

# Quality Engineering Test Report

**SERIES: LPS-100 100.8 WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE: A.LPS-100-3.3 3.3V / 20A      D.LPS-100-12 12V /8.4A      G.LPS-100-24 24V / 4.2A**

**B.LPS-100-5 5V / 20A      E.LPS-100-13.5 13.5V /7.5 A      H.LPS-100-27 27V / 3.8A**

**C.LPS-100-7.5 7.5V / 13.3A      F.LPS-100-15 15V / 6.7A      I. LPS-100-48 48V / 2.1A**

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING      SPEC:88~132V 176~264V O/P:FULL LOAD	A : 129V~267VAC	P
2	LINE REGULATION	I/P:176~264VAC      SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C: ±0.5% D: ±0.5% E: ±0.5% F: ±0.5% G: ±0.5% H: ±0.5% I: ±0.5%	A: +0.00% ~ +0.00% B: +0.00% ~ +0.00% C: -0.08% ~ +0.00% D: +0.00% ~ +0.00% E: +0.09% ~ -0.06% F: -0.00% ~ +0.04% G: -0.05% ~ +0.03% H: -0.04% ~ +0.11% I: -0.02% ~ +0.06%	P
3	LOAD REGULATION	I/P:230VAC      SPEC: O/P:0% LOAD TO FULL LOAD A: ±2% B: ±2% C: ±1.5% D: ±1.5% E: ±1.5% F: ±1.5% G: ±0.5% H: ±0.5% I: ±0.5%	A: -0.18% ~ +0.18% B: -0.35% ~ +0.25% C: -0.33% ~ +0.41% D: -0.10% ~ +0.10% E: -0.04% ~ +0.04% F: -0.12% ~ +0.21% G: -0.03% ~ +0.15% H: -0.15% ~ +0.15% I: -0.06% ~ +0.11%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:176~264VAC      SPEC: O/P: 20% LOAD TO FULL LOAD A: ±3% B: ±3% C: ±2% D: ±2% E: ±2% F: ±2% G: ±1% H: ±1% I: ±1%	A: +0.00% ~ +0.36% B: -0.76% ~ +0.00% C: -0.59% ~ +0.08% D: -0.10% ~ +0.05% E: +0.00% ~ -0.13% F: -0.33% ~ +0.00% G: -0.13% ~ +0.10% H: -0.02% ~ +0.39% I: -0.19% ~ +0.03%	P
5	RIPPLE&NOISE	I/P:230VAC      SPEC: O/P: FULL LOAD A:150mV B:100mV C:100mV D:100mV E:100mV F:100mV G:150mV H:150mV I :200mV	A: 26mV B: 73mV C: 43mV D: 28mV E: 21mV F: 37mV G: 28mV H: 22mV I : 23mV	P
6	AC INPUT CURRENT	I/P:230VAC      SPEC: 1.5A O/P:FULL LOAD	D:1.1A	P
7	MAX. INRUSH CURRENT	I/P:230VAC      SPEC: 60A O/P:FULL LOAD	D:38A	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: -5%~+10% O/P:MIN. LOAD A:3.0V~3.6V B:4.5V~5.7V C:6V~9V D:10V~13.2V E:12V~15V F:13.5V~18V G:20V~26.4V H:26V~32V I:41V~56V	A:2.76V~4.04V B:4.44V~6.25V C:5.92V~9.28V D:9.10V~13.70V E:11.36V~16.12V F:12.81V~17.00V G:20.2V~27.6V H:24.4V~32.6V I :37.5V~59.4V	P
9	SET UP TIME	I/P:230VAC SPEC:800ms O/P:FULL LOAD	D : 580mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	D : 47mS	P
11	EFFICIENCY	I/P:230VAC SPEC: O/P: FULL LOAD A:69% B:77% C:77% D:79% E:79% F:80% G:80% H:81% I :81%	A: 71.91% B: 77.64% C: 78.99% D: 79.40% E: 80.22% F: 81.03% G: 83.37% H: 82.70% I : 81.87%	P
12	OVER LOAD PROTECTION	I/P:230VAC SPEC:105%~140% O/P:TESTING	A: 120% B: 120% C: 112.52% D: 128% E: 125% F: 113.96% G: 119.28% H: 128% I : 123.8%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC SPEC: 110%~135% O/P: TESTING A:3.8~4.45V B:5.75~6.75V C:9.4V~10.9 D:13.8V~16.2V E:15.5V~18.2V F:18V~21V G:27.6V~32.4V H:33.7V~39.2V I:57.6V~67.2V	A: 4.17V B: 6.30V C: 9.29V D: 15.14V E: 17.31V F: 17.01V G: 28.2V H: 38.0V I : 59.5V	p
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<1mA N-FG--<1mA	D: L-FG:0.75mA N-FG:0.60mA	P
15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC / 100M Ohms MIN. I/P-O/P 500VDC / 100M Ohms MIN. I/P-FG 500VDC / 100M Ohms MIN.	D: O/P-FG >100M Ohms I/P-O/P >100M Ohms I/P-FG >100M Ohms	P
16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3000VAC/ 1 sec (10mA CUT-OFF) I/P - FG: 1500VAC/ 1 sec (10mA CUT-OFF) O/P - FG : 500VAC/1sec (10mA CUT-OFF)	D: I/P-O/P :4.84mA I/P-FG :3.79mA O/P- FG :8.76mA	P
17	BURN-IN TEST	I/P: 230VAC O/P:FULL LOAD TA:27.2°C BURN-IN DURATION : 2.0 hrs	D: NON BREAK	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT																																																		
18	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:230 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-9.9°C	D : AFTER 2 hrs POWER ON OK	P																																																		
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:42.8°C	D : AFTER 18 hrs NON BREAK																																																			
