

PHILIPS ADVANCE

LED Driver

Xitanium

40W 0.1-1.1A 54V 0-10V INT
(1% dim) with SimpleSet
XI040C110V054BST1



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.

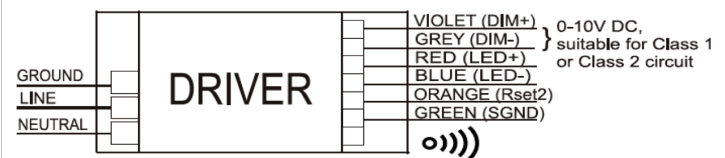
Specifications

| 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 | 40 | 22.5 - 54 | 0.1 - 1.1 | 85 | Life-75°C UL-85°C | 0.4 | 47 | <10% | >0.95 | 2.5 | UL damp & dry |
| 277 | | | | 87 | | 0.17 | | <10% | | | |

Enclosure

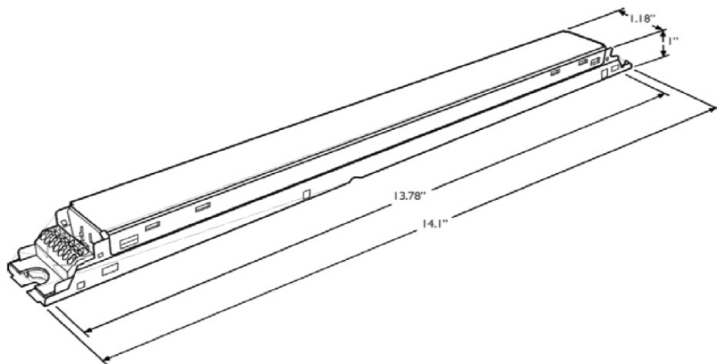
| | In. (mm) |
|-----------------|-------------|
| Case Length | 14.17 (360) |
| Case Width | 1.18 (30) |
| Case Height | 1.00 (25.4) |
| Mounting Length | 13.78 (350) |

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 0.25 - 1.1A) | 0.0025 | 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 1100mA 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

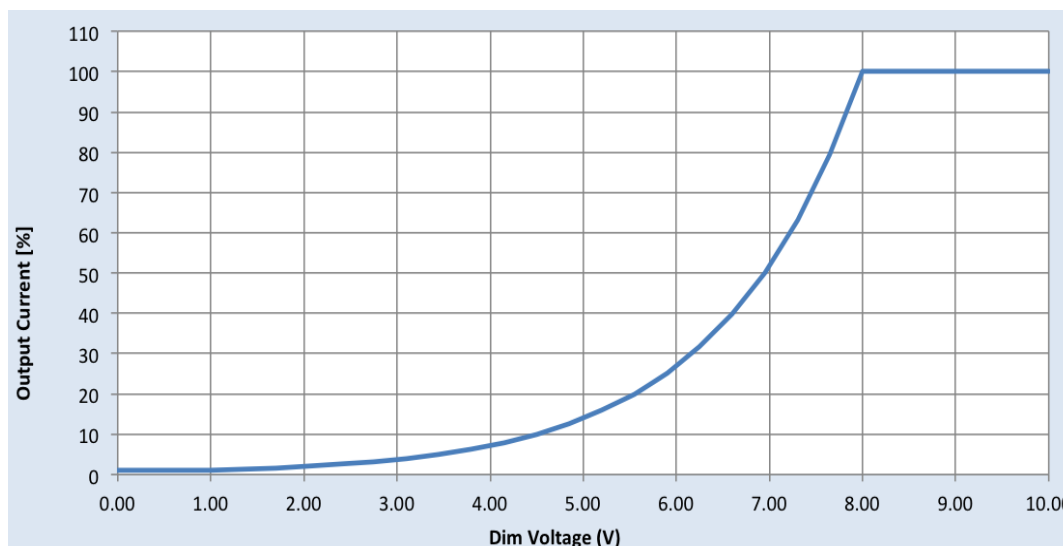
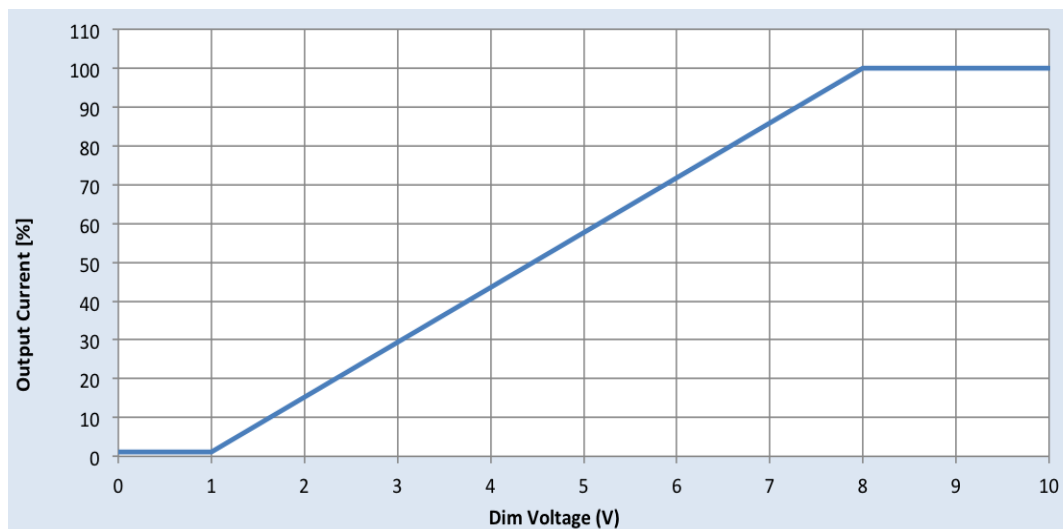
Dimming source current from the driver: 150µA (@ 0<Vdim<8V)

