

# LED-12W Dimming Series

## Switch Mode LED Drivers

Thomas Research Products

Rev 9-24-21

### Electrical Specifications

Input Voltage Range:	120-277 Vac Nom. (108-305 V Min/Max)
Frequency:	50/60 Hz Nom. (47-63 Hz Min/Max)
Power Factor:	>0.90
Inrush Current:	<10.0 Amps max @ 230 Vac, cold start 25°C
Input Current:	0.15 Amps max at 120 Vac
Maximum Power:	12W
Line Regulation:	± 3%
Load Regulation:	± 4%
THD:	≤ 20%
Hold Up Time:	Half Cycle

### Protections

Over-voltage	Output
Over-current	Output
Short Circuit	Auto Recovery

### Environmental Specifications

Max Case Life Temp: (5 year warranty)	68°C
Maximum Case Temp:	90°C
Minimum Starting Temp:	-30°C
Storage Temperature:	-40°C to +85°C
Humidity:	5% to 95%
Cooling:	Convection
Vibration Frequency:	5 to 55 Hz/2g, 30 minutes
Sound Rating:	Class A
MTBF:	>550,000 Hours @ full load & 40°C ambient conditions per MIL-217F Notice 2
Weight:	5.8 oz (164.43 g)



- Total Power: 12 Watts
- Input Voltage: 120-277 Vac Nom.
- UL Dry & Damp Location Rated
- High Power Factor
- UL Type HL Rated for Hazardous Locations
- Constant Current, Dimming with Isolation
- Black Magic Thermal Advantage™ Plastic Housing

### Constant Current Models

SAP PN	Model	Output Current (mA ±4%)	Output Voltage Range (Vdc)	Max. Output Power (W)	Typical Efficiency
93147686	LED12W-36-C0250-D	250	12-36	9	77%
93147688	LED12W-48-C0250-D	250	16-48	12	80%
93147687	LED12W-36-C0350-D	350	12-36	12.6	80%
93147685	LED12W-24-C0500-D	500	8-24	12	78%
93147683	LED12W-16-C0700-D	700	6-16	11.2	78%
93147684	LED12W-16-C0800-D	800	6-16	12.8	78%
93147682	LED12W-12-C1000-D	1000	4-12	12	77%

Class 2: US/Canada

### Dimming Standard:

0-10V & Resistance dimmable models include an extra two wires +Purple/-Pink on the output side. "-D" Compatible with most quality 0-10V wall dimmers. See page 3 for dimming specifications.

### Note:

LED drivers are designed and intended to operate LED loads only. Non-LED loading may be outside the specified design limits of our LED drivers, and therefore cannot be covered by any warranty. If you desire to use our LED drivers to operate non-LED loads please contact us to discuss compatibility.

Safety Cert.	Standard
UL/CUL	UL8750
CSA	22.2
CE	EN61347
EMC Standard	Notes
EN61000-3-2	
EN61000-3-3	Class C
FCC, 47CFR Part 15	Class B
EN6100-4-5	2KV L-N, 8/20 μsec Surge Protection

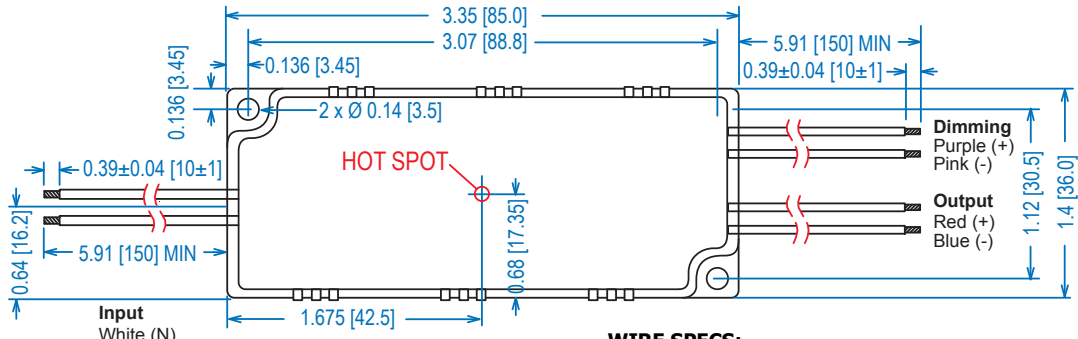
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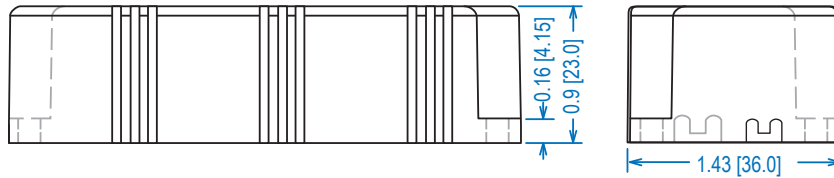


