ADVANCE
by signify

LED Driver

Xitanium

XI050C140V054PST2

The Advance Xitanium range of linear 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. With wide operating windows, slim profile and simple current adjustability, the drivers make it easy for luminaire manufacturers to design linear fixtures with desired lumen levels to suit the application.

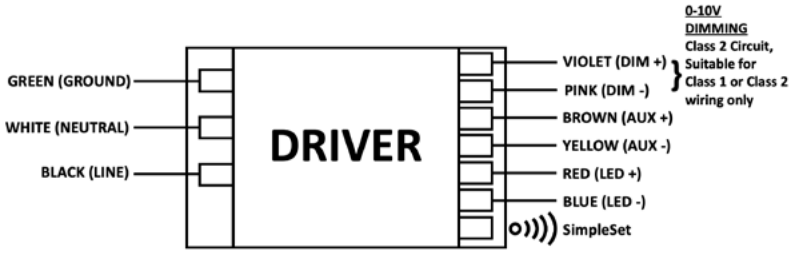
Specifications

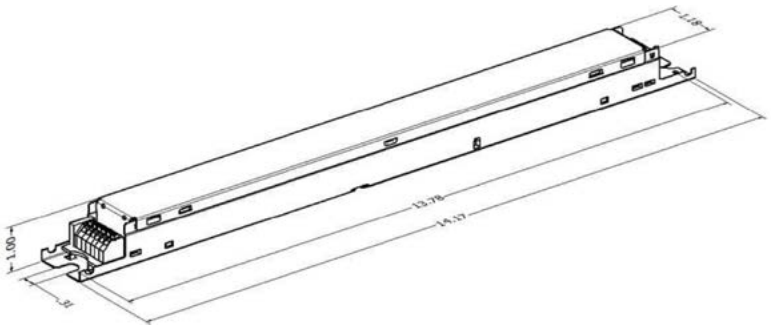
Input Voltage (Vac)	Output Power (W)	Output Voltage (V)	Output Current (A)	Efficiency @ Max Load and 75°C Case	Max Case Temp. (°C)	Input Current (A)	Max. Input Power (W)	THD @ Max Load (%)	Power Factor @ Max Load	Surge Protect. (Ring Wave, KV)	Envir. Protect. Rating	Dim.	Dimming Range (with specified dimmers)	Minimum Output Current (A)	Driver Type	Other Comments
120	50	10-54 Class 2 Output	0.1 - 1.4	87%	Life-75°C UL-85°C	0.48	58	<10%	>0.95	> 2.5	UL damp & dry	0-10V Analog Class 1 or Class 2 Wiring	1% ~ 100%	0.0047	Constant Current	Dimming source current: 150 µA
277				89%		0.21		<15%								

Enclosure

	In. (mm)
Case Length	14.17 (360)
Case Width	1.18 (30)
Case Height	1.00 (25.4)
Mounting Length	13.78 (350)
Mounting Hole Diameter	0.31 (7.9)
Overall Length	14.17 (360)

Wiring Diagram





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 >=300V. Strip Wire 3/8".

Grounding

Driver case must be grounded.

RoHS COMPLIANT c UL us LISTED NOM

Xitanium XI050C140V054PST2

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

Features

- 50,000+ hour lifetime[1]
- SimpleSet programmable
- Large operating window
- 1% minimum dim level
- Auxilliary power supply (12V/24V selectable, default 12V)

Benefits

- Slim profile 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

Application

- Indoor linear applications such as troffers and pendants
- Office
- Education
- Healthcare
- Retail
- Big box stores

