ADVANCE
by signify

# LED Driver

## Xitanium SR

XI180C090V285VSF1

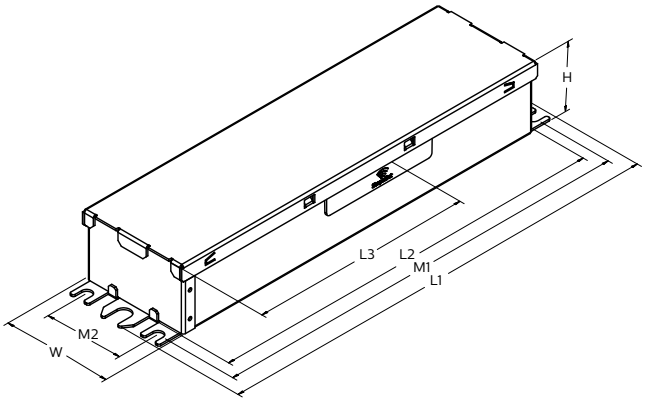
**The Advance Xitanium SR LED driver** can help reduce complexity and cost of light fixtures used in connected lighting systems in outdoor lighting applications. It features a standard digital interface to enable direct connection to SR-certified components. Functionality that ordinarily would require additional auxiliary components is integrated into the driver. The result is a simple, cost-effective light fixture that can enable every fixture to become a wireless node.

## Specifications

| Input Voltage (Vrms) | Output Power (W) | Output Voltage (V) | Output Current (A) | Efficiency@ Max. Load and 70°C Case | Max. Case Temp. (°C) | Input Current (Arms) | Max. Input Power (W)[1] | Inrush Current (Apk/10%-µs) | THD @ Max. Load | Power Factor @ Max. Load | Surge Protection Common/ Diff (KV) | Weight (Lbs/kgs) | Envir. Protection Rating | Dimming | Dimming Range | Min. Output Current (A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 120 | 180 | 100-285 | 0.10-0.9 | 91 | Life - 85°C UL - 90°C | 1.8A | 216 | 66/254 | <15% | >0.95 | 6/6 | 2.1 lbs / 0.95 KGS | UL damp & dry | DALI | 10% ~ 100% | 0.05 |
| 277 | | | | 93 | | 0.76A | | 154/256 | | | | | | | | |

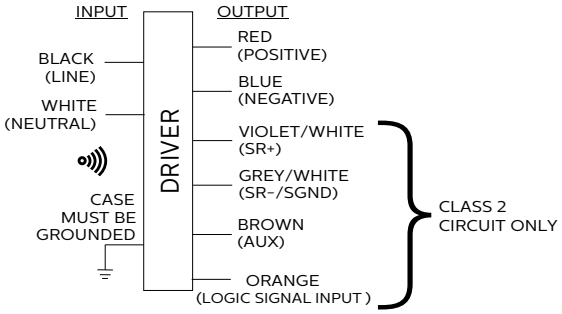
## Enclosure

| | In. (mm) |
|---|---|
| Case Length (L2) | 8.44 (214.4) |
| Case Width (W) | 2.35 (59.8) |
| Case Height (H) | 1.68 (37.6) |
| Mounting Length (M) | 8.91 (226.2) |
| Overall Length (L1) | 9.47 (240.5) |
| Center of SimpleSet Antenna (L3) | 4.70 (119.3) |




## Wiring Diagram

| | Wire Length (mm) |
|---|---|
| Black (Line) | 270 (± 30) |
| White (Neutral) | 270 (± 30) |
| Red (Positive, LED output) | 270 (± 30) |
| Blue (Negative, LED output) | 270 (± 30) |
| Violet/White (Positive, 0-10V) | 270 (± 30) |
| Gray/White (Negative, 0-10V) | 270 (± 30) |
| Brown (Aux) | 270 (± 30) |
| Orange (Logic signal input) | 270 (± 30) |




1. Based on 1W load from SR power supply and 6.2W load from auxiliary power supply.

RoHS COMPLIANT Type HL

Intertek Class P Conforms to UL STD 8750 Certified to CAN/CSA STD C22.2 No. 250.13

cULus LISTED E321253 Class P For Dry and Damp Location

# Xitanium SR XI180C090V285VSF1

## 180W 120–277V 0.9A SR with Auxiliary Supply

### Electrical Specifications

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

### Features

- Compatible with SR-certified devices
- Standard SR digital interface including integral power supply
- Auxiliary power supply for higher power device requirements
- Accurate energy metering
- Logic signal input
- Drive current setting via SimpleSet
- 5-year limited warranty[1]

### Benefits

- Enables interoperability with multiple sensor/network system vendors
- Reduces cost and complexity of outdoor connected lighting systems[2]
- Eliminates need for high-voltage relays to increase system reliability
- 2% metering accuracy meets proposed ANSI standard C136.52
- Can be used with standard motion sensors for local control to complement network control

