

LED Driver

Outdoor 78W Driver

SL-LU2027801US (UL Type TL)

SL-LU2027802US (UL Class P)



Constant Current LED Driver

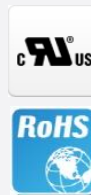
High Efficiency Constant Current LED Driver With Active Power Factor Correction

Features & Benefits

- Output Current Range: 2000 mA Fixed
- Output Voltage Range: 30 ~ 39 Vdc
- Output Power Range: Max. 78 W
- Dimming Control: 0 - 10 Vdc
- Input Voltage: 120 ~ 277 Vac, 50 / 60 Hz
- Safety: UL / cUL (UL 8750, CSA C22.2 No.223-M91)
- EMI: FCC Part 15 Class B
- Protections: Short Circuit, Open Load Voltage, Over Temperature
- t_a Range: -40 ~ +70 °C
- Expected lifetime: 50,000 hours at $t_c < 75$ °C
- Environmental Compliance: RoHS
- Long lasting & high reliability
- Metal housing

Applications

- LED Street/Tunnel Lighting and Outdoor LED Lighting



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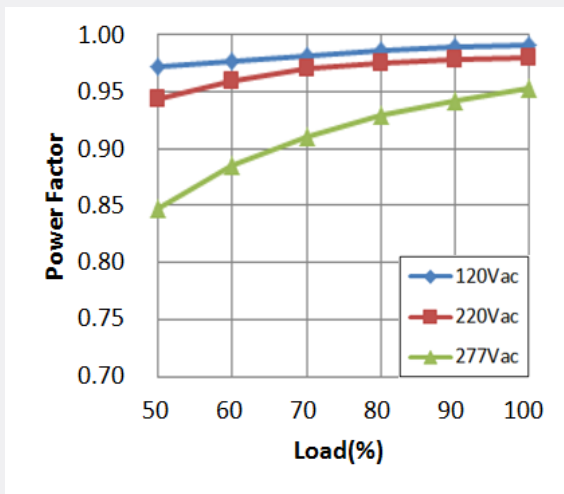
1. Characteristics

Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		
INPUT SPECIFICATIONS						
Nominal Voltage	Vin	120~277			Vac	
Voltage Range		108		305		
Nominal Frequency	Fin	50 / 60			Hz	
Frequency Range		47		63		
Input Power	Pin			100	W	Vin = 120 ~ 277Vac, 100% load
Input Current	Iin			1.0	A	Vin = 120Vac, 100% load
				0.4	A	Vin = 277Vac, 100% load
Total Harmonic Distortion	THD			20	%	Vin = 120 ~ 277Vac, 80 ~ 100% load
Power Factor	PF	0.9			-	
Efficiency	η	86	88		%	Vin = 120Vac, 100% load
		85	87			Vin = 277Vac, 100% load
In-rush Current				65	A _{pk}	Vin = 300Vac, 25°C Cold start Twidth=500us measured at 50%Ipk
Leakage Current				0.7	mA	Vin = 300Vac
OUTPUT SPECIFICATIONS						
Output Voltage	Vo	30		39	Vdc	No-load condition
Max. Voltage	Vp			48		
Output Current	Io		2000		mA	Tolerance = ±5%Io
Output Peak Current	Ip			2700	mA	Vin = 120 ~ 277Vac, 100% load
Output Ripple Current	Iripple			600	mA	Vin = 120 ~ 277Vac, 100% load
Line/Load Regulation		-3		+3	%	Vin = 120 ~ 277Vac
Temperature Drift		-2		+2	%	Vin = 120Vac, Vout = 36Vdc, Run after 3hours
Aux. Output Voltage	Vaux		12		Vdc	
Aux. Output Current	Iaux		100	150	mA	
Nominal Power	Po			78	W	
Turn-on Delay Time	Td			1	s	Vin = 120Vac, 100% load

