LB115S

115W Single Output

LED Series

Features

- Small size of 2” x 4” x 1.3”
- 75W convection cooled/115 Watts with 200 LFM
- Universal Input 90-264Vac
- Meets EN55015 Conducted EMI
- Meets IEC61000-3-2 Class C for less than 1 Watt to full power
- Approved to UL/CSA/IEC/EN60950-1, 2nd Edition
- Level V Efficiency Compliant
- -40˚C start up
- -20˚C to 70˚C Operating temperature Range
- 3 Year Warranty
- Optional LED indicator for power-on

Description

The LB115S LED Series provide a reliable power source with high power density in 2” x 4” x 1.3” package. Fully compliant to the applicable safety and Global Lighting EMC standards, these models will allow easy integration into many Lighting fixtures and other industrial applications. All 4 models are CE marked to low voltage directive and approved to standards of UL/CSA/IEC/EN60950-1 2nd edition.

Model Selection

Model Number	Volts	Output Current Convection Cooled	Output Current Forced air(200 LFM) (Total Power)	Ripple & Noise*	Total Regulation	OVP Threshold
LB115S12K	12 V	6.25 A	9.00A (108 Watts)	0.5%RMS, 1.5% pk-pk	±2%	14.0 ± 1.1V
LB115S24K	24 V	3.13A	4.58A (110 Watts)	0.5%RMS, 1% pk-pk	±2%	28.0 ± 2.5V
LB115S48K	48 V	1.56A	2.40A (115 Watts)	0.5%RMS, 1% pk-pk	±2%	55.0 ± 4.0V
LB115S56K	56 V	1.34A	2.05A (115 Watts)	0.5%RMS, 1% pk-pk	±2%	63.0 ± 4.0V

Notes:

* At -20C, the noise and ripple is 2% of the output.

General & Input Specifications

PARAMETER	SPECIFICATION	NOTES
AC Input Voltage:	90-264Vac, single phase	
AC Input Frequency:	47-63Hz	
AC Input Current:	115Vac: 2A, 230Vac: 1A	
Inrush Current:	65A maximum @ 25C	
Earth Leakage Current (Input–Earth):	<350uA@264Vac, 60 Hz input, NC	
Input Fuse:	F1:4A, 250VAC	Fuse provided on all models

Efficiency	Typical	Measured @ 25˚C
LB115S12K	89% @230V ac, full load	86.5%@115V ac, full load
LB115S24K	89% @230V ac, full load	87%@115V ac, full load
LB115S48K	90% @230V ac, full load	88%@115V ac, full load
LB115S56K	90% @230V ac, full load	88%@115V ac, full load
Operating Temperature	-20˚C to 70˚C	-40˚C start up (full load) For 12V output, the maximum load is 75%
Storage Temperature	-40˚C to 85˚C	
Turn-on Time:	<2 Seconds @115Vac(<3S for 12V output)	<5 Seconds @115Vac for -20˚C ambient
Hold-up Time:	12mS minimum from loss of ac input at 115 Vac	

DC Output Specifications

PARAMETER	SPECIFICATION	NOTES
Output Power:	Max of 75 Watts for Convection cooled	Maximum 108 Watts for 12V output -20 to 50˚C ambient
	Max of 115 Watts for fan cooled (48 & 56V Models)	
Cooling:	Convection	
	Forced Air of 200 LFM	
Total Regulation:	±2% for all models	Total regulation is the maximum deviation from nominal voltage for all loading conditions
Overload Protection:	120% - 180% of rated output current value, Hiccup Mode	For 12V output, it is 110 to 180%
Short Circuit Protection:	Short across the output terminals will not cause damage to the unit. Hiccup Mode	
Overvoltage Protection:	OVP firing reduces output voltage to <50% of nominal in <50mS. See chart for trip range	
Overtemperature Protection:	Automatic Power Shutdown	Thermistor temperature is 130˚C
Minimum Load:	No minimum load is required	
Ripple and Noise:	0.5% RMS, 1% pk-pk for all models.	20 MHz Bandwidth, differential mode. Measured with noise probe directly across output terminals, and load terminated with 0.1µF ceramic and 10µF low ESR capacitors
Transient Response:	500µs typ. response time for return to within 0.5% of final value for a 50% load change, $\Delta i/\Delta t$< 0.2A/µs. Max. voltage deviation is 3.5%.	Measured @ 25˚C
Overshoot:	5% overshoot at turn-on, 5% overshoot at turn-off, under all conditions.	6% for 12V output