### Application

- Site & area
- Parking garages
- Floodlights
- Roadway

### Product Data

| | |
|---|---|
| **Ordering Information** | |
| **Order Code** | XI180C090V285VSF1 |
| **Full Product Code** | XI180C090V285VSF1M (Mid-pack, 10pcs/box), (12NC:929001725113) |
| **Full Product Name** | XITANIUM 180W 120-277V 0.9A SR with auxiliary supply |
| **Net Weight Per Piece** | 2.1 lbs / 0.95 kgs |
| **Input Information** | |
| **Inrush Current** | Per NEMA 410 |
| **Line Voltage (AC operation)** | 120-277VAC +/- 10% |
| **Line Current** | 1.75 @ 120V, 0.75A @ 277V |
| **Line Frequency** | 50/60Hz |
| **Surge Protection** | Refer to table |
| **Output Information** | |
| **Output Voltage Range** | 100VDC to 285VDC |
| **Output Current Range** | 0.10A to 0.9A |
| **Output Current Ripple** | <15% at max. Iout (ripple = pk-avg/avg) Low frequency (<120 Hz) content <1% |
| **Output Current Tolerance** | ±5% at max. output current |
| **Open Circuit Voltage** | 370VDC |
| **Protections** | Short Circuit and Open Circuit Protection for LED + and LED- |
| **Features** | |
| **AOC (adjustable output current)** | 0.10A to 0.9A via SimpleSet programming (refer to graphs and notes) |
| **Life** | 50,000 hr nom. @ TC 85°C; 100,000 hr nom. @ TC 75°C (refer to graphs) |
| **Suitable for Outdoor Use?** | Yes |
| **Interfaces** | SimpleSet, SR, Logic Signal Input (LSI), Auxiliary Power Supply |
| **Min. Ambient Temp** | -40°C |
| **Max. Case Temperature (Tcase)** | Life - 85°C; UL - 90°C |
| **Input Over-voltage** | Can survive input over-voltage stress of 320VAC for 48 hours and 350VAC for 2 hours |
| **Earth Leakage Current** | 0.75 mA [max.] |
| **THD Total** | Refer to graph |

1. Advance Xitanium LED drivers are designed and manufactured to engineering standards correlating to an average life expectancy of 50,000 hours of operation at maximum rated case temperature. Minimum 90% survivals based on MTTF modeling.
2. Functionality that ordinarily would require additional auxiliary components is integrated into the driver.

# Xitanium SR XI180C090V285VSF1

## 180W 120–277V 0.9A SR with Auxiliary Supply

### Electrical Specifications

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

### Product Data (continued)

| | |
|---|---|
| **Power Factor** | Refer to graph |
| **Efficiency** | Refer to graph |
| **Power Reporting Accuracy** | ± 2% in performance window and under nominal operating conditions |
| **SR Interface** | |
| **Digital Protocol** | Specifications available to SR-Certified Partners |
| **SR Power Supply** | Specifications available to SR-Certified Partners |
| **Auxiliary Power Supply** | |
| **Power** | 3W continuous, 10.5W peak for 1.2ms |
| **Voltage** | 24V+/-10% |
| **Ripple** | 300mV peak-peak for resistive load |
| **Protection** | Overload and short circuit protected |
| **Last Gasp Energy** | 200mJ typ. |
| **Logic Signal Input (LSI)** | |
| **Dry Contact Input** | Yes |
| **Logic Low** | <3V or open |
| **Logic High** | >7V |
| **Max. Current Draw** | 2mA |
| **Environment & Approbation** | |
| **Agency Approbations** | UL8750, UL1310, UL935, CSA-C22.2 No. 250.13-12, CSA C22.2 No. 223 |
| **Audible Noise** | <24dB Class A |
| **Isolation Between Output and Input** | Refer to table |
| **Isolation of Controls** | Refer to table |
| **EMC (electromagnetic compliance)** | Meets FCC 47 Part 15 Class A |
| **Envir. Protection Rating** | UL Dry & Damp |

