

PHILIPS ADVANCE

LED Driver

Xitanium

54W 0.1-1.5A 54V 0-10V INT
(1% dim) with SimpleSet
XI054C150V054BST1



The Philips 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.

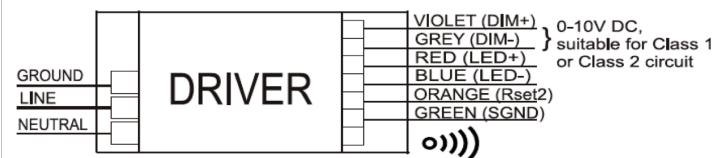
Specifications

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 Protection (Combi-Wave, KV)	Envir. Protection Rating
120	54	27 - 54	0.1 - 1.5	86	Life-75°C UL-85°C	0.54	65	<10%	>0.95	2.5	UL damp & dry
277				88		0.23		<10%			

Enclosure

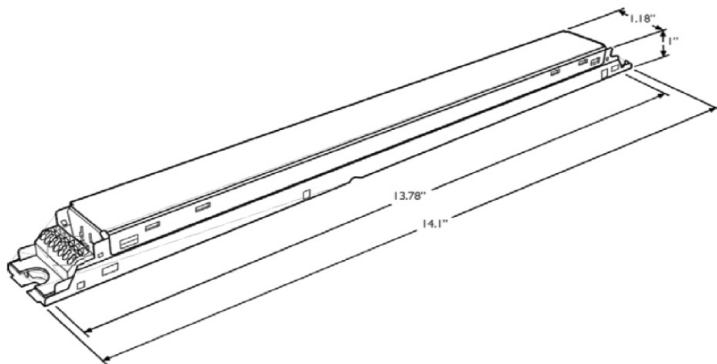
	In. (mm)
Case Length	14.17 (360)
Case Width	1.18 (30)
Case Height	1.00 (25.4)
Mounting Length	13.78 (350)

Wiring Diagram



WARNING:
Install in accordance with National and Local Electrical Codes. Use 18 AWG Solid Copper Wire. Rated $\geq 300V$. Strip Wire 3/8".

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 0.34 - 1.5A)	0.0034	Dimming source current: 150 μA

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Features

- 50,000+ hour lifetime¹
- SimpleSet programmable
- Large operating window
- 1% minimum dim level

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

Electrical Specifications

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

Product Data

Order Information	
Full Product Code	XI054C150V054BST1M (Mid-Pack, 18pcs/Box), 12NC: 929000752513
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)	100mA to 1500mA via external resistor or 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
Environment & Approbation	
Operating Ambient Temp. Range	-20°C to +50°C
Max Case Temperature (Tcase)	85°C
Agency Approbations	UL8750, UL1310, CSA-C22.2 No. 250.13-12, CSA Class P, ETL Class P, UL TL
Electromagnetic Compliance	FCC Title 47 Part 15 Class A
Audible Noise	<24dB Class A
Weight	0.69 Lbs / 0.320 kgs

