



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-120 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-120X041Z	120	20~41	0.43~4.29	2.93~4.29	20~36V/3.33A	91%	0.96
LCP-120X062Z	120	20~62	0.30~3.00	1.93~3.00	20~48V/2.50A	92%	0.96
LCP-120X170Z	120	60~170	0.14~1.40	0.70~1.40	60~114V/1.05A	92%	0.96
LCP-120X305Z	120	120~305	0.07~0.70	0.40~0.70	120~171V/0.7A	92%	0.96

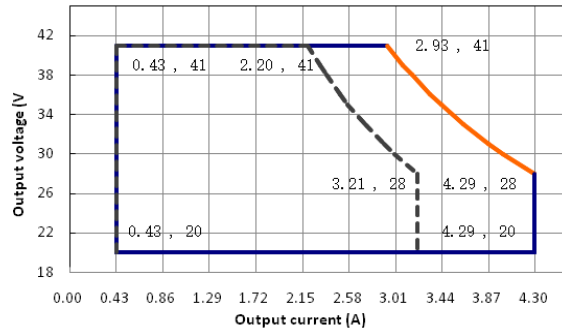
Notes:

- [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

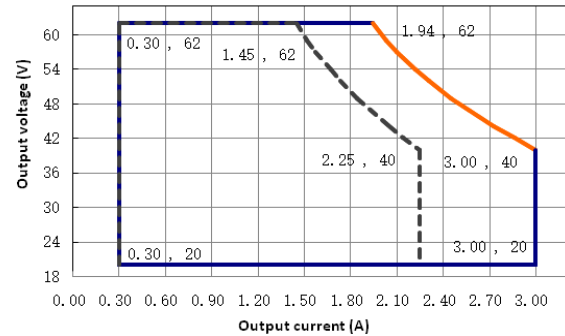
LCP-120X041Z

Maximum Output Voltage vs. Output Current



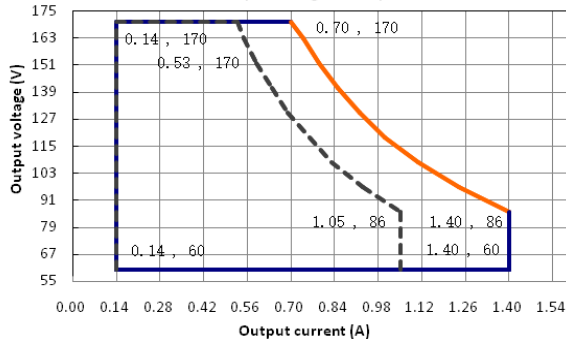
LCP-120X062Z

Maximum Output Voltage vs. Output Current



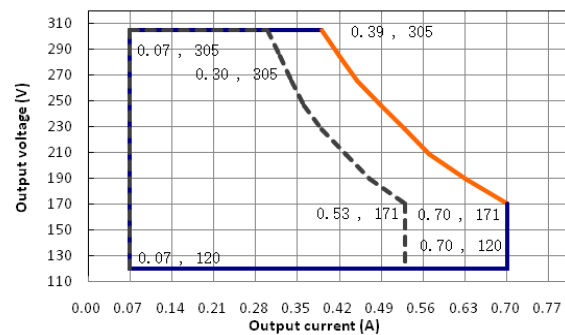
LCP-120X170Z

Maximum Output Voltage vs. Output Current



LCP-120X305Z

Maximum Output Voltage vs. Output Current



Note: 90W is suitable for the dotted line on the left side area; 120W 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	-	-	1.5A 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	-	-	120W	200-277Vac
	-	-	90W	100-200Vac
Output Current Tolerance	-5%Iset	-	5%Iset	Full load
Output Current Setting Range(Iset)				
LCP-120X041Z	0.43A	-	4.29A	200-277Vac
LCP-120X062Z	0.30A	-	3.00A	
LCP-120X170Z	0.14A	-	1.40A	
LCP-120X305Z	0.07A	-	0.70A	
Output Current Setting Range with Constant Power				
LCP-120X041Z	2.93A	-	4.29A	200-277Vac
LCP-120X062Z	1.93A	-	3.00A	
LCP-120X170Z	0.70A	-	1.40A	
LCP-120X305Z	0.40A	-	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-120X041Z	-	-	60V	
LCP-120X062Z	-	-	80V	
LCP-120X170Z	-	-	190V	
LCP-120X305Z	-	-	340V	
Line Regulation	-	-	1%	25°C±10°C ambient temperature, input voltage changes from 115Vac to 305Vac.
Load Regulation	-	-	3%	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-120X041Z				
Io=2.0A	85%	87%		
LCP-120X062Z				
Io=1.93A	87%	89%		Measured at full load and 25°C ambient temperature
LCP-120X170Z				
Io=0.53A	88%	90%		
LCP-120X305Z				
Io=0.40A	89%	91%		
Efficiency @230Vac				
LCP-120X041Z				
Io=2.93A	88%	90%		
Io=4.29A	87%	89%		
LCP-120X062Z				
Io=1.93A	89%	91%		
Io=3.00A	88%	90%		Measured at full load and 25°C ambient temperature
LCP-120X170Z				
Io=0.70A	90%	92%		
Io=1.40A	88%	90%		
LCP-120X305Z				
Io=0.40A	90%	92%		
Io=0.70A	89%	91%		
Efficiency @277Vac				
LCP-120X041Z				
Io=2.93A	88%	90%		
Io=4.29A	87%	89%		
LCP-120X062Z				
Io=1.93A	89%	91%		
Io=3.00A	88%	90%		Measured at full load and 25°C ambient temperature
LCP-120X170Z				
Io=0.70A	90%	92%		
Io=1.40A	88%	90%		

LCP-120X305Z					
Io=0.40A		90%	92%		
Io=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-120X041Z	10%Imax	-	100%Imax	Imax=4.29A
	LCP-120X062Z				Imax=3.00A
	LCP-120X170Z				Imax=1.40A
	LCP-120X305Z				Imax=0.70A
	LCP-120X041Z	0.43A	-	4.29A	
	LCP-120X062Z	0.30A		3.00A	
	LCP-120X170Z	0.14A		1.40A	
	LCP-120X305Z	0.07A		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