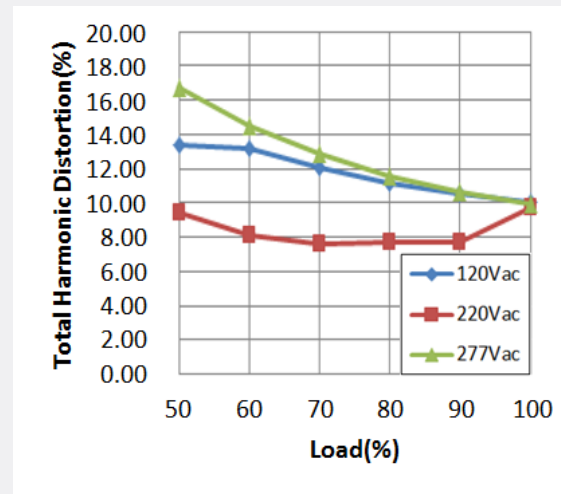
Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		
DIMMING SPECIFICATIONS						
Dimming Rangel		0		100	%	See 4)Dimming Specification section
Dim. Off			0.93		Vdc	± 0.05Vdc
Dim. Min			1			10%Io
Dim. On			1.35			± 0.1Vdc
Dim. Max		8		10		100%Io
I _{SOURCE}		0		0.5	mA	
ENVIRONMENTAL SPECIFICATIONS						
Ambient Temperature	t _a	-40		70	°C	
Case Temperature	t _c			90		
Storage Temperature	t _s	-40		80		
Ambient Humidity		20		95	%	Not condensing
Storage Humidity		10		95	%	Not condensing
Lightning Surge	L / N	±4			kV	IEC/EN 61000-4-5
	L-N / F.G	±6				
IP Rating			67		-	
Expected Lifetime (e-cap)		50,000			h	At t _c < 75°C
MTBF			300,000			At t _a = 25°C
Dimensions	L x W x H		173 x 67.5 x 40		mm	
Net Weight			785		g	

