ADVANCE by signify

# LED Driver

Xitanium

XI085C240V054PST1

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.

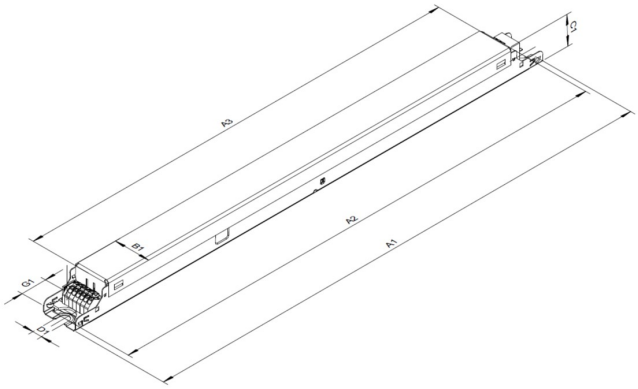
## Specifications

| Input Voltage (Vac) | Output Power (W) | Output Voltage (V) | Output Current (A) | Efficiency @ Max Load | Max Case Temp. (°C) Life/UL | Input Current (A) | Input Power (W) | THD @ Max Load (%) | Power Factor @ Max Load | Surge Protect (Combi Wave, KV) | Dimming | Dimming Range (%) | Min Dimming Current (mA) | Drive Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 120 | 85 | 10-54 | 0.7-2.4 | 87.5 | 85 / 90 | 0.83 | 100 | <10 | >0.95 | 6 | 0-10V | 1-100 | 7 | CC |
| 277 | | | | 89.5 | | 0.36 | 100 | <15 | >0.95 | | | | | |

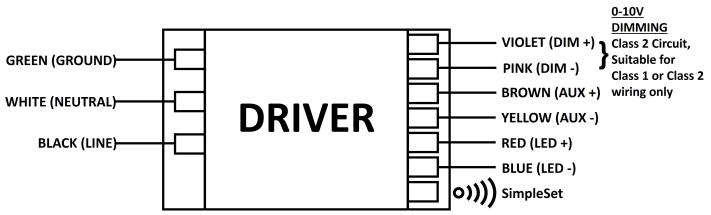
## Enclosure

| Item | In(mm) | Tolerance (mm) |
|---|---|---|
| Overall length (A1) | 16.69(424) | +/-0.5 |
| Mounting Length (A2) | 16.34(415) | +/-0.5 |
| Case Length (A3) | 14.49(368) | +/-0.5 |
| Case Width (B1) | 1.2(30.5) | +/-0.5 |
| Case Height (C1) | 1.02(25.8) | +/-1 |
| Mounting Hole Diameter (D1) | 0.31(7.9) | +/-0.3 |
| Center of SimpleSet antenna (G1) | 0.76(19.4) | +/-3 |

## Mechanical Diagram



## Wiring Diagram




- **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 >= 90 °C.**
- **Strip Wire 3/8".**
- **For Class 2 Wiring, Use 20 AWG-16 AWG.**
- **Driver case must be grounded.**

RoHS COMPLIANT NOM c UL us LISTED

# XI085C240V054PST1

### Features

- 50,000+ hour lifetime
- SimpleSet programming
- Large operating window
- 1% minimum dim level
- Constant Current Reduction (CCR) Dimming

### 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
- Office, Healthcare & Education
- Warehouse & Industrial Applications
- Highbay & Midbay Applications

## Logistical data

| Specification item | Value |
|---|---|
| Product name | XI085C240V054PST1 |
| EOC | XI085C240V054PST1 |
| Logistic code 12NC | 9290 027 56613 |
| Product code | XI085C240V054PST1M |
| Pieces per box | 18 |
| Weight | 495 gram |

All the specifications are typical and at $T_{ambient}$ = 25°C unless specified otherwise

## Electrical input data

| Specification item | Value | Value | Unit | Condition |
|---|---|---|---|---|
| Rated input voltage range | 108...305 | | $V_{ac}$ | Performance range |
| Rated input voltage | 120 | 277 | $V_{ac}$ | |
| Rated input frequency | 50...60 | 50...60 | Hz | Performance range |
| Rated input current | 0.83 | 0.36 | A | @ rated output power @ rated input voltage |
| Rated input power | 100.0 | 100.0 | W | @ rated output power @ rated input voltage |
| Efficiency | 87.5 | 89.5 | % | @ rated output power @ rated input voltage |

