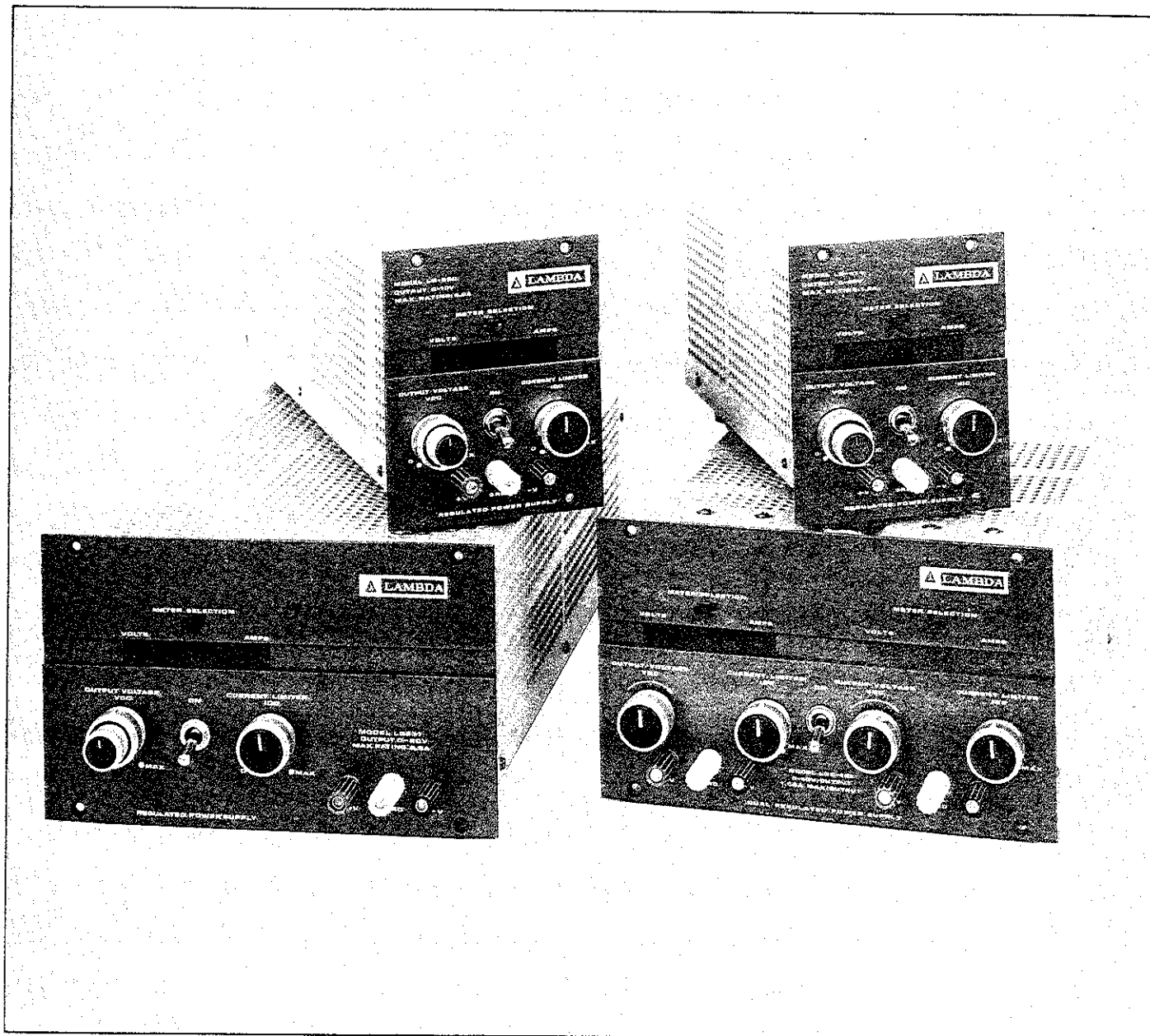


# Lambda LQ series



## PURE DC

Regulation: 0.005%

Ripple: 150  $\mu$ 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

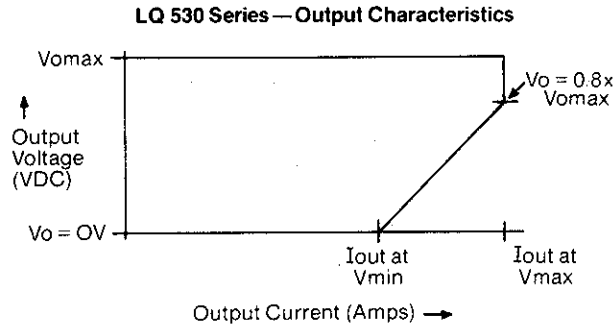
Linear regulator

# Specifications—LQ Series, LPT Series

## DC Output and Ratings

Refer to the tables. For LQ-530 only, refer to figure below.

