

Product Features

- Input voltage range: 90~305Vac;
- Class II design;
- Constant power design, outputs programmable;
- Built-in 3-in-1 dimming and auto-react: 0-10Vdc, PWM, timer control;
- DALI control is optional, can be dim-to-off;
- 12V/0.3A auxiliary power supply is optional;
- Output is isolated with dimming signal;
- Stand-by power consumption <0.5W;
- Multiple protection: SCP / OVP/OTP;
- Surge protection: line-line 5KV;
- Ambient temperature: -40℃ ~ +60℃;
- Degrees of protection: IP67;
- 5 years warranty.

Application

- Suitable for LED architecture lighting, industrial lighting, flood lighting, and roadway lighting, etc.

DESCRIPTION

The LCP-150 series is designed for European market where has higher safety requirement, suitable for Class II application, programmable outdoor LED driver that operates from 90-305Vac input with excellent power factor. Created for high bay, tunnel and roadway lights, it provides a dim-to-off mode with low standby power. The high efficiency of these drivers and compact metal case enables them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, output over voltage, short circuit, and over temperature.

MODELS

Model Number [1]	Max Output Power (W)	Output Voltage Range (Vdc)	Output Current Adjustable Range (A)	Full Power Current Adjustable Range (A) [2]	Default Output Setting	Typ. Effi. [3]	Typ. PF
LCP-150X036Z	150	20~36	0.54~5.36	4.17~5.36	20~36V/4.17A	89%	0.96
LCP-150X054Z	150	20~54	0.42~4.2	2.8~4.2	20~48V/3.13A	90%	0.96
LCP-150X120Z	150	60~120	0.21~2.1	1.25~2.1	60~107V/1.4A	90%	0.96
LCP-150X214Z	150	80~214	0.11~1.1	0.7~1.1	80~143V/1.05A	90%	0.96
LCP-150X335Z	150	176~335	0.07~0.7	0.45~0.7	176~214V/0.7A	91%	0.96

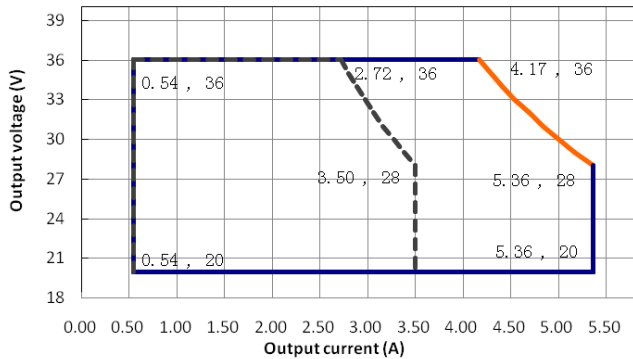
Notes:

- [1]. X=M, programmable output with 0-10V/PWM/Timing dimming; X=R, programmable output with timing dimming; X=D, DALI dimming; Z=A12,output with 12V/0.3A auxiliary power supply;
 [2]. Output current adjustable range with constant power at max output power;
 [3]. All specifications are measured at 25℃ ambient temperature, if no specific note.

OPERATING AREA I-V

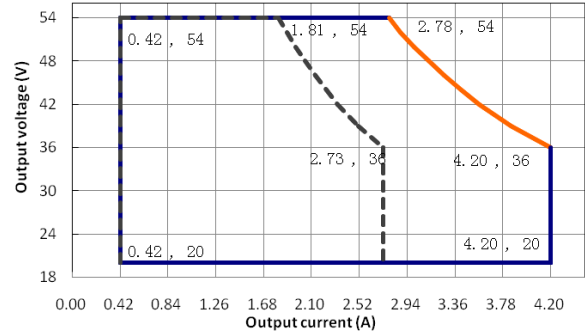
LCP-150X036Z

Maximum Output Voltage vs. Output Current



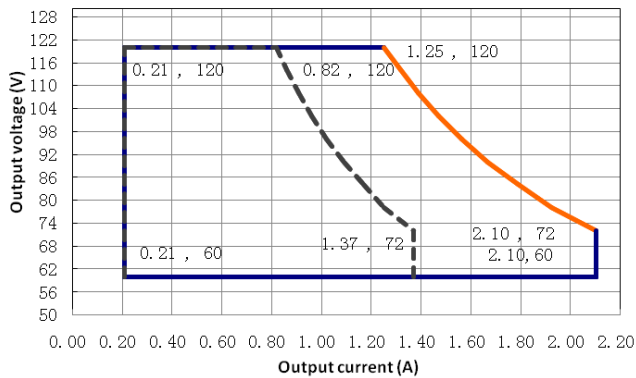
LCP-150X054Z

Maximum Output Voltage vs. Output Current



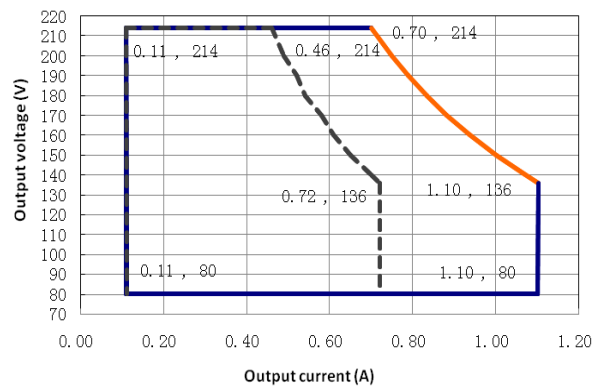
LCP-150X120Z

Maximum Output Voltage vs. Output Current



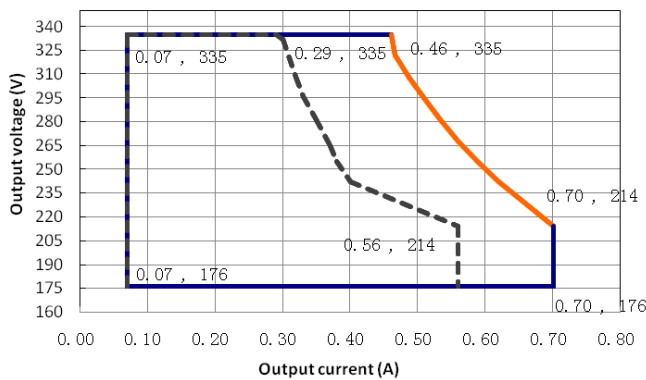
LCP-150X214Z

Maximum Output Voltage vs. Output Current



LCP-150X335Z

Maximum Output Voltage vs. Output Current



Note: 98W is suitable for the dotted line on the left side area; 150W is suitable for the solid line contain area.

INPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90Vac	100-277Vac	305Vac	
Input Frequency	47Hz	50/60	63Hz	
Leakage Current	-	-	0.70mA	277Vac/50Hz
Input AC Current	-	-	1.8A max	100-277Vac & full load
Inrush Current(A)	-	-	75A	Cold start, 230Vac & full load
Power Factor	0.95	0.96	-	230Vac & full load
THD	-	-	15%	230Vac, 70%-100% load
	-	-	20%	277Vac, 70%-100% load

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Rated Power	-	-	150W	200-277Vac
	-	-	98W	100-200Vac
Output Current Tolerance	-5%Iset	-	5%Iset	Full load
Output Current Setting Range (Iset)				
LCP-150X036Z	0.54A	-	5.36A	200-277Vac
LCP-150X054Z	0.42A		4.20A	
LCP-150X120Z	0.21A		2.10A	
LCP-150X214Z	0.11A		1.10A	
LCP-150X335Z	0.07A		0.70A	
Output Current Setting Range with Constant Power				
LCP-150X036Z	4.17A	-	5.36A	200-277Vac
LCP-150X054Z	2.80A		4.20A	
LCP-150X120Z	1.25A		2.10A	
LCP-150X214Z	0.70A		1.10A	
LCP-150X335Z	0.45A		0.70A	
Total Output Current Ripple (pk-pk)	-	-	10%	Load is LED, ripple is different with difference LED load. 20MHz BW.
Startup Overshoot Current	-	-	10%	230Vac & 100% Load, load is LED

