LED Driver
USCI PRO Series

USCI PRO

Highlights & Features

- Constant current design
- Universal AC input voltage from 108-305Vac
- High efficiency up to 94%
- Wide operating temperature range -40ºC ~ +55ºC
- Built-in Active PFC and conforms to harmonic current IEC/EN 61000-3-2, Class C
- Adjustable constant current level through program tool
- Common mode 6kV and differential mode 6kV surge immunity
- Suitable for Dry / Damp location
- UL LISTED, Class P & Type HL

Safety Standards

c UL us LISTED E336604

CB Certified for worldwide use

General Description

Delta LED drivers come in different series to suit different application needs. The USCI-PRO series features program output current level. All the models come in metal casing and major international safety certifications. USCI-PRO 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 indoor and outdoor LED lighting conditions. Featuring high surge immunity (CM: 6kV, DM: 6kV) and complying to IP52 make Delta USCI-PRO series an essential part of an energy efficient LED lighting power solution for both indoor and outdoor applications.

Model Information

Model Number	Input Voltage Range	Output Voltage	Program Output Current Range	Constant Power Current Range
USCI-075140GA	120-277Vac Typical (108-305Vac) Range	36-107Vdc	500 – 1400mA	700 – 1400mA
USCI-100140GA		47-143Vdc	600 – 1400mA	700 – 1400mA
USCI-150140GC		72-214Vdc	600 – 1400mA	700 – 1400mA
USCI-200140GA		75-190Vdc	600 – 1400mA	1050 – 1400mA
USCI-200175GA		56-133Vdc	700 – 1750mA	1500 – 1750mA
USCI-200175GLA		56-133Vdc	700 – 1750mA	1500 – 1750mA

Model Numbering

USCI –	□□□	□□□	G	A/C,LA
LED Driver	Output Power 075: 75W 100: 100W 150: 150W 200: 200W	Maximum Output Current 140: 1400mA 175: 1750mA	Dimming Type G – Programmable	Variable A or C– 0-10V DIM & +12V/50mA LA: DALI + 12V/100mA (Note: USCI-200175GLA without 12V/100mA)

All parameters are specified at 25°C ambient for all products unless otherwise indicated.

LED Driver
USCI PRO Series

Specifications

Model Number		USCI-075140GA	USCI-100140GA	USCI-150140GC	USCI-200140GA	USCI-200175GA USCI-200175GLA
Input Ratings / Characteristics						
Nominal Input Voltage		120-277Vac (108-305Vac)				
Nominal Input Frequency		50-60Hz (47-64Hz)				
Power Factor		Full Load: PF>0.98@120Vac, PF>0.95@230Vac, PF>0.92@277Vac >70% Load: PF>0.92@220Vac				
Total Harmonic Distortion		THD<20% with load≧50% at 120/230Vac input and load≧75% at 277Vac input				
Maximum Input Current	120Vac	0.78A	1.04A	1.53A	2.1A	2.1A
Efficiency[1] at 100% Load (Typical)	120Vac	91.0%@0.7A	91.0%@0.7A	91.5%@0.7A	93.0%@1.05A	92.0%@1.05A
	230Vac	92.5%@0.7A	92.5%@0.7A	93.0%@0.7A	94.0%@1.05A	93.5%@1.05A
	277Vac	92.5%@0.7A	92.5%@0.7A	93.0%@0.7A	94.0%@1.05A	93.5%@1.05A
Inrush Current (Cold Start) @277Vac		80A/250uS	80A/250uS	130A/250uS	200A/200uS	200A/200uS
Max. No.of drivers MCB at 230Vac	B16	8	8	5	4	4
	C16	14	12	8	6	6
Leakage Current		<0.7mA peak @ 277Vac				
Standby Power		<0.5W @ Dim to off & 230Vac				
Input Over-voltage		Can survive input over-voltage stress of 320VAC for 48 hours and 350VAC for 2 hours				
Output Ratings / Characteristics						
Output Power		75W	100W	150W	200W	200W
Output Voltage		36-107Vdc	47-143Vdc	72-214Vdc	75-190Vdc	56-133Vdc
Max. No Load Output Voltage		120Vrms	150Vrms	250Vrms	230Vrms	160Vrms
Adjustable Output Current (AOC)		500-1400mA	600-1400mA	600-1400mA	600-1400mA	700 – 1750mA
		With steps of 1 mA, configurable via software				
Minimum Output Current		100mA (Min dim level) (note: 70mA (Min dim level) for GLA)				
Current Accuracy		± 5% (@ Typical output current range)				
Line / Load Regulation		± 1% (@ 120-277Vac input) / ± 3% (@ Min-Max output voltage)				
Output Current LF Ripple		5% (ripple = peak-average/average)				
Start-up Time		500ms max. @ 120-277Vac (full load), (note: 1000ms max for GLA)				
Hold-up Time		16ms typ. @ 120-277Vac (full load)				

1. Efficiency tested after 30 minutes warm up

LED Driver
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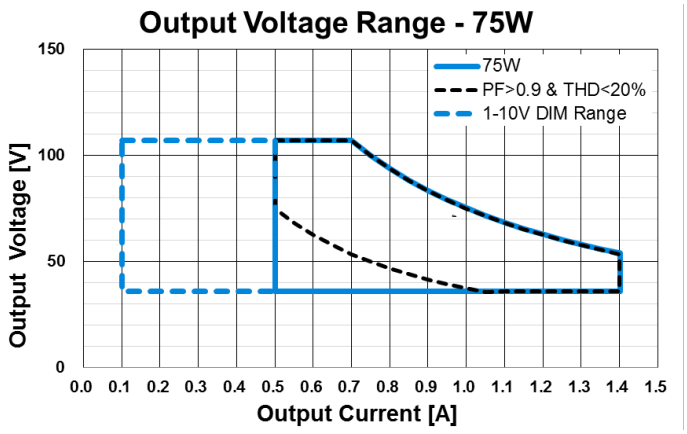
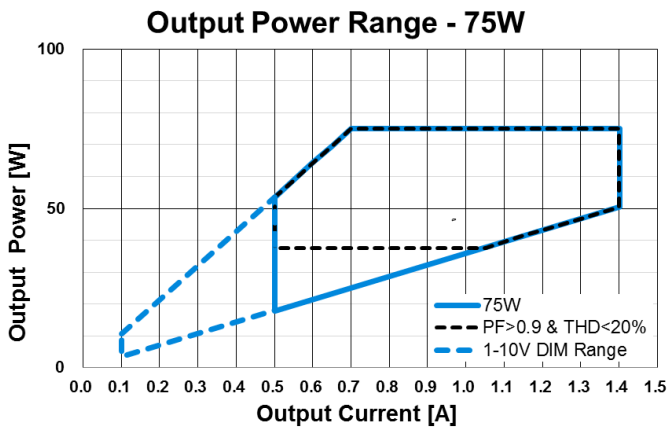
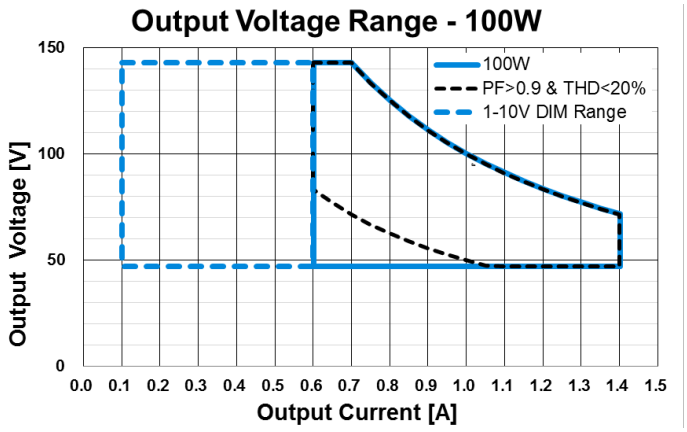
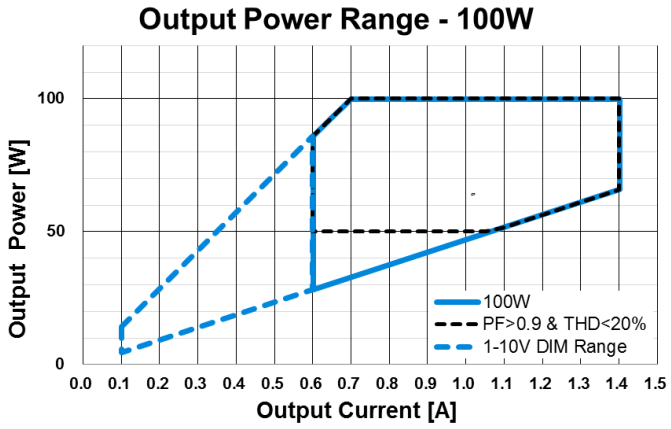
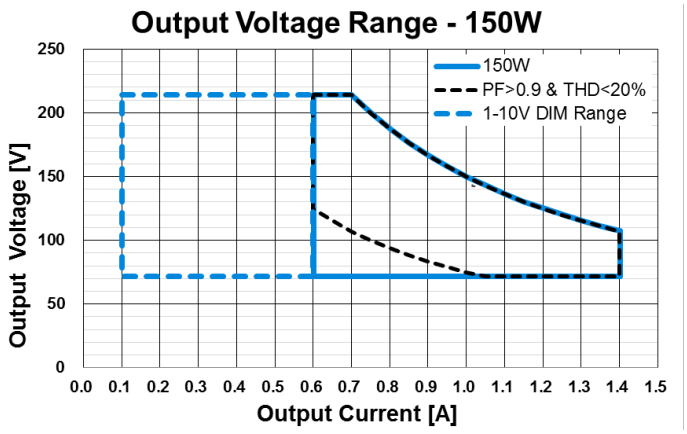
Operational Window