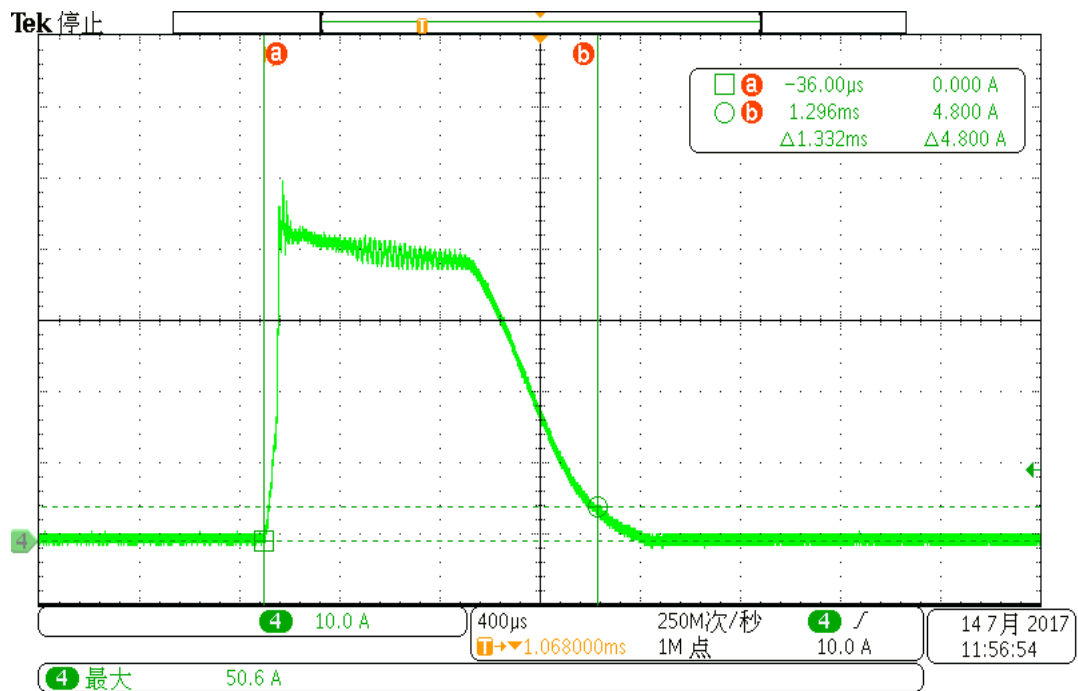
NOTE:

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

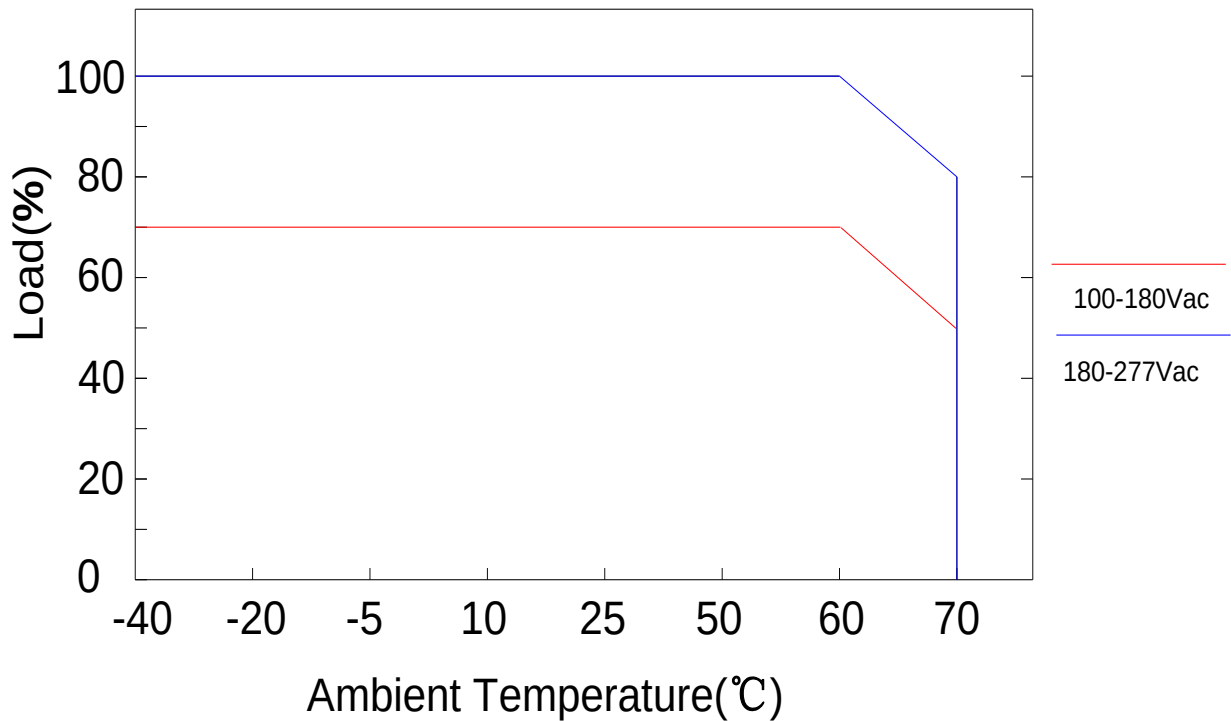
IEC 62386 -101, 102, 207

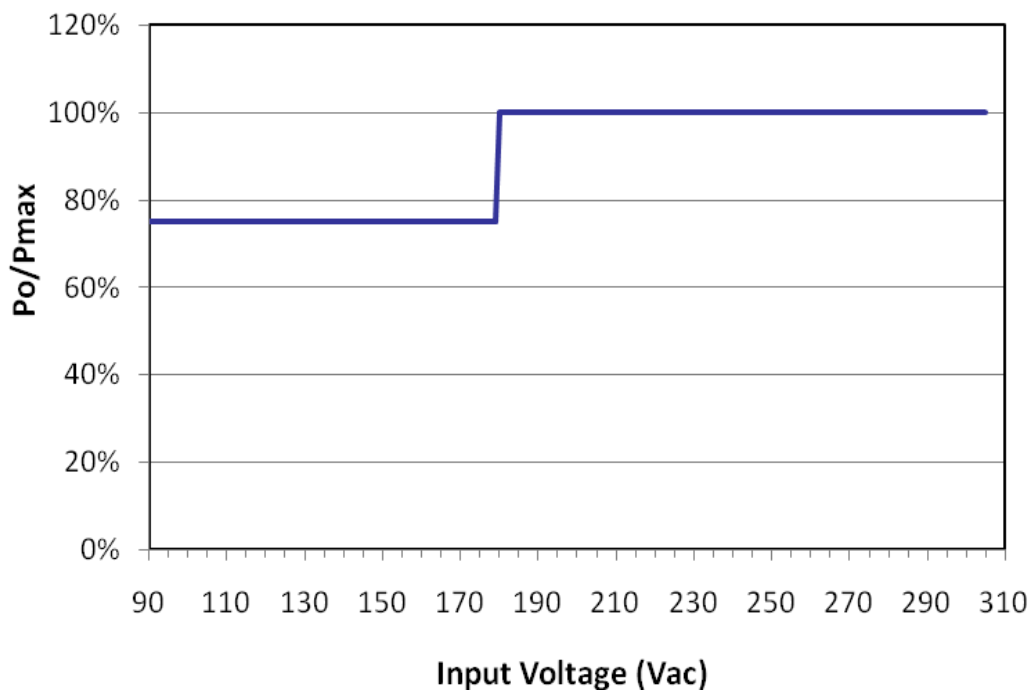
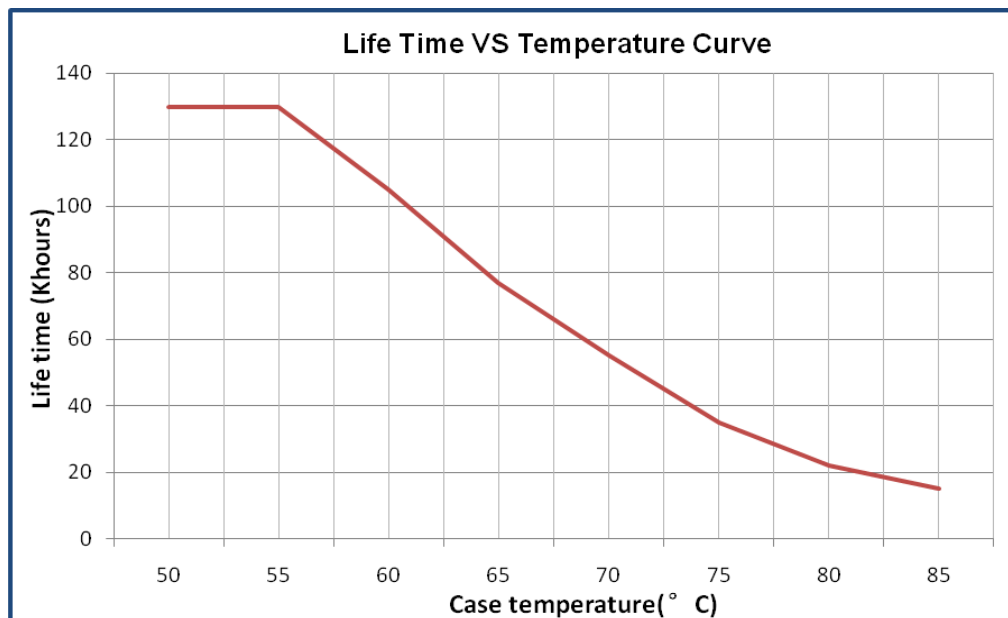
INRUSH CURRENT WAVEFORM



