ADVANCE
by signify

LED Driver

Xitanium

XI050C140V054PST2



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.

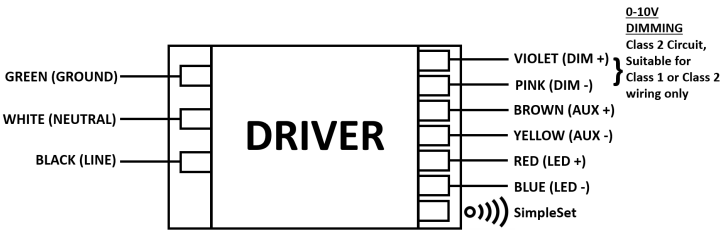
Specifications

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	50	10-54	0.1-1.4	87.0	75 / 85	0.48	58	<10	>0.95	2.5	0-10V	1-100	4.7	CC
277				89.0		0.21	58	<15	>0.95					

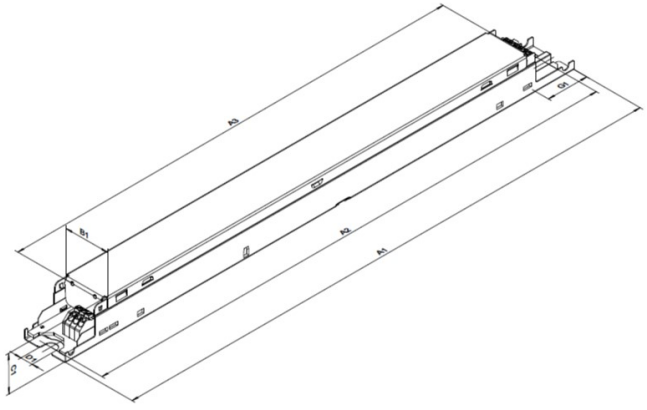
Enclosure

Item	In(mm)	Tolerance (mm)
Overall length (A1)	14.17(360)	+/-0.5
Mounting Length (A2)	13.78(350)	+/-0.5
Case Length (A3)	11.87(301.5)	+/-0.5
Case Width (B1)	1.18(30)	+/-0.5
Case Height (C1)	1(25.4)	+/-1
Mounting Hole Diameter (D1)	0.31(7.9)	+/-0.3
Center of SimpleSet antenna (G1)	0.76(19.3)	+/-3

Wiring Diagram



Mechanical 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

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Features

- 50,000+ hour lifetime
- SimpleSet programmable
- Large operating window
- 1% minimum dim level
- Aux power supply (12V/24V selectable, default 12V)
- Dim to off

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
- Hospitality

Logistical data

Specification item	Value
Product name	XI050C140V054PST2
EOC	XI050C140V054PST2
Logistic code 12NC	9290 017 80713
Product code	XI050C140V054PST2M
Pieces per box	18
Weight	260 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	0.48	0.21	A	@ rated output power @ rated input voltage
Rated input power	58.0	58.0	W	@ rated output power @ rated input voltage
Efficiency	87.0	89.0	%	@ 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	100...1400	mA	
Output current min programmable	100	mA	
Min output current	4.7	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...50.0	W	
Minimum performance output power	20	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	0.15	mA	
Maximum Dimming Voltage	12	V	
Dimming Leakage Current	0.01	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	-20...+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-point is Tcase-life.

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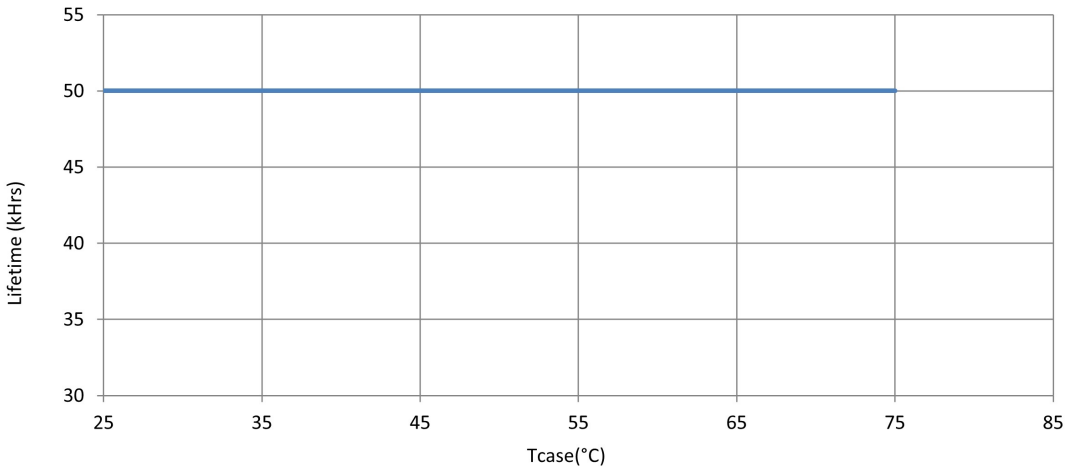

