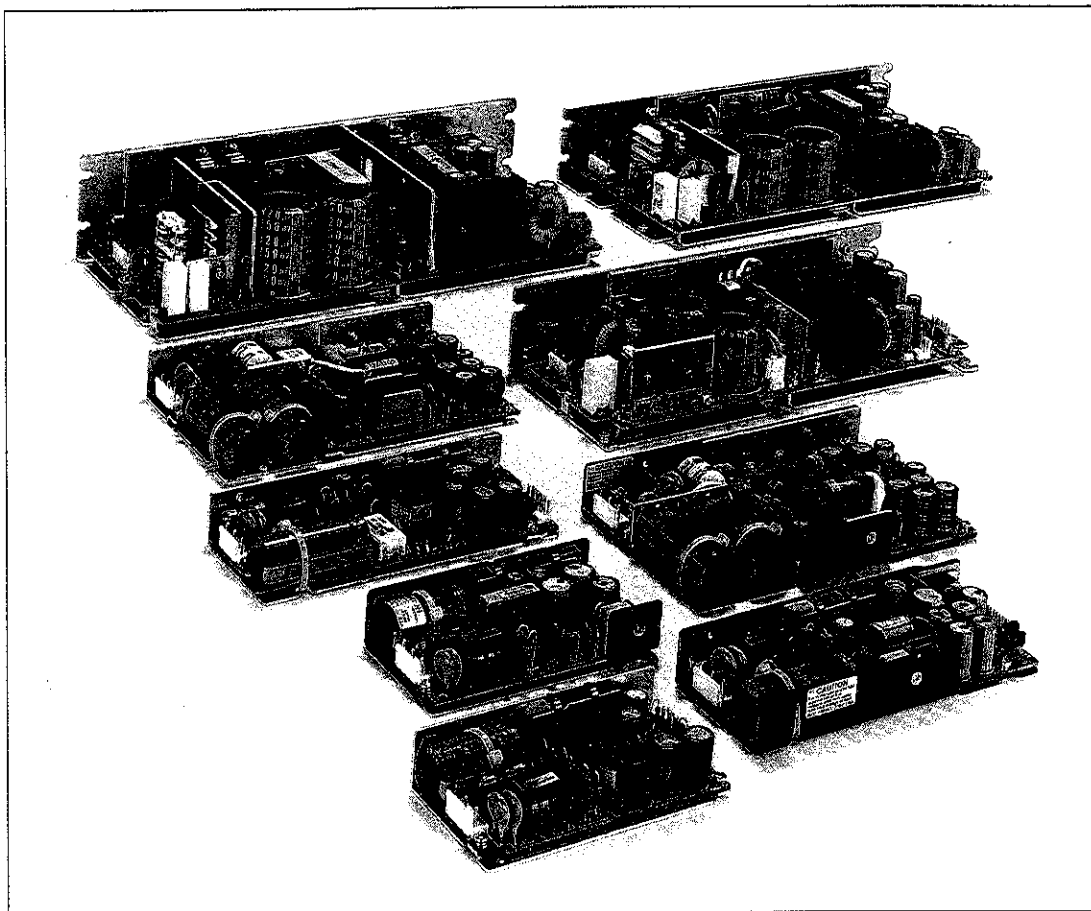


Part I – AC-to-DC Power Supplies

LAMBDA'S LW SERIES



Universal Inputs Designed For International Applications

Lambda's LW Series of dual, triple and quad output power supplies provide a high density, cost effective solution for applications requiring up to 200W of output power. And their small profile – down to 1.02 inches – makes them ideal for tight spaces. Designed for worldwide agency approvals, their universal 110/220VAC inputs make the LW Series the product of choice for international applications. All outputs are fully regulated. In addition, the WattBox™ output approach allows you to maximize output currents within the maximum rating of the units.

There are 42 dual, triple and quad output models designed with integral EMI filtering to FCC Docket 20780 Class A and overvoltage protection (main outputs). Lambda's LW Series are the ideal power supplies for designs that require a small footprint without a big price tag.

LW SERIES SPECIFICATIONS

AC Input

line 85-265VAC, 47-440Hz. on LWD and LWT Series.
85-132/170-265VAC, 47-440Hz (auto selectable) on LWQ Series.

Efficiency

63% minimum on LWD-15 and LWT-2H models. 70% minimum on LWD-30, 50; LWT-3H, 4HA and LWQ models.