Electrical Specifications

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

Product Data

Order Information	
Full Product Code	XI050C140V054PST2M (Mid-Pack, 18pcs/Box) 12NC:929001780713
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 @ frequency range 60Hz-3KHz
Output Current Tolerance (in the performance window)	<5%
Protections	Short Circuit and Open Circuit Protection for LED + and LED-, mis-wiring protection for 0-10V interface
Features	
0-10V Dimming	150µA source current from driver. See dim curve for detail.
AOC (Adjustable Output Current)	0.1A-1.1A via SimpleSet programming (refer to graph and notes below)
Additional SimpleSet Configurable Features	Adjustable minimum dimming level, Dimming curve selection (linear or logarithmic), Adjustable output level, Adjustable output min, OEM write protection, Dim to off function
Environment & Approbation	
Operating Ambient Temp. Range	-20°C to +50°C
Max Case Temperature (Tcase)	Max. 85°C, Tcase Life: 75°C
Agency Approbations	UL8750, UL1310, cUL, Class P (UL, cUL), NOM
Electromagnetic Compliance	FCC Title 47 Part 15 Class A
Audible Noise	<24dB Class A
Weight	0.573 Lbs/0.260 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)

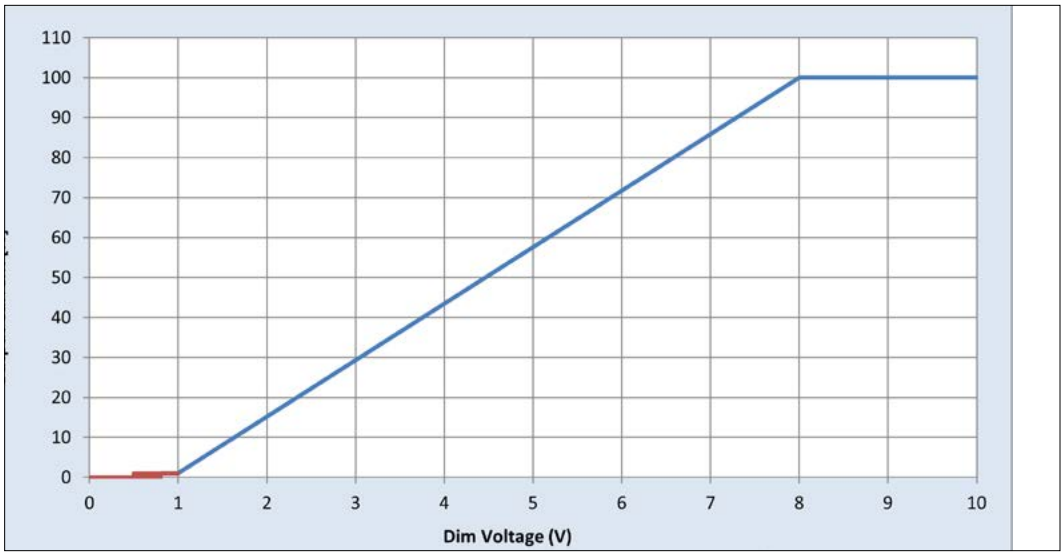
Minimum dim level: 1% of Iout (minimum 4.67mA)

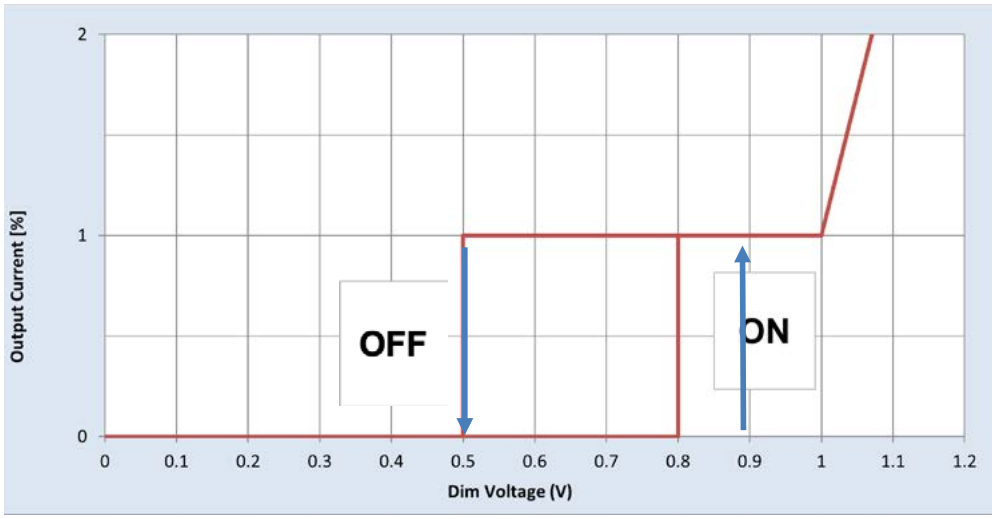
Maximum output voltage on the dimming wires: 12V

