20 Watt — LT20W Series VER A0

CONSTANT CURRENT WITH TRIAC/ELV DIMMABLE LED DRIVER

High-Performance TRIAC dimmable LED driver

US & CN, LED Driver Class 2

LT series driver is a high-performance TRIAC dimmable LED driver that provides smooth, continuous <10% dimming for virtually any LED fixture. It is the most versatile LED driver offered today due to its compatibility with a wide variety of LED arrays, for almost all of trailing edge & leading edge AC dimmer.

Enclosure

Size \ Unit	Inch	Millimeter
Case Length	3.75	95.50
Case Width	1.59	40.50
Case Height	0.98	25.00

Key Features

- Drive Mode: LT20W120 series
- Technology: Active PFC 1-Stage Switch Mode.
- Input Voltage: 100 to 277 VAC, 50/60Hz, no dimmer
120 VAC, With 120V AC Dimmer
- Output Power: 20 Watt Max.
- AC Dimmer: Trailing Edge & Leading Edge AC Dimmer
- Dimming Range: Smooth & Continuous Dimming from 10% to 100%.
- Efficiency: Up to 87%.
- Warranty: 5 years.

Special Features

- Continuous dimming from 10% to 100%.
- Triac or phase cut dimming.
- Safety isolation between primary and secondary.
- A rated lifetime of 50,000 hours @ Tc = 80°C.
- Safety: UL8750, UL1310 Class 2, CSA22.2.
- EMC: FCC Part 15 Class B.
- Inrush Current Limiting Circuitry: AC Power Line: line to line 2 kV, eliminates circuit breaker tripping, switch arcing and relay failure.
- Plastic shell, Used with silicone potting.
- Meet the RoHs directive.
- IP65, NEMA4 compliant for Dry. Damp location.
- 100% performance tested with CHROMA 8000 system at YG factory.
- 100% burned in with program-control test system at YG factory, at 50 degrees ambient temperature.

20W Triac Dimming Part List

No.	Part Number	Input Voltage (with dimmer)	US Class 2	CN Class 2	Output Voltage Range	Output Constant Current Range	Current Accuracy	Power Factor	Output Power	Max. Eff.
1	LT20W120-57-C0350	108-132V	Yes	Yes	38~57Vdc	35-350mA	±5%	0.90	20W	86%
2	LT20W120-48-C0400	108-132V	Yes	Yes	32~48Vdc	40-400mA	±5%	0.90	20W	86%
3	LT20W120-40-C0500	108-132V	Yes	Yes	26~40Vdc	50-500mA	±5%	0.90	20W	85%
4	LT20W120-36-C0550	108-132V	Yes	Yes	24~36Vdc	55-550mA	±5%	0.90	20W	85%
5	LT20W120-28-C0700	108-132V	Yes	Yes	18~28Vdc	70-700mA	±5%	0.90	20W	84%
6	LT20W120-24-C0830	108-132V	Yes	Yes	16~24Vdc	83-830mA	±5%	0.90	20W	84%
7	LT20W120-17-C1200	108-132V	Yes	Yes	11~17Vdc	120-1200mA	±5%	0.90	20W	83%
8	LT20W120-12-C1660	108-132V	Yes	Yes	8~12Vdc	160-1660mA	±5%	0.90	20W	82%

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Product Release Date: 2017.03
Product Updates Date: 2018.06.02

20W Constant Current Part List

No.	Part Number	Input Voltage (no dimmer)	US Class 2	CN Class 2	Output Voltage Range	Output Constant Current	Current Accuracy	Power Factor	Output Power	Max. Eff.
1	LT20W120-57-C0350	100-277V	Yes	Yes	38~57Vdc	350mA	±5%	0.90	20W	87%
2	LT20W120-48-C0400	100-277V	Yes	Yes	32~48Vdc	400mA	±5%	0.90	20W	87%
3	LT20W120-40-C0500	100-277V	Yes	Yes	26~40Vdc	500mA	±5%	0.90	20W	86%
4	LT20W120-36-C0550	100-277V	Yes	Yes	24~36Vdc	550mA	±5%	0.90	20W	86%
5	LT20W120-28-C0700	100-277V	Yes	Yes	18~28Vdc	700mA	±5%	0.90	20W	85%
6	LT20W120-24-C0830	100-277V	Yes	Yes	16~24Vdc	830mA	±5%	0.90	20W	85%
7	LT20W120-17-C1200	100-277V	Yes	Yes	11~17Vdc	1200mA	±5%	0.90	20W	84%
8	LT20W120-12-C1660	100-277V	Yes	Yes	8~12Vdc	1660mA	±5%	0.90	20W	83%