## Electrical output data

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Output voltage | 10...54 | $V_{dc}$ | Class 2 Output |
| Output voltage max. | 60 | V | Open Circuit Voltage |
| Output current | 700...2400 | mA | |
| Output current min programmable | 700 | mA | |
| Min output current | 7 | mA | |
| Output current tolerance ± | 5 | % | within performance window |
| Output current ripple LF | ≤ 15 | % | @ max Iout |
| Output current ripple LF | ≤ 4 | % | @ frequency range 60Hz-3KHz |
| Output $P_{st}^{LM}$ | ≤ 1.0 | | Flicker in compliance per NEMA 77 |
| Output SVM | ≤ 1.0 | | Flicker in compliance per NEMA 77 |
| Output power | 0.1...85.0 | W | |
| Minimum performance output power | 35 | W | Power factor > 0.9 and THD < 20% |

## Control interfaces

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Control method | 0-10V | | |
| Dimming range | 1...100 | % | Default range |
| Dimming Source Current | 0.15 | mA | 1<Vdim<8V |
| Maximum Dimming Voltage | 12 | V | Open circuit |
| Dimming Leakage Current | 0.005 | mA | Max number of driver in parallel, refer to Design-in Guide |

## Isolation
U = Max. input voltage

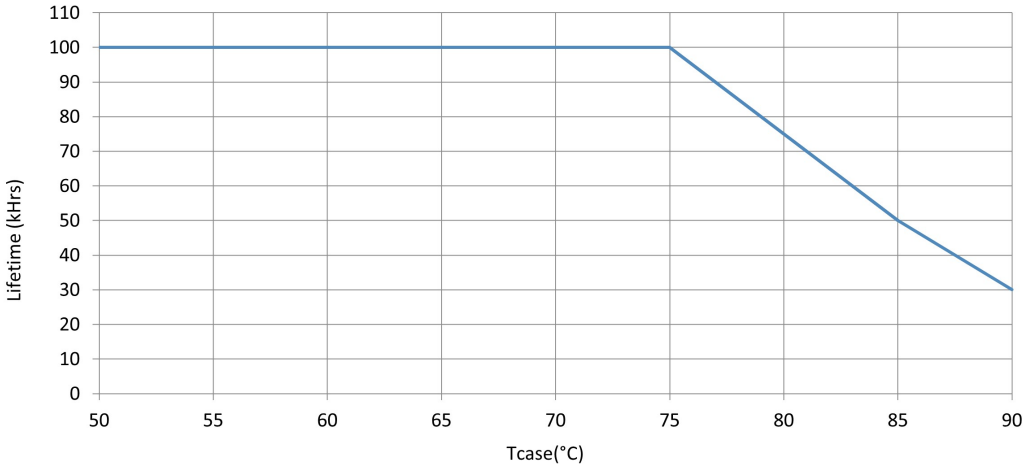
| Isolation per UL-8750 | Input | Output | 0-10V | Enclosure |
|---|---|---|---|---|
| Input | - | 2U + 1kVac | 2U + 1kVac | 2U + 1kVac |
| Output | 2U + 1kVac | - | 2U + 1kVac | 500Vac |
| 0-10V | 2U + 1kVac | 2U + 1kVac | - | 2U + 1kVac |
| Enclosure | 2U + 1kVac | 500Vac | 2U + 1kVac | - |

## Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Ambient temperature | -40...+55 | °C | Higher ambient temperature allowed as long as Tcase-max is not exceeded |
| Tcase-UL | 90 | °C | Max. temperature measured at $T_{case}$-point |
| Tcase-life | 85 | °C | C10 = 50000 hours measured at $T_c$-point |

## Lifetime

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Driver lifetime | 50,000 | hours | Measured temperature at Tcase is Tcase-life |




Maximum failures = 10%

## Programmable features

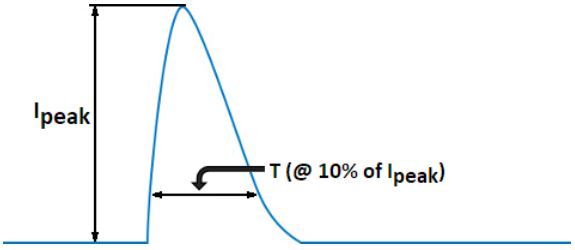
| Specification item | Available | Default setting | Condition |
|---|---|---|---|
| Set Adjustable Output Current (AOC) | NFC, SimpleSet | 1400 mA | |
| Driver Temperature Limit (DTL) | Yes | | |
| Adjustable Light Output (ALO) | Yes | | |
| Constant Light Output (CLO) | Yes | | |
| 0-10V | Yes | | |
| Min Dim Level (%) | Yes | | |
| Dim to off | Yes | | |
| Dimming curve selection | Linear or logarithmic | linear | |
| End Of Life indicator (EOL) | Yes | | |
| OEM Write Protection (OWP) | Yes | | |

## Non-programmable features

| Specification item | Value | | Condition |
|---|---|---|---|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Overtemperature protection | Yes | | Automatic recovering |
| +24V Auxiliary Power Supply | Yes | | |

