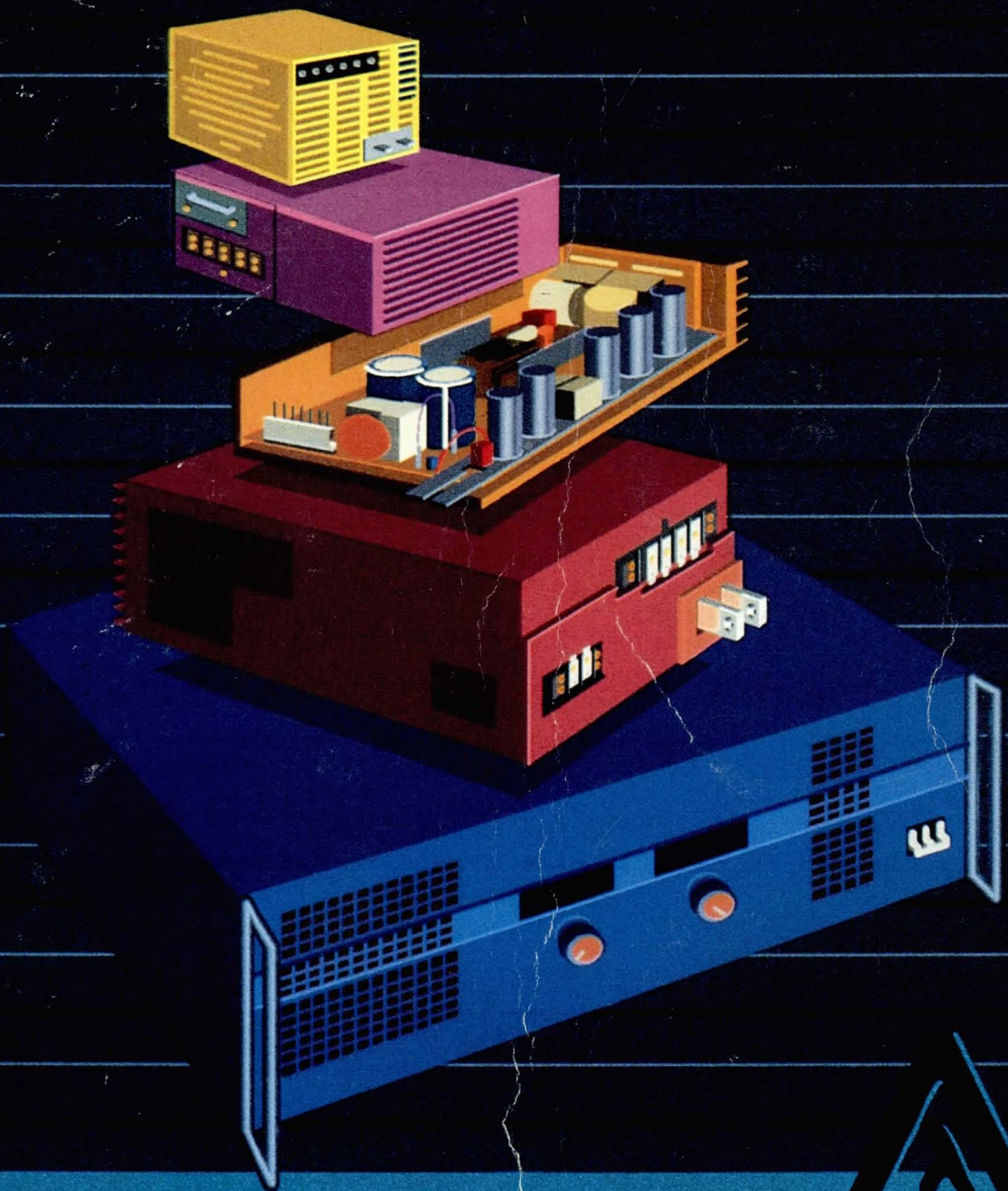
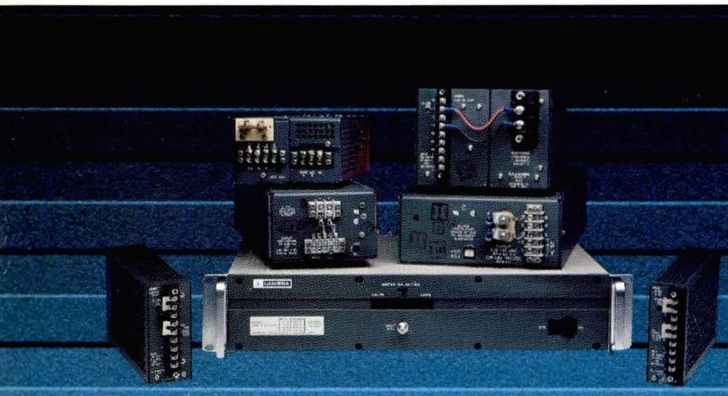
LAMBDA

POWER SUPPLIES '87



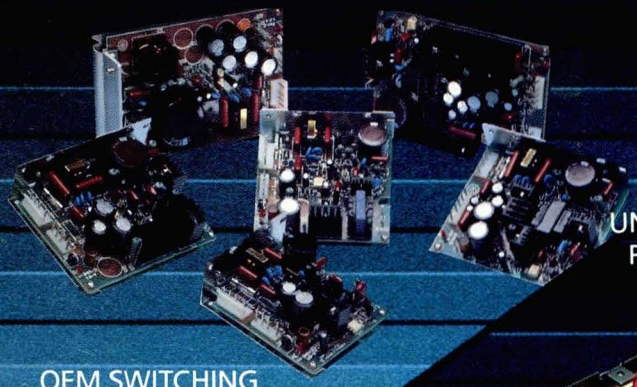
THE WORLD LEADER IN
POWER SUPPLY TECHNOLOGY

A COMPLETE SELECTION OF POWER SUPPLIES



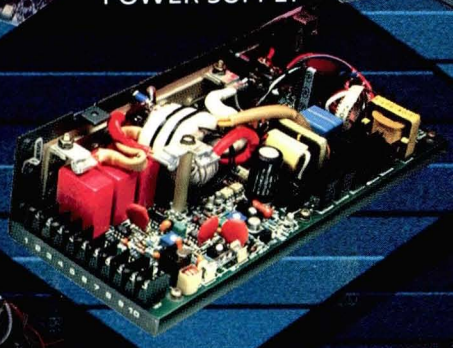
HIGH GRADE INDUSTRIAL SWITCHING

INDUSTRIAL/COMMERCIAL SWITCHING

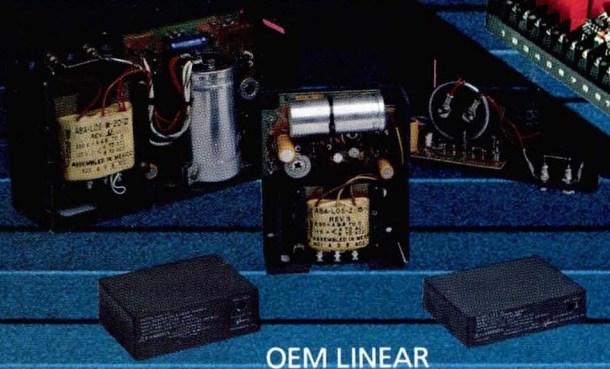


OEM SWITCHING

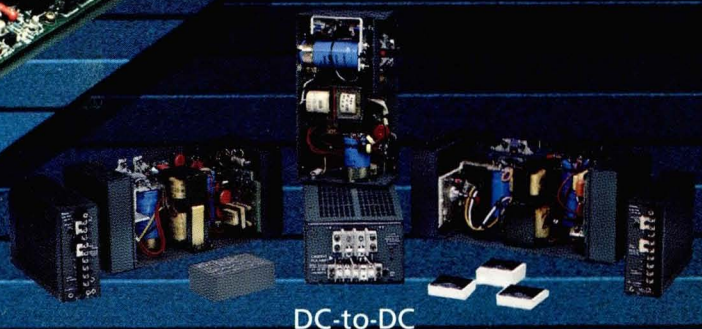
UNINTERRUPTIBLE POWER SUPPLY



HIGH GRADE INDUSTRIAL LINEAR



OEM LINEAR



DC-to-DC

STANDARD ASSEMBLIES FOR CUSTOM REQUIREMENTS

LABORATORY, TEST EQUIPMENT, AND SYSTEM POWER SUPPLIES

READY FOR IMMEDIATE SHIPMENT

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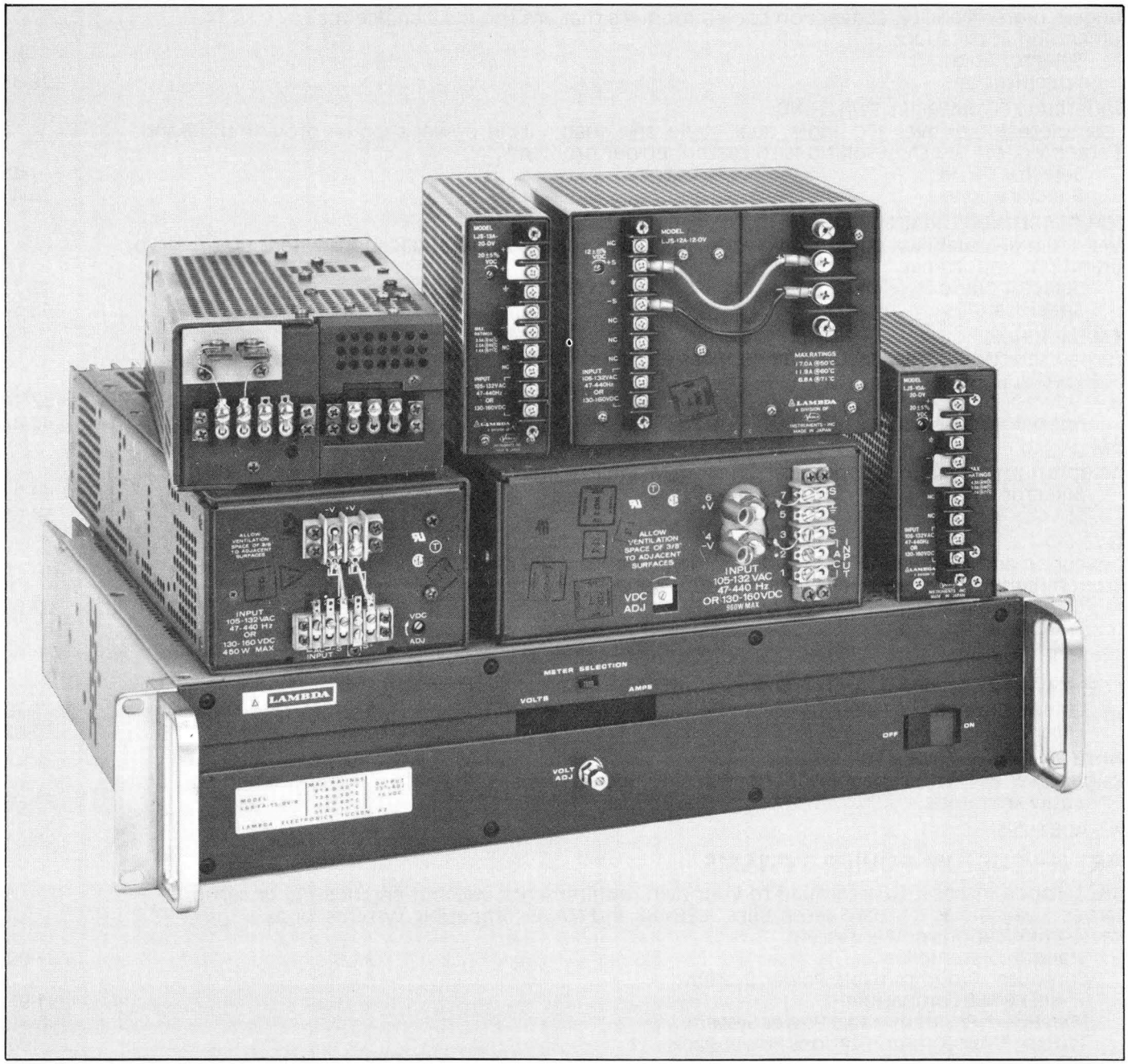
PART I—MODULAR POWER SUPPLIES SELECTOR GUIDES

High Grade Industrial Switching



HIGH GRADE INDUSTRIAL SWITCHING—Lambda reliability makes the High Grade Industrial Switching Power Supplies ideal for such demanding applications as ATE, deliverable test systems, in-house testing, communication systems, industrial controls, and other hi-rel applications. These rugged, convection-cooled units feature built-in overvoltage protection and proprietary Lambda integrated control circuits that minimize the parts count, thereby increasing MTBF. There are over 140 models to choose from, rated at up to 48V, up to 250A.

High Grade Industrial Switching Selector Guide

AC Input. Single Output. Fixed Voltage. Models LR, LGA, LJ and LJA.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
5 VOLTS ±5% ADJ.											
LJS-13-5-OV	0.4%, 0.4%	10	5.0	5.0	4.0	2.8	31	13	4-3/4 x 1-25/32 x 6-5/16	123	$243
LJS-13A-5-OV	0.4%, 0.4%	10	10.0	10.0	7.0	4.0	31	13A	4-17/32 x 1-11/16 x 7-13/64	123	261
LJS-10-5-OV	0.4%, 0.4%	10	10.0	10.0	8.0	5.5	31	10	4-3/4 x 1-25/32 x 7-7/8	123	347
LJS-10A-5-OV	0.4%, 0.4%	10	15.0	15.0	10.5	6.0	31	10A	4-17/32 x 2-3/64 x 7-13/64	123	300
LRS-52-5	0.1%, 0.1%	10	15.0	13.7	11.1	5.9	27	52	2 x 4-7/8 x 6-1/4	119	275
LJS-11-5-OV	0.4%, 0.4%	10	20.0	20.0	16.0	11.0	31	11	4-3/4 x 4-5/16 x 7-15/16	123	434
LRS-53-5	0.1%, 0.1%	10	25.0	21.5	17.5	10.0	27	53	2-3/8 x 4-7/8 x 8-1/2	119	375
LJS-11A-5-OV	0.4%, 0.4%	10	25.0	25.0	17.5	10.0	31	11A	4-17/32 x 3-63/64 x 7-13/64	124	411
LJS-12-5-OV	0.4%, 0.4%	10	30.0	30.0	24.0	16.5	31	12	4-3/4 x 6-1/4 x 7-15/16	123	533
LJS-12A-5-OV	0.4%, 0.4%	10	38.0	38.0	26.6	15.2	31	12A	4-17/32 x 6-7/32 x 7-13/64	124	520
LRS-54-5	0.1%, 0.1%	10	40.0	34.0	27.5	19.5	27	54	3 x 4-7/8 x 11	119	460
LGS-5A-5-OV-R	0.1%, 0.1%	10	55.0	46.0	36.0	22.0	29	5	3-3/16 x 4-15/16 x 14-5/8	121	792
LRS-55-5	0.1%, 0.1%	10	60.0	51.0	41.0	30.0	27	55	3-3/4 x 4-7/8 x 10-1/2	120	585
LRS-56-5	0.1%, 0.1%	10	90.0	77.0	61.0	45.0	27	56	4-7/16 x 4-7/8 x 11-1/2	120	725
LGS-6A-5-OV-R	0.1%, 0.1%	10	90.0	83.0	73.0	57.0	29	6	3-3/16 x 7-1/2 x 15-1/8	121	1070
LRS-57-5	0.1%, 0.1%	10	130.0	110.0	90.0	68.0	27	57	5 x 4-7/8 x 12	120	950
LGS-EEA-5-OV-R	0.1%, 0.1%	10	150.0	135.0	116.0	96.0	29	EE	4-15/16 x 7-1/2 x 16-1/2	122	1324
LRS-58-5	0.1%, 0.1%	10	180.0	147.0	120.0	83.0	27	58	5-1/2 x 4-7/8 x 13-1/8	120	1150
LGS-FA-5-OV-R	0.1%, 0.1%	10	190.0	170.0	147.0	116.0	29	F	3-1/2 x 19 x 14	122	2248
LRS-59-5	0.1%, 0.1%	10	250.0	200.0	165.0	125.0	27	59	6-5/8 x 4-7/8 x 13-25/32	120	1400
6 VOLTS ±5% ADJ.											
LJS-13A-6-OV	0.4%, 0.4%	10	8.5	8.5	6.0	3.4	31	13A	4-17/32 x 1-11/16 x 7-13/16	123	261
LRS-52-6	0.1%, 0.1%	10	13.5	12.2	9.9	5.2	27	52	2 x 4-7/8 x 6-1/4	119	275
LJS-11-6-OV	0.4%, 0.4%	10	16.7	16.7	13.3	9.2	31	11	4-3/4 x 4-5/16 x 7-15/16	123	434
LRS-53-6	0.1%, 0.1%	10	21.0	18.5	16.0	8.3	27	53	2-3/8 x 4-7/8 x 8-1/2	119	375
LRS-54-6	0.1%, 0.1%	10	35.0	31.0	24.0	17.0	27	54	3 x 4-7/8 x 11	119	460
LRS-55-6	0.1%, 0.1%	10	52.0	44.0	36.0	26.0	27	55	3-3/4 x 4-7/8 x 10-1/2	120	585
LRS-56-6	0.1%, 0.1%	10	80.0	69.0	54.0	39.0	27	56	4-7/16 x 4-7/8 x 11-1/2	120	725
LRS-57-6	0.1%, 0.1%	10	110.0	93.0	76.0	58.0	27	57	5 x 4-7/8 x 12	120	950
LRS-58-6	0.1%, 0.1%	10	150.0	123.0	100.0	70.0	27	58	5-1/2 x 4-7/8 x 13-1/8	120	1150
LRS-59-6	0.1%, 0.1%	10	210.0	170.0	140.0	105.0	27	59	6-5/8 x 4-7/8 x 13-25/32	120	1400
12 VOLTS ±5% ADJ.											
LJS-13-12-OV	0.4%, 0.4%	15	2.0	2.0	1.7	1.1	31	13	4-3/4 x 1-25/32 x 6-5/16	123	243
LJS-10-12-OV	0.4%, 0.4%	15	4.2	4.2	3.4	2.3	31	10	4-3/4 x 1-25/32 x 7-7/8	123	347
LJS-13A-12-OV	0.4%, 0.4%	15	5.0	5.0	3.5	2.0	31	13A	4-17/32 x 1-11/16 x 7-13/64	123	261
LJS-10A-12-OV	0.4%, 0.4%	15	6.8	6.8	4.7	2.7	31	10A	4-17/32 x 2-3/64 x 7-13/64	123	300
LRS-52-12	0.1%, 0.1%	15	7.8	6.8	4.9	2.3	27	52	2 x 4-7/8 x 6-1/4	119	275
LJS-11-12-OV	0.4%, 0.4%	15	8.3	8.3	6.6	4.5	31	11	4-3/4 x 4-5/16 x 7-15/16	123	434
LJS-11A-12-OV	0.4%, 0.4%	15	11.5	11.5	8.0	4.6	31	11A	4-17/32 x 3-63/64 x 7-13/64	124	411
LRS-53-12	0.1%, 0.1%	15	12.5	11.2	9.6	7.2	27	53	2-3/8 x 4-7/8 x 8-1/2	119	375
LJS-12-12-OV	0.4%, 0.4%	15	12.5	12.5	10.0	6.85	31	12	4-3/4 x 6-1/4 x 7-15/16	123	533
LJS-12A-12-OV	0.4%, 0.4%	15	17.0	17.0	11.9	6.8	31	12A	4-17/32 x 6-7/32 x 7-13/64	124	520
LRS-54-12	0.1%, 0.1%	15	22.0	18.5	15.0	10.0	27	54	3 x 4-7/8 x 11	119	460
LGS-5A-12-OV-R	0.1%, 0.1%	15	26.0	23.0	19.0	14.0	29	5	3-3/16 x 4-15/16 x 14-5/8	121	792
LRS-55-12	0.1%, 0.1%	15	30.0	26.0	22.0	16.0	27	55	3-3/4 x 4-7/8 x 10-1/2	120	585
LGS-6A-12-OV-R	0.1%, 0.1%	15	45.0	41.0	36.0	29.0	29	6	3-3/16 x 7-1/2 x 15-1/8	121	1070
LRS-56-12	0.1%, 0.1%	15	47.0	41.0	34.0	21.9	27	56	4-7/16 x 4-7/8 x 11-1/2	120	725
LRS-57-12	0.1%, 0.1%	15	65.0	58.0	48.0	34.0	27	57	5 x 4-7/8 x 12	120	950
LGS-EEA-12-OV-R	0.1%, 0.1%	15	81.0	73.0	63.0	51.0	29	EE	4-15/16 x 7-1/2 x 16-1/2	122	1324
LRS-58-12	0.1%, 0.1%	15	84.0	69.0	56.0	40.0	27	58	5-1/2 x 4-7/8 x 13-1/8	120	1150
LGS-FA-12-OV-R	0.1%, 0.1%	15	100.0	90.0	80.0	68.0	29	F	3-1/2 x 19 x 14	122	2248
LRS-59-12	0.1%, 0.1%	15	110.0	92.0	74.0	53.0	27	59	6-5/8 x 4-7/8 x 13-25/32	120	1400
15 VOLTS ±5% ADJ.											
LJS-13-15-OV	0.4%, 0.4%	15	1.6	1.6	1.3	0.9	31	13	4-3/4 x 1-25/32 x 6-5/16	123	243
LJS-10-15-OV	0.4%, 0.4%	15	3.3	3.3	2.6	1.8	31	10	4-3/4 x 1-25/32 x 7-7/8	123	347
LJS-13A-15-OV	0.4%, 0.4%	15	4.0	4.0	2.8	1.6	31	13A	4-17/32 x 1-11/16 x 7-13/64	123	261
LJS-10A-15-OV	0.4%, 0.4%	15	5.5	5.5	3.8	2.2	31	10A	4-17/32 x 2-3/64 x 7-13/64	123	300
LRS-52-15	0.1%, 0.1%	15	6.4	5.6	4.0	1.9	27	52	2 x 4-7/8 x 6-1/4	119	275
LJS-11-15-OV	0.4%, 0.4%	15	6.7	6.7	5.3	3.7	31	11	4-3/4 x 4-5/16 x 7-15/16	123	434
LRS-53-15	0.1%, 0.1%	15	10.0	9.0	7.7	5.8	27	53	2-3/8 x 4-7/8 x 8-1/2	119	375
LJS-12-15-OV	0.4%, 0.4%	15	10.0	10.0	8.0	5.5	31	12	4-3/4 x 6-1/4 x 7-15/16	123	533
LJS-12A-15-OV	0.4%, 0.4%	15	14.0	14.0	9.8	5.6	31	12A	4-17/32 x 6-7/32 x 7-13/64	124	520
LRS-54-15	0.1%, 0.1%	15	18.0	15.0	12.0	8.0	27	54	3 x 4-7/8 x 11	119	460

NOTE: LR Series available in 2 volt models. Consult factory for specifications and prices.

High Grade Industrial Switching Selector Guide

AC Input. Single Output. Fixed Voltage. Models LR, LGA, LJ and LJA

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
15 VOLTS ±5% ADJ. (Cont'd.)											
LGS-5A-15-OV-R	0.1%, 0.1%	15	22.0	19.2	16.0	12.0	29	5	3-3/16 x 4-15/16 x 14-5/8	121	$792
LRS-55-15	0.1%, 0.1%	15	25.0	22.0	19.0	13.0	27	55	3-3/4 x 4-7/8 x 10-1/2	120	585
LRS-56-15	0.1%, 0.1%	15	38.0	33.0	28.0	17.9	27	56	4-7/16 x 4-7/8 x 11-1/2	120	725
LGS-6A-15-OV-R	0.1%, 0.1%	15	39.0	36.0	32.0	25.0	29	6	3-3/16 x 7-1/2 x 15-1/8	121	1070
LRS-57-15	0.1%, 0.1%	15	52.0	46.0	38.0	27.0	27	57	5 x 4-7/8 x 12	120	950
LGS-EEA-15-OV-R	0.1%, 0.1%	15	65.0	59.0	51.0	41.0	29	EE	4-15/16 x 7-1/2 x 16-1/2	122	1324
LRS-58-15	0.1%, 0.1%	15	68.0	56.0	45.5	32.5	27	58	5-1/2 x 4-7/8 x 13-1/8	120	1150
LRS-59-15	0.1%, 0.1%	15	90.0	75.0	60.0	43.0	27	59	6-5/8 x 4-7/8 x 13-25/32	120	1400
20 VOLTS ±5% ADJ.											
LRS-52-20	0.1%, 0.1%	15	4.9	4.3	3.0	1.5	27	52	2 x 4-7/8 x 6-1/4	119	275
LRS-53-20	0.1%, 0.1%	15	7.7	6.9	5.9	4.5	27	53	2-3/8 x 4-7/8 x 8-1/2	119	375
LRS-54-20	0.1%, 0.1%	15	13.5	11.5	8.5	5.5	27	54	3 x 4-7/8 x 11	119	460
LGS-5A-20-OV-R	0.1%, 0.1%	15	15.5	14.0	12.0	8.5	29	5	3-3/16 x 4-15/16 x 14-5/8	121	792
LRS-55-20	0.1%, 0.1%	15	19.0	16.5	14.0	10.0	27	55	3-3/4 x 4-7/8 x 10-1/2	120	585
LRS-56-20	0.1%, 0.1%	15	29.5	27.0	22.0	13.8	27	56	4-7/16 x 4-7/8 x 11-1/2	120	725
LRS-57-20	0.1%, 0.1%	15	40.0	36.0	30.0	21.0	27	57	5 x 4-7/8 x 12	120	950
LRS-58-20	0.1%, 0.1%	15	52.0	43.0	35.0	24.5	27	58	5-1/2 x 4-7/8 x 13-1/8	120	1150
LRS-59-20	0.1%, 0.1%	15	70.0	58.0	46.0	33.0	27	59	6-5/8 x 4-7/8 x 13-25/32	120	1400
24 VOLTS ±5% ADJ.											
LJS-13-24-OV	0.4%, 0.4%	15	1.0	1.0	0.8	0.6	31	13	4-3/4 x 1-25/32 x 6-5/16	123	243
LJS-10-24-OV	0.4%, 0.4%	15	2.1	2.1	1.7	1.2	31	10	4-3/4 x 1-25/32 x 7-7/8	123	347
LJS-13A-24-OV	0.4%, 0.4%	15	3.0	3.0	2.1	1.2	31	13A	4-17/32 x 1-11/16 x 7-13/64	123	261
LJS-10A-24-OV	0.4%, 0.4%	15	3.6	3.6	2.5	1.4	31	10A	4-17/32 x 2-3/64 x 7-13/64	123	300
LRS-52-24	0.1%, 0.1%	15	4.1	3.6	2.6	1.2	27	52	2 x 4-7/8 x 6-1/4	119	275
LJS-11-24-OV	0.4%, 0.4%	15	4.2	4.2	3.3	2.3	31	11	4-3/4 x 4-5/16 x 7-15/16	123	434
LJS-11A-24-OV	0.4%, 0.4%	15	5.8	5.8	4.0	2.3	31	11A	4-17/32 x 3-63/64 x 7-13/64	124	411
LJS-12-24-OV	0.4%, 0.4%	15	6.3	6.3	5.0	3.4	31	12	4-3/4 x 6-1/4 x 7-15/16	123	533
LRS-53-24	0.1%, 0.1%	15	6.5	5.8	5.0	3.8	27	53	2-3/8 x 4-7/8 x 8-1/2	119	375
LJS-12A-24-OV	0.4%, 0.4%	15	9.0	9.0	6.3	3.6	31	12A	4-17/32 x 6-7/32 x 7-13/64	124	520
LRS-54-24	0.1%, 0.1%	15	11.5	9.5	7.5	4.5	27	54	3 x 4-7/8 x 11	119	460
LGS-5A-24-OV-R	0.1%, 0.1%	15	13.5	12.5	10.5	7.5	29	5	3-3/16 x 4-15/16 x 14-5/8	121	792
LRS-55-24	0.1%, 0.1%	15	16.0	14.0	12.0	8.0	27	55	3-3/4 x 4-7/8 x 10-1/2	119	585
LRS-56-24	0.1%, 0.1%	15	25.0	22.5	18.5	11.6	27	56	4-7/16 x 4-7/8 x 11-1/2	119	725
LGS-6A-24-OV-R	0.1%, 0.1%	15	26.0	23.5	20.5	16.0	29	6	3-3/16 x 7-1/2 x 15-1/8	121	1070
LRS-57-24	0.1%, 0.1%	15	33.5	29.0	24.0	17.0	27	57	5 x 4-7/8 x 12	120	950
LGS-EEA-24-OV-R	0.1%, 0.1%	15	40.0	36.0	31.0	26.0	29	EE	4-15/16 x 7-1/2 x 16-1/2	122	1324
LRS-58-24	0.1%, 0.1%	15	44.0	36.0	29.5	20.5	27	58	5-1/2 x 4-7/8 x 13-1/8	120	1150
LGS-FA-24-OV-R	0.1%, 0.1%	15	52.0	47.0	42.0	35.0	29	F	3-1/2 x 19 x 14	122	2248
LRS-59-24	0.1%, 0.1%	15	60.0	50.0	40.0	28.0	27	59	6-5/8 x 4-7/8 x 13-25/32	120	1400
28 VOLTS ±5% ADJ.											
LJS-13-28-OV	0.4%, 0.4%	15	0.9	0.9	0.7	0.5	31	13	4-3/4 x 1-25/32 x 6-5/16	123	243
LJS-10-28-OV	0.4%, 0.4%	15	2.8	1.8	1.4	1.0	31	15	4-3/4 x 1-25/32 x 7-7/8	123	347
LJS-13A-28-OV	0.4%, 0.4%	15	2.5	2.5	1.8	1.0	31	13A	4-17/32 x 1-11/16 x 7-13/64	123	261
LJS-10A-28-OV	0.4%, 0.4%	15	3.1	3.1	2.1	1.2	31	10A	4-17/32 x 2-3/64 x 7-13/64	123	300
LRS-52-28	0.1%, 0.1%	15	3.5	3.1	2.2	1.1	27	52	2 x 4-7/8 x 6-1/4	119	275
LJS-11-28-OV	0.4%, 0.4%	15	3.6	3.6	2.9	2.0	31	11	4-3/4 x 4-5/16 x 7-15/16	123	434
LJS-11A-28-OV	0.4%, 0.4%	15	5.0	5.0	3.5	2.0	31	11A	4-17/32 x 3-63/64 x 7-13/64	124	411
LJS-12-28-OV	0.4%, 0.4%	15	5.4	5.4	4.3	3.0	31	12	4-3/4 x 6-1/4 x 7-15/16	123	533
LRS-53-28	0.1%, 0.1%	15	5.7	5.1	4.4	3.3	27	53	2-3/8 x 4-7/8 x 8-1/2	119	375
LJS-12A-28-OV	0.4%, 0.4%	15	7.8	7.8	5.4	3.1	31	12A	4-17/32 x 6-7/32 x 7-13/64	124	520
LRS-54-28	0.1%, 0.1%	15	9.5	8.5	6.5	4.0	27	54	3 x 4-7/8 x 11	119	460
LGS-5A-28-OV-R	0.1%, 0.1%	15	11.5	10.5	9.5	6.8	29	5	3-3/16 x 4-15/16 x 14-5/8	121	792
LRS-55-28	0.1%, 0.1%	15	14.0	12.0	10.0	7.0	27	55	3-3/4 x 4-7/8 x 10-1/2	119	585
LRS-56-28	0.1%, 0.1%	15	22.0	20.0	16.0	10.0	27	56	4-7/16 x 4-7/8 x 11-1/2	119	725
LGS-6A-28-OV-R	0.1%, 0.1%	15	22.5	20.5	18.0	14.0	29	6	3-3/16 x 7-1/2 x 15-1/8	121	1070
LRS-57-28	0.1%, 0.1%	15	29.0	25.5	21.0	15.0	27	57	5 x 4-7/8 x 12	120	950
LGS-EEA-28-OV-R	0.1%, 0.1%	15	35.0	32.0	27.0	22.0	29	EE	4-15/16 x 7-1/2 x 16-1/2	122	1324
LRS-58-28	0.1%, 0.1%	15	38.0	31.0	25.5	17.5	27	58	5-1/2 x 4-7/8 x 13-1/8	120	1150
LGS-FA-28-OV-R	0.1%, 0.1%	15	46.0	42.0	37.0	31.0	29	F	3-1/2 x 19 x 14	122	2248
LRS-59-28	0.1%, 0.1%	15	52.0	43.0	34.0	24.0	27	59	6-5/8 x 4-7/8 x 13-25/32	120	1400

NOTE: LR Series available in 2 volt models. Consult factory for specifications and prices.

High Grade Industrial Switching Selector Guide.

AC Input, Single Output, Fixed Voltage. Models LR, LGA.

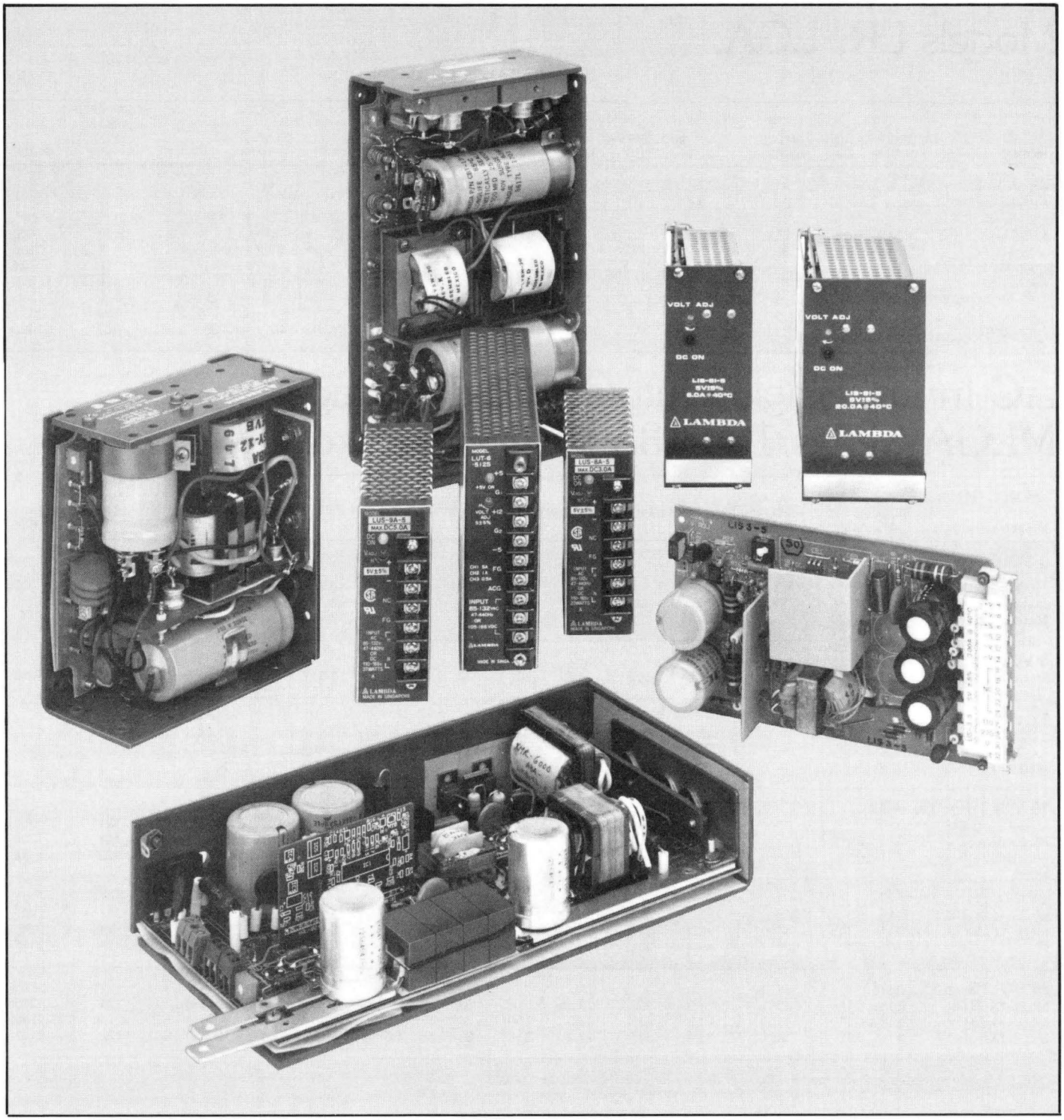
MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
48 VOLTS ±5% ADJ.											
LRS-52-48	0.1%, 0.1%	35	2.0	1.7	1.2	0.6	27	52	2 x 4-7/8 x 6-1/4	119	**$275**
LRS-53-48	0.1%, 0.1%	35	3.3	2.8	2.4	1.8	27	53	2-3/8 x 4-7/8 x 8-1/2	119	**375**
LRS-54-48	0.1%, 0.1%	35	5.8	5.1	3.6	2.3	27	54	3 x 4-7/8 x 11	119	**460**
LRS-55-48	0.1%, 0.1%	35	8.2	7.2	6.2	4.2	27	55	3-3/4 x 4-7/8 x 10-1/2	119	**585**
LRS-56-48	0.1%, 0.1%	35	13.0	12.0	9.5	6.0	27	56	4-7/16 x 4-7/8 x 11-1/2	119	**725**
LRS-57-48	0.1%, 0.1%	35	17.5	15.5	12.5	9.0	27	57	5 x 4-7/8 x 12	120	**950**
LGS-EEA-48-OV-R	0.1%, 0.1%	35	20.0	18.0	15.5	12.5	29	EE	4-15/16 x 7-1/2 x 16-1/2	122	**1383**
LRS-58-48	0.1%, 0.1%	35	22.5	18.5	15.0	10.5	27	58	5-1/2 x 4-7/8 x 13-1/8	120	**1150**
LRS-59-48	0.1%, 0.1%	35	31.0	26.0	21.0	15.0	27	59	6-5/8 x 4-7/8 x 13-25/32	120	**1400**

AC Input, Single Output, Fixed Voltage. MLGA Series 105-132 VAC Standard.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
5 VOLTS ±5% ADJ											
MLGS-5A-5-OV	0.1%, 0.1%	10	55.0	46.0	36.0	22.0	33	5	3-3/16 x 4-15/16 x 14-5/8	121	**1295**
MLGS-6A-5-OV	0.1%, 0.1%	10	90.0	83.0	73.0	57.0	33	6	3-3/16 x 7-1/2 x 15-1/8	121	**1740**
MLGS-EEA-5-OV	0.1%, 0.1%	10	150.0	135.0	116.0	96.0	33	EE	4-15/16 x 7-1/2 x 16-1/2	122	**2115**
6 VOLTS ±5% ADJ											
MLGS-5A-6-OV	0.1%, 0.1%	10	46.5	39.5	31.5	20.0	33	5	3-3/16 x 4-15/16 x 14-5/8	121	**1295**
12 VOLTS ±5% ADJ											
MLGS-5A-12-OV	0.1%, 0.1%	15	26.0	23.0	19.0	14.0	33	5	3-3/16 x 4-15/16 x 14-5/8	121	**1295**
MLGS-6A-12-OV	0.1%, 0.1%	15	45.0	41.0	36.0	29.0	33	6	3-3/16 x 7-1/2 x 15-1/8	121	**1740**
MLGS-EEA-12-OV	0.1%, 0.1%	15	81.0	73.0	63.0	51.0	33	EE	4-15/16 x 7-1/2 x 16-1/2	122	**2115**
15 VOLTS ±5% ADJ											
MLGS-5A-15-OV	0.1%, 0.1%	15	22.0	19.2	16.0	12.0	33	5	3-3/16 x 4-15/16 x 14-5/8	121	**1295**
MLGS-6A-15-OV	0.1%, 0.1%	15	39.0	36.0	32.0	25.0	33	6	3-3/16 x 7-1/2 x 15-1/8	121	**1740**
MLGS-EEA-15-OV	0.1%, 0.1%	15	65.0	59.0	51.0	41.0	33	EE	4-15/16 x 7-1/2 x 16-1/2	122	**2115**
24 VOLTS ±5% ADJ											
MLGS-5A-24-OV	0.1%, 0.1%	15	13.5	12.5	10.5	7.5	33	5	3-3/16 x 4-15/16 x 14-5/8	121	**1295**
MLGS-6A-24-OV	0.1%, 0.1%	15	26.0	23.5	20.5	16.0	33	6	3-3/16 x 7-1/2 x 15-1/8	121	**1740**
MLGS-EEA-24-OV	0.1%, 0.1%	15	40.0	36.0	31.0	26.0	33	EE	4-15/16 x 7-1/2 x 16-1/2	122	**2115**
28 VOLTS ±5% ADJ											
MLGS-5A-28-OV	0.1%, 0.1%	15	11.5	10.5	9.5	6.8	33	5	3-3/16 x 4-15/16 x 14-5/8	121	**1295**
MLGS-6A-28-OV	0.1%, 0.1%	15	22.5	20.5	18.0	14.0	33	6	3-3/16 x 7-1/2 x 15-1/8	121	**1740**
MLGS-EEA-28-OV	0.1%, 0.1%	15	35.0	32.0	27.0	22.0	33	EE	4-15/16 x 7-1/2 x 16-1/2	122	**2115**

NOTE: LR Series available in 2 volt models. Consult factory for specifications and prices.

Industrial/Commercial Switching Selector Guide



INDUSTRIAL/COMMERCIAL SWITCHING—Lambda stocks over 150 models of single, dual, triple and quad output industrial/commercial switching power supplies to provide thousands of standard solutions to custom power problems. All outputs are independently regulated, eliminating cross-regulation problems. Lambda eliminates the reengineering charges you'd have with a custom power supply.

Industrial/Commercial Switching Selector Guide

AC Input. Models LF, LSS, LU, LUA and LY. Single Output.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	QTY. 1	QTY. 100	QTY. 250	QTY. 1000
2 VOLTS ± 5% ADJ.													
LFS-43-2	0.1%, 0.1%	15	40.0	33.5	25.0	35	43	1.9 x 4.75 x 9.125	125	$350.00	—	$207.00	$189.00
LFS-44-2	0.1%, 0.1%	15	60.0	45.0	33.5	35	44	1.9 x 4.75 x 11.75	126	450.00	—	270.00	252.00
LFS-45-2	0.1%, 0.1%	15	90.0	67.5	45.0	35	45	1.9 x 4.75 x 16	126	540.00	—	371.00	342.00
LFS-46-2	0.1%, 0.1%	15	120.0	112.0	93.5	35	46	5 x 4.875 x 7.25	125	675.00	—	428.00	403.00
LFS-47-2	0.1%, 0.1%	15	150.0	142.5	120.0	35	47	5 x 4.875 x 8.875	125	790.00	—	478.00	450.00
LFS-48-2	0.1%, 0.1%	15	200.0	185.0	157.0	35	48	5 x 4.875 x 11	125	940.00	—	600.00	560.00
5 VOLTS ±5% ADJ.													
LSS-34-5	0.4%, 0.8 %	15	2.0	2.0	1.0	39	34	1.22 x 2.91 x 2.83	—	43.00	38.50	25.75	22.75
LUS-8A-5	0.4%, 0.85%	15	3.0	2.1	1.5	43	8	3.82 x 1.38 x 3.54	131	51.00	46.00	40.75	38.50
LSS-35-5	0.4%, 0.8%	15	3.0	3.0	1.5	39	35	1.42 x 2.91 x 3.35	—	51.00	46.00	30.50	28.00
LUS-9A-5	0.4%, 0.85%	15	5.0	3.5	2.5	43	9	3.82 x 1.38 x 4.53	131	79.00	71.00	63.25	59.75
LSS-36-5	0.4%, 0.8%	15	5.0	5.0	2.5	39	36	1.54 x 2.91 x 4.13	—	79.00	71.00	47.50	37.50
LUS-10A-5	0.4%, 0.85%	15	10.0	7.0	5.0	43	10	3.82 x 1.46 x 6.02	131	106.00	95.50	85.00	80.50
LSS-37-5	0.4%, 0.8%	15	10.0	10.0	5.0	39	37	1.54 x 3.74 x 4.75	—	106.00	95.50	63.50	58.25
LYS-Y-5	0.1%, 0.1%	10	11.0	11.0	9.5	41	Y	5-5/8 x 4-7/8 x 2-1/2	128	193.00	174.00	—	153.00
LUS-11-5	0.4%, 0.85%	15	20.0	14.0	—	43	11	3.82 x 3.08 x 7.88	131	150.00	135.00	121.00	115.00
LYS-X-5	0.1%, 0.1%	10	20.0	17.7	15.0	41	X	7 x 4-7/8 x 2-3/4	127	230.00	207.00	—	182.00
LSS-38-5	0.4%, 0.8%	15	20.0	20.0	10.0	39	38	2.17 x 3.74 x 6.30	—	150.00	135.00	104.00	94.50
LSS-39-5	0.4%, 0.8%	15	30.0	30.0	15.0	39	39	2.56 x 3.74 x 7.09	—	235.00	210.00	141.00	129.00
LYS-W-5	0.1%, 0.1%	10	35.0	31.5	27.5	41	W	9 x 4-7/8 x 2-3/4	127	283.00	255.00	—	225.00
LFS-43-5	0.1%, 0.1%	15	40.0	33.5	25.0	35	43	1.9 x 4.75 x 9.125	125	350.00	—	207.00	189.00
LYS-P-5	0.1%, 0.1%	10	50.0	46.0	40.0	41	P	10 x 4-7/8 x 4-7/16	127	360.00	324.00	—	285.00
LFS-44-5	0.1%, 0.1%	15	60.0	45.0	33.5	35	44	1.9 x 4.75 x 11.75	126	450.00	—	270.00	252.00
LYS-K-5-OV	0.1%, 0.1%	10	70.0	61.0	50.0	41	K	10 x 4-7/8 x 5-1/2	127	499.00	449.00	—	396.00
LFS-45-5	0.1%, 0.1%	15	90.0	67.5	45.0	35	45	1.9 x 4.75 x 16	126	540.00	—	371.00	342.00
LYS-D-5-OV	0.1%, 0.1%	10	120.0	104.0	86.0	41	D	7-1/2 x 9-1/2 x 4-13/16	129	698.00	629.00	—	554.00
LFS-46-5	0.1%, 0.1%	15	120.0	112.0	93.5	35	46	5 x 4.875 x 7.25	125	675.00	—	428.00	403.00
LFS-47-5	0.1%, 0.1%	15	150.0	142.5	120.0	35	47	5 x 4.875 x 8.875	125	790.00	—	478.00	450.00
LFS-48-5	0.1%, 0.1%	15	200.0	185.0	157.0	35	48	5 x 4.875 x 11	125	940.00	—	600.00	560.00
LYS-EE-5-OV	0.1%, 0.1%	10	225.0	183.0	137.0	41	EE	7-1/2 x 16-1/2 x 4-13/16	128	1070.00	963.00	—	848.00
6 VOLTS ±5% ADJ.													
LSS-34-6	0.4%, 0.8%	15	1.7	1.7	0.85	39	34	1.22 x 2.91 x 2.83	—	43.00	38.50	25.75	22.75
LSS-35-6	0.4%, 0.8%	15	2.5	2.5	1.25	39	35	1.42 x 2.91 x 3.35	—	51.00	46.00	30.50	28.00
LSS-36-6	0.4%, 0.8%	15	4.2	4.2	2.1	39	36	1.54 x 2.91 x 4.13	—	79.00	71.00	47.50	37.50
LSS-37-6	0.4%, 0.8%	15	8.4	8.4	4.2	39	37	1.54 x 3.74 x 4.75	—	106.00	95.50	63.50	58.25
LSS-38-6	0.4%, 0.8%	15	17.0	17.0	8.5	39	38	2.17 x 3.74 x 6.30	—	150.00	135.00	104.00	94.50
LSS-39-6	0.4%, 0.8%	15	25.5	25.5	12.8	39	39	2.56 x 3.74 x 7.09	—	235.00	210.00	141.00	129.00
LFS-43-6	0.1%, 0.1%	15	35.0	28.0	20.5	43	43	1.9 x 4.75 x 9.125	125	350.00	—	207.00	189.00
LFS-44-6	0.1%, 0.1%	15	50.0	37.5	28.0	43	44	1.9 x 4.75 x 11.75	126	450.00	—	270.00	252.00
LFS-45-6	0.1%, 0.1%	15	75.0	56.0	37.5	43	45	1.9 x 4.75 x 16	126	540.00	—	371.00	342.00
LFS-46-6	0.1%, 0.1%	15	101.0	94.5	79.0	43	46	5 x 4.875 x 7.25	125	675.00	—	428.00	403.00
LFS-47-6	0.1%, 0.1%	15	126.0	120.0	107.0	43	47	5 x 4.875 x 8.875	125	790.00	—	478.00	450.00
LFS-48-6	0.1%, 0.1%	15	168.0	155.0	132.0	43	48	5 x 4.875 x 11	125	940.00	—	600.00	560.00
9 VOLTS ±5% ADJ.													
LUS-8A-9	0.4%, 0.85%	15	1.7	1.2	0.9	43	8	3.82 x 1.38 x 3.54	131	51.00	46.00	40.75	38.50
LUS-9A-9	0.4%, 0.85%	15	2.8	2.0	1.4	43	9	3.82 x 1.38 x 4.53	131	79.00	71.00	63.25	59.75
LUS-10A-9	0.4%, 0.85%	15	5.6	3.9	2.8	43	10	3.82 x 1.46 x 6.02	131	106.00	95.50	85.00	80.50
12 VOLTS ±5% ADJ.													
LSS-34-12	0.4%, 0.8%	15	0.9	0.9	0.45	39	34	1.22 x 2.91 x 2.83	—	43.00	38.50	25.75	22.75
LUS-8A-12	0.4%, 0.85%	15	1.3	0.9	0.7	43	8	3.82 x 1.38 x 3.54	131	51.00	46.00	40.75	38.50
LSS-35-12	0.4%, 0.8%	15	1.3	1.3	0.65	39	35	1.42 x 2.91 x 3.35	—	51.00	46.00	30.50	28.00
LSS-36-12	0.4%, 0.8%	15	2.1	2.1	1.05	39	36	1.54 x 2.91 x 4.13	—	79.00	71.00	47.50	37.50
LUS-9A-12	0.4%, 0.85%	15	2.1	1.5	1.1	43	9	3.82 x 1.38 x 4.53	131	79.00	71.00	63.25	59.75
LUS-10A-12	0.4%, 0.85%	15	4.2	2.9	2.1	43	10	3.82 x 1.46 x 6.02	131	106.00	95.50	85.00	80.50
LSS-37-12	0.4%, 0.8%	15	4.2	4.2	2.1	39	37	1.54 x 3.74 x 4.75	—	106.00	95.50	63.50	58.25
LYS-Y-12	0.1%, 0.1%	15	6.0	6.0	5.1	41	Y	5-5/8 x 4-7/8 x 2-1/2	128	193.00	174.00	—	153.00
LUS-11-12	0.4%, 0.85%	15	8.5	6.0	—	43	11	3.82 x 3.08 x 7.88	131	150.00	135.00	121.00	115.00
LSS-38-12	0.4%, 0.8%	15	8.5	8.5	4.25	39	38	2.17 x 3.74 x 6.30	—	150.00	135.00	104.00	94.50
LYS-X-12	0.1%, 0.1%	15	10.4	9.3	7.8	41	X	7 x 4-7/8 x 2-3/4	127	230.00	207.00	—	182.00
LSS-39-12	0.4%, 0.8%	15	12.5	12.5	6.3	39	39	2.56 x 3.74 x 7.09	—	235.00	210.00	141.00	129.00
LFS-43-12	0.1%, 0.1%	20	19.0	15.0	11.0	43	43	1.9 x 4.75 x 9.125	125	350.00	—	207.00	189.00
LYS-W-12	0.1%, 0.1%	15	20.0	18.0	15.0	41	W	9 x 4-7/8 x 2-3/4	127	283.00	255.00	—	225.00
LFS-44-12	0.1%, 0.1%	20	26.0	18.5	13.5	43	44	1.9 x 4.75 x 11.75	126	450.00	—	270.00	252.00
LYS-P-12	0.1%, 0.1%	15	29.0	27.0	23.0	41	P	10 x 4-7/8 x 4-7/16	127	360.00	324.00	—	285.00
LFS-45-12	0.1%, 0.1%	20	40.0	30.0	20.0	43	45	1.9 x 4.75 x 16	126	540.00	—	371.00	342.00
LYS-K-12	0.1%, 0.1%	15	40.0	35.0	29.0	41	K	10 x 4-7/8 x 5-1/2	127	469.00	422.00	—	370.00
LFS-46-12	0.1%, 0.1%	20	51.5	48.0	40.0	43	46	5 x 4.875 x 7.25	125	675.00	—	428.00	403.00
LFS-47-12	0.1%, 0.1%	20	64.5	61.5	55.0	43	47	5 x 4.875 x 8.875	125	790.00	—	478.00	450.00
LFS-48-12	0.1%, 0.1%	20	86.0	79.5	67.5	43	48	5 x 4.875 x 11	125	940.00	—	600.00	560.00
LYS-EE-12-OV	0.1%, 0.1%	15	110.0	98.0	68.0	41	EE	7-1/2 x 16-1/2 x 4-13/16	128	1070.00	963.00	—	848.00

Industrial/Commercial Switching Selector Guide

AC Input. Models LF, LSS, LU, LUA and LY. Single Output.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250	QTY. 1000
15 VOLTS ±5% ADJ.													
LSS-34-15	0.4%, 0.8%	15	0.7	0.7	0.35	39	34	1.22 x 2.91 x 2.83	—	$43.00	$38.50	$25.75	$22.75
LUS-8A-15	0.4%, 0.85%	15	1.0	0.7	0.5	43	8	3.82 x 1.38 x 3.54	131	51.00	46.00	40.75	38.50
LSS-35-15	0.4%, 0.8%	15	1.0	1.0	0.6	39	35	1.42 x 2.91 x 3.35	—	51.00	46.00	30.50	28.00
LUS-9A-15	0.4%, 0.85%	15	1.7	1.2	0.9	43	9	3.82 x 1.38 x 4.53	131	79.00	71.00	63.25	59.75
LSS-36-15	0.4%, 0.8%	15	1.7	1.7	0.85	39	36	1.54 x 2.91 x 4.13	—	79.00	71.00	47.50	37.50
LUS-10A-15	0.4%, 0.85%	15	3.4	2.4	1.7	43	10	3.82 x 1.46 x 6.02	131	106.00	95.50	85.00	80.50
LSS-37-15	0.4%, 0.8%	15	3.4	3.4	1.7	39	37	1.54 x 3.74 x 4.75	—	106.00	95.50	63.50	58.25
LYS-Y-15	0.1%, 0.1%	15	5.0	5.0	4.3	41	Y	5-5/8 x 4-7/8 x 2-1/2	128	193.00	174.00	—	153.00
LUS-11-15	0.4%, 0.85%	15	7.0	4.9	—	43	11	3.82 x 3.08 x 7.88	131	150.00	135.00	121.00	115.00
LSS-38-15	0.4%, 0.8%	15	7.0	7.0	3.5	39	38	2.17 x 3.74 x 6.30	—	150.00	135.00	104.00	94.50
LYS-X-15	0.1%, 0.1%	15	8.5	7.5	6.3	41	X	7 x 4-7/8 x 2-3/4	127	230.00	207.00	—	182.00
LSS-39-15	0.4%, 0.8%	15	10.0	10.0	5.0	39	39	2.56 x 3.74 x 7.09	—	235.00	210.00	141.00	129.00
LFS-43-15	0.1%, 0.1%	20	15.5	12.0	9.0	35	43	1.9 x 4.75 x 9.125	125	350.00	—	207.00	189.00
LYS-W-15	0.1%, 0.1%	15	16.5	14.5	12.0	41	W	9 x 4-7/8 x 2-3/4	127	283.00	255.00	—	225.00
LFS-44-15	0.1%, 0.1%	20	21.0	15.5	11.5	41	44	1.9 x 4.75 x 11.75	126	450.00	—	270.00	252.00
LYS-P-15	0.1%, 0.1%	15	24.0	22.0	19.0	41	P	10 x 4-7/8 x 4-7/16	127	360.00	324.00	—	285.00
LYS-K-15	0.1%, 0.1%	15	32.0	28.0	23.0	41	K	10 x 4-7/8 x 5-1/2	127	469.00	422.00	—	370.00
LFS-45-15	0.1%, 0.1%	15	32.5	24.5	16.0	35	45	1.9 x 4.75 x 16	126	540.00	—	371.00	342.00
LFS-46-15	0.1%, 0.1%	20	42.0	39.0	33.0	35	47	5 x 4.875 x 7.25	125	675.00	—	428.00	403.00
LFS-47-15	0.1%, 0.1%	20	52.5	50.0	44.5	35	47	5 x 4.875 x 8.875	125	790.00	—	478.00	450.00
LFS-48-15	0.1%, 0.1%	20	70.0	64.5	55.0	35	48	5 x 4.875 x 11	125	940.00	—	600.00	560.00
LYS-EE-15-OV	0.1%, 0.1%	15	90.0	80.0	56.0	41	EE	7-1/2 x 16-1/2 x 4-13/16	128	1070.00	963.00	—	848.00
20 VOLTS ±5% ADJ.													
LFS-43-20	0.1%, 0.1%	20	11.8	9.2	6.8	35	43	1.9 x 4.75 x 9.125	125	350.00	—	207.00	189.00
LFS-44-20	0.1%, 0.1%	20	16.0	11.5	8.5	35	44	1.9 x 4.75 x 11.75	126	450.00	—	270.00	252.00
LFS-45-20	0.1%, 0.1%	20	25.0	19.0	12.5	35	45	1.9 x 4.75 x 16	126	540.00	—	371.00	342.00
LFS-46-20	0.1%, 0.1%	20	32.0	30.0	25.0	35	46	5 x 4.875 x 7.25	125	675.00	—	428.00	403.00
LFS-47-20	0.1%, 0.1%	20	40.0	38.0	34.0	35	47	5 x 4.875 x 8.875	125	790.00	—	478.00	450.00
LFS-48-20	0.1%, 0.1%	20	53.0	49.0	41.5	35	48	5 x 4.875 x 11	125	940.00	—	600.00	560.00
24 VOLTS ±5% ADJ.													
LSS-34-24	0.4%, 0.8%	15	0.5	0.5	0.25	39	34	1.22 x 2.91 x 2.83	—	43.00	38.50	25.75	22.75
LUS-8A-24	0.4%, 0.85%	15	0.7	0.5	0.4	43	8	3.82 x 1.38 x 3.54	131	51.00	46.00	40.75	38.50
LSS-35-24	0.4%, 0.8%	15	0.7	0.7	0.35	39	35	1.42 x 2.91 x 3.35	—	51.00	46.00	30.50	28.00
LUS-9A-24	0.4%, 0.85%	15	1.1	0.8	0.6	43	9	3.82 x 1.38 x 4.53	131	79.00	71.00	63.25	59.75
LSS-36-24	0.4%, 0.8%	15	1.1	1.1	0.55	39	36	1.54 x 2.91 x 4.13	—	79.00	71.00	47.50	37.50
LUS-10A-24	0.4%, 0.85%	15	2.1	1.5	1.0	43	10	3.82 x 1.42 x 6.02	131	106.00	95.50	85.00	80.50
LSS-37-24	0.4%, 0.8%	15	2.1	2.1	1.05	39	37	1.54 x 3.74 x 4.75	—	106.00	95.50	63.50	58.25
LYS-Y-24	0.1%, 0.1%	15	3.3	3.3	2.6	41	Y	5-5/8 x 4-7/8 x 2-1/2	128	193.00	174.00	—	153.00
LUS-11-24	0.4%, 0.85%	15	4.5	3.2	—	43	11	3.82 x 3.08 x 7.88	131	150.00	135.00	121.00	115.00
LSS-38-24	0.4%, 0.8%	15	4.5	4.5	2.25	39	38	2.17 x 3.74 x 6.30	—	150.00	135.00	104.00	94.50
LYS-X-24	0.1%, 0.1%	15	5.7	4.9	4.0	41	X	7 x 4-7/8 x 2-3/4	127	230.00	207.00	—	182.00
LSS-39-24	0.4%, 0.8%	15	6.5	6.5	3.25	39	39	2.56 x 3.74 x 7.09	—	235.00	210.00	141.00	129.00
LFS-43-24	0.1%, 0.1%	20	10.0	7.8	5.7	35	43	1.9 x 4.75 x 9.125	125	350.00	—	207.00	189.00
LYS-W-24	0.1%, 0.1%	15	10.5	9.5	8.0	41	W	9 x 4-7/8 x 2-3/4	127	283.00	255.00	—	225.00
LFS-44-24	0.1%, 0.1%	20	13.0	10.0	7.5	35	44	1.9 x 4.75 x 11.75	125	450.00	—	270.00	252.00
LYS-P-24	0.1%, 0.1%	15	15.5	14.0	12.0	41	P	10 x 4-7/8 x 4-7/16	127	360.00	324.00	—	285.00
LFS-45-24	0.1%, 0.1%	20	20.0	15.0	10.0	35	45	1.9 x 4.75 x 16	126	540.00	—	371.00	342.00
LYS-K-24	0.1%, 0.1%	15	21.0	18.0	15.0	41	K	10 x 4-7/8 x 5-1/2	127	469.00	422.00	—	370.00
LFS-46-24	0.1%, 0.1%	20	27.0	25.0	21.0	35	46	5 x 4.875 x 7.25	125	675.00	—	428.00	403.00
LYS-D-24-OV	0.1%, 0.1%	15	32.0	28.0	23.0	41	D	7-1/2 x 9-1/2 x 4-13/16	129	698.00	629.00	—	554.00
LFS-47-24	0.1%, 0.1%	20	33.5	32.0	28.5	35	47	5 x 4.875 x 8.875	125	790.00	—	478.00	450.00
LFS-48-24	0.1%, 0.1%	20	44.5	40.5	35.0	35	48	5 x 4.875 x 11	125	940.00	—	600.00	560.00
LYS-EE-24-OV	0.1%, 0.1%	15	58.0	52.0	37.0	41	EE	7-1/2 x 16-1/2 x 4-13/16	128	1070.00	963.00	—	848.00
28 VOLTS ±5% ADJ.													
LSS-34-28	0.4%, 0.8%	15	0.4	0.4	0.2	39	34	1.22 x 2.91 x 2.83	—	43.00	38.50	25.75	22.75
LUS-8A-28	0.4%, 0.85%	15	0.6	0.4	0.3	43	8	3.82 x 1.38 x 3.54	131	51.00	46.00	40.75	38.50
LSS-35-28	0.4%, 0.8%	15	0.6	0.6	0.3	39	35	1.42 x 2.91 x 3.35	—	51.00	46.00	30.50	28.00
LUS-9A-28	0.4%, 0.85%	15	0.9	0.6	0.5	43	9	3.82 x 1.38 x 4.53	131	79.00	71.00	63.25	59.75
LSS-36-28	0.4%, 0.8%	15	0.9	0.9	0.45	39	36	1.54 x 2.91 x 4.13	—	79.00	71.00	47.50	37.50
LUS-10A-28	0.4%, 0.85%	15	1.8	1.3	0.9	43	10	3.82 x 1.46 x 6.02	131	106.00	95.50	85.00	80.50
LSS-37-28	0.4%, 0.8%	15	1.8	1.8	0.9	39	37	1.54 x 3.74 x 4.75	—	106.00	95.50	63.50	58.25
LYS-Y-28	0.1%, 0.1%	15	2.8	2.8	2.2	41	Y	5-5/8 x 4-7/8 x 2-1/2	128	193.00	174.00	—	153.00
LUS-11-28	0.4%, 0.85%	15	3.6	2.5	—	43	11	3.82 x 3.08 x 7.88	131	150.00	135.00	121.00	115.00
LSS-38-28	0.4%, 0.8%	15	3.8	3.8	1.9	39	38	2.17 x 3.74 x 6.30	—	150.00	135.00	104.00	94.50
LYS-X-28	0.1%, 0.1%	15	5.0	4.3	3.5	41	X	7 x 4-7/8 x 2-3/4	127	230.00	207.00	—	182.00
LSS-39-28	0.4%, 0.8%	15	5.5	5.5	2.75	39	39	2.56 x 3.74 x 7.09	—	235.00	210.00	141.00	129.00
LFS-43-28	0.1%, 0.1%	20	8.6	6.8	5.0	35	43	1.9 x 4.75 x 9.125	125	350.00	—	207.00	189.00
LYS-W-28	0.1%, 0.1%	15	9.5	8.5	7.0	41	W	9 x 4-7/8 x 2-3/4	127	283.00	255.00	—	225.00

Industrial/Commercial Switching Selector Guide

AC Input. Models LF, LSS, LU, LUA and LY. Single Output.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250	QTY. 1000
28 VOLTS ±5% ADJ. *(Cont'd.)*													
LFS-44-28	0.1%, 0.1%	20	11.5	8.5	6.3	35	44	1.9 x 4.75 x 9.125	125	**$450.00**	—	**$270.00**	**$252.00**
LYS-P-28	0.1%, 0.1%	15	13.5	12.5	10.5	41	P	10 x 4-7/8 x 4-7/16	127	**360.00**	**324.00**	—	**285.00**
LFS-45-28	0.1%, 0.1%	20	17.5	13.0	8.5	35	45	1.9 x 4.75 x 16	126	**540.00**	—	**371.00**	**342.00**
LYS-K-28	0.1%, 0.1%	15	18.0	15.5	13.0	41	K	10 x 4-7/8 x 5-1/2	127	**469.00**	**422.00**	—	**370.00**
LFS-46-28	0.1%, 0.1%	20	23.0	21.5	18.0	35	46	5 x 4.875 x 7.25	125	**675.00**	—	**428.00**	**403.00**
LYS-D-28-OV	0.1%, 0.1%	15	27.5	24.0	19.5	41	D	7-1/2 x 9-1/2 x 4-13/16	129	**698.00**	**629.00**	—	**554.00**
LFS-47-28	0.1%, 0.1%	20	29.0	27.5	24.5	35	47	5 x 4.875 x 8.875	125	**790.00**	—	**478.00**	**450.00**
LFS-48-28	0.1%, 0.1%	20	38.5	35.0	30.0	35	48	5 x 4.875 x 11	125	**940.00**	—	**600.00**	**560.00**
LYS-EE-28-OV	0.1%, 0.1%	15	50.0	45.0	31.0	41	EE	7-1/2 x 16-1/2 x 4-13/16	128	**1070.00**	**963.00**	—	**848.00**
48 VOLTS ±5% ADJ.													
LUS-8A-48	0.4%, 0.85%	15	0.35	0.24	0.18	43	8	3.82 x 1.38 x 3.54	131	**51.00**	**46.00**	**40.75**	**38.50**
LUS-9A-48	0.4%, 0.85%	15	0.5	0.3	0.25	43	9	3.82 x 1.38 x 4.53	131	**79.00**	**71.00**	**63.25**	**59.75**
LUS-10A-48	0.4%, 0.85%	15	1.1	0.7	0.55	43	10	3.82 x 1.46 x 6.02	131	**106.00**	**95.50**	**85.00**	**80.50**
LYS-Y-48	0.1%, 0.1%	25	1.5	1.5	1.2	41	Y	5-5/8 x 4-7/8 x 2-1/2	128	**193.00**	**174.00**	—	**153.00**
LUS-11-48	0.4%, 0.85%	15	2.1	1.4	—	43	11	3.82 x 3.08 x 7.88	131	**150.00**	**135.00**	**121.00**	**115.00**
LYS-X-48	0.1%, 0.1%	25	2.7	2.3	1.9	41	X	7 x 4-7/8 x 2-3/4	127	**230.00**	**207.00**	—	**182.00**
LFS-43-48	0.1%, 0.1%	35	5.0	4.0	3.0	35	43	1.9 x 4.75 x 9.125	125	**350.00**	—	**207.00**	**184.00**
LYS-W-48	0.1%, 0.1%	25	5.3	4.7	3.9	41	W	9 x 4-7/8 x 2-3/4	127	**283.00**	**255.00**	—	**225.00**
LFS-44-48	0.1%, 0.1%	35	6.5	5.0	3.8	35	44	1.9 x 4.75 x 11.75	125	**450.00**	—	**270.00**	**252.00**
LYS-P-48	0.1%, 0.1%	25	7.2	6.7	5.6	41	P	10 x 4-7/8 x 4-7/16	127	**360.00**	**324.00**	—	**285.00**
LFS-45-48	0.1%, 0.1%	35	10.0	7.5	5.0	35	45	1.9 x 4.75 x 16	126	**540.00**	—	**371.00**	**342.00**
LFS-46-48	0.1%, 0.1%	35	13.5	12.5	10.5	35	46	5 x 4.875 x 7.25	125	**675.00**	—	**428.00**	**403.00**
LYS-D-48-OV	0.1%, 1.0%	25	16.0	14.0	11.5	41	D	7-1/2 x 9-1/2 x 4-13/16	129	**698.00**	**629.00**	—	**554.00**
LFS-47-48	0.1%, 0.1%	35	17.0	16.0	14.5	35	47	5 x 4.875 x 8.875	125	**790.00**	—	**478.00**	**450.00**
LFS-48-48	0.1%, 0.1%	35	22.5	20.5	17.5	35	48	5 x 4.875 x 11	125	**940.00**	—	**600.00**	**560.00**
LYS-EE-48-OV	0.1%, 0.1%	25	30.0	27.0	18.0	41	EE	7-1/2 x 16-1/2 x 4-13/16	128	**1070.00**	**963.00**	—	**848.00**

AC Input. Models LU and LUA. Dual Output.

MODEL	VOLT Vo	REGULATION (LINE, LOAD)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 1000
5V ±5% ADJ., 12V ±5% ADJ.													
LUD-15-13	5	0.4%, 0.85%	15	5.0	5.0	3.5	43	15	3.81 x 1.65 x 7.88	132	**$130.00**	**$117.00**	**$85.00**
	12	0.4%, 0.85%	15	2.1	2.1	1.47							
LUD-16-13	5	0.4%, 0.85%	15	10.0	10.0	6.0	43	16	3.81 x 2.56 x 8.66	132	**184.00**	**166.00**	**120.00**
	12	0.4%, 0.85%	15	4.0	4.0	2.4							
5V ±5% ADJ., 24V ±5% ADJ.													
LUD-15-16	5	0.4%, 0.85%	15	5.0	5.0	3.5	43	15	3.81 x 1.65 x 7.88	132	**130.00**	**117.00**	**85.00**
	24	0.4%, 0.85%	15	1.0	1.0	0.7							
LUD-16-16	5	0.4%, 0.85%	15	10.0	10.0	6.0	43	16	3.81 x 2.56 x 8.66	132	**184.00**	**166.00**	**120.00**
	24	0.4%, 0.85%	15	2.0	2.0	1.2							
12V ±5% ADJ., 5V ±5% ADJ.													
LUD-15-31	12	0.4%, 0.85%	15	4.0	4.0	2.8	43	15	3.81 x 1.65 x 7.88	132	**130.00**	**117.00**	**85.00**
	5	0.4%, 0.85%	15	2.0	2.0	1.4							
LUD-16-31	12	0.4%, 0.85%	15	8.0	8.0	4.8	43	16	3.81 x 2.56 x 8.66	132	**184.00**	**166.00**	**120.00**
	5	0.4%, 0.85%	15	2.0	2.0	1.2							
12V ±5% ADJ., 12V ±5% ADJ.													
LUD-15-33	12	0.4%, 0.85%	15	3.0	3.0	2.1	43	15	3.81 x 1.65 x 7.88	132	**130.00**	**117.00**	**85.00**
	12	0.4%, 0.85%	15	1.5	1.5	1.05							
LUD-16-33	12	0.4%, 0.85%	15	6.0	6.0	3.6	43	16	3.81 x 2.56 x 8.66	132	**184.00**	**166.00**	**120.00**
	12	0.4%, 0.85%	15	2.5	2.5	1.5							
15V ±5% ADJ., 15V ±5% ADJ.													
LUD-15-44	15	0.4%, 0.85%	15	3.0	3.0	2.1	43	15	3.81 x 1.65 x 7.88	132	**130.00**	**117.00**	**85.00**
	15	0.4%, 0.85%	15	1.0	1.0	0.7							
LUD-16-44	15	0.4%, 0.85%	15	5.0	5.0	4.0	43	16	3.81 x 2.56 x 8.66	132	**184.00**	**166.00**	**120.00**
	15	0.4%, 0.85%	15	2.0	2.0	1.2							

Industrial/Commercial Switching Selector Guide

AC Input. Models LU and LY. Triple Output.

MODEL	VOLT Vo	REGULATION (LINE, LOAD)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 1000
5V ±5% ADJ. +12V −5V[4]													
LUT-13-131	5	0.4%, 0.85%	15	4.0	4.0	2.8	43	13	1.81 x 4.50 x 7.20	132	$140.50	$126.50	$91.50
	+12	0.4%, 1.0%	15	3.0	3.0	2.1							
	−5	0.4%, 2.0%	15	0.3	0.3	0.21							
LUT-6-5125	5	0.4%, 0.8%	15	5.0	5.0	—	43	6	4.50 x 1.48 x 7.06	132	135.00	121.50	87.75
	+12	0.4%, 1.0%	15	1.0	1.0	—							
	−5	0.4%, 2.0%	15	0.5	0.5	—							
LUT-14-131	5	0.4%, 0.85%	15	8.0	8.0	5.6	43	14	4.53 x 2.15 x 8.66	132	205.50	185.00	133.50
	+12	0.4%, 1.0%	15	4.0	4.0	2.8							
	−5	0.4%, 2.0%	15	0.5	0.5	0.35							
5V ± 5% ADJ. ± 12V[3] [4]													
LUT-13-133	5	0.4%, 0.85%	15	4.0	4.0	2.8	43	13	1.18 x 4.50 x 7.20	132	$140.50	$126.50	$91.50
	+12	0.4%, 1.0%	15	3.0	3.0	2.1							
	−12	0.4%, 2.0%	15	0.3	0.3	0.21							
LUT-6-5122	5	0.4%, 0.8%	15	5.0	5.0	—	43	6	4.50 x 1.48 x 7.06	132	135.00	121.50	87.75
	+12	0.4%, 1.0%	15	1.0	1.0	—							
	−12	0.4%, 2.0%	15	0.5	0.5	—							
LUT-14-133	5	0.4%, 0.85%	15	8.0	8.0	5.6	43	14	4.53 x 2.15 x 8.66	132	205.50	185.00	133.50
	+12	0.4%, 1.0%	15	4.0	4.0	2.5							
	−12	0.4%, 2.0%	15	0.5	0.5	0.35							
LUT-12-5122	5	0.4%, 0.85%	15	12.0	9.6	—	43	12	4.54 x 2.18 x 8.66	132	205.50	185.00	133.50
	+12	0.4%, 1.0%	15	1.5	1.2	—							
	−12	0.4%, 2.0%	15	0.5	0.4	—							
LYT-W-5122	+5	0.1%, 0.1%	10	14.0	12.7	11.0	41	W	9 x 4-7/8 x 2-3/4	130	364.00	328.00	289.00
	±12[3]	0.1%, 100 mV	15	1.2	1.1	0.9							
LYT-P-5122	+5	0.1%, 0.1%	10	28.0	24.5	20.0	41	P	10 x 4-7/8 x 4-7/16	130	447.00	403.00	354.00
	±12[3]	0.1%, 100 mV	15	3.0	2.6	2.2							
LYT-D-5122	+5	0.1%, 0.1%	10	74.0	67.0	50.0	41	D	7-1/2 x 9-1/2 x 4-13/16	129	765.00	689.00	606.00
	±12[3]	0.1%, 100 mV	15	6.0	5.1	4.2							
5V ±5% ADJ. +15V −5V[4]													
LUT-14-141	5	0.4%, 0.85%	15	8.0	8.0	5.6	43	14	4.53 x 2.15 x 8.66	132	205.50	185.00	133.50
	+15	0.4%, 1.0%	15	3.0	3.0	2.1							
	−5	0.4%, 2.0%	15	0.5	0.5	0.35							
5V ±5% ADJ. ±15V[3] [4]													
LUT-13-144	5	0.4%, 0.85%	15	4.0	4.0	2.8	43	13	1.81 x 4.50 x 7.20	132	140.50	126.50	91.50
	+15	0.4%, 1.0%	15	2.4	2.4	1.68							
	−15	0.4%, 2.0%	15	0.3	0.3	0.21							
LUT-6-5152	5	0.4%, 0.8%	15	5.0	5.0	—	43	6	4.50 x 1.48 x 7.06	132	135.00	121.50	87.75
	+15	0.4%, 1.0%	15	1.0	1.0	—							
	−15	0.4%, 2.0%	15	0.5	0.5	—							
LUT-12-5152	5	0.4%, 0.85%	15	12.0	9.6	—	43	12	4.54 x 2.18 x 8.66	132	205.50	185.00	133.50
	+15	0.4%, 1.0%	15	1.5	1.2	—							
	−15	0.4%, 2.0%	15	0.5	0.4	—							
LYT-W-5152	+5	0.1%, 0.1%	10	14.0	12.7	11.0	41	W	9 x 4-7/8 x 2-3/4	130	364.00	328.00	289.00
	±15[3]	0.1%, 100 mV	15	1.2	1.1	0.9							
LYT-P-5152	+5	0.1%, 0.1%	10	25.0	22.0	18.0	41	P	10 x 4-7/8 x 4-7/16	130	447.00	403.00	354.00
	±15[3]	0.1%, 100 mV	15	3.0	2.6	2.2							
LYT-D-5152	+5	0.1%, 0.1%	10	65.0	59.0	43.0	41	D	7-1/2 x 9-1/2 x 4-13/16	129	765.00	689.00	606.00
	±15[3]	0.1%, 100 mV	15	6.0	5.1	4.2							
5V ±5% ADJ. +24V −12V[4]													
LUT-13-163	5	0.4%, 0.85%	15	3.0	3.0	2.1	43	13	1.81 x 4.50 x 7.20	132	140.50	126.50	91.50
	+24	0.4%, 1.0%	15	1.8	1.8	1.26							
	−12	0.4%, 2.0%	15	0.3	0.3	0.21							
LUT-14-163	5	0.4%, 0.85%	15	8.0	8.0	5.6	43	14	4.53 x 2.15 x 8.66	132	205.50	185.00	133.50
	+24	0.4%, 1.0%	15	2.0	2.0	1.4							
	−12	0.4%, 2.0%	15	0.5	0.5	0.35							
12V ±5% ADJ. +12V −5V[4]													
LUT-13-331	12	0.4%, 0.85%	15	1.7	1.7	1.19	43	13	1.81 x 4.50 x 7.20	132	140.50	126.50	91.50
	+12	0.4%, 1.0%	15	3.0	3.0	2.1							
	−5	0.4%, 2.0%	15	0.3	0.3	0.21							
12V ±5% ADJ. +24V −12V[4]													
LUT-13-363	12	0.4%, 0.85%	15	1.2	1.2	0.84	43	13	1.81 x 4.50 x 7.20	132	140.50	126.50	91.50
	+24	0.4%, 1.0%	15	1.8	1.8	1.26							
	−12	0.4%, 2.0%	15	0.3	0.3	0.21							

NOTES: 1. Ratings are for LY series when cover not used. When cover is used derate by 10%.
2. Dimensions are without cover.
3. ± Outputs of LYT models are fixed and preset at factory to be within 100 mV of nominal and within 100 mV of each other at no load, 25°C ambient.
4. Second output of LUT models are fixed at 1%. Third output of LUT models are fixed at 5%.

Industrial/Commercial Switching Selector Guide

WATTBOX LFQ Series. AC Input. Quad Output.

MODEL	OUTPUT NUMBER	ADJUSTABLE VOLTAGE RANGE (VDC)	VOLT NOMINAL (Vo)	MAX OUTPUT POWER (WATTS) 40°C	50°C	60°C	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELECT. SPEC. PG.	PKG. SIZE	DIMENSIONS (INCHES)	COMPLETE MECH. SPEC. PG.	QTY. 1	PRICE QTY. 250	QTY. 1000
LFQ-26	1	5V ± 5%	5	325	276	227	50.00	42.00	34.00	37	26	2.5 x 4.75 x 13	126	**$450**	**$375**	**$325**
	2	11.4-15.75	12				6.00	5.10	4.20							
			15				4.80	4.10	3.40							
	3	11.4-15.75	12				6.00	5.10	4.20							
			15				4.80	4.10	3.40							
	4	22.8-29.4*	24				1.00	0.85	0.70							
			28				0.86	0.73	0.60							
LFQ-27	1	5V ± 5%	5	475	420	362	75.00	66.00	57.00	37	27	4.0 x 4.875 x 11	—	570	485	435
	2	11.4-15.75	12				9.00	7.90	6.90							
			15				7.20	6.40	5.50							
	3	11.4-15.75	12				9.00	7.90	6.90							
			15				7.20	6.40	5.50							
	4	22.8-29.4*	24				1.50	1.30	1.10							
			28				1.30	1.15	1.00							
LFQ-28	1	5V ± 5%	5	635	578	502	100.00	91.00	79.00	37	28	5.0 x 4.875 x 11	—	675	575	510
	2	11.4-15.75	12				12.00	10.80	9.50							
			15				9.60	8.60	7.60							
	3	11.4-15.75	12				12.00	10.80	9.50							
			15				9.60	8.60	7.60							
	4	22.8-29.4*	24				2.00	1.80	1.60							
			28				1.70	1.50	1.40							

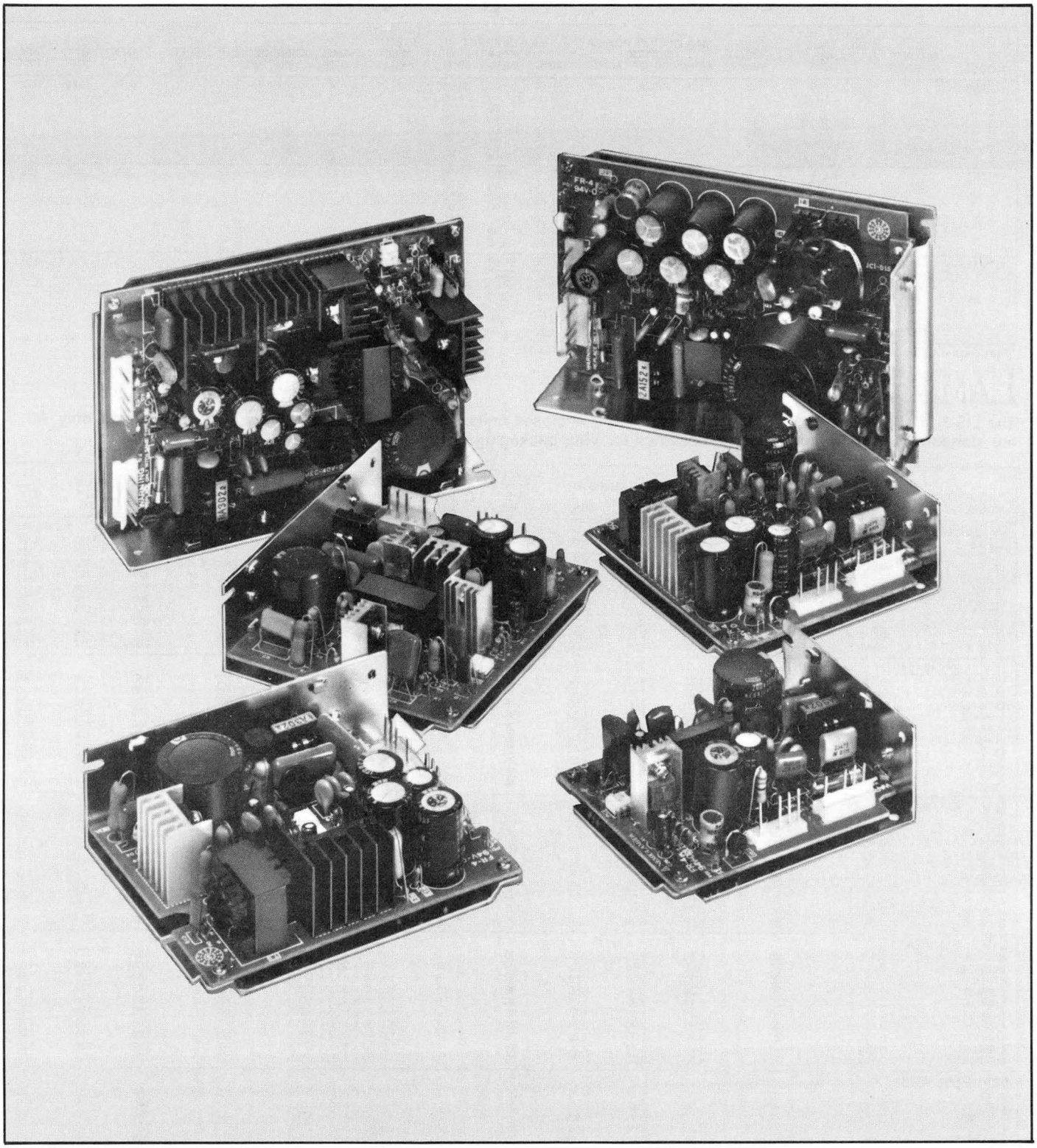
*Peak Output Current (40°C) for 5 seconds; LFQ-26—3.0A; LFQ-27—4.5A; LFQ-28—6.0A.

LAMBDACARD™ LI Series

The LIS-3I, 5I, 6I, 7I and 8I are standard LAMBDACARD™ enclosed units. The LIS-3, 5, 6, 7 and 8 are PC LAMBDACARDS™ only. All are standard 160mm in depth and are designed for VME packaging.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (millimeters)	COMPLETE MECH. SPEC. PG	QTY. 1	PRICE QTY. 100	QTY. 1000
5V ± 5% ADJ.												
LIS-3-5	0.1%, 0.2%	20	3.00	2.40	1.80	39	3	100.00 x 41.7 x 171.0	122	**$140**	**$123**	**$ 90**
LIS-3I-5	0.1%, 0.2%	20	3.00	2.40	1.80	39	3I	128.40 x 50.5 x 176.5	122	**165**	**145**	**110**
LIS-5-5	0.1%, 0.2%	20	6.00	4.20	3.20	39	5	100.00 x 41.7 x 171.0	122	**150**	**130**	**95**
LIS-5I-5	0.1%, 0.2%	20	6.00	4.20	3.20	39	5I	128.40 x 50.5 x 176.5	122	**175**	**152**	**115**
LIS-6-5	0.1%, 0.2%	20	10.00	7.50	5.70	39	6	100.00 x 43.9 x 171.0	122	**180**	**156**	**115**
LIS-6I-5	0.1%, 0.2%	20	10.00	7.50	5.70	39	6I	128.40 x 50.5 x 176.5	122	**205**	**178**	**135**
LIS-7-5	0.1%, 0.2%	20	15.00	12.00	8.00	39	7	100.00 x 54.0 x 171.0	122	**200**	**173**	**128**
LIS-7I-5	0.1%, 0.2%	20	15.00	12.00	8.00	39	7I	128.40 x 60.7 x 176.5	122	**225**	**195**	**148**
LIS-8-5	0.1%, 0.2%	20	20.00	17.50	15.00	39	8	100.00 x 65.1 x 171.0	122	**225**	**195**	**145**
LIS-8I-5	0.1%, 0.2%	20	20.00	17.50	15.00	39	8I	128.40 x 70.8 x 176.5	122	**250**	**217**	**165**
12V ± 5% ADJ.												
LIS-3-12	0.1%, 0.2%	20	1.25	1.00	0.75	39	3	100.00 x 41.7 x 171.0	122	140	123	90
LIS-3I-12	0.1%, 0.2%	20	1.25	1.00	0.75	39	3I	128.40 x 50.5 x 176.5	122	165	145	110
LIS-5-12	0.1%, 0.2%	20	2.50	2.00	1.50	39	5	100.00 x 41.7 x 171.0	122	150	130	95
LIS-5I-12	0.1%, 0.2%	20	2.50	2.00	1.50	39	5I	128.40 x 50.5 x 176.5	122	175	152	115
LIS-6-12	0.1%, 0.2%	20	4.20	3.80	3.40	39	6	100.00 x 43.9 x 171.0	122	180	156	115
LIS-6I-12	0.1%, 0.2%	20	4.20	3.80	3.40	39	6I	128.40 x 50.5 x 176.5	122	205	178	135
LIS-7-12	0.1%, 0.2%	20	6.30	5.70	4.40	39	7	100.00 x 54.0 x 171.0	122	200	173	128
LIS-7I-12	0.1%, 0.2%	20	6.30	5.70	4.40	39	7I	128.40 x 60.7 x 176.5	122	225	195	148
LIS-8-12	0.1%, 0.2%	20	8.40	7.40	6.30	39	8	100.00 x 65.1 x 171.0	122	225	195	145
LIS-8I-12	0.1%, 0.2%	20	8.40	7.40	6.30	39	8I	128.40 x 70.8 x 176.5	122	250	217	165
15V ± 5% ADJ.												
LIS-3-15	0.1%, 0.2%	20	1.00	0.80	0.60	39	3	100.00 x 41.7 x 171.0	122	140	123	90
LIS-3I-15	0.1%, 0.2%	20	1.00	0.80	0.60	39	3I	128.40 x 50.5 x 176.5	122	165	145	110
LIS-5-15	0.1%, 0.2%	20	2.00	1.60	1.20	39	5	100.00 x 41.7 x 171.0	122	150	130	95
LIS-5I-15	0.1%, 0.2%	20	2.00	1.60	1.20	39	5I	128.40 x 50.5 x 176.5	122	175	152	115
LIS-6-15	0.1%, 0.2%	20	3.40	3.10	2.70	39	6	100.00 x 43.9 x 171.0	122	180	156	115
LIS-6I-15	0.1%, 0.2%	20	3.40	3.10	2.70	39	6I	128.40 x 50.5 x 176.5	122	205	178	135
LIS-7-15	0.1%, 0.2%	20	5.00	4.50	3.50	39	7	100.00 x 54.0 x 171.0	122	200	173	128
LIS-7I-15	0.1%, 0.2%	20	5.00	4.50	3.50	39	7I	128.40 x 60.7 x 176.5	122	225	195	148
LIS-8-15	0.1%, 0.2%	20	6.70	5.90	5.10	39	8	100.00 x 65.1 x 171.0	122	225	195	145
LIS-8I-15	0.1%, 0.2%	20	6.70	5.90	5.10	39	8I	128.40 x 70.8 x 176.5	122	250	217	165
24V ± 5% ADJ.												
LIS-3-24	0.1%, 0.2%	20	0.65	0.55	0.40	39	3	100.00 x 41.7 x 171.0	122	140	123	90
LIS-3I-24	0.1%, 0.2%	20	0.65	0.55	0.40	39	3I	128.40 x 50.5 x 176.5	122	165	145	110
LIS-5-24	0.1%, 0.2%	20	1.30	1.05	0.80	39	5	100.00 x 41.7 x 171.0	122	150	130	95
LIS-5I-24	0.1%, 0.2%	20	1.30	1.05	0.80	39	5I	128.40 x 50.5 x 176.5	122	175	152	115
LIS-6-24	0.1%, 0.2%	20	2.10	1.90	1.70	39	6	100.00 x 43.9 x 171.0	122	180	156	115
LIS-6I-24	0.1%, 0.2%	20	2.10	1.90	1.70	39	6I	128.40 x 50.5 x 176.5	122	205	178	135
LIS-7-24	0.1%, 0.2%	20	3.20	2.90	2.20	39	7	100.00 x 54.0 x 171.0	122	200	173	128
LIS-7I-24	0.1%, 0.2%	20	3.20	2.90	2.20	39	7I	128.40 x 60.7 x 176.5	122	225	195	148
LIS-8-24	0.1%, 0.2%	20	4.20	3.70	3.20	39	8	100.00 x 65.1 x 171.0	122	225	195	145
LIS-8I-24	0.1%, 0.2%	20	4.20	3.70	3.20	39	8I	128.40 x 70.8 x 176.5	122	250	217	165
28V ± 5% ADJ.												
LIS-3-28	0.1%, 0.2%	20	0.55	0.45	0.35	39	3	100.00 x 41.7 x 171.0	122	140	123	90
LIS-3I-28	0.1%, 0.2%	20	0.55	0.45	0.35	39	3I	128.40 x 50.5 x 176.5	122	165	145	110
LIS-5-28	0.1%, 0.2%	20	1.10	0.90	0.65	39	5	100.00 x 41.7 x 171.0	122	150	130	95
LIS-5I-28	0.1%, 0.2%	20	1.10	0.90	0.65	39	5I	128.40 x 50.5 x 176.5	122	175	152	115
LIS-6-28	0.1%, 0.2%	20	1.80	1.60	1.40	39	6	100.00 x 43.9 x 171.0	122	180	156	115
LIS-6I-28	0.1%, 0.2%	20	1.80	1.60	1.40	39	6I	128.40 x 50.5 x 176.5	122	205	178	135
LIS-7-28	0.1%, 0.2%	20	2.70	2.40	1.90	39	7	100.00 x 54.0 x 171.0	122	200	173	128
LIS-7I-28	0.1%, 0.2%	20	2.70	2.40	1.90	39	7I	128.40 x 60.7 x 176.5	122	225	195	148
LIS-8-28	0.1%, 0.2%	20	3.60	3.20	2.70	39	8	100.00 x 65.1 x 171.0	122	225	195	145
LIS-8I-28	0.1%, 0.2%	20	3.60	3.20	2.70	39	8I	128.40 x 70.8 x 176.5	122	250	217	165
48V ± 5% ADJ.												
LIS-6-48	0.1%, 0.2%	20	1.10	1.00	0.90	39	6	100.00 x 43.9 x 171.0	122	180	156	115
LIS-6I-48	0.1%, 0.2%	20	1.10	1.00	0.90	39	6I	128.40 x 50.5 x 176.5	122	205	178	135
LIS-7-48	0.1%, 0.2%	20	1.60	1.50	1.10	39	7	100.00 x 54.0 x 171.0	122	200	173	128
LIS-7I-48	0.1%, 0.2%	20	1.60	1.50	1.10	39	7I	128.40 x 60.7 x 176.5	122	225	195	148
LIS-8-48	0.1%, 0.2%	20	2.10	1.90	1.60	39	8	100.00 x 65.1 x 171.0	122	225	195	145
LIS-8I-48	0.1%, 0.2%	20	2.10	1.90	1.60	39	8I	128.40 x 70.8 x 176.5	122	250	217	165

OEM Switching Selector Guide



OEM SWITCHING—Lambda's OEM Switching Power Supplies feature AC-DC input-output connectors for ease in wiring, and L-brackets for easy installation. They are now available with an extended input voltage range of 85-265 VAC, without a tap change. Over sixty models of Lambda OEM Switching Power Supplies with ratings up to 48V, up to 10A, provide standard solutions to custom output requirements.

OEM Switching Selector Guide

LV Series. Single Output. 120 VAC Input.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250	QTY. 1000
5V ±5% ADJ.													
LVS-42-5B	0.4%, 0.8%	15	2.0	2.0	1.50	47	42	1.38 x 3.82 x 3.13	135	**$28.00**	**$25.25**	**$24.50**	**$24.00**
LVS-43-5B	0.4%, 0.8%	15	3.0	3.0	2.25	47	43	1.38 x 3.82 x 3.88	135	**35.00**	**31.50**	**30.00**	**29.50**
LVS-44-5B	0.4%, 0.8%	15	5.0	5.0	3.75	47	44	1.38 x 3.82 x 4.59	135	**55.00**	**49.75**	**47.00**	**46.00**
LVS-45-5B	0.4%, 0.8%	15	10.0	10.0	7.50	47	45	1.46 x 3.82 x 6.26	135	**74.00**	**66.75**	**63.00**	**61.75**
12V ±5% ADJ.													
LVS-42-12B	0.4%, 0.8%	15	0.9	0.9	0.67	47	42	1.38 x 3.82 x 3.13	135	**28.00**	**25.25**	**24.50**	**24.00**
LVS-43-12B	0.4%, 0.8%	15	1.3	1.3	0.97	47	43	1.38 x 3.82 x 3.88	135	**35.00**	**31.50**	**30.00**	**29.50**
LVS-44-12B	0.4%, 0.8%	15	2.1	2.1	1.57	47	44	1.38 x 3.82 x 4.59	135	**55.00**	**49.75**	**47.00**	**46.00**
LVS-45-12B	0.4%, 0.8%	15	4.2	4.2	3.15	47	45	1.46 x 3.82 x 6.26	135	**74.00**	**66.75**	**63.00**	**61.75**
15V ±5% ADJ.													
LVS-42-15B	0.4%, 0.8%	15	0.7	0.7	0.52	47	42	1.38 x 3.82 x 3.13	135	**28.00**	**25.25**	**24.50**	**24.00**
LVS-43-15B	0.4%, 0.8%	15	1.0	1.0	0.75	47	43	1.38 x 3.82 x 3.88	135	**35.00**	**31.50**	**30.00**	**29.50**
LVS-44-15B	0.4%, 0.8%	15	1.7	1.7	1.27	47	44	1.38 x 3.82 x 4.59	135	**55.00**	**49.75**	**47.00**	**46.00**
LVS-45-15B	0.4%, 0.8%	15	3.4	3.4	2.55	47	45	1.46 x 3.82 x 6.26	135	**74.00**	**66.75**	**63.00**	**61.75**
24V ±5% ADJ.													
LVS-42-24B	0.4%, 0.8%	15	0.5	0.5	0.37	47	42	1.38 x 3.82 x 3.13	135	**28.00**	**25.25**	**24.50**	**24.00**
LVS-43-24B	0.4%, 0.8%	15	0.7	0.7	0.52	47	43	1.38 x 3.82 x 3.88	135	**35.00**	**31.50**	**30.00**	**29.50**
LVS-44-24B	0.4%, 0.8%	15	1.1	1.1	0.82	47	44	1.38 x 3.82 x 4.59	135	**55.00**	**49.75**	**47.00**	**46.00**
LVS-45-24B	0.4%, 0.8%	15	2.1	2.1	1.57	47	45	1.46 x 3.82 x 6.26	135	**74.00**	**66.75**	**63.00**	**61.75**
28V ±5% ADJ.													
LVS-42-29B	0.4%, 0.8%	15	0.4	0.4	0.30	47	42	1.38 x 3.82 x 3.13	135	**28.00**	**25.25**	**24.50**	**24.00**
LVS-43-28B	0.4%, 0.8%	15	0.6	0.6	0.45	47	43	1.38 x 3.82 x 3.88	135	**35.00**	**31.50**	**30.00**	**29.50**
LVS-44-28B	0.4%, 0.8%	15	0.9	0.9	0.67	47	44	1.38 x 3.82 x 4.59	135	**55.00**	**49.75**	**47.00**	**46.00**
LVS-45-28B	0.4%, 0.8%	15	1.8	1.8	1.35	47	45	1.46 x 3.82 x 6.26	135	**74.00**	**66.75**	**63.00**	**61.75**
48V ±5% ADJ.													
LVS-42-48B	0.4%, 0.8%	15	0.2	0.2	0.15	47	42	1.38 x 3.82 x 3.13	135	28.00	25.25	24.50	24.00
LVS-43-48B	0.4%, 0.8%	15	0.3	0.3	0.22	47	43	1.38 x 3.82 x 3.88	135	35.00	31.50	30.00	29.50
LVS-44-48B	0.4%, 0.8%	15	0.5	0.5	0.37	47	44	1.38 x 3.82 x 4.59	135	55.00	49.75	47.00	46.00
LVS-45-48B	0.4%, 0.8%	15	1.0	1.0	0.75	47	45	1.46 x 3.82 x 6.26	135	74.00	66.75	63.00	61.75

LV Series. Triple Output. 120 VAC Input.

