



**SAM Listed
LED Optimized Drivers**



**Strip Lighting
12W - 200W
DIMMING**

Strip Lighting LED Drivers

CONSTANT VOLTAGE LED DRIVERS FOR SIGN APPLICATIONS

Model: LD12W - LD200W Series

- Drive Mode: Constant Voltage
- Technology: PFC Off-Line Switch Mode
- Output Power: 12-200W Max.
- Output Voltages: 12VDC or 24VDC
- Optional 0-10V or PWM Positive Dimming 10% - 100% 20W to 200W Versions. Only usable with true strip lighting.

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

Safety and Compliance

1. UL879 SAM, UL8750, EN61347, CSA 22.2 safety certified
2. FCC, 47CFR Part 15 Class B & EN55015 certified
480Vac Versions are FCC, 47CFR Part 15 Class A
3. Water resistant and Dust Proof Design: IP66, NEMA4, for Dry, Damp, Wet Locations.
4. Meets EN61000-3-2 & EN61000-3-3 Class C
5. Protection: output over-voltage, output over-current, output short circuit, auto-recovery.
6. EN614000-4-5: 2kV L-N, 8/20 μsec surge protection.

Electrical Specifications at 25°C

- Input voltage range: See Table Below
- Frequency: 47- 63HZ
- Power Factor: ≥ 0.90 at Full Load
- THD%: ≤ 20% at Full Load
- Inrush current: <20A at 25C, 230V, cold start, Full Load
- Efficiency: See Table Below at 230Vac Full Load
- Line regulation accuracy: ± 3%
- Load regulation accuracy: ± 4%

Constant Voltage Versions



IP66



Part Number (2) (3)	US Class 2	CN Class 2	UL Types	Output Voltage	Output Current	Voltage Accuracy	Output Power Maximum	Typical Efficiency (1)	Vac In Range	Iac In Max
LD12W-12	YES	YES	HL	12V	250 - 1000 mA	± 5%	12W	77%	100-277Vac	0.15 A
LD12W-24	YES	YES	HL	24V	125 - 500 mA	± 5%	12W	78%	100-277Vac	0.15 A
LD17W-12	YES	YES	HL	12V	350 - 1400 mA	± 5%	17W	74%	100-277Vac	0.30 A
LD17W-24	YES	YES	HL	24V	175 - 700 mA	± 5%	17W	78%	100-277Vac	0.30 A
LD20W-12	YES	YES	HL	12V	415 - 1660 mA	± 5%	20W	78%	90-305Vac	0.30 A
LD20W-24	YES	YES	HL	24V	208 - 830 mA	± 5%	20W	80%	90-305Vac	0.30 A
LD25W-12	YES	YES	HL	12V	520 - 2080 mA	± 5%	25W	78%	90-305Vac	0.35 A
LD25W-24	YES	YES	HL	24V	260 - 1040 mA	± 5%	25W	81%	90-305Vac	0.35 A
LD30W-12	YES	YES	HL	12V	625 - 2500 mA	± 5%	30W	83%	90-305Vac	0.41 A
LD30W-24	YES	YES	HL	24V	313 - 1250 mA	± 5%	30W	84%	90-305Vac	0.41 A
LD40W-12	YES	YES	HL	12V	825 - 3330 mA	± 5%	40W	83%	90-305Vac	0.56 A
LD40W-24	YES	YES	HL	24V	418 - 1670 mA	± 5%	40W	85%	90-305Vac	0.56 A
LD40W480-12	YES	YES	HL	12V	825 - 3330 mA	± 5%	40W	81%	347-480Vac	0.15 A
LD40W480-24	YES	YES	HL	24V	418 - 1670 mA	± 5%	40W	82%	347-480Vac	0.15 A
LD50W-12	YES	YES	HL	12V	1050 - 4200 mA	± 5%	50W	84%	90-305Vac	0.71 A
LD50W-24	YES	YES	HL	24V	525 - 2100 mA	± 5%	50W	86%	90-305Vac	0.71 A
LD60W-12	YES	YES	TL & HL	12V	1250 - 5000 mA	± 5%	60W	84%	90-305Vac	1.00 A
LD60W-24	YES	YES	TL & HL	24V	625 - 2500 mA	± 5%	60W	86%	90-305Vac	1.00 A
LP75W-12	YES	YES	TL & HL	12V	1563 - 6250 mA	± 5%	75W	85%	90-305Vac	1.00 A
LP75W-24	YES	YES	TL & HL	24V	783 - 3130 mA	± 5%	75W	87%	90-305Vac	1.00 A
LP96W-24	YES	YES	TL & HL	24V	1000 - 4000 mA	± 5%	96W	87%	90-305Vac	1.30 A
LP96W480-24	YES	YES	TL & HL	24V	1000 - 4000 mA	± 5%	96W	87%	277-480Vac	0.45 A
LD100W-24	NO	NO	TL & HL	24V	1050 - 4200 mA	± 5%	100W	87%	90-305Vac	1.50 A
LD120W-24	NO	NO	TL & HL	24V	1250 - 5000 mA	± 5%	120W	87%	90-305Vac	1.45 A
LD150W-24	NO	NO	TL & HL	24V	1563 - 6250 mA	± 5%	150W	88%	90-305Vac	1.91 A
LD200W-24	NO	NO	TL & HL	24V	2083 - 8330 mA	± 5%	200W	88%	90-305Vac	2.54 A