Safety Standard Compliance

Agency	CONDITIONS
UL	EN/CSA/UL/IEC 60950-1, 2nd Edition
CSA	CSA 60950-1, 2nd
Demko	EN 60950-1, 2nd
CB Report	IEC 60950-1, 2nd
Isolation Type:	Double/Reinforced between Input and Output

Isolation Specifications

PARAMETER	CONDITIONS	Rating	NOTES
Insulation Safety Rating:	Input to Ground	Basic Insulation	
	Input to Output	Double/Reinforced	
Electric Strength Test Voltage:	Input to Ground	1900Vac	
	Input to Output	3000Vac	
	Output to Ground	500Vac	

Environmental Specifications

PARAMETER	SPECIFICATION	NOTES
Operating Temperature:	-20℃ to +70℃	-40℃ Startup guaranteed
Temperature Derating:	60% derating at 70℃	
Cooling:	Convection/ Airflow	75 Watts convection
Storage Temperature:	-40℃ to +85℃	
Altitude:	Operating: -500 to 3,000 meter Non-operating: -500 to 40,000 ft.	
Relative Humidity:	5% to 95%, non-condensing	
Shock:	Non-Operating: Half-sine, 40 gpk, 10mS, 3 axes, 6 shocks total	
Vibration:	Random vibration per MIL-STD-810E, Method 514.4, Cat. 1, Figure 514.4-1, 1 hr in each of three axes	

Reliability Specifications

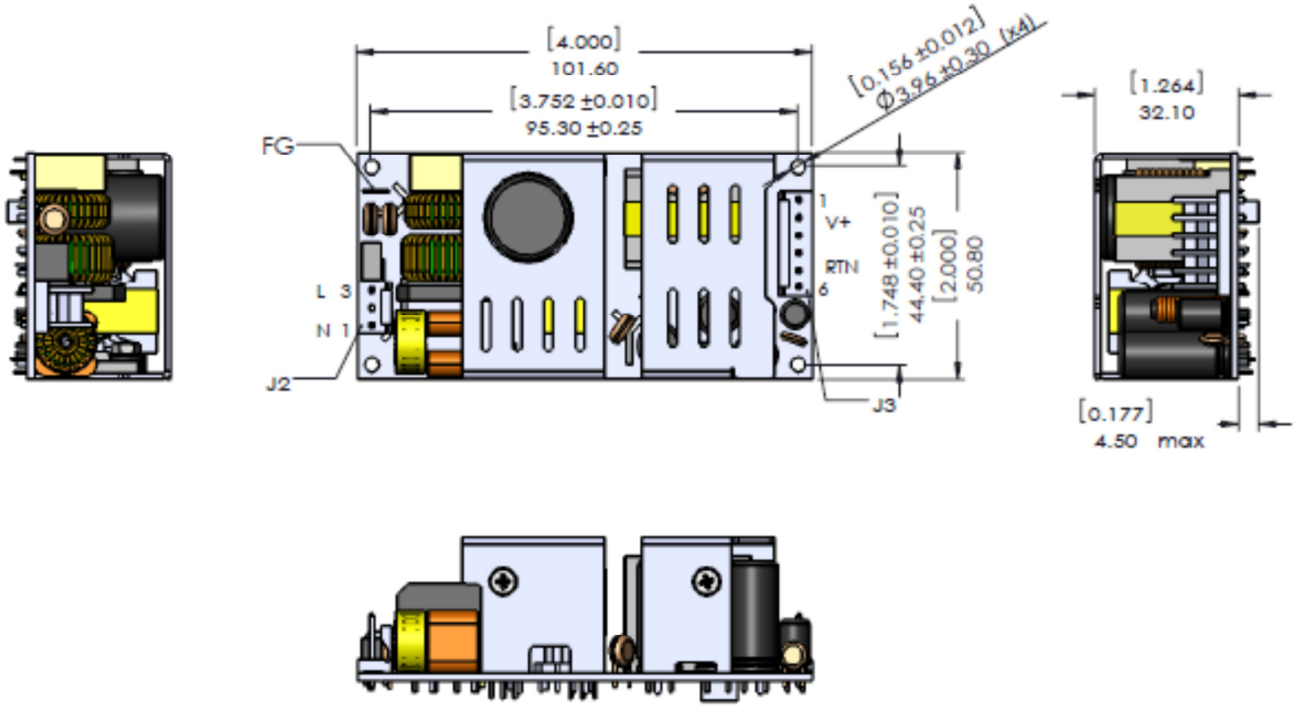
PARAMETER	SPECIFICATION	NOTES
MTBF:	574K hours, 25℃ ambient, full load	Calculation is done based on Telcordia. Reports for each model is available
Warranty:	3 Years	Limited
HALT Data:	Per SL Power Halt procedure	Report is available