# Xitanium SR XI180C090V285VSF1

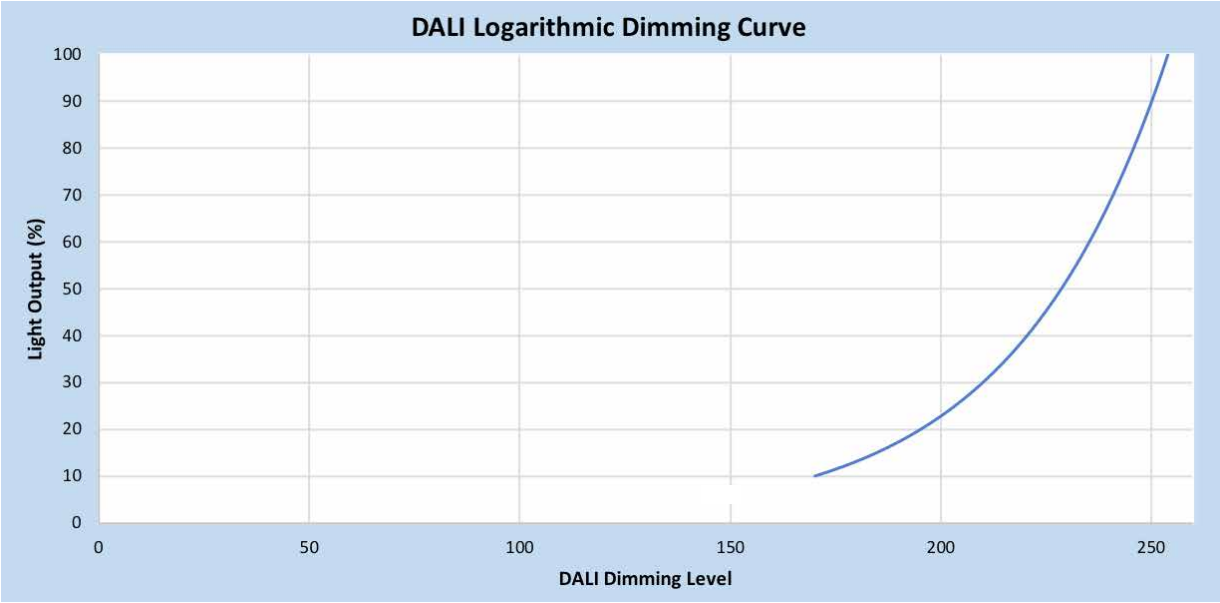
## 180W 120–277V 0.9A SR with Auxiliary Supply

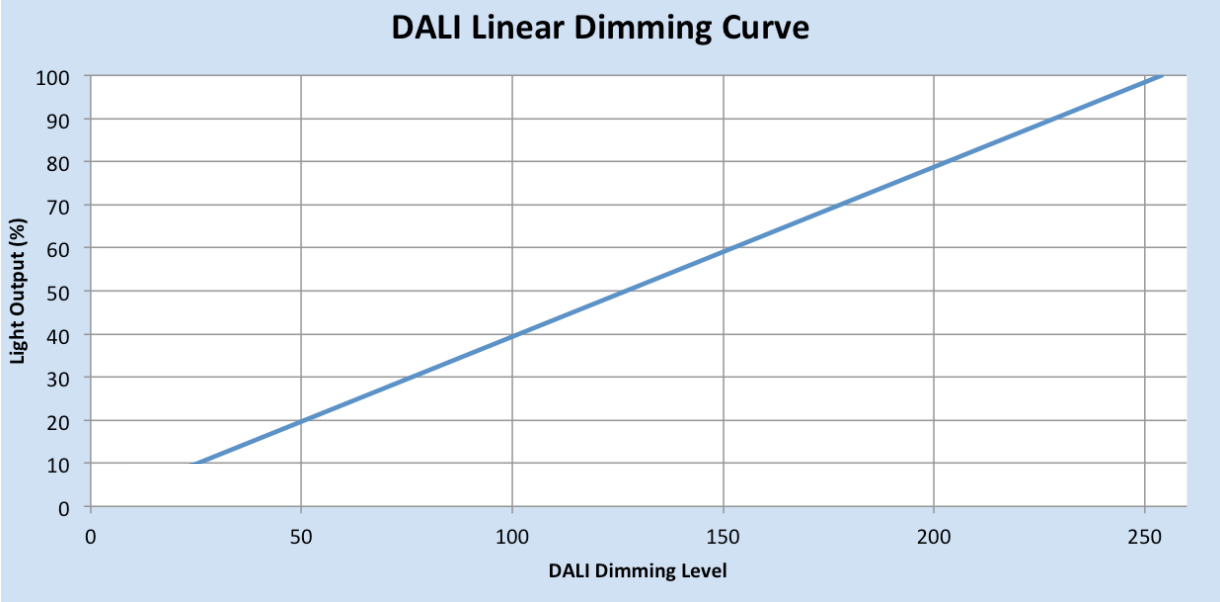
### Electrical Specifications

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

### Dimming Characteristics

SR drivers use a logarithmic dimming curve as default. Dimming is accomplished through the 2-wire DALI connection to the sensor. DALI standard IEC62386_102 Edition 2 defines the logarithmic dimming curve. DALI standard IEC62386_101 Edition 2 defines the linear dimming curve as well as the command for switching between logarithmic and linear curves.