Custom designs available. Please consult the factory.

Specifications subject to change without notice

Strip Lighting LED Drivers

CONSTANT VOLTAGE LED DRIVERS FOR SIGN APPLICATIONS

DIMMING
Strip Lighting
12W - 200W

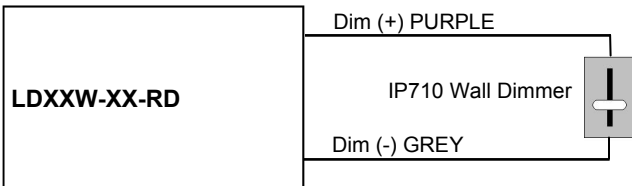
-RD 2-Wire 0-10V CCR Dimming Scheme

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

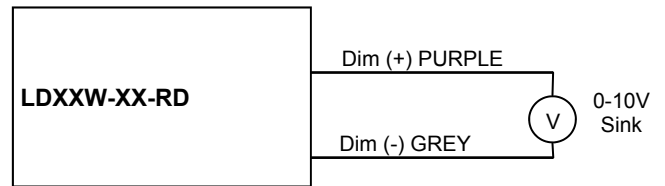
Notes

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.

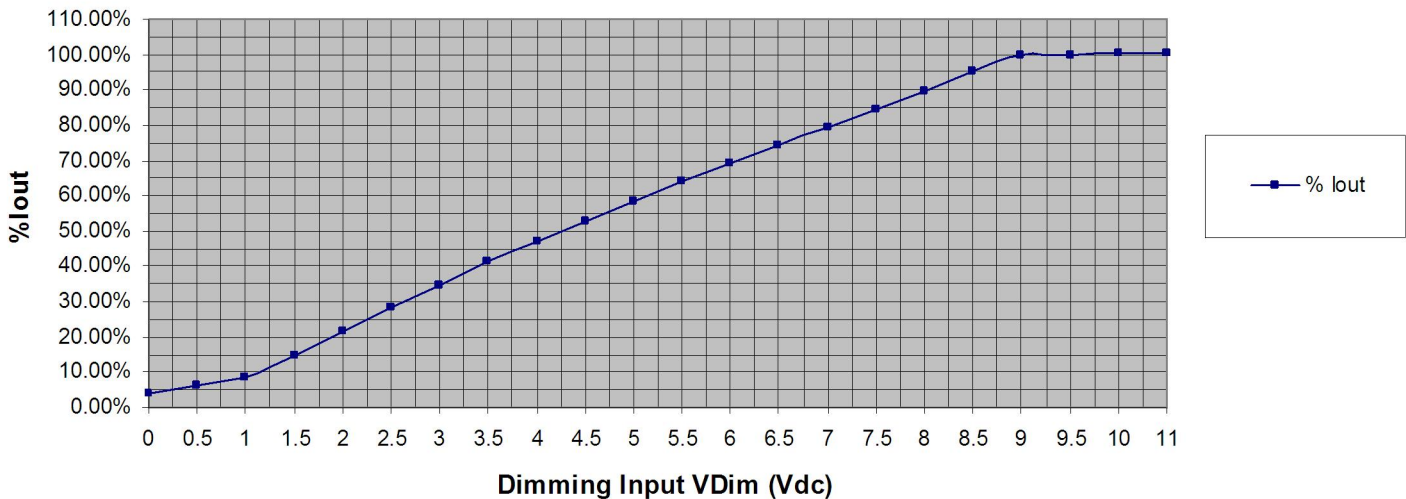
