

# LED Driver

## USCT LINEAR Series

# USCT LINEAR



### Highlights & Features

- Constant current design
- Universal input voltage 120-277Vac
- Class 2 Output
- Up to 90.0% efficiency for 80W model
- Programmable output current by DELTA interface
- Min. dim 1% of 0-10V / Resistor Dimming methods
- Dry and Damp location rated
- Linear type design for indoor and office lighting applications

### Safety Standards



### Dimensions (L x W x D):

USCT-030105GA	11.0 x 1.2 x 1.0 inch (280.0 x 30.0 x 25.4 mm)
USCT-050140GA	11.0 x 1.2 x 1.0 inch (280.0 x 30.0 x 25.4 mm)
USCT-080210GA	14.2 x 1.2 x 1.0 inch (360.0 x 30.0 x 25.4 mm)

### General Description

Delta USCT-Linear series of output current LED drivers with i-Programming control comes with affordable and reliable features. Compatible with built-in type and linear mechanical case design from any LED manufacturer. Output current with i-Programming design for different lumen application. Meet North America safety certifications, and compliant with FCC and NEMA Immunity/ Emissions/ Harmonic requirements. The products are designed and tested rigorously to work in various indoor LED lighting conditions.

### Model Information

#### USCT Linear LED Driver

Model Number	Input Voltage Range	Rated Output Voltage	Rated Output Current
USCT-030105GA	120-277Vac Typical 108-305Vac Range	16-54Vdc	150-1050mA
USCT-050140GA			350-1400mA
USCT-080210GA		20-54Vdc	700-2100mA

### Model Numbering

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Safety Approval cULus	Constant Current	Terminal		Output Power 030 – 30W 050 – 50W 080 – 80W	Output Current 105 – 1050mA 140 – 1400mA 210 – 2100mA	Function G – i-Programming	Variable A – standard

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### Specifications

Model Number	USCT-030105GA	USCT-050140GA	USCT-080210GA
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#### Input Ratings / Characteristics

Normal Input Voltage	120-277Vac		
Input Voltage Range	108-305Vac		
Normal Input Frequency	50/60 Hz		
Input Frequency Range	47-63 Hz		
Normal Input Current	0.33A @ 120-277Vac	0.55A @ 120-277Vac	0.77A @ 120-277Vac
Efficiency <sup>1)</sup>	120Vac	89.0% typ. @ 555mA Io	87.5% typ. @ 925mA Io
	277Vac	89.0% typ. @ 555mA Io	89.5% typ. @ 925mA Io
No load Power Consumption	< 0.5W @ 120Vac		
Inrush Current @277Vac (Apk / 50%-us) (Cold Start)	20A/250us, Meet NEMA 410		80A/250us, Meet NEMA 410
Power Factor	> 0.95 @ 120-277Vac full load		
Total Harmonic Distortion	< 10% @ 120-277Vac		< 10% @ 120Vac full load < 15% @ 277Vac full load
Leakage Current	< 0.75mA @ 277Vac		

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

#### Output Ratings / Characteristics

Nominal Output Current	150-1050mA	350-1400mA	700-2100mA
Output Voltage Range	16-54Vdc	16-54Vdc	20-54Vdc
Max. No Load Output Voltage	60Vdc		
Output Power Range	0-30W	0-50W	0-80W
Output Current Tolerance	± 5%		
Line Regulation	± 2%		
Load Regulation	± 5%		
Output Current Ripple	5% @full load(ripple = pk-avg/avg)		
Rise Time	< 50ms @ 120-277Vac		
Start-up Time	<1000ms @ 120-277Vac		

#### Dimming Characteristics

Dimming Method	0 ~ 10Vdc for 0 ~100% (30W/50W model). Dimming frequency 1kHz. Source current is 100uA. 1) 1.1V (1%) – 8.5V (100%) 2) Dimming terminal Open (100%) 3) Dimming terminal Short 0% for 30W/50W model, and 1% for 80W model 4) Dim=1.0V OFF for 30/50W model
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#### Mechanical

Casing	Metal sheet, Color: Natural		
Dimensions (L x W x H) [inch]	11.0 x 1.2 x 1.0	11.0 x 1.2 x 1.0	14.2 x 1.2 x 1.0
	[mm] 280.0 x 30.0 x 25.4	280.0 x 30.0 x 25.4	360.0 x 30.0 x 25.4
Unit Weight [lb]	0.81	0.81	1.23
	[kg] 0.37	0.37	0.56
Cooling System	Convection		
Input connector (30/50/80W)	Terminal, 3-pole (Line – Black / Neutral – White / PE – Green), Conductor 0.5~1.5 mm <sup>2</sup> , Strip length 8.5...9.5mm		

