

LDP Series - 200W Outdoor Programmable Driver



Product Features

- Universal input voltage / Full range: 90~305Vac;
- Constant power design, outputs programmable;
- Output current reconfigurable by infrared controller;
- 3-in-1 dimmable (M types): 0~10Vdc / PWM signal /

Timer dimming;

- Surge protection: 5KV line-line, 10KV line-earth;
- Protections: SCP / OVP / OTP;
- IP67 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty.

Application

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

DESCRIPTION

The LDP-200W series is 200W outdoor programmable LED driver that operates in constant current model. Monitored by an infrared based programming device, the fully programmed drivers offer all dimming options and a wide range of output current in a single driver, which deliver maximum flexibility with customized operating settings and intelligent control options for lighting manufacturers, as one driver can be programmed for many different luminaire designs. LDP provides built-in timer dimming schedules further increasing the energy savings and CO₂ reductions achieved with LED lighting. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enables the driver to operating with high reliability, and extending product lifetime. Overall protection is provided against lightning surge, output over voltage, short circuit, and over temperature, to ensure low failure rate.

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	Typical Efficiency [3]	Power Factor	
							115Vac	230Vac
LDP-200X054 -A	200	20~41	0.63~6.30	4.88~6.30	20~36V/5.50A	90%	0.99	0.96
LDP-200X054 -B	200	40~54	0.50~5.00	3.70~5.00	40~54V/3.70A	90%	0.99	0.96
LDP-200X120 -A	200	60~90	0.28~2.80	2.22~2.80	60~72V/2.80A	90%	0.99	0.96
LDP-200X120 -B	200	80~120	0.22~2.22	1.67~2.22	80~95V/2.10A	91%	0.99	0.96
LDP-200X305 -A	200	120~220	0.14~1.40	0.91~1.40	120~143V/1.4A	90%	0.99	0.96
LDP-200X305 -B	200	200~305	0.091~0.91	0.65~0.91	200~286V/0.7A	91%	0.99	0.96
LDP-200X445	200	230~445	0.07~0.70	0.45~0.70	230~286V/0.7A	91%	0.99	0.96

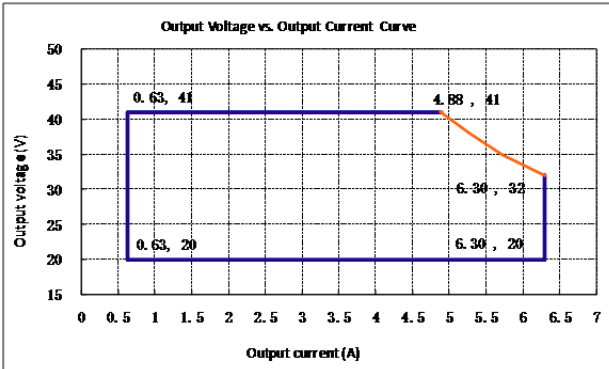
Notes:

- [1]. X can be M or R, means dimmable or non-dimmable. Take LDP-200X054 for example, LDP-200M054 is programmable and 3-in-1 dimmable; LDP-200R054 is programmable and timer dimmable;
- [2]. Output current adjustable range with constant power at max output power;
- [3]. All specifications are measured at 25°C ambient temperature, if no specific note.

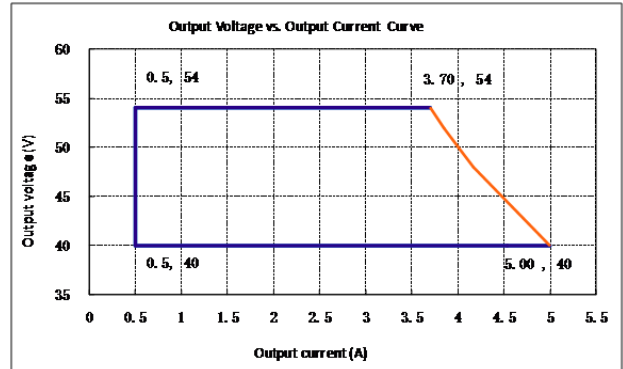
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OPERATING AREA I-V