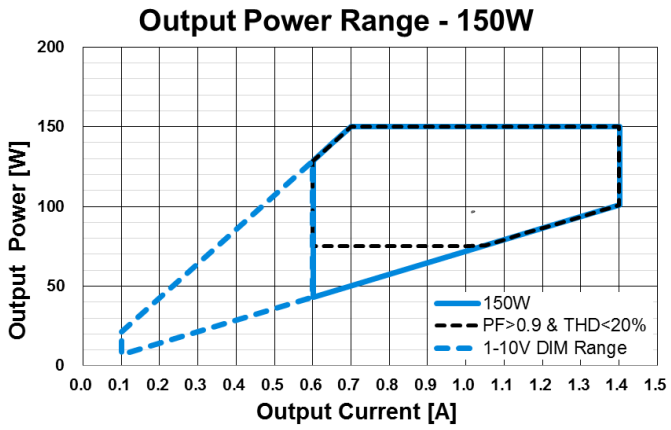












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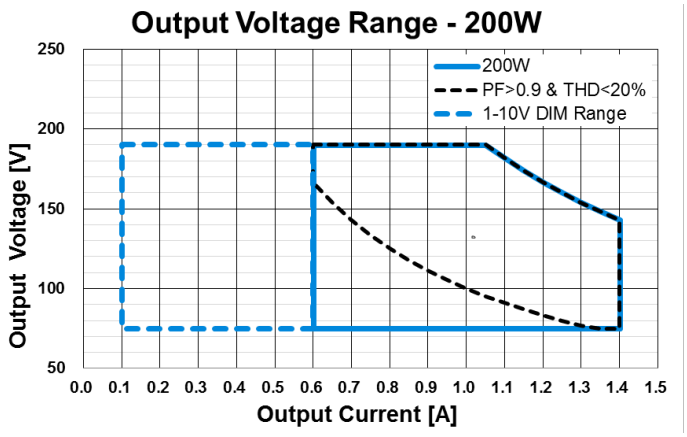
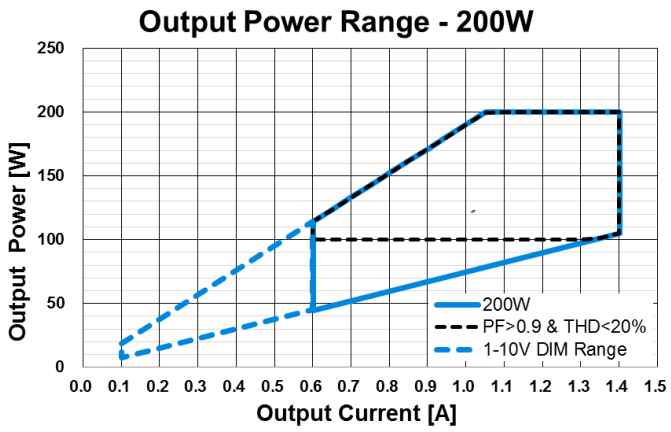
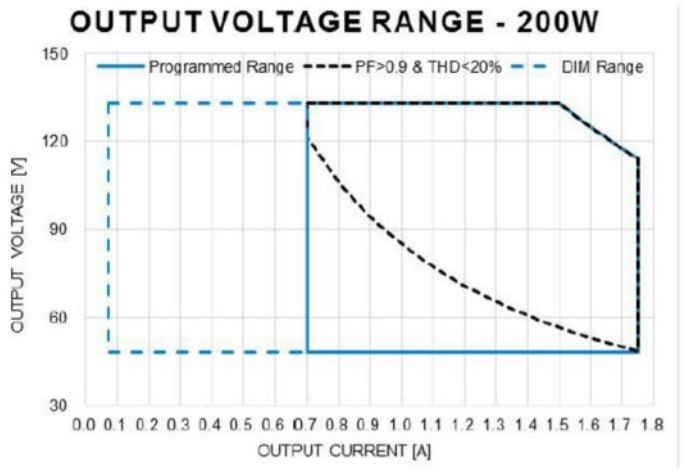
Operational Window

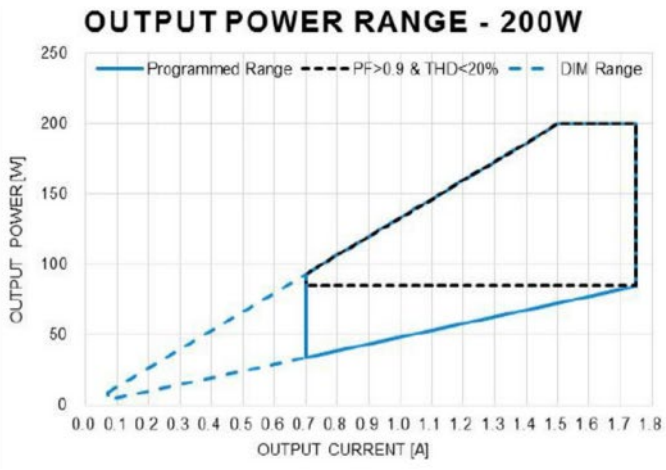
USCI-200140GA





USCI-200175GA/GLA





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Specifications

Model Number		USCI-075140GA	USCI-100140GA	USCI-150140GC	USCI-200140GA	USCI-200175GA USCI-200175GLA
Mechanical						
Casing		Steel case, color : Black				
Dimensions (L x W x D) inch mm		6.6”x2.36”x1.5” 167.5x60.0x37.5	6.6”x2.36”x1.5” 167.5x60.0x37.5	9.5”x2.36”x1.5” 240.5x60.0x38.0		
Unit Weight (gram)		900	900	1100		
Noise (30cm distance)		Sound Pressure Level (SPL) < 24dbA				
Wire	Input	L: Black, N: White; UL1316 18AWG solid copper wires Length 300mm				
	Output	Positive: Red, Negative: Blue; NTC/PRG: Black; wires Length 300mm				
	Dimming	Dim(+): Violet, Dim(-): Gray, +12V: Black/White; wires Length 300mm				
Environment						
Ambient Temperature	Operating	-40°C to +65°C ((+55deg for full load and +65deg for de-rating))				
	Storage	-40°C to +85°C				
Maximum Case Temperature		+85°C	+80°C	+85°C	+90°C	
Power De-rating		> 55°C de-rating power & < 120Vac de-rating power “OUTPUT LOAD VS INPUT VOLTAGE” & “OUTPUT LOAD VS AMBIENT TEMPERATURE”				
Humidity	Operating	10 to 90% RH (Non-Condensing)				
	Storage	5 to 95% RH (Non-Condensing)				
Shock Test (Non-Operating)		IEC 60068-2-27, Half Sine Wave: 50G for a duration of 11ms, 3 shocks for each 3 directions				
Vibration (Non-Operating)		IEC 60068-2-6, Random: 5Hz to 500Hz (2.09G); 20 min per axis for all X, Y, Z direction				
Protections						
Over Voltage		108-120Vdc	144-160Vdc	215-250Vdc	191-230Vdc	56-133Vdc
		Auto-Recovery when the fault is removed				
Over Load		Reduce output current. Auto-Recovery when the fault is removed				
Over Temperature		Reduce output current. Auto-Recovery when the fault is removed				
Output Short Circuit		Auto-Recovery when the fault is removed				
Suitable for Luminaires Class		Class II. Insulation Class according to IEC60598				
Reliability Data						
Lifetime		50,000 hours at case temp & full load. Refer to “LIFETIME VS CASE TEMPERATURE” or “LIFETIME VS AMBIENT TEMPERATURE”				
MTBF		500 khours at +45°C ambient temperature, Telcordia SR-332.				

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Specifications

Model Number		USCI-075140GA	USCI-100140GA	USCI-150140GC	USCI-200140GA	USCI-200175GA USCI-200175GLA
Certificates and standards						
Safety		CB scheme to IEC 61347-1, IEC 61347-2-13 (Built-in) EN 61347-1, EN 61347-2-13 UL/cUL (cRUus) to UL 8750 Compliance to IEC/EN/UL 60950-1 SELV for 75W UL LISTED, Class P & Type HL				
CE		In conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC				
Galvanic Isolation		Mains (Input)	Earth (Case)	Output/PROG	DIM +/- & +12V (DALI)	
	Mains (Input)	N/A	3750V	3750V	3750V	
	Earth (Case)	3750V	N/A	3750V	3750V	
	Output/PROG	3750V	3750V	N/A	1875V	
	DIM +/- &+12V	3750V	3750V	1875V	N/A	
EMC Compliance						
EMC / Emissions		Compliance to EN 55015:2013 Class B; 47 CFR FCC Part 15, Subpart B, Class B				
Immunity to		Compliance to EN 61547:2009				
Electrostatic Discharge		IEC 61000-4-2:2008 ED.2.0		ESD, Criteria A[1] or B[2] Air Discharge: 8kV Contact Discharge: 4kV		
Radiated Field		IEC 61000-4-3:2010 ED.3.2		RS, Criteria A[1] 80MHz-1GHz, 3V/m with 1kHz Sine Wave / 80% AM Modulation		
Electrical Fast Transient /Burst		IEC 61000-4-4:2012 ED.3.0		EFT, Criteria A[1] or B[2] 1kV		
Surge		IEC 61000-4-5:2014 ED.3.0		Criteria A[1] or B[2] Common Mode[3]: 6kV; Differential Mode[4]: 6kV,1.2/50μs, 8/20μs Combination Wave with 2ohms (L-N), 12ohms (L-PE & N-PE) source impedance		
Conducted		IEC 61000-4-6:2013 ED.4.0		CS, Criteria A[1] 150kHz-80MHz, 3Vrms		
Power Frequency Magnetic Fields		IEC 61000-4-8:2009 ED.2.0		PFMF, Criteria A[1] 3A/Meter		
Voltage Dips		IEC 61000-4-11:2004 ED.2.0		Criteria A[1] or B[2] ; 100% dip; 0.5 cycle; Self Recoverable 30% dip; 10 cycle; Self Recoverable		
Harmonic Current Emission		IEC 61000-3-2:2014		Class C (230Vac @ ≥ 50% load)		
Voltage Fluctuation & Flicker		IEC 61000-3-3:2013				