No Load Output Voltage				
LCP-150X036Z			50V	
LCP-150X054Z	-	-	70V	
LCP-150X120Z			140V	
LCP-150X214Z			240V	
LCP-150X335Z			370V	
Line Regulation	-	-	1%	25°C±10°C ambient temperature, input voltage changes from 115Vac to 305Vac.
Load Regulation	-	-	1%	25°C±10°C ambient temperature, 230Vac input, load changes from 50% to 100%.
Turn-on Delay Time	-	-	3S	115Vac, 100% load
	-	-	0.5S	230Vac, 100% load
12V auxiliary output voltage	11.4V	12V	12.6V	
12V auxiliary output source current	0mA		300mA	

GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Efficiency @115Vac				
LCP-150X036Z				
Io=2.72A	86%	88%		
LCP-150X054Z				
Io=1.82A	87%	89%		
LCP-150X120Z				
Io=0.82A	88%	90%		Measured at full load and 25°C ambient temperature
LCP-150X214Z				
Io=0.46A	88%	90%		
LCP-150X335Z				
Io=0.29A	89%	91%		
Efficiency @230Vac				
LCP-150X036Z				
Io=4.17A	88%	90%		
Io=5.36A	87%	89%		Measured at full load and 25°C ambient temperature
LCP-150X054Z				
Io=2.80A	89%	91%		

$I_o=4.20A$ LCP-150X120Z		88%	90%		
$I_o=1.25A$		89%	91%		
$I_o=2.10A$ LCP-150X214Z		88%	90%		
$I_o=0.70A$		89%	91%		
$I_o=1.10A$ LCP-150X335Z		88%	90%		
$I_o=0.45A$		89%	92%		
$I_o=0.70A$		89%	91%		
Efficiency @277Vac LCP-150X036Z					
$I_o=4.17A$		88%	90%		
$I_o=5.36A$ LCP-150X054Z		87%	89%		
$I_o=2.80A$		89%	91%		
$I_o=4.20A$ LCP-150X120Z		88%	90%		
$I_o=1.25A$		89%	91%		
$I_o=2.10A$ LCP-150X214Z		88%	90%		
$I_o=0.70A$		89%	91%		
$I_o=1.10A$ LCP-150X335Z		88%	90%		
$I_o=0.45A$		89%	92%		
$I_o=0.70A$		89%	91%		
Standby power consumption		-	-	0.5W	230Vac/50Hz; Dimming off
Dielectric Strength	Input-Output	-	3750Vac	-	10mA/60S
	Input-Case	-	3750Vac	-	
	Output-Case	-	2000Vac	-	
Grounding Resistance		-	-	0.1Ω	25A/60S
Insulation Resistance		50MΩ	-	-	Input-Output, Input-Case, Output-Case, 500Vdc/60S/25℃/70%RH
MTBF		-	200000 Hours	-	230Vac,80% load (MIL-HDBK-217F)

Lifetime	-	50000 Hours	-	230Vac&100% load,70℃ case temperature, refer to lifetime VS Tc curve for details
Operating Case Temperature for Safety Tc_s	-40℃	-	+85℃	
Operating Case Temperature for Warranty Tc_w	-40℃	-	+70℃	
Storage Temperature	-40℃	-	+85℃	Humidity: 10% to 95% RH
Dimensions (L×W×H)mm	217*68*43.5			
Net Weight	950±50g/PCS			
Package	L500×W390×H170mm; 10pcs/Ctn.			

DIMMING

Parameter		Min.	Typ.	Max.	Notes
0~5V/0~10V Absolute Maximum Voltage on the Vdim (+) Pin		-	5V/10V	-	
0~5V/0~10V Source Current on Vdim(+)Pin		-	-	2mA	
Dimming Output Range	LCP-150X036Z LCP-150X054Z LCP-150X120Z LCP-150X214Z LCP-150X335Z	10%Imax	-	100%Imax	Imax=5.36A Imax=4.20A Imax=2.10A Imax=1.10A Imax=0.70A
	LCP-150X036Z LCP-150X054Z LCP-150X120Z LCP-150X214Z LCP-150X335Z	0.54A 0.42A 0.21A 0.11A 0.07A	-	5.36A 4.20A 2.10A 1.10A 0.70A	
	DA, DA High Level	9.5 V	16 V	22.5 V	applicable to DALI series
	DA, DA Low Level	-6.5 V	0 V	6.5 V	
	Recommended Dimming Range for 0-5 V	0V	-	5V	Default 0-10V/10V PWM Dimming
	Recommended Dimming Range for 0-10 V	0V	-	10V	
	PWM_in High Level	9.7V	-	10.3V	
	PWM_in Low Level	0V	-	0.3V	
	PWM_in Frequency Range	250Hz		1000Hz	
	PWM_in Duty Cycle	1%	-	99%	

SAFTY STANDARDS

Safety Category	Country / Territory	Standards
CCC	China	GB19510.1, GB19510.14
CE	China	EN61347-1, EN61347-2-13
CB	CB Countries	IEC61347-1, IEC61347-2-13
BIS	India	IS 15885(PART 2/SEC 13)
UL	USA	UL 8750
CUL	Canada	CSA C22.2 No.250.13
KC	South Korea	K61347-1, K61347-2-13, K62384
PSE	Japan	J61347-1, J61347-2-13
SAA	Australia	AS/NZS IEC 61347-2-13
		AS/NZS 61347.1

EMC COMPLIANCE

EMC Category	Country / Territory	Standards
CCC	China	GB 17743, GB 17625.1
CE	Europe	EN 55015, EN 61000-3-2, EN 61000-3-3
		EN61000-4-2,3,4,5,6,8,11
		EN 61547
KC	South Korea	K61547
		K00015
PSE	Japan	J55015
FCC	USA	FCC part 15

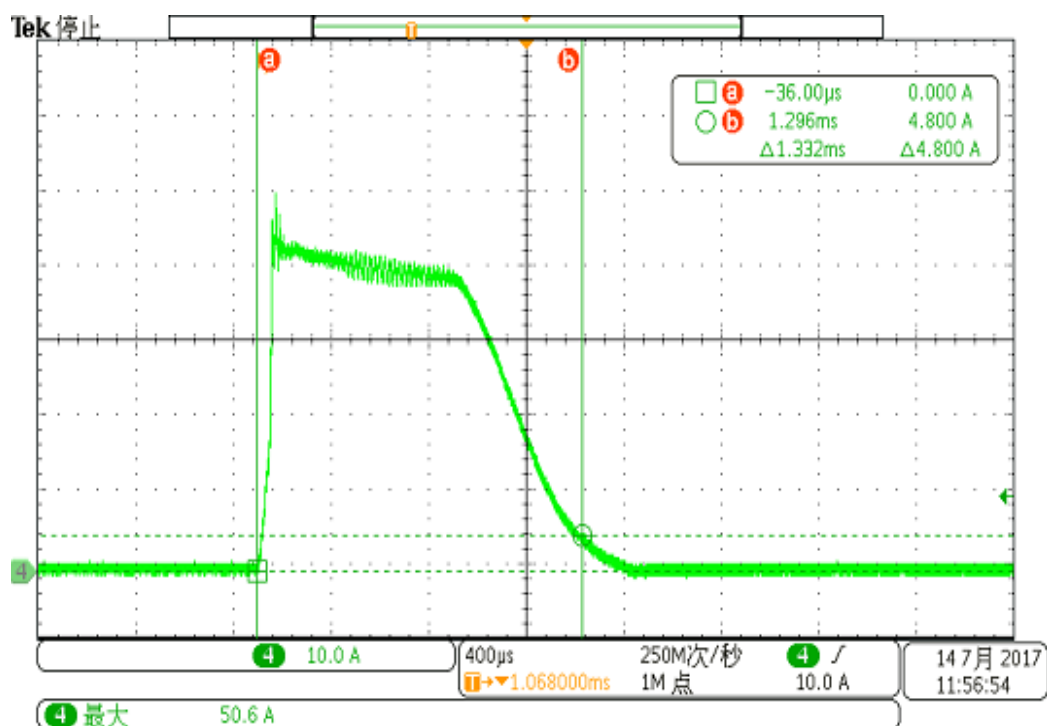
NOTE:

