

LED Driver

30W Slim Driver

SI-CU1023001WW (UL Class P)
SI-CU1023002WW (UL Type TL)



Constant Current LED Driver Deep Dimming up to 1%

Features & Benefits

- Output Current Range: 350 ~ 800 mA (Adjustable through R-set)
- Output Voltage Range: 15 ~ 54 Vdc
- Output Power Range: Max. 30 W
- Dimming Control: 0 - 10 Vdc
- Input Voltage: 120 ~ 277 Vac, 50 / 60 Hz
- Safety: UL / cUL (UL 8750)
- EMI: FCC Part 15 Class B
- Protections: Short Circuit, Open Load Voltage, Over Temperature
- t_a Range: -20 ~ +50 °C
- Expected lifetime: 50,000 hours at $t_c < 88$ °C
- Environmental Compliance : RoHS
- Long lasting & high reliability
- Metal housing



Applications

- Indoor lighting

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Table of Contents

1.	Characteristics	-----	3
2.	Typical Characteristics Graphs	-----	5
3.	Protection	-----	8
4.	Dimming Specification	-----	8
5.	Reliability & standard	-----	9
6.	Outline Drawing & Dimension	-----	10
7.	Label Structure	-----	10
8.	Packing Structure	-----	10
9.	Precautions in Handling & Use	-----	11

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 Current	Iin			0.35	A	At 120 Vac, 100% load
				0.15		At 277 Vac, 100% load
Total Harmonic Distortion	THD			20	%	At 120-277 Vac
Power Factor	PF	0.9			-	At 120-277 Vac
Efficiency	η	83	86		%	At 120 Vac
		85	87			At 277 Vac
Standby Power	Pstd			0.5	W	At 120 Vac, Vdim < 1Vdc
				1		At 277 Vac, Vdim < 1Vdc
In-rush Current				20	A _{pk}	Cold start at 277 Vac .
OUTPUT SPECIFICATIONS						
Output Voltage	Vo	15		54	Vdc	
Max. Voltage	Vp			57	Vdc	No-load condition
Output Current	Io	350		800	mA	
Ripple Current	Iripple	-30		30	%	For 37V/0.8A LED load mode
Nominal Power	Po			30	W	
Turn-on Delay Time	Td			0.5	s	@ Ambient Temperature Time to 90% of rated current

1) The PF, THD can meet the electrical performance above 60% of maximum output power.

2) Measured the unit is thermally stabilized after half an hour, ta=25°C.

Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		

DIMMING SPECIFICATIONS

Dimming Range		1		100	%	See 4)Dimming Specification section
Dim. Min.			1		Vdc	
Dim. Max		8		10	Vdc	
I _{SOURCE}				0.6	mA	

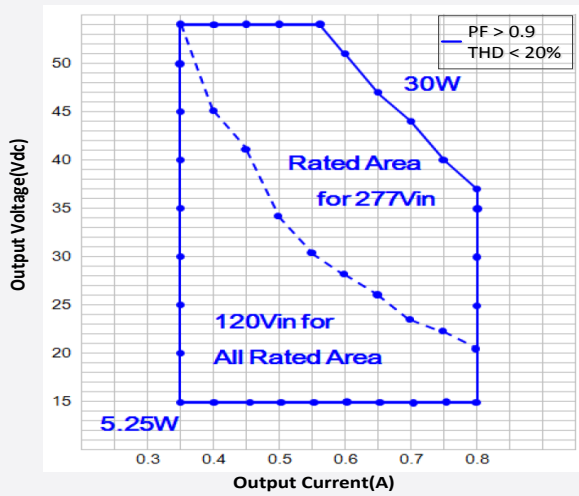
- Recommend for compatible dimmer : IP710-DL, NTSTV-DV, DVSTV

