



LED Optimized Drivers

20 Watt — LD20W Series

CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING



DIMMING
LD20W Series
20W

Model: LD20W Series

- Drive Mode: Constant Current or Constant Voltage
- Technology: PFC Off-Line Switch Mode
- Output Power: 20W Max.
- Input Voltage: 90-305VAC, 47- 63Hz
- Number of Outputs: One
- Output Voltages: 4VDC - 57VDC
- Output Currents: 350mA - 1660mA
- Optional 0-10V or PWM Positive Dimming 10% ~ 100%

Environmental

1. Operating temperature: Tc 90C Maximum. Reference -30 to +60°C ambient
2. Storage temperature range: -40 to +85°C
3. Humidity (non-condensing): 5% - 95%RH
4. Cooling: Convection
5. Vibration Frequency: 5-55Hz/2g, 30 minutes
6. Impact resistance: 1g/s
7. MTBF@ 40°C: 488,000 hours @ Full Load per MIL-217F Notice 2.

Safety and Compliance

1. UL8750, EN61347, CSA 22.2 safety compliant
2. FCC, 47CFR Part 15 Class B compliant
3. Water resistant and Dust Proof Design: IP66, NEMA4, for Dry, Damp, Wet Locations.
4. Compact, 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 usec transient protection.

Electrical Specifications at 25°C

- Input voltage range: 90-305Vac
- Frequency: 47 - 63Hz
- Power Factor: ≥ 0.90 at $\geq 70\%$ Load, 120Vac/230Vac, $\geq 90\%$ Load 277Vac
- THD%: $\leq 20\%$ at $\geq 70\%$ Load, 120Vac/230Vac, $\geq 80\%$ Load 277Vac
- Inrush current: $<15A$ at 25C, 230V, cold start, Max. Load
- Input current: 0.25A at 120Vac, 60Hz, Maximum Load
- Efficiency: 85% typical at 230Vac full load.
- Line regulation accuracy: $\pm 3\%$
- Load regulation accuracy: $\pm 4\%$
- Leakage current: 300uA typical; Hold up time: half cycle

Constant Current Versions



IP66



Part Number ⁽²⁾	US Class 2	CN Class 2	Output Voltage Range	Output Constant Current	Current Accuracy	Output Power Maximum	Typical Efficiency ⁽¹⁾
LD20W-57-C0350	YES	YES	19 - 57 Vdc	350 mA	$\pm 4\%$	20W	84%
LD20W-48-C0350	YES	YES	16 - 48 Vdc	350 mA	$\pm 4\%$	16.8W	83%
LD20W-43-C0460	YES	YES	15 - 43 Vdc	460 mA	$\pm 4\%$	20W	83%
LD20W-40-C0500	YES	YES	14 - 40 Vdc	500 mA	$\pm 4\%$	20W	82%
LD20W-36-C0550	YES	YES	12 - 36 Vdc	550 mA	$\pm 4\%$	20W	82%
LD20W-28-C0700	YES	YES	10 - 28 Vdc	700 mA	$\pm 4\%$	20W	81%
LD20W-24-C0830 ⁽⁵⁾	YES	YES	8 - 24 Vdc	830 mA	$\pm 4\%$	20W	81%
LD20W-22-C0910	YES	YES	7 - 22 Vdc	910 mA	$\pm 4\%$	20W	81%
LD20W-18-C1100	YES	YES	6 - 18 Vdc	1100 mA	$\pm 4\%$	20W	80%
LD20W-15-C1330	YES	YES	5 - 15 Vdc	1330 mA	$\pm 4\%$	20W	80%
LD20W-13-C1540	YES	YES	4 - 13 Vdc	1540 mA	$\pm 4\%$	20W	79%
LD20W-12-C1660 ⁽⁵⁾	YES	YES	4 - 12 Vdc	1660 mA	$\pm 4\%$	20W	78%

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: LD20W-18-C1400-RD is 0-10V or resistance dimmable version, LD20W-18-C1400-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 details.
5. SAM Recognized.