EMI/EMC Compliance

PARAMETER	SPECIFICATION	NOTES
Conducted Emissions:	EN55011/22 Class B; FCC Part 15	Also meets EN55015 Class B
Radiated Emissions:	EN55011/22 Class A; FCC Part 15	
Harmonic Current Emissions	EN61000-3-2, Class A,B,C &D	Meets class C from 5 to 115 Watts. This is based on limits set @ 115 Watt
Voltage Fluctuations & Flicker	EN61000-3-3	
Static Discharge Immunity:	EN61000-4-2, Level 4: 6kV contact, 8kV air, Criteria A	Performance criteria are defined as following: A – Normal performance during and after the test B – Temporary degradation, self-recoverable C – Temporary degradation, operator intervention required to recover the operation
RF Field Susceptibility	EN61000-4-3, Level 3 (3V/m), Criteria A	
Fast Transients/Bursts	EN61000-4-4, Level 3 (PS: 2kV-40A, other lines 1kV-20A), Criteria A	
Surge susceptibility	EN61000-4-5, Installation Class 3 (1kV diff. mode, 2kV common mode), Criteria A	
Conducted RF susceptibility	EN61000-4-6, Level 3 (3Vrms), Criteria A	
Power Frequency Magnetic Field Test	EN61000-4-8, Level 3 (3A/m), Criteria A	
Voltage Sags & Surges	EN61000-4-11, 95% dip/0.5 cycle (Criteria A), 60%/5cycles (Criteria B), 30%/25 cycles (Criteria A). loading is 70% of 100 watts with 100 Vac input.	

Notes:
1. Specifications subject to change without notice.
2. Specifications are for convection rating at factory settings with 115Vac input and 25℃ ambient unless otherwise stated.

