ADVANCE
by signify

LED Driver

Xitanium

XI050C140V054DSM1
XI050C140V054DSM5

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%. Enabled with SimpleSet technology, these drivers offer the needed flexibility and performance for the application with precise tuning of drive currents, selectable dimming curves and adjustable minimum dimming levels. 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	50	27 - 54 Class 2 Output	0.1 - 1.4	86	Life-80°C UL-90°C	0.48	58	<10%	>0.95	2.5	UL damp & dry	Con-stant Current
277				88		0.21		<15%				

Wiring Diagram

Dimming	Dimming Range (with specified dimmers)	Minimum Output Current (A)	Other Comments
0-10V Analog Class 1 and 2 Wiring	1% ~ 100% (for output current range 0.6-1.4A)	0.006	Dimming source current: 150 µA

WARNING:
Install in accordance with national and local electrical codes.
The field-wiring leads or push-in terminals shall be fully enclosed.
Use 18 AWG Solid Copper Wire Rated >=90°C.Strip Wire 3/8".
For Class 2 Wiring, Use 20 AWG-16 AWG.
USE ONLY WITHIN AN ENCLOSURE.

GROUNDING:
Driver case must be grounded.

RoHS COMPLIANT

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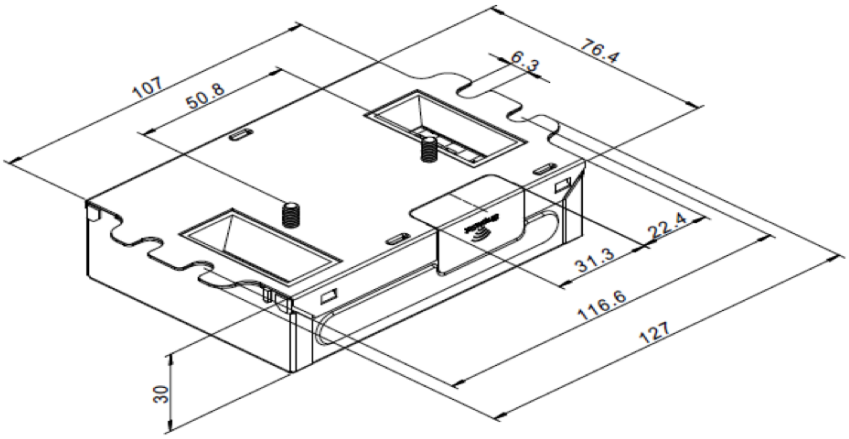
50W 0.1–1.4A 54V 0–10V INT (1% dim) with SimpleSet

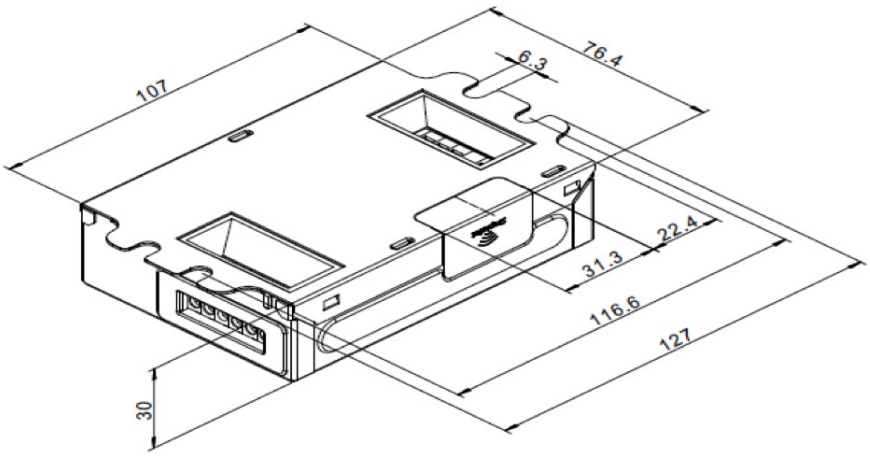
Enclosure

XI050C140V054DSM1 (bottom entry)



	In. (mm)
Case Length	4.21 (107.00)
Case Width	3.01 (76.4)
Case Height	1.18 (30.00)
Mounting Length	4.59 (116.60)
Overall Length	5 (127.00)

XI050C140V054DSM5 (side entry)



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Features

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

Benefits

- SmartMate style housing enables easy design-in with excellent thermal performance
- Enables simple, fast, flexible application-specific configurations
- 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
- Retail
- Hospitality
- Offices (corridors, conference rooms, lobby areas)
- Floodlights