Input Spsecifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
Input Voltage	100 Vac	---	277 Vac	120, 230, 277 Vac Nominal Values.
Input Frequency	47 Hz	50/60 Hz	63 Hz	50/60 Hz Nominal.
Input AC Current	---	---	0.22 A	Measured at 120 Vac / 60Hz Input, Output Full Load.
	---	---	0.12 A	Measured at 230 Vac / 50Hz Input, Output Full Load.
	---	---	0.10 A	Measured at 277 Vac / 60Hz Input, Output Full Load.
Inrush Current (Peak)	---	2.5 A / 0.5uS	3.0 A / 1.0uS	Measured at 120 Vac / 60Hz Input, Output Full Load.
Leakage Current	---	---	300 μA	Measured at 120 Vac / 60Hz Input, Output Full Load.
	---	---	700 μA	Measured at 277 Vac / 60Hz Input, Output Full Load.
THD	---	---	20%	Measured at 120, 230 Vac Input, ≥ 60% Load. 277 Vac Input, ≥ 70% Load.
Power Factor (PF)	0.90	---	---	

Output Spsecifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
DC Output Voltage	8V	---	57V	Measured at 120, 230, 277 Vac Input, The voltage is DC+ to DC-.
Output Power	---	---	20W	Measured at 120, 230, 277 Vac Input.
Flickering Index (Ipk-pk)	---	---	30%	20MHz BW, Full load output in parallel with 0.1uF & 10uF CAP. Flickering Index is defined as [(Imax-Imin)/(Imax+Imin)] * 100%.
Line Regulation	-5%	---	+5%	Maximum over entire range of input voltage / output loads (any combination), and temperature range.
Load Regulation	-5%	---	+5%	
Turn-on Time	---	500 ms	1000 ms	From VAC turn-on until output current reaches 10% of nominal value. Output Full Load.
Turn-off Delay	---	---	1000 ms	LED's not lit, No die glow.
Output Overshoot	-5%	---	+10%	Measured at 120, 230, 277 Vac Input, When power on or off.

Protection Spsecifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
Output Over Voltage (OVP)	---	---	60V	No Damage. Auto recovery when the leads are open.
Output Short Circuit (SCP)	---	---	---	No Damage. Auto recovery after short is removed.

Dimming Spsecifications

Items	Parameter	Min.	Typ.	Max.	Notes / Conditions
Phase cut Dimming	Turn-on Time	---	1000 ms	3000 ms	At 10% dim level. This time is AC input to the DC 10% output current. Less than 1000ms, for most dimmer.
	Flickering Index	---	---	30%	Flickering Index is defined as [(Imax-Imin)/(Imax+Imin)] * 100%.
	Output Current Range	10%	---	100%	CCR output.
	Shimmer	---	---	7%	Long Term Current Stability (Average can't vary by more than X% over 10s period).
	Dimming Curve Type		Similar to Log		Dim curve between max/min.
	Acoustic Noise	---	---	22 dB	Not to exceed at 1 ft at any dim level.

General Spsecifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
Cooling	Convection			
MTBF	650,000 hours			Measured at 120 Vac input, 100% Load and Tc=80° C (MIL-HDBK-217F).
Life Time	50,000 hours			

Environmental Spsecifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
Case Temperature (Tc)	-30 °C	---	+90 °C	Measured at location specified on case.
Operating Temperature (Ta)	-30 °C	---	+55 °C	This is a reference range. Tc controls temperature range.
Storage Temperature (Ts)	-40 °C		+90 °C	Non operating temperature range.
Operating Humidity	---	---	95% RH	Relative Humidity. Non-condensing.
Vibration	5 Hz	---	55 Hz	1G, 10 minutes / 1 cycle, period 30 minutes, each along X, Y, Z axis.

