Features

- High Efficiency (Up to 90%)
- Active Power Factor Correction (Typical 0.95)
- Constant Output Current
- IP54(Potted)
- Dimming Control (0-10V)
- All-Around Protection: OVP,SCP, OTP
- Class 2 Output
- Unique Package for Down Lights
- For use in a Class I, Division 2 hazardous(Classified) location

E352429

Description

The LUC-042SxxxDTG(STG) series operates from a 90 ~ 305 Vac input range. They are designed to be highly efficient and highly reliable. Features include dimming control, over voltage protection, short circuit protection, over load protection, and over temperature protection.

Models

Output Current	Input Voltage Range	Output Voltage Range	Max. Output Power	Typical Efficiency (1)	Power Factor		Model Number
					120Vac	220Vac	
350 mA	90 ~ 305 Vac	60~120Vdc	42 W	90.0%	0.98	0.95	LUC-042S035DTG(STG)(2)
530 mA	90 ~ 305 Vac	40~79 Vdc	42 W	90.0%	0.98	0.95	LUC-042S053DTG(STG)(2)
700 mA	90 ~ 305 Vac	28~56 Vdc	39 W	89.0%	0.98	0.95	LUC-042S070DTG(STG)(3)
1050 mA	90 ~ 305 Vac	20~38 Vdc	40 W	88.0%	0.98	0.95	LUC-042S105DTG(STG)(3)
1400 mA	90 ~ 305 Vac	15~30 Vdc	42 W	87.0%	0.98	0.95	LUC-042S140DTG(STG)(3)
1750 mA	90 ~ 305 Vac	12~24 Vdc	42 W	87.0%	0.98	0.95	LUC-042S175DTG(STG)(3)
2100 mA	90 ~ 305 Vac	10~20 Vdc	42 W	87.0%	0.98	0.95	LUC-042S210DTG(STG)(3)

Notes: (1) Measured at full load and 220 Vac input.
(2) Non-Class 2 output (USR & CNR).
(3) Class 2 output (USR & CNR) for dry and damp location.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage Range	90 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 mA	At 277Vac 60Hz input
Input AC Current	-	-	0.6 A	Measured at full load and 100 Vac input.
	-	-	0.3 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	70 A	At 220Vac input 25℃ Cold Start. Duration=100 μs, 10%Ipk-10%Ipk.
Inrush Current(I^2t)	-	-	0.16 A^2s	

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Power Factor	0.9	-	-	At 100Vac-277Vac, 75%load-100%load
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Range	-5% I_O	-	5% I_O	
No Load Output Voltage I_O = 350 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 1750 mA I_O = 2100 mA	 - - - - - - -	 - - - - - - -	 138 V 104 V 59 V 42 V 37 V 34 V 25 V	
Output Voltage Ripple I_O = 350 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 1750 mA I_O = 2100 mA	 - - - - - - -	 - - - - - - -	 4 V 4 V 4 V 3 V 3 V 3 V 3 V	
Output Current Overshoot / Undershoot	-	-	10%Io	At full load condition.
Line Regulation	-	-	±1%	
Load Regulation	-	-	±1%	
Turn-on Delay Time	-	0.6 s	1.0 s	Measured at 120Vac input.
	-	0.3 s	0.5 s	Measured at 220Vac input.
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	Notes
Short Circuit Protection	Hiccup Mode. The power supply shall be self-recovery when the fault condition is removed.
Over Temperature Protection	Decrease output current mode. When the case temperature reaches 110±10℃, the output current decreases to 50%Io until the case temperature reaches 75℃.

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency				
I_O = 350 mA	87%	89%	-	Measured at full load and 120Vac input.
I_O = 530 mA	87%	89%	-	
I_O = 700 mA	86%	88%	-	
I_O = 1050 mA	85%	87%	-	
I_O = 1400 mA	84%	86%	-	
I_O = 1750 mA	84%	86%	-	
I_O = 2100 mA	83%	85%	-	
Efficiency				
I_O = 350 mA	88%	90%	-	Measured at full load and 220 Vac input.
I_O = 530 mA	88%	90%	-	
I_O = 700 mA	87%	89%	-	
I_O = 1050 mA	86%	88%	-	
I_O = 1400 mA	85%	87%	-	
I_O = 1750 mA	85%	87%	-	
I_O = 2100 mA	85%	87%	-	
Efficiency				
I_O = 350 mA	88%	90%	-	Measured at full load and 277 Vac input.
I_O = 530 mA	88%	90%	-	
I_O = 700 mA	86%	88%	-	
I_O = 1050 mA	85%	87%	-	
I_O = 1400 mA	85%	87%	-	
I_O = 1750 mA	85%	87%	-	
I_O = 2100 mA	85%	87%	-	
No Load Power Dissipation	-	-	3 W	
MTBF	-	303,000 Hours	-	Measured at 120Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	-	113,000 Hours	-	Measured at 120Vac 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)		4.22×2.99×1.22 107×76×31		
Net Weight	-	480 g	-	

