

## Features

- 5 x 3 x 1 Inches Form factor
- 350 Watts with Forced Air Cooling & 200 Watts Convection Cooling
- Efficiencies upto 94%
- -40 to 70 degree operating temperature\*
- 12V / 0.5A Fan Output, Thermal Shut-Down feature
- 2.56m Hours, Telcordia -SR332-issue 3 MTBF
- Standby Power < 0.5W
- Approved to EN60950-1 2nd Edition

## Electrical Specifications

Input Voltage	90-264 VAC/390 VDC, Universal (Derate from 100% at 100V AC to 90% at 90V AC)	
Input Frequency	47-63 Hz	
Input Current	115 VAC: 3.6 A max.	230 VAC: 1.8 A max.
No Load Power	less than 0.5W typical	
Inrush Current	115 VAC – 25 A, 230 VAC – 45 A, 264 VAC – 75 A	
Leakage Current	300 uA Typical	
Efficiency	94%(48V,58V), 93%(24V,30V), 92%(12V,15V)	
Hold-up Time	Full Load > 8 ms typical	Convection Load > 14 ms typical
Power Factor	exceeds 0.95 with Full Load	
Output Power	upto 350W with 375 LFM, upto 200W Convection	
Output Voltage Adjustability	+/-3%	
Line Regulation	+/-0.5%	
Load Regulation	+/-1%	
Transient Response	50-100% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50Hz=5% , recovery time < 5 ms	
Rise Time	55 ms typical	
Set Point Tolerance	+/-1%	
Over Current Protection	>110% ,Hiccup mode / Auto Recovery	
Over Voltage Protection	110 to 140% , Hiccup mode / Auto Recovery	
Short Circuit Protection	Hiccup mode / Auto Recovery	
Switching Frequency	PFC – 70 to 130 KHz ,PWM – 50-80 KHz	
Operating Temperature	-40 to +70°C, * -40 to 0°C startup is guaranteed with spec deviation (ref note 6)	
Storage Temperature	-40 to +85°C	
Relative Humidity	5% to 95%, noncondensing	
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.	
MTBF	2.56m Hours, Telcordia -SR332-issue 3	
Isolation Voltage	Input to Output – 3000V AC for ITE application	
	Input to GND - 1500 VAC	
Cooling	350W with 375 LFM forced air cooling at 100 to 264VAC 200W with natural convection cooling at 100 to 264VAC.	

Model Number	Description	Voltage	Max. Load (Convection)	Max. Load (375 LFM)	Min. Load	Ripple <sup>1</sup>
LFWLP350-1001	with Screw Terminal	12V	15A	25A	0.0A	1%
LFWLP350-1301 <sup>7</sup>	with Molex Connector	12V	15A	18.75A	0.0A	1%
LFWLP350-1002	with Screw Terminal	15V	12A	21.67A	0.0A	1%
LFWLP350-1302 <sup>7</sup>	with Molex Connector	15V	12A	18A	0.0A	1%
LFWLP350-1003	with Screw Terminal	24V	8.33A	14.60A	0.0A	1%
LFWLP350-1303	with Molex Connector	24V	8.33A	14.60A	0.0A	1%
LFWLP350-1004	with Screw Terminal	48V	4.17A	7.30A	0.0A	1%
LFWLP350-1304	with Molex Connector	48V	4.17A	7.30A	0.0A	1%
LFWLP350-1005	with Screw Terminal	30V	6.67A	11.67A	0.0A	1%
LFWLP350-1305	with Molex Connector	30V	6.67A	11.67A	0.0A	1%
LFWLP350-1006	with Screw Terminal	58V	3.45A	6.04A	0.04	1%
LFWLP350-1306	with Molex Connector	58V	3.45A	6.04A	0.0A	1%
LFWLP350-CK metal cover kit accessory						

Connectors		
J1	Pin 1	AC LINE
	Pin 2	NOT FITTED
	Pin 3	AC NEUTRAL
J2 Option 1 (Screw Terminal)	Pin 1	V1 +VE
	Pin 2	V1 -VE
J2 Option 2 (Molex Connector)	Pin 1,2,3,4	V1 +VE
	Pin 5,6,7,8	V1 -VE
J3	Pin 1	FAN +VE
	Pin 2	FAN -VE