Mechanical Drawing



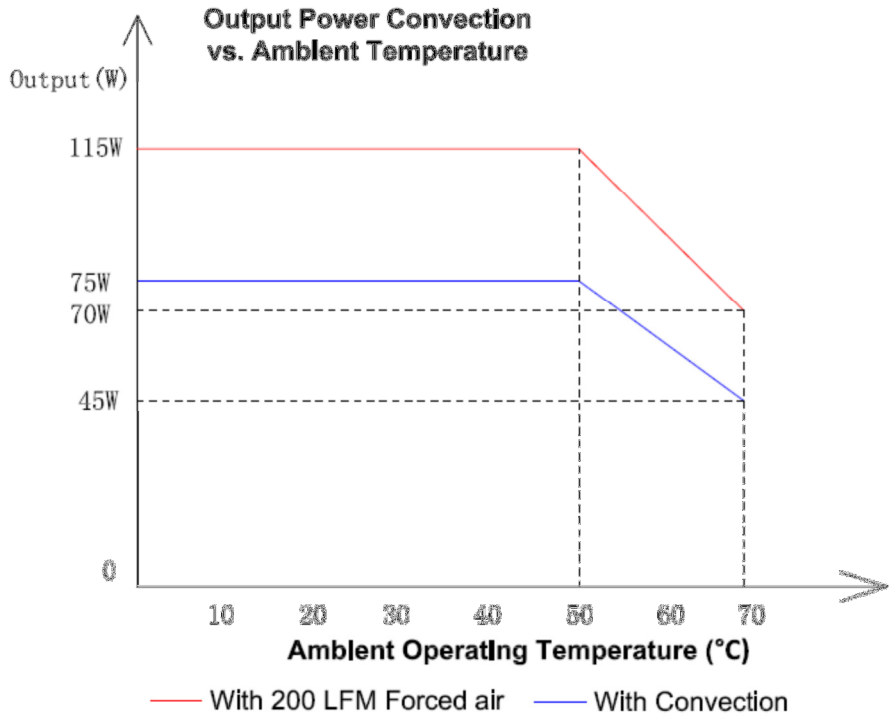
Connector Information

Input Connector J2	DC Output Connector J3	Ground (FG)J1
PIN 1) AC NEUTRAL PIN 2) EMPTY PIN 3) AC LINE	PIN 1) +Vout PIN 2) +Vout PIN 3) +Vout PIN 4) -Vout PIN 5) -Vout PIN 6) -Vout	19-30258-0187 (Keystone 1285) (Zierick 895)(.187*0.020)
Mating Connector: Tyco/AMP 640250-3 Terminals : 3-640252-1	Mating Connector: AMP 640250-6 Terminals : 3-640252-1	Mating Connector Molex 190020005

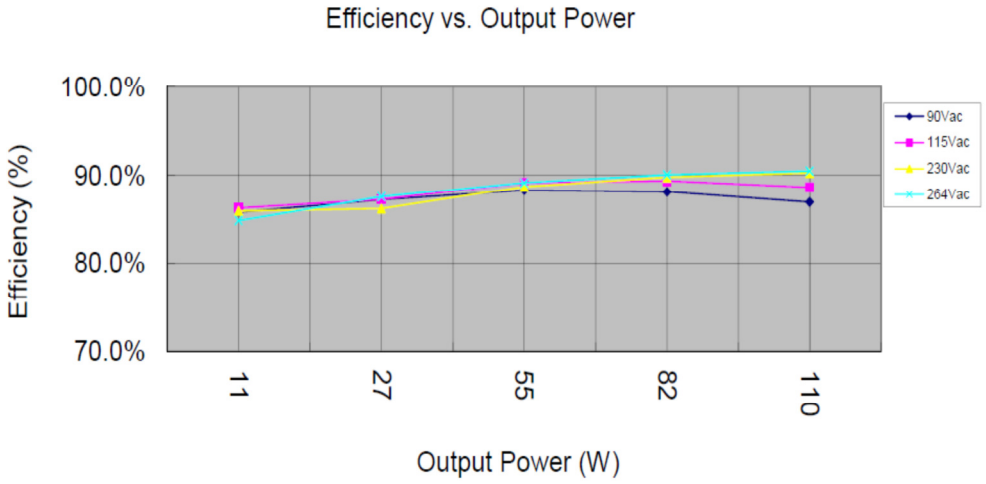
1. All dimensions in inches (mm) undefined tolerance is ±.02" **(0.5mm).**
2. Mounting holes should be connected together for EMI purpose
3. FG is safety ground connection
4. This power supply requires mounting on metal standoffs 0.20" (5mm) Min. in height