## Inrush current

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Inrush current | 11.2 | A | Input voltage 120V |
| Inrush current | 29.4 | A | Input voltage 277V |
| Inrush peak width | 35.4 | µs | Input voltage 120V, measured at 10% height |
| Inrush peak width | 35.8 | µs | Input voltage 277V, measured at 10% height |




## Surge immunity

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Mains surge immunity (diff. mode) | 6 | kV | ANSI Surge Type 1.2/50uS Combi Wave (w/t 2ohm) |
| Mains surge immunity (comm. mode) | 6 | kV | ANSI Surge Type 1.2/50uS Combi Wave (w/t 2ohm) |

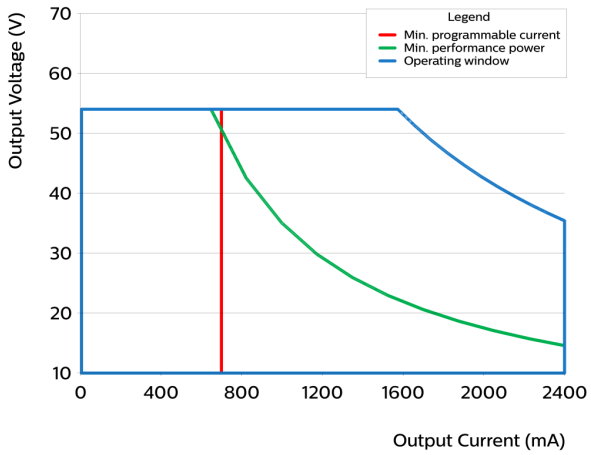
## Approbation

| Specification item | Value |
|---|---|
| Approval Marks / Agency Approbations | NOM / RoHS / UL Class P / UL Listed US & Can |
| EMI standards | FCC Title 47 Part 15; Class A |
| Environmental protection rating | UL damp & dry |
| Audible Noise | <24dB Class A |

# XI085C240V054PST1

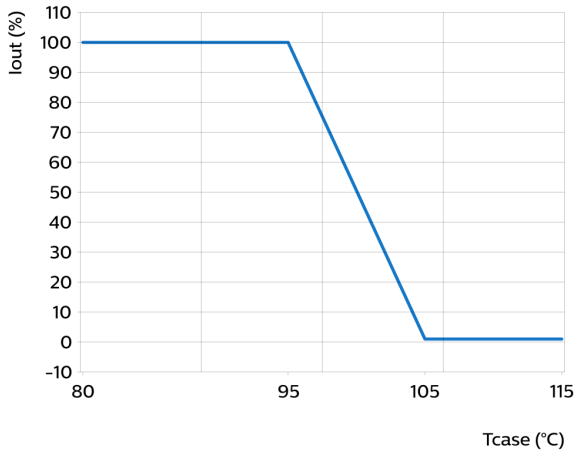
## Graphs

### Operating window



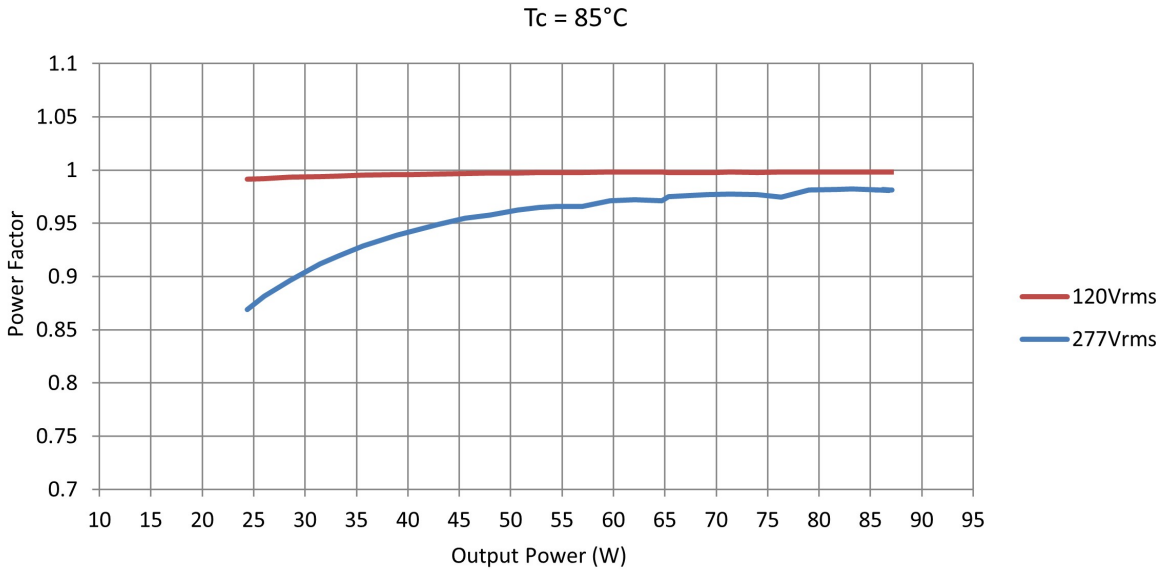

- Factory default output current is 1.4A.
- To get a 100% to 1% dimming range, the output current setting through AOC should be ≥ 0.7A.
- Factory default minimum dimming is 1%. This can be adjusted between 1% and 100% using Advance MultiOne.