EMI

The LWD, LWT and LWQ Series conform to FCC Docket 20780 Class A. The LWQ Series conforms to VDE 0871 Curve B and FCC Docket 20780 Class B.

DC Input

110-330 VDC on LWD and LWT Series.
220-330 VDC on LWQ Series.

DC Output

Voltage range shown in tables.

Regulated Voltage

regulation, line 0.1% from low line to high line and high line to low line.
regulation, load 2% for LWT models, LWD models, and outputs 1 and 4 of LWQ models.
2.5% for outputs 2 and 3 of LWQ models (from no load to full load and full load to no load).
ripple and noise (20MHz Bandwidth) 100mV pk-pk on 5V outputs. 150mV pk-pk on 12V and 15V outputs. 200mV pk-pk on 24V outputs.
temperature coefficient LWD, LWT: 0.02%/°C on main outputs.
0.04% on auxiliary outputs.
LWQ: 0.03%/°C on all outputs.

Hold Up Time

Output will remain within regulation limits for 16 mSec typical for all models.

Overvoltage Protection

Standard on main output of LWD and LWT models and all outputs of LWQ Series.

Overload Protection

Automatic electronic current limiting circuit 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.

Input Fuse

AC input line fuse protects the input wiring to the power supply. Overload of power supply does not cause fuse failure.

Overshoot

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

Cooling

Convection cooled, no fans or blowers needed.

Remote On/Off

Standard on LWQ Series.

DC Output Controls

Simple screwdriver adjustment over the entire voltage range for single output models and main outputs of LWQ and LWD models. The fourth output of the LWQ is adjustable, all other outputs are fixed.

Input and Output Connections

OEM-type connectors. Mating connectors provided with units.

Mounting

Two mounting surfaces and two mounting positions. Air circulation may be required when mounting in confined areas.

Physical Data

Package Model	Lbs. Net	Lbs. Ship	Sizes Inches
LWD-15, LWT-2H	0.50	0.60	2.36 × 1.02 × 4.33
LWD-30, LWT-3H	0.70	0.80	2.36 × 1.02 × 5.91
LWD-50, LWT-4HA	1.00	1.20	3.82 × 1.02 × 6.30
LWQ-80	1.80	2.10	3.82 × 1.85 × 9.45
LWQ-130	2.50	2.80	4.72 × 1.85 × 10.24
LWQ-200	3.60	4.10	4.72 × 2.36 × 11.02

Safety Agency Approvals

All models are UL recognized, CSA certified and TUV licensed.