-RD 2-Wire Resistance Dimming Scheme



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



% Output Current vs. 0-10VDC Dimming Input



Strip Lighting LED Drivers

CONSTANT VOLTAGE LED DRIVERS FOR SIGN APPLICATIONS

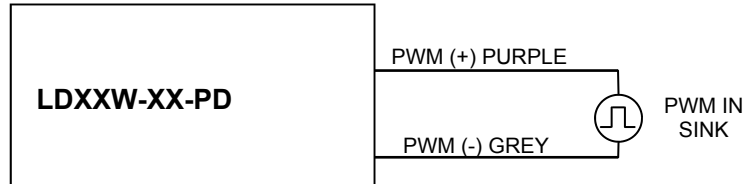
-PD 2-Wire CCR PWM Positive Dimming Scheme

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
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%

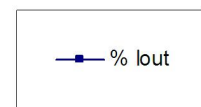
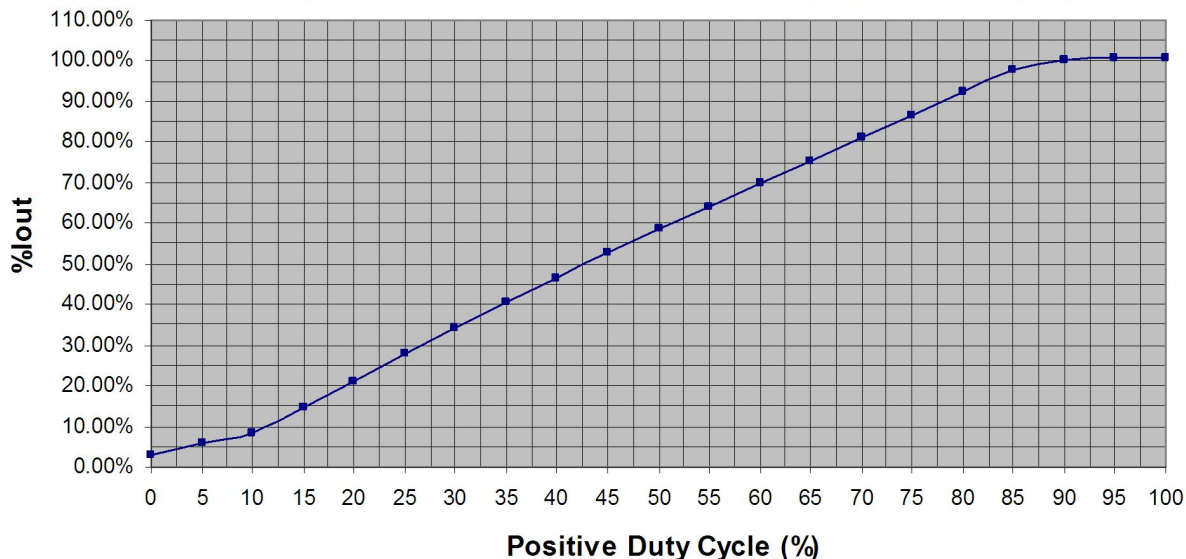
Notes