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.

Dim to Off Function

Symbol	Parameter	Min.	Typical	Max.	Unit
Von	Turn on threshold	0.7	0.8	0.9	V
Voff	Turn off threshold	0.4	0.5	0.6	V
Ton	Turn on time			250	mS
Toff	Turn off time			1000	mS





Electrical Specifications

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24V 50mA Auxilliary Power Supply

Symbol	Parameter	Condition	Min.	Typical	Max.	Unit
Vaux	Aux power supply nominal output voltage (programmable)	Steady state and during pulse current	10.8 21.6	12 24	13.2 26.4	V
Iaux	Steady state Average output current	12V 24V	0 0		100 50	mA
Vaux p_p	Maximum output voltage ripple p-p				1	%
Vaux_max	Transient output voltage range	Surge	-25%		25	%

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

*Dimmers on list do not support Dim to Off functionality

Approved Sensor List

Manufacturer	Manufacturer Part Number
Wattstopper	ADF-120277 Dimmer
	LS - 301
	FSP - 301
	FSP-202
Magnum Energy Solution	Mx-OPUS-CHML10V
	Mx-OPUS-LBKO10-LS
	Mx-OPUS-10V12
	Mx-OPUS-MLHB10V
	Mx-OPUS-ML10V
	Mx-OPUS-HBKO10V
	Mx-OPUS-DR10V
Nedap	Luxon IoT node (9984976)
McWong	PSC-BL series
Philips Easysense	SNS010