Safety Compliance

Safety Category	Standards / Notes
UL / cUL	UL8750, UL1310 Class 2, CSA22.2.
Withstand Voltage	Input to Output: 2000 Vac.
Isolation Resistance	Input to Output: >10MΩ, 500Vdc @ 25°C, 70% RH.

EMC Compliance

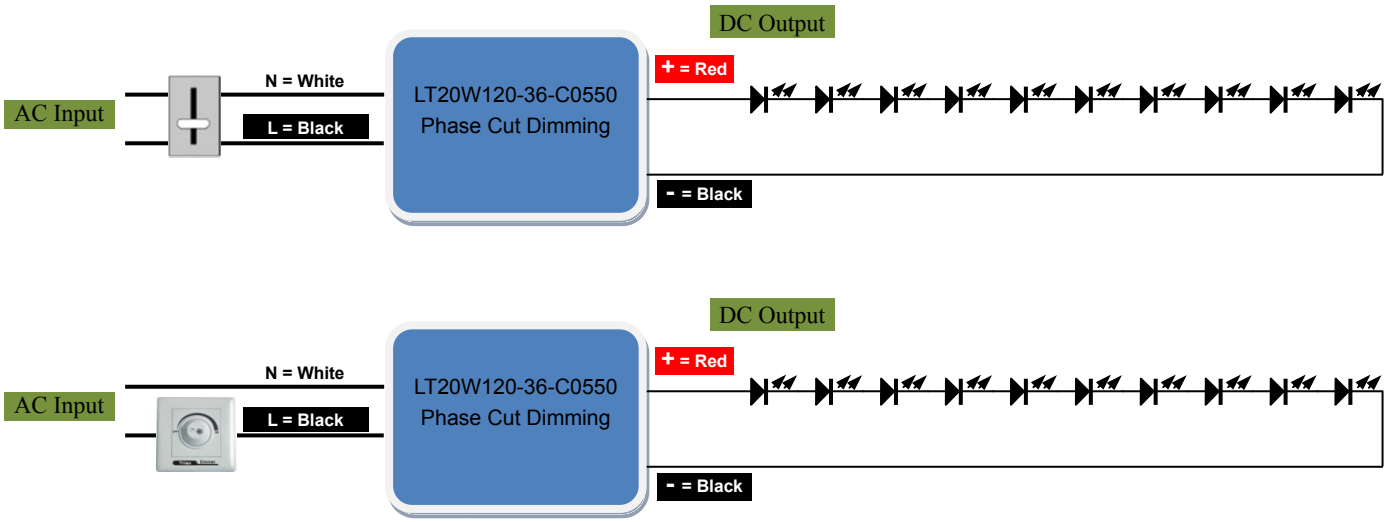
EMI Category	Standards
FCC	FCC 47CFR Part 15 Class B, ANSI C63.4: 2009.
EMS Category	**Notes**
IEEE Std C62.41.2™-2002	Surge Immunity Test: ANSI C62.41 0.5 μs 100 kHz Ring, 2kV/0.2kA, L-N, L-G, LN-G (10 strikes) 1.2/50μs 8/20μs Combination, 2kV/0.5kA, L-N, L-G, LN-G (10 strikes)

Note: the above test data are in the condition of 25 C ambient temperature, except for the marked temperature.

