Thomas Research Products

SLED100W
100W Programmable LED Drivers

select SYNC intelligent

Electrical Specifications

Maximum Power:	100W
Typical Efficiency:	88%
Input Voltage Range:	120-277 Vac Nom. (108-305 V Min/Max)
Frequency:	50/60 Hz Nom. (47-63 Hz Min/Max)
Power Factor:	≥ 0.90 @ ≥ 60% Full Load, 120Vac-277Vac
Inrush Current:	≥26A at 25C, 120Vac, cold start, Max. Load
Input Current (Max):	0.93A Maximum @ 120VAC
Output Dimming Range:	0-100% with adjustable minimum
Load Regulation:	±3%
Line Regulation:	±2%
THD:	< 20% @ > 60% full load
Start-up Time:	<750ms @ 100% Load
Output Ripple Current:	5% Io

## Protections

Over-voltage:	Auto recovery
Over-current:	Auto recovery, Current limiting circuit
Short Circuit:	Auto recovery
Over-temperature:	Auto recovery

Environmental Specifications

Max Case Life Temp: (5 year warranty)	85°C
Maximum Case Temp (UL):	90°C
Minimum Starting Temp:	-30°C
Storage Temperature:	-40°C to +85°C
Humidity:	Up to 95% RH
Cooling:	Convection
Vibration Frequency:	5 to 55 Hz/2g, 30 minutes
Sound Rating:	Class A
EMC:	FCC 47CFR Part 15 Class A compliant
Weight:	31.8 oz (900 grams) Typical

- Program driver with GUI software for fast setup
- Option to program output current with Rset resistor
- Linear or logarithmic dimming curve options
- Flicker free output for comfort and critical applications
- 2-stage power supply design for better performance over wide range of outputs
- Auxiliary 12Vdc, 200mA output for powering controls or fans
- NTC option allows for themal protection of LED engine
- Programmable Output Current (POC): 200-3500mA
- UL Class P, Class 2, Dry & Damp Location Rated
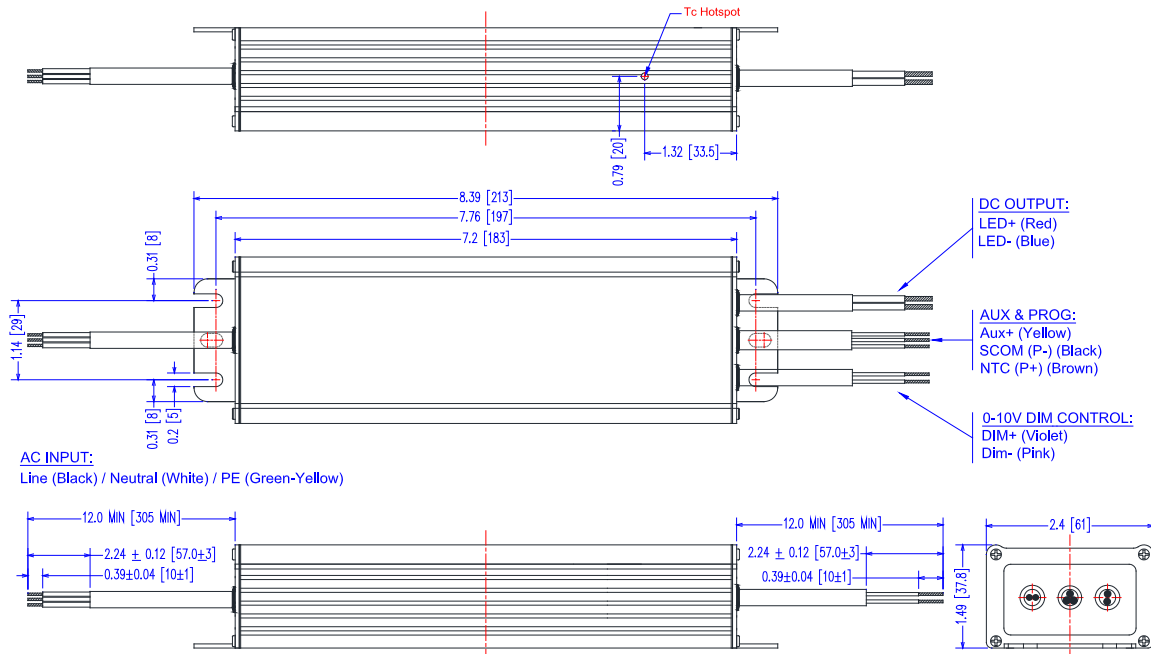- Dim to zero with 0-10V dimming
- Metal housing
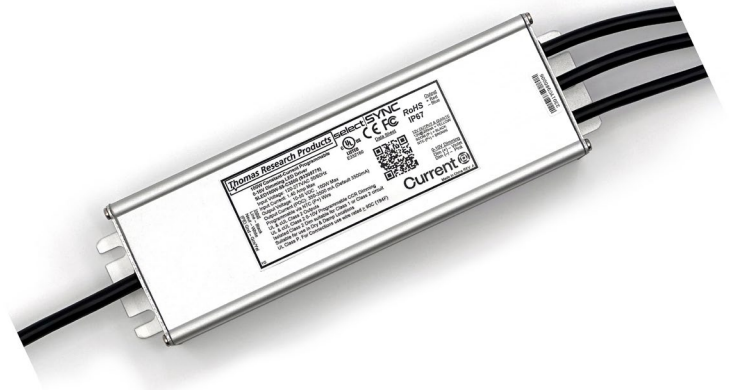
Model Table

