ADVANCE
by signify

# LED Driver

## Xitanium

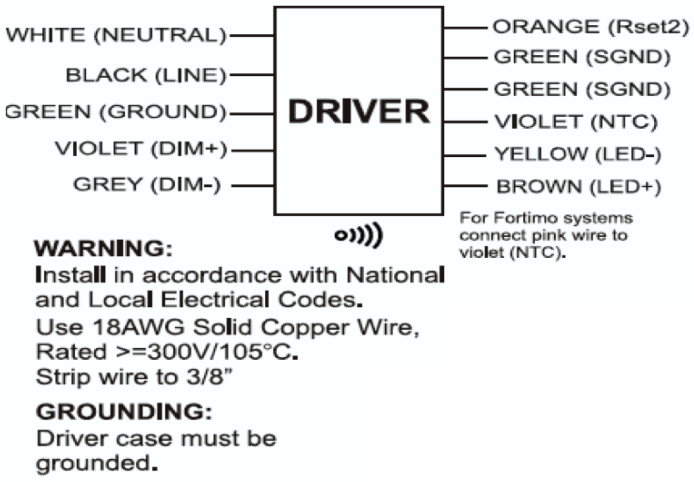
XI050C140V054DSM1
XI050C140V054DSM5

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 120 | 50 | 27 - 54 | 0.1 - 1.4 | 86 | Life-80°C UL-90°C | 0.48 | 58 | <10% | >0.95 | 2.5 | UL damp & dry |
| 277 | | | | 88 | | 0.21 | | <15% | | | |

## Wiring Diagram



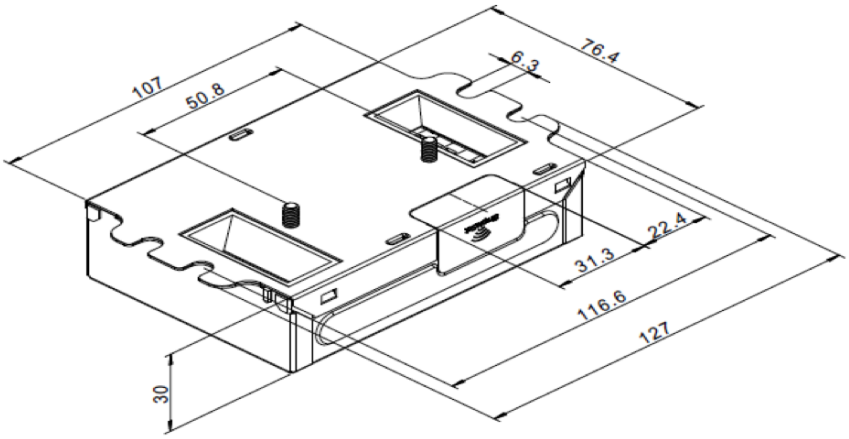

| Dimming | Dimming Range (with specified dimmers) | Minimum Output Current (A) | Other Comments |
|---|---|---|---|
| 0-10V Analog Class 1 and 2 Wiring | 1% ~ 100% (for output current range 0.6-1.4A) | 0.006 | Dimming source current: 150 µA |

Conforms to UL STD 991 for SREC
Class P Tp(90°C)
Class 2 Power Unit Dry & Damp Location
Safety Related Electronic Circuit E321253

# Xitanium
# XI050C140V054DSM1, XI050C140V054DSM5
## 50W 0.1–1.4A 54V 0–10V INT (1% dim) with SimpleSet

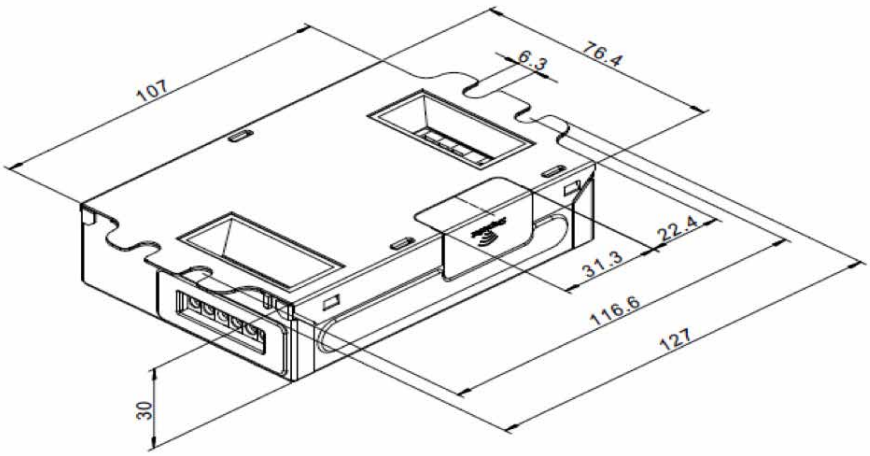
### Enclosure

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)




| | 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) |
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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<br>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<br>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,<br>Dimming curve selection (linear or logarithmic),<br>Adjustable output level,<br>Adjustable output nin,<br>OEM write protection |
| **Environment & Approbation** | |
| **Operating Ambient Temp. Range** | -20°C to +50°C |
| **Max Case Temperature (Tcase)** | 80°C |
| **Agency Approbations** | UL8750, UL991, CSA250.13-14, C22.2 No. 0.8-12 , CSA Class P, ETL Class P, UL 2043 Plenum Rating |
| **Electromagnetic Compliance** | FCC Title 47 Part 15 Class A |
| **Audible Noise** | <24dB Class A |
| **Weight** | 0.90 Lbs / 0.41kgs |