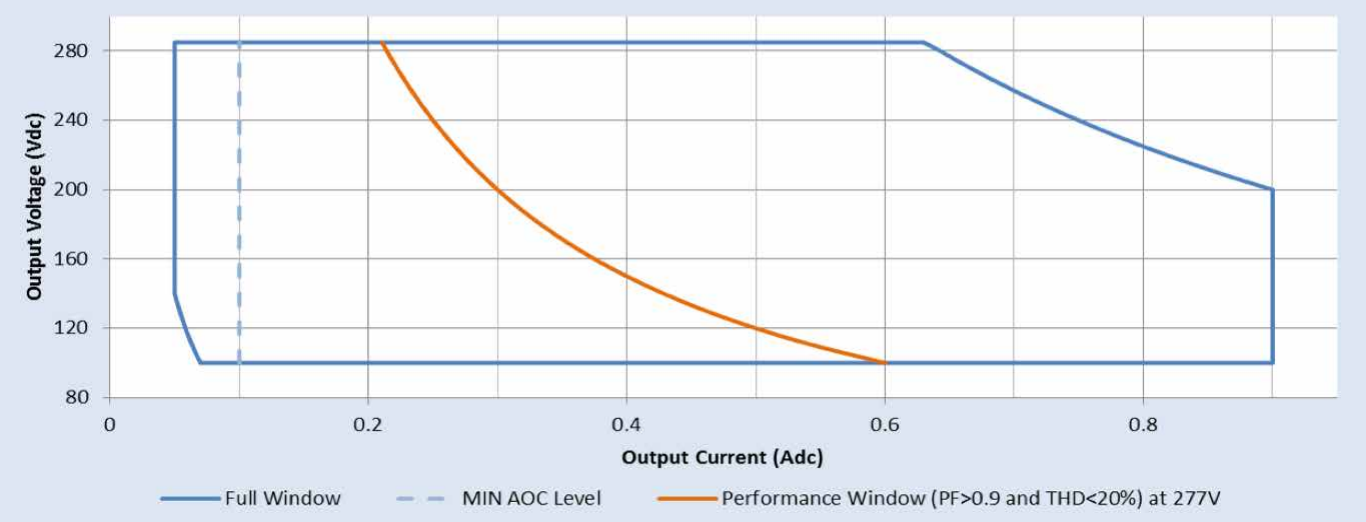



## Electrical Specifications

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

### Operating Window

The driver current cutback feature provides for an increased output voltage with a reduced output current during abnormal LED operation, such as cold weather starting. Output tolerance +/-5%.



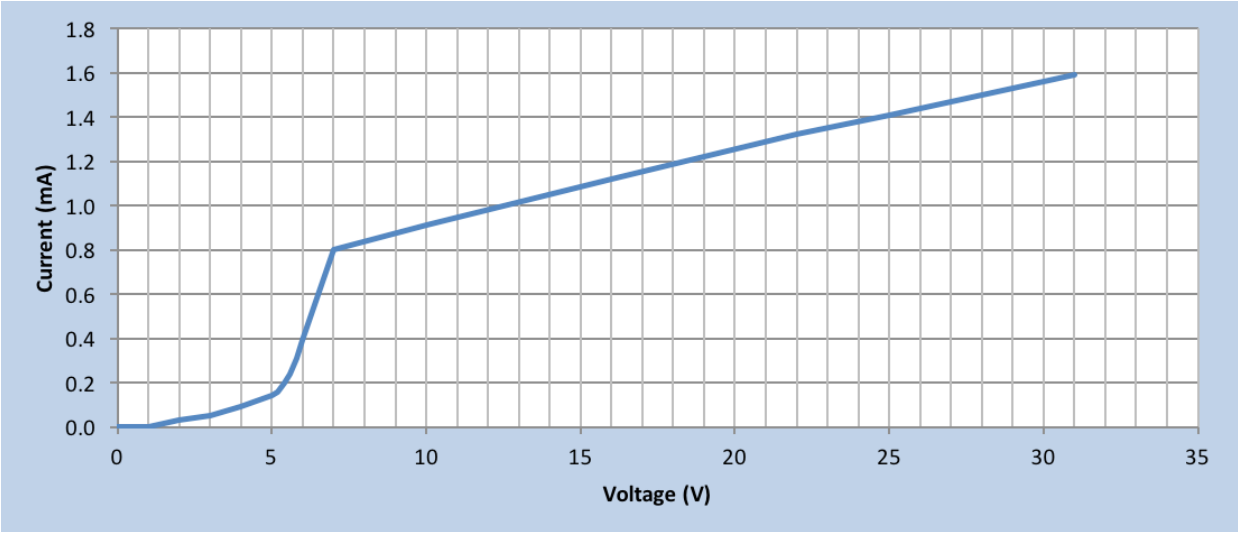

### Notes

1. Factory default output current is 0.7A.
2. To get a 100% to 10% dimming range, the output current setting through AOC should be ≥ 500mA.

