ADVANCE by signify

LED Driver

Xitanium

XI020C050V048BPT1



The Advance Xitanium Basic Programming Driver offers an optimal balance between performance and ease of use to provide an LED solution for indoor lighting applications. Key features include an adjustable output current.1% min. dim levels and High efficiency design. Programmable features are supported by SimpleSet wireless tools and MultiOne software. Standardized Mechanicals and enhanced thermal performance allow easy transitions between product families.

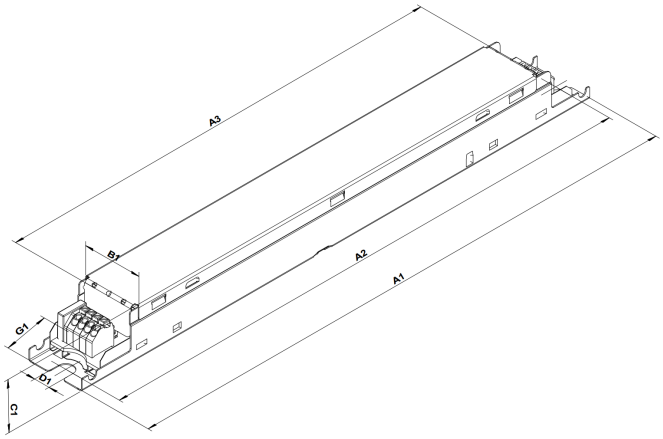
Specifications

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	20	20-48	0.1-0.5	84.5	75 / 85	0.21	24.9	<15	>0.9	2.5	0-10V	1-100	2.5	CC
277				85.0		0.09	24.9	<15	>0.9					

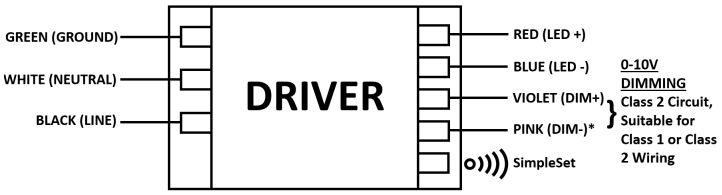
Enclosure

Item	In(mm)	Tolerance (mm)
Overall length (A1)	11.02(280)	+/-0.5
Mounting Length (A2)	10.63(270)	+/-0.5
Case Length (A3)	8.81(223.8)	+/-0.5
Case Width (B1)	1.16(29.4)	+/-0.5
Case Height (C1)	1(25.4)	+/-1
Mounting Hole Diameter (D1)	0.31(8)	+/-0.3
Center of SimpleSet antenna (G1)	0.76(19.2)	+/-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.**

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Features

- High efficiency (>86%)
- SimpleSet programmable
- 1% min. dim level, 0-10V Dimming
- UL Class P

Benefits

- Allows basic programmability for setting discrete output current levels
- Design flexibility to meet DLC requirements
- Low dimming to cover all major linear applications

Application

- Indoor Linear applications such as troffers and pendants
- Office
- Education
- Healthcare
- Retail
- Hospitality

Logistical data

Specification item	Value
Product name	XI020C050V048BPT1
EOC	XI020C050V048BPT1
Logistic code 12NC	9290 027 35113
Product code	XI020C050V048BPT1M
Pieces per box	18
Weight	190 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	0.21	0.09	A	@ rated output power @ rated input voltage
Rated input power	24.9	24.9	W	@ rated output power @ rated input voltage
Efficiency	84.5	85.0	%	@ rated output power @ rated input voltage

Electrical output data

Specification item	Value	Unit	Condition
Output voltage	20...48	V_{dc}	Class 2 Output
Output voltage max.	60	V	Open Circuit Voltage
Output current	100...500	mA	
Output current min programmable	100	mA	
Min output current	2.5	mA	
Output current tolerance ±	5	%	within performance window
Output current ripple LF	≤ 15	%	@ max Iout
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...20.0	W	
Minimum performance output power	10	W	Power factor > 0.9 and THD < 20%

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Control interfaces

Specification item	Value	Unit	Condition
Control method	0-10V		
Dimming range	1...100	%	Default range
Dimming Source Current	0.25	mA	
Maximum Dimming Voltage	12	V	
Dimming Leakage Current	0.018	mA	Max number of driver in parallel, refer to Design-in Guide