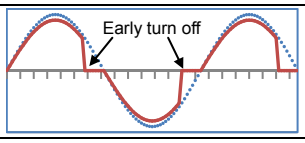
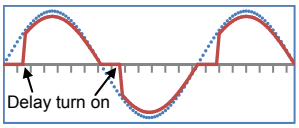
Typical Applications

LED Forward voltage: V_F = 3.0V~3.5V

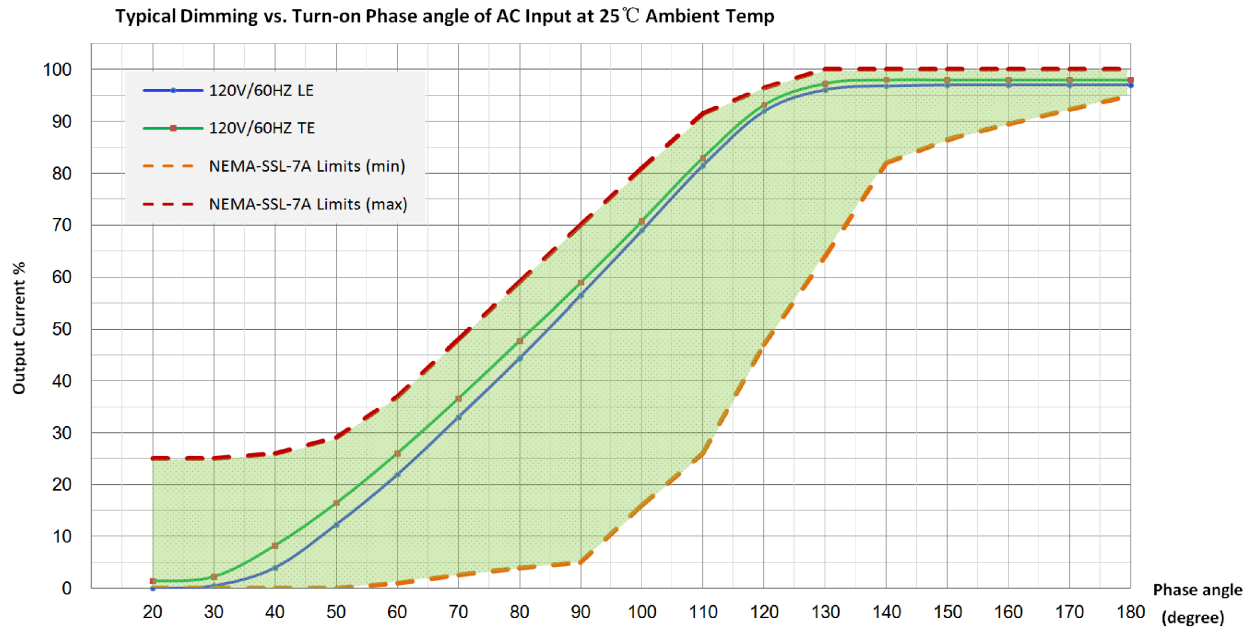
■. **Driver Phase Cut Dimming**



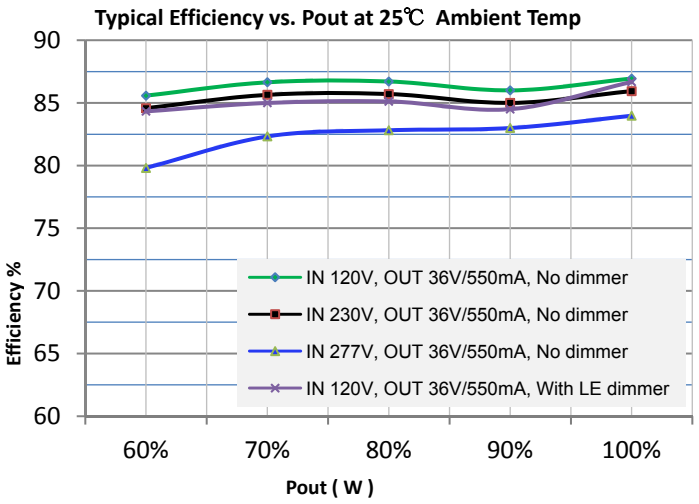
■. About Phase cut dimmer

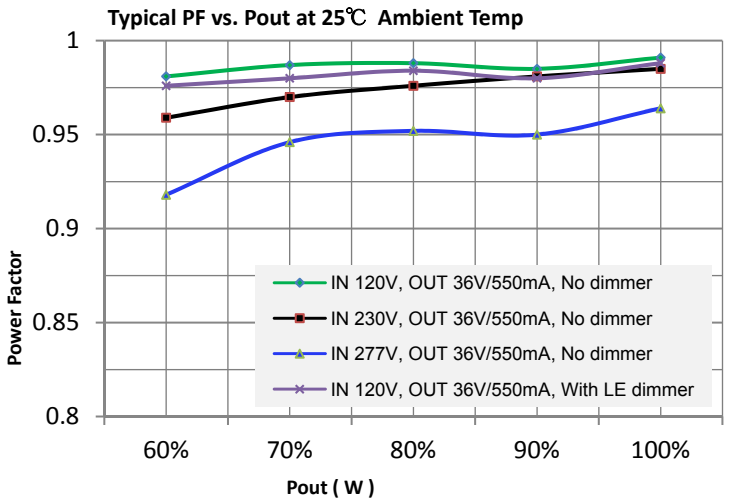
ELV dimmer	► Electronic Low Voltage dimmer. ► Trailing Edge phase dimmer. ► Reverse phase control dimming.		Reverse phase be cut	► high stability. ► low noise. ► highest cost.
TRIAC dimmer	► Incandescent phase dimmer. ► Leading Edge phase dimmer. ► SCR phase dimmer. ► Forward phase control dimming.		Forward phase be cut	► little worse stable. ► a little noise. ► lowest cost.

