

LED Driver

USCI WT Series / USCI-□□□070XA

USCI WT

Highlights & Features

- Constant current design
- Universal AC input voltage from 120-277Vac
- High efficiency up to 91%
- Build-in Active PFC and confirm to harmonic current IEC/EN 61000-3-2, Class C
- Suitable for Dry / Damp location
- 1-10V dimming available

Safety Standards



Dimensions (L x W x H):

USCI-075070XA	240.0 x 43.2 x 31.5 mm (9.45 x 1.70 x 1.24 inch)
USCI-100070XA	241.3 x 60.7 x 41.5 mm (9.50 x 2.39 x 1.63 inch)
USCI-150070XA	241.3 x 60.7 x 41.5 mm (9.50 x 2.39 x 1.63 inch)

General Description

Delta LED drivers come in different series to suit different application needs. USCI WT series offers the capability to achieve different level of LED brightness via built-in 1-10V 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

Model Information

USCI Fixed or 1-10V LED Driver

Model Number	Input Voltage Range	Rated Output Voltage	Rated Output Current	Control Interface
USCI-075070FA (SDHV070C75A)	120-277Vac Typical 108-305Vac Range	54-107Vdc	700mA	Fixed
USCI-075070DA (SDHV070D75T)		54-107Vdc	700mA	1-10V
USCI-100070FA (SDHV070C100T)		72-143Vdc	700mA	Fixed
USCI-100070DA (SDHV070D100T)		72-143Vdc	700mA	1-10V
USCI-150070FA (SDHV070C150T)		107-214Vdc	700mA	Fixed
USCI-150070DA (SDHV070D150T)		107-214Vdc	700mA	1-10V

Remark: () is the original safety application name.

Model Numbering

US	C	I	-	□□□	070	□	A
Safety Approval – cUL, CE	Constant current	Application Indoor		Output Power 075 – 75W 100 – 100W 150 – 150W	Max Output Current 070 – 700mA	Function D – 1-10V Dimming F – Fixed Output	Variable A – Delta Standard

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Specifications

Model Number	USCI-075070FA	USCI-075070DA	USCI-100070FA	USCI-100070DA	USCI-150070FA	USCI-150070DA
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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	0.82A	1.02A	1.52A
Efficiency ¹⁾	230Vac	89%	90%	91%
Inrush Current (Apk / 50% - μS @Cold Start)		50A/50μS @ 230Vac	70A/150μS @ 230Vac	130A/150μS @ 230Vac
Max. no. of LED Drivers circuit breaker at 230Vac	B16	13 pcs	10 pcs	6 pcs
Power Factor		> 0.9 @ 120- 277Vac input with Load ≥60% (except to USCI-075070XA with load ≥70%)		
Total Harmonic Distortion		THD < 20% with load ≥60% at 120- 277Vac input (except to USCI-075070XA with load ≥70%,)		
Leakage Current		<0.7mA @ 277Vac		

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

Output Ratings / Characteristics

Output Voltage Range	54-107Vdc	54-107Vdc	72-143Vdc	72-143Vdc	107-214Vdc	107-214Vdc
Max. No Load Output Voltage	130Vrms	130Vrms	165Vrms	165Vrms	250Vrms	250Vrms
Output Power Range	75W	75W	100W	100W	150W	150W
Rated Output Current	700mA	700mA	700mA	700mA	700mA	700mA
Current Accuracy	$\pm$ 10% (@ Typical output current range)					
Line Regulation	$\pm$ 2% (@ 120-277Vac input)					
Load Regulation	$\pm$ 1% (@ Min-Max output voltage)					
Output Current LF Ripple	5% (ripple = peak-average/average) at full load (<100Hz) for USCI-100070XA & USCI-150070XA 30% (ripple = peak-average/average) at full load (<100Hz) for USCI-075070XA					
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]	240.0 x 43.2 x 31.5		241.3 x 60.7 x 41.5		
	[inch]	9.45 x 1.70 x 1.24		9.50 x 2.39 x 1.63		
Unit Weight	[kg]	0.64		1.10		
	[lb]	1.40		2.43		
Cooling System		Convection				
Input Wire :		Line: Brown, Neutral: Blue, PE: Yellow/Green				
		Wire Length 280mm		Wire Length 450mm	Wire Length 300mm	Wire Length 450mm
Output Wire :		Positive: Red, Negative: Blue, Wire Length 180mm				
Dimming Wire :		Dim(+): Violet, Dim(-): Gray				
		N/A	Wire Length 180mm	N/A	Wire Length 180mm	N/A
Noise (30cm distance)		Sound Pressure Level (SPL) < 24dBA				