### Over Temperature Protection

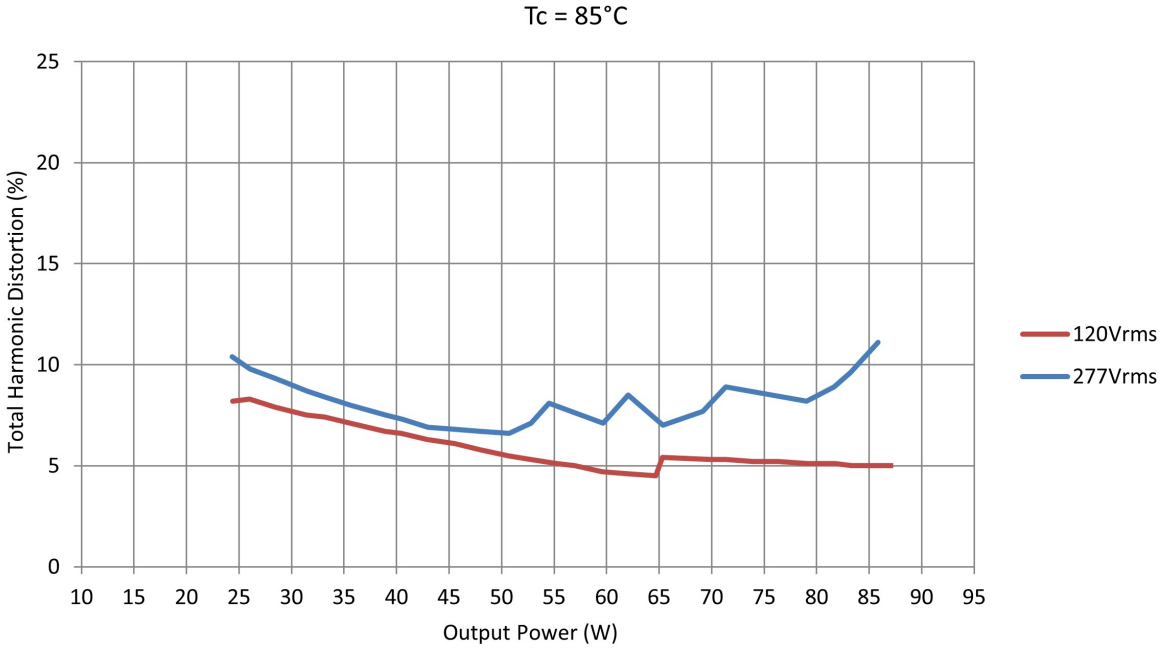



Adjustable via DTL with MultiOne Programming

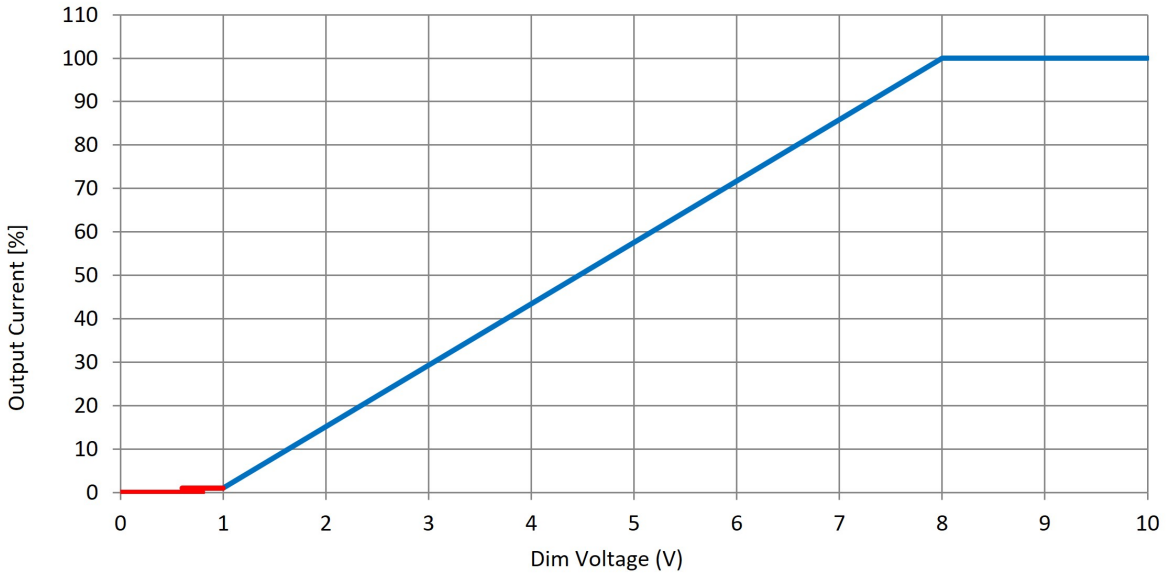
### Power factor versus output power

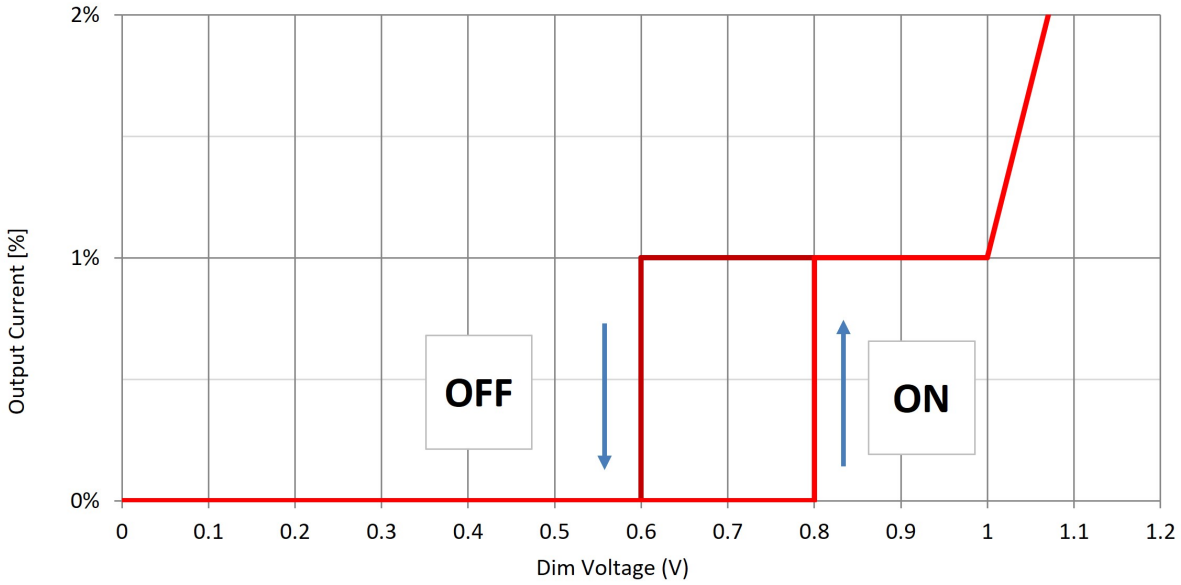