DERATING CURVE

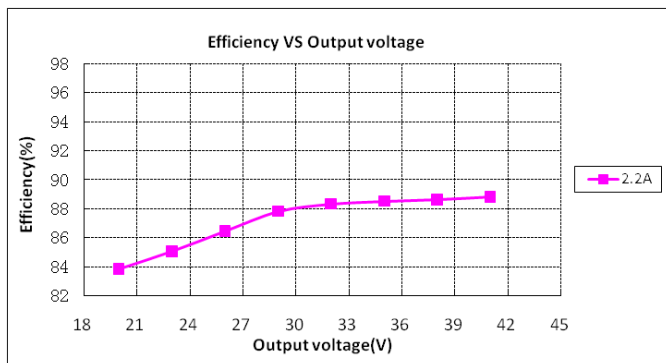
Derating Curve



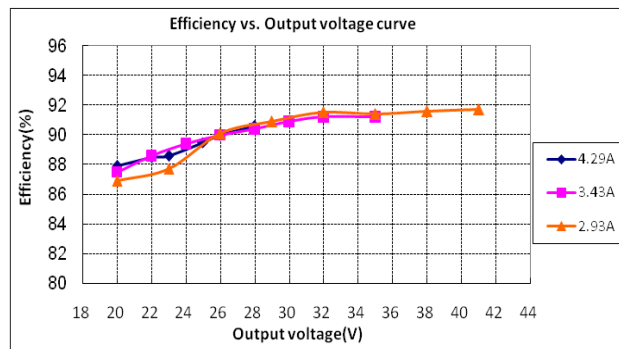
OUTPUT POWER VS INPUT VOLTAGE**Po/Pmax vs. Input Voltage Curve****LIFETIME VS CASE TEMPERATURE**

EFFICIENCY VS LOAD

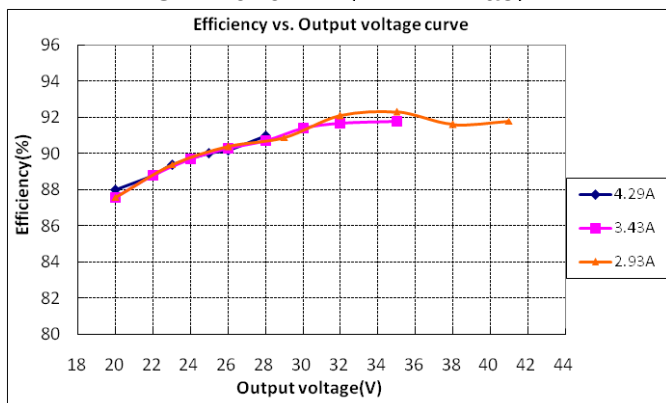
LCP-120X041Z (Vin=115Vac)



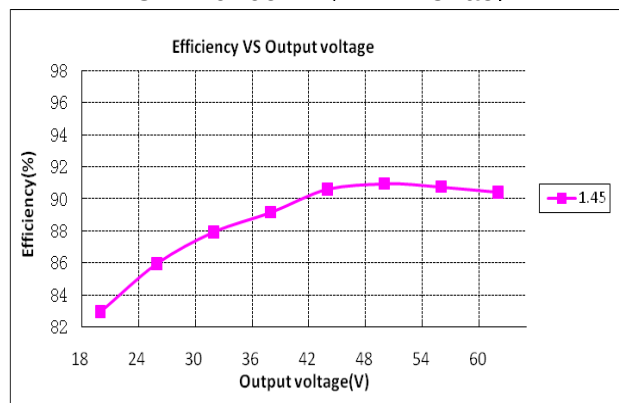
LCP-120X041Z (Vin=230Vac)



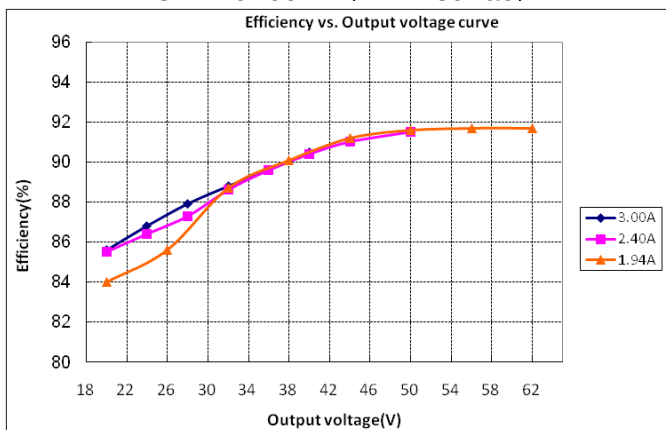
LCP-120X041Z (Vin=277Vac)



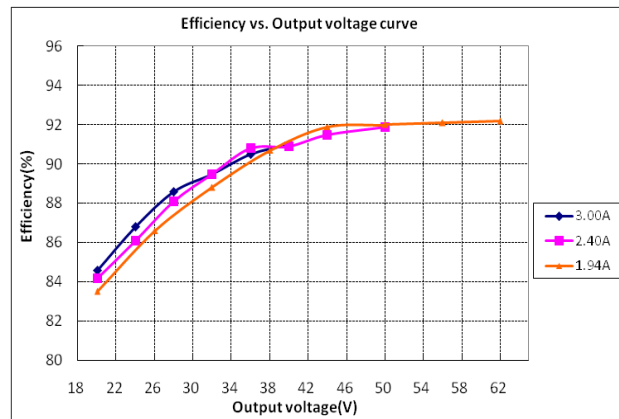
LCP-120X062Z (Vin=115Vac)