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

Electrical Specifications

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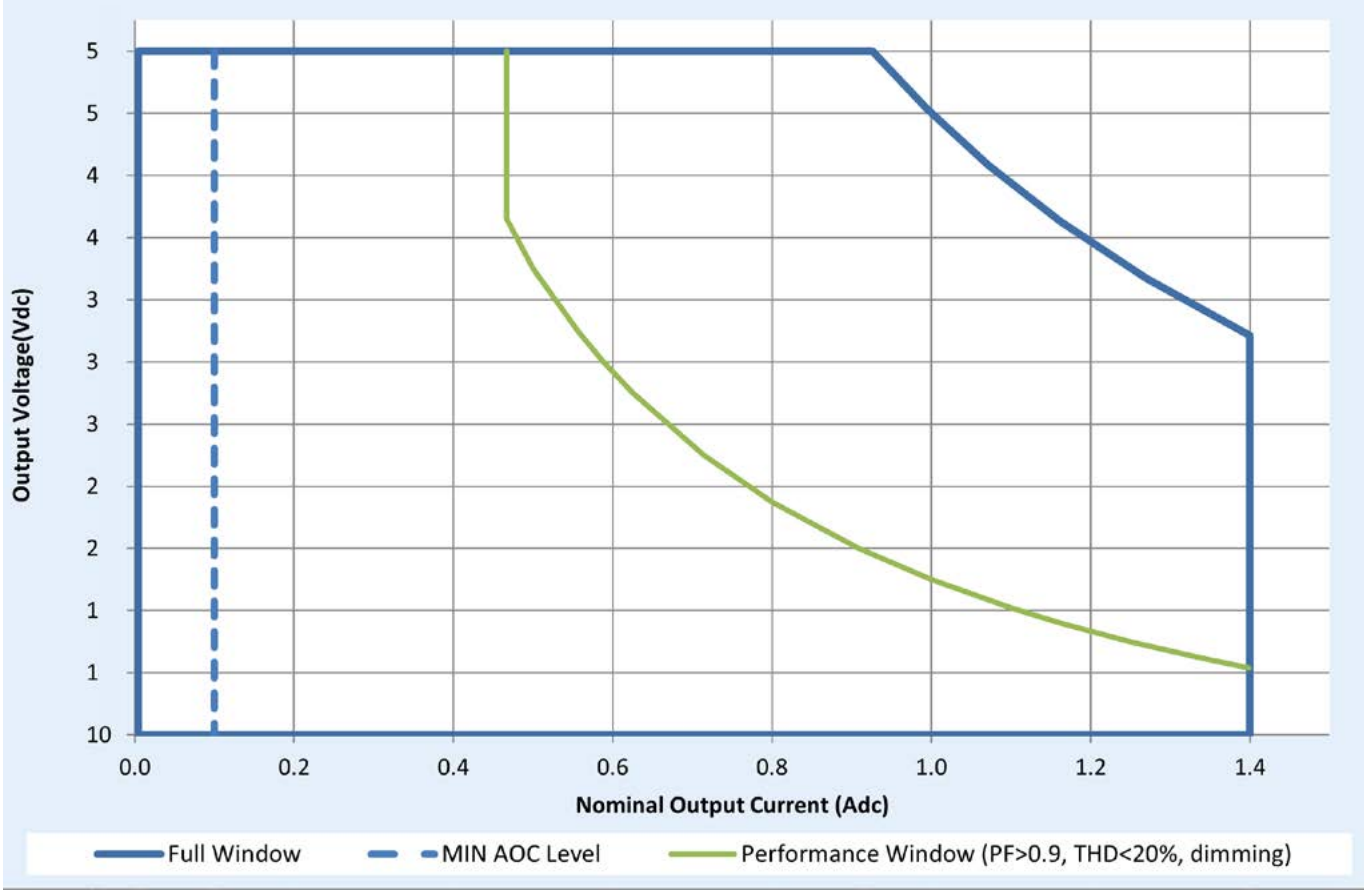

Notes

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 ≥ 0.47A.