## Notes

- Ripple is peak to peak with 20 MHz bandwidth and 10  $\mu$ F (Tantalum capacitor) in parallel with a 0.1  $\mu$ F capacitor at rated line voltage and load ranges.
- Combined output power of main output, fan supply shall not exceed max. Power rating.
- Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-10% and Ripple and noise is less than 10%.
- Specifications are for nominal input voltage, 25°C unless otherwise stated.
- Thermal shutdown feature : The power supply goes in hiccup mode when the temperature of PCB exceeds 110 °C (+/-10 °C).
- Output ripple can be more than 10% of the output voltage.
- Models LFWLP350-1301 and LFWLP350-1302 do not have CCC approval
- When used in Cover Kit, de-rate output power to 70 % under all operating conditions



Innovations in Power

## Mechanical Specifications

AC Input Connector (J1)	Molex: 26-60-4030 Mating: 09-50-3031; Pins: 08-50-0106
Earth (J4)	Molex: 19705-4301 Mating: 19003-0001
DC Output Connector (J2) Option 1 (Screw Terminal)	6-32 inches Screw Pan HD Mating: Designed to accept Ring Tongue Terminal AMP : 8-31886-1, wherein one 16 AWG(max) wire can be crimped. Note : One Ring Tongue Terminal with 16 AWG is recommended for current upto 11A only. Use multiple tongue terminals with wire for more current.
DC Output Connector (J2) Option 2 (Molex Connector)	Molex: 26-60-4080 Mating: 09-50-3081; Pins: 08-50-0106
Aux (Fan) Output(J3)	AMP :640456-2 Mating: 640440-2
Dimensions	5 x 3 x 1 inches (127 x 76.2x 25.4 mm)
Weight	300 gm approx

## EMC

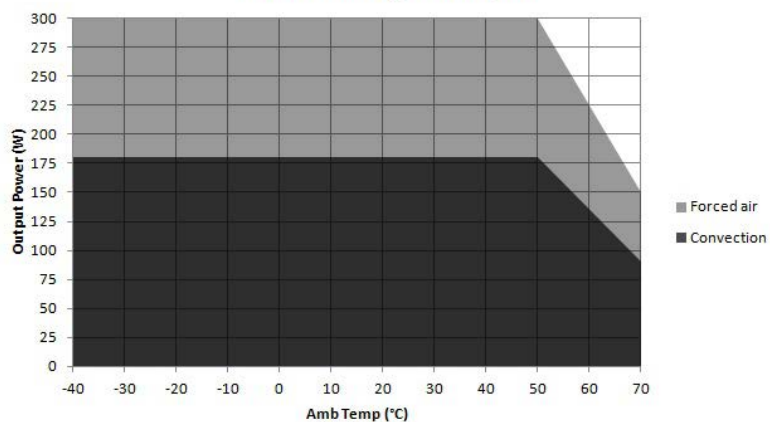
Parameter	Conditions/Description	Criteria
Conducted Emissions	EN55032-B, CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55032 A	Pass Level B with external core (King core K5B RC 25x12x15-M in input cable)
Input Current Harmonics	EN 61000-3-2	Class D
Voltage Fluctuation and Flicker	EN 61000-3-3	Pass
ESD Immunity	EN 61000-4-2	Level 3, Criterion A
Radiated Field Immunity	EN 61000-4-3	Level 3, Criterion A
Electrical Fast Transient Immunity	EN 61000-4-4	Level 3, Criterion A
Surge Immunity	EN 61000-4-5	Level 3, Criterion A
Conducted Immunity	EN 61000-4-6	Level 3, Criterion A
Magnetic Field Immunity	EN 61000-4-8	Level 3, Criterion A
Voltage dips, interruptions	EN 61000-4-11	Criterion A & B