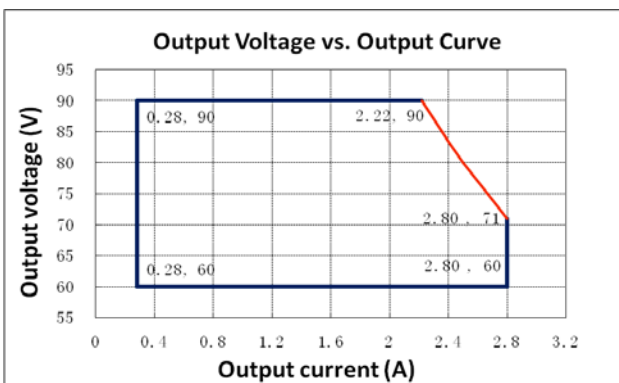
LDP-200X054-A



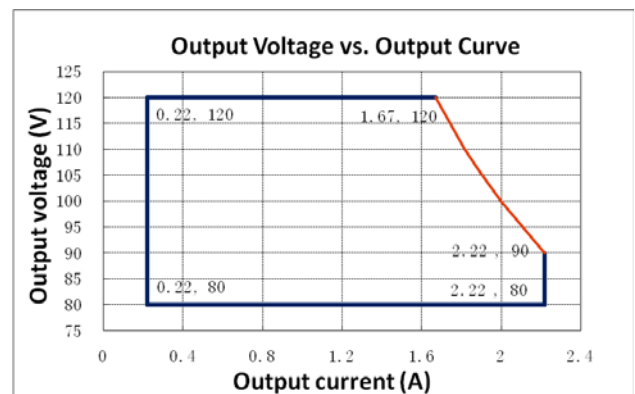
LDP-200X054-B



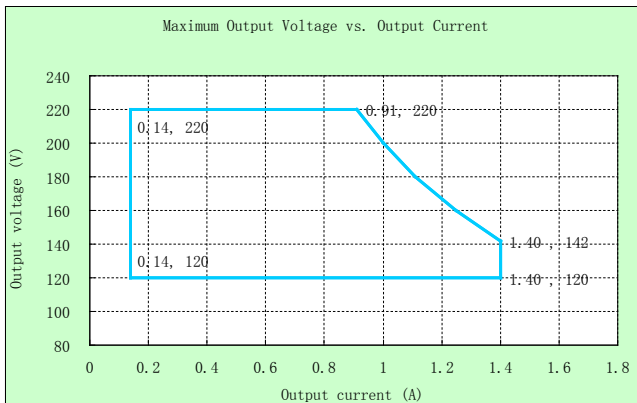
LDP-200X120 -A



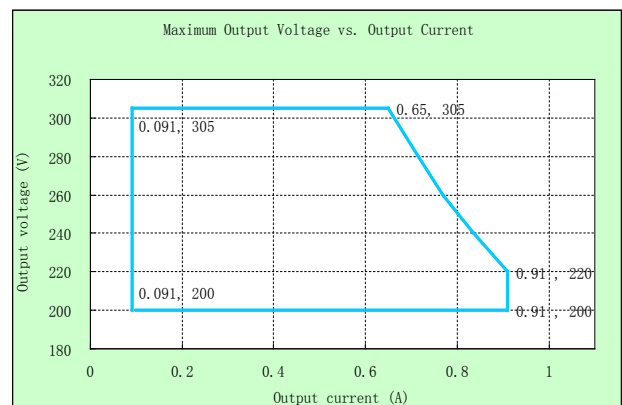
LDP-200X120 -B



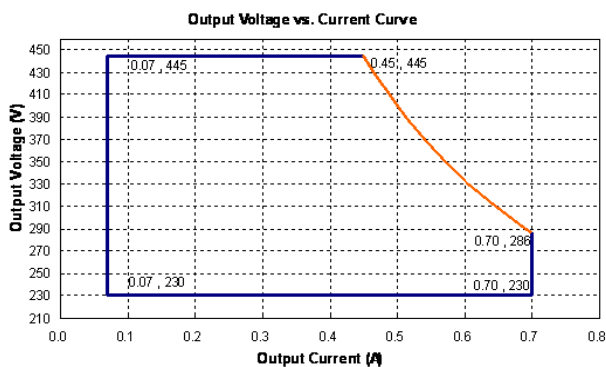
LDP-200X305 -A



LDP-200X305 -B



LDP-200X445



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INPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90Vac	100-277Vac	305Vac	
Input Frequency	47Hz	50/60	63Hz	
Leakage Current	-	-	0.75mA	277Vac/50Hz
Input AC Current	-	-	2.8Amax	100-277Vac & full load
Inrush Current(I _{2t})	-	-	2.4A ² S	230Vac & full load
Power Factor	0.95	0.96	-	230Vac & full load
THD	-	15%	20%	115-230Vac, 80%-100% load, applicable to CE version.
	-	15%	20%	115-277Vac, 70%-100% load, applicable to UL version.

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Iset	-	5%Iset	Full load
Output Current Setting Range (Iset)				
LDP-200X054 -A	0.63A		6.30A	
LDP-200X054 -B	0.50A		5.00A	
LDP-200X120 -A	0.28A		2.80A	
LDP-200X120 -B	0.22A	-	2.22A	
LDP-200X305 -A	0.14A		1.40A	
LDP-200X305 -B	0.09A		0.91A	
LDP-200X445	0.07A		0.70A	
Output Current Setting Range with Constant Power				
LDP-200X054 -A	4.88		6.30A	
LDP-200X054 -B	3.70		5.00A	
LDP-200X120 -A	2.22	-	2.80A	
LDP-200X120 -B	1.67		2.22A	
LDP-200X305 -A	0.91		1.40A	
LDP-200X305 -B	0.65		0.91A	
LDP-200X445	0.45		0.70A	
Total Output Current Ripple (pk-pk)	-	10%	16%	230Vac & full Load · load is LED, ripple is different with difference LED load.
Startup Overshoot Current	-	-	10%	115~277Vac & 100% Load, load is LED
No Load Output Voltage				
LDP-200X054 -A			60V	
LDP-200X054 -B			60V	
LDP-200X120 -A	-	-	140V	
LDP-200X120 -B			140V	
LDP-200X305 -A			340V	
LDP-200X305 -B			340V	
LDP-200X445			490V	
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

