

LED Driver

USCI Mini Can



Safety Standards



USCI Mini Can

Highlights & Features

- Constant current design
- Universal AC input voltage from 120-277Vac
- Wide operating temperature range -25°C to +55°C
- Build-in Active PFC and confirm to harmonic current IEC/EN 61000-3-2, Class C
- Common mode 4kV and differential mode 4kV surge immunity
- Suitable for Dry and Damp location
- 1-10V dimming available

Dimensions (L x W x H):

USCI-040070FA USCI-040105FA USCI-055125FA USCI-040070DA USCI-040105DA USCI-040140DA USCI-055125DA	241.3x 33 x 25.4 mm (9.5 x 1.3 x 1 inch)
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General Description

Delta LED drivers come in different series to suit different application needs. The USCI mini-can series are including various output current level. All the models have major international safety certifications. USCI mini-can series offers the capability to achieve different level of LED brightness via built-in 0-10V dimming function to meet various application and energy optimization needs. The products are designed and rigorously tested to work with various outdoor LED lighting conditions. Featuring surge immunity (CM: 4kV, DM: 4kV) make Delta USCI mini-can series an essential part of an energy efficient LED lighting power solution for built-in applications.

Model Information

USCI Mini Can LED Driver

Fix Series

Model Number	Input Voltage Range	Rated Output Voltage	Rated Output Current	Rated Output Power	Control
USCI-040070FA	120-277Vac Typical 108-305Vac Range	32-55Vdc	700mA	40W	NA
USCI-040105FA		26-38Vdc	1050mA	40W	NA
USCI-055125FA		28-44Vdc	1250mA	55W	NA

Dim Series

Model Number	Input Voltage Range	Rated Output Voltage	Rated Output Current	Rated Output Power	Control
USCI-040070DA	120-277Vac Typical 108-305Vac Range	32-55Vdc	700mA	40W	1-10V
USCI-040105DA		26-38Vdc	1050mA	40W	1-10V
USCI-040140DA		19.5-28.5Vdc	1400mA	40W	1-10V
USCI-055125DA		28-44Vdc	1250mA	55W	1-10V

Model Numbering

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Safety Approval – UL, CE	Constant current	Indoor		Output Power 040:40W 055:55W	Rated Output Current 070 – 700mA 105 – 1050mA 140 – 1400mA	F: Fix output current D: Dimming output current	Variable A – Delta Standard

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Specifications

Model Number	USCI-040070FA USCI-040070DA	USCI-040105FA USCI-040105DA	USCI-040140DA	USCI-055125FA USCI-055125DA
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Input Ratings / Characteristics

Normal Input Voltage		120-277Vac			
Input Voltage Range		108-305Vac			
Normal Input Frequency		50-60Hz			
Input Frequency Range		47-63Hz			
Max. Input Current	120Vac	0.44A	0.44A	0.44A	0.59A
Efficiency ¹⁾	120Vac	82%	82%	82%	85%
Inrush Current (meet NEMA410) (Apk / 50% - μ S @ Cold Start)	277Vac	50A/250 μ S	50A/250 μ S	50A/250 μ S	90A/250 μ S
Max. no. of LED Drivers circuit breaker at 230Vac	B16	16	16	16	9
	C16	26	26	26	15
Power Factor		70%-Full Load: > 0.9 @ 120- 277Vac;			
Total Harmonic Distortion		THD < 20% with load $\geq$ 70% at 120- 277Vac input			
Leakage Current		< 0.5mA rms & <0.7mA peak @ 277Vac			

1) 100% Load (typical) and tested after 30 minutes warm up.

Output Ratings / Characteristics

Output Voltage Range	32-55Vdc	26-38Vdc	19.5-28.5Vdc	28-44Vdc
Max. No Load Output Voltage	60Vrms	45Vrms	35Vrms	49Vrms
Output Power Range	40W	40W	40W	55W
Rated Output Current	700mA	1050mA	1400mA	1250mA
Current Accuracy	$\pm$ 10% (@ Typical output current range)			
Line Regulation	$\pm$ 2% (@ 120-277Vac input) for 55W , $\pm$ 5% (@ 120-277Vac input) for 40W			
Load Regulation	$\pm$ 1% (@ Min-Max output voltage) for 55W , $\pm$ 5% (@ Min-Max output voltage) for 40W			
Output Current LF Ripple	5% (ripple = peak-average/average) at full load (<100Hz)			
Start-up Time	1000ms max. @ 120-277Vac (full load)			

