LED-20W Series
Switch Mode LED Drivers with Isolation, Constant Current, Dimming & Constant Voltage

Thomas Research Products

Electrical Specifications

Input Voltage Range:	100-277 Vac Nom. (90-305 V Min/Max)
Input Over-Voltage:	Can endure 320Vac for 48 Hrs, 350Vac for 2 Hrs
Frequency:	50/60 Hz Nom. (47-63 Hz Min/Max)
Power Factor:	>0.90 @ full load, 100V through 277V
Inrush Current:	<15.0 Amps max @ 230 Vac, cold start 25ºC
Input Current:	0.25 Amps max at 120 Vac
Efficiency:	85% typical at max load
Maximum Power:	20W
Line Regulation:	± 3%
Load Regulation:	± 4%
THD:	$\leq$ 20% @ $\geq$ 70% load 100-230V, $\geq$ 80% load 277V
Leakage Current:	300 µA Typical
Hold Up Time:	Half Cycle
Output Protection:	Over-Voltage, Over-Current, and Short Circuit Protection with Auto Recovery

Environmental Specifications

Minimum Starting Temp:	-30ºC
Storage Temperature:	-40ºC to +85ºC
Maximum Case Temp.	90ºC
Humidity:	5% to 95%
Cooling:	Convection
Sound Rating:	Class A
Vibration Frequency:	5 to 55 Hz/2g, 30 minutes
MTBF:	488,000 Hours at full load and 40ºC ambient conditions per MIL-217F Notice 2
Weight:	5.8 oz (165 grams) typical

Ordering Options:

-D: 0-10V & Resistance dimmable version comes with an extra two wires +Purple/-Gray on the output side. -D 0-10V Dimming is compatible with most quality 0-10V wall dimmers. See page 3 for additional specifications.

E332160

- Total Power: 20 Watts
- Input Voltage: 100-277 Vac Nom.
- UL Dry & Damp Location Rated
- IP66 & NEMA4
- High Power Factor
- UL Sign Components Manual (S.A.M. Models) Models

Constant Current - Product Specifications

Model Number	Output Current (mA ±4%)	Output Voltage Range (Vdc)	Max. Output Power (W)	Typical Efficiency
LED20W-57-C0350-XX	350	19-57	20	84%
LED20W-48-C0350-XX	350	16-48	16.8	83%
LED20W-43-C0460-XX	460	15-43	20	83%
LED20W-40-C0500-XX	500	14-40	20	82%
LED20W-36-C0550-XX	550	12-36	20	82%
LED20W-28-C0700-XX	700	10-28	20	81%
LED20W-24-C0700-XX	700	8-24	16.8	81%
LED20W-24-C0830-XX	830	8-24	20	81%
LED20W-22-C0910-XX	910	7-22	20	81%
LED20W-18-C1100-XX	1100	6-18	20	80%
LED20W-15-C1330-XX	1330	5-15	20	80%
LED20W-13-C1540-XX	1540	4-13	20	79%
LED20W-12-C1660-XX	1660	4-12	20	78%

-XX indicates dimming options are available. See options at left. Blank = fixed current output

Constant Voltage - Product Specifications

Model Number	Output Voltage (Vdc ±5%)	Output Current Range (mA)	Max. Output Power (W)	Typical Efficiency
LED20W-12 ●	12	415-1660	20	82%
LED20W-13	13	385-1540	20	82%
LED20W-15	15	333-1330	20	83%
LED20W-18	18	275-1100	20	83%
LED20W-22	22	228-910	20	84%
LED20W-24 ●	24	208-830	20	84%
LED20W-28	28	175-700	20	84%
LED20W-36	36	138-550	20	85%
LED20W-40	40	125-500	20	85%
LED20W-43	43	115-460	20	85%
LED20W-48	48	88-350	16.8	85%
LED20W-57	57	88-350	20	85%

● Indicates S.A.M.