MODEL	Volt Vo	REGULATION (line, load)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250	QTY. 1000
5V ±12V FIXED														
LVT-40-133B	+ 5	0.4%, 2%	15	2.0	2.0	1.0	47	40	1.38 x 3.82 x 4.47	135	**$62.00**	**$49.50**	**$40.50**	**$36.50**
	+12	0.4%, 2%	15	0.3	0.3	0.15								
	−12	0.4%, 2%	15	0.2	0.2	0.1								
LVT-41-133B	+ 5	0.4%, 2%	15	3.0	1.5	—	47	41	1.46 x 3.82 x 6.05	135	**91.00**	**73.00**	**59.00**	**53.50**
	+12	0.4%, 2%	15	1.2	0.6	—								
	−12	0.4%, 2%	15	0.3	0.15	—								
5V ±15V FIXED														
LVT-40-144B	+ 5	0.4%, 2%	15	2.0	2.0	1.0	47	40	1.38 x 3.82 x 4.47	135	**62.00**	**49.50**	**40.50**	**36.50**
	+15	0.4%, 2%	15	0.3	0.3	0.15								
	−15	0.4%, 2%	15	0.2	0.2	0.1								
LVT-41-144B	+ 5	0.4%, 2%	15	3.0	1.5	—	47	41	1.46 x 3.82 x 6.05	135	**91.00**	**73.00**	**59.00**	**53.50**
	+15	0.4%, 2%	15	1.2	0.6	—								
	−15	0.4%, 2%	15	0.3	0.15	—								
5V ±12V -5V FIXED														
LVT-40-131B	+ 5	0.4%, 2%	15	2.0	2.0	1.0	47	40	1.38 x 3.82 x 4.47	135	**62.00**	**49.50**	**40.50**	**36.50**
	+12	0.4%, 2%	15	0.3	0.3	0.15								
	− 5	0.4%, 2%	15	0.2	0.2	0.1								
LVT-41-131B	+ 5	0.4%, 2%	15	3.0	1.5	—	47	41	1.46 x 3.82 x 6.05	135	**91.00**	**73.00**	**59.00**	**53.50**
	+12	0.4%, 2%	15	1.2	0.6	—								
	− 5	0.4%, 2%	15	0.3	0.15	—								

OEM Switching Selector Guide

LV-E Series. Extended Range. Single Output. 105-265VAC Input.

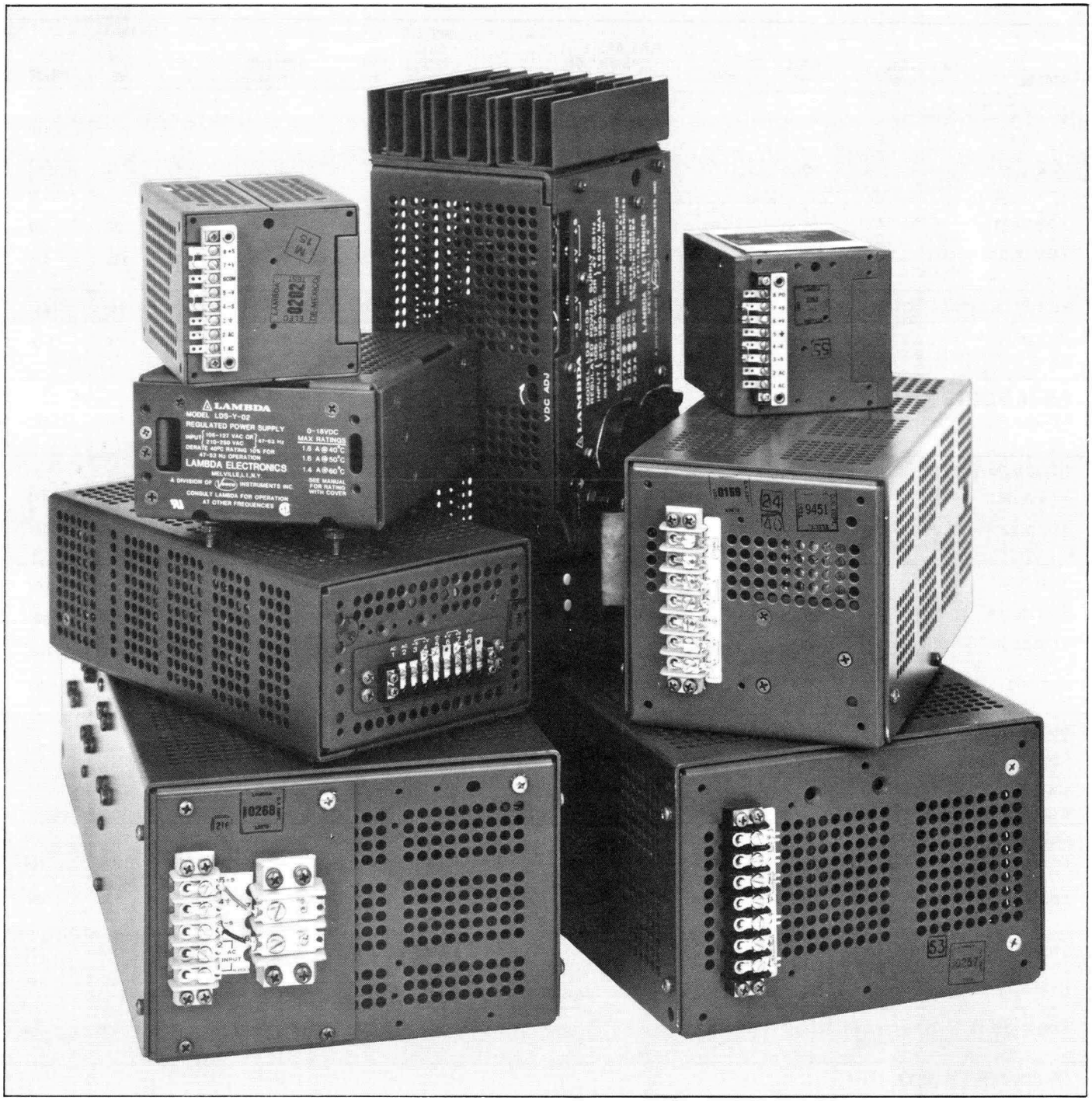
MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250	QTY. 1000
5V ±5% ADJ.													
LVS-42E-5	0.4%, 0.8%	15	2.0	2.0	1.50	47	42	1.38 x 3.82 x 3.13	135	**$43.00**	**$38.50**	**$35.00**	**$34.00**
LVS-43E-5	0.4%, 0.8%	15	3.0	3.0	2.25	47	43	1.38 x 3.82 x 3.88	135	**51.00**	**46.00**	**40.75**	**38.50**
LVS-44E-5	0.4%, 0.8%	15	5.0	5.0	3.75	47	44	1.38 x 3.82 x 4.59	135	**79.00**	**71.00**	**63.25**	**59.75**
LVS-45E-5	0.4%, 0.8%	15	10.0	10.0	7.50	47	45	1.46 x 3.82 x 6.26	135	**106.00**	**95.50**	**85.00**	**80.50**
12V ±5% ADJ.													
LVS-42E-12	0.4%, 0.8%	15	0.9	0.9	0.67	47	42	1.38 x 3.82 x 3.13	135	**43.00**	**38.50**	**35.00**	**34.00**
LVS-43E-12	0.4%, 0.8%	15	1.3	1.3	0.97	47	43	1.38 x 3.82 x 3.88	135	**51.00**	**46.00**	**40.75**	**38.50**
LVS-44E-12	0.4%, 0.8%	15	2.1	2.1	1.57	47	44	1.38 x 3.82 x 4.59	135	**79.00**	**71.00**	**63.25**	**59.75**
LVS-45E-12	0.4%, 0.8%	15	4.2	4.2	3.15	47	45	1.46 x 3.82 x 6.26	135	**106.00**	**95.50**	**85.00**	**80.50**
15V ±5% ADJ.													
LVS-42E-15	0.4%, 0.8%	15	0.7	0.7	0.52	47	42	1.38 x 3.82 x 3.13	135	**43.00**	**38.50**	**35.00**	**34.00**
LVS-43E-15	0.4%, 0.8%	15	1.0	1.0	0.75	47	43	1.38 x 3.82 x 3.88	135	**51.00**	**46.00**	**40.75**	**38.50**
LVS-44E-15	0.4%, 0.8%	15	1.7	1.7	1.27	47	44	1.38 x 3.82 x 4.59	135	**79.00**	**71.00**	**63.25**	**59.75**
LVS-45E-15	0.4%, 0.8%	15	3.4	3.4	2.55	47	45	1.46 x 3.82 x 6.26	135	**106.00**	**95.50**	**85.00**	**80.50**
24V ±5% ADJ.													
LVS-42E-24	0.4%, 0.8%	15	0.5	0.5	0.37	47	42	1.38 x 3.82 x 3.13	135	**43.00**	**38.50**	**35.00**	**34.00**
LVS-43E-24	0.4%, 0.8%	15	0.7	0.7	0.52	47	43	1.38 x 3.82 x 3.88	135	**51.00**	**46.00**	**40.75**	**38.50**
LVS-44E-24	0.4%, 0.8%	15	1.1	1.1	0.83	47	44	1.38 x 3.82 x 4.59	135	**79.00**	**71.00**	**63.25**	**59.75**
LVS-45E-24	0.4%, 0.8%	15	2.1	2.1	1.57	47	45	1.46 x 3.82 x 6.26	135	**106.00**	**95.50**	**85.00**	**80.50**
28V ±5% ADJ.													
LVS-42E-28	0.4%, 0.8%	15	0.4	0.4	0.30	47	42	1.38 x 3.82 x 3.13	135	**43.00**	**38.50**	**35.00**	**34.00**
LVS-43E-28	0.4%, 0.8%	15	0.6	0.6	0.45	47	43	1.38 x 3.82 x 3.88	135	**51.00**	**46.00**	**40.75**	**38.50**
LVS-44E-28	0.4%, 0.8%	15	0.9	0.9	0.67	47	44	1.38 x 3.82 x 4.59	135	**79.00**	**71.00**	**63.25**	**59.75**
LVS-45E-28	0.4%, 0.8%	15	1.8	1.8	1.35	47	45	1.46 x 3.82 x 6.26	135	**106.00**	**95.50**	**85.00**	**80.50**
48V ±5% ADJ.													
LVS-42E-48	0.4%, 0.8%	15	0.2	0.2	0.15	47	42	1.38 x 3.82 x 3.13	135	**43.00**	**38.50**	**35.00**	**34.00**
LVS-43E-48	0.4%, 0.8%	15	0.3	0.3	0.22	47	43	1.38 x 3.82 x 3.88	135	**51.00**	**46.00**	**40.75**	**38.50**
LVS-44E-48	0.4%, 0.8%	15	0.5	0.5	0.37	47	44	1.38 x 3.82 x 4.59	135	**79.00**	**71.00**	**63.25**	**59.75**
LVS-45E-48	0.4%, 0.8%	15	1.0	1.0	0.75	47	45	1.46 x 3.82 x 6.26	135	**106.00**	**95.50**	**85.00**	**80.50**

LV-E Series. Extended Range. Triple Output. 85-265VAC Input. (LVT-40E, 41E 105-265VAC.)

MODEL	Volt Vo	REGULATION (line, load)	RIPPLE (mV RMS)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250	QTY. 1000
5V ± 12V FIXED														
LVT-38E-133	+5	1.0%, 2.0%	15	1.00	1.00	0.70	47	38	1.38 x 1.97 x 4.33	134	**$55.00**	**$49.00**	**$40.00**	**$38.50**
	+12	1.0%, 2.0%	15	0.10	0.10	0.07								
	−12	1.0%, 2.0%	15	0.10	0.10	0.07								
LVT-39E-133	+5	1.0%, 2.0%	15	2.00	2.00	1.40	47	39	1.57 x 2.36 x 4.33	134	**78.00**	**62.75**	**51.25**	**45.75**
	+12	1.0%, 2.0%	15	0.30	0.30	0.21								
	−12	1.0%, 2.0%	15	0.20	0.20	0.14								
LVT-40E-133	+5	0.4%, 0.8%	15	2.00	1.80	1.20	47	40	1.38 x 3.82 x 4.47	135	**71.00**	**57.00**	**52.50**	**48.25**
	+12	0.4%, 0.8%	15	0.30	0.27	0.18								
	−12	0.4%, 0.8%	15	0.20	0.18	0.12								
LVT-41E-133	+5	0.4%, 0.8%	15	3.00	2.00	1.30	47	41	1.46 x 3.82 x 6.05	135	**105.00**	**84.00**	**67.75**	**61.75**
	+12	0.4%, 0.8%	15	1.20	0.80	0.50								
	−12	0.4%, 0.8%	15	0.30	0.20	0.13								
LVT-42E-133	+5	1.0%, 2.0%	15	3.00	3.00	2.10	47	42T	1.57 x 2.36 x 5.91	134	**116.00**	**90.00**	**70.00**	**61.75**
	+12	1.0%, 2.0%	15	0.40	0.40	0.28								
	−12	1.0%, 2.0%	15	0.40	0.40	0.28								
5V ± 15V FIXED														
LVT-38E-144	+5	1.0%, 2.0%	15	1.00	1.00	0.70	47	38	1.38 x 1.97 x 4.33	134	**$55.00**	**$49.00**	**$40.00**	**$38.50**
	+15	1.0%, 2.0%	15	0.10	0.10	0.07								
	−15	1.0%, 2.0%	15	0.10	0.10	0.07								
LVT-39E-144	+5	1.0%, 2.0%	15	2.00	2.00	1.40	47	39	1.57 x 2.36 x 4.33	134	**78.00**	**62.75**	**51.25**	**45.75**
	+15	1.0%, 2.0%	15	0.30	0.30	0.21								
	−15	1.0%, 2.0%	15	0.20	0.20	0.14								
LVT-40E-144	+5	0.4%, 0.8%	15	2.00	1.80	1.20	47	40	1.38 x 3.82 x 4.47	135	**71.00**	**57.00**	**52.50**	**48.25**
	+15	0.4%, 0.8%	15	0.30	0.27	0.18								
	−15	0.4%, 0.8%	15	0.20	0.18	0.12								
LVT-41E-144	+5	0.4%, 0.8%	15	3.00	2.00	1.30	47	41	1.46 x 3.82 x 6.05	135	**105.00**	**84.00**	**67.75**	**61.75**
	+15	0.4%, 0.8%	15	1.20	0.80	0.50								
	−15	0.4%, 0.8%	15	0.30	0.20	0.13								
LVT-42E-144	+5	1.0%, 2.0%	15	3.00	3.00	2.10	47	42T	1.57 x 2.36 x 5.91	134	**116.00**	**90.00**	**70.00**	**61.75**
	+15	1.0%, 2.0%	15	0.40	0.40	0.28								
	−15	1.0%, 2.0%	15	0.40	0.40	0.28								

High Grade Industrial Linear Selector Guide

Lambda LD, LN, LC, LX, LM Series



HIGH GRADE INDUSTRIAL LINEAR—Lambda's High Grade Industrial Linear Power Supplies are designed to meet the stringent specifications required by low-noise applications. More than 170 high reliability, competitively priced models meet requirements up to 150V, up to 80A.

High Grade Industrial Linear Selector Guide

Single Output. Wide Range. Models LD, LC and LM.

MODEL	REGULATION (line, load)	RIPPLE (RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
0-7 VOLTS ADJ.											
LCS-A-01	0.01% + 1 mV, 0.01% + 1 mV	250 μV	2.0	1.9	1.6	1.1	53	A	3-3/16 x 3-3/4 x 6-1/2	139	$315
LDS-Y-01[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	3.4(3.4)	2.9(2.85)	2.4(1.8)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	247
LDS-X-01[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	4.8(4.1)	4.0(3.4)	3.1(2.6)	—	49	X	7 x 4-7/8 x 2-7/8	136	307
LDS-W-01	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	6.6 (5.6)	5.7(4.8)	4.5(3.8)	—	49	W	9 x 5 x 2-7/8	136	372
LCS-CC-01	0.01% + 1 mV, 0.01% + 1 mV	250 μV	9.2	8.3	7.4	6.3	53	CC	4-15/16 x 4-15/16 x 9-3/8	140	656
LDS-P-01[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	9.5(9.0)	8.5(8.0)	7.5(7.1)	—	49	P	11 x 4-7/8 x 4-13/32	136	466
8.5-14 VOLTS ADJ.											
LM-235	0.05% + 4 mV, 0.03% 3 mV	1 mV	7.7	6.8	6.0	4.8	57	D	4-15/16 x 7-1/2 x 9-3/8	140	673
0-18 VOLTS ADJ.											
LCS-A-02	0.01% + 1 mV, 0.01% + 1 mV	250 μV	1.1	1.0	0.9	0.7	53	A	3-3/16 x 3-3/4 x 6-1/2	139	315
LDS-Y-02[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	1.8(1.8)	1.6(1.6)	1.4(0.9)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	247
LDS-X-02[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	2.3(1.95)	1.9(1.6)	1.5(1.3)	—	49	X	7 x 4-7/8 x 2-7/8	136	307
LDS-W-02[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	3.2(2.7)	2.8(2.4)	2.2(1.9)	—	49	W	9 x 5 x 2-7/8	136	372
LCS-CC-02	0.01% + 1 mV 0.01% + 1 mV	250 μV	3.8	3.5	3.2	2.7	53	CC	4-15/16 x 4-15/16 x 9-3/8	140	655
LDS-P-02[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	4.5(4.3)	4.0(3.8)	3.3(3.1)	—	49	P	11 x 4-7/8 x 4-13/32	136	466
22-32 VOLTS ADJ.											
LM-219	0.05% + 4 mV, 0.03% + 3 mV	1 mV	1.2	1.1	1.0	0.8	57	B	3-3/16 x 4-15/16 x 6-1/2	138	426
LM-237	0.05% + 4 mV, 0.03% + 3 mV	1 mV	5.0	4.4	3.9	3.1	57	D	4-15/16 x 7-1/2 x 9-3/8	140	745
0-32 VOLTS ADJ.											
LCS-A-03	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0.69	0.64	0.60	0.45	53	A	3-3/16 x 3-3/4 x 6-1/2	139	315
LDS-Y-03[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	1.1(1.1)	1.0(0.95)	0.8(0.6)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	247
LDS-X-03[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	1.5(1.25)	1.3(1.1)	1.1(0.95)	—	49	X	7 x 4-7/8 x 2-7/8	136	307
LDS-W-03[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	2.1(1.8)	1.9 (1.5)	1.4(1.2)	—	49	W	9 x 5 x 2-7/8	136	372
LDS-P-03[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	2.7(2.5)	2.5(2.4)	2.3(2.2)	—	49	P	11 x 4-7/8 x 4-13/32	136	466
30-60 VOLTS ADJ.											
LM-220	0.05% + 4 mV, 0.03% + 3 mV	1 mV	0.70	0.65	0.60	0.45	57	B	3-3/16 x 4-15/16 x 6-1/2	139	491
0-60 VOLTS ADJ.											
LCS-A-04	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0.370	0.340	0.310	0.250	53	A	3-3/16 x 3-3/4 x 6-1/2	139	315
0-120 VOLTS ADJ.											
LCS-A-05	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0.100	0.100	0.100	0.100	53	A	3-3/16 x 3-3/4 x 6-1/2	139	357

All outputs continuously adjustable over entire range. For other voltages or currents not listed see page 76 or consult your local Lambda Sales Engineer.

[16] Ratings in parenthesis for LD series when cover is used.

High Grade Industrial Linear Selector Guide

Single Output. Fixed Voltage. Models LD, LN, LC, LX and LM.

MODEL	REGULATION (line, load)	RIPPLE (RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
5 VOLTS ±5% ADJ.											
LCS-A-5-OV[5]	0.01% + 1 mV, 0.01% + 1 mV	250 μV	2.7	2.3	1.8	1.2	53	A	3-3/16 x 3-3/4 x 6-1/2	139	**$329**
LNS-Z-5-OV[5] [16]	0.15%, 0.15%	1.5 mV	3.0(2.7)	2.7(2.40)	2.3(2.1)	1.7(1.5)	51	Z	4-7/8 x 4 x 1-3/4	137	**118**
LM-B-5	0.05% + 4 mV, 0.03% + 3 mV	1 mV	3.7	3.2	2.5	1.5	57	B	3-3/16 x 4-15/16 x 6-1/2	139	**426**
LXS-A-5-OV-R[5] [11]	0.1%, 0.1%	1.5 mV	4.0	3.4	2.7	2.0	55	A	3-3/16 x 3-3/4 x 6-1/2	139	**311**
LDS-Y-5-OV[5] [16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	5.4(5.0)	4.4(4.0)	3.3(3.0)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	**247**
LCS-B-5-OV[5]	0.01% + 1 mV, 0.01% + 1 mV	250 μV	5.8	5.0	4.0	3.0	53	B	3-3/16 x 4-15/16 x 6-1/2	139	**429**
LNS-Y-5-OV[5] [16]	0.1%, 0.1%	1.5 mV	6.0(5.4)	5.1(4.6)	4.2(3.8)	3.1(2.8)	51	Y	5-5/8 x 4-7/8 x 2-5/8	137	**172**
LXS-C-5-OV-R[5] [11]	0.1%, 0.1%	1.5 mV	9.0	8.0	6.8	5.3	55	C	3-3/16 x 4-15/16 x 9-3/8	139	**531**
LCS-C-5-OV[5]	0.01% + 1 mV, 0.01% + 1 mV	250 μV	9.0	8.0	6.8	5.3	53	C	3-3/16 x 4-15/16 x 9-3/8	139	**516**
LDS-X-5-OV [16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	10.0(8.5)	8.6(7.3)	7.0(6.0)	—	49	X	7 x 4-7/8 x 2-7/8	136	**307**
LNS-X-5-OV[5] [16]	0.1%, 0.1%	1.5 mV	10.0(8.5)	8.9(7.6)	7.3(6.2)	5.3(4.5)	51	X	7 x 4-7/8 x 2-7/8	137	**209**
LDS-W-5-OV [16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	14.0(11.9)	11.7(9.9)	9.1(7.7)	—	49	W	9 x 5 x 2-7/8	136	**372**
LNS-W-5-OV[5] [16]	0.1%, 0.1%	1.5 mV	14.0(11.9)	12.2(10.4)	10.0(8.5)	7.5(6.4)	51	W	9 x 5 x 2-7/8	137	**261**
LXS-CC-5-OV-R[14]	0.1%, 0.1%	1.5 mV	16.0	14.5	12.7	10.5	55	CC	4-15/16 x 4-15/16 x 9-3/8	140	**695**
LCS-CC-5-OV[5] [14]	0.01% + 1 mV, 0.01% + 1 mV	250 μV	16.0	14.5	12.7	10.5	53	CC	4-15/16 x 4-15/16 x 9-3/8	140	**706**
LDS-P-5-OV [16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	22.0(20.9)	18.8(18.0)	15.6(14.8)	—	49	P	11 x 4-7/8 x 4-13/32	136	**466**
LNS-P-5-OV[5] [16]	0.1%, 0.1%	1.5 mV	22.0(20.9)	19.5(18.5)	16.5(15.7)	13.0(12.4)	51	P	11 x 4-7/8 x 4-13/32	137	**326**
LXS-D-5-OV-R[5] [11]	0.1%, 0.1%	1.5 mV	27.5	24.2	20.5	16.5	55	D	4-15/16 x 7-1/2 x 9-3/8	140	**814**
LCS-D-5-OV[5]	0.01% + 1 mV, 0.01% + 1 mV	250 μV	27.5	24.2	20.5	16.5	53	D	4-15/16 x 7-1/2 x 9-3/8	140	**940**
LXS-E-5-OV-R[5] [11]	0.1%, 0.1%	1.5 mV	35.0	30.0	24.0	17.5	55	E	4-15/16 x 7-1/2 x 11-3/4	139	**1007**
LXS-EE-5-OV-R[5] [11]	0.1%, 0.1%	1.5 mV	45.0	39.0	32.0	25.0	55	EE	4-15/16 x 7-1/2 x 16-1/2	139	**1378**
LM-F-5-M-R[4]	0.05% + 4 mV, 0.03% + 3 mV	1 mV	48.0	41.0	33.0	25.0	57	F	3-1/2 x 19 x 16-1/2	138	**1861**
LM-G-5-M-R[4]	0.05% + 4 mV, 0.03% + 3 mV	1 mV	80.0	75.0	62.0	45.0	57	G	5-3/16 x 19 x 16-1/2	138	**2335**

[2,3,4,5,11,14] See page 23. For other voltages or currents not listed see page 76 or consult your local Lambda Sales Engineer.
[16] Ratings in parenthesis for LD and LN series when cover is used.

High Grade Industrial Linear Selector Guide

Single Output. Fixed Voltage. Models LD, LN, LC, LX and LM.

MODEL	REGULATION (line, load)	RIPPLE (RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
6 VOLTS ±5% ADJ.											
LNS-Z-6[16]	0.15%, 0.15%	1.5 mV	2.5(2.25)	2.2(2.0)	1.9(1.7)	1.4(1.3)	51	Z	4-7/8 x 4 x 1-3/4	137	$112
LXS-C-6-R[11]	0.1%, 0.1%	1.5 mV	8.8	7.8	6.7	5.2	55	C	3-3/16 x 4-15/16 x 9-3/8	139	517
LNS-P-6[16]	0.1%, 0.1%	1.5 mV	20.5(19.5)	18.1(17.2)	15.3(14.5)	12.0(11.4)	51	P	11 x 4-7/8 x 4-13/32	137	298
8 VOLTS ±5% ADJ.											
LCS-A-8	0.01% + 1 mV, 0.01% + 1 mV	250 μV	2.4	2.0	1.7	1.1	53	A	3-3/16 x 3-3/4 x 6-1/2	139	300
10 VOLTS ±5% ADJ.											
LCS-A-10	0.01% + 1 mV, 0.01% + 1 mV	250 μV	2.1	1.8	1.5	1.0	53	A	3-3/16 x 3-3/4 x 6-1/2	139	300
12 VOLTS ±5% ADJ.											
LNS-Z-12[16]	0.15%, 0.15%	1.5 mV	1.7(1.55)	1.6(1.45)	1.5(1.4)	1.3(1.2)	51	Z	4-7/8 x 4 x 1-3/4	137	112
LM-B-12	0.05% + 4 mV, 0.03% + 3 mV	1 mV	2.5	2.3	2.1	1.3	57	B	3-3/16 x 4-15/16 x 6-1/2	139	426
LDS-Y-12[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	3.7(3.4)	2.9(2.55)	2.0(1.75)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	237
LNS-Y-12[16]	0.1%, 0.1%	1.5 mV	4.0(3.6)	3.5(3.15)	2.9(2.6)	2.2(2.0)	51	Y	5-5/8 x 4-7/8 x 2-5/8	137	163
LDS-X-12[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	6.5(5.5)	5.5(4.7)	4.5(3.8)	—	49	X	7 x 4-7/8 x 2-7/8	136	294
LNS-X-12[16]	0.1%, 0.1%	1.5 mV	6.5(5.5)	5.5(4.7)	4.5(3.8)	3.3[2,8]	51	X	7 x 4-7/8 x 2-7/8	137	193
LXS-C-12-R[11]	0.1%, 0.1%	1.5 mV	6.5	6.1	5.5	4.6	55	C	3-3/16 x 4-15/16 x 9-3/8	139	517
LDS-W-12[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	8.5(7.2)	7.0(6.0)	5.3(4.5)	—	47	W	9 x 5 x 2-7/8	136	359
LNS-W-12[16]	0.1%, 0.1%	1.5 mV	8.5(7.2)	7.2(6.1)	5.9(5.0)	4.2(3.6)	51	W	9 x 5 x 2-7/8	137	245
LDS-P-12[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	14.0(13.3)	12.4(11.8)	10.0(9.5)	—	49	P	11 x 4-7/8 x 4-13/32	136	454
LNS-P-12[16]	0.1%, 0.1%	1.5 mV	14.0(13.3)	12.4(11.8)	10.0(9.5)	7.3(6.94)	51	P	11 x 4-7/8 x 4-13/32	137	298
LM-G-12-M-R[4]	0.05% + 4 mV, 0.03% + 3 mV	1 mV	56.0	46.0	37.0	29.0	57	G	5-3/16 x 19 x 16-1/2	138	2335

See page 23. For other voltages or currents not listed see page 76 or consult your local Lambda Sales Engineer.

[16] Ratings in parenthesis for LD and LN series when cover is used.

High Grade Industrial Linear Selector Guide

Single Output. Fixed Voltage. Models LD, LN, LC, LX and LM.

MODEL	REGULATION (line, load)	RIPPLE (RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
15 VOLTS ±5% ADJ.											
LNS-Z-15 (16)	0.15%, 0.15%	1.5 mV	1.4(1.3)	1.3(1.2)	1.2(1.1)	1.0(0.9)	51	Z	4-7/8 x 4 x 1-3/4	137	**$112**
LCS-A-15	0.01% + 1 mV, 0.01% + 1 mV	250 μV	1.8	1.5	1.2	0.9	53	A	3-3/16 x 3-3/4 x 6-1/2	139	**300**
LM-B-15	0.05% + 4 mV, 0.03% + 3 mV	1 mV	2.2	2.0	1.8	1.3	57	B	3-3/16 x 4-15/16 x 6-1/2	139	**426**
LXS-A-15-R (11)	0.1%, 0.1%	1.5 mV	2.4	2.0	1.6	1.3	55	A	3-3/16 x 3-3/4 x 6-1/2	139	**295**
LCS-B-15	0.01% + 1 mV, 0.01% + 1 mV	250 μV	3.2	2.8	2.5	1.5	53	B	3-3/16 x 4-15/16 x 6-1/2	139	**417**
LDS-Y-15 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	3.25(3.0)	2.5(2.25)	1.7(1.55)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	**237**
LNS-Y-15 (16)	0.1%, 0.1%	1.5 mV	3.4(3.1)	3.1(2.8)	2.6(2.35)	2.0(1.8)	51	Y	5-5/8 x 4-7/8 x 2-5/8	137	**163**
LDS-X-15 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	5.5(4.7)	4.6(3.9)	3.6(3.1)	—	49	X	7 x 4-7/8 x 2-7/8	136	**294**
LNS-X-15 (16)	0.1%, 0.1%	1.5 mV	5.5(4.7)	4.8(4.1)	3.9(3.35)	2.8(2.4)	51	X	7 x 4-7/8 x 2-7/8	137	**193**
LXS-C-15-R (11)	0.1%, 0.1%	1.5 mV	6.0	5.6	5.1	4.5	55	C	3-3/16 x 4-15/16 x 9-3/8	139	**517**
LCS-C-15	0.01% · 1 mV, 0.01% · 1 mV	250 μV	6.0	5.6	5.1	4.5	53	C	3-3/16 x 4-15/16 x 9-3/8	139	**507**
LDS-W-15 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	7.7(6.55)	6.2(5.3)	4.7(4.0)	—	49	W	9 x 5 x 2-7/8	136	**359**
LNS-W-15 (16)	0.1%, 0.1%	1.5 mV	7.7(6.55)	6.7(5.7)	5.5(4.7)	3.8(3.15)	51	W	9 x 5 x 2-7/8	137	**245**
LCS-CC-15	0.01% · 1 mV, 0.01% · 1 mV	250 μV	9.5	8.6	7.4	4.8	53	CC	4-15/16 x 4-15/16 x 9-3/8	139	**670**
LDS-P-15 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	12.0(11.4)	10.6(10.0)	8.5(8.1)	—	49	P	11 x 4-7/8 x 4-13/32	136	**454**
LNS-P-15 (16)	0.1%, 0.1%	1.5 mV	12.0(11.4)	10.6(10.1)	8.5(8.1)	6.3(6.0)	51	P	11 x 4-7/8 x 4-13/32	137	**298**
LXS-E-15-R (11)	0.1%, 0.1%	1.5 mV	19.0	17.0	14.0	12.0	55	E	4-15/16 x 7-1/2 x 11-3/4	139	**994**
20 VOLTS ±5% ADJ.											
LNS-Z-20 (16)	0.15%, 0.15%	1.5 mV	1.0(.9)	0.85(.77)	0.65(.59)	0.45(.41)	51	Z	4-7/8 x 4 x 1-3/4	137	**112**
LDS-Y-20 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	2.5(2.25)	2.0(1.8)	1.5(1.35)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	**237**
LNS-Y-20 (16)	0.1%, 0.1%	1.5mV	2.7(2.45)	2.5(2.25)	2.0(1.8)	1.3(1.2)	51	Y	5-5/8 x 4-7/8 x 2-5/8	137	**163**
LDS-X-20 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	4.4(3.7)	3.6(3.1)	2.6(2.2)	—	49	X	7 x 4-7/8 x 2-7/8	136	**294**
LNS-X-20 (16)	0.1%, 0.1%	1.5mV	4.4(3.75)	3.6(3.1)	2.6(2.2)	1.6(1.4)	51	X	7 x 4-7/8 x 2-7/8	137	**193**
LDS-W-20 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	6.1(5.2)	5.0(4.3)	3.8(3.2)	—	49	W	9 x 5 x 2-7/8	136	**359**
LDS-P-20 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	10.0(9.5)	8.9(8.5)	7.0(6.6)	—	49	P	11 x 4-7/8 x 4-13/32	137	**454**
LNS-P-20	0.1%, 0.1%	1.5 mV	10.0	8.9	7.5	5.5	51	P	4-7/8 × 4-13/16 × 11	136	**298**

(2,4,11,13) See page 23. For other voltages or currents not listed see page 76 or consult your local Lambda Sales Engineer.

(16) Ratings in parenthesis for LD and LN series when cover is used

High Grade Industrial Linear Selector Guide

Single Output. Fixed Voltage. Models LD, LN, LC, LX and LM.

MODEL	REGULATION (line, load)	RIPPLE (RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
24 VOLTS ±5% ADJ.											
LNS-Z-24 (16)	0.15%, 0.15%	1.5 mV	0.9(.81)	0.75(.68)	0.6(.55)	0.4(.36)	51	Z	4-7/8 x 4 x 1-3/4	137	**$112**
LCS-A-24	0.01% + 1 mV, 0.01% + 1 mV	250 μV	1.1	1.0	0.85	0.70	53	A	3-3/16 x 3-3/4 x 6-1/2	139	**300**
LDS-Y-24 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	2.1(1.9)	1.7(1.55)	1.3(1.15)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	**237**
LCS-B-24	0.01% + 1 mV, 0.01% + 1 mV	250 μV	2.1	2.0	1.8	1.2	53	B	3-3/16 x 4-15/16 x 6-1/2	139	**417**
LNS-Y-24 (16)	0.1%, 0.1%	1.5 mV	2.3(2.1)	2.1(1.9)	1.7(1.5)	1.1(1.0)	51	Y	5-5/8 x 4-7/8 x 2-5/8	137	**163**
LCS-C-24	0.01% + 1 mV, 0.01% + 1 mV	250 μV	3.6	3.4	3.0	2.5	53	C	3-3/16 x 4-15/16 x 9-3/8	139	**489**
LDS-X-24 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	3.8(3.2)	3.2(2.7)	2.4(2.0)	—	49	X	7 x 4-7/8 x 2-7/8	136	**294**
LNS-X-24 (16)	0.1%, 0.1%	1.5 mV	3.8(3.25)	3.2(2.75)	2.4(2.0)	1.4(1.2)	51	X	7 x 4-7/8 x 2-7/8	137	**193**
LDS-W-24 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	5.4(4.6)	4.4(3.7)	3.3(2.8)	—	49	W	9 x 5 x 2-7/8	136	**359**
LNS-W-24 (16)	0.1%, 0.1%	1.5 mV	5.4(4.6)	4.6(3.9)	3.7(3.1)	2.5(2.1)	51	W	9 x 5 x 2-7/8	137	**245**
LM-D-24	0.05% + 4 mV, 0.03% + 3 mV	1 mV	6.7	6.3	5.8	4.8	57	D	4-15/16 x 7-1/2 x 9-3/8	140	**754**
LXS-CC-24-R (11)	0.1%, 0.1%	1.5 mV	6.8	6.4	5.7	4.4	55	CC	4-15/16 x 4-15/16 x 9-3/8	140	**657**
LDS-P-24 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	9.0(8.5)	8.0(7.6)	6.0(5.7)	—	49	P	11 x 4-7/8 x 4-13/32	136	**466**
LNS-P-24 (16)	0.1%, 0.1%	1.5 mV	9.0(8.6)	8.0(7.6)	6.7(6.4)	5.0(4.8)	51	P	11 x 4-7/8 x 4-13/32	137	**298**
LXS-D-24-R (11)	0.1%, 0.1%	1.5 mV	10.0	8.8	7.5	6.0	55	D	4-15/16 x 7-1/2 x 9-3/8	140	**799**
LCS-D-24	0.01% + 1 mV, 0.01% + 1 mV	250 μV	10.0	8.8	7.5	6.0	53	D	4-15/16 x 7-1/2 x 9-3/8	139	**911**
LM-E-24	0.05% + 4 mV, 0.03% + 3 mV	1 mV	11.0	10.0	9.0	7.6	57	E	4-15/16 x 7-1/2 x 11-3/4	139	**954**
LM-F-24-M-R (4)	0.05% + 4 mV, 0.03% + 3 mV	1 mV	20.0	17.0	14.0	11.0	57	F	3-1/2 x 19 x 16-1/2	138	**1861**
LM-G-24-M-R (4)	0.05% + 4 mV, 0.03% + 3 mV	1 mV	32.0	26.0	21.0	16.0	57	G	5-3/16 x 19 x 16-1/2	138	**2335**
28 VOLTS ±5% ADJ.											
LNS-Z-28 (16)	0.15%, 0.15%	1.5 mV	0.8(.75)	0.65(.60)	0.5(.45)	0.35(.32)	51	Z	4-7/8 x 4 x 1-3/4	137	**112**
LCS-A-28	0.01% + 1 mV, 0.01% + 1 mV	250 μV	1.0	0.9	0.75	0.60	53	A	3-3/16 x 3-3/4 x 6-1/2	139	**300**
LM-B-28	0.05% + 4 mV, 0.03% + 3 mV	1 mV	1.3	1.2	1.1	1.0	57	B	3-3/16 x 4-15/16 x 6-1/2	139	**426**
LDS-Y-28 (16)	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	1.9(1.65)	1.5(1.35)	1.1(1.0)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	**237**
LNS-Y-28 (16)	0.1%, 0.1%	1.5 mV	2.0(1.8)	1.8(1.65)	1.5(1.35)	1.0(0.9)	51	Y	5-5/8 x 4-7/8 x 2-5/8	137	**163**

28 Volts ±5% continued next page.

(4,11,12) See page 23. For other voltages or currents not listed see page 76 or consult your local Lambda Sales Engineer.

(16) Ratings in parenthesis for LD and LN series when cover is used.

High Grade Industrial Linear Selector Guide

Single Output. Fixed Voltage. Models LD, LN, LC, LX and LM.

MODEL	REGULATION (line, load)	RIPPLE (RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
28 VOLTS ±5% ADJ. (Cont'd)											
LCS-C-28	0.01% + 1 mV, 0.01% + 1 mV	250 μV	3.0	2.7	2.6	2.2	53	C	3-3/16 x 4-15/16 x 9-3/8	139	**$489**
LDS-X-28[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	3.4(2.9)	2.9(2.5)	2.2(1.9)	—	49	X	7 x 4-7/8 x 2-7/8	136	**294**
LNS-X-28[16]	0.1%, 0.1%	1.5 mV	3.4(2.9)	2.9(2.5)	2.2(1.5)	1.2(1.0)	51	X	7 x 4-7/8 x 2-7/8	137	**193**
LDS-W-28[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150μV	4.7(4.0)	4.0(3.4)	3.1(2.6)	—	49	W	9 x 5 x 2-7/8	136	**359**
LNS-W-28[16]	0.1%, 0.1%	1.5 mV	4.7(4.0)	4.0(3.4)	3.2(2.75)	2.2(1.9)	51	W	9 x 5 x 2-7/8	137	**245**
LXS-CC-28-R[11]	0.1%, 0.1%	1.5 mV	6.0	5.6	5.0	4.3	55	CC	4-15/16 x 4-15/16 x 9-3/8	140	**657**
LCS-CC-28	0.01% + 1 mV, 0.01% + 1 mV	250 μV	6.0	5.6	5.0	4.3	53	CC	4-15/16 x 4-15/16 x 9-3/8	140	**670**
LDS-P-28[16]	0.005% + 0.5 mV 0.005% + 0.5 mV	150 μV	8.0(7.6)	7.1(6.7)	5.2(4.9)	—	49	P	11 x 4-7/8 x 4-13/32	136	**454**
LNS-P-28[16]	0.1%, 0.1%	1.5 mV	8.0(7.6)	7.1(6.75)	6.0(5.7)	4.5(4.3)	51	P	11 x 4-7/8 x 4-13/32	137	**298**
LXS-D-28-R[11]	0.1%, 0.1%	1.5 mV	9.0	8.0	6.8	5.5	55	D	4-15/16 x 7-1/2 x 9-3/8	140	**799**
LM-E-28	0.05% + 4 mV, 0.03% + 3 mV	1 mV	10.0	9.0	8.0	7.1	57	E	4-15/16 x 7-1/2 x 11-3/4	139	**954**
LXS-E-28-R[11]	0.1%, 0.1%	1.5 mV	11.0	10.0	8.5	5.5	55	E	4-15/16 x 7-1/2 x 11-3/4	139	**995**
LXS-EE-28-R[11]	0.1%, 0.1%	1.5 mV	17.0	15.0	12.0	9.0	55	EE	4-15/16 x 7-1/2 x 16-1/2	139	**1313**
LM-F-28-M-R[4]	0.05% + 4 mV, 0.03% + 3 mV	1 mV	19.0	16.0	13.0	10.0	57	F	3-1/2 x 19 x 16-1/2	138	**1861**
LM-G-28-M-R[4]	0.05% + 4 mV, 0.03% + 3 mV	1 mV	28.0	25.0	21.0	16.0	57	G	5-3/16 x 19 x 16-1/2	138	**2335**
36 VOLTS ±5% ADJ.											
LCS-B-36	0.01% + 1 mV, 0.01% + 1 mV	250 μV	1.4	1.3	1.1	0.7	53	B	3-3/16 x 4-15/16 x 6-1/2	139	**417**
LM-E-36	0.05% + 4 mV, 0.03% + 3 mV	1 mV	8.0	7.3	6.5	5.7	57	E	4-15/16 x 7-1/2 x 11-3/4	139	**954**
48 VOLTS ±5% ADJ.											
LCS-B-48	0.01% + 1 mV 0.01% + 1 mV	250 μV	1.1	1.0	0.90	0.50	53	B	3-3/16 x 4-15/16 x 6-1/2	139	**417**
LDS-Y-48	0.005%+0.5 mV	150 μV	1.36(1.2)	1.05(0.95)	0.75(0.70)	—	49	Y	5-5/8 x 4-7/8 x 2-5/8	136	**247**
LDS-X-48	0.005%+0.5 mV	150 μV	2.1(1.9)	1.8(1.6)	1.4(1.2)	—	49	X	7 x 4-7/8 x 2-7/8	136	**307**
LDS-W-48	0.005%+0.5 mV	150μV	3.0(2.6)	2.6(2.2)	2.0(1.7)	—	49	W	9 x 5 x 2-7/8	136	**372**
LCS-CC-48	0.01% + 1 mV, 0.01% + 1 mV	250 μV	3.7	3.4	3.0	2.2	53	CC	4-15/16 x 4-15/16 x 9-3/8	140	**670**
LDS-P-48	0.005%+0.5 mV	150 μV	4.5(4.28)	4.0(3.8)	3.4(3.2)	—	49	P	11 x 4-7/8 x 4-13/32	136	**466**
LNS-P-48	0.1%, 0.1%	1.5 mV	4.5(4.28)	4.0(3.8)	3.4(3.2)	2.5(2.38)	51	P	4-13/32 x 4-7/8 x 11	137	**363**
LCS-D-48	0.01% + 1 mV 0.01% + 1 mV	250 μV	5.2	4.7	4.1	3.4	53	D	4-15/16 x 7-1/2 x 9-3/8	140	**911**

[2,3,7,13] See page 23. For other voltages or currents not listed see page 76 or consult your local Lambda Sales Engineer.

[16] Ratings in parenthesis for LN series when cover is used.

High Grade Industrial Linear Selector Guide

Single Output. Fixed Voltage. Models LD, LN, LC, LX and LM.

MODEL	REGULATION (line, load)	RIPPLE (RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG SIZE	DIMENSIONS (inches)	COMPLETE MECH SPEC PG	PRICE
100 VOLTS ±5% ADJ.											
LCS-A-100	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0.18	0.18	0.18	0.18	53	A	3-3/16 x 3-3/4 x 6-1/2	139	$329
LDS-Y-100	0.005% +0.5 mV	250 μV	0.55(0.55)	0.45(0.45)	0.35(0.35)	—	49	Y	5-5/8 × 4-7/8 × 2-5/8	136	264
LDS-P-100	0.005% +0.5 mV	250 μV	1.6(1.6)	1.4(1.4)	1.2(1.2)	—	49	P	11 x 4-7/8 x 4-13/32	136	483
120 VOLTS ±5% ADJ.											
LCS-A-120	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0.15	0.15	0.15	0.15	53	A	3-3/16 x 3-3/4 x 6-1/2	139	329
LDS-Y-120	0.005% +0.5 mV	250 μV	.45(.45)	.35(.35)	.25(.25)	—	49	Y	5-5/8 × 4-7/8 × 2-5/8	136	264
LDS-P-120	0.005% +0.5 mV	250 μV	1.4(1.4)	1.2(1.2)	1.0(1.0)	—	49	P	11 x 4-7/8 x 4-13/32	136	483
LM-D-120	0.05% + 4 mV, 0.03% + 3 mV	1 mV	1.50	1.30	1.10	1.00	57	D	4-15/16 x 7-1/2 x 9-3/8	140	754
150 VOLTS ±5% ADJ.											
LCS-A-150	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0.10	0.10	0.10	0.10	53	A	3-3/16 x 3-3/4 x 6-1/2	139	329
LCS-B-150	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0.32	0.32	0.32	0.25	53	B	3-3/16 x 4-15/16 x 6-1/2	139	459
LDS-Y-150	0.005% +0.5 mV	250 μV	.35(.35)	.25(.25)	.15(.15)	—	49	Y	5-5/8 × 4-7/8 × 2-5/8	136	264
LDS-P-150	0.005% +0.5 mV	250 μV	1.1(1.1)	.9(.9)	.8(.8)	—	49	P	11 x 4-7/8 x 4-13/32	136	483
LM-D-150	0.05% + 4 mV, 0.03% + 3 mV	1 mV	1.10	1.00	0.90	0.80	57	D	4-15/16 x 7-1/2 x 9-3/8	140	754

Dual Output. Wide Range. Model LC.

MODEL	REGULATION (line, load)	RIPPLE (RMS)	ADJ. VOLT. RANGE VDC	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
0-18/0-18 VOLTS ADJ.												
LCD-4-22	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0-18 0-18	1.00 1.00	0.80 0.80	0.65 0.65	0.40 0.40	53	4	4-29/32 x 4-29/32 x 5	138	$701
0-32/0-32 VOLTS ADJ.												
LCD-4-33	0.01% + 1 mV, 0.01% + 1 mV	250 μV	0-32 0-32	0.60 0.60	0.53 0.53	0.40 0.40	0.24 0.24	53	2	4-29/32 x 4-29/32 x 5	138	701

All outputs continuously adjustable over entire range. For other voltages or currents not listed see page 76 or consult your local Lambda Sales Engineer.

High Grade Industrial Linear Selector Guide

Dual Tracking. Dual and Triple Output. Models LN, LX and LC.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	ADJ. VOLT. RANGE VDC	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
5 VOLTS ±5% ADJ., 9V-12V ADJ.												
LND-X-MPU (16)	0.1%, 0.1%	1.5	5 ± 5% 9 to 12	7.0(6.0) 1.2(1.0)	6.0(5.1) 1.1(1.0)	4.7(4.0) 1.0(0.8)	3.2(2.7) 0.8(0.7)	51	X	7 x 4-7/8 x 2-7/8	137	**$255**
±6 VOLTS TO ±3 VOLTS ADJ. (Dual Tracking)												
LXD-C-062-R (11) (15)	0.1%, 0.1%	1.5	± 6 to ± 3	3.5 2.6	3.3 2.4	2.7 1.9	1.7 1.3	55	C	3-3/16 x 4-15/16 x 9-3/8	140	**599**
±15 VOLTS TO ±12 VOLTS ADJ. (Dual Tracking) (also used as 24 to 30 VDC)												
LND-Z-152 (16) (15)	0.15%, 0.15%	1.5	± 15 to ± 12	0.6(0.5) 0.6(0.5)	0.55(0.5) 0.55(0.5)	0.45(0.4) 0.45(0.4)	0.3(0.3) 0.3(0.3)	51	Z	4-7/8 x 4 x 1-3/4	137	**127**
LND-Y-152 (16) (15)	0.1%, 0.1%	1.5	± 15 to ± 12	1.4(1.2) 1.2(1.0)	1.2(1.0) 1.1(0.9)	0.9(0.8) 0.8(0.7)	0.6(0.5) 0.5(0.4)	51	Y	5-5/8x 4-7/8 x 2-5/8	137	**179**
LND-X-152 (16) (15)	0.1%, 0.1%	1.5	± 15 to ± 12	2.5(2.1) 2.3(2.0)	2.1(1.8) 1.9(1.6)	1.6(1.4) 1.4(1.2)	1.1(0.9) 0.9(0.8)	51	X	7 x 4-7/8 x 2-7/8	137	**222**
LXD-C-152-R (11) (15)	0.1%, 0.1%	1.5	± 15 to ± 12	2.5 2.0	2.3 1.8	1.9 1.5	1.5 1.2	55	C	3-3/16 x 4-15/16 x 9-3/8	140	**599**
LND-W-152 (16) (15)	0.1%, 0.1%	1.5	± 15 to ± 12	3.3(3.0) 3.1(2.8)	3.1(2.8) 2.8(2.5)	2.6(2.3) 2.3(2.1)	2.0(1.8) 1.6(1.4)	51	W	9 x 5 x 2-7/8	137	**252**
LND-P-152 (16)	0.1%, 0.1%	1.5	± 15 to ± 12	5.3(5.0) 4.6(4.4)	4.7(4.5) 4.0(3.8)	3.9(3.7) 3.3(3.1)	2.9(2.7) 2.5(2.4)	51	P	11 x 4-7/8 x 4-13/32	137	**357**
LXD-D-152-R (11) (15)	0.1%, 0.1%	1.5	± 15 to ± 12	6.2 4.5	5.6 4.1	4.9 3.7	4.0 3.0	55	D	4-15/16 x 7-1/2 x 9-3/8	140	**991**
LXD-EE-152-R (11) (15)	0.1%, 0.1%	1.5	± 15 to ± 12	12.5 10.0	11.0 9.0	9.0 7.8	7.0 6.0	55	EE	4-15/16 x 7-1/2 x 16-1/2	140	**1476**
15 VOLTS ±5% ADJ. (Dual Output)												
LCD-4-152	0.01% + 1 mV, 0.01% + 1 mV	250μV	15 ± 5% 15 ± 5%	1.5 1.5	1.3 1.3	1.0 1.0	0.6 0.6	53	4	4-29/32 x 4-29/32 x 5	138	**701**
5 VOLTS ±5% ADJ., ±15 TO ±12 VOLTS ADJ. (Triple Output)												
LXT-D-5152-B-R (10) (11)	0.1%, 0.1%	1.5 mV	5 ± 5% ± 15 to ± 12	12.0 3.1 2.3	11.5 2.7 2.0	11.0 2.2 1.7	9.5 1.7 1.3	55	D	4-15/16 x 7-1/2 x 9-3/8	140	**1249**

NOTES TO VOLTAGE AND CURRENT RATING TABLES

(2) Built-in continuously adjustable overvoltage protection that crowbars output when trip level is exceeded is included on this model.

(4) The LM-F-M & LM-G-M fixed voltage models have meters included in the price. For non-metered models, delete suffix-M.

(5) (6) (14) Includes fixed overvoltage protection.

(11) All LX series models have fungus proofing standard and is included in model notation and price.

(15) ± 15 to ± 12 Volts and ± 6 to ± 3 Volts are each dual tracking outputs.

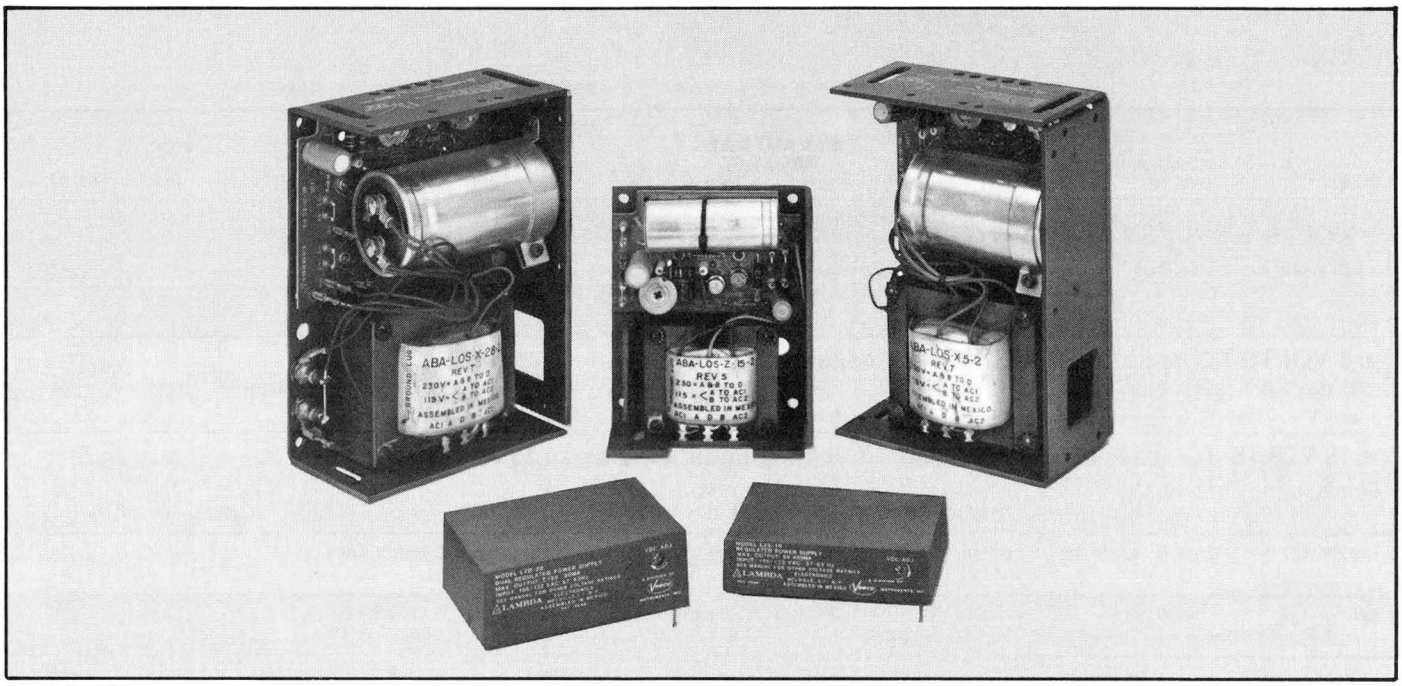
(16) Ratings in parenthesis for LD and LN series when cover is used.

(A) Current rating is from zero to I_{max}. With exception of LXD Series, current rating applies over entire output voltage range.

(B) LD, LC, LM and LX Series power modules are available for operation at 360-440 Hz. Consult factory for ratings and specifications. For 50 Hz operation, derate LC Series by 10%; for LM Series delete 40°C rating; for LX Series delete 40°C rating.

(C) Prices are U.S.A. list prices only, F.O.B. Melville, N.Y., McAllen, Texas, Tucson, Arizona. All prices and specifications are subject to change without notice.

Lambda LO and LZ Series



LZ Series

(For complete mechanical specs, see page 142.)
(For complete electrical specs, see page 61.)

DUAL TRACKING OUTPUTS

MODEL	MAX. CURRENT (mA) AT 50° C	PKG. SIZE	PRICE QUANTITY 1	100	250
±5 VOLTS ADJ.[1]					
LZD-21	300	20	$100	$75	$70
±6 VOLTS ADJ.[1]					
LZD-21	300	20	100	75	70
±10 VOLTS ADJ.[1]					
LZD-22	61	20	76	61	55
LZD-23	114	20	100	75	70
LZD-32	163	30	119	89	83
LZD-35	200	30	169	127	118
±12 VOLTS ADJ.[1]					
LZD-22	73	20	76	61	55
LZD-23	129	20	100	75	70
LZD-32	186	30	119	89	83
LZD-35	240	30	169	127	118
±15 VOLTS ADJ.[1]					
LZD-22	90	20	76	61	55
LZD-23	150	20	100	75	70
LZD-32	220	30	119	89	83
LZD-35	300	30	169	127	118

SINGLE OUTPUT

MODEL	MAX. CURRENT (mA) AT 50° C	PKG. SIZE	PRICE QUANTITY 1	100	250
5 VOLTS ADJ.[1]					
LZS-10	450	10	$68	$51	$46
LZS-30	900	30	119	89	83
6 VOLTS ADJ.[1]					
LZS-10	450	10	68	51	46
LZS-30	900	30	119	89	83
10 VOLTS ADJ.[1]					
LZS-11	225	10	68	51	46
LZD-21[2]	300	20	100	75	70
LZS-33	293	30	119	89	83
12 VOLTS ADJ.[1]					
LZS-11	195	10	68	51	46
LZD-21[2]	300	20	100	75	70
LZS-33	336	30	119	89	83
15 VOLTS ADJ.[1]					
LZS-11	150	10	68	51	46
LZS-33	400	30	119	89	83
20 VOLTS ADJ.[1]					
LZD-22[2]	61	20	76	61	55
LZD-23[2]	114	20	100	75	70
LZD-32[2]	163	30	119	89	83
LZD-35[2]	200	30	169	127	118
24 VOLTS ADJ.[1]					
LZD-22[2]	73	20	76	61	55
LZD-23[2]	129	20	100	75	70
LZD-32[2]	186	30	119	89	83
LZD-35[2]	240	30	169	127	118
28 VOLTS ADJ.[1]					
LZD-22[2]	84	20	76	61	55
LZD-23[2]	143	20	100	75	70
LZD-32[2]	208	30	119	89	83
LZD-35[2]	280	30	169	127	118

NOTES: 1. All LZ models are adjustable between the following limits: LZS-10 2.5 to 6 V, LZS-11 8.0 to 15 V, LZS-30 2.5 to 6 V, LZS-33 8.0 to 15 V, LZD-21 ±2.5 to ±6 V, LZD-22 ±8.0 to ±15 V, LZD-23 ±8.0 to ±15 V, LZD-32 ±8.0 to 15 V, LZD-35 ±8.0 to 15 V. Contact factory for current ratings at voltage setting not indicated in above tables.

2. Single output ratings for dual-output models connected in series.

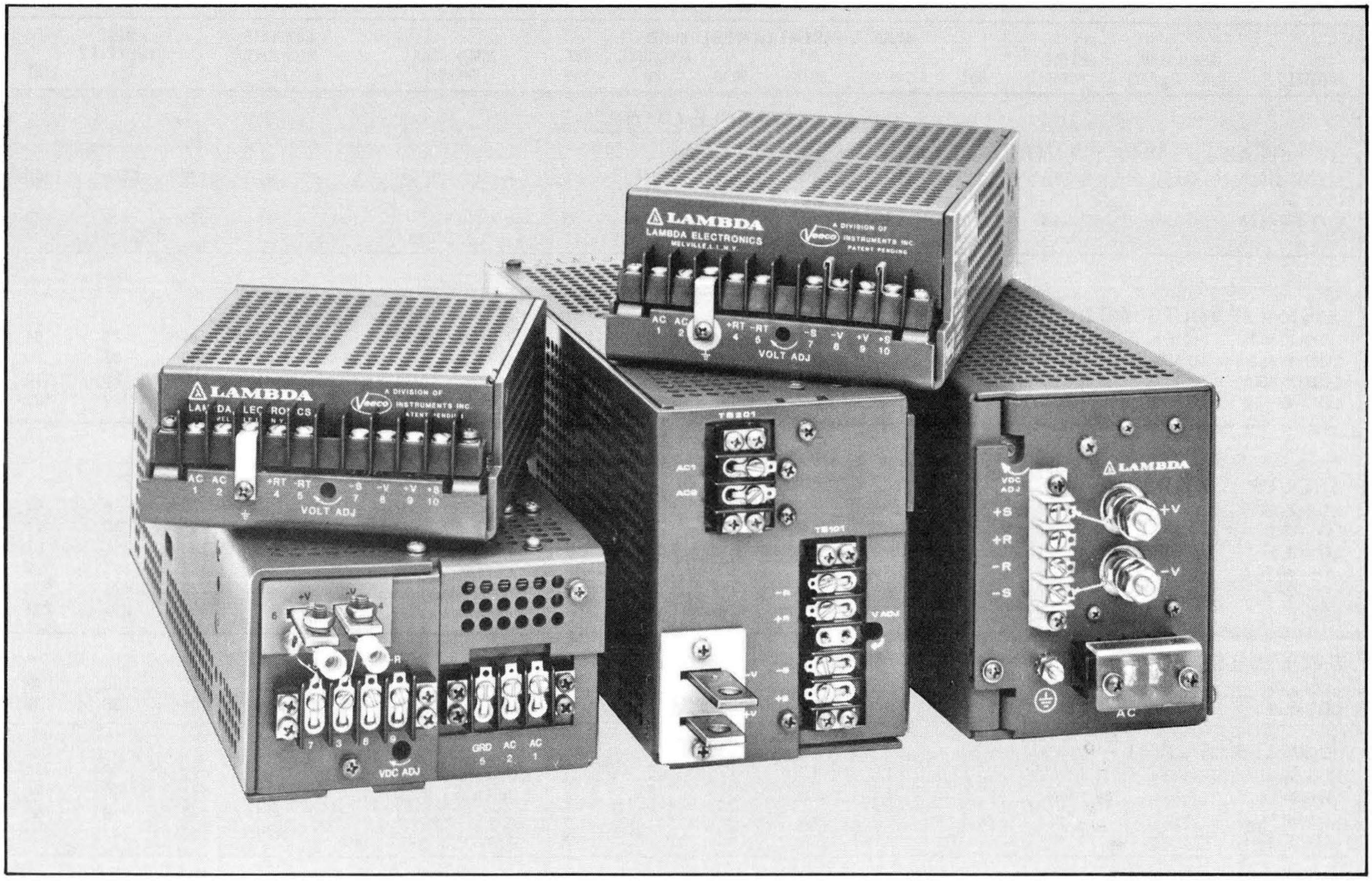
OEM Linear Selector Guide

LO Series. Triple, Dual & Single Outputs.

MODEL	REGULATION (LINE OR LOAD)	RIPPLE (RMS)	VDC	MAX. CURRENT (AMPS) AT 40° C	50° C	60° C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (INCHES)	COMPLETE MECH. SPEC. PG	PRICE QUANTITY 1	25	100
TRIPLE OUTPUT													
5V ±5% ADJ., ±15 to ±12 VOLTS* ADJ.													
LOT-X-5152A	0.15%	1.5mV	5 ±5%	3.0	2.2	1.4	59	X	7 x 4-7/8 x 2-3/4	141	$172	$138	$120
			±15 to ±12	0.50	0.375	0.20							
LOT-W-5152A	0.15%	1.5mV	5 ±5%	6.0	4.5	3.0	59	W	9 x 4-7/8 x 2-3/4	141	213	170	148
			±15 to ±12	1.0	0.75	0.40							
DUAL OUTPUT													
±15 to ±12 VOLTS* ADJ.													
LOD-Z-152	0.15%	1.5mV		0.50	0.37	0.25	59	Z	4-7/8 x 4 x 1-5/8	141	91	73	64
LOD-Y-152	0.15%	1.5mV		1.0	0.75	0.50	59	Y	5-5/8 x 4-7/8 x 2-1/2	141	109	87	70
LOD-X-152	0.15%	1.5mV		2.0	1.4	0.80	59	X	7 x 4-7/8 x 2-3/4	141	159	128	110
LOD-W-152	0.15%	1.5mV		3.0	2.2	1.4	59	W	9 x 4-7/8 x 2-3/4	141	186	149	120
SINGLE OUTPUT													
5 VOLTS ±5% ADJ.													
LOS-Z-5	0.15%	1.5mV		3.0	2.4	1.8	59	Z	4-7/8 x 4 x 1-5/8	141	72	58	47
LOS-Y-5	0.15%	1.5mV		6.0	4.9	3.8	59	Y	5-5/8 x 4-7/8 x 2-1/2	141	114	90	76
LOS-X-5	0.15%	1.5mV		9.0	7.6	6.2	59	X	7 x 4-7/8 x 2-3/4	141	143	115	92
LOS-W-5	0.15%	1.5mV		12.0	10.5	8.5	59	W	9 x 4-7/8 x 2-3/4	141	183	147	122
LOS-V-5	0.15%	1.5mV		17.0	14.5	11.5	59	V	4-7/8 x 13-3/4 x 4-7/8	141	220	175	154
LOS-R-5	0.15%	1.5mV		25.0	21.5	17.5	59	R	4-7/8 x 16-3/4 x 4-7/8	141	289	232	201
6 VOLTS ±5% ADJ.													
LOS-Z-6	0.15%	1.5mV		2.5	2.1	1.6	59	Z	4-7/8 x 4 x 1-5/8	141	72	58	47
LOS-Y-6	0.15%	1.5mV		5.0	4.3	3.5	59	Y	5-5/8 x 4-7/8 x 2-1/2	141	114	90	76
12 VOLTS ±5% ADJ.													
LOS-Z-12	0.15%	1.5mV		1.6	1.3	1.0	59	Z	4-7/8 x 4 x 1-5/8	141	72	58	47
LOS-Y-12	0.15%	1.5mV		3.3	2.8	2.3	59	Y	5-5/8 x 4-7/8 x 2-1/2	141	114	90	76
LOS-X-12	0.15%	1.5mV		5.7	4.8	3.9	59	X	7 x 4-7/8 x 2-3/4	141	143	115	92
LOS-W-12	0.15%	1.5mV		7.0	5.8	4.6	59	W	9 x 4-7/8 x 2-3/4	141	183	147	122
15 VOLTS ±5% ADJ.													
LOS-Z-15	0.15%	1.5mV		1.4	1.2	1.0	59	Z	4-7/8 x 4 x 1-5/8	141	72	58	47
LOS-Y-15	0.15%	1.5mV		2.8	2.5	2.1	59	Y	5-5/8 x 4-7/8 x 2-1/2	141	114	90	76
LOS-X-15	0.15%	1.5mV		4.8	4.0	3.2	59	X	7 x 4-7/8 x 2-3/4	141	143	115	92
LOS-W-15	0.15%	1.5mV		6.3	5.2	4.0	59	W	9 x 4-7/8 x 2-3/4	141	183	147	122
LOS-R-15	0.15%	1.5mV		14.0	11.5	8.8	59	R	4-7/8 x 16-3/4 x 4-7/8	141	289	232	201
20 VOLTS ±5% ADJ.													
LOS-Z-20	0.15%	1.5mV		1.0	0.8	0.6	59	Z	4-7/8 x 4 x 1-5/8	141	72	58	47
LOS-Y-20	0.15%	1.5mV		2.4	2.1	1.8	59	Y	5-5/8 x 4-7/8 x 2-1/2	141	114	90	76
LOS-X-20	0.15%	1.5mV		3.8	3.2	2.5	59	X	7 x 4-7/8 x 2-3/4	141	143	115	92
24 VOLTS ±5% ADJ.													
LOS-Z-24	0.15%	1.5mV		0.9	0.75	0.55	59	Z	4-7/8 x 4 x 1-5/8	141	72	58	47
LOS-Y-24	0.15%	1.5mV		2.2	1.9	1.6	59	Y	5-5/8 x 4-7/8 x 2-1/2	141	114	90	76
LOS-X-24	0.15%	1.5mV		3.3	2.8	2.2	59	X	7 x 4-7/8 x 2-3/4	141	143	115	92
LOS-W-24	0.15%	1.5mV		4.8	3.8	2.8	59	W	9 x 4-7/8 x 2-3/4	141	183	147	122
LOS-V-24	0.15%	1.5mV		6.6	5.2	3.8	59	V	4-7/8 x 13-3/4 x 4-7/8	141	220	175	154
LOS-R-24	0.15%	1.5mV		10.5	8.3	6.0	59	R	4-7/8 x 16-3/4 x 4-7/8	141	289	232	201
28 VOLTS ±5% ADJ.													
LOS-Z-28	0.15%	1.5mV		0.8	0.65	0.45	59	Z	4-7/8 x 4 x 1-5/8	141	72	58	47
LOS-Y-28	0.15%	1.5mV		2.0	1.7	1.4	59	Y	5-5/8 x 4-7/8 x 2-1/2	141	114	90	76
LOS-X-28	0.15%	1.5mV		3.1	2.5	1.9	59	X	7 x 4-7/8 x 2-3/4	141	143	115	92
LOS-W-28	0.15%	1.5mV		4.2	3.3	2.4	59	W	9 x 4-7/8 x 2-3/4	141	183	147	122
LOS-V-28	0.15%	1.5mV		5.9	4.6	3.3	59	V	4-7/8 x 13-3/4 x 4-7/8	141	220	175	154
LOS-R-28	0.15%	1.5mV		9.3	7.5	5.6	59	R	4-7/8 x 16-3/4 x 4-7/8	141	289	232	201

*±15 to ±12 volts are each dual tracking outputs.

Lambda LR Series



Features—LR Series

8 Package sizes, up to 48V, up to 250A

More reliability with a 50% lower parts count, in a 25% smaller package

New patented circuit layout for simple and reliable operation and high thermal and electrical efficiency

Power MOSFET provides fast and efficient switching

5 Year Lambda Guarantee

LR power supplies meet MIL-STD-810C

Lambda LAS-4082 Control Circuit for reliable control and operation

Integral EMI Filter provides protection to meet stringent requirements of MIL-STD-461A and FCC Docket 20780 Class A

Convection cooled, no fans or blowers needed

Remote Turn-on//Turn-off Standard

ЯU /CSA
TUV—Licensed on "V" option and LRS-57

Built in overvoltage protection

Switching frequency up to 100 kHz

Lambda MIL-T-27C grade 6 magnetics, vacuum impregnated varnished layer wound with electrostatic shield class H, 180°C, UL approved

MIL-R-26 type wire wound resistors, MIL-W-16878 wire

−20°C to +71°C operation

Lambda CC4®* Printed Circuit Board plated thru-holes, fungus inert, flame retardant.

*Licensee of Photo Circuits Inc.

Sprague computer grade hermetically sealed 10-year life electrolytic capacitor.

LRS-57, 58, have customer selectable dual input

Specifications—LR Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line ..... 0.1% from 95 to 132VAC (95 to 132 VAC or 187 to 265VAC on LRS-57, LRS-58. 187-265VAC on LRS-59 only.)
regulation, load ..... 0.1% from no load to full load
ripple and noise ..... 10mV RMS, 35mV pk-pk for 2V, 5V and 6V models; 15mV RMS, 100mV pk-pk for 12V through 28V models; 35mV RMS, 150mV pk-pk for 48V models
temperature coefficient ..... 0.03%/°C
remote programming resistance ..... 1000 ohms/volt
remote programming voltage ..... volt per volt

AC Input

line ..... 95 to 132VAC, 47-440Hz
95 to 132 VAC or 187 to 265VAC (user selectable), 47-440 Hz on LRS-57, LRS-58. 187 to 265VAC on LRS-59 only.
power ..... LRS-52: 137 watts maximum
LRS-53: 225 watts maximum
LRS-54: 380 watts maximum
LRS-55: 515 watts maximum
LRS-56: 819 watts maximum
LRS-57: 1100 watts maximum
LRS-58: 1350 watts maximum
LRS-59: 1900 watts maximum

DC Input
145VDC ± 10% (260 to 370 VDC for LRS-57, 58, 59).

Efficiency
55% min for 2V models.
67% min for 5V and 6V models of LRS-52.
70% min for 5V through 15V models of LRS-53, 54.
75% min for 5V and 6V models of LRS-55, 56; 5V through 15V models of LRS-57, 58, 59; 12V through 20V models of LRS-52; 20V through 48V models of LRS-53, 54.
77% min for 12V through 20V models of LRS-55, 56.
78% min for 24V through 48V models of LRS-52.
80% min for 20V through 48V models of LRS-57, 58, 59; 24V through 48V models of LRS-55, 56.

Overshoot
No overshoot at turn-on, turn-off or power failure

Ambient Operating Temperature
Continuous duty −10°C to +71°C with suitable derating above 40°C. Guaranteed turn-on at −20°C.

Storage Temperature Range
-55°C to +85°C

Overload Protection

ELECTRICAL
External overload protection; automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Thermal
Self-resetting thermostat

Fusing
Line fuse removes the power supply from the line if a short occurs in the input circuitry.

Overvoltage Protection
Overvoltage protection is standard on all models. If output voltage increases above a preset level, inverter drive is removed.

Cooling
All units are convection cooled. No fans or blowers are needed.

In-Rush Limiting
The turn-on-in-rush current will not exceed 40 amps peak from a cold start. (50 amps on LRS-57, 58, 59).

DC Output Controls
Simple screwdriver adjustment over the entire voltage range.

Input and Output Connections
All input, output, sensing and remote on/off connections for the LRS-52 and LRS-53 are made through barrier strip terminals. All input, sensing and remote on/off connections for LRS-54, LRS-55, LRS-56, LRS-57, LRS-58 and LRS-59 are made through barrier strip terminals. DC output is through heavy duty threaded bus bars.

Mounting
Two mounting surfaces and two mounting positions on LRS-52, LRS-53 and LRS-54. One mounting surface and one mounting position on LRS-55, LRS-56, LRS-57, LRS-58 and LRS-59.

Power Failure
2V, 5V and 6V models will remain within regulation limits for at least 16.7 msec. after loss of AC power when operating at full load, V_O max, and 105VAC input at 60Hz. (105 or 210 VAC for LRS-57, 58. 210VAC only on LRS-59).

Remote Sensing
Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation.

Remote Turn-On/Turn-Off
Provision is made for digitally controlled remote turn-on, turn-off. (TTL Compatible)

Fungus Proofing
All units are inherently fungi inert.

Military Specifications
The LR series is designed to pass the following tests in accordance with MIL-STD-810C.
1) Low Pressure—Method 500.1, Procedure I
2) High Temperature—Method 501.1, Procedures I and II
3) Low Temperature—Method 502.1, Procedure I
4) Temperature Shock—Method 503.1, Procedure I
5) Temperature-Altitude—Method 504.1, Procedure I Class 2 (−10°C Operating)
6) Humidity—Method 507.1, Procedure I
7) Fungus—Method 508.1, Procedure I
8) Vibration—Method 514.2, Procedures X and XI
9) Shock—Method 516.2, Procedures I and III

EMI
Conducted EMI conforms to FCC Docket 20780 Class A, and MIL-STD-461A Notice 4 CE04 for power leads. LRS-57, LRS-58, LRS-59 also conform to VDC 0871 Class A.

Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LRS-52	2¼	3¼	2 x 4-7/8 x 6-1/4
LRS-53	3¼	4¼	2-3/8 x 4-7/8 x 8-1/2
LRS-54	6½	7½	3 x 4-7/8 x 11
LRS-55	7	8½	3-3/4 x 4-7/8 x 10-1/2
LRS-56	8½	10	4-7/16 x 4-7/8 x 11-1/2
LRS-57	10½	12	5 x 4-7/8 x 12
LRS-58	12½	14	5-1/2 x 4-7/8 x 13-1/8
LRS-59	16½	19	6-5/8 x 4-7/8 x 13-25/32

Accessories
Rack Adapters (LRA-14, LRA-15, LRA-17) and cable system available.

Options

AC Input
(Available on LRS-54, LRS-55, LRS-56 only)

Add Suffix[1]	For Operation at:	Price Qty. 1-14	Price Mixed Models Qty. 15 & Up	Price Single Model Qty. 15 & Up
−V	187-265 VAC 47-440 Hz	12% or $30**	12% or $30**	10% or $30**

[1]Add "V" after package number, i.e.: LRS-55V-5
**Whichever is greater.

Finish
Gray Fed. Std. 595, No. 26081.

Guaranteed for 5 Years
Five year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

/CSA
recognized. CSA certified. LRS-57, 58, 59 under evaluation.

TUV Licensed
LRS-54V, 55V, LRS-56V, 57, 58, 59 under evaluation.

Lambda LG and LGA Series

Features—LG and LGA Series

5-year guaranteed switching power supplies

4 package sizes up to 190A, up to 48 Volts

Convection cooled, no fans, or blowers needed

Lambda LAS-3800 IC Control Circuit

Lambda hybrid overvoltage protector crowbars output and shuts down inverter

Lambda MIL-T-27C grade 6 magnetics, vacuum impregnated varnished layer wound with electrostatic shield Class H, 180° C, UL approved

LG power supplies meet MIL-STD-810C, MIL-I-6181D and FCC docket 20780 Class A

Available with 110/208/230 VAC input, 20.5-32 or 44-58 VDC input. (See page 62)

Sprague computer grade hermetically sealed 10-year life electrolytic capacitor

Hermetically sealed semiconductors

Lambda CC4®* Printed Circuit Board plated thru-holes fungus inert, flame retardant
*Licensee of Photo Circuits Inc.

MIL-R-26 type wire wound resistors

MIL-W-16878 wire UL approved

Chassis designed for easy servicing

UL Recognized

CSA Certified ("D" option under evaluation)

Specifications—LG and LGA Series

DC Output
Voltage ranges shown in tables

REGULATED VOLTAGE

regulation, line	.0.1% for 105 to 132 VAC, 187-242 VAC, 205-265 VAC (187-265 VAC on LGS-EEA, FA)
regulation, load	0 1% for 0 to full load
ripple and noise	.10 mV RMS, 35 mV p-p for 5 and 6 V units 15 mV RMS, 100 mV p-p for 12 thru 28 V units 35 mV RMS, 150 mV p-p for 48 V units.
remote programming resistance	.1000 ohms/volt nominal
remote programming voltage	.volt per volt
temperature coefficient	0.03% per °C

AC Input

line	105-132 VAC, 47-440 Hz (For FA and EEA models derate 10% for operation below 57 Hz)
power	450 watts max at 0 6 P.F. for LGS-5A 970 watts max. at 0 7 P.F. for LGS-6A 1350 watts max at 0.6 P.F. for LGS-EEA 1500 watts max. at 0.7 P.F for LGS-FA
DC Input	.20.5-32 VDC. LGS-5-C packages only. Input voltage specs comply with minimum usable voltage for lead acid batteries. 44-58 VDC "D" models only. (See p. 56-57) 145 VDC ± 10%. LGS-5A, LGS-6A packages only.
Efficiency	.64% minimum except LGS-6-D which is 60% minimum, LGS-5-C which is 55% minimum and LGS-FA which is 70% minimum

Soft-start Circuit: (LGS-6A, LGS-EEA, LGS-FA only)
Limits in-rush current at turn-on

Ambient Operating Temperature
Continuous duty 0° to 71°C

Storage Temperature Range
−55°C to +85°C

Overload Protection

ELECTRICAL
Pre-set electronic current limiting at factory Internal failure protection by means of line fuse

THERMAL
By self-resetting thermostat

Overvoltage Protection
Built-in fixed overvoltage standard on all units. When a pre-set voltage is exceeded, the overvoltage protector crowbars the output and removes the inverter drive.

EMI

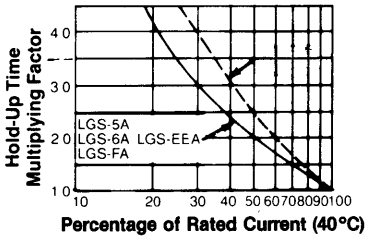
CONDUCTED
Conforms to MIL-I-6181D (FCC docket 20780 Class A—LGA Series)

Cooling
Convection cooled

DC Output Controls
Simple screwdriver voltage adjustment over the voltage range. For LGS-FA, output voltage adjustable by means of potentiometer on the front panel.

Metering (LGS-FA only)
Digital panel meter monitors output voltage/current by means of Volt/Amp selector switch.

Input and Output Connections
By heavy duty terminal blocks, heavy duty studs on all LGS-6A, EEA, and FA



Mounting
Two mounting surfaces, three mounting positions for LGS-5A. One mounting position for LGS-6A, EEA, and FA. For LGS-5C and 5A-D models derate current 10% for mounting positions in which the radiator fins are not vertical.

Power Failure
See graph for hold-up times vs load current on all units. (Except LGS-C and LGS-AD models). Hold-up time is guaranteed at full load, maximum output voltage, low line and 60 Hz.

Remote Sensing
Provision is made for remote sensing to eliminate effects of power output lead resistance on DC regulation

Fungus Proofing
All units are rendered fungi inert.

Military Specifications
The LGS series has passed the following tets in accordance with MIL-STD-810C.*

1) Low Pressure—Method 500 1, Procedure I.
2) High Temperature—Method 501 1, Procedure I & II.
3) Low Temperature—Method 502 1, Procedure I
4) Temperature Shock—Method 503.1, Procedure I
5) Temperature—Altitude—Method 504.1, Procedure I Class 2 (0°C operating)
6) Humidity—Method 507 1, Procedure I
7) Fungus—Method 508.1, Procedure I.
8) Vibration—Method 514.2, Procedure X & XI
9) Shock—Method 516.2, Procedure I & III.

MIL-I-6181D—Conducted and radiated EMI with one output terminal grounded

*5A, 6A and EEA packages only

Physical Data Package Model	Weight Lbs. Net	Lbs. Ship	Size Inches
LGS-5A	9-1/2	11	3-3/16 x 4-15/16 x 14-5/8
LGS-6A	18	21	3-3/16 x 7-1/2 x 15-1/8
LGS-EEA*	26	31	4-15/16 x 7-1/2 x 16-1/2
LGS-FA	38	48	3-1/2 x 19 x 14

Options (EEA & FA only)

AC Input Add[1] Suffix	For Operation at:	Price Qty. 1-14	Price Mixed Models Qty. 15 & up	Price Single Model Qty. 15 & up
—V	187-265 VAC* 47-440 Hz	12%	12%	10%

No derating for 47 Hz operation
[1]Add—V at the end of part number (LGS-FA-12-OV-R-V)

Accessories
Rack adaptors and chassis slides see page 79.

Guaranteed for 5 Years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years

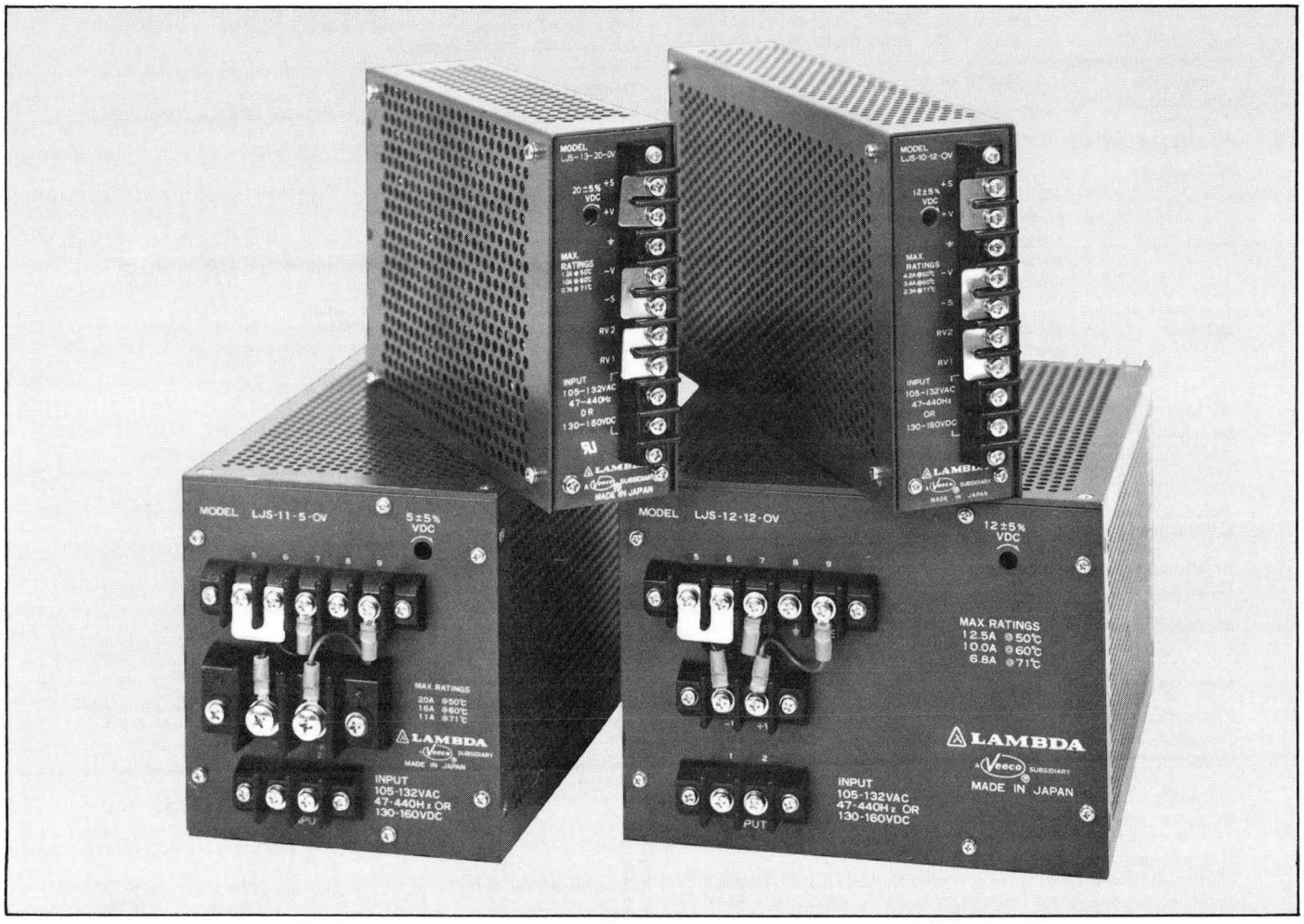
Recognized

CSA Certified ("D" option under evaluation)

MODEL	SERIES LGS 5A	LGS 6A	LGS-EEA	LGS FA
5 OV R	16 5	18 0	24 0	20 0
6 OV R	16 5	17 5	16 5	16 5
12 OV R	5 0	3 0	13 0	12 0
15 OV R	5 0	4 5	13 0	12 0
20 OV R	5 0	6 0	13 0	12 0
24 OV R	5 0	2 0	13 0	12 0
28 OV R	5 0	1 0	13 0	12 0
48 OV R	—	—	13 0	12 0

Hold-up times in milliseconds at 105 VAC, 60 Hz, Max. output power

Lambda LJ and LJA Series



Features—LJ and LJA Series

AC Input 105-132 VAC
187-265VAC (LJA Series "V" models)

DC Input
145 VDC ±10%
42-58VDC (See page 56-57)
("D" models only)

5-year guaranteed switching power supplies

57 models, 12 packages starting from 5V @ 5 amp

Efficiency 70%

Lambda engineering assures performance reproducibility and power supplies are designed for large volume production

Lambda built-in hybrid overvoltage protector shuts down inverters and crowbars output voltage

Isolated remote turn-on turn-off capability (LJ models only)

Serviceability-designed for ease of field repair

Rugged convection-cooled chassis

Heavy-duty barrier strip

Recognized

CSA Certified

Specifications of LJ and LJA Series

DC Output
Voltage range: refer to tables
regulation, line .....0.4% for line variations from 105-132 VAC.
regulation, load .....0.4% for load variations from 0 to full load.
remote programming resistance .....1000 ohms/volt nominal
remote programming voltage .....volt/volt
ripple and noise .....10 mV RMS, 50 mV p-p for 5 V and 6 V models; 15 mV RMS, 100 mV p-p for 12 V to 28 V
temperature coefficient .....0.03%/° C

AC Input
line .....105-132 VAC 47-440 Hz
hold-up time .....16 msec min at low line and full load, Vo max.

DC Input
145 VDC ± 10% (not for V option units).
42-58 VDC "D" models only. (See pgs. 56-57)

Overshoot
No overshoot on turn-on, turn-off, or power failure.

Efficiency
Greater than 70% (60% for LJS-13 and LJS-13A).

Ambient Operating Temperature Range
Continuous duty from 0° C to 71° C with load current ratings as shown in tables. No derating 0° to 50° C.

Storage Temperature Range
–55° C to 85° C.

Overload Protection
ELECTRICAL
External overload protection: automatic factory preset electronic current limiting circuit limits the output current thereby providing protection for the load as well as the power supply.
Internal failure protection: provided by fuse.

Input and Output Connections
Heavy duty terminal block on front of chassis.

Controls
DC output controls.
Simple screwdriver voltage adjustment over the voltage range.

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Remote Shutdown
Capability of remote on-off control for either positive ground or negative ground output. (not on LJA models). (TTL Compatible)

Overvoltage Protection
Built in fixed overvoltage protection on all model outputs.

Mounting
One mounting surface.

Options

AC Input[1]
(LJ A models only)

Model No.	For Operation at:	Price Qty. 1-14	Price Mixed Models Qty. 15 and up	Price Single Model Qty. 15 and up
—AV	170-265 VAC 47-440 Hz	12% or $30**	12% or $30**	10% or $30**

*For example: LJ-13-AV **Whichever is greater.

See Physical Data below. The LJA "V" option supplies sizes are larger than equivalent standard 115V input models power supplies.

[1]Consult factory for current ratings.

Physical Data

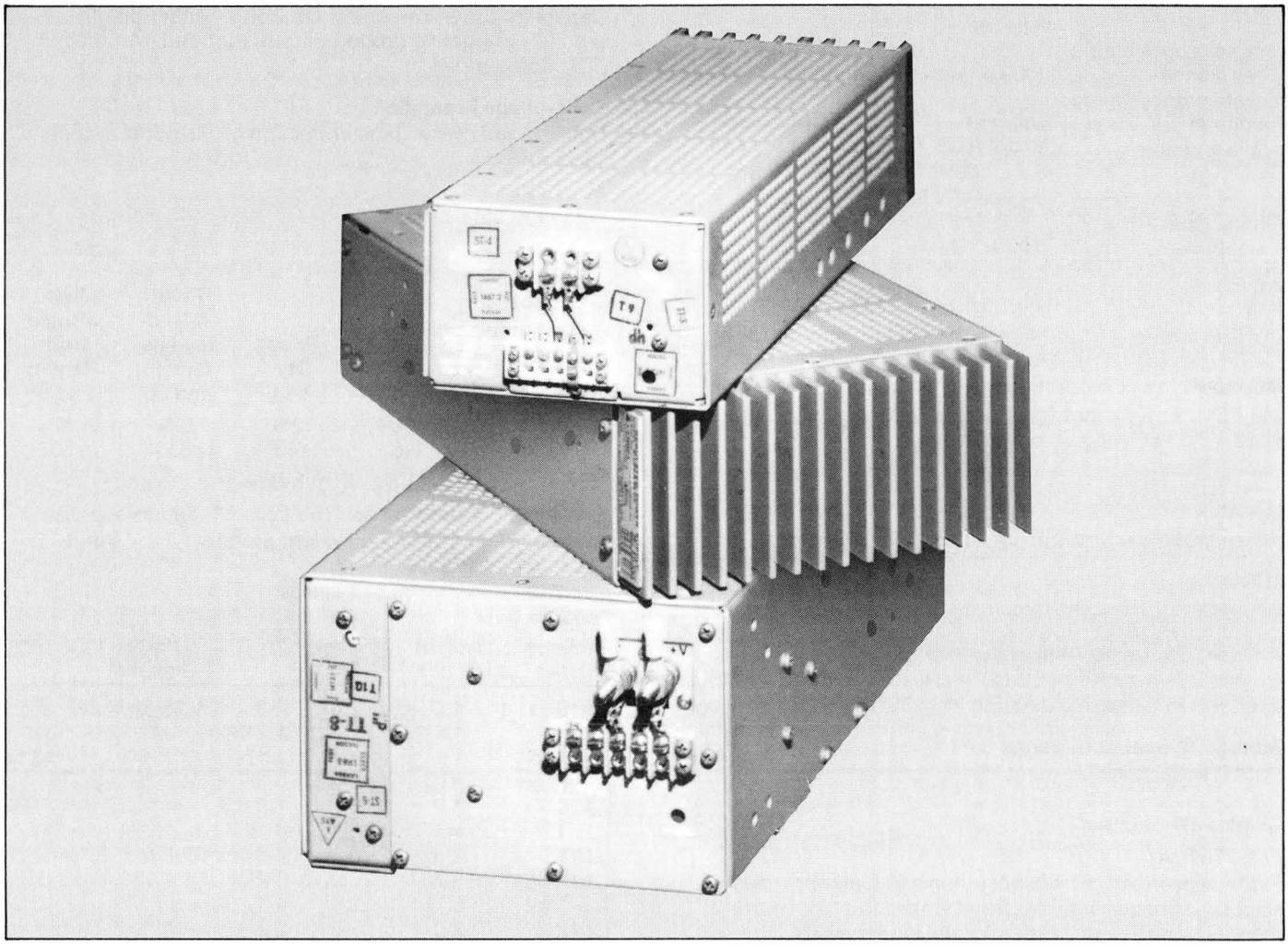
Package Model	Weight net (lbs)	Ship (lbs)	Size (inches)
LJ-13	1.6	2.4	4-3/4 × 1-25/32 × 6-5/16
LJ-13-AV	1.5	2.4	1-21/32 × 4-17/32 × 7-31/64
LJS-13A	1.5	2.4	4-17/32 × 1-11/16 × 7-13/64
LJ-10	2.0	3.0	4-3/4 × 1-25/32 × 7-7/8
LJ-10-AV	1.7	2.7	1-31/32 × 4-17/32 × 8-21/32
LJS-10A	1.7	2.7	4-17/32 × 2-3/64 × 7-13/64
LJ-11	5.5	6.3	4-3/4 × 4-5/16 × 7-15/16
LJ-11-AV	3.75	5.0	3-9/64 × 4-17/32 × 8-21/32
LJS-11A	3.75	5.0	4-17/32 × 3-63/64 × 7-13/64
LJ-12	7.0	7.5	4-3/4 × 6-1/4 × 7-15/16
LJ-12-AV	5.5	6.75	4-17/32 × 4-19/32 × 8-21/32
LJS-12A	5.5	6.75	4-17/32 × 6-7/32 × 7-13/64

Finish
Gray, Fed. Std. 595 No. 26081.

Guaranteed for 5 Years
5 year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

UL Recognized
CSA Certified

Lambda MLGA Series



Features—MLGA Series

5-year guaranteed switching power supplies

3 package sizes, up to 150A, up to 28 volts

Lambda MIL-T-27D grade 5 magnetics, vacuum impregnated varnished layer wound with electrostatic shield, Class H, 180°C, UL approved

Lambda CC4® Printed Circuit Board
plated thru-holes fungus inert, flame retardant
*Licensee of Photo Circuits Inc.

Sealed thermostat and pots

Hermetically sealed semiconductors

Convection cooled, no fans, or blowers needed

Lambda integrated control circuit

Lambda manufactured heavy-duty aluminum chassis

Chassis designed for easy servicing

MIL-R-26 type wire wound resistors

Computer grade hermetically sealed 10-year life electrolytic capacitor

Lambda overvoltage protector crowbars output and shuts down inverter

MIL-W-16878 Wire UL approved

Available with 110/208/230 VAC (EE Package only)

Ⓡ Recognized

CSA Certified

Specifications—MLGA Series

DC Output
Voltage range shown in tables.

Regulated Voltage
regulation, line .....0.1% for 105 to 132 VAC, (187-265 VAC on MLGS-EEA).

regulation, load .....0.1% for 0 to full load
ripple and noise .....10 mV RMS, 35 mV p-p for 5 and 6 V units
15 mV RMS, 100 mV p-p for 12 thru 28 V units
remote programming
resistance .....1000 ohms/volt
remote programming
voltage ..... volt per volt
Temperature
Coefficient ..... 0.03% per °C

AC Input
line .....105-132 VAC; 47-440 Hz
power .....450 watts max at 0.6 P.F. for MLGS-5A
970 watts max at 0.7 P.F. for MLGS-6A
1350 watts max at 0.6 P.F. for MLGS-EEA

DC Input .....145 VDC ± 10%, MLGS-5A, 6A packages only.
Efficiency .....64% minimum

Soft-start Circuit: (MLGS-6A, MLGS-EEA)
Limits in-rush current at turn-on.

Overshoot
No overshoot on turn-on, turn-off, or power failure.

Ambient Operating Temperature
Continuous duty 0° to 71°C.

Storage Temperature Range
−55°C to +85°C.

Overload Protection
ELECTRICAL
Electronic current limiting pre-set at factory.

THERMAL
By self-resetting thermostat.

Overvoltage Protection
Built-in fixed overvoltage protection standard on all units. When a pre-set voltage is exceeded, the overvoltage protector crowbars the output and removes the inverter drive.

