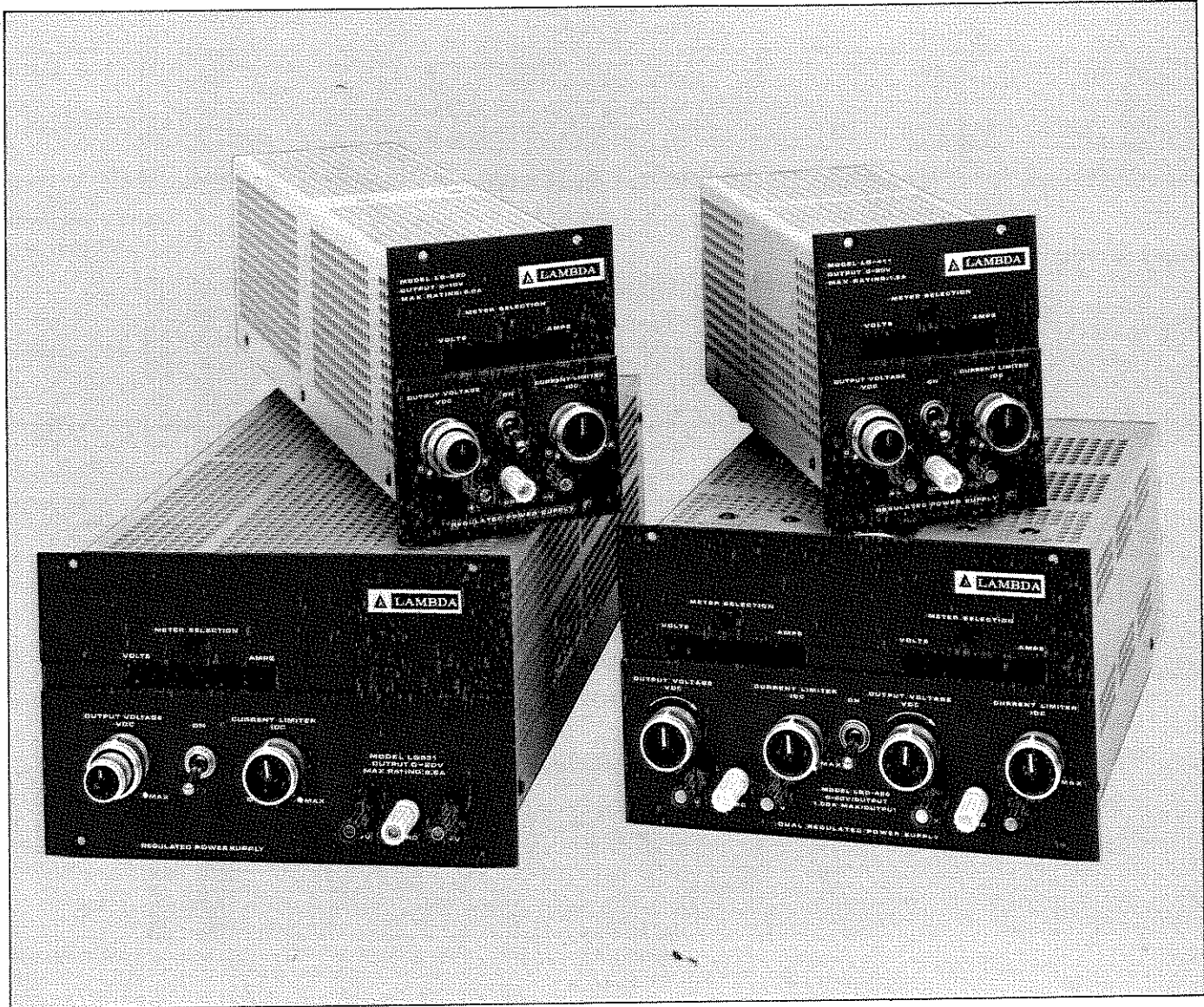


PART III — LAB, TEST EQUIPMENT AND SYSTEM POWER SUPPLIES

Lambda LQ Series



Features—LQ Series

PURE DC

Regulation: 0.005%

Ripple: 150 μ V

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 AT AMBIENT OF (Per Output/Outputs in Parallel)				PRICE
		30°C	40°C	50°C	60°C	
LQD-421	0-±20/0-40	1.7/3.4	1.5/3.0	1.3/2.6	0.90/1.8	\$937
LQD-422	0-±40/0-80	1.0/2.0	0.85/1.70	0.7/1.4	0.55/1.1	937
LQD-423	0-±60/0-120	0.7/1.4	0.60/1.20	0.5/1.0	0.40/0.80	937
LQD-424	0-±120/0-240	0.38/0.76	0.32/0.64	0.26/0.52	0.20/0.40	937
LQD-425	0-±250/0-500	0.13/0.26	0.12/0.24	0.11/0.22	0.10/0.20	1056

