



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-320W series is 320W 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-320X041 | 320 | 20~41 | 1.00~10.00 | 7.80~10.00 | 20~36V/8.90A | 92% | 0.99 | 0.96 |
| LDP-320X062 | 320 | 20~62 | 0.82~8.20 | 5.16~8.20 | 20~48V/6.70A | 92% | 0.99 | 0.96 |
| LDP-320X230-A | 320 | 120~180 | 0.21~2.10 | 1.78~2.10 | 120~152V/2.1A | 93% | 0.99 | 0.96 |
| LDP-320X230-B | 320 | 170~230 | 0.18~1.78 | 1.39~1.78 | 170~228V/1.4A | 93% | 0.99 | 0.96 |
| LDP-320X457 | 320 | 235~457 | 0.11~1.10 | 0.70~1.10 | 230~457V/0.7A | 93% | 0.99 | 0.96 |

Notes:

[1]. X can be M or R, means dimmable or non-dimmable. Take LDP- LDP-320X041 for example, LDP-320M041 is programmable and 3-in-1 dimmable; LDP-320R041 is programmable and timer dimmable;

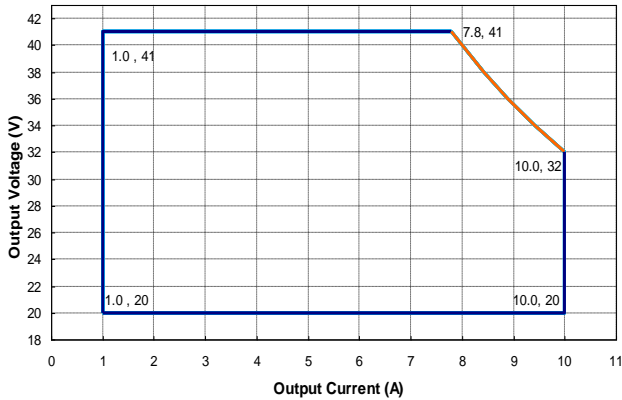
[2]. Output current adjustable range with constant power at max output power;

[3]. All specifications are measured at 25°C ambient temperature, if no specific note.

OPERATING AREA I-V

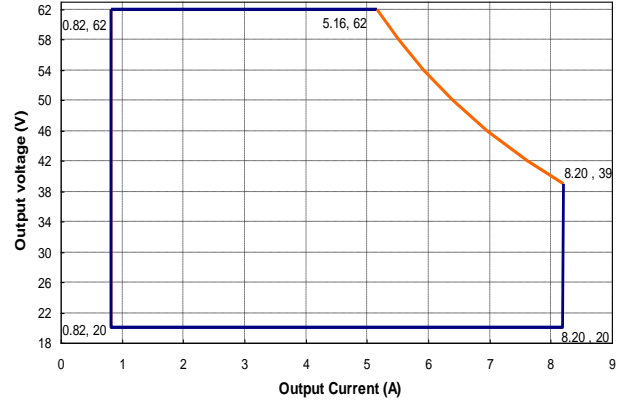
LDP-320X041

Output Voltage vs. Current Curve



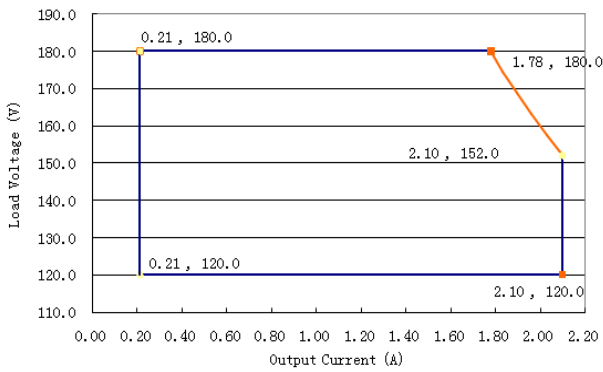
LDP-320X062

Output Voltage vs. Current Curve



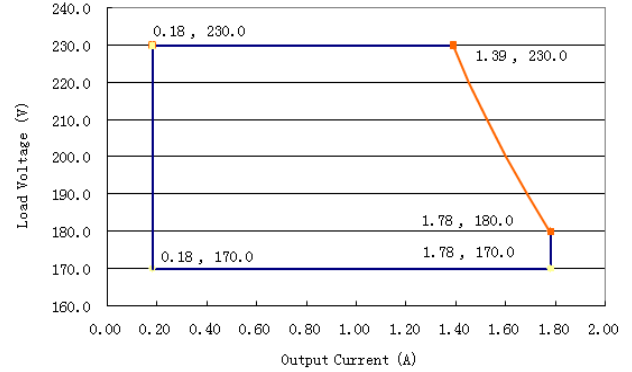
LDP-320X230-A

Output Current Vs Load Voltage Curve



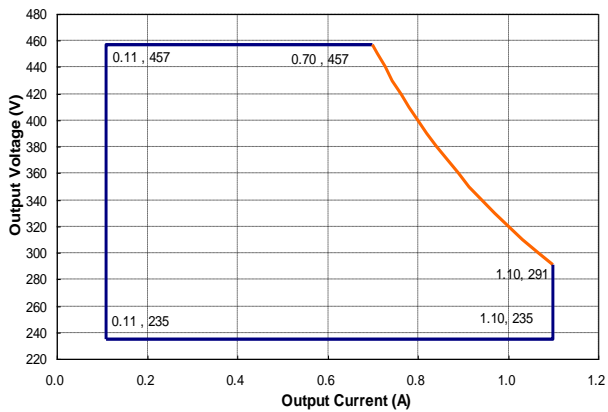
LDP-320X230-B

Output Current Vs Load Voltage Curve



LDP-320X457

Output Voltage vs. Current Curve



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 | - | - | 4.0Amax | 100-277Vac & full load |
| Inrush Current(A) | - | - | 120A | 230Vac & full load |
| Power Factor | 0.95 | 0.96 | - | 230Vac & full load |
| THD | - | - | 18% | 115-230Vac, 80%-100% load |
| THD | - | - | 20% | 277Vac, 80-100% load |