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Mechanical

Casing	Metal Sheet, Color: White
Dimensions (L x W x H) [mm]	241.3*33.0*25.4
[inch]	9.50*1.30*1.00
Unit Weight [kg]	0.41
[lb]	0.90
Cooling System	Convection
Input Wire	Line: Black, Neural: White, Wire Length 300mm
Output Wire	Positive: Red, Negative: Blue, Wire Length 300mm
Dimming Wire	USCI-□□□□□□FA : NA USCI-□□□□□□DA: Dim(+): Violet, Dim(-): Gray, Wire Length 300mm
Noise (30cm distance)	Sound Pressure Level (SPL) < 24dBA

Environment

Ambient Temperature	Operating	-25°C to +55°C
	Storage	-40°C to +85°C
Maximum Case Temperature		+80°C
Relative Humidity	Operating	10 to 90% RH (Non-Condensing)
	Storage	5 to 95% RH (Non-Condensing)
Environmental Locations		Dry / Damp

Protections

Over Voltage	60Vrms	45Vrms	35Vrms	49Vrms
	Auto-Recovery when the fault is removed			
Overload / Overcurrent	Auto-Recovery when the fault is removed			
Short Circuit	Auto-Recovery when the fault is removed			
Over Temperature	Auto-Recovery when the fault is removed			
Suitable for Luminaires Class	Class II. Insulation Class according to IEC 60598			

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Reliability Data

Lifetime	50,000 hours at case temp. tc & full load. Refer to "Lifetime VS Case Temperature"		
Lifetime @ tc	+65°C		+80°C

Safety Standards / Directives

Electrical Safety	EN 61347-1, EN 61347-2-13 CE UL 8750 with type "HL" & Class P for (USCI-055125FA & USCI-055125DA) UL 8750 for others SELV Class 2				
Material and Parts	RoHS Directive 2011/65/EU Compliant				
Galvanic Isolation		Mains (Input)	Earth (Case)	Output	DIM ±
	Mains (Input)	N/A	3750V	3750V	N/A
	Earth (Case)	3750V	N/A	500V(except to 55W , 3750V)	N/A
	Output	3750V	500V(except to 55W , 3750V)	N/A	2250V
	DIM ±	N/A	N/A	2250V	N/A

EMC Compliance

Emissions (CE & RE)	Compliance to EN 55015 Class B; 47 CFR FCC Part 15, Subpart B, Class B	
Immunity	Compliance to EN 61547	
Electrostatic Discharge	IEC 61000-4-2	Air Discharge: 8kV Contact Discharge: 4kV Criteria A ¹⁾ or Criteria B ²⁾
Radiated Field	IEC 61000-4-3	80MHz-1GHz, 3V/m with 1kHz Sine Wave / 80% Modulation Criteria A ¹⁾
Electrical Fast Transient / Burst	IEC 61000-4-4	1KV, Criteria A ¹⁾ or Criteria B ²⁾
Surge	IEC 61000-4-5	<u>For 40W series</u> Differential Mode ⁴⁾ : 4kV. Criteria A ¹⁾ or Criteria B ²⁾ <u>For 55W series</u> Differential Mode ⁴⁾ : 2kV, Common Mode ³⁾ : 4kV; Criteria A ¹⁾ or Criteria B ²⁾
Conducted	IEC 61000-4-6	150kHz-80MHz, 3Vrms :Criteria A ¹⁾
Power Frequency Magnetic Fields	IEC 61000-4-8	3A/Meter : Criteria A ¹⁾
Voltage Dips	IEC 61000-4-11	100% dip; 0.5 cycle , Criteria A ¹⁾ or Criteria B ²⁾ 30% dip; 10 cycle, Criteria A ¹⁾ or Criteria B ²⁾
Harmonic Current Emission	IEC 61000-3-2	Class C
Voltage Fluctuation & Flicker	IEC 61000-3-3	

1) Criteria A: Normal performance within the specification limits

2) Criteria B: Temporary degradation or loss of function, which is self-recoverable

3) Asymmetrical: Common mode (Line to earth)