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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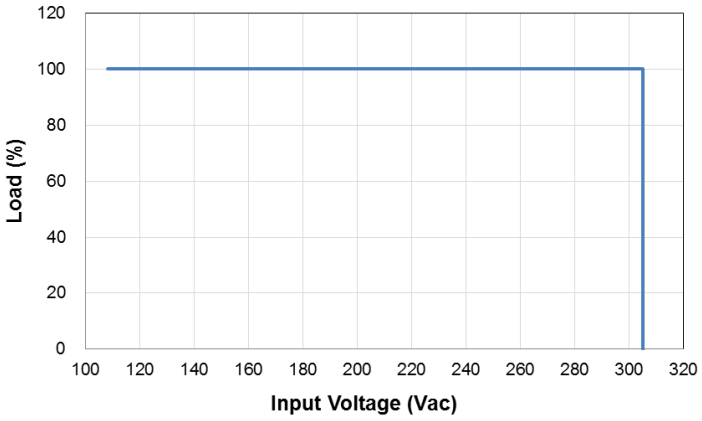
Specifications

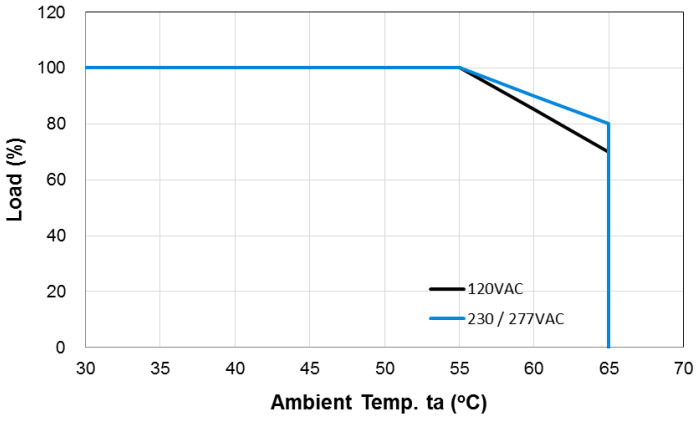
Model Number	USCI-075140GA	USCI-100140GA	USCI-150140GC	USCI-200140GA	USCI-200175GA USCI-200175GLA
0-10V Dimming Specification					
Absolute Maximum Voltage	+/- 20V				
Source Current	200uA +/- 50uA				
Dimming Input Range	1) 0-10V, 1.2V (+/-0.1V) is 10% of Io_set or 100mA minimum,≥8.5V is 100% of Io_set. 2) Lower than 1.1V (+/-0.1V) → Dim to off is programmable. 0.1V Hysteresis. 3) Short is 0% (dim to off) 4) Open is 100% 5) See 0-10V Dimming Curve				
Dimming Current Tolerance	+/- 10% of maximum setting output current. Ex. Io_set=1000mA, tolerance is +/-100mA.				
Default settings of the driver (can be changed with programmer tools)					
Adjustable Output Current (AOC)	700mA	700mA	700mA	1050mA	1500mA
0-10V DIM	Enabled (DIM to OFF). Selectable for Min. Dim Level and Min. & Max. Dim Voltage though Tools				
Smart Time DIM	Disabled (Only one function will be enabled between 0-10V & Smart Time Dim)				
Module Temperature Protection (MTP)	Disabled. Settable though programmable tools				
Constant Lumen Output (CLO)	Disabled. Settable though programmable tools.				
End of Life indication (EOL)	Disabled. Settable though programmable tools				
DALI	DALI-2, According IEC 62386 -101/102/207				
Auxiliary Output Voltage (except to USCI-200175GLA)					
+12V Output Range	+12Vdc (10.8 – 13.2Vdc)				
+12V Output Current	50mA				
Maximum Output Power	0.6W				

LED Driver
USCI PRO Series

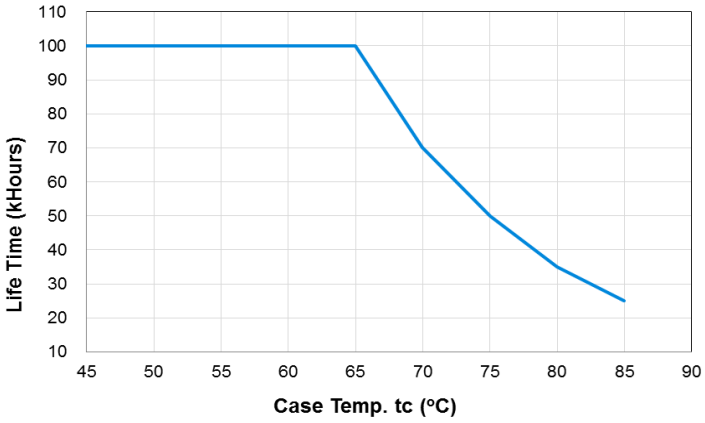
- OUTPUT LOAD VS INPUT VOLTAGE



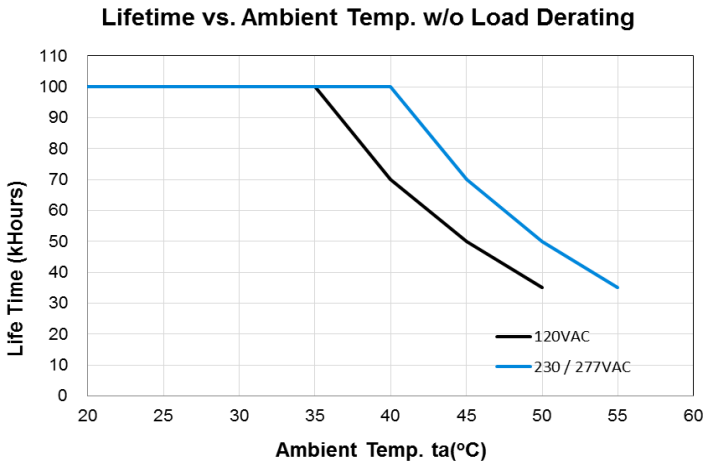
- OUTPUT LOAD VS AMBIENT TEMPERATURE



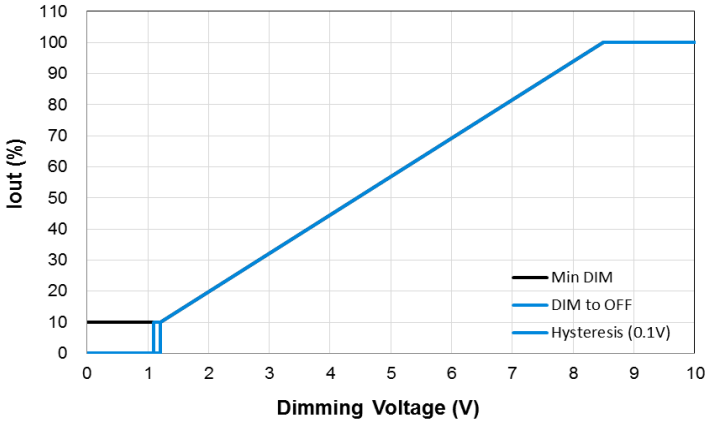
- LIFETIME VS CASE TEMPERATURE



- LIFETIME VS AMBIENT TEMPERATURE



- DIMMING CURVE



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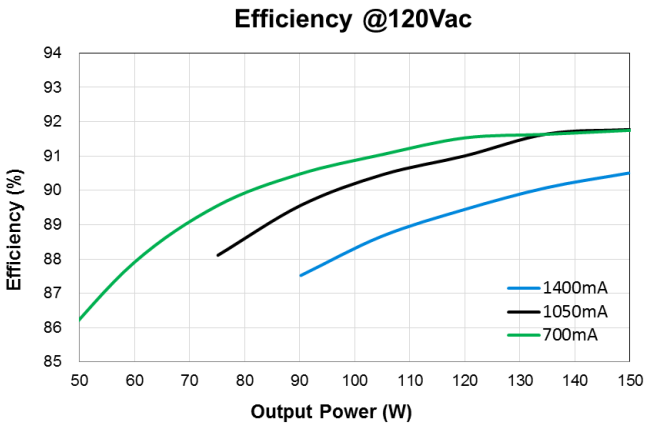
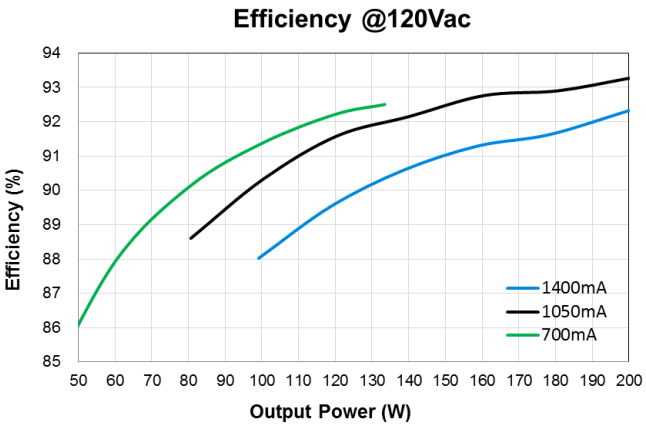
LED Driver
USCI PRO Series

