



Thomas Research Products

SSL Solutions Faster Than The Speed Of Light®

LED-90W Series– Fixed Output and Dimmable Switch Mode LED Drivers Constant Current & Constant Voltage with Isolation Black Magic Thermal Advantage™ Aluminum Housing

Total Power: 90 Watts
Input Voltage: 100-277 Vac
Outputs: Single from 5 - 257 Vdc
Indoor or Outdoor Applications, IP66
High Power Factor
UL8750, EN61347, CSA 22.2
EN61000-3-2, EN61000-3-3 Class C

Electrical Specifications

| | |
|----------------------|---|
| Input Voltage Range: | 100-277 Vac Nom. (90-305 V Min/Max) |
| Frequency: | 50/60 Hz Nom. (47-63 Hz Min/Max) |
| Power Factor: | >0.90 @ full load, 100V through 277V |
| Inrush Current: | <30.0 Amps max @ 230 Vac, cold start 25°C |
| Input Current: | 1.2 Amps max |
| Maximum Power: | 90W |
| Current Accuracy: | ± 1% Over input line variation |
| Load Regulation: | ± 3% |
| THD: | ≤ 20% @ full load |
| Leakage Current: | 400 µA Typical |
| Hold Up Time: | Half Cycle |
| Protection: | Output Over-Voltage, Output Over-Current, and Output Short Circuit Protection reset by power cycling |

Electrical Specifications

| | |
|------------------------|---|
| Operating Temperature: | -30°C to +65°C |
| Maximum Case Temp. | 90°C |
| Storage Temperature: | -40°C to +85°C |
| Humidity: | 5% to 95% |
| Cooling: | Convection |
| Vibration Frequency: | 5 to 55 Hz/2g, 30 minutes |
| MTBF: | 418,000 Hours at full load and 40°C ambient conditions per MIL-217F Notice 2 |
| EMC: | FCC 47CFR Part 15 Class B compliant |



Constant Current - Product Specifications

| Model Number | Output Current (mA ±3%) | Output Voltage Range (Vdc) | Max. Output Power (W) | Typical Efficiency |
|---------------------|----------------------------|-------------------------------|--------------------------|-----------------------|
| LED90W-257-C0350-XX | 350 | 85-257 | 90 | 92% |
| LED90W-200-C0450-XX | 450 | 66-200 | 90 | 92% |
| LED90W-128-C0700-XX | 700 | 42-128 | 90 | 92% |
| LED90W-085-C1050-XX | 1050 | 28-85 | 90 | 91% |
| LED90W-064-C1400-XX | 1400 | 21-64 | 90 | 91% |
| LED90W-056-C1600-XX | 1600 | 18-56 | 90 | 91% |
| LED90W-048-C1875-XX | 1875 | 16-48 | 90 | 91% |
| LED90W-036-C2500-XX | 2500 | 12-36 | 90 | 90% |
| LED90W-030-C3000-XX | 3000 | 10-30 | 90 | 90% |
| LED90W-027-C3330-XX | 3330 | 9-27 | 90 | 89% |
| LED90W-025-C3500-XX | 3500 | 8-25 | 90 | 89% |
| LED90W-022-C4090-XX | 4090 | 7-22 | 90 | 89% |
| LED90W-020-C4500-XX | 4500 | 7-20 | 90 | 88% |
| LED90W-018-C5000-XX | 5000 | 6-18 | 90 | 87% |
| LED90W-015-C6000-XX | 6000 | 5-15 | 90 | 87% |

-XX indicates dimming options are available. See options at left. Blank = fixed current output

Constant Voltage - Product Specifications

| Model Number | Output Voltage (Vdc ±5%) | Output Current Range (mA) | Max. Output Power (W) | Typical Efficiency |
|--------------|-----------------------------|------------------------------|--------------------------|-----------------------|
| LED90W-257 | 257 | 88-350 | 90 | 92% |
| LED90W-200 | 200 | 113-450 | 90 | 92% |
| LED90W-128 | 128 | 175-700 | 90 | 92% |
| LED90W-085 | 85 | 263-1050 | 90 | 91% |
| LED90W-064 | 64 | 350-1400 | 90 | 91% |
| LED90W-056 | 56 | 400-1600 | 90 | 91% |
| LED90W-048 | 48 | 469-1875 | 90 | 91% |
| LED90W-036 | 36 | 625-2500 | 90 | 90% |
| LED90W-030 | 30 | 750-3000 | 90 | 90% |
| LED90W-027 | 27 | 833-3330 | 90 | 89% |
| LED90W-025 | 25 | 875-3500 | 90 | 89% |
| LED90W-022 | 22 | 1023-4090 | 90 | 89% |
| LED90W-020 | 20 | 1125-4500 | 90 | 88% |
| LED90W-018 | 18 | 1250-5000 | 90 | 87% |
| LED90W-015 | 15 | 1500-6000 | 90 | 87% |

Class 2: US/Canada US Only

Ordering Options:

- D: 0-10V & Resistance dimmable version comes with an extra two wires +Purple/-Gray on the output side. -D 0-10V Dimming is compatible with most quality 0-10V wall dimmers. See page 3 for additional specifications.
- PD: PWM Dimmable version comes with an extra two wires +Purple/-Gray on the output side. PD PWM version is PWM Dimmable via a positive 10% to 100% Duty Cycle, 200Hz to 1KHz, 0-10V Pulse. See page 4 for additional 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 driver, 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.