ENVIRONMENTAL SPECIFICATIONS

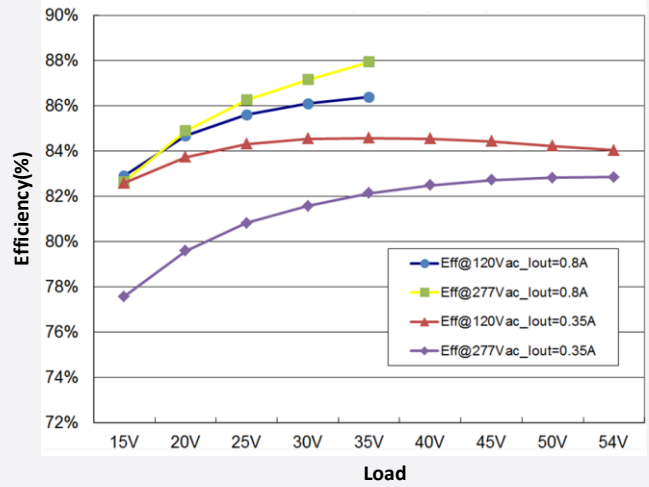
Ambient Temperature	t _a	-20		50	°C	
Case Temperature	t _c			88	°C	Measured at tc point as indicated on the product label
Storage Temperature	t _s	-25		80	°C	
Ambient Humidity		10		90	%	Not condensing
Lightning Surge	L / N	±1			kV	According to IEC/EN 61000-4-5
	LN / GND	±2				
IP Rating		Damp & Dry			-	Suitable for indoor environment
Expected Lifetime (e-cap)		50,000			h	At tc < 88 °C, ta = -20 ~ 50 °C
MTBF		100,000			h	
Dimensions	L x W x H	300 x 30 x 21			mm	
Net Weight		259			g	±10 %