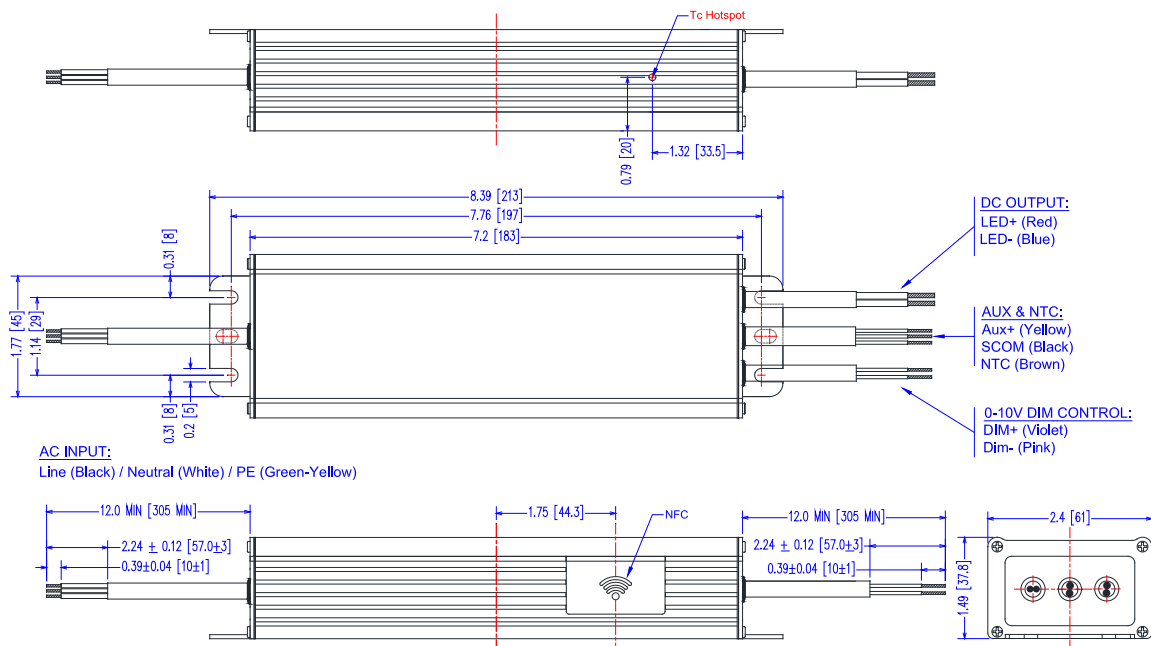| Part	Model	Adj. Current Out (mA +5%)	Voltage Out (Vdc)	Max Power (W)	Default Current
93309779	SLED100W-55-C3500	350-3500	10-55	100	3500
93309780	SLED100W-200-C1400	200-1400	36-200	100	1400
93309797	SLED100W-55-C3500-NFC	350-3500	10-55	100	3500
93309798	SLED100W-200-C1400-NFC	200-1400	36-200	100	1400

Safety Cert.	Standard
UL/CUL	UL8750, UL1310 for UL Class 2 & CAN/CSA C22.2 No. 250.13, UL Class P
CE	EN61347-1, EN61347-2-13

EMC Standard	Notes
FCC, 47CFR Part 15	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.