This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

DALI STANDARDS

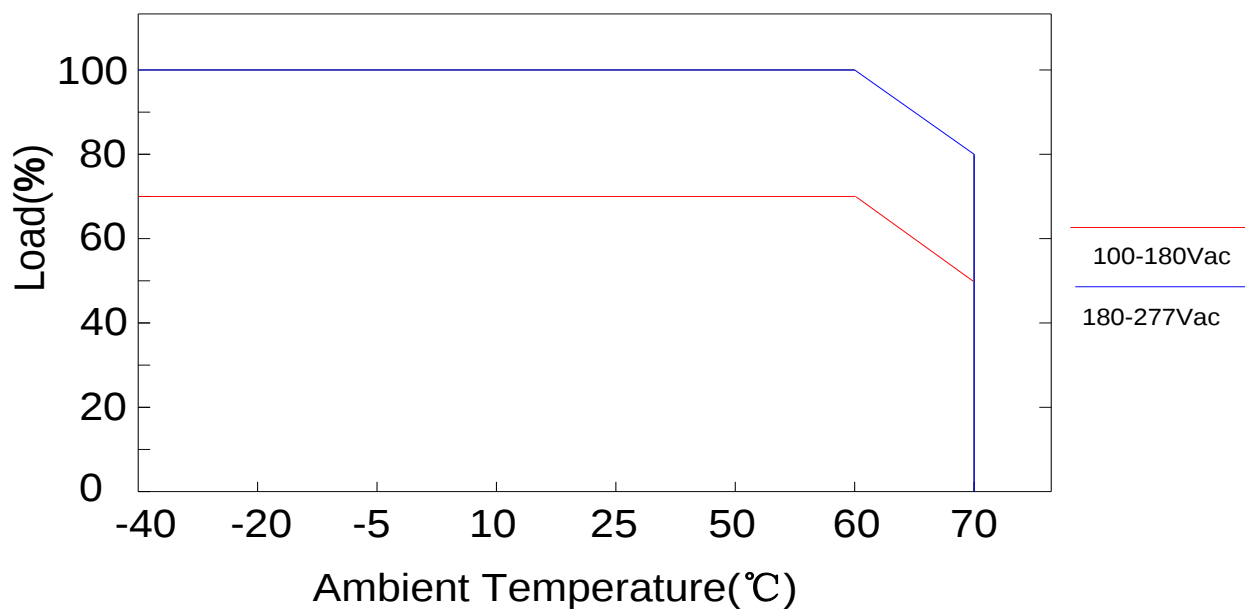
IEC 62386 -101, 102, 207

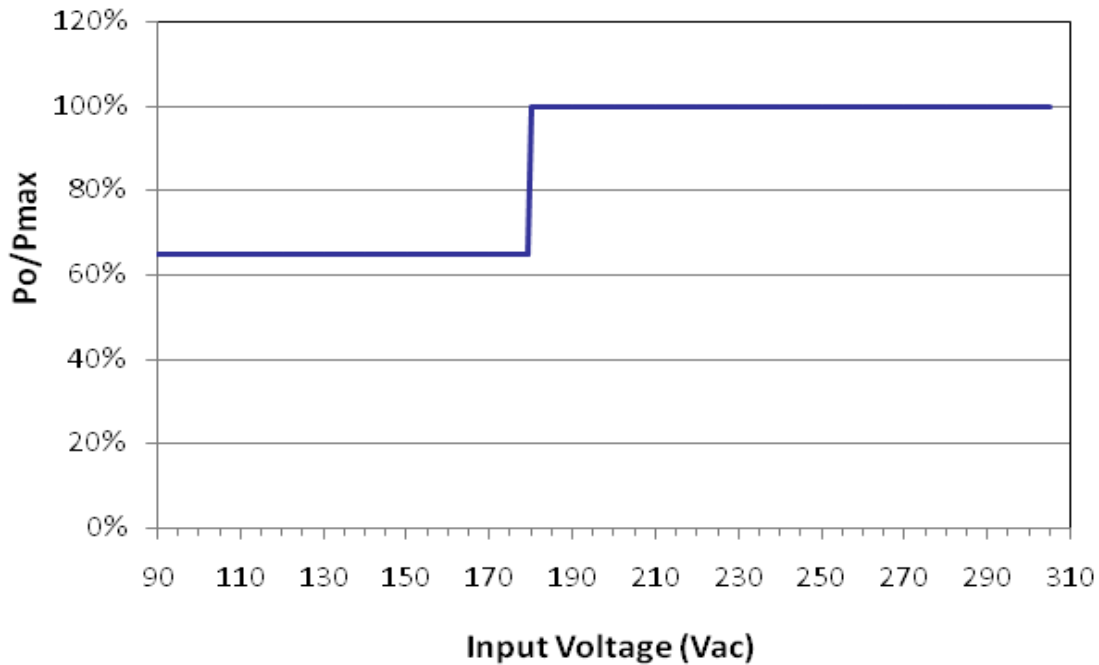
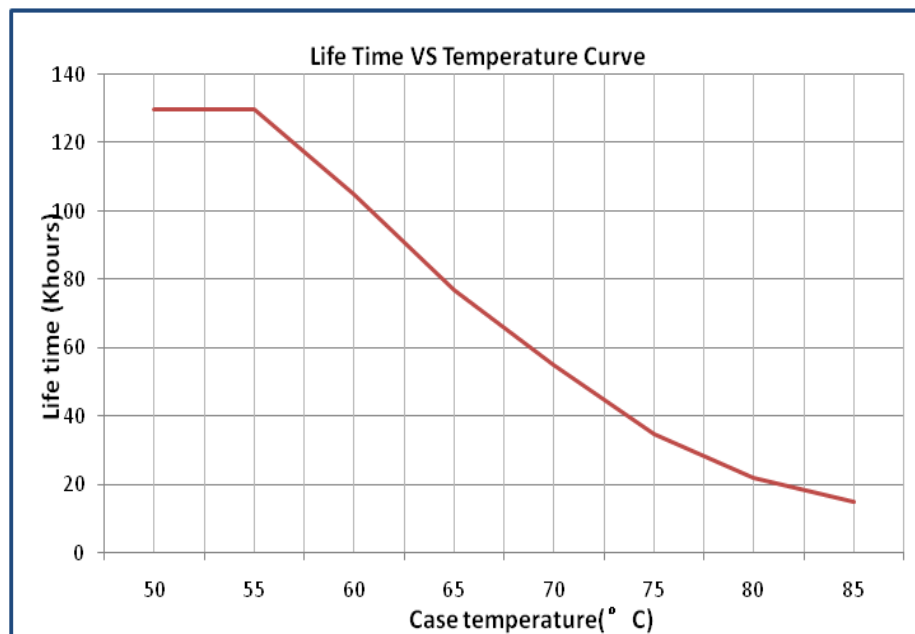
INRUSH CURRENT WAVEFORM



DERATING CURVE

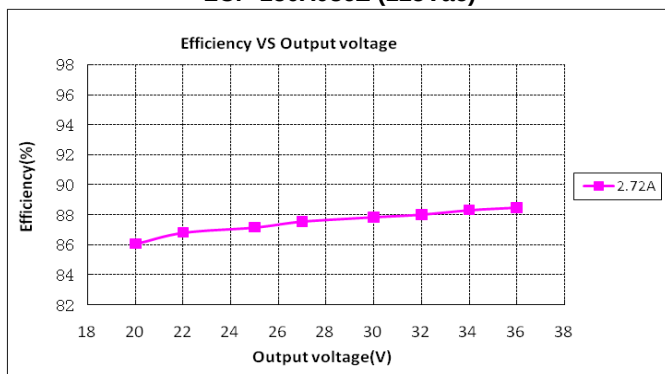
Derating Curve



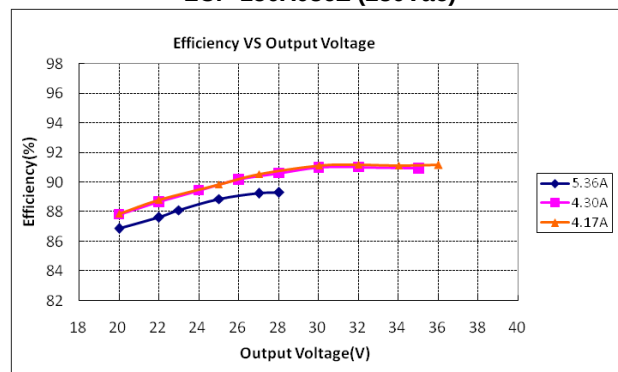
OUTPUT POWER VS INPUT VOLTAGE**Po/Pmax vs. Input Voltage Curve****LIFETIME VS CASE TEMPERATURE**