Minimum dim level: 1% of Iout (minimum 2.5mA)

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 |



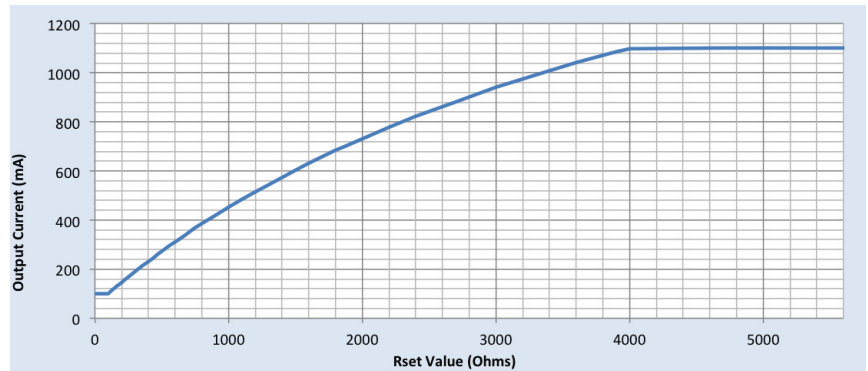
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AOC (Adjustable Output Current) Settings (Rset)

| 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 | 4000 | 1099 |
| 220 | 155 | 4700 | 1100 |
| 240 | 166 | 5100 | 1100 |
| 270 | 176 | 5600 | 1100 |
| 300 | 190 | >100000 | 1100 |
| 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 | | |