Electrical Specifications

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

Product Data

Order Information	
Full Product Code	XI050C140V054DSM1 [bottom entry] (Mid-Pack, 16pcs/Box), 12NC: 929000748613 XI050C140V054DSM5 [side entry] (Mid-Pack, 16pcs/Box), 12NC: 929000748713
Line Frequency	50/60Hz
Min. Mains Voltage Operational	108 Vac
Max. Mains Voltage Operational	305 Vac
Output Information	
Maximum Open Circuit Voltage	< 60Vdc
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–1.4A via SimpleSet (Factory Default at 1.4A)
Additional SimpleSet Configurable Features	Adjustable minimum dimming level, Dimming curve selection (linear or logarithmic), Adjustable output level, Adjustable output nin, OEM write protection
Environment & Approbation	
Operating Ambient Temp. Range	-20°C to +50°C
Max Case Temperature (Tcase)	80°C
Agency Approbations	UL8750, UL991, cUL, Class P (cUL), UL 2043 Plenum Rating
Electromagnetic Compliance	FCC Title 47 Part 15 Class A

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)

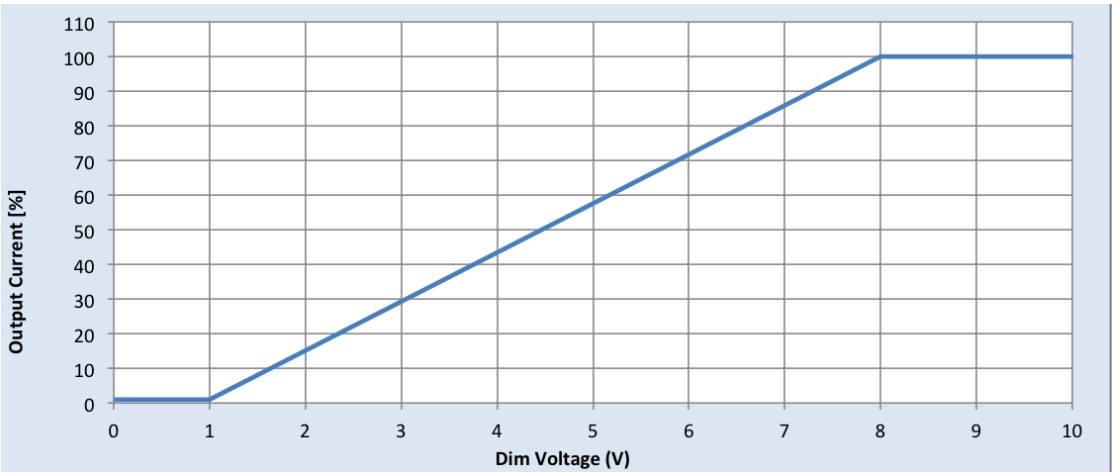
Minimum dim level: 1% of Iout (minimum 600mA)

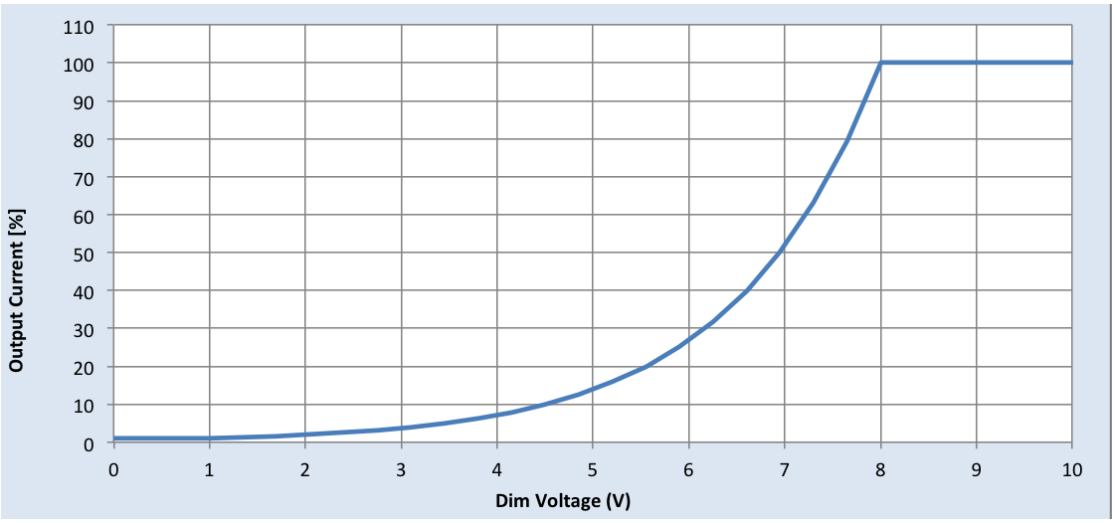
Maximum output voltage on the dimming wires: 12V

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





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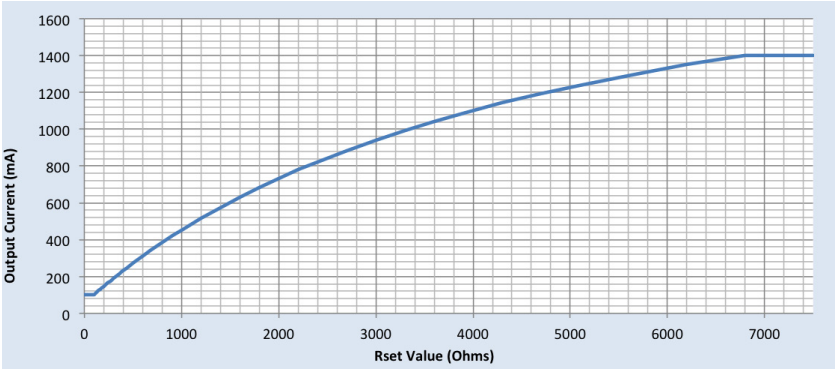
AOC (Adjustable Output Current) Settings (Rset)