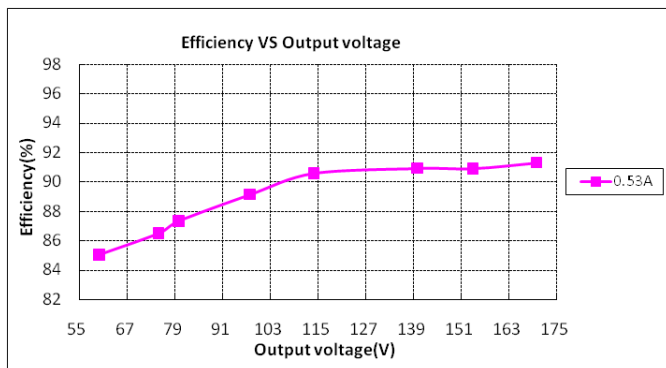
LCP-120X062Z (Vin=230Vac)



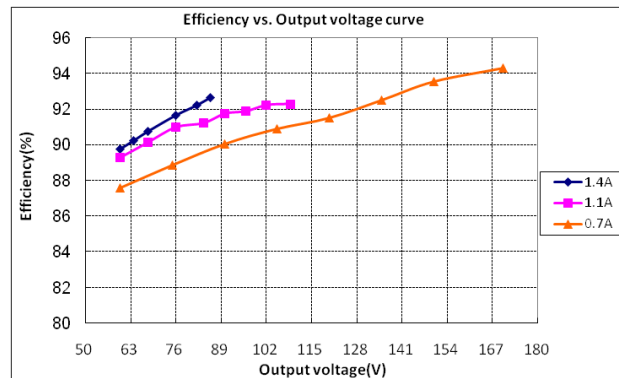
LCP-120X062Z (Vin=277Vac)



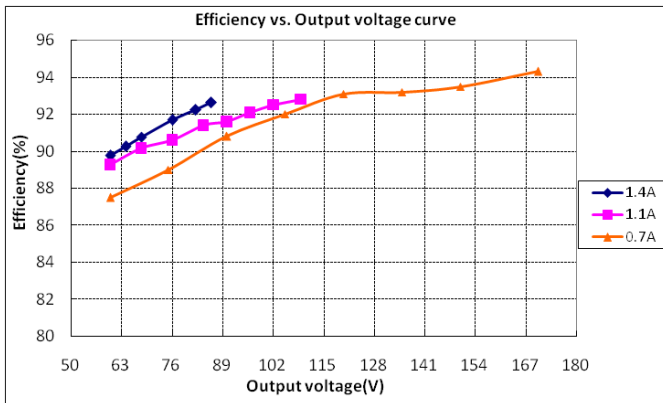
LCP-120X170Z (Vin=115Vac)



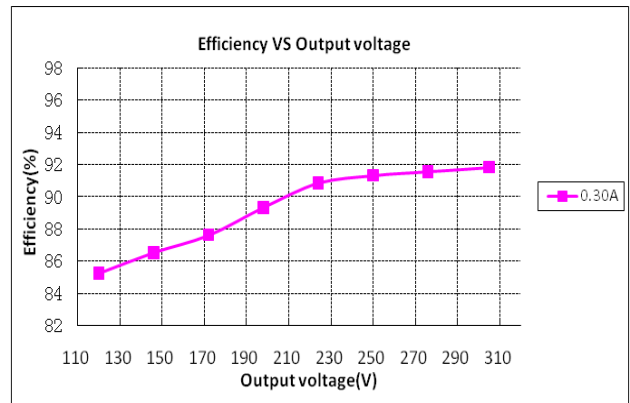
LCP-120X170Z (Vin=230Vac)



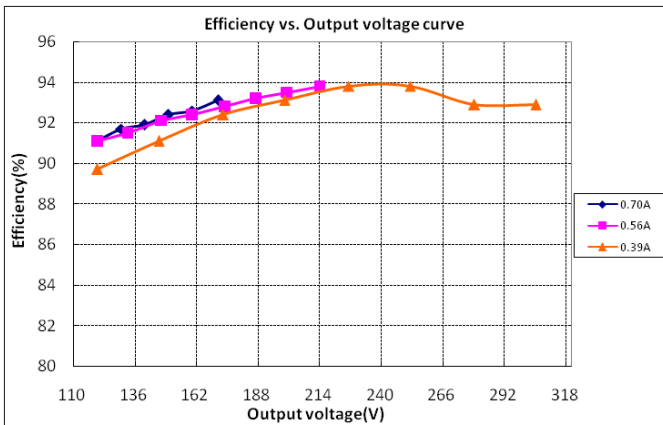
LCP-120X170Z (Vin=277Vac)



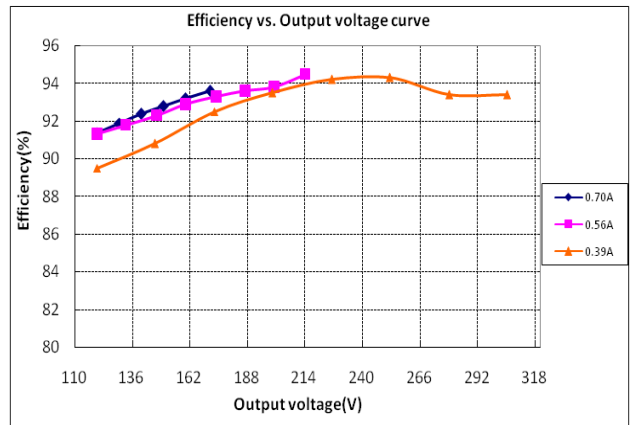
LCP-120X305Z (Vin=115Vac)