Notes

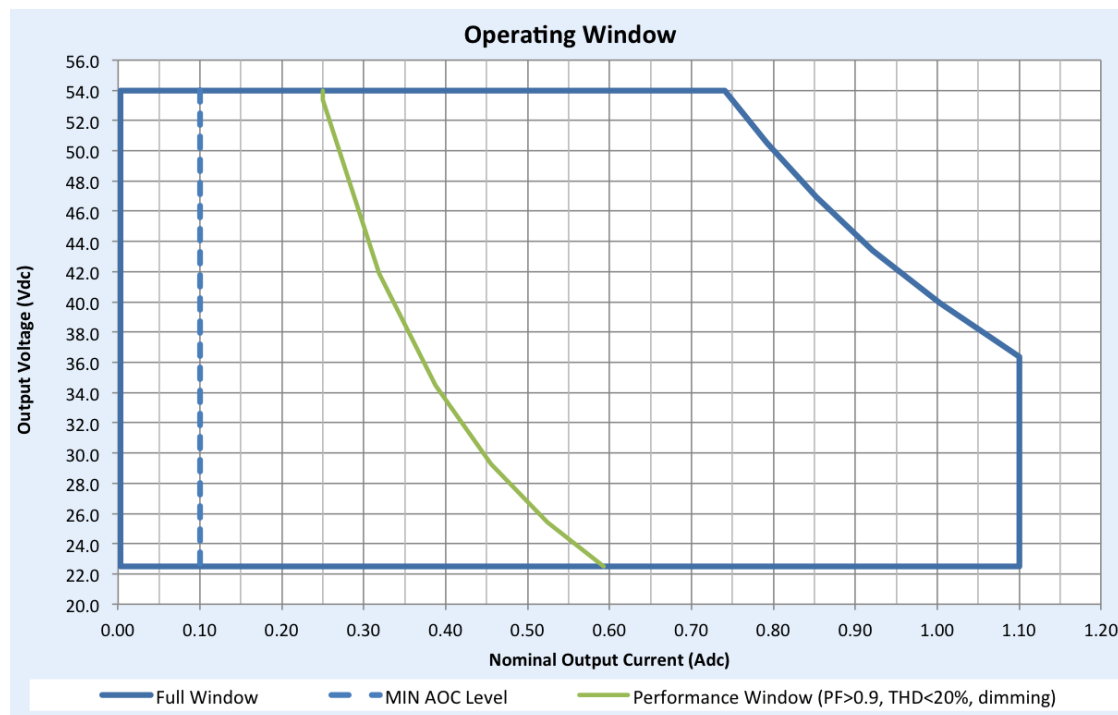
1. Current is set via a resistor between Rset2 and SGND leads.
2. Any through-hole or SMD resistor with >0.25W and >20V can be used as Rset.
3. Driver will default to 1100mA when Rset is left open.