Rset (Ohms)	Current (mA)	Rset (Ohms)	Current (mA)
1	100	2700	883
100	100	3000	941
110	105	3300	993
120	111	3600	1042
130	116	3900	1085
150	125	4300	1143
160	130	4700	1192
180	138	5100	1238
200	146	5600	1293
220	155	6200	1350
240	166	6800	1400
270	176	7500	1400
300	190	>100000	1400
330	204		
360	215		
390	228		
430	245		
470	261		
510	277		
560	297		
620	318		
680	340		
750	368		
820	392		
910	422		
1000	452		
1100	485		
1200	515		
1300	545		
1500	602		
1600	632		
1800	684		
2000	733		
2200	780		
2400	823		



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 1400mA when Rset is left open.

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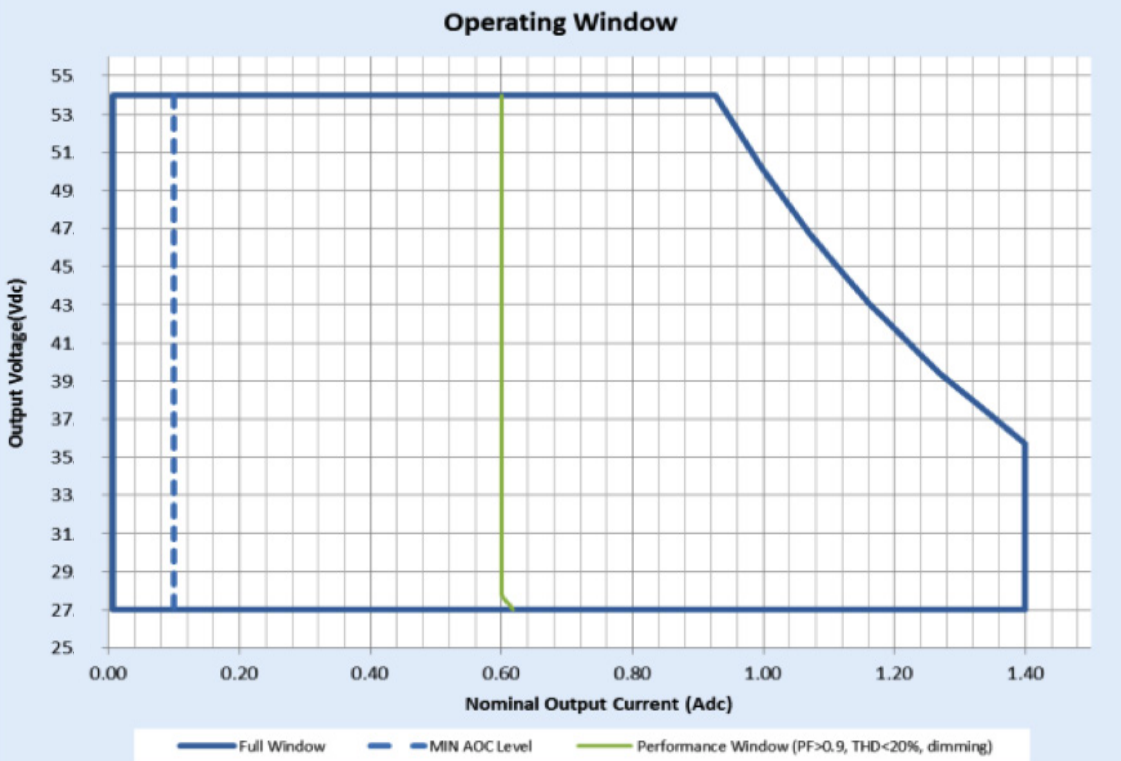
Driver Output Window



Notes

1. Factory default output current is 1.4A.
2. For dimming to a minimum level of 1% the output current setting through AOC should be ≥ 0.6A.