Characteristic Curves

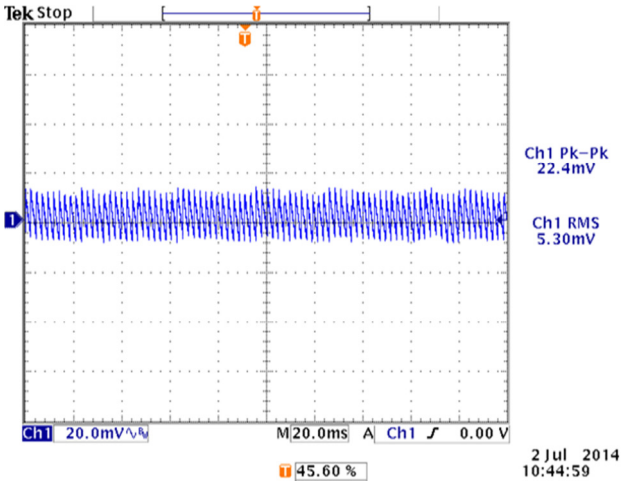
Output Power vs. Temperature



Efficiency vs. Loading

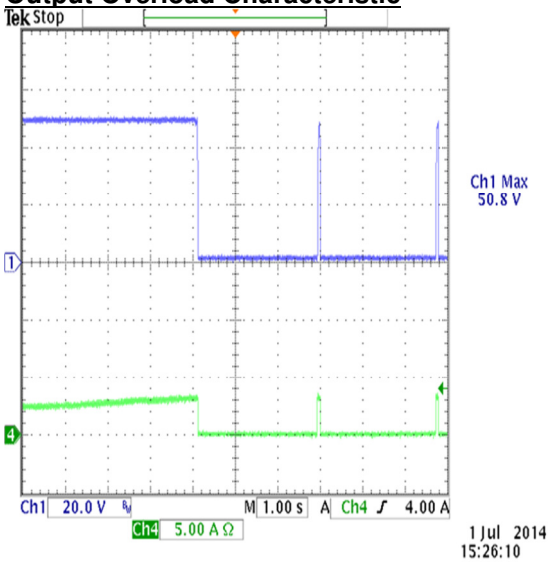


Ripple & Noise

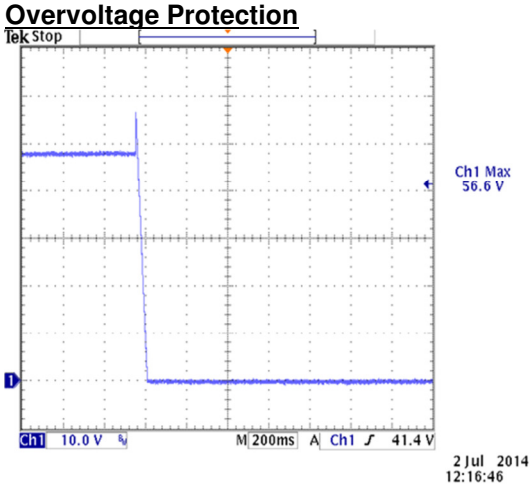


To verify that the output ripple and noise does not exceed the level specified in the product specification, measured using a scope probe socket with 0.1uF ceramic and a 10uF electrolytic capacitor connected in parallel across it, 20MHz BW.

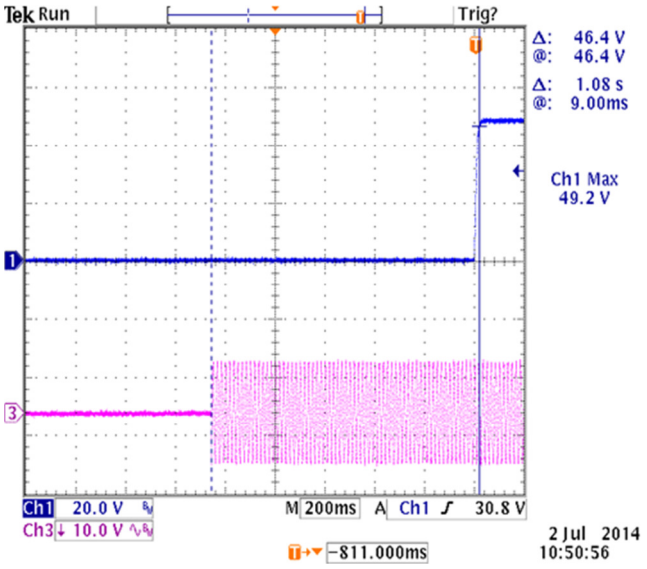
Output Overload Characteristic



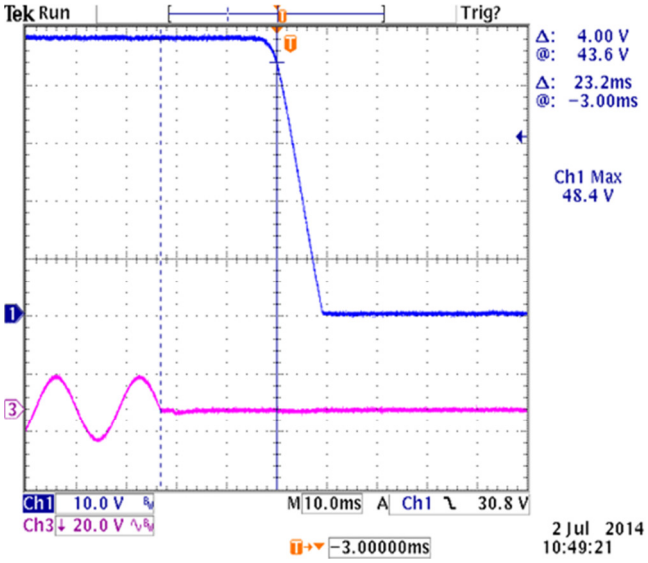
Overvoltage Protection



Turn On Time



Hold Up Time



CH1:	Vout	Vin:	115	Vac
CH3:	Vin	Iout:	2.40	Amps
Min_Limit:	16	Meas:	23.2	mS

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