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GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Efficiency @115Vac				Measured at full load and 25°C ambient temperature
LDP-200X054 -A				
I _o =4.88A	87%	89%		
I _o =6.30A	86%	88%		
LDP-200X054 -B				
I _o =3.70A	87%	89%		
I _o =5.00A	86%	88%		
LDP-200X120 -A				
I _o =2.22A	86%	88%		
I _o =2.80A	86%	88%		
LDP-200X120 -B				
I _o =1.67A	87%	89%		
I _o =2.22A	86%	88%		
LDP-200X305 -A				
I _o =0.91A	87%	89%		
I _o =1.40A	86%	88%		
LDP-200X305 -B				
I _o =0.65A	87%	89%		
I _o =0.91A	86%	88%		
LDP-200X445				
I _o =0.45A	89%	91%		
I _o =0.70A	87%	89%		
Efficiency @230Vac				Measured at full load and 25°C ambient temperature
LDP-200X054 -A				
I _o =4.88A	89%	91%		
I _o =6.30A	88%	90%		
LDP-200X054 -B				
I _o =3.70A	89%	91%		
I _o =5.00A	88%	90%		
LDP-200X120 -A				
I _o =2.22A	89%	90%		
I _o =2.80A	88%	90%		
LDP-200X120 -B				
I _o =1.67A	89%	91%		
I _o =2.22A	89%	90%		
LDP-200X305 -A				
I _o =0.91A	89%	91%		
I _o =1.40A	88%	90%		
LDP-200X305 -B				
I _o =0.65A	89%	91%		
I _o =0.91A	89%	91%		
LDP-200X445				
I _o =0.45A	91%	93%		
I _o =0.70A	89%	91%		
Efficiency @277Vac				Measured at full load and 25°C ambient temperature
LDP-200X054 -A				
I _o =4.88A	89%	91%		
I _o =6.30A	88%	90%		
LDP-200X054 -B				
I _o =3.70A	89%	91%		

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LDP-200X120 -A		io=5.00A	88%	90%	
LDP-200X120 -B		io=2.22A	89%	90%	
		io=2.80A	88%	90%	
LDP-200X305 -A		io=1.67A	89%	91%	
		io=2.22A	89%	90%	
LDP-200X305 -B		io=0.91A	89%	91%	
		io=1.40A	88%	90%	
LDP-200X445		io=0.65A	89%	91%	
		io=0.91A	89%	91%	
		io=0.45A	91%	93%	
		io=0.70A	89%	91%	
Dielectric Strength	Input-Output	-	3750Vac	-	10mA/60S
	Input-PE	-	1600Vac	-	
	Output- PE	-	1600Vac	-	
Grounding Resistance		-	-	0.1Ω	25A/60S
Insulation Resistance		50MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH
MTBF		-	200000 Hours	-	230Vac,80% load (MIL-HDBK-217F)
Lifetime		-	50000 Hours	-	230Vac&100% load,70°C case temperature, refer to lifetime VS Tc curve for details
Operating Case Temperature for Safety Tc_s		-40°C	-	+85°C	
Operating Case Temperature for Warranty Tc_w		-40°C	-	+70°C	
Storage Temperature		-40°C	-	+85°C	Humidity: 5% to 100% RH
Dimensions (LxWxH)mm		207*80*40			
Net Weight		1100±100g /PCS			
Package		L500xW370xH150mm; Gross Weight: about 12.1Kg;10pcs/Ctn			

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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	LDP-200X054 -A LDP-200X054 -B LDP-200X120 -A LDP-200X120 -B LDP-200X305 -A LDP-200X305 -B LDP-200X445	10%Imax	-	100%Imax	Imax=6.30A Imax=5.00A Imax=2.80A Imax=2.22A Imax=1.40A Imax=0.91A Imax=0.70A
	LDP-200X054 -A LDP-200X054 -B LDP-200X120 -A LDP-200X120 -B LDP-200X305 -A LDP-200X305 -B LDP-200X445	0.63A 0.50A 0.28A 0.22A 0.14A 0.09A 0.07A	-	6.30A 5.00A 2.80A 2.22A 1.40A 0.91A 0.70A	
Recommended Dimming Range for 0-5V		0V	-	5V	Default 0-10V/10V PWM Dimming
Recommended Dimming Range for 0-10V		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

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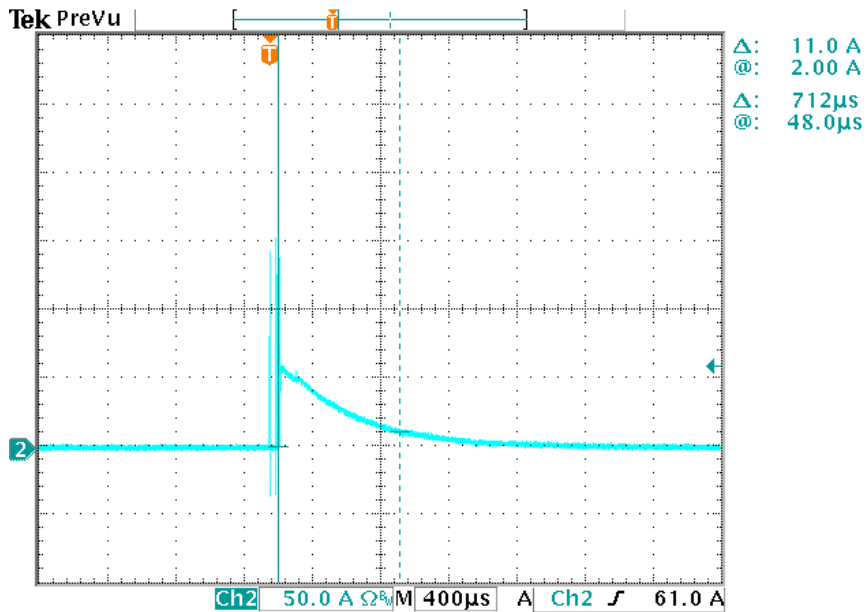
EMC COMPLIANCE

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:

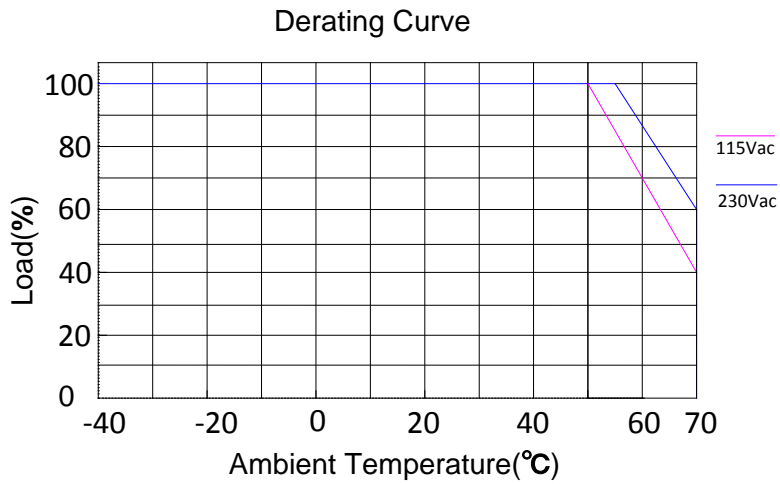
This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

INRUSH CURRENT WAVEFORM

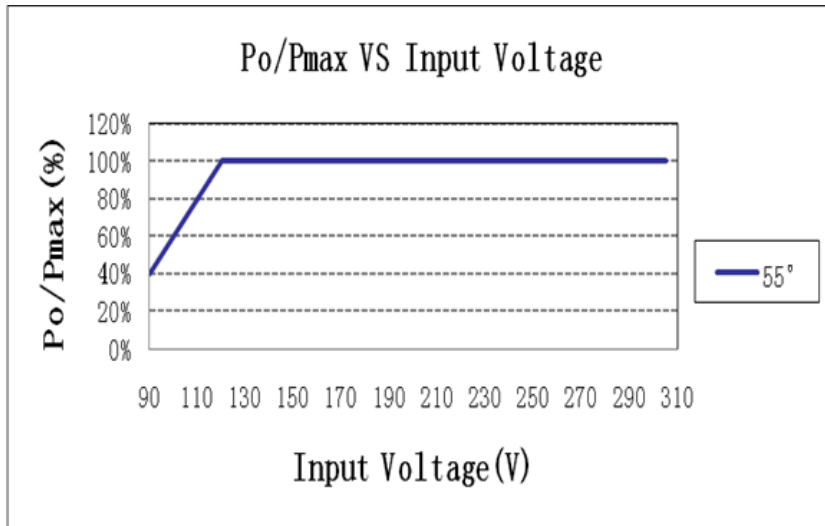


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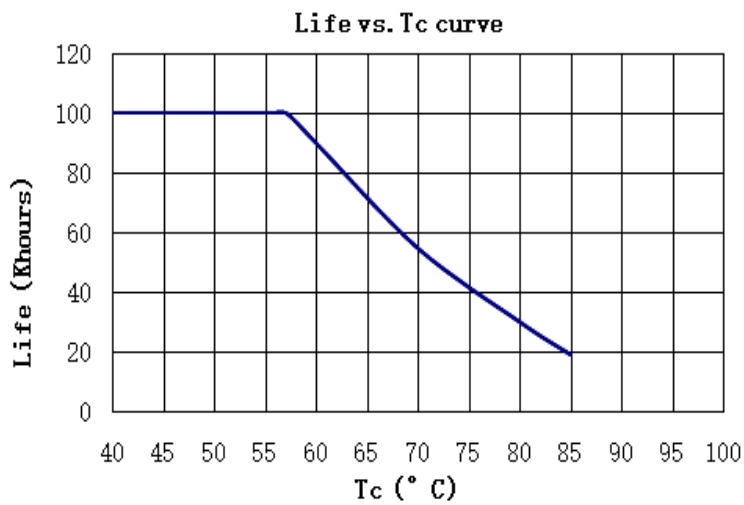
DERATING CURVE



OUTPUT POWER VS INPUT VOLTAGE



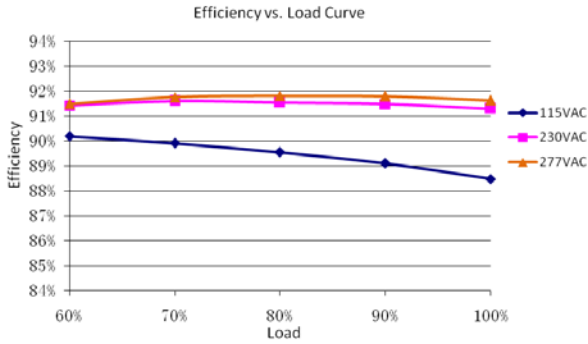
LIFETIME VS CASE TEMPERATURE



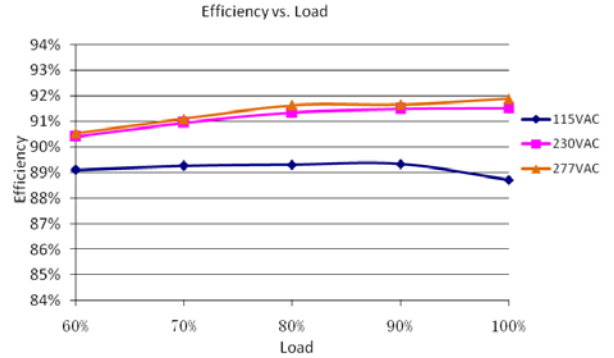
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EFFICIENCY VS LOAD