2. Typical Characteristics Graphs

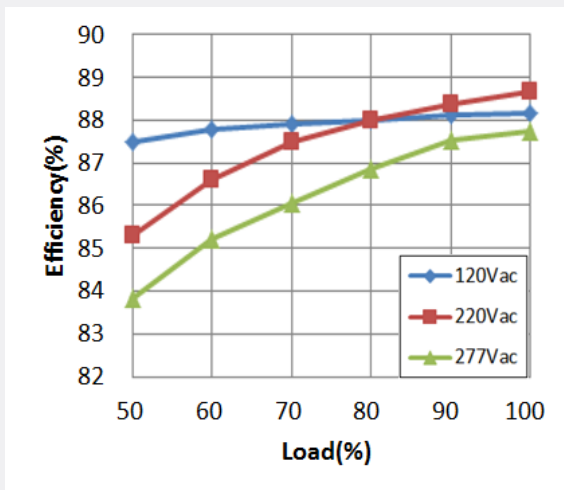
a) PF vs. Load



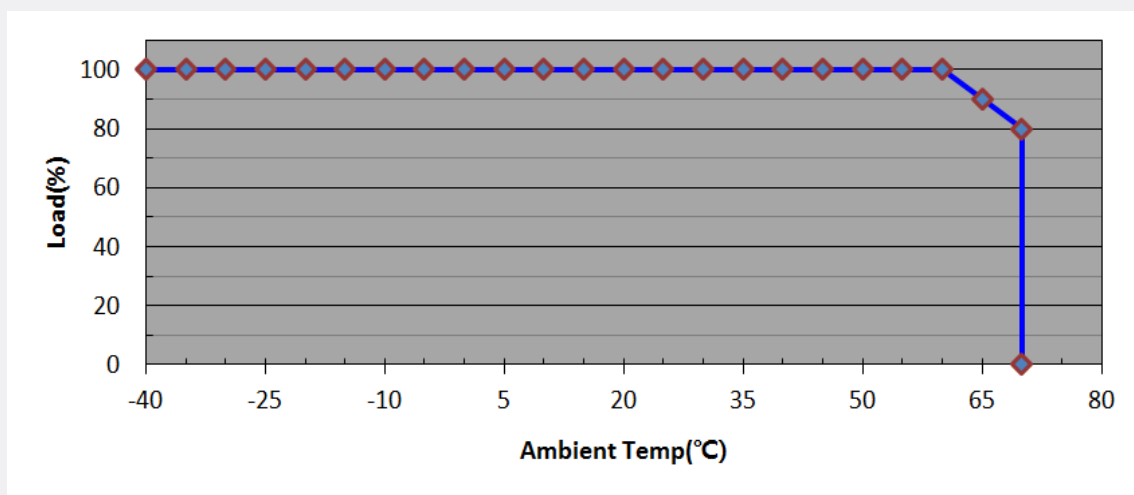
b) THD vs. Load



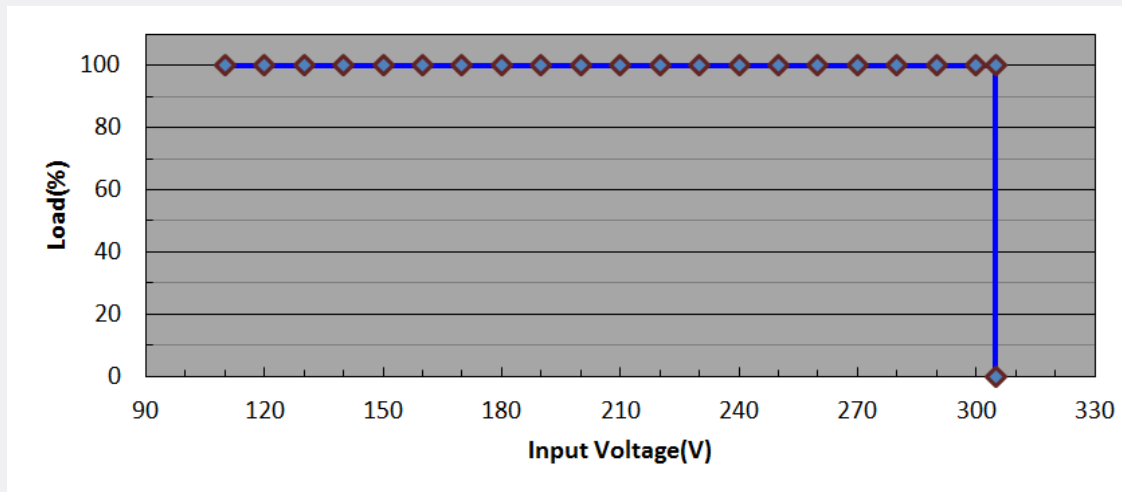
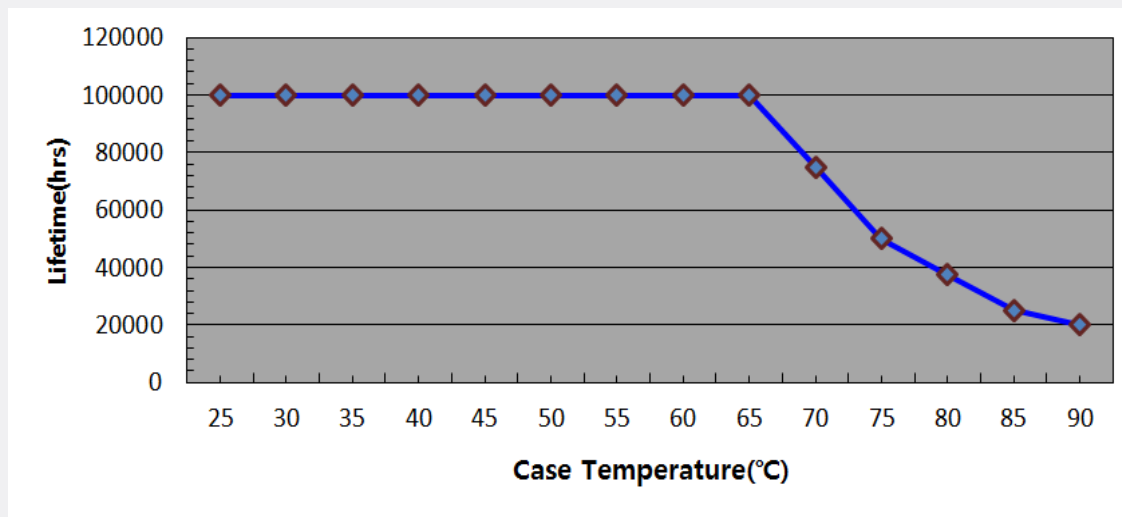
c) Efficiency vs. Load