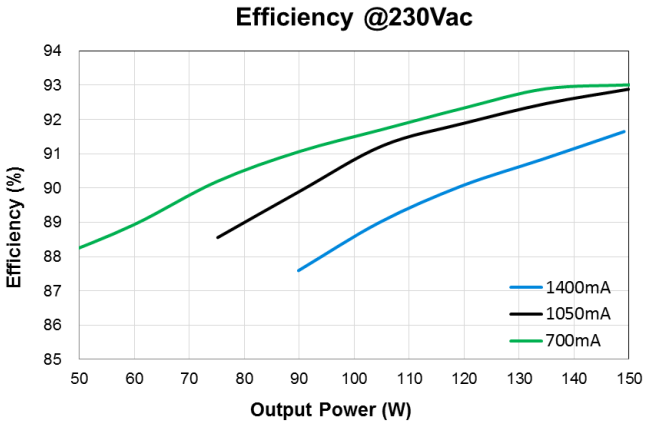
- EFFICIENCY versus OUTPUT POWER

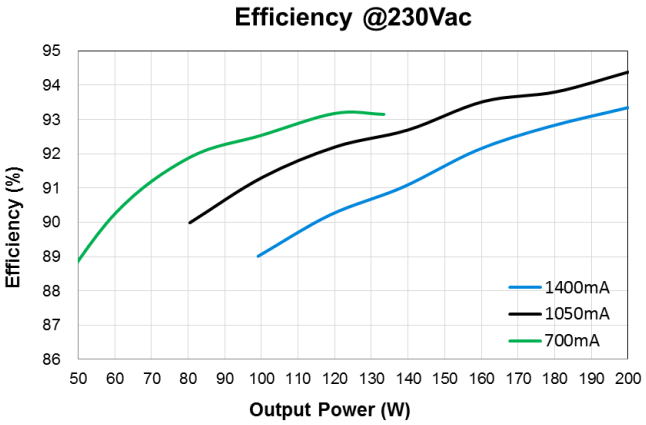
USCI-075140GA – 75W

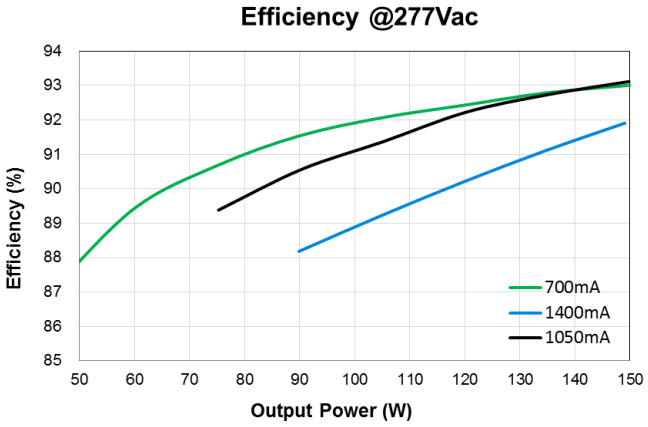


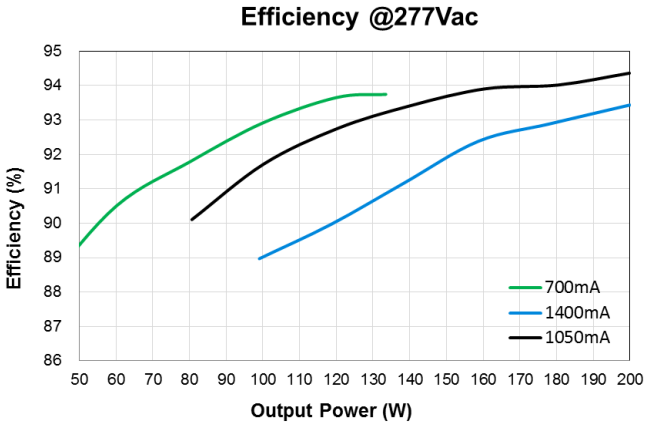
USCI-100140GA – 100W











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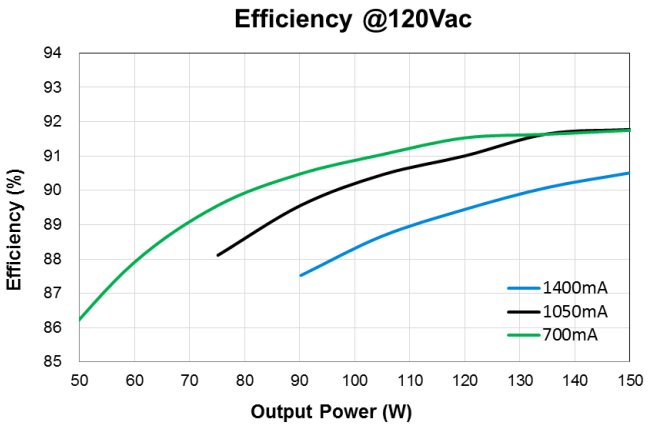
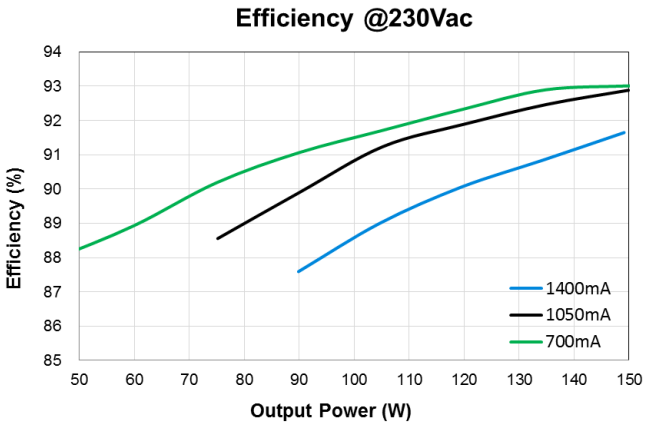
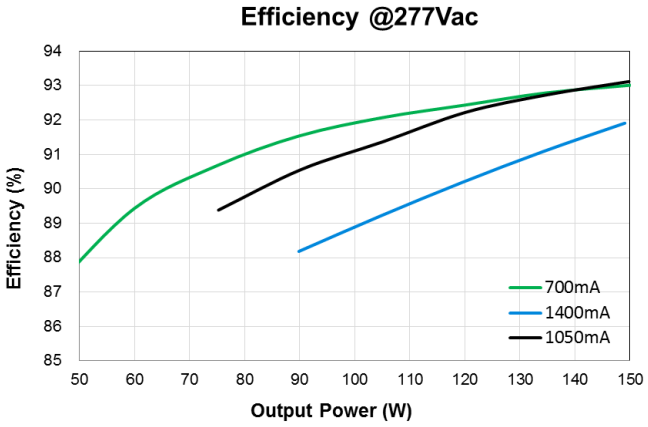
- EFFICIENCY versus OUTPUT POWER

