ADVANCE
by signify

LED Driver

Xitanium

XI013C036V054DNM1
(bottom entry)



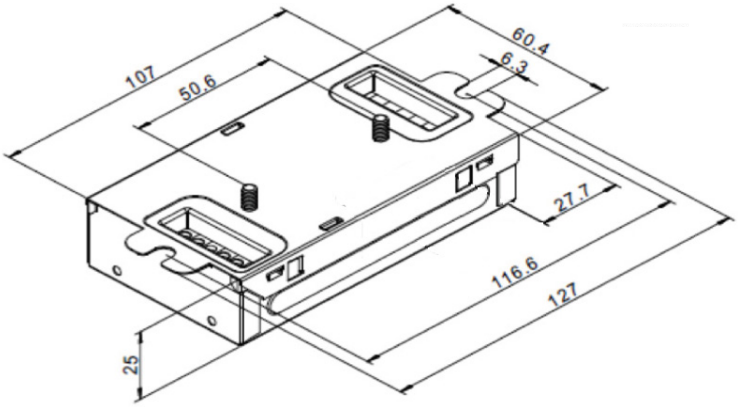
The Advance Xitanium range of downlight LED drivers is designed to provide OEMs with ultimate flexibility. These models are compatible with standard 0-10V dimming systems to deliver reliably smooth dimming performance down to a minimum of 1%. The drivers' wide operating windows, compact size and simple current adjustability allow luminaire manufacturers to easily design downlight fixtures with desired lumen levels to suit the application.

Specifications

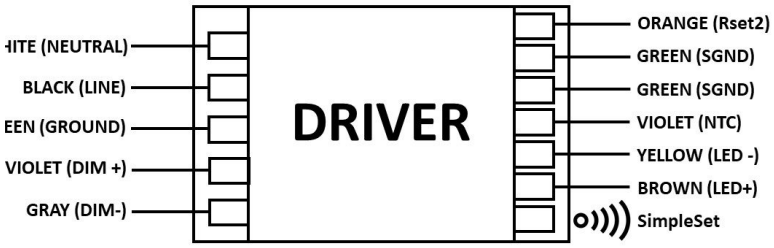
Input Voltage (Vac)	Output Power (W)	Output Voltage (V)	Output Current (A)	Efficiency@ Max Load and 75°C Case	Max Case Temp. (°C)	Input Current (A)	Max. Input Power (W)	THD @ Max Load (%)	Power Factor @ Max Load	Surge Protection (Combi-Wave, KV)	Envir. Protection Rating	Driver Type
120	13	27 - 54 Class 2 Output	0.1 - 0.36	81	Life-80°C UL-90°C	0.14	16.3	<10%	>0.95	2.5	UL damp & dry	Constant Current
277				82		0.06		<15%				

Enclosure

	In. (mm)
Case Length	4.21 (107.00)
Case Width	2.38 (60.4)
Case Height	0.98 (25.00)
Mounting Length	4.57 (116.00)
Overall Length	5 (127.00)



Wiring Diagram



WARNING:
Install in accordance with national and local electrical codes. Use 18AWG solid or tinned stranded copper wire.

The field-wiring leads or push-in terminals shall be fully enclosed.

GROUNDING:
Driver case must be grounded.

Dimming	Dimming Range (with specified dimmers)	Minimum Output Current (A)	Other Comments
0-10V Analog Class 1 or Class 2 Wiring	1% ~ 100% (for output current range 0.1-0.36A)	0.001	Dimming source current: 150 µA

RoHS COMPLIANT
c UL us LISTED

Xitanium XI013C036V054DNM1 (bottom entry)

13W 0.1–0.36A 54V 0–10V INT (1% dim)

Features

- 50,000+ hour lifetime[1]
- Large operating window
- 1% minimum dim level
- Compatible with Fortimo downlight modules

Benefits

- SmartMate style housing enables easy design-in with excellent thermal performance
- Enables fixture designs with comprehensive application coverage for various loads and lumen levels
- A single source system offer optimized for performance

Application

- Indoor downlight applications
- Wall sconces and ceiling surface luminaires
- Offices (corridors, conference rooms, lobby areas)
- Retail, Hospitality

Electrical Specifications

All the specifications are typical and at 25°C Tcase unless specified otherwise.

Product Data

Order Information	
Full Product Code	XI013C036V054DNM1M [bottom entry] (Mid-Pack, 16pcs/Box), 12NC: 929000748013
Line Frequency	50/60Hz
Min. Mains Voltage Operational	108 Vac
Max. Mains Voltage Operational	305 Vac
Output Information	
Maximum Open Circuit Voltage	< 60Vdc, Class 2 output
Output Current Ripple (ripple = peak to average / average)	15% max @ max Iout 4% max @ Visible for stroboscopic frequency range 60Hz-3KHz
Output Current Tolerance (in the performance window)	<5%
Protections	Short Circuit, Open Circuit Protection for LED + and LED – and Temperature Foldback
Features	
0-10V Dimming	150µA source current from driver. See dim curve for detail.
AOC (Adjustable Output Current)	0.1A-0.36A via External Resistor (default set to 0.36A, refer to graph)
Additional Features	
Environment & Approbation	
Operating Ambient Temp. Range	-20°C to +50°C
Max Case Temperature (Tcase)	80°C
Agency Approbations	UL8750, UL991, cUL, Class P (UL, cUL)
Electromagnetic Compliance	FCC Title 47 Part 15 Class A
Audible Noise	<24dB Class A
Weight	0.44 Lbs/0.2 kgs

1. Advance Xitanium LED drivers are manufactured to engineering standards correlating to a designed and average life expectancy of 50,000 hours of operation at maximum rated case temperature. Minimum 90% survivals based on MTBF modeling.