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



Strip Lighting LED Drivers

CONSTANT VOLTAGE LED DRIVERS FOR SIGN APPLICATIONS

DIMMING

Strip Lighting
12W - 200W

Input Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
Input Voltage	Per Table	—	Per Table	120, 230, 240, 277 Vac Nominal Values
Input Frequency	47 Hz	—	63 Hz	50/60Hz Nominal
Input AC Current	—	—	Per Table	Measured at 120Vac/60Hz Input, Output Full load.
THD	—	—	20%	Measured at 120, 230, 277Vac Input, Full Load
Power Factor (PF)	0.90	—	—	Measured at 120, 230, 277Vac Input, Full Load

Output Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
DC Output Voltage	-5%	Per Table	+5%	Per Tables on Page 1
DC Output Current	Per Table	—	Per Table	Per Tables on Page 1
Output Power	—	—	Per Table	Per Tables on Page 1
Ripple & Noise (Vpk-pk)	—	—	20% Vo	20 MHz BW, Full load output in parallel with 0.1 μ F ceramic & 10 μ F Electrolytic.
Ripple (Ipk-pk)	—	—	50% Io	20 MHz BW, Full load output in parallel with 0.1 μ F ceramic & 10 μ F Electrolytic. 120 Hz component
Start-up Time	—	700 mS	1000 mS	Measured at 120Vac/60Hz Input, Output Full load.
Hold-up Time	—	30 mS	—	Typical @ 277Vac Input, Output Full load.

Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
Case Temperature (Tc)	-30 °C	—	+90 °C	Measured at location specified on case.
Operating Temperature (Ta)	-30 °C	—	+60 °C	This is a reference range. Tc controls temperature range.
Storage Temperature (Ts)	-40 °C	—	+85 °C	Non operating temperature range.
Operating Humidity	—	—	95% RH	Relative Humidity, non-condensing.
Vibration	5 Hz	—	55 Hz	2G, 10 minutes/1 cycle, period 30 minutes, each along X, Y, Z axis.
MTBF	—	342,000 Hours	—	MIL-HDBK-217F Notice 2, Ta = 25C, Output Full Load.

Protection Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
Output Short Circuit (SCP)	—	—	—	No Damage, Auto recovery after short is removed.
Output Over Current (OCP)	—	—	+8% Io	Constant Current Limiting circuit.
Output Over Voltage (OVP)	—	—	120% Vo	No Damage, Auto recovery after fault is removed.

Strip Lighting LED Drivers

CONSTANT VOLTAGE LED DRIVERS FOR SIGN APPLICATIONS

Safety Certification

Safety	Notes/Standards
UL/CUL	UL879 SAM, CAN/CSA-22.2 No. 287-M89, UL8750 & CAN/CSA-22.2 No. 250.13-12, UL1310 & CAN/CSA-22.2 No. 223-M91 for Class 2, UL1012/CSA-C22.2 No. 107.1 for Non Class 2, UL Type TL & HL as noted
CE	EN61347-1, EN61347-2-13
Withstand Voltage	Input to Output: 3750 Vac
Isolation Resistance	Input to Output: >100 MΩ, 500VDC @ 25 °C, 70 % RH
Dimming Circuit	Dim+ Purple/Dim- Grey are considered part of the secondary circuit.

EMC Certification

Standard	Notes/Conditions
FCC, 47CFR Part 15	Class B, except 480Vac versions which are Class A
EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.
EN 61000-3-2	Part 3-2: Limits for harmonic current emissions Class C, ≥80% Rated Power
EN 61000-3-3	Part 3-3: Limitation of voltage changes, voltage fluctuations and flicker.
EN 61000-4-5	Part 4-5: Surge Immunity test, 2 kV L-N, 4 kV L-FG & N-FG
Energy Star	Energy Star transient protection: Ballast or driver shall comply with ANSI/IEEE C62.41.1-2002 and ANSI/IEEE C62.41.2-2002, Category A operation. The line transient shall consist of seven strikes of a 100 kHz ring wave, 2.5 kV level, for both common mode and differential mode.