Isolation

U = Max. input voltage

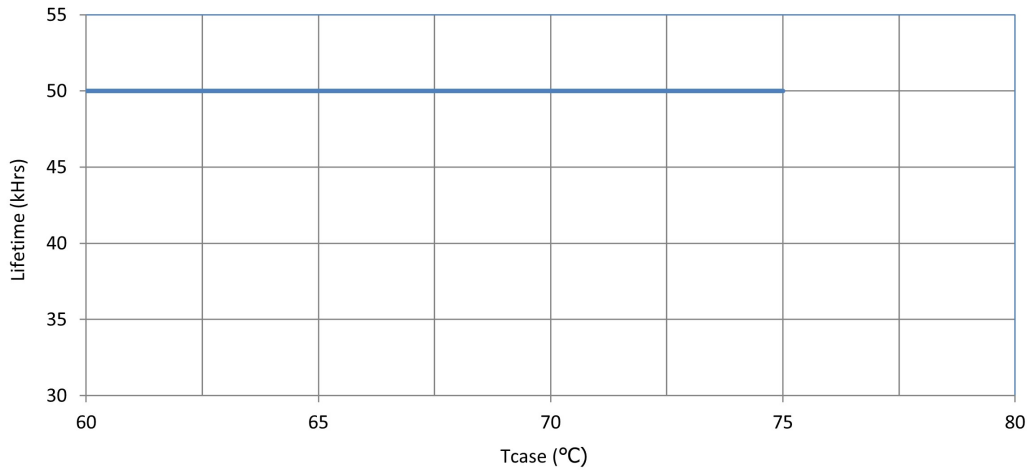
Isolation per UL-8750	Input	Output	0-10V	Enclosure
Input	-	2U + 1kVac	2U + 1kVac	2U + 1kVac
Output	2U + 1kVac	-	2U + 1kVac	500Vac
0-10V	2U + 1kVac	2U + 1kVac	-	2U + 1kVac
Enclosure	2U + 1kVac	500Vac	2U + 1kVac	-

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+50	°C	Higher ambient temperature allowed as long as Tcase-max is not exceeded
Tcase-UL	85	°C	Max. temperature measured at T_{case}-point
Tcase-life	75	°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

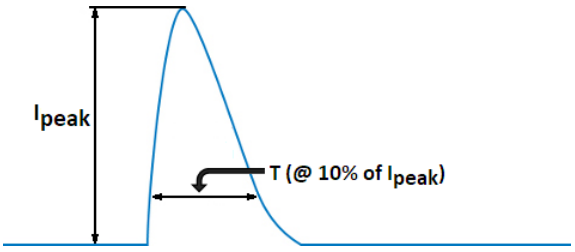
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	NFC, SimpleSet	500 mA	
0-10V	Yes		
Min Dim Level (%)	Yes		
OEM Write Protection (OWP)	Yes		

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

Inrush current

Specification item	Value	Unit	Condition
Inrush current	4.4	A	Input voltage 120V
Inrush current	10.2	A	Input voltage 277V
Inrush peak width	12.5	µs	Input voltage 120V, measured at 10% height
Inrush peak width	12	µs	Input voltage 277V, measured at 10% height



Surge immunity

Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	2.5	kV	ANSI Surge Type 100kHz Ring Wave (w/t 30 ohm)
Mains surge immunity (comm. mode)	2.5	kV	ANSI Surge Type 100kHz Ring Wave (w/t 30 ohm)

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

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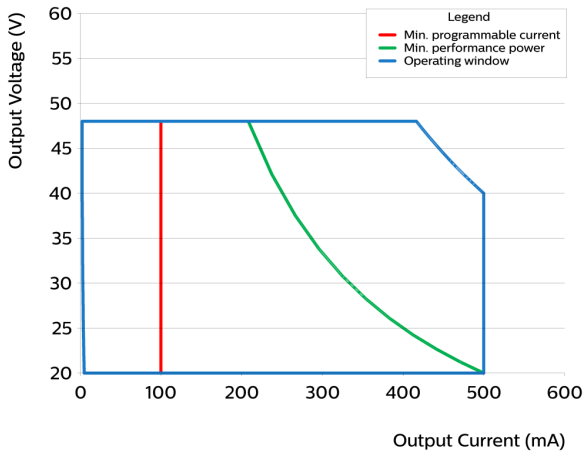
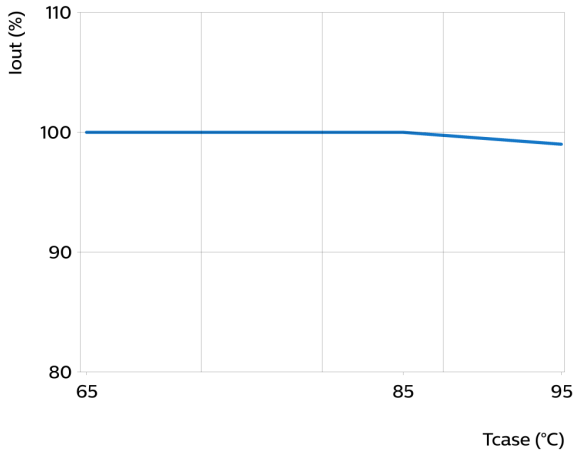
Graphs