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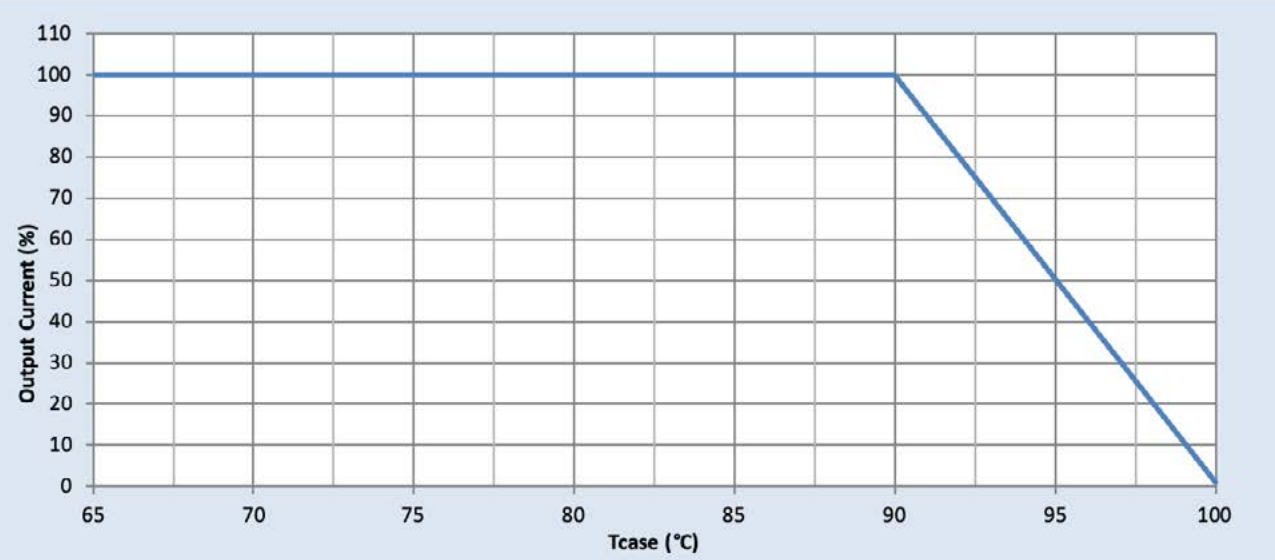
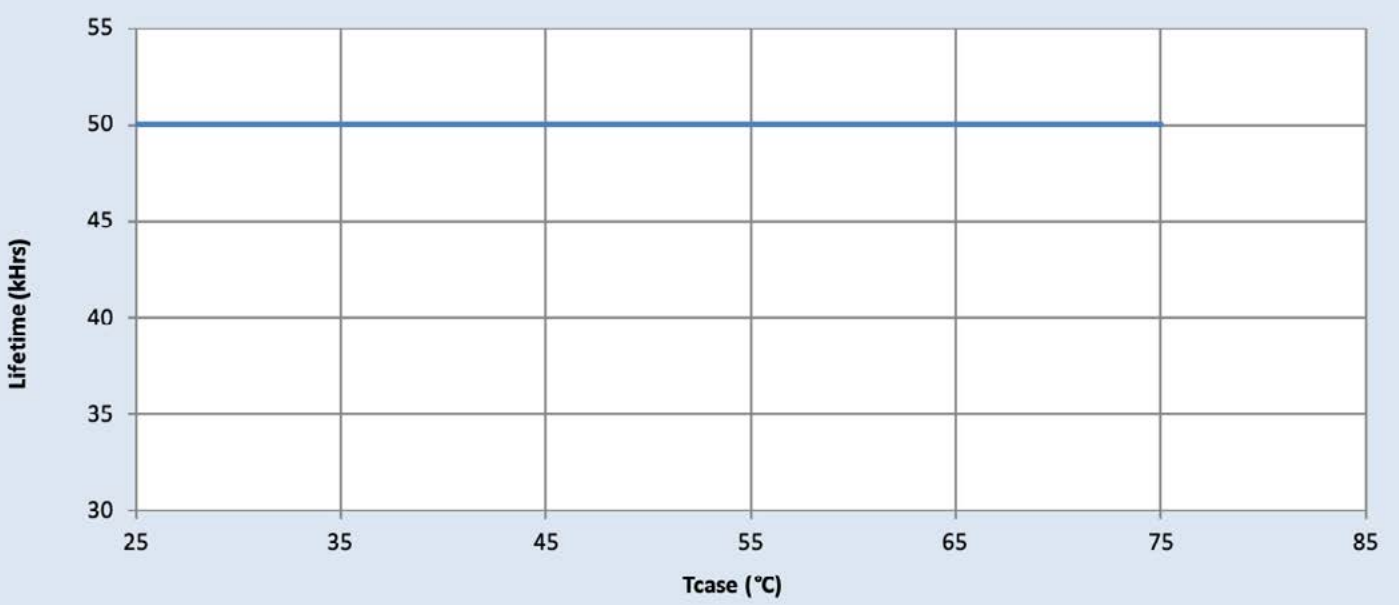
Output Current Vs. Driver Case Temperature