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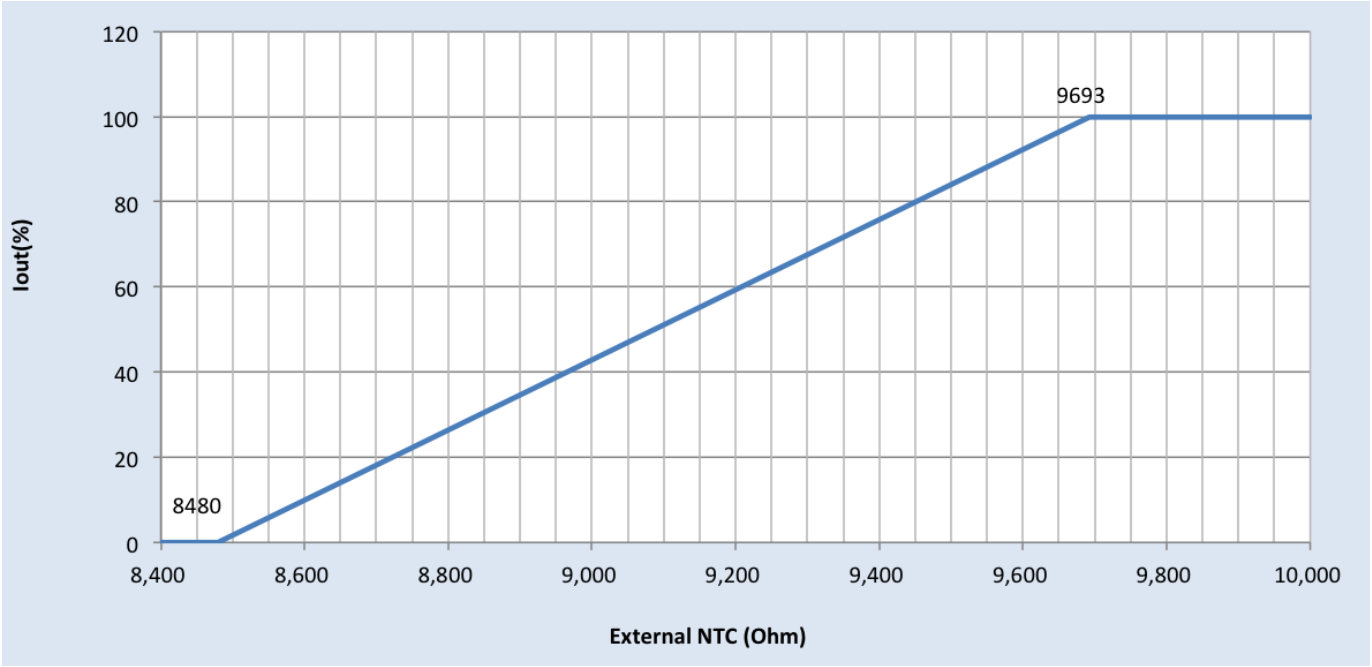
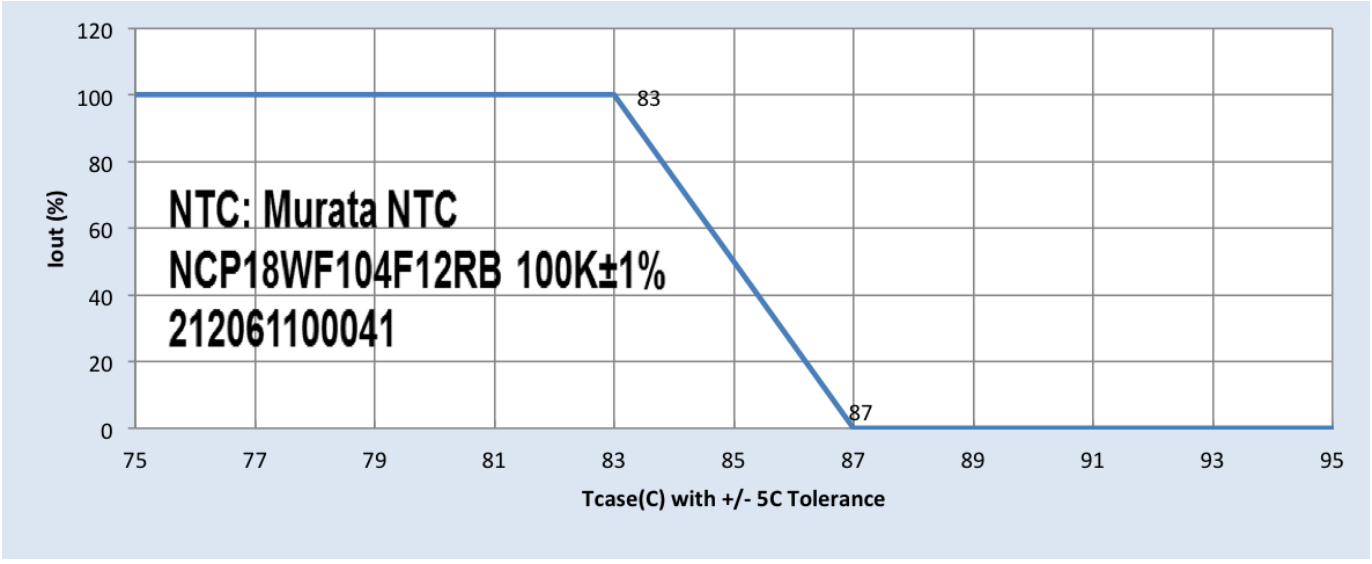
Output Current Vs. External NTC Resistance