		3.ACCELERATED LIFE TEST I/P:264VAC O/P:FULL LOAD POWER ON :10 sec POWER OFF :10 sec AMBIENT TEMPERATURE:25°C AMBIENT HUMIDITY:95%	D : AFTER 13 hrs NON BREAK																																																			
19	TEMPERATURE RISE TEST T rise OF PARTS	D: I/P :230VAC O/P :FULL LOAD TA:27.2°C AFTER 2.0 hrs BURN-IN		P																																																		
		<table border="1"> <thead> <tr> <th></th> <th>POSITION</th> <th>P/N</th> <th>TEMP</th> <th>T rise</th> </tr> </thead> <tbody> <tr> <td></td> <td>BD1</td> <td>BRIDGE DIODE</td> <td>71.3°C</td> <td>44.1°C</td> </tr> <tr> <td></td> <td>Q1</td> <td>MAIN TRANSISTOR</td> <td>88.3°C</td> <td>61.1°C</td> </tr> <tr> <td></td> <td>T1CORE</td> <td>MAIN TRANSFORMER</td> <td>74.1°C</td> <td>46.9°C</td> </tr> <tr> <td></td> <td>D11</td> <td>O/P DIODE</td> <td>86.3°C</td> <td>59.1°C</td> </tr> <tr> <td></td> <td>C42</td> <td>O/P FILTER CAPACITOR</td> <td>59.6°C</td> <td>32.4°C</td> </tr> <tr> <td></td> <td>L1</td> <td>O/P CHOCK</td> <td>71.9°C</td> <td>44.7°C</td> </tr> <tr> <td></td> <td>T1COIL</td> <td>MAIN TRANSFORMER</td> <td>69.4°C</td> <td>42.2°C</td> </tr> <tr> <td></td> <td>C6</td> <td>I/P FILTER CAPACITOR</td> <td>60.8°C</td> <td>33.6°C</td> </tr> <tr> <td></td> <td>LF1</td> <td>I/P FILTER COIL</td> <td>50.7°C</td> <td>23.5°C</td> </tr> </tbody> </table>		POSITION	P/N	TEMP	T rise		BD1	BRIDGE DIODE	71.3°C	44.1°C		Q1	MAIN TRANSISTOR	88.3°C	61.1°C		T1CORE	MAIN TRANSFORMER	74.1°C	46.9°C		D11	O/P DIODE	86.3°C	59.1°C		C42	O/P FILTER CAPACITOR	59.6°C	32.4°C		L1	O/P CHOCK	71.9°C	44.7°C		T1COIL	MAIN TRANSFORMER	69.4°C	42.2°C		C6	I/P FILTER CAPACITOR	60.8°C	33.6°C		LF1	I/P FILTER COIL	50.7°C	23.5°C		
	POSITION	P/N	TEMP	T rise																																																		
	BD1	BRIDGE DIODE	71.3°C	44.1°C																																																		
	Q1	MAIN TRANSISTOR	88.3°C	61.1°C																																																		
	T1CORE	MAIN TRANSFORMER	74.1°C	46.9°C																																																		
	D11	O/P DIODE	86.3°C	59.1°C																																																		
	C42	O/P FILTER CAPACITOR	59.6°C	32.4°C																																																		
	L1	O/P CHOCK	71.9°C	44.7°C																																																		
	T1COIL	MAIN TRANSFORMER	69.4°C	42.2°C																																																		
	C6	I/P FILTER CAPACITOR	60.8°C	33.6°C																																																		
	LF1	I/P FILTER COIL	50.7°C	23.5°C																																																		
20	LIFE CYCLE	D : SUPPOSE C42 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc42:57.4°C Life:199510 hrs I/P:230VAC O/P:FULL LOAD Ta:45°C Tc42:69.1°C Life:89301 hrs		P																																																		
21	CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )	D : FUSE :4A/250VAC GFE BRIDGE DIODE :D3SB60 LINE FILTER :TF-485 ET-28H TRANSFOMER :TF-454-1 EER-28L POWER SWITCHER :2SK2850 TO-3P OUTPUT DIODE :S20LC20 OUTPUT CAPACITOR :RUBYCON 2200uF/16V 105°C, LXJ INPUT CAPACITOR :RUBYCON 330uF/250V,CE,85°C P.C.B :LPS-100-R1 ,CEM-3 , 2 OZ SS																																																				
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																																																		
19980312	PRODUCTION SAMPLE	PASS	H.C.LIOU	Max Lin																																																		
19981209	9812A03A (5V,27V)	PASS	H.C.LIOU	Max Lin																																																		
19981222	9812B02B (48V)	PASS	H.C.LIOU	Max Lin																																																		
19990111	9901A17A (3.3V)	PASS	H.C.LIOU	Max Lin																																																		
20000930	A0009C03 (3.3V)	PASS	VINCENT	Max Lin																																																		
20001021	A0010B05 (12V,13.5V,27V)	PASS	VINCENT	Max Lin																																																		