## Electrical Specifications

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

### Logic Signal Input (LSI) Characteristics (Typical)



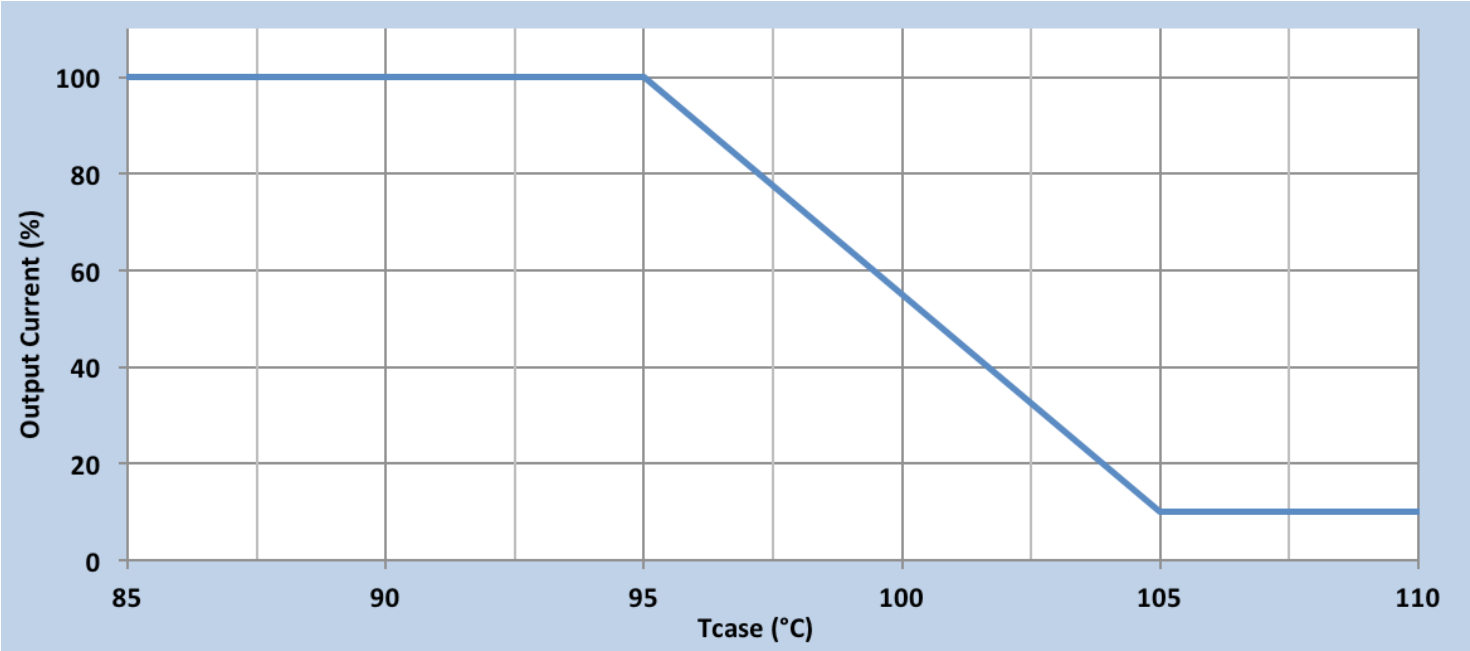
# Xitanium SR XI180C090V285VSF1

## 180W 120–277V 0.9A SR with Auxiliary Supply

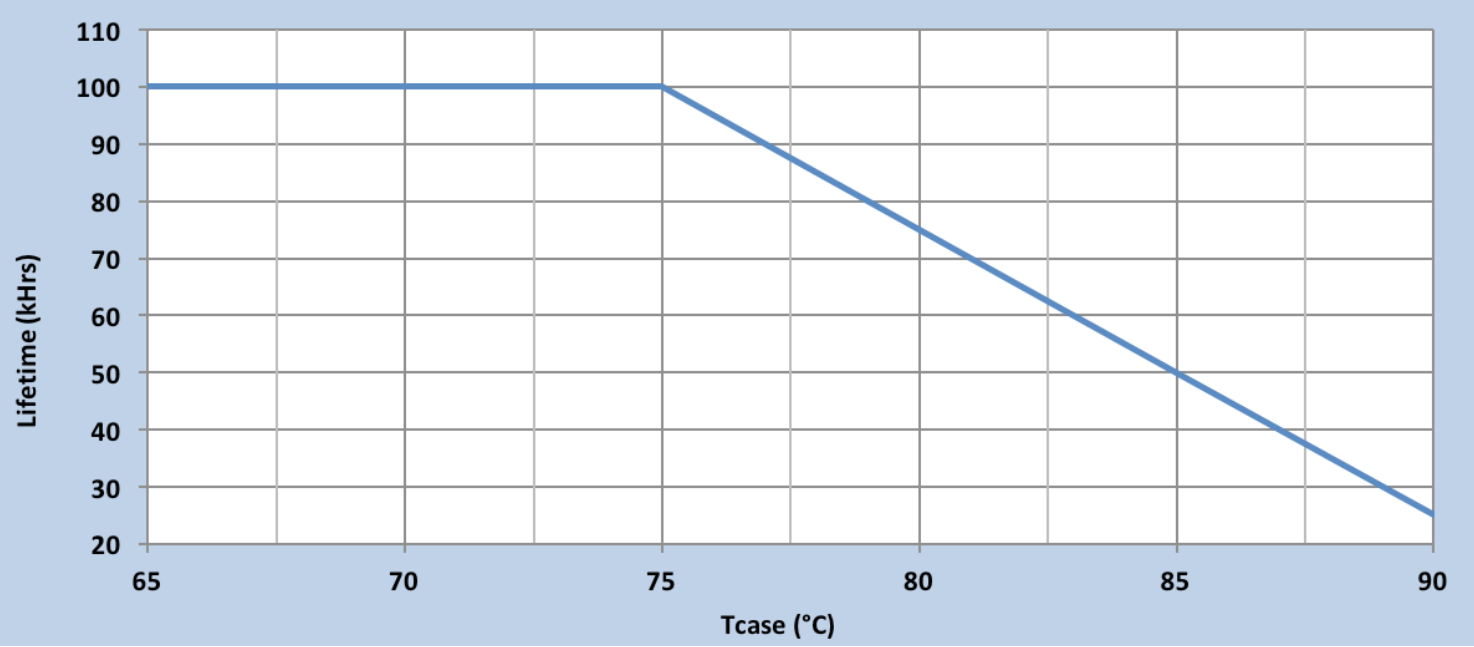