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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### Electrical Specifications

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

### 0-10V Dimming Curve

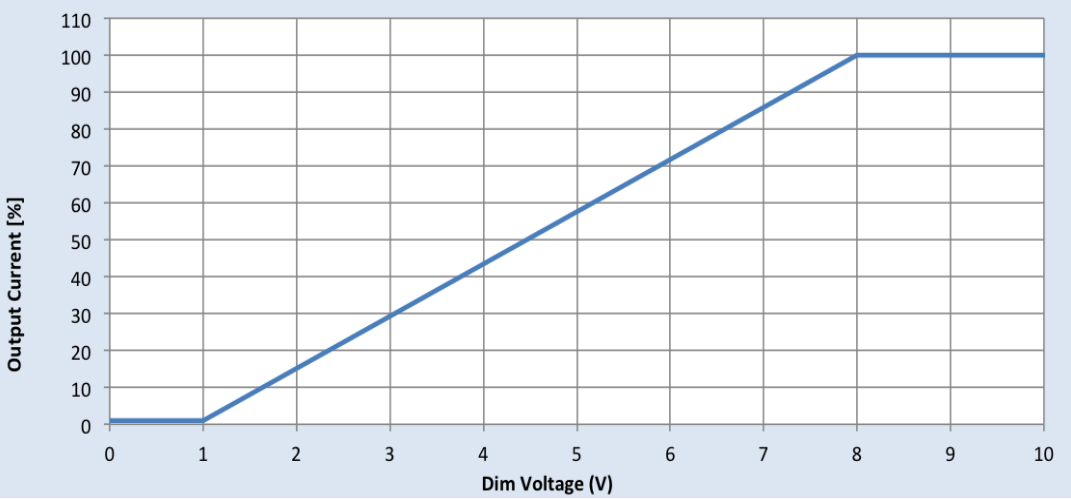
Dimming source current from the driver: 150µA (@ 0<Vdim<8V)

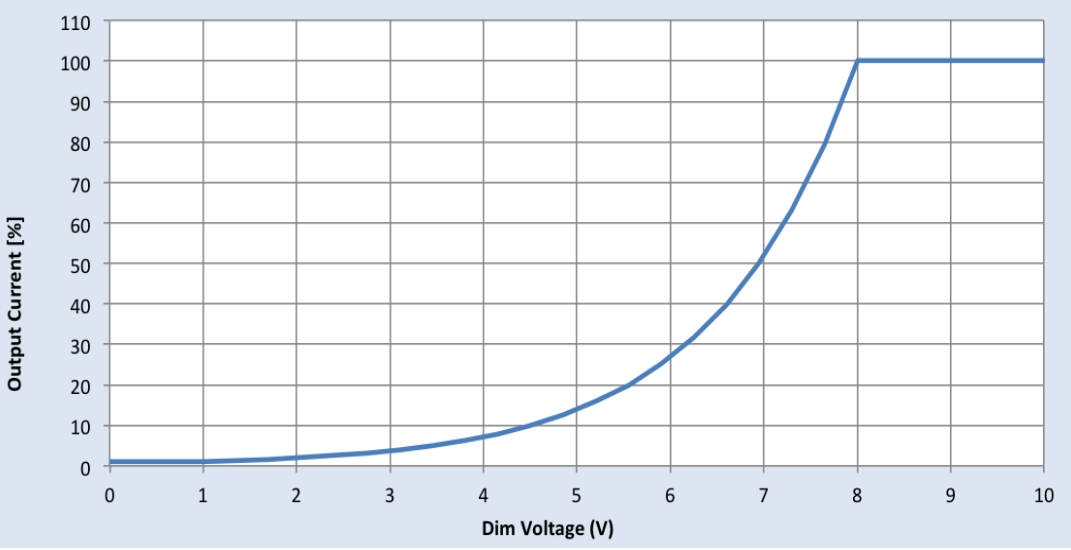
Minimum dim level: 1% of Iout (minimum 200mA)

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 |
| Advance | Sunrise - SR1200ZTUNV |