1. Philips 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

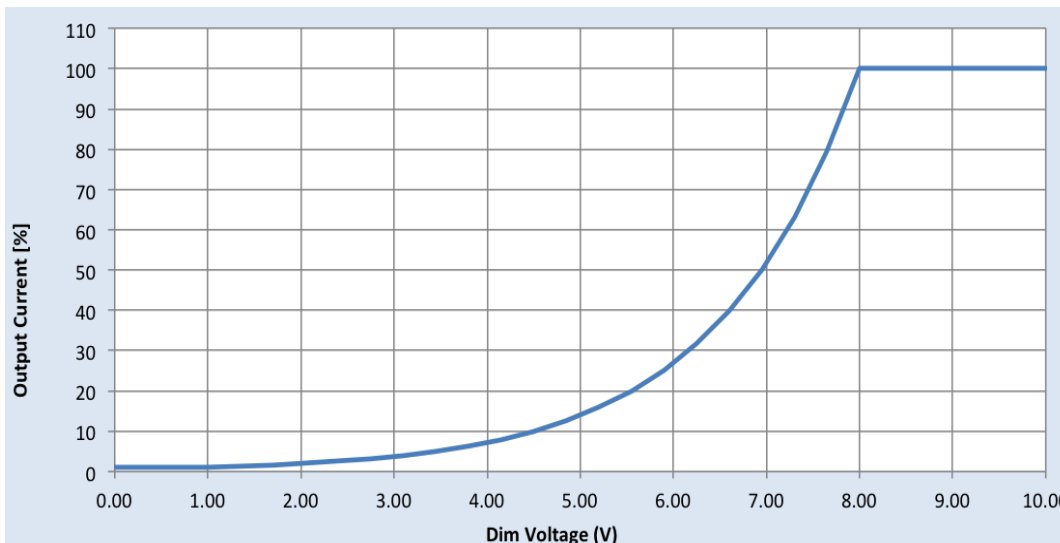
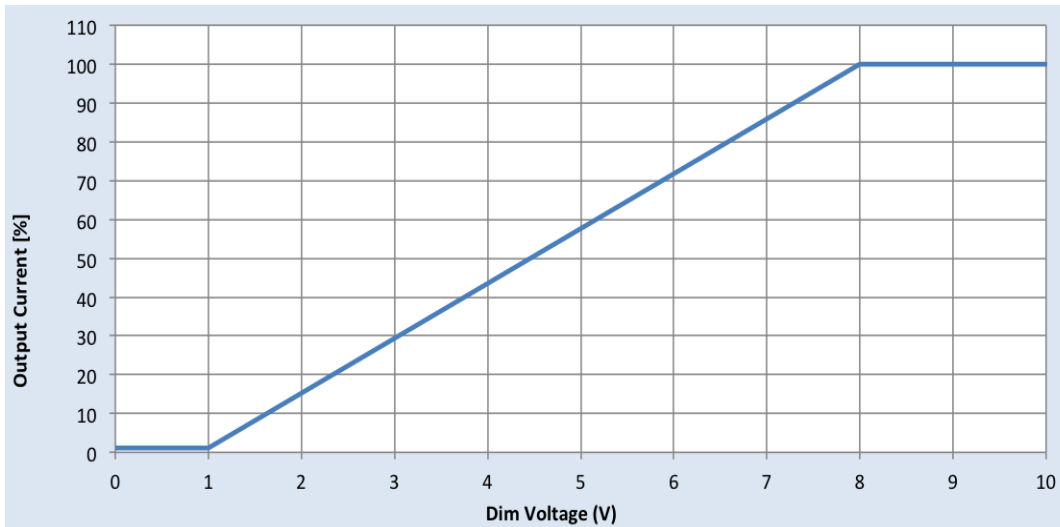
Dimming source current from the driver: 150µA (@ 0<Vdim<8V)

Minimum dim level: 1% of Iout (minimum 3.4mA)

Maximum output voltage on the dimming wires: 12V

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
Philips	Sunrise - SR1200ZTUNV



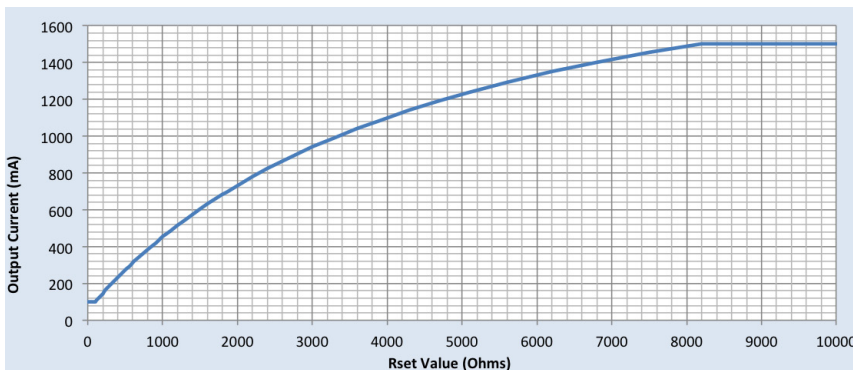
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AOC (Adjustable Output Current) Settings (Rset)

Rset (Ohms)	Current (mA)	Rset (Ohms)	Current (mA)
0	100	1860	698
100	100	2200	780
110	105	2400	823
120	111	2700	883
130	116	3000	941
150	125	3300	993
160	130	3600	1042
180	138	3900	1085
200	146	4300	1143
220	155	4700	1192
240	166	5100	1238
270	176	5600	1293
300	190	6200	1350
330	204	6800	1402
360	215	7500	1454
390	228	8200	1500
430	245	9100	1500
470	261	10000	1500
510	277	>100000	1500
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		