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

Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-30 ℃	-	+70 ℃	Humidity: 10% RH to 100% RH. See Derating Curve for more details
Storage Temperature	-40 ℃	-	+85 ℃	Humidity: 5% RH to 100% RH

Safety & EMC Compliance

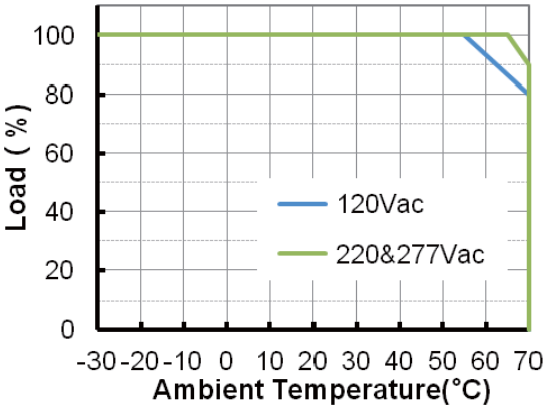
Safety Category	Standard
UL/CUL	UL 8750,UL1310,CAN/CSA-C22.2 No. 250.13-12,CAN/CSA-C22.2 No. 223-M9
CE	EN 61347-1, EN61347-2-13

Safety & EMC Compliance (Continued)

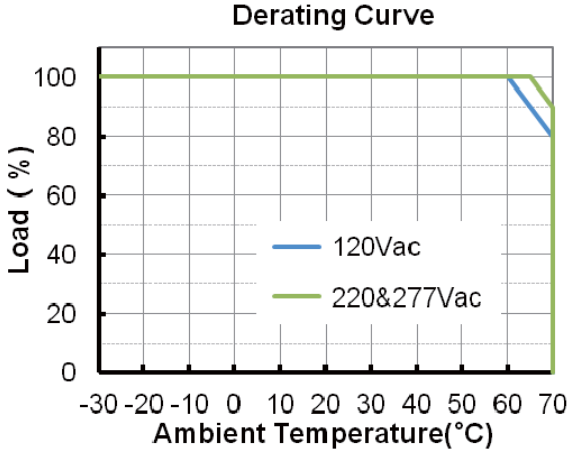
EMI Standards	Notes
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic Current Emissions
EN 61000-3-3	Voltage Fluctuations & Flicker
FCC Part 15	ANSI C63.4:2009 Class B
	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired Operation.
EMS Standards	**Notes**
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
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 2 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
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

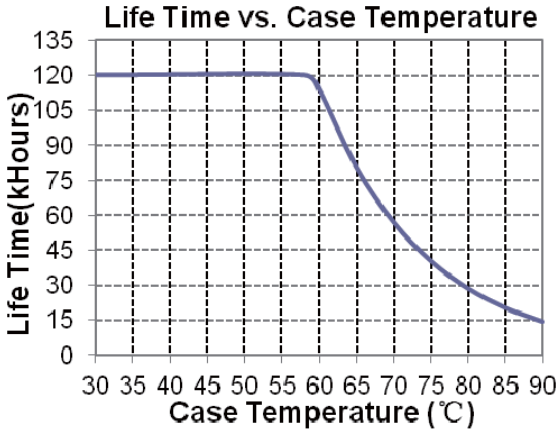
LUC-042S210DTG(STG)



Others

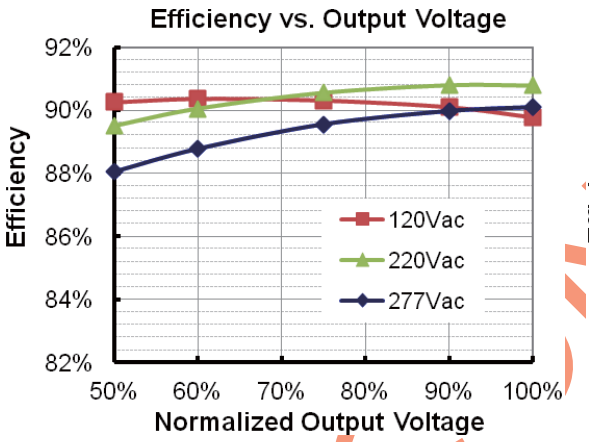


Life Time vs. Case Temperature Curve



Efficiency vs. Load

LUC-042S035DTG(STG)



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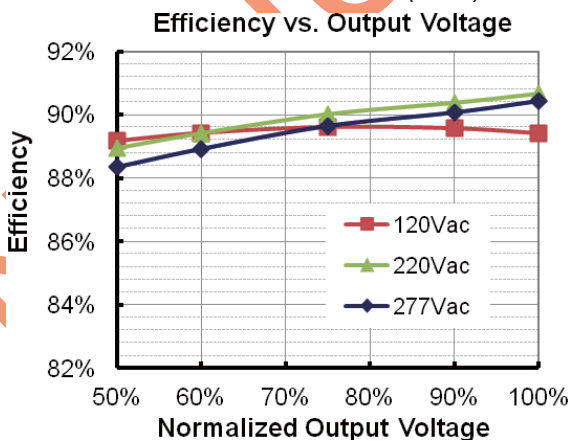