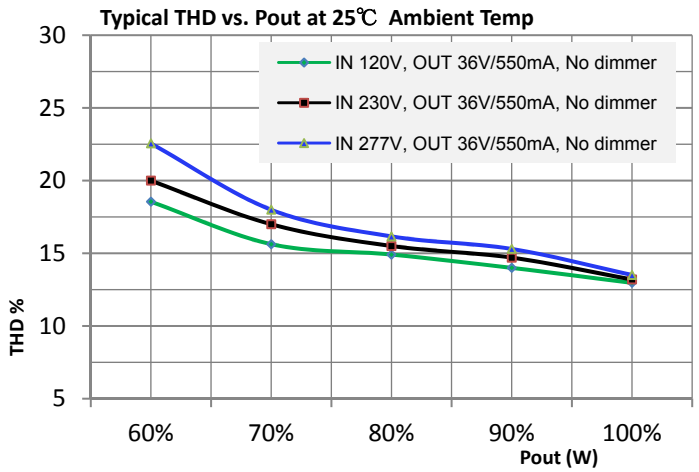
Dimming Curve

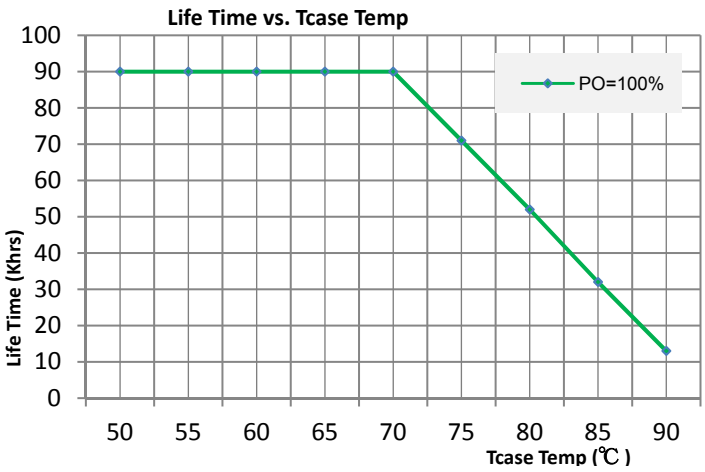


Characteristic Curve









Installation

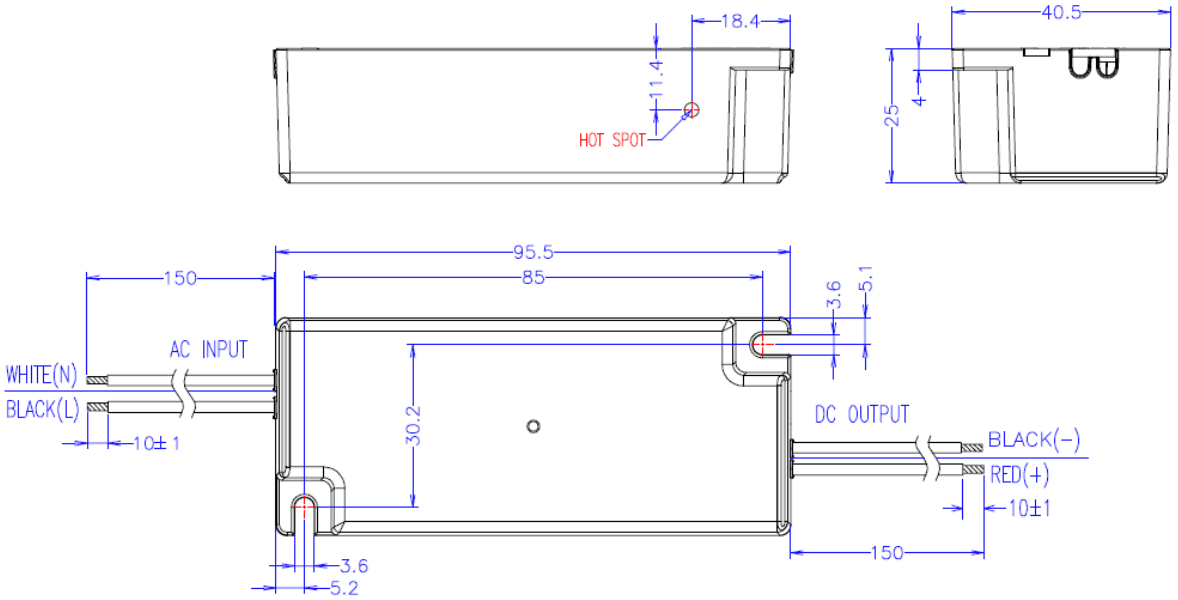
Plastic shell. This product has two Φ3.6mm mounting holes.
AC input for connection the two core ANSI/UL1015/AWG18 temperature 105 °C core copper wire connection.
Cable Length: 150mm, stripping on the tin: 10mm.

Where: L — Black wire, N — White wire.
DC output for connection the two core ANSI/UL1569/AWG18 temperature 105 °C core copper wire.
Cable Length: 150mm, stripping on the tin: 10mm.
Where: DC+ — Red, DC- — Black.