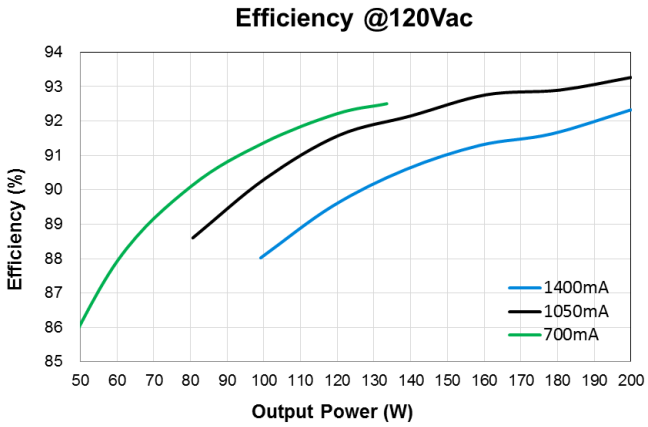
USCI-150140GC – 150W

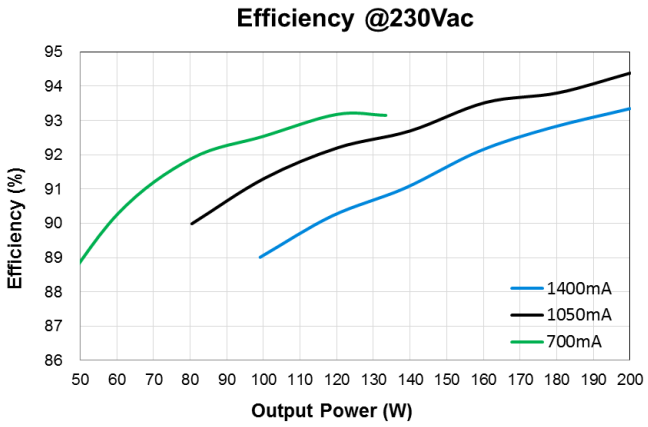


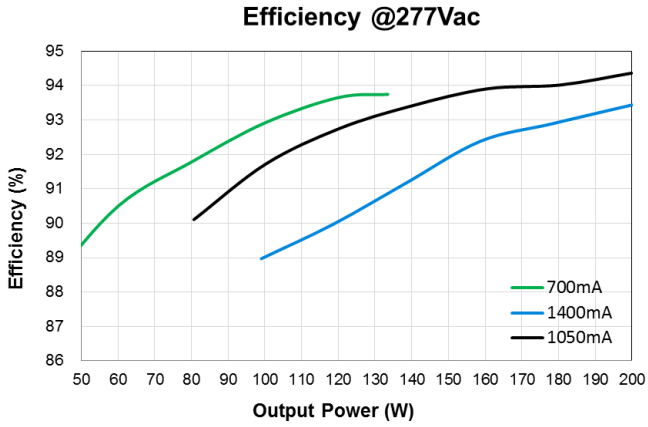




USCI-200140GA – 200W

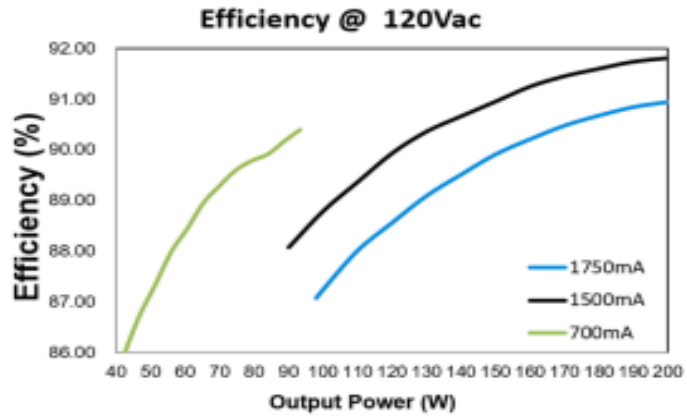


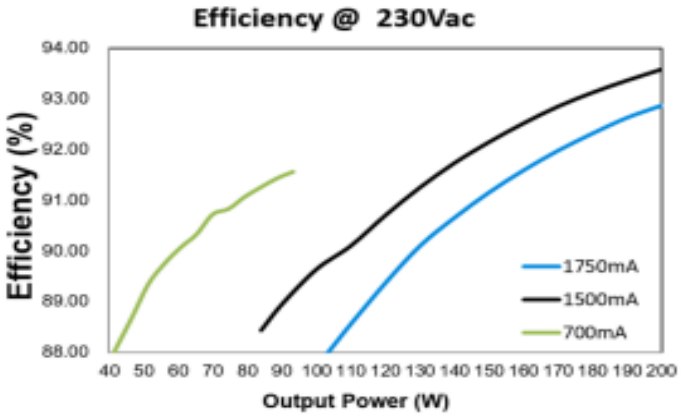


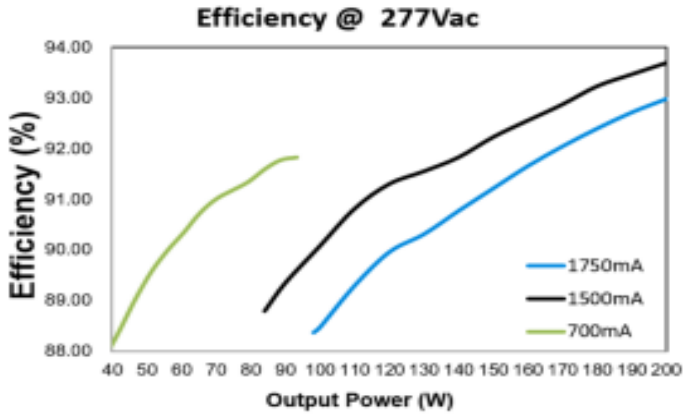


EFFICIENCY versus OUTPUT POWER

USCI-200175GA/GLA – 200W



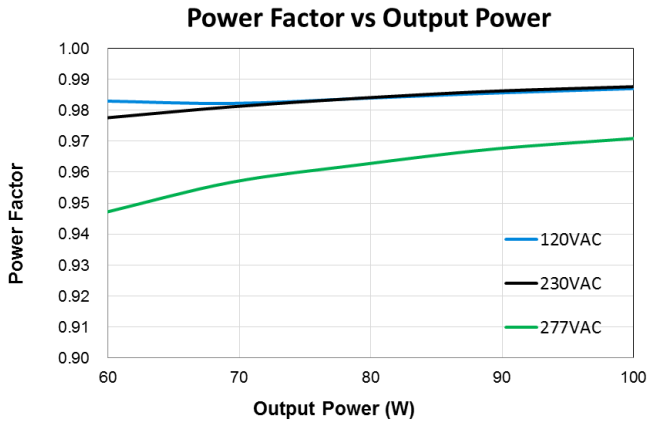


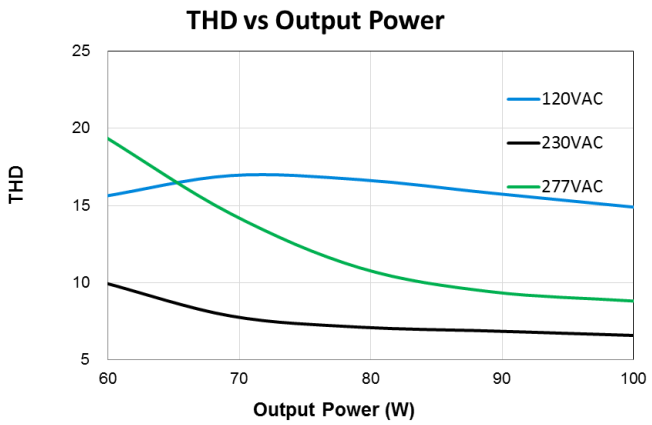


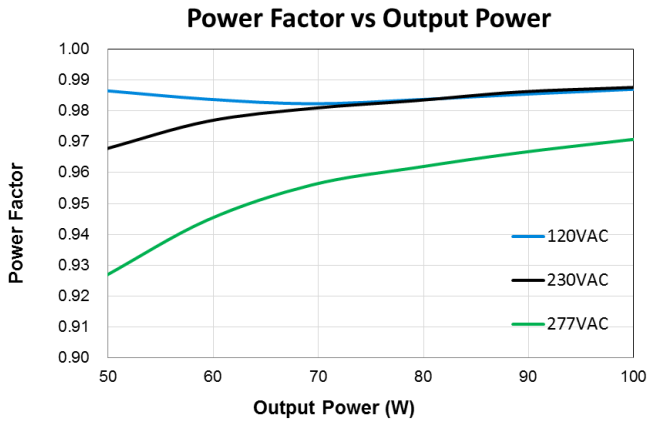
LED Driver
USCI PRO Series

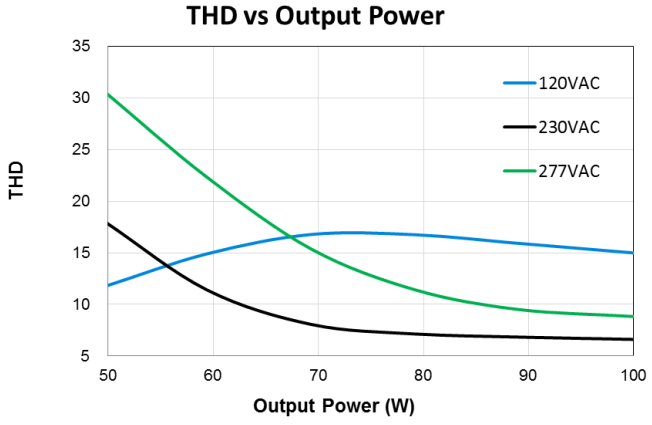
- POWER FACTOR versus OUTPUT POWER
- TOTAL HARMONIC DISTORTION versus OUTPUT POWER