EFFICIENCY VS LOAD

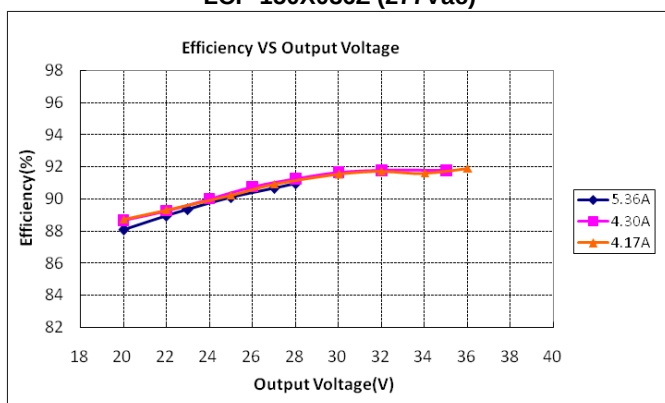
LCP-150X036Z (115Vac)



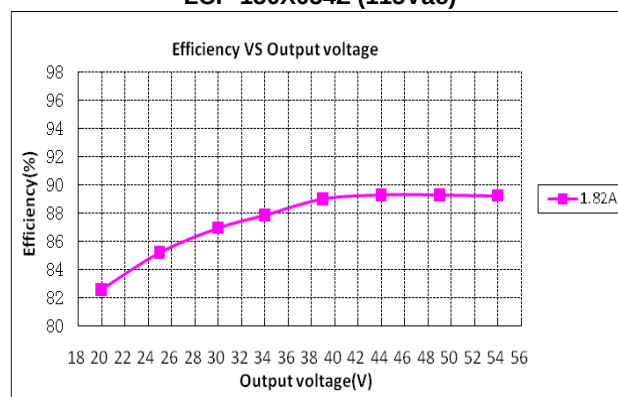
LCP-150X036Z (230Vac)



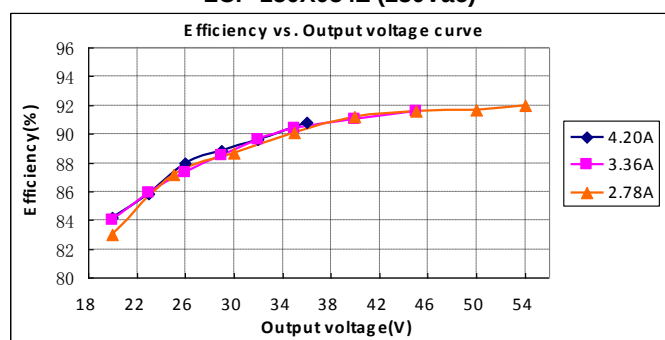
LCP-150X036Z (277Vac)



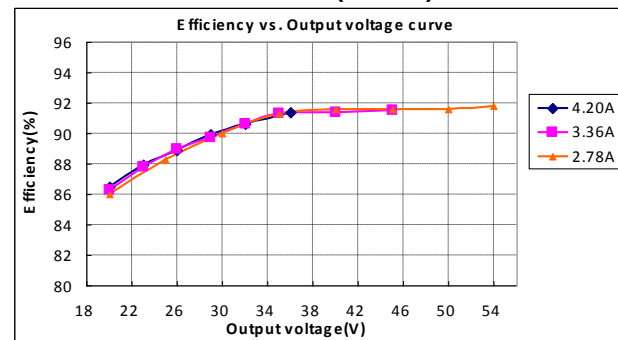
LCP-150X054Z (115Vac)



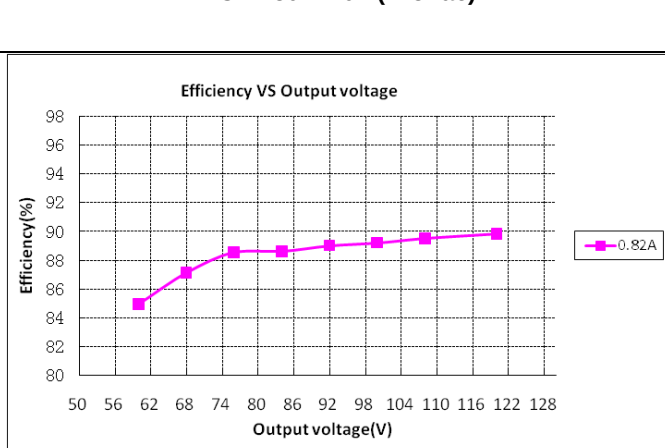
LCP-150X054Z (230Vac)



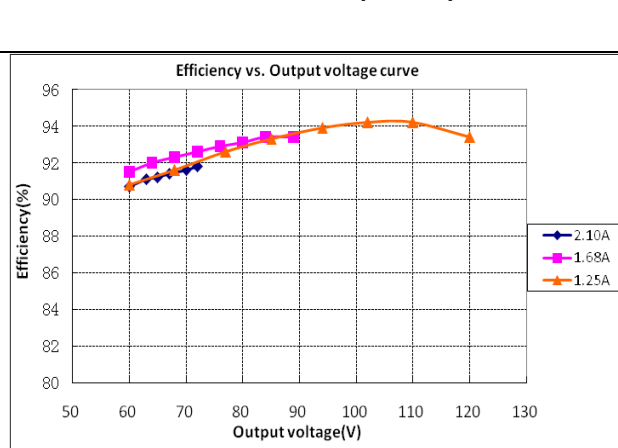
LCP-150X054Z (277Vac)



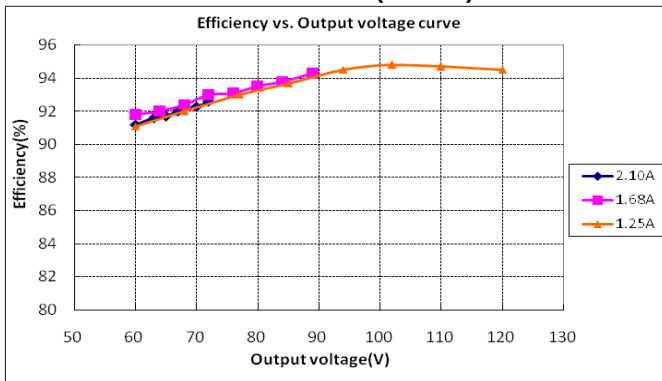
LCP-150X120Z (115Vac)



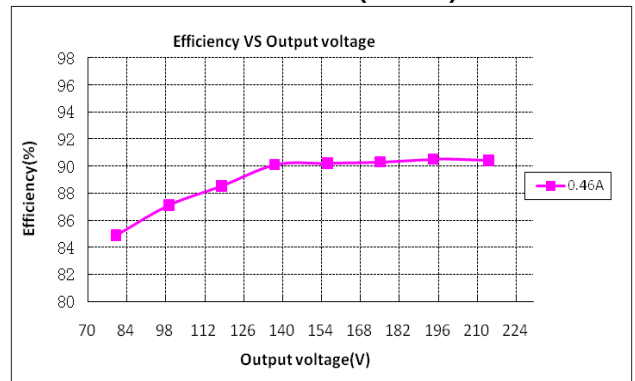
LCP-150X120Z (230Vac)