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Driver Output Window



Notes

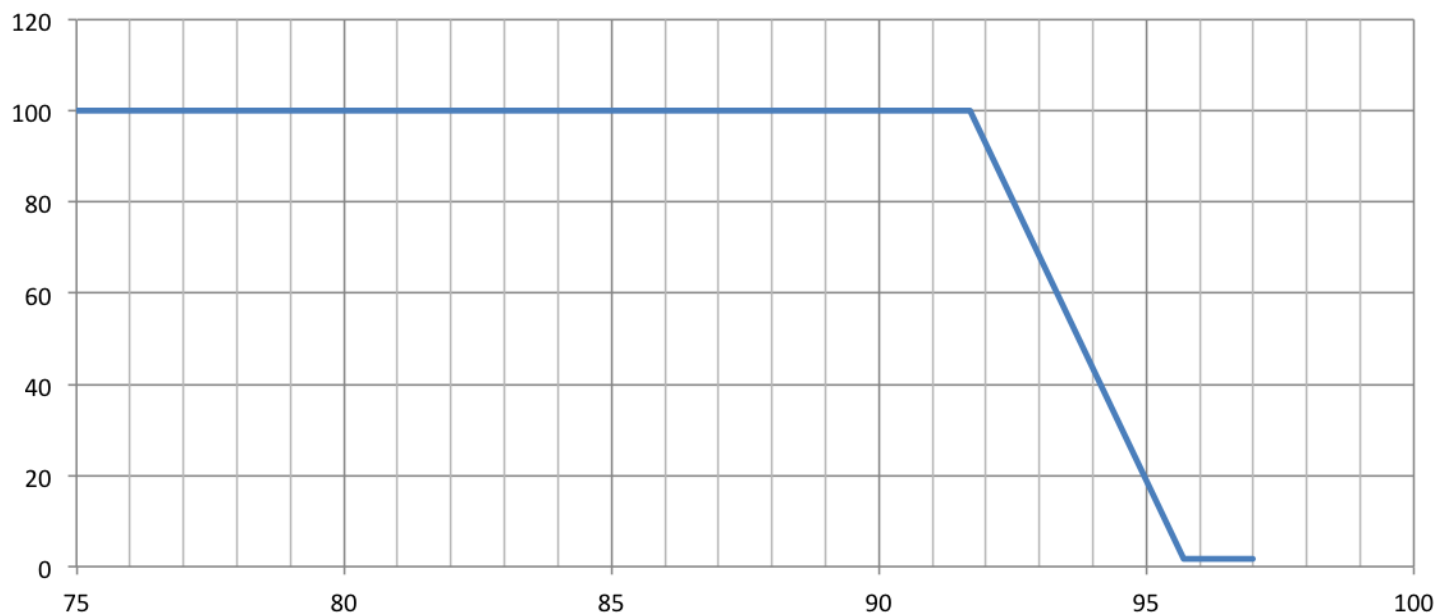
1. Factory default output current is 1.1A.
2. For dimming to a minimum level of 1% the output current setting through AOC should be $\geq 0.25A$.