### Electrical Specifications

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

### Output Current Vs. Driver Case Temperature




### Driver Lifetime Vs. Driver Case Temperature



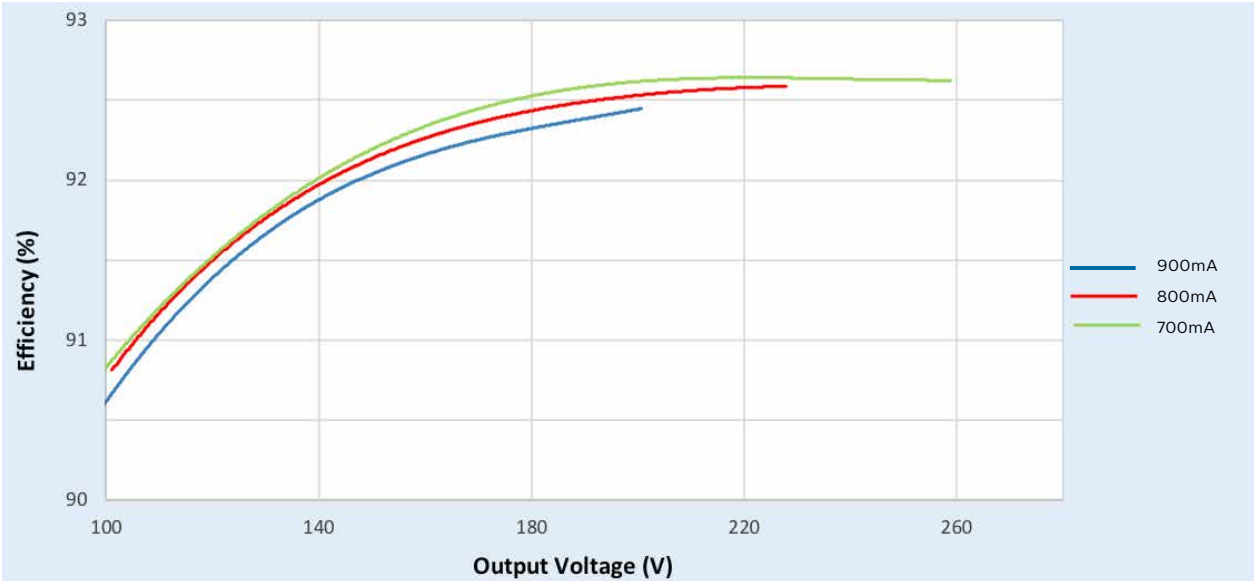
# Xitanium SR XI180C090V285VSF1

## 180W 120–277V 0.9A SR with Auxiliary