EMI
CONDUCTED
Conforms to MIL-I-6181D (MIL-STD-461 with Sprague filter) and FCC docket 20780 class A.

COOLING
Convection cooled.

DC Output Controls
Simple screwdriver voltage adjustment over the voltage range.

Input and Output Connections
By heavy duty barrier strip; heavy duty studs on MLGS-6A, and EEA.

Mounting
Two mounting surfaces, three mounting positions for MLGS-5A. One mounting position for MLGS-6A, and EEA.

Power Failure
See graph on standard LG units for hold-up time vs. load current on all units. Hold-up time is guaranteed at full load maximum output voltage and low line.

Remote Sensing
Provision is made for remote sensing to eliminate effects of power output lead resistance on DC regulation.

Fungus Proofing
All units are rendered fungi inert.

Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
MLGS-5A	13-1/2	15	3-3/16 x 4-15/16 x 14-5/8
MLGS-6A	20	23	3 3/16 x 7-1/2 x 15-1/8
MLGS-EEA	26	31	4-15/16 x 7-1/2 x 16-1/2

Options MLGS-EEA only

AC Input Add Suffix	For Operation at:	Price Qty. 1-14	Price Mixed Model Qty. 15 & up	Price Single Model Qty. 15 & up
—V	187-265 VAC 47-440 Hz	12%	12%	10%

Consult factory for derating, if any.

Accessories
Rack adapters see page 79.

Guaranteed for 5 Years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

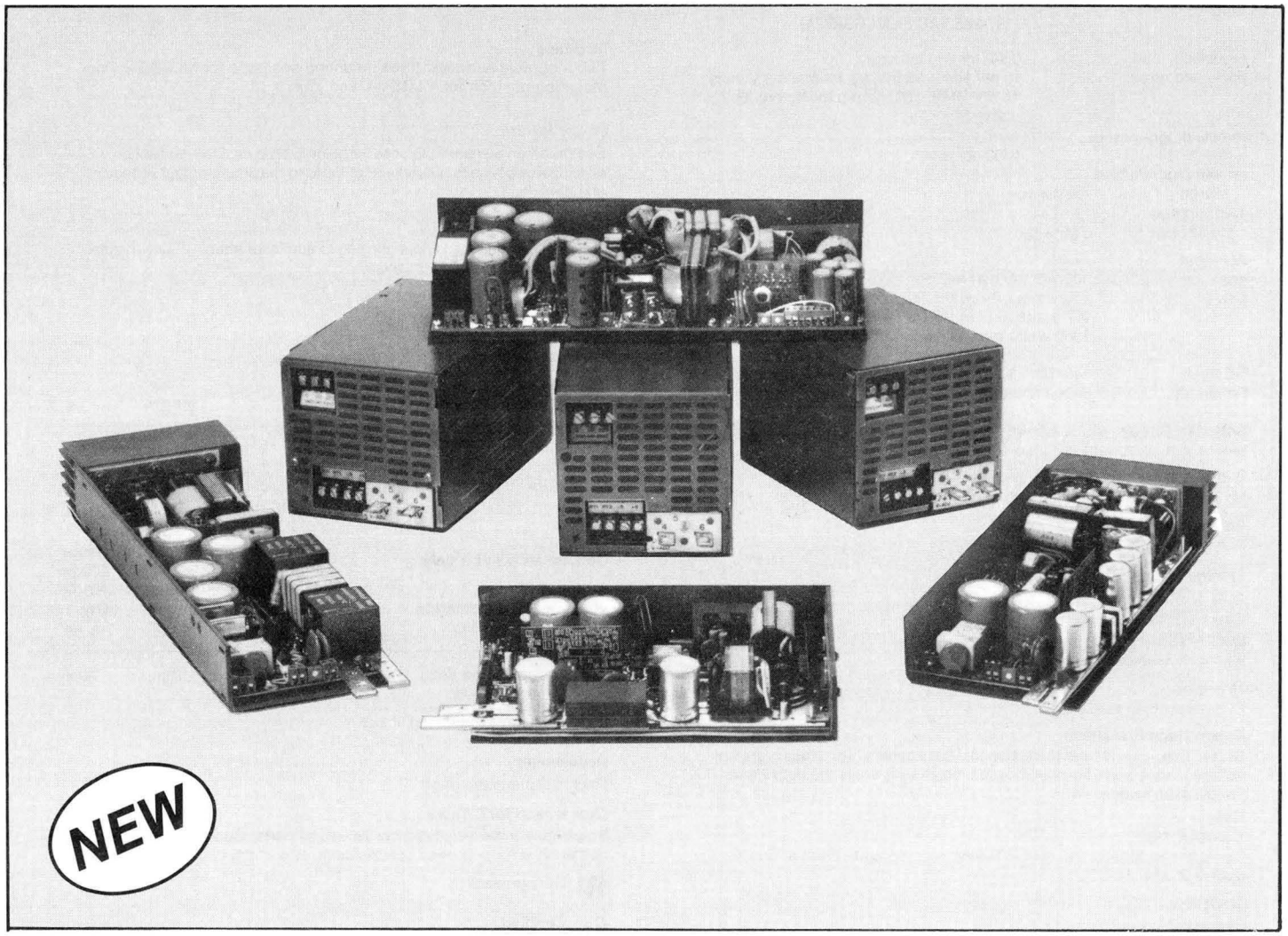
Recognized

CSA Certified

MLGA Series meets these MIL Standards.

MILITARY SPECIFICATION	STANDARD MLG SERIES MEETS:
MIL-STD-810C Low Pressure	Method 500.1 Proc. I
MIL-STD-810C High Temp.	Method 501.1 Proc. I, II
MIL-STD-810C Low Temp.	Method 502.1 Proc. I
MIL-STD-810C Temp. Shock	Method 503.1 Proc. I
MIL-STD-810C Temp. Alt.	Method 504.1 Proc. I Class 2 (0°C operating)
MIL-STD-810C Humidity	Method 507.1 Proc I, II
MIL-STD-810C Fungus	Method 508.1 Proc. I
MIL-E-16400 Salt Fog	¶3.3.5.4.2 Naval Sheltered Environment
MIL-STD-810C Sand & Dust	Method 510.1 Proc. I
MIL-STD-810C Explosive Atmosphere	Method 511.1 Proc. I
MIL-STD-810C Vibration	Method 514.2 Proc. VIII, X, XI
MIL-STD-810C Shock	Method 516.2 Proc. I, III, V
MIL-S-901C High Shock	Grade A, Class 1, Type A
MIL-I-6181D RFI Conducted	Yes
MIL-STD-461 RFI Conducted	Yes—with external filter
MIL-T-27C Transformer	Grade 5
MIL-STD-167 Vibration	Type I
MIL-STD-1399 Voltage Transient	Type III Power

Lambda LFS Series



Features—LFS Series

54 Models in 6 package sizes

Power density to 4.0W/in³. . . the highest available for off-the-shelf products

In-rush current limiting

Built-in overvoltage protection

Input/output isolation of 3750VRMS (8mm spacing)

Up to 48V, up to 200A

Dual input 95 to 132VAC/187 to 265VAC, 47 to 440 Hz (user selectable)

Operation from −10°C to +60°C

Remote turn-on/turn-off

Designed to meet UL 478; CSA 22.2, 143 and 154; VDE 0806; and IEC 380.

Specifications — LFS Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE
regulation, line .....0.1% from 187 to 265 VAC;
0.1% from 95 to 132 VAC.
regulation, load .....0.1% from 0 to full load.
ripple and noise.....15mV RMS, 75mV p-p for 2V, 5V and 6V models.
20mV RMS, 150mV p-p for 12V through 28V models.
35mV RMS, 200mV p-p for 48V models.
remote programming resistance .....1000 Ω/V nominal.
remote programming voltage .....volt per volt.
temperature coefficient.....0.03%/°C

AC Input
(User selectable.)

line .....95 to 132 VAC / 187-265 VAC, 47-440 Hz

power.....LFS-43: 326 watts maximum.
LFS-44: 440 watts maximum.
LFS-45: 682 watts maximum.
LFS-46: 882 watts maximum.
LFS-47: 1103 watts maximum.
LFS-48: 1470 watts maximum.

RMS current .....5.7A RMS maximum on LFS-43.
7.5A RMS maximum on LFS-44.
12.0A RMS maximum on LFS-45.
15.0A RMS maximum on LFS-46.
18.0A RMS maximum on LFS-47.
25.0A RMS maximum on LFS-48.

Efficiency.....55% minimum on 2V models.
75% minimum on 5V through 15V models.
80% minimum on 20V through 48V models.

DC Input.....260 to 370 VDC.

Overshoot
No overshoot at turn-on, turn-off or power failure.

Ambient Operating Temperature
Continuous duty 0° to 60°C with suitable derating above 40°C. Guaranteed turn-on at −10°C with reduced specifications.

Overload Protection

ELECTRICAL
External overload protection. Automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Hold Up Time
2V, 5V and 6V models will remain within regulation limits for at least 16.7 msec after loss of AC power when operating at full load, Vo max and 105 VAC input at 60 Hz. (When configured at 220V input: 20 msec holdup when operating at maximum output power and 210 VAC input at 50 Hz.)

In-Rush Current Limiting
All models are provided with in-rush current limiting to limit the current to a preset value.

Overvoltage Protection
Non-crowbar, inverter shutdown type OV protection is standard on all models.

Cooling
LFS-43, 44, 45 are convection cooled. LFS-46, 47, 48 are fan cooled.

DC Output Controls
Simple screwdriver adjustment over entire voltage range.

Input and Output Connections
All input, sensing and remote on/off connections are made via PC board mounted terminal block. DC output connections are made via heavy duty bus bars. Ground connections are made via chassis stud.

Mounting
One mounting surface and one mounting position on LFS-43, 44, 45. One mounting surface, multiple mounting positions on LFS-46, 47, 48.

Remote Turn On/Turn-Off
TTL compatible signal enables remote turn-on/turn-off of the power supply. A voltage of 2.8V to 5.0V applied to remote on/off terminals will initiate turn-off. Open circuit or short circuit condition, or a zero to 0.5V signal will cause turn-on.

Remote Sensing
Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation.

Isolation Rating
3750V RMS input to output, (8mm spacing). 1500V RMS input-to-ground. 500mV RMS output-to-ground.

Physical Data

Package Model	Lb. Net	Lb. Ship	Size (In.)
LFS-43	3.00	4.00	1.9 x 4.75 x 9.125
LFS-44	3.50	4.50	1.9 x 4.75 x 11.75
LFS-45	6.00	7.00	1.9 x 4.75 x 16
LFS-46	8.75	11.75	5 x 4.875 x 7.25
LFS-47	9.19	12.19	5 x 4.875 x 8.875
LFS-48	12.31	15.31	5 x 4.875 x 11

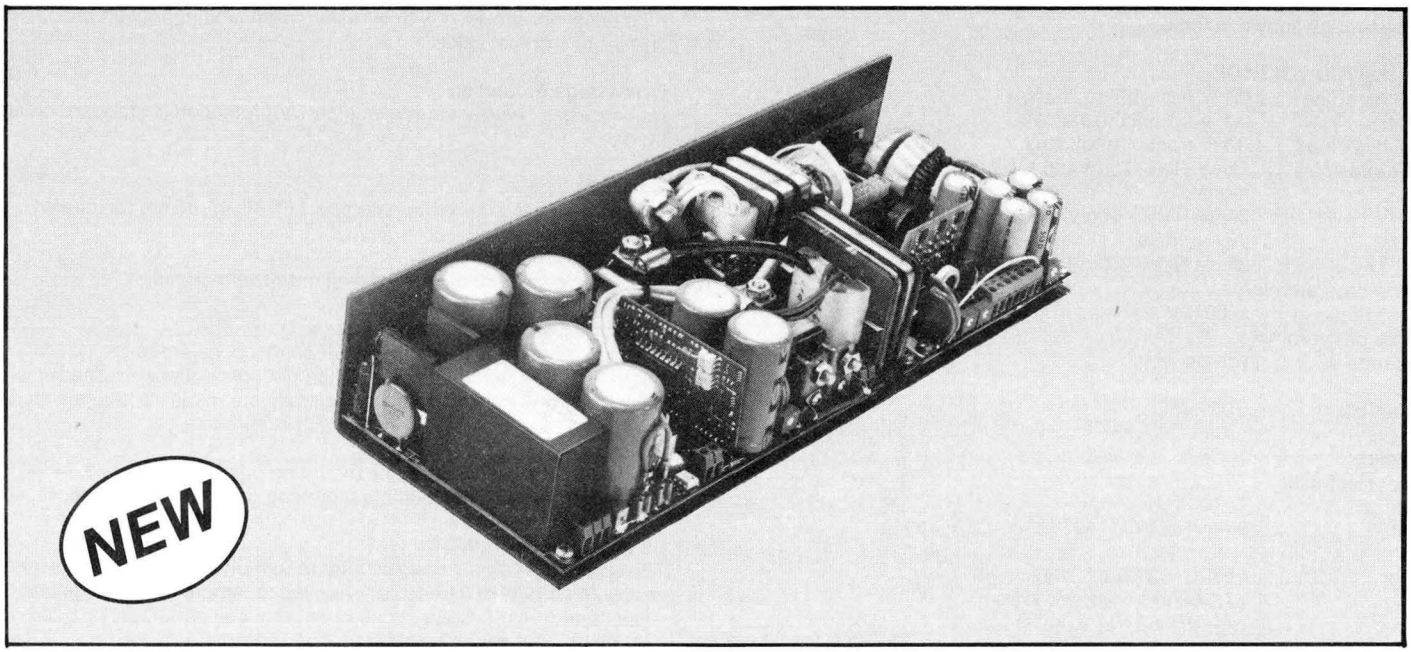
Finish
Grey, Fed. Std. 595, No. 26081

Accessories
LRA-17 Rack Adapter available. LRA-15 Rack Adapter also available on LFS-43, 46, 47, and 48. Cable system available on all models (consult factory).

Guaranteed for 1 Year
One-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of one year.

/CSA/VDE/IEC
Under evaluation.

Lambda WATTBOX™ LFQ Series



Principles of Operation

A WATTBOX is a standard Lambda off-the-shelf, multiple output, dual input, high density switching power supply whose the outputs are customized by the customer's load.

Each Lambda WATTBOX provides: One 5V output, two 12V to 15V adjustable outputs, and one 24V to 28V adjustable output. Each output is independently isolated from each other. Simply select the required voltage, and the load will select the current.

The WATTBOX has two built-in limits: the total output power of the package, and the maximum available current of each output. As long as the user's requirements do not exceed either limit, the power supply will operate to published specifications.

For example: Lambda WATTBOX LFQ-27

Maximum Output Power: 475 Watts

Maximum Ratings:
5V @ 75A
12V @ 9.0A
12V @ 9.0A
24V @ 1.5A

The current on each output can be used up to the maximum value shown, as long as the maximum output power of the package (475 Watts in this example) is not exceeded. Any output combinations are allowable, subject to the above constraints.

Actual Load Requirements

Example One		**Example Two**	
5V @ 50A	250W	5V @ 65A	325W
15V @ 4.0A	60W	12V @ 6.0A	72W
12V @ 7.0A	84W	12V @ 1.0A	12W
24V @ 1.0A	24W	24V @ 0.6A	14.4W
Total Power	**418 Watts**	**Total Power**	**423.4 Watts**

Both of these examples would use the same power supply. . . The Lambda LFQ-27.

Should the maximum current rating be exceeded on any individual output, all outputs will drop. If the total output power of the package exceeds the maximum, the WATTBOX will go into a current limit mode. Therefore, the power supply cannot be damaged by either current or power overloads.

Using the Lambda WATTBOX eliminates the need for stocking many different custom units for the same output voltage requirements. In addition, minor load changes can easily be accommodated by the same unit. . . without modifications.

The WATTBOX LFQ Series incorporates many of the same design features as the popular LFS Series, such as surface mount technology, and Lambda's unique new monolithic PWM control circuit. These technological advances make the WATTBOX the most reliable, cost-effective, quad output switcher on the market today. The WATTBOX is designed to meet UL, CSA, VDE and IEC specifications and is available at competitive prices, for one day delivery from stock.

Specifications—WATTBOX™ LFQ Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line ..... 0.1% from 187 to 265 VAC; 0.1% from 95 to 132 VAC.

regulation, load ..... 0.1% for load variations from 0 to full load for main output; 1% for 12V/15V outputs*; 2% for 24V/28V outputs*; (*5V outputs require a preload of 12.5A on LFQ-26, 19.0A on LFQ-27, 25.0A on LFQ-28 at full output power.)

ripple and noise ..... 15mV RMS, 100mV p-p for 5V outputs. 25mV RMS, 150mV p-p for 12V/15V outputs. 25mV RMS, 250mV p-p for 24V/28V outputs

cross regulation ..... 5V outputs: 0.1% for load variations on auxiliary outputs from no load to full load. (0% for LFQ-26); Auxiliary outputs: 0.1% for load variations on 5V output from preload to full load current.

remote programming resistance ..... 1000 Ω/V nominal (main output only).

remote programming voltage ..... volt per volt.

temperature coefficient ..... 0.03%/°C

AC Input (User selectable.)

line ..... 95 to 132 VAC / 187-265 VAC, 47-440 Hz

power ..... LFQ-26: 434 watts maximum. LFQ-27: 633 watts maximum. LFQ-28: 880 watts maximum.

RMS current ..... 7.0A RMS maximum on LFQ-26. 11.0A RMS maximum on LFQ-27. 15.0A RMS maximum on LFQ-28.

Efficiency ..... 75% minimum on LFQ-26, 27. 72% minimum on LFQ-28.

DC Input ..... 260 to 370 VDC. (LFQ 27, 28 can be configured for 220V input.)

Overshoot
No overshoot at turn-on, turn-off or power failure.

Storage Temperature Range
−55°C to +85°C.

Ambient Operating Temperature
Continuous duty 0° to 60°C with suitable derating above 40°C. Guaranteed turn-on at −10°C with reduced specifications.

Overload Protection

ELECTRICAL

External overload protection. Automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Hold Up Time
All outputs will remain within regulation limits for at least 16.7 msec after loss of AC power when operating at maximum output power and 105 VAC input at 60 Hz. (When configured at 220V input: 20 msec holdup when operating at maximum output power and 210 VAC input at 50 Hz.)

In-Rush Current Limiting
The turn-on in-rush current will not exceed 40 amps peak on LFQ-26. (75 amps peak on LFQ-27, 28.)

Overvoltage Protection
5V outputs only. If output voltage exceeds a preset value, inverter drive is removed.

Cooling
The LFQ-26 is convection cooled. The LFQ-27, 28 are fan cooled. A fan failure circuit will shutdown the inverter in the event of fan failure or interference of fan rotation. AC input power must be momentarily interrupted to reduce output after fault condition is corrected.

LED Indicator
An LED fan failure indicator will illuminate in the event of fan failure or interference of fan rotation.

DC Output Controls
Simple screwdriver adjustment over entire voltage range.

Input and Output Connections
AC input, 5V DC sensing and remote turn-on/turn-off are via pc board mounted barrier strips for LFQ-27, 28, and via pc board mounted terminal block for LFQ-26. Ground connections are made via chassis stud. DC output is made via bus bar for 5V outputs. Auxiliary outputs are made via pc board mounted barrier strips for LFQ-27, 28 and via pc board mounted terminal block for LFQ-26.

Mounting
Two mounting surfaces and two mounting positions on LFQ-26. LFQ-27, 28 have one mounting surface. Forced air cooling will allow multiple mounting positions.

Remote Turn-On/Turn-Off
TTL compatible signal enables remote turn-on/turn-off of the power supply. A voltage of 2.8V to 5.0V applied to remote on/off terminals will initiate turn-off. Open circuit or short circuit condition, or a zero to 2.8V signal will cause turn-on.

Remote Sensing
Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation. (5V outputs only.)

EMI
Conducted EMI conforms to FCC docket 20780 Class A and VDE 0871 Class A above 150 kHz.

Isolation Rating
3750V RMS input to output, (8mm spacing).

Physical Data

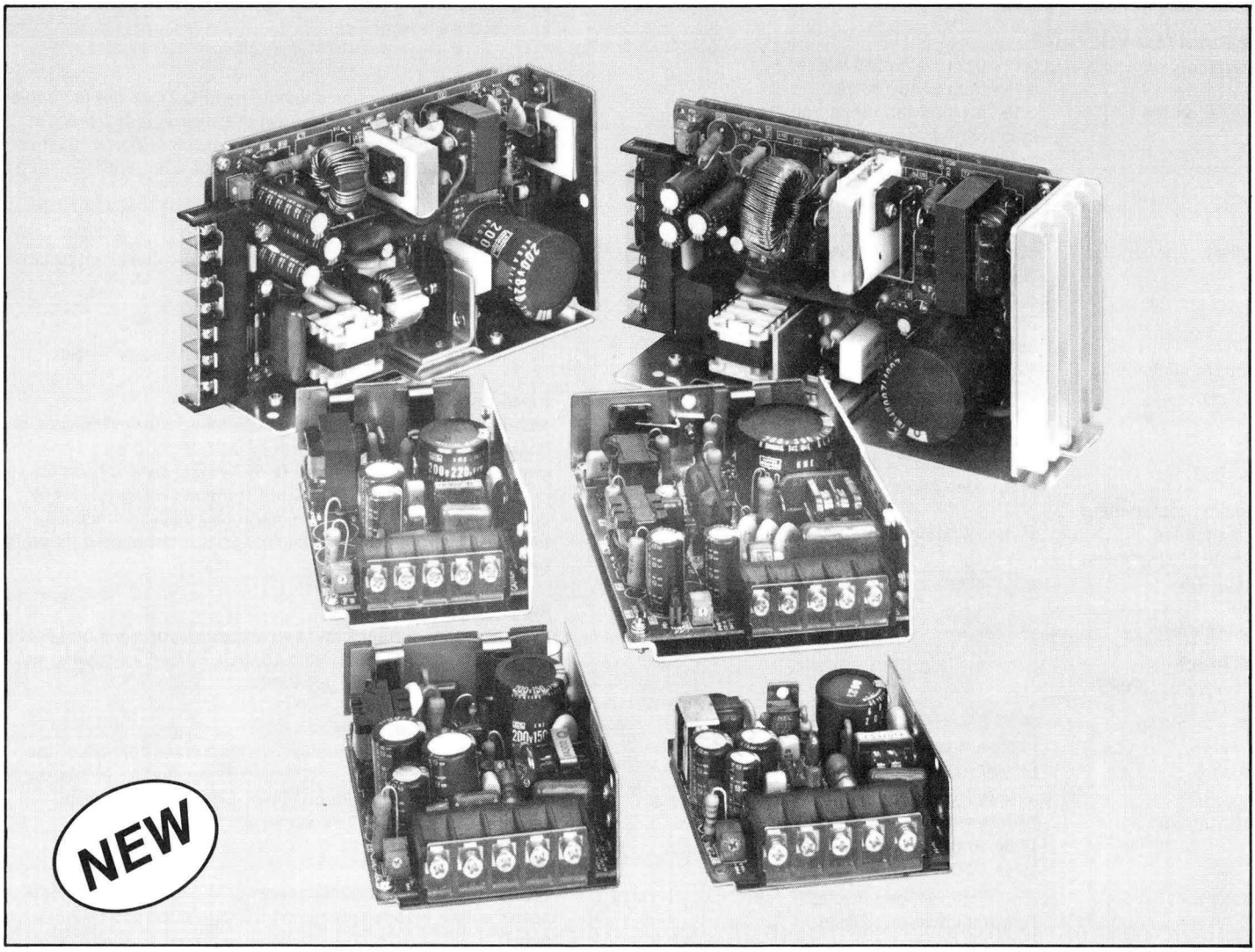
Package Model	Lb. Net	Lb. Ship	Size (In.)
LFQ-26	6	7	2.5 x 4.75 x 13
LFQ-27	12	14	4.0 x 4.875 x 11
LFQ-28	13	15	5.0 x 4.875 x 11

Finish
Grey, Fed. Std. 595, No. 26081.

Guaranteed For 1 Year
One-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of one year.

/CSA/VDE/IEC
Under evaluation.

Lambda LSS Series



Features—LSS Series

1-Year Guarantee

36 Models in 6 package sizes

Delivers over 2.2w/in^3

Built-in overvoltage protection on all models

LED status indicator

In-rush current limiting

Up to 28V, up to 30A

0 to 60°C (full output to 50°C)

2000 VAC isolation

Convection cooled, no fans or blowers required

All input and output connections made via barrier strip terminals

Specifications—LSS Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE
regulation, line .....0.4% for input variations from 85-132 VAC or 132-85 VAC.
regulation, load .....0.8% for load changes from zero to full load and from full load to zero.
ripple and noise.....15mV RMS for all models;
120mV pk-pk for 5V and 6V models;
150mV pk-pk for 12V and 15V models;
200mV pk-pk for 24V and 48V models.
temp. coeff. .....0.02%/°C.

AC Input
line .....85-132VAC, 47-440 Hz.
efficiency.....68% minimum for 5V and 6V models of LSS-35; 70% minimum for 5V and 6V models of LSS-34, LSS-36, 12V and 15V models of LSS-35; 73% minimum for 12V and 15V models of LSS-34, 24V and 28V models of LSS-35; 75% minimum for 5V and 6V models of LSS-37, 12V and 15V models of LSS-36; 78% minimum for 5V and 6V models of LSS-38, LSS-39, 24V and 28V models of LSS-34; 79% minimum for 12V and 15V models for LSS-37, 24V and 28V models of LSS-36; 80% minimum for 12V and 15V models of LSS-38, LSS-39; 81% minimum for 24V and 28V models of LSS-37; 82% minimum for 24V and 28V models of LSS-38, LSS-39.
DC input .....110-175 VDC.

Overshoot
No overshoot at turn-on, turn-off or power failure.

Ambient Operating Temperature
0-60°C with suitable derating above 50°C.

Storage Temperature
-30°C to +85°C.

Overload Protection
External overload protection, automatic electronic current limiting circuit, limits output current to a safe, preset value, thereby protecting the load as well as the power supply.

Overvoltage Protection
Overvoltage protection is standard on all models. If output voltage increases above a preset level, inverter drive is removed.

In-Rush Current Limiting
The turn-on in-rush current will not exceed 24A typical for LSS-34; 30A typical for LSS-35, LSS-36, LSS-37; 15A typical for LSS-38, LSS-39.

Hold Up Time
5V and 6V models will remain within regulation limits for at least 16.7 msec after loss of AC power when operating at full load, nominal output voltage and 100 VAC input voltage.

Cooling
Convection cooled, no fans or blowers needed.

DC Output Controls
Simple screwdriver adjustment.

Remote Sensing
Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation for LSS-38 and LSS-39.

Isolation Rating
2000V RMS input to output.

Output Status Indicator
LED indicates presence of output voltage.

Mounting
Two mounting surfaces, two mounting positions. One mounting surface and one mounting position for LSS-39. Some derating may be required in horizontal mounting position.

Input and Output Connections
All input and output connections are made via barrier strip terminals.

Physical Data

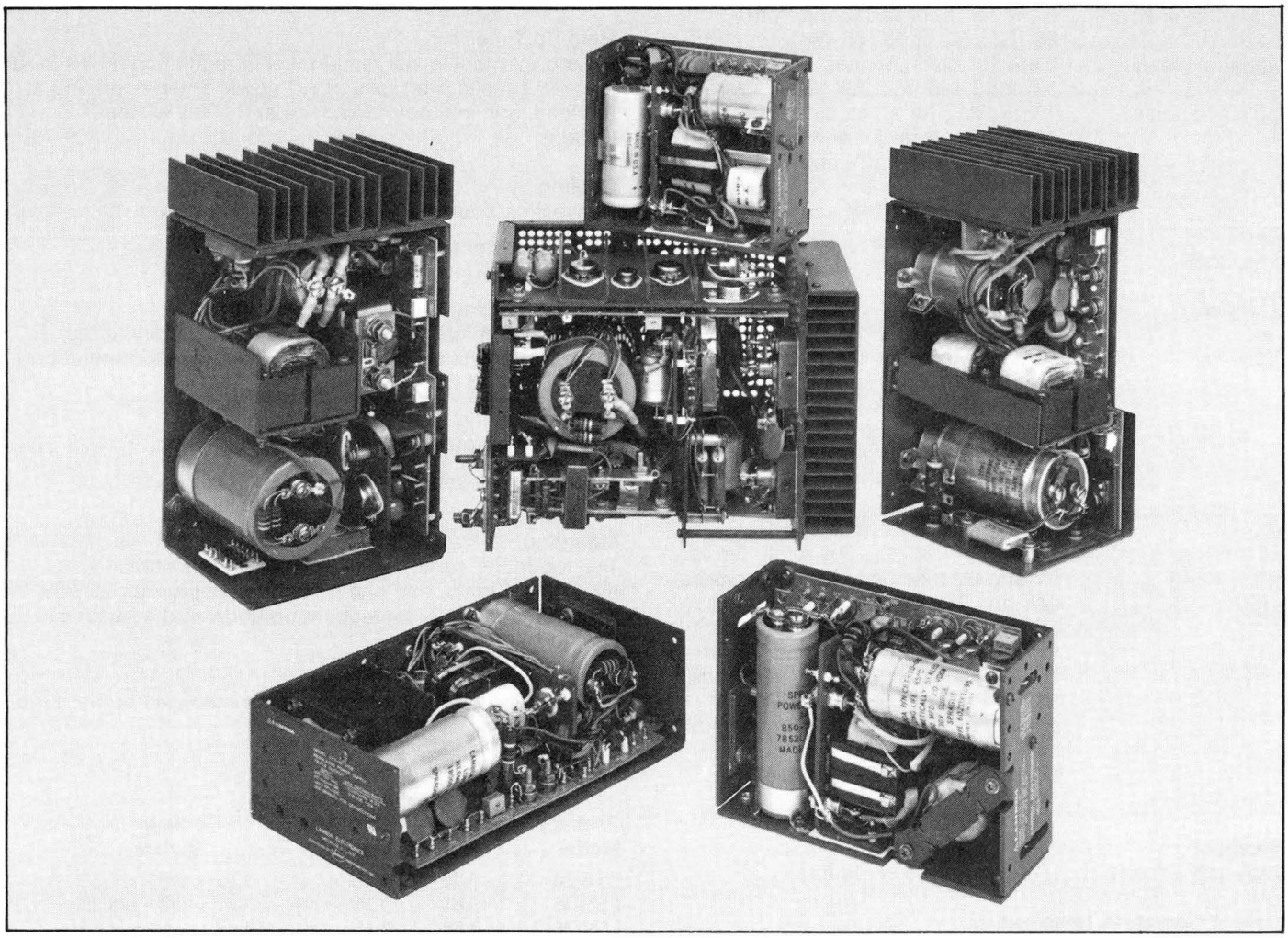
Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LSS-34	0.46	0.55	1.22 x 2.91 x 2.83
LSS-35	0.64	0.75	1.42 x 2.91 x 3.35
LSS-36	0.66	0.75	1.54 x 2.91 x 4.13
LSS-37	0.88	1.00	1.54 x 3.74 x 4.72
LSS-38	1.54	1.85	2.17 x 3.74 x 6.30
LSS-39	2.31	2.50	2.56 x 3.74 x 7.09

Finish
Aluminum.

Guarantee
One year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of one year.

VDE—Under evaluation.
CSA—Under evaluation.

Lambda LY Series



Features—LY Series

1-year guarantee

Lambda 180° C Class H—Varnish Dipped Choke

Lambda 130° C Varnish Dipped Transformer

Hermetically Sealed Switching Transistors

Sprague 36D high temperature, long life electrolytic capacitor

Sprague 636D computer grade, electrolytic capacitor

Potentiometer fully enclosed cermet

120 VAC input or 220 VAC input (V Option)

40 Single, 6 Triple output models

Lambda CC4®* Printed Circuit Board plated thru-holes, fungus inert, flame retardant

Lambda heavy duty ⅛ inch thick aluminum sheet metal

MIL-R-22684 type film resistors

MIL-W-16878 Wire

ᖰU —Recognized

CSA—Certified

TUV—Licensed (V Option)

*Licensee of Photo Circuits Inc.

LY Series—Specifications

DC Output
Voltage range shown in tables.

Regulated Voltage

regulation line 0.1%
regulation, load . . . . . 0.1% for single output models and 5V output of LYT, 100mV from 0 to full load for dual outputs of LYT.
ripple and noise . . . . . 10mV RMS, 75mV p-p for 5V and 6V outputs of LYS models, and 5V output of LYT, 15mV RMS, 150mV p-p for 12V through 28V outputs of LYS models, and dual output of LYT, 25mV RMS, 250mV p-p for all 48V models.
temperature coefficient . . . . . 0.03%/°C
remote programming resistance . . . . . 200 Ω/V (Not applicable to dual output of LYT)
remote programming voltage . . . . . volt per volt (not applicable to dual output of LYT)

AC Input
line . . . . . 105 to 132 VAC, 47-440 Hz (187 to 265 VAC, 47-440 Hz for LYS-EE)
power . . . . . 130 watts max for LYS-Y models, 200 watts max for LYS-X models, 380 watts max for LYS-W models, 510 watts max for LYS-P models, 700 watts for LYS-K models, 1150 watts for LYS-D models, 190 watts max for LYT-W models, 420 watts max for LYT-P models, 840 watts max for LYT-D models, 1800 watts max for LYS-EE models.
efficiency . . . . . 60% min for LYS-Y models, 64% min LYS-X and LYS-W models, 67% min for LYS-P models, 65% min for LYS-K&D models, 57% min for LYT-W models, 52% min for LYT-P models, 58% min for LYT-D models, 78% min for LYS-EE-5V and 6V, 80% min for LYS-EE-12V and 15V, 82% min all other LYS-EE models.
power failure hold up time . . . . . 5V and 6V models and the LYT & LYS-D models will remain within regulation limits for at least 16.67 msec after loss of AC power when operating at full load, V_{OUT} max and minimum input at 60 HZ.

DC input . . . . . 145VDC ± 10% (does not apply to LYS-EE models)

Overshoot
No overshoot at turn-on, turn-off, or power failure.

Ambient Operating Temperature
Continuous duty 0° to 60° with suitable derating shown in tables.

Storage Temperature Range
−55°C to +85°C

Overload Protection
Electrical
External overload protection, automatic electronic current limiting circuit limits the output current (short circuit output current LYT only) to a preset value, thereby providing protection for the load as well as the power supply.

Cooling
Convection cooled, no fans or blowers needed.

Soft Start
LYS-D, LYS-EE and LYT-D models only, limits in-rush current at turn-on.

EMI (For 105-132 VAC Input Units Only)
EMI suppression cover available an accessory (exception LYS-EE). Provides additional filtering sufficient for compliance to FCC Docket #20780. Class A conducted; perforated cover minimizes radiated emission. Customer input and output connections via barrier strips mounted on cover and terminal board mounted on cover of LYS-P, LYS-D, LYS-K, and LYT-P models. Output current must be derated 10% with cover, 15% for LYT-D and LYS-D with cover. Ripple and noise when cover is used is 10mV RMS-35mV p-p for 5 and 6V units. 15mV RMS, 100mV p-p for 12 thru 28V units. See page 78 for cover model and price for each LY series.

DC Output Controls
Simple screwdriver voltage adjustment over the entire voltage range. (Not applicable to dual output of LYT.)

Mounting
Three mounting surfaces and three mounting positions. (One mounting surface and one mounting position for LYS-P, LYS-K, LYS-D, LYS-EE, LYT-P, and LYT-D models.)

Input and Output Connections
Solder terminals located on printed circuit boards, (studs for LYS-X, W, P, K and 5V output of LYT-W and LYT-P, and heavy duty studs for LYS-D and LYT-D). When EMI suppression cover is used connections through barrier strips or terminal board mounted on cover. Barrier strips for AC input of LYS-D, LYT-D. LYS-EE has 1-inch heavy duty copper buss bars for DC output and solder terminals adjacent to output buss bars for DC sensing.

Remote Sensing
Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation. (Sum of dual outputs can be remotely sensed on triple models.)

PHYSICAL DATA

Package Model	Weight (without cover) Lbs. Net	Lbs. Ship	Size Inches
LYS-Y	2-3/4	3	5-5/8x4-7/8x2-1/2(w/o cover)
	—	—	5-5/8x4-7/8x3-5/16 (w cover)
LYS-YAV	2-3/4	3	6.5x4 33x2.5 (w/o cover)
LYS-X, XV	4	4-1/2	7x4-7/8x2-3/4 (w/o cover)
	—	—	7x4-7/8x3-5/16 (w cover)
LYS-W, WV	5-1/2	6	9x4-7/8x2-3/4 (w/o cover)
	—	—	9x4-7/8x3-3/4 (w cover)
LYT-W, WV	6	6-1/2	9x4-7/8x2-3/4 (w/o cover)
	—	—	9x4-7/8x4-5/32 (w cover)
LYS-P, PV	8-1/2	10-1/2	10x4-7/8x4-7/16 (w/o cover)
	—	—	10x4-7/8x5-9/16 (w cover)
LYT-P, PV	9-3/4	12-1/4	10x4-7/8x4-7/16 (w/o cover)
	—	—	10x4-7/8x5-5/8 (w cover)
LYS-K, KV	11	13-1/2	10x4-7/8x5-1/2 (w/o cover)
	—	—	10x4-7/8x7-1/2 (w cover)
LYS-D, DV	12-1/2	15-1/2	7-1/2x9-1/2x4-13/16 (w/o cover)
	—	—	7-1/2x11x4-13/16 (w cover)
LYT-D	13	16	7-1/2x9-1/2x4-13/16 (w/o cover)
	—	—	7-1/2x11-3/16x4-13/16 (w cover)
LYS-EE	23	33	7½x16½x4-13/16 (w and w/o cover)

OPTIONS

AC Input
(LYS-Y, X, W, P, K, D and LYT-W, P models only).

Add[1] Suffix	For Operation at:	Price[2]
—V	187-265 VAC 47-440 Hz	12% or $30†

† Whichever is greater.
[1] Add V after package size (LYS-XV-5). ("AV" on Y package)
[2] Consult factory for voltage and current ratings and quantity prices

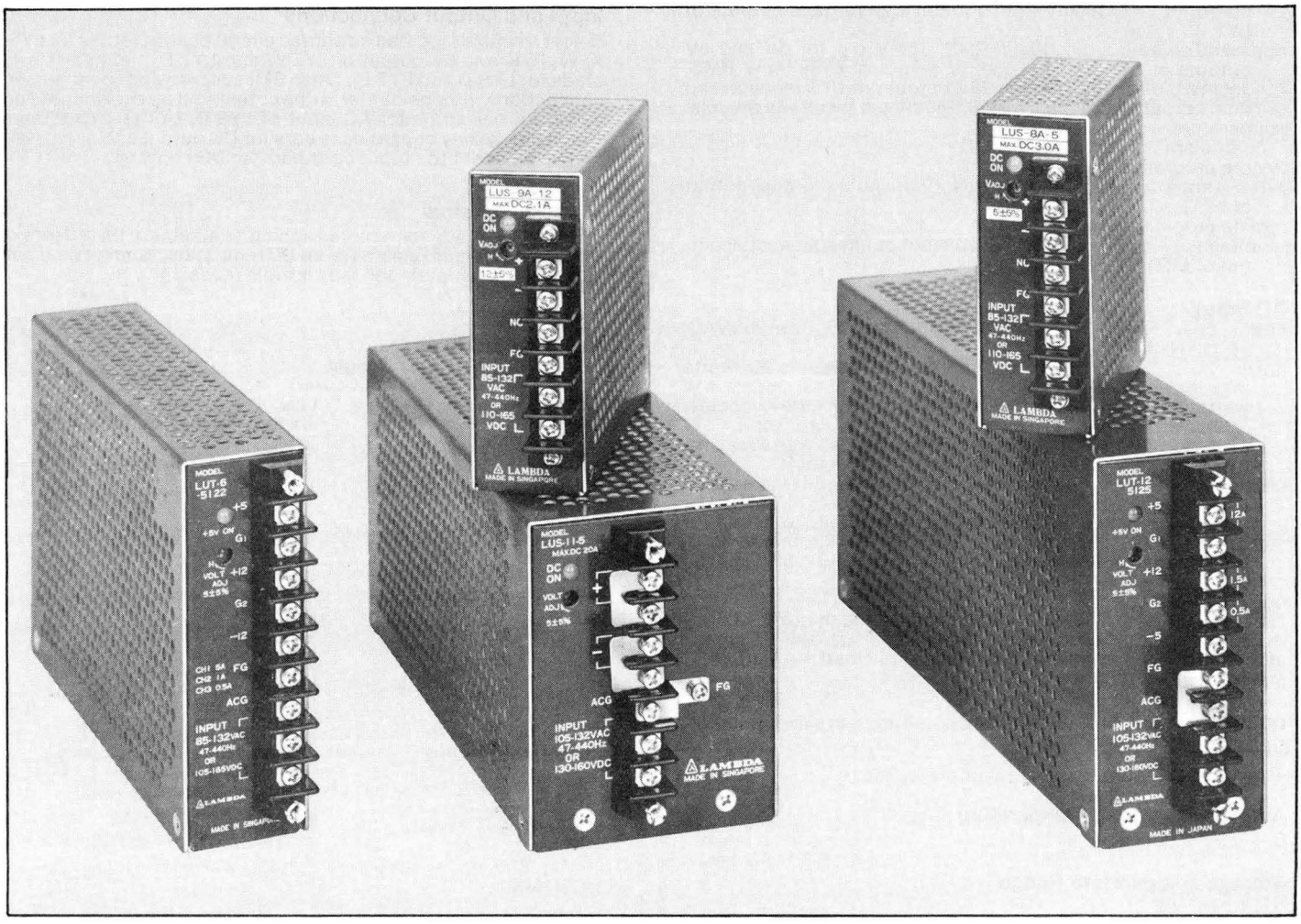
Finish
Gray, Fed. Std. 595, No. 26081.

UL / CSA/TUV
UL recognized and CSA certified. TUV licensed (V Option Sets).

Accessories
Overvoltage protection built in on LYS-D, LYS-EE, LYS-K, (5V and 6V models), and LYT-D (5V output only). Lambda will mount an overvoltage protector to other standard LY models. Consult factory for part numbers and price. See page 77 for OV specifications. LRA-14 through LRA-17 Rack Adapters available. Not all models fit in LRA-14. See page 79. EMI suppression cover available—see page 78.

Guaranteed for 1 Year
One year guarantee includes labor as well as parts.

Lambda LU and LUA Series



Features—LU and LUA Series

1 year guarantee

1/3 the weight, 60% the size, twice the efficiency of low-cost linears

27 single, 10 dual, 15 triple output models

Up to 48V; up to 20 Amps

Indicator light

Convection cooled-no fans or blower needed

AC input 105-132 VAC or 187-265 VAC (V Option)

Heavy duty barrier strip

Truly modular for custom configurations

Built in OV standard on LUS-9A, LUS 10A, LUS 11, main output of LUT packages and lower voltage of LUD models

UL —Recognized
CSA — Certified

Specifications—LU Series

DC Output
Voltage range shown in tables.

Regulated Voltage

regulation, line .....0.4% for input variations from 105-132 VAC or 132 to 105 VAC on LUS-11, LUT-6 and LUT-12 models. 0.4% for input variations from 85-132 VAC or 132-85 VAC on all other models

regulation, load (all outputs regulated on LUT's no cross regulation) .....0.85% for all LUS and LUD models, and main output of LUT-12, LUT-13 and LUT-14 models. 0.8% for main output of LUT-6 models, 1% for second output of all LUT models and 2.0% for third output of all LUT models (0 to full load, no preload required).

ripple and noise .....15mV RMS all models (LUS-8A, 9A, 10A) — 120mV pk-pk for 5V models; 150mV pk-pk 9V thru 15V models; 200mV pk-pk 24V and 28V models (LUS-11) 150mV pk-pk for 5V model; 200mV pk-pk for 12V and 15V models; 250mV for 24V and 28V models. 100 mV pk-pk for main output of LUT-6 models, 120 mV pk-pk for main output of LUT-12 models. 150 mV pk-pk for second and third outputs of LUT-6 and LUT-12 models. (LUD-15, LUD-16, LUT-13, LUT-14) 150 mV pk-pk on 5V outputs; 250 mV pk-pk on all other outputs.

temp. coeff. .....0.02%/°C. 0.04%/°C for second and third outputs of LUT-6 and LUT-12 models. Less than 0.02%/°C for main and second output of LUT-13 and LUT-14. Less than 0.04%/°C for third output of LUT-13 and LUT-14.

AC Input

line .....105-132 VAC, 47-440 Hz on LUS-11, LUT-6 and LUT-12. 85-132 VAC, 47-440 Hz on all other models

efficiency minimum .....62% for LUS-8A models. 63% for LUT-6-5125. 66% for LUS-9A, LUD-15 models. 67% for LUT-6-5122. 70% for LUS-10A, LUT-6-5152, LUT-12-5122, LUT-12-5152, LUT-13 and LUT-14 models. 71% for LUD-15-16. 72% for LUD-15-31 and LUS-11 models. 73% for LUD-15-33. 74% for LUD-15-44 and LUD-16-13, — 16, — 33 models. 75% for LUD-16-31, — 44 models.

DC Input .....LUS-11, LUT-6, LUT-12 models 130-160 VDC. LUD-15, LUD-16, LUT-13, LUT-14 110-175 VDC. All other models 110-165 VDC.

Overshoot
No overshoot at turn-on, turn-off or power failure.

Ambient Operating Temperature
Continuous duty 0°C to 60°C (0° to 50°C for LUS-11, LUT-6 and LUT-12 models) with suitable derating.

Storage Temperature
−30°C to +85°C

Overload Protection
External overload protection, automatic factory preset electronic current limiting circuit limits the output current thereby providing protection for the load as well as the power supply. Internal failure protection provided by fuse.

Hold Up Time
Output will remain within regulation limits for at least 16 msec after loss of AC power at full load with nominal output voltage and 105 VAC input at 60 Hz (130 VDC input) — (117 VAC at 60 Hz for LUS-11 and LUT-12).

Overvoltage Protection
Overvoltage protection is standard on LUS-9A, LUS-10A, LUS-11 and main output of LUT models and lower voltage output of LUD models.

Cooling
Convection cooled, no fans or blowers needed.

DC Output Controls
Simple screwdriver voltage adjustment over the entire voltage range of LUS and LUD models and main output of LUT models. Second and third outputs of LUT models are fixed.

Output Status Indicator
LED indicates presence of voltage on single output models and on main output of LUT and LUD models.

Mounting
One mounting surface, one mounting position.

Input and Output Connections
Heavy duty terminal block on front of chassis

PHYSICAL DATA

Package Model	Weight (Lbs.) Net	Ship	Size Inches*
LUS-8A	0 62	0 75	3.82 x 1 38 x 3.54
LUS-9A	0 78	1 00	3 82 x 1 38 x 4.53
LUS-10A	1.04	1.25	3.82 x 1 46 x 6.02
LUS-11	2.43	2.99	3.82 x 3.08 x 7.88
LUD-15	1 23	1 75	3.81 x 1 65 x 7 88
LUD-16	1 85	2.35	3.81 x 2 56 x 8 66
LUT-6	1.21	1.66	4.50 x 1.48 x 7.06
LUT-12	2.00	2.45	4.54 x 2.18 x 8.66
LUT-13	1.29	1.82	1.81 x 4.50 x 7.20
LUT-14	1.67	2.25	4.53 x 2.15 x 8.66

*Excluding terminal block

OPTIONS

AC Input
(LUA models, consult factory for duals and triples)

Add Suffix	For Operation at:	Price
−V	187-265 VAC 47-440 Hz	12% or $30†

† Whichever is greater
Consult factory for derating if any.
Consult factory for dimensions.

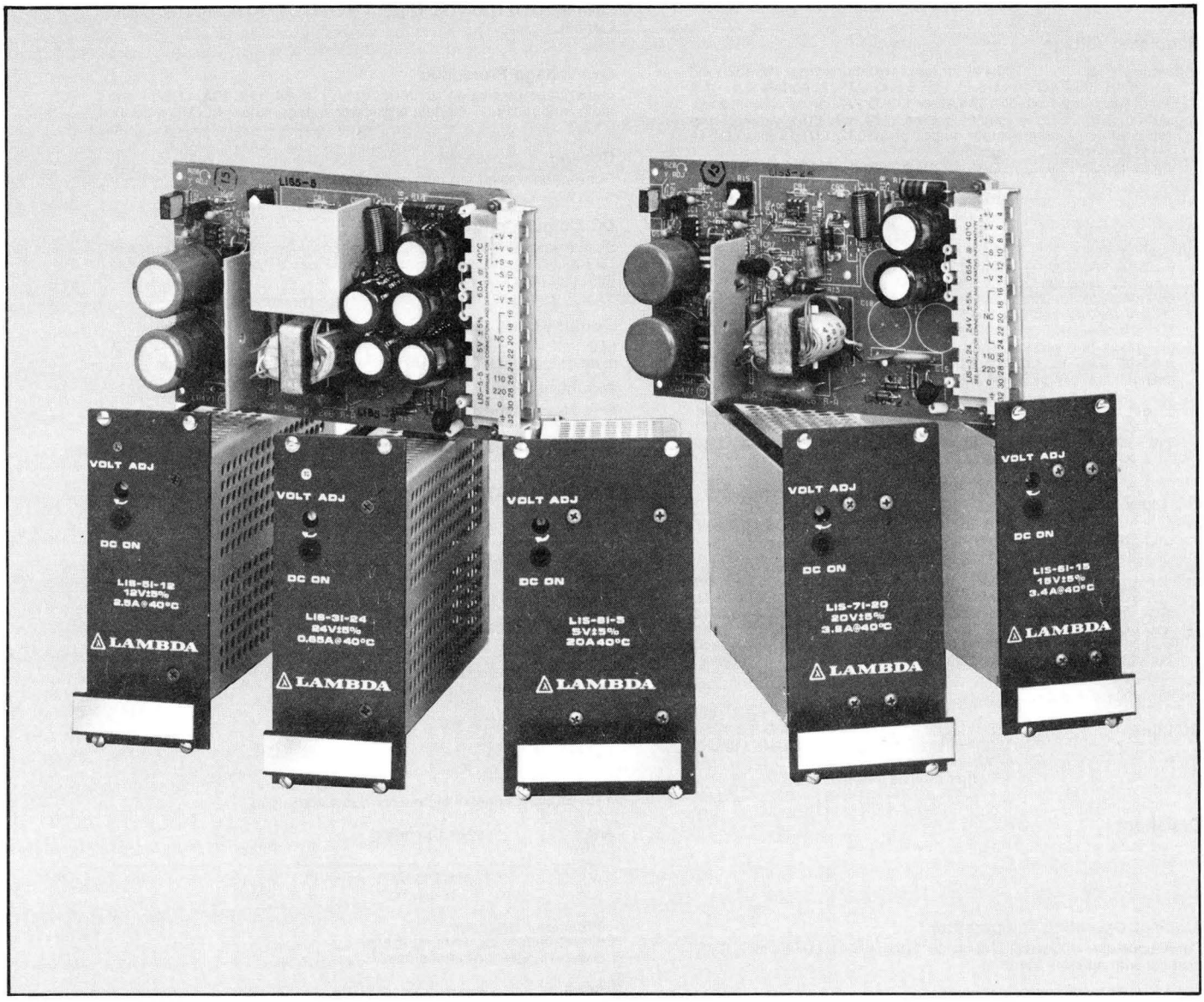
Finish
Gray, Fed. Std. 595, No. 26081.

Accessories
Overvoltage protectors available — see page 77. (Built-in on models as stated above.)

Guarantee
1 year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 1 year after shipment.

UL —Recognized
CSA—Certified

LAMBDACARD™ LI Series



Features—LAMBDACARD™ LI Series

User selectable AC input 95-132 VAC or 187-265 VAC

56 models, up to 48V, up to 20A

In-rush current limiter

Designed to meet UL/CSA/IEC/VDE standards

DC Indicator light

Compatible with 3U-high Eurocard VME/DIN subracks

Available as standard enclosed units or PC LambdaCards™ only

3750 VAC Isolation

One year guarantee

Specifications—LAMBDACARD™ LI Series

The LIS-3I, 5I, 6I, 7I and 8I are standard enclosed units. These models include a front panel with handle, LED Vo indicator, and shields on both sides of the PC board to eliminate shock hazard. The LIS-3, 5, 6, 7 and 8 models are PC LAMBDACARDS™ only.

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line	0.1% from 187 to 265VAC. 0.1% from 95 to 132VAC.
regulation, load	0.2% from 0 to full load.
ripple and noise	20mV RMS, 120mV pk-pk on 5V models. 20mV RMS, 150mV pk-pk on 12V through 48V models.
remote programming resistance	1000 Ω/V nominal.
remote programming voltage	volt per volt.
temp. coeff.	0.03%/°C

AC Input
(User selectable at connector without changing internal jumper.)

line	95 to 132VAC, 187 to 265 VAC, 47-440Hz
power	LIS-3, LIS-3I: 26.0 watts max LIS-5, LIS-5I: 52.5 watts max LIS-6, LIS-6I: 77 watts max LIS-7, LIS-7I: 113 watts max LIS-8, LIS-8I: 150 watts max
Efficiency	70% minimum on 5V models. 75% minimum on 12V through 48V models. 60% minimum on all LIS-3, 3I, 5, 5I models
DC Input	290V ± 10%

Overshoot
No overshoot at turn-on, turn-off or power failure.

Ambient Operating Temperature
Continuous duty 0° to 60°C with suitable derating above 40°C.

Storage Temperature Range
-55°C to +85°C.

Overload Protection

ELECTRICAL
External overload protection. Automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Hold Up Time
All models will remain within regulation limits for at least 20msec after loss of AC power when operating at full load, Vo max, and 105VAC (210VAC) at 60Hz (50Hz).

In-rush Current Limit
An in-rush current limiting device limits the peak in-rush current from a cold turn on, to 25 amperes on LIS-3, 3I, 5 and 5I; 45 amperes on LIS-6, 6I, 7 and 7I; 90 amperes on LIS-8, 8I.

Overvoltage Protection
Non-crowbar, inverter shutdown type OV protection is standard on all models.

Cooling
Convection cooled. No fans or blowers required.

DC Output Controls
Single turn output voltage adjust pot located on front edge of PC board. Access hole is provided on front panel of LIS-3I, LIS-5I, LIS-6I, LIS-7I and LIS-8I.

Input and Output Connections
All connections to the unit are made via a DIN type H15 connector.

Output Status Indicator
LED indicates presence of voltage on all models.

Mounting
Mounting is compatible with standard 3U-high Eurocard subracks. Depth is standard 160mm (pc board only). Unit width is: 9Te (HP) for the LIS-3, 5, 6; 10Te (HP) for the LIS-3I, 5I, 6I; 11Te (HP) for the LIS-7; 12Te (HP) for the LIS-7I; 13Te (HP) for the LIS-8; 14Te (HP) for the LIS-8I.

Remote Sensing
Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation.

Physical Data

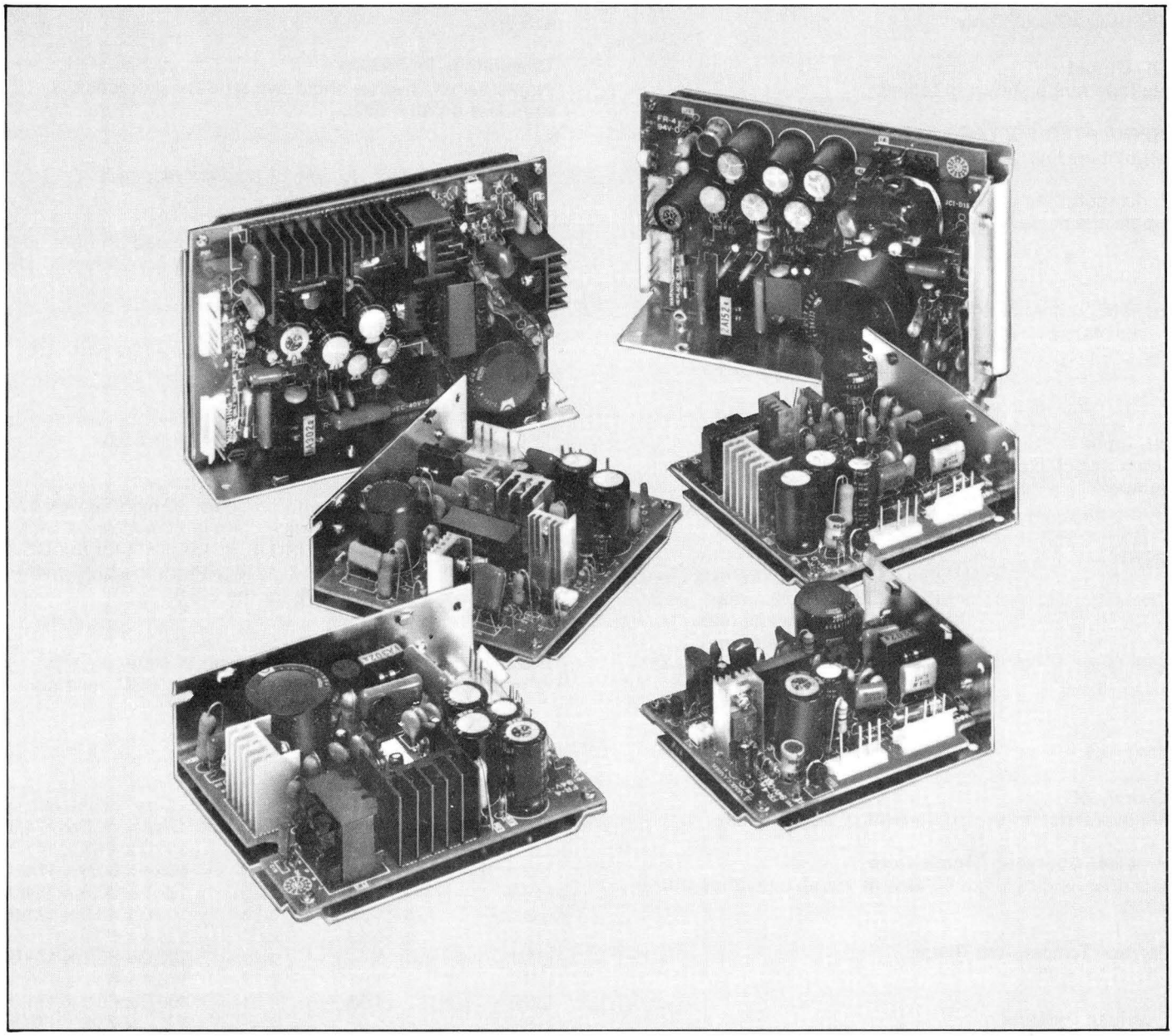
Model	Lbs. Net	Lbs. Ship	Package Size Millimeters
LIS-3	0.69	1.00	128.4 x 50.5 x 174.0
LIS-3I	1.50	1.75	100.0 x 41.7 x 171.0
LIS-5	0.69	1.00	128.4 x 50.5 x 174.0
LIS-5I	1.50	1.75	128.5 x 50.3 x 174.0
LIS-6	1.31	1.63	100.0 x 43.9 x 171.0
LIS-6I	1.69	2.00	128.4 x 50.5 x 176.5
LIS-7	1.44	1.75	100.0 x 60.7 x 171.0
LIS-7I	1.81	2.13	128.4 x 60.7 x 176.5
LIS-8	1.50	1.81	100.0 x 65.1 x 171.0
LIS-8I	2.06	2.38	128.4 x 70.8 x 176.5

Finish
All units have tan covers. Enclosed units have tan shields, brown front panels with black handles, and brushed aluminum handle inserts.

Guarantee
One year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of one year.

/CSA/TUV
Under evaluation.

Lambda LV and LV-E Series



Features—LV and LV-E Series

48 single output models, up to 48V, up to 10A

18 triple output models, up to 32W

Molex-type input-output connectors for ease in wiring and installation

One day delivery

Ideal for OEM applications

Indicator light for quick verification of output voltage

AC input: 85-132 VAC Standard
85-265 VAC "E" models

—Recognized (LV-E models under evaluation)

CSA—Certified (LV-E models under evaluation)

VDE—LV-E models only, under evaluation

Specifications—LV and LVE Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line ..... 0.4% for input variations from 85-132 VAC or 132-85 VAC on all LV models. 0.4% for input variations from 105-265 VAC or 265-105 VAC on LVS-E, LVT-40E, 41E models. (LVS-45E models: 0.4% for input variations from 95-132 VAC or 132-95 VAC when wired for 110V operation; 187-265 VAC or 265-187 VAC when wired for 220V operation. 1.0% for input variations from 85-265 VAC or 265-85 VAC on LVT-38E, 39E, 42E models.

regulation, load ..... 0.8% for LVS, LVS-E and LVT-40E, 41E models. 2% for LVT: LVT-38E, 39E, 42E models (from no load to full load and full load to no load).

ripple and noise ..... 15mV RMS for all models with either positive or negative terminal grounded. 150mV pk-pk for 5V models; 300mV pk-pk for 12V through 48V models and second and third outputs of LVT models.

temp. coeff. ..... 0.02%/°C for LVS, LVS-E, LVT-40E, 41E models and 5V output of LVT models. 0.03%/°C for other two outputs of LVT models and for main output of LVT-38E, 39E, 42E. 0.05%/°C on other two outputs of these models.

AC Input ..... 85-132 VAC, 47-440 Hz on all LV models. 105-265 VAC, 47-440 Hz on LVS-E and LVT-40E, 41E models. The LVS-45E is jumper selectable for 95-132 VAC or 187-265 VAC operation (factory pre-wired for 220V operation). 85-265 VAC, 47-440 Hz on all LVT-38E, 39E, 42E models.

Efficiency ..... 62% minimum on all LVS, LVT, LVT-40E, 41E and LVS-E models. 64% typical on LVT-38E, 39E, 42E models.

DC Input ..... 110-175 VDC for LV models. 145-370 VDC for LVS-E and LVT-40E, 41E. LVS-45E allows DC input (260-370 VDC) only, when used for 220 VAC operation. 110-330 VDC for LVT-38E, 39E, 42E.

Overshoot
No overshoot at turn-on, turn-off or power failure.

Ambient Operating Temperature
0-60°C with suitable derating above 50°C. LVT-40E and 41E derate above 40°C. 0-50°C for LVT-41. (See Tables.)

Storage Temperature
-30°C to +85°C.

Overload Protection
Automatic electronic current limiting circuit with automatic recovery, limits short circuit output current to a safe, preset value, thereby protecting the load as well as the power supply when direct shorts occur. Sustained short circuit operation for more than 30 seconds may cause damage to the power supply.

Hold Up Time
Output will remain within regulation limits for 16 msec typical for all models (20 msec typical at 100 VAC for LVT-38E, 39E, 42E models) after loss of AC power at full load with nominal output voltage and 85 VAC input at 60 Hz (110V RMS, 60 Hz on LVS-E models). On LVS-45E this is true at 105V RMS when wired for 110V operation, or 210V RMS when wired for 220V operation.

Overvoltage Protection
Standard on all single output LVS-44, LVS-45, LVS-44E, LVS-45E and on main output of LVT-38E, 39E, 42E models.

Input Fuse
A 2 amp slo-blo fuse in the AC input line protects the input wiring to the power supply. Overload of power supply does not cause fuse failure.

Cooling
Convection cooled, no fans or blowers needed.

DC Output Controls
Simple screwdriver adjustment over the entire voltage range of single output models. Triple output models are fixed.

Output Status Indicator
LED indicates presence of voltage on single output models and on +5V output of triple models.

Mounting
Two mounting surfaces, three mounting positions. Air circulation may be required when mounting in confined areas. Two mounting positions on LVT-38E, 39E, 42E.

Input and Output Connections
Molex connectors. AC input—Molex Type 5289-4A. DC output—Molex Type 5287-4A. (Molex Type 5287-5A on triples). AC input terminals are marked "H" and "N" for hot side and neutral respectively. LVT-38E, 39E, 42E use Amp 171141-1 for AC input and Amp 171216-1 for DC outputs.

Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LVS-42, 42E	0.44	0.52	1.38 x 3.82 x 3.13
LVS-43, 43E	0.55	0.64	1.38 x 3.82 x 3.88
LVS-44, 44E	0.70	0.82	1.38 x 3.82 x 4.59
LVS-45, 45E	0.86	1.00	1.46 x 3.82 x 6.26
LVT-38E	0.35	0.42	1.38 x 1.97 x 4.33
LVT-39E	0.44	0.52	1.57 x 2.36 x 4.33
LVT-40, 40E	0.84	1.00	1.38 x 3.82 x 4.47
LVT-41, 41E	1.00	1.13	1.46 x 3.82 x 6.05
LVT-42E	0.66	0.75	1.57 x 2.36 x 5.91

Finish
Plated steel chassis.

Guarantee
90-day guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 90 days.

UL—Recognized (LVS-E, LVT-E models under evaluation).
CSA—Certified (LVS-E, LVT-E models under evaluation).
VDE—LV-E models only (under evaluation).

Lambda LD Series

Features—LD Series

Regulation: 0.005%
Ripple: 150 μV
Temp. Coeff: 0.005%

Made possible through use of Lambda's proprietary, monolithic, multi-function voltage regulator with built-in, on-chip temperature regulator

4 package sizes, up to 150 Volts, up to 22A

Low-cost 5-year guaranteed power supplies

Convection Cooled

Lambda MIL-T-27C Grade 6 Transformer layer wound with electrostatic shield, Class H 180° C, UL approved

LD power supplies designed to meet MIL-STD-810C and MIL-I-6181D specifications

Sprague 602D high temperature, premium computer grade hermetically sealed electrolytic capacitor

Lambda heavy duty 1/8 inch thick aluminum sheet metal

Lambda CC4®* Printed Circuit Board plated thru-holes, fungus inert, flame retardant
***Licensee of Photo Circuits, Inc.**

MIL-R-26 wire-wound resistors

MIL-W-16878 Wire UL approved

Thermostat - automatically resets when overtemperature condition is eliminated

Potentiometer fully enclosed cermet

MIL-R-22684 type film resistors

Lambda perforated 1/16 inch thick steel cover

ℛU - Recognized

CSA — Certified (100V, 120V and 150V models presently under test)

Specifications—LD Series

DC Output
Refer to the tables.

REGULATED VOLTAGE

regulation, line ..... 0.005%+0.5 mV for line variations from 105 to 127 VAC.

regulation, load ..... 0.005%+0.5 mV for load variations from 0 to full load.

ripple and noise ..... 1mV pk-pk, 150 μv RMS (250 μv for 100V, 120V, 150V units)

temp. coeff. ..... ±(0.005%+10μv) /°C on wide range models with external programming resistors. ±(0.01%+10 μv)/°C on wide range models with internal programming resistors and on 5V thru 150V units.

remote programming resistance ..... 1000Ω/volt nominal. Downward programming to voltages less than 1 volt must be accomplished in two steps; first, from original voltage value to 1 volt, and then from 1 volt to final desired value.

remote programming voltage ..... volt/volt

AC Input

line ..... 105-127 VAC, 210-254 VAC (by transformer tap change) 47-440 Hz. Derate 40°C rating 10% for 50 Hz operation. Consult factory for 63-440 Hz ratings.

power ..... LDS-Y - 155 watts; LDS-X - 230 watts; LDS-W - 293 watts; LDS-P - 430 watts.

Ambient Operating Temperature
Continuous duty from 0 to 60°C with appropriate deratings above 40°C (see tables).

Storage Temperature
−55 to +85° C

Overload Protection

THERMAL
By self resetting thermostat.

ELECTRICAL
External overload protection—automatic current limiting circuit limits output current to preset value, thereby providing protection for load as well as the power supply.

Overshoot
No overshoot at turn-on, turn-off, or power failure.

Cooling
Convection cooled—no fans or blowers required.

Transformer
MIL-T-27C, Grade 6. Electrostatic shield: 4000 VAC input/output isolation.

Isolation Rating
Minimum 10 Megohm isolation from DC to ground at 750 VDC.

Controls
Simple screwdriver adjustment over entire voltage range on fixed voltage models. On wide range models, an adjustable range of 1%-Vo max to Vo max is provided by the internal programming potentiometer; programming over the full 0 to Vo max range can be accomplished by remote programming.

Input and Output Connections
Heavy duty screw terminals on PC board.
Solder turrets provide for remote programming operation.

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Military Specifications
The LD series has been designed to pass the following tests in accordance with MIL-STD-810C
1) Low Pressure—Method 500.1, Procedure I.
2) High Temperature—Method 501.1, Procedure I & II.
3) Low Temperature—Method 502.1, Procedure I.
4) Temperature Shock—Method 503.1, Procedure I.
5) Temperature—Altitude—Method 504.1, Procedure I. Class 2 (0°C operating)
6) Humidity—Method 507.1, Procedure I & II.
7) Fungus—Method 508.1, Procedure I.
8) Vibration—Method 514.2, Procedures X & XI.
9) Shock—Method 516.2, Procedures I & III.

MIL-I-6181D—Conducted and radiated EMI with one output terminal grounded.

Mounting
LDS-Y, X, W—three mounting surfaces, three mounting positions (Two mounting surfaces on wide range and 48V models when used with optional adjustable LH OV).
LDS-P—one mounting surface, one mounting position.

Physical Data

Package Model	Weight Lbs. Net	Lbs. Ship	Size Inches
LDS-Y	5-1/2	6	5-5/8×4-7/8×2-5/8 w/cover 5-5/8×4-7/8×2-1/2 wo/cover
LDS-X	7-3/4	8-1/4	7×4-7/8×2-7/8 w/cover 7×4-7/8×2-3/4 wo/cover
LDS-W	9	9-1/2	9×5×2-7/8 w/cover 9×4-7/8×2-3/4 wo/cover
LDS-P	14	15-1/2	11×4-7/8×4-13/32 w & wo/cover

All units shipped with cover.

Fungus Proofing
All units are fungi inert.

Finish
Gray, Fed. Std. 595, No. 26081

Options
AC Input: Unit can be rewired for 210-254 VAC at 47-440 Hz. Consult factory for operation above 63 Hz.

Accessories
Overvoltage protection (standard on all 5V models)

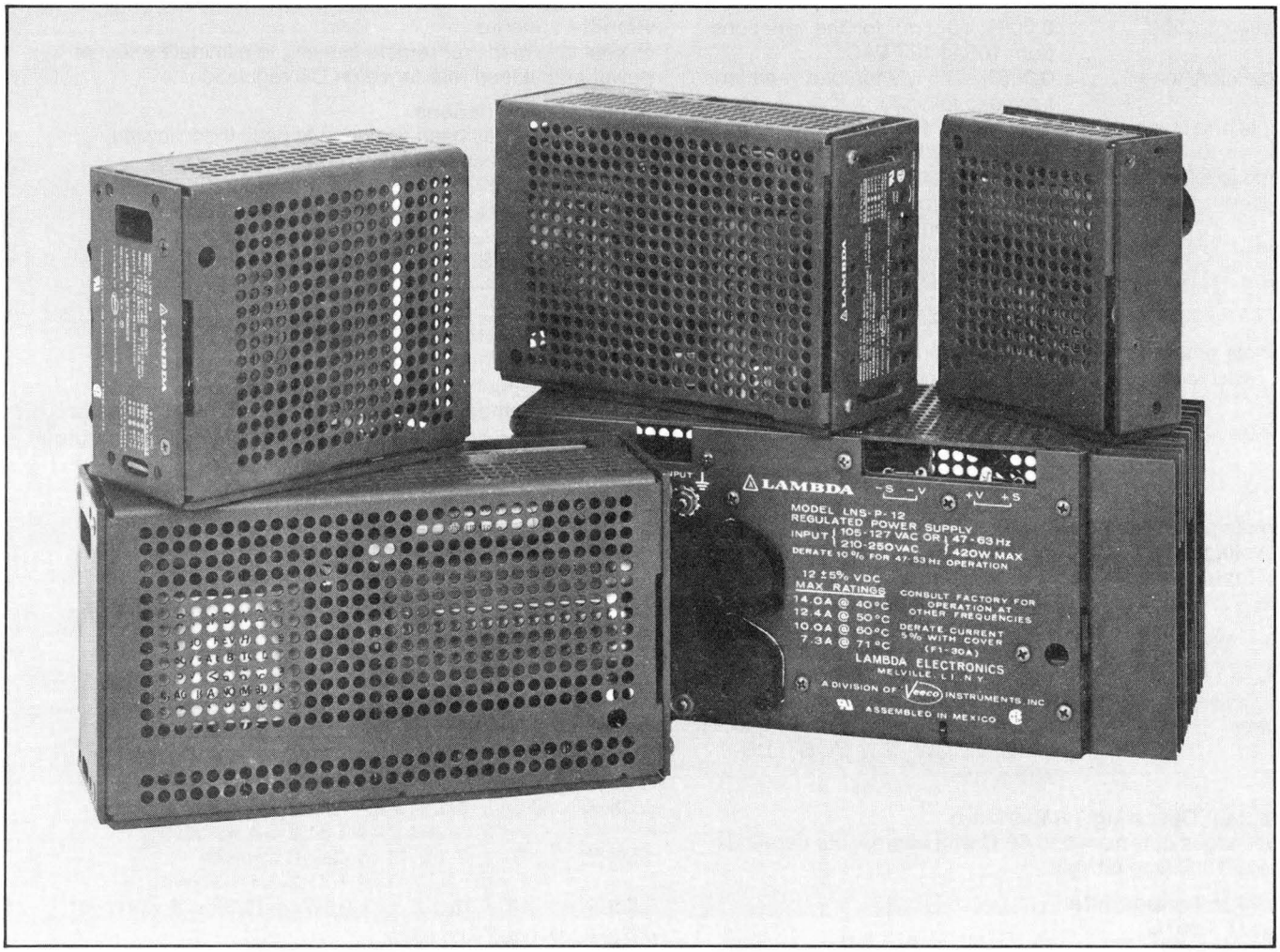
POWER SUPPLY SERIES	OV SERIES
LDS-Y-12V thru 28V models	L-6-OV (Fixed)
LDS-X-12V thru 28V models	L-12-OV (Fixed)
LDS-W-12V thru 28V models	L-29-OV (Fixed)
LDS-P-12V thru 28V models	L-20-OV (Fixed)
All 01, 02, 03 and 48V models	LHOV (Adjustable)

For rack adaptors, chassis slides and blank panels, see page 79.

Guaranteed for 5 years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

UL/Recognized
CSA-Certified (100V, 120V and 150V models presently under test)

Lambda LN Series



Features—LN Series

Low-cost 5-year guaranteed power supplies

5 package sizes up to 48 V up to 22 amps

Convection Cooled

Lambda Monolithic Overvoltage Protector L-6-OV or Lambda hybrid overvoltage protector

Lambda MIL-T-27C Grade 6 Transformer layer-wound with electrostatic shield, Class H 180° C, UL Approved

LN power supplies meet MIL-STD-810C and MIL-I-6181D specifications

Sprague 602D high temperature, premium computer grade hermetically sealed electrolytic capacitor

Lambda CC4®* Printed Circuit Board plated thru-holes fungus inert, flame retardant
***Licensee of Photo Circuits Inc.**

MIL-R-26 type wire-wound resistors

MIL-W-16878 Wire UL approved

Thermostat—automatically resets when overtemperature condition is eliminated

Lambda LAS-1100 monolithic voltage regulator (TO-96)

Lambda Monolithic Full Wave Center-tap Rectifier PMR-27, PMR-31

Lambda PMD-10 K, 12 K, 16 K Series 200° C Darlington Transistor series pass transistors (TO-3)

Potentiometer fully enclosed cermet

MIL-R-22684 type film resistors

Lambda Perforated 1/16 inch Thick Steel Cover

Lambda Heavy Duty 1/8 inch thick Aluminum Sheet Metal

UL /CSA

Specifications—LN Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line	0.1% (0.15% for LN-Z)
regulation, load	0.1% (0.15% for LN-Z)
ripple and noise	1.5 mV RMS, 5 mV pk-pk (5 mV RMS, 15 mV pk-pk for LNS-P-48) with either positive or negative terminal grounded.
temperature coefficient	0.03%/° C
remote programming resistance	200 ohms per volt nominal (LNS models only)
remote programming voltage	volt per volt (LNS models only)

AC Input

line	105-127 VAC, 210-254 VAC (by transformer tap change) 47-440 Hz. Consult factory for operation at frequencies other than 57-63 Hz.
Efficiency (Typical)	30%-5 V and 6 V models, 42% 12 V and 15 V models, 49%-20 V, 24 V, and 28 V models, 52% for 48 V model, 42% for LN duals except LND-MPU which are 34%.

Ambient Operating Temperature Range
Continuous duty from 0° to +71° C with corresponding load current ratings for all modes of operation.

Storage Temperature Range
—55° C to 85° C.

Overload Protection

ELECTRICAL
External overload protection, automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

THERMAL
Thermostat—automatically reset when overtemperature condition is eliminated.

Overshoot
No overshoot on turn-on, turn-off or power failure.

Overvoltage Protection
Overvoltage protection module crowbars output when trip level is exceeded—standard on all 5 V models and both outputs of model LND-X-MPU.

Input and Output Connections
Heavy-duty screw terminals on printed circuit board.

DC Output Controls
Simple screwdriver adjustment over the entire voltage range.

Tracking Accuracy (Dual Tracking Models Only)
3% absolute voltage difference, 0.2% change for all conditions of line, load and temperature.

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Mounting
Three mounting surfaces, three mounting positions. One mounting position for LN-P models.

Convection Cooled
No external heat sinking or forced air required.

Transformer
MIL-T-27C, Grade 6; Electrostatic shield; 4000 VAC input/output isolation.

Isolation Rating
Minimum, 10 Megohm isolation from DC to ground at 750 VDC.

Fungus Proof
No fungi nutrient material used.

Military Specifications
The LN series has passed the following tests in accordance with MIL-STD-810C.

1) Low Pressure—Method 500.1, Procedure I.
2) High Temperature—Method 501.1, Procedure I & II.
3) Low Temperature—Method 502.1, Procedure I.
4) Temperature Shock—Method 503.1, Procedure I.
5) Temperature—Altitude—Method 504.1, Procedure I. Class 2 (0° C operating)
6) Humidity—Method 507.1, Procedure I & II.
7) Fungus—Method 508.1, Procedure I.
8) Vibration—Method 514.2, Procedures X & XI.
9) Shock—Method 516.2, Procedures I & III.

MIL-I-6181D—Conducted and radiated EMI with one output terminal grounded.

Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LN-Z	3	3-1/4	4-7/8 x 4 x 1-3/4 (w/cover) 4-7/8 x 4 x 1-5/8 (w/o cover)
LN-Y	5	5-1/2	5-5/8 x 4-7/8 x 2-5/8 (w/cover) 5-5/8 x 4-7/8 x 2-1/2 (w/o cover)
LN-X	7-3/4	8-1/4	7 x 4-7/8 x 2-7/8 (w/cover) 7 x 4-7/8 x 2-3/4 (w/o cover)
LN-W	9	9-1/2	9 x 4-7/8 x 2-7/8 (w/cover) 9 x 4-7/8 x 2-3/4 (w/o cover)
LNS-P	14	15-1/2	11 x 4-7/8 x 4-13/32 (w & w/o cover)
LND-P	15-1/2	17	11 x 4-7/8 x 4-13/32 (w & w/o cover)

Finish
Gray, Fed. Std. 595 No. 26081.

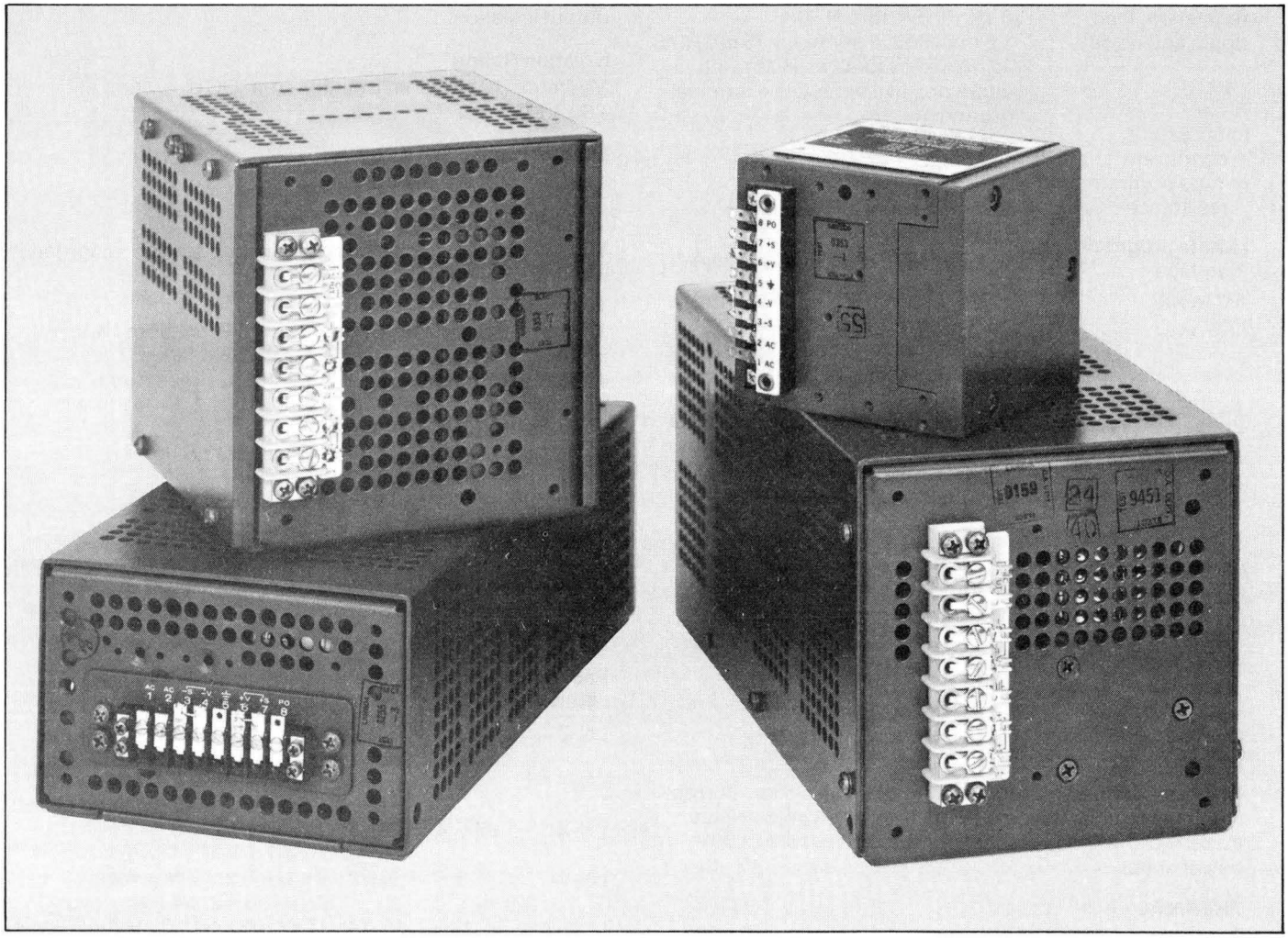
Accessories
Overvoltage protectors (standard on 5 V models and on LND-X-MPU). See pages 77-78.

POWER SUPPLY SERIES	OV SERIES
LNS-Z	L-6-OV
LNS-Y	L-6-OV
LNS-X	L-12-OV
LNS-W	L-20-OV
LNS-P	L-35-OV for 5 & 6V Models L-20-OV for others
LND (All Series)	L-12-OV

Guaranteed for 5 Years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

/CSA
UL Recognized
CSA Certified

Lambda LC Series



Features—LC Series

6 package sizes

0.01% Reg line or load

250 μV RMS Ripple

5-year guaranteed

Computer grade hermetically sealed 10-year life electrolytic capacitors.

Lambda MIL-T-27C grade 6 magnetics layer wound with electrostatic shield

Integrated circuit that replaces up to 32 discrete components for higher reliability

Lambda CC4®* Printed Circuit Board
plated thru-holes fungus inert, flame retardant
*Licensee of Photo Circuits Inc.

Designed for use with breadboard, in laboratory or where precision is needed.

Meets military environmental specifications
MIL-STD-810B, MIL-E-5272C, MIL-I-6181D

MIL-R-26 type wire wound resistors

Rugged convection-cooled chassis

MIL-W-16878 Wire UL approved

MIL-R-22684 type film resistors

MIL-R-11 composition resistors

Ⓡ — Recognized

Specifications—LC Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line ..... 0.01% + 1 mV
regulation, load ..... 0.01% + 1 mV
ripple and noise ..... 250 μV RMS, 1 mV pk-pk
remote programming
resistance ..... 1000 ohms/volt, nominal
remote programming
voltage ..... volt per volt
temperature
coefficient ..... (0.01% + 300 μV)/° C with external programming resistor; (0.015% + 300 μV/° C with internal programming resistor).

AC Input

line ..... 105-132 VAC; 47-440 Hz. Derate 10% for 50 Hz operation. For operation at other than 57-63 Hz and 187-242 VAC, see AC input option. For 360-440 Hz ratings consult factory.

power ..... LCS-A-80 watts; LCD-4 125 watts; LCS-B-125 watts; LCS-C-215 watts; LCS-CC 300 watts; LCD-D 460 watts.

Ambient Operating Temperature Range
Continuous duty from —20° C to +71° C with corresponding load current ratings for all modes of operation.

Storage Temperature Range
—55° C to +85° C.

Overload Protection

THERMAL

Thermostat, automatic reset when over-temperature condition is eliminated. (Not applicable to LCS-A models.)

ELECTRICAL

External overload protection; automatic electronic current limiting circuit limits the output current to a preset value thereby providing protection for the load as well as the power supply.

Overshoot
No overshoot on turn-on, turn-off or power failure.

Input and Output Connections
Through terminal block on chassis.

Integrated Circuit Regulation
Integrated circuit provides regulation system, except for input and output capacitors, rectifiers and series regulation transistors.

Convection Cooled
No external heat sinking or forced air required.

Number of Package Sizes
Six (6), Package A, B, 4, C, CC, D.

Controls

DC Output Control
Simple screwdriver voltage adjustment over entire voltage range.

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation. A terminal (RP) is provided for remote programming which eliminates interaction with internal voltage control, on LCS-CC and LCS-D models.

Current Limit
140% of 40°C rating for LCS-A, 130% of 40°C rating for LCD-4, LCS-B, LCS-C, LCS-CC, LCS-D.

Mounting
Three mounting surfaces, designed to mount in Lambda standard rack adapters.

Mil Spec
Altitude: MIL-STD-810 Meth. 500.1, Procedure I, high temperature: MIL-STD-810B, Meth. 501.1, Procedures I & II, MIL-E-5272C, Para. 4.1.2, Procedure II, low temperature: MIL-STD-810B, Method 502.1, Procedure I, temp. shock: MIL-STD-810B, Meth. 503.1, Procedure I, MIL-E-5272C, Para. 4.3.1, Procedure I, Humidity: MIL-STD-810B, Meth. 507.1, Procedure I, MIL-E-5272C, Para. 4.4.1, Procedure I, shock: MIL-STD-810B, Meth. 516.1, Procedures I, III, MIL-E-5272C, Para. 4.15.5.1, 4.15.5.2, vibration: MIL-STD-810B, Notice 1, Meth. 514, Procedures X, XI, emi: MIL-I-6181D.

Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LC-A	6	7	3-3/16 x 3-3/4 x 6-1/2
LC-4	8	9	4-29/32 x 4-29/32 x 5
LC-B	7	8	3-3/16 x 4-15/16 x 6-1/2
LC-C	10	11	3-3/16 x 4-15/16 x 9-3/8
LC-CC	15	17	4-15/16 x 4-15/16 x 9-3/8
LC-D	23	26	4-15/16 x 7-1/2 x 9-3/8

Finish
Gray. FED. STD. 595 No. 26081.

Accessories
Rack adapters, overvoltage protectors, chassis slides and blank panels. See pages 77-79.

Options

AC Input

Add Suffix	For Operation at:	Price Qty. 1-14	Price Single Model Qty. 15 & Up	Price Mixed Models Qty. 15 & Up
—V	187-242 VAC 47-440 Hz	12% or $30*	10%	12% or $30*
—V1	205-265 VAC 47-440 Hz	12% or $30*	10%	12% or $30*

*Whichever is greater.

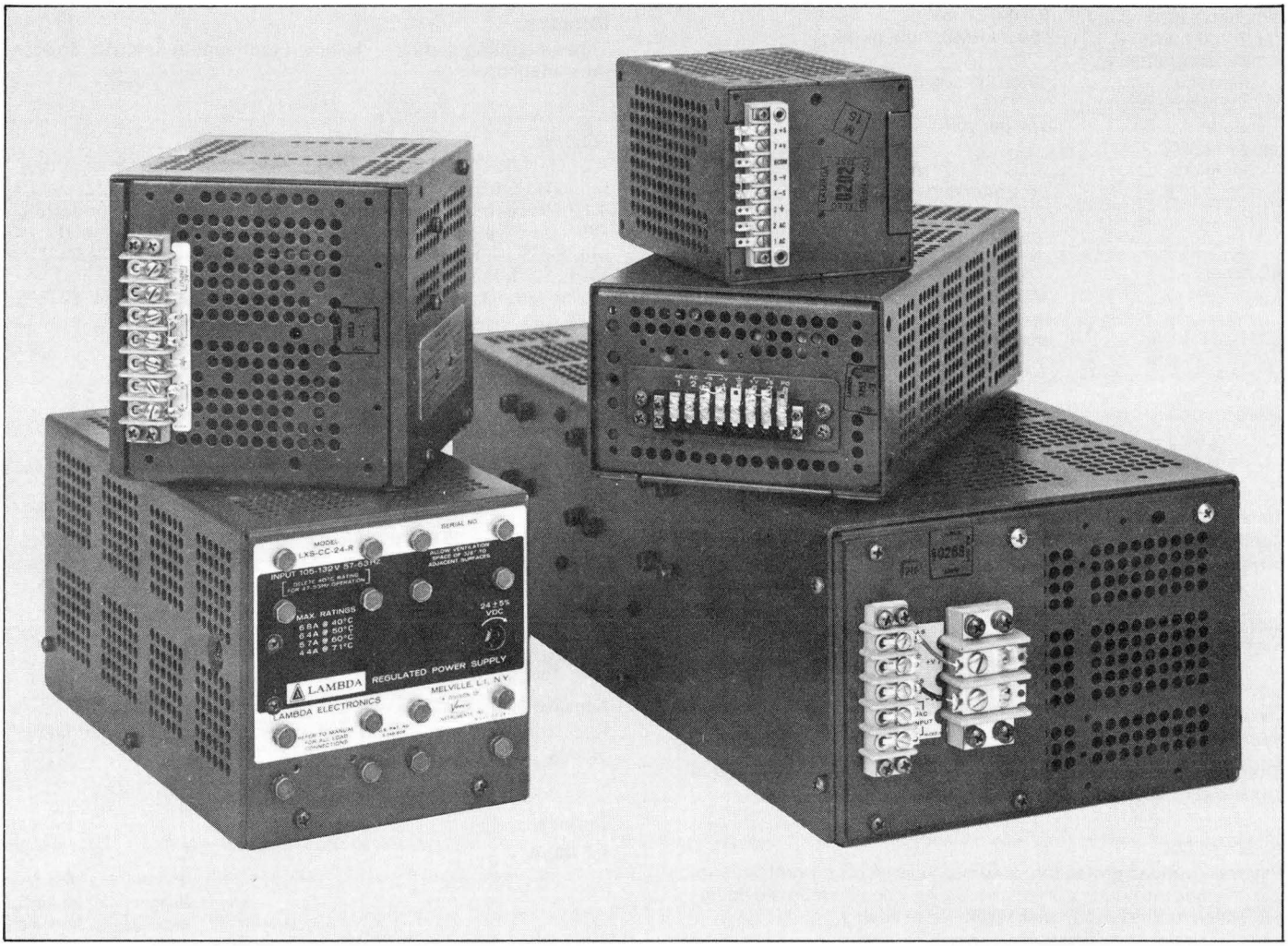
Derate current 10% for 47-53 Hz operation.

Fungus Proofing
Add suffix -"R"- all models can be obtained with MIL-V-173 varnish to render all fungi nutrient components inert. LC series single output models add $10.00 to price, LC series dual output models add $15.00 to price.

Guaranteed for 5 Years
5-year guarantee includes labor as well as parts. Guarantee applied to operation at full published specifications at end of 5 years.

UL —Recognized

Lambda LX Series



Features—LX Series

6 package sizes

5-year guaranteed

Lambda minimum component count, power hybrid voltage regulator replaces discrete components for higher reliability

Lambda Power Hybrid Voltage Regulator has 100,000 hours MTBF

Lambda MIL-T-27C grade 6 magnetics layer wound with electrostatic shield Class H, 180° C, UL approved

Lambda CC4®* Printed Circuit Board
plated thru-holes fungus inert, flame retardant
*Licensee of Photo Circuits Inc.

Lambda hybrid overvoltage protector

Meets military environmental specifications MIL-STD-810B, MIL-E-5272C, MIL-I-6181D

MIL-W-16878 Wire UL approved

MIL-R-26 type wire wound resistors

Computer grade hermetically sealed 10-year life electrolytic capacitors

MIL-R-22684 type film resistors

Rugged convection-cooled chassis

MIL-R-11 composition resistors

Ⓡ Recognized

Specifications—LX Series

DC Output
Voltage ranges shown in tables.

REGULATED VOLTAGE

regulation, line 0.1%
regulation, load 0.1%
ripple and noise .....1.5 mV RMS, 5 mV pk-pk with either positive or negative terminal grounded
temperature coefficient .....0.03%/°C
remote programming resistance (LXS units only) ..... 1000 ohms/volt, nominal for package A, CC, D, E and EE models. 200 ohms/volt nominal for C models.
remote programming voltage .....volt/volt (LXS units only)

AC Input

line .....105-132 VAC; 47-440 Hz. For 187-242 VAC, see AC input options. For operation of package LX-G units at 50 Hz or at 400 Hz, consult factory. Ratings apply to 57-63 Hz. For all other models delete 40° C rating for 50 Hz operation.
power ..... LXS-A 91 watts; LXD-C 185 watts; LXS-C 215 watts; LXS-CC 300 watts; LXS-D 450 watts; LXS-E 600 watts; LXS-EE 750 watts; LXD-CC 300 watts; LXD-D 425 watts; LXT-D 500 watts; LXD-EE 850 watts.

Ambient Operating Temperature Range
Continuous duty from 0° to +71°C with corresponding load current ratings for all modes of operation.

Storage Temperature Range
—55°C to +85°C.

Tracking Accuracy (Dual Models)
2% absolute voltage difference (3% on LXD-C models), 0.2% change for all conditions of line, load and temperature

Overload Protection

THERMAL

Thermostat, automatic reset when over-temp. condition is removed.

ELECTRICAL

External overload protection, automatic electronic current limiting circuit limits the output current to the preset value, thereby providing protection for load as well as power supply.

Overshoot
No overshoot on turn-on, turn-off or power failure.

Input and Output Connections
Through terminal block on chassis

Power Hybrid Voltage Regulator or Integrated Circuit Regulator
Most models have Power Hybrid Voltage Regulator providing complete regulation system while others have an integrated circuit providing regulation system.

Convection Cooled
No external heat sinking or forced air required.

Number of Package Sizes
Six (6) packages A, C, CC, D, E and EE.

Controls

DC Output Control
Screwdriver voltage adjustment over entire voltage range.

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Transformer
MIL-T-27C, Grade 6.

Mounting
Three mounting surfaces, designed to mount in Lambda standard rack adapters. LX-E and LX-EE models have only one mounting surface in horizontal plane.

MIL Specs.
Altitude: MIL-STD-810 Meth. 500.1, Procedure I, high temperature: MIL-STD-810B, Meth. 501.1, Procedures I & II, MIL-E-5272C, Para. 4.1.2, Procedure II, low temperature: MIL-STD-810B, Method 502.1, Procedure I, temp. shock: MIL-STD-810B, Meth. 503.1, Procedure I, MIL-E-5272C, Para. 4.3.1, Procedure I, Humidity: MIL-STD-810B, Meth 507.1, Procedure I, MIL-E-5272C, Para. 4.4.1, Procedure I, shock: MIL-STD-810B, Meth. 516.1, Procedures I, III, MIL-E-5272C, Para 4.15.5.1, 4.15.5.2, vibration: MIL-STD-810B, Notice 1, Meth. 514, Procedures X, XI, emi: MIL-I-6181D.

Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LX-A	6	7	3-3/16 x 3-3/4 x 6-1/2
LX-C	10	11	3-3/16 x 4-15/16 x 9-3/8
LX-CC	15	17	4-15/16 x 4-15/16 x 9-3/8
LX-D	23	26	4-15/16 x 7-1/2 x 9-3/8
LX-E	27	29	4-15/16 x 7-1/2 x 11-3/4
LX-EE	37	47	4-15/16 x 7-1/2 x 16-1/2

Finish
Gray, FED. STD. 595 No. 26081.

Accessories
Rack adapters, blank panels, chassis slides, fixed and wide-range overvoltage protectors are available for all models except for models with built-in fixed overvoltage protection.
See pages 77-79.

AC Input

Add Suffix	For Operation at:	Price Qty. 1-14	Price Single Model Qty. 15 & up	Price Mixed Models Qty. 15 & up
—V	187-242 VAC 47-440 Hz	12% or $30*	10%	12% or $30*
—V1	205-265 VAC 47-440 Hz	12% or $30*	10%	12% or $30*

*Whichever is greater.

Fungus Proofing
All fungi nutrient components are rendered fungi inert.

Guaranteed for 5 Years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years

Ⓡ Recognized

Lambda LM Series

Features—LM Series

5 package sizes

5-year guaranteed

Lambda MIL-T-27C grade 6 magnetics layer wound with electrostatic shield

Computer grade hermetically sealed 10-year life electrolytic capacitors.

Lambda CC4®* Printed Circuit Board plated thru-holes fungus inert, flame retardant
*Licensee of Photo Circuits Inc.

