

## 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 Class 2



## Description

The *LUC-010SxxxDSM (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	14~ 29 Vdc	10 W	80%	0.94	LUC-010S035DSM(SSM)
500 mA	90 ~ 305 Vac	10~ 20 Vdc	10 W	79%	0.94	LUC-010S050DSM(SSM)
700 mA	90 ~ 305 Vac	8 ~ 16 Vdc	11 W	79%	0.94	LUC-010S070DSM(SSM)

**Note:** (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	-	-	0.15 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 <sup>2</sup> t)	-	-	0.001 A <sup>2</sup>	
Power Factor	0.86	-	-	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 (I <sub>o</sub> )	10%		100%	
Temperature co-efficient	-	-	0.03%/°C	Case temperature = 0°C ~T <sub>c</sub> max

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

## Protection Functions

Parameter	Min.	Typ.	Max.	Notes
No Load Voltage	V <sub>omax</sub>	110% V <sub>omax</sub>	120% V <sub>omax</sub>	V <sub>omax</sub> 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 I <sub>o</sub> = 350 mA I <sub>o</sub> = 500 mA I <sub>o</sub> = 700 mA	78% 77% 77%	79% 78% 78%	- - -	Measured at full load and 120 Vac input
Efficiency I <sub>o</sub> = 350 mA I <sub>o</sub> = 500 mA I <sub>o</sub> = 700 mA	79% 78% 78%	80% 79% 79%	- - -	Measured at full load and 220 Vac input
Efficiency I <sub>o</sub> = 350 mA I <sub>o</sub> = 500 mA I <sub>o</sub> = 700 mA	78% 77% 77%	79% 78% 78%	- - -	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 @ T <sub>c</sub> point. See life time vs. T <sub>c</sub> 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 otherwise stated.

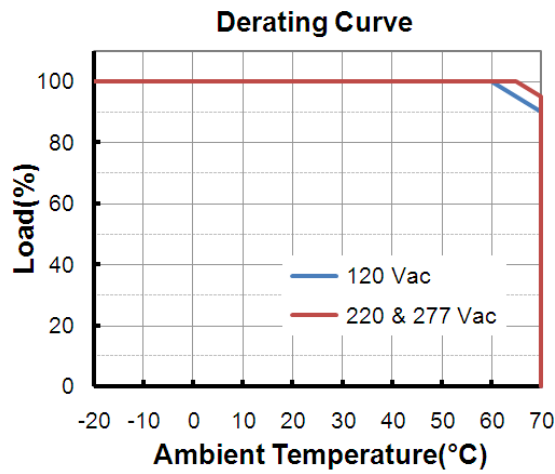
## Environmental Specifications

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

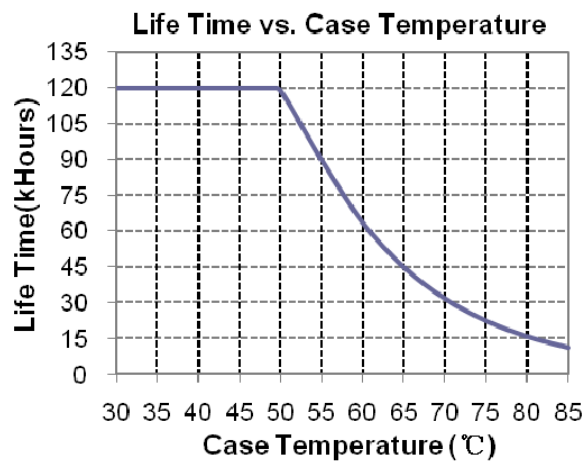
## Safety & EMC Compliance

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 Test
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

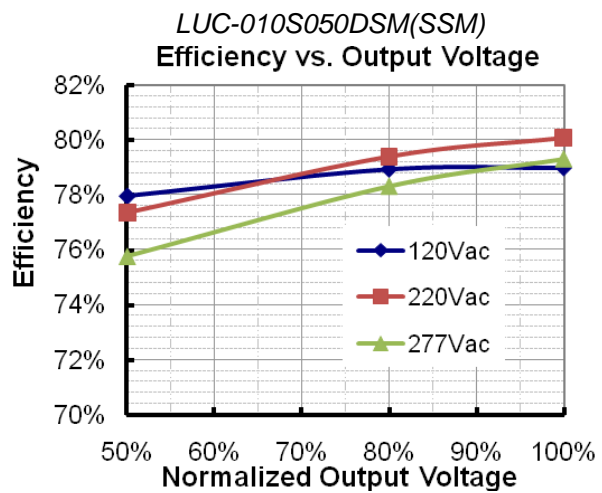
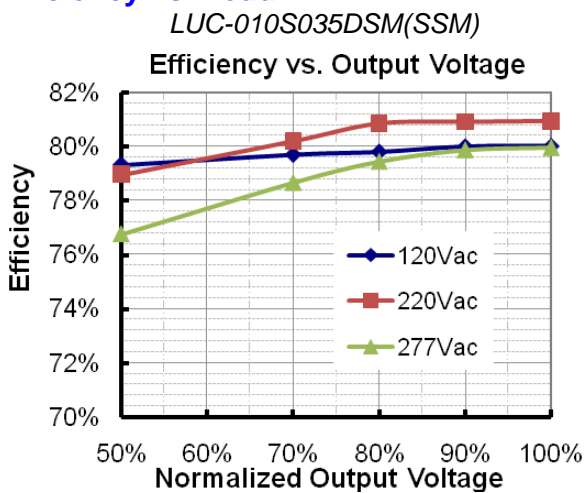
## Derating Curve

