Thomas Research Products

SSL Solutions Faster Than The Speed Of Light®

TRC-150W Dimmable Series

Switch Mode LED Drivers
Constant Current
Aluminum Housing

Total Power: 150 Watts
Input Voltage: 100-277 Vac
Outputs: Single from 53 - 428 Vdc
Waterproof Applications, IP67
Ultra High Efficiency
High Power Factor
UL8750

Electrical Specifications

Input Voltage Range:	**100 - 277 Nom. Vac (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:	**65 Amps maximum @ 230 Vac, cold start 25ºC**
Input Current:	**1.8 A max 100Vac, 0.9 A max 220Vac**
Maximum Power:	**150W**
Line Regulation:	**± 1%**
Load Regulation:	**± 3%**
Leakage Current:	**0.75 mA 277 Vac 60Hz**
Typical Efficiency	**92.5%-93.5% at 220Vac**
Turn-on Delay:	**0.5S typical 110Vac, 0.3S typical 220Vac**
Ripple and Noise:	**13V at 350 mA**
Protection:	**Over-Voltage, Over-Temperature (110°C), Lightning, and Short Circuit Protection with Self Recovery**

Environmental Specifications

Operating Temperature:	**-35ºC to +70ºC**
Storage Temperature:	**-40ºC to +85ºC**
Humidity:	**5% to 100%**
Cooling:	**Convection**
MTBF:	**250,000 Hours (350 mA model) @ 110Vac input, 80% load and 25ºC ambient conditions per MIL-HDBK-217F** **230,000 Hours (1400 mA model) @ 110Vac input, 80% load and 25ºC ambient conditions per MIL-HDBK-217F**
Lifetime:	**350mA: 58,000 Hours @ 220Vac, 80% load, Tc=60ºC** **1400mA: 88,000 Hours @ 220Vac, 80% load, Tc=60ºC**
Weight:	**3.31 lbs. (1.5 kg)**

Dimming - Product Specifications

Model Number	Output Current *(mA)**	Output Voltage Range *(Vdc)*	Max. Output Power *(W)*	Typical Efficiency
TRC-150S035DT	350	214~428	150	93.5%
TRC-150S045DT	450	166~333	150	93.0%
TRC-150S070DT	700	107~214	150	93.0%
TRC-150S105DT	1050	107~142	150	93.0%
TRC-150S140DT	1400	53~107	150	92.5%

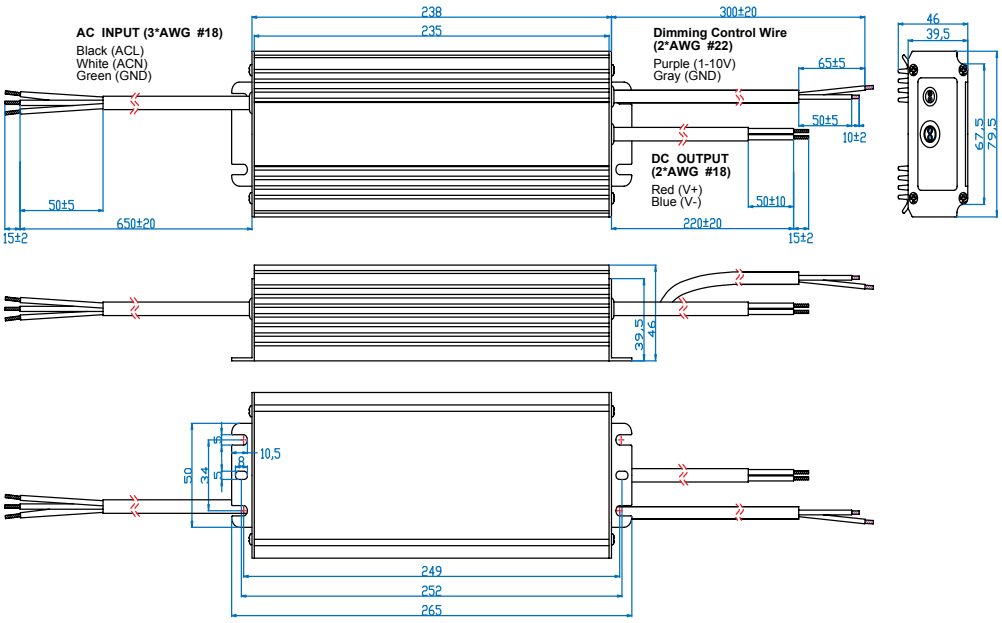
* The output current is adjustable at factory from 50% to 100%.