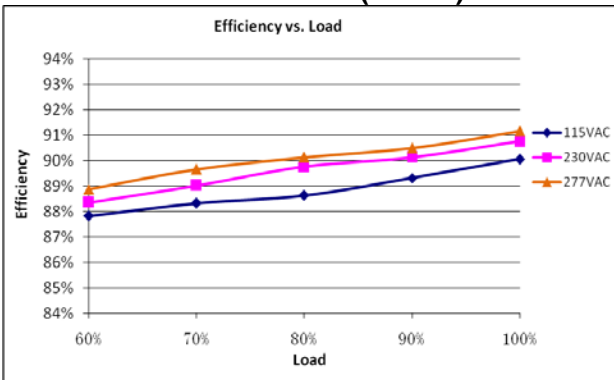
LDP-200X054-A(U=36V)



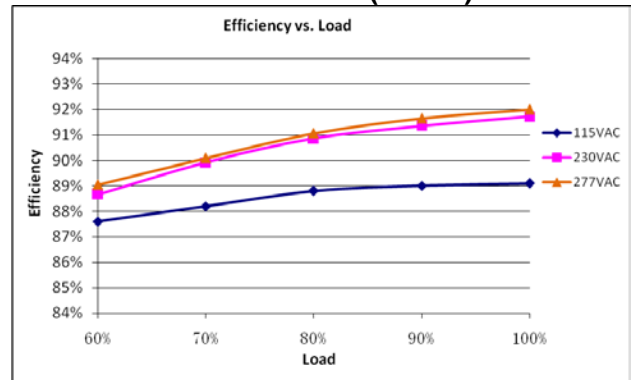
LDP-200X054-B(U=54V)



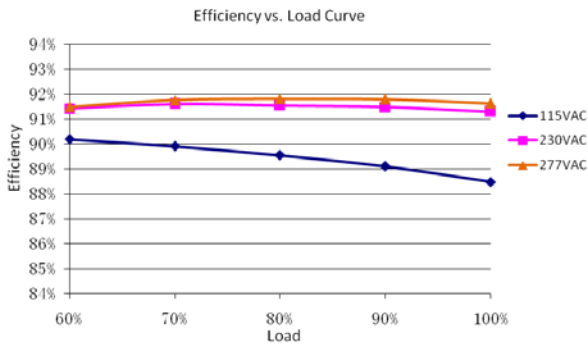
LDP-200X120-A(U=72V)



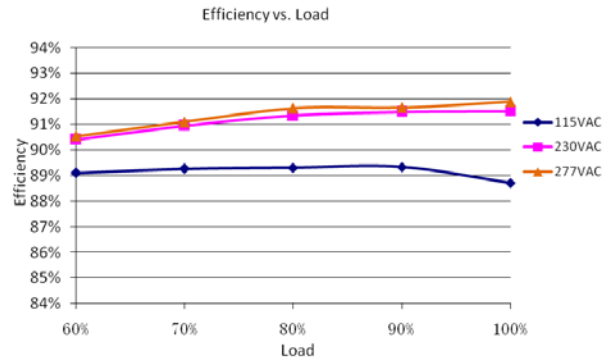
LDP-200X120-B(U=95V)



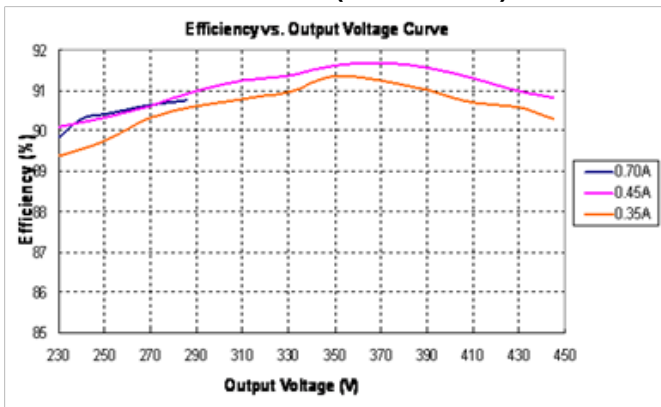
LDP-200X305-A(U=220V)



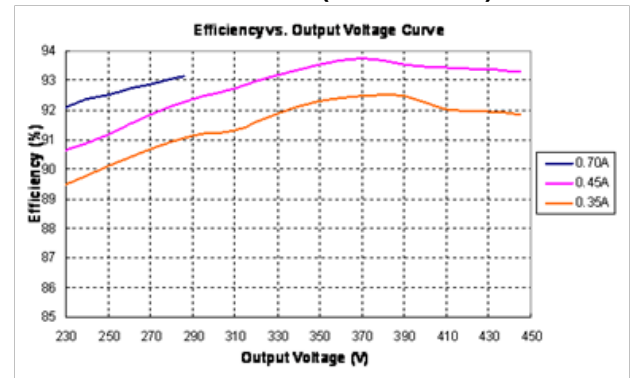
LDP-200X305-B(U=305V)



LDP-200X445(Vin=115Vac)