Fig. 1



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

### 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

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

## 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	\$910
LQD-422	0-±40/0-80	1.0/2.0	0.85/1.70	0.7/1.4	0.55/1.1	910
LQD-423	0-±60/0-120	0.7/1.4	0.60/1.20	0.5/1.0	0.40/0.80	910
LQD-424	0-±120/0-240	0.38/0.76	0.32/0.64	0.26/0.52	0.20/0.40	910
LQD-425	0-±250/0-500	0.13/0.26	0.12/0.24	0.11/0.22	0.10/0.20	1025

### 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	\$520
LQ-411	0-20	1.2	1.1	1.0	0.80	520
LQ-412	0-40	1.0	0.90	0.80	0.60	520
LQ-413	0-60	0.45	0.41	0.37	0.33	520
LQ-415	0-250	80mA	72mA	65mA	60mA	598

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	\$628
LQ-521	0-20	3.3	3.0	2.6	2.3	628
LQ-522	0-40	1.8	1.6	1.4	1.2	628
LQ-523	0-60	0.9	0.8	0.7	0.6	628
LQ-524	0-120	0.5	0.45	0.4	0.35	655

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	\$847
LQ-531	0-20	8.6	6.0	8.6	5.6	7.4	5.1	6.4	4.6	847
LQ-532	0-40	5.0	3.5	5.0	3.3	4.5	3.0	3.9	2.7	847
LQ-533	0-60	3.3	2.4	3.3	2.3	3.0	2.1	2.5	1.9	847
LQ-534	0-120	1.7	1.1	1.7	1.2	1.6	1.0	1.5	0.9	928