### THD versus output power

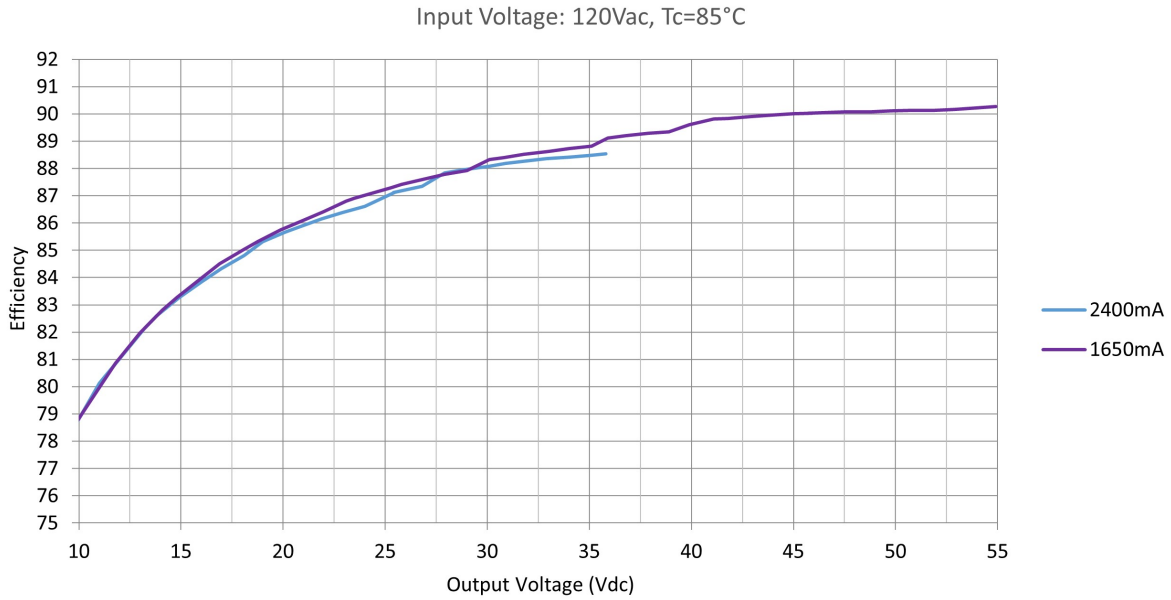


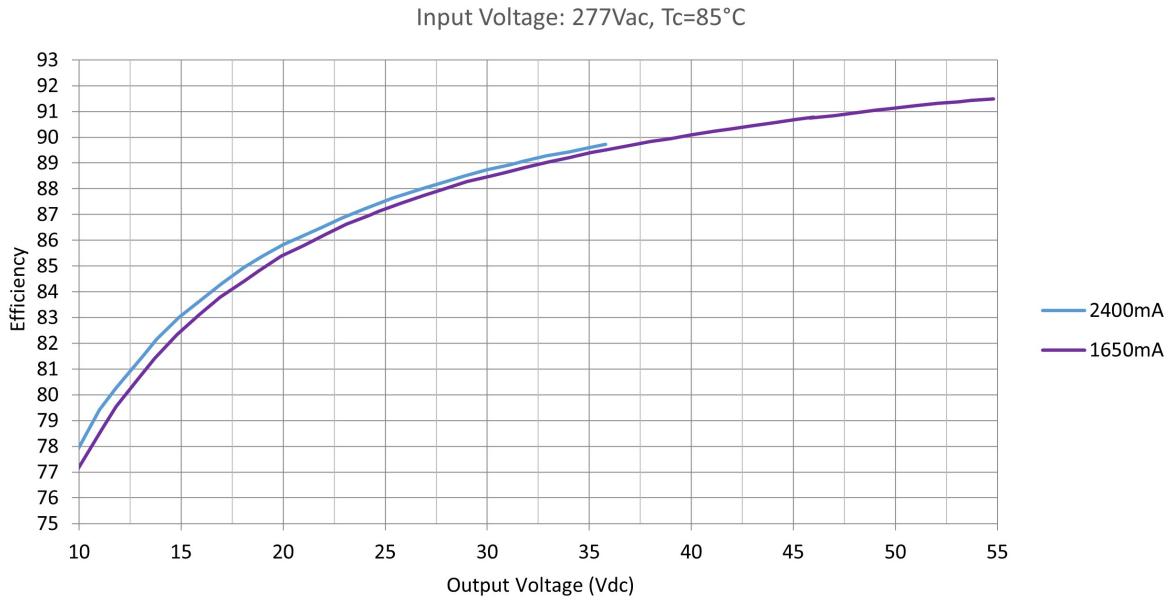
**I_out as function of 0-10V interface**



**Efficiency as function of $V_{out}$**



### Approved Dimmer List

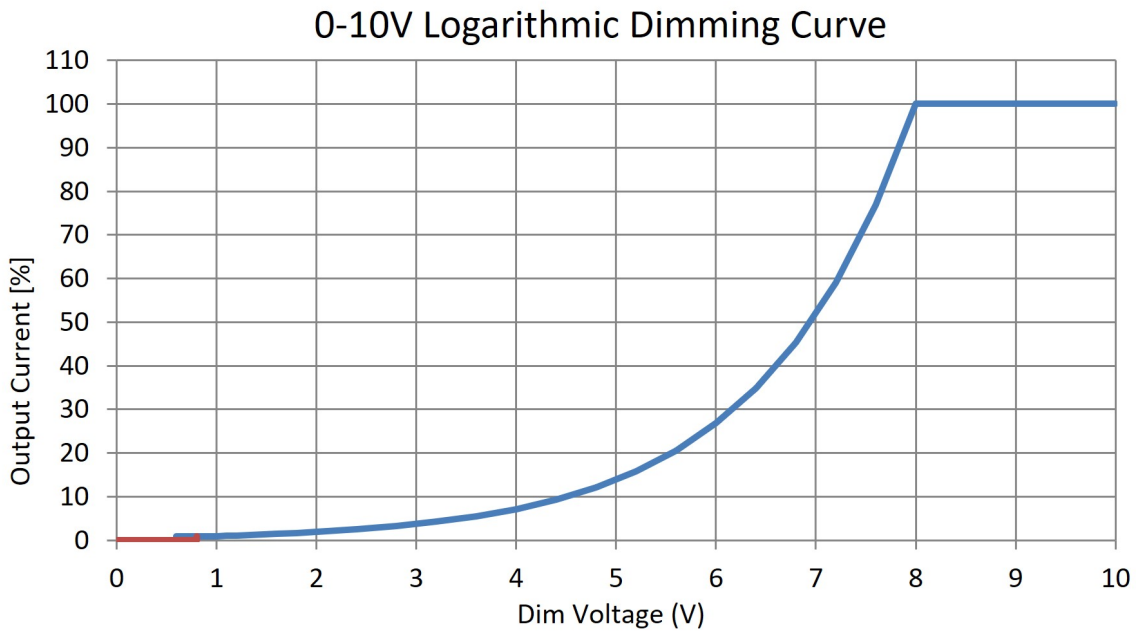
| Manufacturer | Manufacturer Part Number |
|---|---|
| Lutron | Visit www.lutron.com/ advance for a list of dimmers (Mark VII) that will work with this driver |
| Leviton | IllumaTech IP7 series |
| Philips | Sunrise - SR1200ZTUNV |