Guarantee

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

Commercial Ratings Table – Multiple Output

VOLTS Vo	MAX CURRENT (AMPS) AT AMBIENT TEMPERATURE OF			MAX POWER (WATTS) AT AMBIENT TEMPERATURE OF			Vout ADJ. RANGE	COMPLETE ELEC. SPEC. PG.	UNIT PRICE PER DELIVERED QUANTITY				MODEL
	40°C	50°C	60°C	40°C	50°C	60°C			1	10	25	100	
DUAL OUTPUT. WIDE RANGE INPUT.													
+ 5V, + 12V OUTPUT													
+5	1.5	0.90	0.60	14.7	8.8	5.8	5.0-5.25	55	\$ 76	\$ 72	\$ 70	\$ 57	LWD-15-0512
+12	0.6	0.36	0.24				±5% Fixed						
+5	3.0	1.80	1.20	29.4	17.6	11.7	5.0-5.25	55	110	105	101	77	LWD-30-0512
+12	1.2	0.72	0.48				±5% Fixed						
+5 ¹	5.0	3.00	2.00	49.0	29.4	19.6	5.0-5.25	55	139	132	128	100	LWD-50-0512
+12	2.0	1.20	0.80				±5% Fixed						
+ 5V, + 24V OUTPUT													
+5	1.5	0.90	0.60	14.7	8.8	5.8	5.0-5.25	55	76	72	70	57	LWD-15-0524
+24	0.3	0.18	0.12				±5% Fixed						
+5	3.0	1.80	1.20	29.4	17.6	11.7	5.0-5.25	55	110	105	101	77	LWD-30-0524
+24	0.6	0.36	0.24				±5% Fixed						
+5 ¹	5.0	3.00	2.00	49.0	29.4	19.6	5.0-5.25	55	139	132	128	100	LWD-50-0524
+24	1.0	0.60	0.40				±5% Fixed						
+ 12V, - 12V OUTPUT													
+12	0.6	0.36	0.24	14.4	8.8	5.8	12.0-12.60	55	76	72	70	57	LWD-15-1212
-12	0.6	0.36	0.24				±5% Fixed						
+12	1.2	0.72	0.48	28.8	17.6	11.7	12.0-12.60	55	110	105	101	77	LWD-30-1212
-12	1.2	0.72	0.48				±5% Fixed						
+12 ¹	2.0	1.20	0.80	48.0	29.4	19.6	12.0-12.60	55	139	132	128	100	LWD-50-1212
-12	2.0	1.20	0.80				±5% Fixed						
+ 12V, + 24V OUTPUT													
+12	0.6	0.36	0.24	14.4	8.8	5.8	12.0-12.60	55	76	72	70	57	LWD-15-1224
+24	0.3	0.18	0.12				±5% Fixed						
+12	1.2	0.72	0.48	28.8	17.6	11.7	12.0-12.60	55	110	105	101	77	LWD-30-1224
+24	0.6	0.36	0.24				±5% Fixed						
+12 ¹	2.0	1.20	0.80	48.0	29.4	19.6	12.0-12.60	55	139	132	128	100	LWD-50-1224
+24	1.0	0.60	0.40				±5% Fixed						
+ 15V, - 15V OUTPUT													
+15	0.5	0.30	0.20	15.0	8.8	5.8	15.0-15.75	55	76	72	70	57	LWD-15-1515
-15	0.5	0.30	0.20				±5% Fixed						
+15	1.0	0.60	0.40	30.0	17.6	11.7	15.0-15.75	55	110	105	101	77	LWD-30-1515
-15	1.0	0.60	0.40				±5% Fixed						
+15 ¹	1.6	0.96	0.64	48.0	29.4	19.6	15.0-15.75	55	139	132	128	100	LWD-50-1515
-15	1.6	0.96	0.64				±5% Fixed						
TRIPLE OUTPUT. WIDE RANGE INPUT.													
+ 5V, + 12V, - 12V OUTPUT													
+5	3.00	2.10	—	17.00	12.00	—	5.0-5.25	55	\$ 99	\$ 95	\$ 91	\$ 78	LWT-2H-522
+12	.60	.42	—				±5% Fixed						
-12	.30	.21	—				±5% Fixed						
+5	5.00	3.33	—	30.00	20.00	—	5.0-5.25	55	128	122	118	99	LWT-3H-522
+12	1.20	.80	—				±5% Fixed						
-12	.60	.40	—				±5% Fixed						
+5	8.00	5.60	—	50.00	35.00	—	5.0-5.25	55	157	150	145	122	LWT-4HA-522
+12	1.50	1.10	—				±5% Fixed						
-12	1.00	.70	—				±5% Fixed						
+ 5V, + 15V, - 15V OUTPUT													
+5	3.00	2.10	—	17.00	12.00	—	5.0-5.25	55	99	95	91	78	LWT-2H-5FF
+15	.60	.42	—				±5% Fixed						
-15	.30	.21	—				±5% Fixed						
+5	5.00	3.33	—	30.00	20.00	—	5.0-5.25	55	128	122	118	99	LWT-3H-5FF
+15	1.20	.80	—				±5% Fixed						
-15	.60	.40	—				±5% Fixed						
+5	8.00	5.60	—	50.00	35.00	—	5.0-5.25	55	157	150	145	122	LWT-4HA-5FF
+15	1.50	1.10	—				±5% Fixed						
-15	1.00	.70	—				±5% Fixed						
+ 5V, + 12V, - 5V OUTPUT													
+5	3.00	2.10	—	17.00	12.00	—	5.0-5.25	55	99	95	91	78	LWT-2H-525
+12	.60	.42	—				±5% Fixed						
-5	.30	.21	—				±5% Fixed						
+5	5.00	3.33	—	30.00	20.00	—	5.0-5.25	55	128	122	118	99	LWT-3H-525
+12	1.20	.80	—				±5% Fixed						
-5	.60	.40	—				±5% Fixed						
+5	8.00	5.60	—	50.00	35.00	—	5.0-5.25	55	157	150	145	122	LWT-4HA-525
+12	1.50	1.10	—				±5% Fixed						
-5	1.00	.70	—				±5% Fixed						

Notes: ¹Output #1 requires a 1.0A minimum load on the LWD-50-0512 and LWD-50-0524 models; 0.4A minimum load on the LWD-50-1224 and LWD-50-1212; 0.3A minimum load on the LWD-50-1515.