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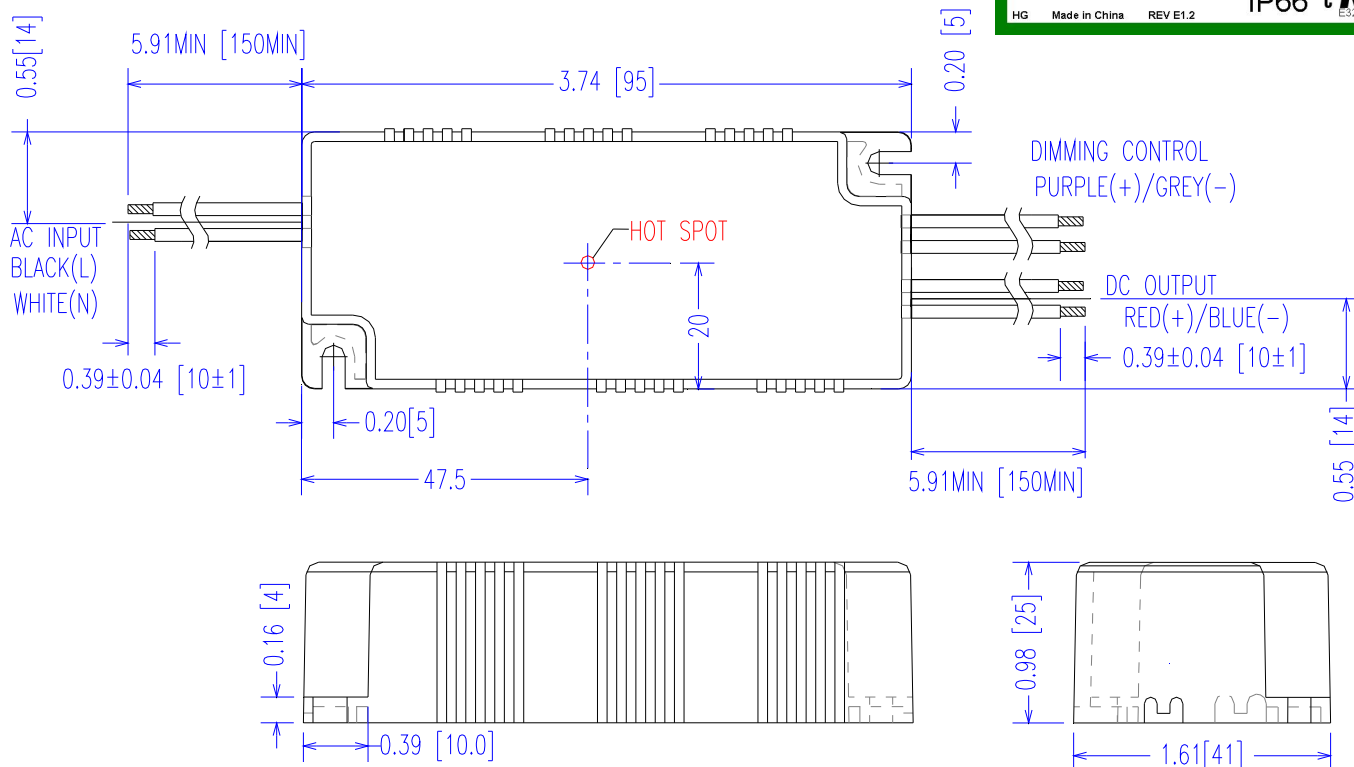
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Constant Voltage Versions

Part Number	US Class 2	CN Class 2	Output Constant Voltage	Output Current Range	Voltage Accuracy	Output Power Maximum	Typical Efficiency ⁽¹⁾
LD20W-57	YES	NO	57 Vdc	88 - 350 mA	± 5%	20W	85%
LD20W-48	YES	NO	48 Vdc	88 - 350 mA	± 5%	16.8W	85%
LD20W-43	YES	NO	43 Vdc	115 - 460 mA	± 5%	20W	85%
LD20W-40	YES	NO	40 Vdc	125 - 500 mA	± 5%	20W	85%
LD20W-36	YES	YES	36 Vdc	138 - 550 mA	± 5%	20W	85%
LD20W-28	YES	YES	28 Vdc	175 - 700 mA	± 5%	20W	84%
LD20W-24 ⁽⁵⁾	YES	YES	24 Vdc	208 - 830 mA	± 5%	20W	84%
LD20W-22	YES	YES	22 Vdc	228 - 910 mA	± 5%	20W	84%
LD20W-18	YES	YES	18 Vdc	275 - 1100 mA	± 5%	20W	83%
LD20W-15	YES	YES	15 Vdc	333 - 1330 mA	± 5%	20W	83%
LD20W-13	YES	YES	13 Vdc	385 - 1540 mA	± 5%	20W	82%
LD20W-12 ⁽⁵⁾	YES	YES	12 Vdc	415 - 1660 mA	± 5%	20W	82%