4) Symmetrical: Differential mode (Line to line)

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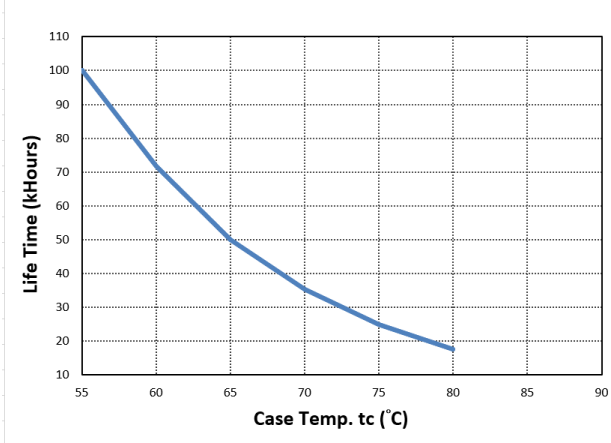
1-10V Dimming Specification for Dim series

Absolute Maximum Voltage	$\pm 20V$		
Source Current	$275\mu A \pm 10\%$		$200\mu A \pm 10\%$
Dimming Input Range	1) 0-1V: 10% duty , 1-10V: 10-100%duty 2) Open is 100% duty		

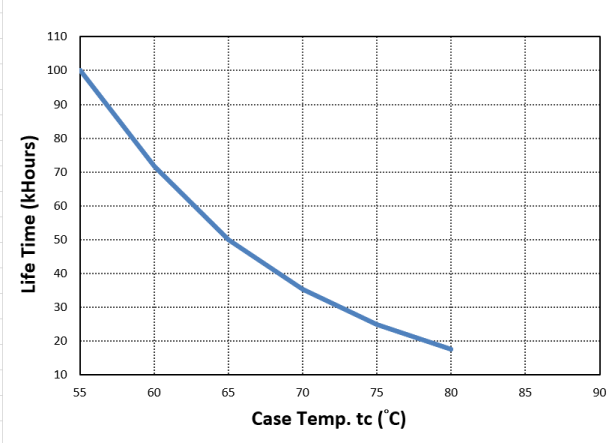