d) Ta vs. Load



e) Input Voltage vs. Load

f) Lifetime vs. t_c 

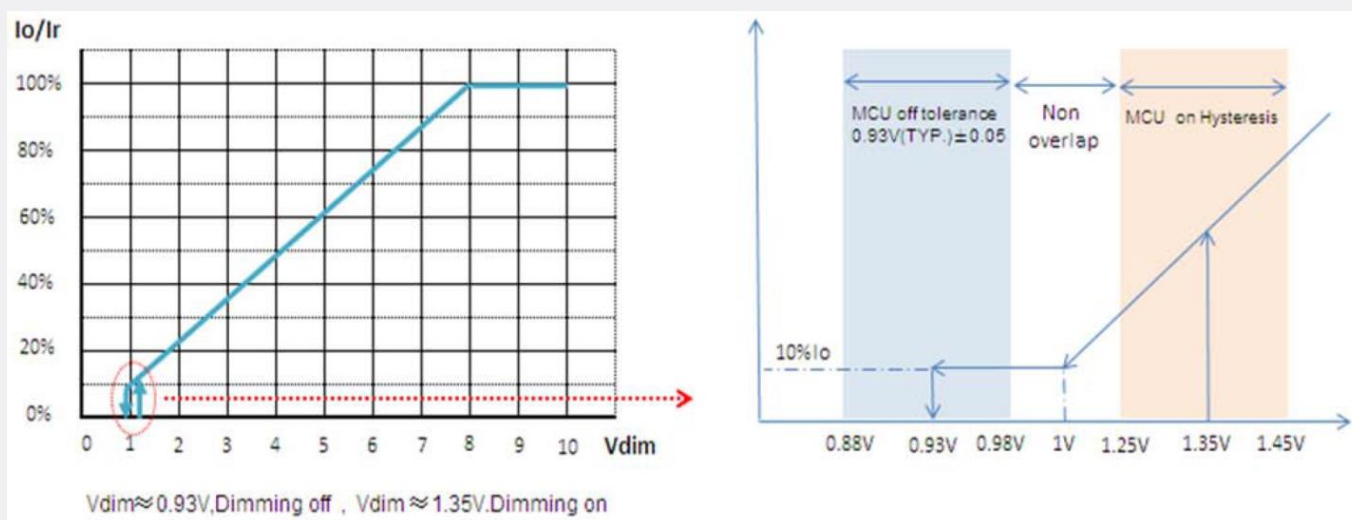
3. Protection

Protection Specification	Protection Mode	Condition
Output Short Protection	Auto-Recovery	(1) AC turn on then output short (2) Output short then AC turn on
Output Open Protection	Clamp Open Load Voltage under 48Vdc	(1) AC turn on then output open (2) Output open then AC turn on
Output Temperature Protection	Current Reduction to 50%Io	Vin = Rated Voltage, tc point : 110°C, 100% load

4. Dimming Specification

The unit has Analog Dimming (AD) function, using 0-10 Vdc.

The typical dimming curve is shown below.