Meets military environmental specifications MIL-STD-810B, MIL-I-16910, MIL-E-5272C, MIL-T-4807A, MIL-E-4970A

Rugged convection-cooled chassis

MIL-R-26 type wire wound resistors

MIL-W-16878 Wire UL approved

MIL-R-11 composition resistors

Heavy duty barrier strip on all LM power supplies

MIL-R-22684 type film resistors

Recognized

Specifications—LM Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line ..... 0.05% plus 4 mV for line variations from 105-132 VAC, 0.01% plus 1.0 mV for line variations from 105-132 VAC. ("Y" option)

regulation, load ..... 0.03% plus 3 mV for load variations from 0 to full load. 0.02% plus 2 mV for load variations from 0 to full load. ("Y" option)

remote programming resistance ..... 200 ohms/volt, nominal

remote programming voltage ..... volt per volt

ripple and noise ..... 1 mV RMS, 3 mV pk-pk with either pos. or neg. terminal grounded. 0.5 mV RMS, 1.5 mV pk-pk with 60 Hz input. ("Y" option)

temperature coefficient ..... 0.03%/° C; 0.01%/° C ("Y" option)

AC Input

line ..... 105-132 VAC; 45-440 Hz. 40° C rating not applicable for 50 Hz operation; for 400 Hz operation consult factory. 187-242 VAC, see AC input option.

power* ..... LM-B Models, 80 watts; LM-D Models, 380 watts; LM-E Models, 520 watts; LM-F Models, 900 watts; LM-G Models, 1300 watts.

*With output loaded to 40° C rating, input 132 VAC and 55-65 Hz.

Ambient Operating Temperature Range
Continuous duty from —20° C to +71° C ambient with corresponding load current ratings for all modes of operation and mounting positions

Storage Temperature Range
—55° C to +85° C.

Overload protection

THERMAL
Thermostat; automatic reset when over-temperature condition is eliminated.

ELECTRICAL
External overload protection: fixed, automatic electronic current limiting circuit limits the output current upon external overloads, including short circuit, thereby providing protection for load as well as power supply.

Overshoot
No overshoot on turn-on, turn-off, or power failure.

Input and Output Connections
Heavy duty terminal block on rear of chassis; output terminals on LM-F and LM-G are two heavy duty studs.

Controls

DC Output Control
Simple screwdriver voltage adjustment over entire voltage range.

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Mounting
Three surfaces, each with tapped mounting holes, can be utilized for mounting LM-B, and D Models. One mounting surface for E Models, and only in the horizontal plane. Designed to mount in Lambda Standard Rack Adapters. LM-F and G Models are full rack supplies.

Mil Specs
RFI: MIL-1-16910, temp. shock: MIL-E-5272C (ASG) Proc. 1
vibration: MIL-T-4807A, altitude: MIL-E-4970A (ASG) Proc1
shock: MIL-E-4970A Proc 1 & 2
humidity: MIL-STD-810 Meth. 507, Proc. 1,
fungus proofing: MIL- V-173.

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LM-B	6	7	3-3/16 x 4-15/16 x 6-1/2
LM-D	20	23	4-15/16 x 7-1/2 x 9-3/8
LM-E	28	31	4-15/16 x 7-1/2 x 11-3/4
LM-F	54	64	3-1/2 x 19 x 16-1/2
LM-G	72	84	5-3/16 x 19 x 16-1/2

Finish
LM-B, D, E, F and G—grey, FED. STD. 595 No. 26081, LM-F and G front panels brushed aluminum clear anodized panels with grey inlay (standard).

Accessories
Rack adapters, chassis slides, overvoltage protectors, blank panels see pages 77-79.

Options

High Performance
Add suffix "-Y"—all models available with these specifications for $15.00 extra; line regulation .01% + 1 mV; Load regulation .02% + 2 mV; Ripple and noise—with 60 Hz input 0.5 mV RMS; 1.5 mV pk-pk with either positive or negative terminal grounded; Temp. coeff. .01%/°C.

AC Input

Add Suffix	For Operation at:	Price Qty. 1-14	Price Single Model Qty. 15 & up	Price Mixed Models Qty. 15 & up
—V	187-242 VAC 47-440 Hz	12% or $30*	10%	12% or $30*
—V1	206-265 VAC 47-440 Hz	12% or $30*	10%	12% or $30*

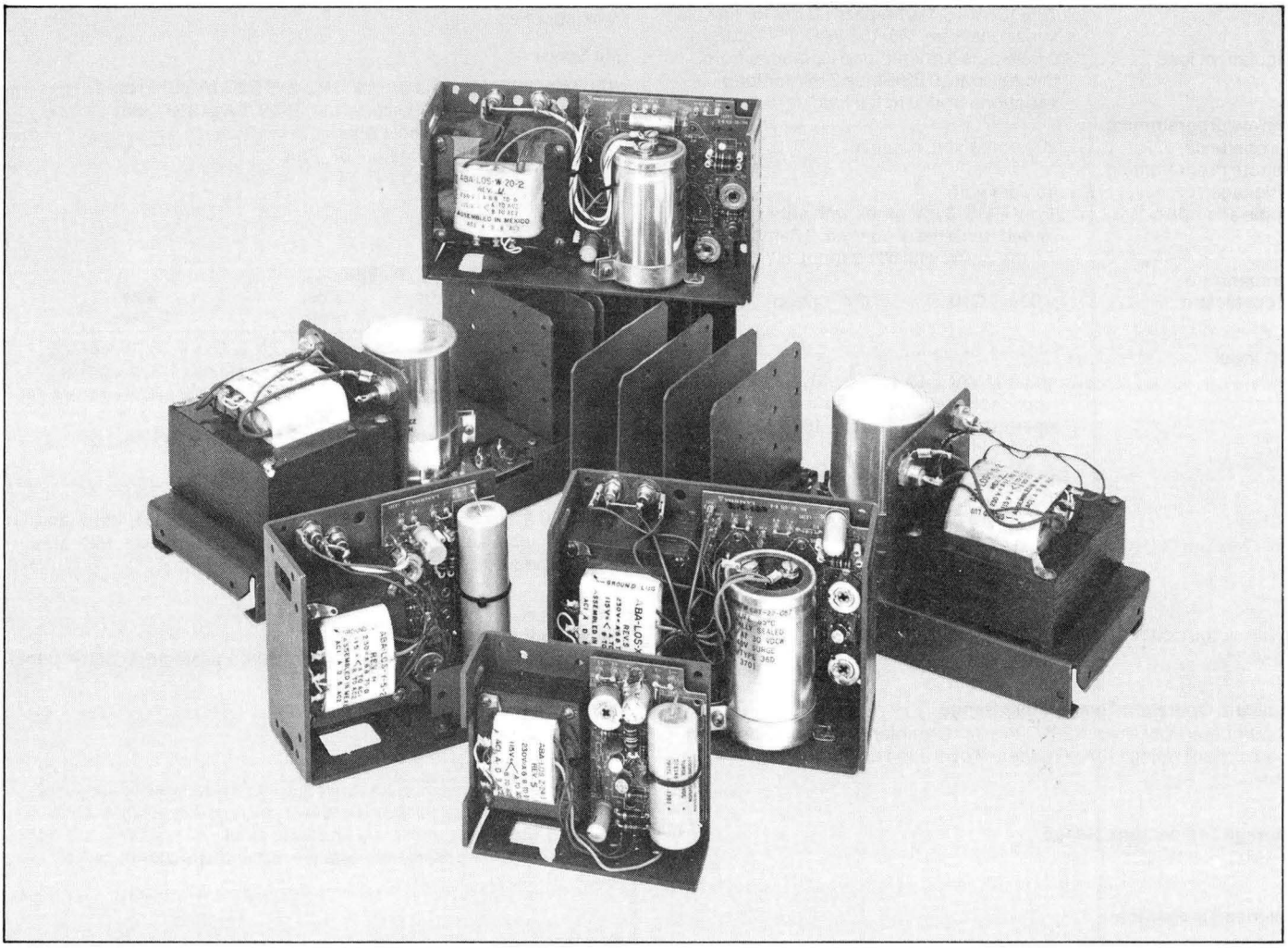
*whichever is greater.

Fungus Proofing
Add suffix "-R"—all models can be obtained with MIL-V-173 varnish for all fungi nutrient components. LM-B thru E at $10.00 surcharge. All LM-F, LM-G models have all fungi nutrient components rendered fungi inert with MIL-V-173 varnish—standard and included in price.

Guaranteed for 5 Years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

Recognized

Lambda LO Series



Features—LO Series

AC input 105 to 125 VAC or 210-250 VAC, 47-440 Hz

3 mounting positions

No overshoot on turn-on, turn-off, or power failure

Integrated circuit regulation

Convection cooled, no internal fans or blowers or external heat sinking required

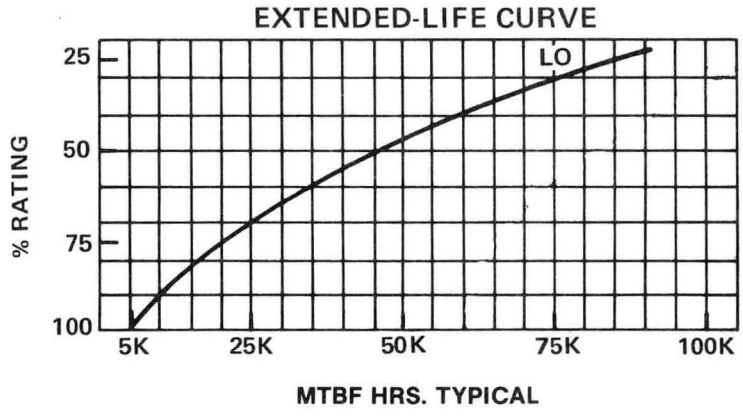
Foldback current limiting

6 package sizes up to 28 VDC, up to 25 A

Ambient operating temperature range continuous duty from 0° C to + 60° C

Temperature coefficient 0.03%° C

Ⓡ Recognized



Specifications—LO Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line .....0.15% for 105 to 125 VAC
regulation, load .....0.15% for 100% load change
ripple and noise .....1.5 mV RMS, 5 mV pk-pk with either positive or negative terminal grounded
remote programming resistance .....200 ohms/volt nominal (LOS units only)
remote programming voltage .....volt/volt (LOS units only)
temperature coefficient .....0.03%/° C

AC Input
line .....105-125 VAC/210-250 VAC, 47-440 Hz (derate 10% at 50 Hz). Consult factory for operation at frequencies other than 47 to 63 Hz. Units are factory wired for 105-125 VAC

Efficiency
minimum .....25% for 5 V, 6V models, 35% for 12V, 15 V and triple output models, 48% for 20 V, 24 V, 28 V models, ±15 to ±12 V models.

Overshoot
No overshoot on turn-on, turn-off or power failure.

Ambient Operating Range
Continuous duty from 0° to 60° C.

Storage Temperature Range
−55° C to +85° C

Overload Protection

ELECTRICAL
External overload protection; automatic electronic current limiting circuit limits the current to a preset value, thereby providing protection for the load as well as the power supply.

Overvoltage Protection
Available for all models. Lambda will mount an overvoltage protector to a standard LO series power supply. Consult factory for part numbers and prices. See page 77 for complete specifications.

Input and Output Connections
AC Input— Heavy duty terminals on transformer.
DC Output— Heavy duty stud terminals on printed circuit board.

Cooling
Units are rated at 40° C in free air and must be derated or fan cooled when mounted in confined area with no air circulation.

Controls

DC Output Control
Simple screwdriver voltage adjustment over voltage range.

Remote Sensing
Provision is made for remote sensing to eliminate effects of power output lead resistance on DC regulation. Connected for local sensing at factory.

Finish
Gray, FED. STD. 595 No. 26081.

Tracking Accuracy
(Dual and Triple Output Models Only) 4% absolute voltage difference, 0.2% change for all conditions of line, load, and temperature.

Mounting
Three mounting surfaces and three mounting positions for models W, X, Y, Z. One mounting surface for Models V and R.

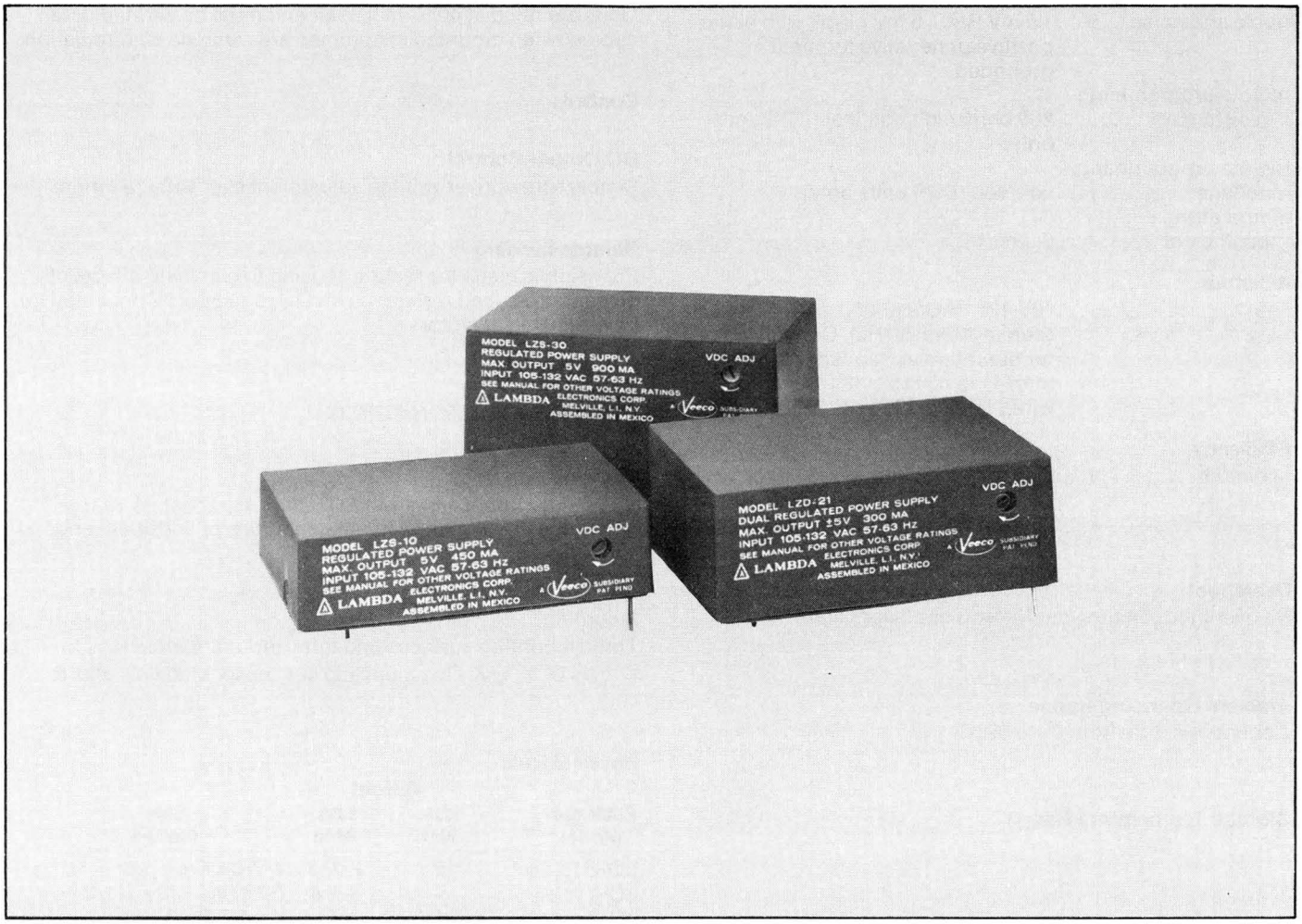
Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LO-Z	2	2-1/4	4-7/8 x 4 x 1-5/8
LO-Y	4	4-1/4	5-5/8 x 4-7/8 x 2-1/2
LO-X	6-1/2	7	7 x 4-7/8 x 2-3/4
LO-W	7-3/4	8-1/4	9 x 4-7/8 x 2-3/4
LO-V	10-1/4	11-3/4	4-7/8 x 13-3/4 x 4-7/8
LO-R	14-3/4	16-1/4	4-7/8 x 16-3/4 x 4-7/8

Guaranteed for 90 Days
90-day guarantee includes labor as well as parts. Guarantee applies to operation at full published specification at end of 90-days.

Recognized

Lambda-PAK™ LZ Series



Features—LZ Series

Three power packages

Single, dual tracking outputs

Fully repairable

Impact resistant, flame retardant plastic housing

Foldback current limiting

Continuously adjustable output voltage

Multi-voltage rated

Ambient operating temperature
Continuous duty from 0° C to +50° C

Only repairable, plastic power supply offering 90-day guarantee that includes material and labor

Specifications—Lambda-PAK™ LZ Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE
regulation, line .....0.15% for 105 to 132 VAC
regulation, load .....0.15% for 100% load change. Models LZS-10, LZS-30, LZD-21 have load regulation of 0.15% + 5mV
ripple and noise.....1.5 mV RMS, 5 mV pk-pk with either positive or negative terminal grounded
temperature coefficient .....0.03%/°C

AC Input
line.....105-132 VAC, 57-63 Hz.

Tracking Accuracy
2% absolute voltage difference for dual output models only. 0.2% change for all conditions of line, load and temperature.

Overshoot
No overshoot on turn-on, turn-off or power failure.

Ambient Operating Range
Continuous duty from 0° to 50°C.

Storage Temperature Range
−25°C to +85°C

Overload Protection

ELECTRICAL
Fixed automatic electronic current limiting circuit limits the output current upon external overloads, including short circuits, thereby providing protection for the load as well as the power supply.

Input and Output Connections
Printed circuit solder pins on lower surface of unit.

Controls
Simple screwdriver voltage adjustment over voltage range.

Mounting
Two 4 x 40 tapped holes on lower surface of LZ-10 series; three 4 x 40 tapped holes on lower surface LZ-20, and LZ-30 series. (Outline drawings see page 142)

Physical Data

Model	Weight (oz.) net	ship	Size (inches)
LZ-10	10	18	2-1/2 x 3-1/2 x 7/8
LZ-20	17	25	2-1/2 x 3-1/2 x 1-1/4
LZ-30	24	32	2-1/2 x 3-1/2 x 1-7/8

Options
AC Input

Add Suffix	For Operation At:
−V	187-242 VAC, 47-63 Hz

Price Added for "V" option which is available for these models only

$ 5	LZS-10, LZD-23,
$10	LZS-30, LZS-33, LZD-32, LZD-35

Derate current 10%.

Accessories
See pages 77-79 for overvoltage protectors.

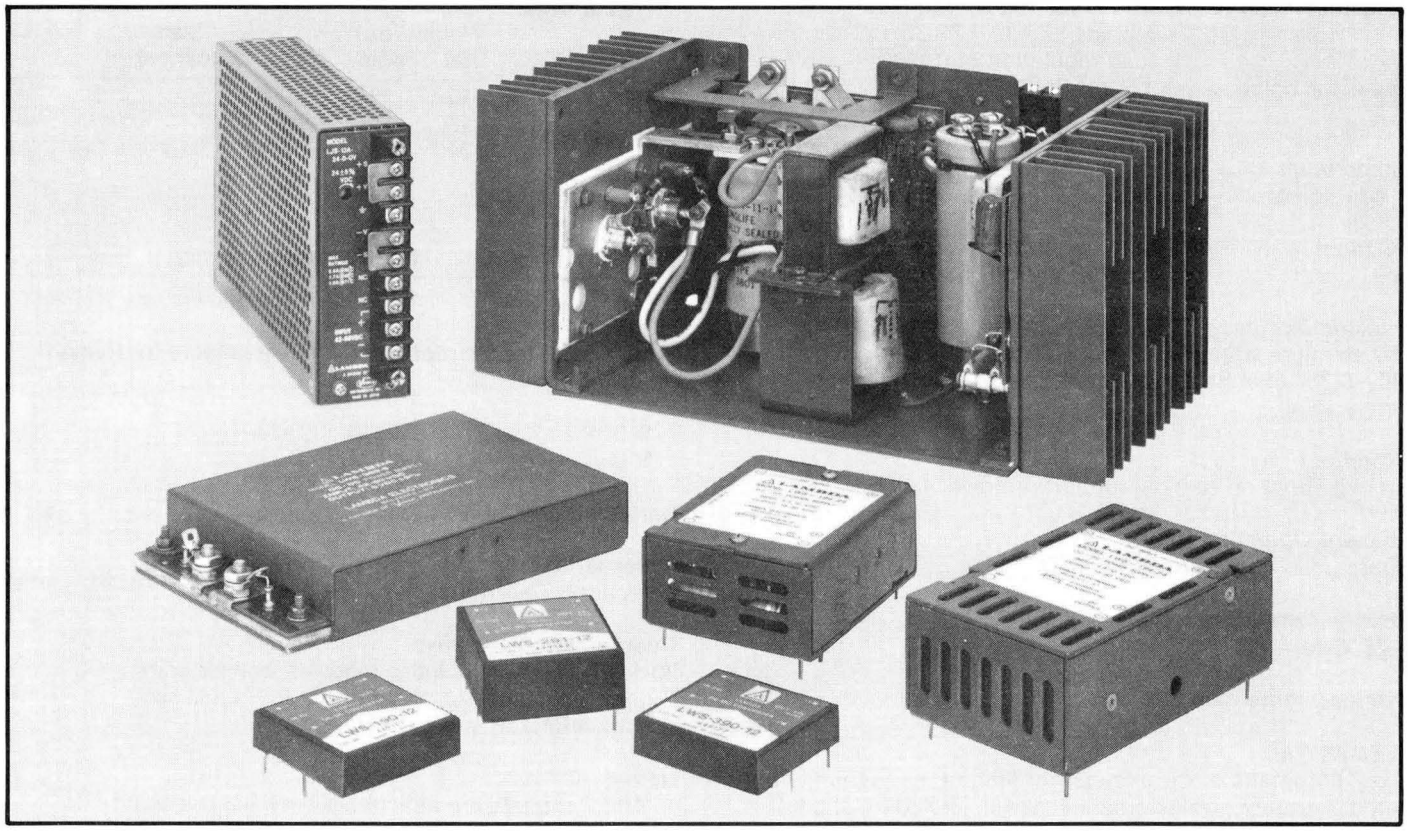
Guaranteed for 90 Days
90-day guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 90 days.

Notes:
1. All LZ models are adjustable between the following limits: LZS-10, LZS-30, (2.5 to 6V); LZS-11, LZS-33 (8.0 to 15V); LZD-21 (±2.5 to ± 6V); LZD-22, LZD-23 (±8.0 to ±15V); LZD-32, LZD-35 (±8.0 to 15V). Contact factory for current ratings at voltage setting not indicated in above tables.

2. Single output ratings for dual output models connected in series.

DC-TO-DC Power Supplies

Lambda LW, LGA, LJA and LY Series



DC-TO-DC—Lambda's Line of DC-to-DC power supplies is the answer for all your DC-to-DC applications. From low power pc-boards to higher powered telecommunications, Lambda has an in-stock solution. All models feature innovative Lambda technology, high densities up to 10W/in³, and reliability that's backed by Lambda's guarantee.

DC-TO-DC Selector Guide

DC Input, Single Output, Fixed Voltage. Models LG, LGA, LJA, and LY

DC INPUT 20.5-32 VDC STANDARD, LG SERIES

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE
5 VOLTS ±5% ADJ.											
LGS-5-5-C-OV-R	0.1%, 0.1%	10	35.0	31.0	25.0	16.5	29	5	3-3/16 x 4-15/16 x 14-5/8	121	**$1138**
12 VOLTS ±5% ADJ.											
LGS-5-12-C-OV-R	0.1%, 0.1%	15	15.0	13.5	10.0	7.0	29	5	3-3/16 x 4-15/16 x 14-5/8	121	**1138**

42-60 VDC, see next page.

DC-TO-DC Selector Guide

DC Input 42-58 VDC LJA Series Standard; 42-60 VDC LY Series Standard; 44-58 VDC LG, LGA Series Standard.

MODEL	REGULATION (line, load)	RIPPLE (mV RMS)	MAX AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	COMPLETE ELEC. SPEC. PG.	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG.	PRICE QTY. 1	QTY. 100	QTY. 1000
5 VOLTS ±5% ADJ.													
LJS-13A-5-D-OV	0.4%, 0.4%	10	9.0	9.0	6.3	3.6	63	13A	$4\frac{17}{32} \times 1\frac{11}{16} \times 7\frac{13}{64}$	123	**$242**	**$ —**	**$ —**
LJS-10A-5-D-OV	0.4%, 0.4%	10	14.0	14.0	9.8	5.6	31	10A	$4\frac{17}{32} \times 2\frac{3}{64} \times 7\frac{13}{64}$	123	**287**	**—**	**—**
LYS-W-5-D	0.1%, 0.1%	10	35.0	31.5	27.5	—	71	W	$9 \times 4\frac{7}{8} \times 3\frac{5}{32}$	127	**295**	**266**	**221**
LGS-5A-5-D-OV-R	0.1%, 0.1%	10	40.0	32.0	25.0	16.5	29	5	$3\frac{3}{16} \times 4\frac{15}{16} \times 14\frac{5}{8}$	121	**890**	**—**	**—**
LYS-P-5-D	0.1%, 0.1%	10	50.0	46.0	40.0	—	71	P	$11 \times 4\frac{7}{8} \times 4\frac{7}{16}$	127	**365**	**329**	**274**
LYS-K-5-D	0.1%, 0.1%	10	70.0	61.0	50.0	—	71	K	$11 \times 4\frac{7}{8} \times 5\frac{1}{2}$	127	**473**	**426**	**355**
LYS-D-5-D	0.1%, 0.1%	10	120.0	104.0	86.0	—	71	D	$9\frac{1}{2} \times 7\frac{1}{2} \times 4\frac{13}{16}$	129	**710**	**639**	**533**
6 VOLTS ±5% ADJ.													
LJS-13A-6-D-OV	0.4%, 0.4%	10	8.5	8.5	6.0	3.4	63	13A	$4\frac{17}{32} \times 1\frac{11}{16} \times 7\frac{13}{64}$	123	**242**	**—**	**—**
LJS-10A-6-D-OV	0.4%, 0.4%	10	13.0	13.0	9.1	5.2	31	10A	$4\frac{17}{32} \times 2\frac{3}{64} \times 7\frac{13}{64}$	123	**287**	**—**	**—**
LYS-W-6-D	0.1%, 0.1%	10	30.0	27.5	24.0	—	71	W	$9 \times 4\frac{7}{8} \times 3\frac{5}{32}$	127	**295**	**266**	**221**
LYS-P-6-D	0.1%, 0.1%	10	43.0	40.0	35.0	—	71	P	$11 \times 4\frac{7}{8} \times 4\frac{7}{16}$	127	**365**	**329**	**274**
LYS-K-6-D	0.1%, 0.1%	10	60.0	53.0	43.0	—	71	K	$11 \times 4\frac{7}{8} \times 5\frac{1}{2}$	127	**473**	**426**	**355**
LYS-D-6-D	0.1%, 0.1%	10	104.0	90.0	74.0	—	71	D	$9\frac{1}{2} \times 7\frac{1}{2} \times 4\frac{13}{16}$	129	**710**	**639**	**533**
12 VOLTS ±5% ADJ.													
LJS-13A-12-D-OV	0.4%, 0.4%	15	5.0	5.0	3.5	2.0	31	13A	$4\frac{17}{32} \times 1\frac{11}{16} \times 7\frac{13}{64}$	123	**242**	**—**	**—**
LJS-10A-12-D-OV	0.4%, 0.4%	15	6.8	6.8	4.7	2.7	31	10A	$4\frac{17}{32} \times 2\frac{3}{64} \times 7\frac{13}{64}$	123	**287**	**—**	**—**
LGS-5A-12-D-OV-R	0.1%, 0.1%	15	17.5	14.0	10.8	7.0	29	5	$3\frac{3}{16} \times 4\frac{15}{16} \times 14\frac{5}{8}$	121	**890**	**—**	**—**
LYS-W-12-D	0.1%, 0.1%	15	20.0	18.0	15.0	—	71	W	$9 \times 4\frac{7}{8} \times 3\frac{5}{32}$	127	**295**	**266**	**221**
LYS-P-12-D	0.1%, 0.1%	15	29.0	27.0	23.0	—	71	P	$11 \times 4\frac{7}{8} \times 4\frac{7}{16}$	127	**365**	**329**	**274**
LYS-K-12-D	0.1%, 0.1%	15	40.0	35.0	29.0	—	71	K	$11 \times 4\frac{7}{8} \times 5\frac{1}{2}$	127	**473**	**426**	**355**
LYS-D-12-D	0.1%, 0.1%	15	57.0	50.0	41.0	—	71	D	$9\frac{1}{2} \times 7\frac{1}{2} \times 4\frac{13}{16}$	129	**710**	**639**	**533**
15 VOLTS ±5% ADJ.													
LJS-13A-15-D-OV	0.4%, 0.4%	15	4.0	4.0	2.8	1.6	63	13A	$4\frac{17}{32} \times 1\frac{11}{16} \times 7\frac{13}{64}$	123	**242**	**—**	**—**
LJS-10A-15-D-OV	0.4%, 0.4%	15	5.5	5.5	3.8	2.2	63	10A	$4\frac{17}{32} \times 2\frac{3}{64} \times 7\frac{13}{64}$	123	**287**	**—**	**—**
LYS-W-15-D	0.1%, 0.1%	15	16.5	14.5	12.0	—	71	W	$9 \times 4\frac{7}{8} \times 3\frac{5}{32}$	127	**295**	**266**	**221**
LYS-P-15-D	0.1%, 0.1%	15	24.0	22.0	19.0	—	71	P	$11 \times 4\frac{7}{8} \times 4\frac{7}{16}$	127	**365**	**329**	**274**
LYS-K-15-D	0.1%, 0.1%	15	32.0	28.0	23.0	—	71	K	$11 \times 4\frac{7}{8} \times 5\frac{1}{2}$	127	**473**	**426**	**355**
LYS-D-15-D	0.1%, 0.1%	15	48.0	42.0	34.0	—	71	D	$9\frac{1}{2} \times 7\frac{1}{2} \times 4\frac{13}{16}$	129	**710**	**639**	**533**
20 VOLTS ±5% ADJ.													
LJS-13A-20-D-OV	0.4%, 0.4%	15	3.0	3.0	2.1	1.2	31	13A	$4\frac{17}{32} \times 1\frac{11}{16} \times 7\frac{13}{64}$	123	**242**	**—**	**—**
LJS-10A-20-D-OV	0.4%, 0.4%	15	4.3	4.3	3.0	1.7	31	10A	$4\frac{17}{32} \times 2\frac{3}{64} \times 7\frac{13}{64}$	123	**287**	**—**	**—**
LYS-W-20-D	0.1%, 0.1%	15	12.5	11.5	9.5	—	71	W	$9 \times 4\frac{7}{8} \times 3\frac{5}{32}$	127	**295**	**266**	**221**
LYS-P-20-D	0.1%, 0.1%	15	18.5	16.5	14.5	—	71	P	$11 \times 4\frac{7}{8} \times 4\frac{7}{16}$	127	**365**	**329**	**274**
LYS-K-20-D	0.1%, 0.1%	15	25.0	21.5	18.0	—	71	K	$11 \times 4\frac{7}{8} \times 5\frac{1}{2}$	127	**473**	**426**	**355**
LYS-D-20-D	0.1%, 0.1%	15	36.0	31.5	26.0	—	71	D	$9\frac{1}{2} \times 7\frac{1}{2} \times 4\frac{13}{16}$	129	**710**	**639**	**533**
24 VOLTS ±5% ADJ.													
LJS-13A-24-D-OV	0.4%, 0.4%	15	2.5	2.5	1.7	1.0	31	13A	$4\frac{17}{32} \times 1\frac{11}{16} \times 7\frac{13}{64}$	123	**242**	**—**	**—**
LJS-10A-24-D-OV	0.4%, 0.4%	15	3.6	3.6	2.5	1.4	31	10A	$4\frac{17}{32} \times 2\frac{3}{64} \times 7\frac{13}{64}$	123	**287**	**—**	**—**
LYS-W-24-D	0.1%, 0.1%	15	10.5	9.5	8.0	—	71	W	$9 \times 4\frac{7}{8} \times 3\frac{5}{32}$	127	**295**	**266**	**221**
LYS-P-24-D	0.1%, 0.1%	15	15.5	14.0	12.0	—	71	P	$11 \times 4\frac{7}{8} \times 4\frac{7}{16}$	127	**365**	**329**	**274**
LYS-K-24-D	0.1%, 0.1%	15	21.0	18.0	15.0	—	71	K	$11 \times 4\frac{7}{8} \times 5\frac{1}{2}$	127	**473**	**426**	**355**
LYS-D-24-D	0.1%, 0.1%	15	32.0	28.0	23.0	—	71	D	$9\frac{1}{2} \times 7\frac{1}{2} \times 4\frac{13}{16}$	129	**710**	**639**	**533**
28 VOLTS ±5% ADJ.													
LJS-13A-28-D-OV	0.4%, 0.4%	15	2.2	2.2	1.5	0.9	63	13A	$4\frac{17}{32} \times 1\frac{11}{16} \times 7\frac{13}{64}$	123	**242**	**—**	**—**
LJS-10A-28-D-OV	0.4%, 0.4%	15	3.1	3.1	2.1	1.2	63	10A	$4\frac{17}{32} \times 1\frac{11}{16} \times 7\frac{13}{64}$	123	**287**	**—**	**—**
LYS-W-28-D	0.1%, 0.1%	15	9.0	8.5	7.0	—	71	W	$9 \times 4\frac{7}{8} \times 3\frac{5}{32}$	127	**295**	**266**	**221**
LYS-P-28-D	0.1%, 0.1%	15	13.5	12.5	10.5	—	71	P	$11 \times 4\frac{7}{8} \times 4\frac{7}{16}$	127	**365**	**329**	**274**
LYS-K-28-D	0.1%, 0.1%	15	18.0	15.5	13.5	—	71	K	$11 \times 4\frac{7}{8} \times 5\frac{1}{2}$	127	**473**	**426**	**355**
LYS-D-28-D	0.1%, 0.1%	15	27.5	24.0	19.5	—	71	D	$9\frac{1}{2} \times 7\frac{1}{2} \times 4\frac{13}{16}$	129	**710**	**639**	**533**

DC-TO-DC Selector Guide

DC Input. Single Output. LW Series.

DC INPUT 4.5-6.0 VDC

MODEL	REGULATION (line, load)	RIPPLE (mV pk-pk)	MAX CURRENT IN AMPS 45°C	50°C	60°C	65°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250
5V ±5% NON-ADJ.													
LWS-190-5	0.5%, 1.0%	120	0.5	0.5	—	0.200	69	90	1.85 x 1.85 x 0.47	143	$49	$39	$31
LWS-191-5	0.5%, 1.0%	120	1.0	—	0.400	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37
12V ±5% NON-ADJ.													
LWS-190-12	0.5%, 1.0%	150	0.21	0.21	—	0.084	69	90	1.85 x 1.85 x 0.47	143	49	39	31
LWS-191-12	0.5%, 1.0%	150	0.42	—	0.168	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37
15V ±5% NON-ADJ.													
LWS-190-15	0.5%, 1.0%	150	0.17	0.17	—	0.060	69	90	1.85 x 1.85 x 0.47	143	49	39	31
LWS-191-15	0.5%, 1.0%	150	0.34	—	0.136	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37

DC INPUT 4.5-10.0 VDC

MODEL	REGULATION (line, load)	RIPPLE (mV pk-pk)	MAX CURRENT IN AMPS (MAX WATTAGE IN WATTS) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 1000
4.75-16 VOLTS ADJ.												
LWS-193-5	0.1%, 0.4%	100	2.0(10)	1.7(8.5)	1.5(7.5)	69	94	1.25 x 3.5 x 2.5	143	$89	$76	$62
LWS-194-5	0.1%, 0.4%	100	3.0(15)	2.6(12)	2.3(11.5)	69	94	1.25 x 3.5 x 2.5	143	119	101	75
15-30 VOLTS ADJ.												
LWS-193-24	0.1%, 0.4%	200	0.65(10)	0.57(8.5)	0.50(7.5)	69	94	1.25 x 3.5 x 2.5	143	89	76	62
LWS-194-24	0.1%, 0.4%	200	1.00(15)	0.90(13)	0.75(11.5)	69	94	1.25 x 3.5 x 2.5	143	119	101	75

DC INPUT 10.0-15.0 VDC

MODEL	REGULATION (line, load)	RIPPLE (mV pk-pk)	MAX CURRENT IN AMPS 45°C	50°C	60°C	65°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250
5V ±5% NON-ADJ.													
LWS-290-5	0.5%, 1.0%	120	0.60	0.60	—	0.24	69	90	1.85 x 1.85 x 0.47	143	$49	$39	$31
LWS-291-5	0.5%, 1.0%	120	1.20	—	0.48	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37
12V ±5% NON-ADJ.													
LWS-290-12	0.5%, 1.0%	150	0.25	0.25	—	0.10	69	90	1.85 x 1.85 x 0.47	143	49	39	31
LWS-291-12	0.5%, 1.0%	150	0.50	—	0.20	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37
15V ±5% NON-ADJ.													
LWS-290-15	0.5%, 1.0%	150	0.20	0.20	—	0.08	69	90	1.85 x 1.85 x 0.47	143	49	39	31
LWS-291-15	0.5%, 1.0%	150	0.40	—	0.16	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37

DC INPUT 10.0-20.0 VDC

MODEL	REGULATION (line, load)	RIPPLE (mV pk-pk)	MAX CURRENT IN AMPS (MAX WATTAGE IN WATTS) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 1000
4.75-16 VOLTS ADJ.												
LWS-195-5	0.1%, 0.4%	100	5.0(25)	4.3(21.5)	3.6(18)	69	95	2.5 x 4.5 x 1.5	143	$150	$127	$95
15-30 VOLTS ADJ.												
LWS-195-24	0.1%, 0.4%	200	1.65(25)	1.4(21.5)	1.2(18)	69	95	2.5 x 4.5 x 1.5	143	150	127	95

DC INPUT 10.0-30.0 VDC

MODEL	REGULATION (line, load)	RIPPLE (mV pk-pk)	MAX CURRENT IN AMPS (MAX WATTAGE IN WATTS) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 1000
4.75-16 VOLTS ADJ.												
LWS-294-5	0.1%, 0.4%	100	3.0(15)	2.6(13)	2.3(11.5)	69	94	1.25 x 3.5 x 2.5	143	$119	$101	$75
15-30 VOLTS ADJ.												
LWS-294-24	0.1%, 0.4%	200	1.0(15)	0.9(13)	0.75(11.5)	69	94	1.25 x 3.5 x 2.5	143	119	101	75

DC INPUT 20.0-30.0 VDC

MODEL	REGULATION (line, load)	RIPPLE (mV pk-pk)	MAX CURRENT IN AMPS 45°C	50°C	60°C	65°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250
5V ±5% NON-ADJ.													
LWS-390-5	0.5%, 1.0%	120	0.60	0.60	—	0.24	69	90	1.85 x 1.85 x 0.47	143	$49	$39	$31
LWS-391-5	0.5%, 1.0%	120	1.20	—	0.48	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37
12V ±5% NON-ADJ.													
LWS-390-12	0.5%, 1.0%	150	0.25	0.25	—	0.10	69	90	1.85 x 1.85 x 0.47	143	49	39	31
LWS-391-12	0.5%, 1.0%	150	0.50	—	0.20	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37
15V ±5% NON-ADJ.													
LWS-390-15	0.5%, 1.0%	150	0.20	0.20	—	0.08	69	90	1.85 x 1.85 x 0.47	143	49	39	31
LWS-391-15	0.5%, 1.0%	150	0.40	—	0.16	—	69	91	1.85 x 1.85 x 0.75	143	59	47	37

DC-TO-DC Selector Guide

DC Input. Single Output. LW Series.

DC INPUT 20.0-40.0 VDC

MODEL	REGULATION (line, load)	RIPPLE (mV pk-pk)	MAX CURRENT IN AMPS (MAX WATTAGE IN WATTS) 40°C	50°C	60°C	COMPLETE ELEC. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 1000
4.75-16 VOLTS ADJ.												
LWS-295-5	0.1%, 0.4%	100	5.0(25)	4.3(21.5)	3.6(18)	69	95	2.5 x 4.5 x 1.5	143	$150	$127	$95
15-30 VOLTS ADJ.												
LWS-295-24	0.1%, 0.4%	200	1.65(25)	1.4(21.5)	1.2(18)	69	95	2.5 x 4.5 x 1.5	143	150	127	95
20-40 VOLTS ADJ.												
LWS-296-28	0.1%, 0.4%	200	2.5(50)	2.1(42)	1.8(36)	69	95	2.5 x 4.5 x 1.5	143	200	170	127
30-60 VOLTS ADJ.												
LWS-296-48	0.1%, 0.4%	200	1.67(50)	1.4(42)	1.2(36)	69	95	2.5 x 4.5 x 1.5	143	200	170	127

DC INPUT 20.0-60.0 VDC

4.75-16 VOLTS ADJ.												
LWS-394-5	0.1%, 0.4%	100	3.0(15)	2.6(12)	2.3(11.5)	69	94	1.25 x 3.5 x 2.5	143	$119	$101	$75
15-30 VOLTS ADJ.												
LWS-394-24	0.1%, 0.4%	200	1.0(15)	0.9(13)	0.75(11.5)	69	94	1.25 x 3.5 x 2.5	143	119	101	75

DC INPUT 30.0-60.0 VDC

4.75-16 VOLTS ADJ.												
LWS-395-5	0.1%, 0.4%	100	5.0(25)	4.3(21.5)	3.6(18)	69	95	2.5 x 4.5 x 1.5	143	$150	$127	$95
15-30 VOLTS ADJ.												
LWS-395-24	0.1%, 0.4%	200	1.65(25)	1.4(21.5)	1.2(18)	69	95	2.5 x 4.5 x 1.5	143	150	127	95
20-40 VOLTS ADJ.												
LWS-397-28	0.1%, 0.4%	200	3.0(60)	2.5(50)	2.1(42)	69	95	2.5 x 4.5 x 1.5	143	200	170	127
30-60 VOLTS ADJ.												
LWS-397-48	0.1%, 0.4%	200	2.0(60)	1.67(50)	1.4(42)	69	95	2.5 x 4.5 x 1.5	143	200	170	127

DC Input. Dual Output. LW Series.

DC INPUT 5V ±10%

MODEL	Vo	REGULATION (line, load)	RIPPLE (mV pk-pk)	MAX CURRENT (AMPS AT) 40°C	50°C	60°C	COMPLETE ELECT. SPEC. PG	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG	PRICE QTY. 1	QTY. 100	QTY. 250
±12 VOLTS ±3% FIXED													
LWD-191-12	±12	0.2%, 0.2%	120	.060	.060	.060	69	D-91	1.77 x 1.19 x .40	143	$62	$49	$40
LWD-192-12	±12	0.2%, 0.2%	120	.120	.120	.084	69	D-92	1.85 x 1.85 x .47	143	76	60	49
±15 VOLTS ±3% FIXED													
LWD-191-15	±15	0.2%, 0.2%	150	.050	.050	.050	69	D-91	1.77 x 1.19 x .40	143	62	49	40
LWD-192-15	±15	0.2%, 0.2%	150	.100	.100	.070	69	D-92	1.85 x 1.85 x .47	143	76	60	49

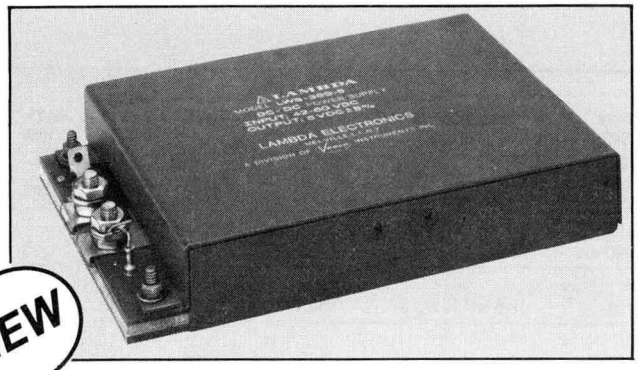
DC INPUT 12V ±10%

±12 VOLTS ±3% FIXED													
LWD-291-12	±12	0.2%, 0.2%	120	.060	.060	.060	69	D-91	1.77 x 1.19 x .40	143	$62	$49	$40
LWD-292-12	±12	0.2%, 0.2%	120	.120	.120	.084	69	D-92	1.85 x 1.85 x .47	143	76	60	49
±15 VOLTS ±3% FIXED													
LWD-291-15	±15	0.2%, 0.2%	150	.050	.050	.050	69	D-91	1.77 x 1.19 x .40	143	62	49	40
LWD-292-15	±15	0.2%, 0.2%	150	.100	.100	.070	69	D-92	1.85 x 1.85 x .47	143	76	60	49

DC INPUT 24V ±10%

±12 VOLTS ±3% FIXED													
LWD-391-12	±12	0.2%, 0.2%	120	.060	.060	.060	69	D-91	1.77 x 1.19 x .40	143	$62	$49	$40
LWD-392-12	±12	0.2%, 0.2%	120	.120	.120	.084	69	D-92	1.85 x 1.85 x .47	143	76	60	49
±15 VOLTS ±3% FIXED													
LWD-391-15	±15	0.2%, 0.2%	150	.050	.050	.050	69	D-91	1.77 x 1.19 x .40	143	62	49	40
LWD-392-15	±15	0.2%, 0.2%	150	.100	.100	.070	69	D-92	1.85 x 1.85 x .47	143	76	60	49

LAMBDA LWS-389 SERIES



NEW

Features:

- **High efficiency**
- **Galvanic isolation**
- **Wide input range**
- **Convection or conduction cooled**
- **Remote turn-on/turn-off**
- **Designed to meet environmental specifications of MIL-STD-810**
- **Meets FCC specifications for telecommunications equipment**
- **High reliability**
- **No life-limiting components used**
- **Designed to meet UL/CSA**

EXAMPLE 1

Calculation of the Required Heat Sink Coefficient (θ_{SA})

Given:
Output load requirement — 5V @ 25A
Maximum ambient temperature —
$T_A = 40°C$

1. Determine maximum baseplate temperature (T_C) from voltage and current table for 5V @ 25A.
   $T_C = 80°C$
2. Calculate power dissipation in unit.
   Efficiency (5V unit) = 75%
   $P_{OUT} = 5V \times 25A = 125W$

$$P_{DISS} = P_{OUT}\left(\frac{1\text{-Efficiency}}{\text{Efficiency}}\right)$$

$$= 125W\left(\frac{1\text{-}.75}{.75}\right) = 41.7W$$

3. Calculate required heat sink coefficient (θ_{SA})
   $T_C = T_A + \theta_{SA} P_{DISS}$
   $80°C = 40°C + \theta_{SA}(41.7W)$
   $\theta_{SA} = 0.96°C/W$ (or less)

EXAMPLE 2

Calculation of the Required Heat Sink Coefficient (θ_{SA})

Given:
Output load requirement —
24V @ 8.75A
Maximum ambient temperature —
$T_A = 40°C$

1. Determine maximum baseplate temperature (T_C) from voltage and current table for 24V @ 8.75A.
   $T_C = 75°C$
2. Calculate power dissipation in unit.
   Efficiency (24V unit) = 84%
   $P_{OUT} = 24V \times 8.75A = 210W$

$$P_{DISS} = P_{OUT}\left(\frac{1\text{-Efficiency}}{\text{Efficiency}}\right)$$

$$= 210W\left(\frac{1\text{-}.84}{.84}\right) = 40W$$

3. Calculate required heat sink coefficient (θ_{SA})
   $T_C = T_A + \theta_{SA} P_{DISS}$
   $75°C = 40°C + \theta_{SA}(40W)$
   $\theta_{SA} = 0.875°C/W$ (or less)

EXAMPLE 3

To Determine If the Power Supply Can Supply the Output Requirement

Given:
Heat sink coefficient — $\theta_{SA} = 0.8°C/W$
Maximum ambient temperature —
$T_A = 40°C$
Output requirement — 24V @ 8A

1. Calculate power dissipation in unit.
   Efficiency (24V unit) = 84%
   $P_{OUT} = 24V \times 8A = 192W$

$$P_{DISS} = P_{OUT}\left(\frac{1\text{-Efficiency}}{\text{Efficiency}}\right)$$

$$= 192W\left(\frac{1\text{-}.84}{.84}\right) = 36.57W$$

2. Calculate baseplate temperatures (T_C)
   $T_C = T_A + \theta_{SA} P_{DISS}$
   $T_C = 40°C + (0.8°C/W)(36.57W)$
   $T_C = 69.25°C$
   At 69.25°C, 11.5A is allowed
   $\therefore \theta_{SA} = 0.8°C/W$ is sufficient to provide the full output requirement at $T_A = 40°C$.

DC Input. Single Output. 42 to 60VDC.

MODEL	REGULATION (line, load)	MAX CURRENT IN AMPS *70°C	*75°C	*80°C	*85°C	COMPLETE ELECT. SPEC. PG.	PKG. SIZE	DIMENSIONS (inches)	COMPLETE MECH. SPEC. PG.	PRICE QTY. 1	QTY. 100	QTY. 1000
5V ±5% ADJ. LWS-389-5	0.1%, 0.1%	50.00	37.50	25.00	12.50	67	89	1 x 4 x 6	142	**$400**	**$340**	**$250**
6V ±5% ADJ. LWS-389-6	0.1%, 0.1%	42.00	31.25	21.00	10.50	67	89	1 x 4 x 6	142	**400**	**340**	**250**
12V ±5% ADJ. LWS-389-12	0.1%, 0.1%	23.00	17.25	11.50	5.75	67	89	1 x 4 x 6	142	**400**	**340**	**250**
15V ±5% ADJ. LWS-389-15	0.1%, 0.1%	18.50	14.00	9.25	4.60	67	89	1 x 4 x 6	142	**400**	**340**	**250**
20V ±5% ADJ. LWS-389-20	0.1%, 0.1%	14.00	10.50	7.00	3.50	67	89	1 x 4 x 6	142	**400**	**340**	**250**
24V ±5% ADJ. LWS-389-24	0.1%, 0.1%	11.50	8.75	5.75	2.90	67	89	1 x 4 x 6	142	**400**	**340**	**250**
28V ±5% ADJ. LWS-389-28	0.1%, 0.1%	10.00	7.50	5.00	2.50	67	89	1 x 4 x 6	142	**400**	**340**	**250**

*NOTE: Maximum baseplate temperature. (Contact factory for additional output ranges.)

Specifications — LWS-389

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line . . . . . 0.1% for line variations from 42 to 60 VDC.

regulation, load . . . . . 0.1% from no load to full load.

ripple and noise . . . . . 1% or 75mv pk-pk (whichever is greater)

temp. coeff. . . . . 0.03%/°C

remote programming resistance . . . . . 1000Ω/volt nominal

remote programming voltage . . . . . volt per volt

DC Input

line . . . . . 42VDC to 60VDC (other input ranges available—Consult Factory)

power . . . . . 350 watts maximum

efficiency . . . . . 75% minimum for 5V and 6V models
80% minimum for 12V and 15V models
82% minimum for 20V models
84% minimum for 24V and 28V models

Overshoot
No overshoot at turn-on, turn-off, or power failure.

Operating Temperature
– 25°C to + 90°C base plate.

Storage Temperature Range
-55°C to + 100°C

Isolation Rating
1500 VDC.

Overload Protection

ELECTRICAL
External overload protection, automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Thermal
Electronic overtemperature shutdown, self-resetting.

Cooling
Conduction cooled via the baseplate. 0.5°C/W heat sink required for maximum output at 25°C ambient temperature.

DC Output Controls
Simple screw driver adjustment over the entire voltage range.

Mounting
One mounting surface.

Input and Output Connections
DC input via solder studs. DC output via bus bars.

Remote Turn-On/Turn-Off
Provision is made for remote turn-on/turn-off by means of a TTL compatible signal. (Grounding shutdown terminal to the input ground turns the unit off.)

Remote Sensing
Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation.

EMI
The LWS-389 meets FCC specifications for telecommunications equipment.

Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LWS-389	1.75	2.0	1 x 4 x 6

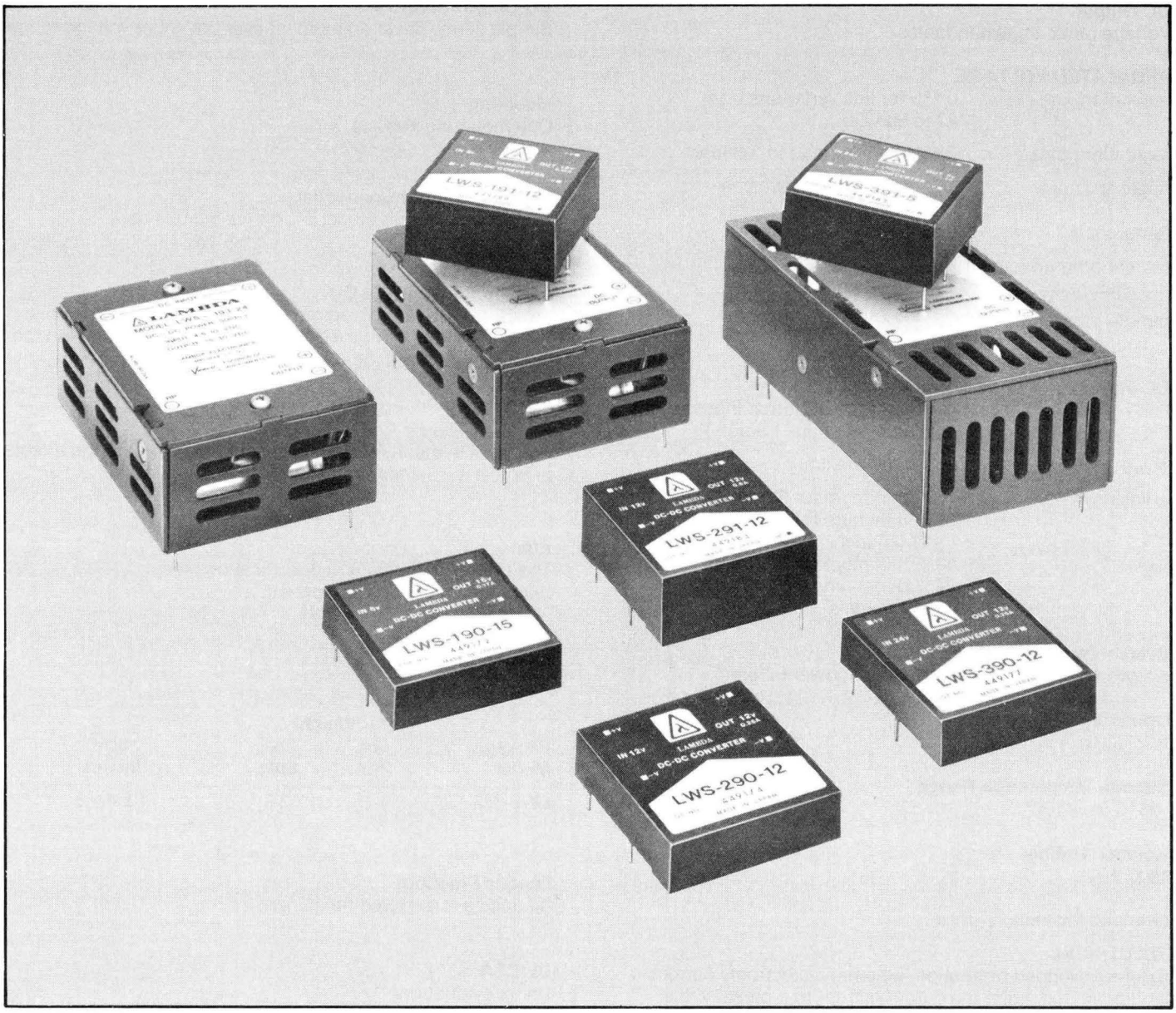
Fungus Proofing
All units are rendered fungi inert.

UL/CSA
Under evaluation.

Accessories
Overvoltage protectors available. Consult factory.

Guarantee
90 day guarantee includes labor as well as parts.

Lambda LW Series



Features—LW Series

48 models to meet your exact requirements

All outputs isolated

High efficiency

New dual output models

Available for one day delivery from stock

All outputs regulated

PC board mountable

Specifications—LW Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE

regulation, line ..... 0.1% from minimum to maximum and from maximum to minimum. 0.5% on LWS-190, 191, 290, 291, 390, 391. 0.2% on both outputs of dual output models for input variations from 21.6 to 26.4 VDC or 26.4 to 21.6 VDC on LWD-391, 392; from 10.8 to 13.2 VDC or 13.2 to 10.8 VDC on LWD-291, 292; from 4.5 to 5.5 VDC or 5.5 to 4.5 VDC on LWD-191, 192.

regulation, load ..... 0.4% for load variations from no load to full load and full load to no load. 1.0% on LWS-190, 191, 290, 291, 390, 391. 0.2% on dual output models.

ripple and noise ..... 20mV RMS, 100mV pk-pk for 5V models of LWS-193, 194, 195, 294, 295, 394, 395.
120mV pk-pk for 5V models of LWS-190, 191, 290, 291, 390, 391 and 12V models of LWD-191, 192, 291, 292, 391, 392.
150mV pk-pk for 12V models of LWD-191, 192, 291, 292, 391, 392 and 12V and 15V models of LWS-190, 191, 290, 291, 390, 391.
25mV RMS, 200mV pk-pk for all other models.

efficiency ..... LWS-194, LWS-294, LWS-394, and LWS-193: 50% minimum.
LWD-191, 291, 391, 192, 292, 392: 56% minimum.
LWS-195, 295, 395: 57% minimum.
LWS-190: 58% minimum.
LWS-191: 60% minimum.
LWS-391: 64% minimum.
LWS-390: 67% minimum.
LWS-291: 68% minimum.
LWS-290: 70% minimum.
LWS-296, 397: 75% minimum.

temp. coeff. ..... 0.03%/°C. 0.02% on LWS-190, 191, 290, 291, 390, 391 and on all dual output models.

Ambient Operating Temperature
Continuous duty 0 to +60°C with suitable derating above 40°C for LWS-193, 194, 195, 294, 295, 296, 394, 395, 397, and dual output models. Continuous duty -5°C to 60°C with suitable derating above 45°C for LWS-191, 291, 391. Continuous duty -5°C to +65°C with suitable derating above 50°C for LWS-190, 290, 390.

Overload Protection
External overload protection. Automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Storage Temperature Range
-55°C to +85°C. -20°C to +85°C for LWS-190, 191, 290, 291, 390, 391. −30°C to +85°C on all dual output models.

Overshoot
No overshoot at turn-on, turn-off, or power failure.

Cooling
All units are convection cooled. No fans or blowers needed.

Mounting
PC board mountable. Refer to outline drawings.

Output Voltage Adjust
LWS-193, 194, 195, 294, 295, 296, 394, 395, 397
Output voltage can be set to desired value within the entire range by inserting a resistor between +V and RP terminals. Resistor can be selected as per equations supplied in instruction manual.

Input/Output Connections
DC input and outputs are via pin type connections. Refer to outline drawings.

Isolation Rating
1500 VDC on LWS-394, 395, 397.
500 VDC on all other models.

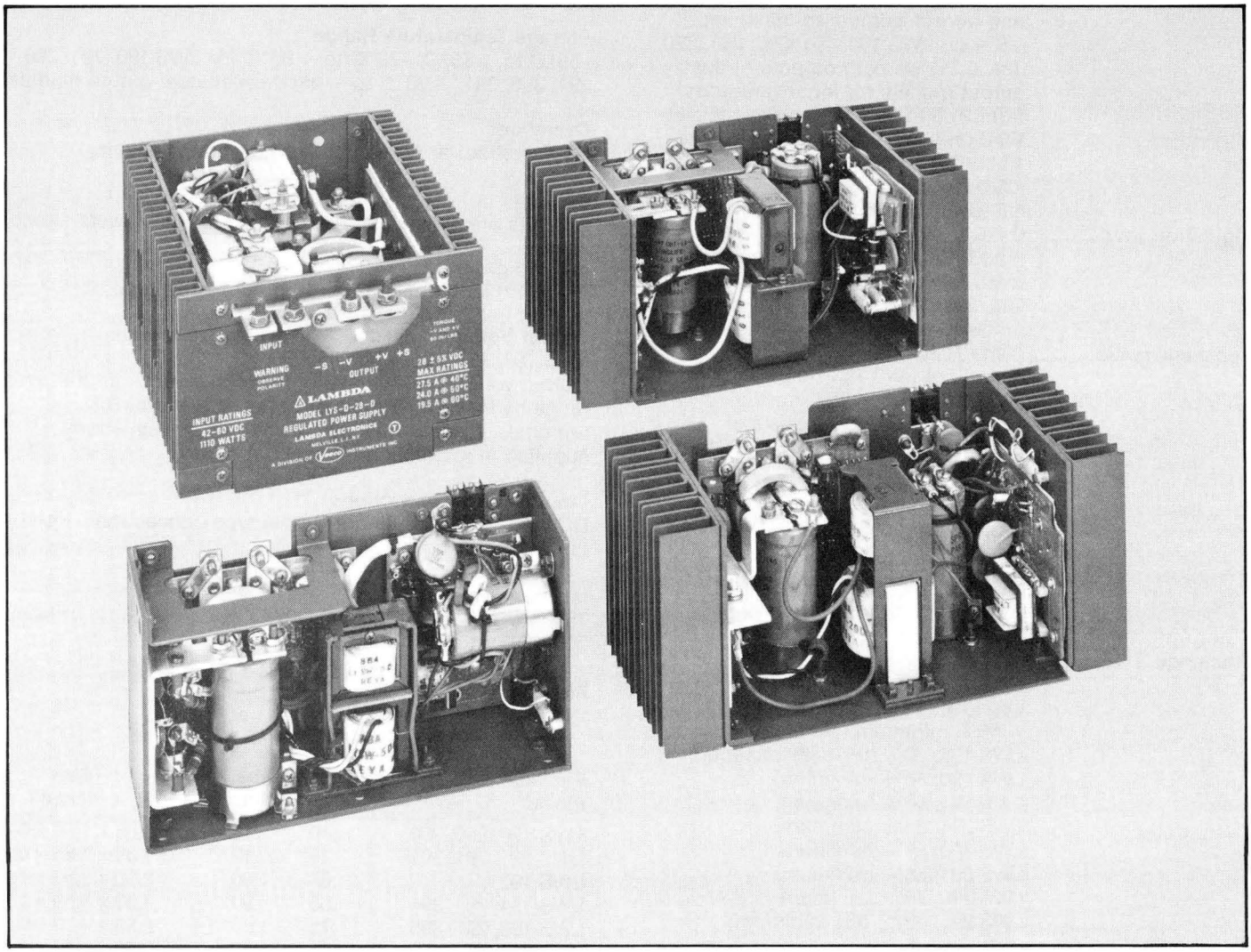
Physical Data

Package Model	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LWS-190, 290, 390	.10	.12	1.85 x 1.85 x 0.47
LWS-191, 291, 391	.16	.19	1.85 x 1.85 x 0.75
LWS-193	.65	.90	2.50 x 3.50 x 1.25
LWS-194, 294, 394	.65	.90	2.50 x 3.50 x 1.25
LWS-195, 295, 395	.75	1.00	2.50 x 4.50 x 1.50
LWS-296	.75	1.00	2.50 x 4.50 x 1.50
LWS-397	.75	1.00	2.50 x 4.50 x 1.50
LWD-191, 291, 391	.06	.10	1.77 x 1.19 x 0.40
LWD-192, 292, 392	.09	.12	1.85 x 1.85 x 0.47

/CSA
Under evaluation

Guarantee
90 day guarantee includes labor as well as parts.

Lambda LYS-D Series



Features—LYS-D Series

Ruggedly built to meet the needs of the telecommunications industry.

Hermetically sealed switching transistors.

Lambda CC4® Printed Circuit Board plated thru-holes, fungus inert, flame retardant.

Heavy duty connector.

Sprague high temperature, long life electrolytic capacitors.

Lambda 130°C varnish dipped transformer and choke.

MIL-R-22684 type film resistors.

MIL-W-16878 wire.

Potentiometer fully enclosed cermet.

One day delivery.

*licensee of Photo Circuits Inc.

Specifications—LYS-D Series

DC Output
Voltage range shown in tables.

REGULATED VOLTAGE
regulation, line . . . . . 0.1% for line variations from 42 to 60 VDC.
regulation, load . . . . . 0.1% from no load to full load.
ripple and noise . . . . . 10mV RMS, 75mV p-p for 5V and 6V units.
15mV RMS, 150mV p-p for 12V through 28V units.
temp. coeff. . . . . 0.03%/C°
remote programming resistance 1000Ω/volt
remote programming voltage . . . . . volt per volt

DC Input
line . . . . . 42VDC to 60VDC
power . . . . . 375 watts max for LYS-WD models
550 watts max for LYS-PD models
650 watts max for LYS-KD models
1100 watts max for LYS-DD models
efficiency . . . . . 70% minimum

Overshoot
No overshoot at turn-on, turn-off, or power failure.

Ambient Operating Temperature
Continuous duty 0° to 60°C with suitable derating above 40°C.

Storage Temperature Range
-55°C to +85°C

Isolation Rating
1700 VDC.

Overload Protection

ELECTRICAL
External overload protection, automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Overvoltage Protection
OV protection is standard on LYS-"D" Series. If output voltage increases above a preset value, inverter-drive is removed.

Cooling
Convection cooled, no fans or blowers needed.

DC Output Controls
Simple screwdriver voltage adjustment over the entire voltage range.

Mounting
One mounting surface and one mounting position on LYS-KD, LYS-DD, and LYS-PD. Three mounting surfaces and two mounting positions on LYS-WD.

Input and Output Connections
Sensing. . . Screw terminals mounted on printed circuit board.
DC Output. . . Through output bus bars (bolts located on output bus bars on LYS-KD and LYS-DD).
DC Input. . . Barrier strip mounted on chassis. (Bolts located on input bus bars on LYS-DD).

Remote Sensing
Provision is made for remote sensing to eliminate the effects of power output lead resistance on DC regulation.

Physical Data

Package Model	Weight Lbs. Net	Lbs. Ship	Size Inches
LYS-WD	6	6-1/2	9 x 4-7/8 x 3-5/32
LYS-PD	9	10	11 x 4-7/8 x 4-7/16
LYS-KD	10	12-1/2	11 x 4-7/8 x 5-1/2
LYS-DD	13	16	9-1/2 x 7-1/2 x 4-13/16

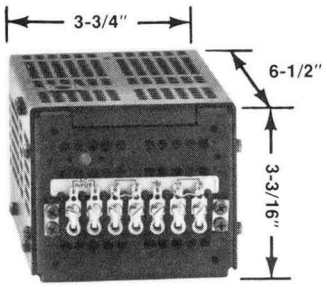
Finish
Grey, Fed. Std. 595, No. 26081

—Recognized
CSA—Under evaluation

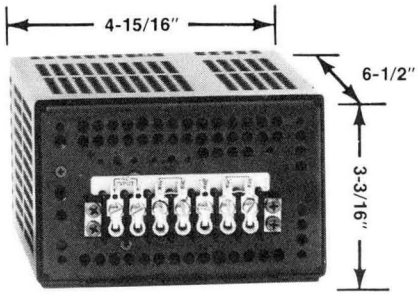
Accessories
Rack adapters (LRA-15, LRA-17, LRA-18), and TelRack™ cable system available. See p. 79 and p. 100.

Guaranteed for 1 Year
One year guarantee includes labor as well as parts.

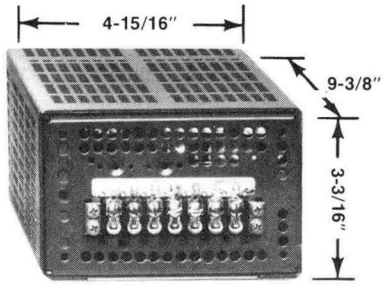
LAMBDA PACKAGE SIZES
SWITCHING AND LINEAR
HIGH GRADE INDUSTRIAL POWER SUPPLIES



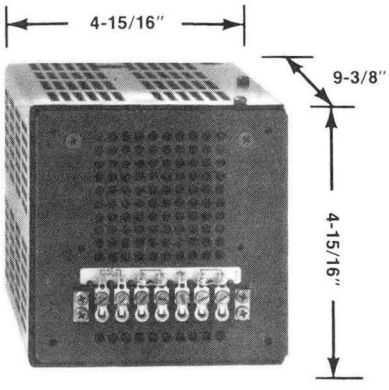
PACKAGE A
3-3/16" x 3-3/4" x 6-1/2"



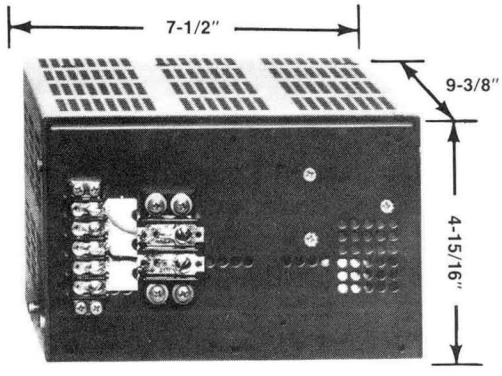
PACKAGE B
3-3/16" x 4-15/16" x 6-1/2"



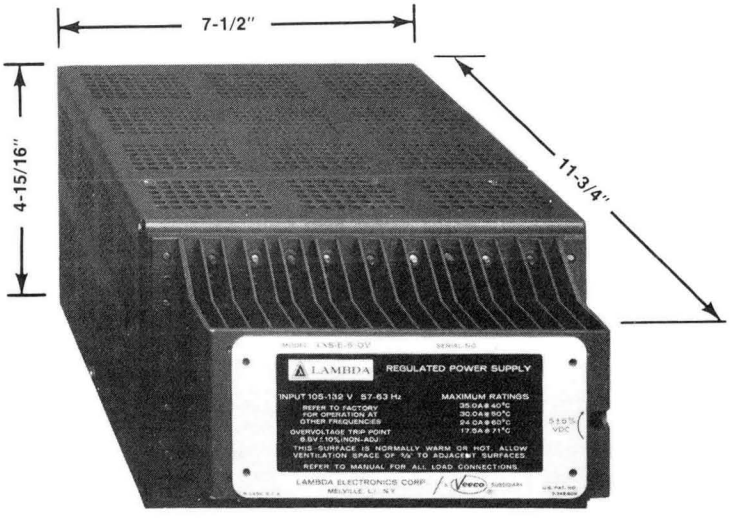
PACKAGE C
3-3/16" x 4-15/16" x 9-3/8"



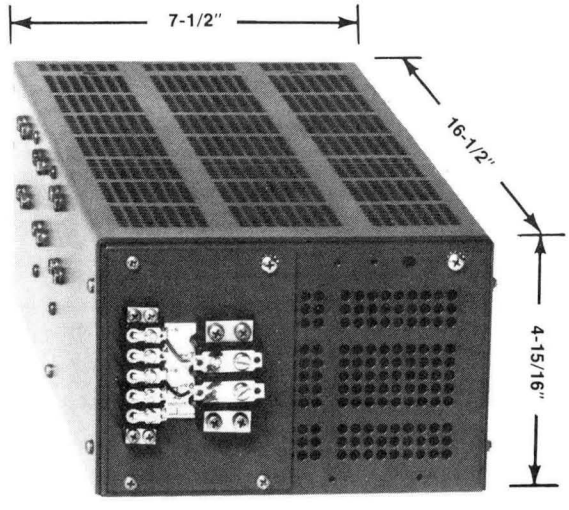
PACKAGE CC
4-15/16" x 4-15/16" x 9-3/8"



PACKAGE D
4-15/16" x 7-1/2" x 9-3/8"

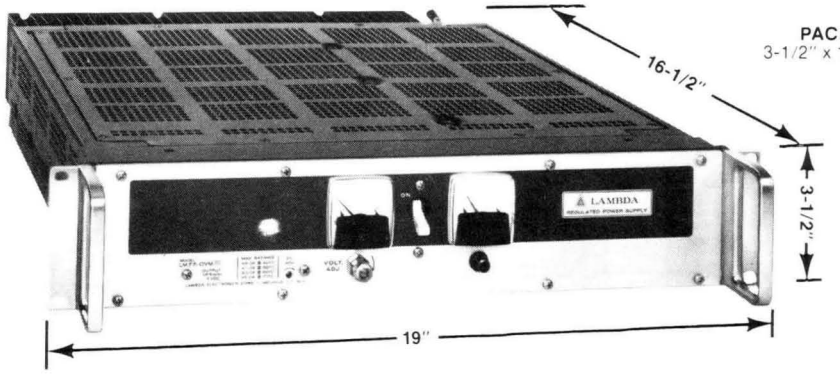


PACKAGE E
4-15/16" x 7-1/2" x 11-3/4"

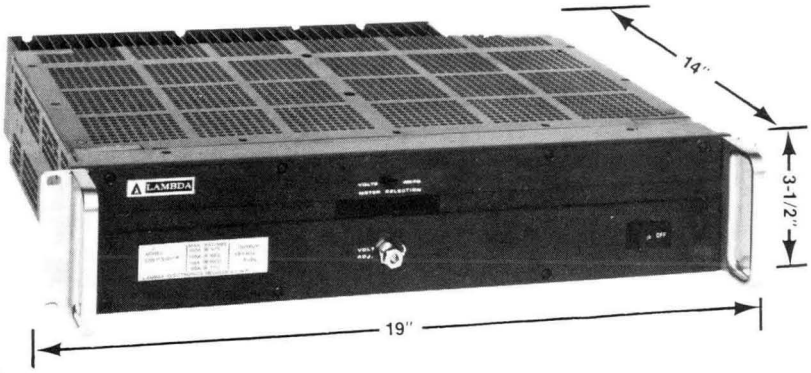


PACKAGE EE (Linear Only)
4-15/16" x 7-1/2" x 16-1/2"

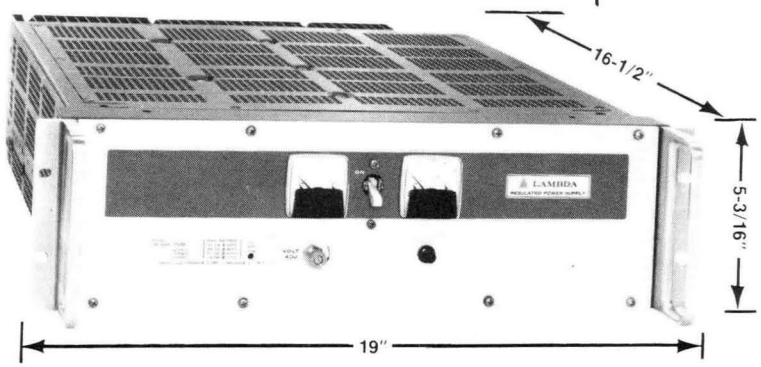
LAMBDA PACKAGE SIZES
SWITCHING AND LINEAR
HIGH GRADE INDUSTRIAL POWER SUPPLIES



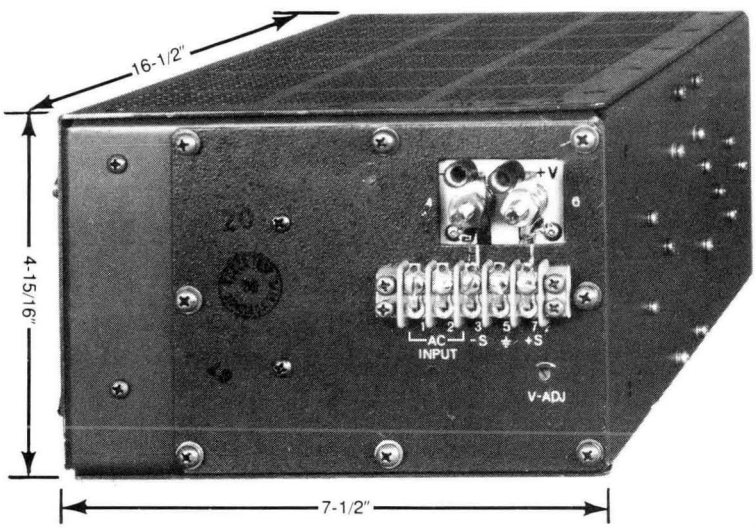
PACKAGE F
3-1/2" x 19" x 16-1/2"



PACKAGE LGS-FA
3-1/2" x 19" x 14"

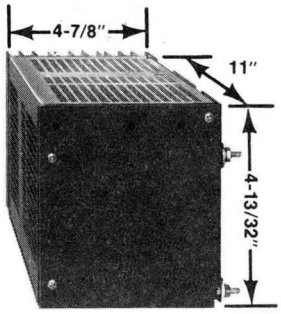


PACKAGE G
5-3/16" x 19" x 16-1/2"

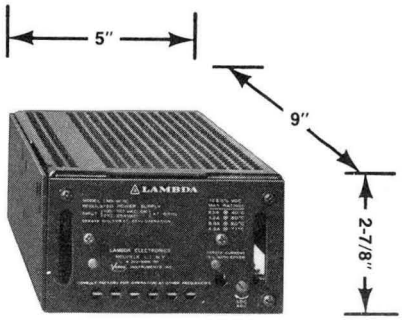


PACKAGE LGS-EEA
4-15/16" x 7-1/2" x 16-1/2"

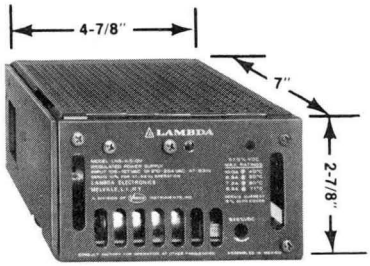
LAMBDA PACKAGE SIZES SWITCHING AND LINEAR HIGH GRADE INDUSTRIAL POWER SUPPLIES



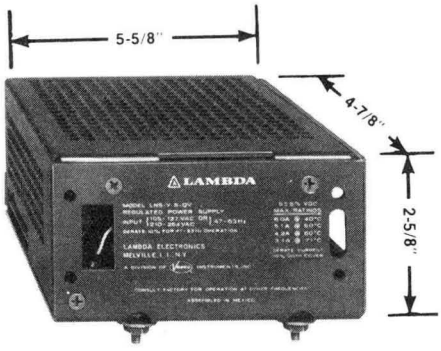
PACKAGE P
4-7/8" x 4-13/32" x 11"



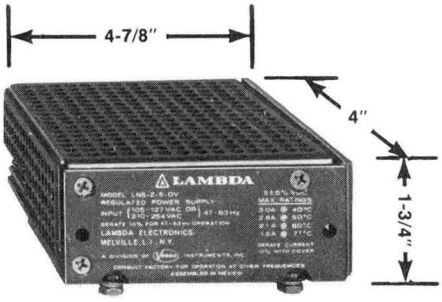
PACKAGE W
2-7/8" x 5" x 9"



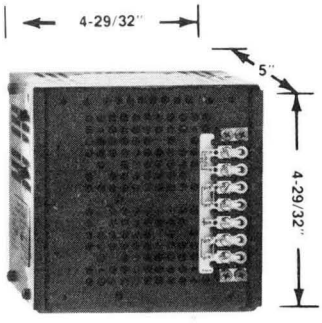
PACKAGE X
2-7/8" x 4-7/8" x 7"



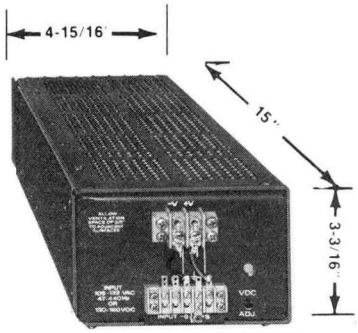
PACKAGE Y
2-5/8" x 5-5/8" x 4-7/8"



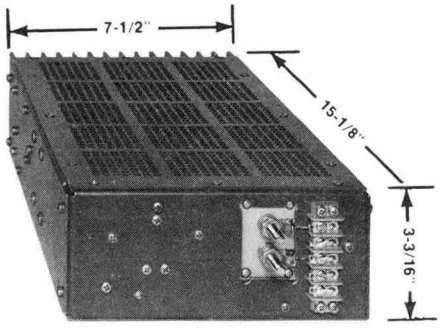
PACKAGE Z
1-3/4" x 4-7/8" x 4"



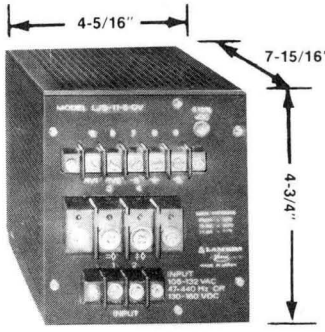
PACKAGE 4
4-29/32" x 4-29/32" x 5"



PACKAGE 5, 5A
3-3/16" x 4-15/16" x 15"



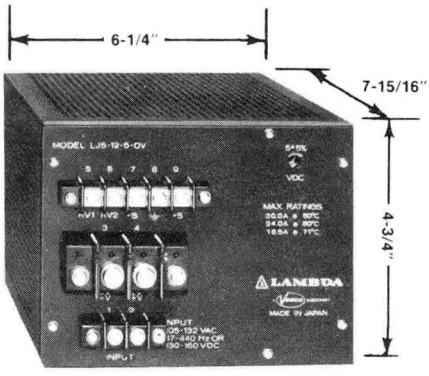
PACKAGE 6A
3-3/16" x 7-1/2" x 15-1/8"



PACKAGE 11
4-3/4" x 4-25/16" x 7-15/64"

PACKAGE 11A
4-17/32" x 3-63/64" x 7-13/64"

PACKAGE 11AV
3-9/64" x 4-17/32" x 8-21/32"

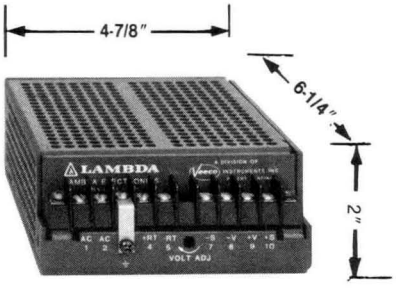


PACKAGE 12
4-3/4" x 6-1/4" x 7-15/16"

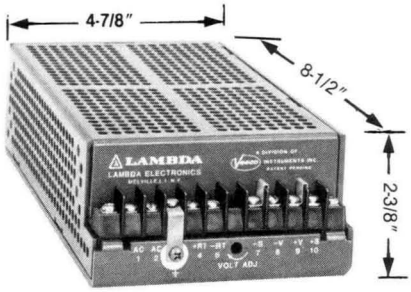
PACKAGE 12A
4-17/32" x 6-7/32" x 7-13/64"

PACKAGE 12AV
4-17/32" x 4-19/32" x 8-21/32"

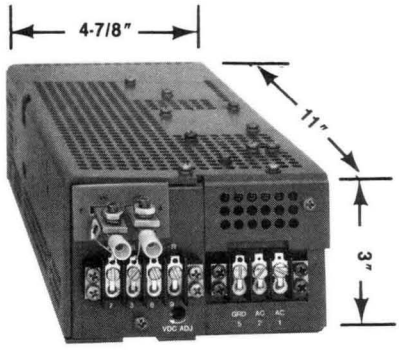
LAMBDA PACKAGE SIZES
SWITCHING AND LINEAR
HIGH GRADE INDUSTRIAL POWER SUPPLIES



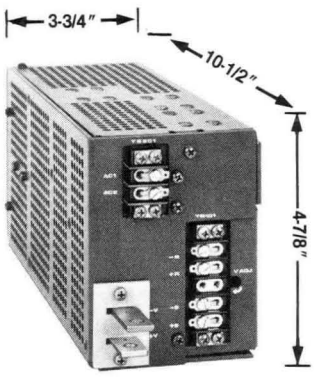
PACKAGE 52
2″ x 4-7/8″ x 6-1/4″



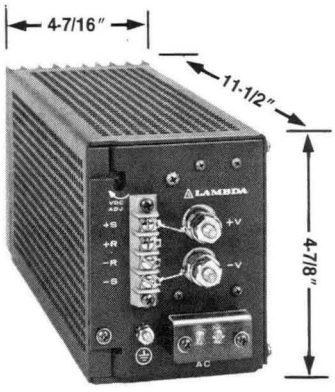
PACKAGE 53
2-3/8″ x 4-7/8″ x 8-1/2″



PACKAGE 54
3″ x 4-7/8″ x 11″

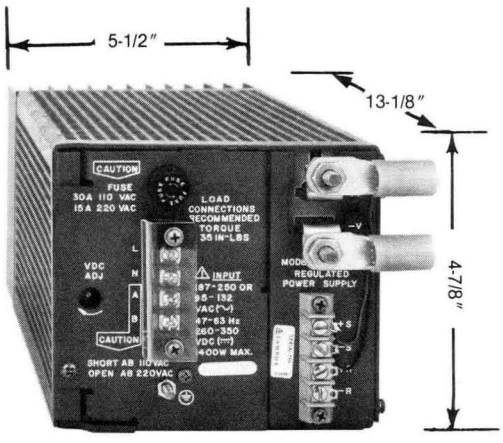


PACKAGE 55
3-3/4″ x 4-7/8″ x 10-1/2″

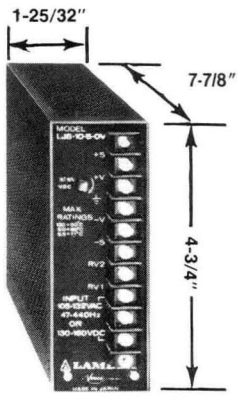


PACKAGE 56
4-7/16″ x 4-7/8″ x 11-1/2″

PACKAGE 57
5″ x 4-7/8″ x 12″



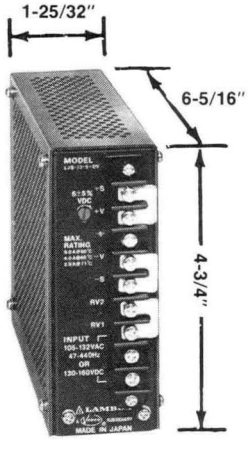
PACKAGE 58
5-1/2″ x 4-7/8″ x 13-1/8″



PACKAGE 10
4-3/4″ x 1-25/32″ x 7-7/8″

PACKAGE 10A
4-17/32″ x 2-3/64″ x 7-13/64″

PACKAGE 10AV
1-31/32″ x 4-17/32″ x 8-21/32″



PACKAGE 13
4-3/4″ x 1-25/32″ x 6-5/16″

PACKAGE 13A
4-17/32″ x 1-11/16″ x 7-13/64″

PACKAGE 13AV
1-21/32″ x 4-17/32″ x 7-31/64″

Switching and Linear Modular Power Supplies
Non-Stocked & Specially Modified Models

Models designated non-stocked may be available from stock at any given time. Consult factory.

Specially modified units are available from Lambda. Lambda will modify its standard packages to meet your particular application. Please consult factory or your local Lambda sales engineer for price and delivery.

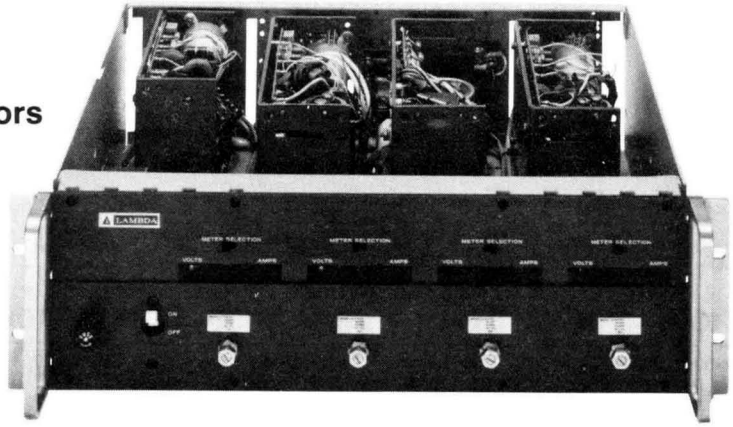
Non-stocked Models	Nearest Equiv. In-stock Models
LCS-A-12	LDS-Y-12
LCS-A-18	LDS-Y-02
LCS-A-36	—
LCS-A-48	LDS-Y-48
LCS-B-01	LDS-Y-01
LCS-B-02	LDS-Y-02
LCS-B-03	LDS-Y-03
LCS-B-2	LDS-X-01
LCS-B-12	LDS-Y-12
LCS-B-20	LDS-Y-20
LCS-B-28	LDS-Y-28
LCS-B-120	LDS-Y-120
LCS-C-01	LDS-X-01
LCS-C-02	LDS-X-02
LCS-C-03	LDS-X-03
LCS-C-2	LDS-P-01
LCS-C-6	LXS-C-6
LCS-C-12	LDS-X-12
LCS-C-20	LDS-X-20
LCS-C-36	—
LCS-C-48	LDS-X-48
LCS-C-100	LDS-Y-100
LCS-C-120	LDS-Y-120
LCS-C-150	LDS-Y-150
LCS-CC-03	LDS-P-03
LCS-CC-2	LDS-P-01
LCS-CC-6	LDS-P-6
LCS-CC-12	LDS-P-12
LCS-CC-20	LDS-P-20
LCS-CC-24	LNS-P-24
LCS-D-01	LDS-P-01
LCS-D-02	LDS-P-02
LCS-D-03	LDS-P-03
LCS-D-2	LDS-P-01
LCS-D-6	LDS-P-6
LCS-D-12	LDS-P-12
LCS-D-15	LDS-P-15
LGS-5A-6-OV-R	LRS-55-6
LGS-5A-6-D-OV-R	LYS-P-6-D
LGS-5A-12-D-OV-R	LYS-W-12-D
LGS-5A-20-D-OV-R	LYS-W-20-D
LGS-5A-24-D-OV-R	LYS-W-24-D
LGS-5A-28-D-OV-R	LYS-W-28-D
LGS-6A-6-OV-R	LRS-56-6
LGS-6A-12-OV-R	LRS-56-12
LGS-6A-20-OV-R	LRS-56-20
LGS-EEA-6-OV-R	LRS-57-6
LGS-EEA-20-OV-R	LRS-57-20
LGS-EEA-5-D-OV-R	LYS-D-5-D
LGS-EEA-6-D-OV-R	LYS-D-6-D
LGS-EEA-12-D-OV-R	LYS-D-12-D
LGS-EEA-15-D-OV-R	LYS-D-15-D
LGS-EEA-20-D-OV-R	LYS-D-20-D
LGS-EEA-24-D-OV-R	LYS-D-24-D
LGS-EEA-28-D-OV-R	LYS-D-28-D
LGS-FA-6-OV-R	LRS-58-6
LGS-FA-15-OV-R	LRS-58-15
LGS-FA-20-OV-R	LRS-58-20
LGS-FA-48-OV-R	LRS-58-48
LJS-10-6-OV	LRS-52-6
LJS-10-20-OV	LRS-52-20
LJS-10A-6-OV	LRS-52-6
LJS-10A-20-OV	LRS-53-20
LJS-11A-6-OV	LRS-53-6
LJS-11A-15-OV	LRS-53-15
LJS-11A-20-OV	LRS-53-20
LJS-12A-6-OV	LRS-54-6
LJS-12A-20-OV	LRS-54-20
LJS-13-6-OV	LRS-52-6
LJS-13-20-OV	LRS-52-20
LJS-13A-20-OV	LRS-52-20
LM-B-0-7	LDS-Y-01
LM-B-0-14	LDS-Y-02
LM-B-20	LDS-Y-20
LM-B-24	LDS-Y-24
LM-B-36	LCS-B-36
LM-D-0-14	LDS-P-02
LM-D-0-32	LDS-P-03
LM-D-0-60	—
LM-D-5	LDS-W-5-OV
LM-D-6	LNS-P-6
LM-D-8	—
LM-D-12	LDS-P-12
LM-D-15	LNS-P-12
LM-D-20	LNS-P-20
LM-D-28	LNS-P-28
LM-D-36	LM-E-36
LM-D-48	LDS-P-48
LM-D-100	LDS-P-100
LM-E-0-7	LCS-E-01
LM-E-0-14	LM-235
LM-E-0-32	—
LM-E-5	LDS-P-5
LM-E-6	LNS-P-6
LM-E-12	LNS-P-12
LM-E-15	LNS-P-15
LM-E-18	—
LM-E-20	LNS-P-20
LM-E-48	LDS-P-48
LM-E-100	LDS-P-100
LM-E-120	LDS-P-120
LM-E-150	LDS-P-150
LM-F-12-R	LRS-54-12
LM-F-15-R	LRS-54-15
LM-F-120-M-R	LDS-P-120
LM-F-150-M-R	LDS-P-150
LM-G-6-R	LRS-56-6
LM-G-15-R	LRS-56-15
LM-G-20-R	LRS-56-20
LM-G-48-R	LRS-57-48
LM-G-100-M-R	LDS-P-100
LM-217	LDS-W-02
LM-218	—
LM-234	LDS-P-01
LM-236	LM-237
LNS-Y-6	LRS-52-6
LNS-W-6	LRS-52-6
LNS-W-20	LRS-52-20
LNS-X-6	LRS-52-6
LOS-R-6	LRS-53-6
LOS-R-12	LRS-53-12
LOS-R-20	LRS-53-20
LOS-V-6	LRS-52-6
LOS-V-12	LRS-52-12
LOS-V-15	LRS-52-15
LOS-W-2	LRS-52-2
LOS-W-6	LRS-52-6
LOS-W-20	LRS-52-20
LOS-X-2	LDS-P-01
LOS-X-6	LRS-52-6
LOS-Y-2	LDS-W-01
LOS-Z-2	LDS-Y-01
LUS-8A-6	LOS-Z-6
LUS-9A-6	LOS-Y-6
LUS-10A-6	LOS-X-6
LXS-A-6-R	LNS-Z-6
LXS-A-12-R	LNS-Y-12
LXS-CC-6-R	LRS-52-6
LXS-CC-12-R	LRS-52-12
LXS-CC-15	LRS-52-15
LXS-CC-20-R	LRS-52-20
LXS-D-6-R	LRS-53-6
LXS-D-12-R	LRS-53-12
LXS-D-15-R	LRS-53-15
LXS-D-20-R	LRS-53-20
LXS-E-6-R	LRS-54-6
LXS-E-12-R	LRS-54-12
LXS-E-20-R	LRS-54-20
LXS-E-24-R	LRS-54-24
LXS-EE-6-OV-R	LRS-54-6
LXS-EE-12-R	LRS-54-12
LXS-EE-15-R	LRS-54-15
LXS-EE-20-R	LRS-54-20
LXS-EE-24	LRS-54-24
LYS-D-6-OV	LFS-46-6
LYS-D-12-OV	LFS-46-12
LYS-D-15-OV	LFS-46-15
LYS-D-20-OV	LFS-46-20
LYS-K-6-OV	LFS-45-6
LYS-K-20	LFS-45-20
LYS-P-6	LFS-44-6
LYS-P-20	LFS-44-20
LYS-W-6	LFS-43-6
LYS-W-20	LFS-43-20
LYS-X-6	LRS-53-6
LYS-X-20	LRS-53-20
LYS-Y-20	LRS-52-20

ACCESSORIES/ MODULAR POWER SUPPLIES

Overvoltage Protectors

Rack Adapters

Chassis Slides



Uninterruptible Power Supplies

Blank Panels

Filters

OVERVOLTAGE PROTECTORS

NOM SUPPLY VOLTAGE (VOLTS)	TRIP POINT VOLTAGE (VOLTS)	2 AMP MODELS	PRICE QTY 1	PRICE QTY 25	PRICE QTY 100	6 AMP MODELS	PRICE QTY 1	PRICE QTY 25	PRICE QTY 100
5	6.6 ± 0.2	**L-2-OV-5**	$3.25	$3.05	$2.50	**L-6-OV-5**	$6.10	$5.60	$4.80
6	7.3 ± 0.2	**L-2-OV-6**	3.25	3.05	2.50	**L-6-OV-6**	6.10	5.60	4.80
12	13.7 ± 0.4	**L-2-OV-12**	3.25	3.05	2.50	**L-6-OV-12**	6.10	5.60	4.80
15	17.0 ± 0.5	**L-2-OV-15**	3.25	3.05	2.50	**L-6-OV-15**	6.10	5.60	4.80
20	22.8 ± 0.7	**L-2-OV-20**	3.25	3.05	2.50	**L-6-OV-20**	6.10	5.60	4.80
24	27.3 ± 0.8	**L-2-OV-24**	3.25	3.05	2.50	**L-6-OV-24**	6.10	5.60	4.80
28	31.9 ± 1.0	**L-2-OV-28**	3.25	3.05	2.50	**L-6-OV-28**	6.10	5.60	4.80

NOM SUPPLY VOLTAGE (VOLTS)	TRIP POINT VOLTAGE[1] (VOLTS)	12 AMP MODELS	PRICE QTY 1	PRICE QTY 25	PRICE QTY 100	20 AMP MODELS	PRICE QTY 1	PRICE QTY 25	PRICE QTY 100	35 AMP MODELS	PRICE QTY 1	PRICE QTY 25	PRICE QTY 100
5	6.6 ± 0.3	**L-12-OV-5**	$22.00	$20.40	$16.10	**L-20-OV-5**	$31.75	$28.50	$22.40	**L-35-OV-5**	$40.40	$40.40	$40.40
6	7.4 ± 0.3	**L-12-OV-6**	22.00	20.40	16.10	**L-20-OV-6**	31.75	28.50	22.40	**L-35-OV-6**	40.40	40.40	40.40
9	10.5 ± 0.5	**L-12-OV-9**	22.00	20.40	16.10								
12	13.8 ± 0.5	**L-12-OV-12**	22.00	20.40	16.10	**L-20-OV-12**	31.75	28.50	22.40	**L-35-OV-12**	40.40	40.40	40.40
15	17.0 ± 0.5	**L-12-OV-15**	22.00	20.40	16.10	**L-20-OV-15**	31.75	28.50	22.40				
20	22.8 ± 0.7	**L-12-OV-20**	22.00	20.40	16.10	**L-20-OV-20**	31.75	28.50	22.40				
24	27.3 ± 0.8	**L-12-OV-24**	22.00	20.40	16.10	**L-20-OV-24**	31.75	28.50	22.40				
28	31.9 ± 1.0	**L-12-OV-28**	22.00	20.40	16.10	**L-20-OV-28**	31.75	28.50	22.40				
30	33.5 ± 1.0	**L-12-OV-30**	22.00	20.40	16.10	**L-20-OV-30**	31.75	28.50	22.40				

Power Supply Series	Use OV Series	Power Supply Series	Use OV Series	Power Supply Series	Use OV Series
LOS-Z	L-6-OV	LNS-Z	L-6-OV	LYS-K	L-20-OV
LOS-Y	L-6-OV	LNS-Y	L-6-OV	LYS-Y	L-12-OV
LOS-X	L-12-OV	LNS-X	L-12-OV	LYS-X	L-20-OV
LOS-W	L-12-OV	LNS-W	L-20-OV	LYS-W	L-35-OV or L-20-OV
LOS-V	L-20-OV	LNS-P	L-35-OV for 6 V models	LYS-P	L-35-OV or L-20-OV
LOS-R	L-35-OV for 5 V, 6 V models L-20-OV for others		L-20-OV for others	LYT-P	L-12-OV
				LYT-W	L-12-OV
				LYT-D	L-12-OV
LOD-Z	L-12-OV	LND-Z	L-12-OV		
LOD-Y	L-12-OV	LND-Y	L-12-OV	LDS-Y (12V-28V)	L-6-OV
LOD-X, LOT-X	L-12-OV	LND-X	L-12-OV	LDS-X (12V-28V	L-12-OV
LOD-W, LOT-W	L-12-OV	LND-W	L-12-OV	LDS-W (12V-28V)	L-20-OV
		LND-P	L-12-OV	LDS-P (12V-28V)	L-20-OV
				LDS (all 01, 02, 03 and 48V models)	Adjustable - LHOV

5 V and LND MPU have OV standard on unit are included in price.
LX, LC, LM power supplies use L-20-OV or L-35-OV fixed overvoltage protectors depending on voltage and current applicable.