Maximum failures = 10%

Programmable features

Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	NFC, SimpleSet	1400 mA	
Adjustable Light Output (ALO)	Yes		
0-10V	Yes		
Min Dim Level (%)	Yes		
Dim to off	Yes		
Dimming curve selection	Linear or logarithmic	linear	
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		12V or 24V selectable with Simpleset

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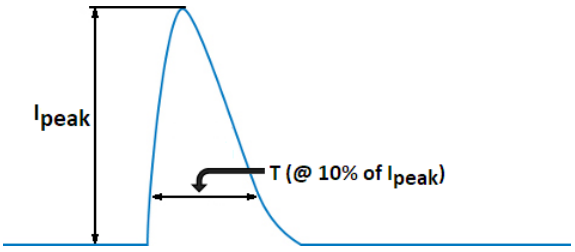
Inrush current

Specification item	Value	Unit	Condition
Inrush current	10.36	A	Input voltage 120V
Inrush current	26.4	A	Input voltage 277V
Inrush peak width	5.99	µs	Input voltage 120V, measured at 10% height
Inrush peak width	5.78	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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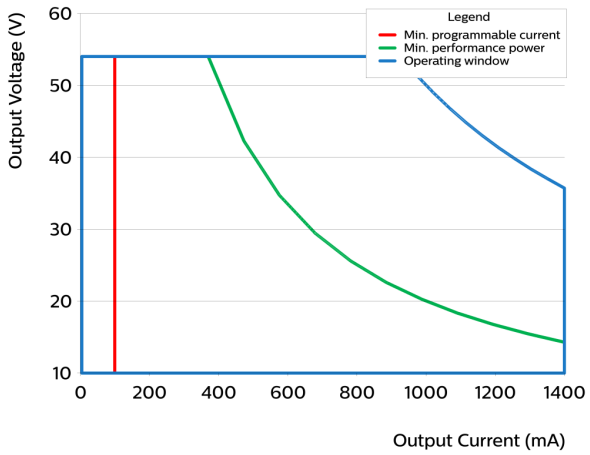
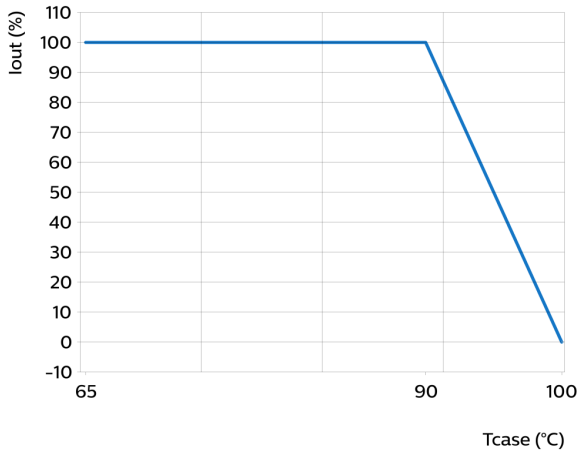
Graphs