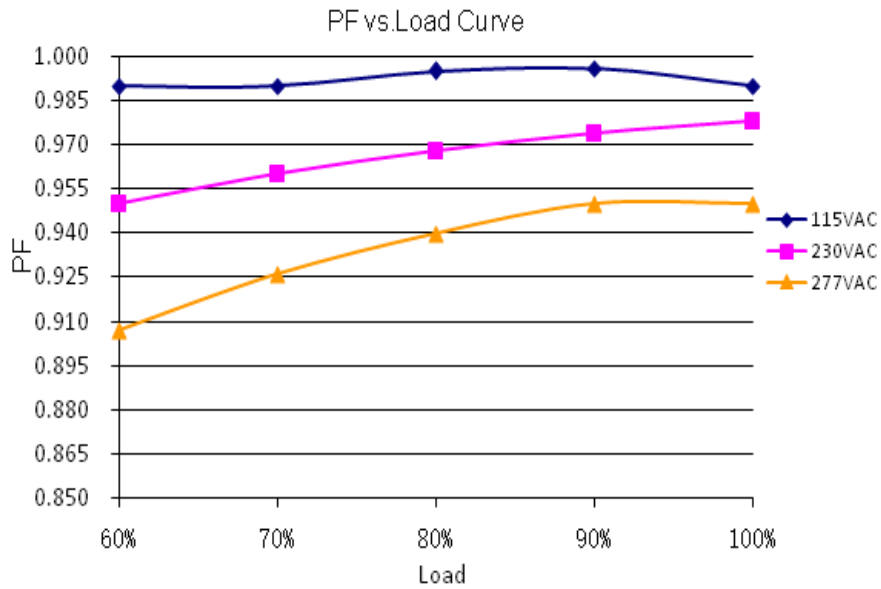


LDP-200X445(Vin=230Vac)