## Safety

CE Mark	Complies with LVD Directive
Approval Agency	Nemko, UL, C-UL, CCC
Safety Standard(s)	EN60950-1, IEC60950-1 (ed.2) , UL 60950 (ed.2), CSA C22.2 No.60950-1 (ed.2), Class1 SELV , GB4943. 1-2011 ; GB9254-2008 ; GB17625. 1-2012
Safety File Number(s)	Class-I : UL: Certificate Number 20150122-E150565,Nemko: Certificate No. P15219422, CB Certificate No.: NO85161 Class-II : Nemko: Certificate No. P15219457,CB Certificate No.: NO85356

## Derating Curve

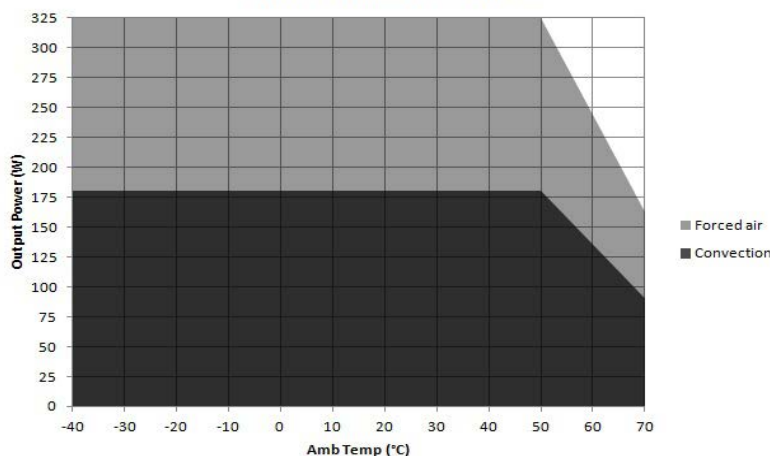
**Power de-rating : 12V output**



CONVECTION LOAD: 180W UP TO 50 °C  
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load : 300W up to 50°C  
De-rate above 50 °C @ 2.5% per °C

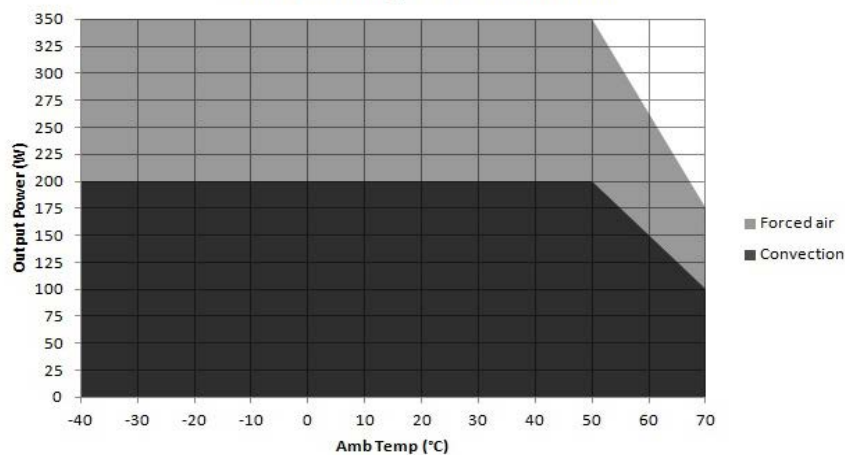
**Power de-rating : 15V output**



CONVECTION LOAD: 180W UP TO 50 °C  
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load : 325W up to 50°C  
De-rate above 50 °C @ 2.5% per °C

**Power de-rating : 24V, 30V, 48V, 58V**



CONVECTION LOAD: 200W UP TO 50 °C  
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load : 350W up to 50°C  
De-rate above 50 °C @ 2.5% per °C