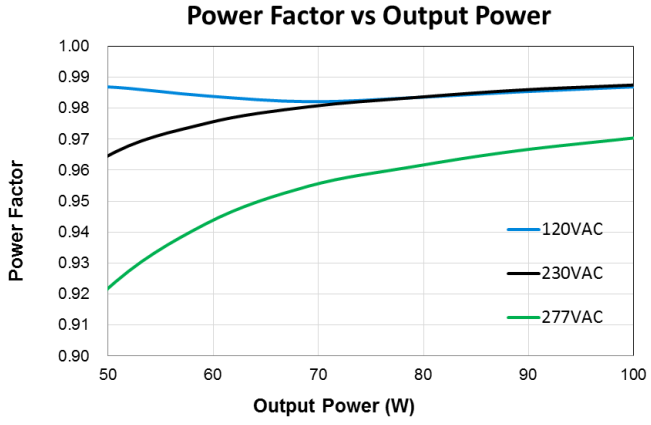
- USCI-100140GA – 1400mA

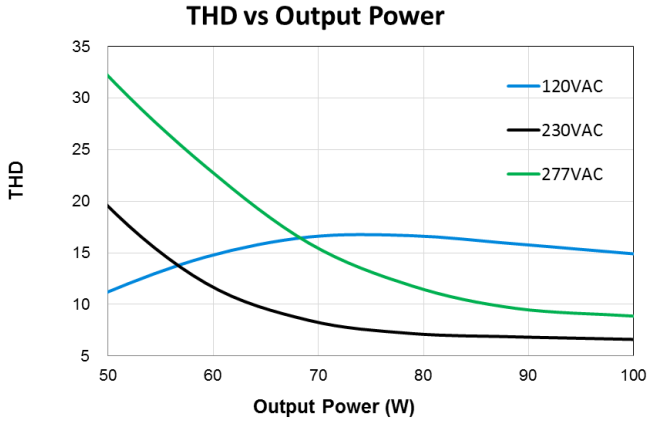








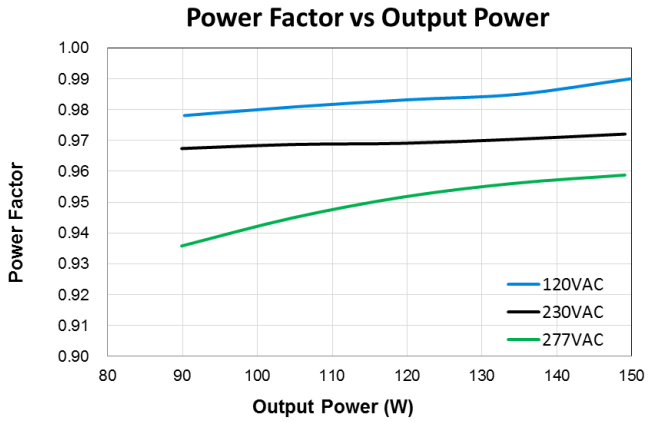


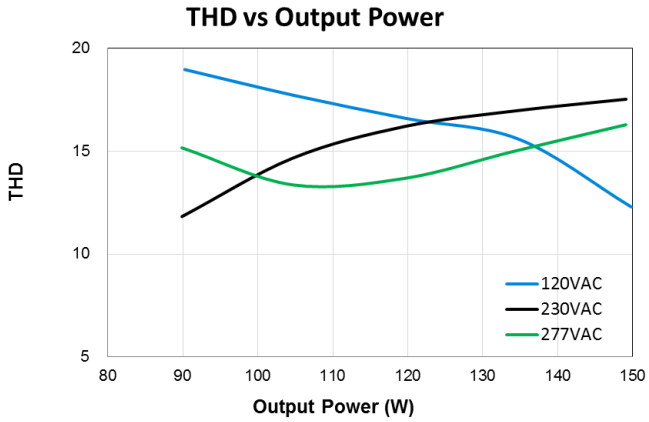


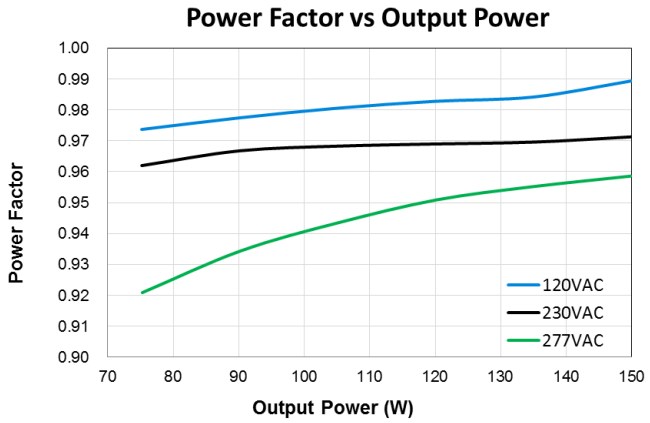
LED Driver
USCI PRO Series

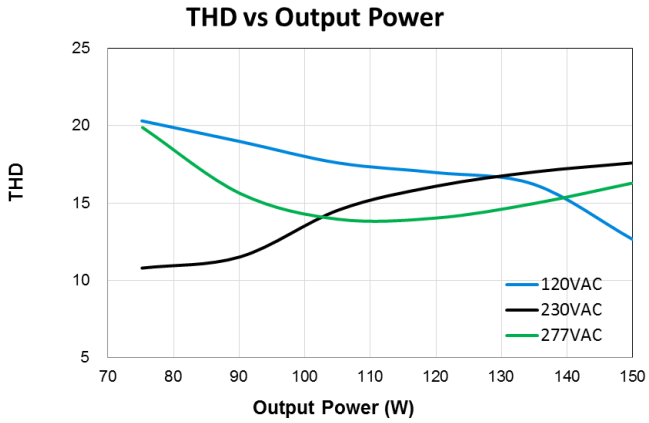
- POWER FACTOR versus OUTPUT POWER
- TOTAL HARMONIC DISTORTION versus OUTPUT POWER

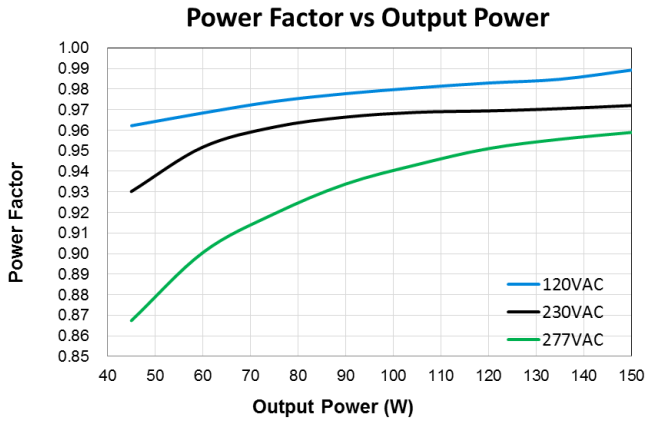
- USCI-150140GC – 1400mA

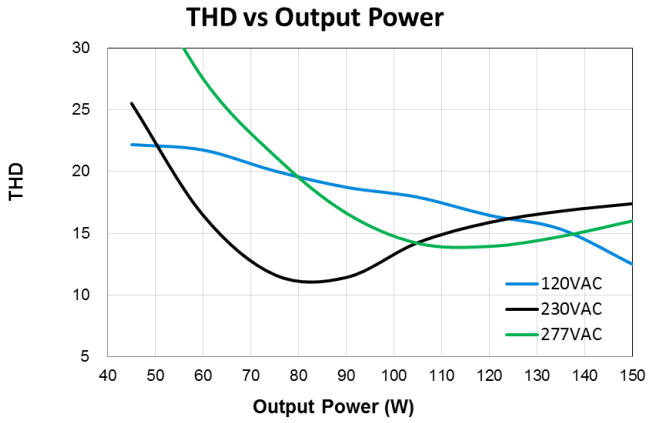












All parameters are specified at 25°C ambient for all products unless otherwise indicated.
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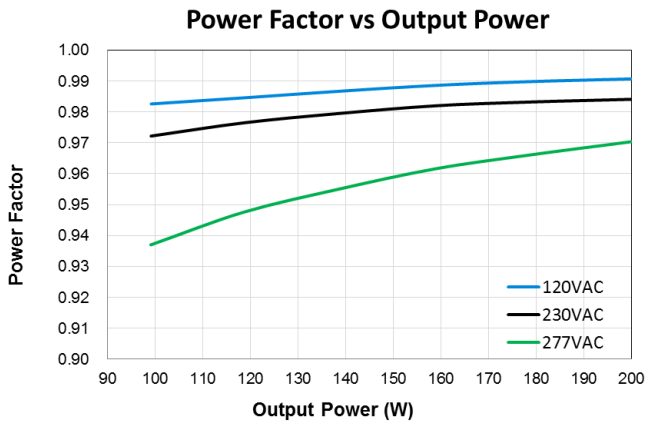
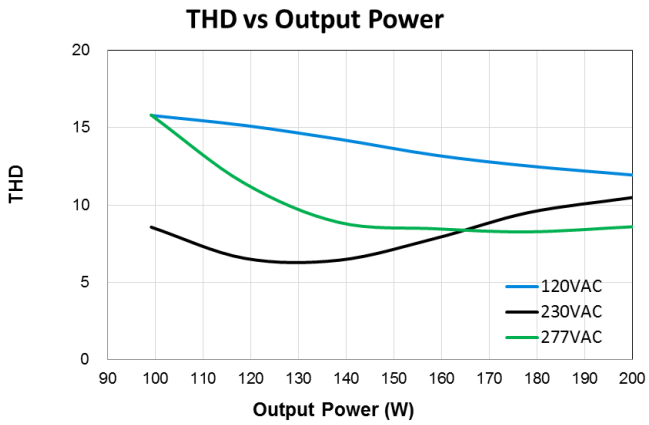
LED Driver
USCI PRO Series

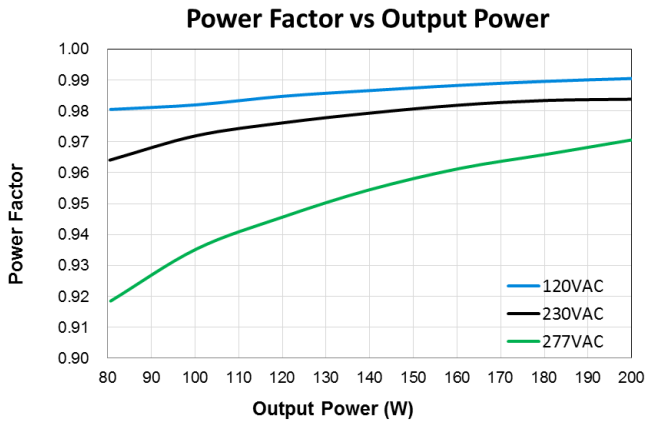
- POWER FACTOR versus OUTPUT POWER
- TOTAL HARMONIC DISTORTION versus OUTPUT POWER