## Dimensions

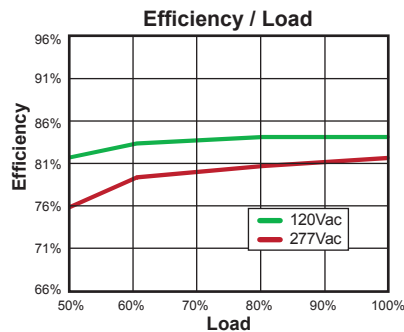
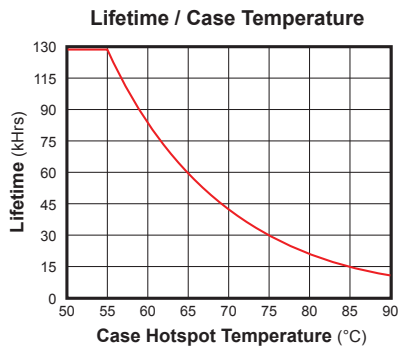
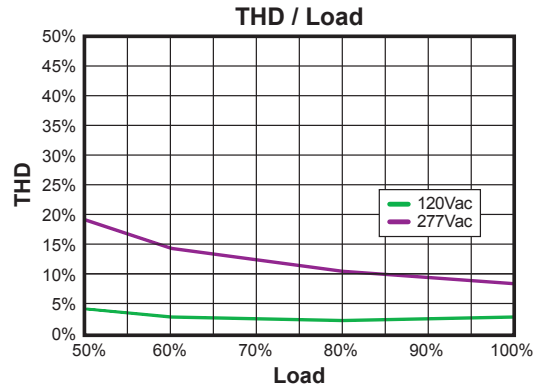
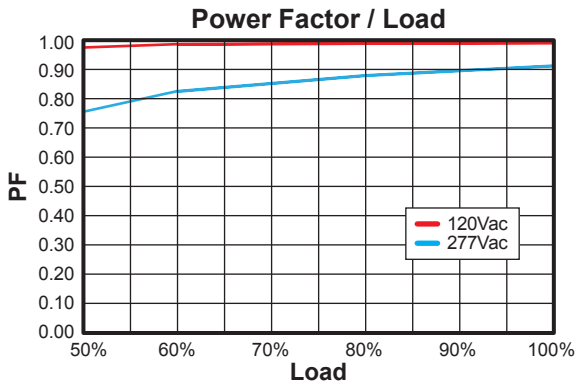
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**WIRE SPECS:**  
**Input Leads:** 18-AWG, Rated 600V, 105°C, min.  
**Output Leads:** 18-AWG, Rated 600V, 105°C, min.  
**Dimming Leads:** 22-AWG, Rated 600V, 105°C.  
 All wires are stranded with solder dipped ends



## Power Characteristics



Note: The area under the life-temperature curve represents where the driver has highly reliable operation within specification. Driver performance may drift out of published specifications as the hours of operation exceed the curve at a given temperature. Higher operating temperatures increase the chances of a failure to function. Other electrical, mechanical and environmental factors affect driver lifetime but are not represented in this calculation.

**UL Conditions of Acceptability**  
 See website for additional information



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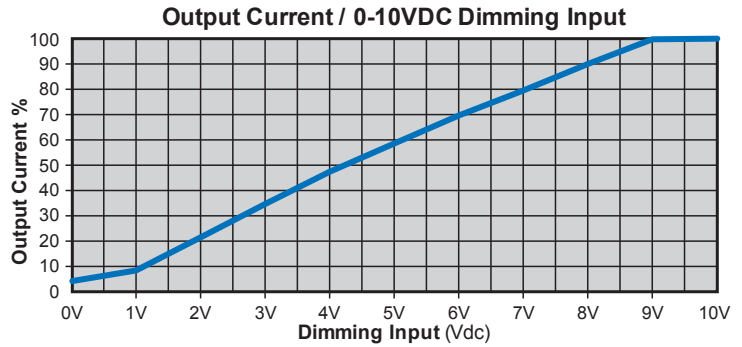
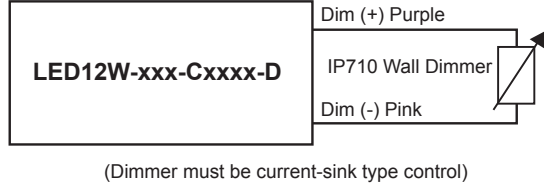
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## “-D” Option: 0-10VDC and Resistance Dimming

Parameters	Minimum	Typical	Maximum
Source Current out of 0-10V Purple Wire	0 mA	—	2mA
Absolute Voltage Range on 0-10V (+) Purple Wire	-2.0V	—	+15V

### Typical Dimming Circuit



### Notes:

1. 0-10V dimmable version comes with an extra two wires +Purple/-Pink on the output side.
2. Compatible with most 0-10V Wall Slide dimmers and direct 0-10V analog signal. Recommended dimmer is Leviton IP710 or equivalent
3. 0-10V dimmable version output will be  $\leq 10\%$  @ 0-1.0V
4. 0-10V dimmable version output will be 100% with Purple/Pink open and minimum with Purple/Pink Shorted.
5. For units manufactured before Date of January 1st 2022, the Dim(-) wire will be gray, not pink.