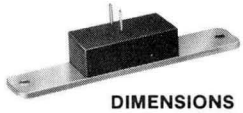
ACCESSORIES/ MODULAR POWER SUPPLIES

OVERVOLTAGE PROTECTORS

L-2 OV
[TO-66]

L-6 OV
[TO-3]

DIMENSIONS
L-12-OV 1.5"L x 0.75"W x 0.7"H



L-20-OV
L-35-OV

DIMENSIONS
3-13/32"L x 5/8"W x 0.6"H

ADJUSTABLE CROWBAR TYPE, MOUNTING PROVISIONS PROVIDED, 2 TERMINAL CONNECTIONS

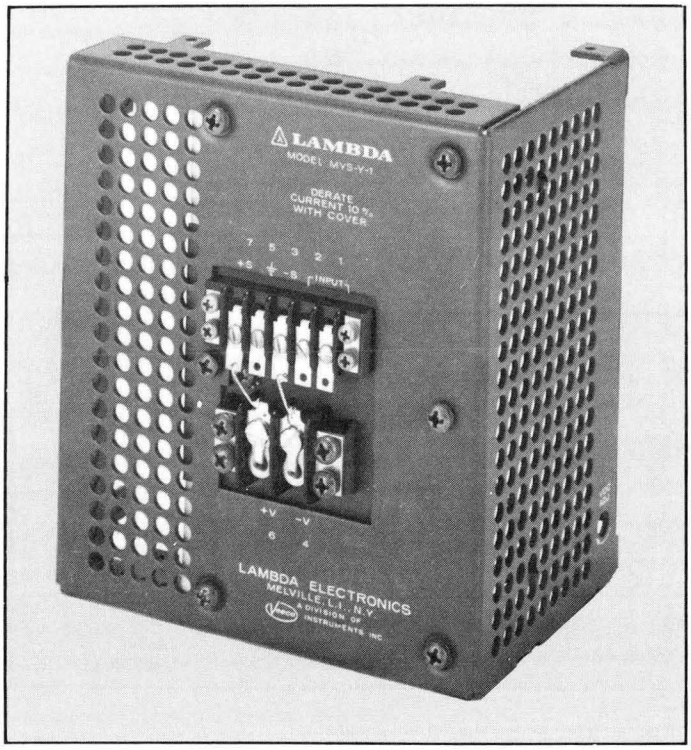
ADJ. VOLT. RANGE VDC	MODEL	FOR USE WITH PACKAGES	PRICE
3-24	**LH-OV-4**	Wide range models in	**$61**
3-47	**LH-OV-5**	Packages A, B, 4, C,	**61**
3-70	**LH-OV-6**	CC, D	**61**
	Add Suffix "-OV" to Model No. OV is then built-in	LM-F & LM-G	**159**
Built in OV: MLG, LG, LGA, LJ, LJA, LR, LF, LI, LUS			

ADJ. VOLT RANGE VDC	MODEL	FOR USE WITH PACKAGE	PRICE
3-8	**LM-OV-1**	Fixed voltage models in	**$50**
6-20	**LM-OV-2**	Packages A, B, C, CC,	**50**
18-70	**LM-OV-3**	D, E and LXD-EE	**50**
3-8	**LM-OV-7**		**$129**
6-20	**LM-OV-8**	LXS-EE	**129**
18-70	**LM-OV-9**		**129**

LM-OV-7 to
LM-OV-9

LM-OV-1 to LM-OV-3
LH-OV-4 to LH-OV-6

EMI suppressor accessory for LY series

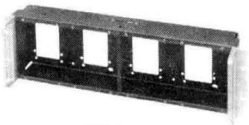


EMI suppression cover available as an accessory. Provides additional filtering sufficient for compliance with FCC Docket 20780, Class A conducted; perforated cover minimizes radiated emissions. Customer input and output connections via barrier strips mounted on cover (LYS-Y, LYS-X, LYS-W, LYT-P, LYT-W models), and terminal board mounted on cover for LYS-P, LYS-D, and LYS-K models. Ripple and noise when cover is used is 10mV RMS, 35mV p-p for 5 and 6V units. 15mV RMS, 100mV p-p for 12 thru 28V units and dual outputs of LYT.

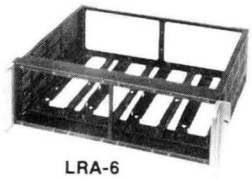
Cover Model	For Use With	Weight Lbs. Net	Weight Lbs. Ship	Price
M-YSD-2	LYS-D models	2-1/4	3-1/4	**$177**
M-YSK-2	LYS-K models	3-3/4	5	**133**
M-YSP-2	LYS-P models	2-1/8	2-3/8	**99**
M-YSW-2	LYS-W models	2	2-1/4	**91**
M-YSX-2	LYS-X models	1-3/4	2	**70**
M-YSY-2	LYS-Y models	1-1/2	1-3/4	**70**
M-YTP-2	LYT-P models	2-7/8	3-1/2	**127**
M-YTW-2	LYT-W models	2	2-1/4	**87**
M-YTD-2	LYT-D models	3-1/2	4-1/2	**211**

ACCESSORIES/ MODULAR POWER SUPPLIES

RACK ADAPTERS

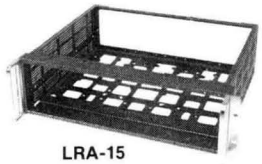


LRA-3

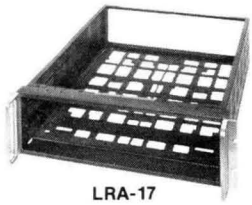


LRA-6

LRA-14



LRA-15



LRA-17

STANDARD RACK ADAPTERS[1]

MODEL	DIMENSIONS H x W x D	FOR USE WITH PACKAGES	PRICE	MODEL	DIMENSIONS H x W x D	FOR USE WITH PACKAGES	PRICE
LRA-3[2] [3]	5-3/16" x 19" x 2-9/16/	A, B, C, CC, D, E	**$ 91**	**LRA-15**	5-3/16" x 19" x 14"	A, B, C, CC, D, K, P, V, W, X, Z, 4	**$141**
LRA-6[4]	5-3/16" x 19" x 14"	A, B, C, CC, D, E, 4	**159**			5, 5A, 6A, 9, 10, 10A, 10AD, 10AV, 11,	
LRA-14[6] [7]	3-1/2" x 19" x 14"	A, B, C, Y*, Z, 5, 5A	**141**			11A, 11AV, 12, 12A, 12AV, 13, 13A,	
		6A, 9, 10, 10A, 10AD,				13AV, 52, 53, 54, 55, 56, 57, 58, 59,	
		10AV, 13, 13A, 13AD,				LPS-40, LPS-41, LFS-43, 46, 47, 48	
		13AV, LYV, 52, 53, 54,		**LRA-17**	5-3/16" x 19" x 21"	A, B, C, CC, CA, D, E, EEA, K, P, R,	**179**
						V, W, X, Y, Z, 4, 5, 5A, 6A, 9, 10, 10A,	
						10AD, 10AV, 11, 11A, 11AV, 12, 12A,	
						12AV, 13, 13A, 13AD, 13AV, 52, 53,	
						54, 55, 56, 57, 58, 59, LPS-40, LPS-41,	
						LFS-43, 44, 45, 46, 47, 48	

NOTES:

[1] LRA-1 and -2 rack adapters are for use with Lambda power instruments, see page 118.

[2] Except the LXS-D, LXD-D, LXT-D, LXS-E, LCS-D.

[3] All models of LCS-A series require one spacer kit (KT-1 @ $3.00/Kit) for mounting each unit in LRA-3.

[4] All models of LCD-4 series require one bracket kit (KT-32 @ $3.00/Kit) for mounting each unit in LRA-6.

[5] Except LGS-EEA

[6] Spacer kit (KT-35 @ $3.00/Kit) used when LNS-Y/Z or LND-Y/Z are mounted on LRA-14 rack adapters (1) kit per power supply.

[7] Mounting kit (KT-36 @ $3.00/kit) used with LJS10, LJS10AV, (1) Kit per power supply

See pages 151-152 for rack adapter dimensional drawings and quantity of each package size allowed.

*NOTE: Height restriction on the LRA-14 rack adapter does not permit the use of EMI suppression covers on LY models.

CHASSIS SLIDES

KHT-34-012

KHT-44-013

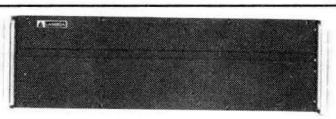
FOR USE WITH RACK ADAPTERS AND FULL RACK POWER SUPPLIES	LAMBDA PART NO.	ADD TO PRICE
LRA-6, LM-F, LM-G	**KHT-34-012**	**$147**
LRA-14, LRA-15	**KHT-34-012**	**147**
LRA-17	**KHT-44-013**	**147**
LGS-FA	**KHT-24-014**	**147**

NOTE:
To order rack adapters, or full rack power supplies with chassis slides, add suffix "-CS" to model number (Example: LRA-17-CS, LM-G-5-CS) and add price of chassis slides.

BLANK PANELS

Model **SB-50** **Price** **$43**

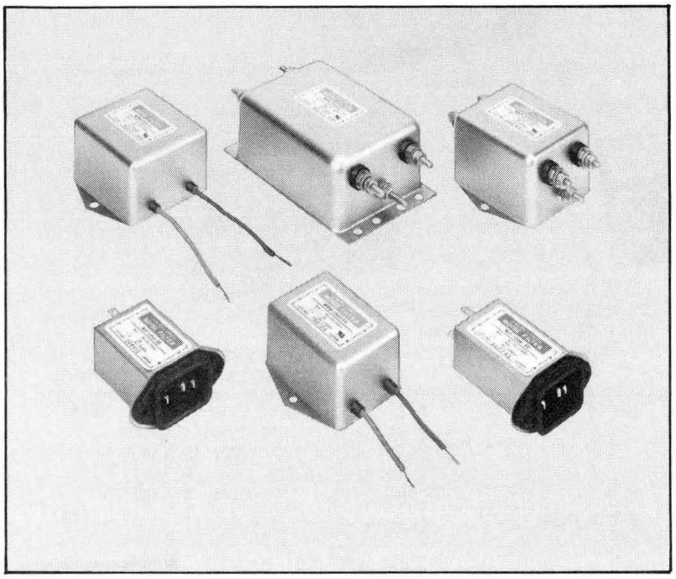
For use with 5-3/16" height rack adapter, full panel 16-23/32" width.



Model **SB-30** **Price** **$45**

For use with 3-1/2" height rack adapter, full panel 16-23/32" width.

Lambda MBW, MBS and MIF Series Filters



Features:

- **recognized/CSA certified.**
- **Designed for optimal attenuation with switching power supplies.**
- **Compact, lightweight design.**
- **Designed in accordance with VDE safety regulations.**
- **Pretested with Lambda power supplies to meet FCC Docket 20780 Class A.**
- **Stocked in sufficient quantities to meet production needs.**
- **One day delivery.**

Prices:

	Rating	1	100	250
MBW-1203-22	3 Amps	$15.25	$ 9.80	$ 8.25
MBW-1205-22	5 Amps	16.25	10.80	9.30
MBS-1210-22	10 Amps	21.60	17.50	14.40
MBS-1220-22	20 Amps	27.00	22.70	19.60
MIF-1203-22	3 Amps	15.25	9.80	8.25
MIF-1206-22	6 Amps	16.25	10.80	9.30

Specifications:

Specification	Unit of Measure	MODEL MBW 1203-22	MBW 1205-22	MBS 1210-22	MBS 1220-22	MIF 1203-22	MIF 1206-22
Rated Voltage (max)	Volts	250	250	250	250	250	250
Rated Current (max)	Amps	3*	5*	10[1]	20[2]	3[2]	6[2]
Breakdown Voltage (min)	Volts	2500	2500	2500	2500	2500	2500
Insulation Resistance (min)	MΩ	100	100	100	100	100	100
Leakage Current (max)	mA	0.5	0.5	0.5	0.5	0.5	0.5
DC Resistance (max)	Ω	0.3	0.2	0.05	0.02	0.13	0.04
Ambient Temperature Range*	0°C	-20~ +85	-20~ +85	-20~ +85	-20~ +85	-20~ +85	-20~ +85

*No derating up to 55°C

NOTES: (1) The rated current is for operation up to 55°C. For temperatures between 55°C and 85°C, derate according to curve A, on p.82.
(2) The rated current is for operation up to 50°C. For temperatures between 50°C and 85°C, derate according to curve B on p.82.

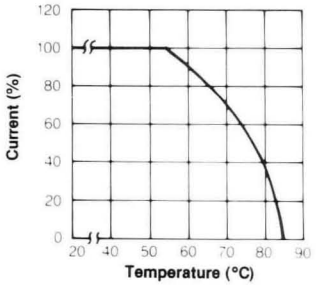
How To Pick A Filter To Meet FCC Docket 20780 Class A.

To select the appropriate Lambda AC Line Filter:

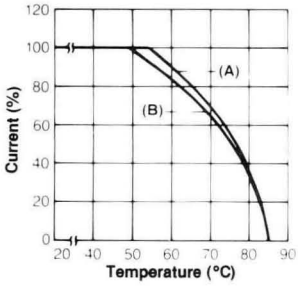
1. choose a power supply(s) from this table and add the total current.
2. select the filter to meet your system needs from the ratings in the price table on page 80.

Power Supply LU Series	Input Current in Amps	Power Supply LY Series	Input Current in Amps	Power Supply LJ Series	Input Current in Amps	Power Supply LF Series	Input Current in Amps
LUS-8A	0.4	LYS-Y	1.3	LJS-13	0.6	LFS-43	5.7 (2.9)
LUS-9A	0.7	LYS-X	2.7	LJS-10	1.2	LFS-44	7.5 (3.8)
LUS-10A	1.3	LYS-W	5.1	LJS-11	1.8	LFS-45	12.0 (6.0)
LUS-11	2.2	LYS-P	7.0	LJS-12	3.0	LFS-46	15.0 (7.5)
LUT-6	1.2	LYS-K	9.4	**LJA Series**		LFS-47	18.0 (9.0)
LUT-12	1.9	LYS-D	15.0			LFS-48	
LUT-13	1.6	LYS-EE	18.0	LJS-13A	1.3	Note: Numbers in parentheses for 220 VAC input operation.	
LUT-14	2.8	LYT-W	2.6	LJS-10A	1.5		
LUD-15	1.6	LYT-P	5.6	LJS-11A	2.5		
LUD-16	3.0	LYT-D	11.3	LJS-12A	3.8		

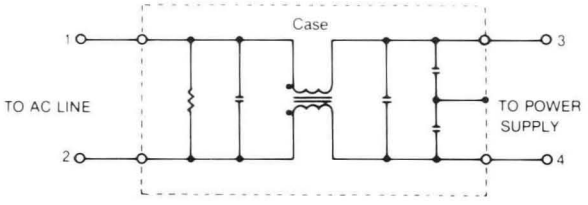
MBW Models
Derating Curves



MBS / MIF Models
Derating Curves



Electrical Schematic



System Examples

Example 1

2	LUS-8A @ 0.4A	= 0.8A
1	LUS-10A @ 1.3A	= 1.3A
		2.1A

Use an MBW-1203-22 @ 3.0Amps

Example 2

1	LUS-9A @ 0.7A	= 0.7A
1	LUT-12 @ 1.9A	= 1.9A
1	LYS-P @ 7.0A	= 7.0A
		9.6A

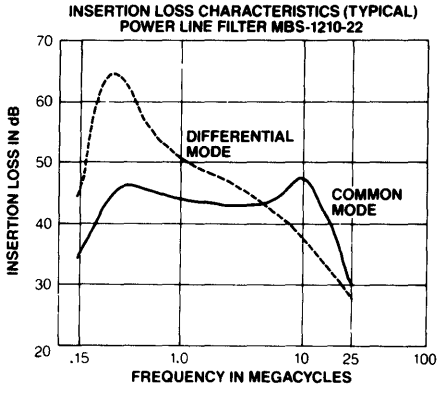
Use an MBS -1210-22 @ 10.0Amps

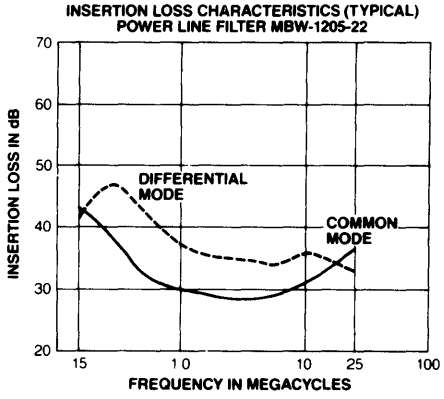
Example 3

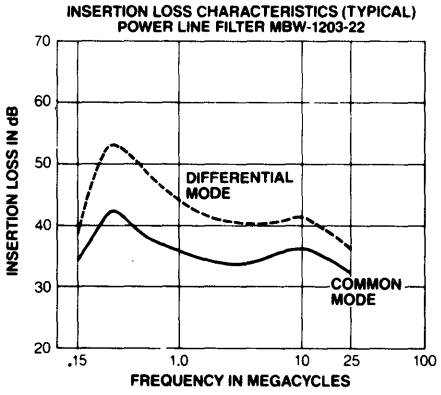
1	LYS-W @ 5.1A	= 5.1A
1	LYT-D @ 11.3A	= 11.3A
		16.4A

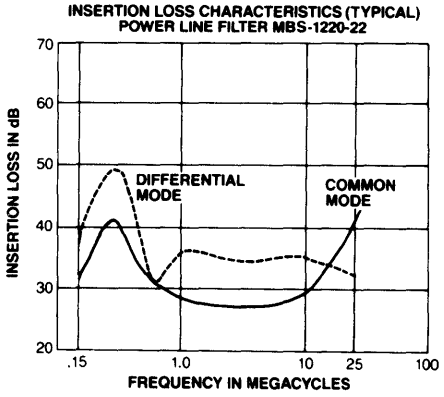
Use an MBS-1220-22 @ 20.0Amps

Attenuation Curves. Lambda EMI Filters.

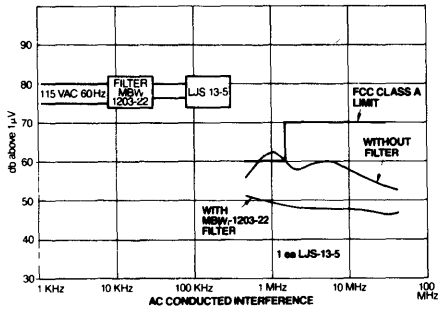


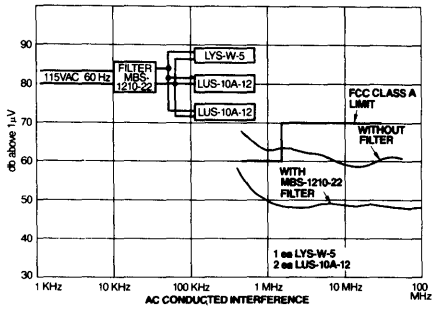


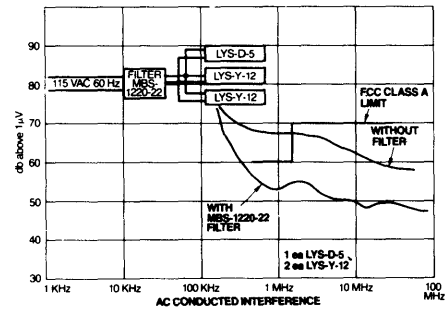


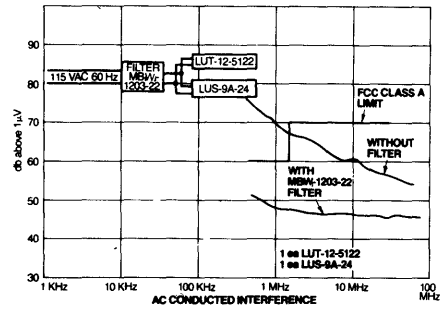


Typical Data Curves of Conducted Interference With and Without Lambda EMI/RFI Filters.

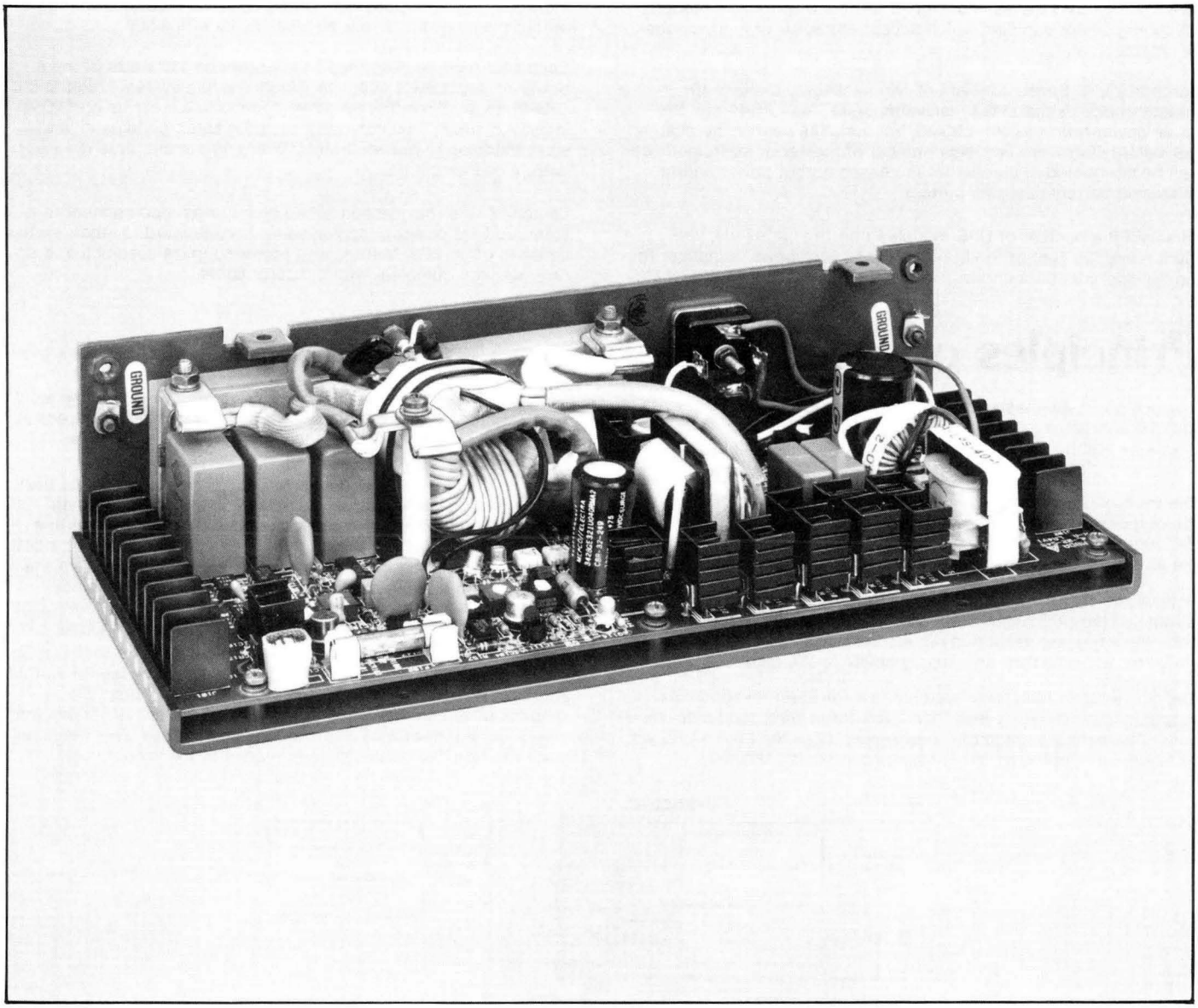








Lambda LPS Series



Features:

No transfer switches

85% minimum efficiency on battery operation

Truly uninterruptible on-line performance

98% minimum efficiency on line operation

1/3 the size, 1/3 the cost of equivalent units

Uninterruptible Power Supplies

Lambda LPS Series

The Lambda LPS Series is designed for use with today's modern switching power supplies which accept either AC or high voltage DC input.

Lambda's LPS Series consists of two packages, the LPS-40 (master module) and LPS-41 (slave module). The LPS-41 has the same power rating as the LPS-40, but contains neither the charger nor failure alarm circuitry. Any number of master or slave modules can be connected in parallel for increased output power and/or increased battery charging current.

To select the number of UPS modules that fit your needs, you must know the sum of the input power to your power supplies. The input power can be found in the specification sheets of the individual power supplies or can be approximated by dividing the output power of the power supplies by its efficiency.

Each UPS module described below provides 416 watts of input power to your power supplies. Single module systems require the LPS-40. In multi-module systems, one module must be an LPS-40 (master module). You may wish to add master modules in lieu of slave modules to provide battery charging current, thus reducing battery charging time.

Lambda's LPS may be purchased alone or as a component in a standard UPS power supply system. The standard Lambda system consists of an LPS, battery, and power supplies assembled in a rack adapter, complete with indicator lights.

Principles of Operation

Lambda's LPS-40 (master module) consists of a high-efficiency DC-to-DC converter, a switch-mode battery charger, and an isolation bridge. In addition, status signals are provided by built-in test circuitry. (Refer to block diagram.)

The utility AC is rectified by the isolation bridge and delivered to the output of the UPS System. The bridge output is paralleled to the output of the DC-to-DC converter, whose voltage is set equal to the lowest instantaneous value of the rectified/filtered line voltage.

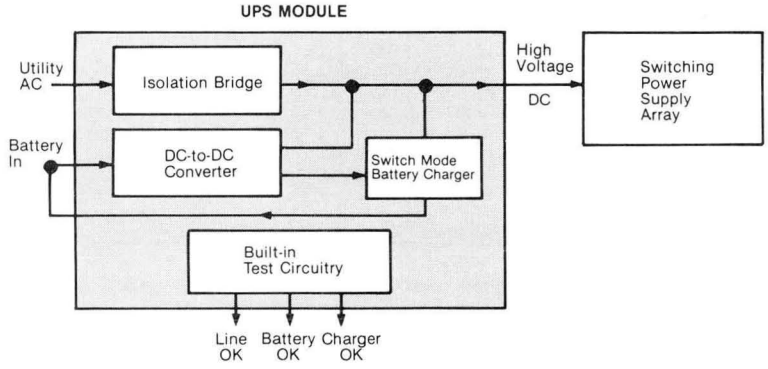
In the case of the line failure (brown-out or black-out), the output voltage of the UPS System will start to decay. This decay will stop once the converter set voltage is reached. At this point, the converter will take over and supply power to the load(s).

The converter exhibits an extremely fast transient response; its output voltage drops by less than 0.5% for a 100% load step. As a result, the output voltage of the power supplies fed by the LPS will be totally unaffected by either total or partial line failures.

An isolation bridge will disconnect the system from the line as soon as the line fails (all diodes are back biased). The process is passive and instantaneous, unlike the operation of transfer switches used in more conventional AC UPS Systems.

The switch-mode charger derives its power from the line via the isolation bridge. The charger provides 2 amperes of charging current to the battery, and an open circuit (float) voltage with a temperature coefficient that matches the characteristics of a 24V (nominal) lead acid battery. A shutdown signal, derived from the converter, inhibits the charger operation when the line is not present.

It is possible to increase the output power level by paralleling several units. There is no limit to the number of units that can be paralleled. Paralleling the LPS-40 modules will increase the output power as well as the charging capability of the system. For systems where an increase in the charging current is not required, one or more LPS-41 modules may be used instead. This flexibility gives the user the optimum performance at the lowest cost.



Current Ratings

(Both master and slave modules are rated at 416 watts. Any number of modules can be connected in parallel for increased output power.)

MODEL	MAXIMUM CURRENT OUTPUT OF UPS MODULE (A) 40°C	50°C	60°C	71°C	PRICE/QTY 1	100	1000
LPS-40	3.20	2.80	2.45	2.15	**$700**	**$595**	**$435**
LPS-41	3.20	2.80	2.45	2.15	**580**	**493**	**360**
LPS-V-40	1.75	1.52	1.32	1.16	**784**	**666**	**435**
LPS-V-41	1.75	1.52	1.32	1.16	**650**	**552**	**360**

NOTE: AC input power for LPS-40 and LPS-41 is 105-132 VAC. AC input power for LPS-V-40 and LPS-V-41 is 187-265 VAC.

Specifications—LPS Series

DC Output
The DC output voltage is proportional to the AC input voltage for as long as the AC line is above the minimum tolerance. Output will be maintained at 130V minimum (240V minimum for V models) when the AC input voltage drops below its minimum tolerance. These voltages will keep any Lambda Switching Power Supply operating within its published specifications.

Parallel Operation
Modules can be paralleled for increased system power. The stress on modules is equalized by adjusting the maximum output power of each module.

AC Input Power . . . . . 105-132 VAC, 47-440Hz on LPS-40 and LPS-41.
187-265 VAC, 47-440Hz on LPS-V-40 and LPS-V-41.

Output Power . . . . . 416 watts max.

Efficiency
Line operation . . . . . 98% minimum.
Battery operation . . . . . 85% minimum.

Battery Voltage . . . . . 20 to 32VDC.

Transfer
Lambda's LPS Series allows transfer from line to battery operation and vice versa, without involving sensing circuitry/active switching. No transients will be generated on the outputs of power supplies connected to the LPS System under brown-out or black-out conditions.

Operating Temperature Range
0 to 71°C.

Storage Temperature Range
−25°C to +85°C.

CHARGER SECTION

Recharge Capacity
2 A minimum, 2.3 A maximum battery charging current.

Charger Derating
No derating up to 71°C.

Charger Output Voltage
28.2V @ 25°C. The temperature coefficient of the output voltage matches the characteristics of lead acid batteries in order to avoid overcharge.

Protection
Both the charger and inverter are electronically protected against overload/short circuit. The charger output is fused against a battery discharge back into the unit in case of an internal component failure. An internal thermostat protects the unit against damage from excessive ambient temperature.

Cooling
Convection cooled. No fans or blowers needed.

Interface Signals
AC Line Fail, Charger Fail, Battery Low.
The battery-low signal is user adjustable and can be set to trip when the battery reserve time drops below a specified value. The signals are available as an open collector (optically isolated, 5mA sinking capability).

Controls
The output voltage, battery-low threshold, and battery charger output voltage are screwdriver adjustable over the entire voltage range. Additional controls are available for special applications.

Isolation
Battery: Non-isolated (battery negative or positive terminal grounded).
Output to ground: 1,500V RMS, for one minute.
Battery to output: 1,500V RMS, for one minute.

Mounting
Two mounting surfaces, two mounting positions.

Fungus Proofing
Available on request.

Physical Data

Package Model	Weight (Lb.) Net	Ship	Size (In.)
LPS-40, V-40	3½	4½	3 x 4-29/32 x 12
LPS-41, V-41	3½	4½	3 x 4-29/32 x 12

Finish
Gray, Fed. Std. 595, No. 26081

Accessories
Five-minute batteries by Gates, available for 400W systems. (Gates product number 0809-0026, Lambda product number FRL-24-005). Contact factory for battery selection tables for longer battery operation times. Cover available. Consult factory for price and derating if necessary. Rack adapters available (see pg. 79).

UPS Power System
Lambda will package your power system (LPS, battery, power supplies) in a standard Lambda rack adapter, and built to your specifications. Consult factory for price.

/CSA
Under evaluation.

Guaranteed For One Year
One-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of one year.

Design Guidelines For Lambda's UPS System

1. Determine **actual** load requirements.
   For Example: 1) 5 Volts @ 20.0A
   2) 24 Volts @ 2.0A
   3) 48 Volts @ 1.0A

2. Select a Lambda Switching Power Supply that fits your load requirement.
   For Example: 1) LUS-11-5 **Rated At:** 5 Volts @ 20.0A
   2) LUS-10A-24 **Rated At:** 24 Volts @ 2.1A
   3) LUS-10A-48 **Rated At:** 48 Volts @ 1.1A

3. Determine the efficiency of each power supply using the chart in item 5 below, and calculate the input power using the following formula:

$$\textit{Input Power} = \frac{\textit{(Actual Volts) x (Actual Amps)}}{\textit{Efficiency of Power Supply}}$$

Model	Efficiency	Input Power
LUS-11-5	70%	142.86 Watts
LUS-10A-24	80%	60.00 Watts
LUS-10A-48	80%	60.00 Watts
	Total Input Power =	**262.86 Watts**

EXAMPLE

4. a) When using (1) FRL-24-005 Battery, look at Figure 1 to determine the maximum amount of UPS time for the calculated total input power.
   In the above example, 262.86 watts corresponds to a maximum of approximately 8.0 minutes.
   b) For a longer UPS time use (2) FRL-24-005 Batteries in parallel and refer to Figure 2.
   For the same system 262.86 watts corresponds to a maximum of approximately 20 minutes.
   (For longer operation times, consult factory for a recommended battery)

5. Use the following guidelines for efficiencies whenever using a Lambda switching power supply.

Output Voltage	Efficiency
5V	70%
12V-15V	75%
24V-48V	80%
Dual Output Power Supplies	Refer to respective pages in Lambda Catalog
Triple Output Power Supplies	Refer to respective pages in Lambda Catalog

FOR USE WITH (1) FRL-24-005 BATTERY

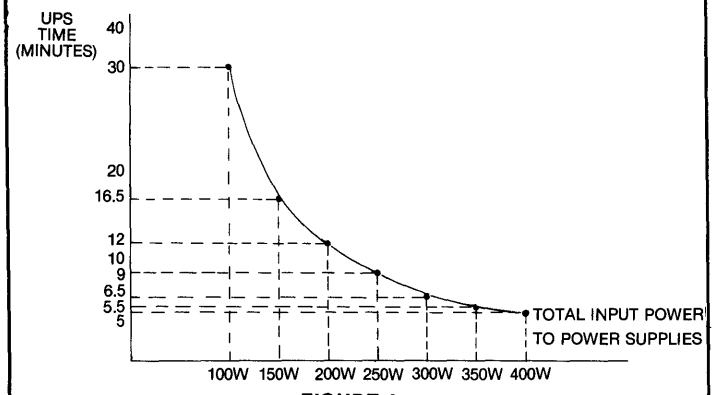


FIGURE 1

FOR USE WITH (2) FRL-24-005 BATTERIES CONNECTED IN PARALLEL

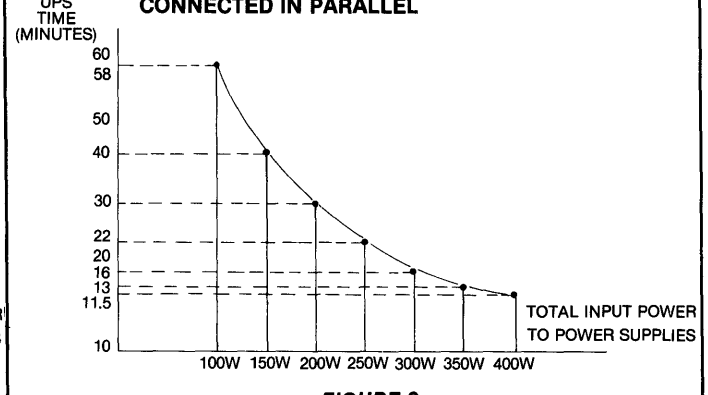
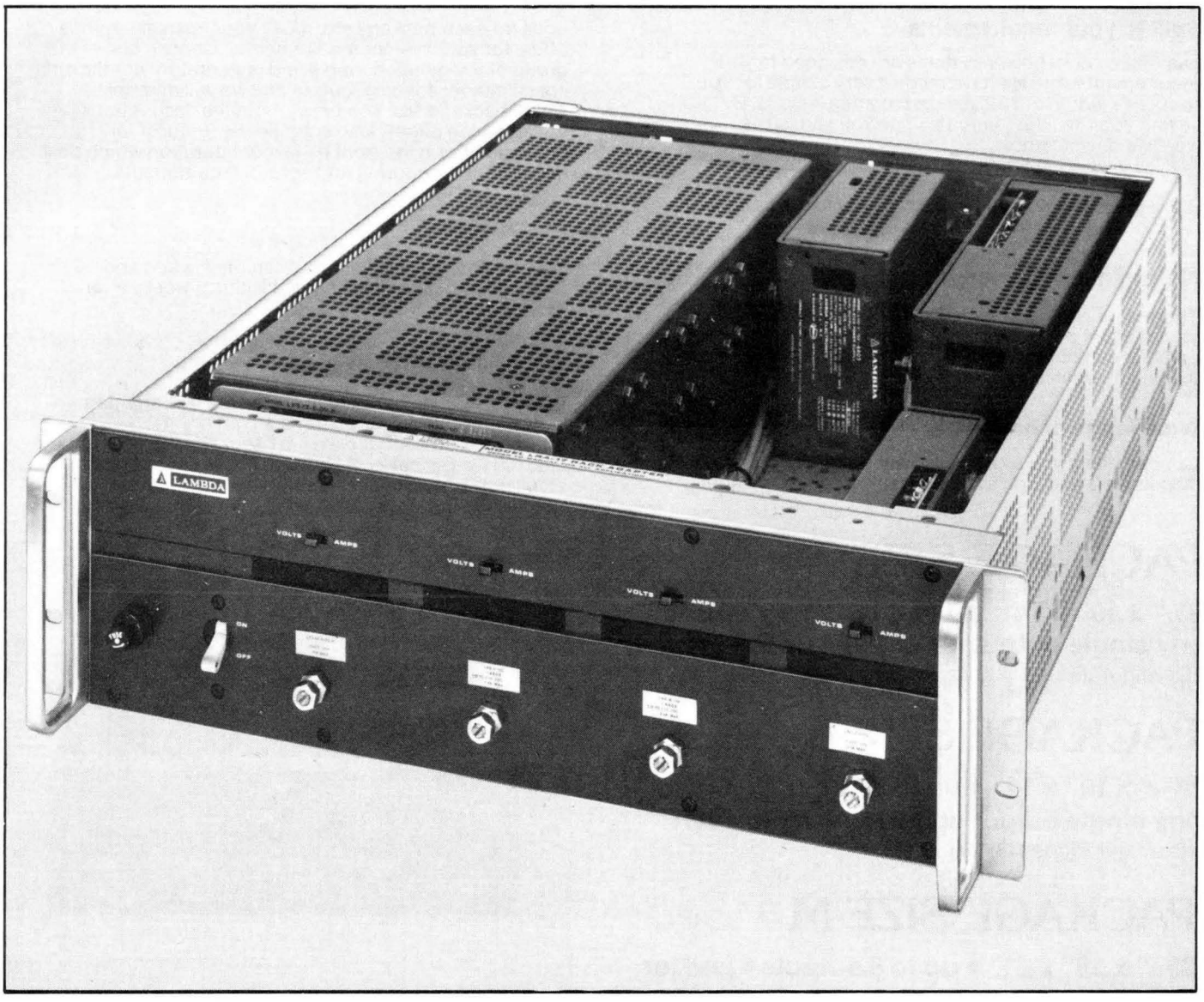


FIGURE 2

NOTE: These diagrams are approximations. Contact factory for precise UPS times.

PART II—CUSTOM POWER SYSTEMS
Standard Assemblies



STANDARD ASSEMBLIES—Now, Lambda makes it easy to build to your own requirements without engineering or setup charges. Whether the application is IEEE-488 related, MATE compatible, or one that requires manual operation, Lambda offers more than nine front-panel configurations in a system that is built to your needs from off-the-shelf modules with a wide range of options. In addition, Lambda offers standard assembly configurations for telecommunication applications that meet FCC requirements. All standard assemblies are covered by Lambda's Comprehensive 5-Year Guarantee (when 5-year guaranteed power supplies are used).

Features—Standard Assemblies

5 year guarantee

3 package sizes with up to 8 outputs

Wide range of options

Built to meet your requirements

Never an engineering charge

Quick delivery

PART II—CUSTOM POWER SYSTEMS
Standard Assemblies

Built to your requirements

Lambda custom power systems are designed to your requirements, and we have made it very simple for you to specify within our 22 standard configurations. By calling your nearest Lambda office you can tell us what we need to know:

1. To give you a firm price quotation on the number and type of custom units you require.
2. To design and build these supplies to the parameters you select.

No engineering charge

There is no engineering or set-up charge for designing your custom power system. This is one more reason why Lambda can offer you a custom product at a lower cost than if you built it yourself.

Wide range of options

Lambda offers you a custom power system with up to 8 outputs, in 3 package sizes and 9 front panel configurations for each package size. (Call your nearest Lambda office for your system requirements.) Choose one of the group of 5 regulation, ripple and temperature coefficient specifications for each output and we will determine which package size you need. From the descriptions on the following pages, also enter on the Request for Quotation Form the front panel configuration which best meets your monitoring and control requirements.

Six week delivery

Your custom power system, assembled, wired and ready to operate will be shipped within 6 weeks after receipt of your order.

5 year guarantee

Every custom power system is covered by Lambda's comprehensive 5 year guarantee (when five year guaranteed power supplies are used) which includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

PACKAGE SIZE J

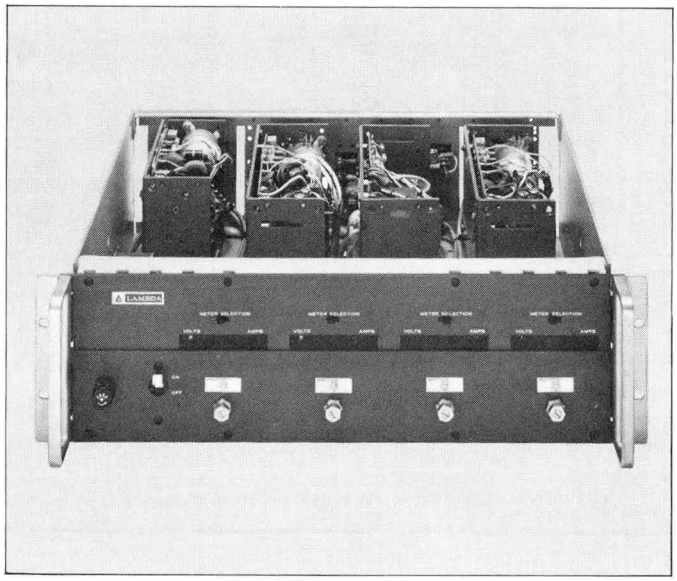
3½" x 19" x 14 • up to 8 outputs • and for any single output up to 150V, up to 90A
(Configurations 1-4 only)

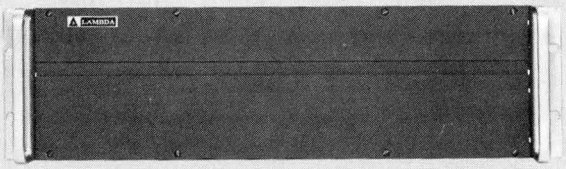
PACKAGE SIZE K

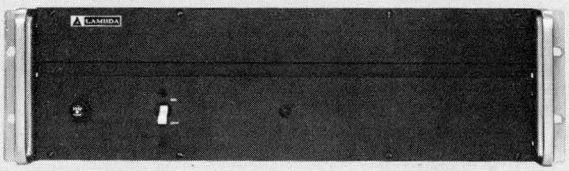
5 3/16" x 19" x 14" • up to 8 outputs • and for any single output up to 150V, up to 120A
(Configurations 1-9)

PACKAGE SIZE M

5 3/16" x 19" x 21" • up to 8 outputs • and for any single output up to 150V, up to 150A
(Configurations 1-9)



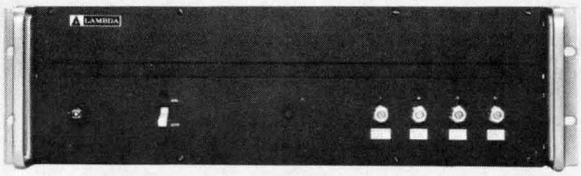




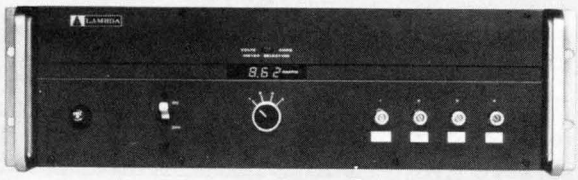
CONFIGURATION 1
Blank panel. Economical when power supply will be remotely controlled. Maximum of 8 outputs (up to 4 power supplies) with AC input wiring provided through barrier strip on rear of rack adapter. Customer to provide necessary wiring for DC outputs available at rear of rack.

CONFIGURATION 2
Panel with on/off switch for AC input, pilot light and fuse. Maximum of 8 outputs (up to 4 power supplies) with AC input wiring provided through barrier strip on rear of rack adapter. Customer to provide necessary wiring for DC outputs available at rear of rack.

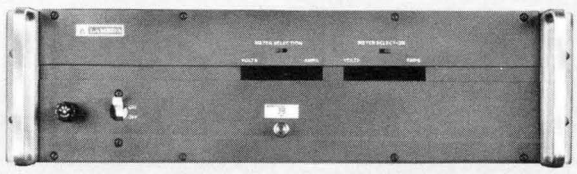
CUSTOM POWER SYSTEMS



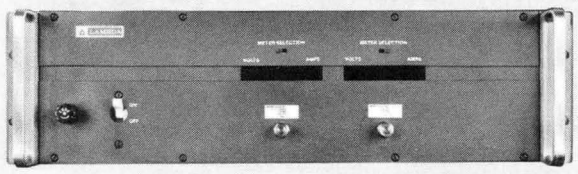
CONFIGURATION 3
Panel with on/off switch for AC input, pilot light and fuse plus voltage controls (up to 4 potentiometers provided.) Maximum of 4 outputs with AC input and DC output wiring provided through barrier strip on rear of rack adapter. Power supply nameplates at output barrier strips and at front panel potentiometers.



CONFIGURATION 4
Panel with on/off switch for AC input, and fuse, plus voltage controls (up to 4 potentiometers provided) and one meter (up to 4 supplies monitored, monitoring up to 110A up to 99.9V per supply). Maximum of 4 outputs with AC input and DC output wiring provided through barrier strip on rear of rack adapter. Power supply nameplates at output barrier strips and at front panel potentiometers.

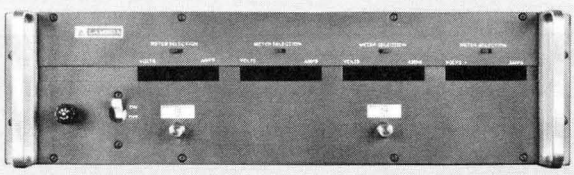


CONFIGURATION 5
Panel with on/off switch for AC input and fuse, plus one digital display meter to read volts and a second meter to simultaneously display amps and voltage control for one power supply. One power supply with AC input and DC output wiring provided through barrier strip on rear of rack adapter. Power supply nameplate at output barrier strip and at front panel potentiometer.



CONFIGURATION 6
Panel with on/off switch for AC input and fuse, plus voltage controls (2) and 2 digital display meters capable of reading either volts or amps (via front panel selector switch) for 2 supplies monitored (up to 110A, 99.9V per supply). 2 outputs with AC input and DC output wiring provided through barrier strip on rear of rack adapter. Power supply nameplates at output barrier strips and at front panel potentiometers.

CONFIGURATION 7
Panel with on/off switch for AC input and fuse, plus voltage controls (3 potentiometers provided) and 3 digital display meters capable of reading either volts or amps (via front panel selector switch) for 3 supplies monitored (up to 110A, 99.9V per supply). 3 outputs with AC input and DC output wiring provided through barrier strip on rear of rack adapter. Power supply nameplates at output barrier strips and at front panel potentiometers.



CONFIGURATION 8
Panel with on/off switch for AC input and fuse, plus 2 digital display meters to read volts and 2 separate meters to simultaneously display amps (one voltage and one current meter for each supply monitored) and voltage controls for 2 power supplies. 2 power supplies with AC input and DC output wiring provided through barrier strip on rear of rack adapter. Power supply nameplates at output barrier strips and at front panel potentiometers.

CONFIGURATION 9
Panel with on/off switch for AC input and fuse, plus voltage controls (4 potentiometers provided) and 4 digital display meters capable of reading either volts or amps (via front panel selector switch) for 4 supplies monitored (up to 110A, 99.9V per supply). 4 outputs with AC input and DC output wiring provided through barrier strip on rear of rack adapter. Power supply nameplates at output barrier strips and at front panel potentiometers.

SEE WHY IT PAYS TO BUY AN ASSEMBLY BUILT COMPLETELY BY LAMBDA.

Estimate what it will cost you to build an assembly yourself

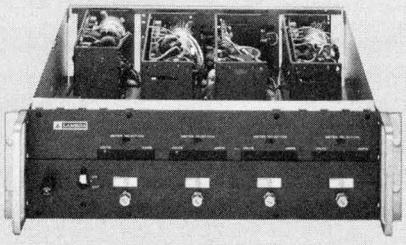
	Hours	Cost	Lambda Charge
Selecting Power Supplies & Components	5	$200.00	
Layout—Mechanical	8	320.00	
Wiring—Interconnecting	4	160.00	
Drafting	8	240.00	
Methods	2	70.00	
Purchasing (3 PO's @ $50)	—	150.00	See Note 1
Documentation	8	240.00	
Mechanical Assembly	16	480.00	
Testing	1	35.00	
Rework	1	35.00	
Incoming Inspection (Components)	1	35.00	
Silk Screen or Painting	1	35.00	
TOTAL LABOR COST		$2000.00	See Note 1
MATERIALS			
4 Power Supplies + OV's		$1473.50	$1473.50
Rack Adapter		179.00	179.00
4 Digital Meters		250.00	
Panel		50.00	1067.00 (Note 2)
Potentiometer		3.00	
AC on/off Switch		2.00	
Indicator Light		2.00	
TOTAL MATERIAL		$1959.50	$2719.50 (Note 2)
TOTAL COST		$3959.50	$2719.50
ESTIMATED SAVINGS			**$1240.00**

NOTE 1 These costs included in Lambda's total price as indicated in example below.
2 Includes all Lambda charges for labor.

BUT IF YOU LET LAMBDA BUILD YOUR COMPLETE ASSEMBLY

EXAMPLE:

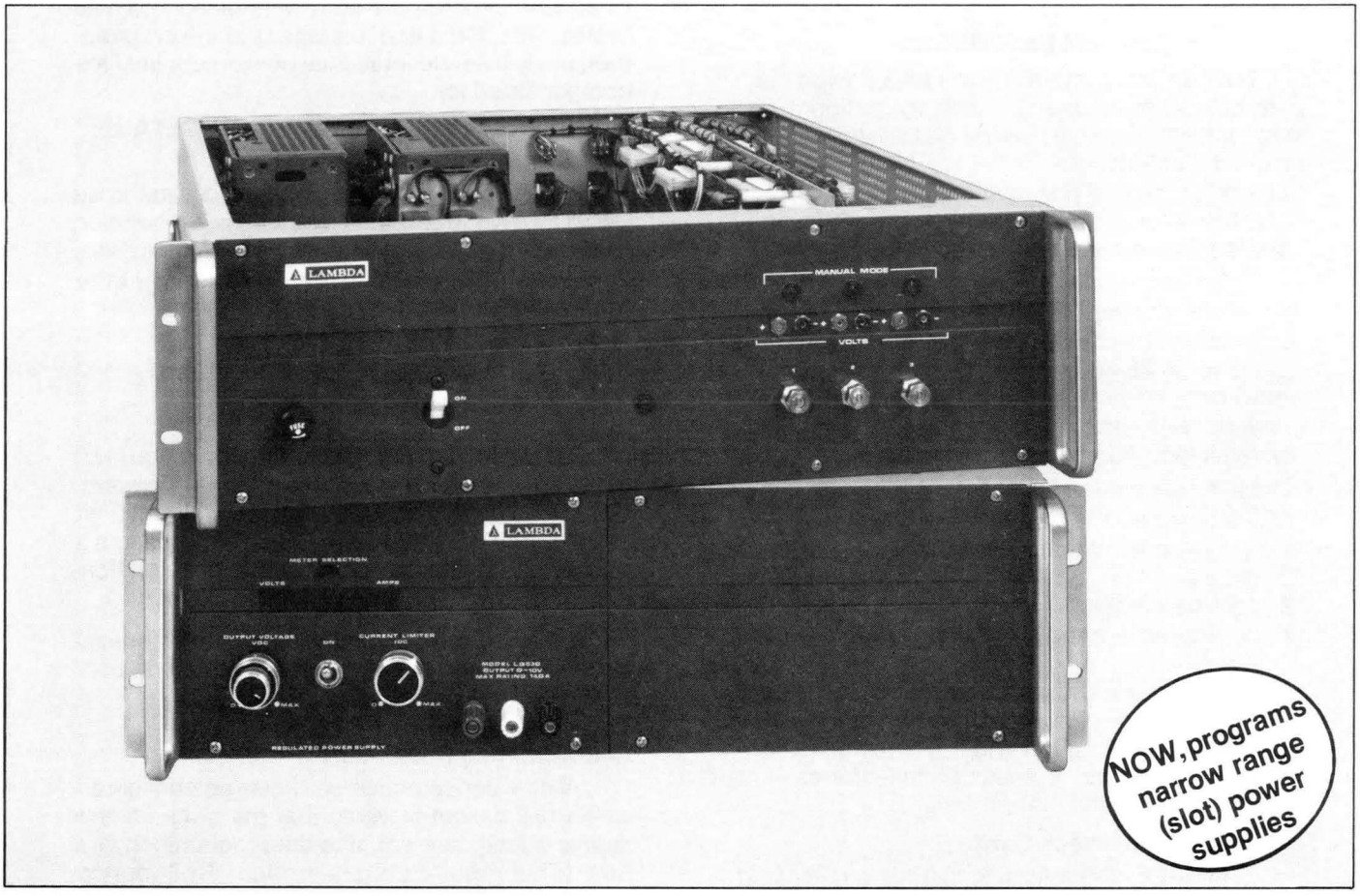
Package M, Configuration 9 provides a completely wired, assembled ready-to-use, custom power supply consisting of:



Two **LRS-54-5** (5V @ 40A with built-in OV)	$460 ea.	$920.00
Two **LNS-W-12** (12V @ 8.5A)	245 ea.	490.00
Two **L20-OV-12** (over voltage protectors)	31.75 ea.	63.50
One **LRA-17** rack adapter		179.00
4 Digital Meters, panel, AC on/off, indicator light fuse, voltage potentiometer, cables, and assembly labor		1067.00
	Total Price	$2719.50

Call your nearest Lambda office with your custom system requirements.

Lambda Computer Programmable IEEE-488 Power System



Features—

The Lambda IEEE-488 Power System and IBM® PC have been tested with the PC-MATE,™ GPIB-PC2, PC-488 and ZT-1488 interface cards. A sample program is available on request. Consult factory.

Standard—pick the system to suit your needs from off-the-shelf modules with a wide range of options.

Controls Lambda standard wide range and narrow range (slot) power supplies.

Confidence check—verifies the program requested.

One primary address controls 6 secondary addresses.

Simplicity in programming.

Manual/Auto mode select switch—for ease of maintenance and system set up.

6-8 week delivery—uses Lambda standard off the shelf modules.

No engineering charges.

5 year guarantee.

IBM® is a registered trademark of International Business Machine Corporation, PC-MATE™ is a trademark of Techmar Inc. GPIB-PC2 is a product of National Instruments. PC-488 is a product of Capital Equipment Corp. ZT-1488 is a product of Ziatech Corp.

PART II—CUSTOM POWER SYSTEMS
Computer Programmable IEEE-488 Power System

SYSTEM DESCRIPTION
PROGRAMMING

The Lambda IEEE-488 Power Supply System provides the communication link between an end user's control system (computer) and standard Lambda off-the-shelf Power Supplies. The bus protocol and timing relationships are as defined by the IEEE-488 Standard.

SYSTEM DESCRIPTION

The Lambda system is a modular design that permits maximum user flexibility in configuring a system to your specific needs and costs. System elements include:

* Lambda standard power supplies
* Lambda standard rack adapter and the following printed circuit cards:

a. IEEE-488 interface card
b. programming card(s)—one per power supply
c. confidence check card (optional)

The IEEE-488 Power System includes all interconnection wiring and comes completely assembled, tested and guaranteed by Lambda. A system block diagram is shown in figure 1.

The Lambda system features:

1. Standard-pick the system to suit your needs from off-the-shelf modules with a wide range of options.
2. Controls Lambda standard power supplies.
3. Confidence check—verifies the program requested.
4. One primary address controls 6 secondary addresses.
5. Simplicity in programming.
6. Manual/Auto mode select switch—for ease of maintenance and system set up.

A. IEEE-488 Interface Card

The IEEE-488 Interface Card is a dedicated microprocessor which performs the tasks of bus communication, instruction decode and secondary address selection. Instructions and data are formulated in accordance with the 1978 IEEE-488 Standard. One interface card is required for each primary address and controls both programmer and confidence check cards (described in sections B and C) up to a maximum of 6 secondary addresses. Secondary addresses are determined by connections from the interface card to the programming card.

B. Programming Card

The programming card converts the decoded ASCII instructions into power supply control voltages for voltage output or current limit setting.[1] It also provides the isolation between the bus and the power supply.

A wide range power supply may be programmed from zero volts up to its maximum output value, and also has full current limit programmability. A narrow range (slot) supply may be programmed over its nominal output voltage ±5% with the capability of being turned on/off via the bus.

The divider network and associated circuitry to accomplish this are factory-installed and calibrated. All offsets and tolerances in the programmer, as well as the individual power supplies, are compensated for.

UNIVERSAL PROGRAMMING IN VOLTAGE AND CURRENT

Power supplies are voltage programmed using four decimal digits, resulting in a resolution to better than 0.1% for wide range power supplies. Zero volts is represented as 0000 and V_{OUT} maximum as 9999. Any intermediate value of voltage is determined by the relationship:

$$\text{Voltage Scale Factor} = 9999 \times \frac{V \text{ desired}}{V_o \text{ max}}$$

For current limit programming the range is 00 to 99.00 represents the minimum value of current. 99 represents power supply full load current limit setting. Any value between 00 to 99 represents a percentage of full scale current limit with a relationship similar to that of the voltage scale factor.[2]

Lambda power supplies used in this application are trimmed at the factory requiring no user action.

C. Confidence Check Card

A confidence check card can be configured within the system to verify that the programmed supply outputs are equal to the programmed values. (This requirement is termed "Confidence Check.") The confidence check card occupies one secondary address and is capable of routing output voltage and/or current by means of relays of up to five supplies to a user furnished digital voltmeter. Either output voltage or load current may be measured. By using an IEEE-488 compatible meter the user is capable of machine reading the outputs. The outputs are isolated from the meter until the confidence test check is invoked.

FOOTNOTES

[1]This applies to zero-up wide range power supplies only. For narrow range (slot) power supplies, the GPIB controls the output voltage and has on/off capability via program control. Narrow range (slot) supplies are not capable of current limit programming.

Zero-Up Wide Range Power Supplies	Narrow Range (Slot) Power Supplies
LC Series (wide range models) LD Series (wide range models) LK Series, LQ Series, LT Series	LR Series LG Series

[2]For programming of narrow range (slot) power supplies, consult Lambda's Computer Programmable IEEE-488 Power System Application Notes.

PRIMARY AND SECONDARY ADDRESSING

The IEEE-488 interface can only handle 15 instruments. To expand the system capabilities, secondary addresses are used. The Lambda IEEE-488 Power Supply Interface can handle up to six secondary addresses for each primary address. This gives the system designer flexibility in matching his needs in terms of cost and performance at each primary address. A confidence check card provides efficient usage of primary addressing. One confidence check card may be used for each primary address.

OPERATING THE GPIB ASSEMBLY

The Lambda IEEE-488 Power Supply Assembly is provided as a completed system as specified by the user. The user is required to apply input power, connect the IEEE-488 interface cable, set the primary address switch, and connect the load circuits to the proper power sources. The Lambda IEEE-488 Power Supply Assembly conforms to the 1978 IEEE-488 specifications. The system conforms to the extended listener configuration subgroup #2 (LE2).

Bus Connector

The assembly is equipped with a standard IEEE-488 receptacle located on the rear panel. The controller/computer IEEE-488 mating package is simply connected to this receptacle.

Primary Address Selection

A five bit switch is part of the rear panel assembly, and its address must be selected by the user. The adapter will respond to commands bearing this address. Addresses may be selected from 0-30. The selected address is recognized at power up.

Secondary Address

These addresses are assigned to each power supply at time of assembly either on recommendation by the user or by Lambda.

COMMAND SEQUENCE TO ADJUST POWER SUPPLY VOLTAGE OR CURRENT

Definition of Terms

MLA
My listen address—switch selected primary address.

MSA
Secondary address numbers 1-6.

P
Represents power supply.

C
Represents confidence check.

V_1, V_2, V_3, V_4
Represents percent of full scale voltage.

These numbers are transmitted in ASCII format. 99.99% is controller transmitted as 39,39,39,39.

I_1, I_2
Represents percent of full scale current I_1, I_2% of full scale. These numbers are also transmitted in ASCII format; 50% is transmitted as 35,30.

E
Represents end of string command. Please note a wrong terminator or an incorrect number of the data string digits will result in no change of assigned power supply output.

UNL
Represents GPIB unlisten command.

VOLTAGE OR CURRENT PROGRAMMING FOR WIDE RANGE POWER SUPPLIES.[2]

This is best explained with the following example. An asterisk refers to the GPIB implementation of the noted mnemonic Programming Format for Power Supply.

★ **My Listen Address:**
1-30 selected primary address (Binary Format)

★ **My Secondary Address:**
1-6 power supply address (Binary Format)
P Represents Power Supply
V_1 = 37
V_2 = 35
V_3 = 30
V_4 = 30
} Assume power supply is programmed to 75.00% full scale voltage
I_1 = 39 Assume power supply is programmed
I_2 = 39 for full scale current
E = End of String Command (Letter E in ASCII)

★ **UNL:** Unlistens Interface Card

CONFIDENCE CHECK PROGRAMMING

The confidence check programming is similar in format to power supply programming. An external meter must be connected to the Confidence Check Output to measure the selected power supply output voltage or current as required. Please note this meter should possess IEEE-488 listener and talker capability and have its own primary address of outputs to be computer interpreted.

★ **My Listen Address**
1-30 selected address (Binary Format)

★ **My Secondary Address**
Assigned address in Binary Format (generally 6)
C represents confidence check
V = voltage measurement
I = current measurement
Secondary Address of power supply to be monitored (1-5)
E = End of String Command

FOOTNOTES

[2]For programming of narrow range (slot) supplies, consult Lambda's Computer Programmable IEEE-488 Power System Application Notes

PART II — CUSTOM POWER SYSTEMS
Computer Programmable IEEE-488 Power System

★ UNL
Unlistens Interface Card

All secondary addresses of a primary address may be programmed successively by deleting the UNL unlisten command. After transmittal of the E command the programmer transmits a new secondary address and repeats the new data followed by an E command (end of string command). Upon completion of all programming to the primary address a UNL, unlisten command, is given and the IEEE-488 adapter card is again in a monitoring state.

Note: A missing or incorrect termination character or improper format inhibits confidence check.

TYPICAL EXAMPLE OF A PROGRAMMING FORMAT

1 System listen address
switch address

2 Secondary address

50 Refers to Power Supply
(Letter P in ASCII)

37 7 in ASCII
35 5 in ASCII
30 0 in ASCII
30 0 in ASCII
} Programmed voltage in %. Unit programmed to 75% of V_0 max.

39 9 in ASCII
39 9 in ASCII
} Programmed current in %. Unit programmed to 99% to I_0 max.

45 End of String Command
(Letter E in ASCII)

The above sequence will program the power supply at secondary address 2, to 75% of V_0 max and 99% of I_0 max value. To measure programmed output, the following sequence of commands will initiate confidence check system to measure the output. Assume that primary address is still active.

6—Secondary address for confidence check. (Binary Format)

43—Refers to confidence check system. (Letter C in ASCII)

56—Measuring parameter-voltage. (Letter V in ASCII)

2—Power Supply to be monitored. (Binary Format)

45—End of String Command. (Letter E in ASCII)

UNL
Unlisten command.

COMMAND STRING TO CLEAR ONE SECONDARY ADDRESS

★ My Listen Address
1-30 selected address (Binary Format)

★ My Secondary Address
Assigned secondary address (Binary Format)

★ Selected Device Clear
a. This command to a power supply sets voltage and current limit to minimum value.
b. This command to a confidence check circuit opens all relays disconnecting the monitored power supply and monitoring meter from the confidence check card.

★ Unlisten

TERMINATION OF AN ERRONEOUS COMMAND STRING

Inserting any character not recognized by the adapter, e.g. (Q or Z) etc. will terminate and abort a command string.

Reset of all functions is automatic at power up or upon receiving the bus command of "DEVICE CLEAR". Manual reset, although provided, is not required for this operation.

ASSEMBLY SPECIFICATION

The IEEE-488 Power Supply System unit is available only as a completed assembly.

SYSTEM SPECIFICATIONS

Number of Outputs
a. 6 outputs total
b. 6 independent voltage sources
c. 5 independent voltage sources plus one confidence check.

SUPPLIES

Most standard Lambda Power Supplies

SYSTEM PERFORMANCE

Voltage Range and Output from zero to the published V_{OUT} maximum of the power supply up to a maximum V_{OUT} of 100 volts.

VOLTAGE REGULATOR MODE

Line Regulation/Load Regulation
Individual power supply specifications apply.

Ripple
RMS—Individual power supply specifications plus 1MV RMS for linear power supplies.

Peak to peak—individual power supply specifications + 3MV peak to peak for linear power supplies.

Computer Programmable IEEE-488 Power System

Accuracy of Programming
0.1% of full scale

Resolution of Programming
0.1% of full scale

Temperature Coefficient
TC of Supply + .01%/°C

Overshoot
0.25 Volt maximum at turn on/turn off/recovery from short circuit.

Programming Range
00.00% to 99.99% of V_{OUT}.

Programming Time
Voltage up programming 50 milliseconds typical.

Remote Sensing of Power Supplies
Provisions are made for remote sensing of power supplies. For connections, see instruction manual of individual power supply.

CURRENT REGULATOR MODE

Line Regulation/Load Regulation
Power supply specifications apply.

Accuracy
2% of programmed value plus 1% of full scale.

Resolution
1% of rated current.

INPUT DATA FORMAT

Communication is conducted in accordance with IEEE-488/1978 standards. All data is transmitted in ASCII format.

The system is capable of a listen only function.

It uses secondary addressing extensively.

Voltage Programming format. See page 86.

Input connector is wired per IEEE-488 specifications. All communication, control and data entry through this connector.

The following control signals are recognized: ATN, IFC, NRFD, NDAC and DAV. REN is not recognized.

Protection

In addition to all protection circuits inherent to each power supply, protection circuits are added which limit each output voltage to less than 5V in case of programmer failure.

Power On Operation

All outputs are set to zero volts. No overshoot at power on, power off or power failure.

AC Input
105-132 VAC 50/60 Hz
187-242 VAC 50/60 Hz available as an option.
205-265 VAC 50/60 Hz available as an option.

Operating Temperature Range
0-60°C

Storage Temperature Range
−55°C to +85°C

CONFIDENCE CHECK SYSTEM

1. Number of power supplies that may be monitored. (5)
2. Number of power supplies that may be monitored at one time. (1)
3. Power Supply-Output functions that may be monitored at one time. (1)—either output voltage or a measure of output current.
4. Location of voltage and current measurements.
a. Output voltage of power supply at terminals of assembly.
b. Output current is taken across internal shunt.
5. Accuracy of output voltage measurement.
Measurement meter accuracy plus effect of 50,000 ohm source impedance on meter accuracy.
6. Accuracy of current measurement.
1% plus accuracy of meter plus effect of 50,000 ohm source impedance on meter accuracy.
7. Switching Relay voltage insulation.
a. Voltage rating between contacts = 200 volts.
b. Voltage rating contact to coil = 1,000 volts.

Power On Operation
All relay contacts open.

AC Input
Same as IEEE-488 adapter card and programmer card.

Operating Temperature Range
0-60°C

Storage Temperature Range
−55°C to 85°C

Protection
All relay contacts buffered with 25,000 ohms.

MECHANICAL CONFIGURATION

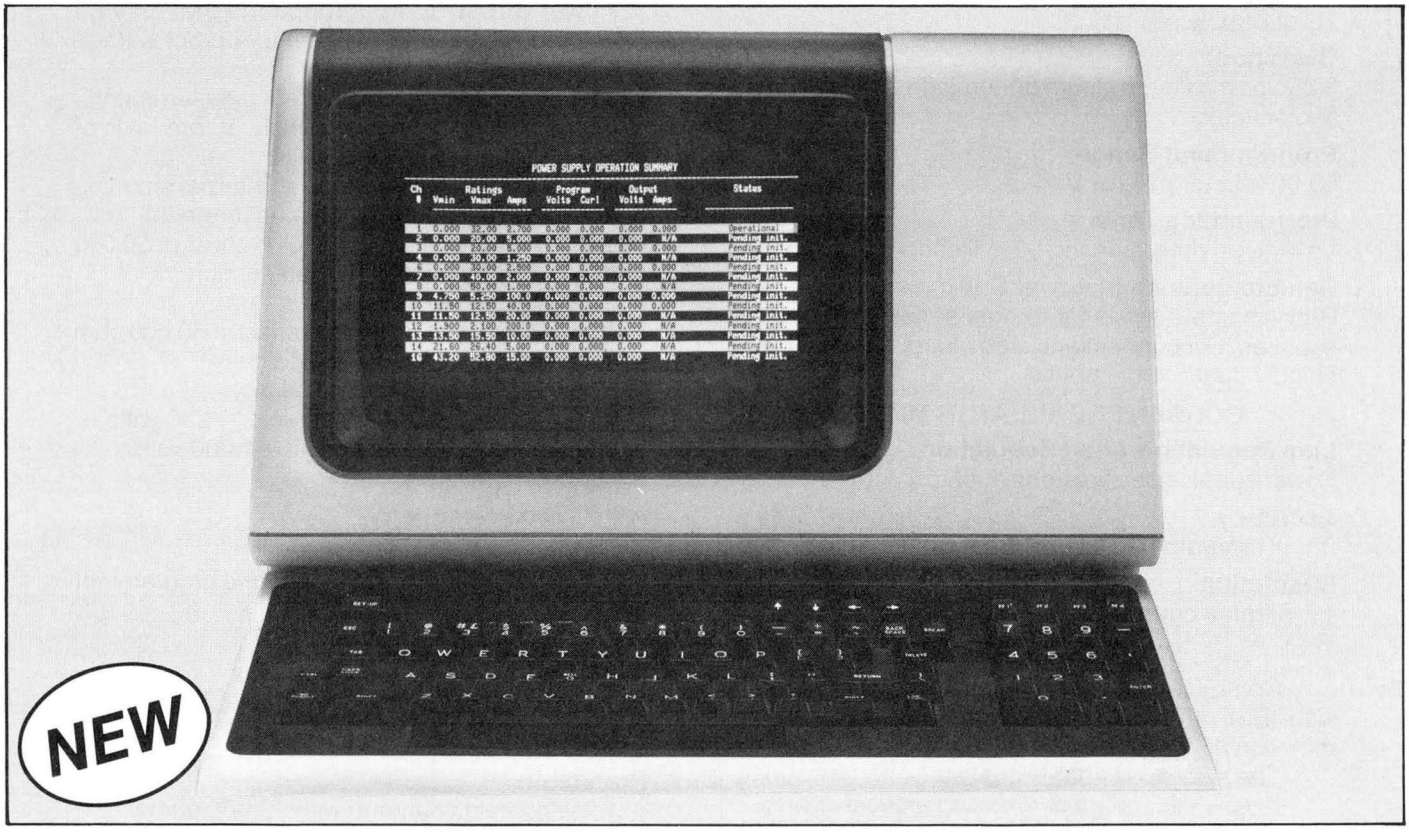
Two basic configurations are available with modular power supplies.
a. blank front panel with on/off switch, pilot light and fuse.
b. same as above with front panel voltage adjust pots and test points.

FREE APPLICATION NOTES

Send for your free copy of Lambda's computer programmable IEEE-488 Power System application notes. Call or write Lambda today.

PART II—CUSTOM POWER SYSTEMS
Computer Programmable Power System

Lambda MATEPLUS™



Features—MATEPLUS

Fully complies to MATE requirements

Programmed using CIIL mnemonics

Controls standard Lambda Power Supplies (wide and narrow range)

PC controllable

One system controls up to 31 Power Supplies

Talk-Listen capabilities

Confidence test (internal self-test)

No engineering charges

5-Year Guarantee

SUPERVISORY CONTROL AND DISPLAY SYSTEM

VT-100* Terminal (for compatible) visual display system

Programmable voltage and current safety window

Fault indication

Built-in metering system replaces conventional multiple metering configurations

Local/Remote operation—for ease of system set-up and maintenance

LOAD PROTECTION SYSTEM

Programmable activation of load isolation relays

Programmable tracking overvoltage protection (VLTL)

Fault monitor lines—soft/hard

*VT-100 is a product of Digital Equipment Corp.

MATEPLUS™ Programmable Power System

SYSTEM DESCRIPTION

Lambda's MATEPLUS™ Programmable Power Supply System provides the communication link between an end users controller (computer) and Lambda standard off-the-shelf power supplies. The Lambda system uses CIIL (Control Interface Intermediate Language) mnemonics over the IEEE-488 Bus and fully complies with the MATE specification.

The modular design of the system and broad selection of Lambda power supplies gives the MATE system designer maximum versatility in tailoring a system to their specific needs. System elements include:

- Lambda Standard Power Supplies—Wide range and narrow range (slot) supplies.
- Lambda Standard Rack Adapter for mounting and packaging equipment.
- Interface Card—Accepts CIIL commands over the IEEE-488 bus. (One per system.)
- Programming Cards—One per power supply.
- VT-100 (or compatible) Hardware hookup lines.
- Multiple Designed-in Software—User accessible.

The Lambda MATEPLUS™ Programmable Power System includes all the interconnection wiring and comes completely assembled, tested, and carries Lambda's 5-year guarantee.

SYSTEM FEATURES

Lambda's MATEPLUS™ system is a unique, programmable power supply system that fully complies to the requirements set forth by the MATE specifications. The system provides:

- Two-way communication (talker/listener)
- Programming of functions in English mnemonic language
- Confidence test (internal self-test)
- Programming of voltage at current limit
- Performance monitoring

More importantly, Lambda's MATEPLUS™ provides additional features above and beyond the requirements of the MATE specification. These features, which constitute the PLUS in MATEPLUS™, give the MATE test engineer more diagnostic and sensory capability than any other off-the-shelf, programmable power supply system available in the marketplace today.

The Lambda system is capable of controlling the output voltage and current limit of up to 31 power supplies per system. The unique part of the system is its ability to monitor the operating conditions centered on or related to programmed values of voltage and current limit. This monitoring capability is twofold. The first being the actual output parameters (V + I) of each power supply in the system. The second is a passive fault monitoring scheme which is based on user definable safety windows that provide the test engineer with fault notification when these minimum or maximum values are exceeded. These values are setpoints which are independent of the overvoltage (VLTL) or programmed current limit (CURL) value of the power supply. The attainment of an overvoltage fault (VLTL) or the programmed current limit for a period of five seconds will both result in system disconnect and shutdown (RST). See Table 1 for additional features and specifications of the Lambda MATEPLUS™ system.

MATEPLUS™ SYSTEM SPECIFICATIONS

Number of Power Supplies Programmed Per System
31

Power Supplies
Lambda wide range supplies and narrow range (slot) supplies.

Zero-Up Wide Range Power Supplies	Narrow Range (Slot) Power Supplies
LD Series (wide range models) LK Series, LQ Series, LT Series	LR Series

Output Voltage Range
Up to 120VDC.

Output Current Range
Up to 300A.

VOLTAGE REGULATION MODE

Line Regulation/Load Regulation
Individual power supply specifications apply.

Ripple and Noise
RMS—Individual power supply specifications apply. (Plus 1mV for linear power supplies.)

Peak-to-Peak—Individual power supply specifications apply. (Plus 3mV for linear power supplies.)

Programming Accuracy
0.1% of full scale

Programming Resolution
0.025% of full scale

Temperature Coefficient
TC of individual power supply plus 0.01%/°C.

Overshoot
0.25 Volt maximum at turn-on, turn-off, or recovery from short circuit (without load isolation relay option).

Programming Voltage
Numerical or scientific notation, four digits in volts.

Programming Time
Voltage programming 50 milliseconds typical.

Voltmeter Accuracy
0.6% of full scale.

CURRENT REGULATION MODE

Line Regulation/Load Regulation
Individual power supply specifications apply. (Wide range supplies only.)

Ammeter Accuracy
0.6% of full scale.

Programming Accuracy
1.0% of programmed value plus 10mA.

Resolution
0.5% of full scale

AC Input
105-132VAC, 50/60Hz
187-242VAC, 50/60Hz or 205-265VAC available as an option.

Operating Temperature Range
0-60°C.

Storage Temperature Range
−25° to +85°C.

Power-On Status
All outputs set to zero volts, zero current.

PART II—CUSTOM POWER SYSTEMS
MATEPLUS™ Programmable Power System

PROGRAMMING OF A POWER SUPPLY PER THE MATE FORMAT

Command Mnemonics	Description
FNC DCS :CH nn	FNC—Function DCS—DC Source :CH nn Power Supply #
SET VOLT nn · nn	SET VOLT—Programmed Output Voltage Value (Volts)
SET CURL nn · nn	SET CURL—Programmed Current Limit Value (Amps)
RST,CLS,OPN	RST—Reset to Zero Volts, Zero I Limit CLS—Relay Close OPN—Relay Open
CNF, STA	CNF—Confidence Check (Internal Self-Test) STA—Status Report Requested

IEEE-488 COMMANDS THE MATEPLUS™ RESPONDS TO:

Command Mnemonics	Description
ATN	Attention
DCL	Device Clear
IFC	Interface Clear
MLA	My Listen Address
MTA	My Talk Address
REN	Remote Enable
UNL	Unlisten
UNT	Untalk

Table 1—COMPARING LAMBDA'S MATEPLUS™ WITH STANDARD MATE REQUIREMENTS

LAMBDA MATEPLUS™ SYSTEM FEATURES	LAMBDA SYSTEM	STANDARD SYSTEM REQUIREMENTS
• Two-way communication (Talker-Listener)	+	✓
• Programming of functions in standard MATE (English) mnemonic language	+	✓
• Confidence test (internal self-test)	+	✓
• Full voltage and current limit programmability	+	✓
• Performance monitoring	+	✓
• Local/remote operation for ease of system set-up and maintenance	+	
• Initialization of all power supplies in system, providing signature identification under software control	+	
• User defined overvoltage tracking (VLTL). System reset (RST) occurs upon attainment of that value	+	
• SRX VOLT, SRN VOLT: These two programmed voltage limits allow the user a safe acceptable window of current output	+	
• SRX CURR, SRN CURR: These two programmed current values allow the user a safe acceptable window of current output.	+	
• Load current measurement of each power supply in system (option)	+	
• Polarity reversal of each power supply under program control (option)	+	
• Constant current operation under program control (wide range supplies only)	+	
• Load isolation relay commands automatically activating upon load faulting or under command of host computer (option)	+	
• VT-100 terminal (or equivalent) display system providing the following visual information: 1) Channel Number (1-31 power supplies) 2) Rated output of each power supply (V + I) 3) Programmed values of: a) Voltage b) Current limit 4) Actual measured values of: a) Output voltage b) Load current 5) Status for each channel consisting of: a) Pending initialization d) Faulted b) Operational e) Communication error c) Window limit exceeded 6) Replaces the function required by multiple voltmeters and ammeters	+	

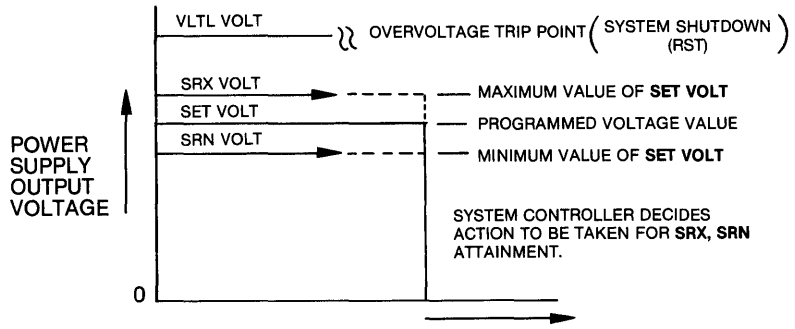


FIGURE 1
Power Supply Output Current
(Graphical Definitions of VLTL, SRX, SET SRN VOLT.)

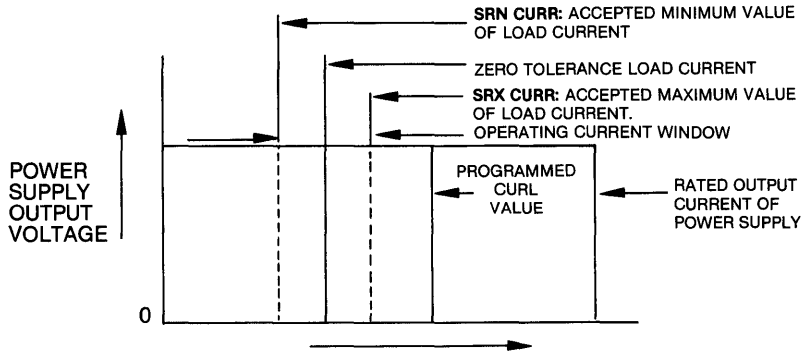


FIGURE 2
Power Supply Output Current
(Graphical Definitions of SRX, SRN CURR, SET CURL and Power Supply Rated Current.)

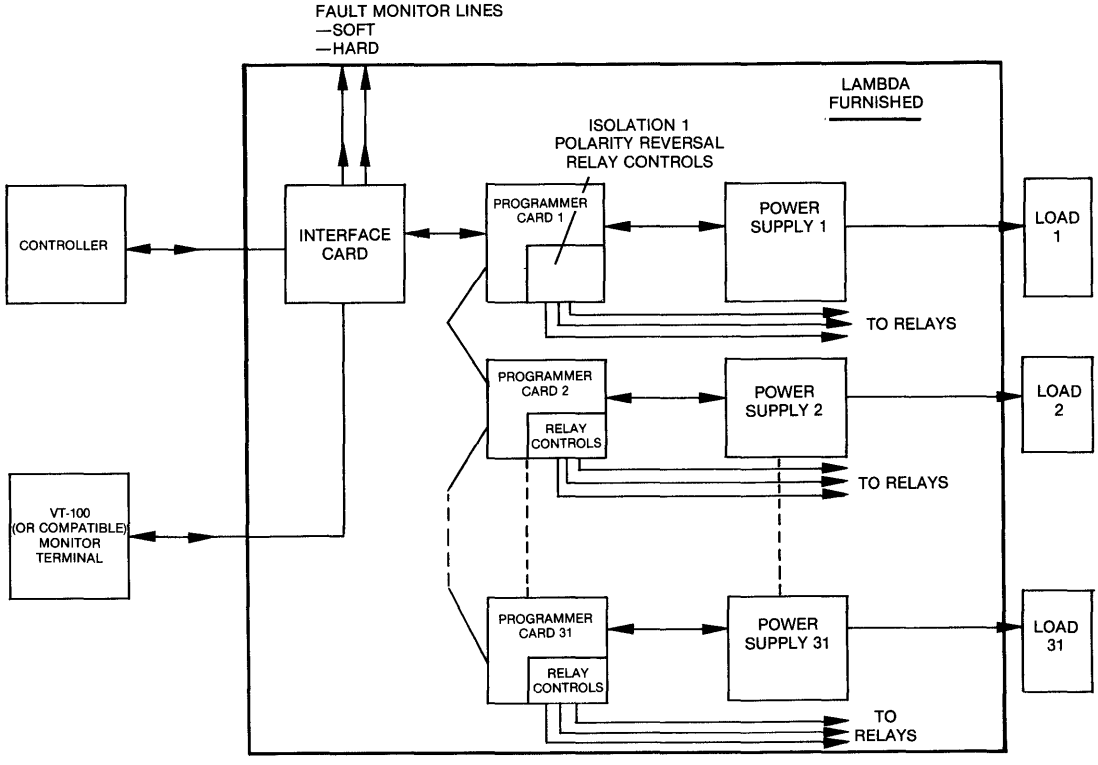
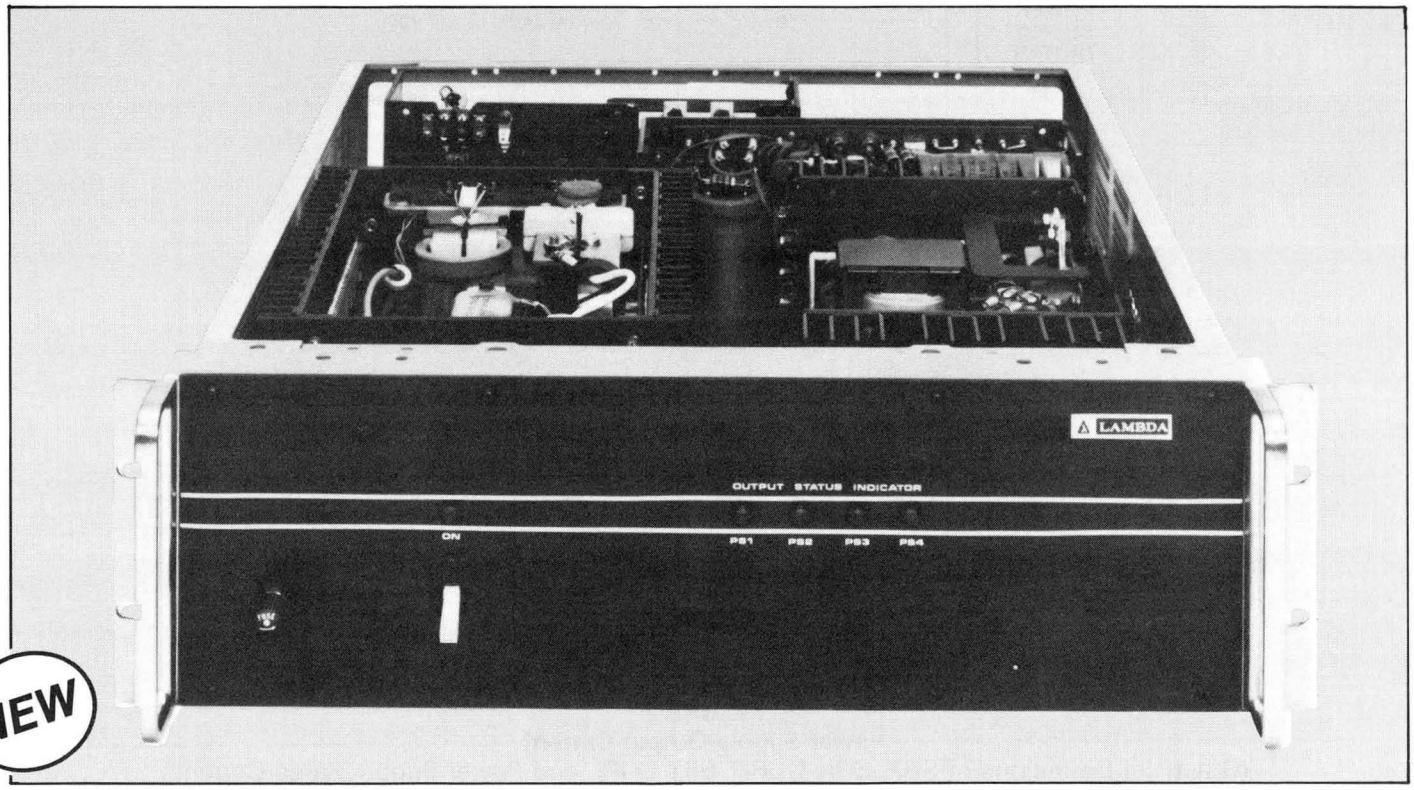


FIGURE 3
MATEPLUS™ Block Diagram

PART II—CUSTOM POWER SYSTEMS
Telecommunication Power Rack

Lambda TELRACK™



NEW

Lambda's LYS-"D"/LJA-"D" Series of DC-to-DC converters is now available as a complete system in an LRA-15 or LRA-17 Rack Adapter. These rack adapters are available in either a 19″ rack mount or a 24″ telecommunications rack configuration.

Lambda's new TELRACK™ features:

- Up to 4 outputs.
- A DC input circuit breaker, located on the front panel, which controls the entire system.
- A front panel pilot light to indicate the condition of the breaker.
- Front panel LED's indicating the status of each power supply. LED's are customer specified for color (green or red) and normally "ON"/normally "OFF".
- Rear panel individual Form "C" contacts for each supply indicate power supply status for remote monitoring.
- Built-in overvoltage protection on each supply.
- Undervoltage protection will shut down the power supply if its output falls below a pre-set value.
- In-rush current limiting circuit limits the maximum input current at power turn-on.

Lambda's new Telecommunications Rack is designed to meet surge voltage requirements, as well as isolation and leakage current as specified by FCC part 68. The Lambda TELRACK™ complete with associated wiring and all internal components is backed by Lambda's 1 year guarantee. It is built to your requirements without engineering charges and is available for 6-8 week delivery. Consult factory or your local Lambda field sales engineer for complete specifications and price.

Lambda TELRACK™ Example

Configuration T4 (pictured above) provides a completely assembled, ready-to-use, fully wired TELRACK™ Power System. A typical system provides:

2 LYS-W-5-D (5V @ 35A)	$295 ea.	**$590**
2 LYS-W-12-D (12V @ 20.0A)	$295 ea.	**$590**
1 LRA-17 Rack Adapter		**$179**
Configuration T4 with indicator lights, UV, OV, signals, completely wired and tested		**$1069**
	TOTAL PRICE	**$2428**

NOTE: See pages 63, 70-71 for LYS-D ratings and specifications.

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LA, LL, LQ, LPT, LT, LE, LK, and LB Series

LAB, TEST EQUIPMENT, AND SYSTEM POWER SUPPLIES—Lambda provides a wide range of quality, reliable power supplies designed for a variety of applications and budgets. Whether the need is high power, exacting precision or low cost, Lambda has a power supply to meet your specifications.

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LA Series

Features—LA Series

Low-cost bench power supply

Separate voltage and Current meters

Remote on/off

Mode of operation indicator light

Built-in OV

One-day delivery

Voltage and Current Ratings

Single Outputs

Model	Voltage Range	Maximum Output Current	Price
LA 200	1.0-16.5 Volts	4.0A	**$200**
LA 300	1.0-16.5 Volts	7.0A	**331**
LA 250	10.0-32.5 Volts	2.0A	**200**
LA 350	10.0-32.5 Volts	3.5A	**331**

Specifications—LA Series

DC Output and Ratings
Refer to the tables.

Regulated Voltage
regulation, line .....20mV for LA 200, LA 300; 40mV for LA 250, LA 350 for line variations from 85-132 VAC.
regulation, load .....20mV for LA 200, LA 300; 40mV for LA 250. LA 350 for load variations from zero to full load.
ripple and noise .....60mV pk-pk for LA 200, LA 300 ;80mV pk-pk for LA 250, LA 350 with either positive or negative terminal grounded.
temperature coefficient .....(.012% + 2mV)/°C

AC Input
line .....85 to 132 VAC, 47-440 Hz.

efficiency .....Typically greater than 80% at full output power.

DC Input .....110 to 165 VDC.

In Rush Current Limiting .....In-rush current is limited to 12 amps typical. (When resuming operation in less than 8 sec after AC turn off at no-load, soft-start circuit will not limit the in-rush current at turn on.)

Ambient Operating Temperature
Continuous duty from 0 to 50°C with no derating.

Storage Temperature
−20°C to +70°C

Cooling
Convection cooled—no fans or blowers needed.

Overvoltage Protection
Built-in 21 ± 2VDC for LA 200, 300
36 ± 2VDC for LA 250, 350
Fixed

Overload Protection
Electrical
Adjustable, automatic current-limiting circuit limits output current to preset value. Current limiter variable from zero to I_{max}.

Input and Output Connections
Heavy duty binding posts on front panel for output connections. Three wire AC line cord for input.

Meters
Separate meters for voltage and current.

Remote On/Off Control
Logic "0" for on and logic "1" for off.
TTL compatible.

Power
On-off switch on front panel.

Output Adjustment
Potentiometers on front panel allow adjustment of output voltage and current limit. The current limit is adjustable from no load to full load.

Indicator Light
Green or red L.E.D. indicates whether power supply is in the constant voltage or current-limit mode.

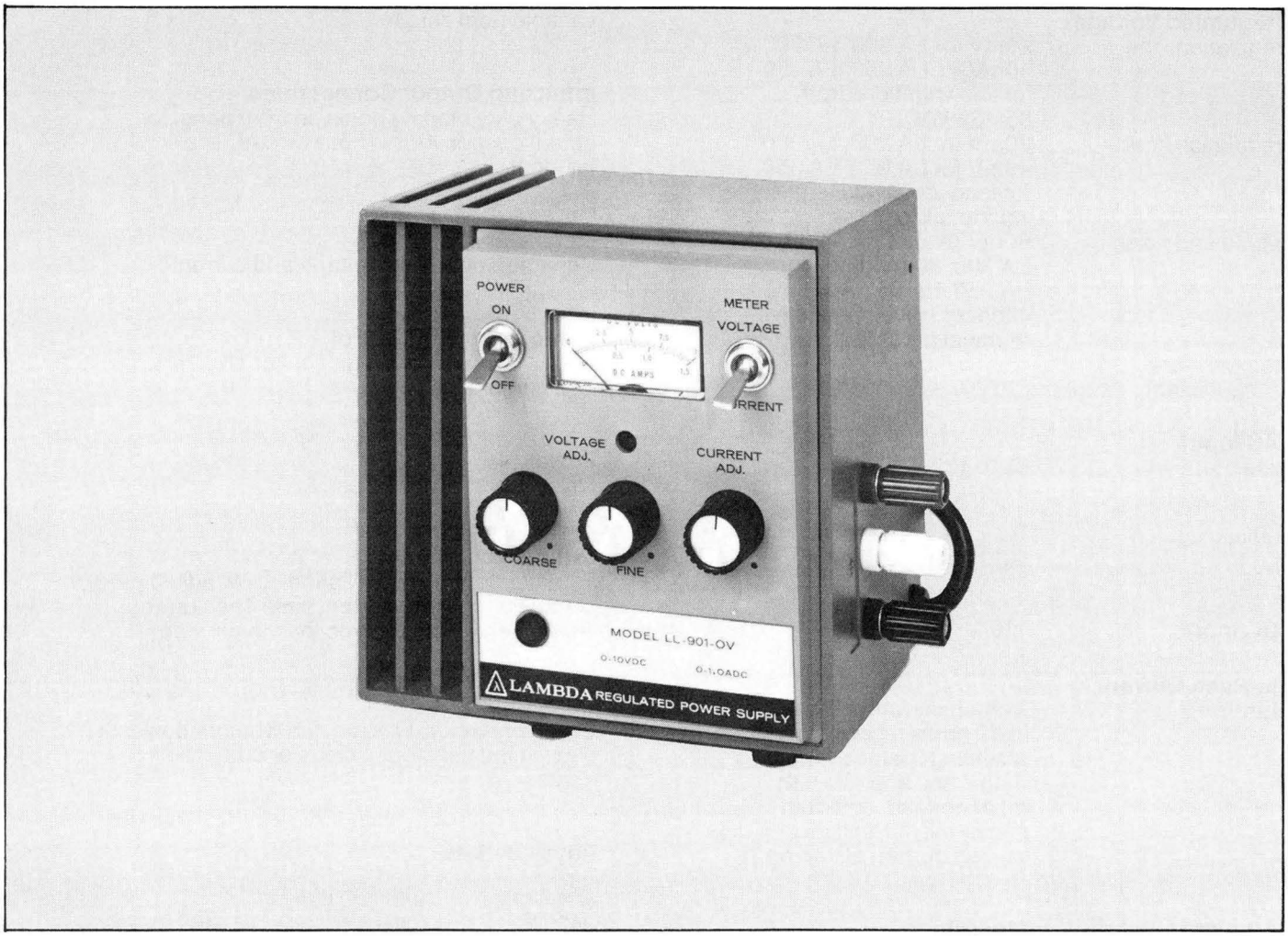
Physical Data

Package Model	Weight (lbs.) Net	Ship	Size Inches
LA 200	3.24	3.74	4.33 x 5.64 x 7.74
LA 250	3 24	3.74	4.33 x 5.64 x 7 74
LA 300	3.68	4.18	4.33 x 5.64 x 7.74
LA 350	3.68	4.18	4.33 x 5.64 x 7.74

Guarantee
90 day guarantee includes labor as well as parts.

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LL Series



Features—LL Series

5 year guarantee

All-silicon DC power supply using an integrated circuit to provide regulation system.

Convection cooled

Multi-position operation: lies flat or stands erect

Die-cast aluminum construction

No overshoot on turn-on, turn-off or power failure

Adjustable current limiting 0 to 110% of rating

Controls: coarse voltage adjust, fine voltage adjust, current adjust, ON/OFF switch, meter function switch

Built-in tracking overvoltage protection models available

MODEL	ADJ. VOLT. RANGE VDC	CURRENT RANGE (1)	PRICE
3 models with built-in tracking overvoltage protection			
LL-901-OV	0-10	0-1 amp	**$450**
LL-902-OV	0-20	0-0.65 amp	**450**
LL-903-OV	0-40	0-0.35 amp	**450**
LL-905	0-120	0-65 ma	**498**

NOTES:

(1) Consult factory for operation at 400 Hz or temperatures above 50° C. Ratings apply 0-50° C.