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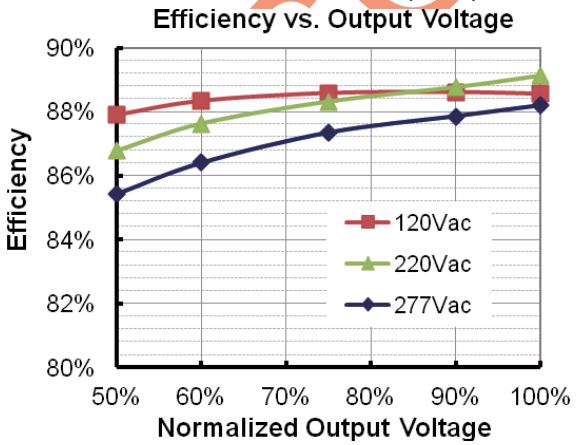

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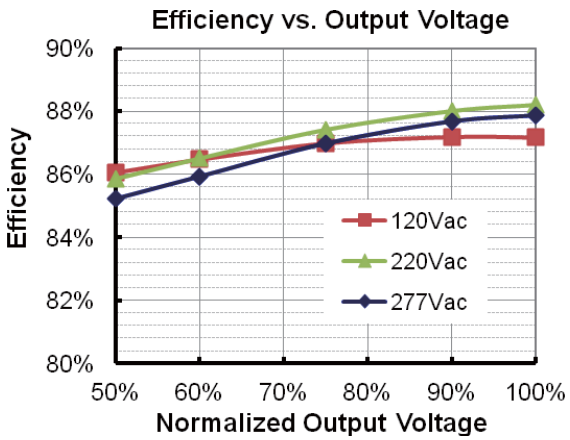

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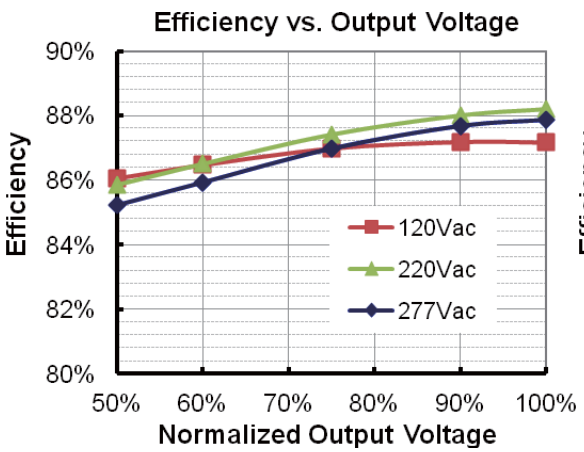

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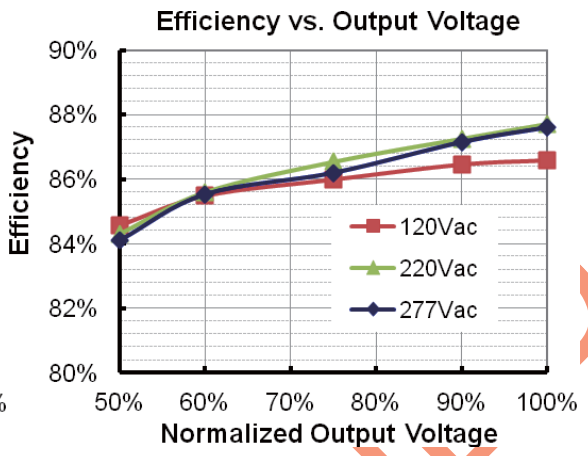

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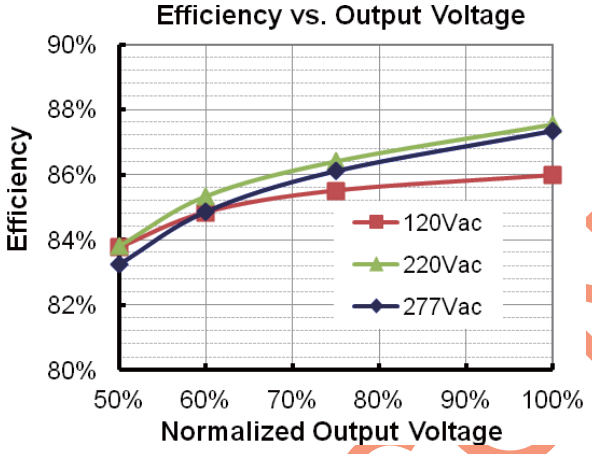
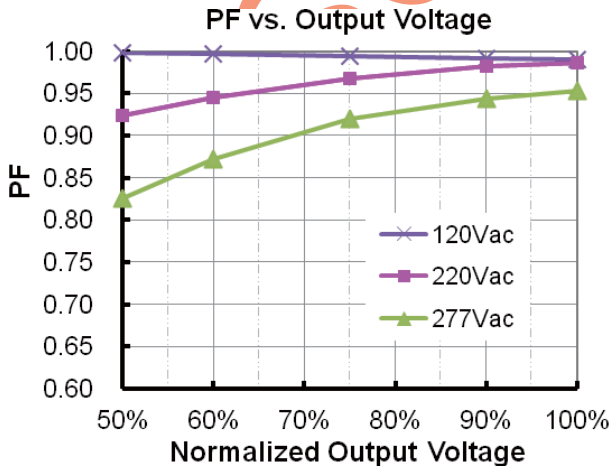


