Features

- Leading Edge and Trailing Edge AC Dimmable
- Constant Current Output
- High Efficiency (Up to 84%)
- Active Power Factor Correction (Up to 0.95)
- All-Round Protection: OLP,SCP, and No Load Protection
- SELV Output

Description

The *LHC-024SxxxRSP* series operate from a 176 ~ 264 Vac input range. They are designed to be highly efficient and reliable. Features include dimming control with leading edge and trailing edge, open lamp, short circuit protections.

Model List

Output Current	Input Voltage Range	Output Voltage Range	Max. Output Power	Efficiency (1)	Power Factor (1)	Model Number
350 mA	176 ~ 264 Vac	34-68 Vdc	24 W	84%	0.95	LHC-024S035RSP
500 mA	176 ~ 264 Vac	24-48 Vdc	24 W	84%	0.95	LHC-024S050RSP
700 mA	176 ~ 264 Vac	17-34 Vdc	24 W	83%	0.95	LHC-024S070RSP
1050 mA	176 ~ 264 Vac	12-23 Vdc	24W	82%	0.95	LHC-024S105RSP

Notes: (1) Measured in 220 Vac input at full load.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	176 Vac	-	264 Vac	
Input Frequency		50 Hz		
Leakage Current	-	-	0. 5 mA	At 220Vac, 50Hz input.
Input AC Current	-	-	0.2 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	25 A	At 220Vac input, 25℃ cold start, duration = 2 us, 10%Ipk-10%Ipk.
Inrush Current(I^2t)	-	-	$4.2*10^{-4}$ A^2s	
Power Factor	0.90	-	-	At 176Vac-264Vac, 75%load-100%load
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	5%	Full load condition
Startup Overshoot Current	-	-	10%	Full load condition
Line Regulation	-	-	±2%	Input voltage from 200Vac to 264Vac
	-	-	±30%	Input voltage from 176Vac to 200Vac

Output Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Load Regulation	-	-	±5%	Input voltage from 200Vac to 264Vac
	-	-	±20%	Input voltage from 176Vac to 200Vac
Turn-on Time	-	0.6 s	1.0 s	Measured at 220Vac input.
Dimming Range	0%Io	-	100%Io	Conduction Angle 30° ~180°
Temperature coefficient	-	-	0.03%/°C	Case temperature = 0°C ~Tc max

Note: All specifications are typical at 25 °C unless otherwise stated.

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
No Load Voltage I_O = 350 mA I_O = 500 mA I_O = 700 mA I_O = 1050 mA	 - - - -	 73V 52V 36V 25V	 75V 54V 38V 27V	Measured at full load and 220 Vac input with full conduction angle.
Short Circuit Protection	Latch mode. The power supply shall return to normal operation only after the short is removed and the power is recycled.			

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency I_O = 350 mA I_O = 500 mA I_O = 700 mA I_O = 1050 mA	 83% 83% 82% 81%	 84% 84% 83% 82%	 - - - -	Measured at full load and 220 Vac input with full conduction angle.
No Load Power Dissipation	-	-	5 W	
MTBF	-	330,000 Hours	-	Measured at 220Vac input, 80%load and 25℃ ambient temperature (MIL-HDBK-217F)
Life Time	-	51,000 Hours	-	Measured at 220Vac input, 80%Load and 60°C case temperature; See life time vs. Tc curve for the details
Case Temperature	-	-	90℃	
Dimensions Inches (L × W × H) Millimeters (L × W × H)	 4.73× 1.65 × 1.20 120 × 42 ×30.5			
Net Weight		250 g		

Note: All specifications are typical at 25 °C unless otherwise stated.