Lifetime VS Case Temperature

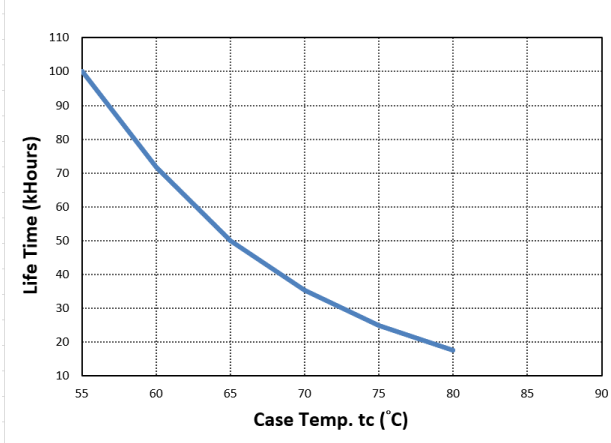
USCI-040070FA



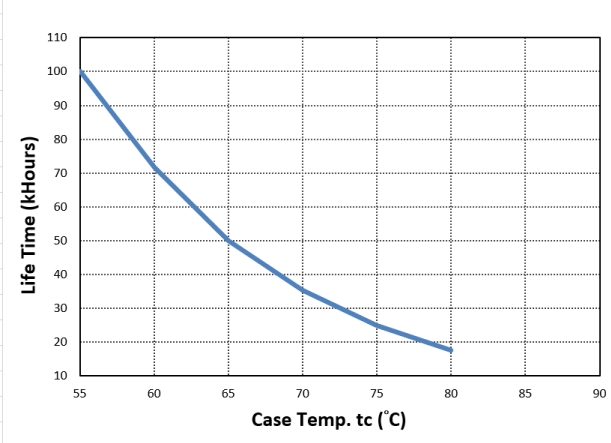
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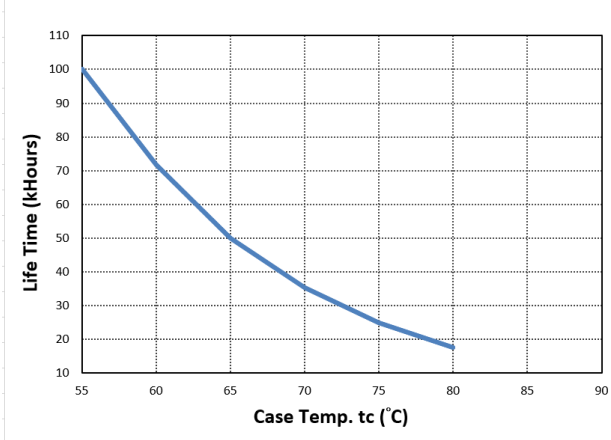
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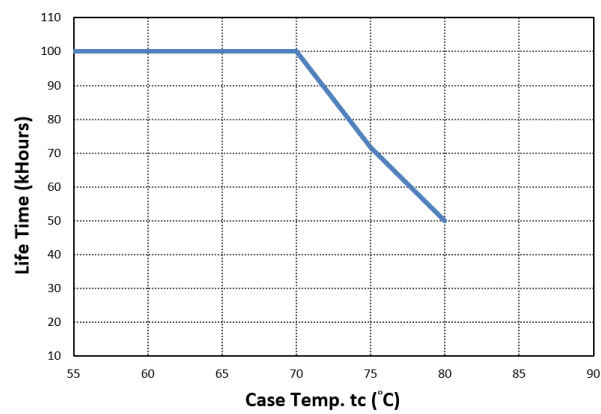
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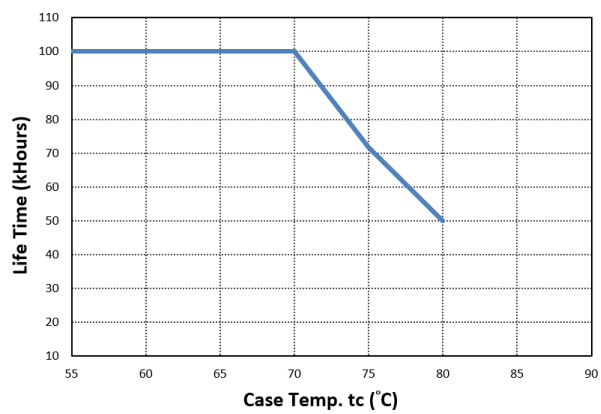
USCI-040140DA