Specifications subject to change without notice.

7-11-13



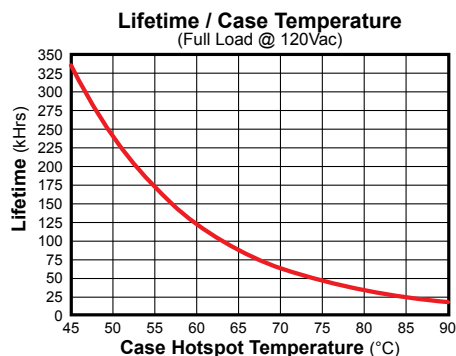
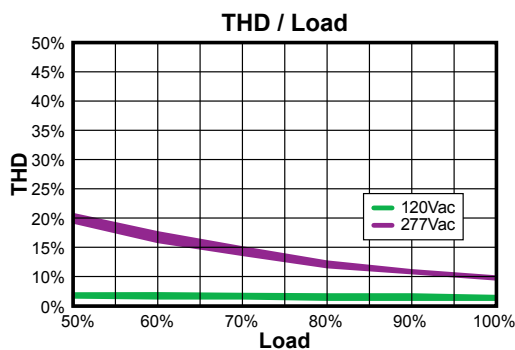
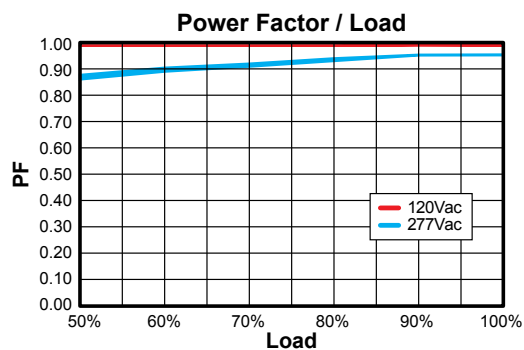
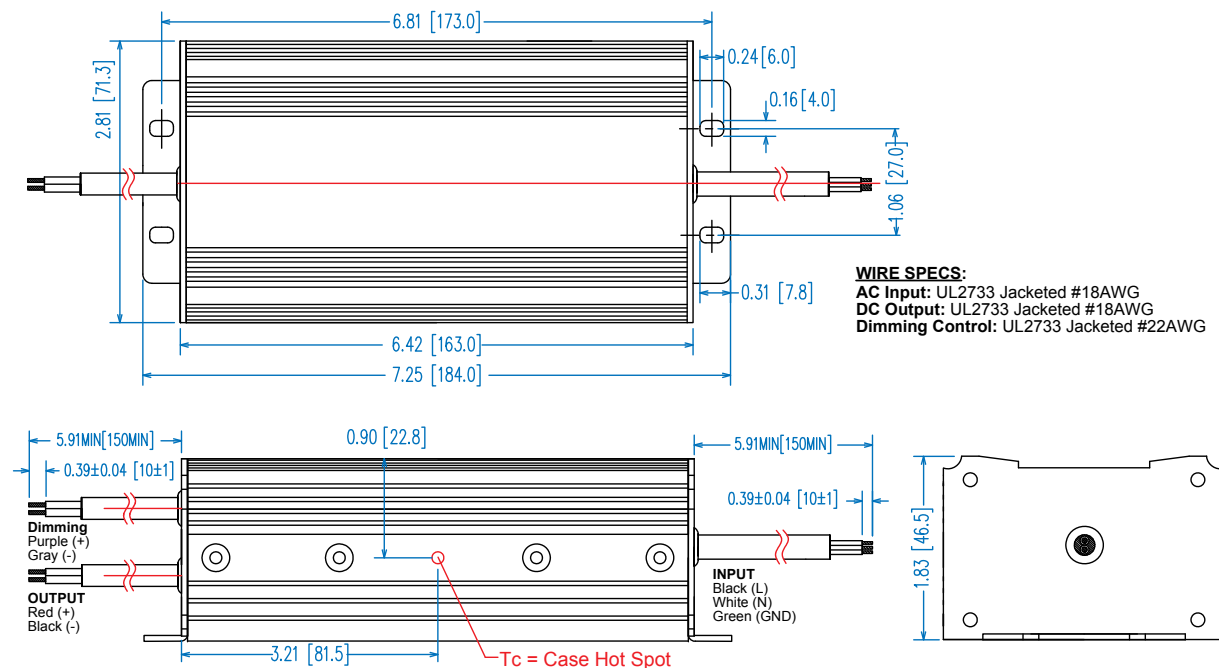
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LED90W

Pg 2 of 4

Dimensions - Inches (mm)