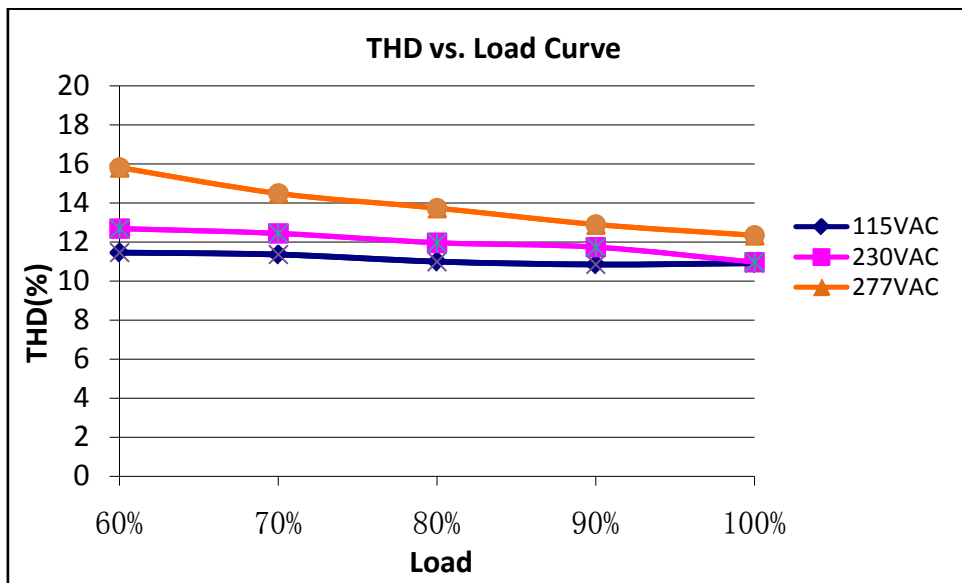


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POWER FACTOR VS LOAD



TOTAL HARMONIC DISTORTION

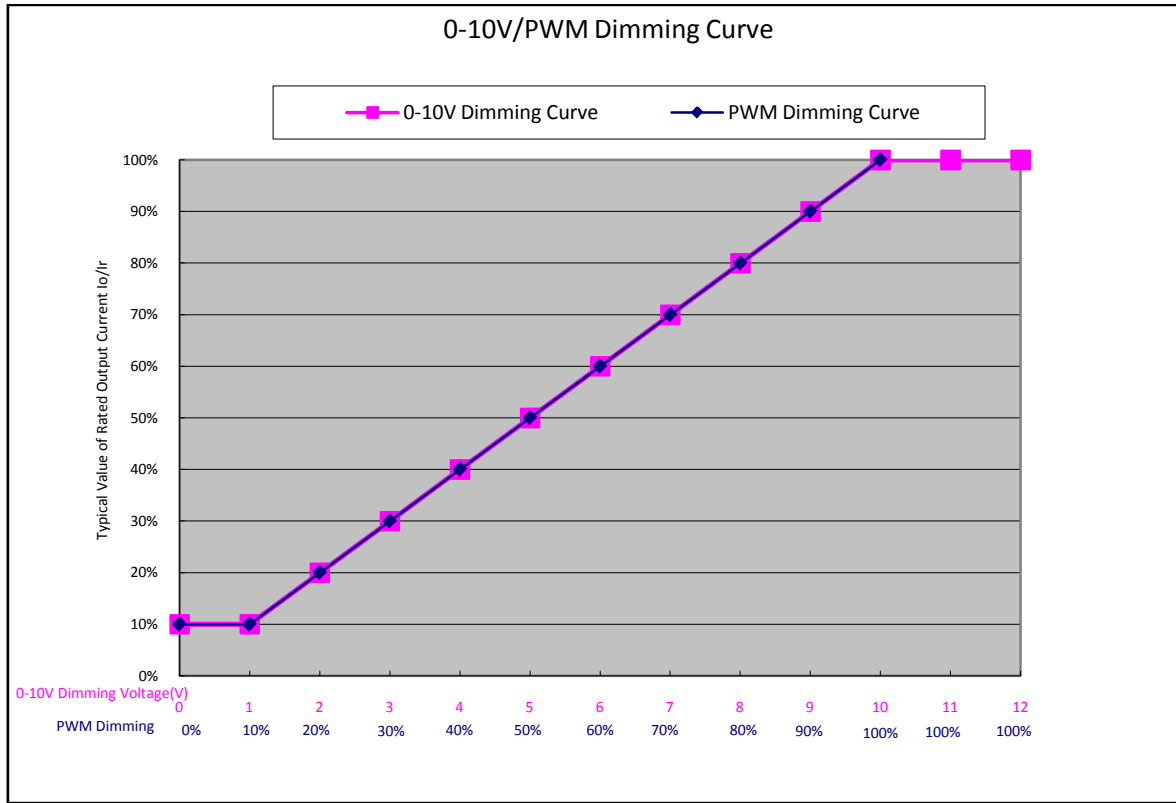


PROTECTIONS

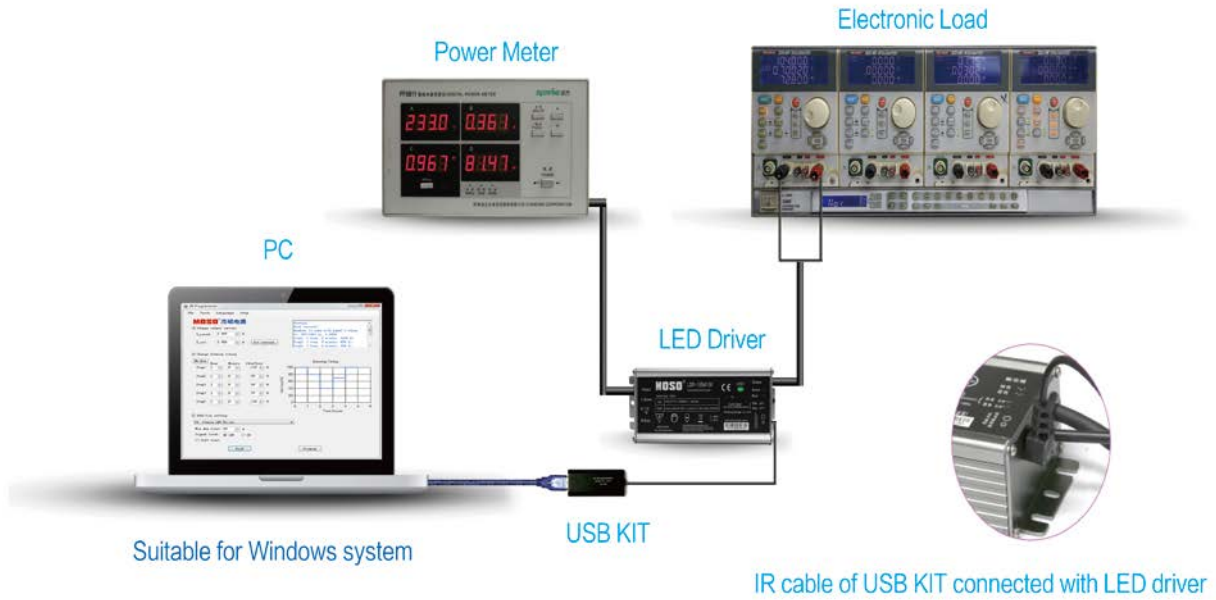
Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed. The max derating could be 30% (typ.).
Short Circuit Protection	Hiccup mode and auto recovery. No damage will occur when any output is short circuited. The output shall return to 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

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0-10V/PWM DIMMING

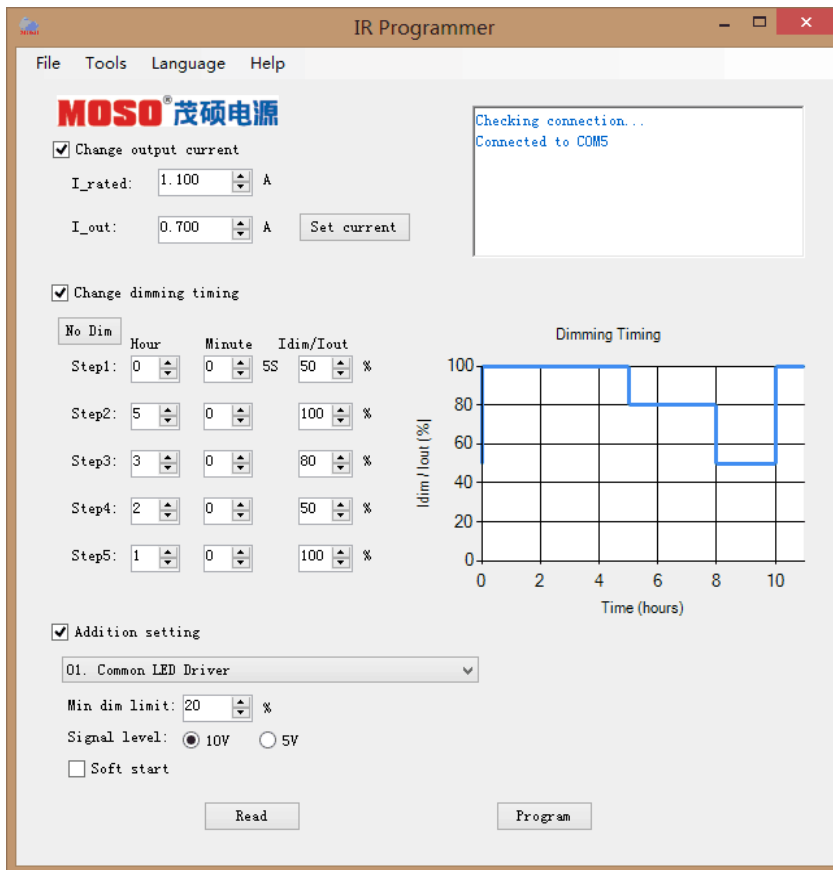


PROGRAMMING CONNECTION



LDP Series - 200W Outdoor Programmable Driver

PROGRAMMING GUIDE AND SOFTWARE INTERFACE



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



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.