5. Reliability& Standards

a) Safety and EMC

International Standard	Certification
UL Safety Standards (Class 2 Output)	UL 8750
	CAN/CSA-C22.2 No. 250.13-12 CAN/CSA-C22.2 No.107.1-01
Electro Magnetic Compatibility	FCC Part 15 Class B
IEC/EN Safety Standards for LED Lighting	IEC/EN 61347-1 IEC/EN 61347-2-13
Conducted and Radiated Emission Test	IEC/EN 55015
Harmonic current emissions: Class C	IEC/EN 61000-3-2
Voltage Fluctuations and Flicker	IEC/EN 61000-3-3
Electrostatic Discharge (ESD): Contact $\pm 8\text{kV}$, Air $\pm 15\text{kV}$	IEC/EN 61000-4-2
Radio-frequency Electromagnetic Fields	IEC/EN 61000-4-3
Electrical Fast Transients (EFT)	IEC/EN 61000-4-4
Surge: Differential mode $\pm 4\text{kV}$, Common mode $\pm 6\text{kV}$	IEC/EN 61000-4-5
Injected Currents, Conducted disturbances induced by Radio-Frequency fields	IEC/EN 61000-4-6
Power Frequency Magnetic Fields	IEC/EN 61000-4-8
Voltage Dips and Short Interruptions	IEC/EN 61000-4-11