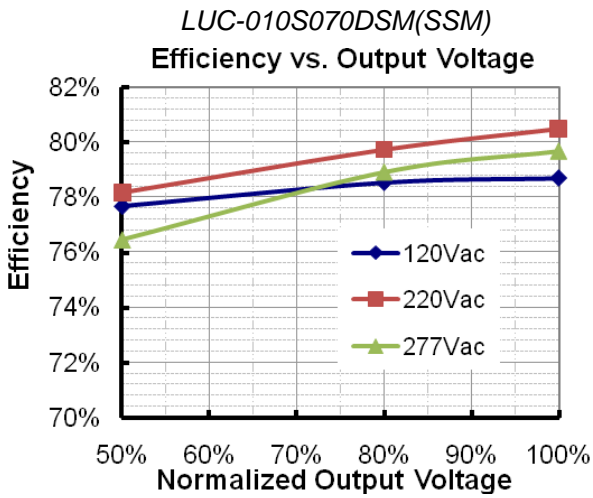


## Life Time vs. Case Temperature Curve

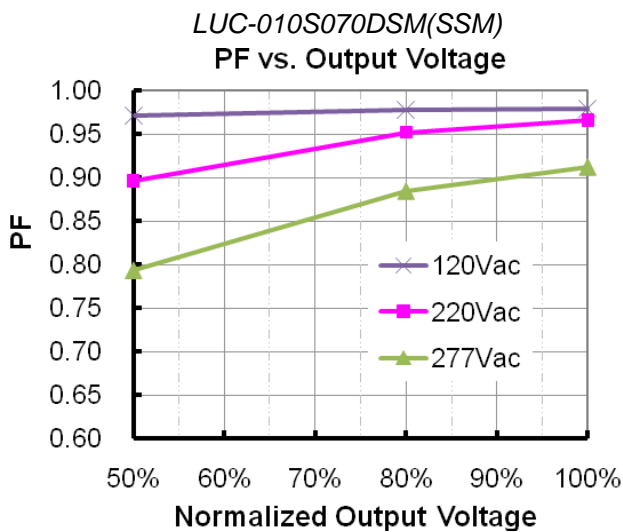
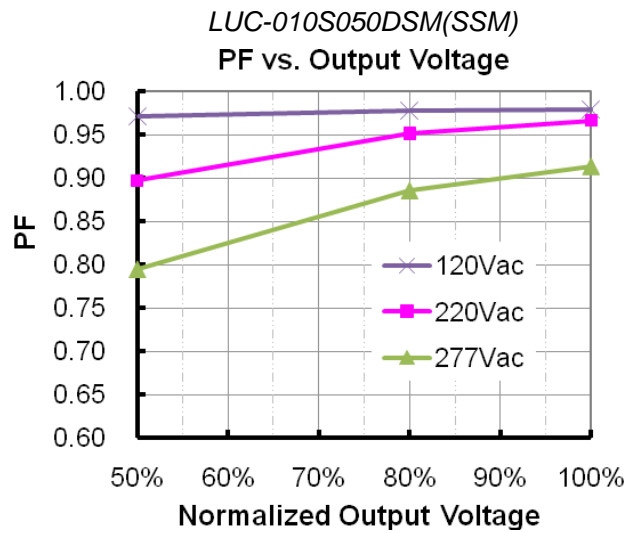
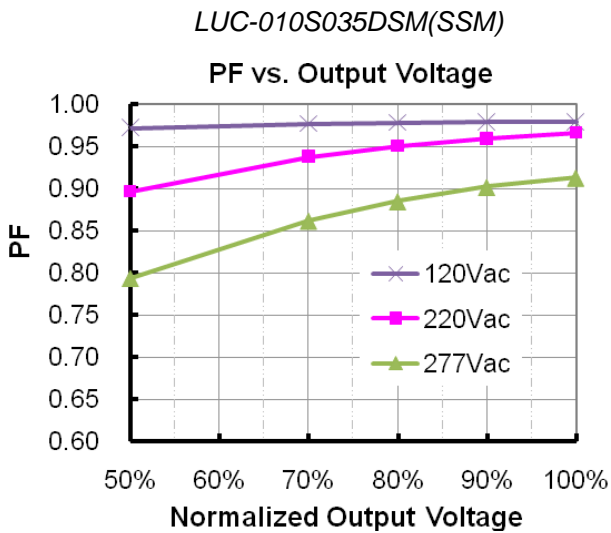