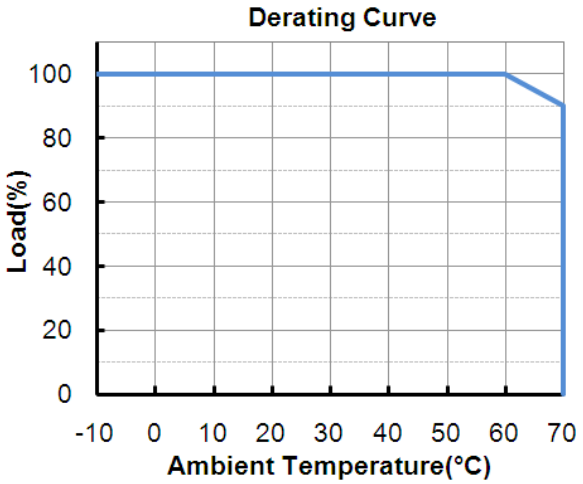
Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-10℃	-	+70 ℃	Humidity: 10% RH to 90% RH. See Derating Curve for details
Storage Temperature	-20 ℃	-	+85 ℃	Humidity: 5% RH to 90% RH

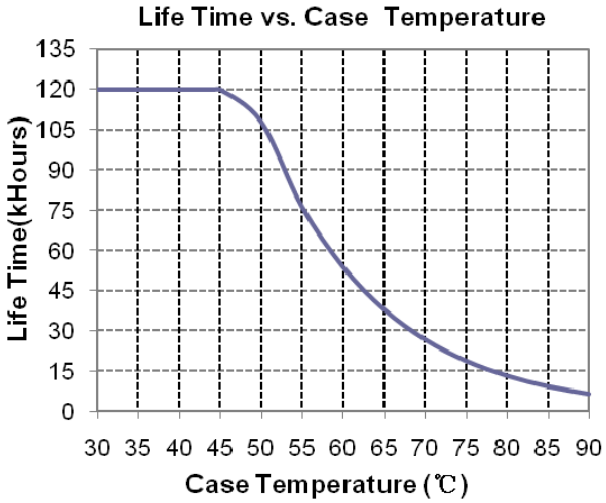
Safety & EMC Compliance

Safety Category	Standard
CE	EN 61347-1, EN61347-2-13
EMI Standards	**Notes**
EN55015/CISPR15	Conducted Emission Test & Radiated Emission Test
EN 61000-3-2	Harmonic Current Emissions
EN 61000-3-3	Voltage Fluctuations & Flicker
EMS Standards	**Notes**
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge Level 3, Criteria A
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: Line to Line 1 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies to Lighting Equipment

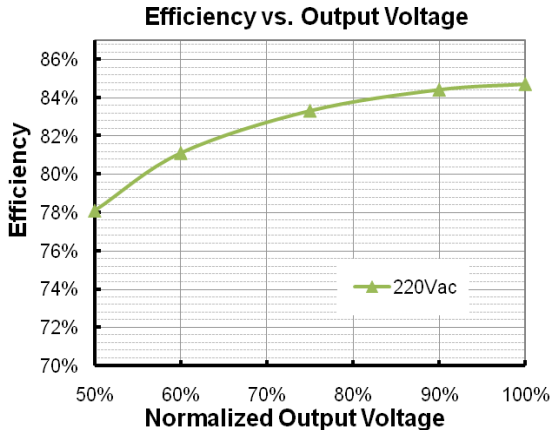
Derating Curve



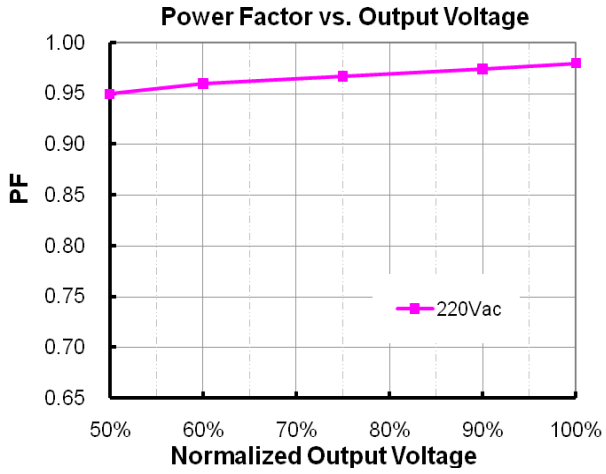
Life Time vs. Case Temperature Curve



Efficiency vs. Load (350 mA)



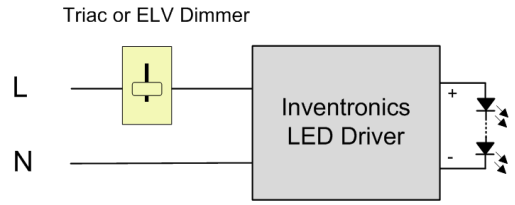
Power Factor Characteristics (350 mA)

