



Thomas Research Products

SSL Solutions Faster Than The Speed Of Light®

96W TRC-096 Dimmable Series

Switch Mode LED Drivers,
Constant Current

Total Power: 96 Watts
Input Voltage: 100-277 Vac
High Efficiency
Indoor or Outdoor Applications, IP67
High Power Factor
Lightning Protection
UL8750, EN61347

Electrical Specifications

Input Voltage Range:	100-277 Vac Nom. (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:	69 A @ 230Vac
Input Current:	1.2 A @ 100Vac, 0.6 A @ 220Vac
Leakage Current:	1 mA @ 277Vac
Maximum Power:	96W
Current Accuracy:	± 1%
Load Regulation:	± 3%
THD:	≤ 20% @ full load
Ripple and Noise:	30% I _o
Turn-on Delay:	1S @ 110Vac, 0.8S @ 220Vac
Protection:	Output Over-Voltage, Short Circuit Protection with Self Recovery, Over-Temperature Protection (110°C)

Environmental Specifications

Operating Temperature:	-35°C to +70°C
Storage Temperature:	-40°C to +85°C
Maximum Case Temp.	89°C
Humidity:	10% to 100%
Cooling:	Convection
MTBF:	400,000 Hours @ 25°C, 80% load, 110Vac per MIL-HDBK-217F
Lifetime:	50,000 Hours @ 60°C
Weight:	1.87 lbs (850 g)



Constant Current Versions - Product Specifications

Model Number	Output Current (mA)	Output Voltage Range (Vdc)	Typical Efficiency (full load, 220Vac)
TRC-096S035DT	350	137-274	91%
TRC-096S045DT	450	106-213	91%
TRC-096S070DT	700	68-137	90%
TRC-096S105DT	1050	46-92	90%
TRC-096S140DT	1400	35-69	89%
TRC-096S175DT	1750	27-54.8	89%
TRC-096S210DT	2100	22-45.7	88%
TRC-096S245DT	2450	19-39.1	88%
TRC-096S280DT	2800	17-34.2	88%
TRC-096S315DT	3150	15-30.4	87%
TRC-096S350DT	3500	13-27.4	87%
TRC-096S400DT	4000	12-24	87%

Class 2: US/Canada US Only



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 be 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.