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0-10V Dimming Curve

Dimming source current from the driver: 150µA (@ 0<Vdim<8V)

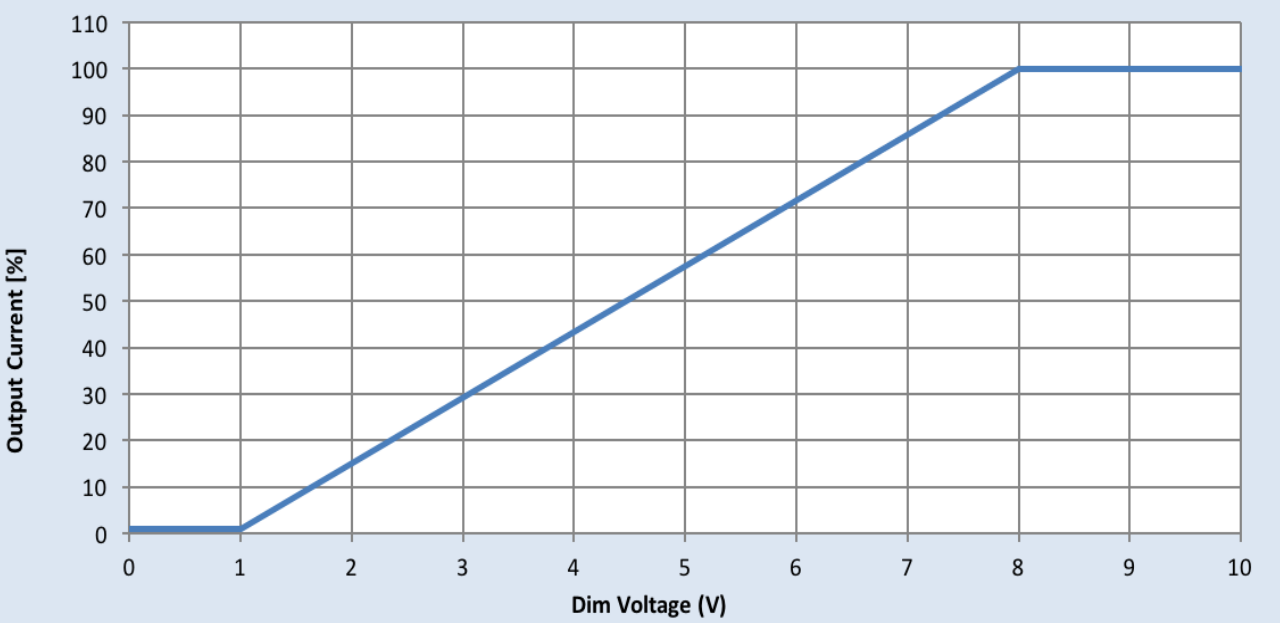
Minimum dim level: 1% of Iout (minimum 100mA)

Maximum output voltage on the dimming wires: 12V

The dimming lead leakage current is 0.01mA. The maximum number of drivers that can be connected in parallel to one dimming control circuit is based on this dimming lead leakage current and the calculation is described in the corresponding Design-in Guide.

Approved Dimmer List

Manufacturer	Manufacturer Part Number
Lutron	Visit www.lutron.com/advance for a list of dimmers (Mark VII) that will work with this driver
Leviton	IllumaTech IP7 series
Advance	Sunrise - SR1200ZTUNV



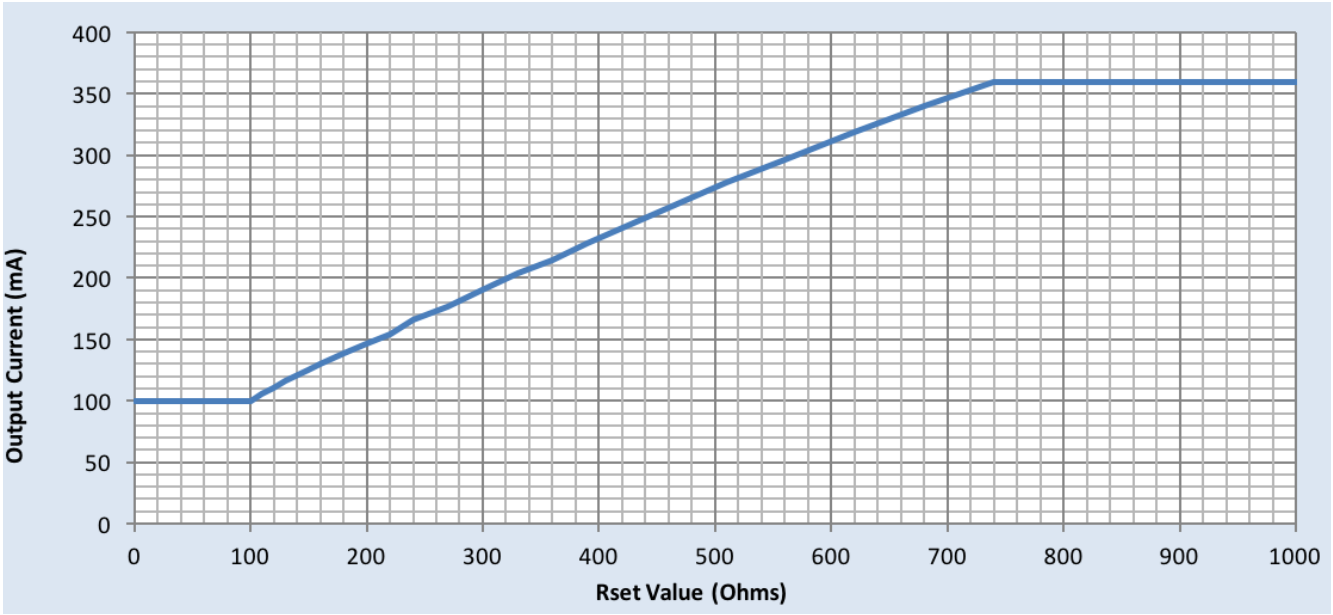
Xitanium XI013C036V054DNM1 (bottom entry)