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

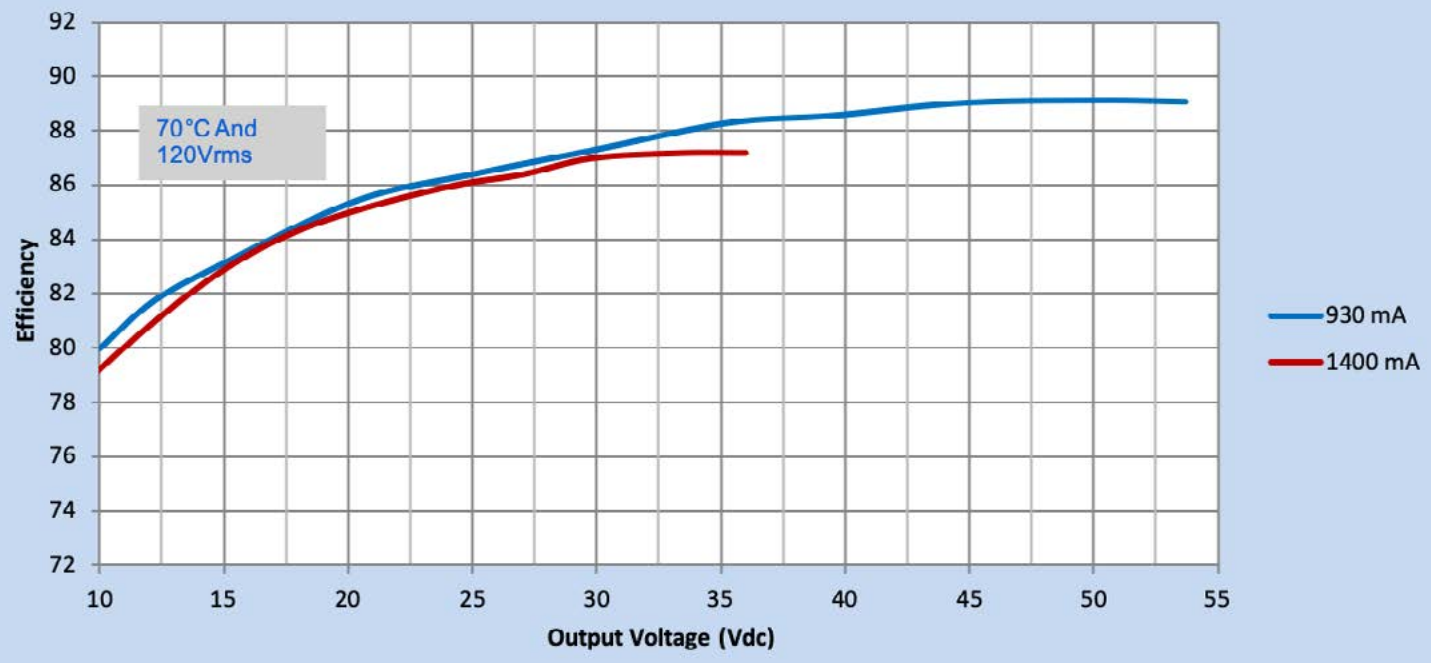
Driver Lifetime vs. Driver Case Temperature