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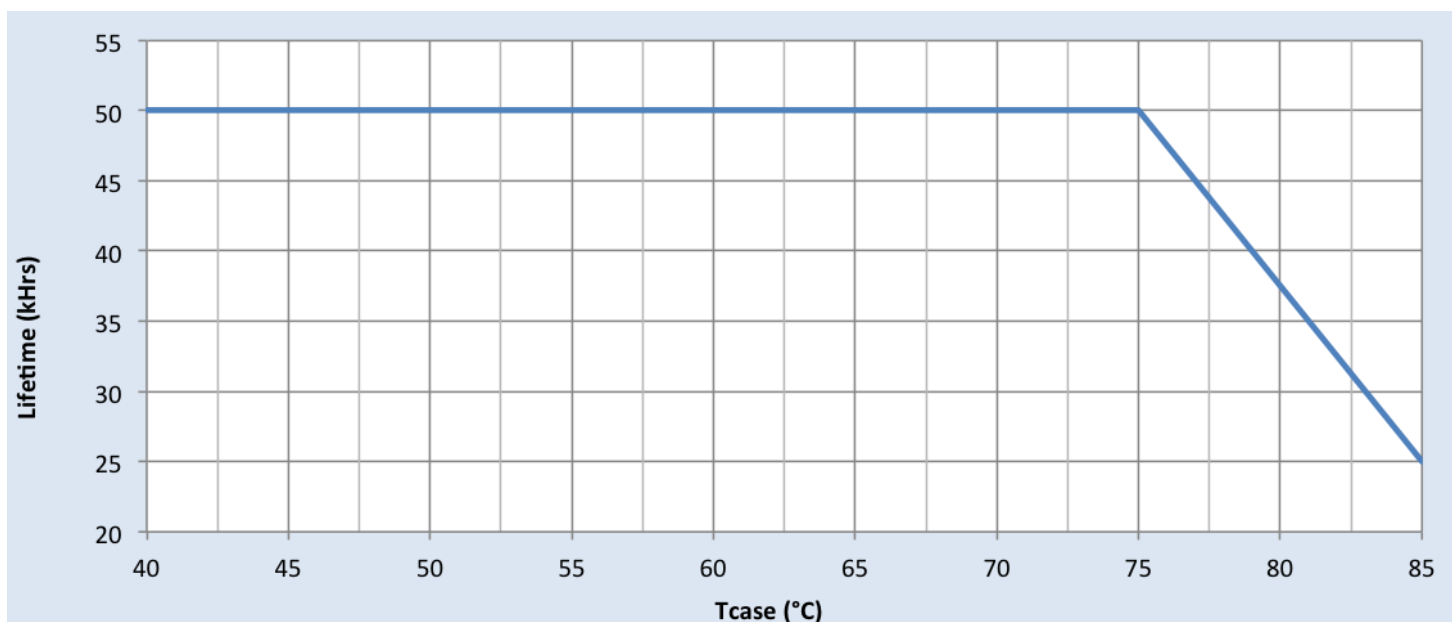
All the specifications are typical and at 25°C Tcase unless specified otherwise.