USCI-055125FA



USCI-055125DA

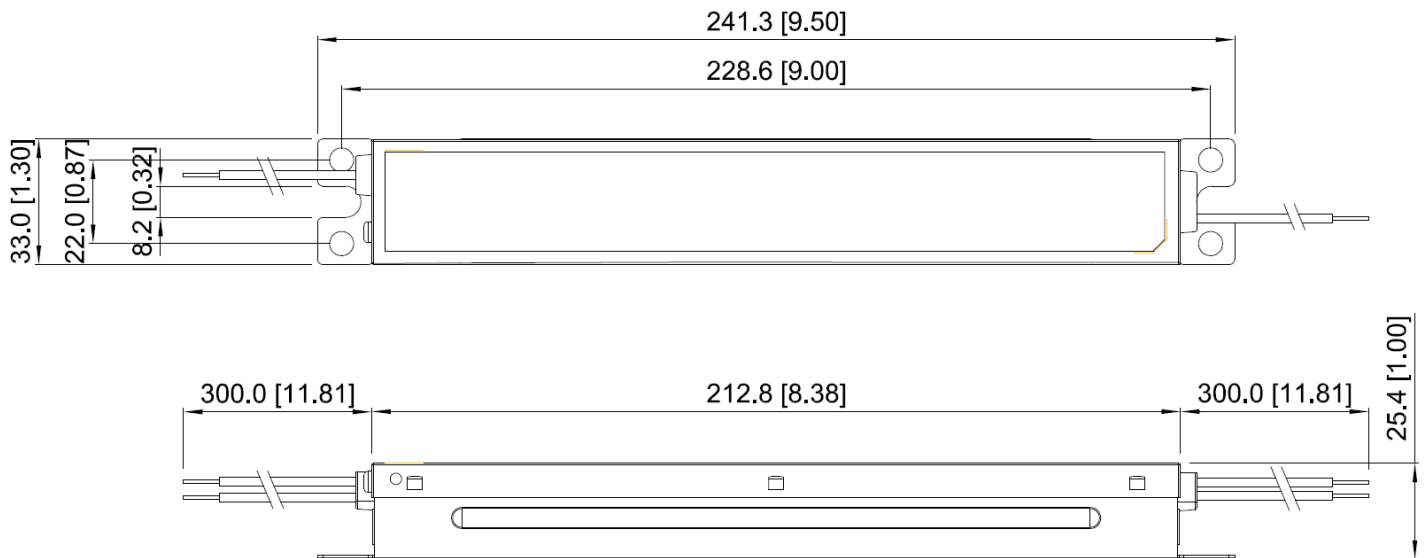


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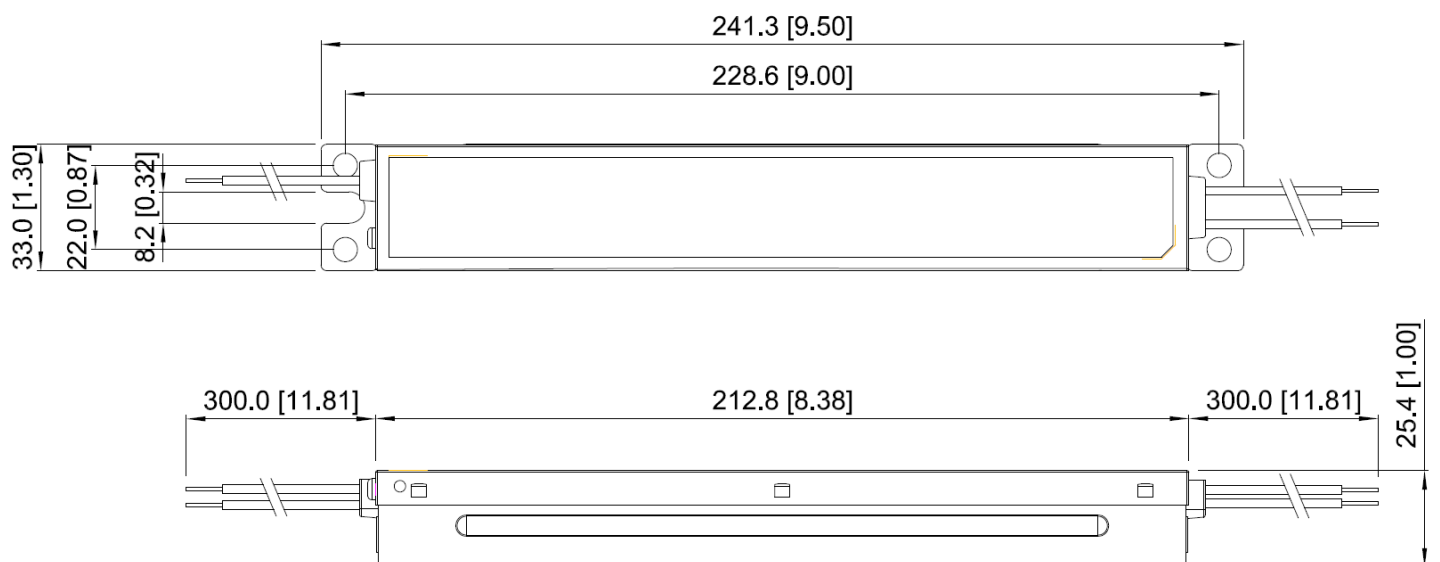
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Dimensions

