

## 90 Watt - LD90W Series

CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING



DIMMING  
LD90W Series  
**90W**

### Model: LD90W Series

- Drive Mode: Constant Current or Constant Voltage
- Technology: PFC Off-Line Switch Mode
- Output Power: 90W Max.
- Input Voltage: 90 to 305Vac, 47- 63Hz
- Number of Outputs: One
- Output Voltages: 5VDC - 257VDC
- Output Currents: 350mA - 6000mA
- Optional 0-10V or PWM Positive Dimming 10% - 100%

### Environmental

1. Operating temperature: Tc 90C Maximum. Reference -30 to +65°C ambient
2. UL Type TL (Tref Max/Meas. Tref): 90/69°C
3. Storage temperature range: -40 to +85°C
4. Humidity (non-condensing): 5% - 95%RH
5. Cooling: Convection
6. Vibration Frequency: 5-55Hz/2g, 30 minutes
7. Impact resistance: 1g/s
8. MTBF@ 40°C: 478,000 hours @ Full Load per MIL-217F Notice 2.

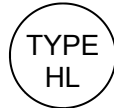
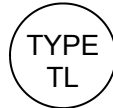
### Safety and Compliance

1. UL8750, EN61347, CSA 22.2, UL Type TL & HL recognized.
2. FCC, 47CFR Part 15 Class B certified
3. Water resistant and Dust Proof Design: IP66, NEMA6, for Dry, Damp, Wet Locations.
4. Compact Miniature, Lightweight Design.
5. Safety Isolation between Primary and Secondary
6. Meets EN61000-3-2 & EN61000-3-3 Class C
7. Protection: output over-voltage, output over-current, output short circuit, auto-recovery.
8. EN61000-4-5: 2kV/4kV 8/20 µsec surge protection.

### Electrical Specifications at 25°C

- Input voltage range: 90 to 305VAC
- Frequency: 47- 63HZ
- Power Factor: ≥ 0.90 at > 85% Load, 120Vac/230Vac/277Vac 50/60Hz
- THD%: ≤ 20% at > 85% Load, 120Vac/230Vac/277Vac 50/60Hz
- Inrush current: <30A at 25C, 230Vac, cold start, Max. Load
- Input current: 1.2A Maximum
- Efficiency: 90% typical at 230Vac Full Load
- Constant Current regulation: +/-2% Over Input Line Variation
- Load regulation accuracy: +/-4%
- Leakage current: 400uA typical; Hold up time: half cycle

### Constant Current Versions



IP66



| Part Number <sup>(2)</sup> | US Class 2 | CN Class 2 | UL Types | Output Voltage Range | Output Constant Current | Current Accuracy | Output Power Maximum | Typical Efficiency <sup>(1)</sup> |
|----------------------------|------------|------------|----------|----------------------|-------------------------|------------------|----------------------|-----------------------------------|
| LD90W-257-C0350            | NO         | NO         | TL & HL  | 85 - 257 VDC         | 350 mA                  | + 3%             | 90W                  | 91%                               |
| LD90W-200-C0450            | NO         | NO         | TL & HL  | 66 - 200 VDC         | 450 mA                  | + 3%             | 90W                  | 91%                               |
| LD90W-128-C0700            | NO         | NO         | TL & HL  | 42 - 128 VDC         | 700 mA                  | + 3%             | 90W                  | 90%                               |
| LD90W-85-C1050             | NO         | NO         | TL & HL  | 28 - 85 VDC          | 1050 mA                 | + 3%             | 90W                  | 90%                               |
| LD90W-64-C1400             | NO         | NO         | TL & HL  | 21 - 64 VDC          | 1400 mA                 | + 3%             | 90W                  | 90%                               |
| LD90W-56-C1600             | NO         | NO         | TL & HL  | 18 - 56 VDC          | 1600 mA                 | + 3%             | 90W                  | 90%                               |
| LD90W-48-C1875             | YES        | YES        | TL & HL  | 16 - 48 VDC          | 1875 mA                 | + 3%             | 90W                  | 90%                               |
| LD90W-36-C2500             | YES        | YES        | TL & HL  | 12 - 36 VDC          | 2500 mA                 | + 3%             | 90W                  | 89%                               |
| LD90W-30-C3000             | YES        | YES        | TL & HL  | 10 - 30 VDC          | 3000 mA                 | + 3%             | 90W                  | 89%                               |
| LD90W-27-C3330             | YES        | YES        | TL & HL  | 9 - 27 VDC           | 3330 mA                 | + 3%             | 90W                  | 88%                               |
| LD90W-25-C3500             | YES        | YES        | TL & HL  | 8 - 25 VDC           | 3500 mA                 | + 3%             | 90W                  | 88%                               |
| LD90W-22-C4090             | YES        | YES        | TL & HL  | 7 - 22 VDC           | 4090 mA                 | + 3%             | 90W                  | 88%                               |
| LD90W-20-C4500             | YES        | YES        | TL & HL  | 7 - 20 VDC           | 4500 mA                 | + 3%             | 90W                  | 87%                               |
| LD90W-18-C5000             | YES        | YES        | TL & HL  | 6 - 18 VDC           | 5000 mA                 | + 3%             | 90W                  | 86%                               |
| LD90W-15-C6000             | NO         | NO         | TL & HL  | 5 - 15 VDC           | 6000 mA                 | + 3%             | 90W                  | 86%                               |