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Output connector (30/50/80W)	Terminal, 6-pole (LED+ – Red / LED- – Black / GND – White / PRG_NTC – Orange / DIM – Pink / DIM+ – Purple), Conductor 0.5~1.5 mm <sup>2</sup> , Strip length 8.5...9.5mm for 30W and 50W model Terminal, 5-pole (LED+ – Red / LED- – Black / PRG_NTC – Orange / DIM – Pink / DIM+ – Purple), Conductor 0.5~1.5 mm <sup>2</sup> , Strip length 8.5...9.5mm for 80W model
Noise (30cm distance)	Sound Pressure Level (SPL) < 24dBA

Model Number	USCT-030105GA	USCT-050140GA	USCT-080210GA
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### Environment

Ambient Temperature	Operating	-25°C to +50°C		
	Storage	-30°C to +85°C		
Maximum Case Temperature		75°C	85°C	90°C
Lifetime Case Temperature		70°C	80°C	80°C
Relative Humidity	Operating	10 to 60% RH (Non-Condensing)		
	Storage	10 to 95% RH (Non-Condensing)		
Environmental Locations		Dry / Damp		

### Protections

Over Voltage	Max. 60V, Auto-Recovery when the fault is removed
Open Load	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 I. Insulation Class according to IEC 60598. The case must be grounded.

### Reliability Data

Lifetime	50,000 hrs. at lifetime case temperature
MTTF	500,000 hrs. as per Telcordia SR-332 (ta: +50°C)

### Safety Standards / Directives

Electrical Safety	UL	UL 8750, Class P, type “HL”. Output meet class 2 of UL1310			
Material and Parts	RoHS Directive 2011/65/EU Compliant				
Galvanic Isolation		Mains (Input)	Output	DIM + / -	Case
	Mains (Input)	N/A	2V + 1,000	2V + 1,000	2V + 1,000
	Output	2V <sup>1)</sup> + 1,000	N/A	2V + 1,000	500V
	DIM + / -	2V + 1,000	2V + 1,000	N/A	500V
	Case	2V + 1,000	500V	500V	N/A

1) V is the maximum AC (rms) voltage between the parts under test

### EMC

Emissions (CE & RE)	Compliance to 47 CFR FCC Part 15, Subpart B, Class A Compliance to CAN ICES-005(A) / NMB-005(A)
Surge	ANSI C62.41-Category A1 with a 2.5kV/100kA ring wave, Criteria A <sup>1)</sup>

1) Criteria A: Normal performance within the specification limits

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

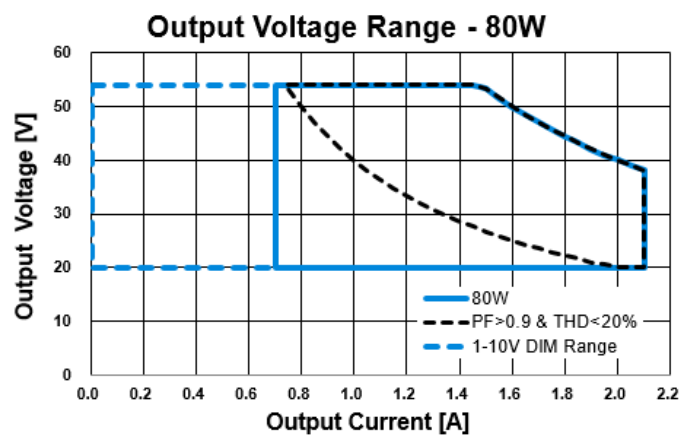
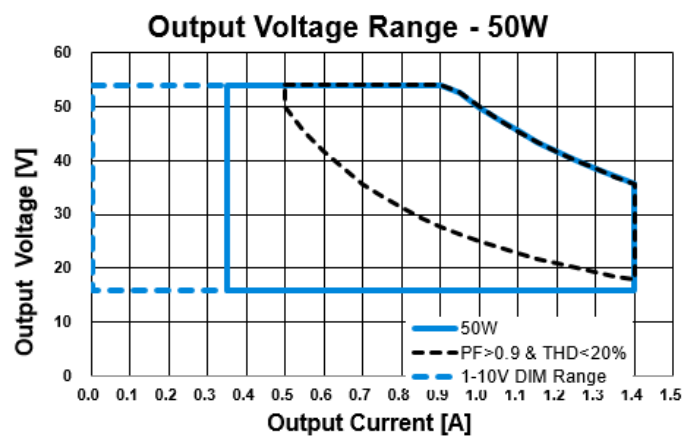
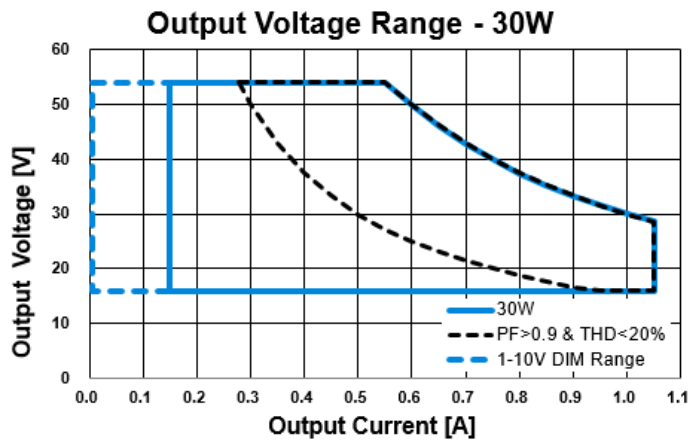
3) Asymmetrical: Common mode (Line to earth)