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Dimensions

RD: Wire Programmable Version with NTC

Tc Hotspot

0.79 [20] 1.32 [33.5]

8.39 [213]
7.76 [197]
7.2 [183]

0.31 [8]
1.14 [29]
0.31 [8] 0.2 [5]

DC OUTPUT:
LED+ (Red)
LED- (Blue)

AUX & PROG:
Aux+ (Yellow)
SCOM (P-) (Black)
NTC (P+) (Brown)

0-10V DIM CONTROL:
DIM+ (Violet)
Dim- (Pink)

AC INPUT:
Line (Black) / Neutral (White) / PE (Green-Yellow)

12.0 MIN [305 MIN]
2.24 ± 0.12 [57.0±3]
0.39±0.04 [10±1]

12.0 MIN [305 MIN]
2.24 ± 0.12 [57.0±3]
0.39±0.04 [10±1]

2.4 [61]
1.49 [37.8]

RDNFC: NFC Wireless Programmable Version with NTC

Tc Hotspot

0.79 [20] 1.32 [33.5]

8.39 [213]
7.76 [197]
7.2 [183]

0.31 [8]
1.77 [45]
1.14 [29]
0.31 [8] 0.2 [5]

DC OUTPUT:
LED+ (Red)
LED- (Blue)

AUX & NTC:
Aux+ (Yellow)
SCOM (Black)
NTC (Brown)

0-10V DIM CONTROL:
DIM+ (Violet)
Dim- (Pink)

AC INPUT:
Line (Black) / Neutral (White) / PE (Green-Yellow)

12.0 MIN [305 MIN]
2.24 ± 0.12 [57.0±3]
0.39±0.04 [10±1]

1.75 [44.3] NFC

12.0 MIN [305 MIN]
2.24 ± 0.12 [57.0±3]
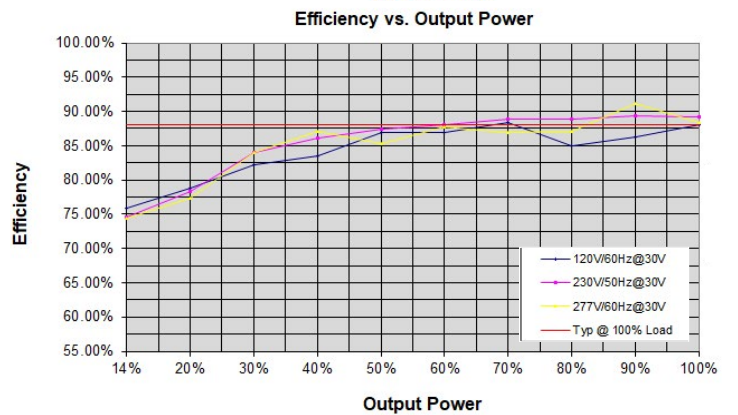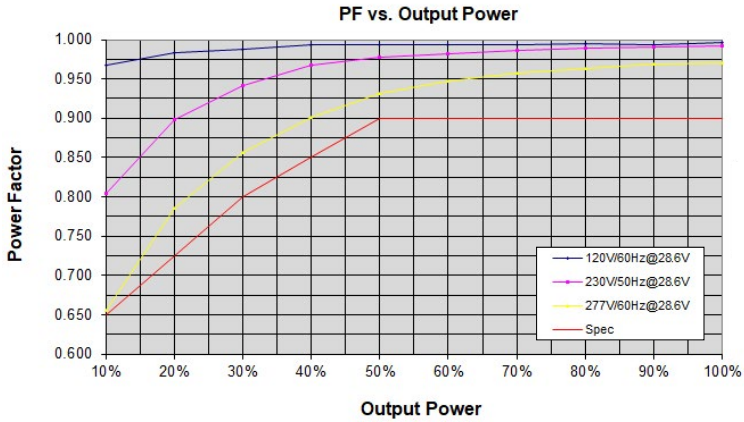0.39±0.04 [10±1]

2.4 [61]
1.49 [37.8]

LED wiring distance:
Recommended maximum wiring distance:
28.57V@3500mA with ~5% Vout Drop.

