

## 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, 2<sup>nd</sup> 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 2<sup>nd</sup> edition.

## Model Selection

Model		Output Current	Output Current	Ripple &	Total	OVP
Number	Volts	Convection Cooled	Forced air(200 LFM) (Total Power)	Noise*	Regulation	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
<b>AC Input Voltage:</b>	90-264Vac, single phase	
<b>AC Input Frequency:</b>	47-63Hz	
<b>AC Input Current:</b>	115Vac: 2A, 230Vac: 1A	
<b>Inrush Current:</b>	65A maximum @ 25C	
<b>Earth Leakage Current (Input-Earth):</b>	<350 $\mu$ A@264Vac, 60 Hz input, NC	
<b>Input Fuse:</b>	F1:4A, 250VAC	Fuse provided on all models

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

### DC Output Specifications

PARAMETER	SPECIFICATION	NOTES
<b>Output Power:</b>	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)	
<b>Cooling:</b>	Convection	
	Forced Air of 200 LFM	
<b>Total Regulation:</b>	±2% for all models	Total regulation is the maximum deviation from nominal voltage for all loading conditions
<b>Overload Protection:</b>	120% - 180% of rated output current value, Hiccup Mode	For 12V output, it is 110 to 180%
<b>Short Circuit Protection:</b>	Short across the output terminals will not cause damage to the unit. Hiccup Mode	
<b>Overvoltage Protection:</b>	OVP firing reduces output voltage to <50% of nominal in <50mS. See chart for trip range	
<b>Overtemperature Protection:</b>	Automatic Power Shutdown	Thermistor temperature is 130°C
<b>Minimum Load:</b>	No minimum load is required	
<b>Ripple and Noise:</b>	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
<b>Transient Response:</b>	500µs typ. response time for return to within 0.5% of final value for a 50% load change, $\Delta i/\Delta t < 0.2A/\mu s$ . Max. voltage deviation is 3.5%.	Measured @ 25°C
<b>Overshoot:</b>	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, 2 <sup>nd</sup> Edition
CSA	CSA 60950-1, 2 <sup>nd</sup>
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 °C to +70 °C	-40 °C Startup guaranteed
Temperature Derating:	60% derating at 70 °C	
Cooling:	Convection/ Airflow	75 Watts convection
Storage Temperature:	-40 °C to +85 °C	
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 °C 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