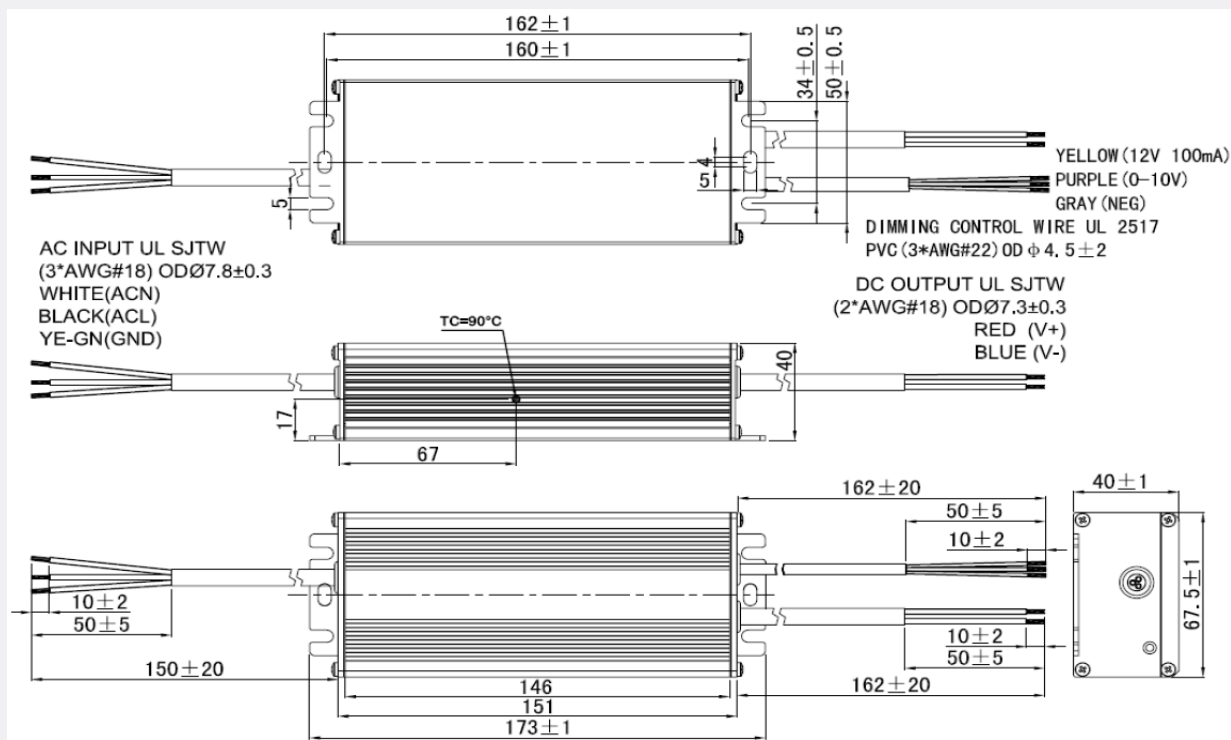
b) Test Items and Conditions

Test Item	Specification	Condition
Leakage Current	< 0.7 mA	Vin=300Vac
Earth Continuity	< 0.1 Ω	
Hi-Pot	Input – Output	3750 Vac, 60 s, cut-off current 10 mA
	Input – F.G	1875 Vac, 60 s, cut-off current 10 mA
	Output – F.G	1500 Vac, 60 s, cut-off current 10 mA
Insulation Resistance	Input – Output	500 Vdc, insulation resistance > 100 MΩ
	Input – F.G	500 Vdc, insulation resistance > 100 MΩ
	Output – F.G	500 Vdc, insulation resistance > 100 MΩ
Surge	L / N	±4 kV
	L-N / F.G	±6 kV
ESD	Contact	±8 kV
	Air	±15 kV

Recommend to install the SPD device to prevent the unexpected damage to the luminaire.

6. Outline Drawing & Dimension

a) Dimension :173 (L) x 67.5 (W) x 40 (H) Unit: mm



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b) Wiring

c)

Input harness

Wire	Symbol	Color	Description	Cable
1	Live	Black	AC Input	SJTW PVC, 18AWG
2	Neutral	White		
3	F.G	Yellow-Green	Protective Ground	

Output harness

Wire	Symbol	Color	Description	Cable
1	V+	Red	Positive(Anode) LED Output(LED+)	SJTW PVC, 18AWG
2	V-	Blue	Negative(Cathode) LED Output(LED-)	
3	DIM+	Purple	External 0-10V Dimming Input	UL 2517, 22AWG
4	12V	Yellow	External 12V Power Supply Output	
5	DIM-	Gray	Dimming Signal Ground	

7. Driver Label

SL-LU2027801US

145 mm	
20 mm	AC/L BLACK ● AC/N WHITE ● YE-GN ⊕ INPUT SAMSUNG LED Driver Model: SL-LU2027801US Input Voltage: 120-277 Vac 50/60Hz Input Current: 1.0A Output Voltage: 30-39Vdc Output Current: 2000mA Output Power: 78W IP67 RoHS Aux Output: 12V ---150mA Suitable for use in Dry & Damp Locations Type TL 90/68°C Class 2 Output MADE IN CHINA DIM 12V 0-10V NEG Yellow Purple Gray V-: BLUE ● V+: RED ●

SL-LU2027802US

145 mm	
20 mm	AC/L BLACK ● AC/N WHITE ● YE-GN ⊕ INPUT SAMSUNG LED Driver Model: SL-LU2027802US Input Voltage: 120-277 Vac 50/60Hz Input Current: 1.0A Output Voltage: 30-39Vdc Output Current: 2000mA Output Power: 78W Aux Output: 12V ---150mA IP67 RoHS Suitable for use in Dry & Damp Locations For Connections Use Wire Rated for at Least 90°C(194°F) Type HL Class P MADE IN CHINA DIM 12V 0-10V NEG Yellow Purple Gray V-: BLUE ● V+: RED ●

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8. Packing Structure

Packing material	Driver Quantity	Dimension (mm)		
		Length	Width	Height
Outer Box	10	340	200	265
Pallet	320	850	820	1185

9. Precautions in Handling & Use

- 1) To prevent the LED Driver from any defect, please handle and store it with care
 - Do not drop or give shock
 - Do not store in very humid location or at extreme temperature
 - Do not open or disassemble the product
- 2) Static electricity or surge voltage may damage the components inside LED Driver, as such please observe proper anti-electrostatic working process
 - People handling the Driver should be well grounded (e.g. using ESD wrist band) and wear anti-static working clothes and gloves
 - All related devices and instruments in the production line should be well grounded (e.g. working table, measuring equipment, assembly jigs)
- 3) Observe the correct polarity of output terminal
- 4) Avoid input voltage exceeds the maximum rating, which will cause damage to the circuit and result in malfunction

Legal and additional information.

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