# Xitanium
# XI050C140V054DSM1, XI050C140V054DSM5

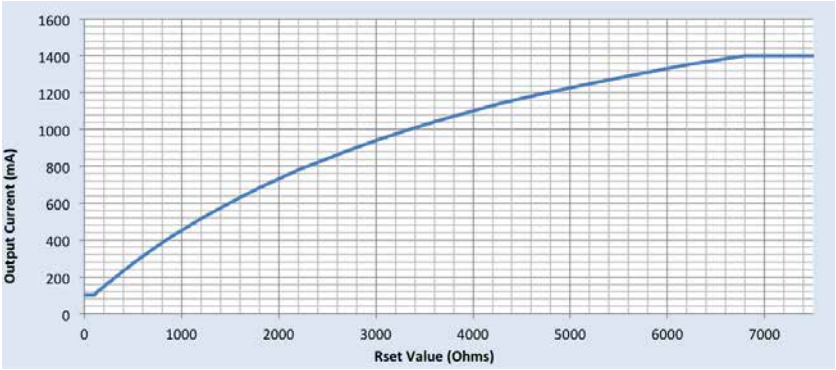
## 50W 0.1–1.4A 54V 0–10V INT (1% dim) with SimpleSet

### Electrical Specifications

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

### 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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### Electrical Specifications

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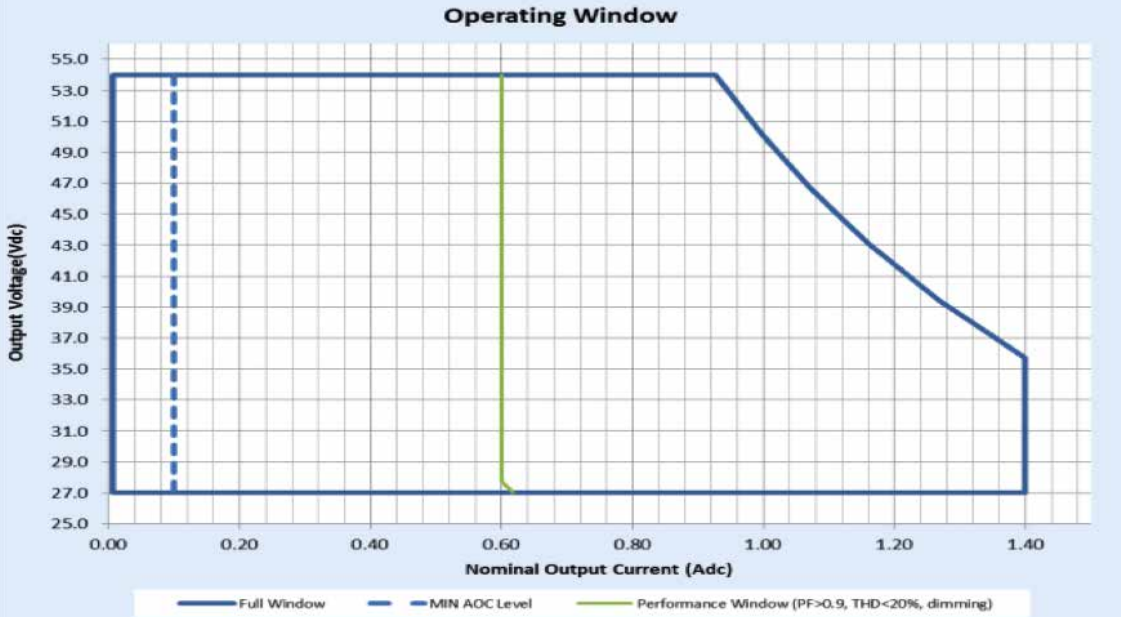
### Driver Output Window