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

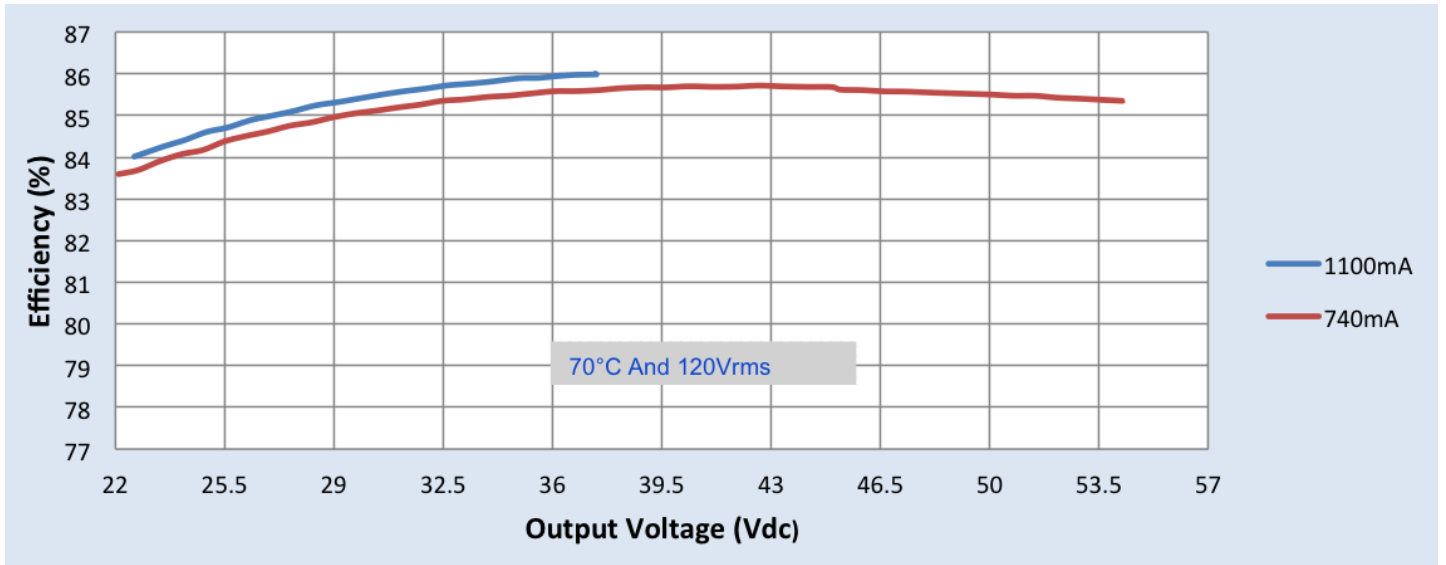


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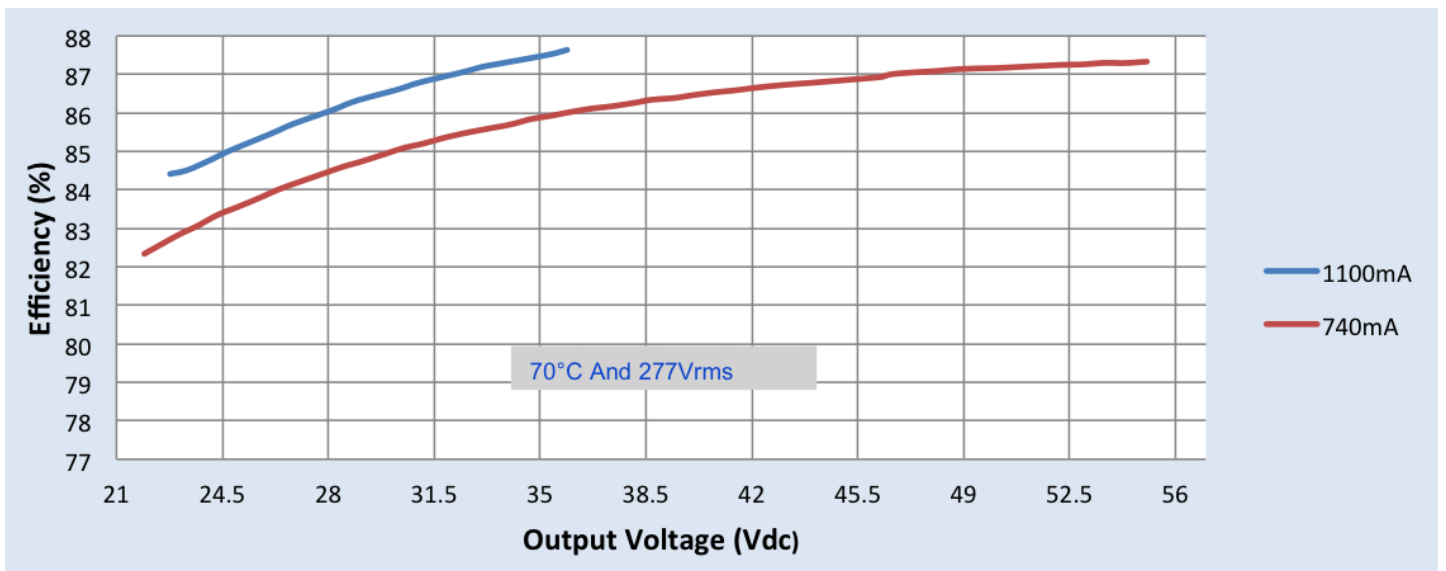
Performance Characteristics