Class 2:   US/Canada

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 drivers, 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.
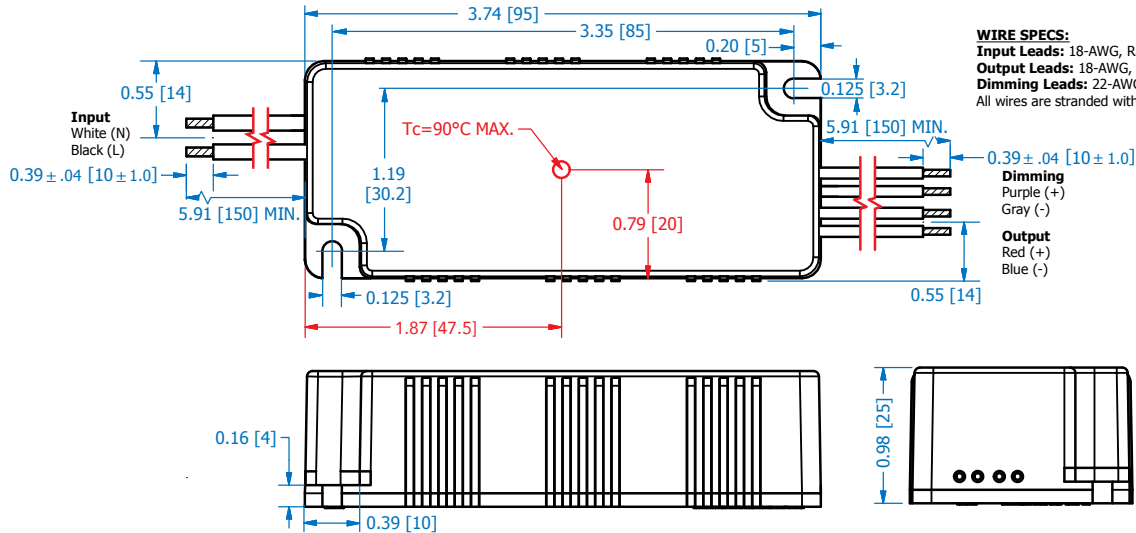
Specifications subject to change without notice.

Rev 10-13-16
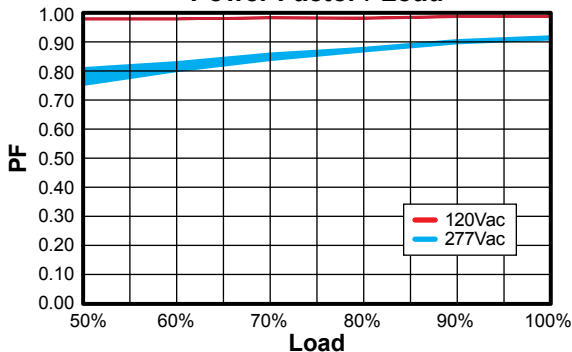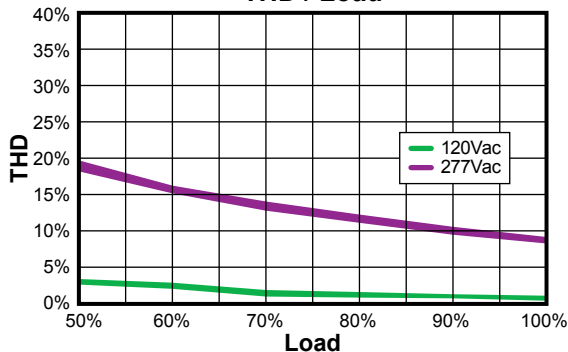
HUBBELL

Dimensions - IN [mm]

WIRE SPECS:
Input Leads: 18-AWG, Rated 600V, 105°C, min.
Output Leads: 18-AWG, Rated 600V, 105°C, min.
Dimming Leads: 22-AWG, Rated 600V, 105°C.
All wires are stranded with solder dipped ends

3.74 [95]
3.35 [85]
0.20 [5]
0.125 [3.2]
0.55 [14]

Input
White (N)
Black (L)

0.39 ± .04 [10 ± 1.0]
5.91 [150] MIN.
5.91 [150] MIN.

Tc=90°C MAX.