AWG	#22	#21	#20	#19	#18	#16
Distance (m)	3.9	4.9	6.1	7.7	9.7	15.5
Distance (ft)	12.6	15.9	20.1	25.3	32.0	50.8

TRP_SLED100W_Spec

Power Characteristics

PF vs. Output Power

THD vs. Output Power

SLED 100W-XX-PCXXXX-RD Estimated Life Full Load @ 120Vac

Efficiency vs. Output Power
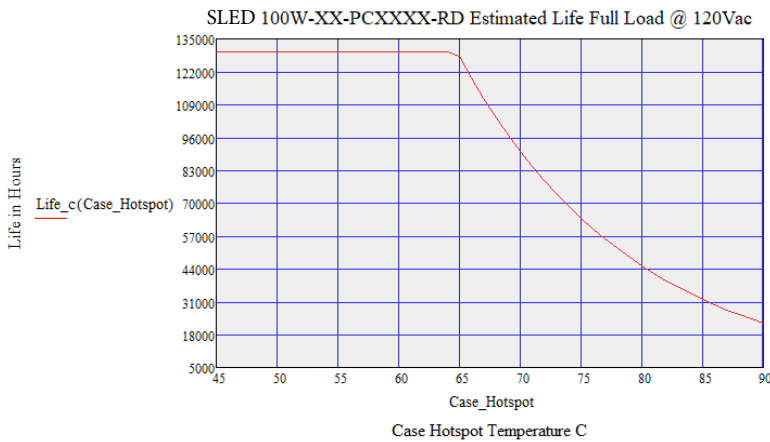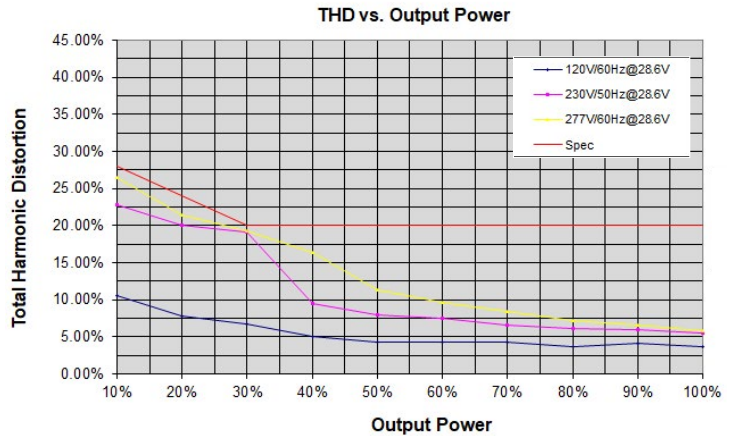
Parameter Defaults

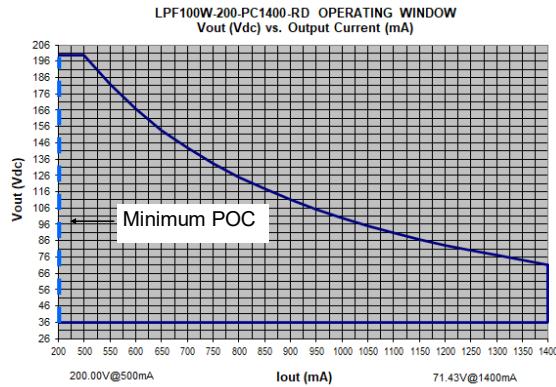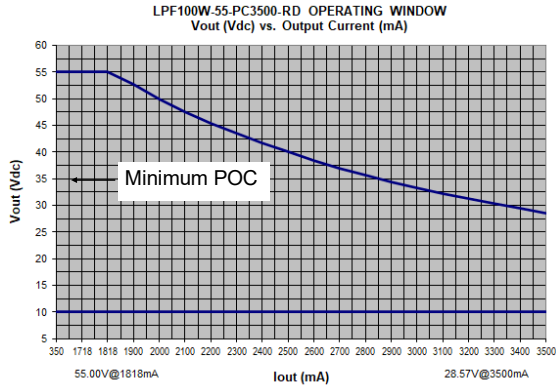| Parametar	Default Setting	Setting Range
Output Current (mA)	See model table	See model table
Dim to Zero	No	Yes or No
Minimum Dim Level (%)	1	1 - 100
Dimming Curve	Linear	Linear or Logarithmic
NTC Maximum Ohms (kΩ)	6.3	2 - 10
NTC Minimum Ohms (kΩ)	2	1 - 10
NTC-Minimum Output Level (%)	10	1 - 100