Specifications—LL Series

DC Output
voltage ranges: 0-10 V, 0-20 V, 0-40 V, 0-120 V.

Regulated Voltage
regulation, line .....0.01% + 1 mV
regulation, load .....4 mV
ripple and noise .....250 μV RMS
1 mV pk-pk
temperature
coefficient .....(0.015% + 300 μV)/°C

AC Input
line .....105-132 VAC 47-440 Hz (current ratings based on 57-63 Hz) derate current 10% for 50 Hz operation. 187-242 VAC, 205-265 VAC, 45-440 Hz, see "AC Input Option"
power .....LL-901-OV, 30 Watts; LL-902-OV, 32 Watts; LL-903-OV, 32 Watts; LL-905, 15 Watts

Ambient Operating Temperature Range
Continuous duty from 0° to + 50° C.

Storage Temperature Range
– 40° C to +85° C.

Overload Protection

ELECTRICAL
External overload protection: automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for load as well as the power supply. Automatic current limiting is adjustable from 0-110% of rating.

Overvoltage Protection
Built-in tracking overvoltage protection on LL-901-OV, LL-902-OV and LL-903-OV.

Input Connections
Heavy-duty, 3-wire line cord provided.

Output Connections
5-way binding posts on side panel.

Meter
Dual function meter measures voltage or current output as selected by meter function switch on front panel.

Controls

DC OUTPUT CONTROLS
Course voltage adjust, fine voltage adjust and current adjust on front panel. On models LL-901-OV, LL-902-OV and LL-903-OV adjustment of voltage control allows overvoltage protector to track voltage output automatically.

POWER
On-off switch on front panel.

METER
Function switch to measure output voltage or current.

Multiposition Operation
Lies flat or stands erect.

Physical Data

SIZE
5-5/8"W x 5-1/2"H x 3-7/8"D

WEIGHT
5 lbs. net, 7 lbs. ship.

Accessories
Pot covers. See page 118.

Options

AC INPUT

Add Suffix	For Operation at:	Price
—V	187-242 VAC, 47-440 Hz	$25
—V_1	205-265 VAC, 47-440 Hz	$25

Derate current 10% for 50 Hz operation.

Guaranteed for 5 years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

PART III — LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LQ and LPT Series

Features—LQ Series

PURE DC

Regulation: 0.005%

Ripple: 150 μV

Temp. Coeff: 0.005%/° C

Made possible through use of Lambda's monolithic, multi-function voltage regulator with built-in, on-chip temperature regulation. Only Lambda has the in-house integrated circuit capability to develop and produce this device.

Digital meter readout

Convection cooled—No fans or blowers

Designed for bench or rack use

Completely protected—Short circuit proof; continuously adjustable automatic current limiting.

Guaranteed 5 years

One day delivery

Linear regulator

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

LQ Series—Voltage and Current Ratings

DUAL OUTPUTS

MODEL	VOLTAGE RANGE (Per Output/Outputs In Series)	MAXIMUM CURRENT AMPS AT AMBIENT OF (Per Output/Outputs in Parallel) 30°C	40°C	50°C	60°C	PRICE
LQD-421	0-±20/0-40	1.7/3.4	1.5/3.0	1.3/2.6	0.90/1.8	$983
LQD-422	0-±40/0-80	1.0/2.0	0.85/1.70	0.7/1.4	0.55/1.1	983
LQD-423	0-±60/0-120	0.7/1.4	0.60/1.20	0.5/1.0	0.40/0.80	983
LQD-424	0-±120/0-240	0.38/0.76	0.32/0.64	0.26/0.52	0.20/0.40	983
LQD-425	0-±250/0-500	0.13/0.26	0.12/0.24	0.11/0.22	0.10/0.20	1109

SINGLE OUTPUTS

MODEL	VOLTAGE RANGE	MAXIMUM CURRENT AMPS AT AMBIENT OF 30°C	40°C	50°C	60°C	PRICE
LQ-410	0-10	2.0	1.8	1.6	1.4	$563
LQ-411	0-20	1.2	1.1	1.0	0.80	563
LQ-412	0-40	1.0	0.90	0.80	0.60	563
LQ-413	0-60	0.45	0.41	0.37	0.33	563
LQ-415	0-250	80mA	72mA	65mA	60mA	647

MODEL	VOLTAGE RANGE VDC	MAXIMUM CURRENT AMPS AT AMBIENT OF 30° C	40° C	50° C	60° C	PRICE
LQ-520	0-10	5.0	4.7	4.3	3.7	$679
LQ-521	0-20	3.3	3.0	2.6	2.3	679
LQ-522	0-40	1.8	1.6	1.4	1.2	679
LQ-523	0-60	0.9	0.8	0.7	0.6	679
LQ-524	0-120	0.5	0.45	0.4	0.35	709

MODEL	VOLTAGE RANGE VDC	MAXIMUM CURRENT AMPS AT AMBIENT OF 30° C At Vmax	At Vmin	40° C At Vmax	At Vmin	50° C At Vmax	At Vmin	60° C At Vmax	At Vmin	PRICE
LQ-530	0-10	14.0	10.0	12.7	9.0	11.0	8.0	9.2	7.2	$916
LQ-531	0-20	8.6	6.0	8.6	5.6	7.4	5.1	6.4	4.6	916
LQ-532	0-40	5.0	3.5	5.0	3.3	4.5	3.0	3.9	2.7	916
LQ-533	0-60	3.3	2.4	3.3	2.3	3.0	2.1	2.5	1.9	916
LQ-534	0-120	1.7	1.1	1.7	1.2	1.6	1.0	1.5	0.9	1004

LPT Series—Voltage and Current Ratings

MODEL	REGULATION	RIPPLE (RMS)	VOLTAGE RANGE (VDC)	MAXIMUM CURRENT AMPS AT AMBIENT OF 30°C	40°C	50°C	60°C	DIMENSIONS (in)	PRICE
LPT-7202-FM	0.01% ± 1mV	500μV	0-7	5.0	4.50	4.0	3.5	5 3/16 x 12 1/2 x 11	$1477
			0-20	1.5	1.35	1.2	1.0		
			0-20	1.5	1.35	1.2	1.0		

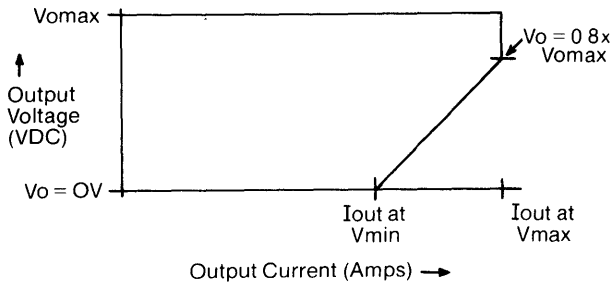
Specifications—LQ Series, LPT Series

DC Output and Ratings

Refer to the tables. For LQ-530 only, refer to figure below.

Fig. 1

LQ 530 Series—Output Characteristics



Regulated Voltage

regulation, line ..... 0.005% +0.5 mV (0.01% +1 mV for LPT) for line variations from 105 to 132 VAC (187 to 242 VAC on "V" options; 205 to 265 VAC on "V1" options).

regulation, load ..... 0.005% +0.5 mV (0.01% +1 mV for LPT) for load variations from 0 to full load.

ripple and noise ..... 1 mV pk-pk, 150 μV RMS (300 μV on LQ-415 and LQD-425) with plus or minus terminal grounded. (1.5 mV PK-PK, 500 μV RMS for LPT.)

temperature coefficient ..... ± (0.005% Vo + 10 μV)/° C. (With external programming resistors). (0.015% to 3 mV/°C for LPT).

remote programming resistance ..... 1000Ω/volt nominal (500Ω nominal on LQ-415 and LQD-425 200Ω/volt for LPT). Downward programming to voltages less than 1 volt must be accomplished in two steps; first, from original voltage value to 1 volt, and then from 1 volt to final desired value.

remote programming voltage ..... volt/volt

Constant Current

(automatic crossover)

range ..... LQD, LQ-410, LQ-520 Series-1% to I_{out} max (min 45 mA or 1% for LPT). LQ-530 Series-1% to ≈ 70% I_{out} max (refer to Fig. 1).

regulation, line ..... 1mA max for line variations from 105 to 132 VAC (187 to 242 VAC for "V" options; 205 to 265 VAC for "V1" options). (Less than 0.2% or 7.5 mA for LPT).

regulation, load ..... 2.5mA max for load changes from 0 to rated DC voltage.

AC Input

line ..... 105 to 132 VAC (47-440 Hz) standard input (derate output by 10% at 50 Hz). See options. Consult factory for operation above 63 Hz.

Ambient Operating Temperature

Continuous duty from 0 to 60° C with appropriate deratings above 30° C (see table).

Storage Temperature

−55° C to +85° C.

Overload Protection

THERMAL

By self-resetting thermostat.

ELECTRICAL

External overload protection—adjustable, automatic current limiting circuit limits output current to preset value. Current limiter variable from zero to I_{MAX} or to appropriate max. value at output voltage setting via front panel adjustment (see fig. 1) for LQ-530 series only.

Internal Failure Protection

Provided by primary and secondary fuses.

Cooling

Convection cooled—no fans or blowers required.

Input and Output Connections

Heavy duty barrier strip at rear of chassis.
Five-way binding posts on front panel for output connections.

Meters

Digital panel meter standard on all sets. Monitors output voltage/current by means of volt/amp selector switch. (Each output on LPT models has a separate voltmeter and ammeter).

Controls

DC Output Controls

Coarse/fine (LQD-421, LQ-410, LQ-411, LQ-530, LQ-531, LQ-520, LQ-521, LPT) or multiturn (LQD-422 thru LQD-425, LQ-412 thru LQ-415, LQ-532 thru LQ-534 and LQ-522-LQ-524) voltage adjust and single turn current adjust on front panel. An adjustable range of 1%-Vo max to Vo max is provided by the internal programming potentiometer; programming over the full 0 to Vo max range can be accomplished by remote programming.

Power

On-off switch on front panel.

Remote Sensing

Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Series/Parallel Operation

Provision is made for auto series/auto parallel (master-slave) operation to permit tracking to a common reference.

Physical Data

Package Model	Weight Lbs. Net.	Weight Lbs. Ship	Size Inches
LQD-420	12	15	5-3/16 x 8-3/8 x 10-3/32
LQ-410	9	12	5-3/16 x 4-3/16 x 10
LQ-520	14	18	5-3/16 x 4-3/16 x 15-1/2
LQ-530	25	30	5-3/16 x 8-3/8 x 15-5/8
LPT	24	29	5-3/16x12-1/2x11

Options

AC Input

Add Suffix	For Operation at:	Add to Price
—V	187-242 VAC, 47-440 Hz	12%
—V1	205-265 VAC, 47-440 Hz	12%

Derate output by 10% at 50 Hz. Consult factory for operation above 63 Hz.

Fungus Proofing

Add Suffix "—R" to Model Number and add 10% to price.

Accessories

(See page 118)
Rack adaptors LRA-1, LRA-2
Adjustable overvoltage protectors
Pot covers
Blank panels

Guaranteed for 5 Years

5 yr. guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LT Series

Features—LT Series

16 models up to 60V, up to 500A

Weighs up to 80% less and occupies only 35% of the volume of equivalent models

Constant voltage/constant current operation

Built-in adjustable overvoltage protection

Ideal for laboratory, burn-in, test and systems applications

Front panel supervisory control group provides instant analysis of system operation

Compatible with Lambda's IEEE-488 Computer Programmable Power System

Available as a stand alone IEEE-488 Computer Programmable Power Supply

5-year guarantee

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Voltage and Current Ratings—LT Series

MODEL	MAX CURRENT AMPS AT AMBIENT OF 40°C	50°C	60°C	71°C	PRICE
0-7.5 VOLTS					
LT-801	150.0	135.0	115.0	89.0	$1733
LT-821	300.0	266.0	218.0	160.0	2750
LT-861/LT-871	500.0	450.0	400.0	325.0	3200/4500
0-18 VOLTS					
LT-802	70.0	61.0	52.0	40.0	1733
LT-822	150.0	133.0	109.0	80.0	2750
LT-862/LT-872	225.0	205.0	180.0	145.0	3200/4500
0-36 VOLTS					
LT-803	34.5	30.5	26.0	20.0	1733
LT-823	80.0	71.0	58.0	42.0	2750
LT-863/LT-873	115.0	104.0	92.0	75.0	3200/4500
0-60 VOLTS					
LT-804	21.5	19.0	16.0	12.5	1733
LT-824	50.0	43.0	35.0	25.0	2750
LT-864/LT-874	70.0	63.0	56.0	45.0	3200/4500

(NOTE: Maximum output current applies over entire voltage range.)

New LT-860 Power Supply Series ... $3200
New LT-870 GPIB Power Supply Series ... $4500

INTRODUCING THE NEW LT-870 STAND ALONE GPIB POWER SUPPLY

Lambda's new LT-870 Series is a stand alone IEEE-488 GPIB power supply. It is designed with three internal PC cards allowing for voltage and current limit programming over the bus.

The Interface Card handles the communication over the bus. The Programming Card provides the appropriate D/A conversion necessary for voltage and current limit programming over the entire voltage range. The third card, the Interconnect Card, is designed with these rear panel features:

- 5-bit DIP switch for primary address selection.
- Pushbutton reset switch—to reset the voltage and current limit to zero.
- Auto/manual select switch sets the power supply for either local or computer control.
- 9-pin connector facilitating hookup to Lambda's optional Confidence Check Card.

The stand alone LT-870 IEEE-488 Power Supply is backed by Lambda's 5 year guarantee and is available for one day delivery from stock.

Specifications—LT Series

DC OUTPUT AND RATINGS
Refer to the table.

REGULATIONS
Constant Voltage

regulation, line . . . . 0.02% + 2mV for line variations from 187 to 242 VAC (205 to 265 VAC on "V1" option) for LT-800 series.
187 to 229 VAC (207 to 253 VAC on "V1" option) for LT-820 series.
0.05% for line variations from 187 to 265 VAC for LT-860 and LT-870 series.

regulation, load . . . 0.02% + 2mV on LT-801, 802, 821, 822;
0.02% + 4mV on LT-803, 804, 823, 824;
0.05% on LT-860 and LT-870 series for load variations from 0 to full load.

remote programming resistance . . . . . 200Ω/volt nominal.

remote programming voltage . . . . . volt/volt.

ripple and noise . . . 10mV RMS; 50mV p-p for LT-801, 821.
15mV RMS; 100mV p-p for LT-802, 803, 804, 822, 823, 824.
20mV RMS, for LT-860 and LT-870 series.

temp. coeff. . . . . (0.02% + 50μV)/°C.

Constant Current (current regulated line and load)
Automatic Crossover

voltage range . . . . . as shown in Table.

current range . . . . . 5% to full load current.

regulation, line . . . . 0.3% of Io(max) for line variations from 187 to 242 VAC (205 to 265 VAC on "V1" option) for LT-800 series.
0.3% of Io(max) for line variations from 187 to 229 VAC (207 to 253 VAC on "V1" option) for LT-820 series.
0.3% of Io(max) for line variations from 187 to 265 VAC on LT-860 and LT-870 series.

regulation, load . . . 0.3% of Io(max) for load variations from 5% to rated DC voltage.

AC Input

line . . . . . LT-800 series: 187 to 242 VAC (205 to 265 VAC on "V1" option), 47-63 Hz. (Derate all ratings by 10% at 47-53 Hz)
LT-820 series: 187 to 229 VAC, 3 phase ± 10% max phase imbalance, 4 wire, 47-63 Hz (207 to 253 VAC on "V1" option). (Derate 40°C ratings by 10% at 47-53 Hz.)
LT-860 and LT-870 series: 187 to 265 VAC, 3 phase ± 10% max phase imbalance, 4 wire, 47-63 Hz.

power . . . . . 1985 watts max on LT-800 series.
4000 watts max on LT-820 series.
5000 watts max on LT-860, LT-870 series.

efficiency . . . . . minimum 65% at maximum output voltage for LT-800 series, 70% for LT-820 series, 78% for LT-860 and LT-870 series.

in-rush limiting circuit . . . . limits in-rush current at turn-on to 200% of full load peak current.

input current . . . . . 18A RMS max on LT-800 series, 17A RMS max per phase on LT-820 series, LT-860 and LT-870 series.

Ambient Operating Temperature
Continuous duty from 0°C to 71°C with appropriate deratings from 40°C to 71°C.

Storage Temperature Range
−55°C to +85°C.

Overload Protection

THERMAL
Thermostat protects unit from excessive ambient temperature as well as inadequate air velocity. AC power must be momentarily removed from unit after thermal shutdown in order to restore operation.

ELECTRICAL
External overload protection—adjustable, automatic electronic current-limiting circuit limits output current to preset value. Current-limiting setability to 105% of rated current via front panel adjust.

OVERVOLTAGE PROTECTION
Built-in, adjustable overvoltage protection standard on all sets. When pre-set voltage is exceeded, the overvoltage protector crowbars the output and removes the inverter drive. AC power must be momentarily removed from unit after overvoltage shutdown in order to restore operation.

Overvoltage Protection Adjustable Ranges

Model	Vov(Min)	Vov(Max)
LT-801/821/861/871	3.5V	10V
LT-802/822/862/872	6V	24V
LT-803/823/863/873	9V	47V
LT-804/824/864/874	12V	70V

LED Status Indicators
An overvoltage/overtemperature indicator lamp will light to notify the user of the occurrence of either an overvoltage or overtemperature shutdown condition. AC power must be removed from the unit to reset the power supply and the light. A line fault indicator with automatic reset indicates power loss or loss of a phase on LT-860 and LT-870 series.

EMI
Conducted EMI conforms to FCC 20780 class A on LT-800 and LT-820 series.

Cooling
Fan cooled. Forced air cooling utilizing all metal, shaded pole, ball bearing, long life fan. (No lubrication needed). Leave adequate clearance at all air intakes and exhausts. Exhaust is at rear of unit.

Input and Output Connections
Heavy duty barrier strips for AC input, ground and sensing. DC output via bus bar at rear of chassis.

Meters
Digital panel meter standard on LT-800, 820 series. Monitors output voltage/current by means of a volt/amp selector switch on LT-800 series. Separate digital panel meters on LT-820 series allow simultaneous monitoring of output voltage and current. Separate analog meters on LT-860 and LT-870 series provide for simultaneous monitoring of output voltage and current. Additional LED on front panel of LT-870 indicates auto/manual operation.

CONTROLS
DC Output Controls
Coarse and fine voltage adjust and single current adjust on front panel.

Overvoltage Protection
Overvoltage trip point set by screwdriver adjust on front panel.

Power
On-off switch on front panel of LT-800 series. On-off circuit breaker on front panel of LT-820, LT-860 and LT-870 series.

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Remote On/Off
Isolated terminals on LT-860 and LT-870 series allows for these remote functions: Turn-on—Logic zero, short circuit or open circuit; Turn-off—provide 5mA into ± R terminals.

Accessories
Pot Covers available on LT-800, LT-860 and LT-870 series. LRA-17 Rack Adapter available for LT-800 series. Chassis slides available for LT-820, LT-860 and LT-870 series. See page 118.

OPTIONS
AC Input

Series Model	Add Suffix	For Operation at:	Price Qty. 1-14	Price Single Model Qty. 15	Price Mixed Model Qty. 15 & up
LT-800	—V1	205-265 VAC 47-63 Hz	12%	10%	12%
LT-820	—V1	207-253 VAC 47-63 Hz	12%	10%	12%

Physical Data

Package Model	Weight (Lbs.) Net	Ship	Size (In.)
LT-800 series	30	37	5 3/16 x 8 3/8 x 19 9/16
LT-820 series	70	82	5 3/16 x 19 x 16 1/2
LT-860, LT-870 series	60	72	5 3/16 x 19 x 17 1/2

Guaranteed for 5 Years
5 year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LE Series

Features—LE Series

45% smaller than an equivalent SCR switching power supply

Designed to meet military environment MIL-STD-810C

Digital meter readout

Convection cooled, no fans or blowers

Constant voltage/constant current

Overvoltage protection—built in on all models

Guaranteed 5 years

MODEL	MAX CURRENT AMPS AT AMBIENT OF 40° C	50° C	60° C	71° C	PRICE
0-7.5 VOLTS					
LES-EE-01-OV	60	52	41	30	**$1750**
LES-F-01-OV	100	83	66	47.5	**2334**
0-18 VOLTS					
LES-EE-02-OV	29	25	20	14	**1750**
LES-F-02-OV	47.5	41	32.5	23.5	**2334**
0-36 VOLTS					
LES-EE-03-OV	14.5	12.5	10	7	**1750**
LES-F-03-OV	24	20.4	16.5	12	**2334**
0-60 VOLTS					
LES-EE-04-OV	9	7.7	6.2	4.5	**1750**
LES-F-04-OV	15	12.8	10.3	7.5	**2334**

Note: Maximum output current applies over entire output voltage range.

Specifications—LE Series

DC Output and Rating
Refer to the table.

Regulated Voltage
regulation, line .....0.02%+2 mV for line variations from 105 to 132 VAC (or 187 to 242 VAC on 'V' options, 205 to 265 VAC on 'VI' options).
regulation, load ..... 0.02% +2 mV (LES-01, 02)
0.02% +4 mV (LES-03, 04) for load variations from 0 to full load.
remote programming resistance .....200Ω/volt nominal
remote programming voltage .....volt/volt
ripple and noise ..... 10 mV RMS; 50 mV pp for LES-01
15 mV RMS; 100 mV pp for LES-02, 03, 04
temperature coefficient .....(0.02%+50 μV)/° C

Constant Current
(Current regulated line and load)
automatic crossover.
voltage range .....As shown in table.
current range .....5% to full load current.
regulation, line .....0.5%+50 mA (LES-01, 02)
0.5%+20 mA (LES-03, 04) for input variations from 105 to 132 VAC (or 187 to 242 VAC on 'V' opts, 205 to 265 VAC on 'VI' opts).
regulation, load .....0.5% of $I_{O max}$ for load changes from 5% to rated DC voltage.

AC Input
line .....105-132 VAC (47-63 Hz) standard input (derate output current by 5% at 50 Hz).
power .....750 watts max (LES-EE); 1250 watts max (LES-F) at 0.6 pF at maximum output voltage, nominal line.
efficiency .....Minimum 60% at maximum output voltage.
soft start circuit .....Limits inrush current at turn on to 200% of full load peak current.
input current .....15 A RMS max (LES-EE)
25 A RMS max (LES-F)

Ambient Operating Temperature
Continuous duty from 0° C to 71° C with appropriate deratings (40° C to 71° C—see table).

Storage Temperature Range
—55° C to +85° C.

Overload Protection

THERMAL
By self resetting thermostat.

ELECTRICAL
External overload protection—adjustable, automatic, electronic current limiting circuit limits output current to preset value. Current limiting settability to 105% of rated current via front panel adjust.

Overvoltage Protection
Built in, adjustable overvoltage protection standard on all sets. When preset voltage is exceeded, the overvoltage protector crowbars the output and removes the inverter drive. See table for OV range on each unit.

OVERVOLTAGE PROTECTION ADJUSTABLE RANGES—LE SERIES

	ADJUSTABLE OVERVOLTAGE PROTECTOR RANGE	
VOUT	Vov(min)	Vov(max)
0 TO 7.5 VDC	3V	10V
0 TO 18VDC	6V	24V
0 TO 36VDC	9V	47V
0 TO 60VDC	12V	70V

EMI
Conducted EMI conforms to MIL-I-6181D.

Cooling
Convection cooled—no fans or blowers.

Input and Output Connections
Heavy duty barrier strip and output studs on rear of chassis.

Meters
Digital panel meter standard on all sets monitors output voltage/current by means of a volt/amp selector switch.

Controls

DC Output Controls
Coarse and fine voltage adjust and single current adjust on front panel.

Overvoltage Protection
Overvoltage trip point set by screwdriver adjust on front panel.

Power
On-off switch on front panel.

Remote sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Fungus Proofing
All units are rendered fungi inert.

Options

AC Input

Add Suffix	For Operation at:	Price Qty. 1-14	Price Mixed Models Qty. 15 and up	Price Single Model Qty. 15 and up
-V*	187-242 VAC (47-63 Hz) (derate current 10%)	12%	12%	10%
-VI*	205-265 VAC (47-63 Hz)	12%	12%	10%

*No additional 5% derating for 50 Hz operation

Accessories
Rack Adapters LRA-1, LRA-2 (LES-EE) See page 118.
Chassis slides KHT-34-012 (LES-F) See page 118.

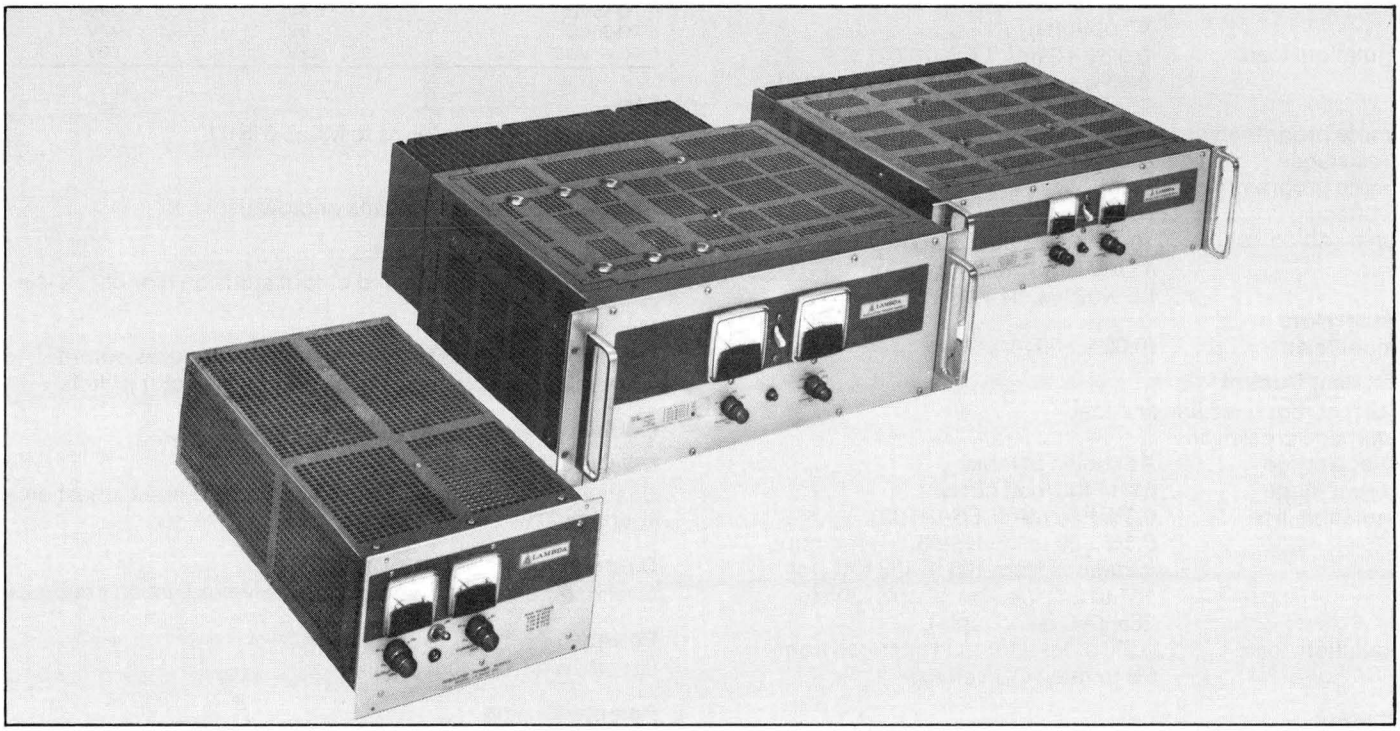
Physical Data

Series	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LES-EE	27	33	5-3/16 x 8-3/8 x 16
LES-F	40	50	3-15/32 x 19 x 16-1/2

Guaranteed for 5 Years
5 year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LK Series



Voltage and Current Ratings

MODEL	REGULATION	RIPPLE (RMS)	MAX. CURRENT, AMPS AT AMBIENT OF:[1] 40°C	50°C	60°C	71°C	DIMENSIONS	PRICE
0-20 VOLTS								
LK-340-A-FM	0.015% or 1 mV	500 uV	8.0	7.0	6.1	4.9	5-3/16" x 8-3/8" x 16"	**$1270**
LK-341-A-FM	0.015% or 1 mV	500 uV	13.5	11.0	10.0	7.7	5-3/16" x 8-3/8" x 16"	**1553**
LK-350-FM	0.015% or 1 mV	500 uV	35.0	31.0	26.0	20.0	5-3/16" x 19" x 16-1/2"	**2175**
LK-360-FM*	0.015% or 1 mV	500 uV	66.0	59.0	50.0	40.0	7" x 19" x 8-1/2"	**3387**
0-36 VOLTS								
LK-342-A-FM	0.015% or 1 mV	500 uV	5.2	5.0	4.5	3.7	5-3/16" x 8-3/8" x 16"	**1247**
LK-343-A-FM	0.015% or 1 mV	500 uV	9.0	8.5	7.6	6.1	5-3/16" x 8-3/8" x 16"	**1553**
LK-351-FM	0.015% or 1 mV	500 uV	25.0	23.0	20.0	15.0	5-3/16" x 19" x 16-1/2"	**2175**
LK-361-FM*	0.015% or 1 mV	500 uV	48.0	43.0	36.0	30.0	7" x 19" x 18-1/2"	**3387**
0-60 VOLTS								
LK-344-A-FM	0.015% or 1 mV	500 uV	4.0	3.5	3.0	2.5	5-3/16" x 8-3/8" x 16"	**1355**
LK-345-A-FM	0.015% or 1 mV	500 uV	6.0	5.2	4.5	4.0	5-3/16" x 8-3/8" x 16"	**1553**
LK-352-FM	0.015% or 1 mV	500 uV	15.0	14.0	12.5	10.0	5-3/16" x 19" x 16-1/2"	**2345**
LK-362-FM*	0.015% or 1 mV	500 uV	25.0	24.0	22.0	19.0	7" x 19" x 18-1/2"	**3387**

*AC INPUT 188-238 VAC STANDARD

OVERVOLTAGE PROTECTOR ACCESSORIES

ADJ. VOLT. RANGE VDC	MODEL	FOR USE WITH	PRICE
3-24	LH-OV-4	LK-340-A-FM, 341-A-FM	**$61**
3-47	LH-OV-5	LK-342-A-FM, 343-A-FM	**61**
3-70	LH-OV-6	LK-344-A-FM, 345-A-FM	**61**
3-70	Add "OV" to	LK-350-FM to 352-FM	**147**
3-70	Model No.	LK-360-FM to 362-FM	**200**

NOTES:
[1] Current rating applies over entire voltage range.
[2] Chassis slides for full models. See page 118.

Features—LK Series

Convection-cooled, no blower, no external heat sinking
No voltage spikes or overshoot on turn-on, turn-off or power failure
Series/Parallel operation
Constant voltage/constant current
Remotely programmable all models, by voltage or resistance

Meet mil, environment specs:
Vibration: MIL-T-4807A
Shock: MIL-E-4970A Proc. 1 & 2
Humidity: MIL-STD-819 Meth. 507
Temp. Shock: MIL-E-5272C (ASG) Proc. 1
Altitude: MIL-E-4970A (ASG) Proc. 1

Specifications

DC Output
Voltage ranges shown in tables.

REGULATED VOLTAGE

regulation, line or load ..... 0.015% or 1 mV whichever is greater for line variations from 105-132 VAC, (or 188-238 VAC LK-360-FM series); or for load changes from no load to full load.
remote programming resistance ..... 200 ohms/volt nominal
remote programming voltage ..... volt per volt
ripple and noise ..... 500 μV RMS; with either pos. or neg. terminal grounded.
temperature coefficient ..... 0.015%/°C

Constant Current
(Current regulated line and load.)

AUTOMATIC CROSSOVER

voltage range ..... as shown in tables.
current range ..... minimum—5% of 40°C rating. maximum—as shown in tables.
regulation, line ..... less than 10 mA or 0.1% whichever is greater for Input Variations of 105-132 VAC (188-238 VAC LK-360-FM series).
regulation, load ..... less than 10 mA or 0.1% whichever is greater—from 0 to rated VDC load voltage change.

AC Input
105-132 VAC, 47-63 Hz. (188-238 VAC, 47-63 Hz LK-360-FM Series only). For operation at 50 Hz derate output current by 10%. 187-242 VAC, see AC option.

Ambient Operating Temperature Range
Continuous duty from 0°C to +71°C with load current ratings shown in tables.

Storage Temperature Range
—55°C to +85°C.

Overload Protection

THERMAL

Thermostat; automatic reset when over-temp. condition is removed.

ELECTRICAL

External overload protection: adjustable, automatic electronic current limiting circuit limits the output current to the preset value, thereby providing protection for load as well as power supply. Current limiting settability to 105% of rated current. Internal failure protection: provided by fuse.

Input and Output Connections
Terminal block on rear of chassis.

Meters
Voltmeter and ammeter on all models.

Controls

DC Output Controls
Coarse and fine voltage adjust and coarse and fine current adjust on front panel.

Power
On-off switch, front panel, —½ rack models; circuit breakers, front panel—full-rack models.

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation.

Physical Data

Series	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LK-340-A-FM	35	41	5-3/16 x 8-3/8 x 16
LK-350-A-FM	95	125	5-3/16 x 19 x 16-1/2
LK-360-A-FM	135	170	7 x 19 x 18-1/2

Panel Finish
Brushed aluminum clear anodized panels with grey inlay (standard).

Accessories
Rack adapters LRA-1, LRA-2 (LK-340 series only) chassis slides, over-voltage protectors, pot covers, blank panels.
See page 118.

Options

AC Input

For LK-340, LK-350 Series Only.

Add Suffix	For Operation at:	Price Qty. 1-14	Price Single Model Qty. 15 & up	Price Mixed Model Qty. 15 & up
—V	187-242 VAC 47-63 Hz	12%	10%	12%
—V1	205-265 VAC 47-63 Hz	12%	10%	12%
For LK-360 Series Only				
—V1	205-265 VAC 47-63 Hz	12%	10%	12%

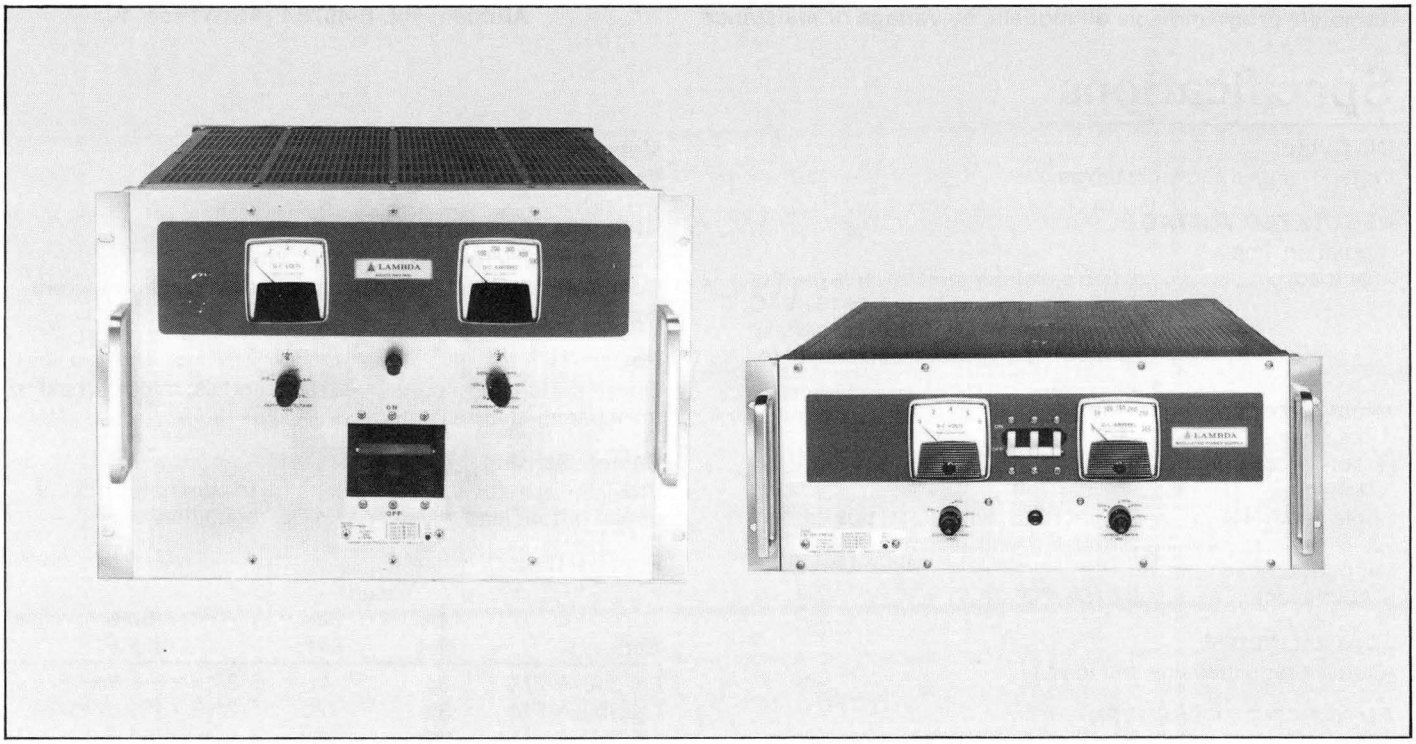
For 50 Hz operation derate current 10% for all models.

Fungus Proofing
Add suffix "R" to model number and add 10% to price.

Guaranteed for 5 Years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LB Series



Features—LB Series

Up to 87% efficiency

Regulation line 0.05% + 6 mV; load 0.1% + 10 mV

Ripple 10 mV RMS max. by use of electronic ripple reducer

Convection cooled, no blowers or internal fans, no external heat sinking

Overvoltage protection standard on all models up to 60 VDC rating

No overshoot on turn-on, turn-off or power failure

Remotely programmable

Remotely sensing

Magnetics designed to MIL-T-27C, grade 6

Completely protected, short circuit proof - continuously adjustable automatic current limiting

Constant I/Constant V by automatic crossover

Series operation

Multi-current-rated for 40° C, 50° C, 60° C, 71° C

MODEL	MAX AMPS AT AMBIENT OF:[1] 40°C	50°C	60°C	71°C	DIMENSIONS	PRICE[2]
0-7.5 VOLTS						
LB-701-FM-OV	300	270	235	200	7"x19"x20-1/16"	$5861
LB-721-FM-OV	500	450	400	350	12-3/16"x19"x22-1/16"	8705
0-15 VOLTS						
LB-702-FM-OV	180	170	160	150	7"x19"x20-1/16"	5861
LB-722-FM-OV	300	265	225	180	12-3/16"x19"x22-1/16"	8705
0-36 VOLTS						
LB-703-FM-OV	80	75	70	65	7"x19"x20-1/16"	5861
LB-723-FM-OV	135	130	125	120	12-3/16"x19"x22-1/16"	8705
0-60 VOLTS						
LB-704-FM-OV	50	47	44	40	7"x19"x20-1/16"	5861
LB-724-FM-OV	80	75	70	65	12-3/16"x19"x22-1/16"	8705
0-120 VOLTS						
LB-705-FM	25	22	19	16	7"x19"x20-1/16"	5160
LB-725-FM	40	36	32	28	12-3/16"x19"x22-1/16"	8385
0-300 VOLTS						
LB-706-FM	10	9.5	9.0	8.0	7"x19"x20-1/16"	5160
LB-726-FM	16	15	14	13	12-3/16"x19"x22-1/16"	8385

NOTES:
[1] Current rating applies over entire voltage range.
[2] Prices include meters. LB Series models are not available without meters. Prices for all models up to and including 60 VDC include built-in over-voltage protection.
[3] Chassis slides are available with LB-701 thru LB-706-FM models only. See page 118.

Specifications—LB Series

DC Output
Voltage ranges as shown in tables.

Constant Voltage
regulation, line .....0.05% + 6 mV for line variations from 187-229 VAC or from 229-187 VAC
regulation, load .....0.1% + 10 mV for load variations from 0 to full load
remote programming
resistance .....200 ohms/volt nominal
remote programming
voltage .....volt per volt
ripple and noise .....10 mV RMS max.; 100 mV RMS max. for LB-706-FM; 150 mV RMS max. for LB-726-FM.
With "V" option: 15 mV RMS for LB-701 thru LB-705; 150 mV RMS for LB-706
temperature
coefficient .....(0.03% + 0.5 mV/°C)

Constant Current
(Current regulated line and load)
automatic crossover
current range .....zero to max. current as shown in tables
regulation (line and
load combined) ....less than 1% + 10 mA for 721-725; less than 1% for 701-706 (1% + 50 mA for LB-726-FM) for input variations from 187-229 VAC or from 229-187 VAC and from 0 to 95% output voltage change
ripple and noise .....for LB-701-LB-705-FM and LB-721-FM-OV-LB-725-FM less than (1/Vout*)% RMS of load current either positive or negative terminal grounded. For LB-706-FM, less than (10/Vout*)% of load current. For LB-726-FM, less than (15/Vout*)% of load current. With "V" option (1.5/Vout*)% of I DC for LB-701-705; (15/Vout)% of I DC for LB-706

*Vout equals I out R_L measured at output terminals of power supplies.

AC Input
208 ±10% VAC; 57-63 Hz, 3 phase ±10% max. phase unbalance, 4 wire. For operation at other than 57-63 Hz, see AC input option.

Efficiency
Up to 87% efficiency.

Response Time
For a 20% load change between 20% and 100% load, the voltage will recover to within 0.5 volt in 150 milliseconds.

Ambient Operating Temperature Range
Continuous duty from 0° to 71°C with load current rating shown in tables.

Storage Temperature
—55° to +85°C.

Overload Protection

THERMAL
Thermostat requires resetting of circuit breaker to re-energize.

ELECTRICAL
External overload protection: adjustable, automatic electronic current limiting circuit limits the output current to the preset value, thereby providing protection for load as well as power supply. Current limiting settability to 110% of rated current.
Internal failure protection: provided by primary circuit breaker.

Overvoltage Protection
Built-in overvoltage protection on all models up to 60 VDC ratings.

Input Connections
Terminal block on rear of chassis.

Output Connections
LB-700 series: 2 heavy duty studs 1/2"-20 on LB-701-FM-OV and LB-702-FM-OV models; all other models: 5/16"-24 studs on rear of chassis. LB-720 series: 4 heavy duty studs 5/16"-24 on LB-721-FM-OV and LB-722-FM-OV models; all other models: 2 studs, 5/16"-24.

Meters
Independent voltmeter and ammeter with ±2% accuracy.

Controls

DC OUTPUT AND CONTROL
Coarse and fine voltage adjust and coarse and fine current adjust on front panel.

POWER
Circuit breaker to protect against internal failure and to provide an on-off control on front panel. Pilot lamp on front panel energizes when circuit breaker is "on".

Remote Sensing
Provision is made for remote sensing to eliminate effect of power output lead resistance on DC regulation up to 5 Volts in each leg.

Physical Data

Series	Weight Lbs. Net	Weight Lbs. Ship	Size Inches
LB 700	230	240	7 x 19 x 20-1/16
LB 720	360	410	12-3/16 x 19 x 22-1/16

Panel Finish
Brushed aluminum clear anodized panels with grey inlay.

Chassis Finish
Grey, FED. STD. 595 No. 26081.

Options

AC Input

Add Suffix	For Operation at:	Price Qty. 1-14	Price Mixed Models Qty. 15 & up	Price Single Model Qty. 15 & up
For LB 700 Series Only				
—V	208 ±10% VAC 47-53 Hz 3 phase	12%	12%	10%
For 50 Hz operation derate current 10%				
—V1	230 ±10% VAC 57-63 Hz 3 phase	12%	12%	10%
For LB-720 Series Only				
—V1	230 ±10% VAC 57-63 Hz 3 Phase	12%	12%	10%

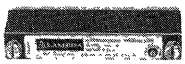
Accessories
Chassis slides (LB-701-FM-OV thru LB-706-FM models only) and pot covers. See page 118.

Guaranteed for 5 Years
5-year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 5 years.

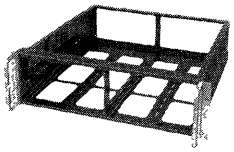
PART III—LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Accessories

OVERVOLTAGE PROTECTORS

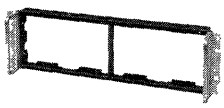
ADJUSTABLE CROW—BAR TYPE (MOUNTING PROVISIONS PROVIDED-2 TERMINAL CONNECTIONS.)	ADJ. VOLT RANGE VDC	MODEL	FOR USE WITH	PRICE
	3-24	**LH-OV-4**	LQ-530, LQ-531, LK-340A-FM, LK-341A-FM, LQ-520, LQ-521, LPT-7202-FM	**$61**
	3-47	**LH-OV-5**	LQ-532, LK-342A-FM, LK-343A-FM, LQ-522	**61**
	3-70	**LH-OV-6**	LQ-533, LK-344A-FM, LK-345A-FM, LQ523	**61**
		Add "-OV" to power supply model number	LK-350-FM, LK-351-FM, LK-352-FM	**147**
			LK-360-FM, LK-361-FM, LK-362-FM	**200**

RACK ADAPTERS



LRA-1 Rack Adapter
5-3/16"H x 19"W x 16-1/2"D

For use with LK and LQ series $158

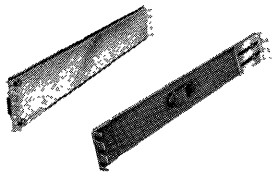


LRA-2 Rack Adapter
5-3/16" Heights

For use with LK and LQ series $92

CHASSIS SLIDES

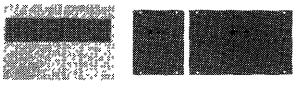
FOR USE WITH RACK ADAPTER OR FULL RACK POWER INSTRUMENT	LAMBDA PART NO.	ADD TO PRICE
LK 350-352 series	**KHT-34-012**	**$147**
LE series, LRA-1, LT-820 series	**KHT-34-012**	**147**
LK 360-362 series	**KHT-36-004**	**541**
LB 701-706 series	**KHT-42-010**	**541**



*The LB models LB-721 thru LB-726 power supplies are not available with chassis slides.

To order rack adapters or full rack power supplies with chassis slides, add suffix "-CS" to the model number. For example: LRA-1-CS, LB-705-FM-CS.

BLANK FRONT PANELS



LBP-11, ***SB-22 Blank Front Panel 1/4 rack size, 5-3/16" height **$25

*LBP-20, **LBP-21 Blank Front Panel 1/2 rack size, 5-3/16" height **$43**

SB-40 ***Blank Front Panel 1/2 rack size, 5-3/16" height **$43**

Panel finish. *Brushed aluminum clear anodized panels with grey inlay (standard)
**Tan in color to match tan plastic front panels now used in certain 1/4 and 1/2 rack supplies.

***Dark brown to match LES-EE and LQ models

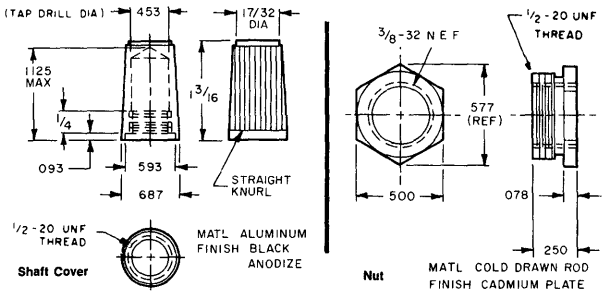
POT COVER

Tamper-proof potentiometer spindle cover designed for use with Lambda power supplies, but may be used with most instruments.

Front panel control knob with the Lambda PC-1 control knob cover, which fits standard potentiometer shaft threads. Useful in those applications which require permanent or semi-permanent laboratory or systems settings with no possibility of disturbing those critical settings.

The Pot Cover may be used with any pot using a 3/8" mounting shaft. There are two parts to the Pot Cover—a lock nut and a black anodized knurled knob. The device screws onto the threads of the potentiometer shaft and is tightened. (Note that the opening in the front panel must be of large enough diameter to accommodate the 3/8" diameter thread nut) See dimensional drawing

PC-1 Pot Cover **$4.20**



PART IV—DIMENSIONAL DRAWINGS MODULAR POWER SUPPLIES LRS-52, LRS-53, AND LRS-54

LRS-52
LRS-53

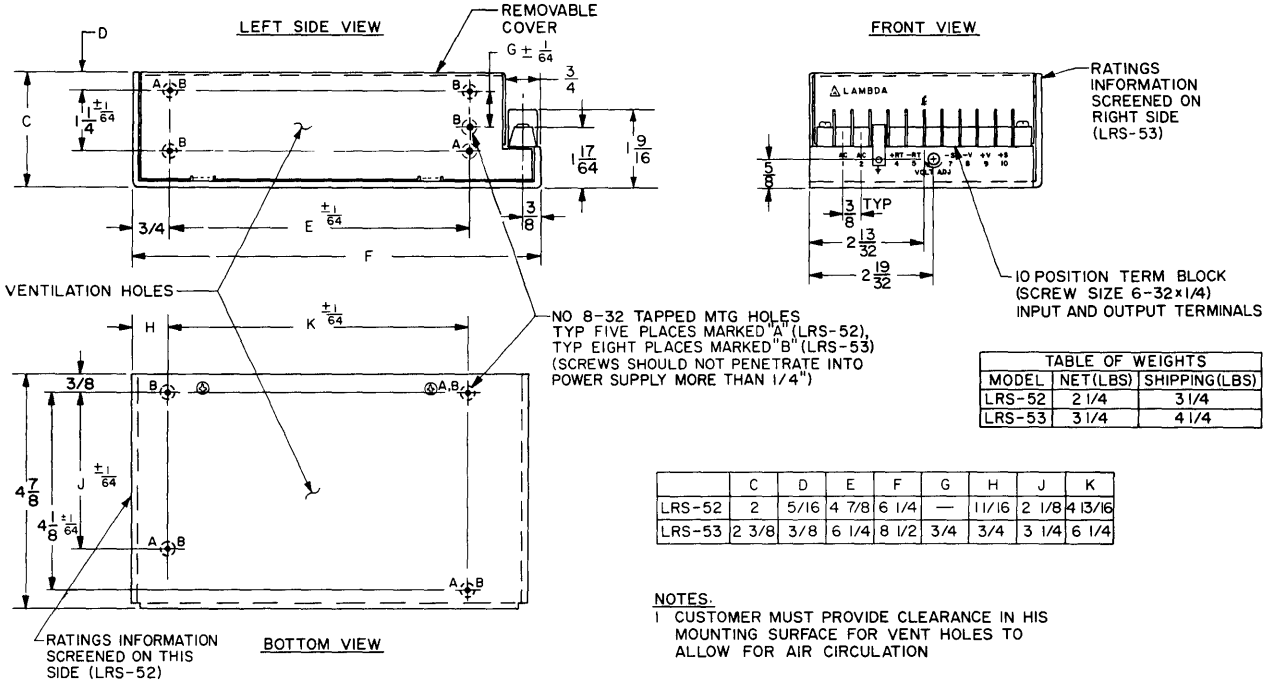
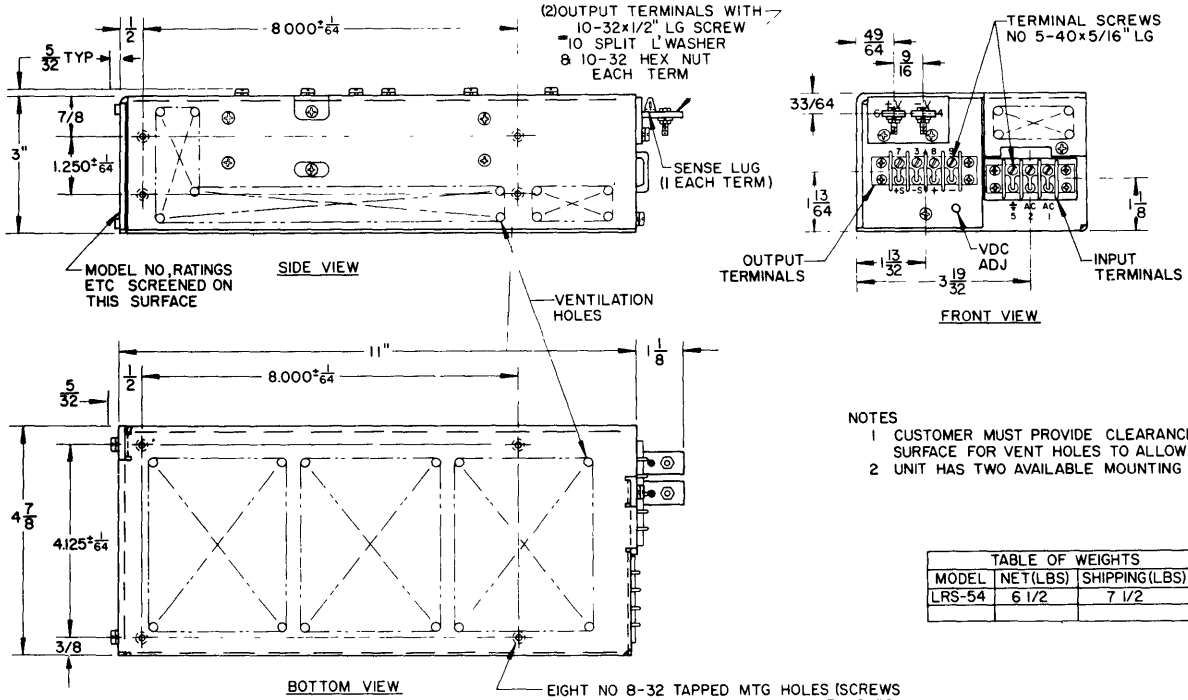


TABLE OF WEIGHTS		
MODEL	NET(LBS)	SHIPPING(LBS)
LRS-52	2 1/4	3 1/4
LRS-53	3 1/4	4 1/4

	C	D	E	F	G	H	J	K
LRS-52	2	5/16	4 7/8	6 1/4	—	11/16	2 1/8	4 13/16
LRS-53	2 3/8	3/8	6 1/4	8 1/2	3/4	3/4	3 1/4	6 1/4

NOTES.
1 CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION

LRS-54



NOTES
1 CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION
2 UNIT HAS TWO AVAILABLE MOUNTING SURFACES

TABLE OF WEIGHTS		
MODEL	NET(LBS)	SHIPPING(LBS)
LRS-54	6 1/2	7 1/2

PART IV—DIMENSIONAL DRAWINGS MODULAR POWER SUPPLIES LRS-55, LRS-56, LRS-57 AND LRS-58

LRS-55
LRS-56

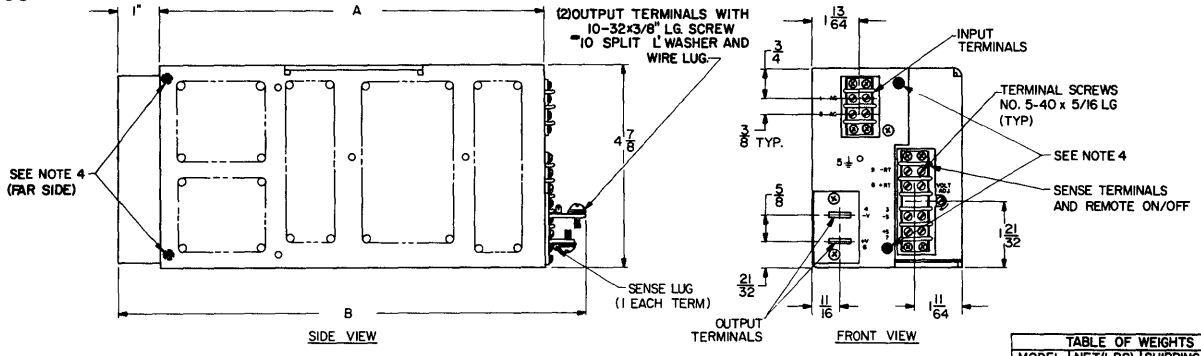
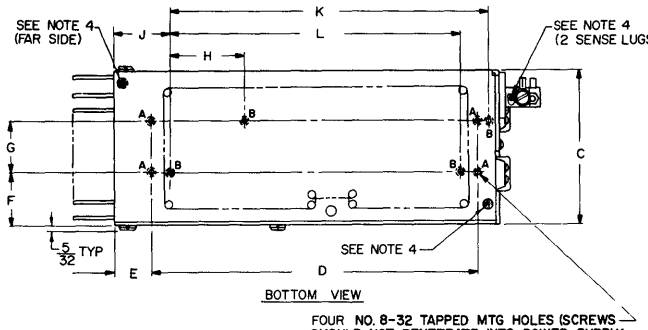


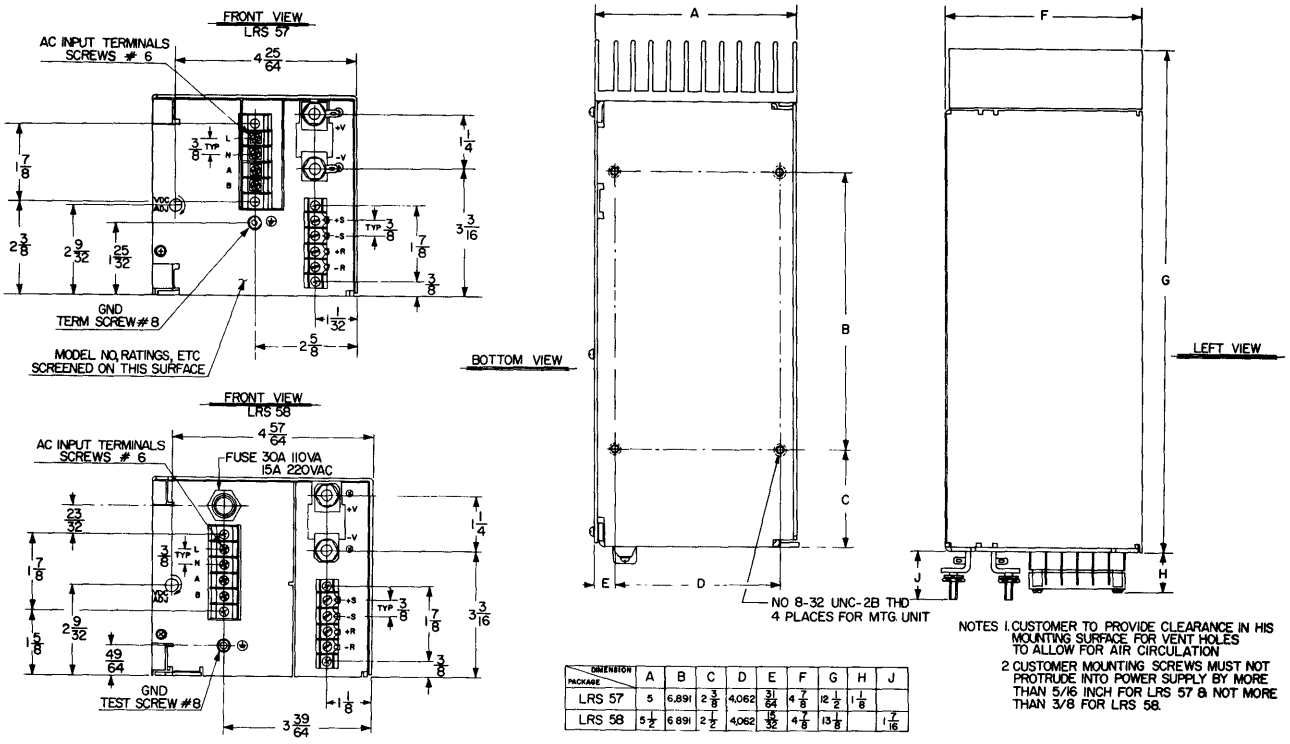
TABLE OF WEIGHTS		
MODEL	NET(LBS)	SHIPPING(LBS)
LRS-55	8 1/2	10
LRS-56	9 1/2	11



	A	B	C	D	E	F	G	H	J	K	L
LRS-55	9 1/2	11 7/8	3 3/4	8.000"	1"	1 1/4	1.250	—	—	—	—
LRS-56	10 1/2	12 7/8	4 11/32	—	—	19/64	3.500	3.000	1 11/16	7.343	7.125

NOTES:
1. CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION.
2. UNIT HAS ONE MOUNTING SURFACE
3. RADIATOR FINS MUST BE MOUNTED IN A VERTICAL POSITION.
4. TO OPEN UNIT FOR SERVICING, REMOVE (8) 6-32 SCREWS SHOWN SHADED

LRS-57
LRS-58

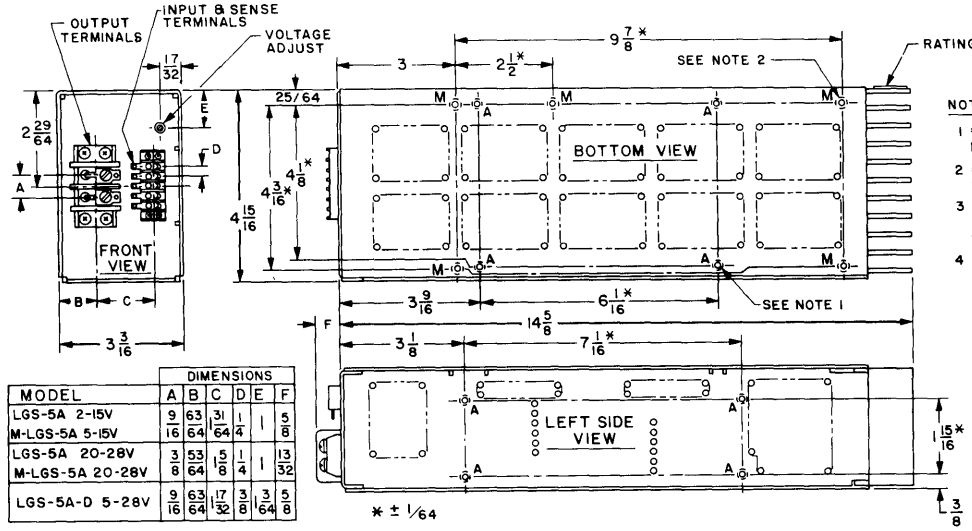


DIMENSION / PACKAGE	A	B	C	D	E	F	G	H	J
LRS 57	5	6.891	2 3/8	4.062	31/64	4 7/8	12 1/2	1 1/8	
LRS 58	5 1/2	6.891	2 1/2	4.062	15/32	4 7/8	13 1/8		1 7/16

NOTES 1. CUSTOMER TO PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION
2. CUSTOMER MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 5/16 INCH FOR LRS 57 & NOT MORE THAN 3/8 FOR LRS 58.

PART IV—DIMENSIONAL DRAWINGS
MODULAR SUPPLIES PACKAGE SIZES 5, 5A, 6 AND 6A

MLG-5A Series
LG-5A Series
LG-5 Series



NOTES

1 #8-32 THREAD HOLES (8 MARKED "A") FOR CUSTOMER MOUNTING

2 #10-32 THREAD HOLES (5 MARKED "M") FOR MILITARY MOUNTING

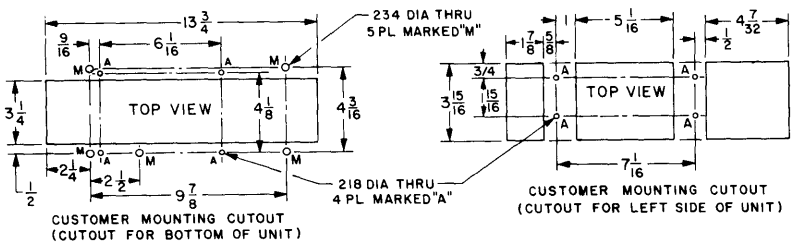
3 CUSTOMER MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 3/8"

4 CUSTOMER MUST PROVIDE MOUNTING HOLES AND CUTOUTS, IN MOUNTING SURFACE, TO CLEAR VENTILATION PATTERNS AND ALLOW FOR AIR FLOW

MODEL	DIMENSIONS A	B	C	D	E	F
LGS-5A 2-15V	9/16	63/64	31/64	1/4	1	5/8
M-LGS-5A 5-15V						
LGS-5A 20-28V	3/8	53/64	15/8	1/4	1	13/32
M-LGS-5A 20-28V						
LGS-5A-D 5-28V	9/16	63/64	17/32	3/8	3/64	5/8

MODEL	TERM STRIP SCREW SIZE INPUT TERM	OUTPUT TERM
2-15V	2-56 x 3/16	8-32 x 5/16
20-28V	2-56 x 3/16	5-40 x 5/16
LGS-5A-D 5-28V	5-40 x 5/16	8-32 x 5/16

TABLE OF WEIGHTS MODEL	NET WT LBS	SHIPPING WT LBS
LGS-5A M-LGS-5A LGS-5A-D	9 1/2	11



MLG-6A Series
LG-6A Series
LG-6 Series

NOTES

1. #8-32 THREADED HOLES (4 MARKED "A") FOR CUSTOMER MOUNTING.
2. #1/4-20 THREADED HOLES (4 MARKED "M") FOR MILITARY MOUNTING.
3. #8-32 THREADED HOLES (8 MARKED "A & B") FOR LAMBDA RACK ADAPTER.
4. CUSTOMER MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY MORE THAN 3/8"
5. CUSTOMER MUST PROVIDE MOUNTING HOLES AND CUTOUTS (IN MOUNTING SURFACE) TO CLEAR VENTILATION PATTERNS, HEATSINK AND ALLOW FOR AIR FLOW

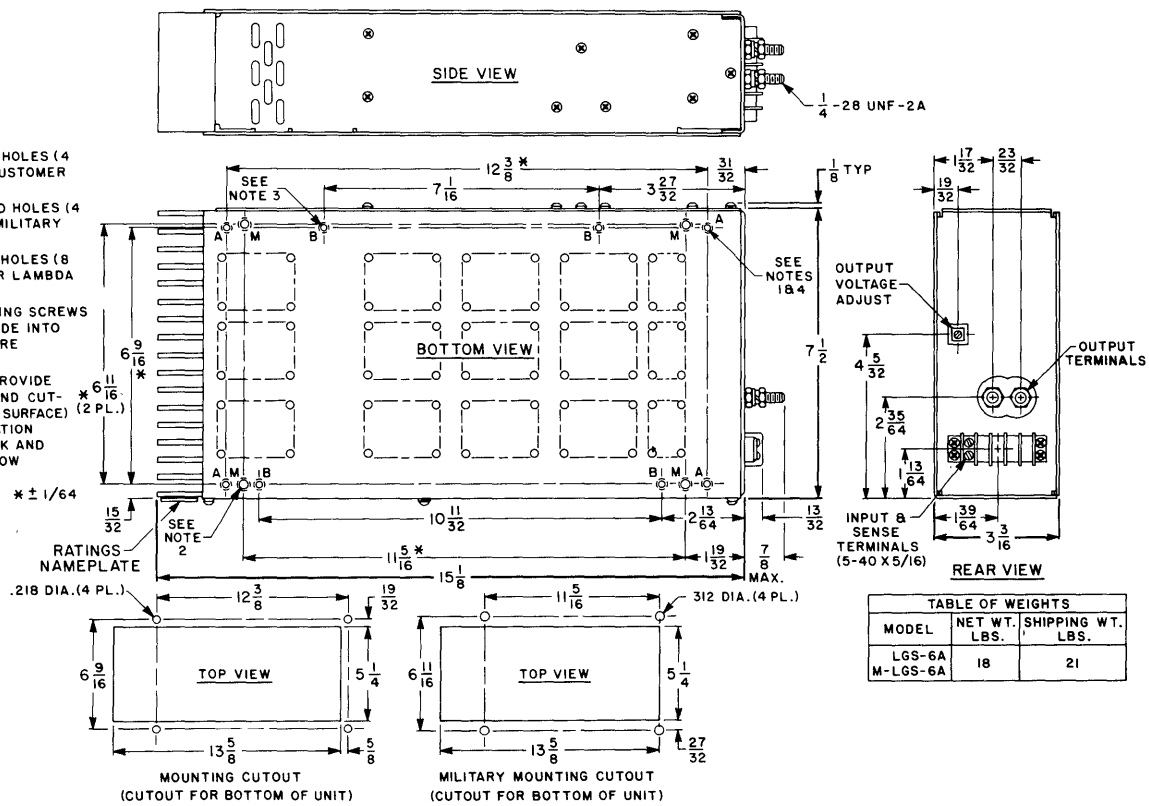


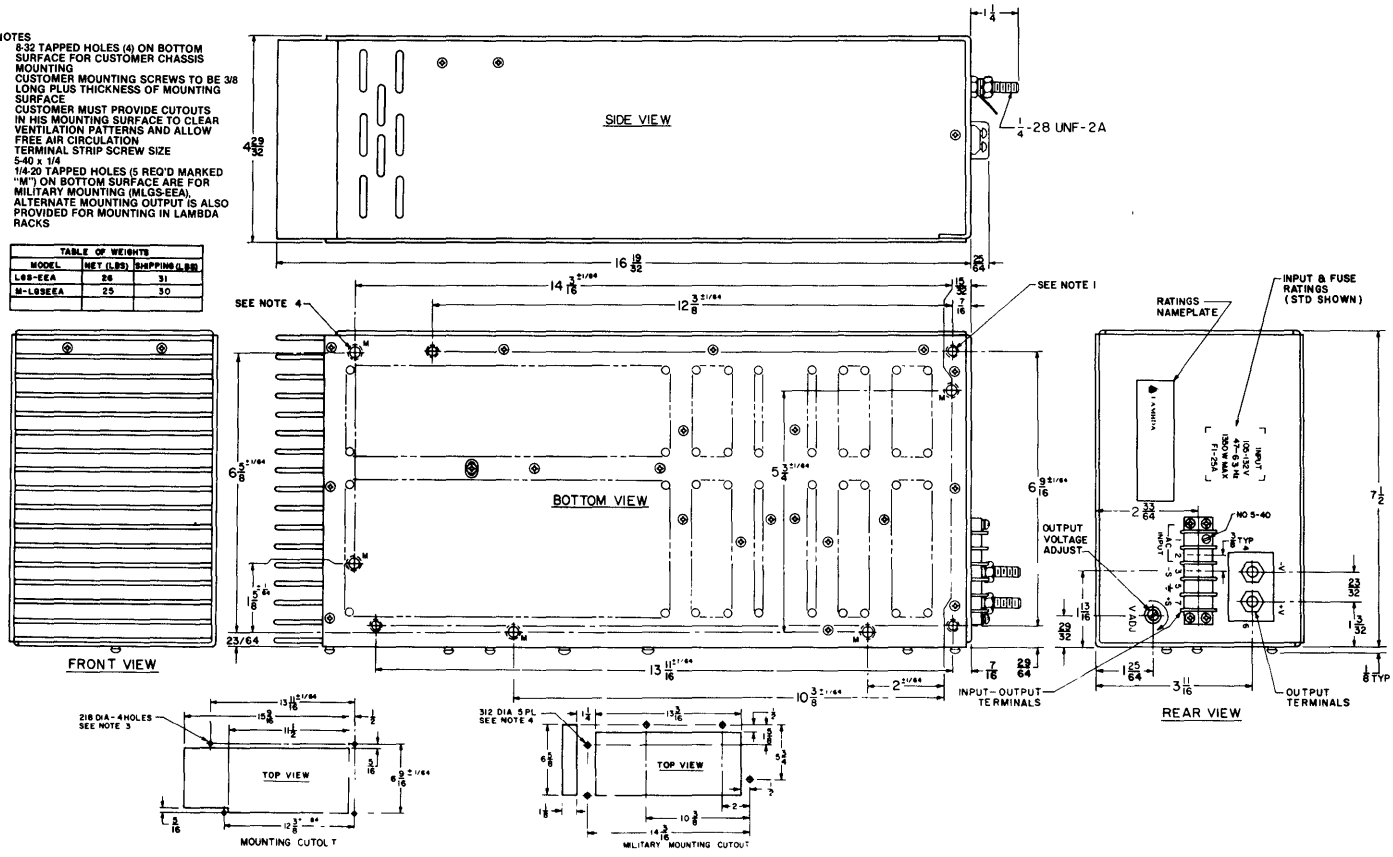
TABLE OF WEIGHTS MODEL	NET WT. LBS.	SHIPPING WT. LBS.
LGS-6A M-LGS-6A	18	21

PART IV—DIMENSIONAL DRAWINGS
MODULAR SUPPLIES MLGA and LGA SERIES
PACKAGE SIZES EEA, FA

LGS-EEA Series
MLGS-EEA Series

NOTES
1. 6-32 TAPPED HOLES (4) ON BOTTOM SURFACE FOR CUSTOMER CHASSIS MOUNTING
2. CUSTOMER MOUNTING SCREWS TO BE 3/8 LONG PLUS THICKNESS OF MOUNTING SURFACE
3. CUSTOMER MUST PROVIDE CUTOUTS IN HIS MOUNTING SURFACE TO CLEAR VENTILATION PATTERNS AND ALLOW FREE AIR CIRCULATION
4. TERMINAL STRIP SCREW SIZE 5-40 x 1/4
5. 1/4-20 TAPPED HOLES (5 REQ'D MARKED "M") ON BOTTOM SURFACE ARE FOR MILITARY MOUNTING (MLGS-EEA). ALTERNATE MOUNTING OUTPUT IS ALSO PROVIDED FOR MOUNTING IN LAMBDA RACKS

TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LGS-EEA	26	31
M-LGSEEA	25	30



LGS-FA Series

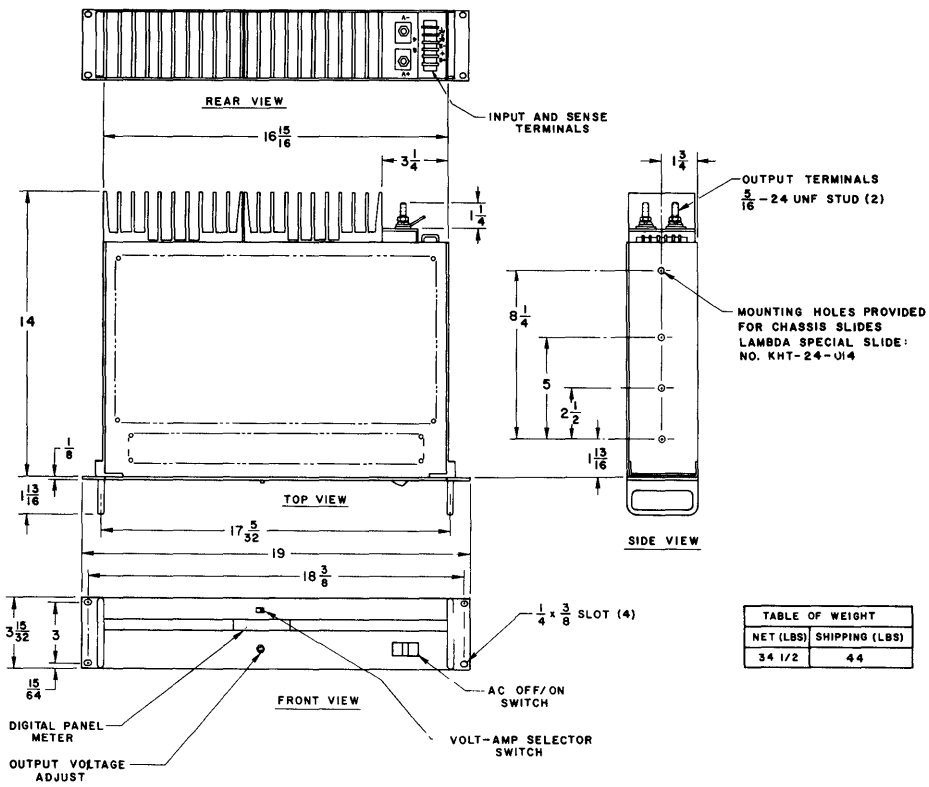
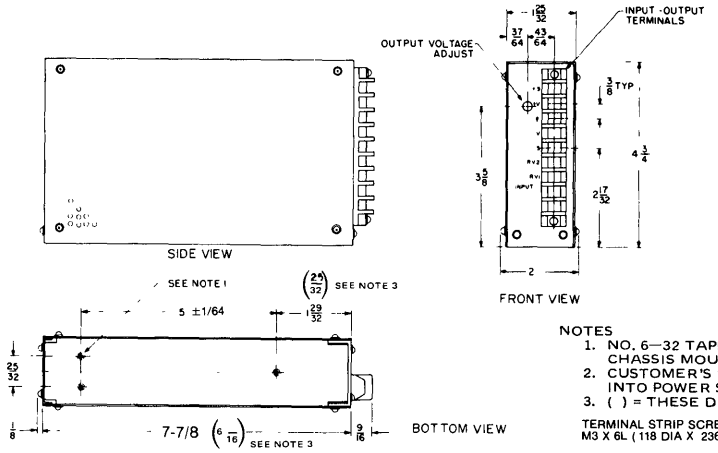


TABLE OF WEIGHT	
NET (LBS)	SHIPPING (LBS)
34 1/2	44

PART IV—DIMENSIONAL DRAWINGS
LJ SERIES POWER SUPPLIES

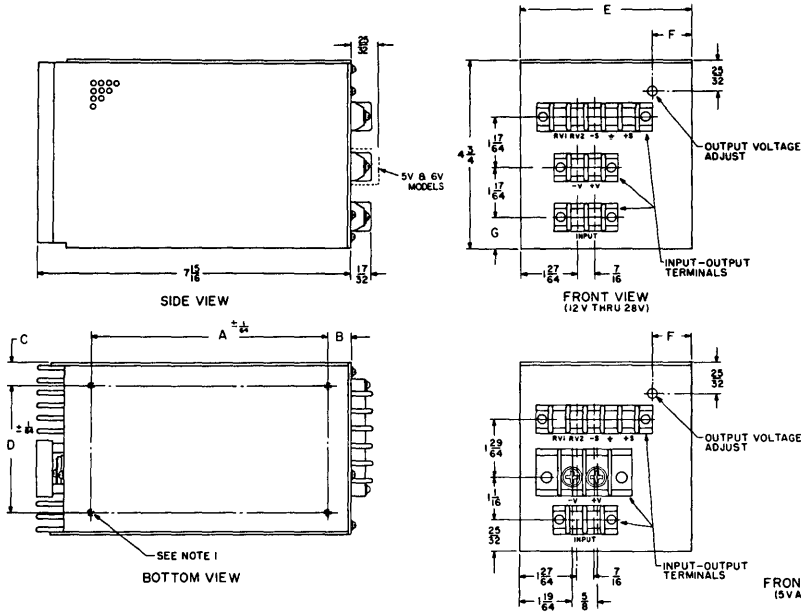
LJS-10
LJS-13



NOTES
1. NO. 6—32 TAPPED HOLES ( ) FOR CUSTOMER CHASSIS MOUNTING.
2. CUSTOMER'S MOUNTING SCREW MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4".
3. ( ) = THESE DIMENSIONS APPLICABLE TO LJS-13 SERIES ONLY.

TERMINAL STRIP SCREWS
M3 X 6L (118 DIA X 236 L)

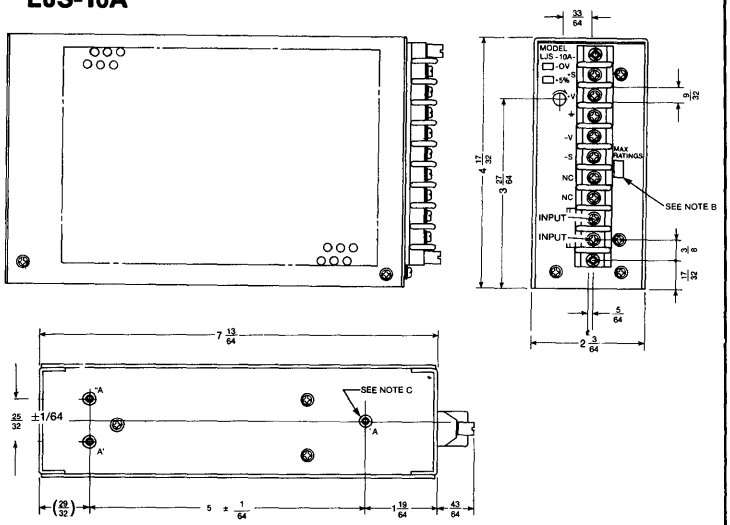
LJS-11
LJS-12



NOTE
1 NO 6-32 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING
2 CUSTOMER'S MOUNTING SCREW MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4
3 TERMINAL STRIP SCREWS
M3 X 6L (118 DIA X 236L)
MODELS—LJS-11-5.0V & 6.0V,
LJS-12-5.0V & 6.0V
M5 X 12L (197 DIA X 472L)

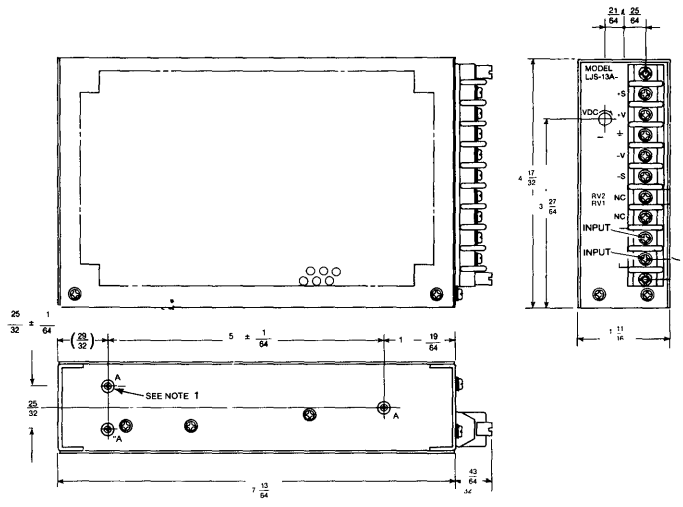
MODEL	A	B	C	D	E	F	G
LJS-11	5 29/32	19/32	37/64	3 9/64	4 5/16	63/64	25/32
LJS-12	5 23/32	25/32	3/4	4 23/32	6 1/4	1 3/16	27/32

LJS-10A



NOTE
1 No. 6-32 Tapped Holes (3) for customer chassis mounting.
2 Customer's mounting screw must not protrude into power supply by more than 1/4".

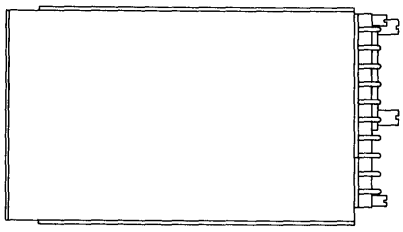
LJS-13A



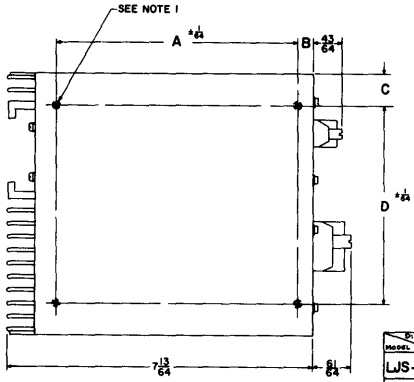
NOTE
1 No 6-32 Tapped Holes (3) for customer chassis mounting
2. Customer's mounting screw must not protrude into power supply by more than 1/4"

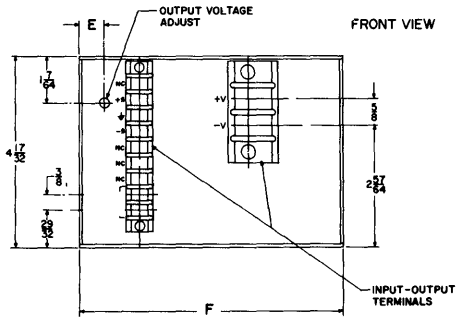
PART IV—DIMENSIONAL DRAWINGS
LJ SERIES POWER SUPPLIES

LJS-11A
LJS-12A



SIDE VIEW

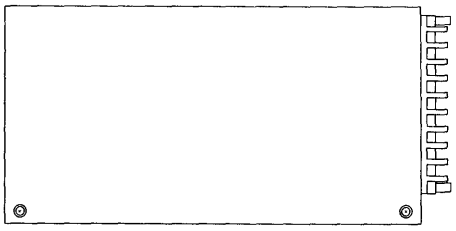




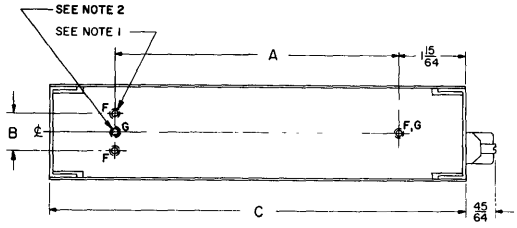
MODEL / DIM	A	B	C	D	E	F
LJS-11A	5 23/32	15/32	27/64	3 9/64	17/32	3 63/64
LJS-12A	5 45/64	23/64	3/4	4 23/32	5/8	6 7/32

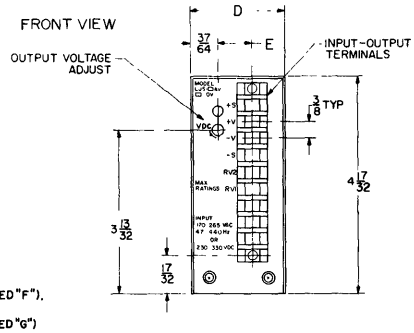
NOTES
1 NO 6-32 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING
2. CUSTOMER'S MOUNTING SCREW MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4

LJS-10AV
LJS-13AV



SIDE VIEW

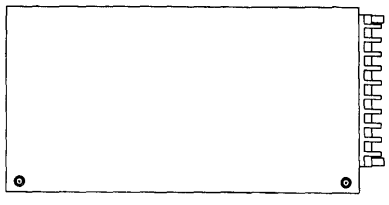




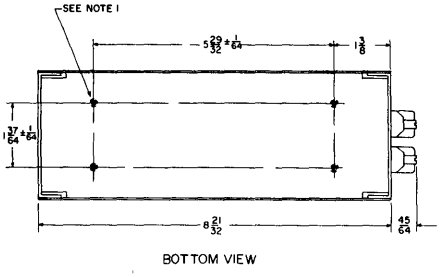
	LJS-10AV	LJS-13AV
A	5 29/32	5
B	25/32	—
C	8 21/32	7 31/64
D	1 31/32	1 21/32
E	45/64	53/64

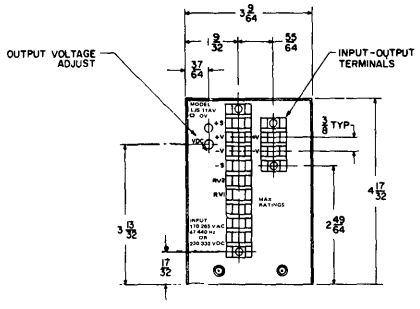
NOTES
1 6-32 TAPPED HOLES (3) FOR CUSTOMER CHASSIS MOUNTING, MODEL LJS-10AV (MARKED "F").
2 6-32 TAPPED HOLES (2) FOR CUSTOMER CHASSIS MOUNTING, MODEL LJS-13AV (MARKED "G")
3 CUSTOMER'S MOUNTING SCREW MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4 INCH.

LJS-11AV



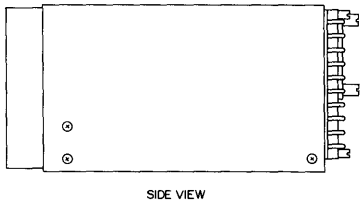
SIDE VIEW



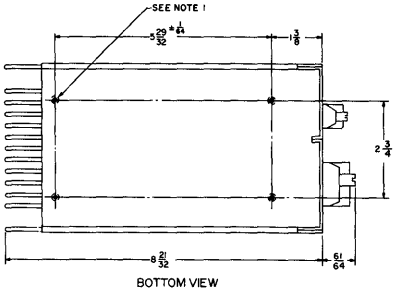


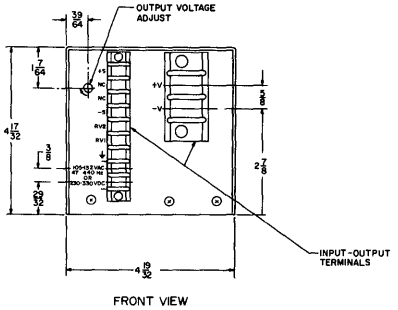
NOTES
1 6 32 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING
2 CUSTOMER S MOUNTING SCREW MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4 INCH

LJS-12AV



SIDE VIEW

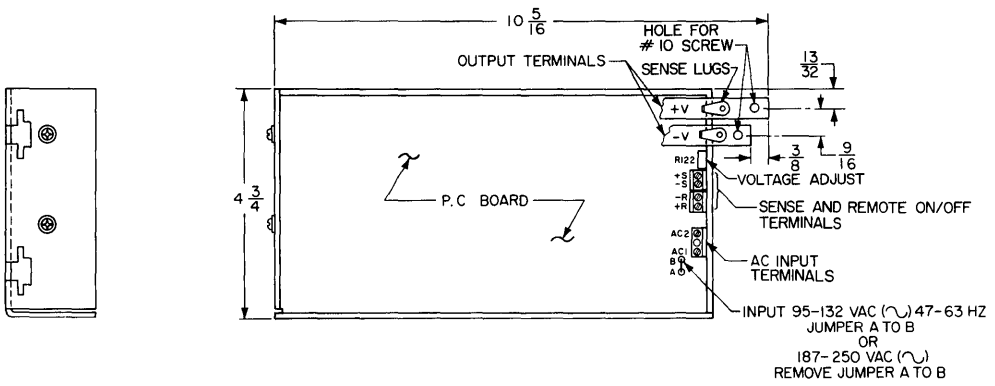


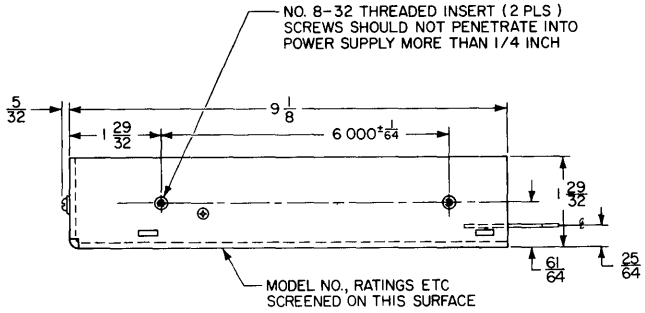


NOTES
1 NO 6-32 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING
2 CUSTOMER'S MOUNTING SCREW MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4

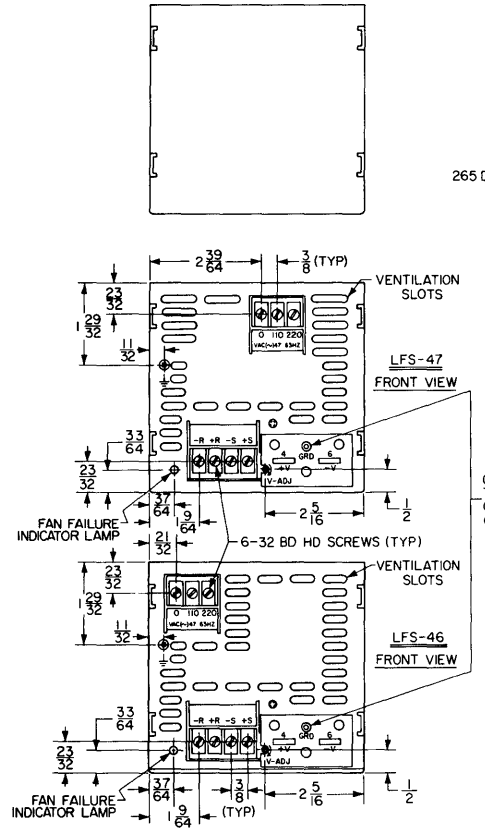
PART IV—DIMENSIONAL DRAWINGS
LFS SERIES POWER SUPPLIES

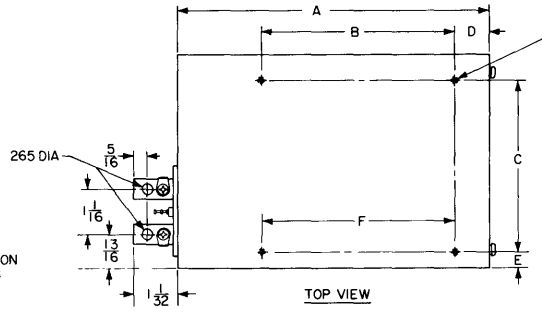
LFS-43



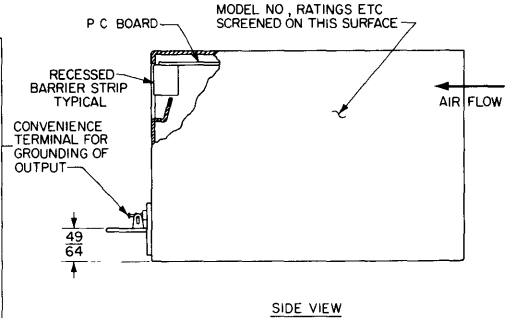


LFS-46
LFS-47
LFS-48





DIM / MODEL	A	B	C	D	E	F
LFS-46	7 1/4	4 1/2	4	13/16	3/8	4 1/2
LFS-47	8 7/8	5	4	1 13/16	3/8	5
LFS-48	11	7 1/2	4	13/16	3/8	8



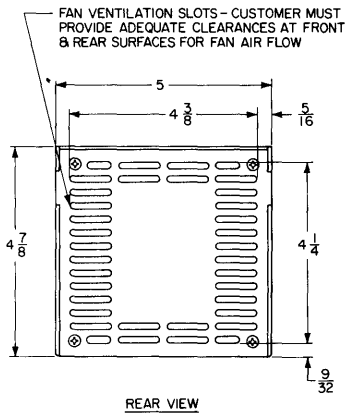
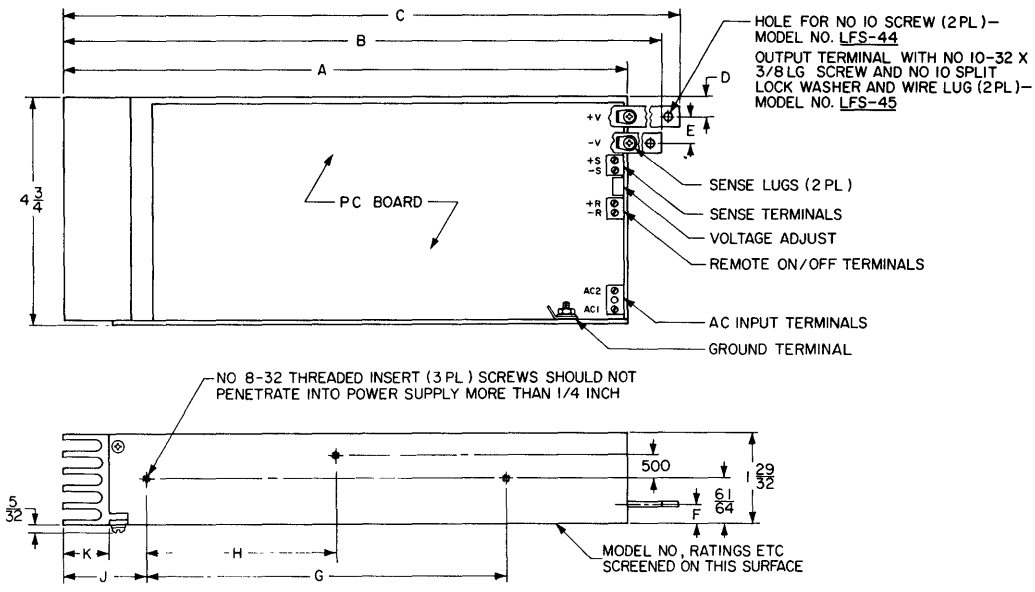


TABLE OF WEIGHTS		
MODEL	NET WT (LBS)	SHIPPING WT (LBS)
LFS-46	8 3/4	11 3/4
LFS-47	9 1/4	12 1/4
LFS-48	12 1/4	15 1/4

PART IV—DIMENSIONAL DRAWINGS
LFS-44, LFS-45 and LFQ-26 WATTBOX™

LFS-44
LFS-45

	LFS-44	LFS-45
A	11 3/4	15 1/2
B	12 1/2	16 1/2
C	12 7/8	16 1/4
D	13/32	15/32
E	9/16	1 000
F	13/32	7/16
G	7 500	10 500
H	4000	5 000
J	1 3/4	4 1/4
K	1"	1 25/32



LFQ-26

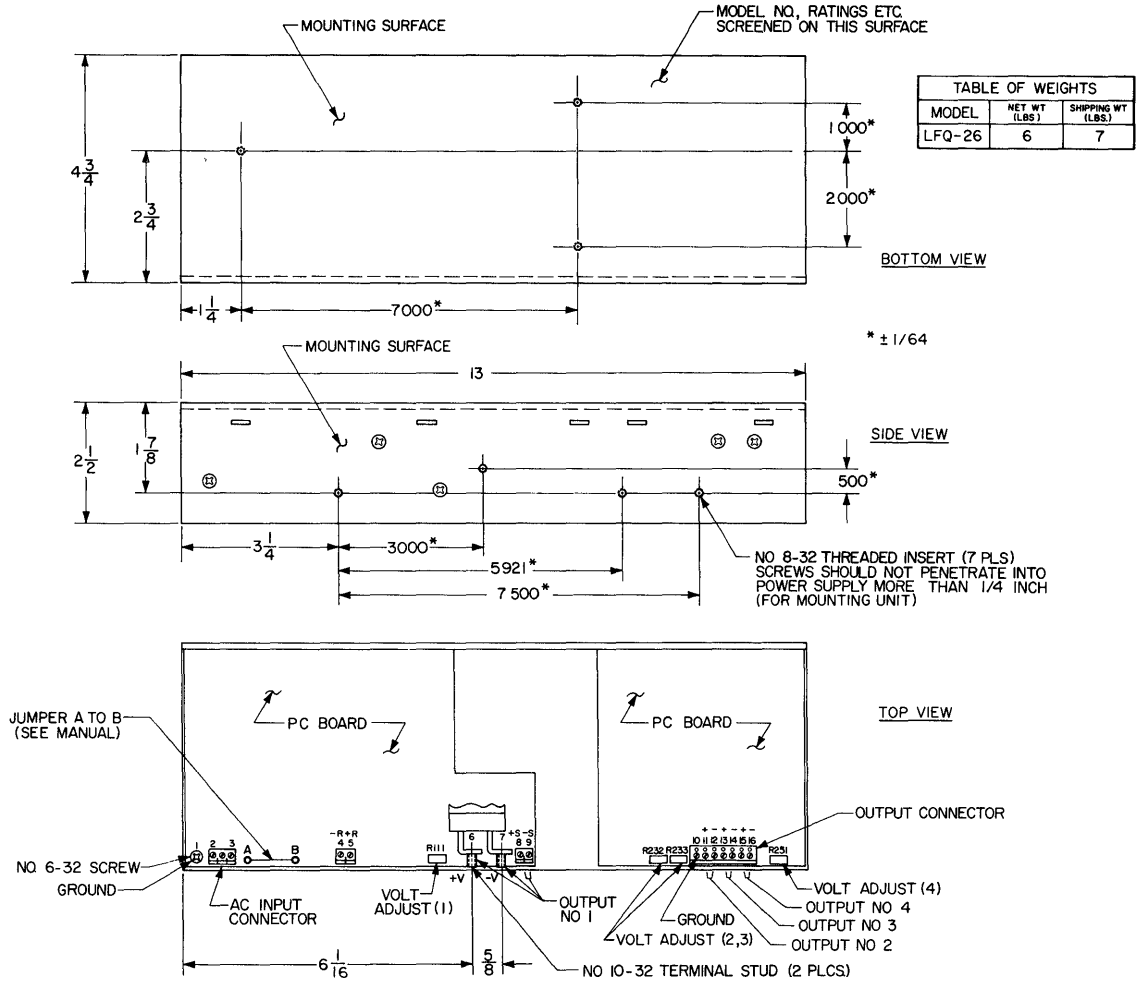


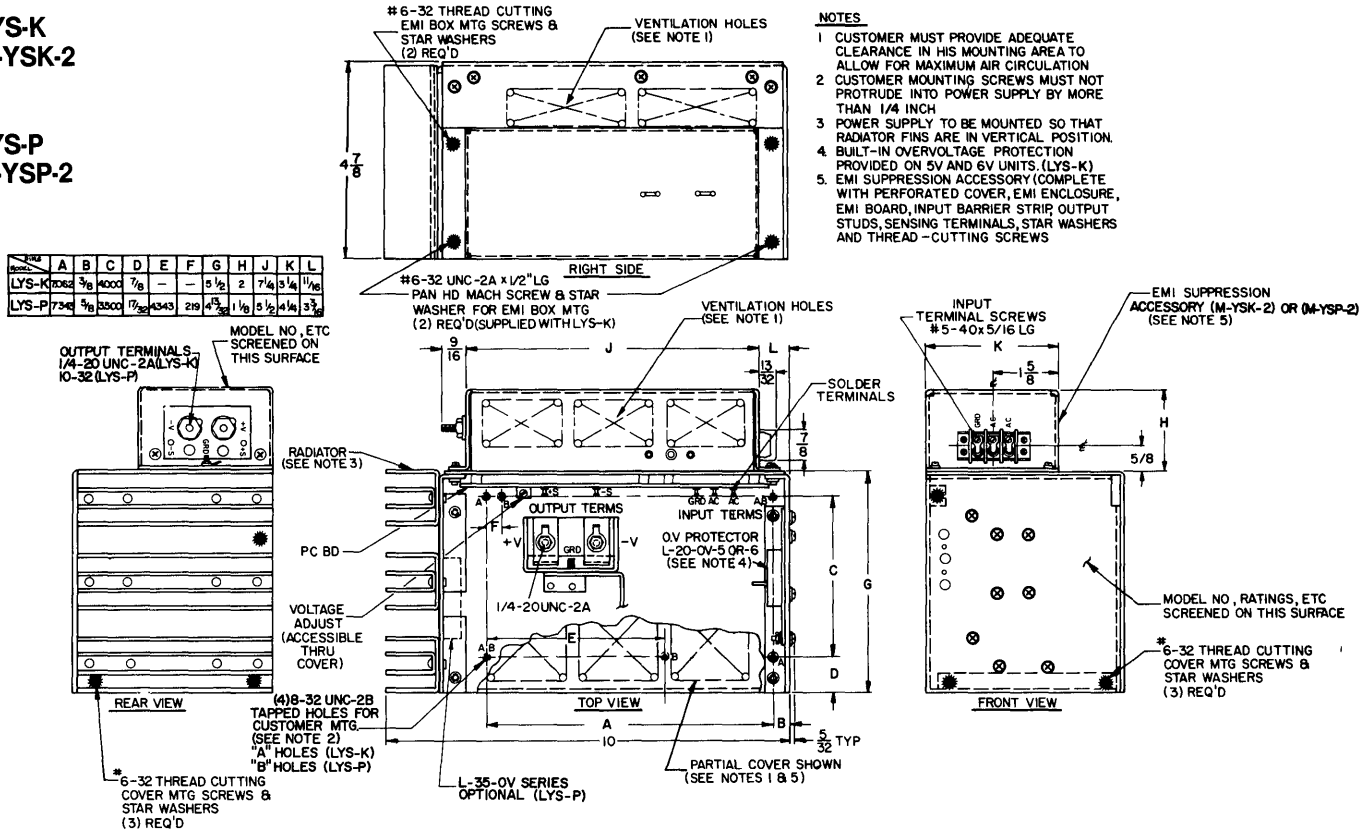
TABLE OF WEIGHTS		
MODEL	NET WT (LBS)	SHIPPING WT (LBS.)
LFQ-26	6	7

PART IV—DIMENSIONAL DRAWINGS
LYS-K, LYS-P, LYS-W AND LYS-X

LYS-K
M-YSK-2

LYS-P
M-YSP-2

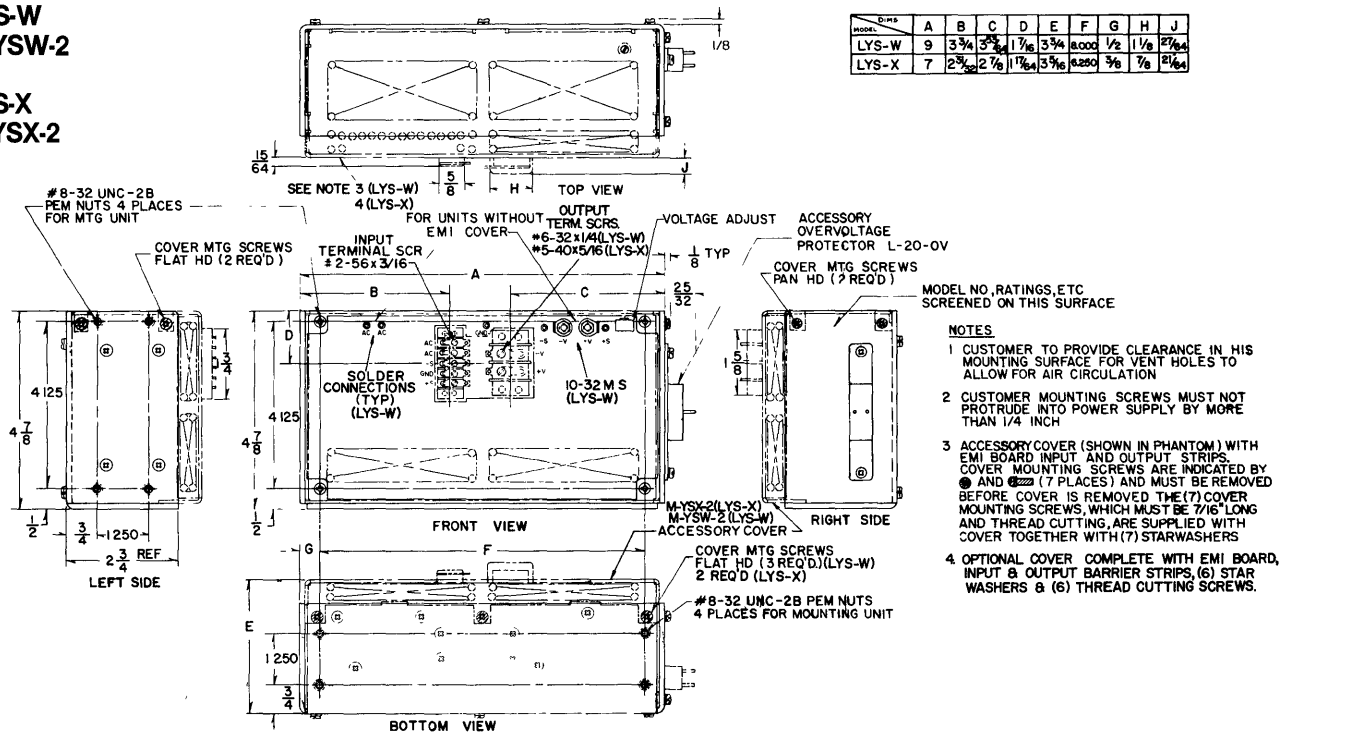
MODEL / DIMS	A	B	C	D	E	F	G	H	J	K	L
LYS-K	7.062	3/8	4.000	7/8	—	—	5 1/2	2	7 1/4	3 1/4	11/16
LYS-P	7.345	5/8	3.500	17/32	4.343	2.19	4 13/32	1 1/8	5 1/2	4 1/8	3 3/8



LYS-W
M-YSW-2

LYS-X
M-YSX-2

DIMS / MODEL	A	B	C	D	E	F	G	H	J
LYS-W	9	3 3/4	3 53/64	1 7/16	3 3/4	0.000	1/2	1 1/8	27/64
LYS-X	7	2 31/32	2 7/8	1 17/64	3 5/16	0.250	3/8	7/8	21/64



NOTES
1 CUSTOMER TO PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION
2 CUSTOMER MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4 INCH
3 ACCESSORY COVER (SHOWN IN PHANTOM) WITH EMI BOARD INPUT AND OUTPUT STRIPS. COVER MOUNTING SCREWS ARE INDICATED BY ● AND ⊞ (7 PLACES) AND MUST BE REMOVED BEFORE COVER IS REMOVED THE (7) COVER MOUNTING SCREWS, WHICH MUST BE 7/16" LONG AND THREAD CUTTING, ARE SUPPLIED WITH COVER TOGETHER WITH (7) STARWASHERS
4 OPTIONAL COVER COMPLETE WITH EMI BOARD, INPUT & OUTPUT BARRIER STRIPS, (6) STAR WASHERS & (6) THREAD CUTTING SCREWS.