Operating window

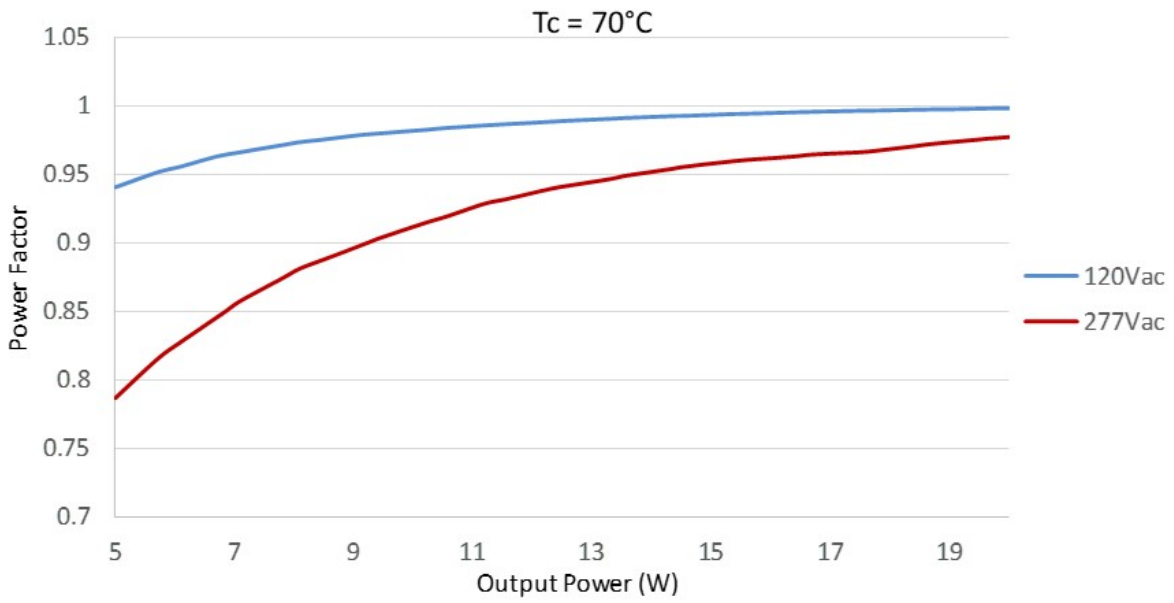


- Factory default output current is 0.5A.
- To get a 100% to 1% dimming range, the output current setting through AOC should be ≥ 0.25A.
- Factory default minimum dimming is 1%. This can be adjusted between 1% and 100% using Advance MultiOne.