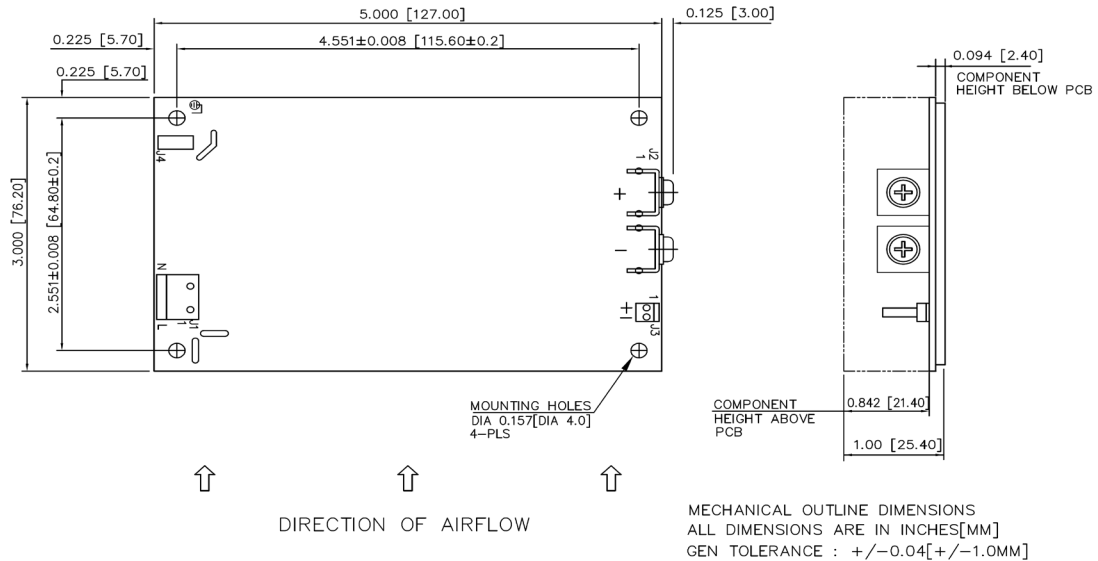
Derating Curve Note : Between -40 to 0°C startup is guaranteed with spec deviation ( ref note 6)



Innovations in Power

## Mechanical Drawing

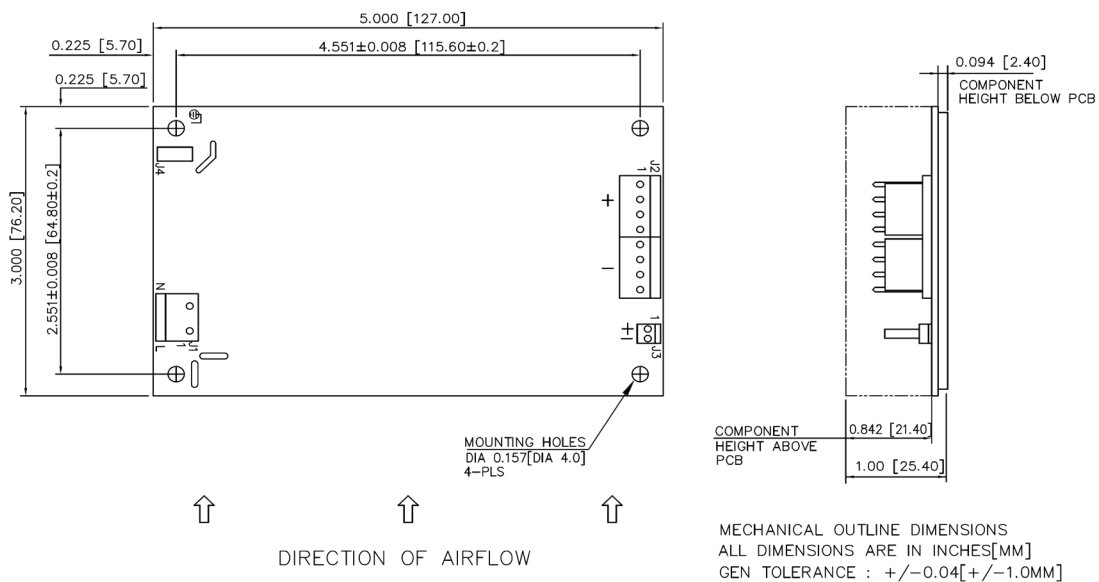
### Option 1 -10XX Suffix.



Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following

1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.

### Option 2 -13XX Suffix.



Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following

1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.