Power Factor Characteristics

LUC-042S035DTG(STG)



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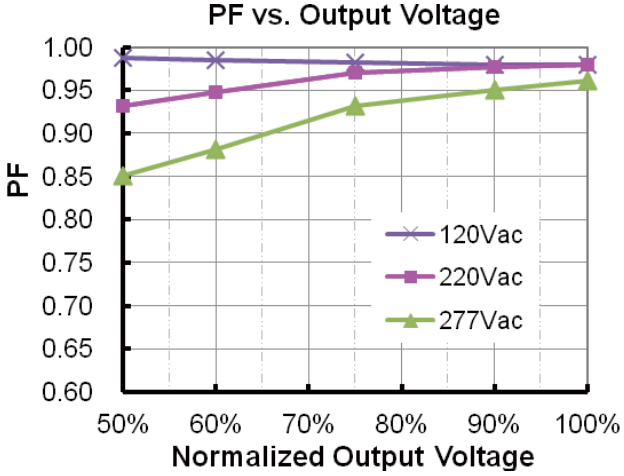

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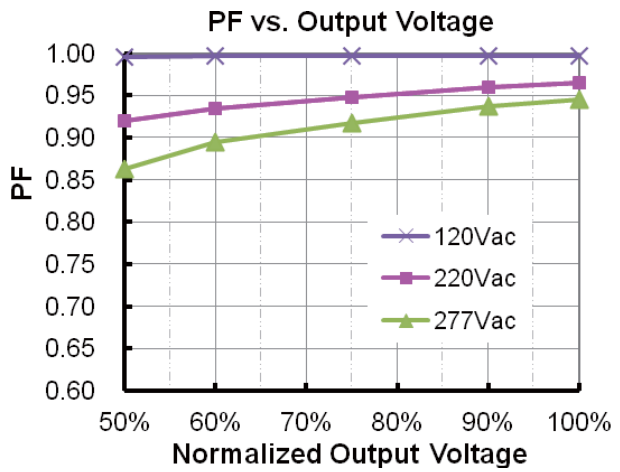

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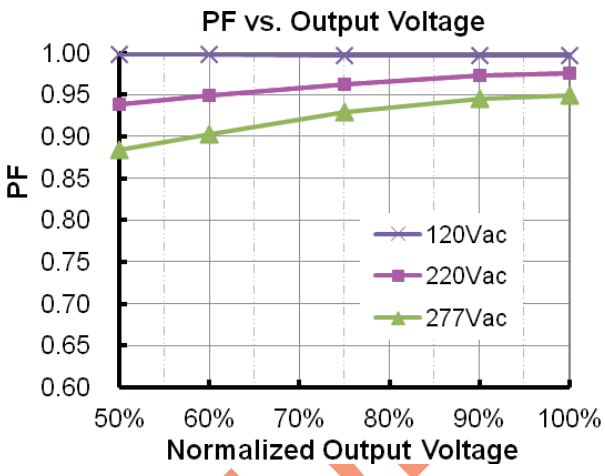

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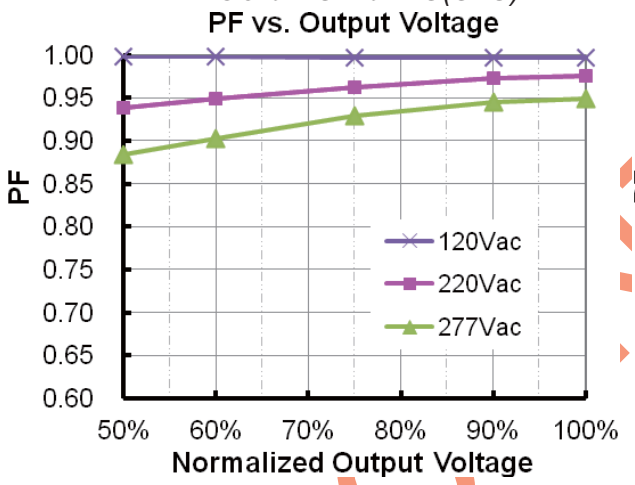

