

Features

- 0 -10V Dimmable (Compatible with Passive Dimmers)
- Constant Current Output
- High Efficiency
- Active Power Factor Correction
- All-Around Protection: OLP, SCP and Open Lamp Protection
- SELV and Class2



Description

The LUC-012SxxxDSM (SSM) series operates from a 90 ~ 305 Vac input range. They are designed to be highly efficient and reliable. Features include open lamp, short circuit and over load protections.

Model List

Output Current	Input Voltage Range	Output Voltage Range	Max. Output Power	Efficiency (1)	Power Factor (1)	Model Number
350 mA	90 ~ 305 Vac	17~ 34 Vdc	12 W	81%	0.94	LUC-012S035DSM(SSM)
500 mA	90 ~ 305 Vac	12~ 24 Vdc	12 W	80%	0.94	LUC-012S050DSM(SSM)
700 mA	90 ~ 305 Vac	9 ~ 17 Vdc	12 W	80%	0.94	LUC-012S070DSM(SSM)

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

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.5 mA	At 277Vac, 60Hz input
Input AC Current	-	-	0.18 A	Measured at full load and 120 Vac input
Inrush Current	-	-	20 A	At 220Vac input, 25°C cold start, duration=150 μs, 10%Ipk-10%Ipk.
Inrush Current(I ² t)	-	-	0.001 A ²	
Power Factor	0.90	-	-	At 100Vac-277Vac, 100%load
THD	-	-	20%	At 100Vac-277Vac, 75%load-100%load

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	5%	
Output Current Ripple	-	-	30%Io	Full load condition

Output Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Startup Overshoot Current	-	-	10%	Full load condition
Line Regulation	-	-	±1%	/
Load Regulation	-	-	±3%	/
Turn-on Delay Time	-	0.8 s	1.0 s	Measured at 120Vac input
Dimming Range (Io)	10%		100%	
Temperature co-efficient	-	-	0.03%/°C	Case temperature = 0°C ~Tc max

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

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
No Load Voltage	Vomax	110% Vomax	120% Vomax	Vomax is the maximum operation output voltage
Short Circuit Protection	Hiccup. The power supply shall be self-recovery when the fault condition is removed.			

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency Io = 350 mA Io = 500 mA Io = 700 mA	79% 78% 78%	80% 79% 79%	- - -	Measured at full load and 120 Vac input
Efficiency Io = 350 mA Io = 500 mA Io = 700 mA	80% 79% 79%	81% 80% 80%	- - -	Measured at full load and 220 Vac input
Efficiency Io = 350 mA Io = 500 mA Io = 700 mA	79% 78% 78%	80% 79% 79%	- - -	Measured at full load and 277 Vac input
No Load Power Dissipation	-	-	3 W	
MTBF	-	459,300 Hours	-	Measured at 120Vac input, 80%load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	-	63,500 Hours	-	Measured at 120Vac input, 80%load; Case temperature=60°C @ Tc point. See life time vs. Tc curve for the details
Case temperature	-	-	85°C	
Dimensions Inches (L × W × H) Millimeters (L × W × H)	3.29 × 1.64 × 0.98 83.5 × 41.5 × 25			
Net Weight		170 g		

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

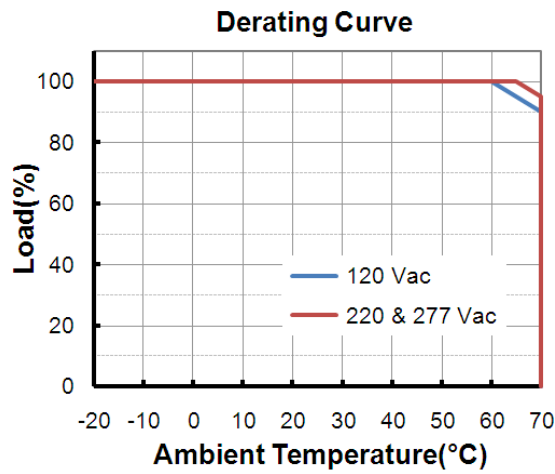
Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-20 °C	-	+70 °C	Humidity: 10% RH to 100% RH. See Derating Curve for more details
Storage Temperature	-30 °C	-	+85 °C	Humidity: 5% RH to 100% RH