Commercial Ratings Table – Quad Output

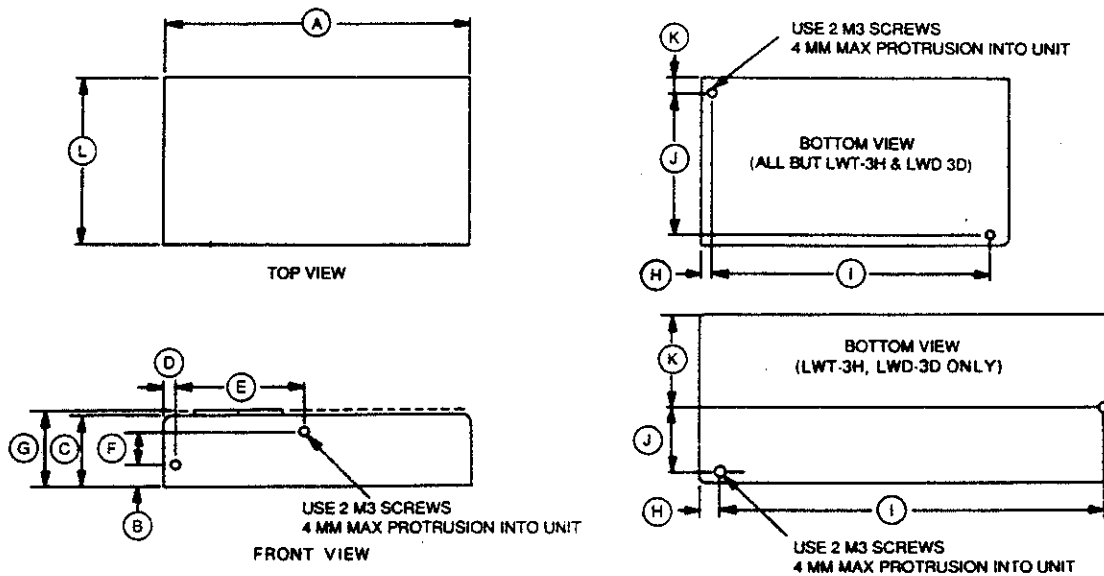
VOLTS V _o	MAX CURRENT (AMPS) AT AMBIENT TEMPERATURE OF			MAX POWER (WATTS) AT AMBIENT TEMPERATURE OF			V _{out} ADJ. RANGE	COMPLETE ELEC. SPEC. PG.	UNIT PRICE PER DELIVERED QUANTITY				MODEL
	40°C	50°C	60°C	40°C	50°C	60°C			1	10	25	100	
QUAD OUTPUT. WIDE RANGE INPUT.													
5V, ±12V, 5V OUTPUT													
5 ¹	8.0	6.00	4.00	80	60	40	4.75-5.25	55	\$198	\$188	\$181	\$162	LWQ-80-5225
+12	2.0	1.50	1.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
5	7.0	5.25	3.50				4.75-5.25						
5 ¹	15.0	11.25	7.50	130	97.5	65	4.75-5.25	55	267	255	246	221	LWQ-130-5225
+12	4.0	3.00	2.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
5	10.0	7.50	5.00				4.75-5.25						
5 ¹	25.0	18.75	12.50	200	150	100	4.75-5.25	55	366	349	336	303	LWQ-200-5225
+12	4.0	3.00	2.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
5	15.0	11.30	7.50				4.75-5.25						
5V, ±15V, 5V OUTPUT													
5 ¹	8.0	6.00	4.00	80	60	40	4.75-5.25	55	198	188	181	162	LWQ-80-5FF5
+15	2.0	1.50	1.00				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
5	7.0	5.25	3.50				4.75-5.25						
5 ¹	15.0	11.25	7.50	130	97.5	65	4.75-5.25	55	267	255	246	221	LWQ-130-5FF5
+15	3.2	2.40	1.60				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
5	10.0	7.50	5.00				4.75-5.25						
5 ¹	25.0	18.75	12.50	200	150	100	4.75-5.25	55	366	349	336	303	LWQ-200-5FF5
+15	3.2	2.40	1.60				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
5	15.0	11.30	7.50				4.75-5.25						
5V, ±12V, 12V OUTPUT													
5 ¹	8.0	6.00	4.00	80	60	40	4.75-5.25	55	198	188	181	162	LWQ-80-5222
+12	2.0	1.50	1.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
12	3.0	2.25	1.50				11.4-12.6						
5 ¹	15.0	11.25	7.50	130	97.5	65	4.75-5.25	55	267	255	246	221	LWQ-130-5222
+12	4.0	3.00	2.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
12	4.0	3.00	2.00				11.4-12.6						
5 ¹	25.0	18.75	12.50	200	150	100	4.75-5.25	55	366	349	336	303	LWQ-200-5222
+12	4.0	3.00	2.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
12	6.0	4.50	3.00				11.4-12.6						
5V, ±15V, 12V OUTPUT													
5 ¹	8.0	6.00	4.00	80	60	40	4.75-5.25	55	198	188	181	162	LWQ-80-5FF2
+15	2.0	1.50	1.00				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
12	3.0	2.25	1.50				11.4-12.6						
5 ¹	15.0	11.25	7.50	130	97.5	65	4.75-5.25	55	267	255	246	221	LWQ-130-5FF2
+15	3.2	2.40	1.60				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
12	4.0	3.00	2.00				11.4-12.6						
5 ¹	25.0	18.75	12.50	200	150	100	4.75-5.25	55	366	349	336	303	LWQ-200-5FF2
+15	3.2	2.40	1.60				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
12	6.0	4.50	3.00				11.4-12.6						
5V, ±12V, 24V OUTPUT													
5 ¹	8.0	6.00	4.00	80	60	40	4.75-5.25	55	198	188	181	162	LWQ-80-5224
+12	2.0	1.50	1.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
24	1.5	1.13	0.75				22.8-25.20						
5 ¹	15.0	11.25	7.50	130	97.5	65	4.75-5.25	55	267	255	246	221	LWQ-130-5224
+12	4.0	3.00	2.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
24	2.0	1.50	1.00				22.8-25.20						
5 ¹	25.0	18.75	12.50	200	150	100	4.75-5.25	55	366	349	336	303	LWQ-200-5224
+12	4.0	3.00	2.00				±5% Fixed						
-12	1.0	0.75	0.50				±5% Fixed						
24	3.0	2.25	1.50				22.8-25.20						
5V, ±15V, 24V OUTPUT													
5 ¹	8.0	6.00	4.00	80	60	40	4.75-5.25	55	198	188	181	162	LWQ-80-5FF4
+15	2.0	1.50	1.00				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
24	1.5	1.13	0.75				22.8-25.20						
5 ¹	15.0	11.25	7.50	130	97.5	65	4.75-5.25	55	267	255	246	221	LWQ-130-5FF4
+15	3.2	2.40	1.60				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
24	2.0	1.50	1.00				22.8-25.20						
5 ¹	25.0	18.75	12.50	200	150	100	4.75-5.25	55	366	349	336	303	LWQ-200-5FF4
+15	3.2	2.40	1.60				±5% Fixed						
-15	1.0	0.75	0.50				±5% Fixed						
24	3.0	2.00	1.50				22.8-25.20						