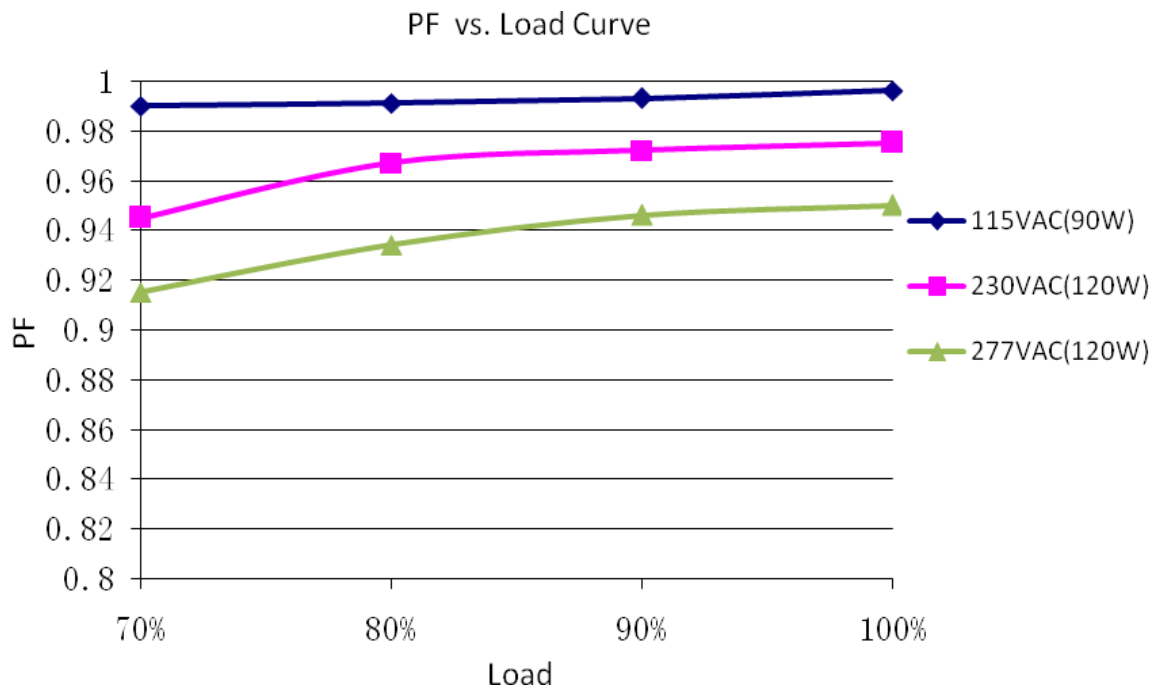
LCP-120X305Z (Vin=230Vac)



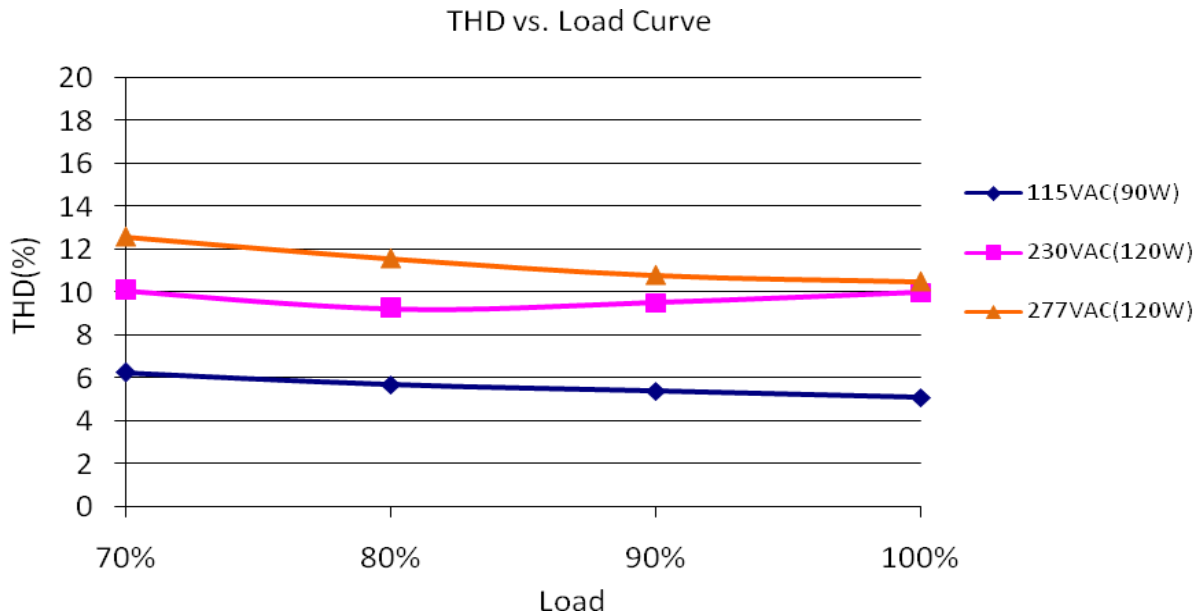
LCP-120X305Z (Vin=277Vac)