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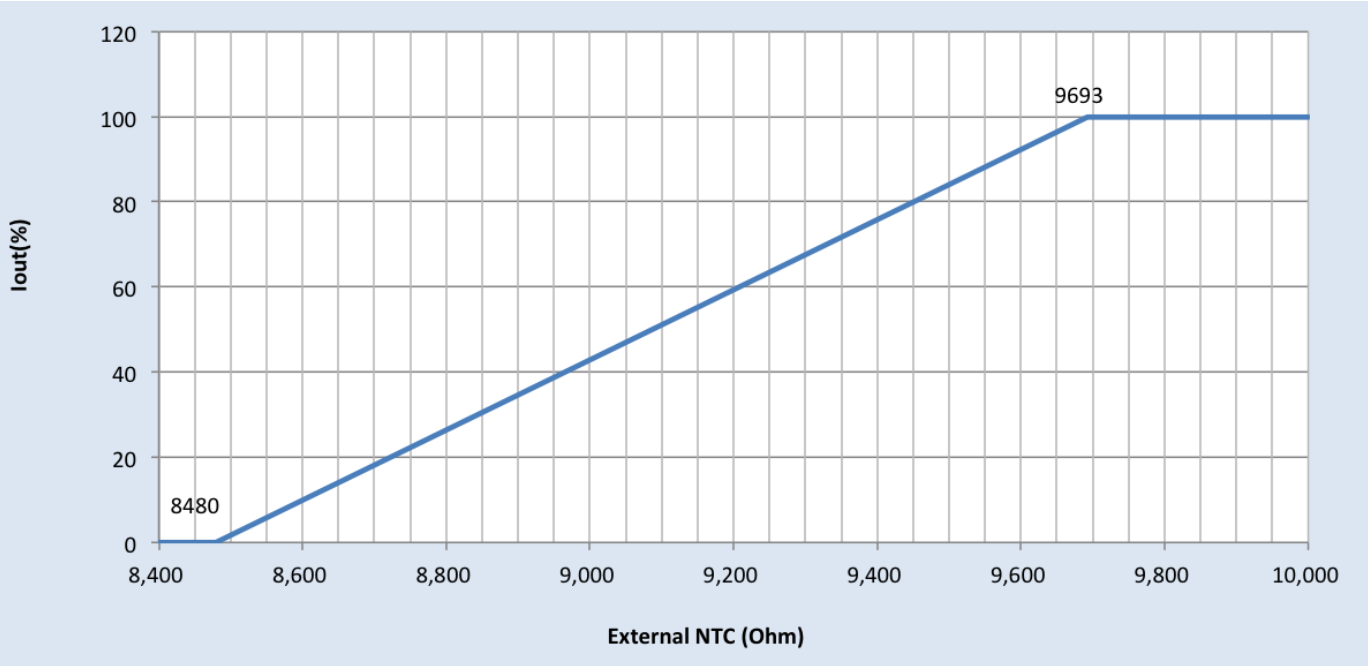
## 50W 0.1–1.4A 54V 0–10V INT (1% dim) with SimpleSet