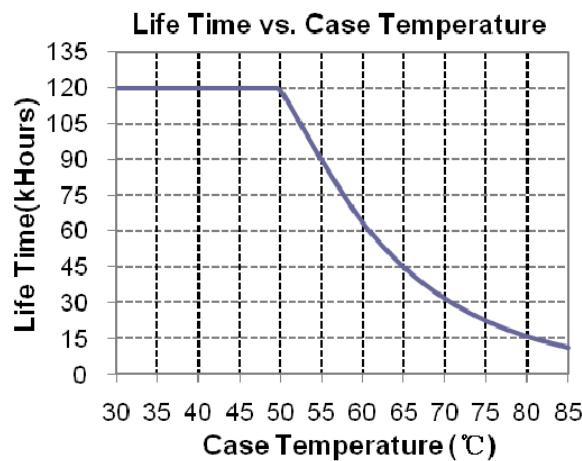
Safety & EMC Compliance

Safety Category	Standard
CE	EN 61347-1, EN61347-2-13
UL/CUL	UL8750, UL1310, CAN/CSA-C22.2 No. 223-M91
EMI Standards	Notes
EN 55015/CISPR15	Conducted Emission Test & Radiated Emission
EN 61000-3-2	Harmonic Current Emissions Class C
EN 61000-3-3	Voltage Fluctuations & Flicker
FCC Part 15	ANSI C63.4:2009 Class B
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-RS Level 3, Criteria A
EN 61000-4-4	Electrical Fast Transient / Burst-EFT Level 3, Criteria A
EN 61000-4-5	Surge Immunity Test: AC Power Line: Line to Line 1 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS Level 3, Criteria A
EN 61000-4-8	Power Frequency Magnetic Field Test 3A/m , Criteria A
EN 61000-4-11	Voltage Dips Criteria B
EN 61547	Electromagnetic Immunity Requirements Applies to Lighting Equipment

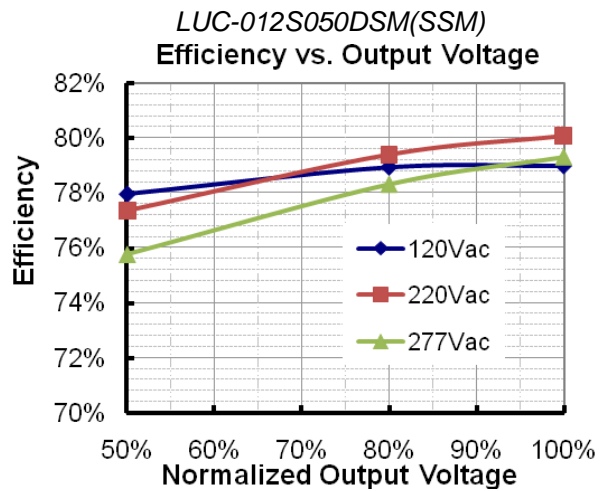
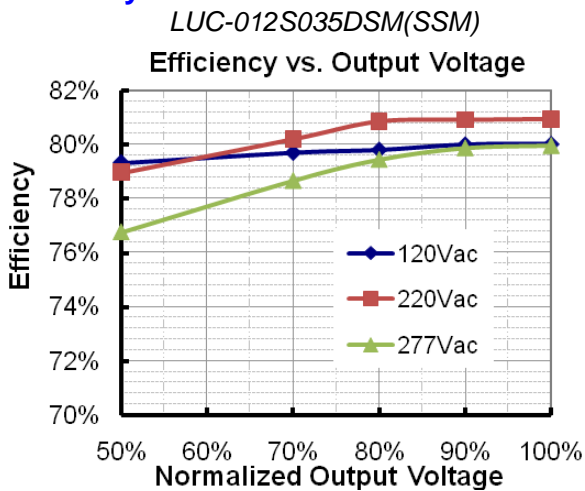
Derating Curve