2. Typical Characteristics Graphs

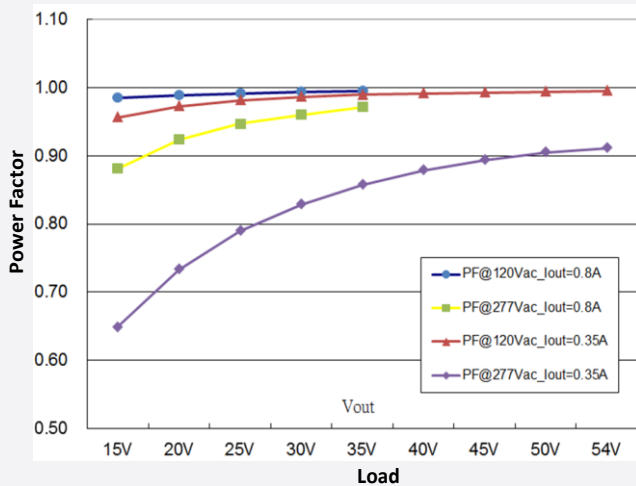
a) Operating Window



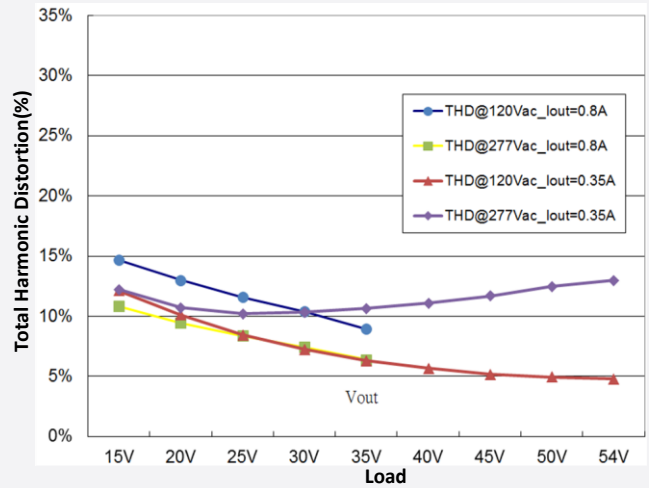
b) Efficiency vs. Load



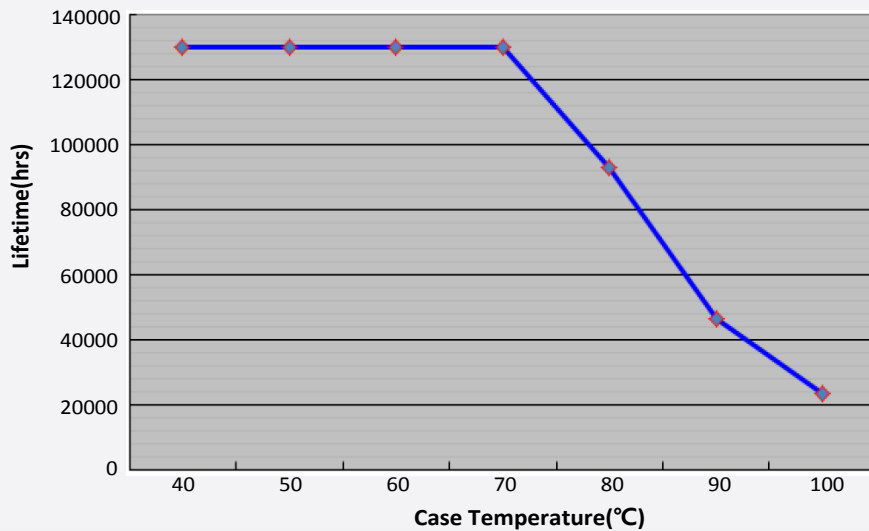
c) PF vs. Load



d) THD vs. Load



e) Lifetime vs. tc



f) Installation Instruction for R-set Setting

1. Power OFF the driver.
2. Choice a resistance from Rset table. Use lead type resistor for easy to connect(Recommend).
3. Forming the resistor.
4. Connection.

Step.1

Remove the cable from input side as below



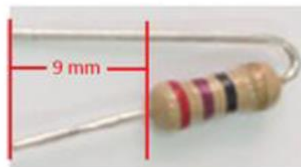
Step.2

Recommended to use a resistor with lead wire
(Requirement: $\geq 0.25W$ and $\geq 20V$)



Step.3

Bend a lead
Cut the wires as the length below



Step.4

Insert the resistor to the Rset connector



※ Resistor wire should be the opposite side of driver metal case.

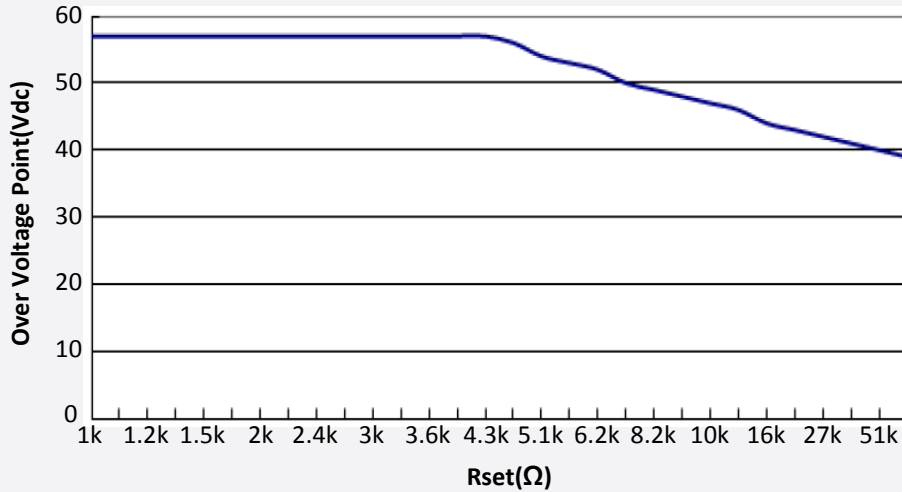
g) Installation Instruction for R-set Setting

Rset(k Ω)	Output Current(mA)	Current Tolerance(%)	Output Voltage(V)	Open Load Voltage(V)
1.0	350	±5	15 ~ 54	56.9
1.3	375		15 ~ 54	56.9
1.5	392		15 ~ 54	56.9
1.6	402		15 ~ 54	56.9
2.0	438		15 ~ 54	56.9
2.2	446		15 ~ 54	56.9
2.7	482		15 ~ 54	56.9
3.0	501		15 ~ 54	56.9
3.9	537		15 ~ 54	56.9
4.3	564		15 ~ 54	56.9
4.7	573		15 ~ 53	56.9
5.6	591		15 ~ 51	55.3
6.2	610		15 ~ 50	53.3
7.5	636		15 ~ 48	51.7
8.2	646		15 ~ 47	51.0
9.1	655		15 ~ 46	50.3
10	673		15 ~ 45	48.9
11	682		15 ~ 44	48.1
12	690		15 ~ 44	47.4
15	709		15 ~ 43	46.0
18	727		15 ~ 42	44.6
22	736		15 ~ 41	43.4
24	745		15 ~ 41	43.1
30	754		15 ~ 40	42.0
33	764	15 ~ 40	41.6	
43	773	15 ~ 39	41.0	
51	782	15 ~ 39	40.3	
82	791	15 ~ 38	39.4	
110	800	15 ~ 37	39.0	