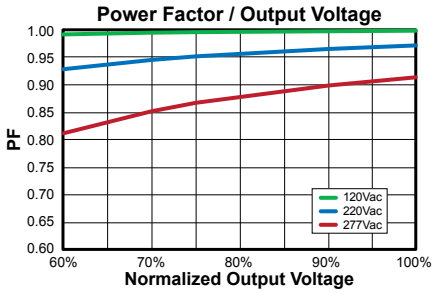
c UL us CE RoHS IP67

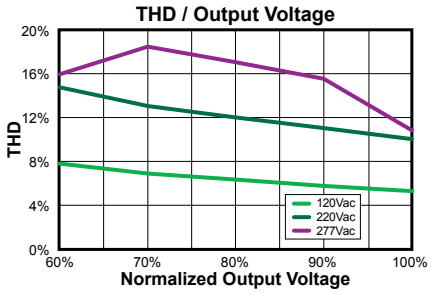
Note:
LED drivers are designed and intended to operate LED loads only. Non-LED loading may be outside the specified design limits of our LED driver, and therefore cannot covered by any warranty. If you desire to use our LED drivers to operate non-LED loads please contact us to discuss compatibility.

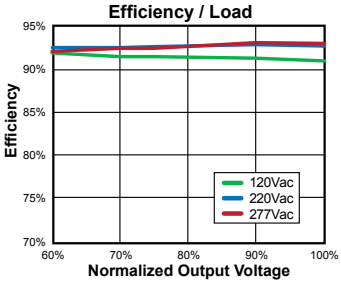
Specifications subject to change without notice.

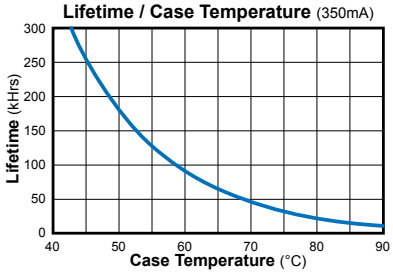
5-22-13

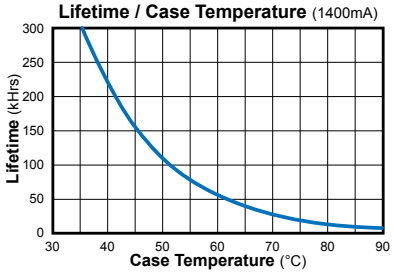

AC INPUT (3*AWG #18)
Black (ACL)
White (ACN)
Green (GND)
Dimming Control Wire
(2*AWG #22)
Purple (1-10V)
Gray (GND)
DC OUTPUT
(2*AWG #18)
Red (V+)
Blue (V-)
238
235
300±20
46
39,5
65±5
50±5
10±2
97,5
79,5
50±5
650±20
15±2
50±10
220±20
15±2
39,5
46
10,5
50
34
249
252
265

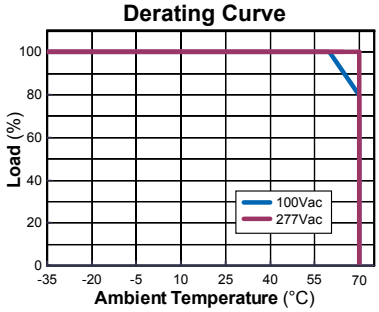

Power Factor / Output Voltage
PF
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
60%
70%
80%
90%
100%
Normalized Output Voltage
120Vac
220Vac
277Vac