1.19 [30.2]
0.79 [20]
0.125 [3.2]
1.87 [47.5]

0.39 ± .04 [10 ± 1.0]
Dimming
Purple (+)
Gray (-)

Output
Red (+)
Blue (-)

0.55 [14]

0.16 [4]
0.39 [10]
0.98 [25]

Power Factor / Load

| | 120Vac |
| | 277Vac |

PF / Load — axis: PF (0.00 to 1.00), Load (50% to 100%)

THD / Load

| | 120Vac |
| | 277Vac |

THD / Load — axis: THD (0% to 40%), Load (50% to 100%)

Lifetime / Case Temperature

Lifetime (kHrs) (0 to 130) vs Case Hotspot Temperature (°C) (40 to 90)

Typical Efficiency / Load
(LED20W-028-C0700-D)

| | 120Vac |
| | 277Vac |

Efficiency (75% to 100%) vs Load (50% to 100%)
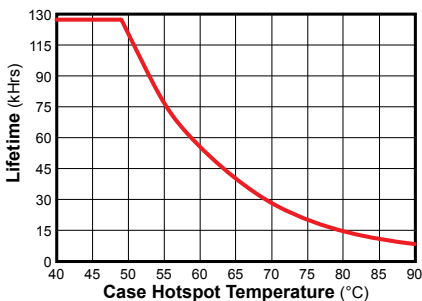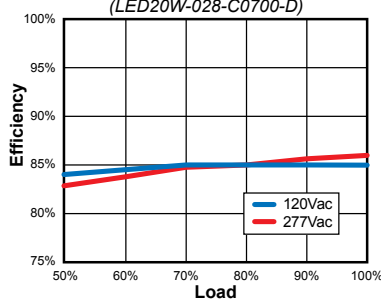
Safety Cert.	Standard
UL/CUL	UL8750
CSA	22.2
CE	EN61347
EMC Standard	**Notes**
EN61000-3-2	
EN61000-3-3	Class C
FCC, 47CFR Part 15	Class B

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.

UL Conditions of Acceptability

See website for additional information

## "-D" Option: 0-10VDC and Resistance Dimming

Parameters	Minimum	Typical	Maximum
Source Current out of 0-10V Purple Wire	0mA	—	2mA
Absolute Voltage Range on 0-10V (+) Purple Wire	-2.0 V	—	+15 V
Sink Current into 0-10V Purple Wire	0mA	—	1.2mA

Typical Dimming Circuit

Dim (+) Purple

LED20W-xxx-Cxxxx-D

IP710 Wall Dimmer

Dim (-) Gray
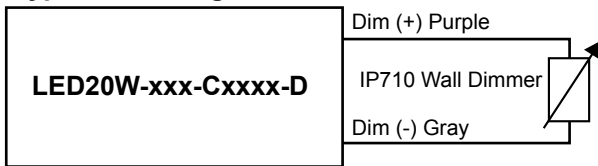
(Dimmer must be current-sink type control)

Output Current / 0-10VDC Dimming Input
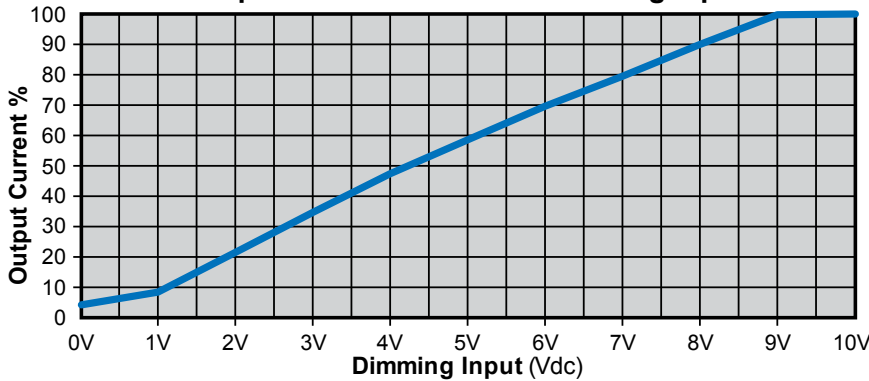
Notes:

1. 0-10V dimmable version comes with an extra two wires +Purple/-Gray on the output side.
2. Compatible with most 0-10V Wall Slide dimmers and direct 0-10V analog signal. Recommended dimmer is Leviton IP710 or equivalent
3. 0-10V dimmable version output will be ≤ 10% @ 0-1.0V
4. 0-10V dimmable version output will be 100% with Purple/Gray open and minimum with Purple/Gray Shorted.