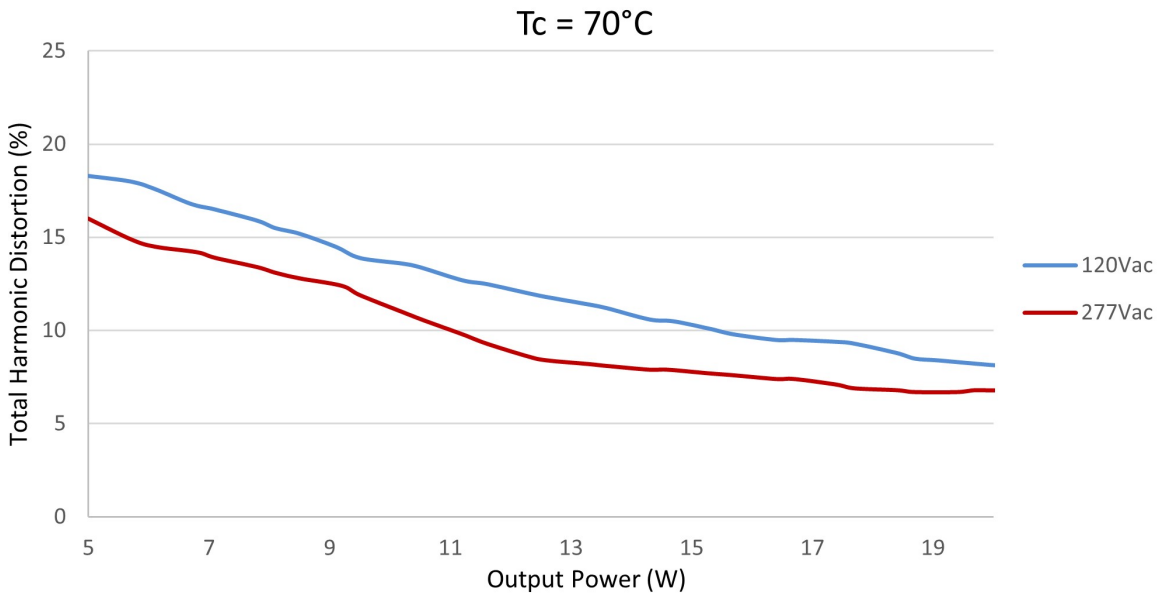
Over Temperature Protection



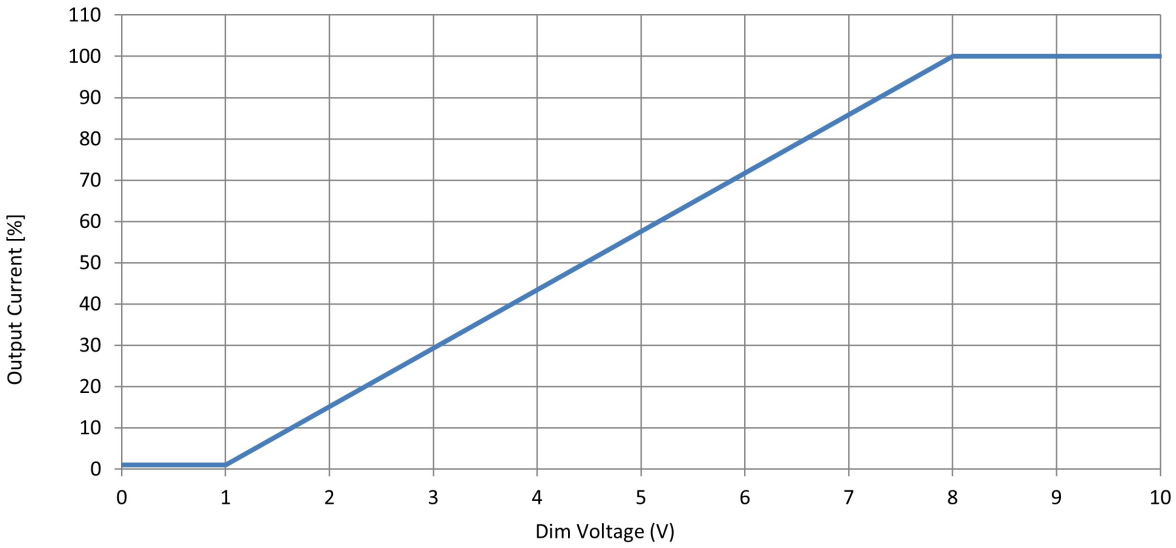
Power factor versus output power



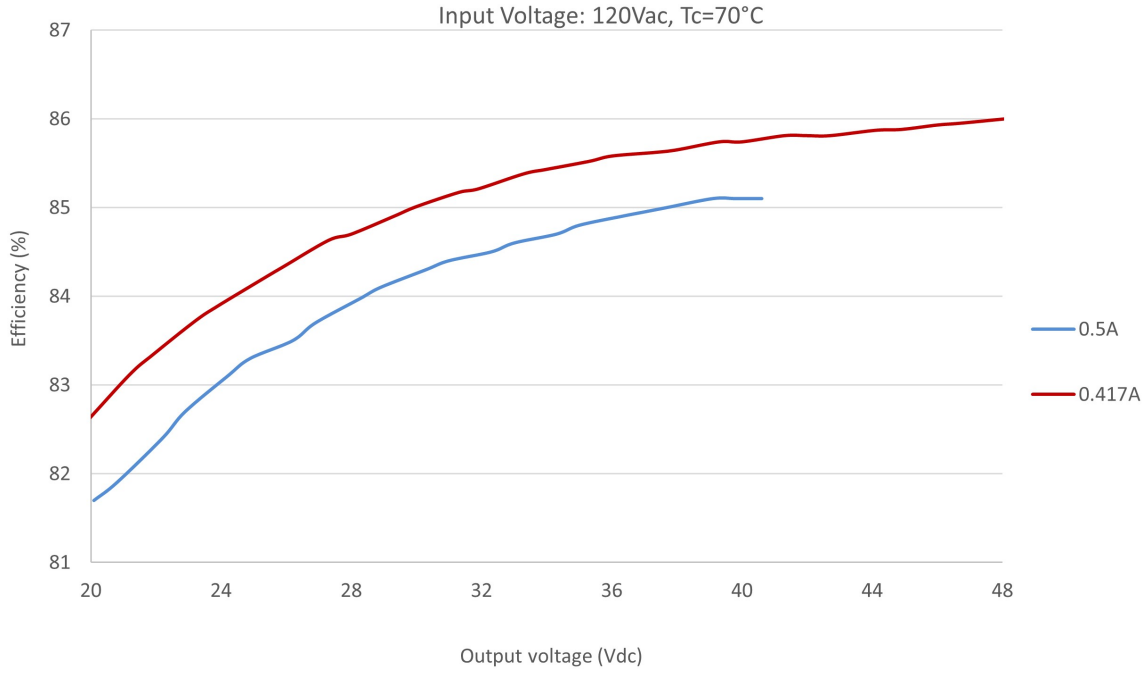
THD versus output power