13W 0.1–0.36A 54V 0–10V INT (1% dim)

Electrical Specifications

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AOC (Adjustable Output Current) Settings (Rset)



Rset (Ohms)	Current (mA)	Rset (Ohms)	Current (mA)
1	100	620	318
100	100	680	340
110	105	740	360
120	111	820	360
130	116	910	360
150	125	1000	360
160	130		
180	138		
200	146		
220	155		
240	166		
270	176		
300	190		
330	204		
360	215		
390	228		
430	245		
470	261		
510	277		
560	297		

Notes

1. Current is set via a resistor between Rset2 and SGND leads.
2. Any through-hole or SMD resistor with >0.25W and >20V can be used as Rset.
3. Driver will default to 360mA when Rset is left open.

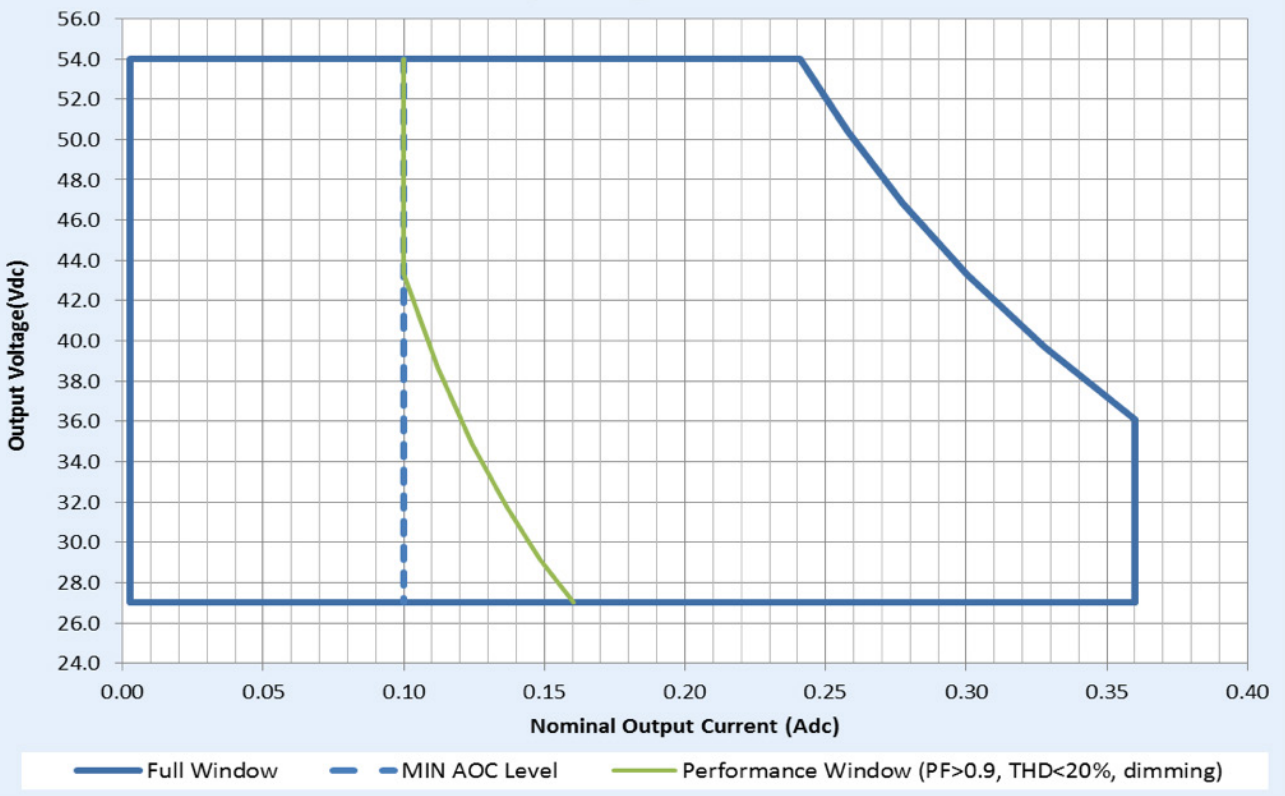
Xitanium XI013C036V054DNM1 (bottom entry)

13W 0.1-0.36A 54V 0-10V INT (1% dim)

Electrical Specifications

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Driver Output Window



Notes

1. Factory default output current is 0.36A.
2. For dimming to a minimum level of 1% the output current setting through AOC should be ≥ 0.1A.