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

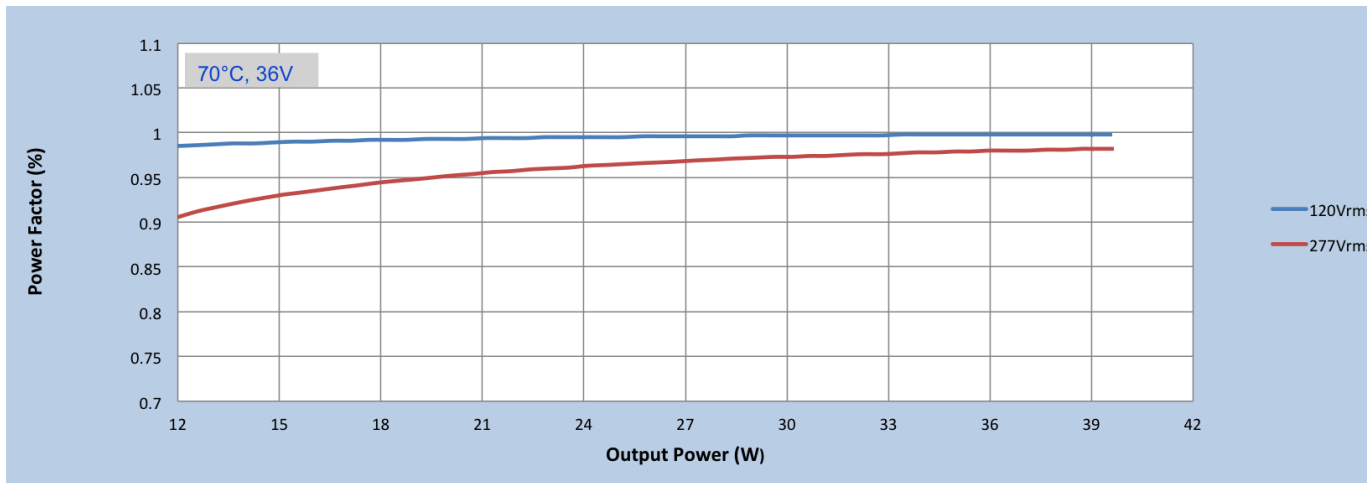


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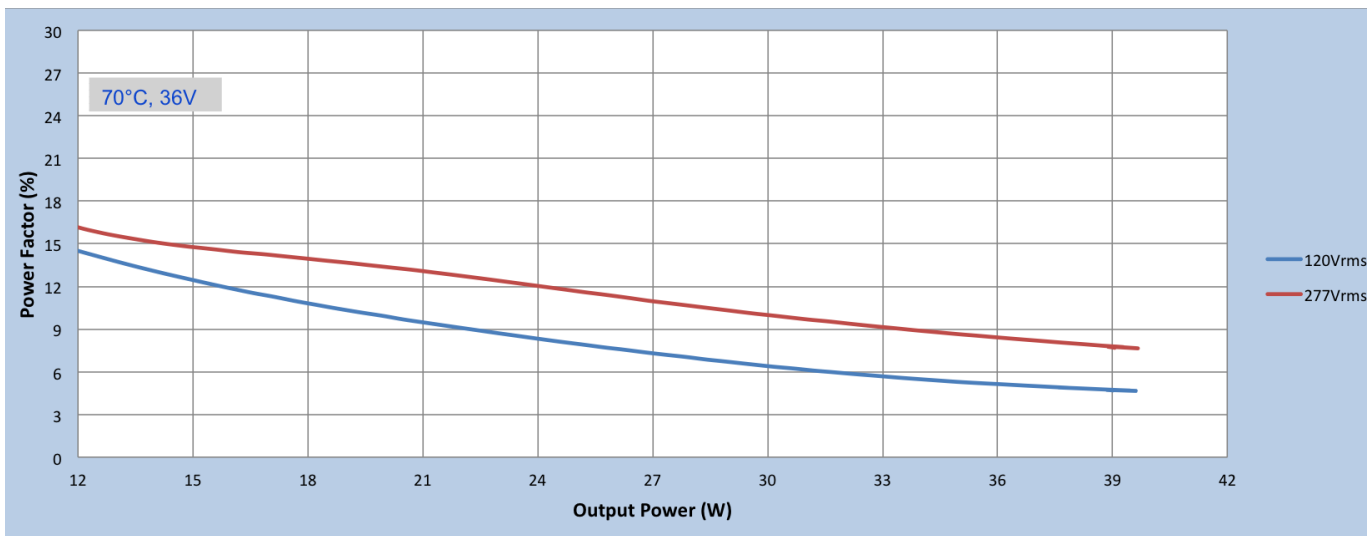
Performance Characteristics

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

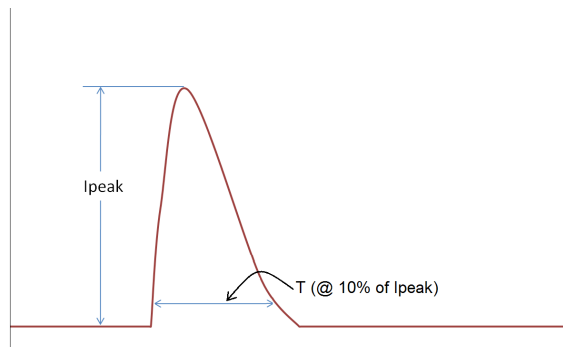


Total Harmonic Distortion (THD) Vs. Output Power



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Inrush Current Info



| V_{in} | I_{peak} | $T (@ 10\% \text{ of } I_{peak})$ |
|----------|------------|-----------------------------------|
| 120 Vrms | 12A | 77 μ S |
| 277 Vrms | 29.7A | 84.9 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

UL Conditions of Acceptability

Please contact your Philips representative for a copy of the latest UL Conditions of Acceptability (COA).

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