Operating window

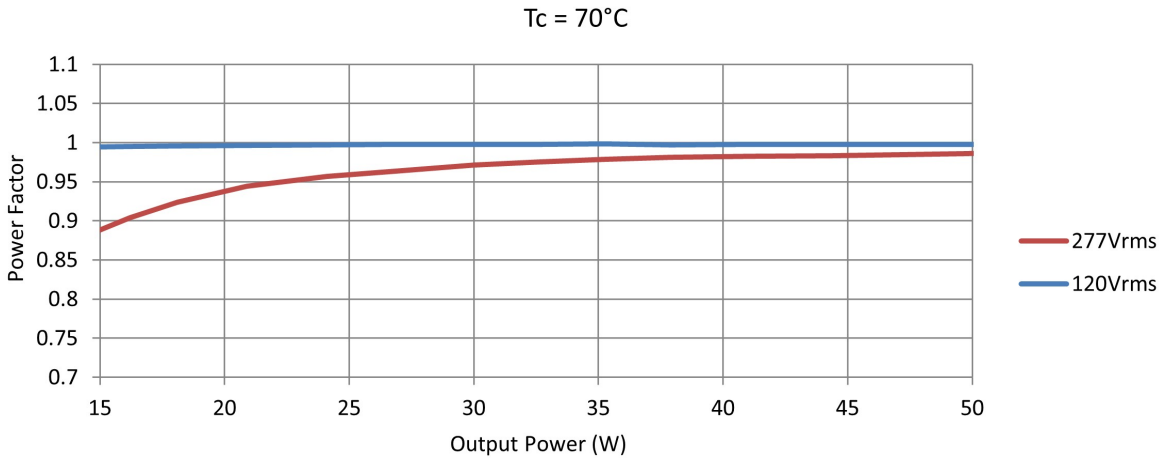


- Factory default output current is 1.4A.
- To get a 100% to 1% dimming range, the output current setting through AOC should be ≥ 0.47A.
- Factory default minimum dimming is 1%. This can be adjusted between 1% and 100% using Advance MultiOne.