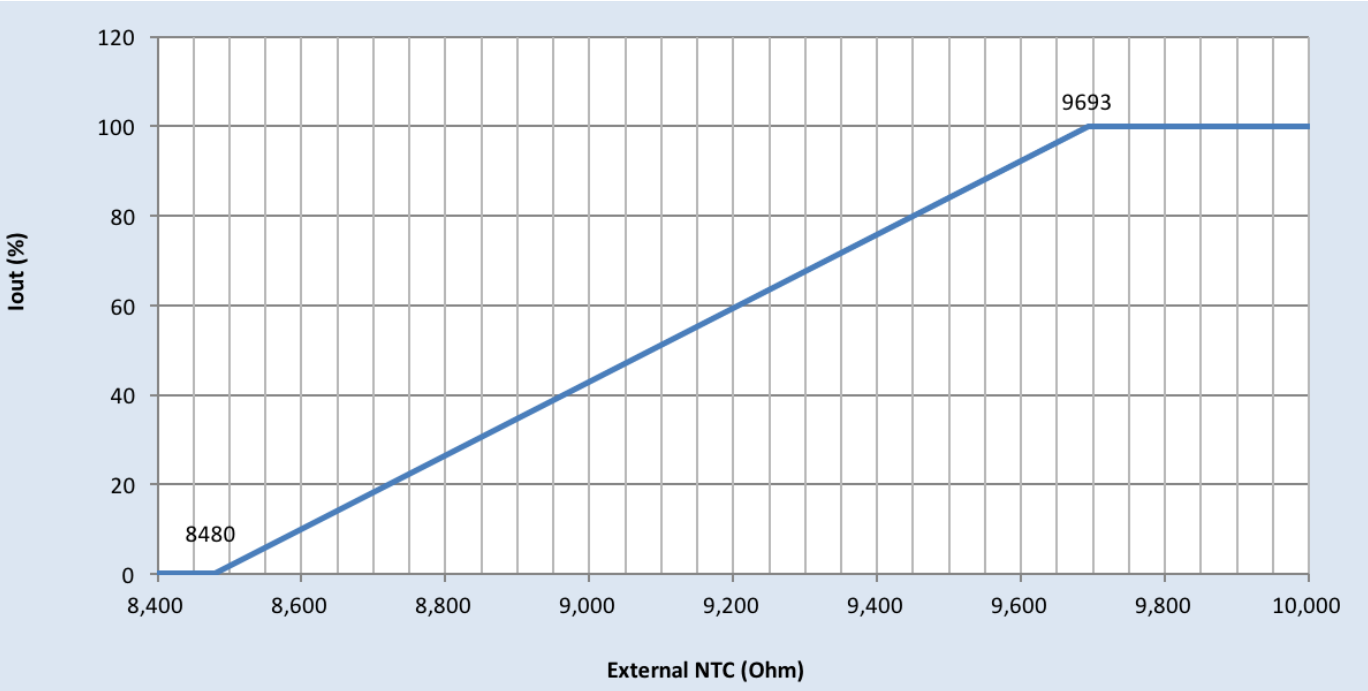
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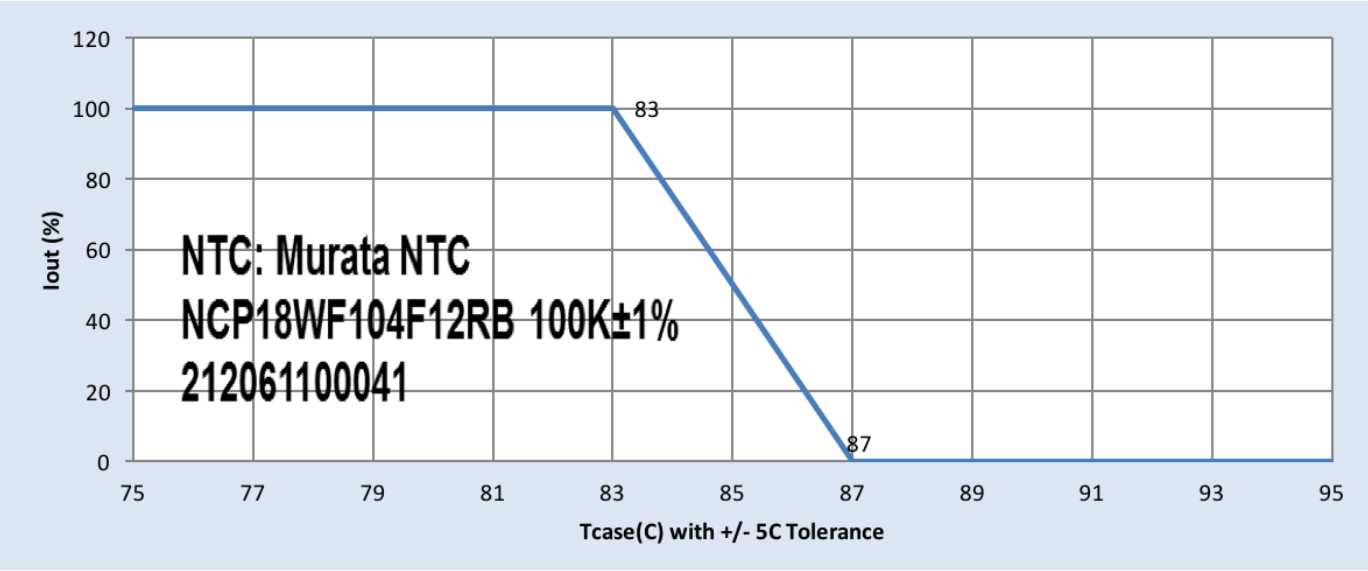
Electrical Specifications