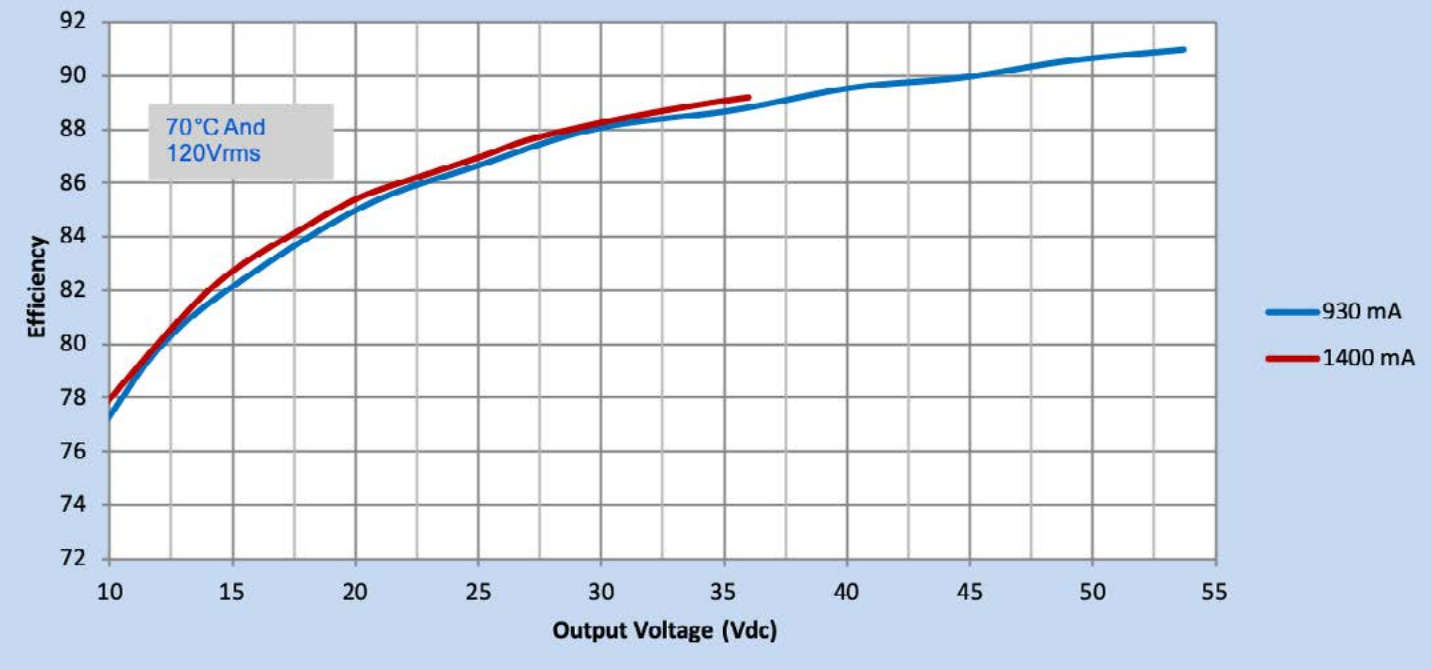
Performance Characteristics

Based on measurements on a typical sample at 75°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