Notes

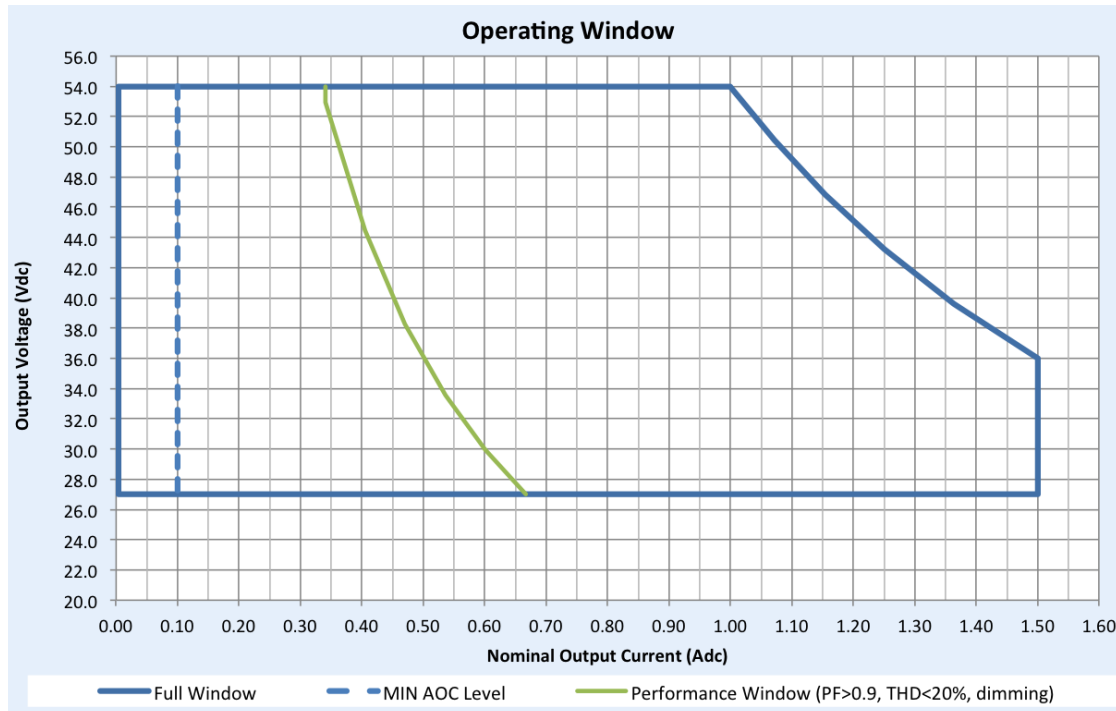
1. Current is set via a resistor between Rset2 and SGND leads.
2. Any through-hole or SMD resistor with >0.25W and >20V can be used as Rset.
3. Driver will default to 1500mA when Rset is left open.