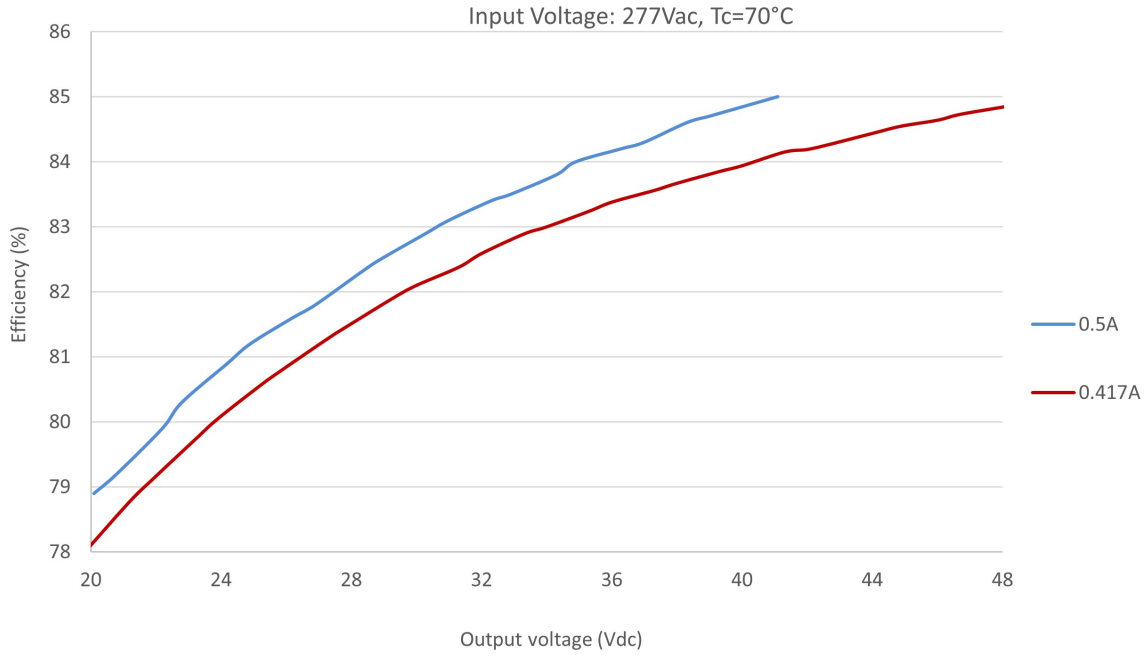


I_out as function of 0-10V interface



Efficiency as function of V_{out}





Appendix

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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