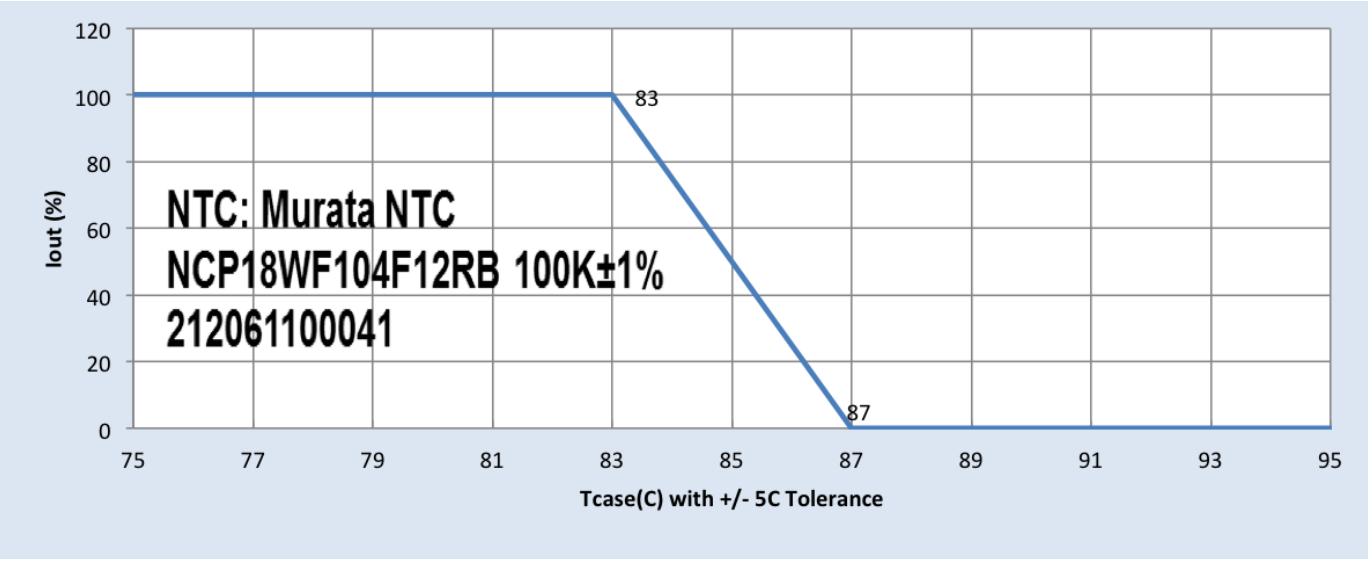
### Electrical Specifications

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

### Output Current Vs. External NTC Resistance




### Output Current Vs. LED Module Temperature using 100kohm NTC

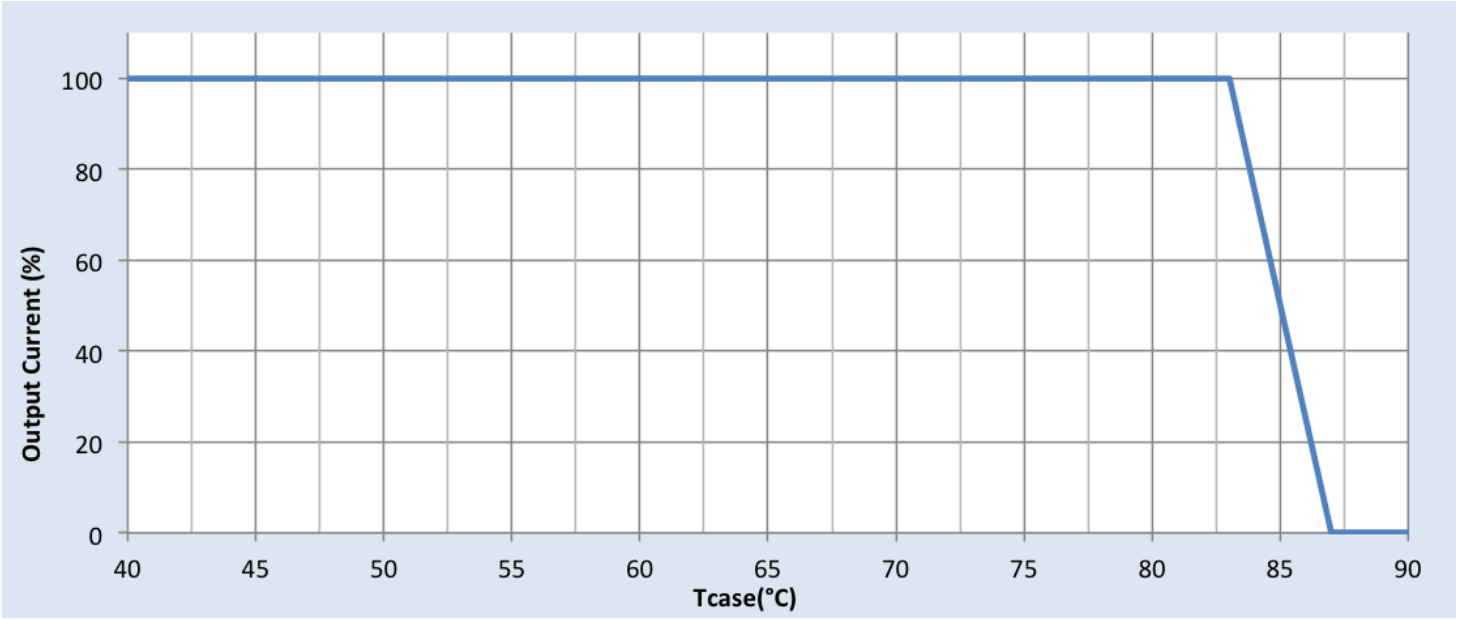


# Xitanium
# XI050C140V054DSM1, XI050C140V054DSM5
## 50W 0.1–1.4A 54V 0–10V INT (1% dim) with SimpleSet

### Electrical Specifications

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

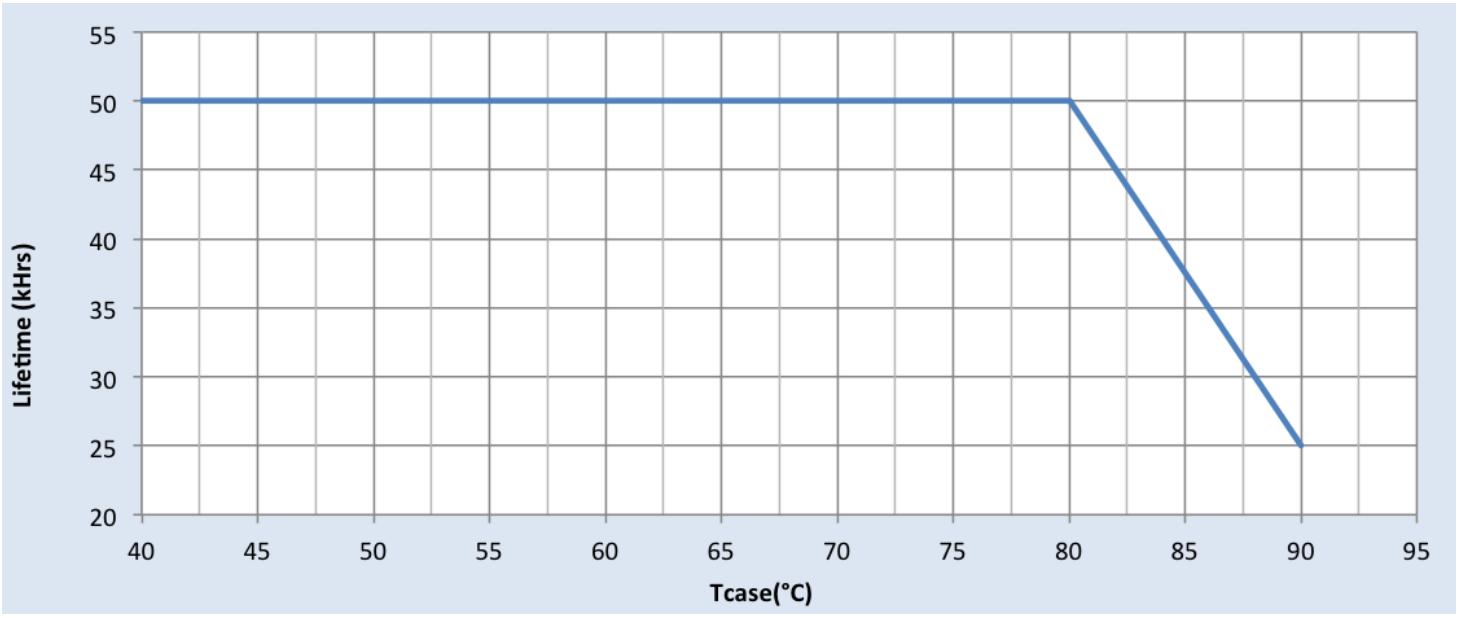
### Output Current Vs. Driver Case Temperature