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Output Current Vs. External NTC Resistance



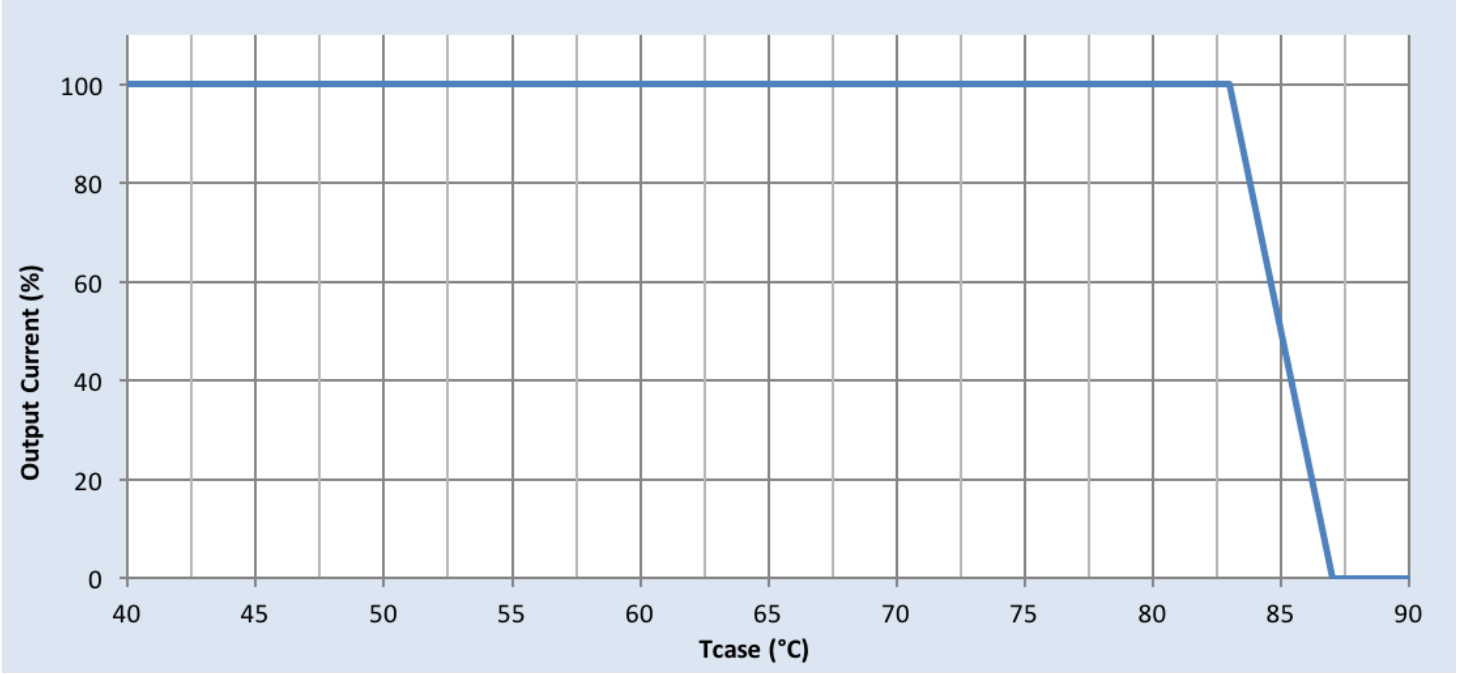
Output Current Vs. LED Module Temperature using 100kohm NTC



Electrical Specifications

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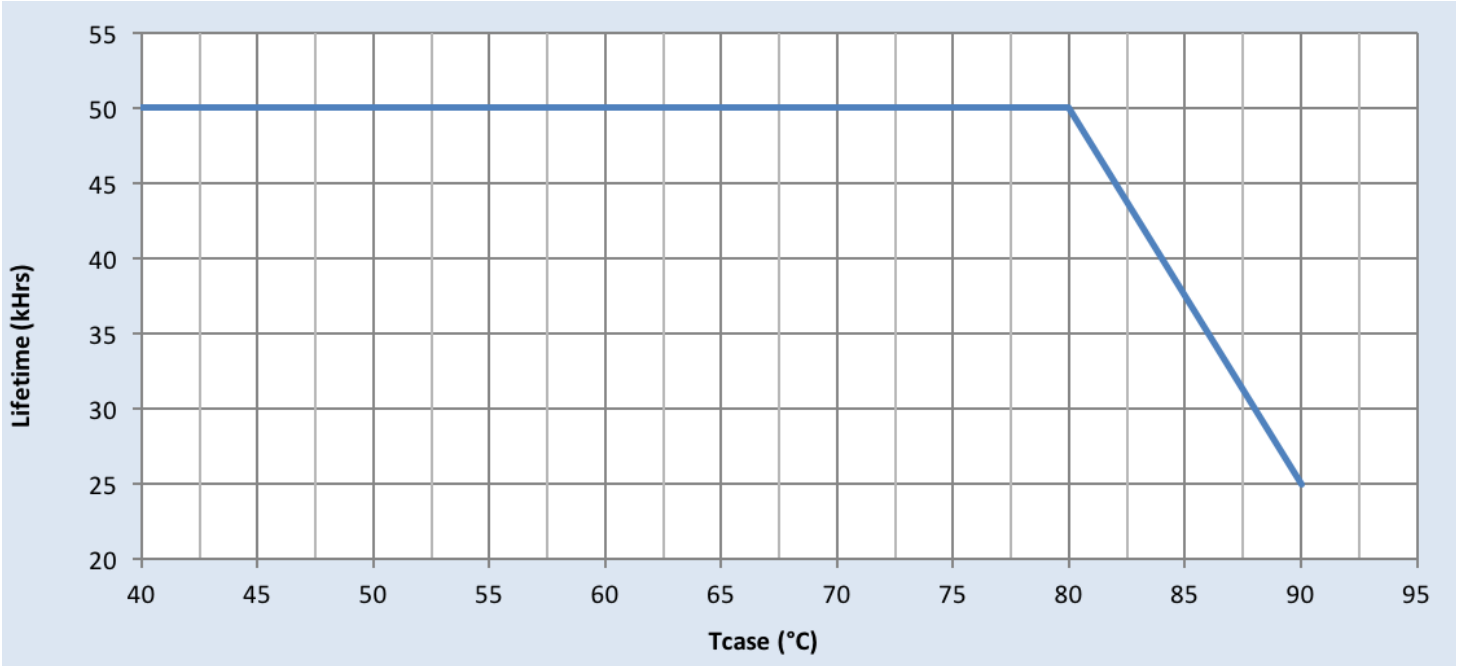
Output Current Vs. Driver Case Temperature