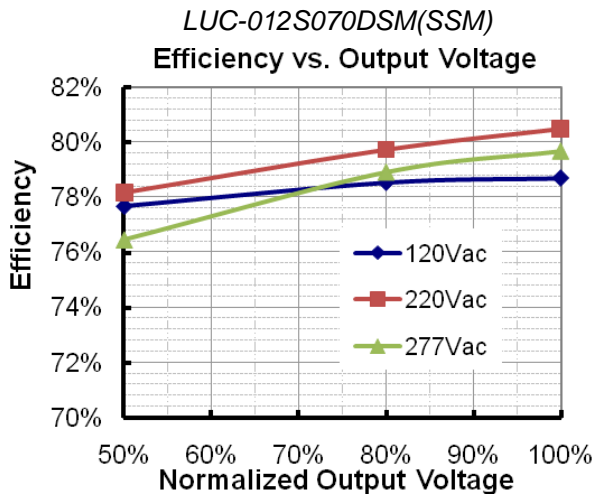


Life Time vs. Case Temperature Curve

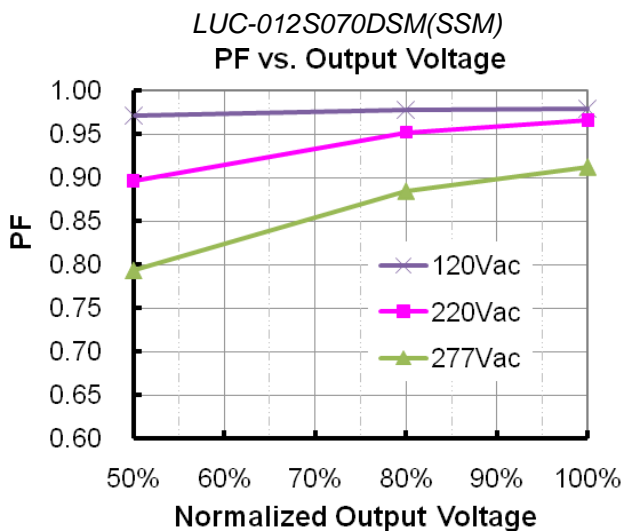
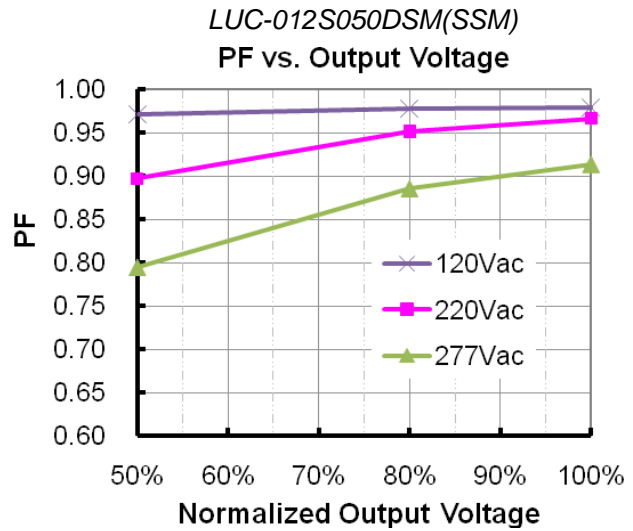
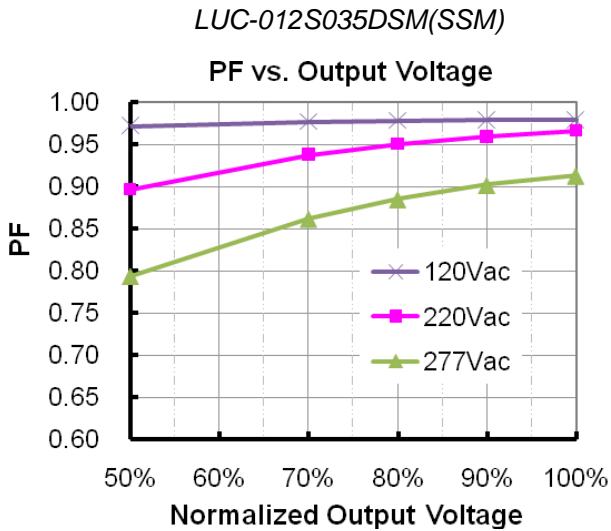