### Note

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

### Driver Lifetime vs. Driver Case Temperature

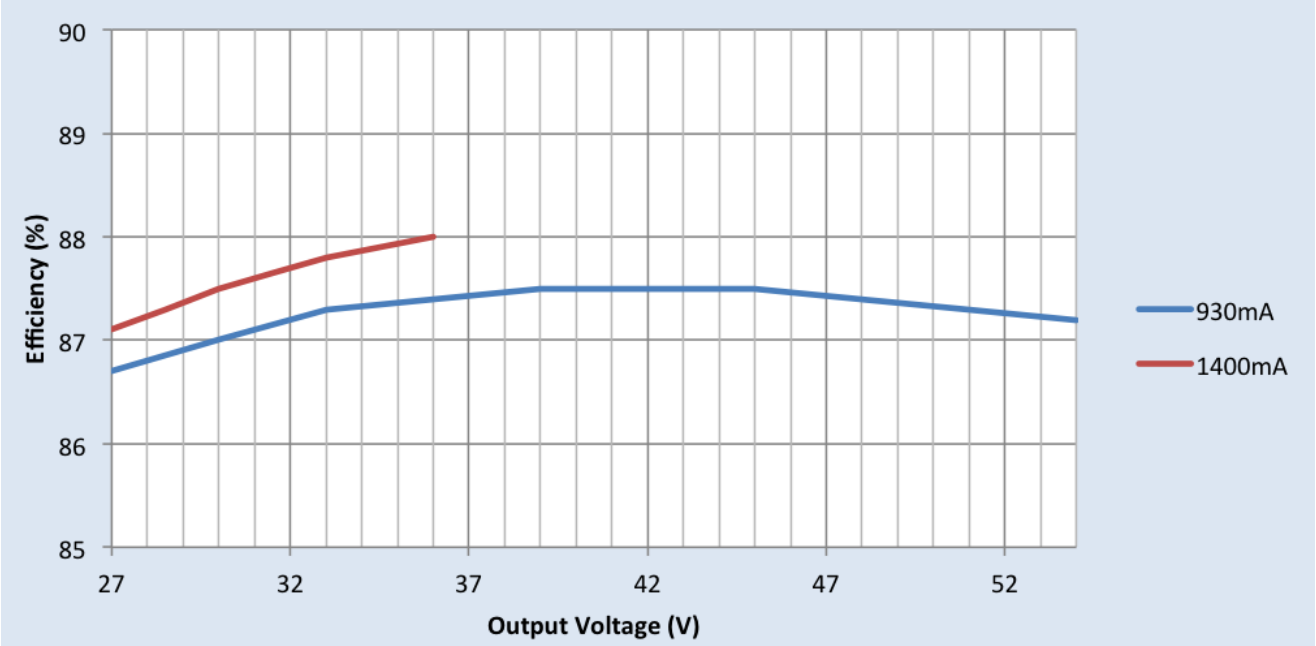


# Xitanium
# XI050C140V054DSM1, XI050C140V054DSM5
## 50W 0.1–1.4A 54V 0–10V INT (1% dim) with SimpleSet

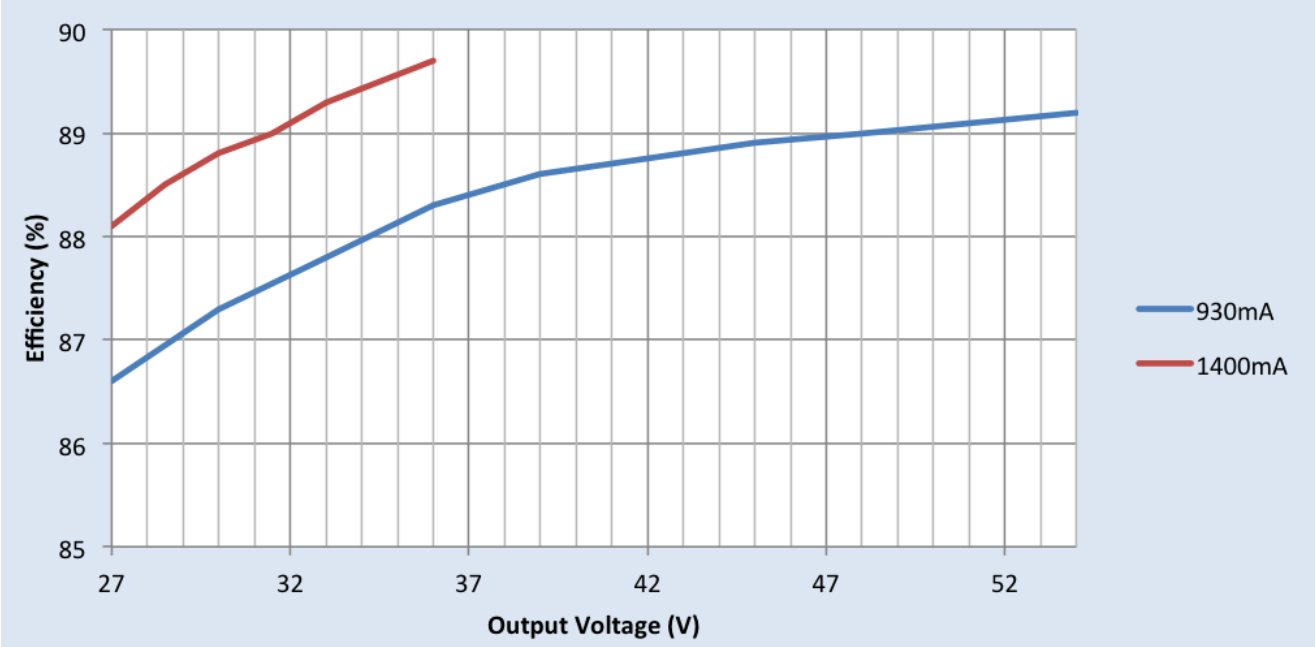