UL Conditions of Acceptability

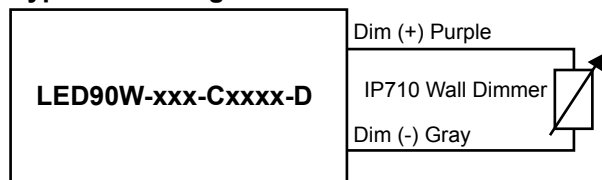
See website for additional information



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

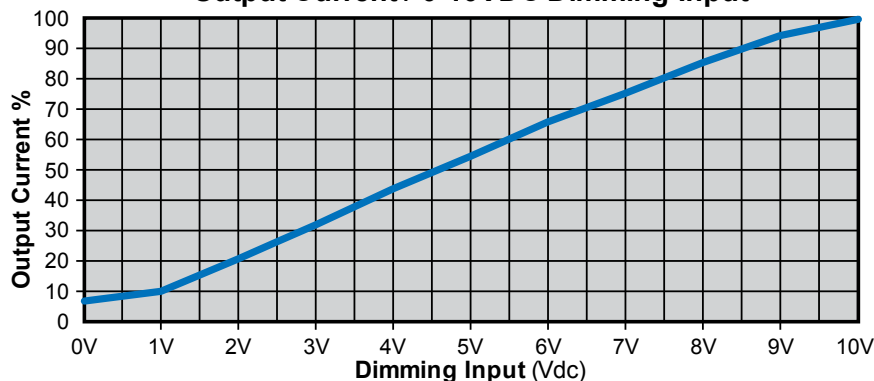
| Parameters | Minimum | Typical | Maximum |
|---|---------|---------|---------|
| Source Current out of 0-10V Purple Wire | 0 mA | — | 10 mA |
| Absolute Voltage Range on 0-10V (+) Purple Wire | -2.0 V | — | +15 V |

Typical Dimming Circuit



(Dimmer must be current-sink type control)

Output Current / 0-10VDC Dimming Input



Notes:

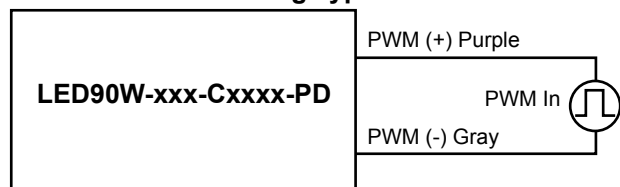
1. 0-10V dimmable version comes with an extra two wires +Purple/-Gray on the output side.
2. Compatible with most 0-10V Wall Slide dimmers and direct 0-10V analog signal. Recommended dimmer is Leviton IP710 or equivalent
3. 0-10V dimmable version is not intended to dim below about 5% @ 0V or 10% @ 1.0V
4. 0-10V dimmable version output will be 100% with Purple/Gray open and minimum with Purple/Gray Shorted.



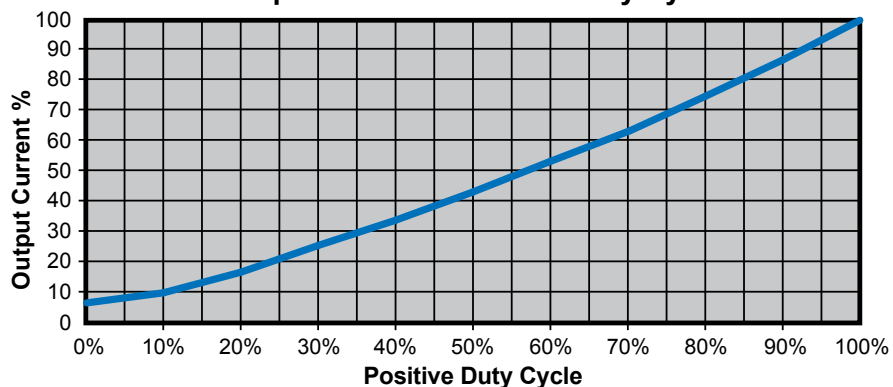
“-PD” Option: PWM Dimming

| Parameters | Minimum | Typical | Maximum |
|---|---------|---------|---------|
| Absolute Maximum Voltage Range on PWM Input (Purple Wire) | -2.0V | 10V | +28V |
| Input LOW Level Voltage Range (Purple Wire) | -2.0 | 0V | +7.5V |
| Input HIGH Level Voltage Range (Purple Wire) | +9.0 | 10V | 28V |
| Sink Current into PWM Input (Purple Wire) | 0mA | — | 1.2mA |
| PWM Input Signal Frequency | 200Hz | — | 1000Hz |
| PWM Input Signal Positive Duty Cycle | 0% | 10-90% | 100% |

PWM Positive Dimming Typical Circuit



Output Current / Positive Duty Cycle



Notes:

1. PWM Dimmable version comes with an extra 2 wires +Purple/-Gray on the output side.
2. Below 10% Duty cycle proper dimming operation is not assured. Unit is not intended to turn off at <10% Duty Cycle.
3. PWM dimmable version output will be 100% with Purple/Gray open and minimum with Purple/Gray Shorted.