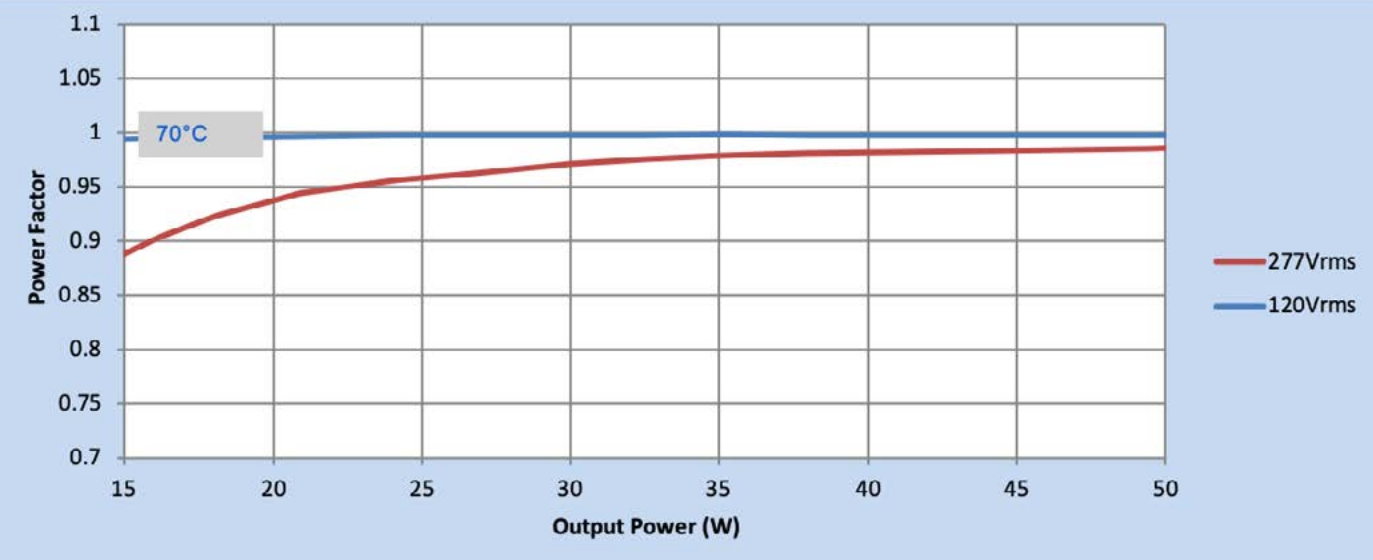
Xitanium XI050C140V054PST2

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

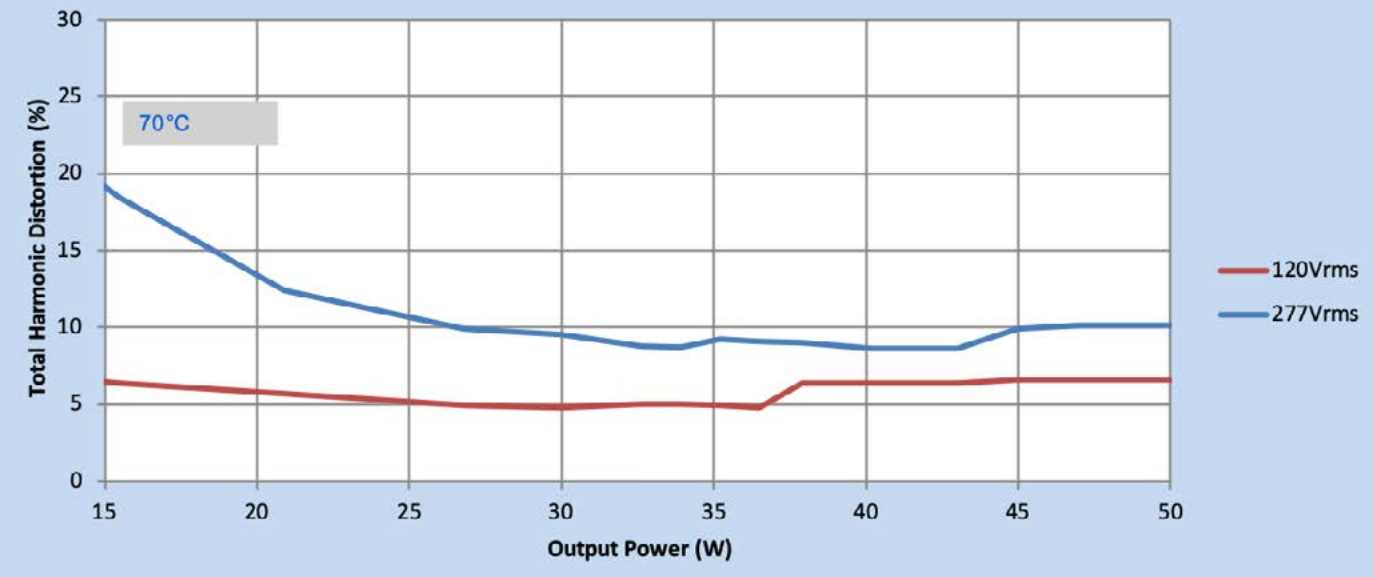
Performance Characteristics

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

Power Factor Vs. Output Power



Total Harmonic Distortion (THD) Vs. Output Power



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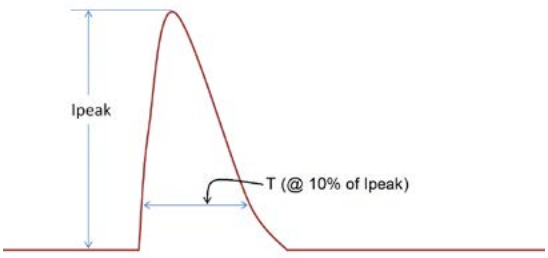
Inrush Current Info



Vin	Ipeak	T (@ 10% of Ipeak)
120 Vrms	10.36A	5.99µS
277 Vrms	26.4A	5.78µS

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

U = Max input voltage

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