### Notes

1. Typical efficiency measured at 230Vac input, full load
2. For dimmable versions add appropriate designator to the end of the part number: For Example: LD90W-18-C5000-RD is 0-10V or resistance dimmable version, LD90W-18-C5000-PD is PWM dimmable version.  
-RD 0-10V & Resistance dimmable version comes with an extra two wires +Purple/-Grey on the output side.  
-PD PWM Dimmable version comes with an extra two wires +Purple/-Grey on the output side.
3. -RD 0-10V Dimming is compatible with most quality 0-10V wall dimmers and direct 0-10V analog signal. See page 3 for details.
4. -PD PWM version is PWM Dimmable via a positive 10% to 100% Duty Cycle, 500Hz to 1.5kHz, 0-10V Pulse. See page 4 for detail.

**90W****LD90W Series****DIMMING****LED Optimized Drivers**

# 90 Watt - LD90W Series

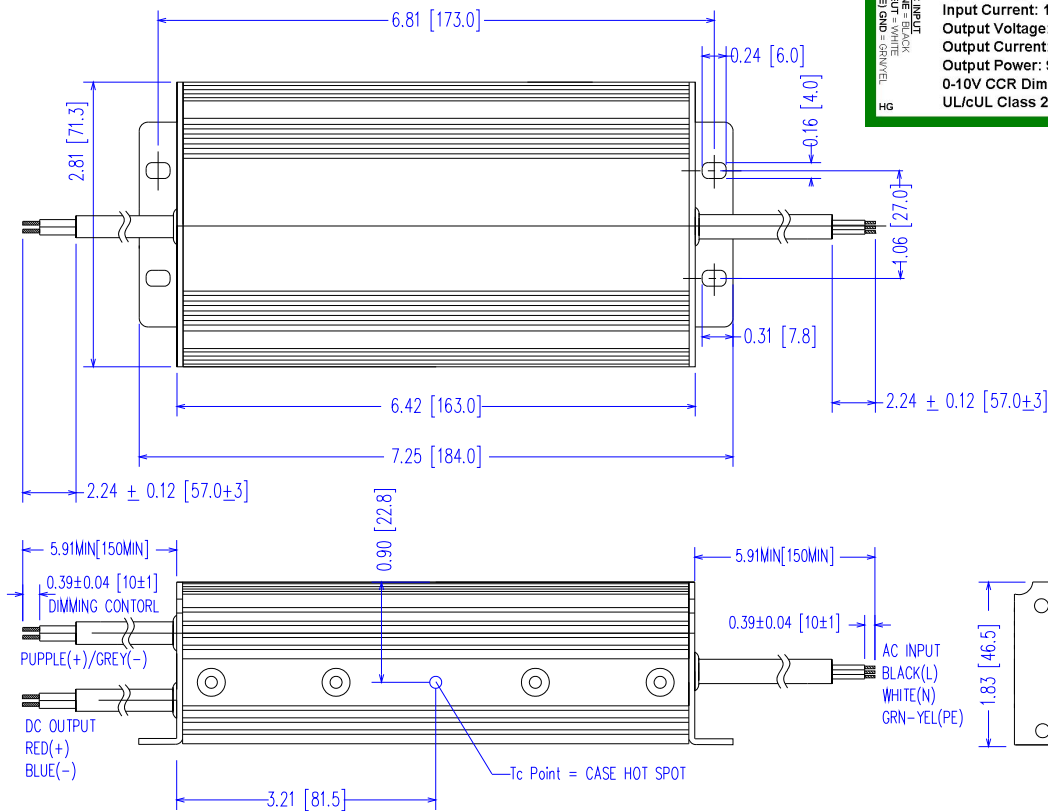
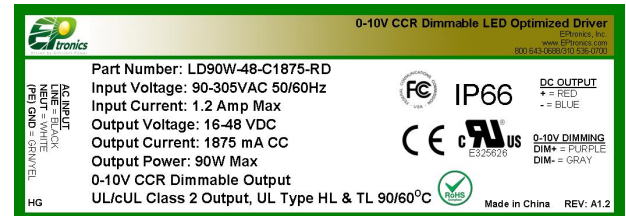
CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING

**Constant Voltage Versions**

| Part Number | US Class 2 | CN Class 2 | UL Types | Output Constant Voltage | Output Current Range | Voltage Accuracy | Output Power Maximum | Typical Efficiency <sup>(1)</sup> |
|-------------|------------|------------|----------|-------------------------|----------------------|------------------|----------------------|-----------------------------------|
| LD90W-257   | NO         | NO         | TL & HL  | 257 VDC                 | 88 - 350 mA          | ± 5%             | 90W                  | 91%                               |
| LD90W-200   | NO         | NO         | TL & HL  | 200 VDC                 | 113 - 450 mA         | ± 5%             | 90W                  | 91%                               |
| LD90W-128   | NO         | NO         | TL & HL  | 128 VDC                 | 175 - 700 mA         | ± 5%             | 90W                  | 90%                               |
| LD90W-85    | NO         | NO         | TL & HL  | 85 VDC                  | 263 - 1050 mA        | ± 5%             | 90W                  | 90%                               |
| LD90W-64    | NO         | NO         | TL & HL  | 64 VDC                  | 350 - 1400 mA        | ± 5%             | 90W                  | 90%                               |
| LD90W-56    | NO         | NO         | TL & HL  | 56 VDC                  | 400 - 1600 mA        | ± 5%             | 90W                  | 90%                               |
| LD90W-48    | YES        | YES        | TL & HL  | 48 VDC                  | 469 - 1875 mA        | ± 5%             | 90W                  | 90%                               |
| LD90W-36    | YES        | YES        | TL & HL  | 36 VDC                  | 625 - 2500 mA        | ± 5%             | 90W                  | 89%                               |
| LD90W-30    | YES        | YES        | TL & HL  | 30 VDC                  | 750 - 3000 mA        | ± 5%             | 90W                  | 89%                               |
| LD90W-27    | YES        | YES        | TL & HL  | 27 VDC                  | 833 - 3330 mA        | ± 5%             | 90W                  | 88%                               |
| LD90W-25    | YES        | YES        | TL & HL  | 25 VDC                  | 875 - 3500 mA        | ± 5%             | 90W                  | 88%                               |
| LD90W-22    | YES        | YES        | TL & HL  | 22 VDC                  | 1023 - 4090 mA       | ± 5%             | 90W                  | 88%                               |
| LD90W-20    | YES        | YES        | TL & HL  | 20 VDC                  | 1125 - 4500 mA       | ± 5%             | 90W                  | 87%                               |
| LD90W-18    | YES        | YES        | TL & HL  | 18 VDC                  | 1250 - 5000 mA       | ± 5%             | 90W                  | 86%                               |
| LD90W-15    | NO         | NO         | TL & HL  | 15 VDC                  | 1500 - 6000 mA       | ± 5%             | 90W                  | 86%                               |