Notes: ¹Output #1 requires a 2.0A minimum load on the LWQ-80 and LWQ-130 Series; 3.0A minimum load on the LWQ-200 Series.

Part I – AC-to-DC Power Supplies

LW SERIES MECHANICAL DRAWINGS

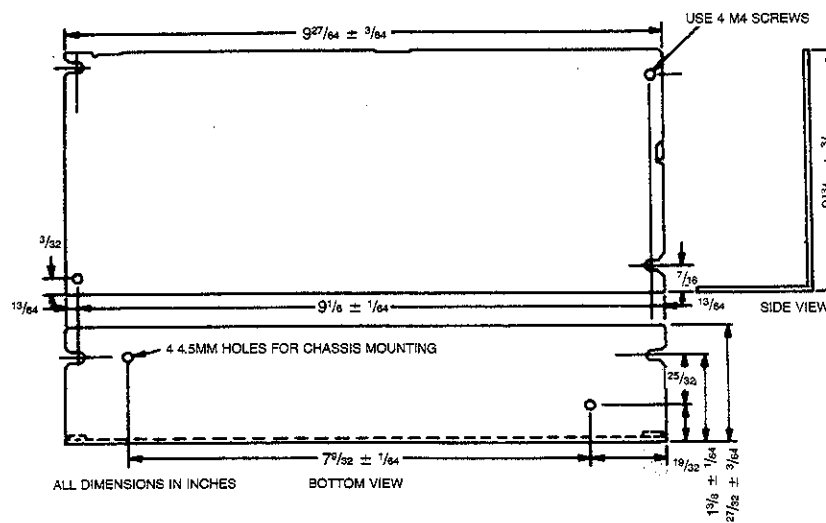
LWT-2H
LWT-3H
LWT-4HA
LWD-15
LWD-30
LWD-50