Efficiency vs. Load





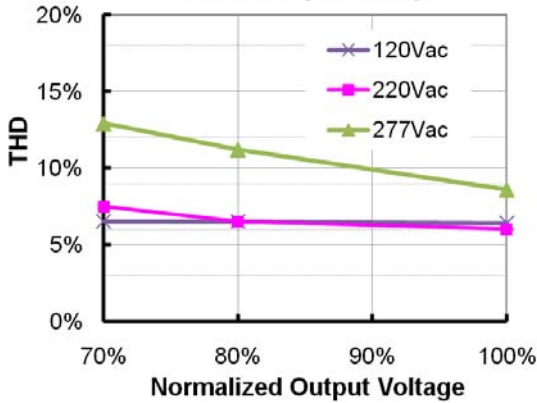
Power Factor Characteristic



Total Harmonic Distortion

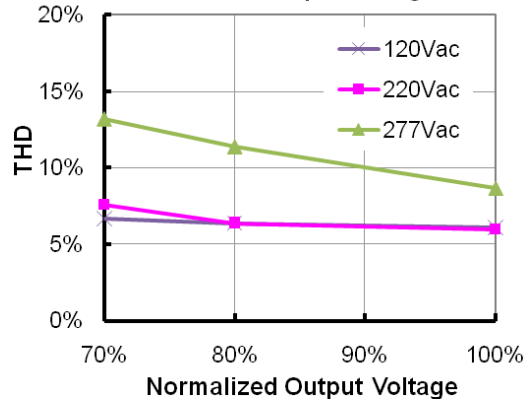
LUC-012S035DSM(SSM)

THD vs. Output Voltage



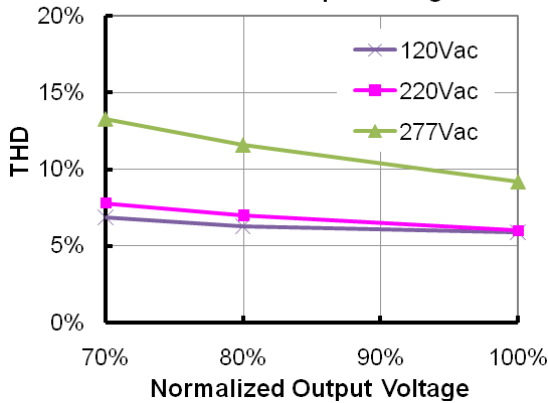
LUC-012S050DSM(SSM)

THD vs. Output Voltage



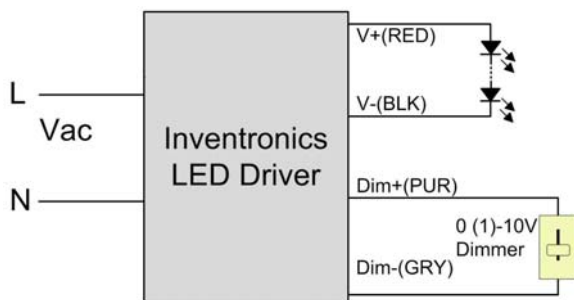
LUC-012S070DSM(SSM)

THD vs. Output Voltage

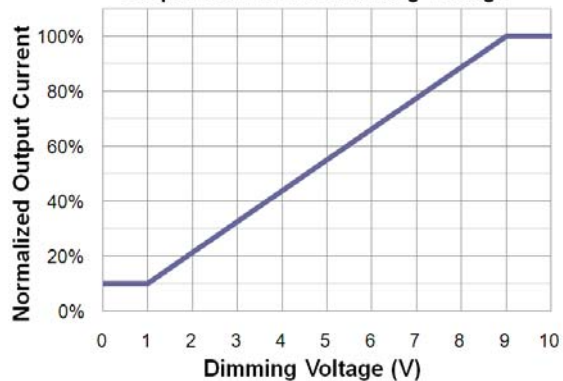


Dimming Control (On secondary side)

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the 0~10V Wire	-2 V	-	15 V	
0~10V Wire Current Sourcing Capability	100 μ A	150 μ A	200 μ A	