**Mechanical Dimensions: Inches [mm]**

Material: Black Aluminum Housing

**Labeling Example**

## 90 Watt - LD90W Series

CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING

DIMMING

LD90W Series

90W

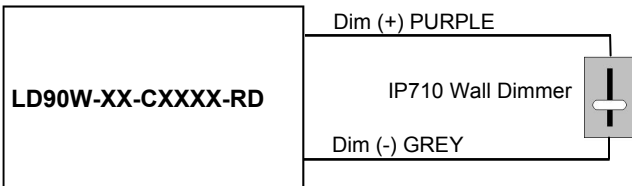
### -RD 2-Wire 0-10V CCR Dimming Scheme

| Parameters                                      | Minimum | Typical | Maximum |
|---|---------|---------|---------|
| Source Current out of 0-10V Purple Wire         | 0mA     | —       | 2mA     |
| Absolute Voltage Range on 0-10V (+) Purple Wire | -2.0V   | —       | +15V    |
| Sink Current into 0-10V Purple Wire             | 0mA     | —       | 1.2mA   |

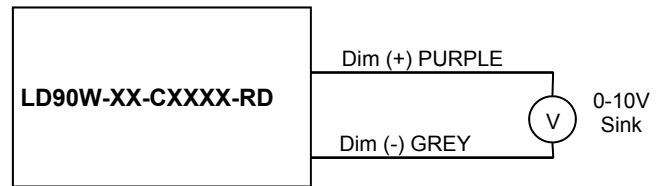
### Notes

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

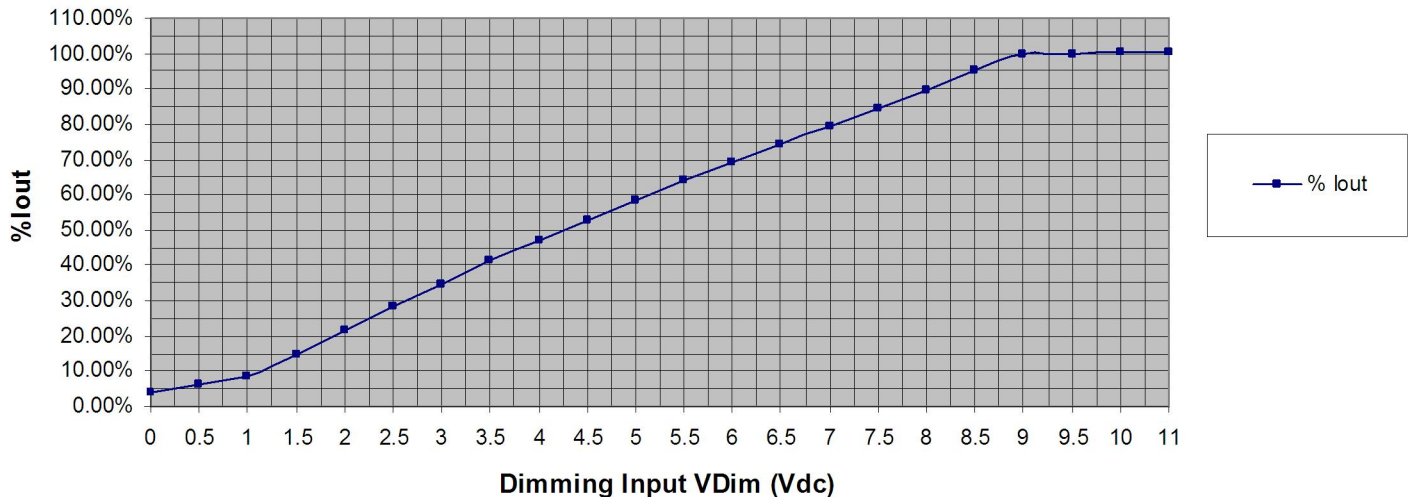
### -RD 2-Wire Resistance Dimming Scheme