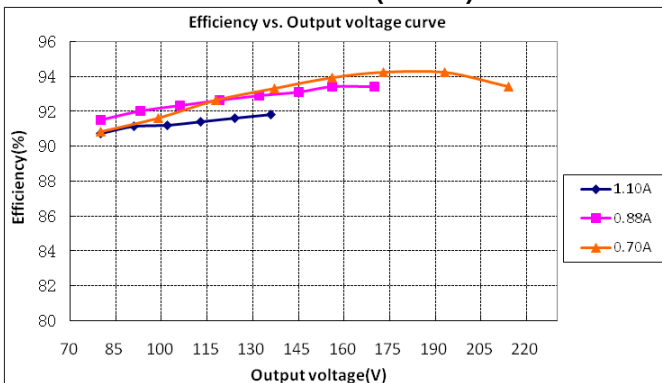
LCP-150X120Z (277Vac)



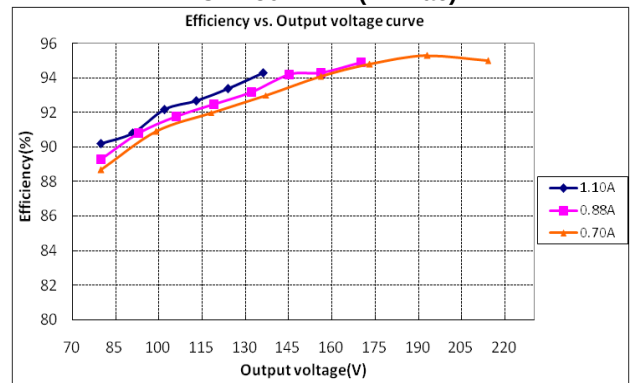
LCP-150X214Z (115Vac)



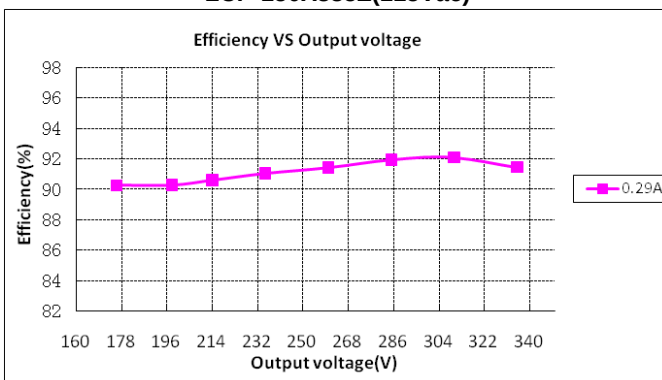
LCP-150X214Z (230Vac)



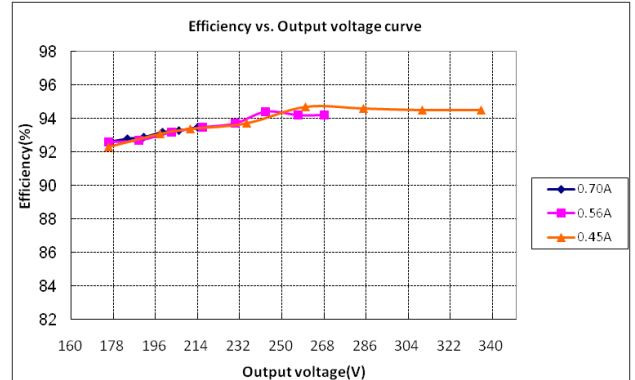
LCP-150X214Z (277Vac)



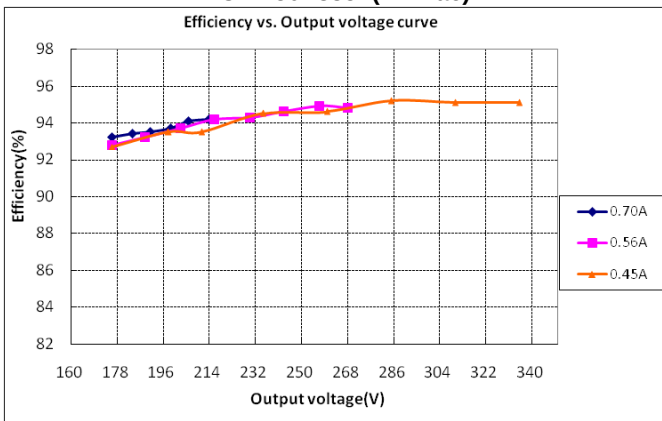
LCP-150X335Z(115Vac)



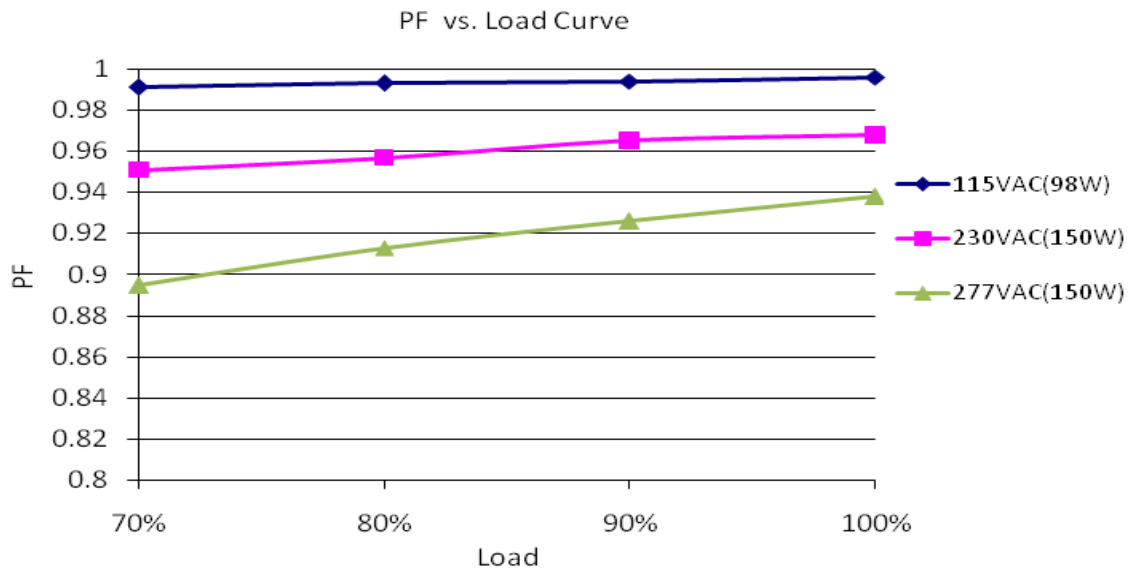
LCP-150X335Z(230Vac)



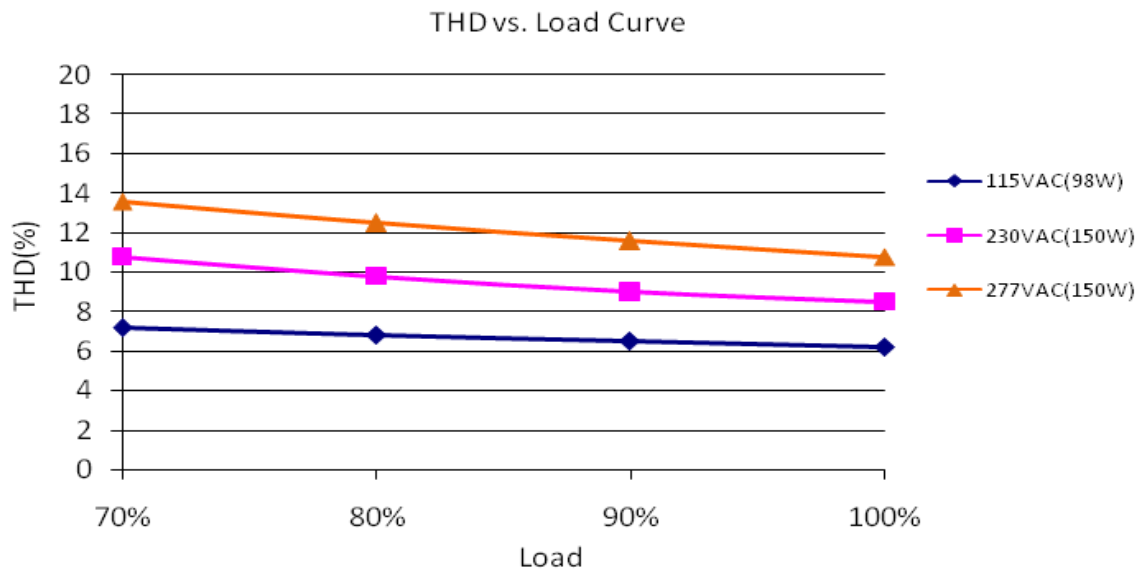
LCP-150X335Z(277Vac)