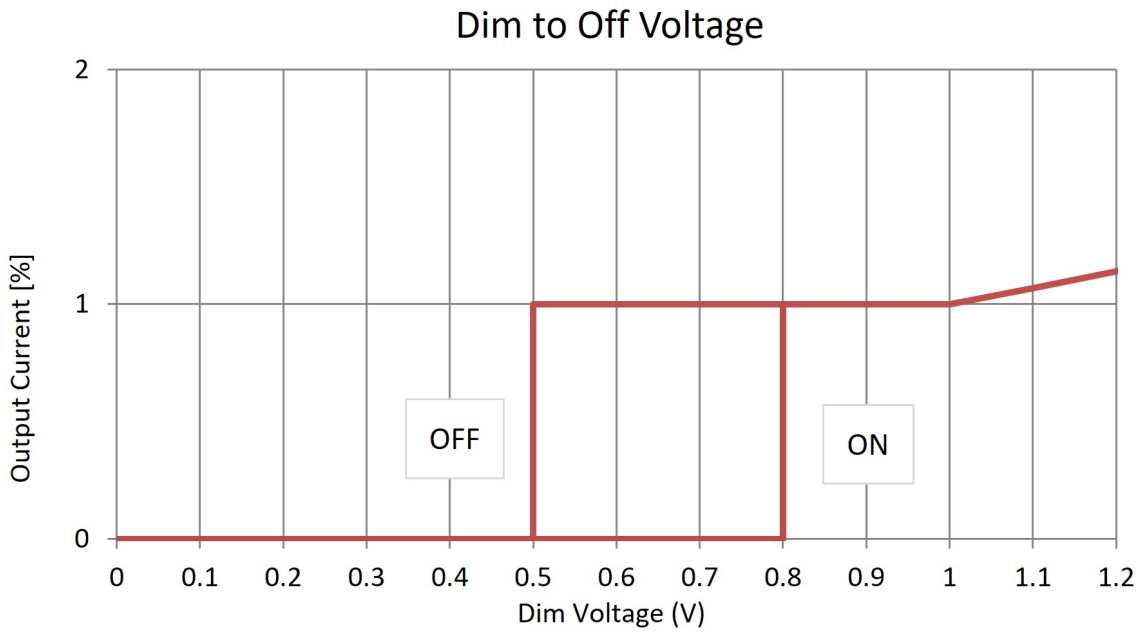
### 0.5V Dim to Off (factory default)

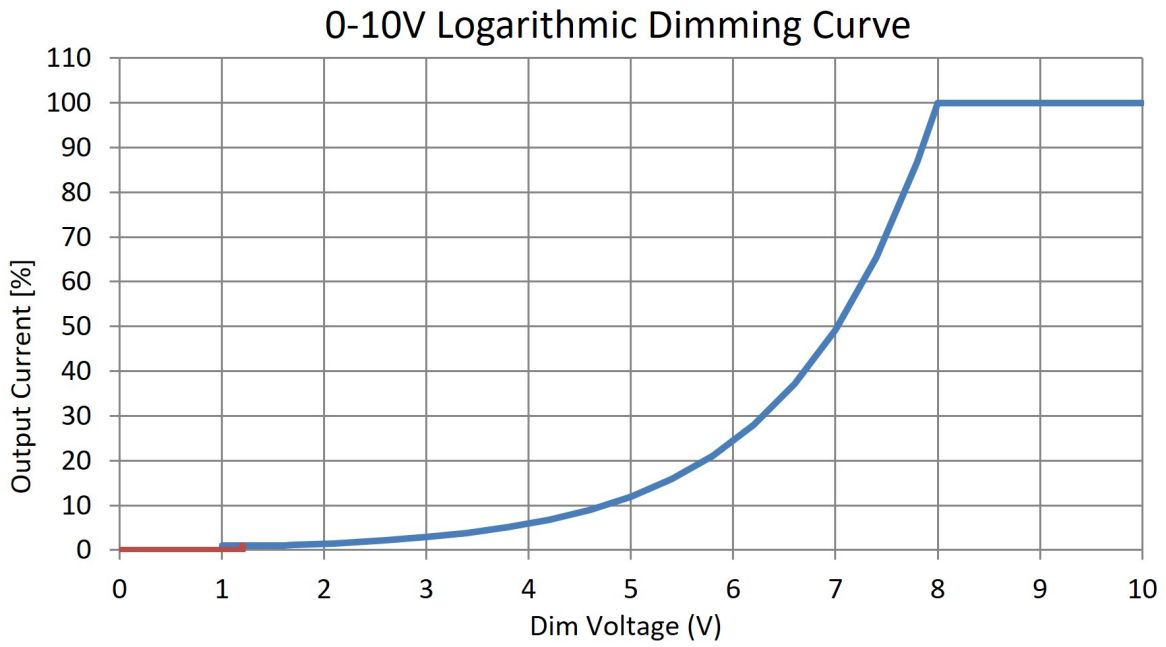
| Symbol | Parameter | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Von | Turn on threshold | 0.7 | 0.8 | 0.9 | V |
| Voff | Turn off threshold | 0.4 | 0.5 | 0.6 | V |
| Ton | Turn on time | | | 250 | mS |
| Toff | Turn off time | | | 1000 | mS |