Supply

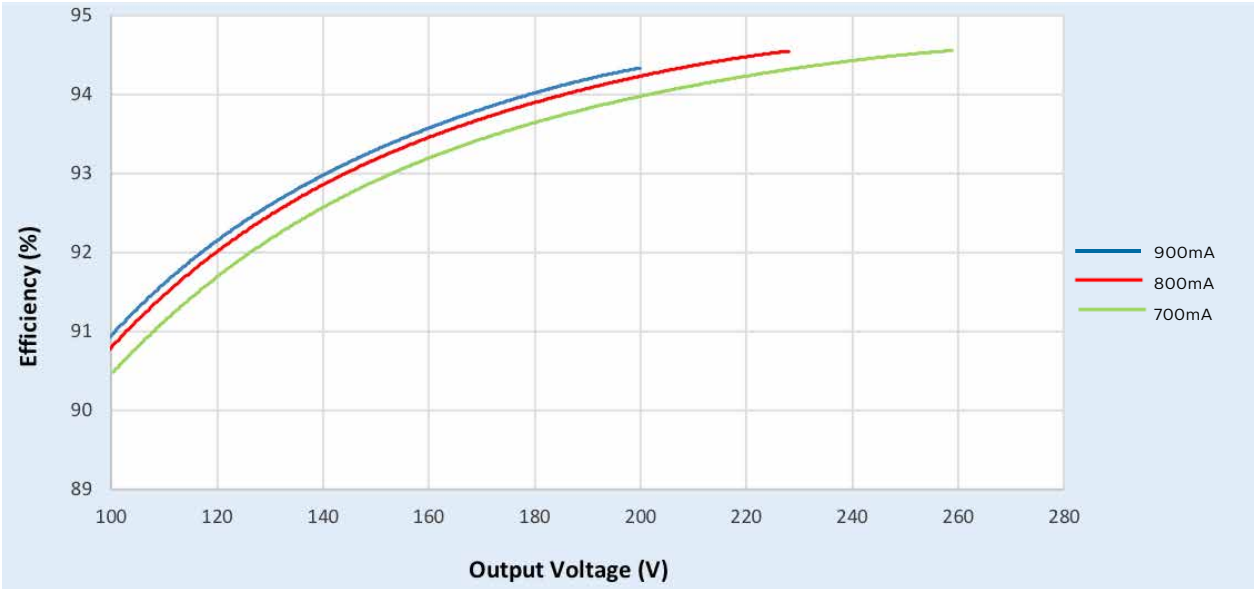
### Performance Characteristics

Based on measurements on a typical sample. The accuracy of the measurements is within the tolerance of the measurement instruments. The graphs are meant to be a guideline and not a specification. Data below at 75°C Tcase.