Environment

Ambient Temperature	Operating	-40°C to +55°C		
	Storage	-40°C to +85°C		
Maximum Case Temperature		+85°C	+80C	+85°C
Lifetime Case Temperature		+85°C	+75°C	+75°C
Relative Humidity	Operating	10 to 90% RH (Non-Condensing)		
	Storage	5 to 95% RH (Non-Condensing)		
Environmental Locations		Dry / Damp		

Protections

Over Voltage	130Vrms	165Vrms	250Vrms
	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		

Reliability Data

Lifetime	50,000 hrs. @ lifetime case temperature		
MTTF	ta: +55°C	ta: +45°C	ta: +45°C
	500,000 hrs. (as per Telcordia SR-332 , total failure rate less than 10%)		

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Safety Standards / Directives

Electrical Safety	CB scheme to IEC 61347-1, IEC 61347-2-13 UL 8750				
CE	In conformance with EMC Directive and Low Voltage Directive				
Material and Parts	RoHS Directive Compliant				
Galvanic Isolation		Mains (Input)	Earth (Case)	Output	DIM ±
USCI-075070FA	Mains (Input)	N/A	3750V	3750V	N/A
USCI-100070FA	Earth (Case)	3750V	N/A	3750V	N/A
USCI-075070DA	Output	3750V	3750V	N/A	1875V
USCI-100070DA	DIM ±	N/A	N/A	1875V	N/A
Galvanic Isolation		Mains (Input)	Earth (Case)	Output	DIM ±
USCI-150070FA	Mains (Input)	N/A	3750V	3750V	N/A
USCI-150070DA	Earth (Case)	3750V	N/A	3000V	N/A
	Output	3750V	3000V	N/A	3000V
	DIM ±	N/A	N/A	3000V	N/A

EMC Compliance

Emissions (CE & RE)	Compliance to EN 55015 Class B	
Immunity	Compliance to EN 61547	
Electrostatic Discharge	IEC 61000-4-2	Air Discharge: 8kV ; Contact Discharge: 4kV Criteria A ¹⁾ or B ²⁾
Radiated Disturbances	IEC 61000-4-3	80MHz-1GHz, 3V/m with 1kHz Sine Wave / 80% AM Modulation Criteria A ¹⁾
Electrical Fast Transient / Burst	IEC 61000-4-4	1kV; Criteria A ¹⁾ or B ²⁾
Surge	IEC 61000-4-5	1.2/50µs, 8/20µs Combination Wave with 2ohms (L-N), 12ohms (L-PE & N-PE) source impedance Criteria A ¹⁾ or B ²⁾ Common Mode ³⁾ : 4kV; Differential Mode ⁴⁾ : 4kV
Conducted Disturbances	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; Self Recoverable 30% dip; 10 cycle; Self Recoverable Criteria A ¹⁾ or B ²⁾
Harmonic Current Emission	IEC 61000-3-2	Class C (230Vac @ 100% load)
Voltage Fluctuation and Flicker	IEC 61000-3-3	P _{st} ≤ 1.0 ; d _{max} ≤ 4% ; P _{It} ≤ 0.65 ; d _c ≤ 3.3% ; T _{max} ≤ 500ms

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)

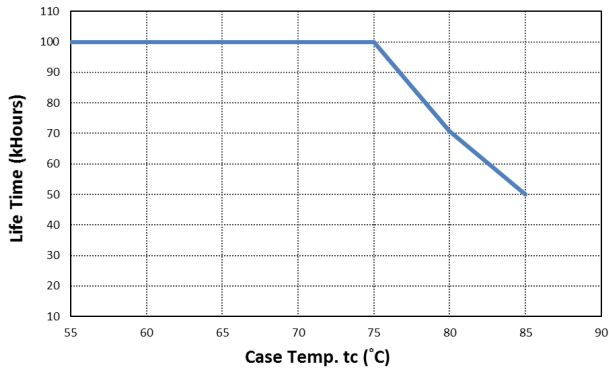
4) Symmetrical: Differential mode (Line to line)