1* Note: NTC Minimum value must not exceed 70% of Maximum value

Note: The area under the life-temperature curve represents where the driver has highly reliable operation within specification. Driver performance may drift out of published specifications as the hours of operation exceed the curve at a given temperature. Higher operating temperatures increase the chances of a failure to function. Other electrical, mechanical and environmental factors affect driver lifetime but are not represented in this calculation.

Wiring

LED Driver

(Violet) Dim+
(Pink) Dim-
(Brown) NTC/P+ — (For NTC Option)
(Black) SCOM (P-) — (For Rset Option)
(Yellow) 12V@200mA — OPTIONAL
(Red) LED+
(Blue) LED-

INCOMING POWER
(NEUTRAL) — (White) NEUTRAL
(LINE) — (Black) LINE
(GROUND) — (Green) GND

CASE MUST BE GROUNDED

RSET RESISTOR

PURPLE +

0-10V DIMMER or CONTROL

NTC

LED ENGINE
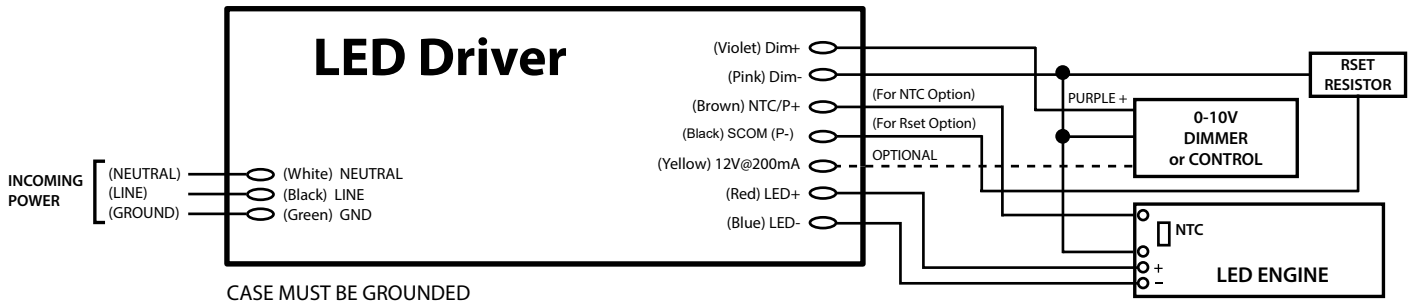
Power Operating Window

LPF100W-55-PC3500-RD OPERATING WINDOW
Vout (Vdc) vs. Output Current (mA)

Vout (Vdc) — Minimum POC

Iout (mA)
55.00V@1818mA   28.57V@3500mA

LPF100W-200-PC1400-RD OPERATING WINDOW
Vout (Vdc) vs. Output Current (mA)

Vout (Vdc) — Minimum POC
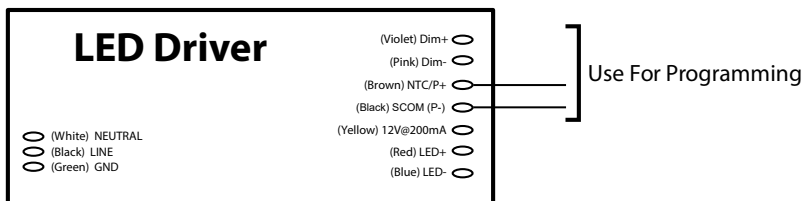
Iout (mA)
200.00V@500mA   71.43V@1400mA

Labeling Programmable Drivers

It is highly recommended that the drivers be labeled with information traceable to the programming prole. It can include the programmed output current, dimming curve type, minimum dimming level and name of the le storing the prole.