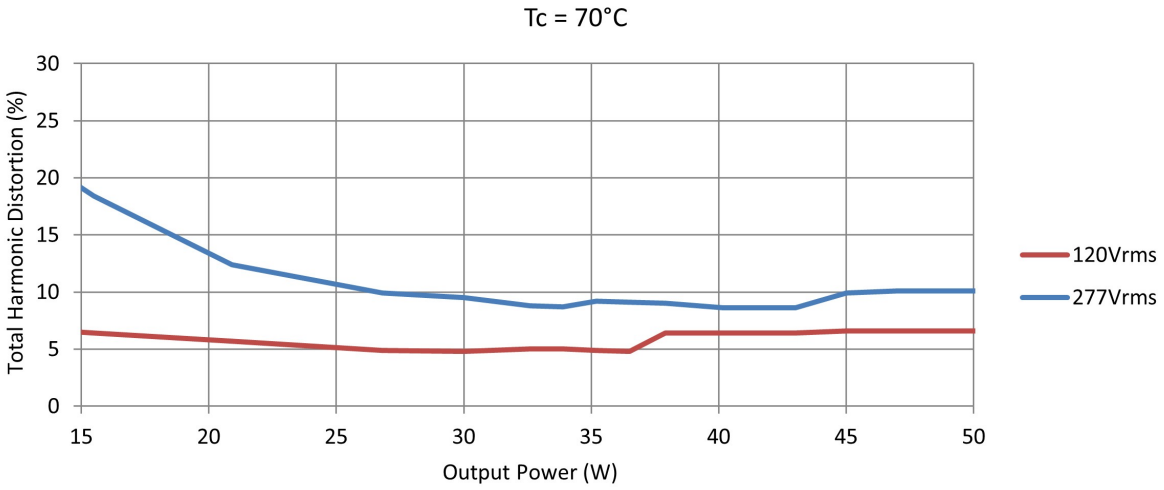
Over Temperature Protection



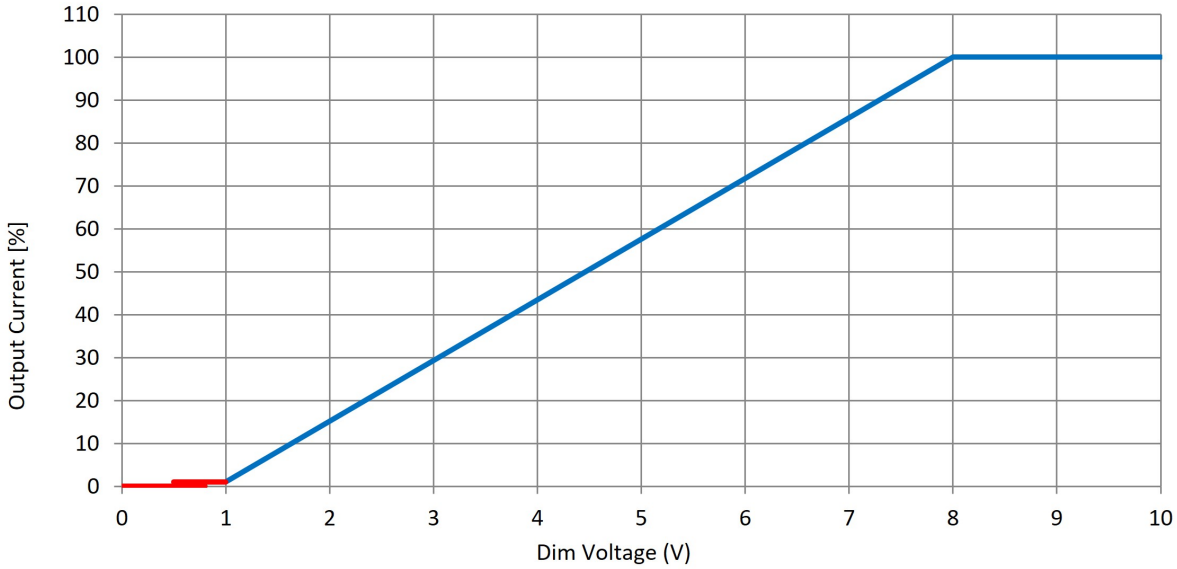
Power factor versus output power

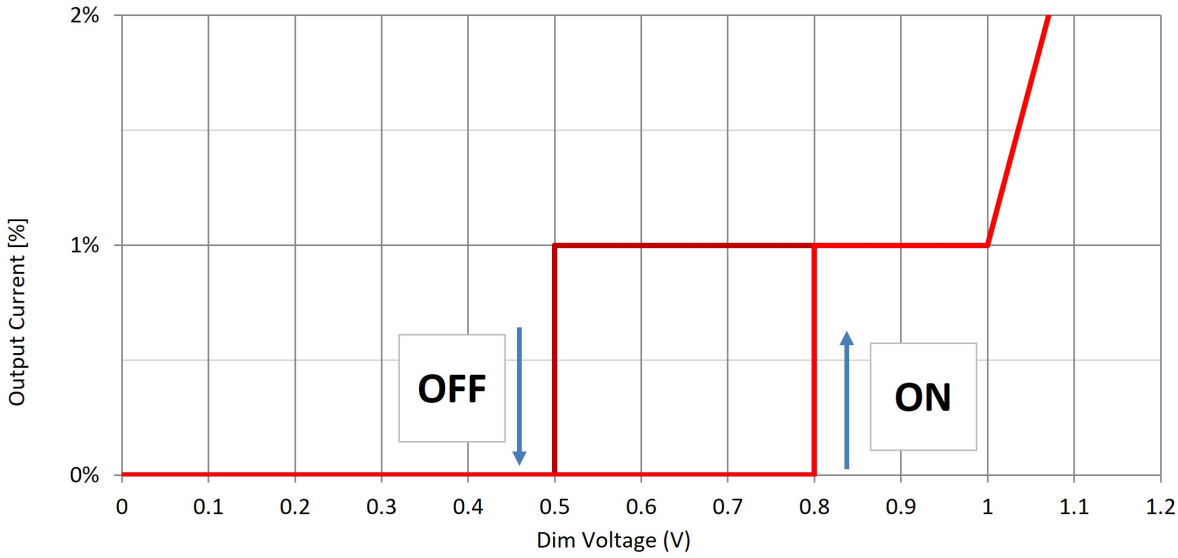


THD versus output power

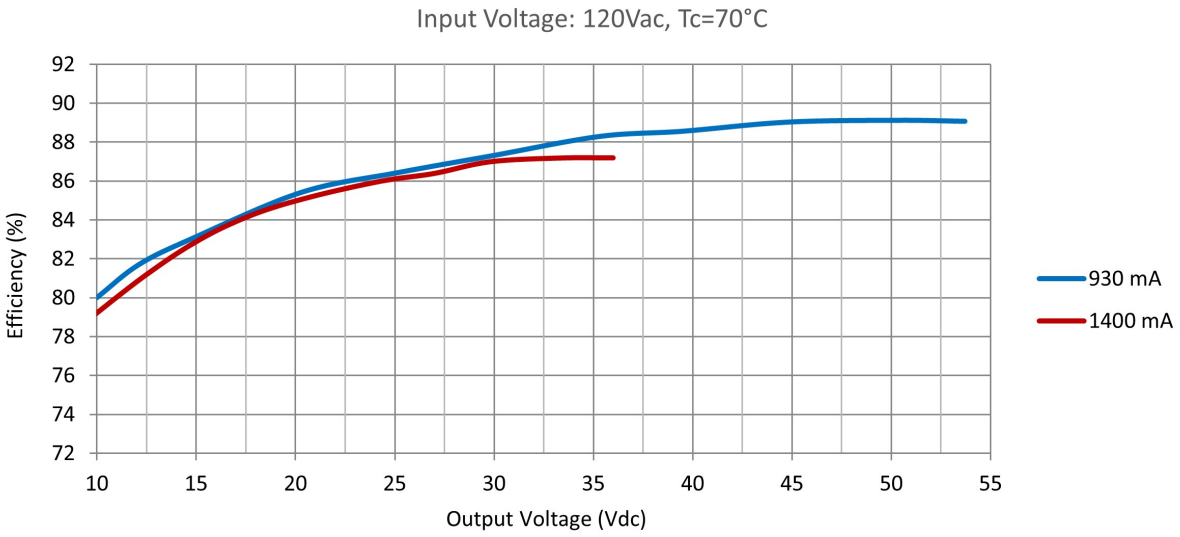