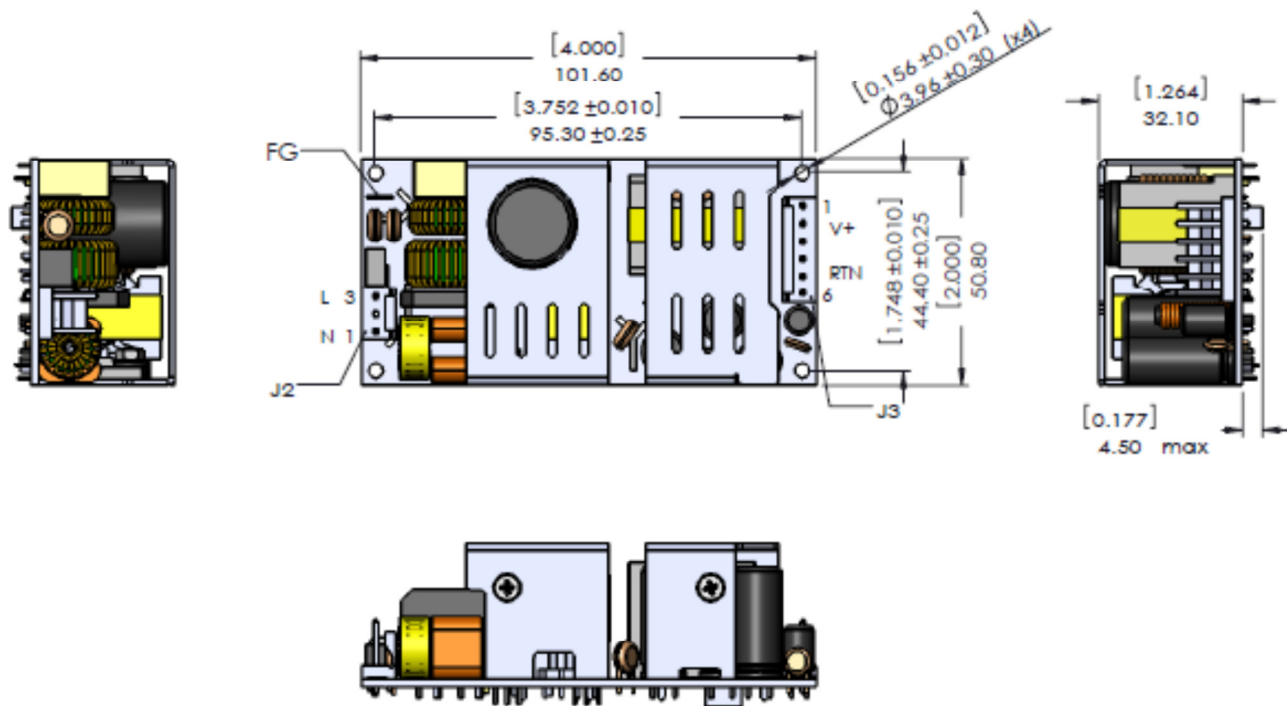
### EMI/EMC Compliance

PARAMETER	SPECIFICATION	NOTES
<b>Conducted Emissions:</b>	EN55011/22 Class B; FCC Part 15	Also meets EN55015 Class B
<b>Radiated Emissions:</b>	EN55011/22 Class A; FCC Part 15	
<b>Harmonic Current Emissions</b>	EN61000-3-2, Class A,B,C &D	Meets class C from 5 to 115 Watts. This is based on limits set @ 115 Watt
<b>Voltage Fluctuations &amp; Flicker</b>	EN61000-3-3	
<b>Static Discharge Immunity:</b>	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
<b>RF Field Susceptibility</b>	EN61000-4-3, Level 3 (3V/m), Criteria A	
<b>Fast Transients/Bursts</b>	EN61000-4-4, Level 3 (PS: 2kV-40A, other lines 1kV-20A), Criteria A	
<b>Surge susceptibility</b>	EN61000-4-5, Installation Class 3 (1kV diff. mode, 2kV common mode), Criteria A	
<b>Conducted RF susceptibility</b>	EN61000-4-6, Level 3 (3Vrms), Criteria A	
<b>Power Frequency Magnetic Field Test</b>	EN61000-4-8, Level 3 (3A/m), Criteria A	
<b>Voltage Sags &amp; Surges</b>	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°C ambient unless otherwise stated.