This information is critical to answering any eld questions from the contractor or end user.
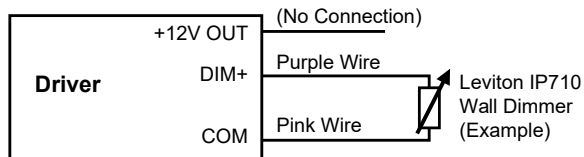
Programming Guide

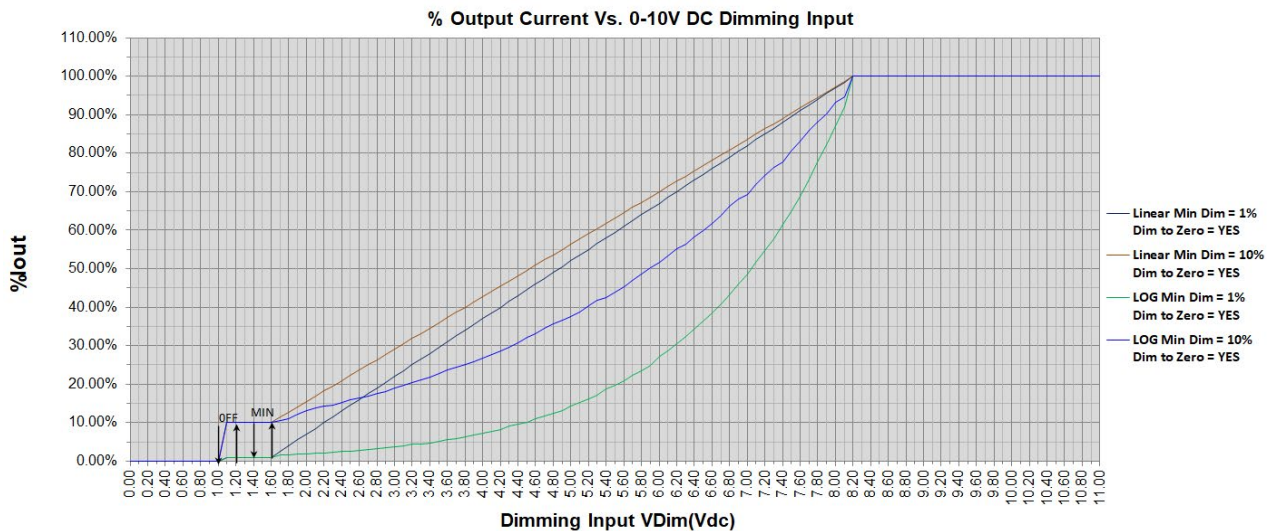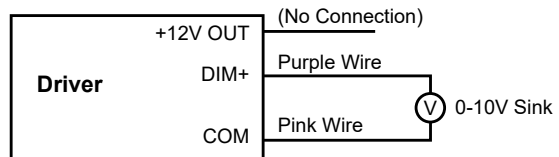Refer to the SelectSYNC Programming Software User's Manual.

LED Driver

(Violet) Dim+
(Pink) Dim-
(Brown) NTC/P+
(Black) SCOM (P-)
(Yellow) 12V@200mA
(Red) LED+
(Blue) LED-

Use For Programming

(White) NEUTRAL
(Black) LINE
(Green) GND

Dimming: 0-10Vdc

Parametar	Minimum	Typical	Maximum
12V Auxiliary Output	11.0V	12.0V	13.0V
12V Auxiliary Output Source Current	0mA		200mA
Absolute Voltage Range on 0-10V Input (Purple Wire)	-2.0V		+15V
Source Current out of 0-10V Input (Purple Wire)	0uA		250uA

Typical Dimming Circuit: 2-Wire Resistance

Driver
+12V OUT — (No Connection)
DIM+ — Purple Wire
COM — Pink Wire
→ Leviton IP710 Wall Dimmer (Example)

Typical Dimming Circuit: 2-Wire 0-10V Analog

Driver
+12V OUT — (No Connection)
DIM+ — Purple Wire
COM — Pink Wire
→ (V) 0-10V Sink