ALL DIMENSIONS IN INCHES

MODEL	A	B	C	D	E	F	G	H	I	J	K	L
LWT-2H	$4\frac{21}{64} \pm \frac{3}{64}$	$\frac{5}{16}$	$\frac{63}{64} \pm \frac{3}{64}$	$\frac{5}{32}$	$1\frac{13}{16} \pm \frac{1}{64}$	$\frac{7}{16} \pm \frac{1}{64}$	$1\frac{1}{32}$	$\frac{5}{32}$	$3\frac{57}{64} \pm \frac{1}{64}$	$1\frac{63}{64} \pm \frac{1}{64}$	$\frac{7}{32}$	$2\frac{23}{64} \pm \frac{3}{64}$
LWT-3H	$5\frac{29}{32} \pm \frac{3}{64}$	$\frac{15}{32}$	$\frac{63}{64} \pm \frac{3}{64}$	$\frac{13}{8}$	$3\frac{15}{16} \pm \frac{1}{64}$	$\frac{5}{16} \pm \frac{1}{64}$	$1\frac{1}{32}$	$\frac{9}{32}$	$5\frac{7}{16} \pm \frac{1}{64}$	$2\frac{29}{32} \pm \frac{1}{64}$	$1\frac{13}{64}$	$2\frac{29}{64} \pm \frac{3}{64}$
LWT-4HA	$6\frac{19}{64} \pm \frac{3}{64}$	$\frac{23}{64}$	$\frac{63}{64} \pm \frac{3}{64}$	$\frac{25}{64}$	$4\frac{5}{8} \pm \frac{1}{64}$	$\frac{7}{16} \pm \frac{1}{64}$	$1\frac{1}{32}$	$1\frac{43}{64}$	$3\frac{39}{64} \pm \frac{1}{64}$	$3\frac{15}{64} \pm \frac{1}{64}$	$\frac{5}{16}$	$3\frac{13}{16} \pm \frac{3}{64}$
LWD-15	$4\frac{21}{64} \pm \frac{3}{64}$	$\frac{5}{16}$	$\frac{63}{64} \pm \frac{3}{64}$	$\frac{5}{32}$	$1\frac{13}{16} \pm \frac{1}{64}$	$\frac{7}{16} \pm \frac{1}{64}$	$1\frac{1}{32}$	$\frac{5}{32}$	$3\frac{57}{64} \pm \frac{1}{64}$	$1\frac{62}{64} \pm \frac{1}{64}$	$\frac{7}{32}$	$2\frac{23}{64} \pm \frac{3}{64}$
LWD-30	$5\frac{24}{32} \pm \frac{3}{64}$	$\frac{31}{64}$	$\frac{63}{64} \pm \frac{3}{64}$	$\frac{13}{8}$	$3\frac{15}{16} \pm \frac{1}{64}$	$\frac{5}{16} \pm \frac{1}{64}$	$1\frac{1}{32}$	$\frac{9}{32}$	$5\frac{7}{16} \pm \frac{1}{64}$	$2\frac{29}{32} \pm \frac{1}{64}$	$1\frac{13}{64}$	$2\frac{23}{64} \pm \frac{3}{64}$
LWD-50	$6\frac{19}{64} \pm \frac{3}{64}$	$\frac{23}{64}$	$\frac{63}{64} \pm \frac{3}{64}$	$\frac{25}{64}$	$4\frac{5}{8} \pm \frac{1}{64}$	$\frac{7}{16} \pm \frac{1}{64}$	$1\frac{1}{32}$	$1\frac{43}{64}$	$5\frac{7}{16} \pm \frac{1}{64}$	$3\frac{15}{64} \pm \frac{1}{64}$	$\frac{5}{16}$	$3\frac{13}{16} \pm \frac{3}{64}$

LWQ-80



COMPONENTS SIDE VIEW



BOTTOM VIEW

COMPONENTS SIDE VIEW