### Performance Characteristics

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

### Efficiency Vs. Output Voltage at 120Vac




### Efficiency Vs. Output Voltage at 277Vac



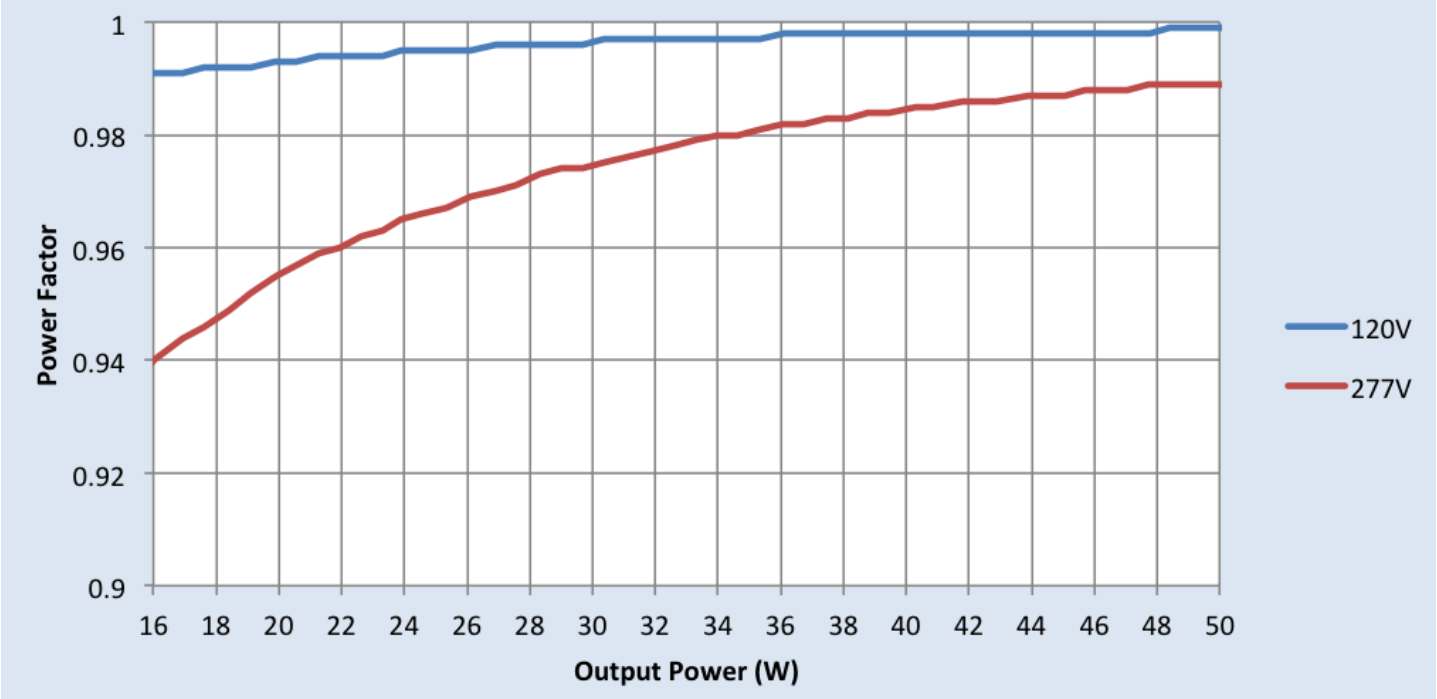
# Xitanium
# XI050C140V054DSM1, XI050C140V054DSM5