Output Current Vs. LED Module Temperature using 100kohm NTC



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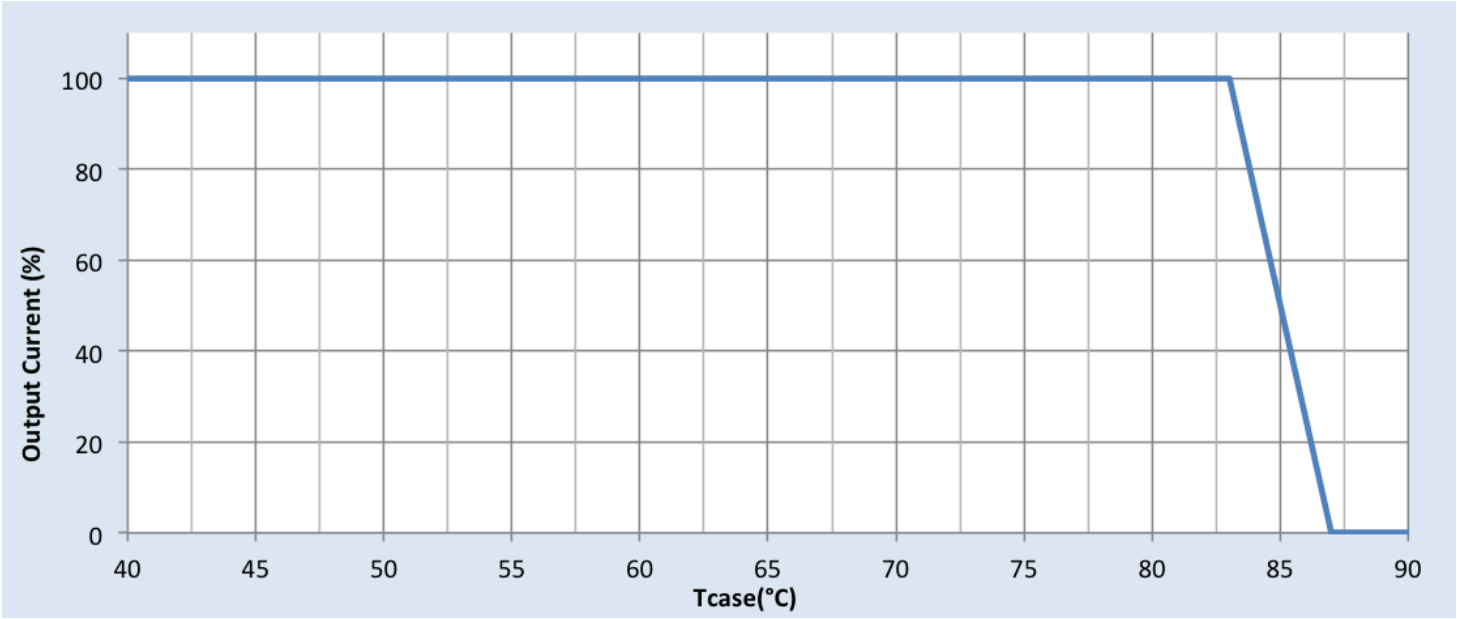
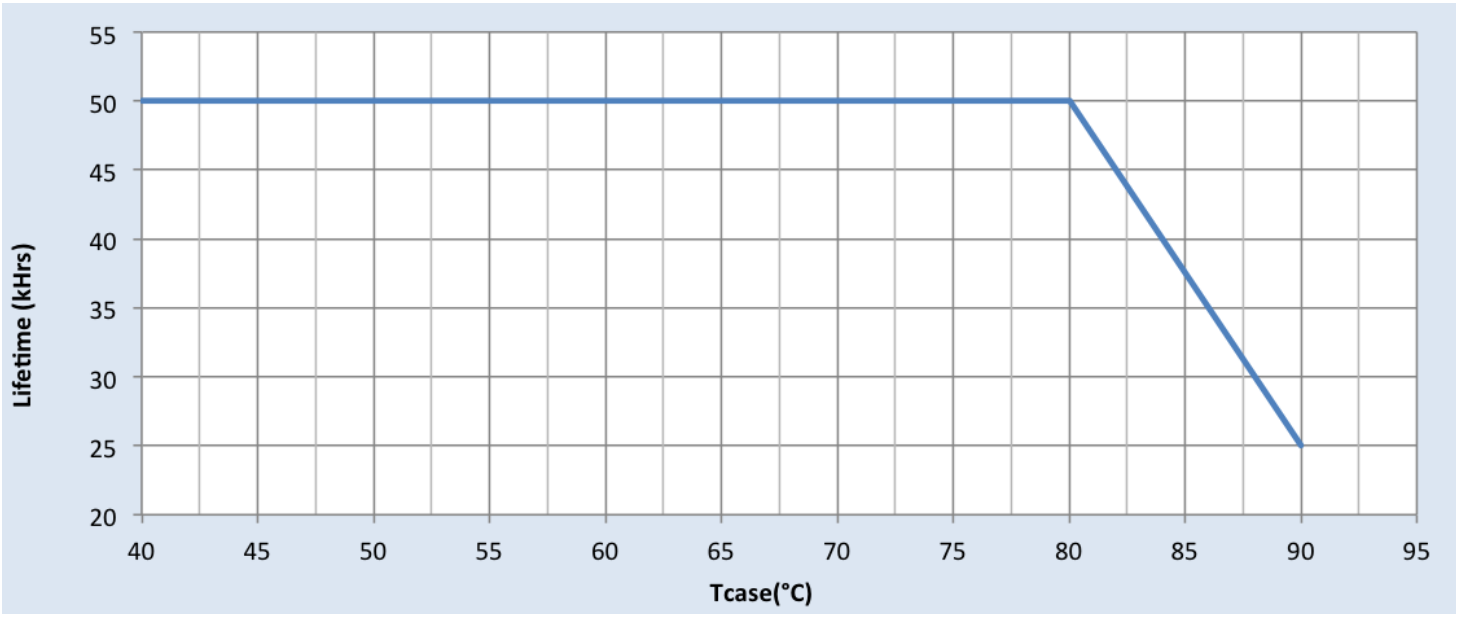
Output Current Vs. Driver Case Temperature