5-21-13

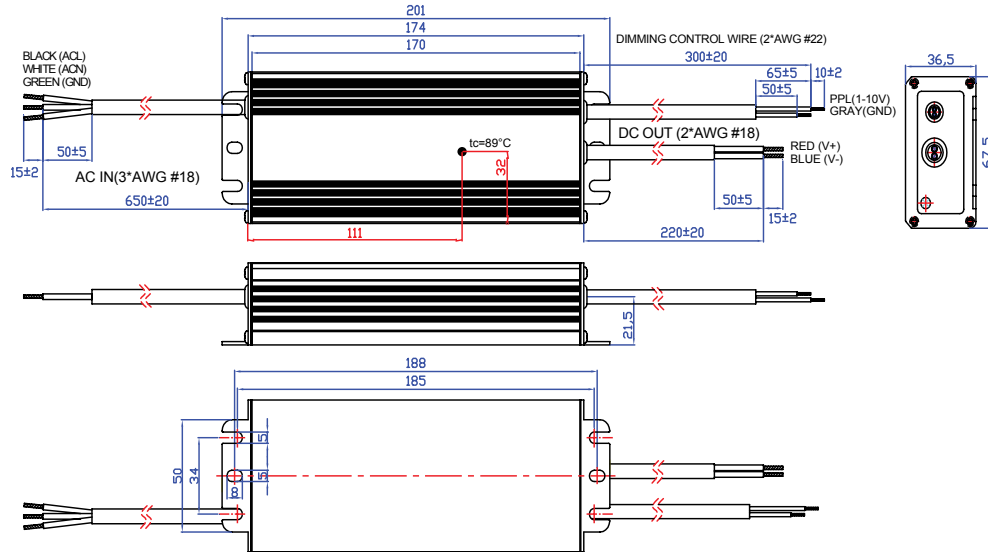


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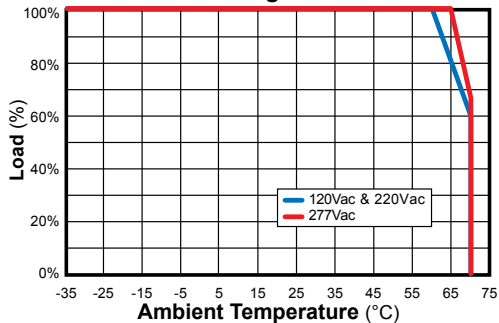
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TRC-096 Dimming

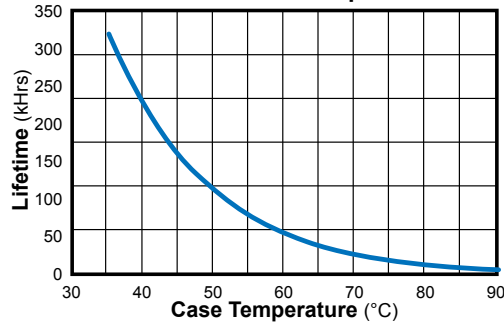
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Derating Curve



Lifetime / Case Temperature



Safety and EMC Compliance

UL/CUL	UL8750, UL1310, UL1012, CSA C22.2 No. 223-M91, CSA C22.2 No. 107.1
C E	EN 61347-1, EN61347-2-13
EN 55015	Conducted emission
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
FCC Part 15 Class B	
EN 61000-4-2	Electrostatic Discharge
EN 61000-4-3	RFE Field Susceptibility Test
EN 61000-4-4	Electrical Fast Transient
EN 61000-4-5	Surge Immunity Test
EN 61000-4-6	Conducted Radio Frequency
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity

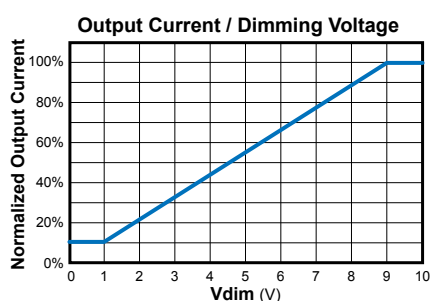
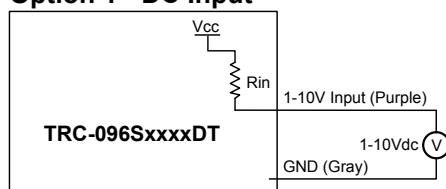


Dimming Control Details

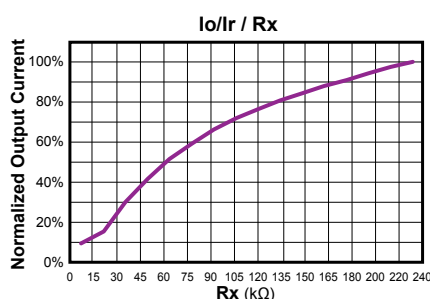
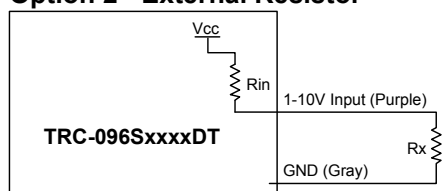
Parameters	Minimum	Typical	Maximum
10V output voltage	9.8 V	10 V	10.2 V
Absolute maximum voltage on the 0-10V input pin	0 V	—	12 V
Source current on 0-10V input pin	0 mA	—	0.5 mA
Value of Rin (the resistor inside the LED driver which is located between the 1-10V input pin and the Vcc output pin)	19.8K	20K	20.2K

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

Option 1 - DC Input



Option 2 - External Resistor



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 signal is allowed to be less than 1V, however, when it is 0-1V, the output current is 10%Ir.
5. Do not connect the Gray dimming control lead to the black output-current lead.