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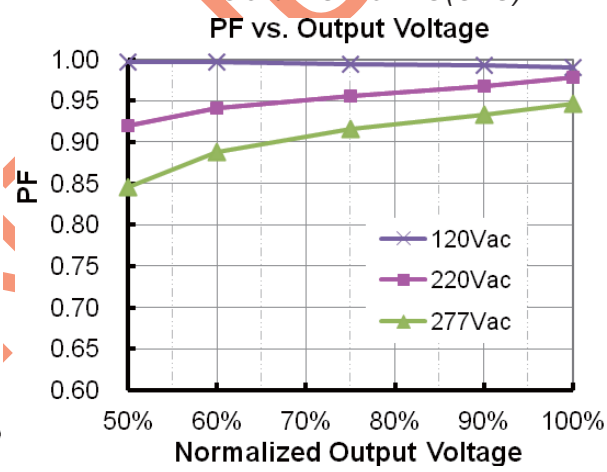

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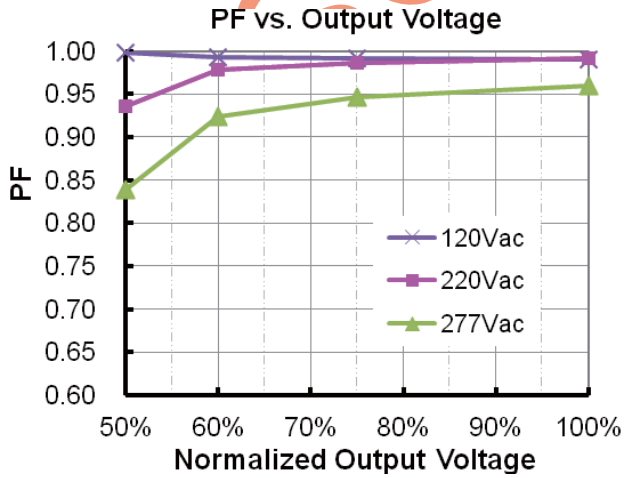

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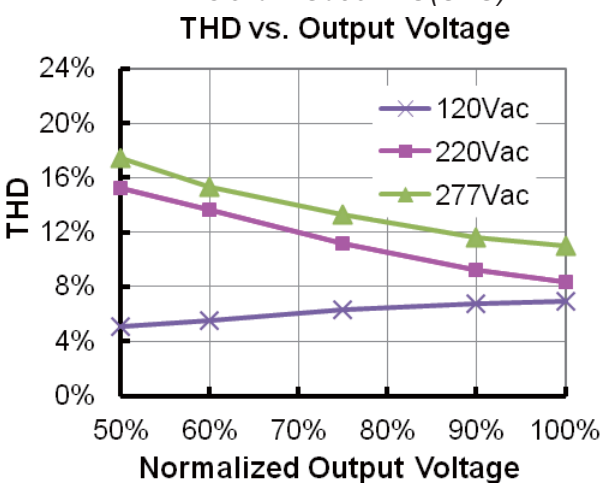
Total Harmonic Distortion

LUC-042S035DTG(STG)



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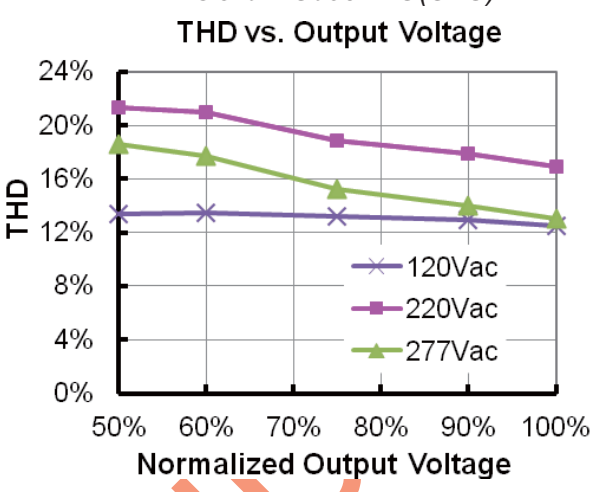