Note

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

Driver Lifetime vs. Driver Case Temperature



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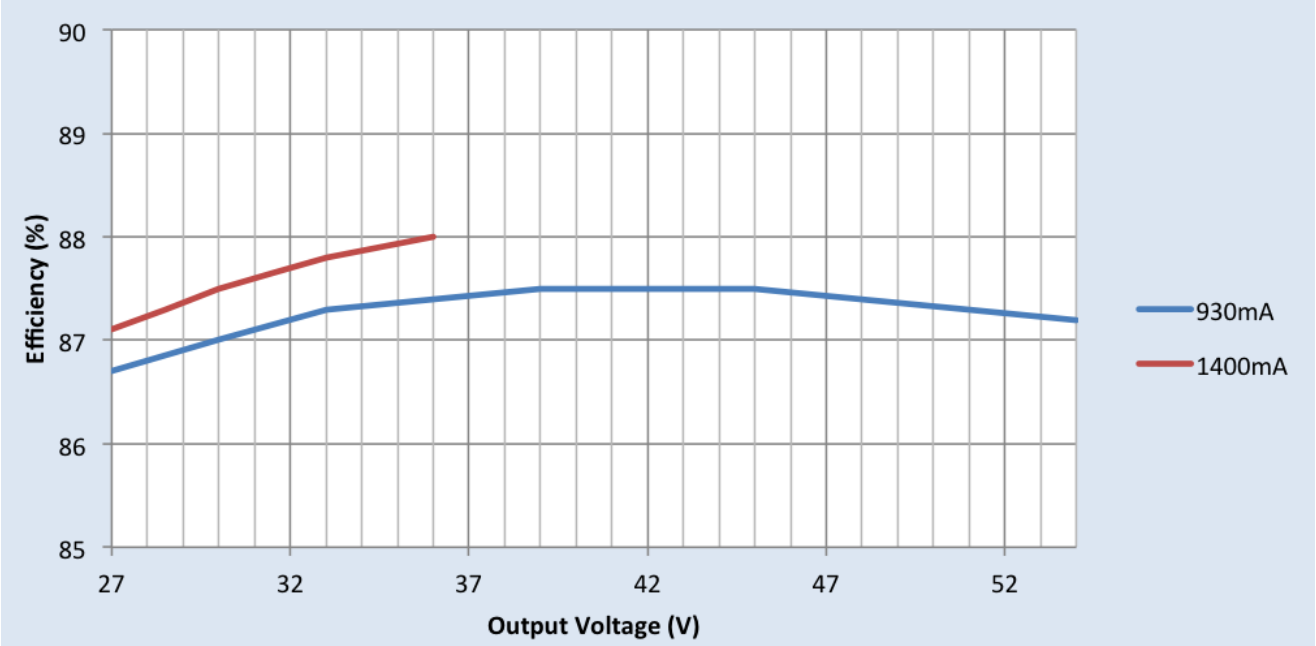
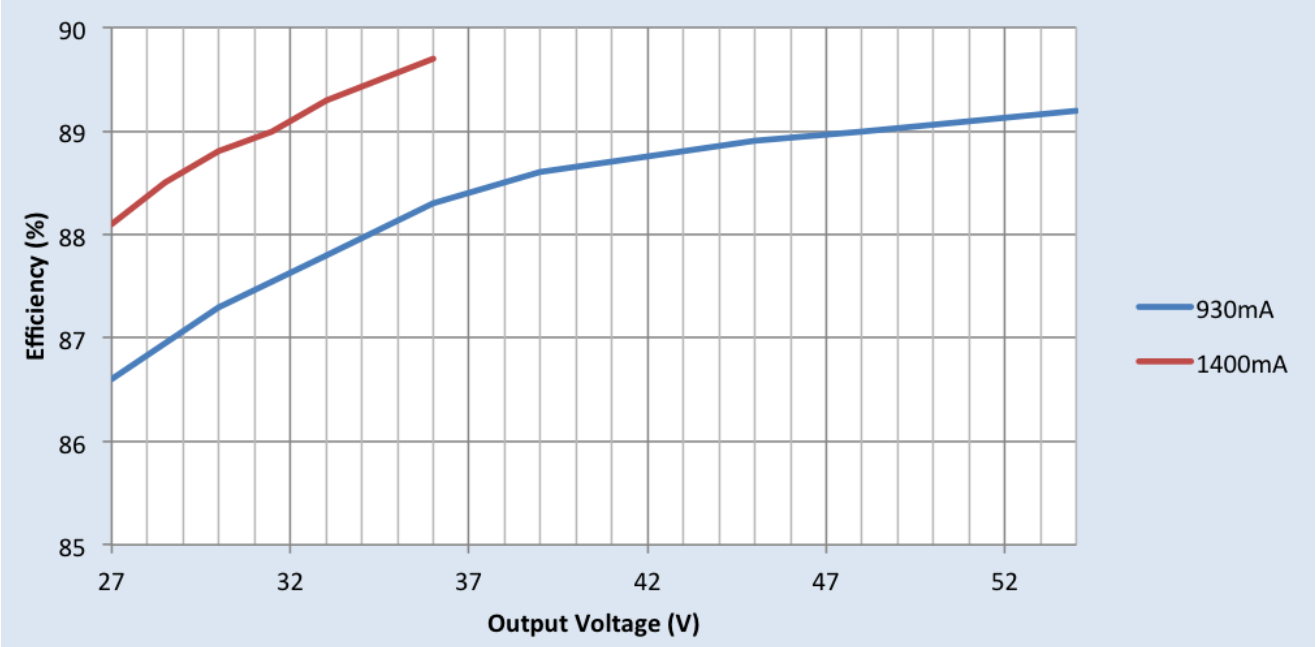
Performance Characteristics