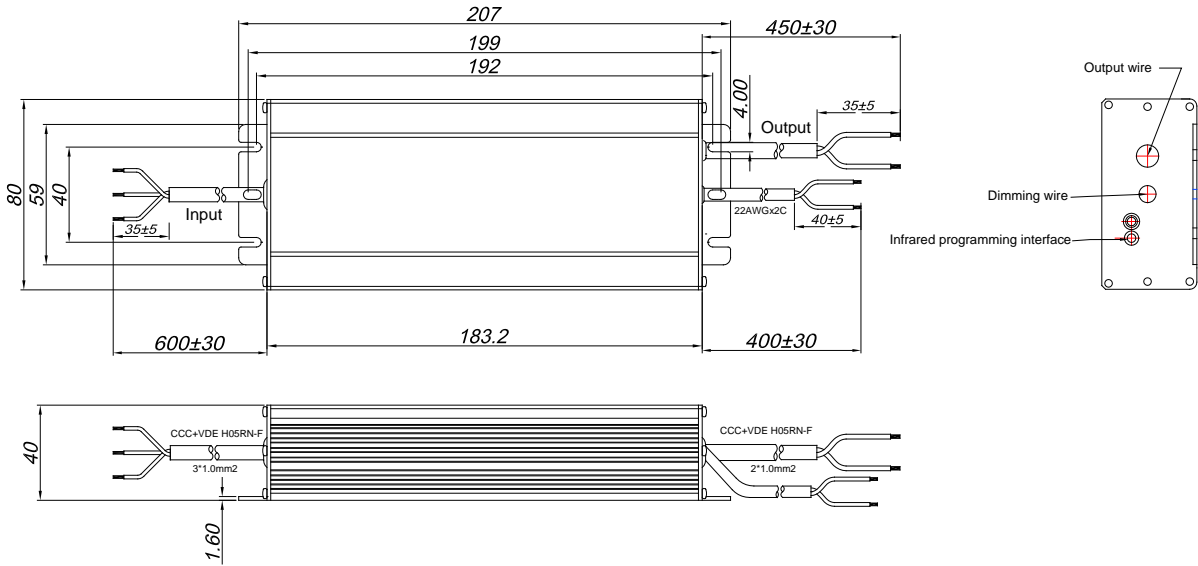
Warning:

- 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.

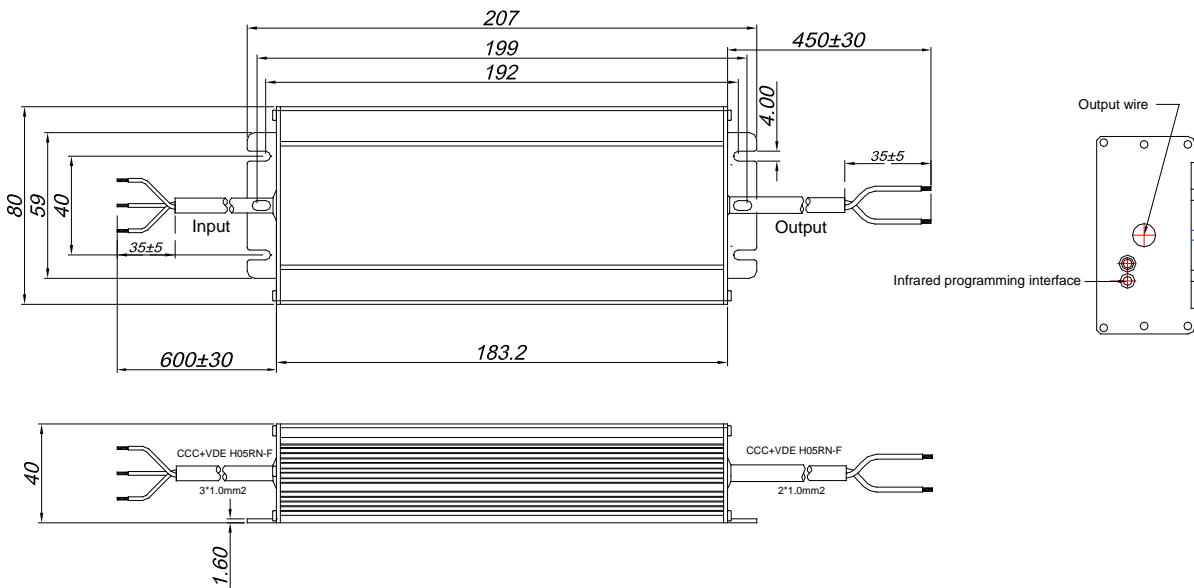
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MECHANICAL OUTLINE

LDP-200M types



LDP-200M R types



Wire	Specification	Note
Input	CCC+VDE H05RN-F 3*1.0mm ² L=600mm	for CE
	18AWG*3C SJOW L=600mm	for UL
Output	CCC+VDE H05RN-F 2*1.0mm ² L=450mm	for CE
	18AWG*2C SJOW L=450mm	for UL
Dimming	22AWG*2C UL1332 L=400mm	for CE
	18AWG*2C SJOW L=400mm	for UL

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REVISION HISTORY

Version	Description of Change		Date	Notes
	Before	Now		
A.2	—	Datasheets Release	2018-03-09	