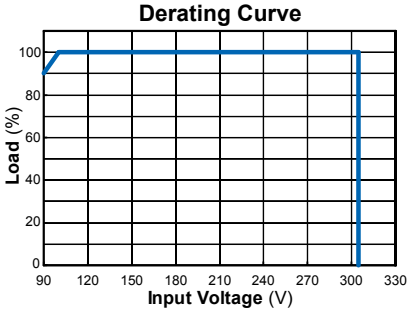

THD / Output Voltage
THD
20%
16%
12%
8%
4%
0%
60%
70%
80%
90%
100%
Normalized Output Voltage
120Vac
220Vac
277Vac


Efficiency / Load
Efficiency
95%
90%
85%
80%
75%
70%
60%
70%
80%
90%
100%
Normalized Output Voltage
120Vac
220Vac
277Vac


Lifetime / Case Temperature (350mA)
Lifetime (kHrs)
300
250
200
150
100
50
0
40
50
60
70
80
90
Case Temperature (°C)


Lifetime / Case Temperature (1400mA)
Lifetime (kHrs)
300
250
200
150
100
50
0
30
40
50
60
70
80
90
Case Temperature (°C)


Derating Curve
Load (%)
100
80
60
40
20
0
-35
-20
-5
10
25
40
55
70
Ambient Temperature (°C)
100Vac
277Vac

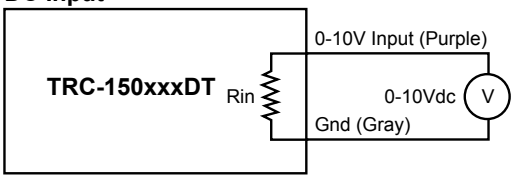

Derating Curve
Load (%)
100
80
60
40
20
0
90
120
150
180
210
240
270
300
330
Input Voltage (V)

Dimming Control (on secondary side)

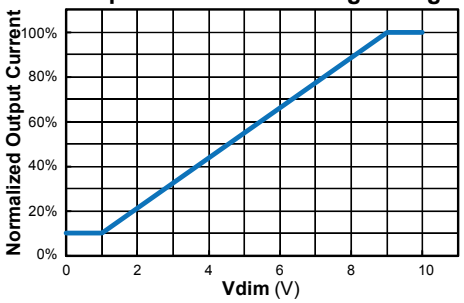
Parameters	Minimum	Typical	Maximum
Absolute maximum voltage on the 0~10V input pin	-2 V	—	12 V
Source current on 0~10V input pin	0 µA	—	1 mA

The dimmer control is operated from an input signal of 1 – 10 Vdc. Recommended implementations are provided below.

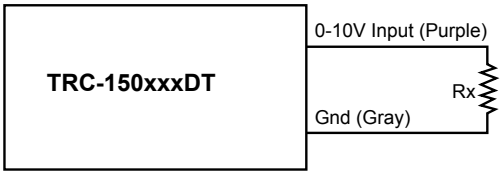
DC Input



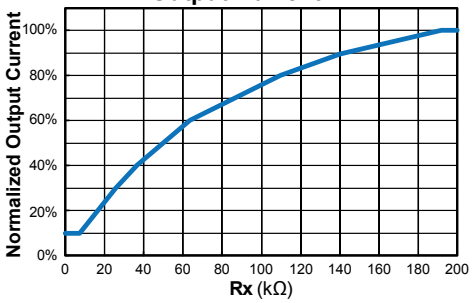
Output Current / Dimming Voltage



External Resistor



Output Current / Rx



Notes:

1. Io is actual output current and Ir is rated current without dimming control.
2. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
3. If the output voltage is maintained above 50% of the maximum output voltage, the dimming control may be operated over the entire 1-10V range with output current varying from 10% to 100% of Ir.
4. The dimming input signal may be less than 1V; however, no further dimming will occur between 0V and 1V.
5. The internal resistor Rin is 20K, and Vcc is about 15V.
6. Do not connect the GRAY of dimming to the output; otherwise, the LED driver can not work normally.

Safety and EMC Compliance	
UL/CUL	UL8750, UL1012, UL935, CSA-C22.2 No. 107.1-01
C E	EN 61347-1, EN61347-2-13
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 2 kV, line to earth 4 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies to Lighting Equipment