3. Protection

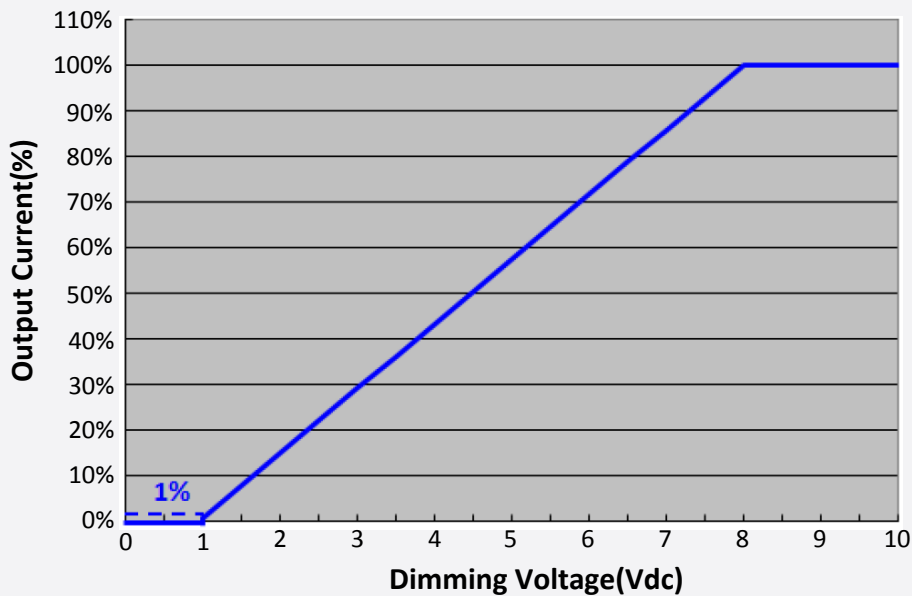
Protection Specification	Protection Mode	Condition
Output Short Protection	Auto-Recovery	(1) AC turn on then output short (2) Output short then AC turn on
Output Open Protection	Clamp Open Load Voltage*	(1) AC turn on then output open (2) Output open then AC turn on
Output Temperature Protection	Latch	to point : 95 ± 10 °C
AC Transient Protection	Auto-Recovery	120 ~ 277 Vac range switching

- The open load voltage can be adjusted by Rset resistor setting. Please refer to the below graph.