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Driver Output Window



Notes

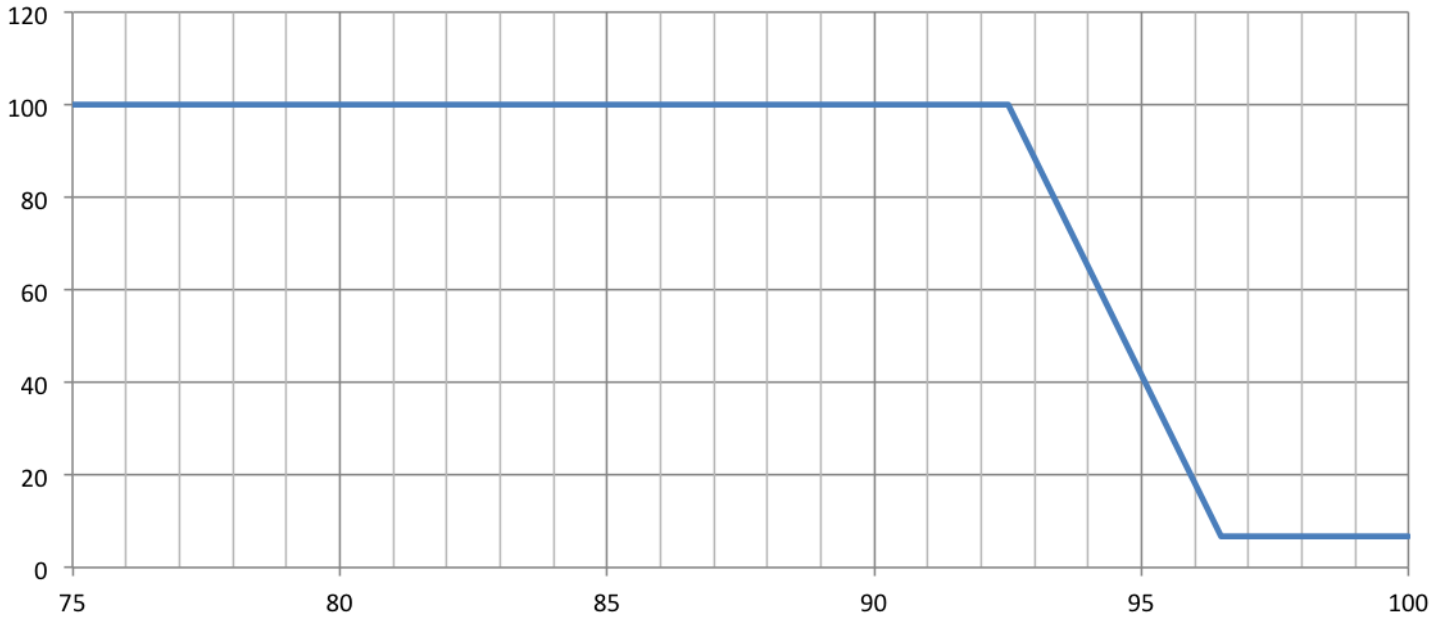
1. Factory default output current is 1.5A.
2. For dimming to a minimum level of 1% the output current setting through AOC should be $\geq 0.34A$.

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Electrical Specifications

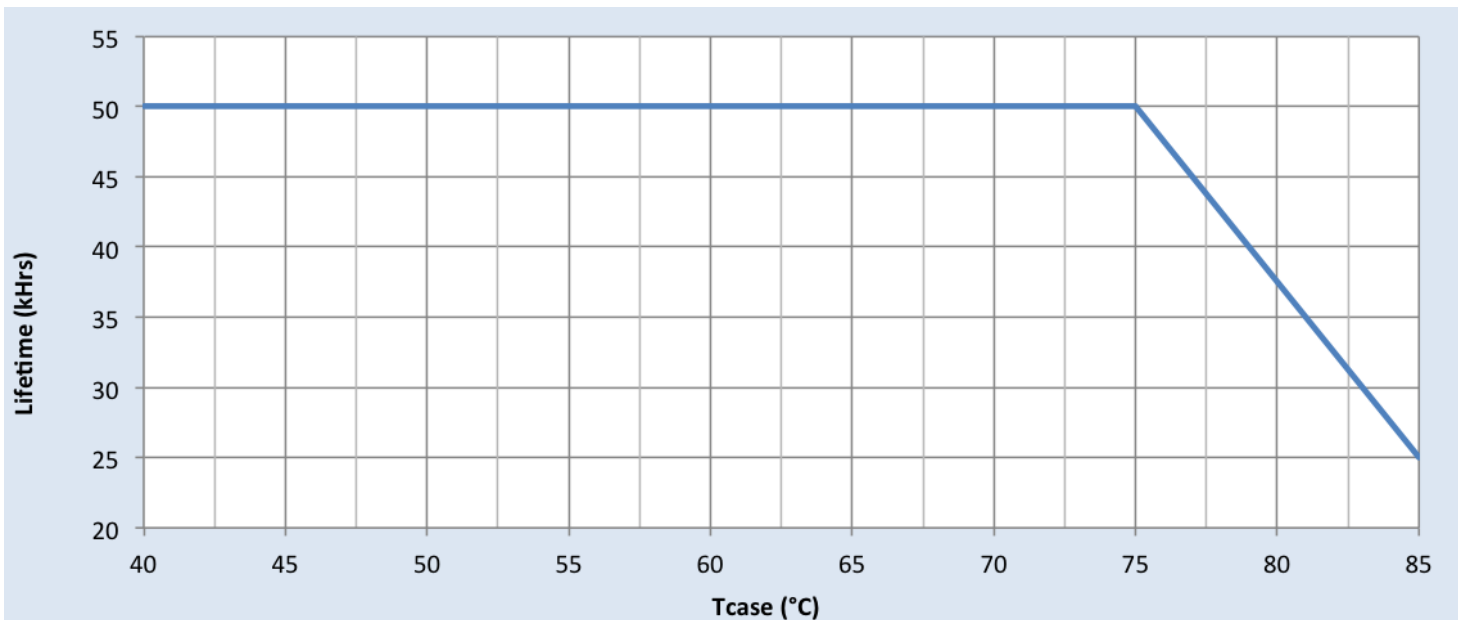
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Output Current Vs. Driver Case Temperature



Note: There is $\pm 5^\circ\text{C}$ tolerance on the driver case temperature.