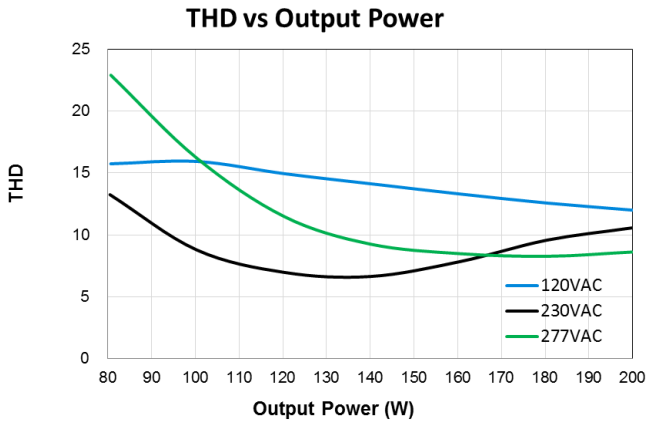
- USCI-200140GA – 1400mA



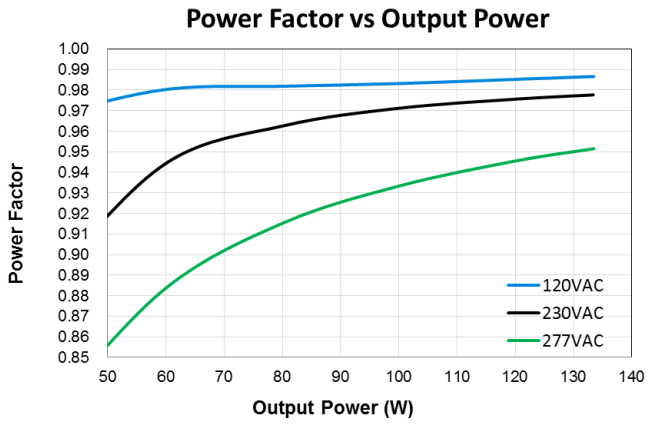


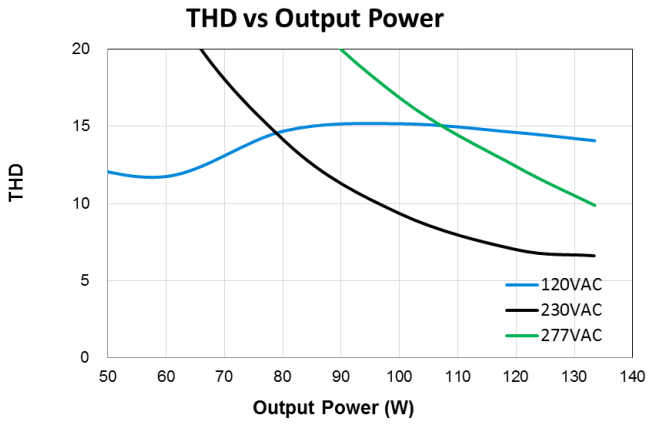
- USCI-200140GA – 1050mA





- USCI-200140GA – 700mA





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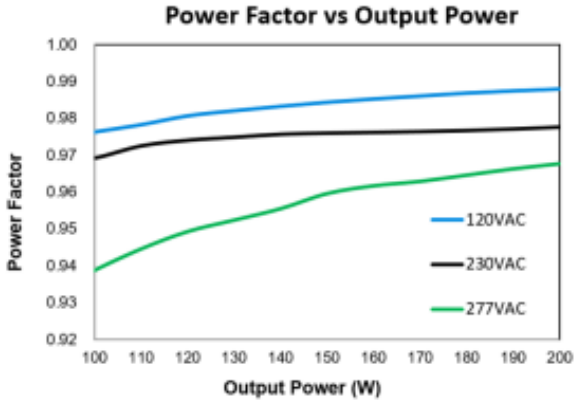
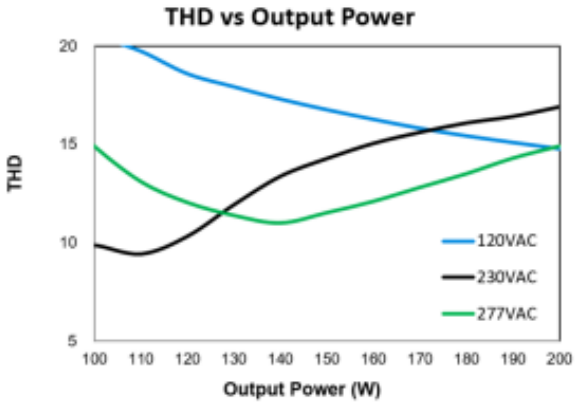
LED Driver
USCI PRO Series

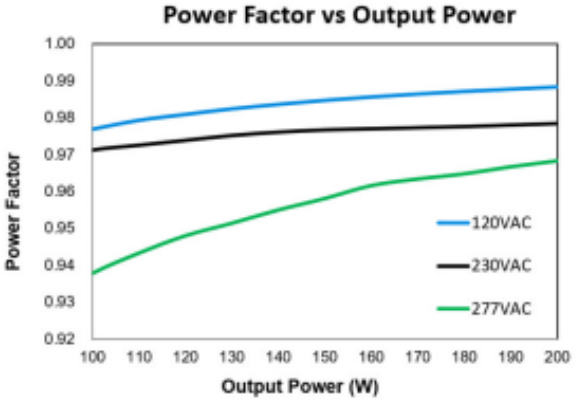
- POWER FACTOR versus OUTPUT POWER
- TOTAL HARMONIC DISTORTION versus OUTPUT POWER

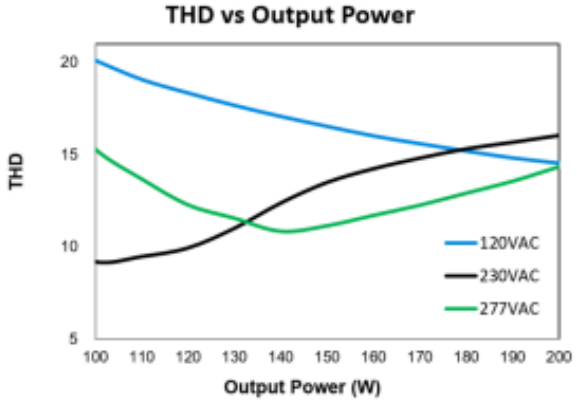
- USCI-200175GA /GLA – 1750mA



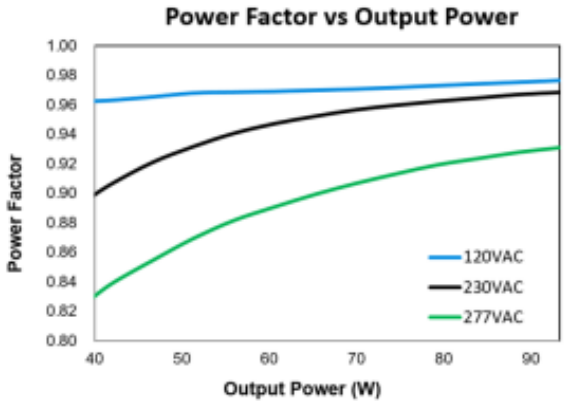


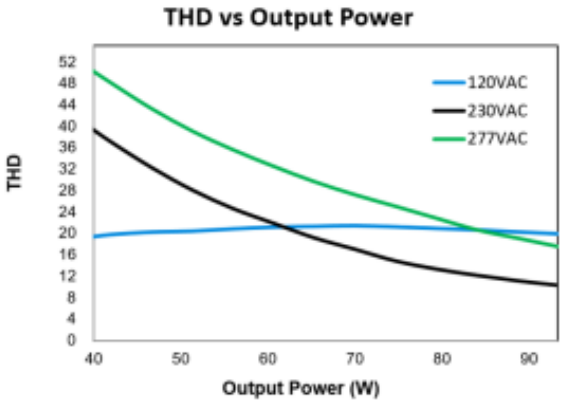
- USCI-200175GA /GLA – 1500mA





- USCI-200175GA /GLA – 700mA





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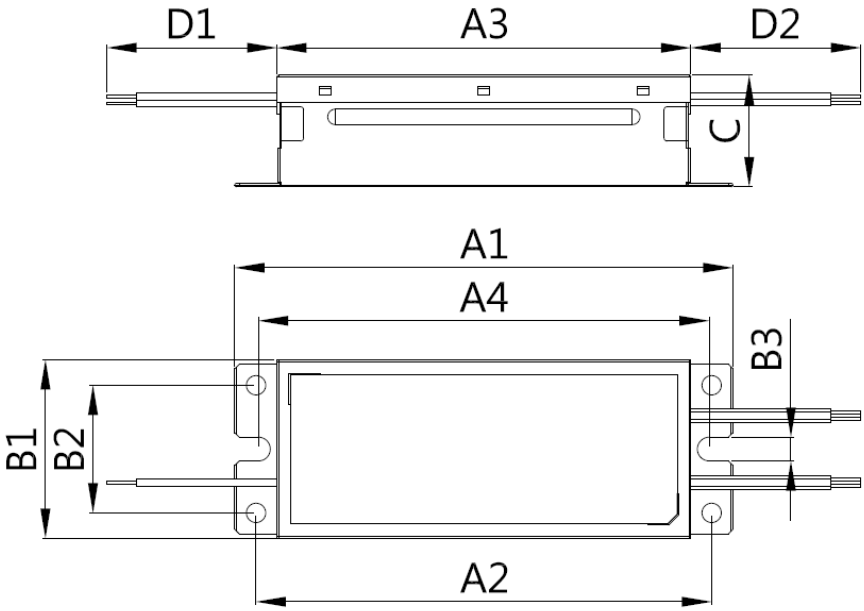
LED Driver
USCI PRO Series

Dimensions

- 75W / 100W / 150W / 200W



Length (A1):
9.5”, 240.5mm (200W/150W)
6.6”, 167.5mm (100W/75W)

Width (B1): 2.36”, 60mm

Height (C):
1.5”, 38.0mm (200W/150W)
1.5”, 37.5mm (100W/75W)

Fixing hole distance (A2):
8.9”, 226.0mm (200W/150W)
6.0”, 153.2mm (100W/75W)

Fixing hole distance (B2):
1.7”, 43.0mm (200W/150W)
1.7”, 42.9mm (100W/75W)

Fixing hole distance (B3):
0.3”, 8mm

Fixing hole distance (A4):
8.9”, 226mm (200W/150W)
6.0”, 151.6mm (100W/75W)

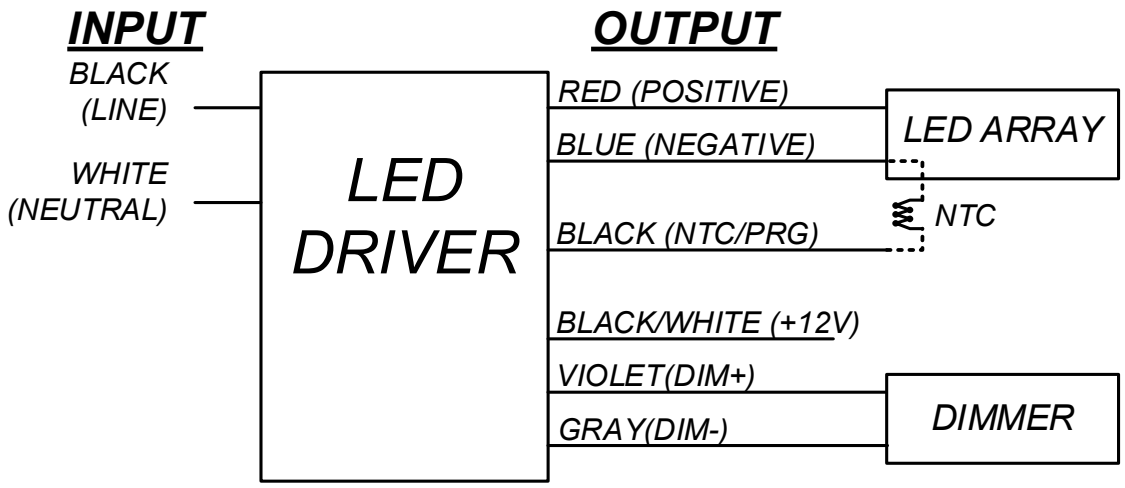
Body length (A3):
8.4”, 212mm (200W/150W)
5.5”, 139.2mm (100W/75W)