POWER FACTOR VS LOAD



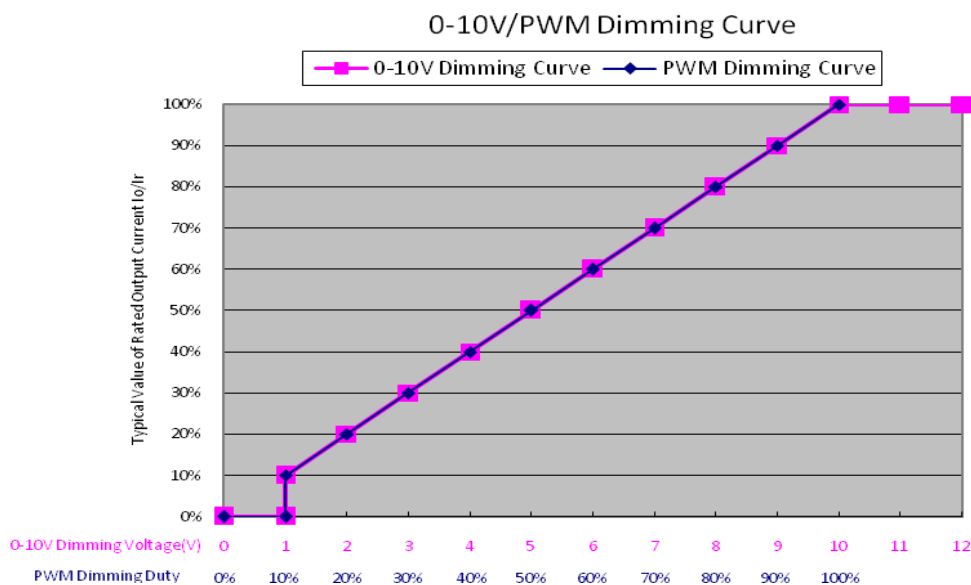
TOTAL HARMONIC DISTORTION



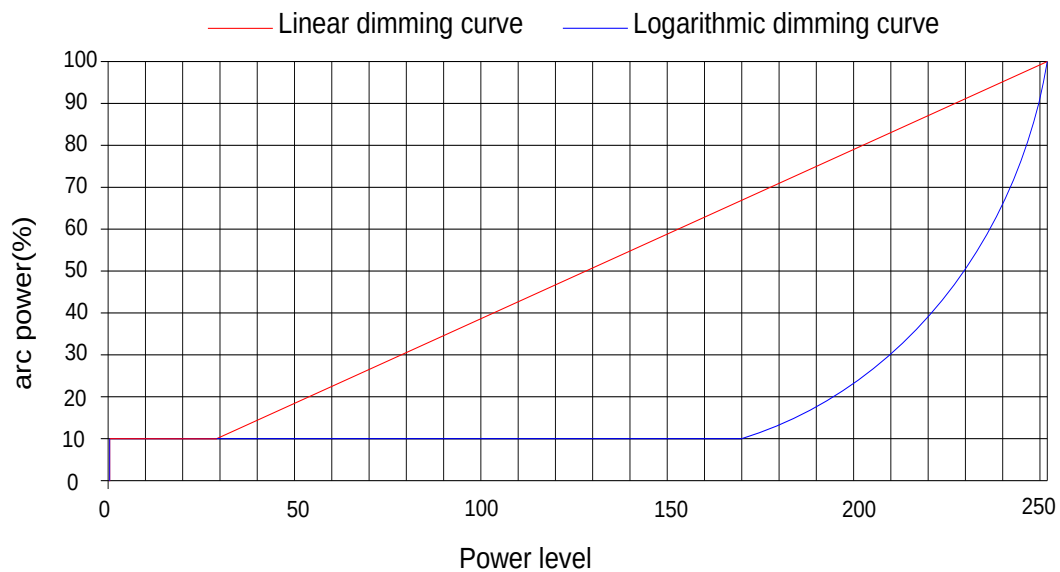
PROTECTIONS

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	Hiccup mode and auto recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	Run into protection model when output voltage exceeds limit, and return to normal when the fault

0-10V/PWM DIMMING

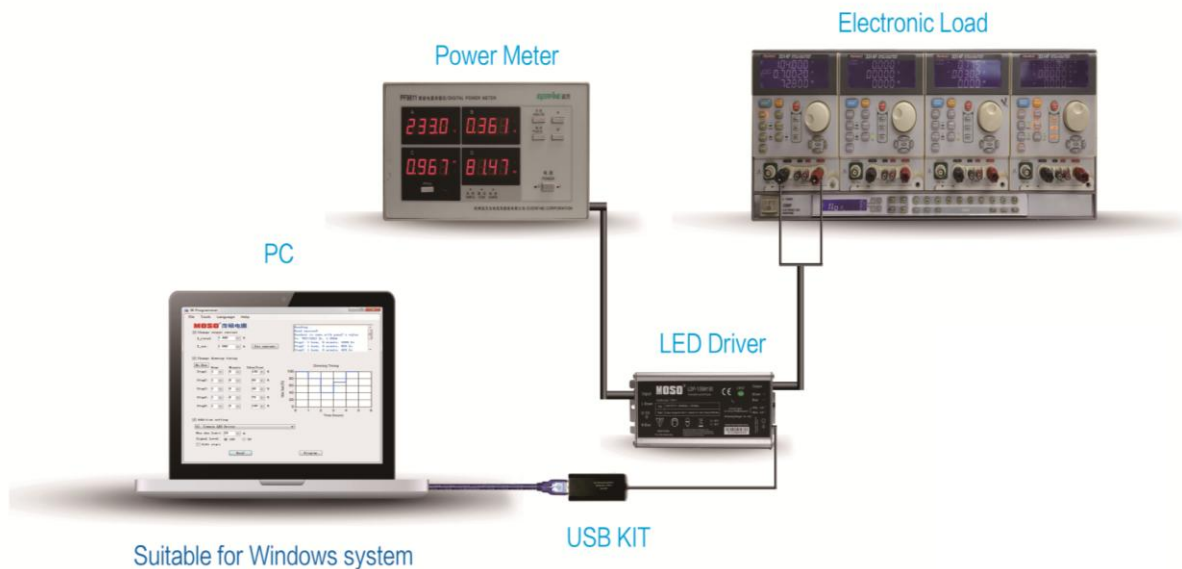


DALI DIMMING

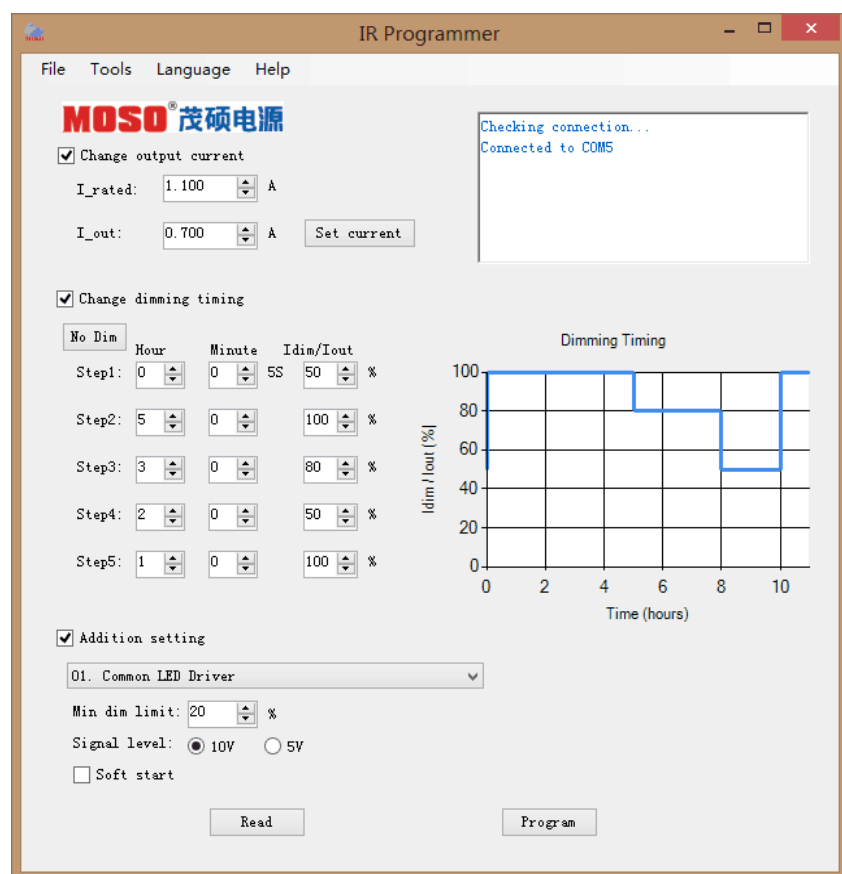


Note: Factory Default Output Logarithmic Curve

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:

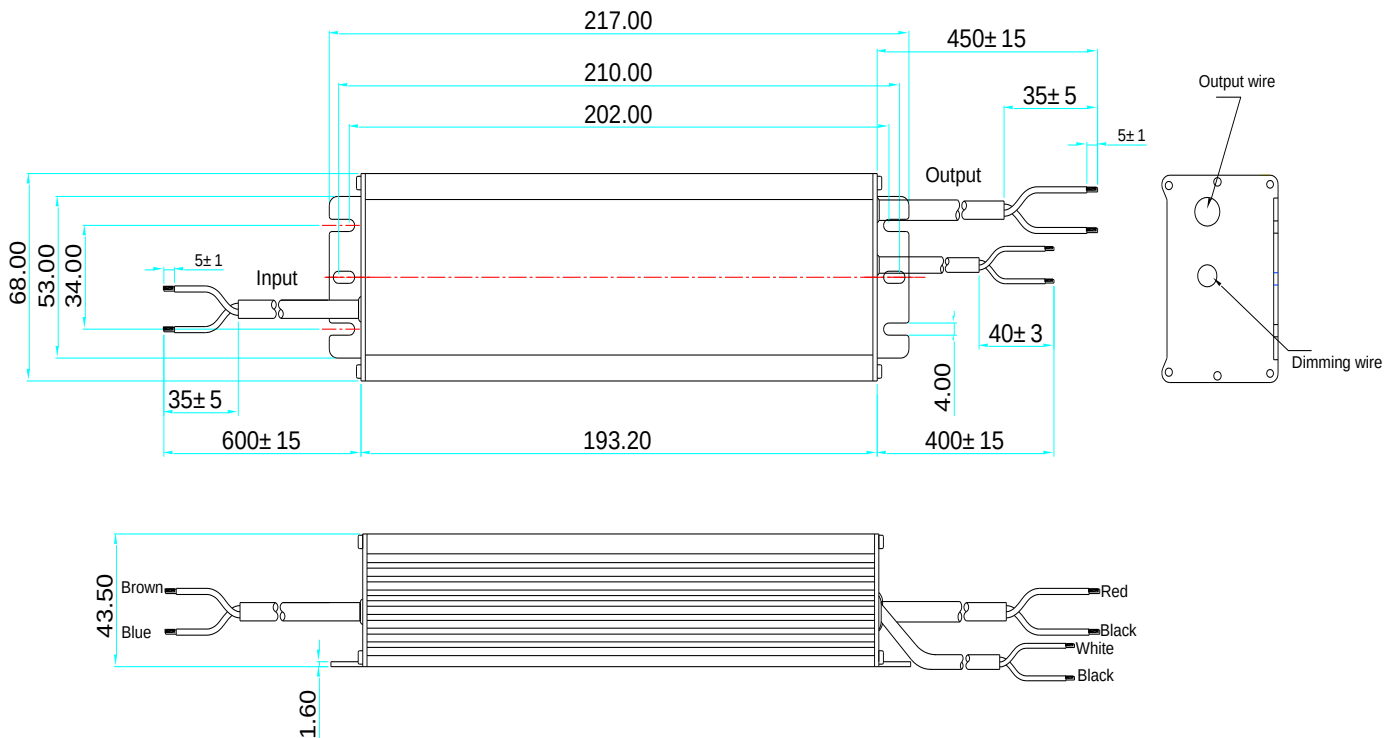
- 1) Insert cable terminal of the infrared controller into the infrared communication port, which is at the DC output side of the LED driver.
- 2) Press "ON" key to power on the controller;
- 3) Within 10S interval, press a function key to adjust output current to the percentage of max delivered current;
 - 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:

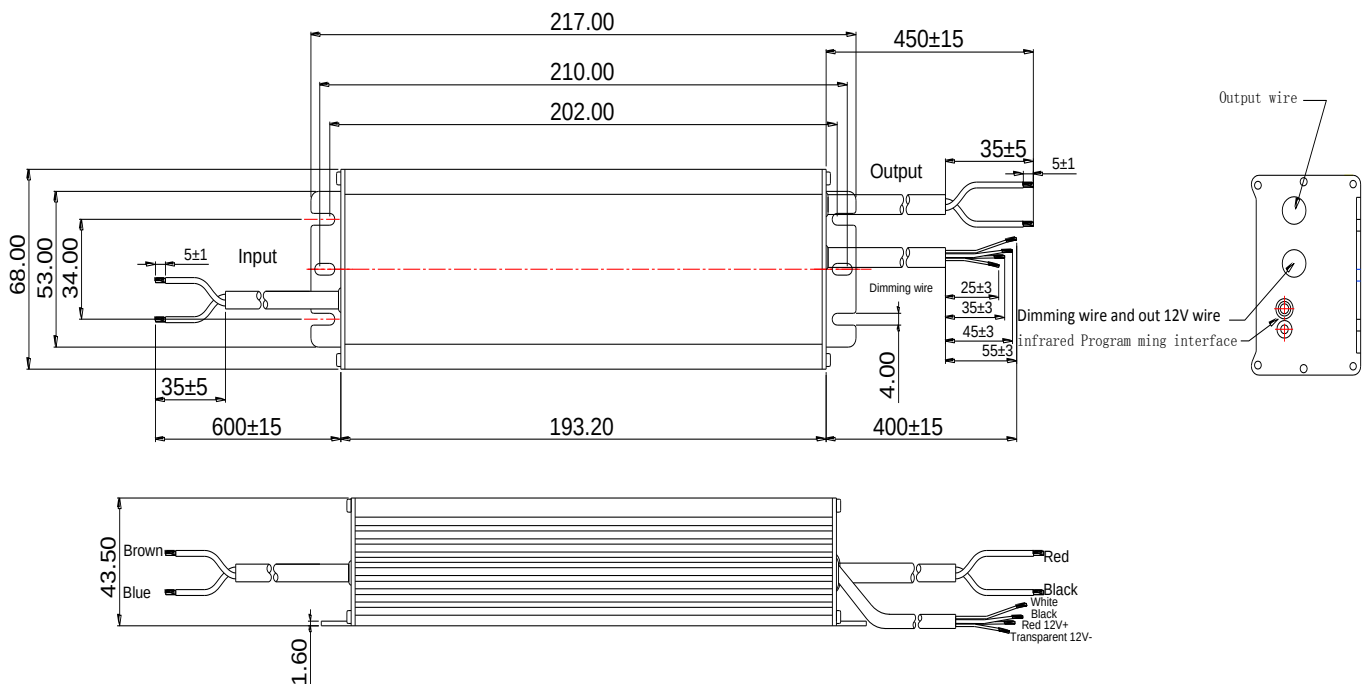
- Please do not hold "+"key, to avoid the over power protection and unstable output.
- Each step of operation should be done within 10S interval, otherwise the controller is power off automatically.