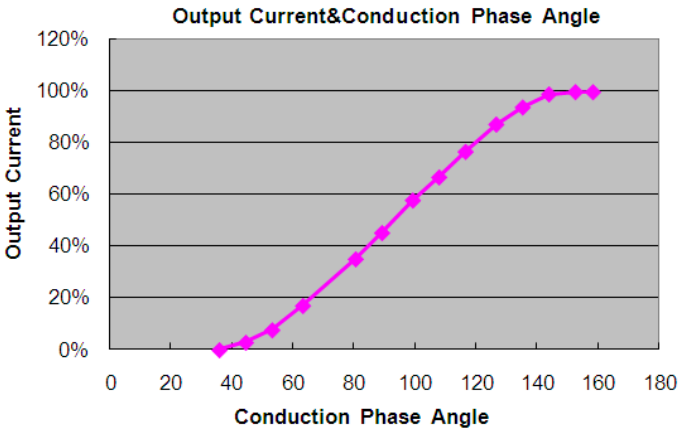


Dimmer Recommendation

Manufacturer	Type	Applicable Voltage	Power Rating	Notes
Hongyan	KT250	230Vac	250W	
Flexalite	FL6300	230Vac	630W	
SIEMENS	5TG	230Vac	500W	
T&J	60669	230Vac	630W	
Opus	852.390	230Vac	400W	
Bush-Jaeger	2250U	230Vac	600W	

TRIAC Dimming Control

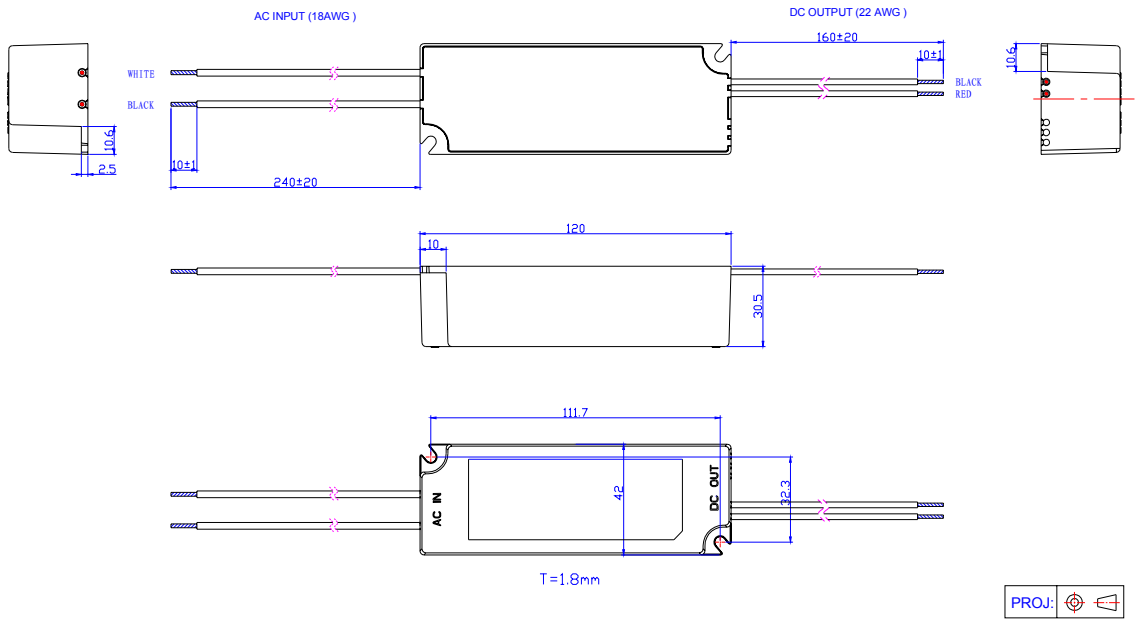




Implementation: Dimming with Triac or ELV Dimmer

Parameter	Min.	Typ.	Max.	Notes
Dimming Range	0%Io	-	100%Io	Measured at 220 Vac input.
Conduction Angle	30°	-	180°	Measured at 220 Vac input.

Mechanical Outline



RoHS Compliance

Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2012-10-15	A	Datasheet Release	/	/