### -RD 2-Wire 0-10V Analog Dimming Scheme



% Output Current vs. 0-10VDC Dimming Input



# 90 Watt - LD90W Series

CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING

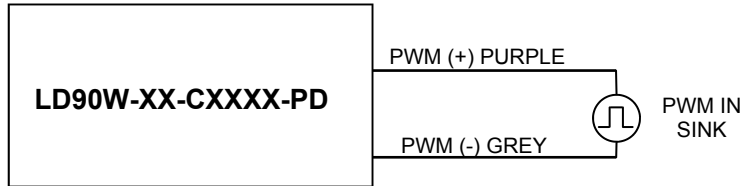
## -PD 2-Wire CCR PWM Positive Dimming Scheme

| Parameters  | Minimum | Typical | Maximum |
|---|---------|---------|---------|
| Absolute Maximum Voltage Range on PWM Input (Purple Wire) | -2.0V   | 10V     | +15V    |
| Input LOW Level Voltage Range (Purple Wire)               | -2.0V   | 0V      | +5.5V   |
| Input HIGH Level Voltage Range (Purple Wire)              | +9.0V   | 10V     | +15V    |
| Current into PWM Input (Purple Wire)                      | 0mA     | —       | 1.2mA   |
| Source Current out of PWM Input (Purple Wire)             | 0mA     | —       | 2mA     |
| PWM Input Signal Frequency                                | 500Hz   | —       | 1500Hz  |
| PWM Input Signal Positive Duty Cycle                      | 0%      | 10-90%  | 100%    |

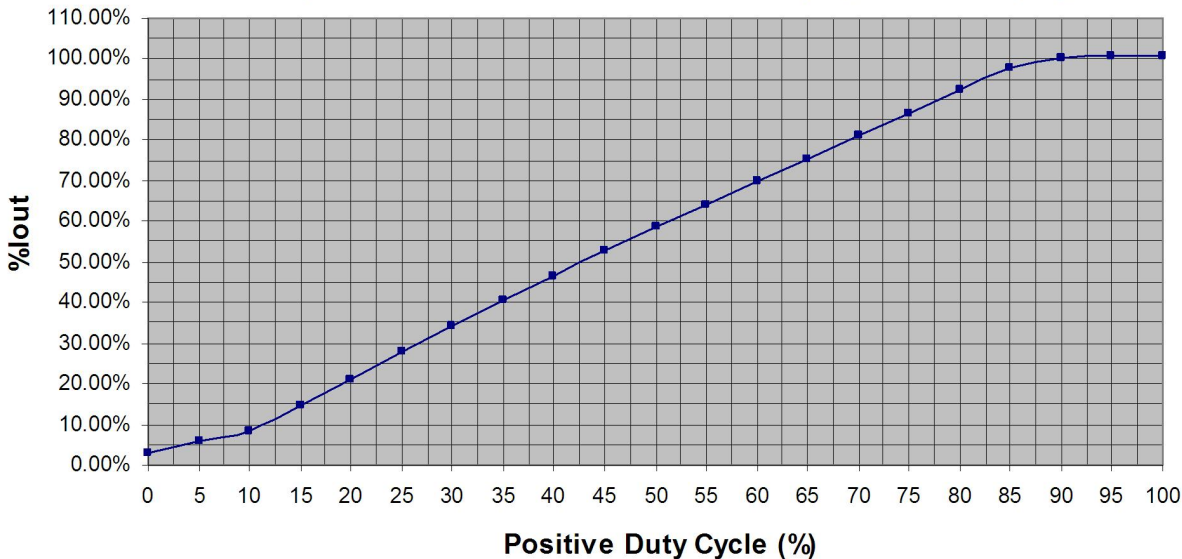
### Notes

1. -PD PWM Dimmable version comes with an extra 2 wires +Purple/-Grey on the output side.
2. -PD PWM Dimmable version is not intended to dim below about 5% @ 0% Duty Cycle or 10% @ 10% Duty Cycle
3. -PD PWM dimmable version output will be 100% with Purple/Grey open and minimum with Purple/Grey Shorted.

## -PD 2-Wire PWM Positive Dimming Scheme



**% Output Current vs. 1.0 kHz, Positive Duty Cycle Dimming Input**



—■ % Iout