## Efficiency vs. Load





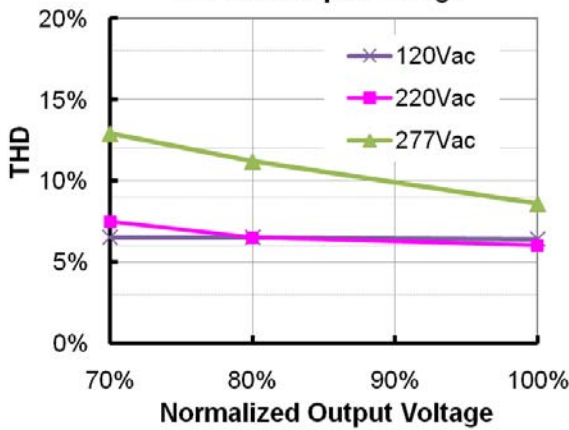
### Power Factor Characteristic



## Total Harmonic Distortion

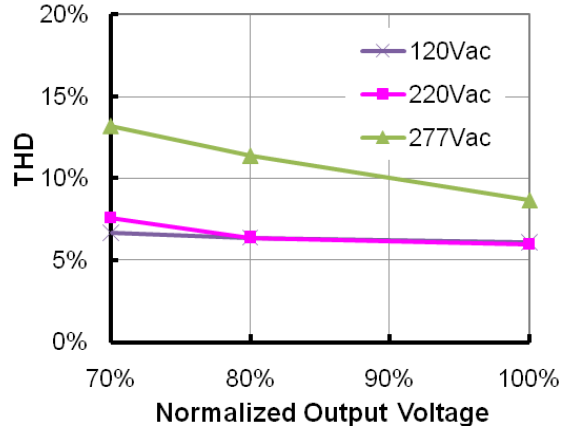
LUC-010S035DSM(SSM)

THD vs. Output Voltage



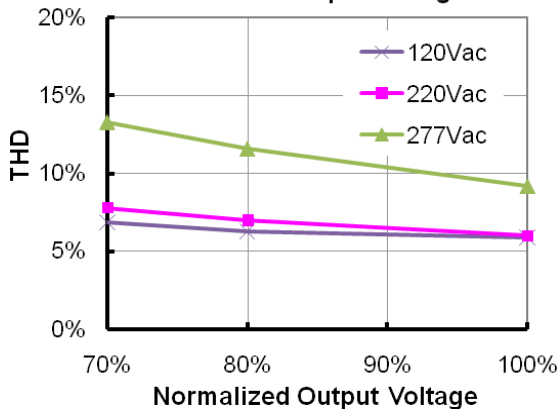
LUC-010S050DSM(SSM)

THD vs. Output Voltage



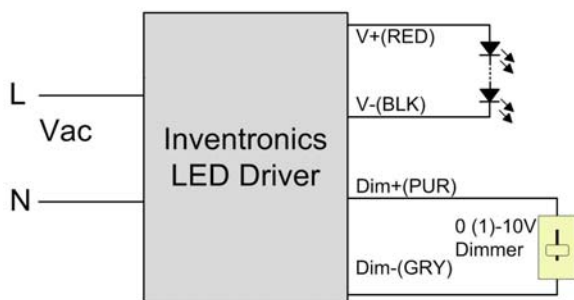
LUC-010S070DSM(SSM)

THD vs. Output Voltage

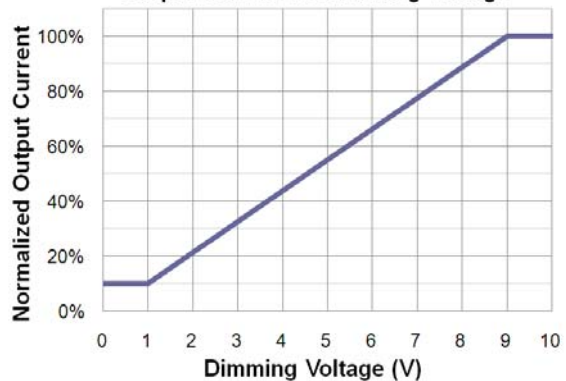


## Dimming Control (On secondary side)

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the 0~10V Wire	-2 V	-	15 V	
0~10V Wire Current Sourcing Capability	150 Ua	200Ua	250 Ua	