POWER FACTOR VS LOAD



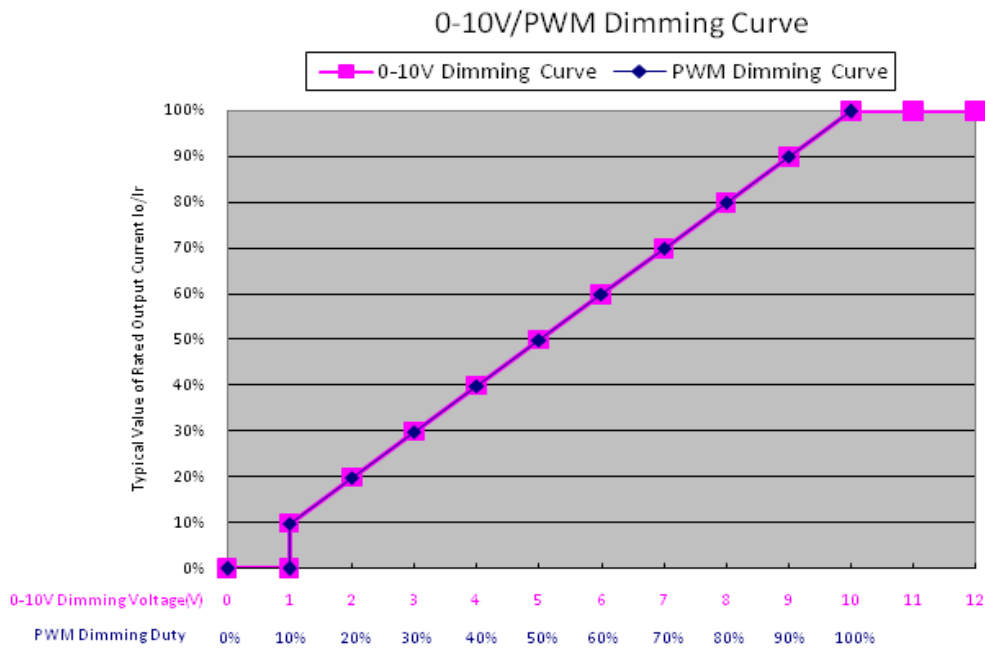
TOTAL HARMONIC DISTORTION



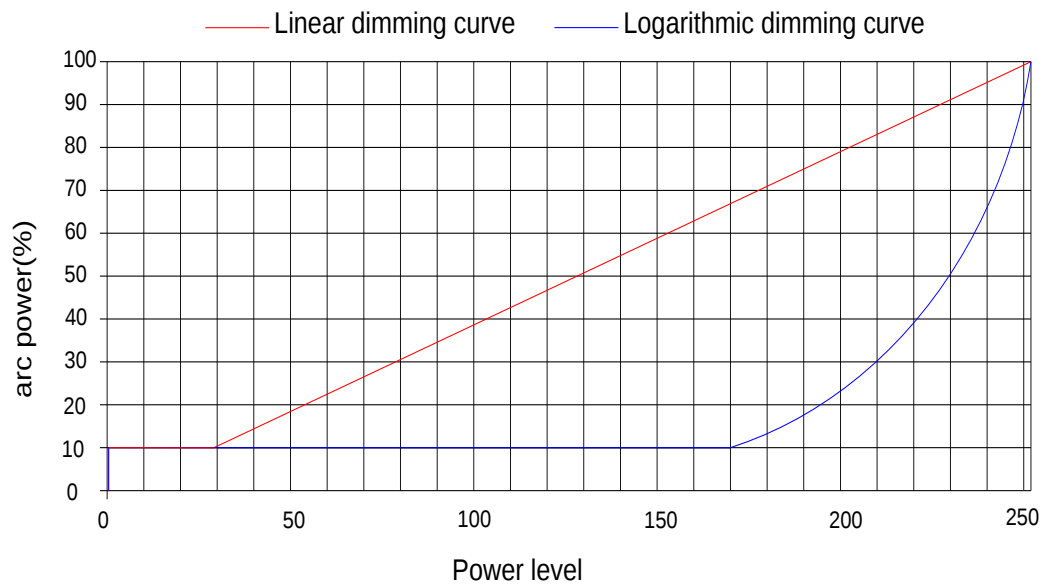
PROTECTIONS

Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed. The max derating could be 30% (typ.).
Short Circuit Protection	The input power shall decrease when the output rail short, the power supply shall not be damaged.
Over Voltage Protection	Run into protection model when output voltage exceeds limit, and return to normal when the fault