Note

There is ±5°C tolerance on the driver case temperature.

Driver Lifetime vs. Driver Case Temperature



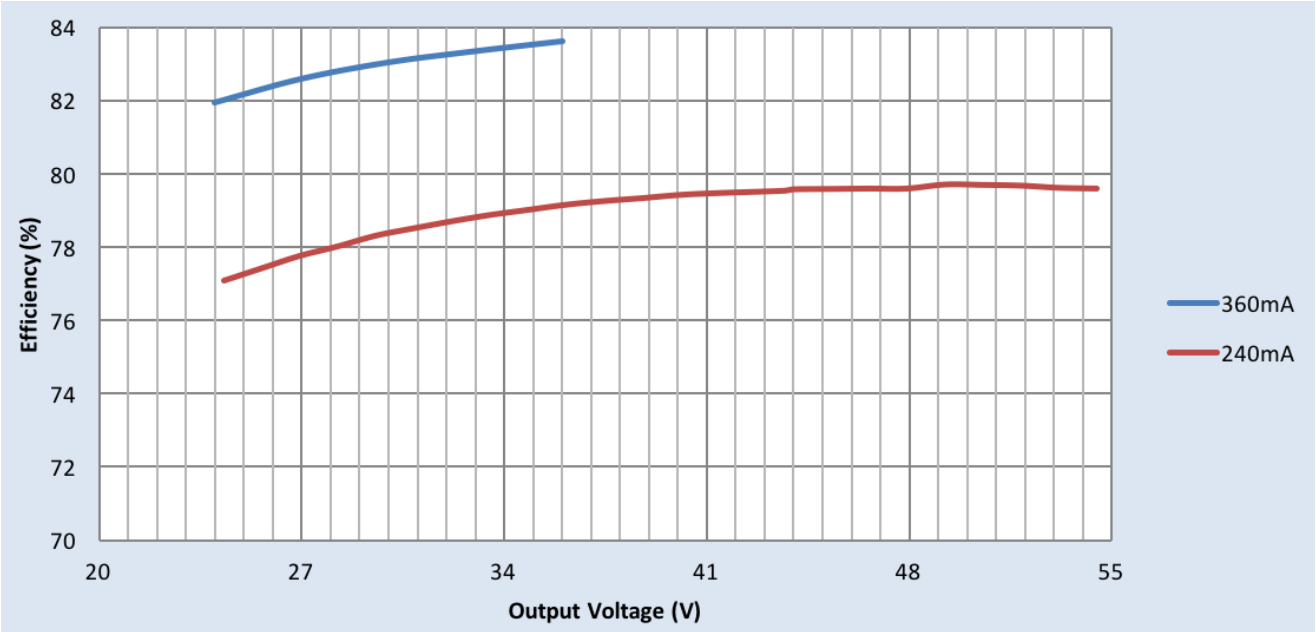
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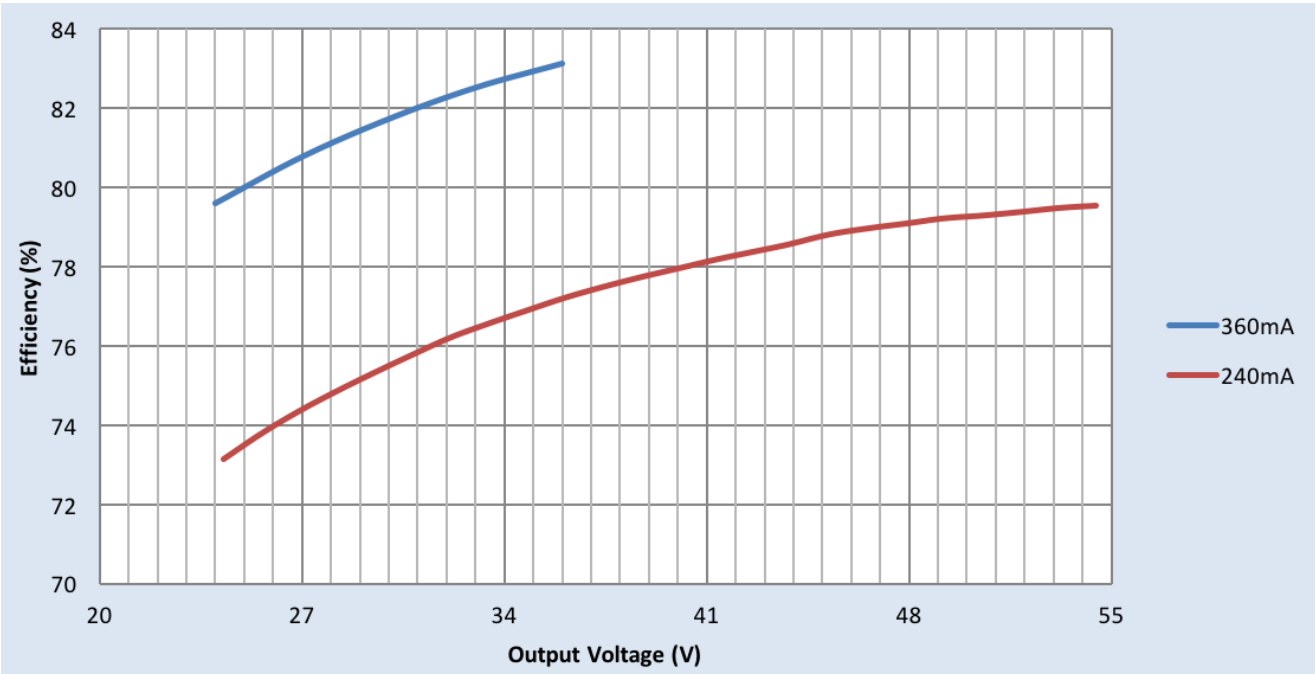
Performance Characteristics