### Efficiency Vs. Output Voltage @ 120VAC




### Efficiency Vs. Output Voltage @ 277VAC



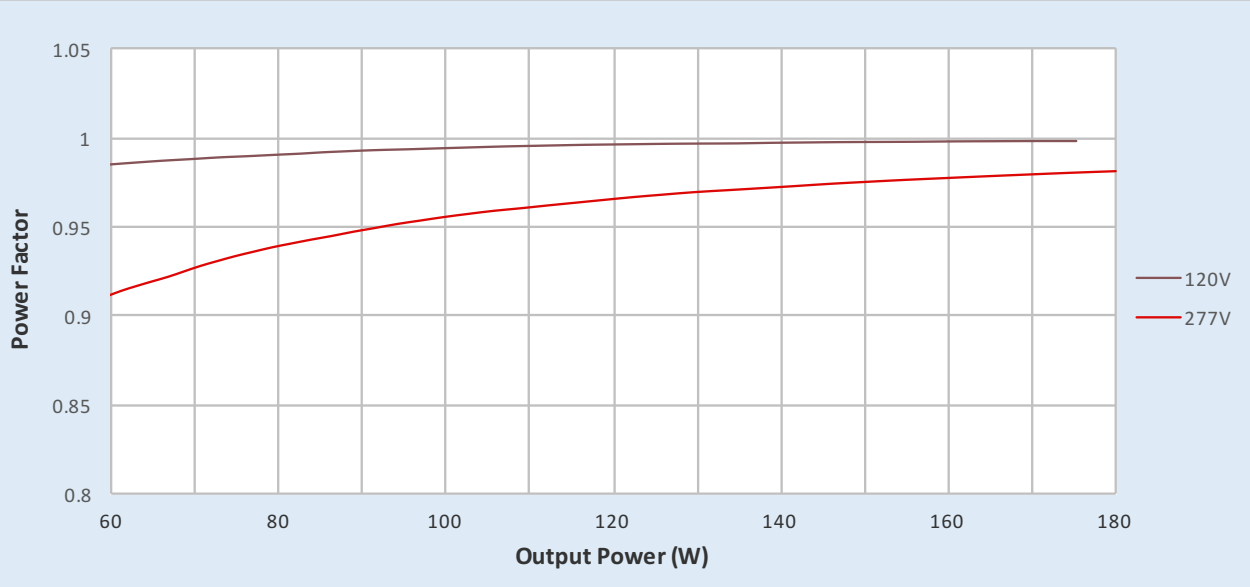
# Xitanium SR XI180C090V285VSF1

## 180W 120–277V 0.9A SR with Auxiliary Supply

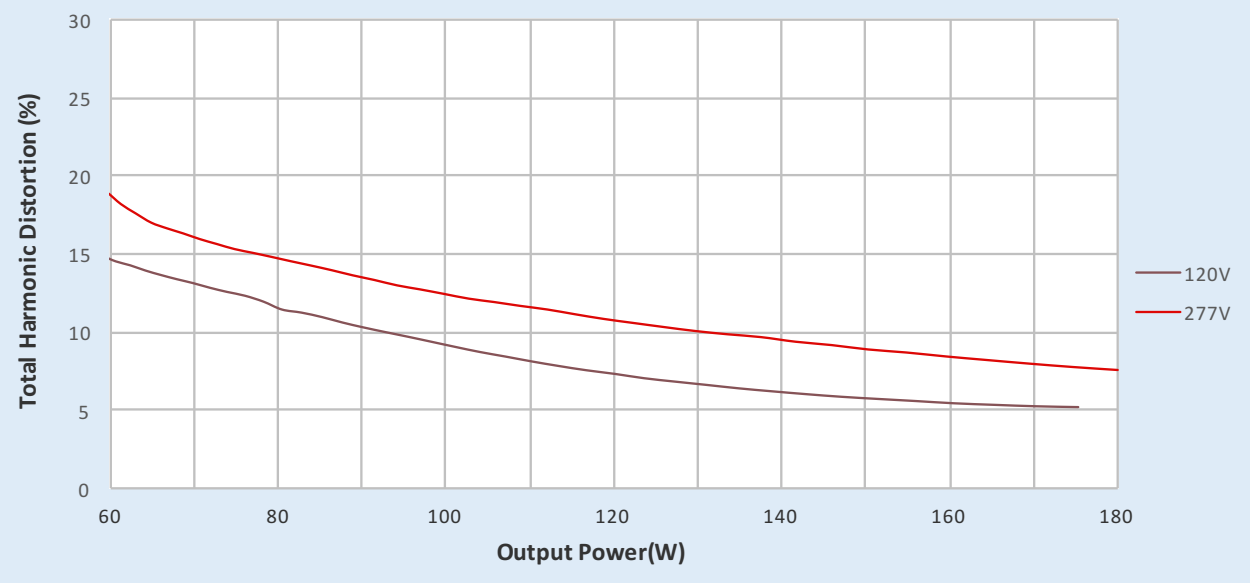
### Performance Characteristics

Based on measurements on a typical sample. The accuracy of the measurements is within the tolerance of the measurement instruments. The graphs are meant to be a guideline and not a specification. Data below at 75°C Tcase.

### Power Factor Vs. Output Power



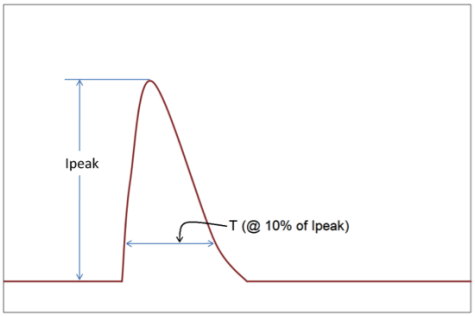

### Total Harmonic Distortion Vs. Output Power



# Xitanium SR XI180C090V285VSF1

## 180W 120–277V 0.9A SR with Auxiliary Supply

### Inrush Current Info




| Vin | Ipeak | T (@ 10% of Ipeak) |
|---|---|---|
| 120 Vac | 66A | 254µs |
| 277 Vac | 154A | 256µs |

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) |
|---|---|---|
| 1.2/50µs Combination Wave (w/t 2Ω) | 6kV | 6kV |

### Isolation

| Isolation | Input Leads | Output Leads | SR Leads (SR+, SR-/SGND, AUX, and LSI), Class 2 Only | Enclosure |
|---|---|---|---|---|
| Input Leads | NA | 2xU+1kV | 2xU+1kV | 2xU+1kV |
| Output Leads | 2xU+1kV | NA | 2xU+1kV | 2xU+1kV |
| SR Leads (SR+, SR-/SGND, AUX, and LSI), Class 2 Only | 2xU+1kV | 2xU+1kV | NA | 2xU+1kV |
| Enclosure | 2xU+1kV | 2xU+1kV | 2xU+1kV | NA |

U = Max. input voltage



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