0-10V/PWM DIMMING

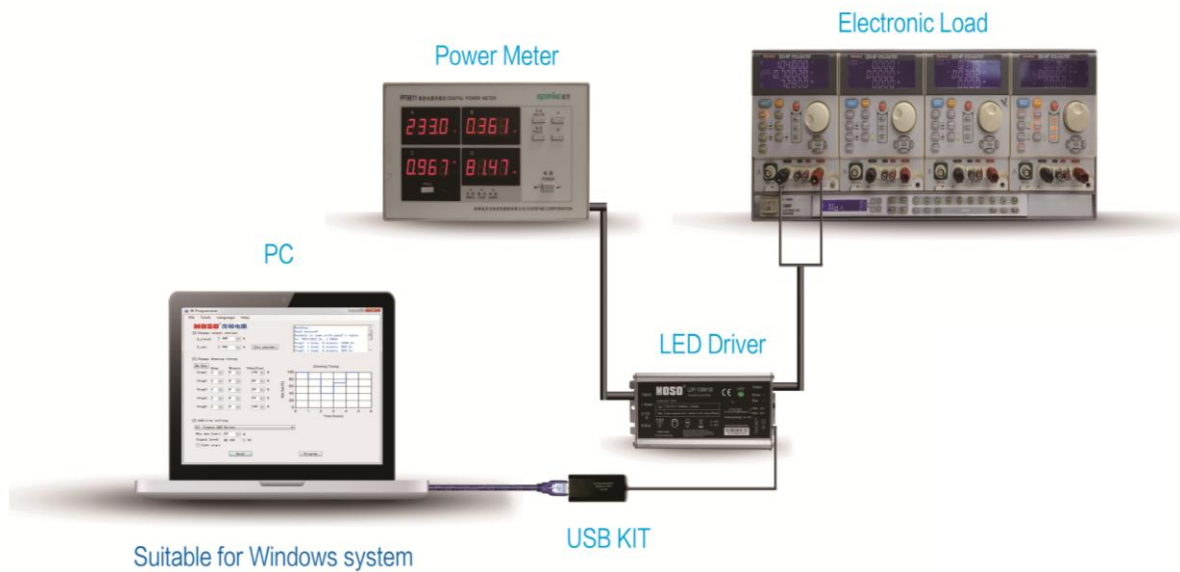


DALI DIMMING

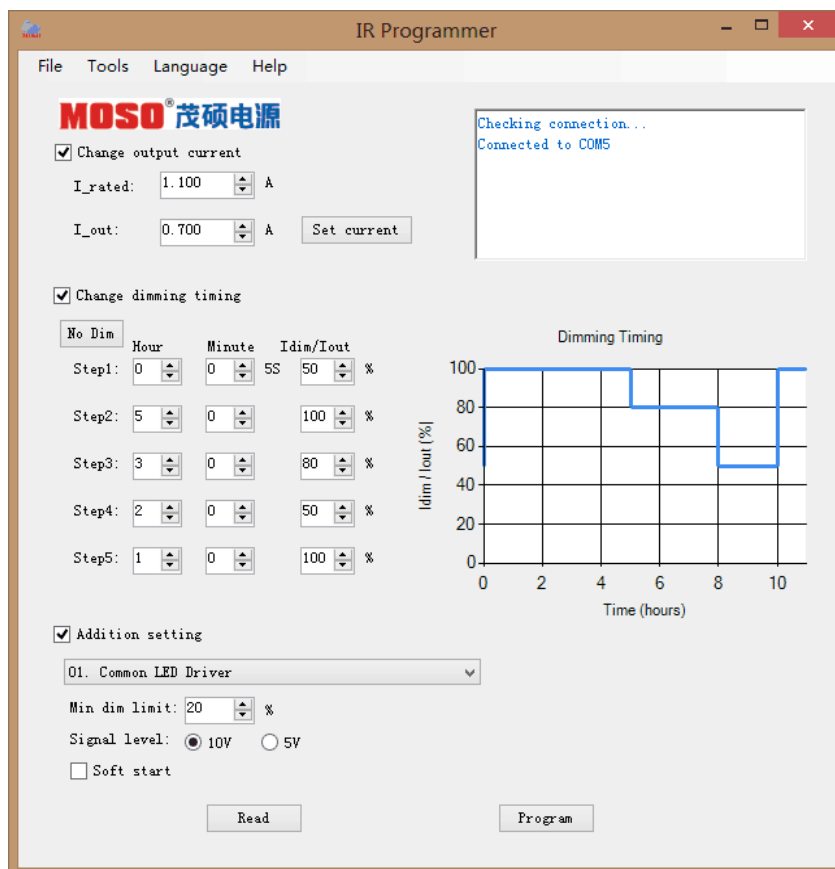


Note: Factory Default Output Logarithmic Curve

PROGRAMMING CONNECTION



PROGRAMMING GUIDE AND SOFTWARE INTERFACE (apply to M&R model)



Programming by Software:

- 1) Read existing setting of the driver
- 2) Change output current;
- 3) Set timer dimming schedules;
- 4) Addition setting
 - Set min. dim value;
 - Set signal level can be 5V or 10V;
 - Set soft start.

USING INFRARED CONTROLLER TO RESET OUTPUT CURRENT (apply to M&R model)



Operation Instruction:

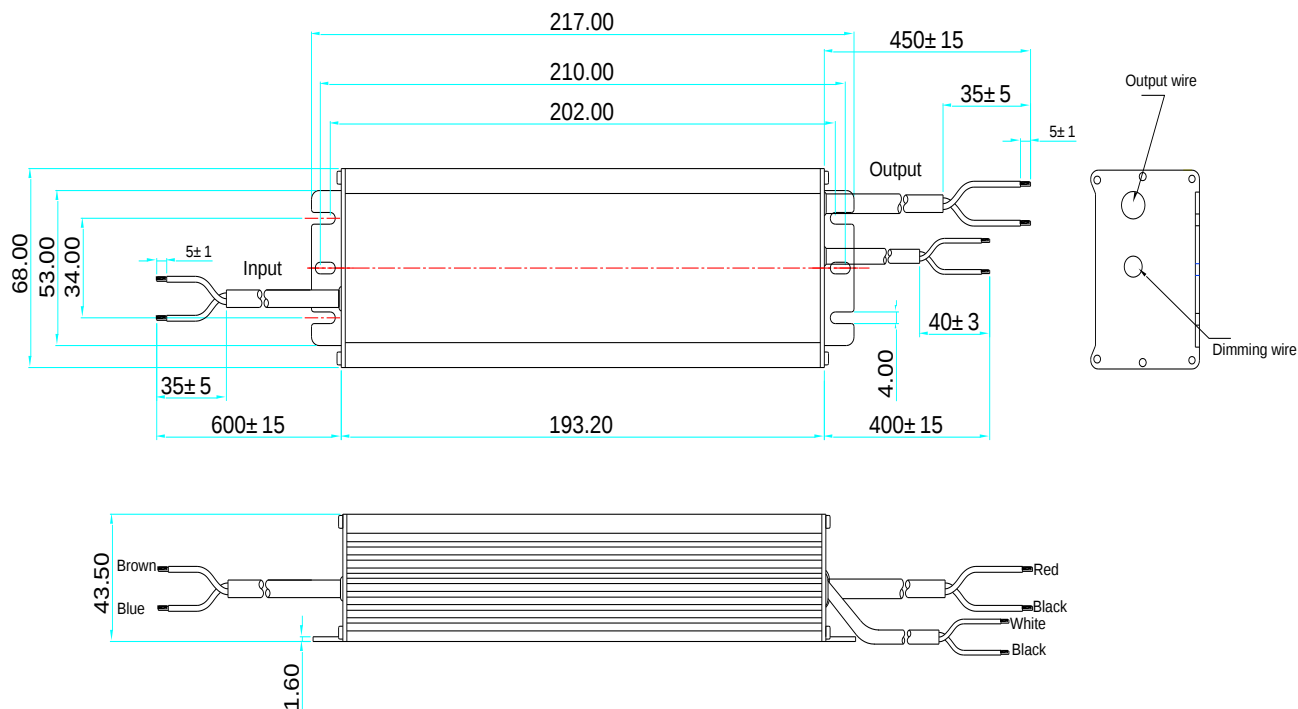
- 1) Insert cable terminal of the infrared controller into the infrared communication port, which is at the DC output side of the LED driver.
- 2) Press "ON" key to power on the controller;
- 3) Within 10S interval, press a function key to adjust output current to the percentage of max delivered current;
 - 10%-100%: Percentage of maximum output current of such driver.
 - + / - : Fine adjustment of output current, increase / decrease 1% each time.
 - ON: Power on controller.
 - OFF: Set min output current of such driver.
 - SE: No function.

Warning:

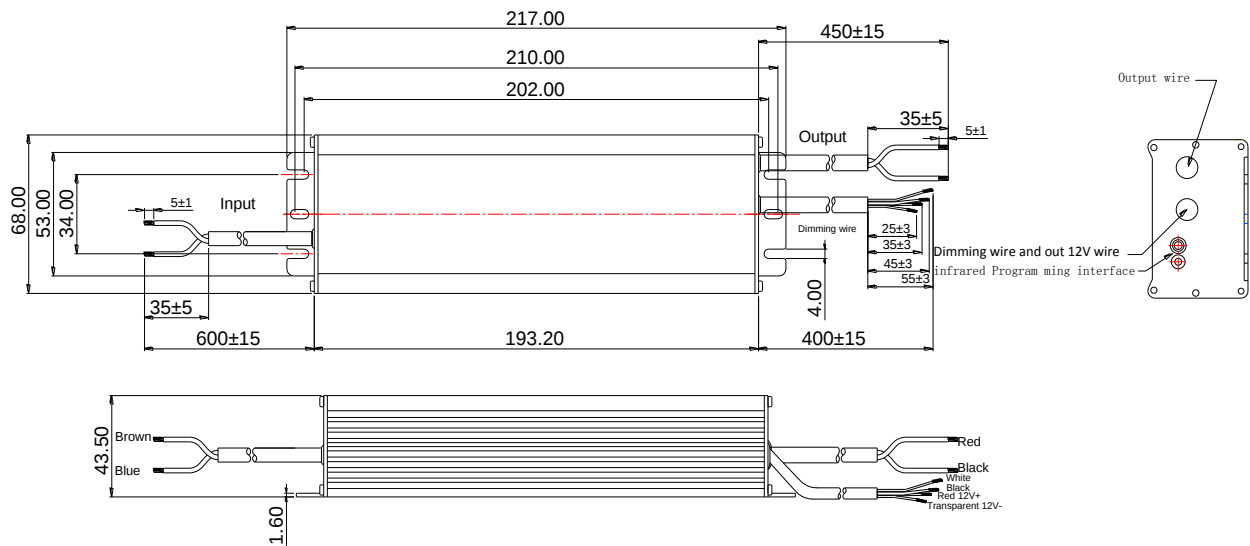
- Please do not hold "+"key, to avoid the over power protection and unstable output.
- Each step of operation should be done within 10S interval, otherwise the controller is power off automatically.