Mechanical Dimensions: Inches [mm]

Material: Black PC ABS Plastic Case
Fully Encapsulated
Weight: 165 grams (5.8 oz) Typical

Labeling Example

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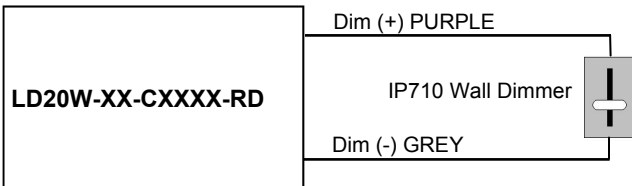
-RD 2-Wire 0-10V CCR Dimming Scheme

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

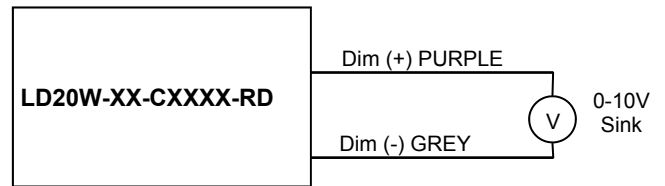
Notes

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

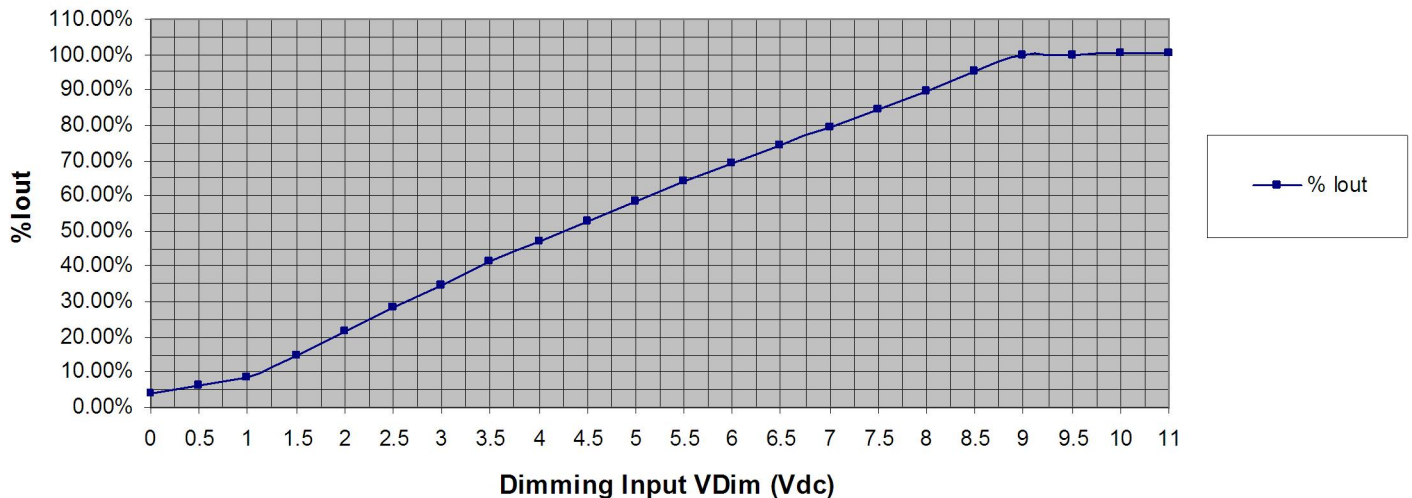
-RD 2-Wire Resistance Dimming Scheme



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



% Output Current vs. 0-10VDC Dimming Input



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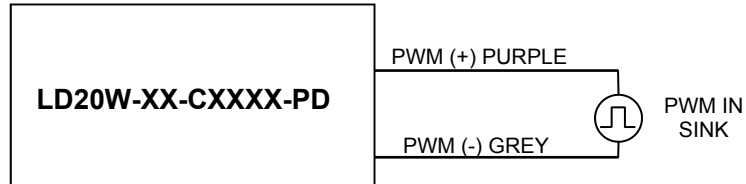
-PD 2-Wire CCR PWM Positive Dimming Scheme

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