PART IV—DIMENSIONAL DRAWINGS
LYS-Y AND LYS-EE SERIES POWER SUPPLIES

LYS-Y Series
M-YSY-2

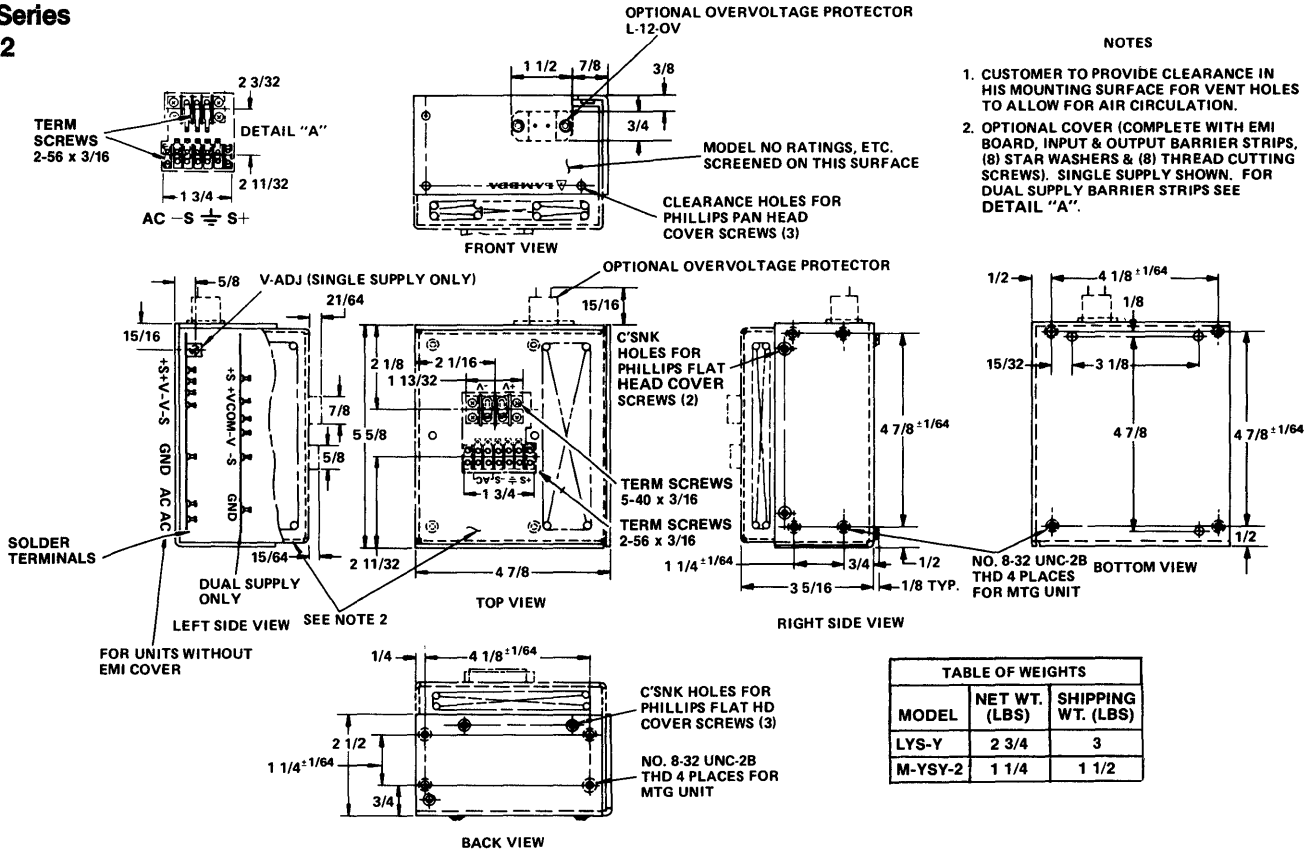
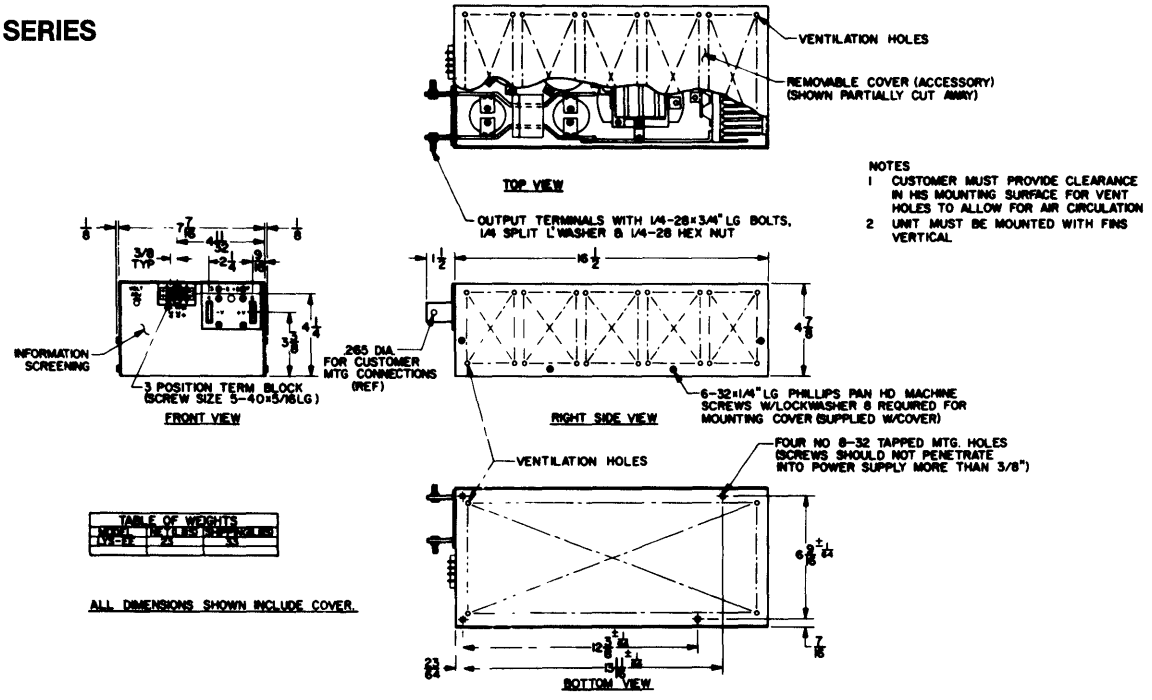


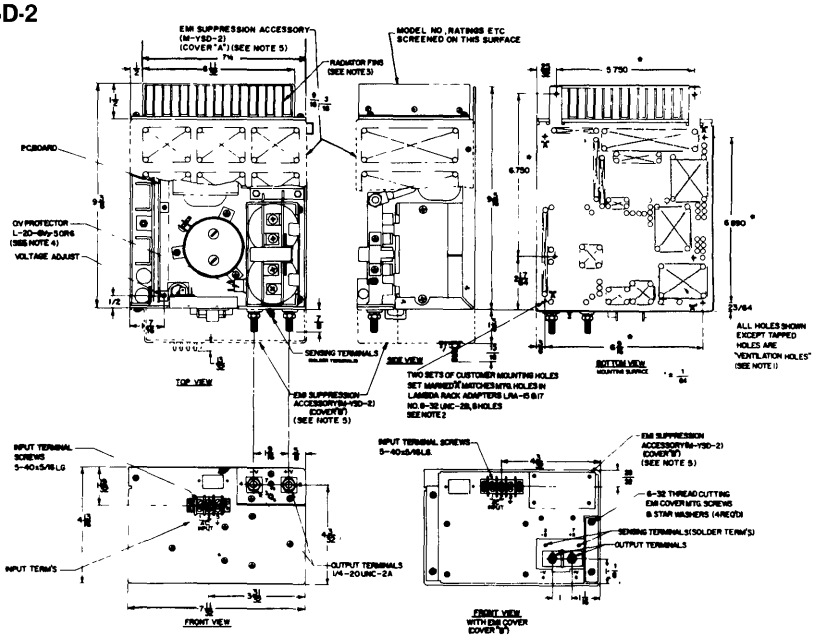
TABLE OF WEIGHTS		
MODEL	NET WT. (LBS)	SHIPPING WT. (LBS)
LYS-Y	2 3/4	3
M-YSY-2	1 1/4	1 1/2

LYS-EE SERIES



PART IV—DIMENSIONAL DRAWINGS
LYS-D AND LYT-D POWER SUPPLIES

LYS-D SERIES
M-YSD-2



NOTES
1 CUSTOMER MUST PROVIDE ADEQUATE CLEARANCE IN HIS MOUNTING AREA TO ALLOW FOR MAXIMUM AIR CIRCULATION
2 CUSTOMER MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 3/8 INCH
3 POWER SUPPLY TO BE MOUNTED SO THAT RADIATOR FINS ARE IN VERTICAL POSITION
4 BUILT IN OVERVOLTAGE PROTECTION PROVIDED ON 5V AND 6V UNITS
5 EMI SUPPRESSION ACCESSORY COMPLETE WITH STAR WASHERS AND THREAD-CUTTING SCREWS
6 THE LYS DD MEASURES 9 1/2 x 7 1/2 x 4 13/16 INCLUDING TERMINAL SCREWS (HEAT SINK ON BOTH SIDES)

TABLE OF WEIGHTS		
MODEL	NET WT (LBS)	SHIPPING WT (LBS)
LYS-D (ALL)	12 5	15 5
M-YSD	2 5	
LYS-D-D	13	1b

LYT-D SERIES
M-YTD-2

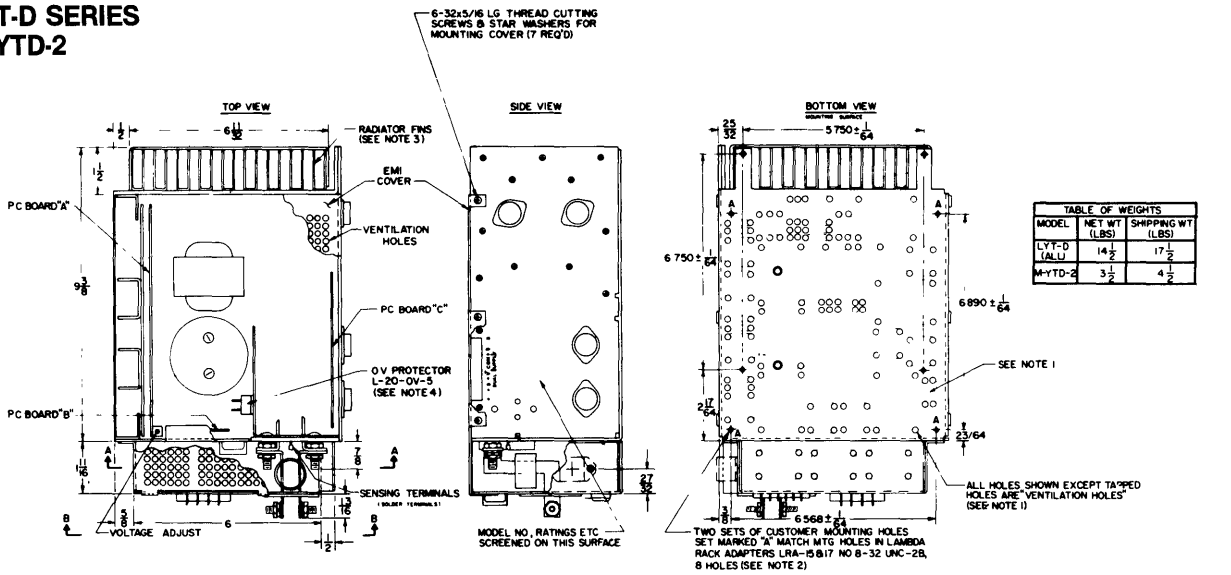


TABLE OF WEIGHTS		
MODEL	NET WT (LBS)	SHIPPING WT (LBS)
LYT-D (ALL)	14 1/2	17 1/2
M-YTD-2	3 1/2	4 1/2

NOTES
1 CUSTOMER MUST PROVIDE ADEQUATE CLEARANCE IN HIS MOUNTING AREA TO ALLOW FOR MAXIMUM AIR CIRCULATION
2 CUSTOMER MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 3/8 INCH
3 POWER SUPPLY TO BE MOUNTED SO THAT RADIATOR FINS ARE IN VERTICAL POSITION
4 BUILT-IN OVERVOLTAGE PROTECTION PROVIDED ON 5V SECTION ONLY
5 CUSTOMER LOAD LEADS MUST BE IN DIRECT CONTACT WITH BUSS BARS THIS WILL REQUIRE THE REMOVAL AND REASSEMBLY OF SENSING LUGS
6 EMI SUPPRESSION ACCESSORY CONSISTING OF SEPARATE COVER & EMI COMPARTMENT COMPLETE WITH STAR WASHERS AND THREAD CUTTING SCREWS

PART IV—DIMENSIONAL DRAWINGS
LYT-P AND LYT-W POWER SUPPLIES

LYT-P
M-YTP-2

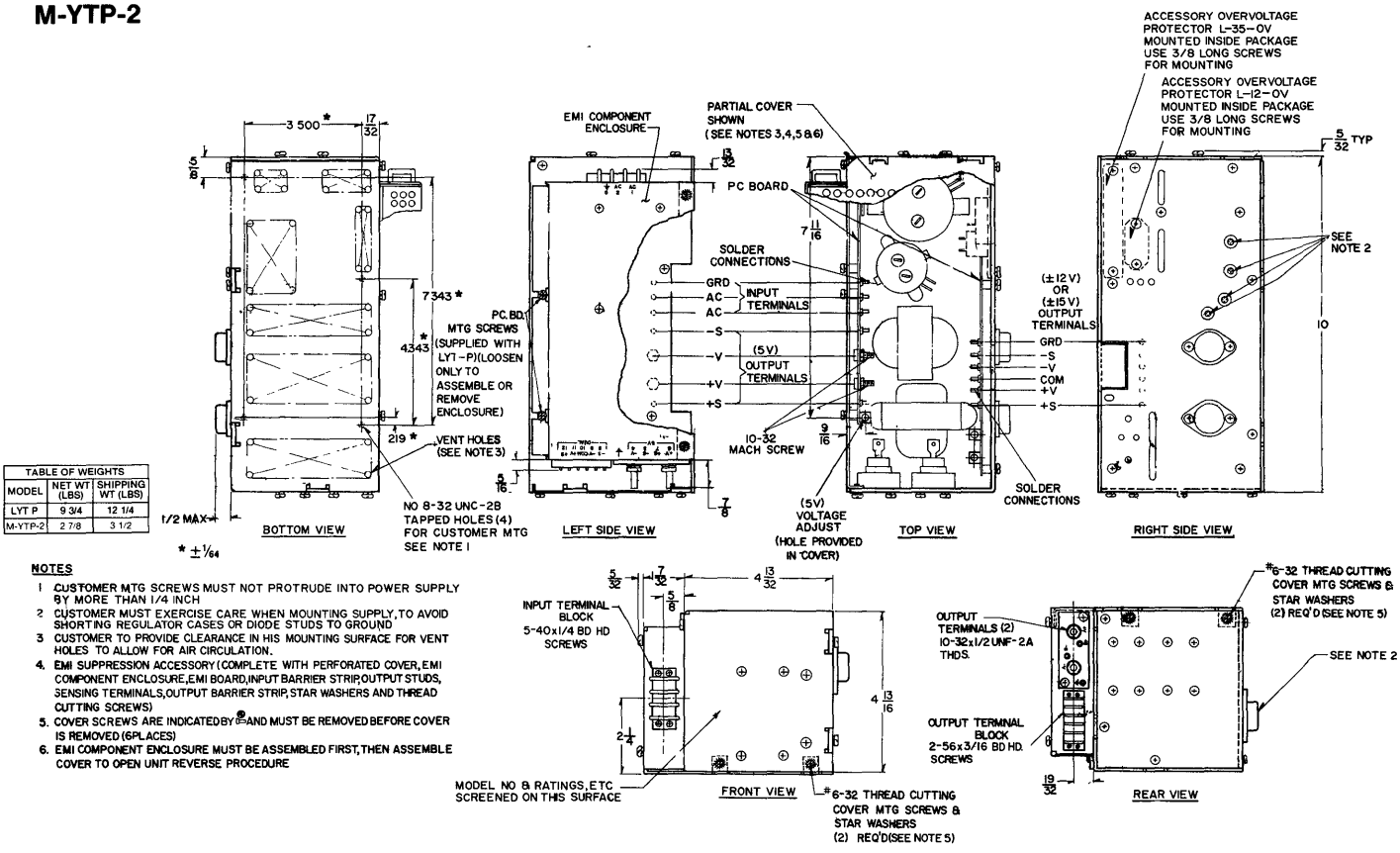
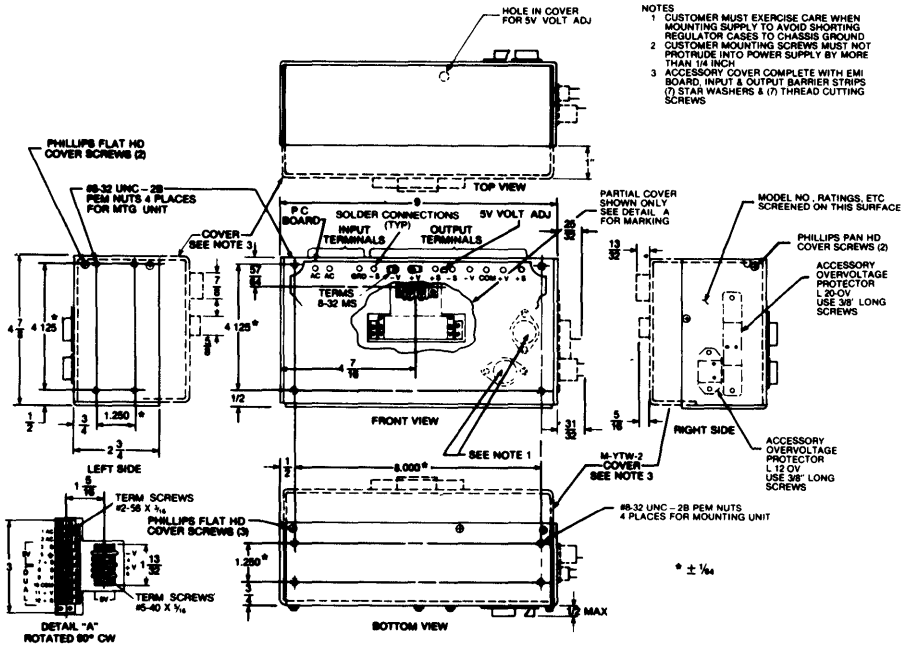


TABLE OF WEIGHTS		
MODEL	NET WT (LBS)	SHIPPING WT (LBS)
LYT P	9 3/4	12 1/4
M-YTP-2	2 7/8	3 1/2

NOTES

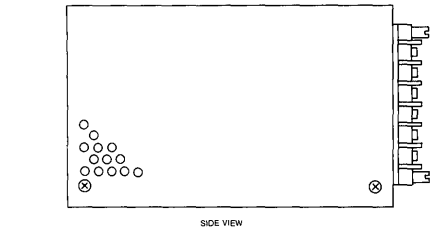
1. CUSTOMER MTG SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4 INCH.
2. CUSTOMER MUST EXERCISE CARE WHEN MOUNTING SUPPLY, TO AVOID SHORTING REGULATOR CASES OR DIODE STUDS TO GROUND.
3. CUSTOMER TO PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION.
4. EMI SUPPRESSION ACCESSORY (COMPLETE WITH PERFORATED COVER, EMI COMPONENT ENCLOSURE, EMI BOARD, INPUT BARRIER STRIP, OUTPUT STUDS, SENSING TERMINALS, OUTPUT BARRIER STRIP, STAR WASHERS AND THREAD CUTTING SCREWS)
5. COVER SCREWS ARE INDICATED BY Ⓢ AND MUST BE REMOVED BEFORE COVER IS REMOVED (6PLACES)
6. EMI COMPONENT ENCLOSURE MUST BE ASSEMBLED FIRST, THEN ASSEMBLE COVER TO OPEN UNIT REVERSE PROCEDURE

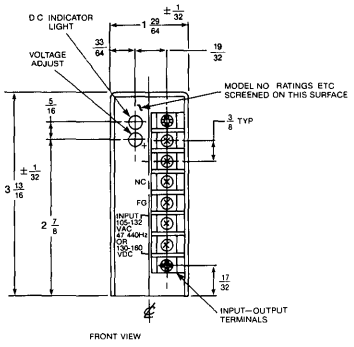
LYT-W
M-YTW-2

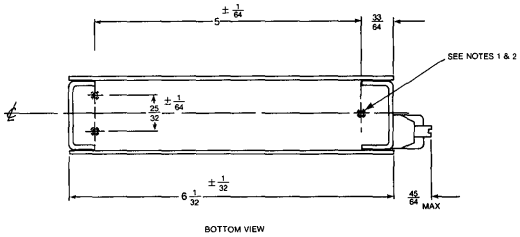


PART IV—DIMENSIONAL DRAWINGS LUS-8A, LUS-9A, LUS-10A, AND LUS-11

LUS-10A

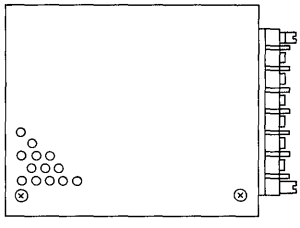


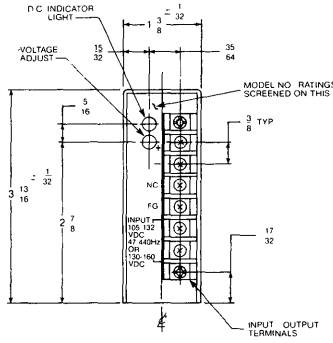


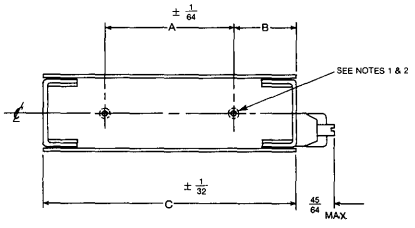


NOTES
1 6-32 TAPPED HOLES (2) FOR CUSTOMER CHASSIS MOUNTING
2 CUSTOMER'S MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN $^{15}/_{64}$

LUS-8A
LUS-9A



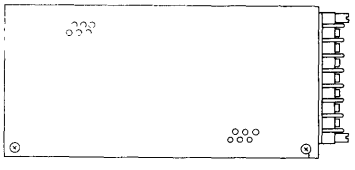


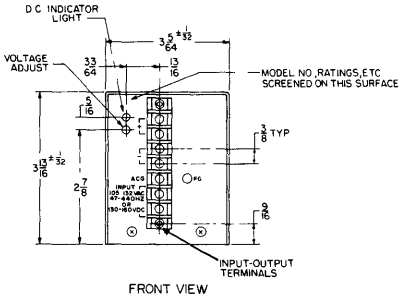


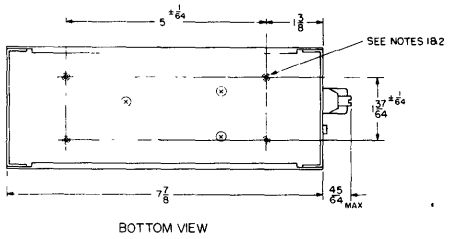
DIMENSIONS			
MODEL	A	B	C
LUS-8	$2^{29}/_{32}$	$^{5}/_{16}$	$3^{17}/_{32}$
LUS-9	$3^{17}/_{64}$	$^{5}/_{8}$	$4^{17}/_{32}$

NOTES
1 6-32 TAPPED HOLES (3) FOR CUSTOMER CHASSIS MOUNTING
2 CUSTOMER S MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN $^{15}/_{64}$

LUS-11 SERIES

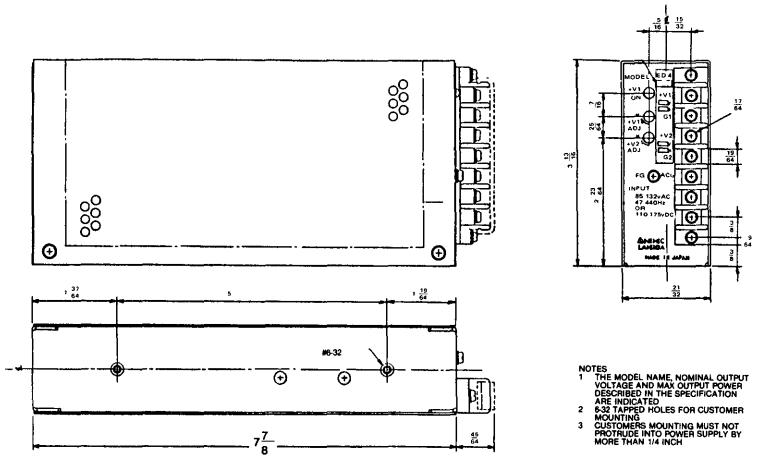




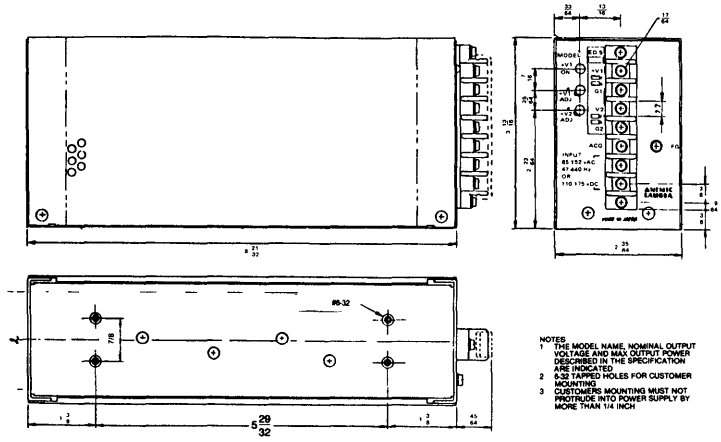


1 6-32 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING
2 CUSTOMER'S MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4

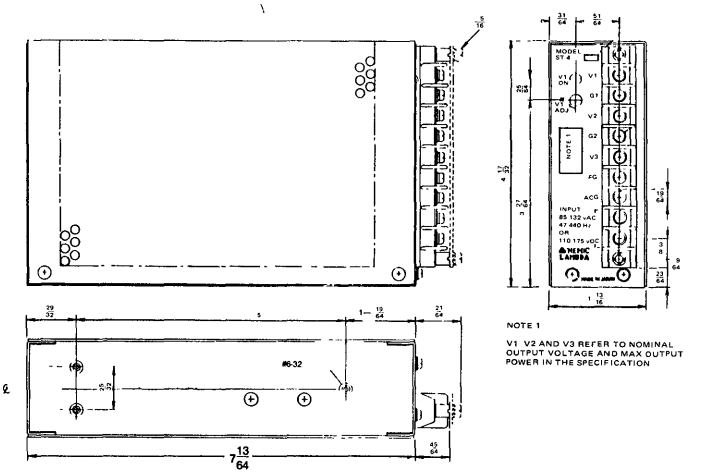
PART IV—DIMENSIONAL DRAWINGS
LU SERIES POWER SUPPLIES



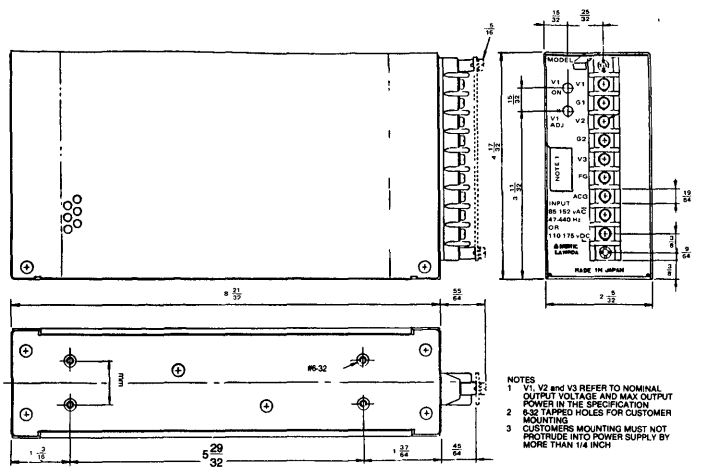
LUD-15



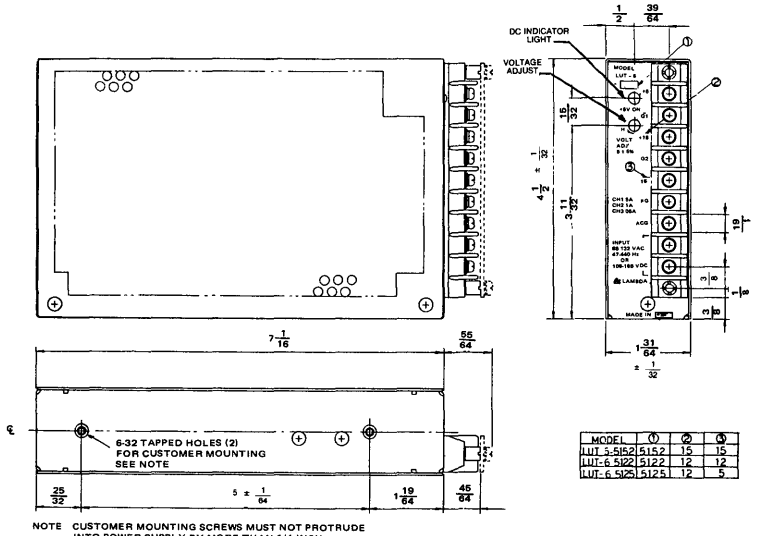
LUD-16



LUT-13

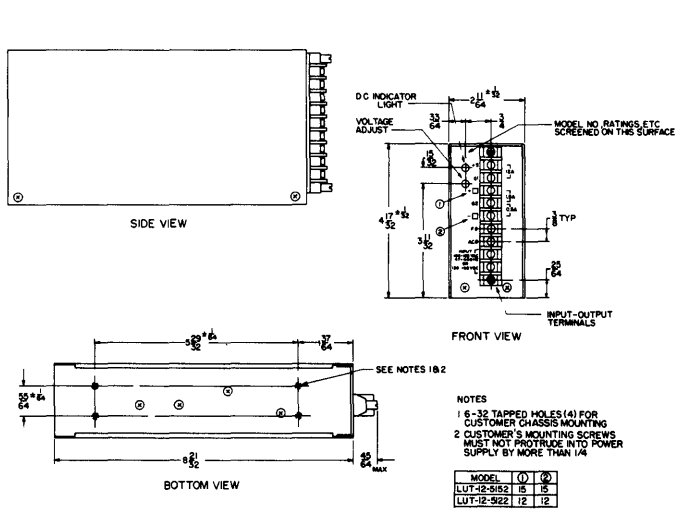


LUT-14



MODEL	①	②	③
LUT 5-5152	5152	15	15
LUT-6 5122	5122	12	12
LUT-6 5125	5125	12	5

LUT-6



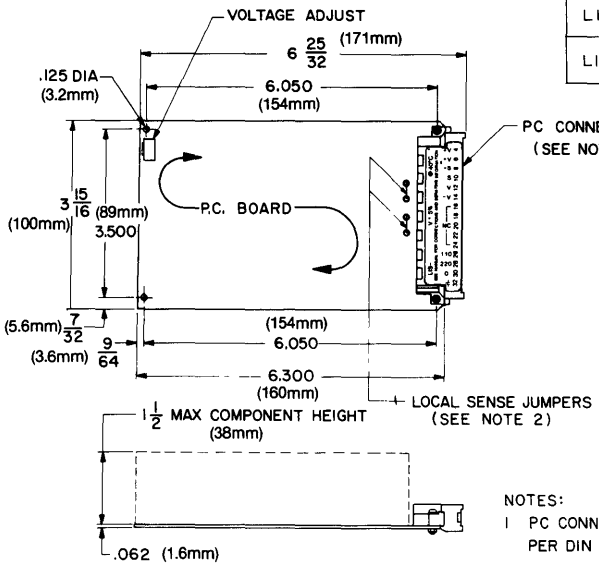
MODEL	①	②
LUT-12-5152	15	15
LUT-12-5122	12	12

LUT-12 SERIES

PART IV—DIMENSIONAL DRAWINGS
LI SERIES POWER SUPPLIES

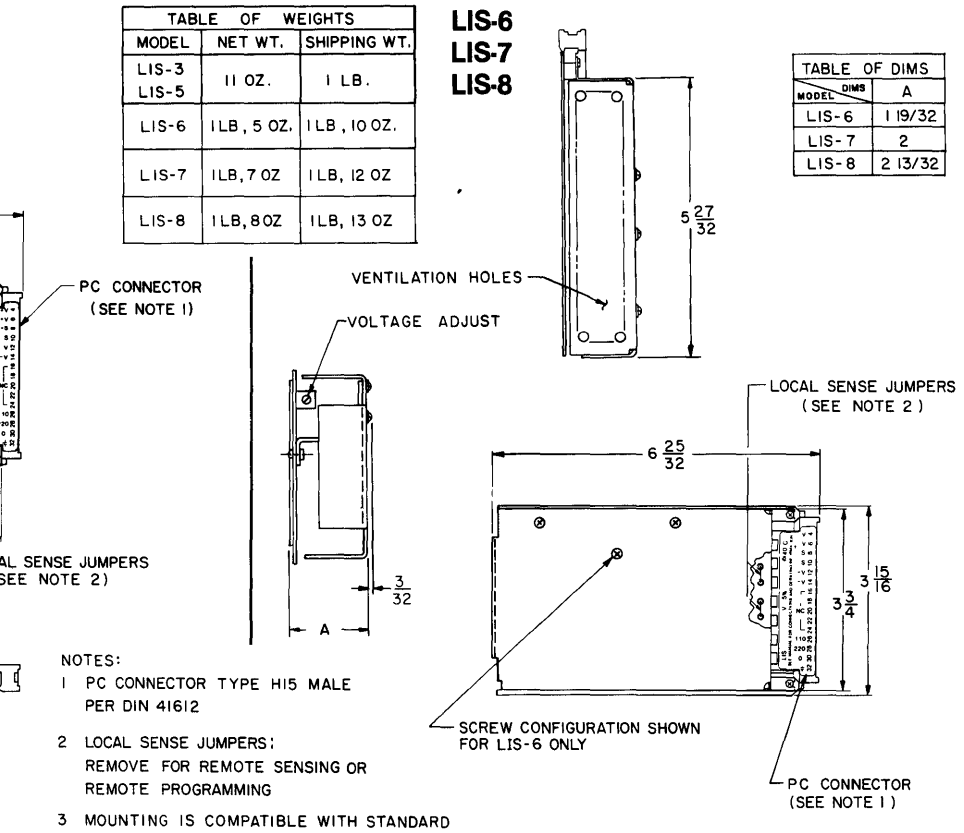
LIS-3
LIS-5

TABLE OF WEIGHTS		
MODEL	NET WT.	SHIPPING WT.
LIS-3 LIS-5	11 OZ.	1 LB.
LIS-6	1LB, 5 OZ.	1LB, 10 OZ.
LIS-7	1LB, 7 OZ	1LB, 12 OZ
LIS-8	1LB, 8 OZ	1LB, 13 OZ



LIS-6
LIS-7
LIS-8

TABLE OF DIMS	
MODEL \ DIMS	A
LIS-6	1 19/32
LIS-7	2
LIS-8	2 13/32



NOTES:

1 PC CONNECTOR TYPE HI5 MALE PER DIN 41612

2 LOCAL SENSE JUMPERS: REMOVE FOR REMOTE SENSING OR REMOTE PROGRAMMING

3 MOUNTING IS COMPATIBLE WITH STANDARD 3U HIGH EUROCARD SUBRACKS

LIS-31
LIS-51
LIS-61
LIS-71
LIS-81

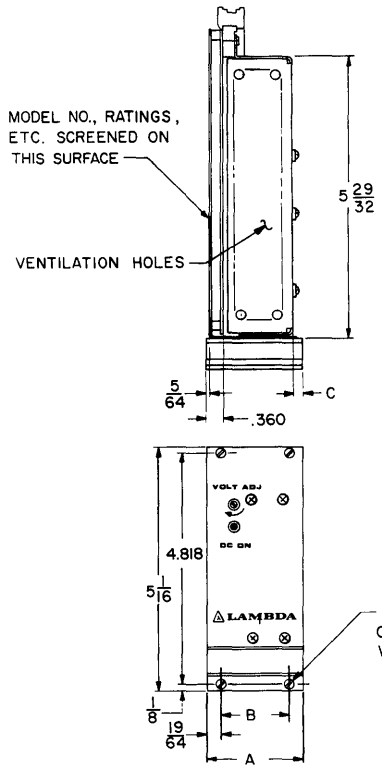


TABLE OF WEIGHTS		
MODEL:	NET WT.	SHIPPING WT.
LIS-31,51	1LB, 8 OZ	1LB, 12 OZ
LIS-61	1LB, 11 OZ	2 LBS
LIS-71	1LB, 13 OZ	2 LBS, 2 OZ
LIS-81	2 LBS, 1 OZ	2 LBS, 6 OZ

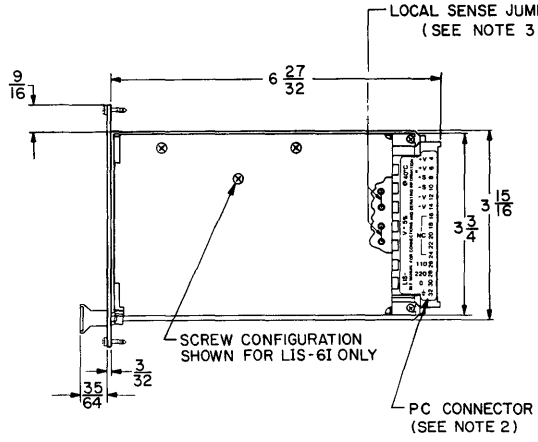
TABLE OF DIMS			
MODEL \ DIMS	A	B	C
LIS-31,51	1 63/64	1.400	1/16
LIS-61	1 63/64	1.400	3/16
LIS-71	2 25/64	1.800	3/16
LIS-81	2 51/64	2.200	1/8

NOTES

1 MOUNTING IS COMPATIBLE WITH STANDARD 3U HIGH EUROCARD SUBRACKS.

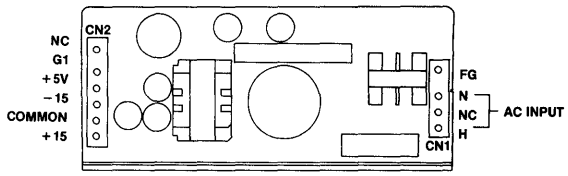
2 PC CONNECTOR TYPE HI5 MALE PER DIN 41612

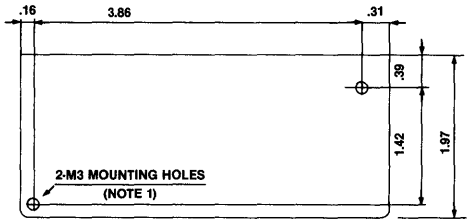
3. LOCAL SENSE JUMPERS: REMOVE FOR REMOTE SENSING OR REMOTE PROGRAMMING

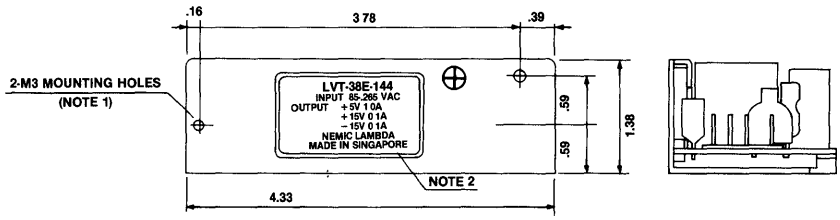


PART IV—DIMENSIONAL DRAWINGS
LVT-38E, LVT-39E, LVT-42E POWER SUPPLIES

LVT-38E







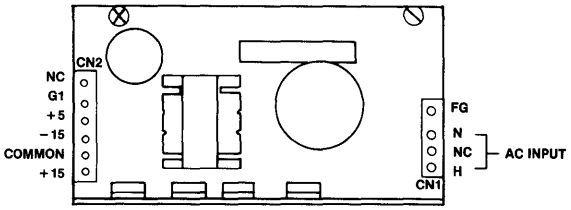
MODELS NAME, OUTPUT VOLTAGE AND CURRENT ARE INDICATED BELOW:

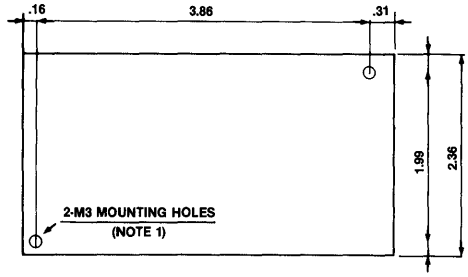
	CH1	CH2	CH3
LVT-38E-144	+5V1A	+15V0.1A	−15V0.1A
LVT-38E-133	+5V1A	+12V0.1A	-12V0.1A

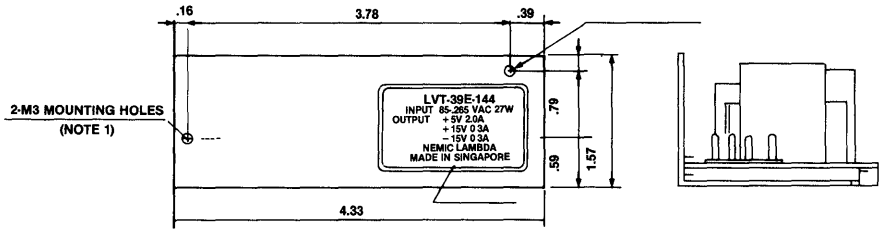
Note 1. Mounting screws must not protrude into power supply by more than 4mm.

2. Country of manufacture will be shown here.

LVT-39E







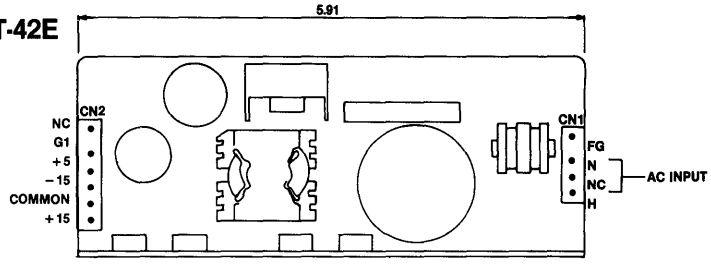
MODELS NAME, OUTPUT VOLTAGE AND CURRENT ARE INDICATED BELOW:

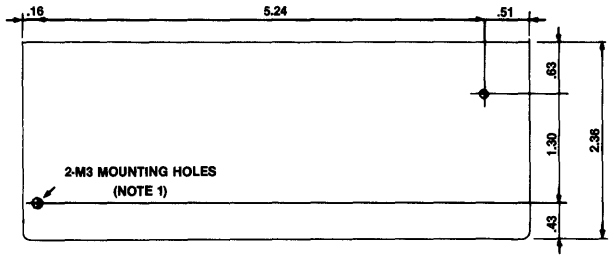
	CH1	CH2	CH3
LVT-39E-144	+5V2A	+15V0.3A	-15V0.2A
LVT-39E-133	+5V2A	+12V0.3A	-12V0.2A

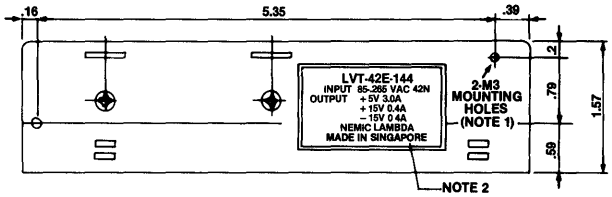
Note 1. Mounting screws must not protrude into power supply by more than 4mm.

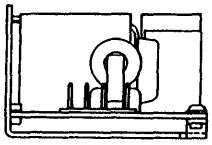
2. Country of manufacture will be shown here.

LVT-42E









MODELS NAME, OUTPUT VOLTAGE AND CURRENT ARE INDICATED BELOW:

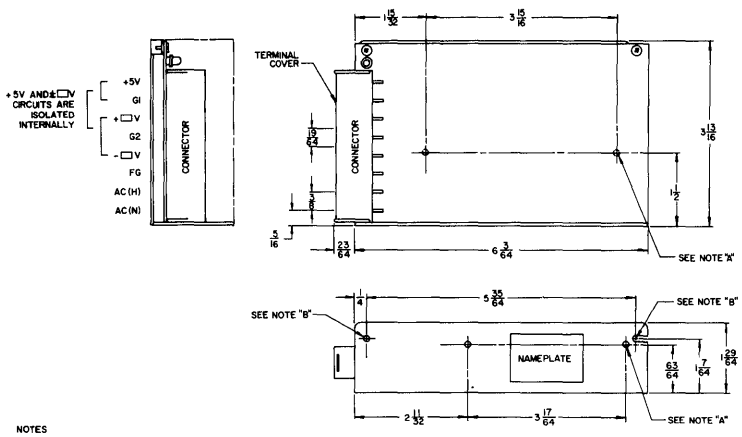
	CH1	CH2	CH3
LVT-42E-144	+5V3A	+15V0.4A	-15V0.4A
LVT-42E-133	+5V3A	+12V0.4A	-12V0.4A

Note 1. Mounting screws must not protrude more than 4mm into the power supply.

2. Country of manufacture will be shown here.

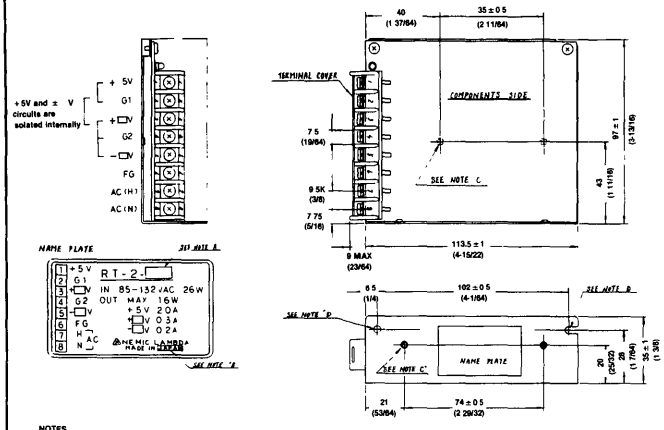
PART IV—DIMENSIONAL DRAWINGS
LV SERIES POWER SUPPLIES

LVT-41, 41E



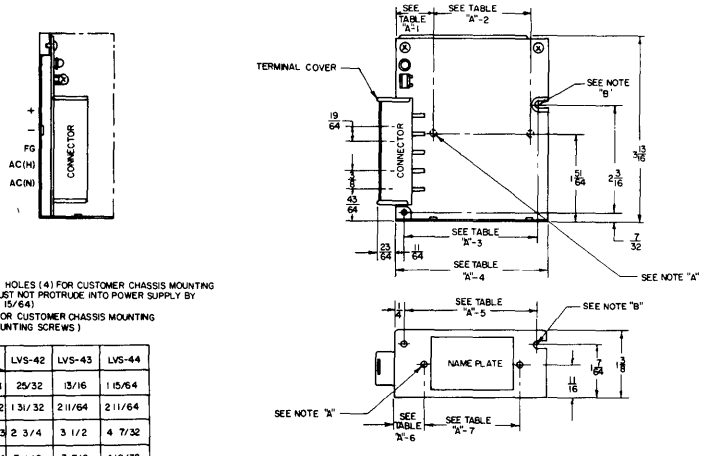
NOTES
A M3 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING (SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 15/64)
B SLOTS (2) FOR CUSTOMER CHASSIS MOUNTING (USE M3 MOUNTING SCREWS)

LVT-40, 40E



NOTES
A. MODEL NAME AND OUTPUT VOLTAGES ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS
B COUNTRY OF MANUFACTURE WILL BE SHOWN HERE.
C M3 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING (SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 6MM (15/24))
D +3.5 HOLES (2) FOR CUSTOMER CHASSIS MOUNTING (USE M3 MOUNTING SCREWS)

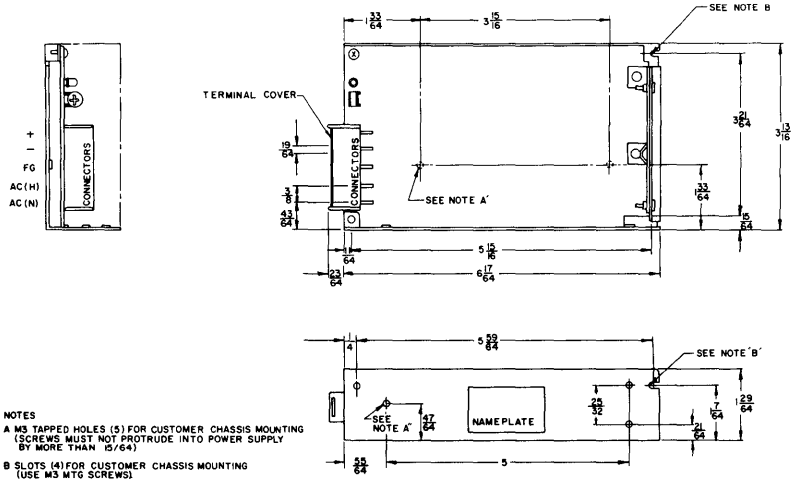
LVS-42
LVS-43, 43E
LVS-44, 44E



NOTES
A M3 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING (SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 15/64)
B SLOTS (4) FOR CUSTOMER CHASSIS MOUNTING (USE M3 MOUNTING SCREWS)

MODEL / TABLE	LVS-42	LVS-43	LVS-44
TABLE "A"-1	25/32	13/16	1 15/64
TABLE "A"-2	1 31/32	2 11/64	2 11/64
TABLE "A"-3	2 3/4	3 1/2	4 7/32
TABLE "A"-4	3 1/8	3 7/8	4 19/32
TABLE "A"-5	2 43/64	3 27/64	4 9/64
TABLE "A"-6	19/32	45/64	27/32
TABLE "A"-7	1 31/32	2 29/32	3 17/64

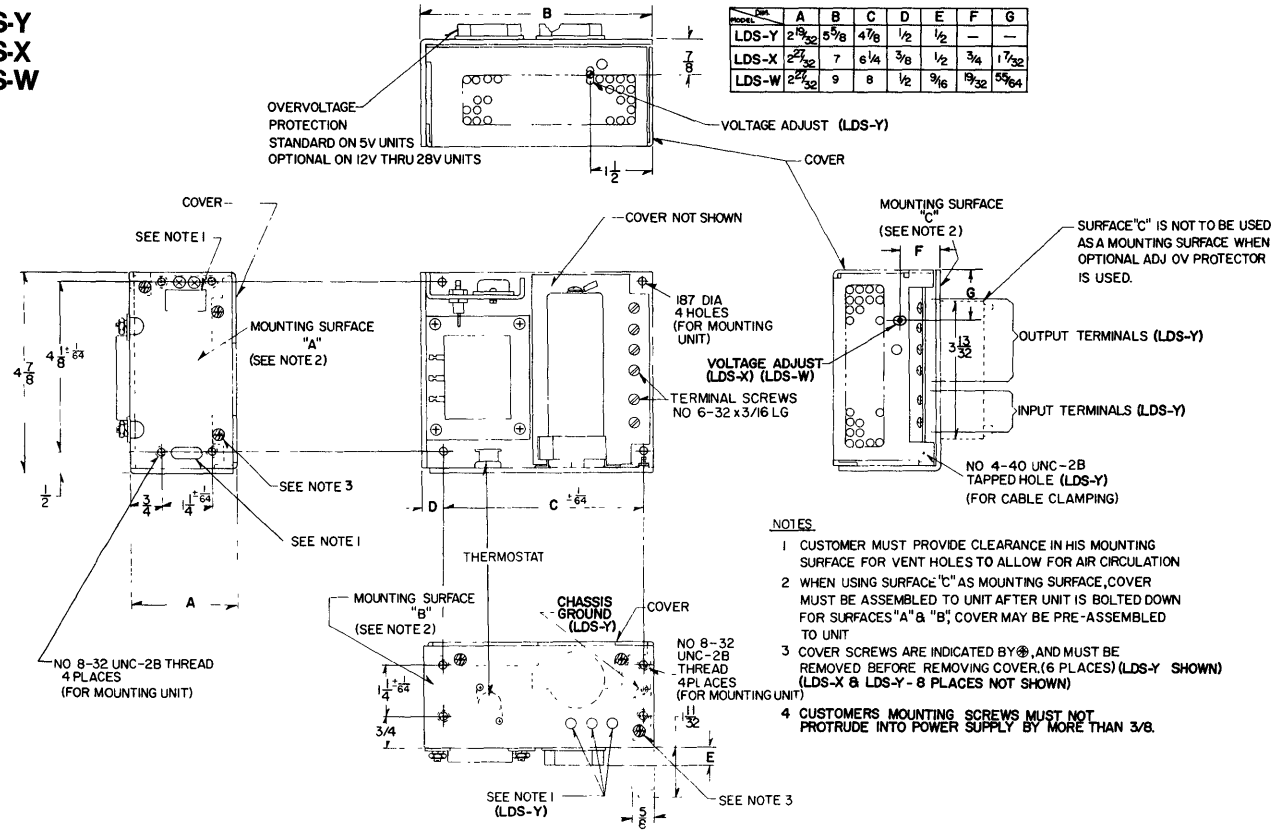
LVS-45, 45E



NOTES
A M3 TAPPED HOLES (5) FOR CUSTOMER CHASSIS MOUNTING (SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 15/64)
B SLOTS (4) FOR CUSTOMER CHASSIS MOUNTING (USE M3 MTG SCREWS)

PART IV—DIMENSIONAL DRAWINGS
LD SERIES POWER SUPPLIES

LDS-Y
LDS-X
LDS-W



MODEL / DIM.	A	B	C	D	E	F	G
LDS-Y	2 19/32	5 5/8	4 7/8	1/2	1/2	—	—
LDS-X	2 27/32	7	6 1/4	3/8	1/2	3/4	1 7/32
LDS-W	2 27/32	9	8	1/2	9/16	19/32	55/64

NOTES

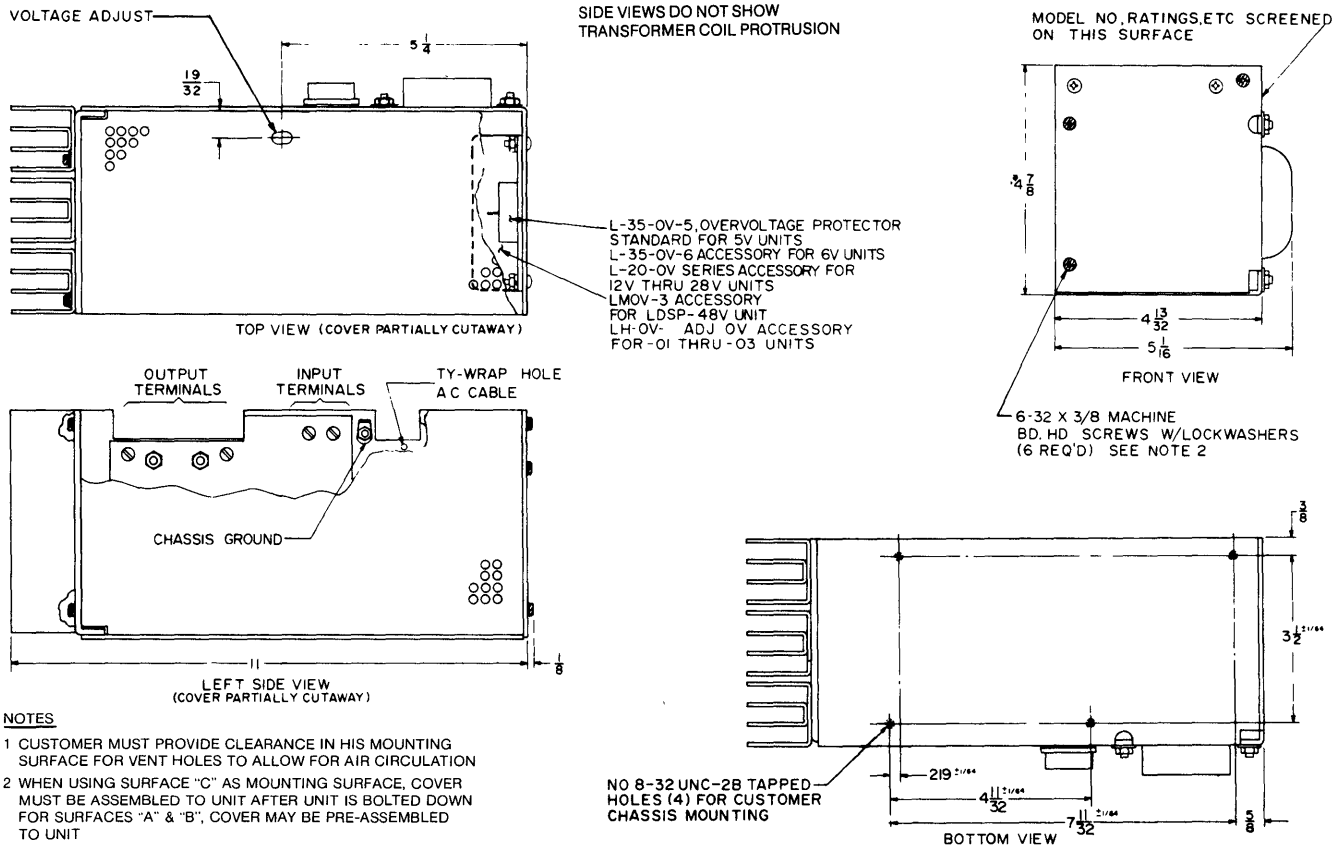
1 CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION

2 WHEN USING SURFACE "C" AS MOUNTING SURFACE, COVER MUST BE ASSEMBLED TO UNIT AFTER UNIT IS BOLTED DOWN FOR SURFACES "A" & "B", COVER MAY BE PRE-ASSEMBLED TO UNIT

3 COVER SCREWS ARE INDICATED BY ⊕, AND MUST BE REMOVED BEFORE REMOVING COVER. (6 PLACES) **(LDS-Y SHOWN) (LDS-X & LDS-Y - 8 PLACES NOT SHOWN)**

4 **CUSTOMERS MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 3/8.**

LDS-P SERIES



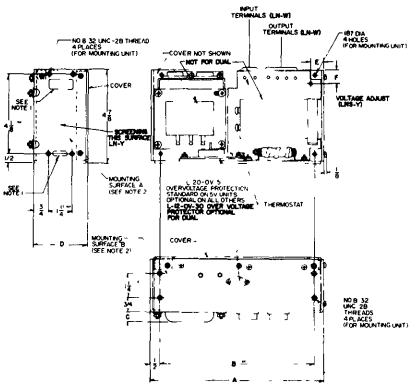
NOTES

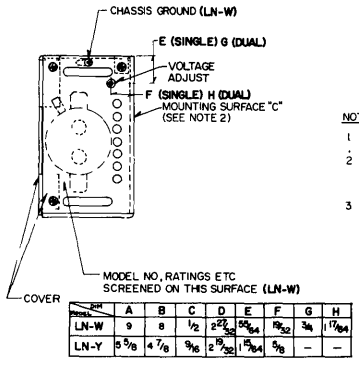
1 CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION

2 WHEN USING SURFACE "C" AS MOUNTING SURFACE, COVER MUST BE ASSEMBLED TO UNIT AFTER UNIT IS BOLTED DOWN FOR SURFACES "A" & "B", COVER MAY BE PRE-ASSEMBLED TO UNIT

PART IV—DIMENSIONAL DRAWINGS
LN SERIES POWER SUPPLIES

LN-W
LN-Y



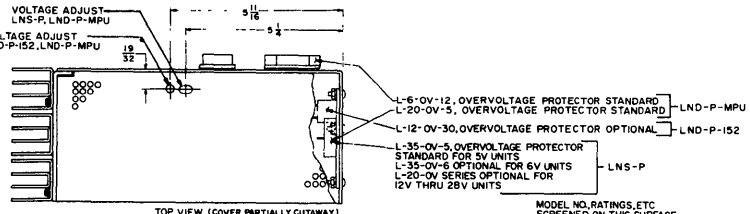


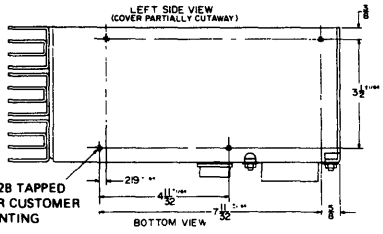
	A	B	C	D	E	F	G	H
LN-W	9	8	1/2	2 22/32	55/64	19/32	3/4	17/64
LN-Y	5 5/8	4 7/8	9/16	2 19/32	15/64	5/8	—	—

NOTES
1. CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION
2. WHEN USING SURFACE "C" AS MOUNTING SURFACE, COVER MUST BE ASSEMBLED TO UNIT AFTER UNIT IS BOLTED DOWN FOR SURFACES "A" & "B", COVER MAY BE PRE-ASSEMBLED TO UNIT
3. COVER SCREWS ARE INDICATED BY ●, AND THEY MUST BE REMOVED BEFORE REMOVING COVER

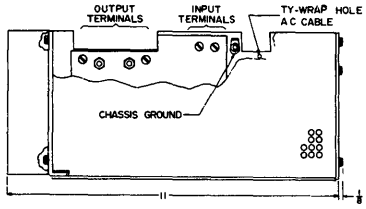
LNS-P
LND-P

NOTES
1. CUSTOMER MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4"
2. COVER SCREWS ARE INDICATED BY ⊗ & ⊖ AND MUST BE REMOVED BEFORE COVER IS REMOVED (6 PLACES)
3. SIDE VIEWS DO NOT SHOW TRANSFORMER COIL PROTRUSION





NO 8-32 UNC-2B TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING



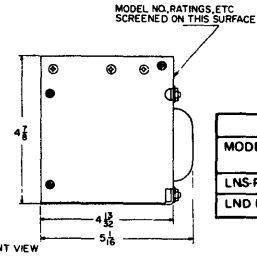
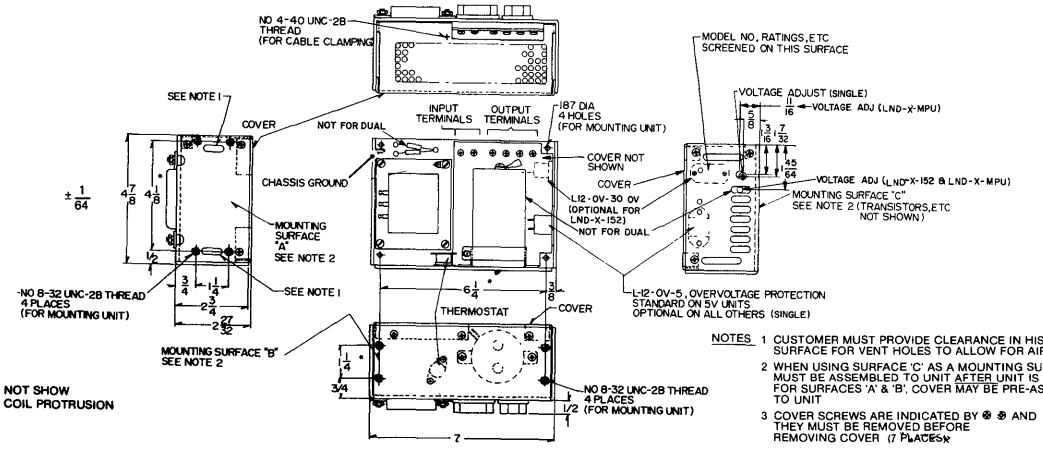


TABLE OF WEIGHTS		
MODEL	NET WT (LBS)	SHIPPING WT (LBS)
LNS-P	14	15 1/2
LND P	15 1/2	17

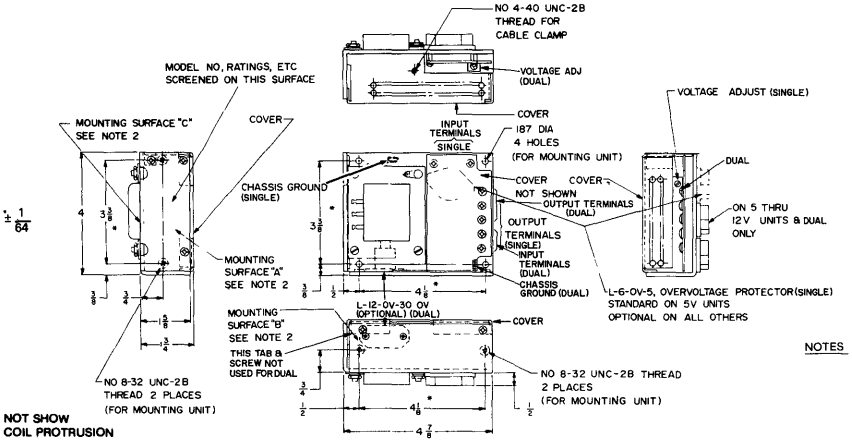
LNS-X Series
LND-X-152
LND-X-MPU



SIDE VIEWS DO NOT SHOW TRANSFORMER COIL PROTRUSION

NOTES
1. CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION
2. WHEN USING SURFACE 'C' AS A MOUNTING SURFACE, COVER MUST BE ASSEMBLED TO UNIT AFTER UNIT IS BOLTED DOWN FOR SURFACES 'A' & 'B', COVER MAY BE PRE-ASSEMBLED TO UNIT
3. COVER SCREWS ARE INDICATED BY ⊗ ⊗ AND THEY MUST BE REMOVED BEFORE REMOVING COVER (7 PLACES)

LN-Z Series

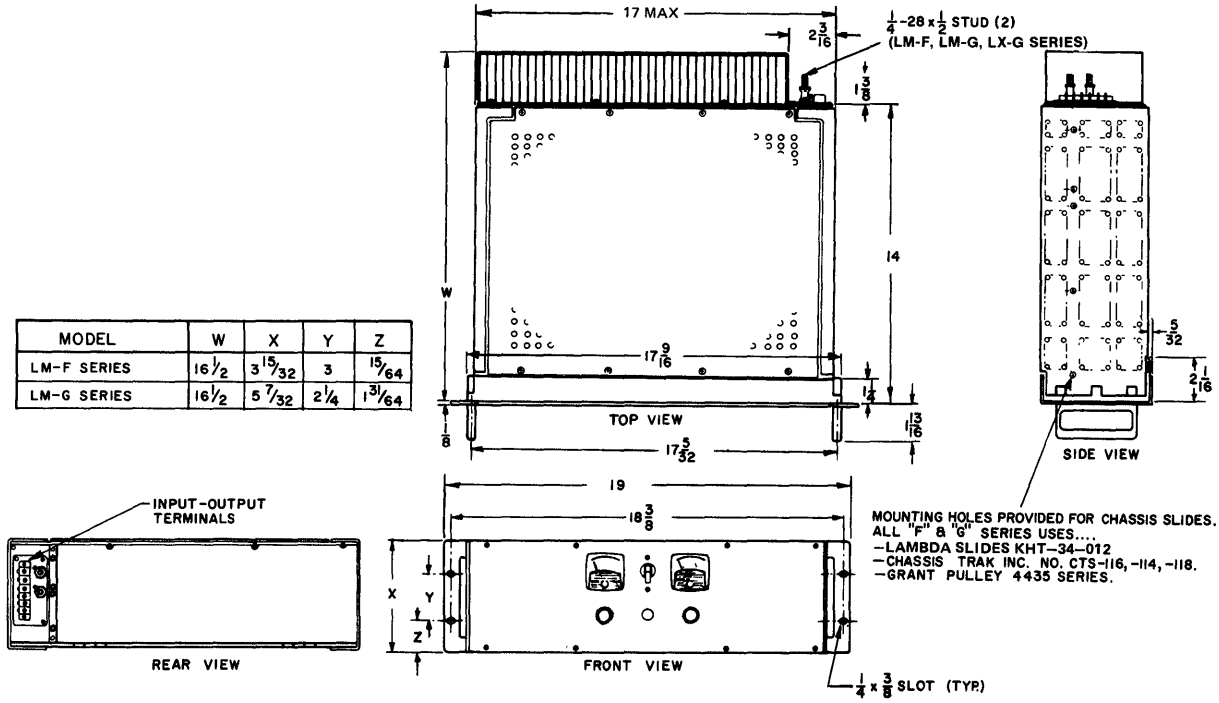


SIDE VIEWS DO NOT SHOW TRANSFORMER COIL PROTRUSION

NOTES
1. CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION
2. WHEN USING SURFACE 'C' AS A MOUNTING SURFACE, COVER MUST BE ASSEMBLED TO UNIT AFTER UNIT IS BOLTED DOWN FOR SURFACES 'A' & 'B', COVER MAY BE PRE-ASSEMBLED TO UNIT
3. COVER SCREWS ARE INDICATED BY ⊗ ⊗ AND THEY MUST BE REMOVED BEFORE REMOVING COVER

PART IV—DIMENSIONAL DRAWINGS PACKAGE SIZES F, G AND 4

LM-F Series
LM-G Series

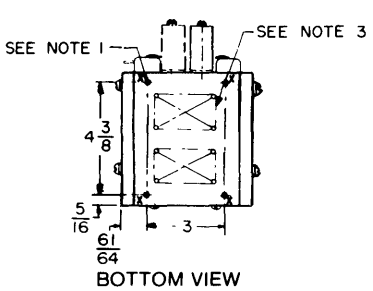


MODEL	W	X	Y	Z
LM-F SERIES	16 1/2	3 15/32	3	15/64
LM-G SERIES	16 1/2	5 7/32	2 1/4	1 31/64

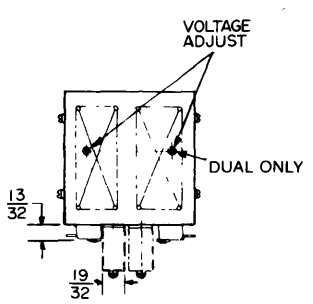
TERMINAL STRIP SCREW SIZE
5-40 X 5/16

LCD-4 Series

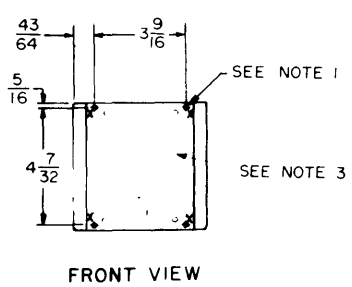
NOTES
1. HOLES MARKED "X" ARE 8 32 TAPPED HOLES FOR USE AS CUSTOMER MOUNTING HOLES
2. CUSTOMER MUST PROVIDE CLEARANCE CUTOUTS FOR COMPONENTS SHOWN FOR FLUSH MOUNTING ON THIS SURFACE
3. CUSTOMER MUST PROVIDE CLEARANCE CUTOUTS FOR VENTILATION PATTERNS TO ALLOW CIRCULATION
4. CUSTOMERS MOUNTING SCREW MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 3/8"
5. TERMINAL STRIP SCREW SIZE 2 56 X 3/16



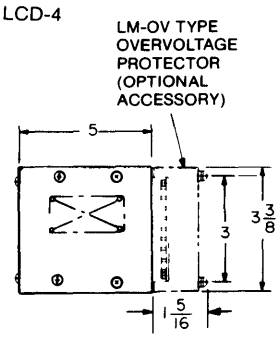
BOTTOM VIEW
LCD-4



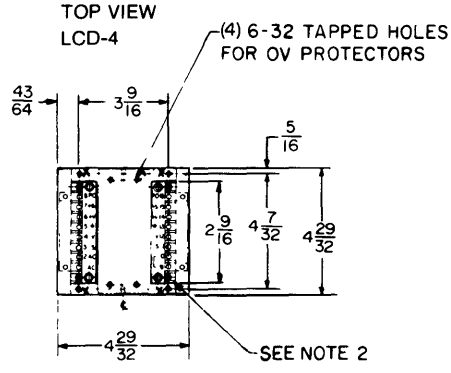
TOP VIEW
LCD-4



FRONT VIEW



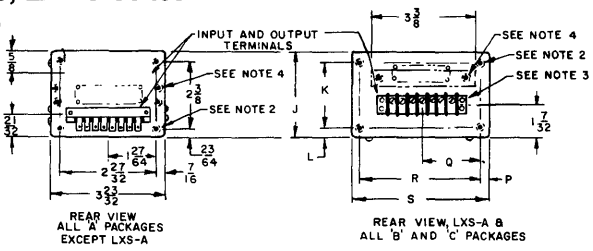
LEFT SIDE VIEW
LCD-4

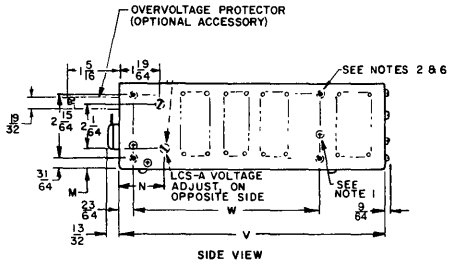


REAR VIEW

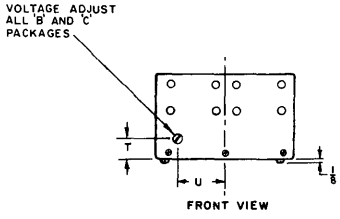
PART IV—DIMENSIONAL DRAWINGS MODULAR SUPPLIES PACKAGE SIZES A, B, C, E AND EE

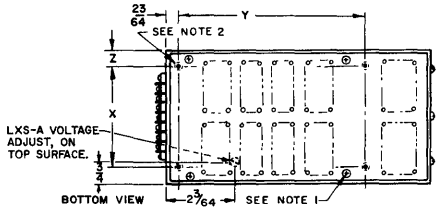
LCS-A, LCD-A Series
LCS-B, LM-B Series
LCS-C, LXS-C, LXD-C Series
LXS-A Series





NOTES
1. PROVIDE CLEARANCE HOLES, AS REQUIRED, FOR SCREW HEADS LOCATED ON BOTTOM OF "B" AND "C" PACKAGE SUPPLIES, AND ON SIDE OF "A" PACKAGE SUPPLIES
2. NO 8-32 TAPPED HOLES (4 ON EACH SURFACE) FOR CUSTOMER CHASSIS MOUNTING
3. 8 POSITION TERMINAL STRIP USED ON MODELS LCS-B, LCS-C AND LXD-C
4. TWO NO 6-32 TAPPED HOLES FOR MOUNTING OVERVOLTAGE PROTECTOR
5. CUSTOMERS MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 3/8". 1/4" FOR LCS-C, LXD-C & LXS-C SERIES
6. THIS MOUNTING HOLE NOT USED ON LXS-A SERIES MODELS



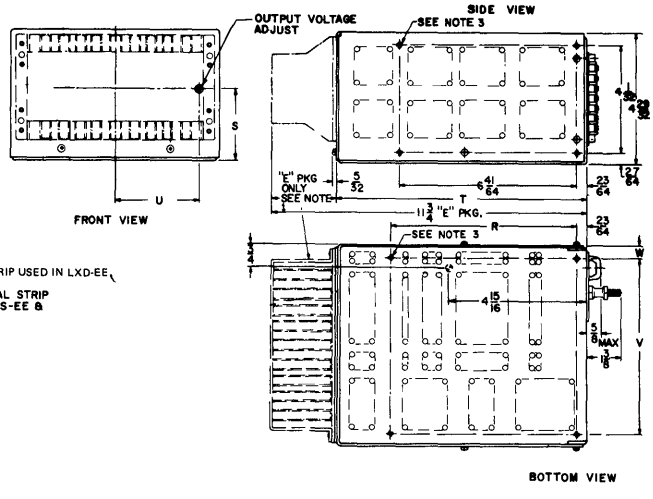


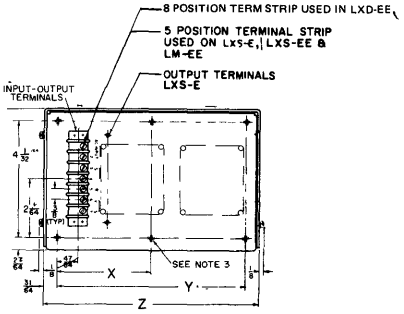
TERMINAL STRIP SCREW SIZE 5-40 X 5/16 FOR LXS-B, LXS-C, LM-B, LM-C
FOR ALL OTHERS, TERMINAL STRIP SCREW SIZE IS 2-56 X 3/16

MODEL	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	J	K	L
LXS-A SERIES	—	—	7/16	1 27/64	2 27/32	3 23/32	—	—	6 7/16	5 1/16	2 27/32	5 5/16	27/64	3 5/32	2 3/8	23/64
LCD-A, LCS-A SERIES	19/32	1 13/32	7/16	1 27/64	2 27/32	3 23/32	—	—	6 1/2	5 1/16	2 27/32	5 5/16	27/64	3 11/64	2 3/8	23/64
LCS-B, LXD-B SERIES	—	—	27/64	2 1/64	4 1/32	4 29/32	13/16	2 1/8	6 1/2	5 1/16	3 3/4	5 1/16	9/16	3 11/64	2 15/64	31/64
LCS-C, LXD-C, LXS-C SERIES	—	—	27/64	2 1/64	4 1/32	4 29/32	13/16	2	9 3/8	6 57/64	3 3/4	6 57/64	9/16	3 11/64	2 15/64	29/64
LM-B SERIES	—	—	27/64	2 1/64	4 1/32	4 29/32	2 15/64	31/32	6 1/2	5 1/16	3 3/4	5 1/16	9/16	3 11/64	2 15/64	31/64

LM-E, LXS-E
LXS-EE, LXD-EE

NOTES:
1. "E" PACKAGE MUST BE MOUNTED WITH RADIATOR FINS VERTICAL.
2. PROVIDE 5/16 DIA. CLEARANCE HOLES FOR SCREW HEADS ON SIDE OF ALL UNITS.
3. 8-32 TAPPED HOLES 6 ON REAR SURFACE OF "E" PACKAGES, 4 EACH ON BOTTOM AND SIDE SURFACES FOR CUSTOMER CHASSIS MOUNTING (4 ON BOTTOM ONLY OF "EE" PACKAGES).
4. TWO 6-32 TAPPED HOLES FOR MOUNTING OVERVOLTAGE PROTECTOR (4 ON LM-EE, & LXS-EE) ON "E" PACKAGES.
5. CUSTOMER'S MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 3/8".
6. TERMINAL STRIP SCREW SIZE PACKAGE E & LXD-EE 5-40 x 1/4 PACKAGE EE 8-32 X 5/16.

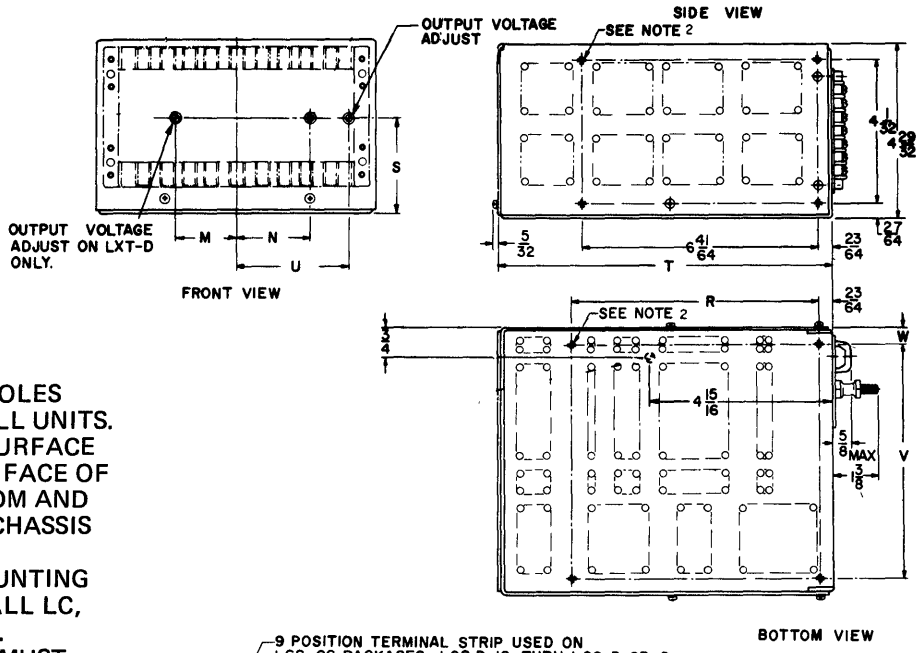




MODEL	P	Q	R	S	T	U	V	W	X	Y	Z
LM-E SERIES	31/64	47/64	6 57/64	2 11/16	9 3/8	3 1/64	6 9/16	31/64	3 1/4	6 33/64	7 1/2
LX-EE	—	—	12 3/8	2 9/32	16 1/2	2 15/16	6 9/16	31/64	—	—	7 1/2
LXS-E SERIES	31/64	11/32	6 57/64	2 11/16	9 3/8	3 1/64	6 9/16	31/64	3 61/64	6 33/64	7 1/2

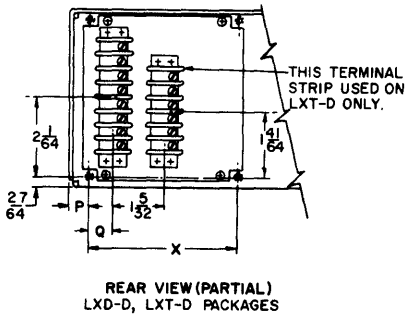
PART IV—DIMENSIONAL DRAWINGS
MODULAR SUPPLIES PACKAGE SIZES CC AND D

LCS-CC Series
LXS-CC Series
LM-D, LCS-D, LXS-D Series
LXD-D, LXT-D Series

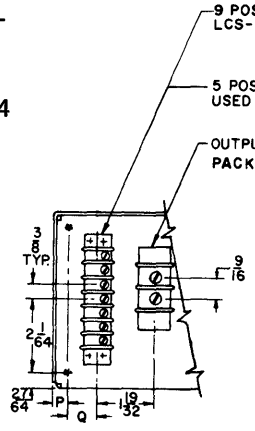


NOTES:

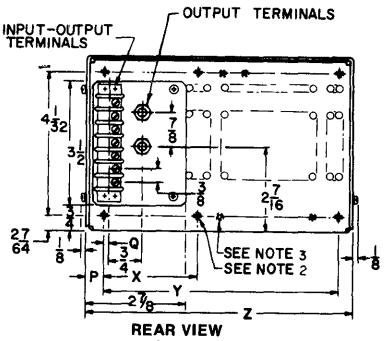
1. PROVIDE 5/16 DIA. CLEARANCE HOLES FOR SCREW HEADS ON SIDE OF ALL UNITS.
2. 8-32 TAPPED HOLES, 6 ON REAR SURFACE OF "D" PACKAGE, 4 ON REAR SURFACE OF "CC" PACKAGE, 4 EACH ON BOTTOM AND SIDE SURFACES FOR CUSTOMER CHASSIS MOUNTING.
3. TWO 6-32 TAPPED HOLES FOR MOUNTING OVERVOLTAGE PROTECTOR ON ALL LC, LX & LM SERIES PACKAGES ONLY.
4. CUSTOMER'S MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 3/8".
5. TERMINAL STRIP SCREW SIZE 5-40 X 1/4



REAR VIEW (PARTIAL)
LXD-D, LXT-D PACKAGES



REAR VIEW (PARTIAL)
*LM PACKAGES
*LXS PACKAGES
*LCS PACKAGES

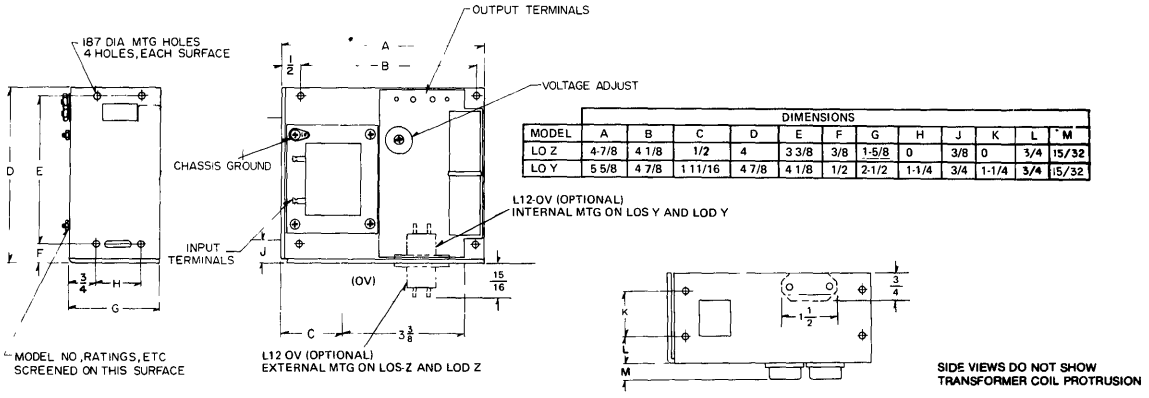


REAR VIEW
LXS PACKAGES
LCS PACKAGES
LM PACKAGES

MODEL	M	N	P	Q	R	S	T	U	V	W	X	Y	Z
LXS-CC, LCS-CC SERIES	–	–	31/64	47/64	6 57/64	2 11/16	9 3/8	1 23/32	4 1/16	7/16	–	3 61/64	4 15/16
LXS-D SERIES	–	–	31/64	11/32	6 57/64	2 11/16	9 3/8	3 1/64	6 9/16	31/64	3 1/4	6 33/64	7 1/2
LM-D SERIES	–	–	31/64	47/64	6 57/64	2 11/16	9 3/8	3 1/64	6 9/16	31/64	3 1/4	6 33/64	7 1/2
LCS-D-12 THRU LCS-D-C3	–	–	31/64	1 3/32	6 57/64	2 11/16	9 3/8	3 1/64	6 9/16	31/64	3 61/64	6 33/64	7 1/2
LXD-D, LXT-D SERIES	2 59/64	–	31/64	19/32	6 57/64	2 11/16	9 3/8	3 1/64	6 9/16	31/64	3 61/64	6 33/64	7 1/2
LCS-D-2 THRU LCS-D-6	–	–	31/64	11/32	6 57/64	2 11/16	9 3/8	3 1/64	6 9/16	31/64	3 61/64	6 33/64	7 1/2

PART IV—DIMENSIONAL DRAWINGS
LO SERIES POWER SUPPLIES

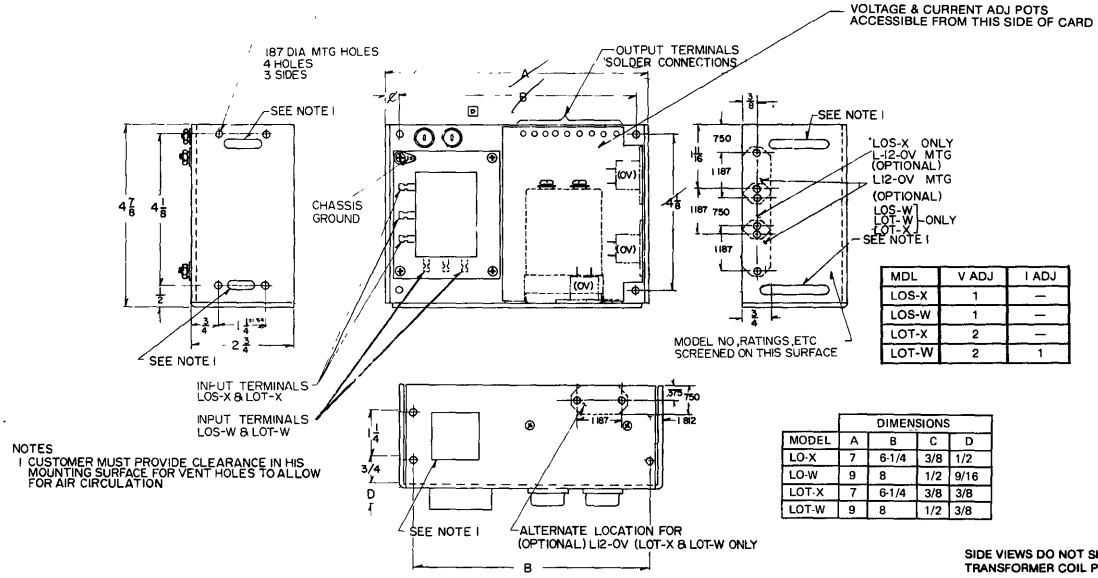
LO-Z
LO-Y



MODEL	DIMENSIONS											
	A	B	C	D	E	F	G	H	J	K	L	M
LO Z	4-7/8	4 1/8	1/2	4	3 3/8	3/8	1-5/8	0	3/8	0	3/4	15/32
LO Y	5 5/8	4 7/8	1 11/16	4 7/8	4 1/8	1/2	2-1/2	1-1/4	3/4	1-1/4	3/4	15/32

SIDE VIEWS DO NOT SHOW TRANSFORMER COIL PROTRUSION

LO-X
LO-W



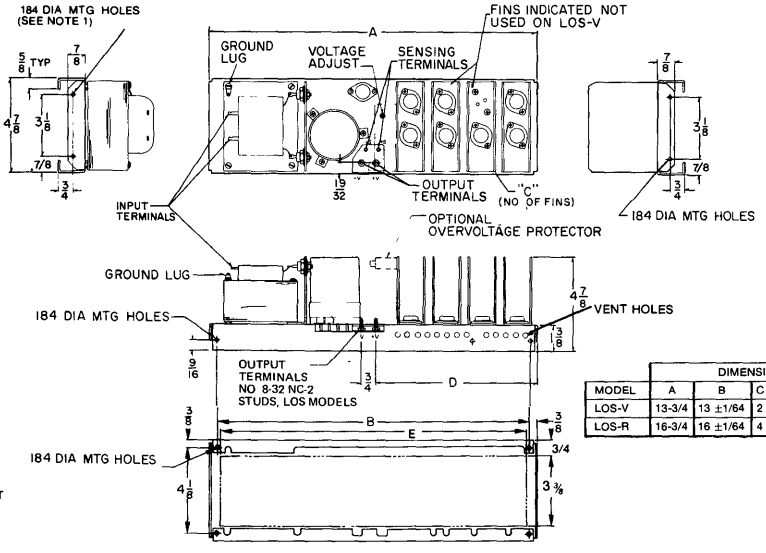
MDL	V ADJ	I ADJ
LOS-X	1	—
LOS-W	1	—
LOT-X	2	—
LOT-W	2	1

NOTES
1 CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR VENT HOLES TO ALLOW FOR AIR CIRCULATION

MODEL	DIMENSIONS			
	A	B	C	D
LO-X	7	6-1/4	3/8	1/2
LO-W	9	8	1/2	9/16
LOT-X	7	6-1/4	3/8	3/8
LOT-W	9	8	1/2	3/8

SIDE VIEWS DO NOT SHOW TRANSFORMER COIL PROTRUSION

LO-V
LO-R



MODEL	DIMENSIONS				
	A	B	C	D	E
LOS-V	13-3/4	13 ±1/64	2	5-13/32	12-3/4
LOS-R	16-3/4	16 ±1/64	4	8-7/32	15-3/4

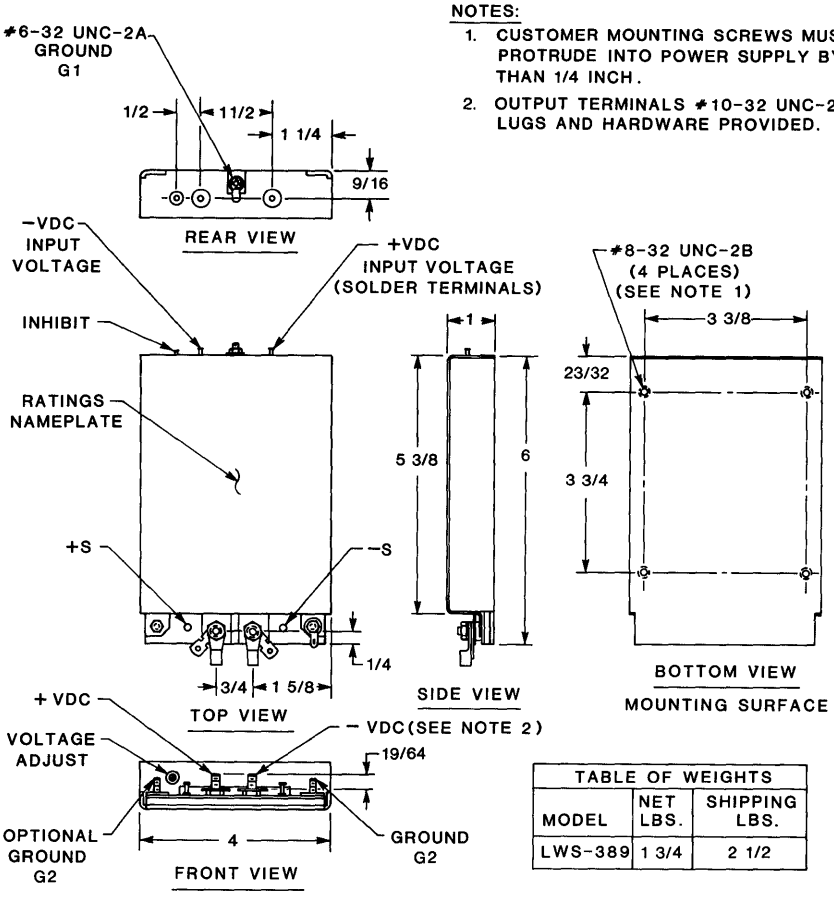
CUSTOMER MUST PROVIDE CLEARANCE IN HIS MOUNTING SURFACE FOR AREA SHOWN TO ALLOW FOR AIR CIRCULATION

NOTES
1 FOR MOUNTING UNIT USE ONE OF THE FOLLOWING METHODS
a) FOUR (4) BOTTOM MOUNTING HOLES
b) TWO (2) RIGHT SIDE AND TWO (2) LEFT SIDE MOUNTING HOLES
c) TWO (2) FRONT AND TWO (2) REAR MOUNTING HOLES

SIDE VIEWS DO NOT SHOW TRANSFORMER COIL PROTRUSION

PART IV—DIMENSIONAL DRAWINGS
LWS-389, LZ SERIES

LWS-389



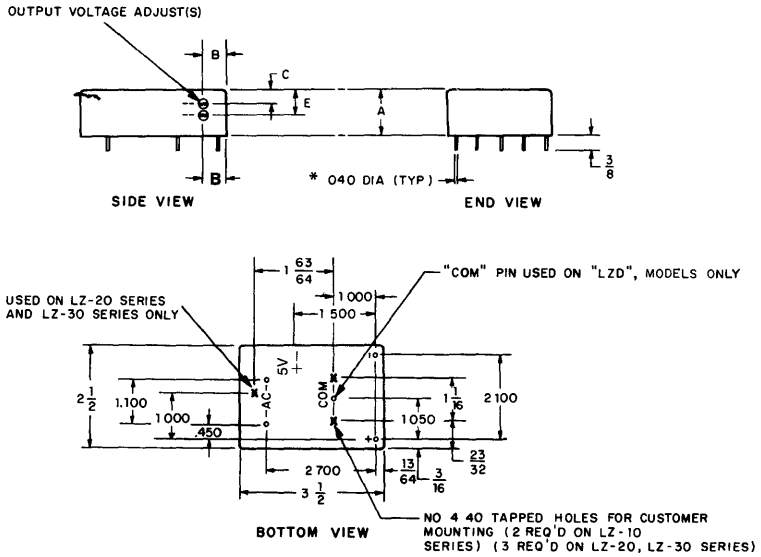
NOTES:
1. CUSTOMER MOUNTING SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4 INCH.
2. OUTPUT TERMINALS #10-32 UNC-2A. LUGS AND HARDWARE PROVIDED.