Driver Lifetime vs. Driver Case Temperature

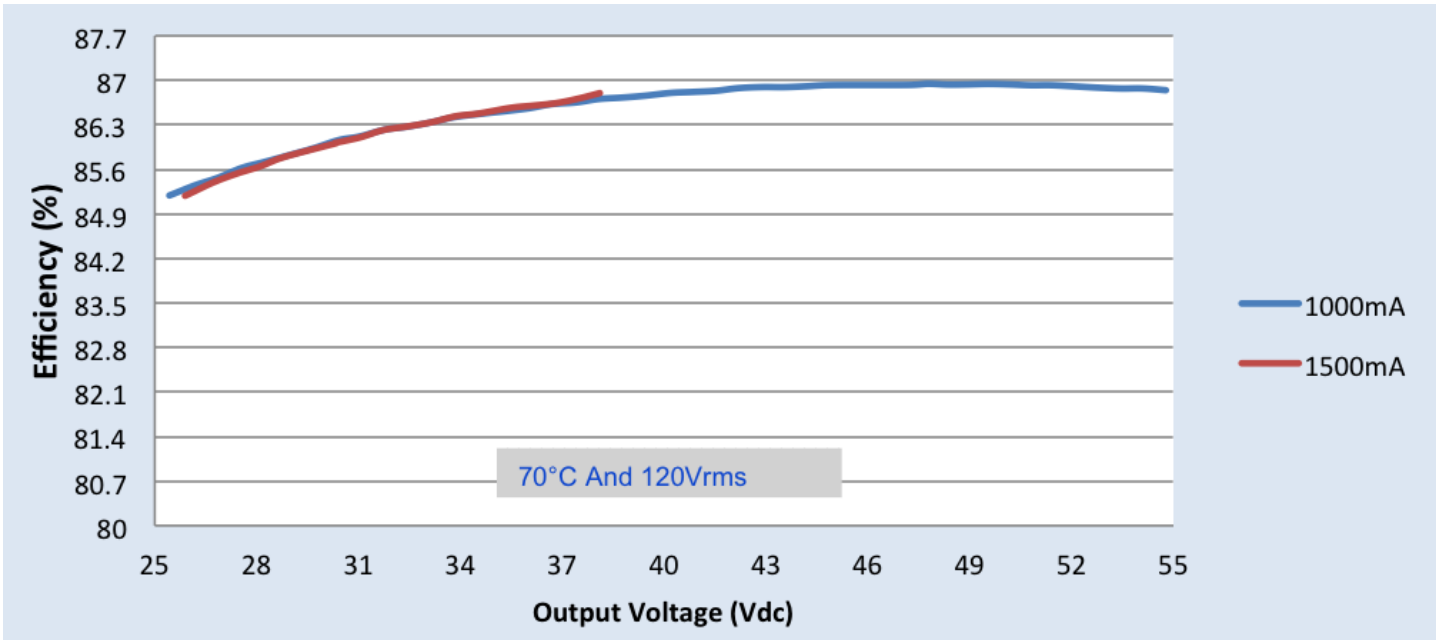


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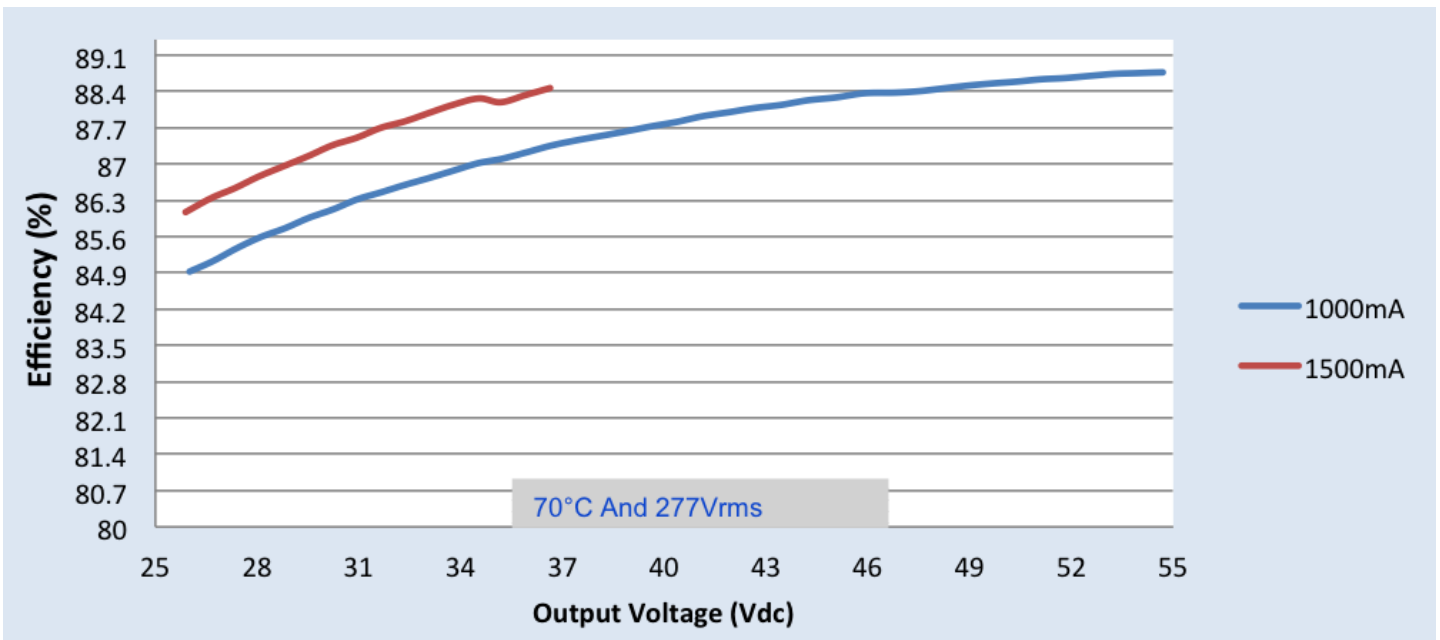
Performance Characteristics