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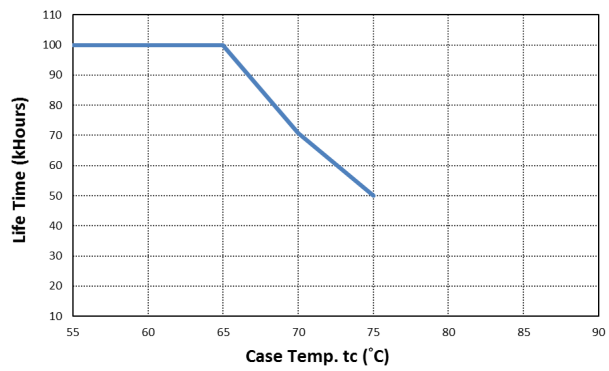
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Lifetime VS Case Temperature

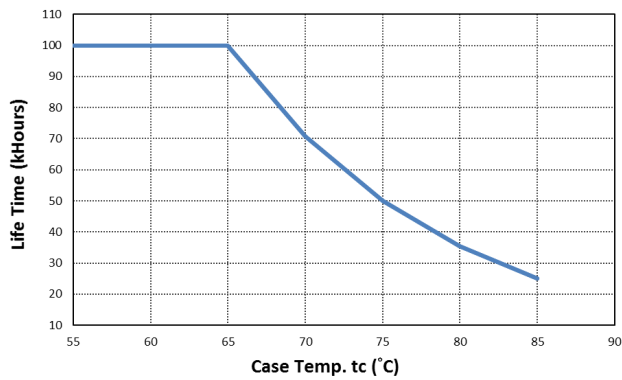
USCI-075070FA / USCI-075070DA



USCI-100070FA / USCI-100070DA



USCI-150070FA / USCI-150070DA

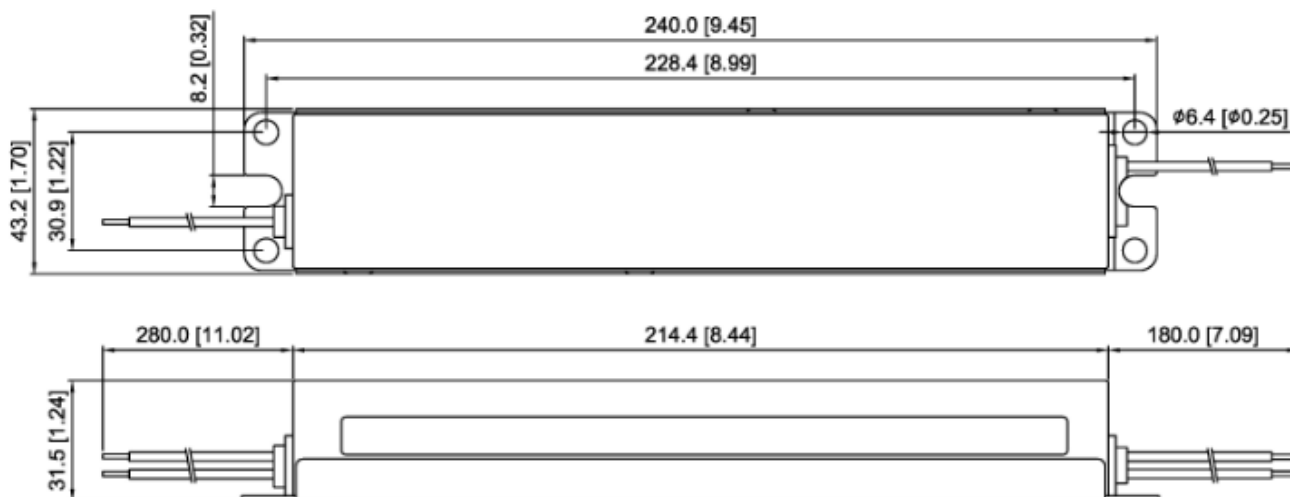


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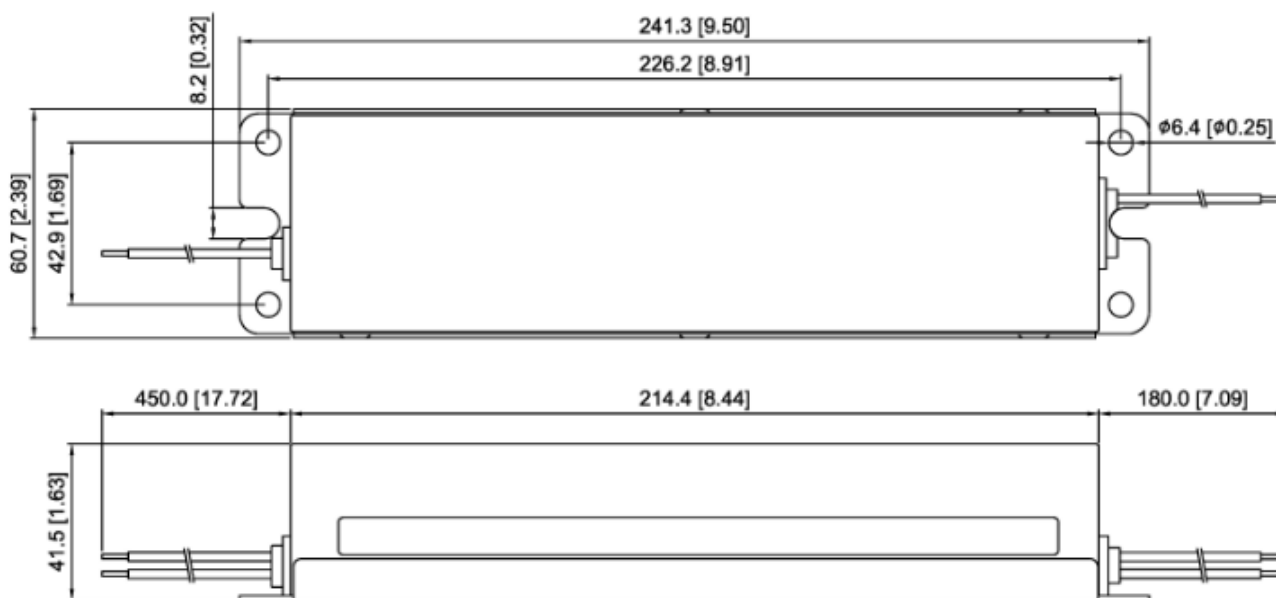