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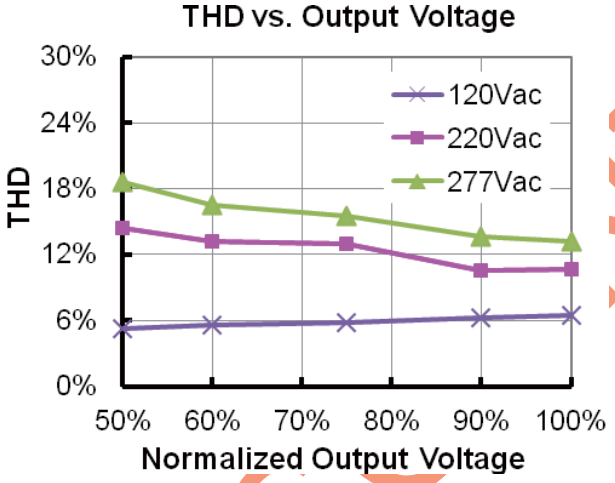
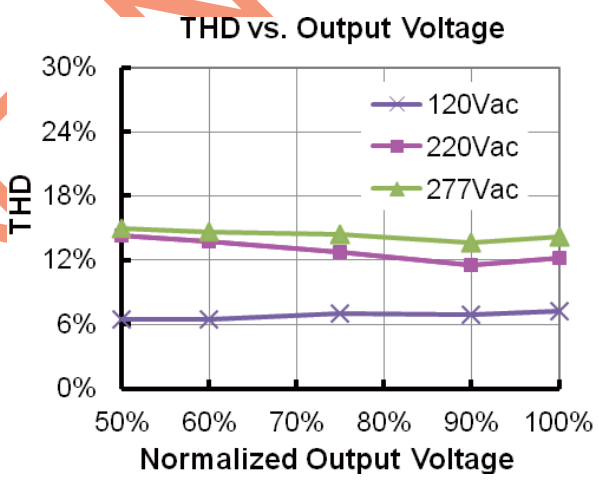


LUC-042S105DTG(STG)



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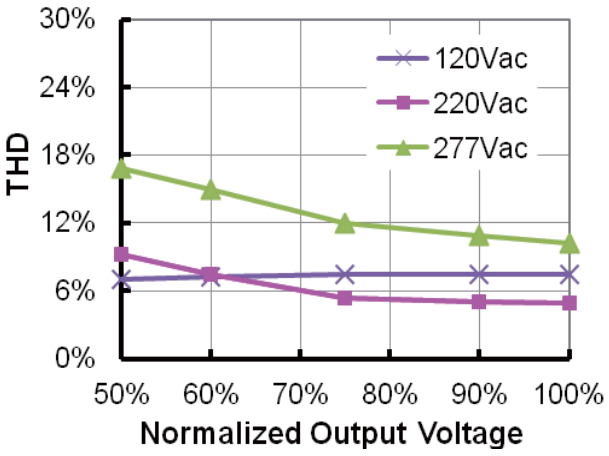

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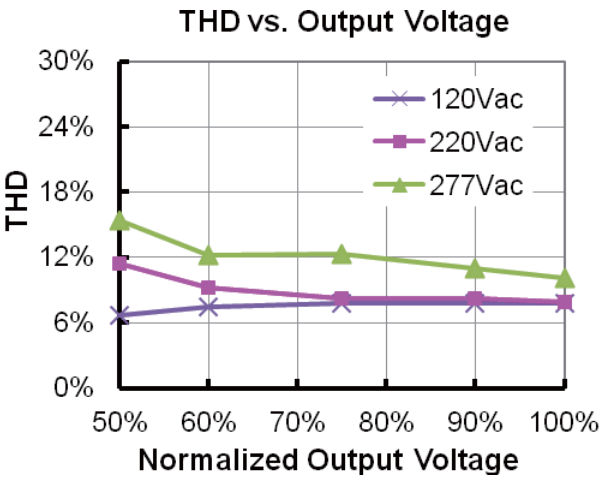

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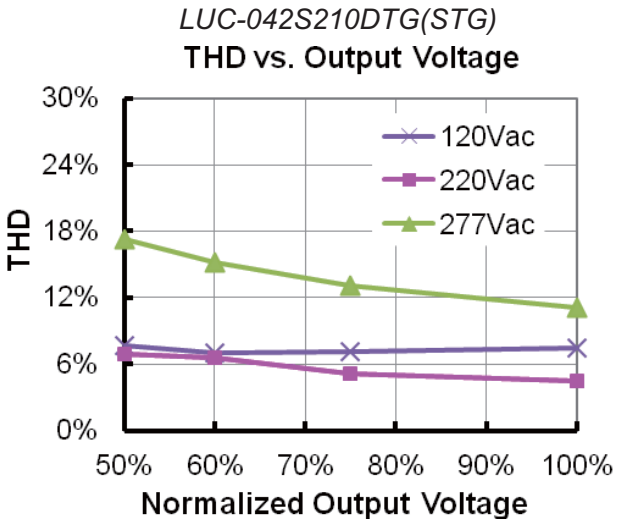
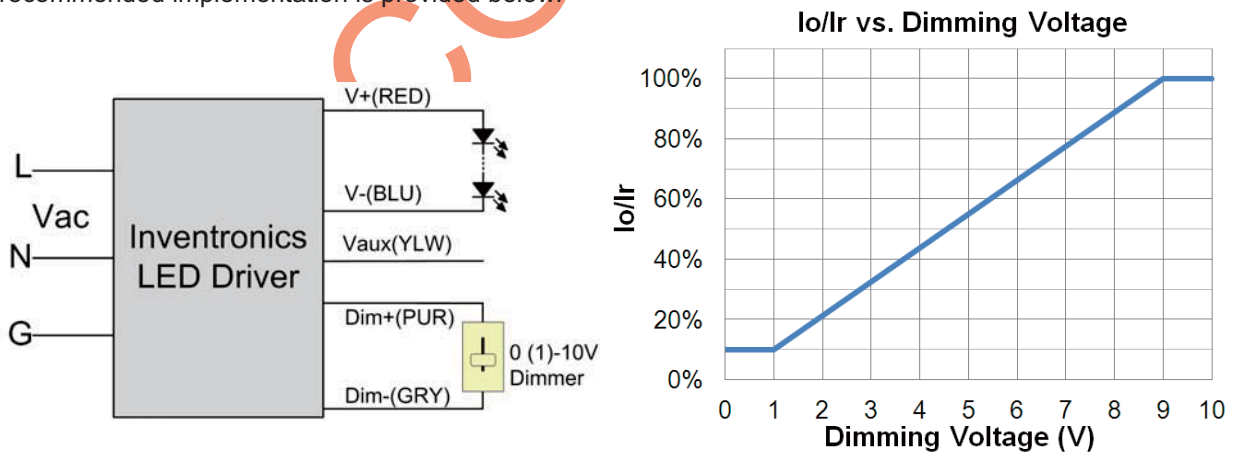