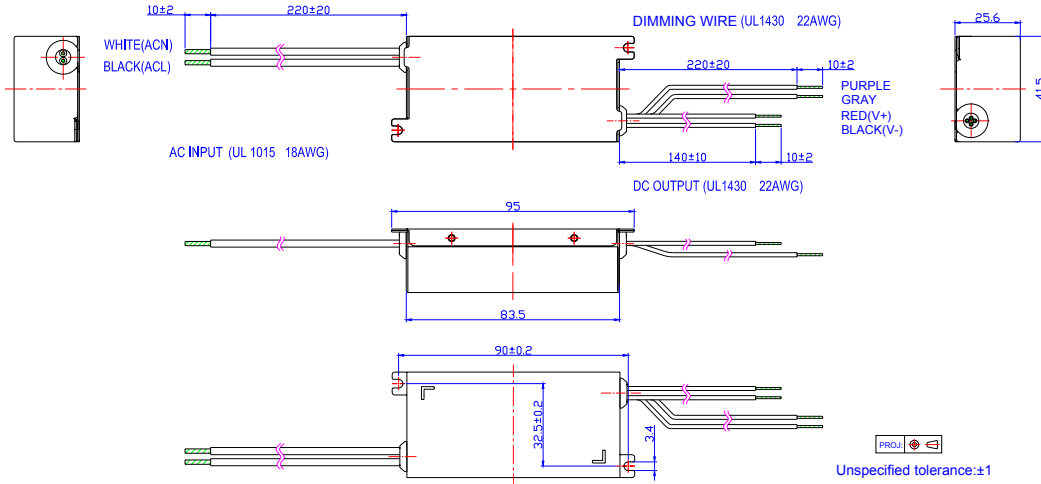
Output Current vs. Dimming Voltage



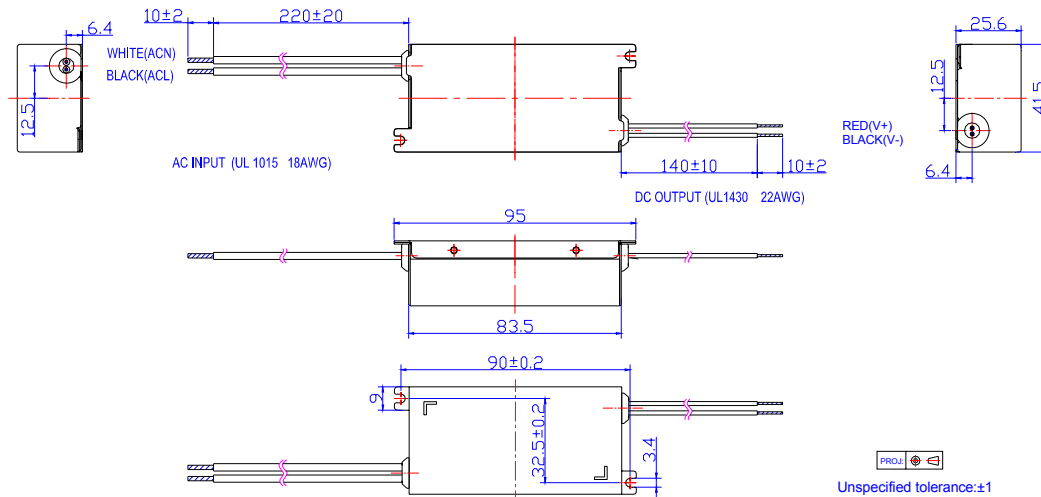
**Note:** If 0-10V dimming is not used, Dim + can be open.

## Mechanical Outline

### LUC-010SxxxDSM



### LUC-010xxxSSM



## 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
2011-09-28	A	Datasheets Release	/	/
2011-10-10	B	Power Factor Measured at 277Vac input	0.88 0.86 0.88	0.90 0.88 0.90
		Derating Curve, Life time PF, EFF Curve	/	Updated
2011-12-27	C	Derating Curve	/	Changed
2012-03-31	D	Output Voltage Range	350Ma 17~29V 500Ma 12~20V 700Ma 9~16V	350Ma 14~29V 500Ma 10~20V 700Ma 8~16V
2012-6-14	E	Startup Overshoot Current	20%	10%
2012-7-17	F	Max Case Temperature	/	Updated
2012-8-29	G	Inrush Current(I <sup>2</sup> t)	/	Added
		Min PF	/	Added
		Max THD	/	Added
		Temperature co-efficient	/	Added
		Typical life time and MTBF	/	Added
2013-02-20	H	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	I	Mechanical Outline	/	Updated
2014-02-26	J	Efficiency of all models	/	1% lower
		PF	0.9 Min At 100-277Vac, 90%-100%load	0.86 Min At 100-277Vac, 100%load



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