% Output Current Vs. 0-10V DC Dimming Input

(Graph: %Iout vs Dimming Input VDim(Vdc))

Legend:
- Linear Min Dim = 1% Dim to Zero = YES
- Linear Min Dim = 10% Dim to Zero = YES
- LOG Min Dim = 1% Dim to Zero = YES
- LOG Min Dim = 10% Dim to Zero = YES

0-10V Dimming Notes:

1. Part comes with DIM+, COM & +12V auxiliary connectors. DIM+ and +12V return are connected to COM. This is for controls and sensors that need a 12V supply.
2. Part is compatible with most 0-10V Wall Slide dimmers and direct 0-10V analog signal. Recommended dimmer is Leviton IP710 or equivalent connected between DIM + and COM wires.
3. Output current will be Minimum Programmed Value when Vdim ≤1.00V. If set to 0% then this indicates dim to zero operation.
4. Output will be 100% with DIM+/COM open or above 9.0V and Minimum Programmed Value with DIM+/COM Shorted.
5. Minimum dimming level is programmable with TRP Programming software.

NTC Information

Module Temperature Protection using External NTC (Negative Temperature Coefficient)

Select a Negative Thermal Coefficient (NTC) resistor with a resistance range that allows the full output current to flow at safe LED operating tem-peratures. NTC resistance should drop sufficiently to allow reduced output current at elevated or harmful LED temperature levels. NTC operation should be thoroughly tested to ensure proper operation over all the full temperature range of the Driver and the LED Engine.

Example: NTC High, NTC Low and NTC Minimum Iout% can be programmed using TRP Programmer USB interface & TRP PC based GUI Software. Factory Default Settings: NTC Low = 2.0K ~ 10% Iout, NTC High = 6.3K, 100% Iout
Programmable settings: NTC Minimum Level (%), NTC Minimum Ohms, NTC Maximum Ohms.

Output Current (%) vs. NTC (Ohms)
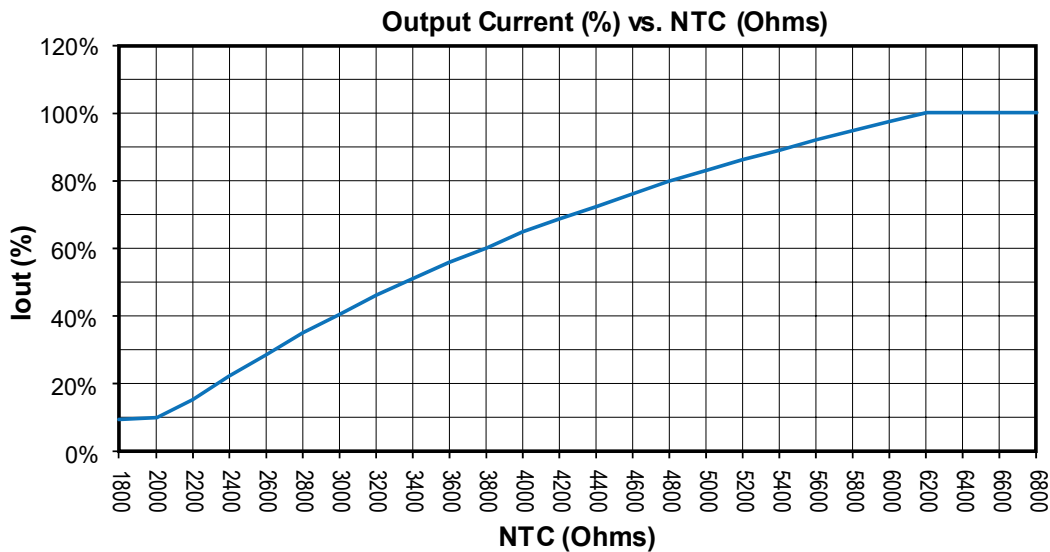
Module Temperature Protection Example

NTC = 805SMD, R_{25C} = 15K Ohm ± 2%, R_{64C} = 3700, Vishay Part #: NTCS0805E3153GMT
With part set: NTC Max = 6.3K, NTC MIN = 2.0K, Iout Min = 10%

Output Current (%) vs. NTCS0805E3153GMT NTC Temp (^{O}C)

Current ◉

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