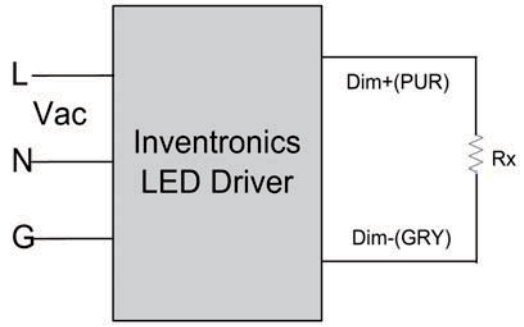
Dimming Control (On secondary side)

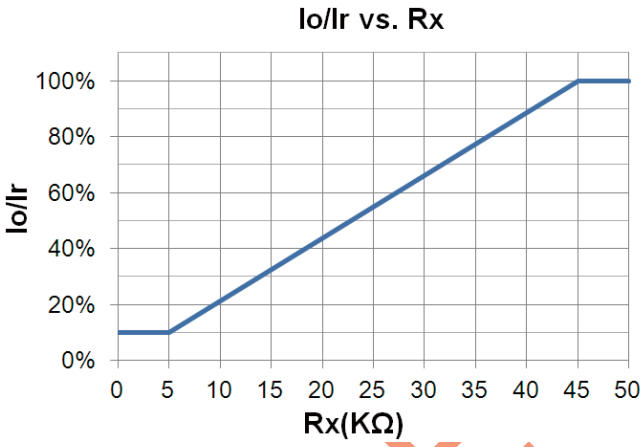
Parameter	Min.	Typ.	Max.	Notes
12V Output Voltage	10.8 V	12 V	13.2 V	
12V Output Source Current	0 mA	-	20 mA	
Absolute Maximum Voltage on the 0~10V Input Pin	-20 V	-	20 V	
Source Current on 0~10V Input Pin	180 uA	200 uA	220 uA	

The dimmer control may be operated from either a dimmer or from an input signal of 0 – 10 Vdc. The recommended implementation is provided below.