## Mechanical Drawing



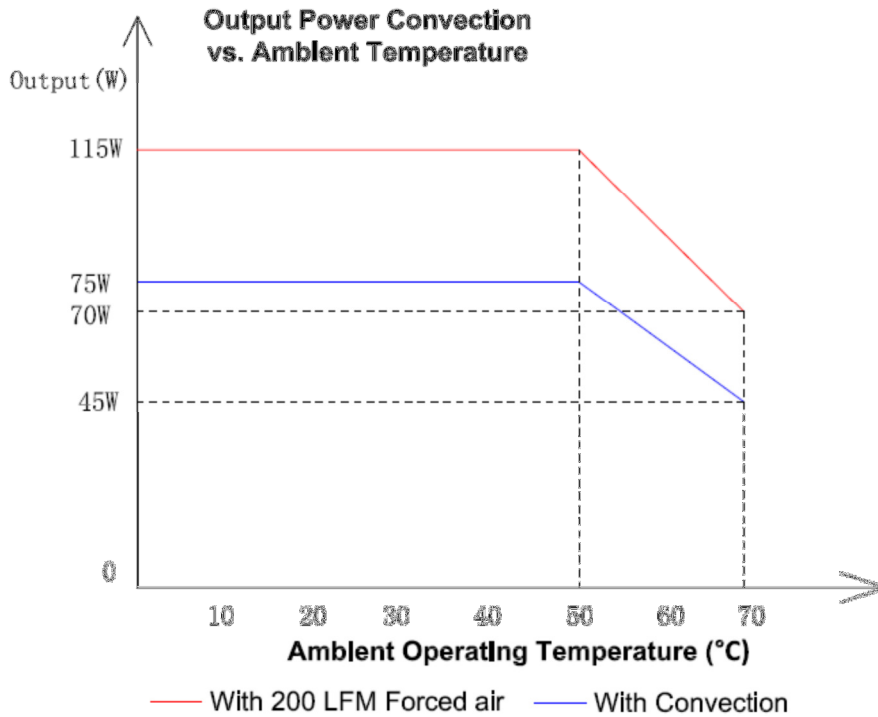
## Connector Information

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

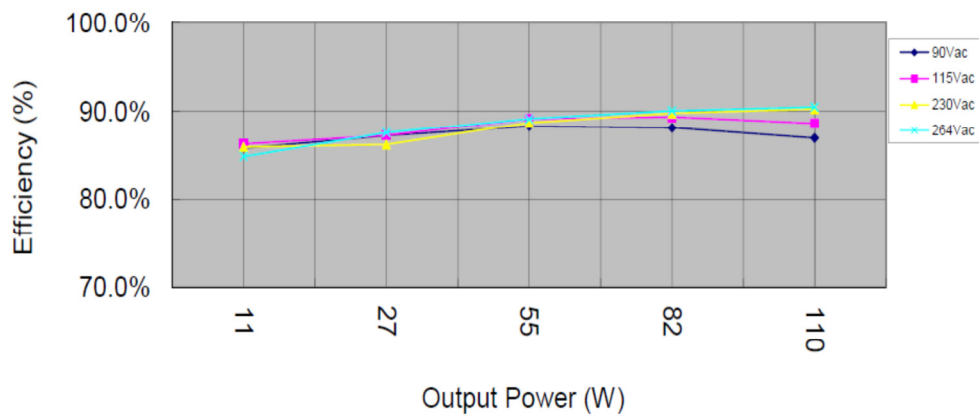
## Characteristic Curves

### Output Power vs. Temperature

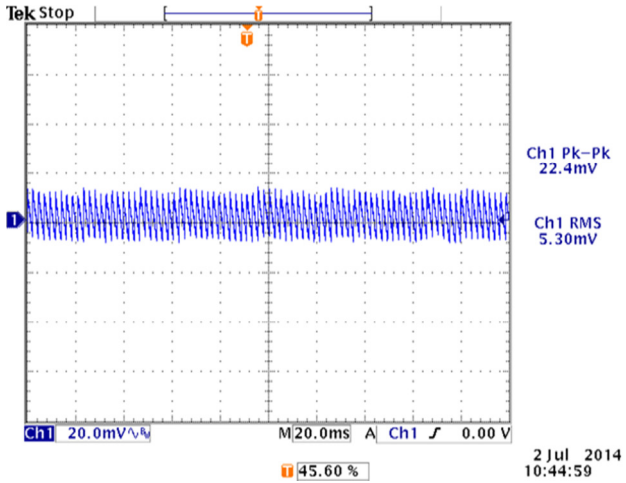


### Efficiency vs. Loading

Efficiency vs. Output Power

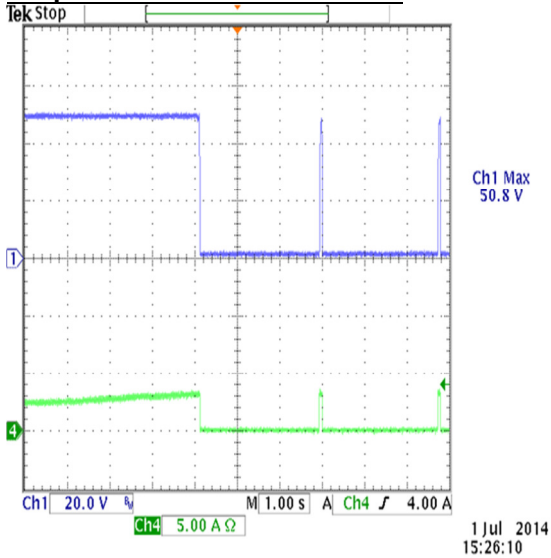


**Ripple & Noise**

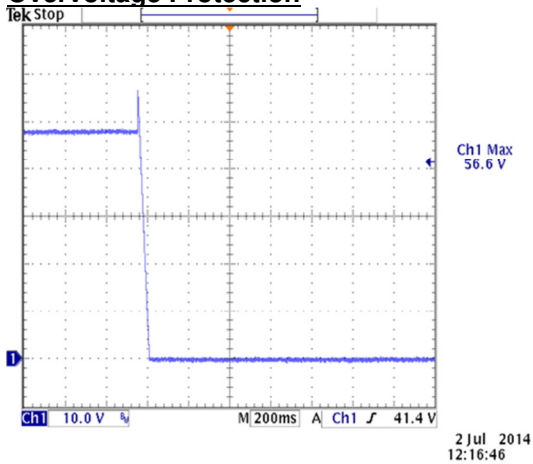