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) International Standard

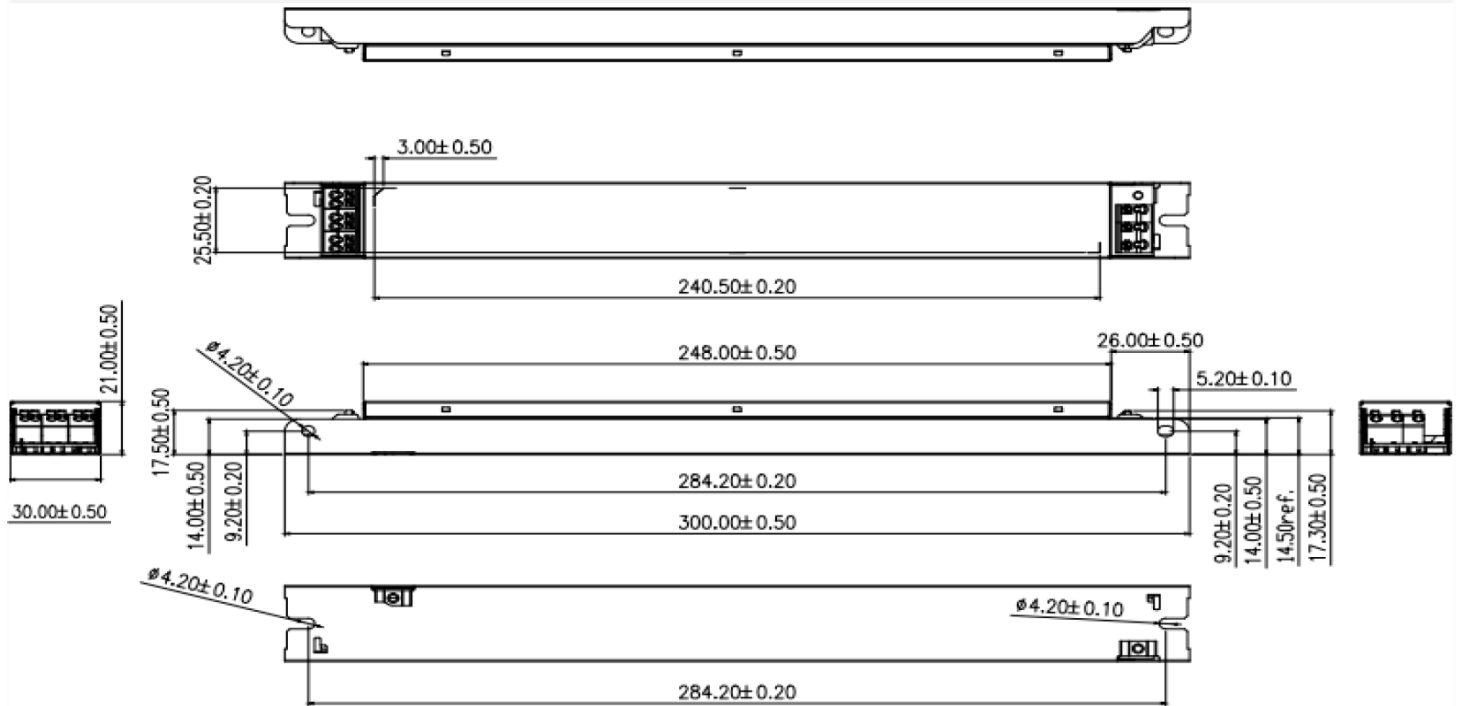
International Standard	Certification
UL Safety Standards (Class 2 Output)	UL 8750
Electro Magnetic Interference	FCC Part 15 Class B
Electrostatic Discharge (ESD): Contact $\pm 4\text{kV}$, Air $\pm 8\text{kV}$	IEC/EN 61000-4-2
Electrical Fast Transients (EFT)	IEC/EN 61000-4-4
Surge : Differential mode $\pm 1\text{KV}$, Common mode $\pm 2\text{KV}$	IEC/EN 61000-4-5
Touch Current	IEC/EN 61347

b) Test Items and Conditions

Test Item	Specification	Condition	
Leakage Current	< 0.7 mA		
Earth Continuity	< 0.5 Ω		
Hi-Pot	Input – Output	3750 Vac, 60 s, cut-off current 10 mA	100 % tested in production line
	Input – F.G	1500 Vac, 60 s, cut-off current 10 mA	100 % tested in production line
Insulation Resistance	Input – Output	500 Vdc, 60 s, Insulation resistance > 4 M Ω	100 % tested in production line
	Input – F.G	500 Vdc, 60 s, Insulation resistance > 2 M Ω	100 % tested in production line
Surge	L / N	± 1 kV	
	LN / F.G	± 2 kV	
ESD	Contact	± 4 kV	
	Air	± 8 kV	

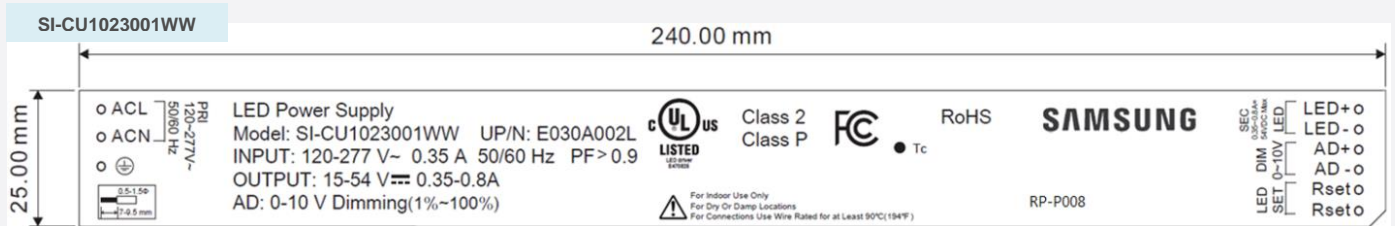
6. Outline Drawing & Dimension

Dimension : 300 (L) x 30 (W) x 21 (H) Unit: mm



Housing material : SGCC

7. Label Structure



8. Packing Structure

Packing material	Driver Quantity (pcs)	Dimension (mm)		
		Length	Width	Height
Outer Box	28	483	385	148
Pallet	1008 (36 outer boxes)	1220	1020	120

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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

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