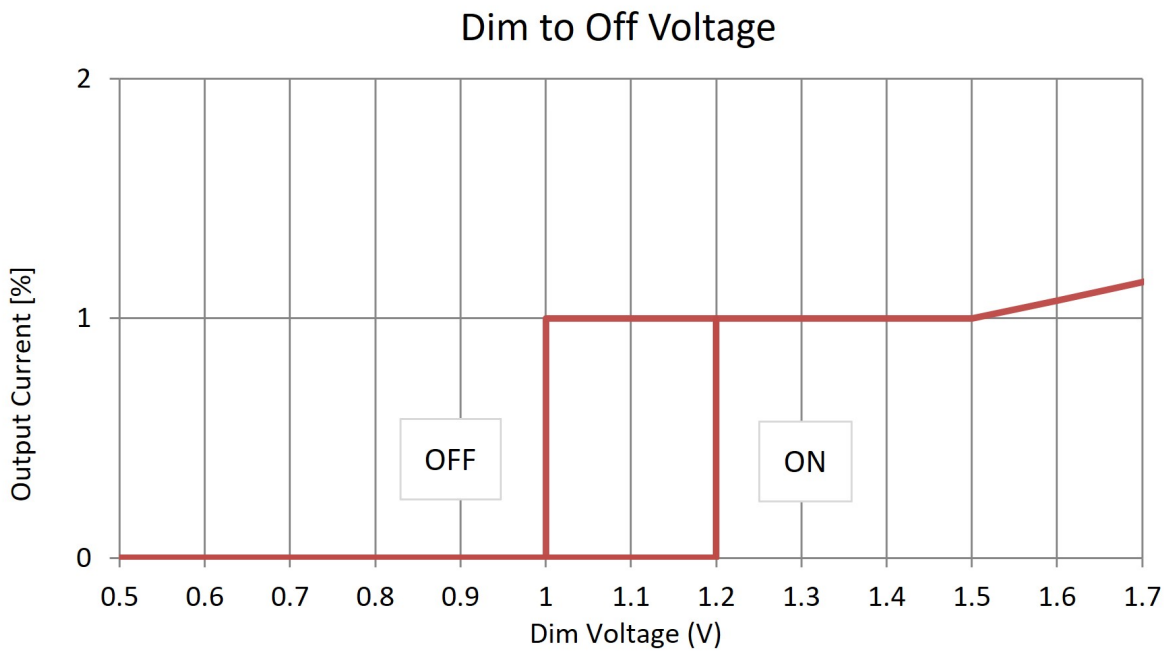
### 12V/24V Auxiliary Power Supply

| Symbol | Parameter | Condition | Min | Typical | Max | Unit |
|---|---|---|---|---|---|---|
| Vaux | Aux Power supply Nominal output voltage (programmable) | Steady state and during pulse current | 10.8 | 12 | 13.2 | V |
| | | | 21.6 | 24 | 26.4 | |
| Iaux | Steady state Average output current | 12V | 0 | | 100 | mA |
| | | 24V | 0 | | 50 | |


0-10V Logarithmic Dimming Curve
Output Current [%]
110
100
90
80
70
60
50
40
30
20
10
0
0
1
2
3
4
5
6
7
8
9
10
Dim Voltage (V)


Dim to Off Voltage
Output Current [%]
2
1
0
OFF
ON
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2
Dim Voltage (V)



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