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

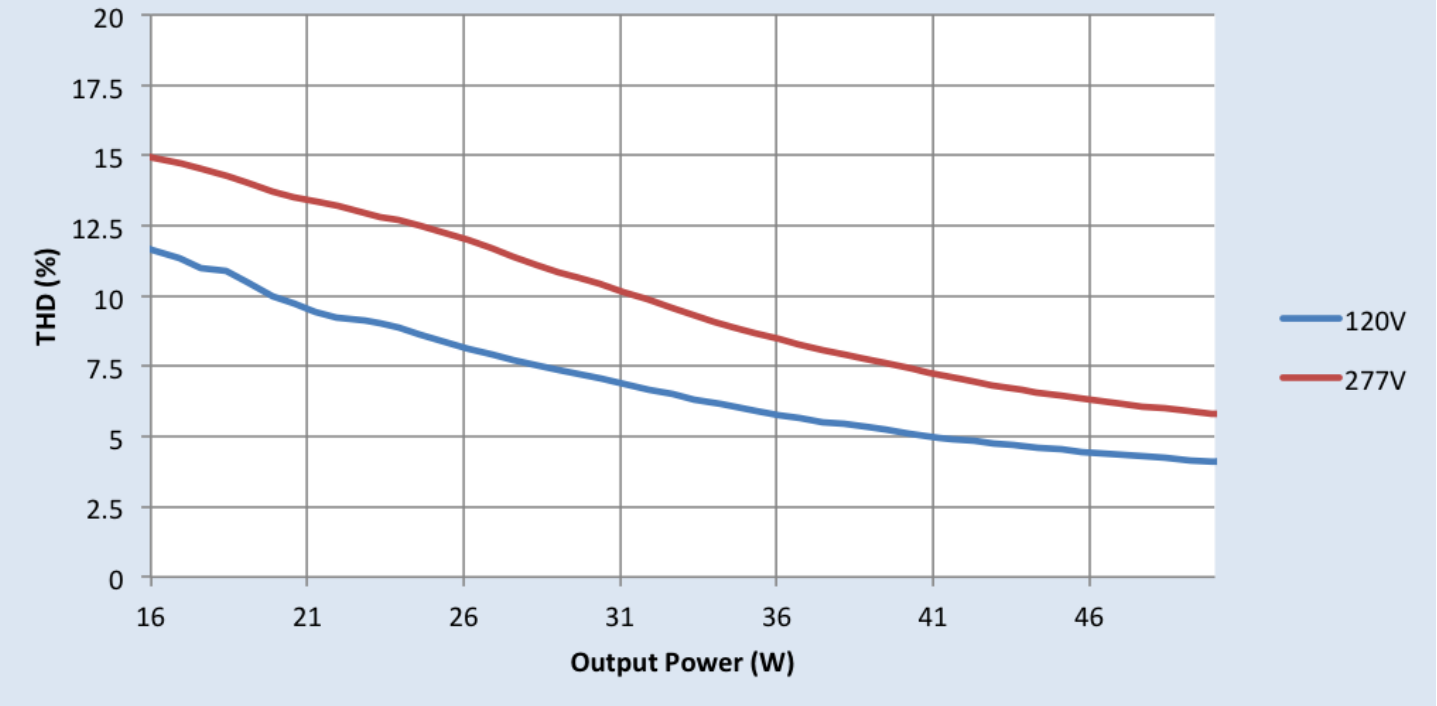
### Performance Characteristics

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



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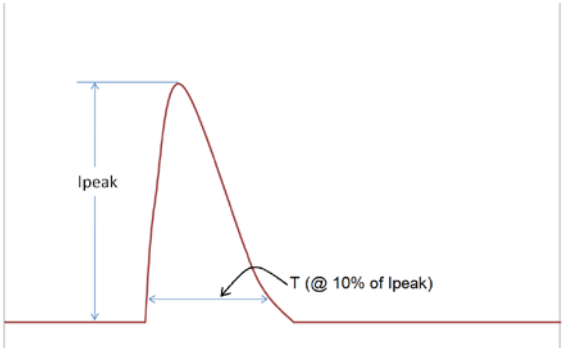
## 50W 0.1–1.4A 54V 0–10V INT (1% dim) with SimpleSet

### 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 |
| Enclosure | 2xU+1kV | 2xU+1kV | 2xU+1kV | NA |

U = Max input voltage





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