MECHANICAL OUTLINE

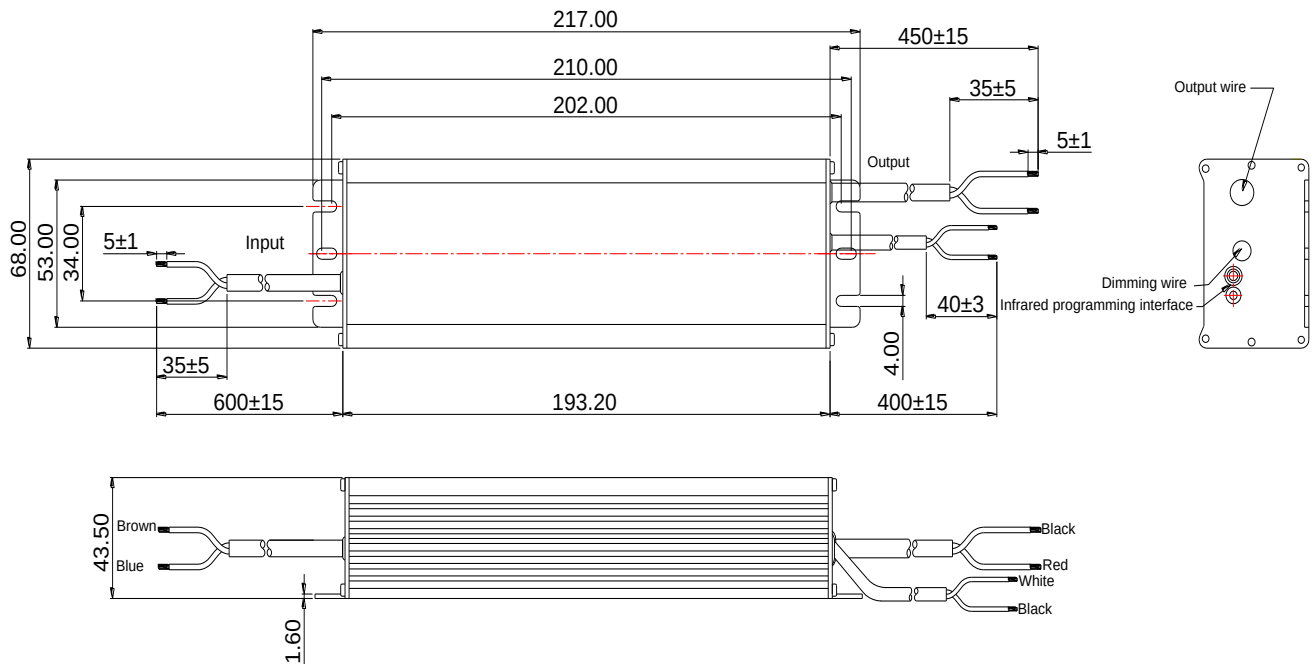
LCP-120D types



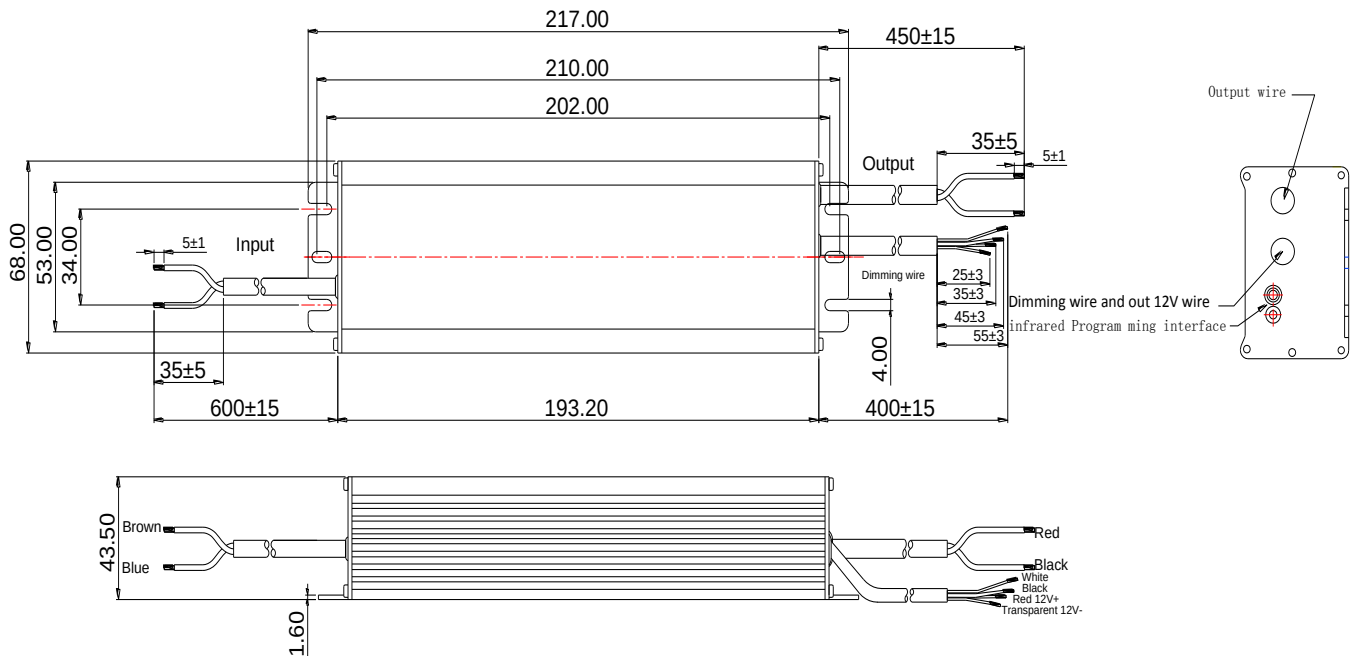
LCP-120D-A12 types



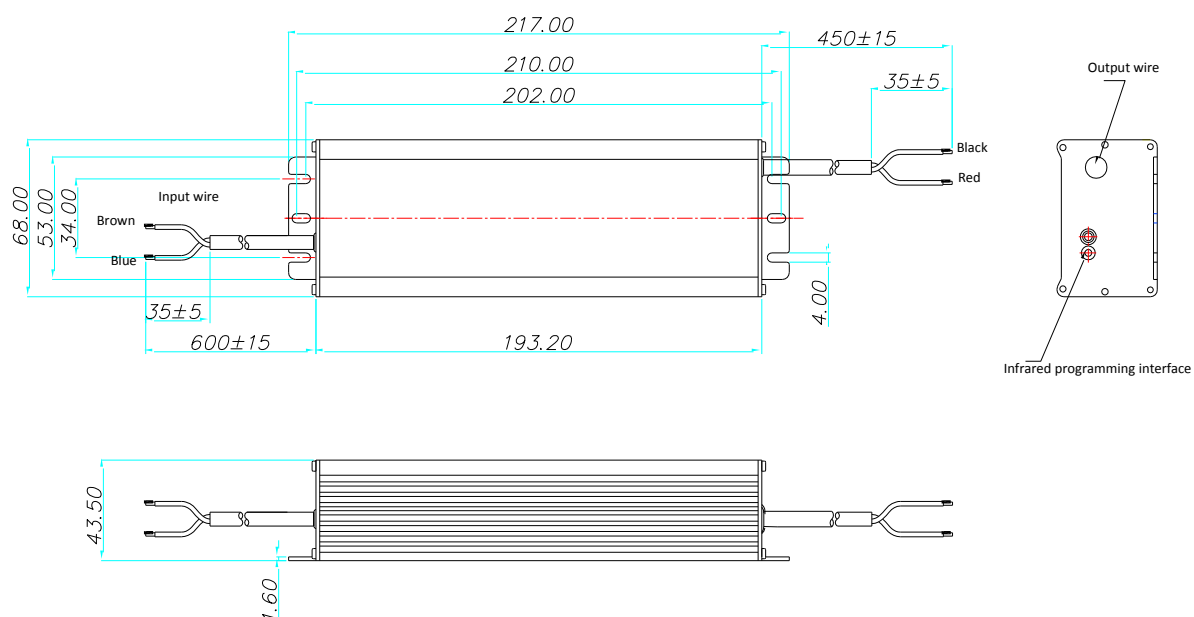
LCP-120M types



LCP-120M-A12 types



LCP-120R 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	