# PART IV—DIMENSIONAL DRAWINGS

## LQ SERIES POWER SUPPLIES

### LQ-410 Series

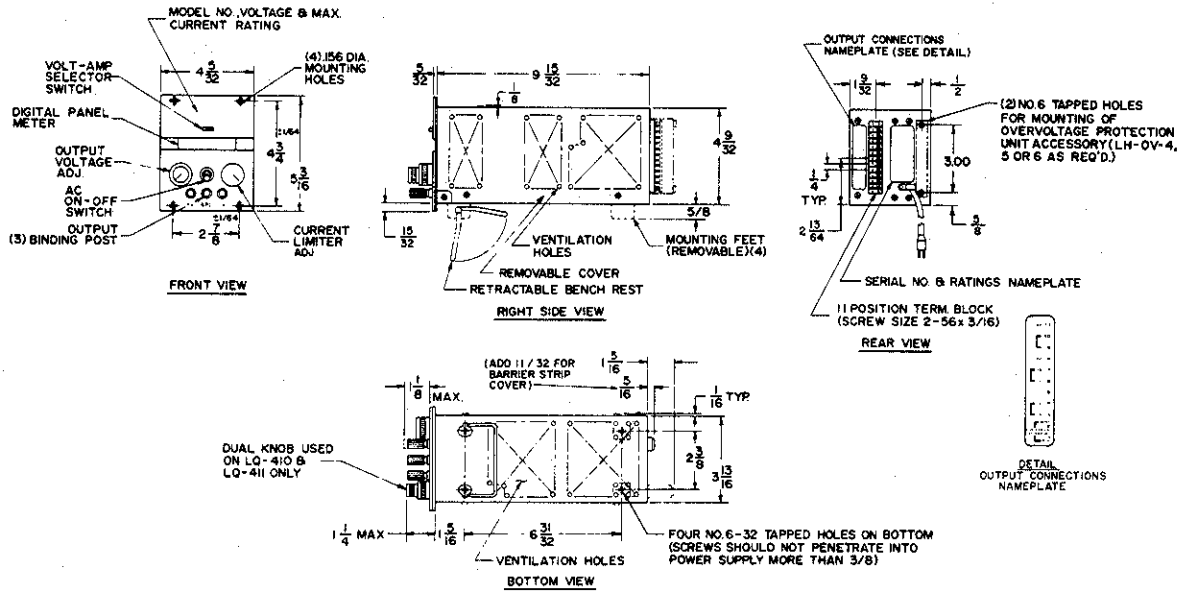
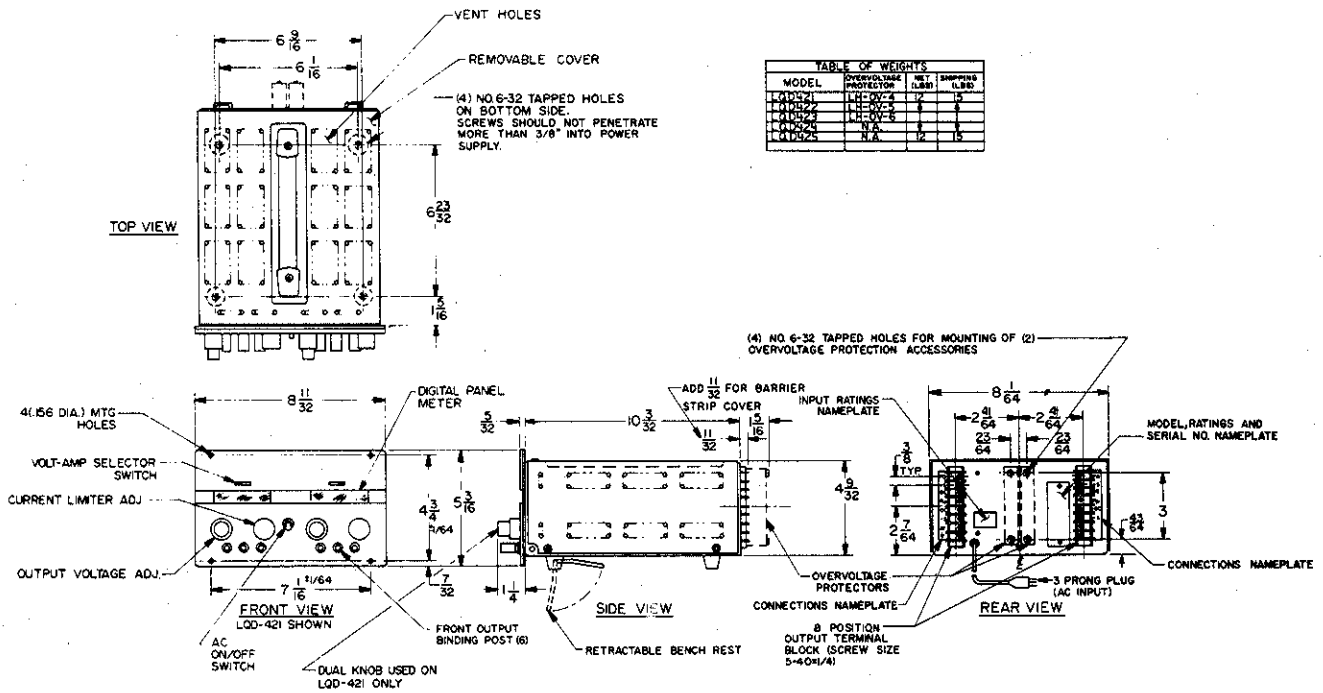


TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LQ-410 SERIES	9	12

### LQD-420 Series



# PART IV-DIMENSIONAL DRAWINGS LQ SERIES POWER SUPPLIES

## LQ-520 SERIES

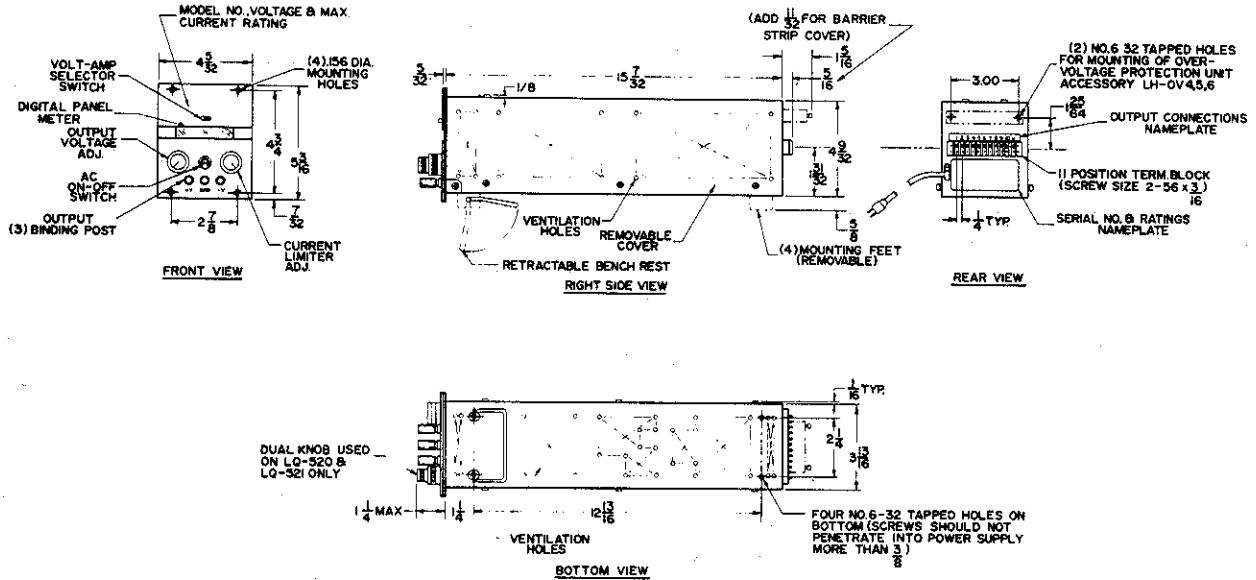


TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LQ-520 SERIES	14	18

## LQ-530 SERIES

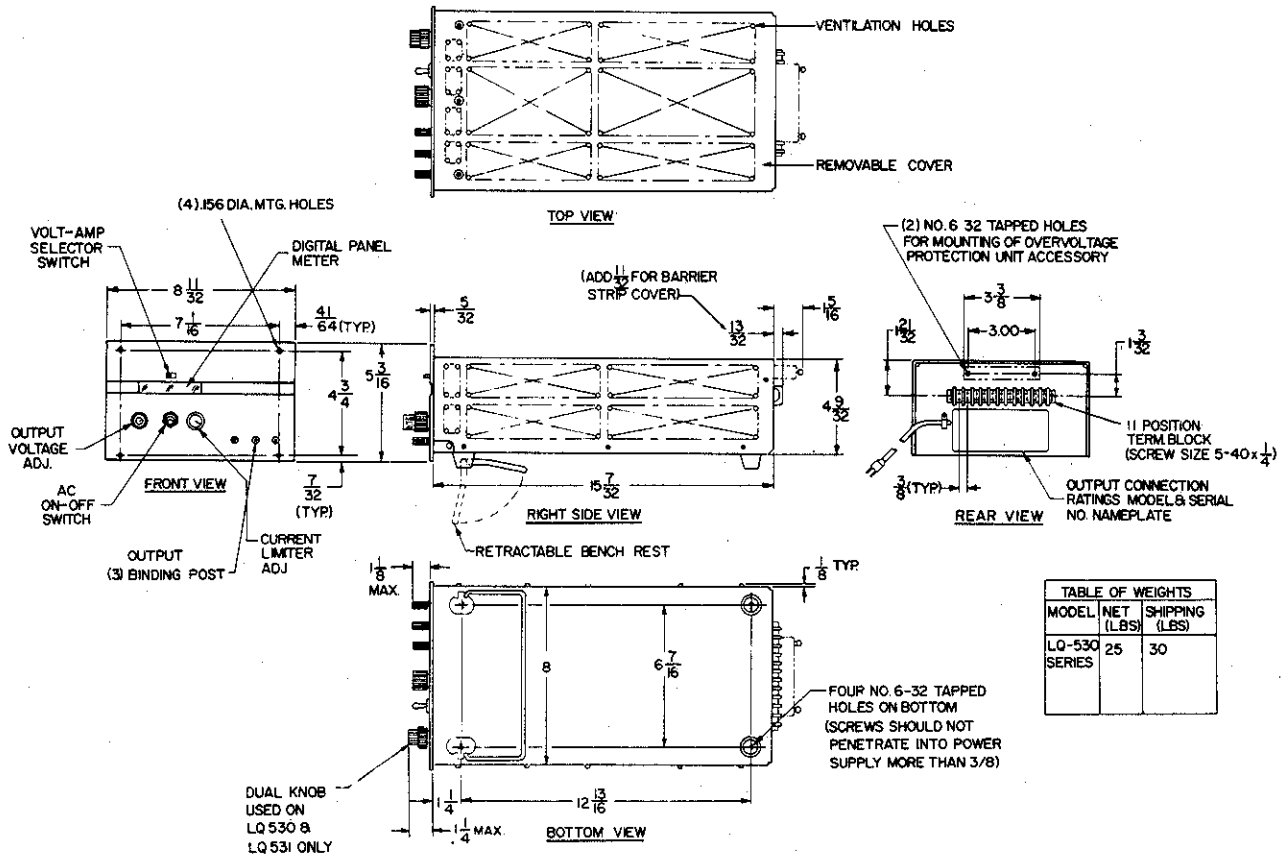


TABLE OF WEIGHTS		
MODEL	NET (LBS)	SHIPPING (LBS)
LQ-530 SERIES	25	30