MECHANICAL OUTLINE

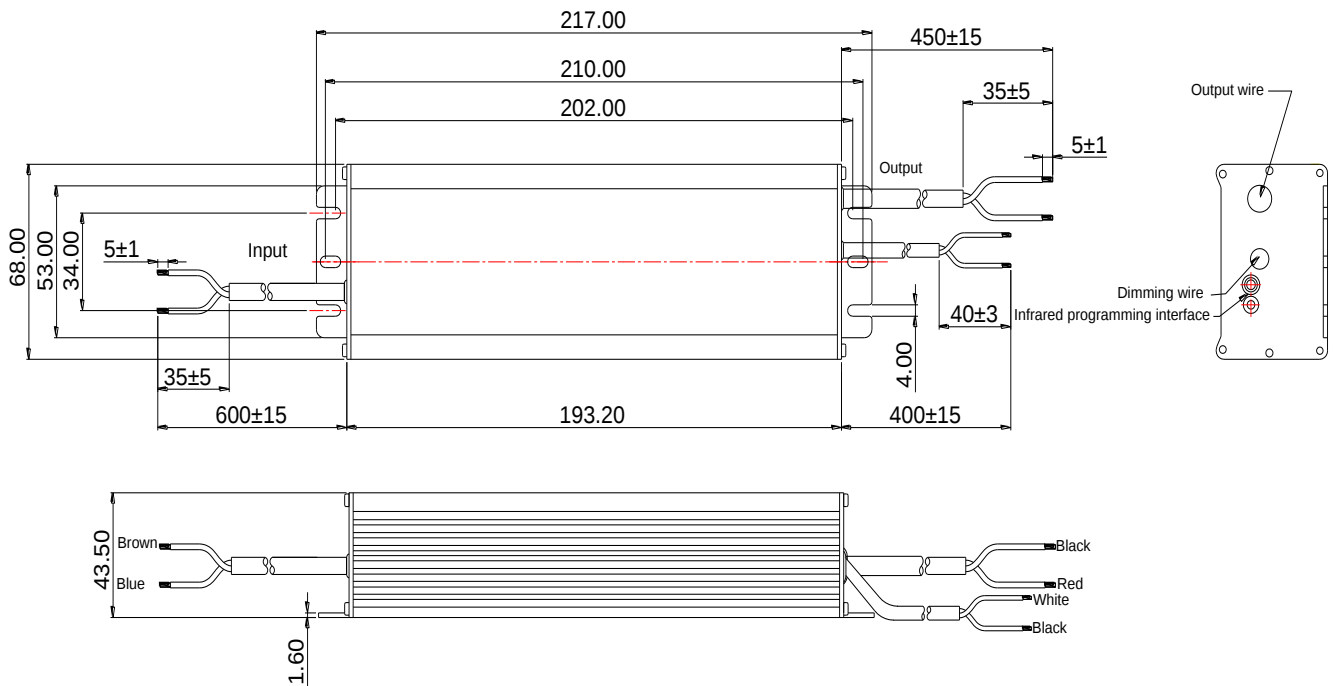
LCP-150D types



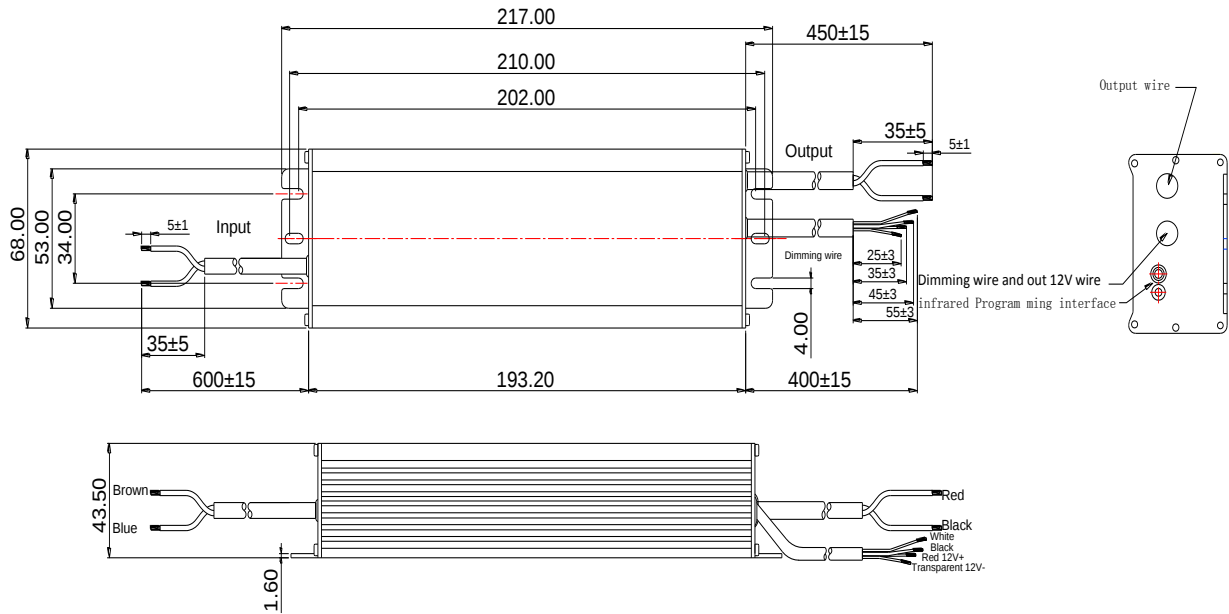
LCP-150D-A12 types



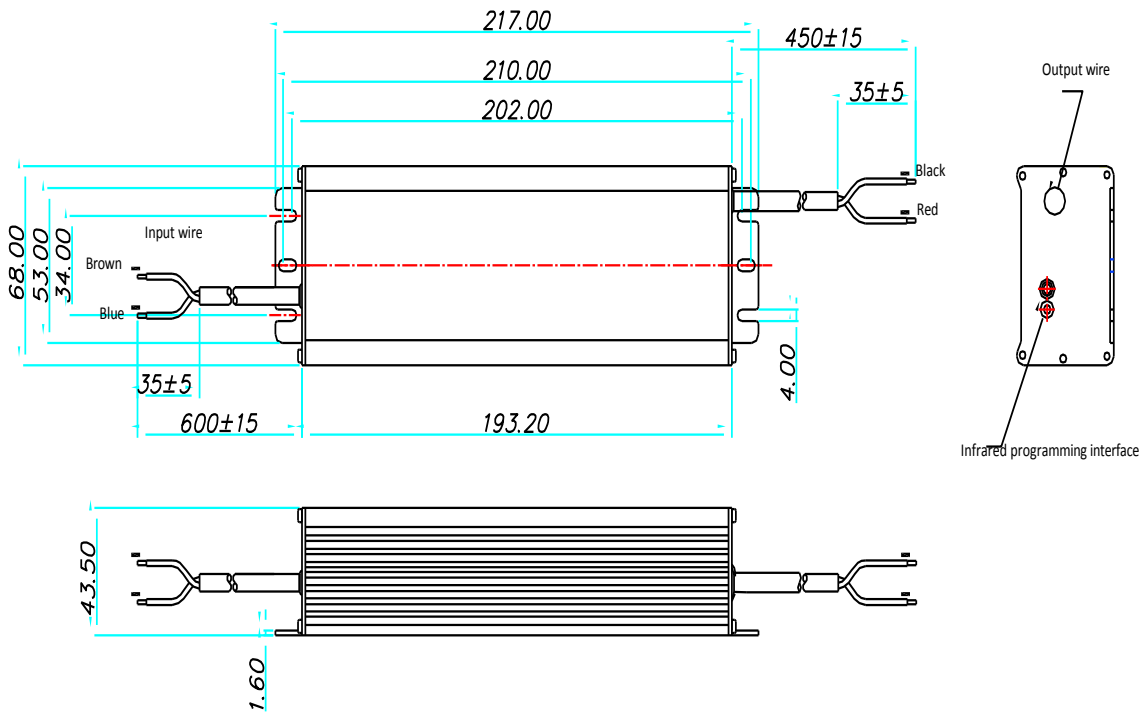
LCP-150M types



LCP-150M-A12 types



LCP-150R types



Wire	Specification
AC Input	CCC+VDE 2x1.0mm ² L=600mm
DC Output	UL 2x18AWG L=450mm
Dimming	22# 2C L=400mm
	22# 4C L=400mm

REVISION HISTORY

Version	Description of Change		Date	Notes
	Before	Now		
A.1	—	Datasheets Release	2018-03-13	