



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

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 and direct 0-10V analog signal. 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.

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



Specifications subject to change without notice.

3-28-13



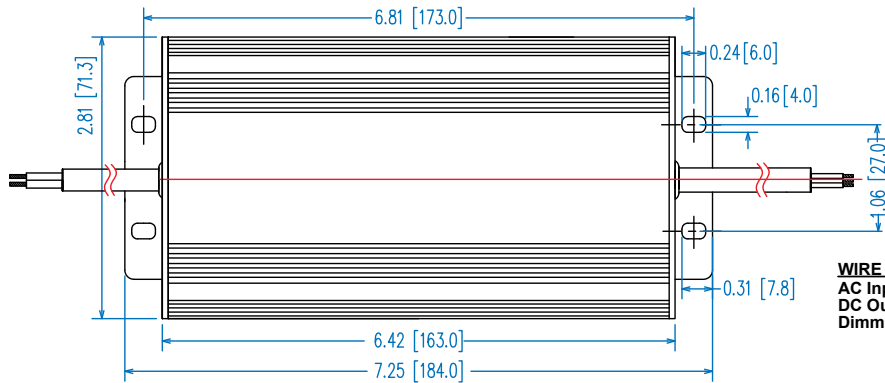
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LED90W

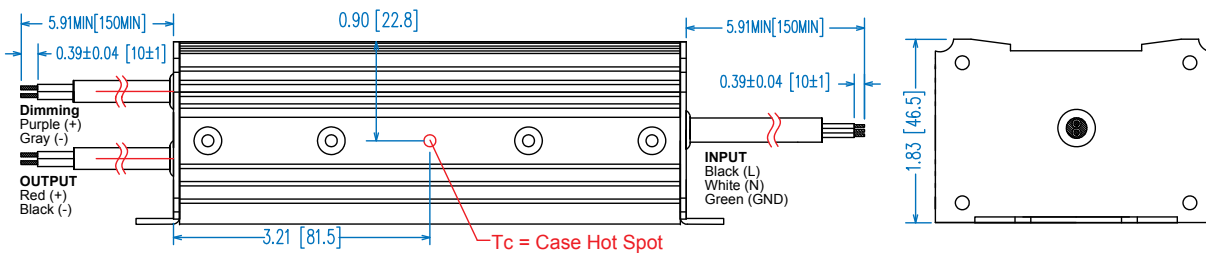
Pg 2 of 4

Dimensions - Inches (mm)

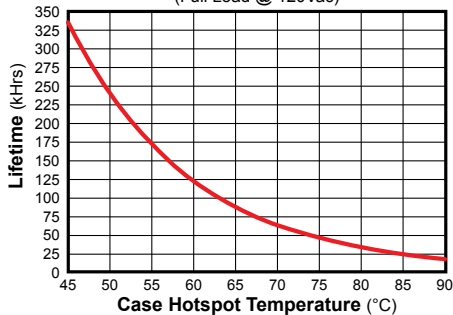


WIRE SPECS:

AC Input: UL2733 Jacketed #18AWG
DC Output: UL2733 Jacketed #18AWG
Dimming Control: UL2733 Jacketed #22AWG



Lifetime / Case Temperature
(Full Load @ 120Vac)



UL Conditions of Acceptability

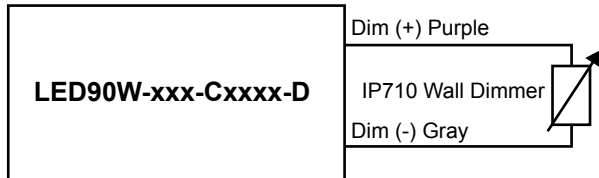
See website for additional information



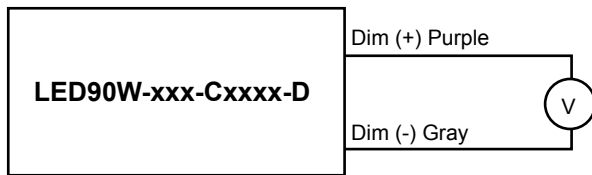
“-D” Option: 0-10VDC and Resistance Dimming

| 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 |
| Sink Current into 0-10V Purple Wire | 0 mA | — | 1.2 mA |

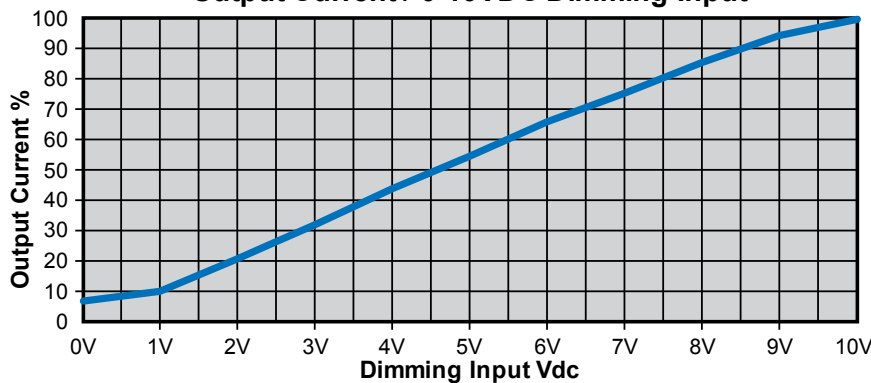
Resistance Dimming Typical Circuit



0-10V Analog Dimming Typical Circuit



Output Current / 0-10VDC Dimming Input



Notes:

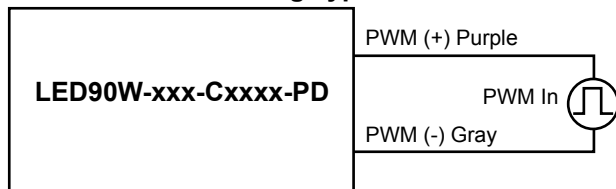
1. 0-10V dimmable version comes with an extra two wires +Purple/-Gray on the output side.
2. Compatible with most 0-10V Wall Slide dimmers and direct 0-10V analog signal. Recommended dimmer is Leviton IP710 or equivalent
3. 0-10V dimmable version is not intended to dim below about 5% @ 0V or 10% @ 1.0V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



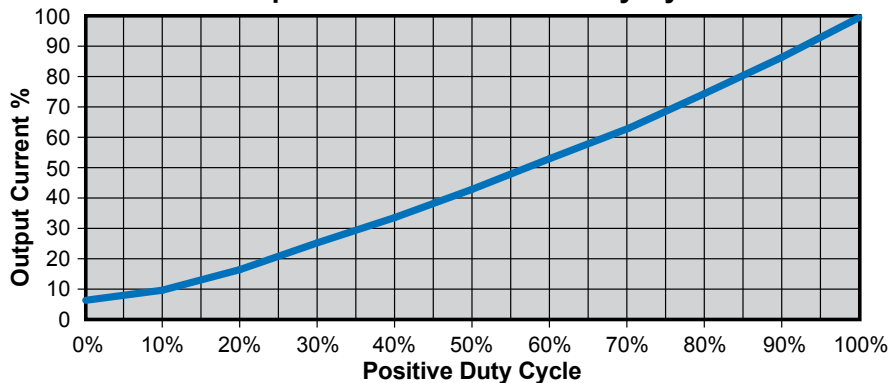
“-PD” Option: PWM Dimming

| 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.