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

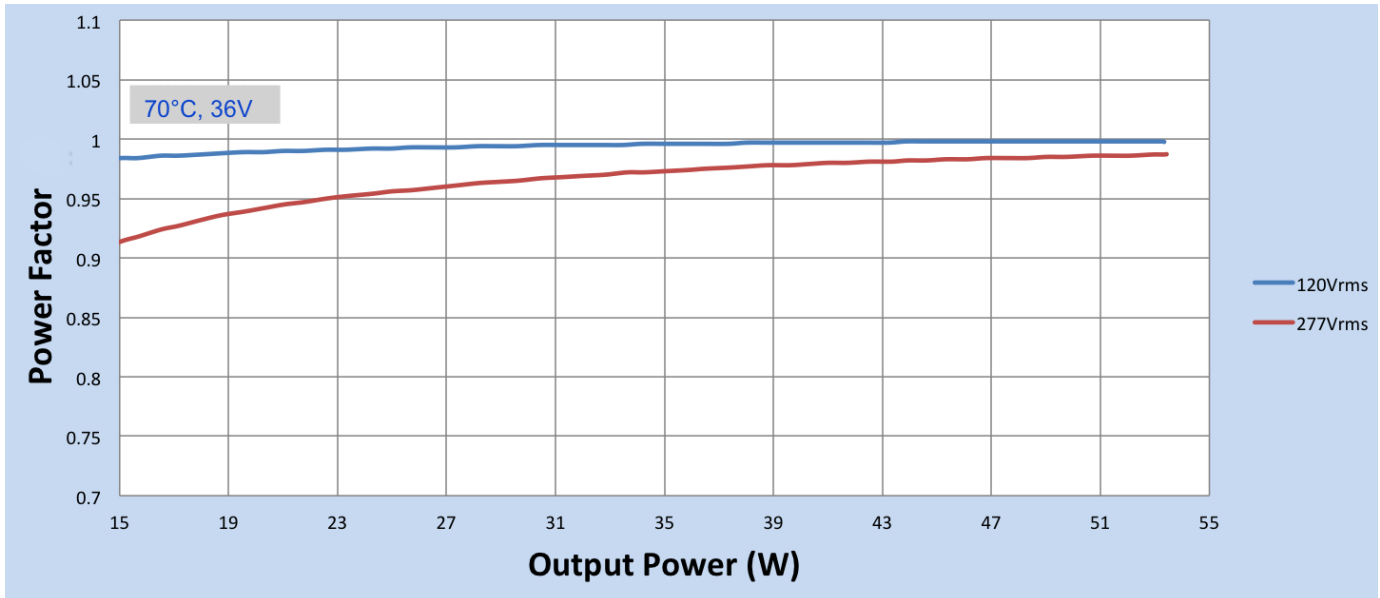


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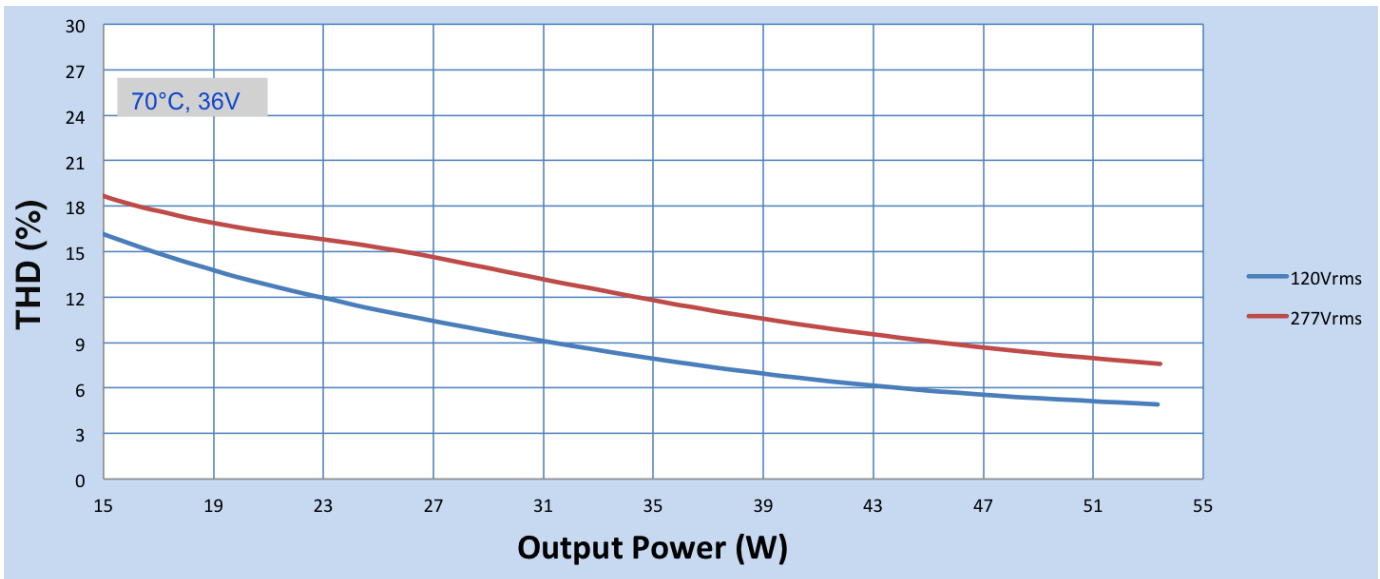
Performance Characteristics

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

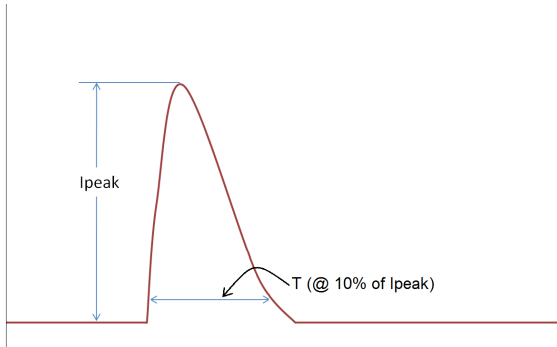


Total Harmonic Distortion (THD) Vs. Output Power



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Inrush Current Info



V_{in}	I_{peak}	$T (@ 10\% \text{ of } I_{peak})$
120 Vrms	23.3A	73.7 μ S
277 Vrms	46.9A	86.7 μ S

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 30 Ω)	>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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