Input wire (D1): 11.8”, 300mm
Output wire (D2): 11.8”, 300mm
Dimming wire (D2): 11.8”, 300mm

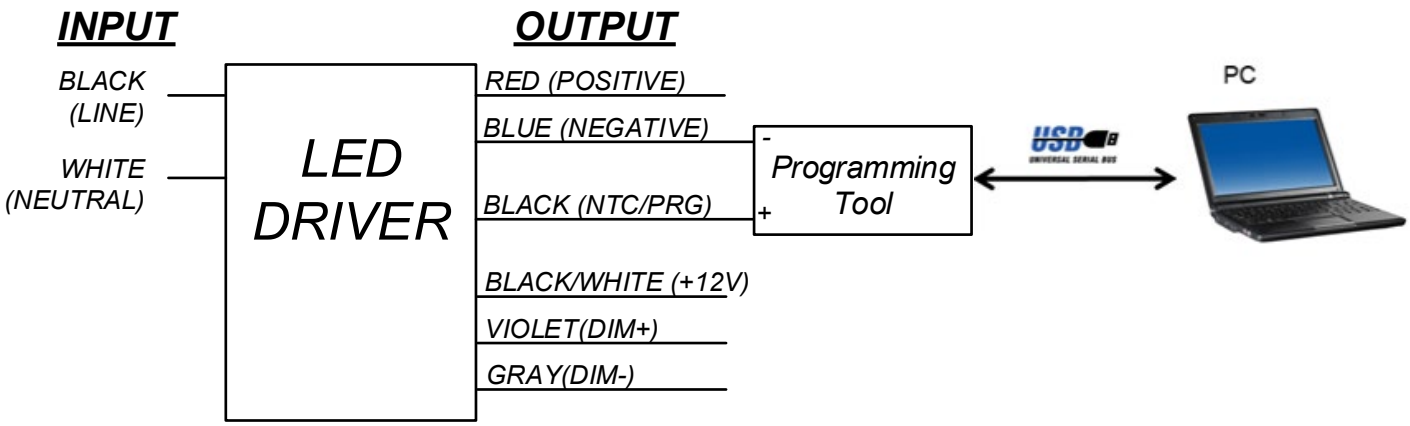
LED Driver
USCI PRO Series

Wiring Connection

- Module Temperature Protection (MTP)
  The LEDs are thermally protected by the driver's NTC (Negative Temperature Coefficient resistor) interface, which ensures the output current will be reduced when a critical temperature is reached. Connect an NTC on the LED module to the LED driver associated wires as shown in the wiring diagram below.



- Programming Setup
  Programming doesn't require powering up input voltage or connecting the LED Module to the driver

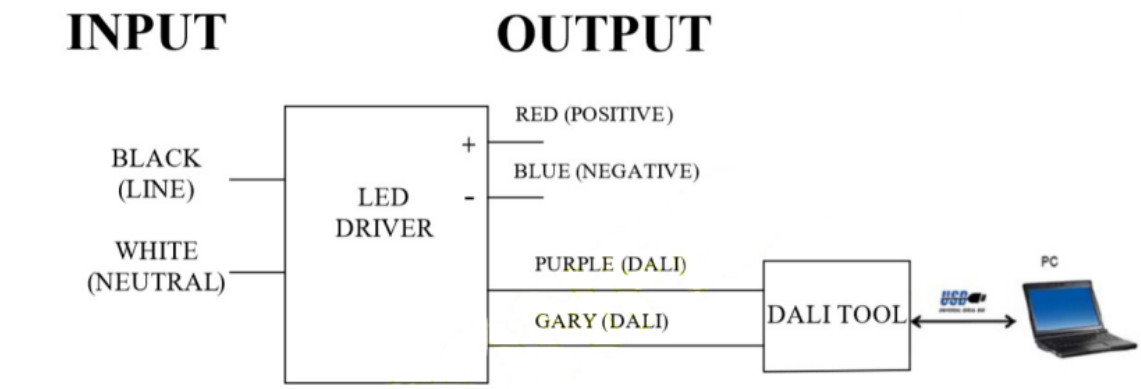


Software and latest version check can be obtained at :
http://www.deltaww.com/Products/CategoryListT1.aspx?CID=0103&hl=zh-TW

Wiring Connection

- Programming Setup and control by DALI interface
  Programming require powering up input voltage or connecting the LED Module to the driver

Programming Setup



Assembly & Installation

The device is not recommended to be placed on low thermal conductive surfaces. For example, plastics.

Base Mounting (Horizontal)

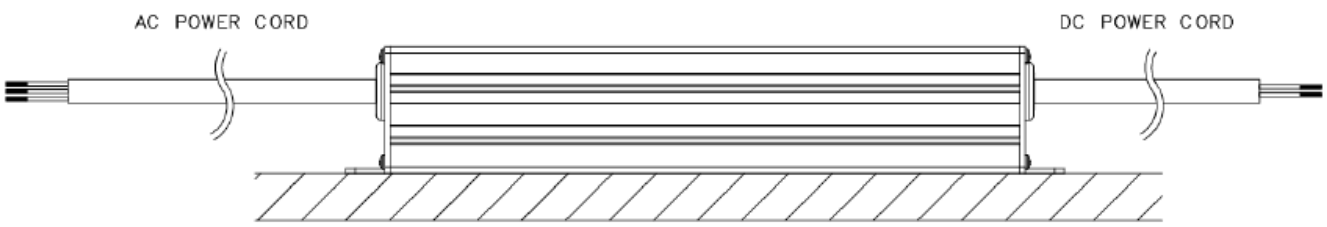


Fig. 2 Recommended Mounting Orientation

Safety Instructions

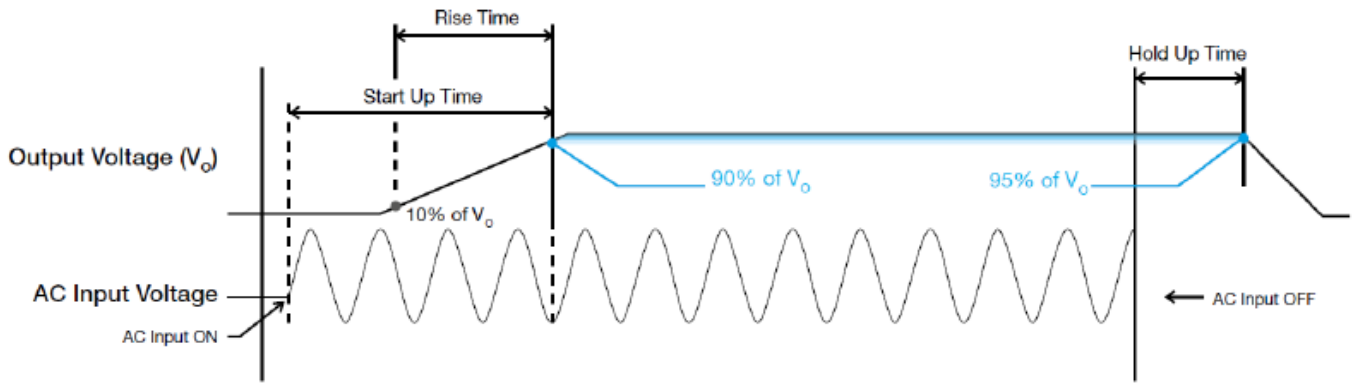
- ALWAYS switch mains of input power OFF before connecting and disconnecting the input voltage to the device. If mains are not turned OFF, there is risk of explosion / severe damage.
- To guarantee sufficient convection cooling, keep a distance of 50mm above and lateral distance to other units.
- DO NOT insert any objects into the device.
- When the PE terminal is not connected, the device must be installed on a metal plate with PE connection.
- The current rating for the output cable must be rated higher than or equal to the output current of the power supply. Please refer to the product specifications.
- For device with dimming function, always ensure the dimming control is working properly. “Dimming 0-10V” shall be insulated from AC mains by reinforced insulation.

LED Driver
USCI PRO Series

Functions

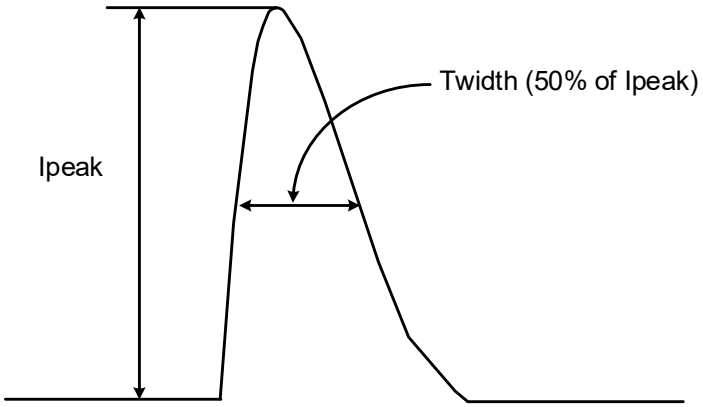
- Start-up Time
  The time required for the output voltage to reach 90% of its set value, after the input voltage is applied.
- Rise Time
  The time required for the output voltage to change from 10% to 90% of its set value.
- Hold-up Time
  Hold up time is the time when the AC input collapses and output voltage retains regulation for a certain period of time. The time required for the output to reach 95% of its set value, after the input voltage is removed.

■ Graph illustrating the Start-up Time, Rise Time, and Hold-up Time



Inrush Current

Inrush current is the peak, instantaneous, input current measured and, occurs when the input voltage is first applied. For AC input voltages, the maximum peak value of inrush current will occur during the first half cycle of the applied AC voltage. This peak value decreases exponentially during subsequent cycles of AC voltage.



Others

Warranty Policy

Please reach out our Warranty Policy should you require any further clarification.