TABLE OF WEIGHTS		
MODEL	NET LBS.	SHIPPING LBS.
LWS-389	1 3/4	2 1/2

LZ Series

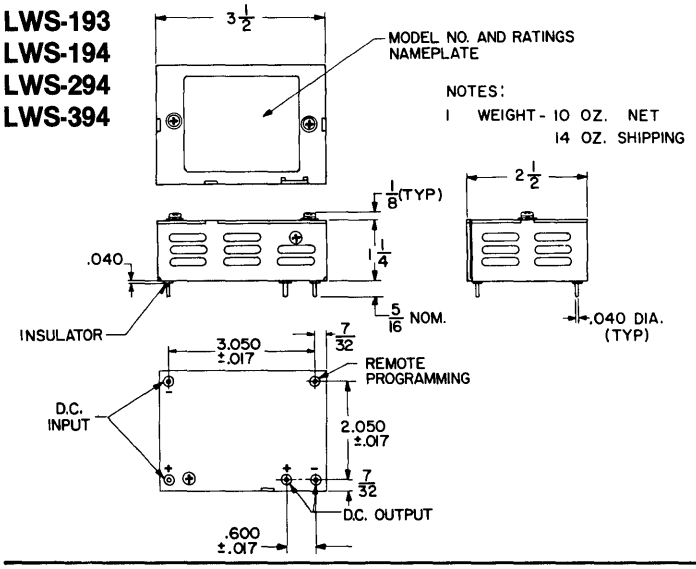
NOTES
1 CUSTOMER'S MOUNTING SCREW MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 1/4"

MODEL	A	B	C	E
LZS-10 SERIES	$\frac{7}{8}$	$\frac{17}{32}$	$\frac{3}{8}$	—
LZ-20 SERIES	$1\frac{1}{4}$	$\frac{17}{32}$	$\frac{3}{8}$	—
LZS-30 LZD-31 SERIES	$1\frac{7}{8}$	$\frac{17}{32}$	$\frac{3}{8}$	—



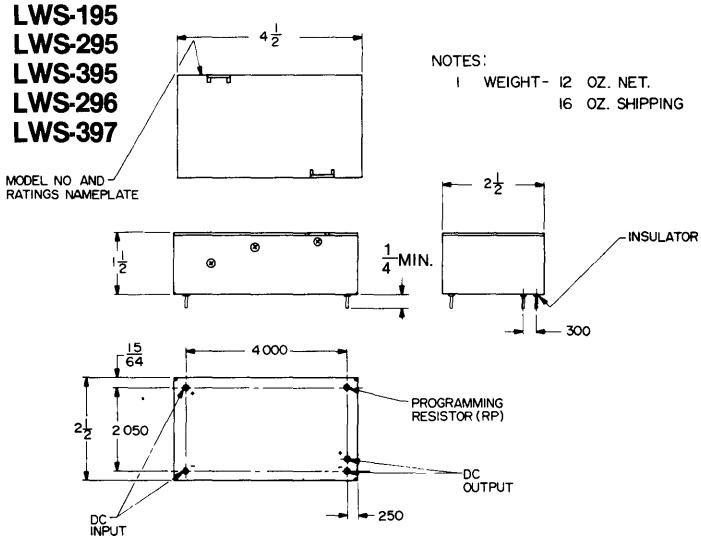
PART IV—DIMENSIONAL DRAWINGS
LW SERIES POWER SUPPLIES

LWS-193
LWS-194
LWS-294
LWS-394



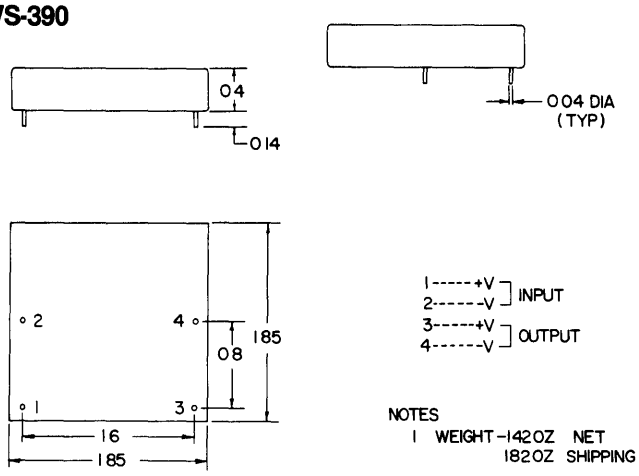
NOTES:
1 WEIGHT- 10 OZ. NET
14 OZ. SHIPPING

LWS-195
LWS-295
LWS-395
LWS-296
LWS-397



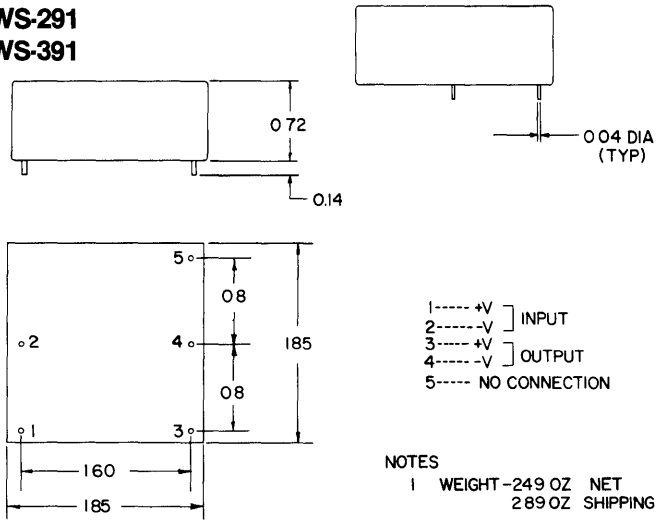
NOTES:
1 WEIGHT- 12 OZ. NET.
16 OZ. SHIPPING

LWS-190
LWS-290
LWS-390



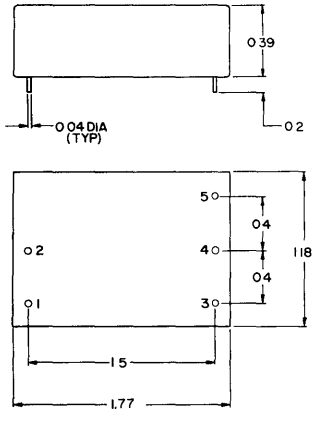
NOTES
1 WEIGHT-142OZ NET
182OZ SHIPPING

LWS-191
LWS-291
LWS-391



NOTES
1 WEIGHT-249 OZ NET
289 OZ SHIPPING

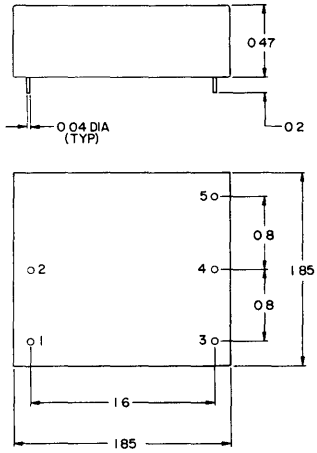
LWD-191
LWD-291
LWD-391



1 ---+V
2 ---V
3 ---+V
4 ---COM
5 ---V
INPUT
OUTPUT

NOTES
1 WEIGHT- OZ NET
OZ SHIPPING

LWD-192
LWD-292
LWD-392

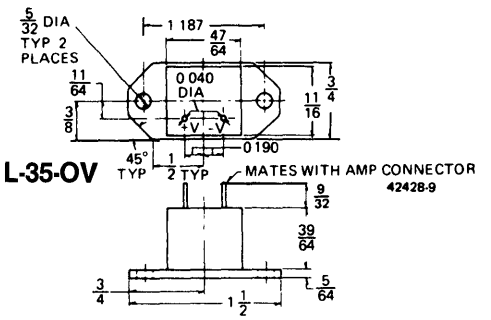


1 ---+V
2 ---V
3 ---+V
4 ---COM
5 ---V
INPUT
OUTPUT

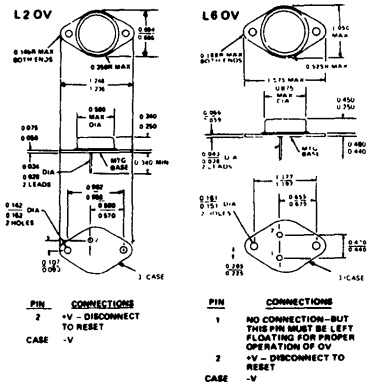
NOTES
1 WEIGHT- OZ NET
OZ SHIPPING

PART IV—DIMENSIONAL DRAWINGS OVERVOLTAGE PROTECTORS AND FILTERS

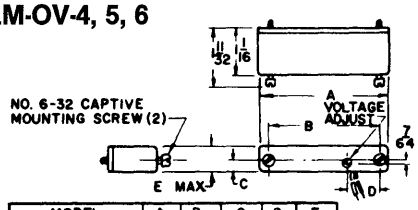
OVERVOLTAGE PROTECTORS



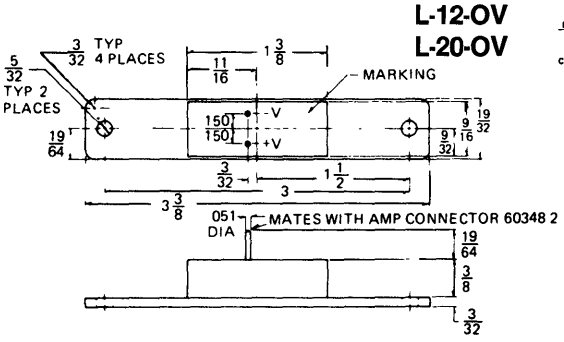
L-35-OV



LM-OV-1, 2, 3
LM-OV-4, 5, 6

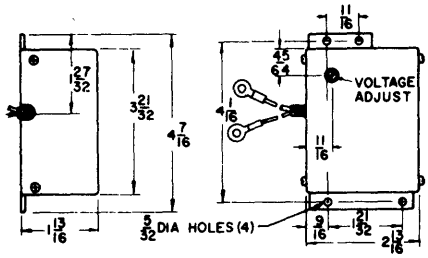


MODEL	A	B	C	D	E
LM,LHOV SERIES	15/32	3	5/16	3/8	5/8

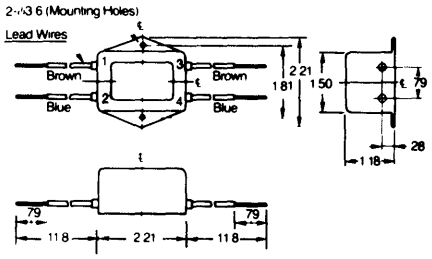


L-12-OV
L-20-OV

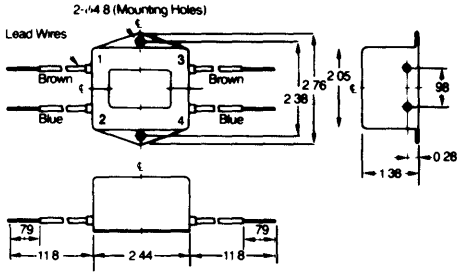
LM-OV-7, 8, 9



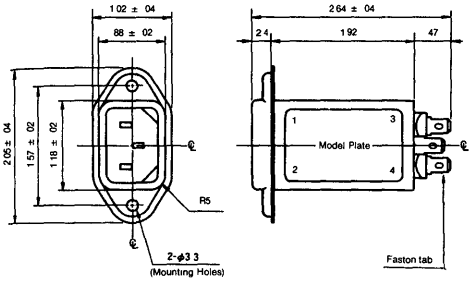
FILTERS

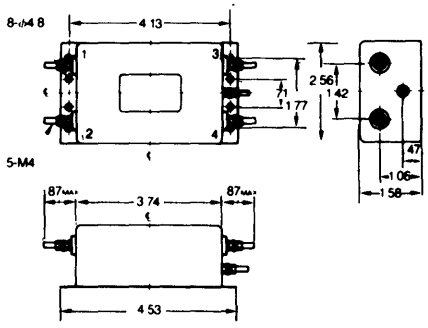


MBW-1203-22

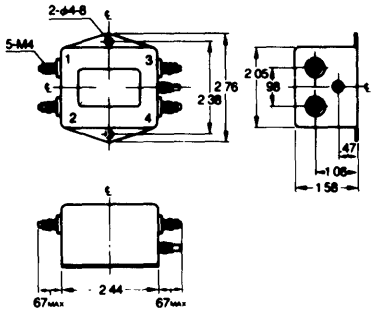


MBW-1205-22

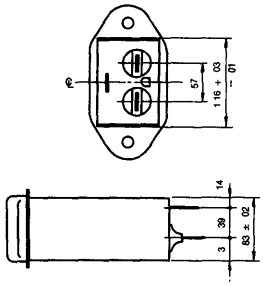




MBS-1220-22



MBS-1210-22



MIF-1203
MIF-1206

PART IV—DIMENSIONAL DRAWINGS LPS SERIES UNINTERRUPTIBLE POWER SUPPLIES, LA SERIES

LPS Series

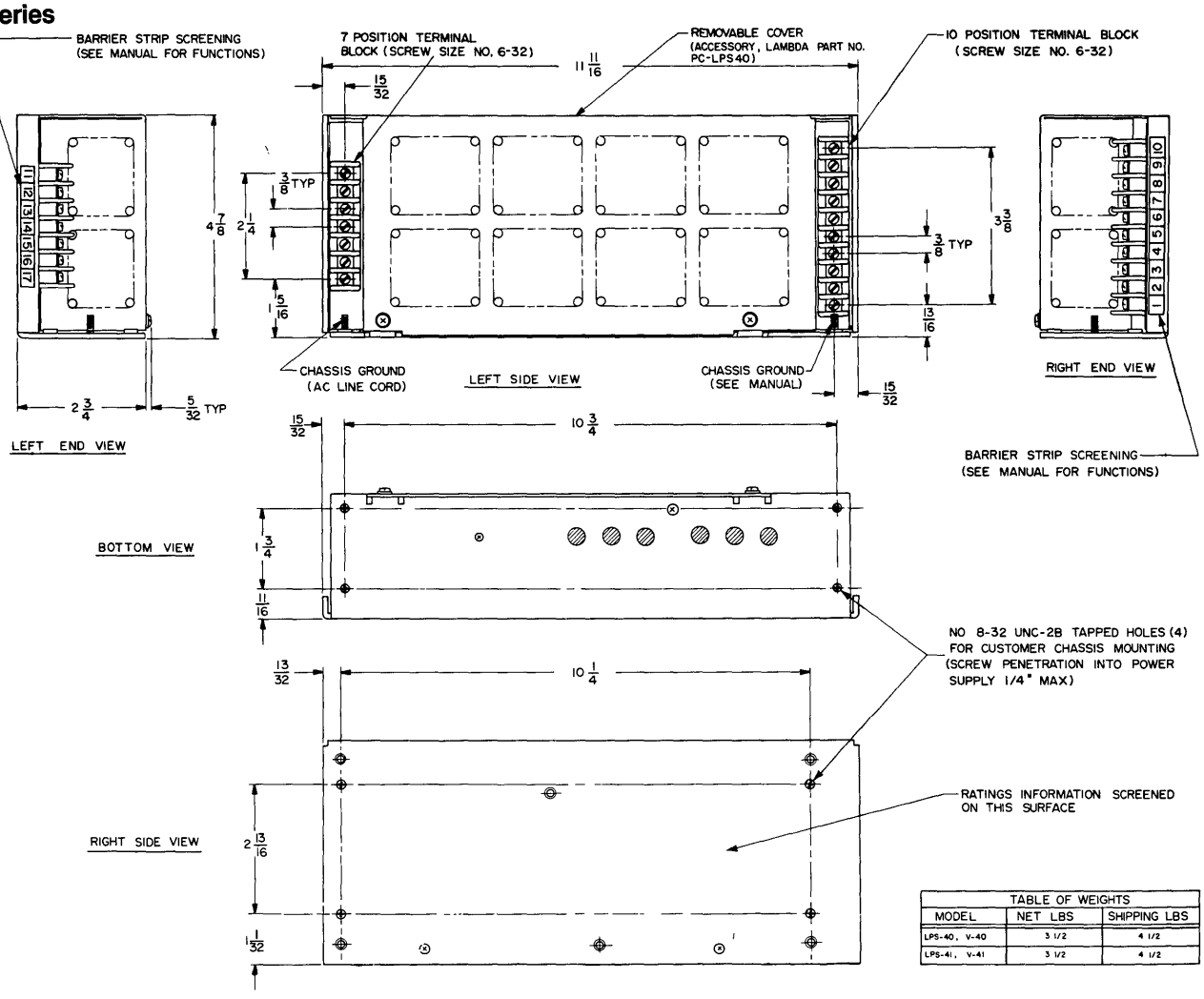
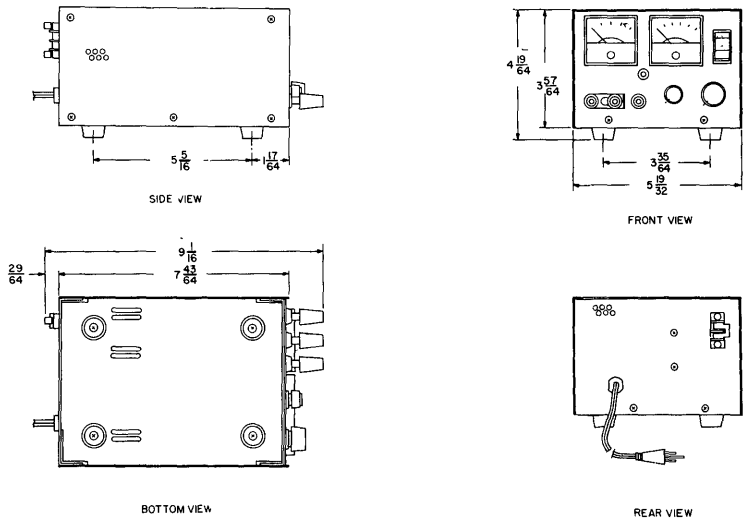


TABLE OF WEIGHTS		
MODEL	NET LBS	SHIPPING LBS
LPS-40, V-40	3 1/2	4 1/2
LPS-41, V-41	3 1/2	4 1/2

LA Series



PART IV—DIMENSIONAL DRAWINGS
LQ SERIES POWER SUPPLIES

LQ-410 Series
LQ-520 Series

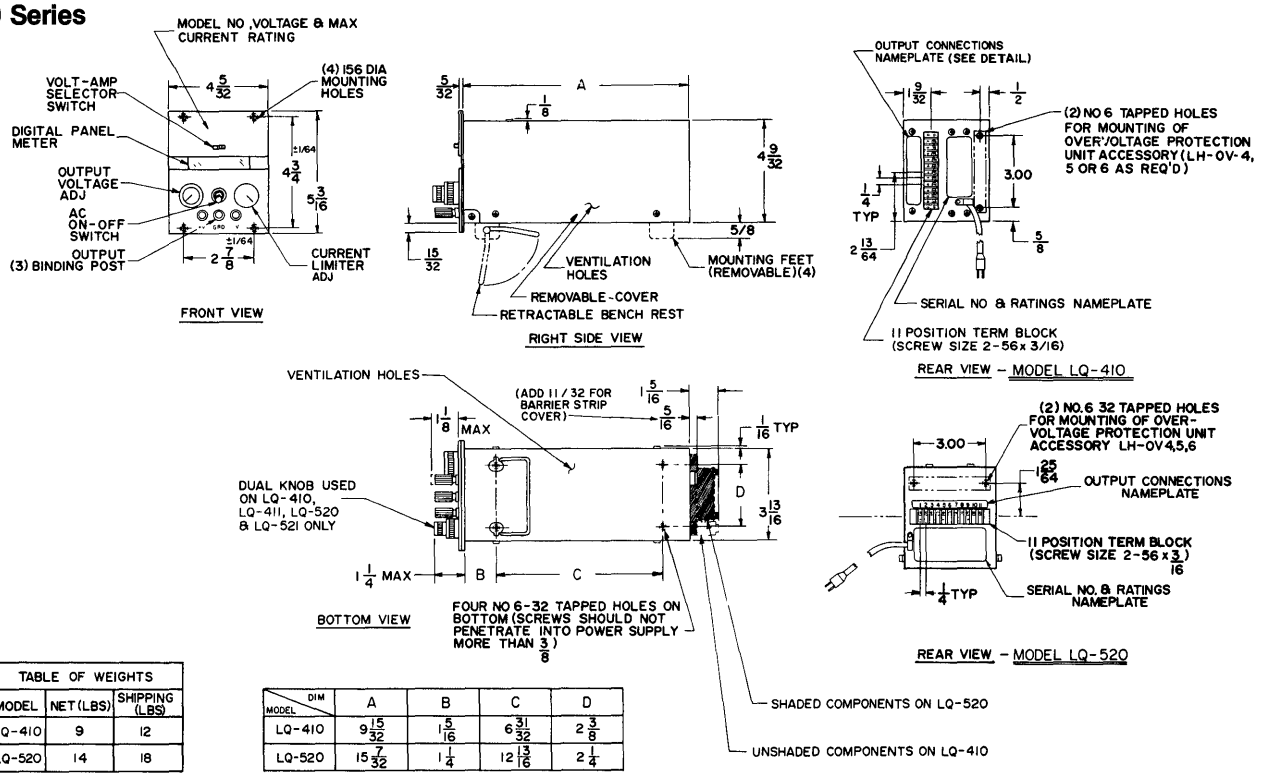


TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LQ-410	9	12
LQ-520	14	18

MODEL \ DIM	A	B	C	D
LQ-410	9 15/32	1 5/16	6 31/32	2 3/8
LQ-520	15 7/32	1 1/4	12 3/16	2 1/4

LQD-420 Series

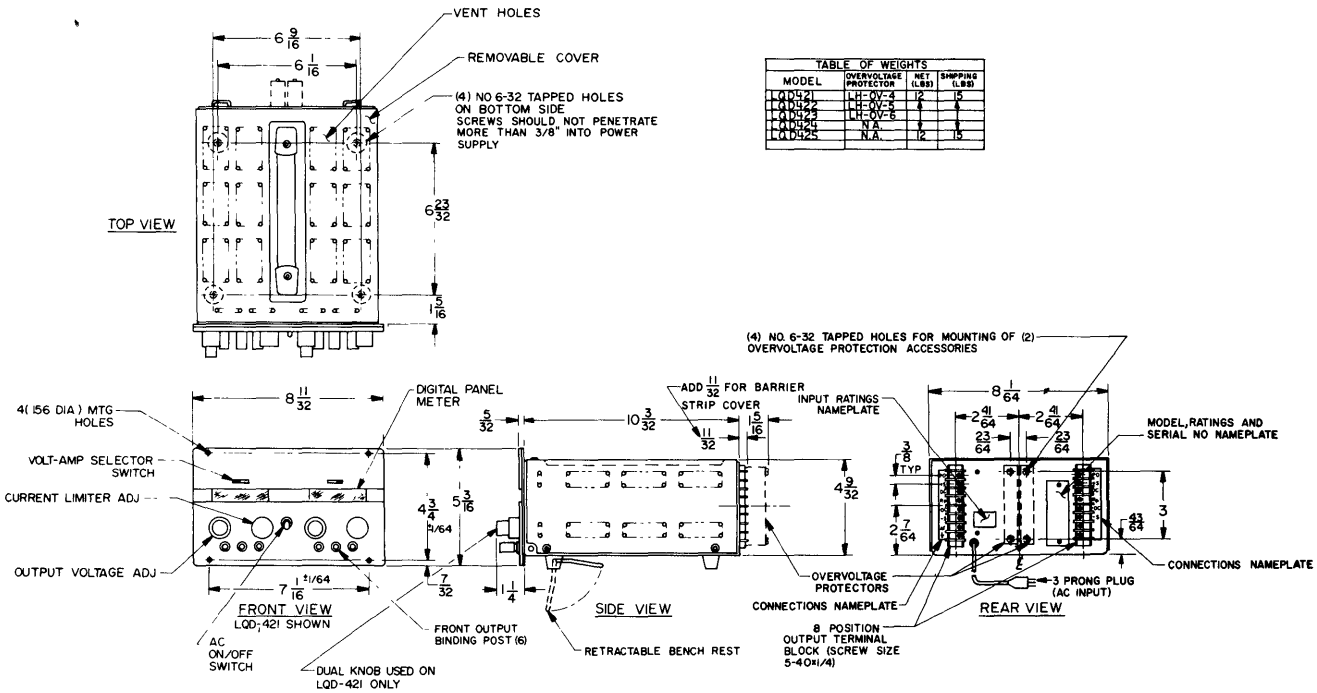


TABLE OF WEIGHTS			
MODEL	OVERVOLTAGE PROTECTOR	NET (LBS)	SHIPPING (LBS)
LQD421	LH-OV-4	12	15
LQD422	LH-OV-5	〃	〃
LQD423	LH-OV-6	〃	〃
LQD424	N.A.	〃	〃
LQD425	N.A.	12	15

PART IV—DIMENSIONAL DRAWINGS
LQ-530, LT-860 SERIES POWER SUPPLIES

LQ-530 SERIES

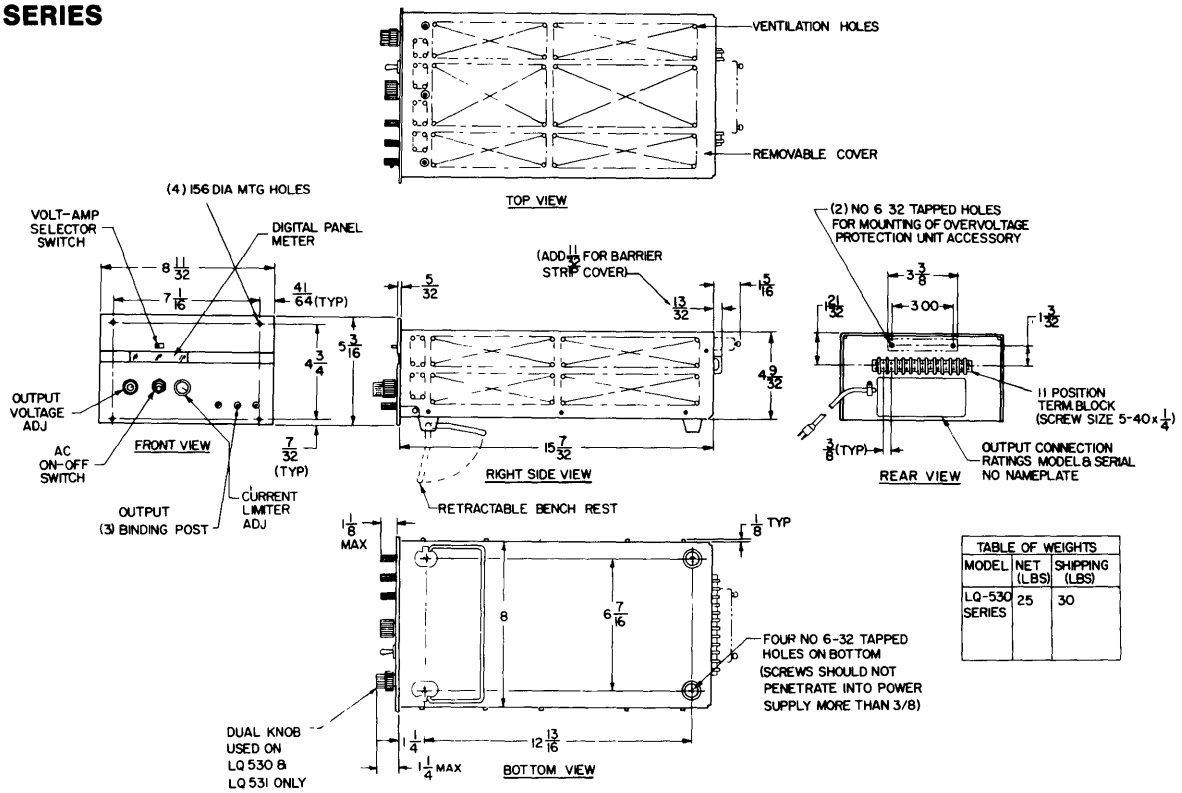


TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LQ-530 SERIES	25	30

LT-860 Series

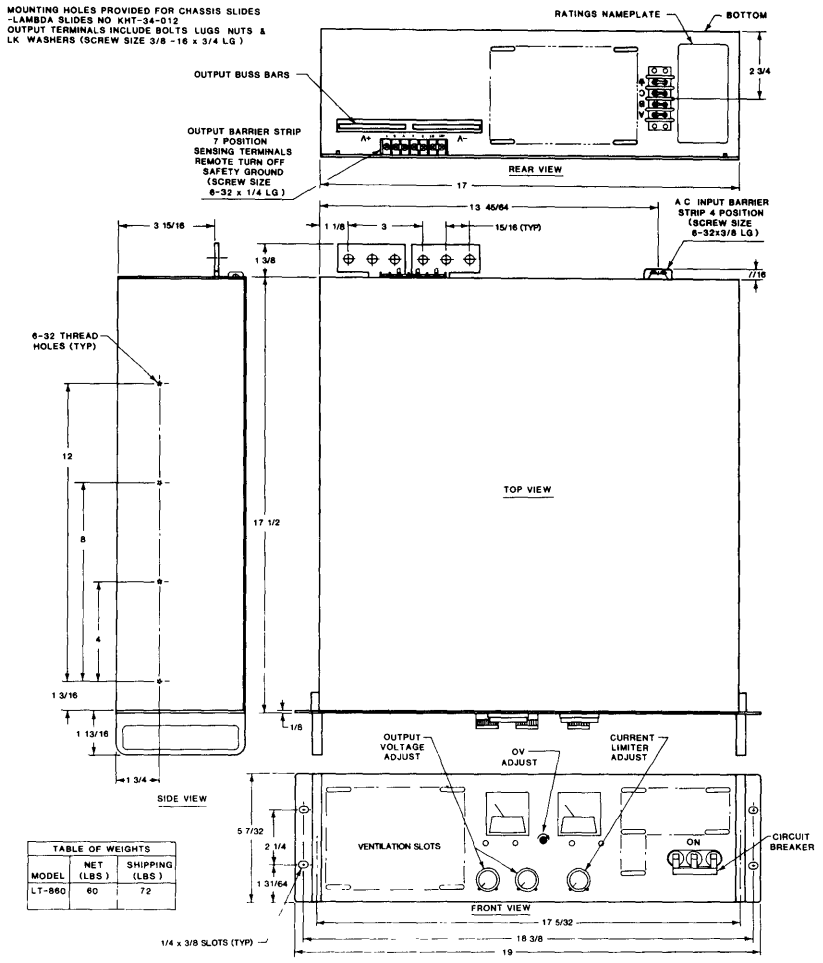


TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LT-860	60	72

PART IV—DIMENSIONAL DRAWINGS
LT SERIES POWER SUPPLIES

LT-800 SERIES

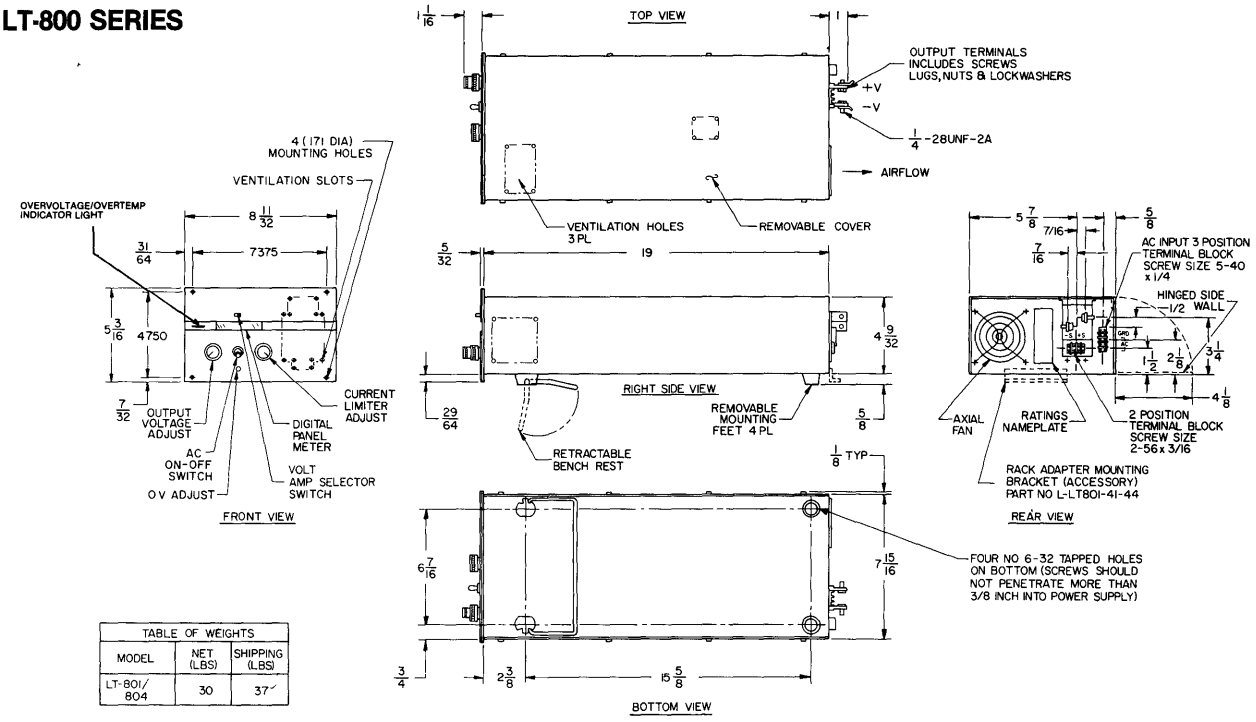


TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LT-801/804	30	37

LT-820 SERIES

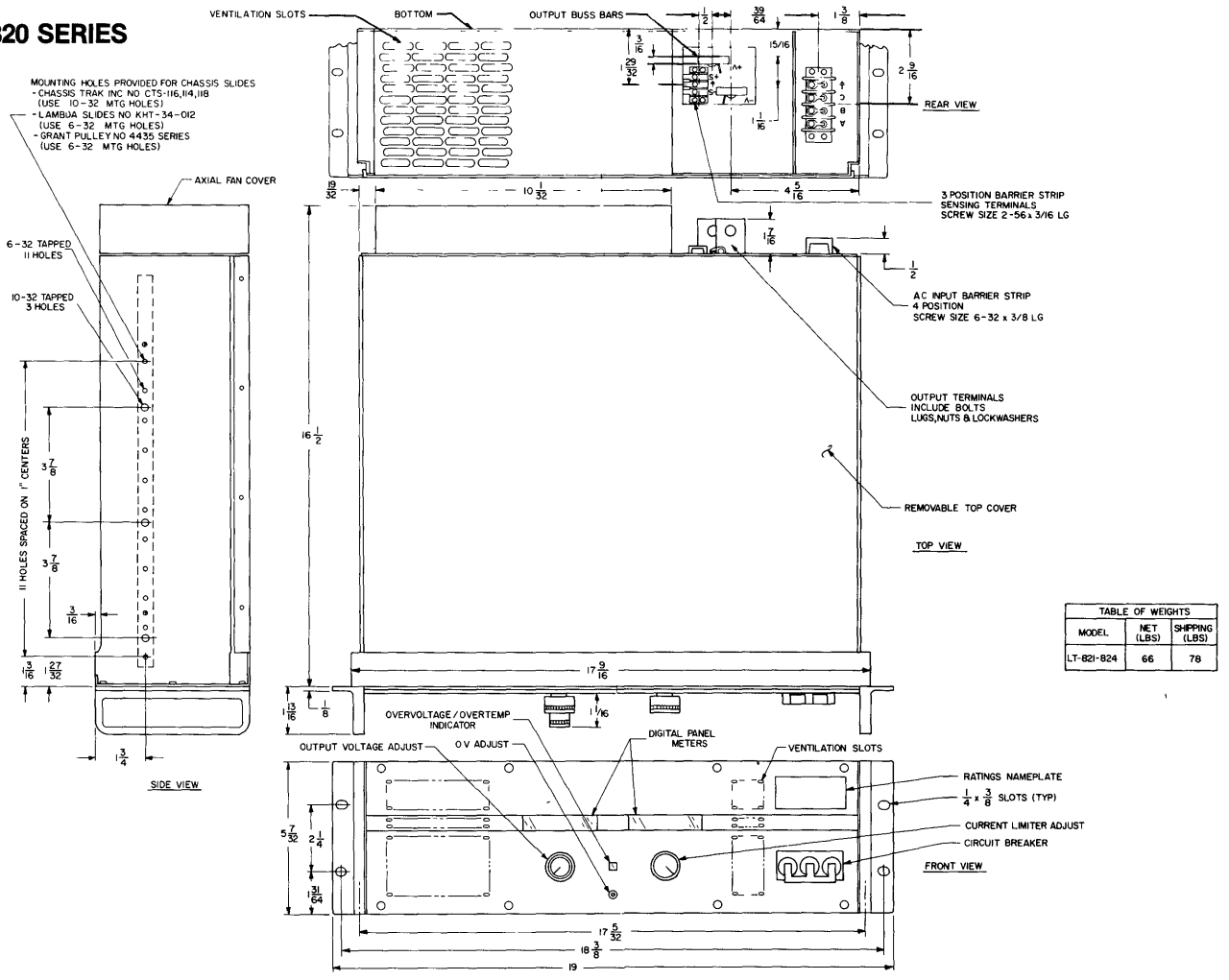
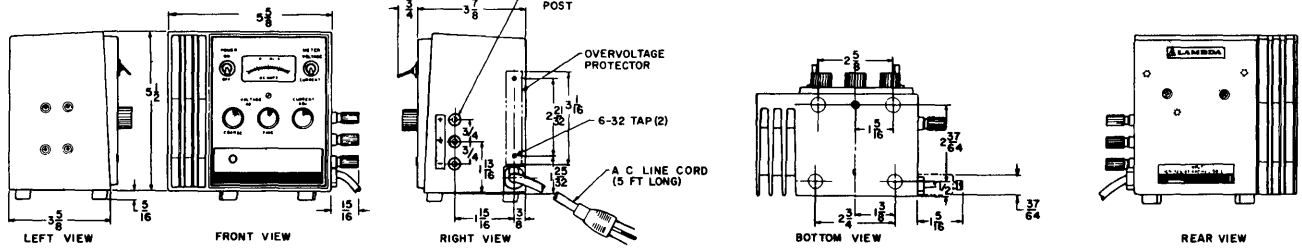


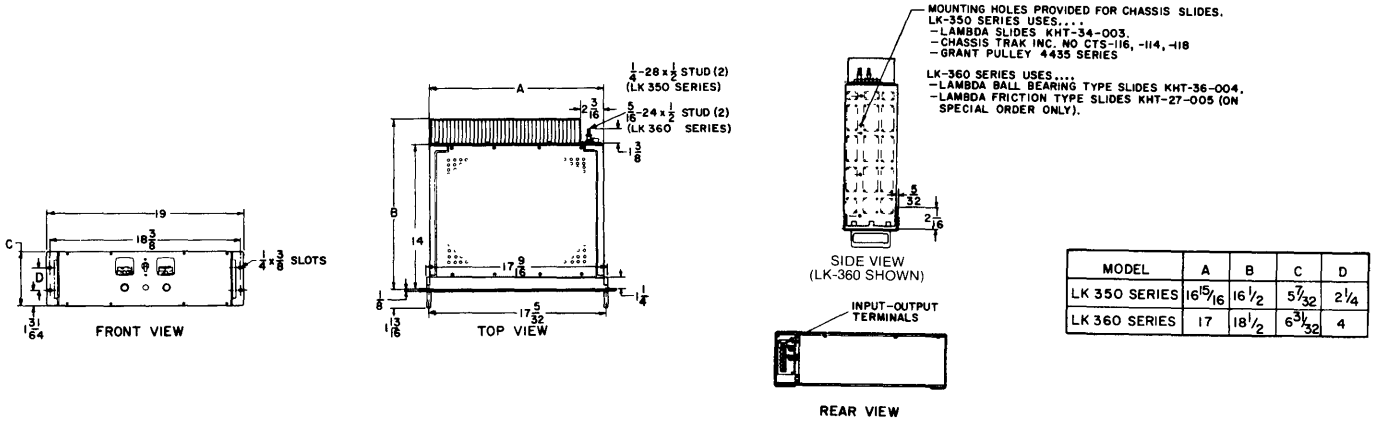
TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LT-821-824	66	78

PART IV—DIMENSIONAL DRAWINGS
LL SERIES, LK SERIES AND LPT SERIES

LL Series

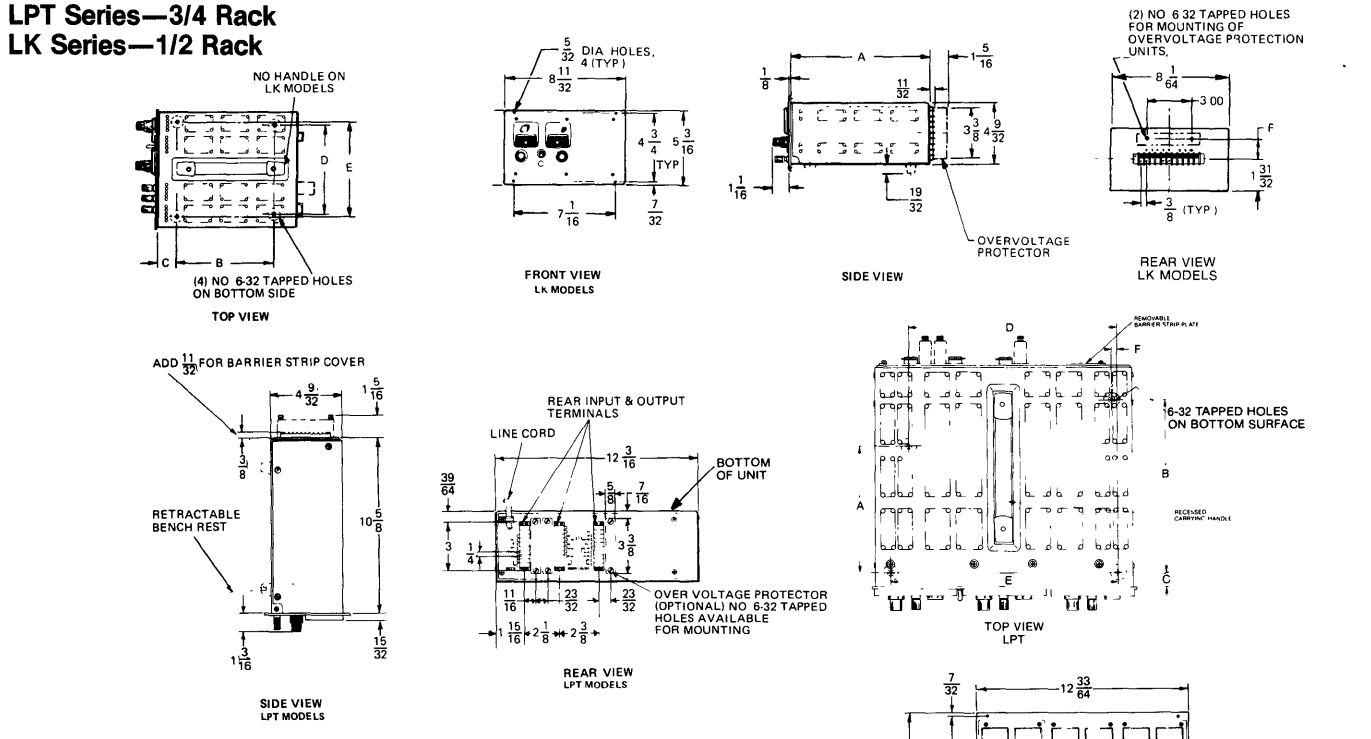


LK Series—Full-Rack Models



MODEL	A	B	C	D
LK 350 SERIES	16 15/16	16 1/2	5 7/32	2 1/4
LK 360 SERIES	17	18 1/2	6 3/32	4

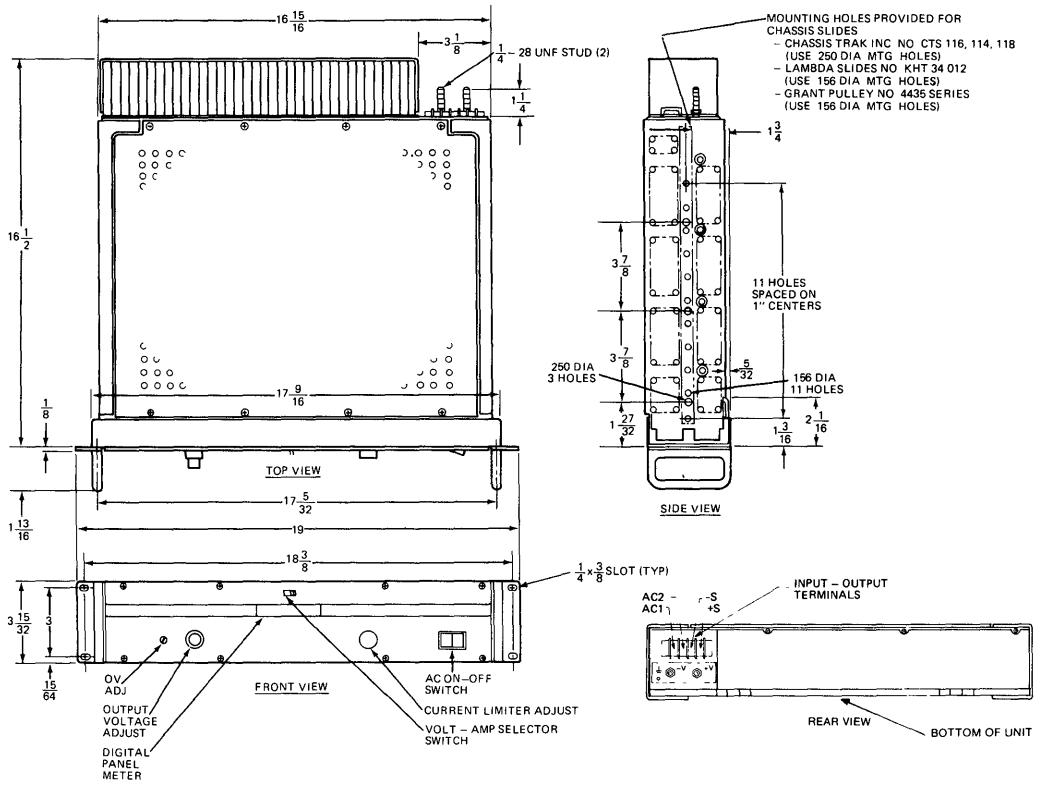
LPT Series—3/4 Rack
LK Series—1/2 Rack



MODEL	A	B	C	D	E	F
LK ½ RACK SERIES	16	12 13/16	1¼	6 7/16	6 7/16	1 27/64
LPT ¾ RACK MODEL	6	7 31/32	21/32	9⅞	10¾	¼

PART IV—DIMENSIONAL DRAWINGS
LES SERIES AND LB SERIES POWER SUPPLIES

LES-F SERIES



LES-EE SERIES

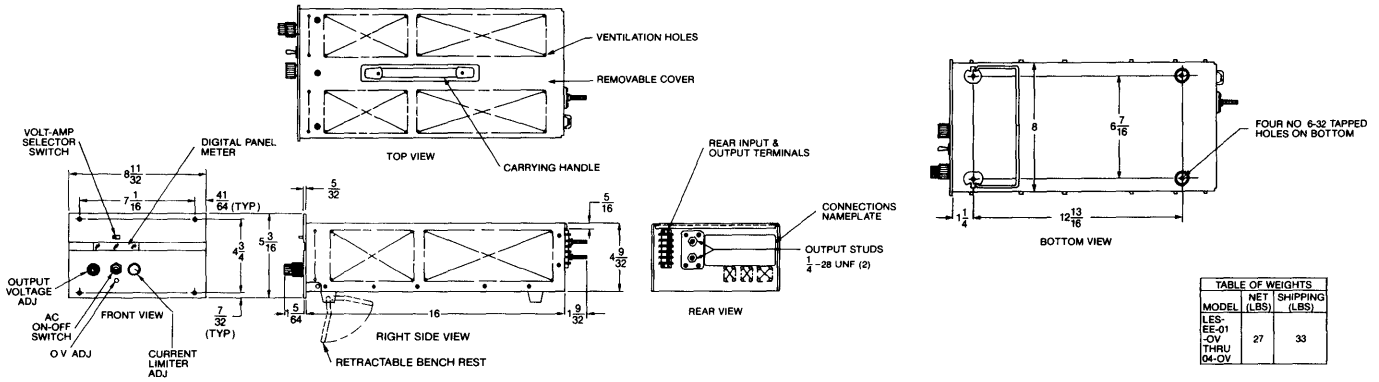
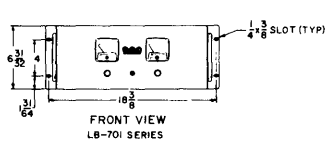
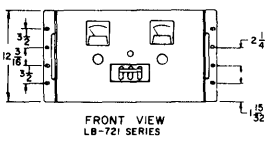
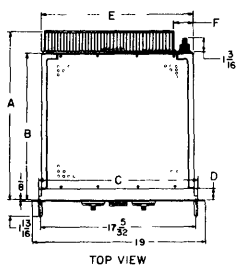


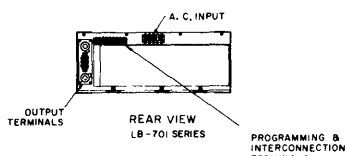
TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LES-EE-01 -OV THRU 04-OV	27	33

LB Series

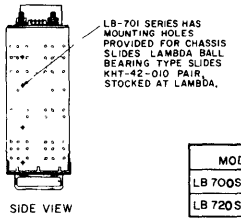








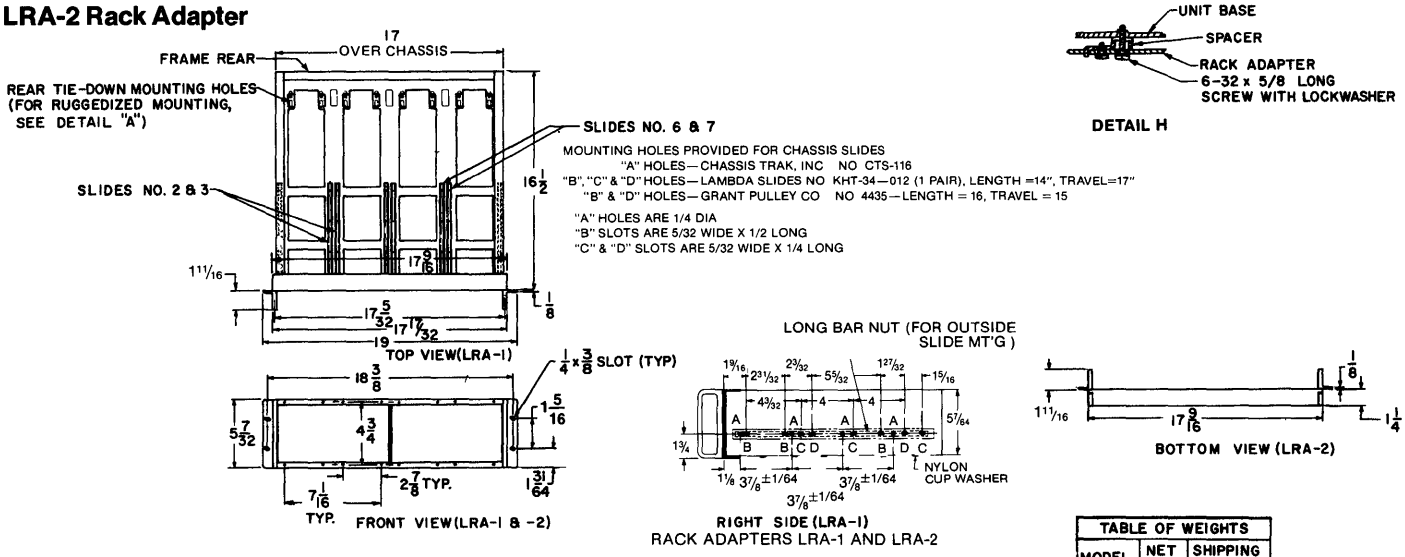
TERMINAL STRIP SCREW SIZE
LB 701 SERIES TB-1 & TB-3 6-32 X 5/16
TB-2 5-40 X 1/4 STUDS — 5/16-24 (1/2-20 ON 701 & 2)
LB 720 SERIES TB-1 6-32 X 5/16,
TB-3 8 32 X 5/16
TB-2 5- 40 X 5/16 STUDS 5/16-24



MODEL	A	B	C	D	E	F
LB 700SERIES	20 1/16	17 33/64	17 9/16	1 1/4	17	2 3/16
LB 720SERIES	22 1/16	19 1/2	17 5/8	1 1/2	17 5/8	2 1/2

PART IV—DIMENSIONAL DRAWINGS
RACK ADAPTERS

LRA-1 Rack Adapter
LRA-2 Rack Adapter



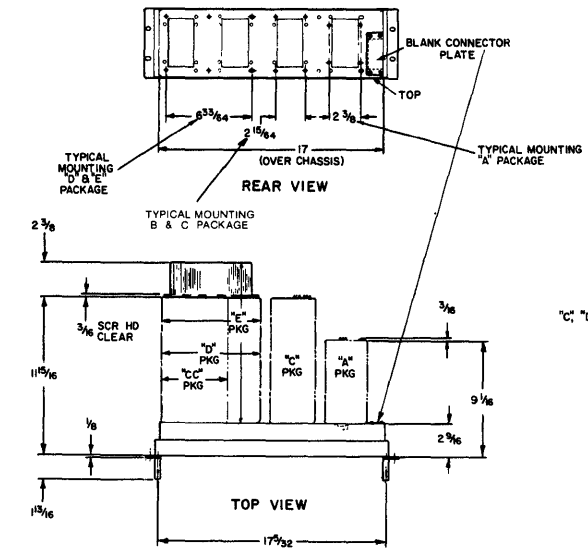
MOUNTING HOLES PROVIDED FOR CHASSIS SLIDES
"A" HOLES—CHASSIS TRAK, INC NO CTS-116
"B", "C" & "D" HOLES—LAMBDA SLIDES NO KHT-34—012 (1 PAIR), LENGTH =14", TRAVEL=17"
"B" & "D" HOLES—GRANT PULLEY CO NO 4435—LENGTH = 16, TRAVEL = 15

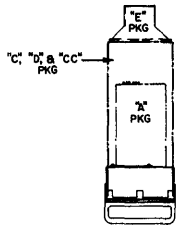
"A" HOLES ARE 1/4 DIA
"B" SLOTS ARE 5/32 WIDE X 1/2 LONG
"C" & "D" SLOTS ARE 5/32 WIDE X 1/4 LONG

RACK ADAPTERS LRA-1 AND LRA-2

TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LRA-1	12	18
LRA-2	3	4
LRA-3	5	6

LRA-3 Rack Adapter

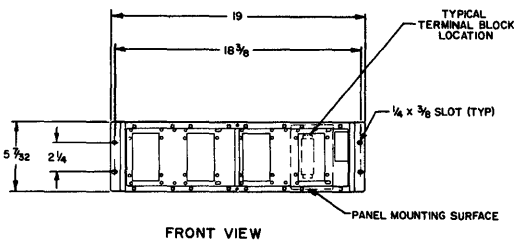




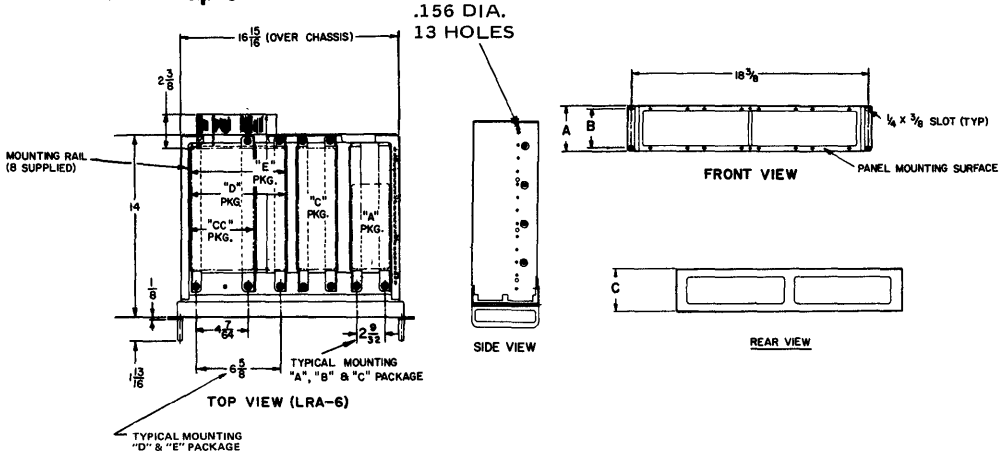
THIS RACK ADAPTER HAS PROVISIONS FOR MOUNTING:
(2) "D" PACKAGES OR "E" PACKAGES OR
(2) "CC" PACKAGES OR (4) "A", "B", OR "C" PACKAGES OR
(1) "D" WITH (1) "E" PACKAGE OR
(1) "CC" OR "D" OR "E" WITH (2) "A", "B", OR "C" PACKAGES OR
(1) "CC" WITH (1) "D" OR "E" PACKAGES.

NOTE:

THE FOLLOWING MODELS WILL NOT FIT IN A LRA-3: LXD-CC, LXS-D, LXD-D, LXT-D, LXS-E, LCS-CC, LCS-D,



LRA-6 Rack Adapter



LRA-6....
THIS RACK HAS PROVISIONS FOR MOUNTING:
(2) D PACKAGES OR E PACKAGES OR
(3) "CC" PACKAGES OR (4) "A", B", OR 'C' PACKAGES OR
(1) 'D' WITH (1) 'E' PACKAGE OR
(1) CC OR D OR 'E' WITH (2) A' B OR C' PACKAGES OR
(1) CC WITH (1) 'D' OR E PACKAGES OR
(4) NO 1 OR NO 2 OR NO 3 PACKAGES OR
(3) NO 4 PACKAGES

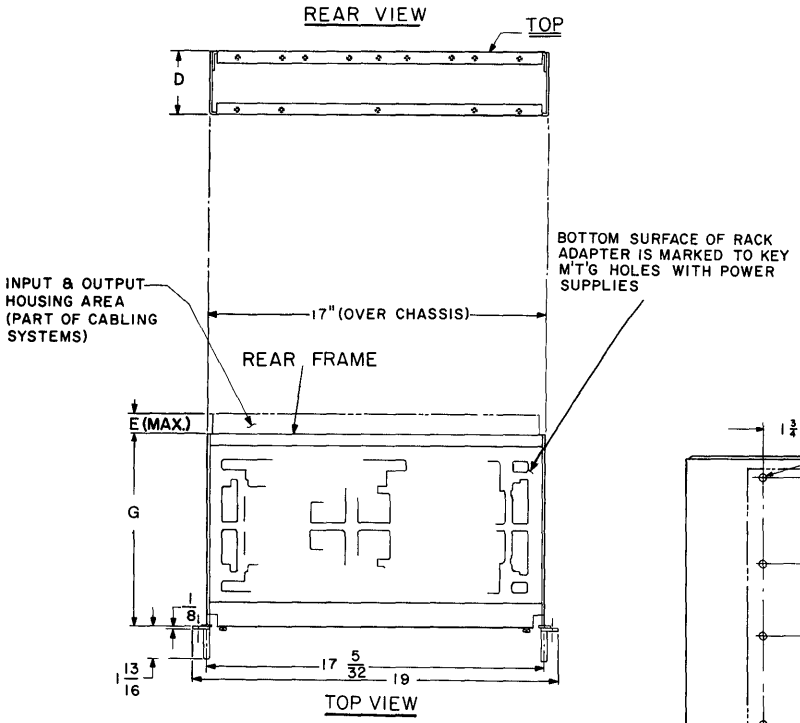
MODEL	A	B	C
LRA-6	5 7/32	2 1/4	5 1/16

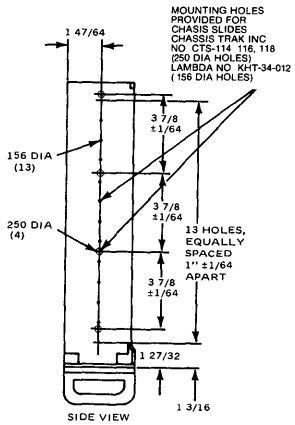
TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LRA-4	14	15

MOUNTING HOLES PROVIDED FOR CHASSIS SLIDES. LRA-6 USES ....
- CHASSIS TRAK INC NO CTS-116,114,118;
- JONATHAN MFG CO NO. 130 SERIES,
- GRANT PULLEY NO 4435 * LRA-4 ONLY,
- LAMBDA SPECIAL SLIDE PART NO KHT-34-012

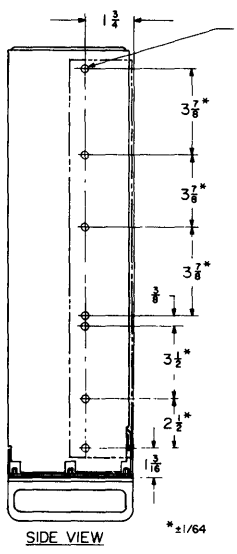
PART IV—DIMENSIONAL DRAWINGS
RACK ADAPTERS

LRA-14 Rack Adapter
LRA-15 Rack Adapter
LRA-17 Rack Adapter

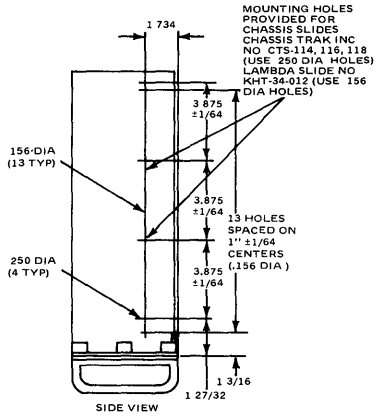




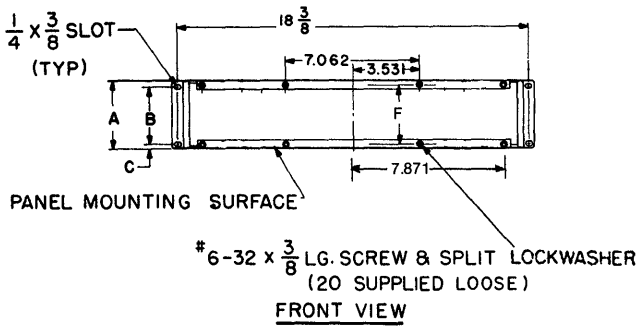
LRA-14



LRA-17



LRA-15



MODEL	A	B	C	D	E	F	G
LRA-14	3 15/32	3	15/64	3 21/64	1 1/4	3	14
LRA-15	5 7/32	2 1/4	1 31/64	5 5/64	1 1/4	4 3/4	14
LRA-17	5 7/32	2 1/4	1 31/64	5 1/16	1 1/4	4 3/4	21 1/8

LRA - 14, LRA - 15: MOUNTING HOLES PROVIDED FOR CHASSIS SLIDES: LAMBDA SPECIAL SLIDE NO. KHT - 34 - 012 CHASSIS TRAK INC. NO. CTS - 114, 116, 118

LRA - 17: MOUNTING HOLES PROVIDED FOR CHASSIS SLIDES: LAMBDA SPECIAL SLIDE NO. KHT - 44 - 013 CHASSIS TRAK INC. NO. CTS - 122

TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LRA-14	8 1/2	12
LRA-15	10	13
LRA-17	13 3/4	17

PART V—5 YEAR GUARANTEE— THAT INCLUDES LABOR... NOW IN EFFECT FOR 33 YEARS

Lambda's 5-Year Guarantee has proven itself more than six times over. It has covered most Lambda manufactured power components, power instruments and power systems sold since 1953. It is another proof of Lambda's high caliber engineering, product design, quality control and production techniques which result in exceptional reliability.

Labor and Materials

The Lambda Five-Year Guarantee (see below) covers labor and all materials (except fuses) when returned to the factory. It also includes all semiconductor components within power supplies. The LU, LY, LPS, LF, LS and LI Series are covered by a similar 1-year guarantee. These guarantees do not include non-magnetic components supplied with power kits, any of Lambda's power semiconductors when purchased as separate components or the LZ, LO, LA, LW, or LV Series low cost power supplies. (See product pages for warranty information for these products.)

Components Free of Charge, If You Repair

If the customer chooses to perform the maintenance, Lambda will supply all replacements for defective components without cost within the guarantee period only.

Performance to Published Specifications

The Lambda 5-Year Guarantee covers the operation of the power unit for five years to published specifications. If, at any time during the five-year period, a power product does not meet the published specification when used *within* specified ratings, it can be returned to the factory for calibration. Contact the factory or the nearest Lambda office before returning equipment. Shipments must be prepaid and include reason for return.

Transferable If You Sell Unit

If the unit is sold to a manufacturer who is using it in a system, which he is reselling, the complete guarantee is transferable—as long as the Lambda power product is sold as original equipment.

All Lambda Modifications

The 5-Year Guarantee covers most Lambda products, including units which have been modified by Lambda to fit customer's specific requirements.

5 Year Guarantee

We warrant each instrument manufactured by us and sold by us or our authorized agents, to be free from defects in material and workmanship, and that, if operated properly, it will perform within applicable specifications for a period of five years after original shipment. Our obligation under this guarantee is limited to repairing or replacing any instrument or part thereof (except fuses) which shall, within five years after delivery to the original purchaser, be returned to us with transportation charges prepaid, prove after our examination to be thus defective.

This warranty is in lieu of all other warranties, express or implied and constitutes fulfillment of all our liabilities to purchaser. **We do not warrant that the instruments can be used for any particular purpose other than those covered by the applicable specifications.** We assume no liability, in any event, for consequential damages; for anticipated or lost profits, incidental damages or loss of time or other losses incurred by purchaser or any third party in connection with instruments covered by this warranty or otherwise.

In addition, we assume no liability to a purchaser or any third party for any damages, including consequential damages, anticipated or lost profits, incidental damages or loss of time, or damage to any property of a purchaser or any third party (including loss of use thereof) resulting from or arising out of or in connection with nuclear material including source material, special nuclear material and byproduct material, as such terms are defined in the Atomic Energy Act of 1954 or in any law amendatory thereof), whether alleged to be due, in whole or in part, to our negligence, and a purchaser must agree to indemnify and hold us harmless against any loss, liability, expense or damage arising out of or in connection with the use of nuclear material by the purchaser or any third party, whether alleged to be due, in whole or in part, to the negligence, fault or otherwise of us.

We reserve the right to discontinue instruments without notice, and to make modifications in design without incurring any obligation to make such modifications to instruments previously sold.

PART V—GENERAL ORDERING INFORMATION

Prices

U.S.—All prices F.O.B. Melville, N.Y., Tucson, Arizona, Corpus Christi, Texas or McAllen, Texas for Power Supplies, Custom Power Supplies, Power Semiconductors, and Accessories. All prices are effective December 1, 1986.
Canada—Please contact Montreal office for prices and handling charges of units shipped from Montreal, Canada. All prices are effective December 1, 1986 and are in U.S. funds.

TERMS
Net 30 days.

MINIMUM ORDER
$60.00 Minimum order.
3.00 Minimum for each line item on order.

TAXES
All applicable taxes, federal, state and local, are extra.

DISCOUNTS
Available to quantity buyers. For details consult with the Lambda Sales Department or Field Sales Engineer.

QUOTATIONS
All written quotations will be honored for 30 days from the date on which they are made.

SOURCE INSPECTION
2% EXTRA ($50.00 minimum) per shipment for standard in-plant inspection procedures. For shipments requiring DD 250 forms, add $30.00 for each destination.

DISTRIBUTION POINTS
Lambda power supplies, power semiconductors, and accessories are shipped from distribution points for minimum shipping costs.

AREAS SERVED
1. Melville, New York
2. McAllen, Texas
3. Montreal, Canada
4. Corpus Christi, Texas
5. Tucson, Arizona

See specific product series description for options and accessories available with each product series. Options and accessories available with each series are described in the "Specifications Pages." Accessories are also described on pages 77-82, 118.

SHIPMENT
Express shipment in our experience has provided the fastest and safest delivery of power supplies. Unless you specifically request otherwise, your order will usually be forwarded in this manner. Urgent needs can be accommodated by air express or air freight in accordance with your instructions. If equipment is received damaged, it is the customer's responsibility to contact the carrier and file a claim for damages.

DELIVERY
Under normal conditions, we ship from stock. Over 90% of all power supply models can be shipped within 24 hours. If circumstances do not permit immediate delivery on a particular model, you will be notified at once and a firm shipping date will be given to you. Urgent requirements often can be handled on an expedited basis. Your mail, telephone or telegraph order or inquiry will bring you a same-day reply. Lambda accepts scheduled delivery orders. Contact your nearest Lambda sales office, see page 160.

OVERSEAS MODELS
Most units are wired for operation at 115 VAC. Models can generally be provided for operation from 187 to 242 VAC (V-option) or from 205 to 265 VAC (VI-option). Consult specifications for each series for price and availability of this option. Most models will accommodate a range of input frequencies from 47 to 63 Hz while some models accept source frequencies up to 440 Hz. Consult specification page of each series for input ratings.

EXPORT PACKING
We will crate in a separate wooden box for export shipment. Consult factory for prices.

RATINGS
All components used are of the highest quality and are operated well within manufacturers' ratings. Ample safety factors are provided in the design to insure the long life, and the dependable, trouble-free operation so desirable in military, industrial and laboratory applications.

TESTING
Each Lambda power supply is electrically tested to insure conformance with published specifications. There is a large safety margin between published maximum specifications and factory test limits. This tolerance is incorporated in the specifications to allow for normal industrial component deviations over time.

TEST DATA
Free of Charge
A Lambda certificate of compliance and Lambda standard test data. Lambda standard test data consists of checking (✓) a pre-prepared form for the specific model. No readings are taken. No serial numbers recorded.

For 2% or $25 per shipment, whichever is greater.
Lambda now checks the power supply to Lambda's test points and readings are recorded. The serial number of the power supply is noted.

From the quotation dept.
If the customer needs more than the above as described, we will be pleased to provide a written quote to suit individual needs.

WARRANTY
(5 YEARS). Most Lambda products listed in this catalog are backed by a firm five-year warranty covering the cost of parts and labor. The warranty is honored at our Service Departments in Melville, New York; Montreal, Canada; Bucks, England; Orsay, France; Achern, Germany; Tel Aviv, Israel; Tokyo, Japan; and Singapore. Advise Lambda of equipment to be returned and request shipping instructions.

PART V—GENERAL ORDERING INFORMATION

REPAIRS

Goods Under Warranty

Lambda will repair goods covered by our warranty. To return goods an RMA number is required see paragraphs below. Goods beyond the 5 year guarantee, or the 1 year guarantee for LU, LY, LPS, LF, LS and LI series, will be repaired only after customer has authorized quoted repair charges.

REPAIR PARTS

Repair parts are always in stock for immediate shipment for repair purposes. When ordering a repair part, please give the Lambda part number, serial number and date of original purchase of power supply. Customers may repair and calibrate equipment without voiding the guarantee, provided work is performed in a workmanlike manner. Lambda will supply parts free of charge to those customers who elect to repair equipment that is under the warranty.

90 day Warranty products

LO series, LZ series, LA series, LW series and LV series which are out of warranty will not be repaired by Lambda. However, repair parts can be purchased and customer can make repairs.

SHIPMENTS TO FACTORY

Warranty Repairs

Power supplies covered under the Lambda warranty in need of repair require return material authorization numbers prior to shipment to factory. See return material authorization paragraph below.

Where to return goods

See map, page 160 for telephone numbers to call for return goods instructions.

Returned Goods ordered in error

Standard material ordered incorrectly may be exchanged for the proper unit by contacting the factory for a return authorization number. Restocking charges of 25% or $25.00, whichever is greater, are applicable to all models with the following exceptions. LM Series units are non-returnable.

All returned equipment must be new, unused, in the original carton, and in the customer's possession no more than 30 days. Shipments must be prepaid, contain return authorization number and reason for return plus instructions for return shipment and be packed in a manner to preclude shipping damage. Any shipping damage will be the responsibility of the customer.

Assemblies, accessories, power supplies with built-in options, non-standard or obsolete power supplies or any material modified or built to customer specifications cannot be accepted for credit.

Return Material Authorization Numbers

All returning goods must have a return material authorization (RMA) number marked on carton. Number should be marked on minimum of 2 sides of carton, 2 inches high and 5 inches long minimum. To receive RMA number contact Lambda. See map page 160. All goods must be shipped prepaid.

PART V—PRODUCT/PRICE INDEX

PART V—PRODUCT/PRICE INDEX

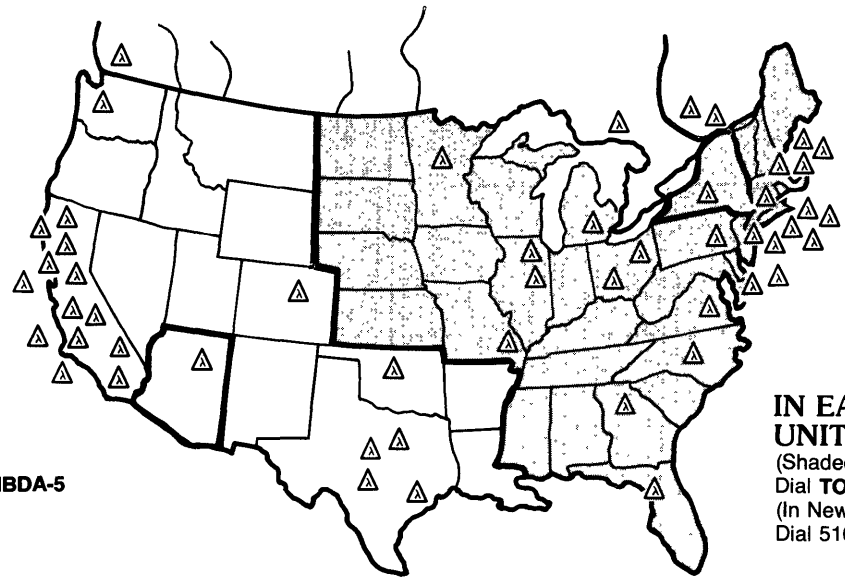
PART V—PRODUCT/PRICE INDEX

PART V—PRODUCT/PRICE INDEX

Model	Price	Page
LWD-392-12	$76	65
LWD-392-15	76	65
LWS-190-5	$49	64
LWS-190-12	49	64
LWS-190-15	49	64
LWS-191-5	$59	64
LWS-191-12	59	64
LWS-191-15	59	64
LWS-193-5	$89	64
LWS-193-24	89	64
LWS-194-5	$119	64
LWS-194-24	119	64
LWS-195-5	$150	64
LWS-195-24	150	64
LWS-290-5	$49	64
LWS-290-12	49	64
LWS-290-15	49	64
LWS-291-5	$59	64
LWS-291-12	59	64
LWS-291-15	59	64
LWS-294-5	$119	64
LWS-294-24	119	64
LWS-295-5	$150	64
LWS-295-24	150	64
LWS-296-28	$200	65
LWS-296-48	200	65
LWS-389-5	$400	66
LWS-389-6	400	66
LWS-389-12	400	66
LWS-389-15	400	66
LWS-389-20	400	66
LWS-389-24	400	66
LWS-389-28	400	66
LWS-390-5	$49	64
LWS-390-12	49	64
LWS-390-15	49	64
LWS-391-5	$59	64
LWS-391-12	59	64
LWS-391-15	59	64
LWS-394-5	$119	65
LWS-394-24	119	65
LWS-395-5	$150	65
LWS-395-24	150	65
LWS-397-28	$200	65
LWS-397-48	200	65
LXD-C-062-R	$599	23
LXD-C-152-R	599	23
LXD-D-152-R	991	23
LXD-EE-152-R	1476	23
LXS-A-5-OV-R	$311	17
LXS-A-6-R		76
LXS-A-12-R		76
LXS-A-15-R	295	19
LXS-C-5-OV-R	$531	17
LXS-C-6-R	517	18
LXS-C-12-R	517	18
LXS-C-15-R	517	19
LXS-CC-5-OV-R	$695	17
LXS-CC-6-R		76
LXS-CC-12-R		76
LXS-CC-15-R		76
LXS-CC-20-R		76
LXS-CC-24-R	657	20
LXS-CC-28-R	657	21
LXS-D-5-OV-R	$811	17
LXS-D-6-R		76
LXS-D-12-R		76
LXS-D-15-R		76
LXS-D-20-R		76
LXS-D-24-R	799	20
LXS-D-28-R	799	21
LXS-E-5-OV-R	$1007	17
LXS-E-6-R		76
LXS-E-12-R		76
LXS-E-15-R	994	19
LXS-E-20-R		76
LXS-E-24-R		76
LXS-E-28-R	994	21
LXS-EE-5-OV-R	$1378	17
LXS-EE-6-OV-R		76
LXS-EE-12-R		76
LXS-EE-15-R		76
LXS-EE-20-R		76
LXS-EE-24-R		76
LXS-EE-28-R	1313	21
LXT-D-5152-B-R	$1249	23
LYS-D-5-OV	$698	7
LYS-D-6-OV		76
LYS-D-12-OV	698	7
LYS-D-15-OV		76
LYS-D-20-OV		76
LYS-D-24-OV	698	8
LYS-D-28-OV	698	8
LYS-D-48-OV	698	8
LYS-D-5-D	$710	63
LYS-D-6-D	710	63
LYS-D-12-D	710	63
LYS-D-15-D	710	63
LYS-D-20-D	710	63
LYS-D-24-D	710	63
LYS-D-28-D	710	63
LYS-EE-5-OV	$1070	7
LYS-EE-6-OV		76
LYS-EE-12-OV	1070	7
LYS-EE-15-OV	1070	7
LYS-EE-20-OV		76
LYS-EE-24-OV	1070	8
LYS-EE-28-OV	1070	8
LYS-EE-48-OV	1070	8
LYS-K-5-OV	$499	7
LYS-K-6-OV		76
LYS-K-12	469	7
LYS-K-15	469	7
LYS-K-20		76
LYS-K-24	469	8
LYS-K-28	469	8
LYS-K-5-D	$473	63
LYS-K-6-D	473	63
LYS-K-12-D	473	63
LYS-K-15-D	473	63
LYS-K-20-D	473	63
LYS-K-24-D	473	63
LYS-K-28-D	473	63
LYS-P-5	$360	7
LYS-P-6		76
LYS-P-12	360	7
LYS-P-15	360	7
LYS-P-20		76
LYS-P-24	360	8
LYS-P-28	360	8
LYS-P-48	360	8
LYS-P-5-D	$365	63
LYS-P-6-D	365	63
LYS-P-12-D	365	63
LYS-P-15-D	365	63
LYS-P-20-D	365	63
LYS-P-24-D	365	63
LYS-P-28-D	365	63
LYS-W-5	$283	7
LYS-W-6		76
LYS-W-12	283	7
LYS-W-15	283	7
LYS-W-20		76
LYS-W-24	283	8
LYS-W-28	283	8
LYS-W-48	283	8
LYS-W-5-D	$295	63
LYS-W-6-D	295	63
LYS-W-12-D	295	63
LYS-W-15-D	295	63
LYS-W-20-D	295	63
LYS-W-24-D	295	63
LYS-W-28-D	295	63
LYS-X-5	$230	7
LYS-X-6		76
LYS-X-12	230	7
LYS-X-15	230	7
LYS-X-20		76
LYS-X-24	230	8
LYS-X-28	230	8
LYS-X-48	230	8
LYS-Y-5	$193	7
LYS-Y-6	193	7
LYS-Y-12	193	7
LYS-Y-15	193	7
LYS-Y-20		76
LYS-Y-24	193	8
LYS-Y-28	193	8
LYS-Y-48	193	8
LYT-D-5122	$765	9
LYT-D-5152	765	10
LYT-P-5122	$447	9
LYT-P-5152	447	10
LYT-W-5122	$364	9
LYT-W-5152	364	10
LZD-21	$100	24
LZD-22	76	24
LZD-23	100	24
LZD-32	119	24
LZD-35	169	24
LZS-10	$68	24
LZS-11	68	24
LZS-30	119	24
LZS-33	119	24
MLGS-5A-5-OV	$1295	5
MLGS-5A-6-OV	1295	5
MLGS-5A-12-OV	1295	5
MLGS-5A-15-OV	1295	5
MLGS-5A-20-OV		76
MLGS-5A-24-OV	1295	5
MLGS-5A-28-OV	1295	5
MLGS-6A-5-OV	$1740	5
MLGS-6A-6-OV		76
MLGS-6A-12-OV	1740	5
MLGS-6A-15-OV	1740	5
MLGS-6A-20-OV		76
MLGS-6A-24-OV	1740	5
MLGS-6A-28-OV	1740	5
MLGS-EEA-5-OV	$2115	5
MLGS-EEA-6-OV		76
MLGS-EEA-12-OV	2115	5
MLGS-EEA-15-OV	2115	5
MLGS-EEA-20-OV		76
MLGS-EEA-24-OV	2115	5
MLGS-EEA-28-OV	2115	5
ACCESSORIES		
L-2-OV-5	$3.25	77
L-2-OV-6	3.25	77
L-2-OV-12	3.25	77
L-2-OV-15	3.25	77
L-2-OV-20	3.25	77
L-2-OV-24	3.25	77
L-2-OV-28	3.25	77
L-6-OV-5	$6.10	77
L-6-OV-6	6.10	77
L-6-0V-12	6.10	77
L-6-OV-15	6.10	77
L-6-OV-20	6.10	77
L-6-OV-24	6.10	77
L-6-OV-28	6.10	77
L-12-OV-5	$22	77
L-12-OV-6	22	77
L-12-OV-9	22	77
L-12-OV-12	22	77
L-12-OV-15	22	77
L-12-OV-20	22	77
L-12-OV-24	22	77
L-12-OV-28	22	77
L-12-OV-30	22	77
L-20-OV-5	$31.75	77
L-20-OV-6	31.75	77
L-20-OV-12	31.75	77
L-20-OV-15	31.75	77
L-20-OV-20	31.75	77
L-20-OV-24	31.75	77
L-20-OV-28	31.75	77
L-20-OV-30	31.75	77
L-35-OV-5	$40.40	77
L-35-OV-6	40.40	77
L-35-OV-12	40.40	77
LBP-11	$25	118
LBP-20	43	118
LBP-21	43	118
LM-OV-1	$50	78
LM-OV-2	50	78
LM-OV-3	50	78
LH-OV-4	61	78
LH-OV-5	61	78
LH-OV-6	61	78
LM-OV-7	129	78
LM-OV-8	129	78
LM-OV-9	129	78
LRA-1	$158	118
LRA-2	92	118
LRA-3	92	79
LRA-6	158	79
LRA-14	141	79
LRA-15	141	79
LRA-17	179	79
LRA-1-CS	305	79
LRA-6-CS	305	79
LRA-14-CS	288	79
LRA-15-CS	288	79
LRA-17-CS	326	79
MBW-1203-22	$15.25	80
MBW-1205-22	16.25	80
MBS-1210-22	$21.60	80
MBS-1220-22	27.00	80
MIF-1203-22	$15.25	80
MIF-1206-22	16.25	80
M-YSD-2	$177	78
M-YSK-2	133	78
M-YSP-2	99	78
M-YSW-2	91	78
M-YSX-2	70	78
M-YSY-2	70	78
M-YTP-2	127	78
M-YTW-2	87	78
M-YTD-2	211	78
PC-1	$4.20	118
SB-22	$25	118
SB-30	45	79
SB-40	43	118
SB-50	43	79

LAMBDA-STAFFED DOMESTIC SALES AND SERVICE OFFICES

To contact the direct-factory Lambda Sales Engineer responsible for your account and located in your area, or to contact Customer Service for price, delivery or placing purchase orders, call as follows:



IN WESTERN UNITED STATES
Dial **TOLL FREE 1-800-LAMBDA-5**
(In Arizona, Alaska and Hawaii, Dial 602-746-1011)

IN EASTERN UNITED STATES
(Shaded area)
Dial **TOLL FREE 1-800-LAMBDA-4**
(In New York and Puerto Rico Dial 516-694-4200)

ADDRESS ALL CUSTOMER CORRESPONDENCE TO:
LAMBDA ELECTRONICS
515 BROAD HOLLOW ROAD
MELVILLE, NY 11747-3700
TEL: 516-694-4200
TWX: 510-224-6484
FAX: 516-293-0519
FAX: 516-752-2649

WORLDWIDE LAMBDA-STAFFED SALES AND SERVICE OFFICES

INTERNATIONAL
Lambda Electronics Export Dept.
515 Broad Hollow Road
Melville, N.Y. 11747
Tel. 516-694-4200
TWX: 510-224-6484
Cable: Lambdatron, Melville, N.Y.
FAX: 516-293-0519
FAX: 516-752-2649

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Lambda Electronics
4125 Cousens St.
St. Laurent
Quebec H4S 1V6
Tel. 1-800-361-6130
Telex: 05-822582
FAX: 514-697-4336
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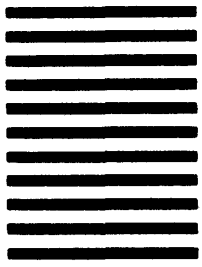

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TECHNOLOGY FOR 1987

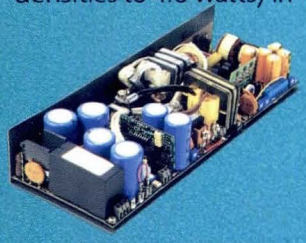
In 1987, Lambda continues to add exciting new products, and to expand its existing broad line of standard power supplies. These products represent the smallest, most cost-effective, and most reliable products available in the market today. They are designed for new applications, and to solve specific customer needs. All products are built on Lambda's innovative leading-edge technology in design, packaging and manufacturing, and are intended to revolutionize the power supply marketplace for value and performance.

NEW PRODUCTS APPEARING IN THE 1987 CATALOG INCLUDE:

LR SERIES—Lambda's 5th generation switching power supplies are now available up to 48V and up to 250A. Designed for the most demanding applications, they provide higher reliability with a 50% lower parts count, in a 25% smaller, more rugged package.

LV/LV-E SERIES—With prices starting at $24 00, the LV Series is an ideal power supply for many OEM applications. They are now available with an extended input voltage range of 85–265 VAC, without a tap change. These new LV-E models provide a low cost, standard solution to custom output requirements.

LFS SERIES—This dual input, switching power supply series is designed for applications where low cost, small size, and high performance are required. There are 48 models in six package sizes, ranging up to 48V, and up to 200A. Through the use of state-of-the-art circuitry and manufacturing techniques, as well as SMD technology, Lambda's LFS Series has achieved power densities to 4.0 watts/in³ and OEM pricing from only 60¢/watt.



WATTBOX™ LFQ SERIES—Lambda's new dual input, quad output power supplies are available in three power ranges: 325, 475 and 635 watts. Utilizing the same design, technology as the LFS Series, Lambda's LFQ Series achieves the highest power densities of any standard off-the-shelf product, and is ideal for low-cost, multiple-output OEM applications.

LT-860/870 SERIES—Lambda's new LT-860/870 Series provides up to 500A in a smaller, lighter, less expensive package. Models are available as a system supply (LT-860 Series) or as a stand alone GPIB power supply (LT-870 Series). They are ideal for laboratory, burn-in, test, and systems applications.

LWS-389 SERIES—Lambda's newest line of high density DC-to-DC converters measure only 1 × 4 × 6 inches and deliver up to 250 watts of highly-regulated output power without auxiliary circuitry. Designed for both convection and conduction cooling, all models incorporate the use of patented Lambda circuitry and packaging techniques, including SMD, to achieve a power density in excess of 10 watts/in³.

MATEPLUS™—This unique new programmable power supply system fully complies with the requirements set forth by the MATE specifications using CIIL (Control Interface Intermediate Language) mnemonics. In, addition, the system offers features in excess of the MATE requirements, making it the most versatile programmable power system on the market. The MATEPLUS™ Programmable Power Supply System includes all interconnection wiring, comes completely assembled and tested, and carries Lambda's 5-year guarantee.

Lambda's new product lines have been designed for telecommunications, automatic test equipment, computers and peripherals, medical, and OEM applications. They are cost effective, efficient, highly reliable, and are backed by the Lambda guarantee.

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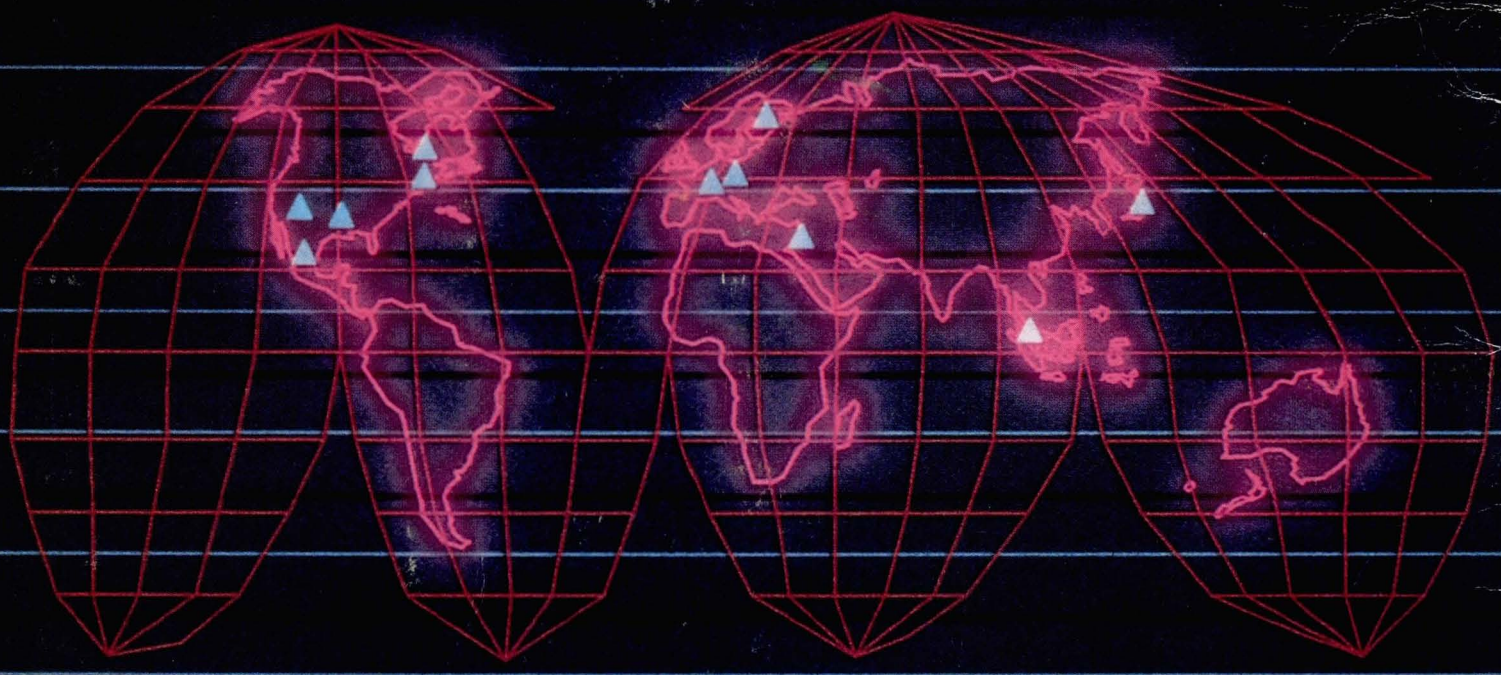

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