4) Symmetrical: Differential mode (Line to line)

# LED Driver

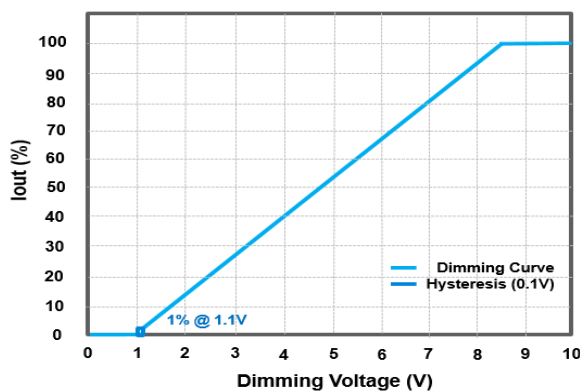
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### Output and Dimming Characteristic Curve

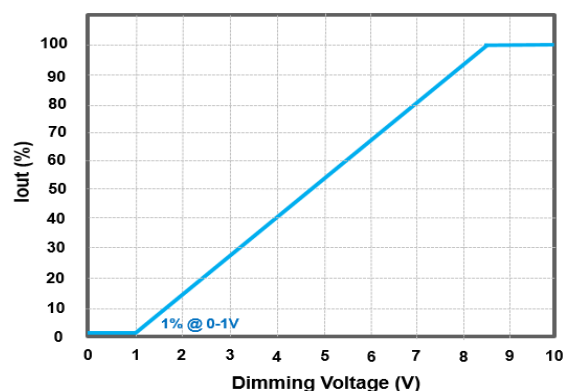


### Dimming Curve- Dimming Voltage v.s. Output Voltage

USCT-030105GA / USCT-050140GA



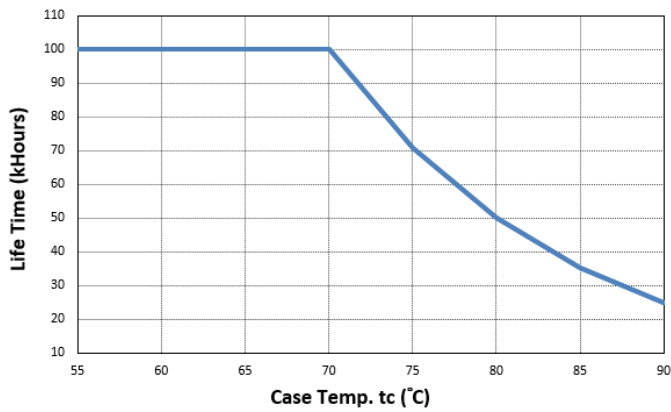
USCT-080210GA



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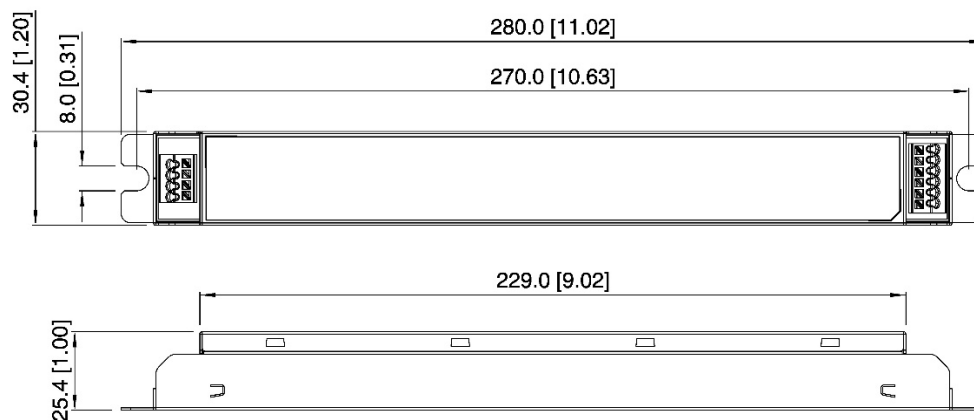
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### Lifetime VS Case Temperature



### Dimensions

#### USCT-030140GA & USCT-050140GA



#### USCT-080210GA