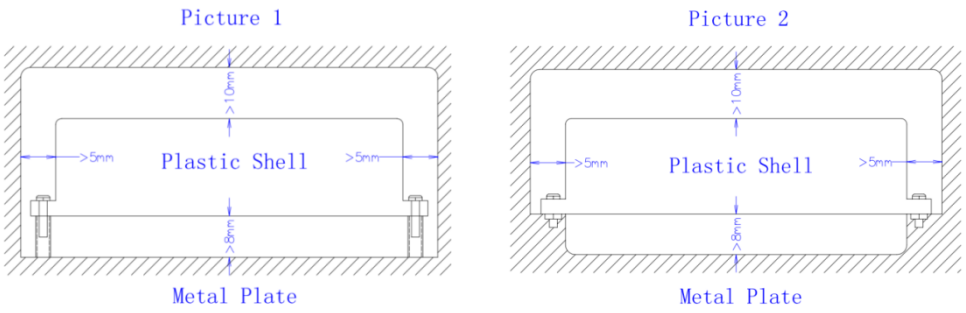
Order ID

P/N : LT20W-36-C0550
Description: 20W, 36Vdc voltage max, constant current 550mA, phase cut dimming mode.

Product Size



Application note



In Picture 1 and Picture 2, EMC has the best.

Note :

- The independent LED drive conforms to the EMC standard.
  But it is not guaranteed to be qualified, when the drive is mounted in the LED lamp.
- Please forgive us for any discrepancy due to the update of the specifications or the upgrade of the product.
  If you need the latest information, please contact our marketing department.