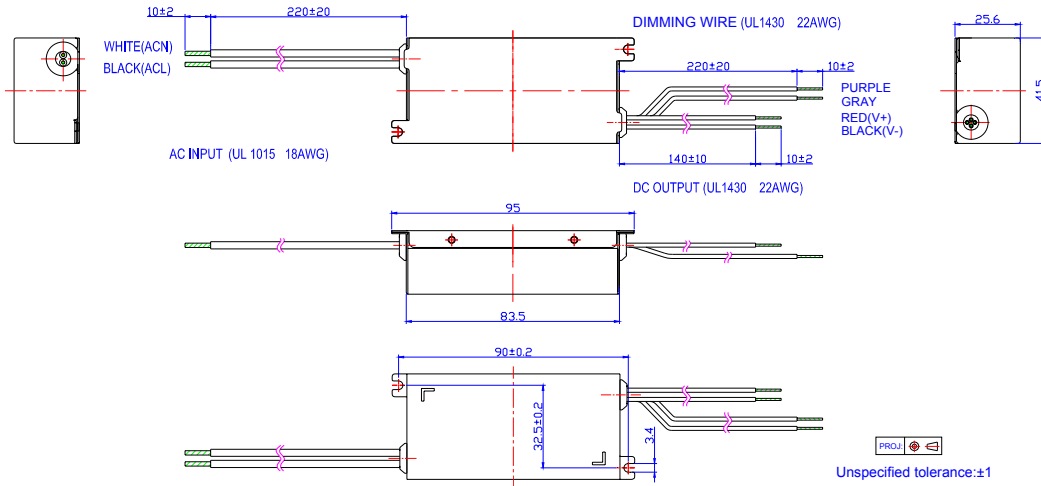
Output Current vs. Dimming Voltage



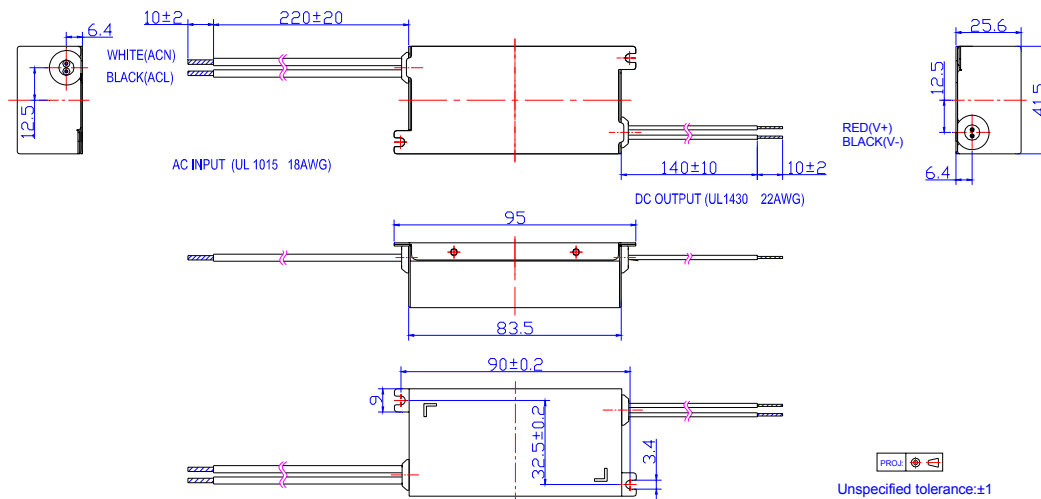
Note: If 0-10V dimming is not used, Dim + can be open.

Mechanical Outline

LUC-012SxxxDSM



LUC-012xxxSSM



RoHS Compliance

Our products comply with the European Directive 2011/65/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
2011-9-29	A	Datasheets Release	/	/
2011-10-11	B	Derating Curve, Life time, PF, EFF Curve	/	Update
2011-12-27	C	Derating Curve	/	Update
2012-6-14	D	Startup Overshoot Current	20%	10%
2012-7-17	E	Max Case Temperature	/	Updated
2012-8-29	F	Inrush Current(I ² t)	/	Added
		Min PF	/	Added
		Max THD	/	Added
		Temperature co-efficient	/	Added
		Typical life time and MTBF	/	Added
2013-02-20	G	Efficiency @220Vac	/	1% lower
		Efficiency @277Vac	/	2% lower
		Efficiency & PF Curve of other models	/	Added
		THD Curve of all the models	/	Added
2013-11-29	H	Mechanical Outline	/	Updated
2014-02-26	I	PF	0.9 Min At 100-277Vac, 90%-100%load	0.9 Min At 100-277Vac, 100%load