Implementation 1: DC Output





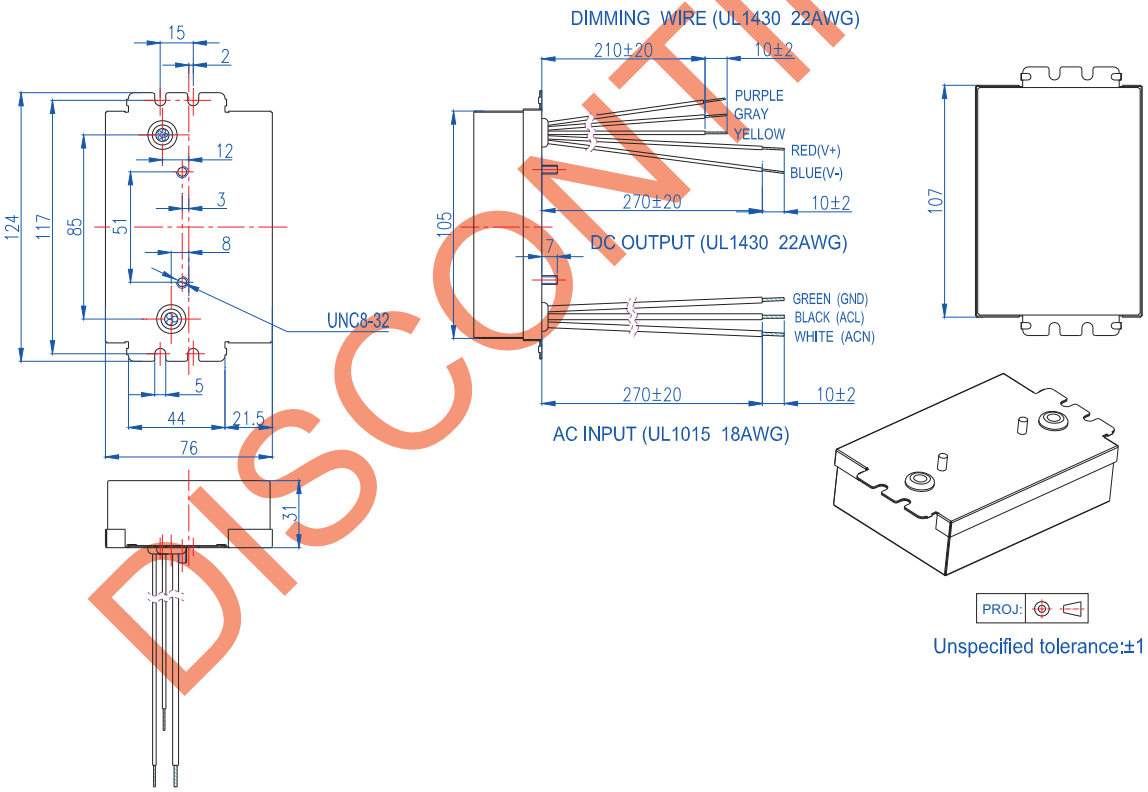
Implementation 2: External Resistor

Notes:

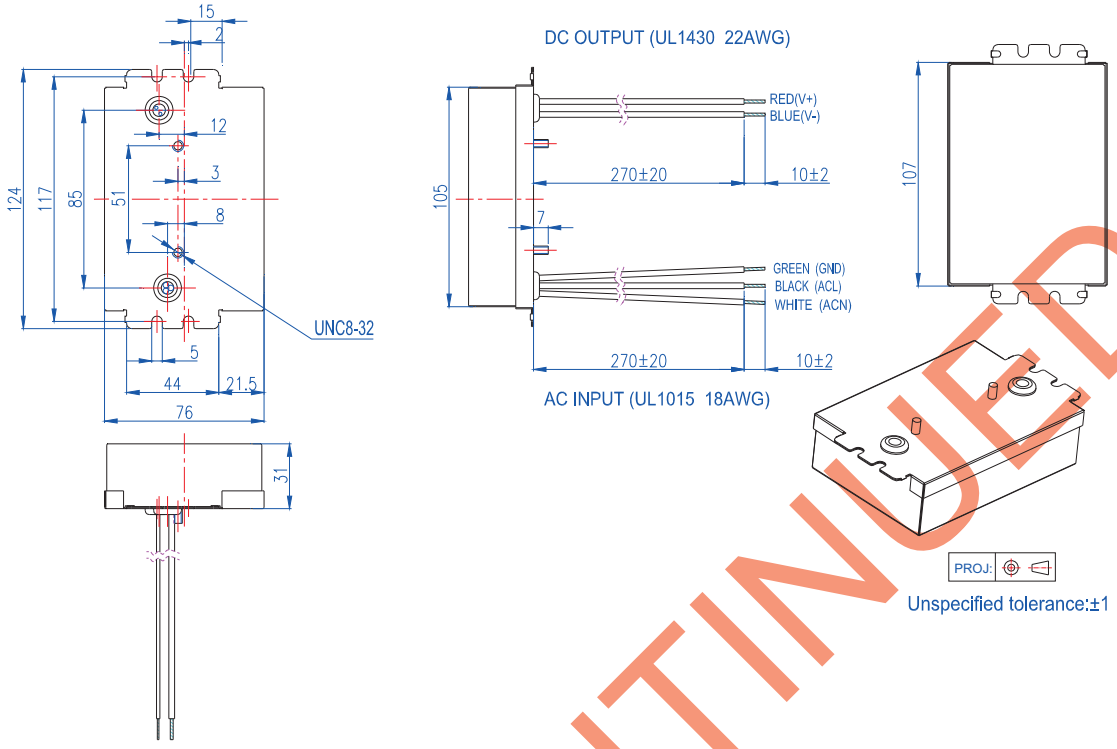
1. Do not connect the Dim- to the V-; otherwise, the LED driver cannot work normally.
2. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

Mechanical Outline

LUC-042SxxxDTG



LUC-042SxxxSTG



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
2013-08-09	A	Datasheets Release	/	/
2013-11-29	B	No Load Output Voltage of 350mA Model	132 V	138 V
		Mechanical Outline---one of Input wires color changed	Yellow/green	green
		General Specifications-Dimensions	/	Corrected
		Product Picture	/	Updated