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Dimensions

USCI-075070FA & USCI-075070DA



USCI-100070FA & USCI-150070FA

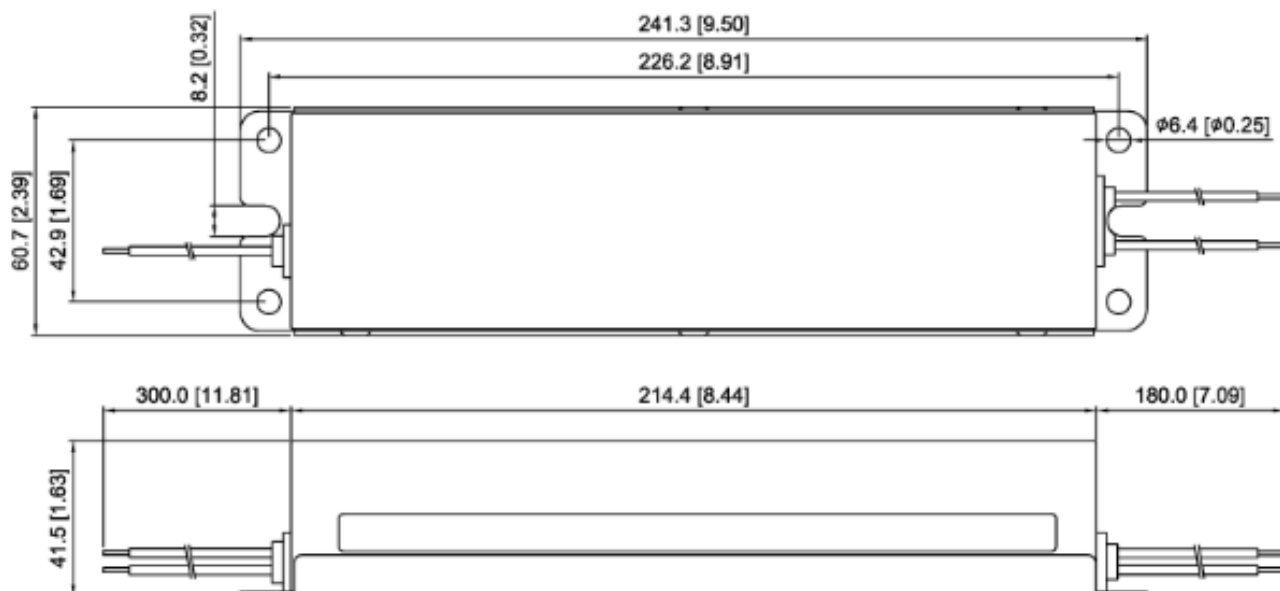


Unit: mm [inch]

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USCI-100070DA & USCI-150070DA



Unit: mm [inch]

Mouser Electronics

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