Based on measurements on a typical sample at 70°C case. The accuracy of the measurements is within the tolerance of the measurement instruments.

Efficiency Vs. Output Voltage at 120Vac



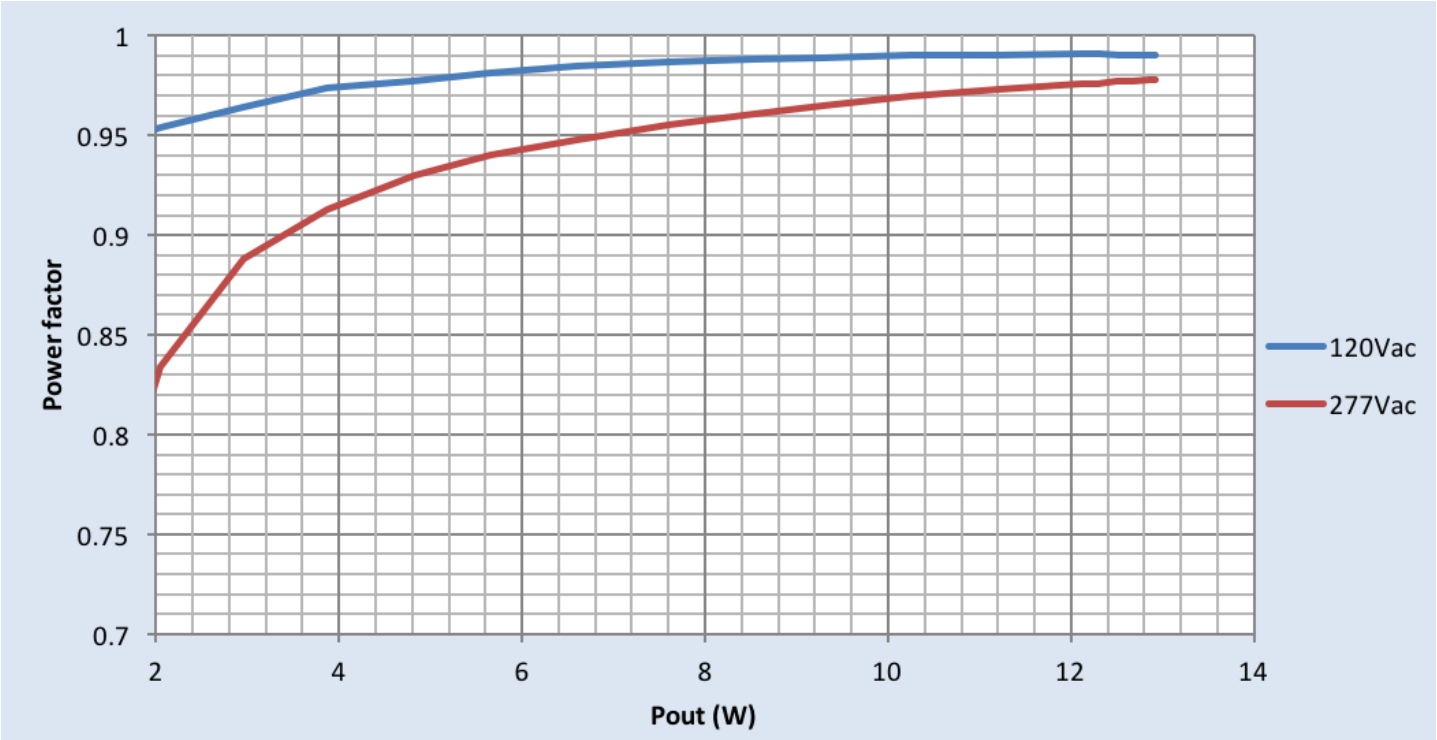
Efficiency Vs. Output Voltage at 277Vac



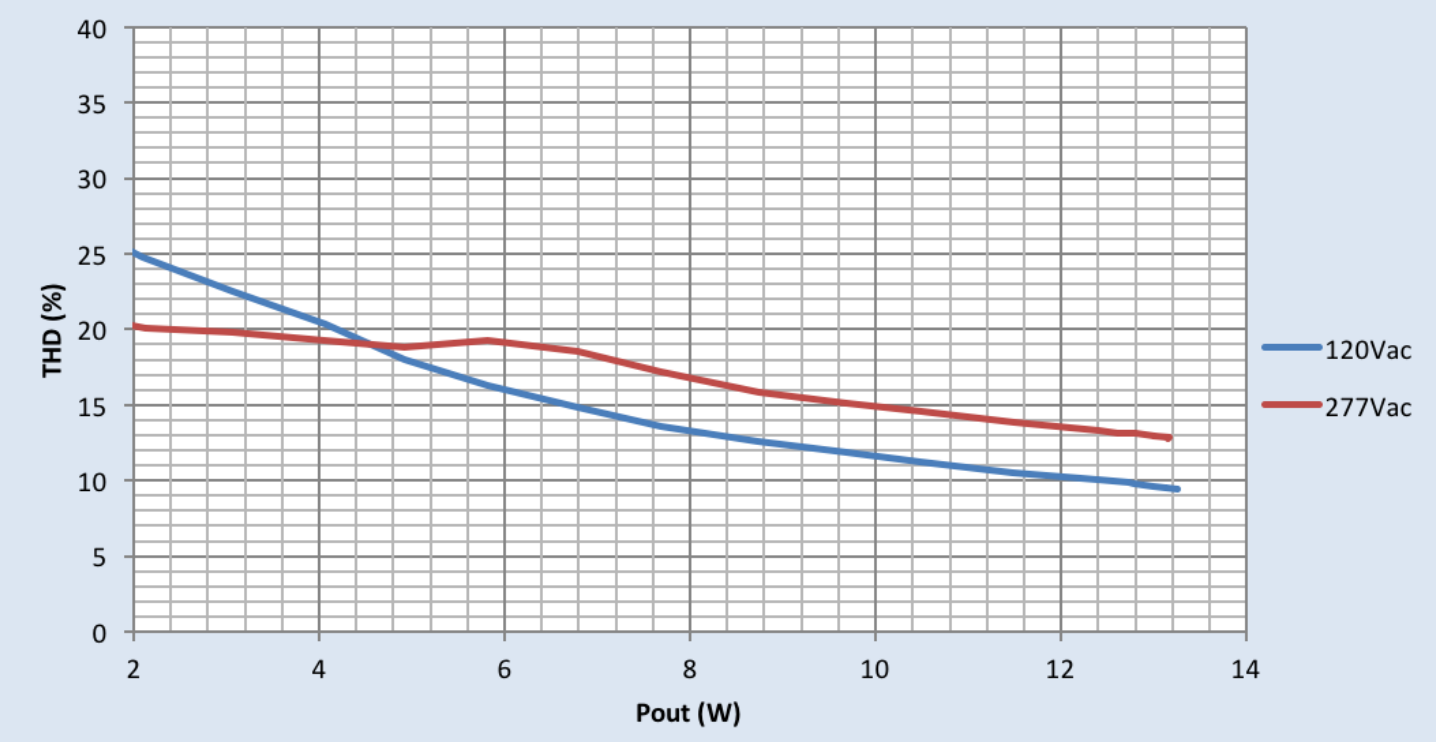
Performance Characteristics

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Power Factor Vs. Output Power



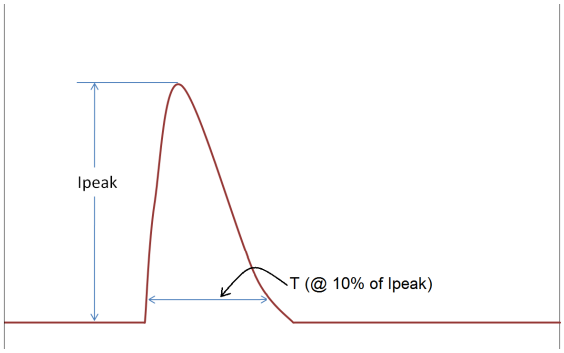
Total Harmonic Distortion (THD) Vs. Output Power



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Inrush Current Info



Vin	Ipeak	T (@ 10% of Ipeak)
120 Vrms	10.96A	300µS
277 Vrms	27.1A	300µS

Inrush current is measured at peak of the corresponding line voltage. Source impedance per NEMA 410.

Lightning Surge Info

ANSI Surge Type	Differential Mode (L-N)	Common Mode (L-G, N-G, L&N-G)
100kHz Ring Wave (w/t 30Ω)	2.5KV	2.5KV

Isolation

Isolation	Input	Output	0-10V	Enclosure
Input	NA	2xU+1kV	2.5kV	2xU+1kV
Output	2xU+1kV	NA	2.5kV	2xU+1kV
0-10V	2.5kV	2.5kV	NA	2xU+1kV
Enclosure	2xU+1kV	2xU+1kV	2xU+1kV	NA

U = Max working voltage

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