To verify that the output ripple and noise does not exceed the level specified in the product specification, measured using a scope probe socket with 0.1uF ceramic and a 10uF electrolytic capacitor connected in parallel across it, 20MHz BW.

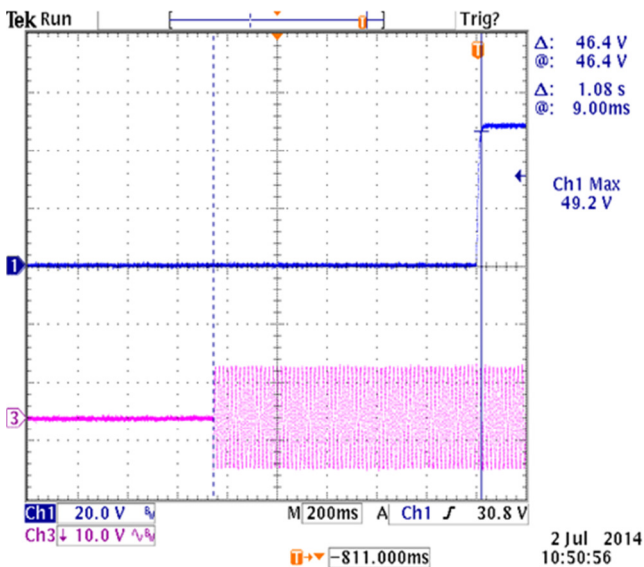
**Output Overload Characteristic**



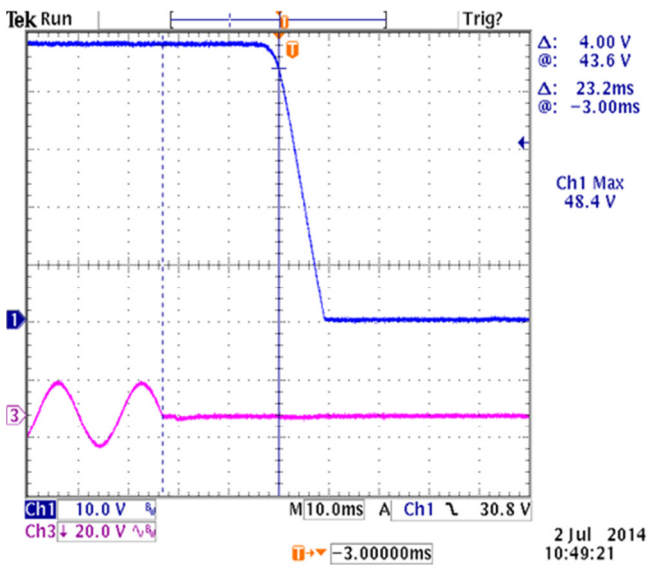
**Overvoltage Protection**



### 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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