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



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Performance Characteristics

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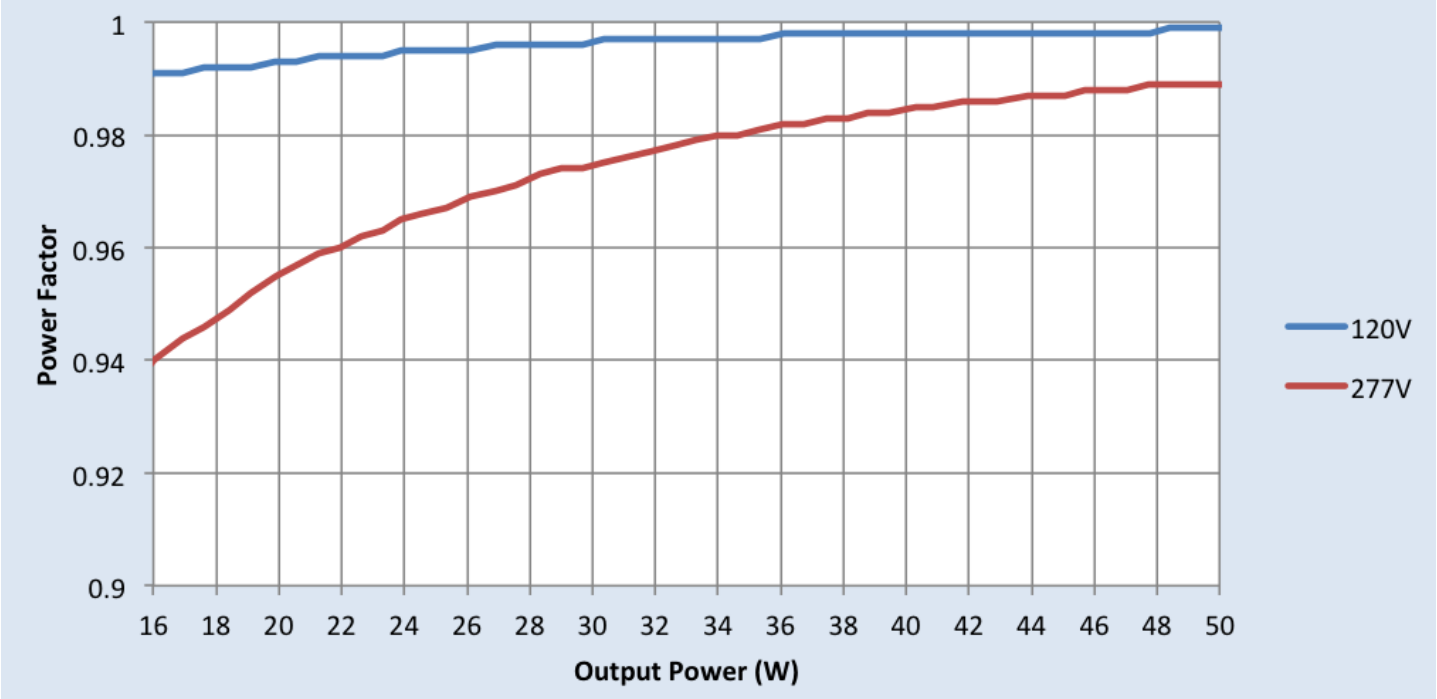
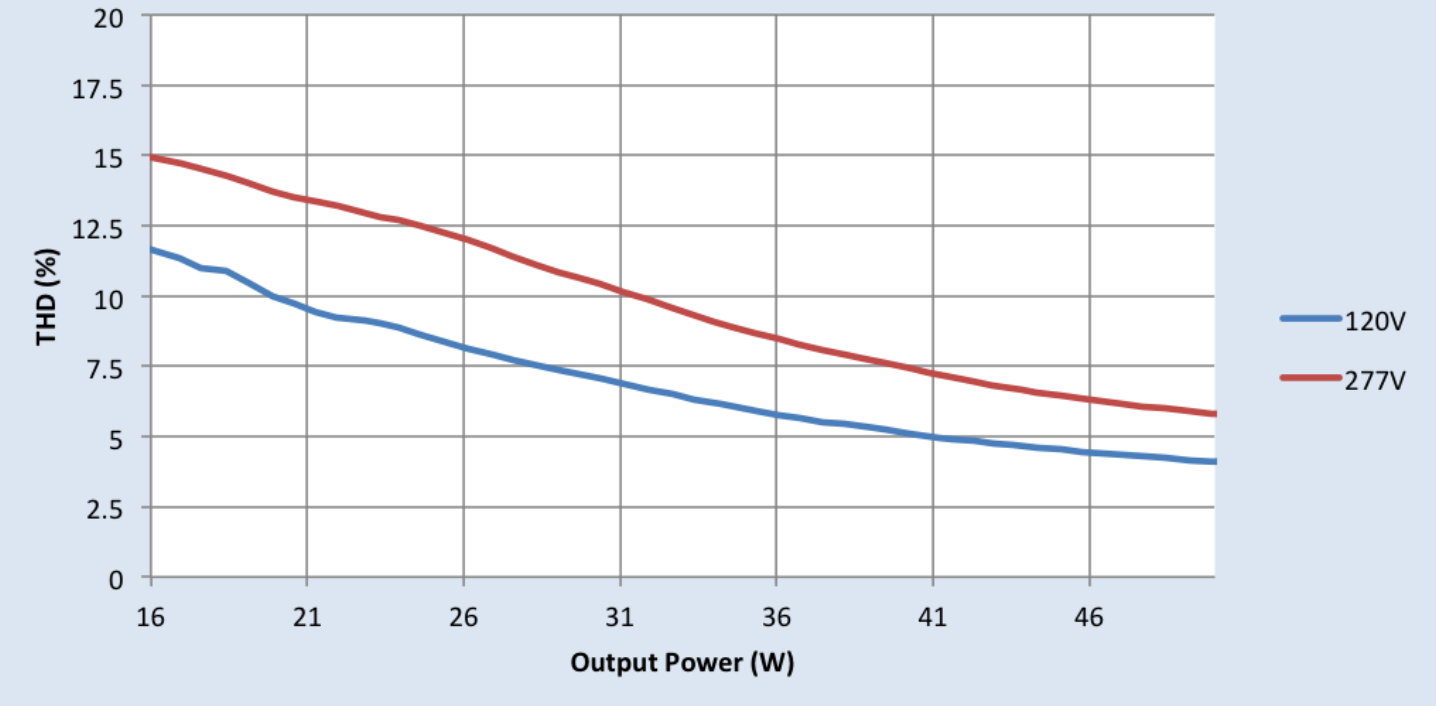
Power Factor Vs. Output Power



Total Harmonic Distortion (THD) Vs. Output Power



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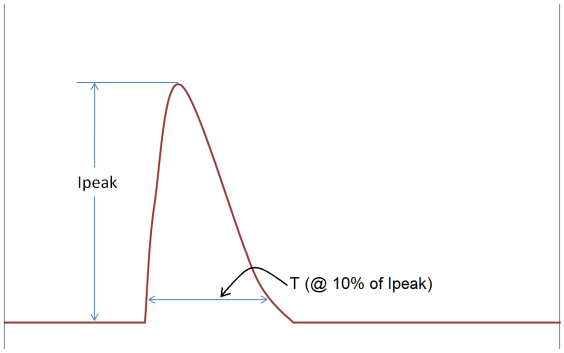
Inrush Current Info



Vin	Ipeak	T (@ 10% of Ipeak)
120 Vrms	13.2A	370µS
277 Vrms	34.0A	370µS

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	2xU+1kV	2xU+1kV
Output	2xU+1kV	NA	2xU+1kV	2xU+1kV
0–10V	2xU+1kV	2xU+1kV	NA	2xU+1kV

U = Max input voltage

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