SINGLE OUTPUTS

MODEL	VOLTAGE RANGE	MAXIMUM CURRENT AMPS AT AMBIENT OF				PRICE
		30°C	40°C	50°C	60°C	
LQ-410	0-10	2.0	1.8	1.6	1.4	\$536
LQ-411	0-20	1.2	1.1	1.0	0.80	536
LQ-412	0-40	1.0	0.90	0.80	0.60	536
LQ-413	0-60	0.45	0.41	0.37	0.33	536
LQ-415	0-250	80mA	72mA	65mA	60mA	616

MODEL	VOLTAGE RANGE VDC	MAXIMUM CURRENT AMPS AT AMBIENT OF				PRICE
		30° C	40° C	50° C	60° C	
LQ-520	0-10	5.0	4.7	4.3	3.7	\$647
LQ-521	0-20	3.3	3.0	2.6	2.3	647
LQ-522	0-40	1.8	1.6	1.4	1.2	647
LQ-523	0-60	0.9	0.8	0.7	0.6	647
LQ-524	0-120	0.5	0.45	0.4	0.35	675

MODEL	VOLTAGE RANGE VDC	MAXIMUM CURRENT AT AMBIENT OF								PRICE
		30° C		40° C		50° C		60° C		
		At Vmax	At Vmin	At Vmax	At Vmin	At Vmax	At Vmin	At Vmax	At Vmin	
LQ-530	0-10	14.0	10.0	12.7	9.0	11.0	8.0	9.2	7.2	\$872
LQ-531	0-20	8.6	6.0	8.6	5.6	7.4	5.1	6.4	4.6	872
LQ-532	0-40	5.0	3.5	5.0	3.3	4.5	3.0	3.9	2.7	872
LQ-533	0-60	3.3	2.4	3.3	2.3	3.0	2.1	2.5	1.9	872
LQ-534	0-120	1.7	1.1	1.7	1.2	1.6	1.0	1.5	0.9	956

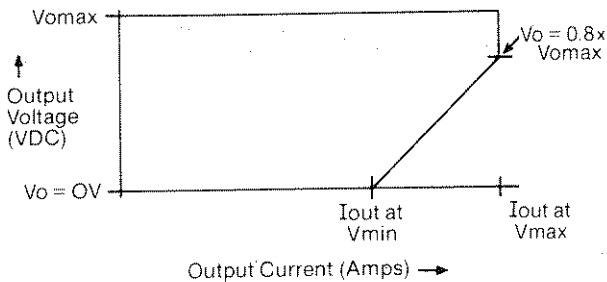
Specifications—LQ Series, LPT Series

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 μ V RMS (300 μ V on LQ-415 and LQD-425) with plus or minus terminal grounded. (1.5 mV PK-PK, 500 μ V RMS for LPT.)
temperature coefficient	\pm (0.005% V_o + 10 μ V)/ $^{\circ}$ C. (With external programming resistors). (0.015% to 3 mV/ $^{\circ}$ C for LPT).
remote programming resistance	1000 Ω /volt nominal (500 Ω nominal on LQ-415 and LQD-425 200 Ω /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 voltagevolt/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 \approx 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.
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Ambient Operating Temperature

Continuous duty from 0 to 60 $^{\circ}$ C with appropriate deratings above 30 $^{\circ}$ C (see table).

Storage Temperature

- 55 $^{\circ}$ C to + 85 $^{\circ}$ 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% $V_o\ max$ to $V_o\ max$ is provided by the internal programming potentiometer; programming over the full 0 to $V_o\ max$ 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		Size Inches
	Lbs. Net.	Lbs. Ship	
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 106)
 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.