USCI-040070FA, USCI-040105FA



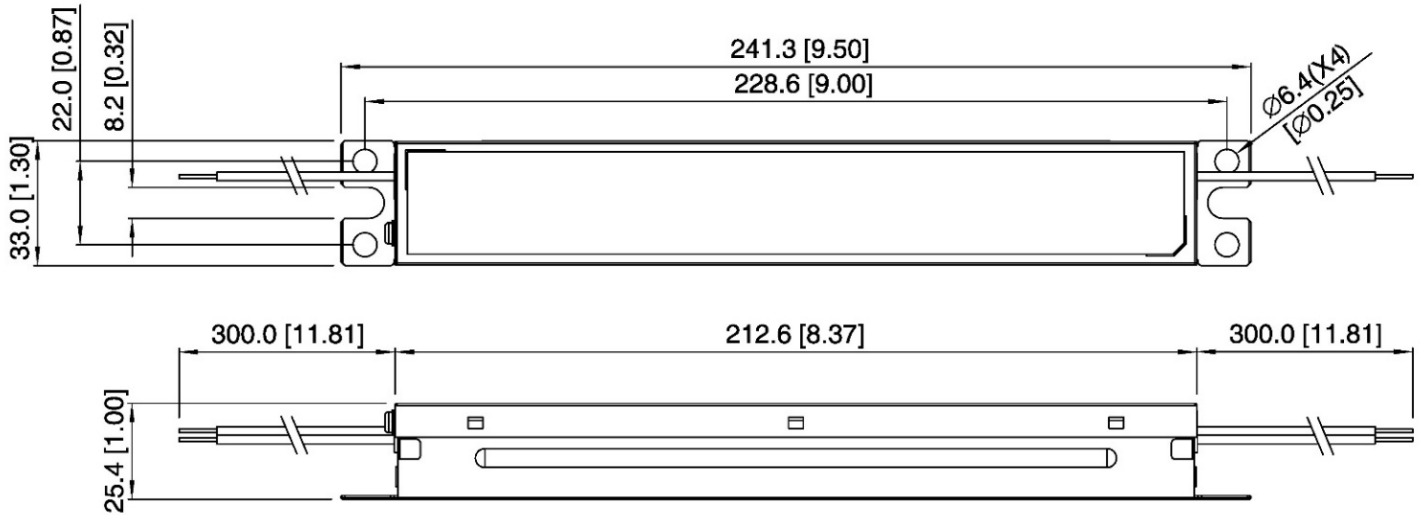
USCI-040070DA, USCI-040105DA, USCI-040140DA



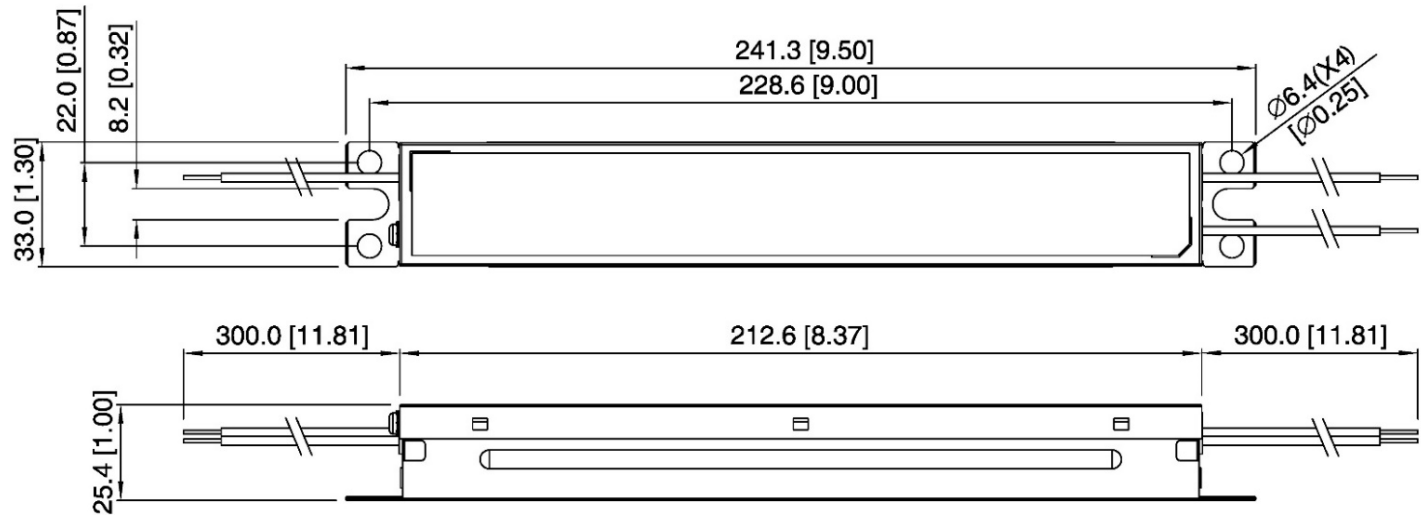
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USCI-055125FA



USCI-055125DA



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