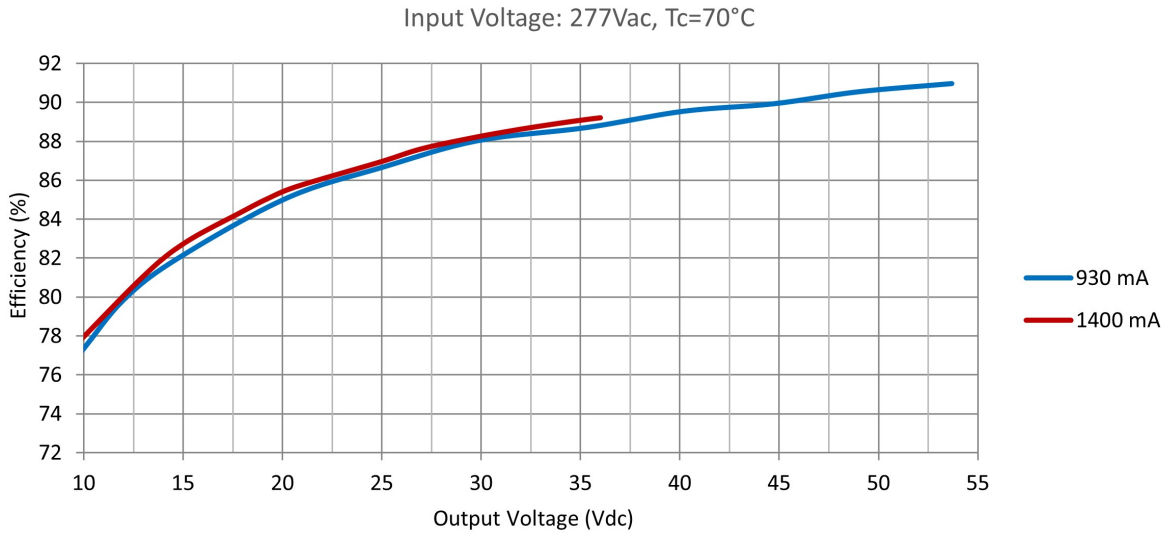
I_out as function of 0-10V interface





Efficiency as function of V_{out}





Appendix

Approved Dimmer List

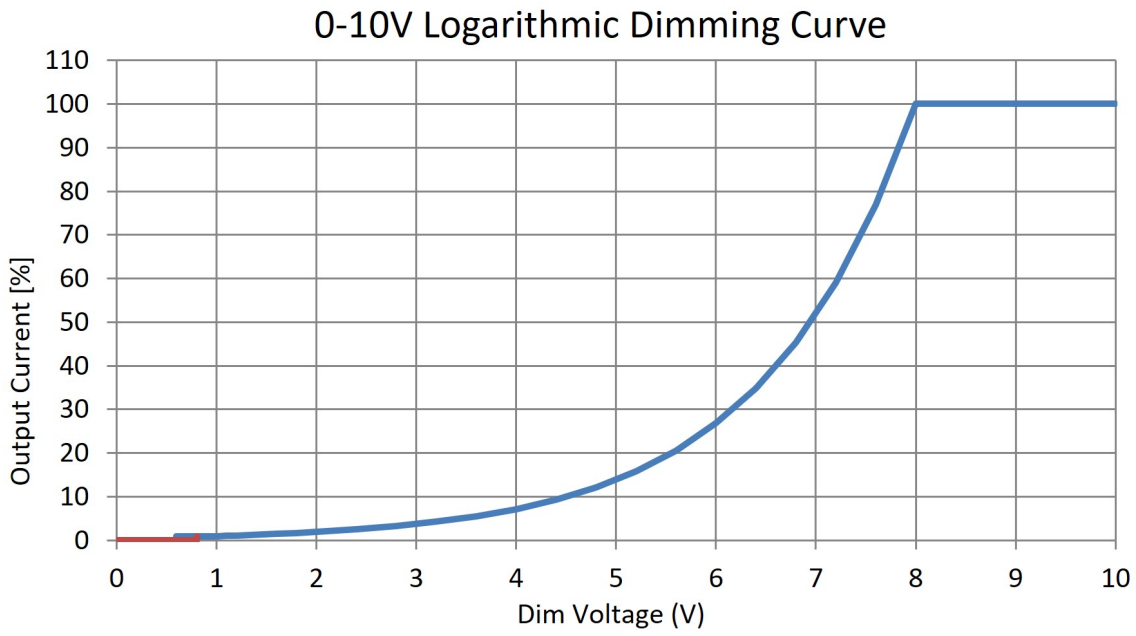
Manufacturer	Manufacturer Part Number
Lutron	Visit www.lutron.com/ advance for a list of dimmers (Mark VII) that will work with this driver
Leviton	IllumaTech IP7 series
Philips	Sunrise - SR1200ZTUNV

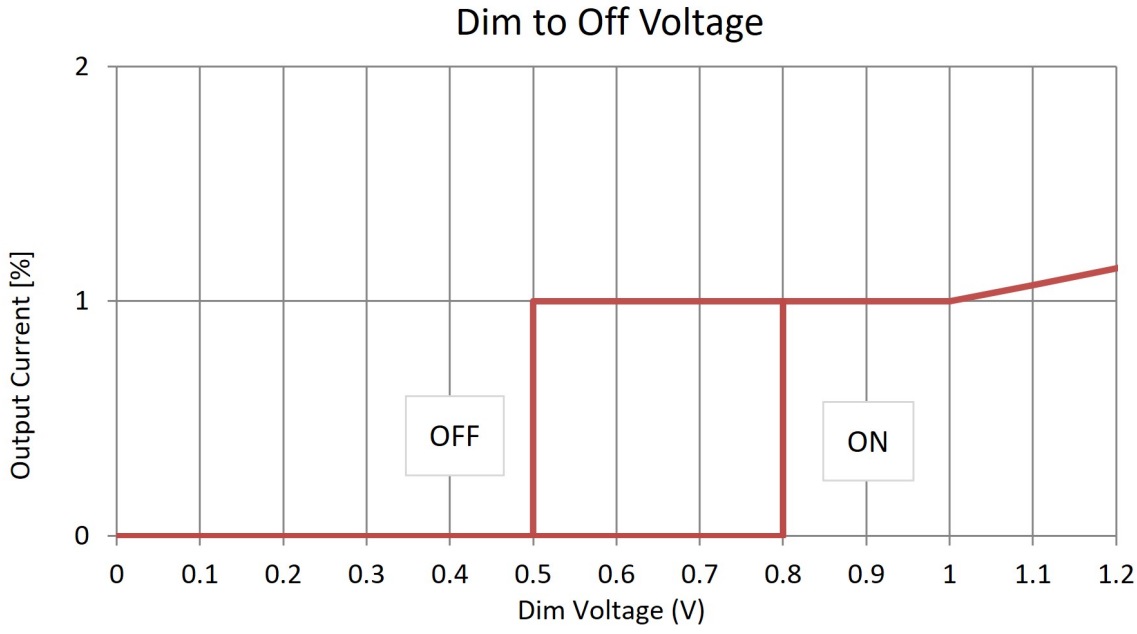
0.5V Dim to Off

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	





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