OUTPUT SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|------|---|--|
| Output Current Tolerance | -5%Iset | - | 5%Iset | Full load |
| Output Current Setting Range (Iset) LDP-320X041 LDP-320X062 LDP-320X230-A LDP-320X230-B LDP-320X457 | 1.00A 0.82A 0.21A 0.17A 0.11A | - | 10.0A 8.20A 2.10A 1.78A 1.10A | |
| Output Current Setting Range with Constant Power LDP-320X041 LDP-320X062 LDP-320X230-A LDP-320X230-B LDP-320X457 | 7.80A 5.16A 1.78A 1.39A 0.70A | - | 10.0A 8.20A 2.10A 1.78A 1.10A | |
| 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-320X041 LDP-320X062 LDP-320X230-A LDP-320X230-B LDP-320X457 | - | - | 44V 68V 260V 260V 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 |
| | - | - | 2S | 230Vac, 100% load |

GENERAL SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Notes | | |
|---|--|--|---------|--|--|--|
| Efficiency @115Vac LDP-320X041 I _o =7.80A I _o =10.00A LDP-320X062 I _o =5.16A I _o =8.20A LDP-320X230-A I _o =1.78A I _o =2.10A LDP-320X230-B I _o =1.39A I _o =1.78A LDP-320X457 I _o =0.70A I _o =1.10A | 88% 88% 88% 88% 89% 89% 89% 89% 89% 89% | 90% 90% 90% 90% 91% 91% 91% 91% 91% 91% | | Measured at full load and 25°C ambient temperature | | |
| Efficiency @230Vac LDP-320X041 I _o =7.80A I _o =10.00A LDP-320X062 I _o =5.16A I _o =8.20A LDP-320X230-A I _o =1.78A I _o =2.10A LDP-320X230-B I _o =1.39A I _o =1.78A LDP-320X457 I _o =0.70A I _o =1.10A | 91% 90% 91% 90% 91% 91% 91% 91% 91% 91% | 93% 92% 93% 92% 93% 93% 93% 93% 93% 93% | | | Measured at full load and 25°C ambient temperature | |
| Efficiency @277Vac LDP-320X041 I _o =7.80A I _o =10.00A LDP-320X062 I _o =5.16A I _o =8.20A LDP-320X230-A I _o =1.78A I _o =2.10A LDP-320X230-B I _o =1.39A I _o =1.78A LDP-320X457 I _o =0.70A I _o =1.10A | 91% 90% 91% 90% 91% 91% 91% 91% 91% 91% | 93% 92% 93% 92% 93% 93% 93% 93% 93% 93% | | | | Measured at full load and 25°C ambient temperature |
| Dielectric Strength | Input-Output | - | 3750Vac | - | | |
| | 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:10% to 95% RH |
| Dimensions (LxWxH)mm | 234*98*40 | | | |
| Net Weight | 1550±100g /PCS | | | |
| Package | L610xW370xH160mm; Gross Weight: about 16.8Kg;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 | LDP-320X041 LDP-320X062 LDP-320X230-A LDP-320X230-B LDP-320X457 | 10%Imax | - | 100%Imax | Imax=10.0A Imax=8.20A Imax=2.10A Imax=1.78A Imax=1.10A |
| | LDP-320X041 LDP-320X062 LDP-320X230-A LDP-320X230-B LDP-320X457 | 1.00A 0.82A 0.21A 0.17A 0.11A | - | 10.0A 8.20A 2.10A 1.78A 1.10A | |
| 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 |

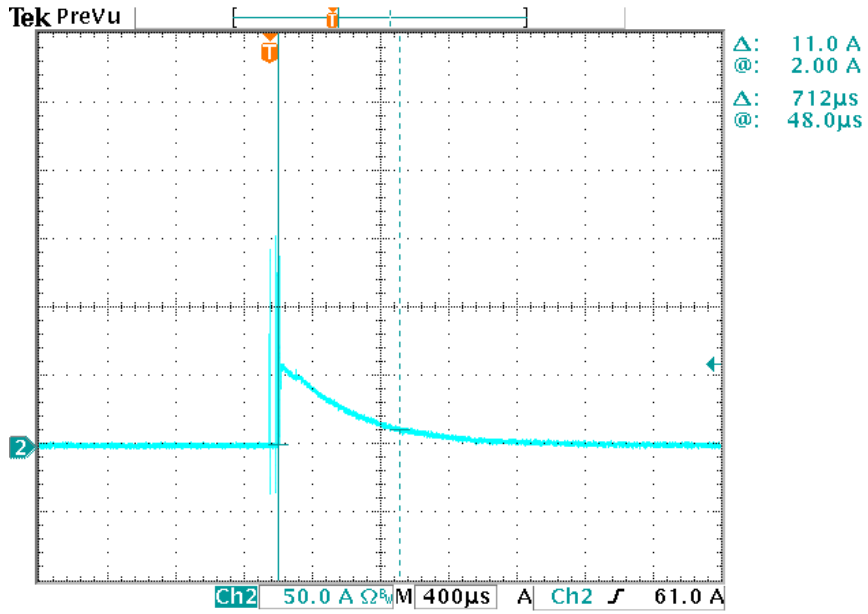
EMC COMPLIANCE

| 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:

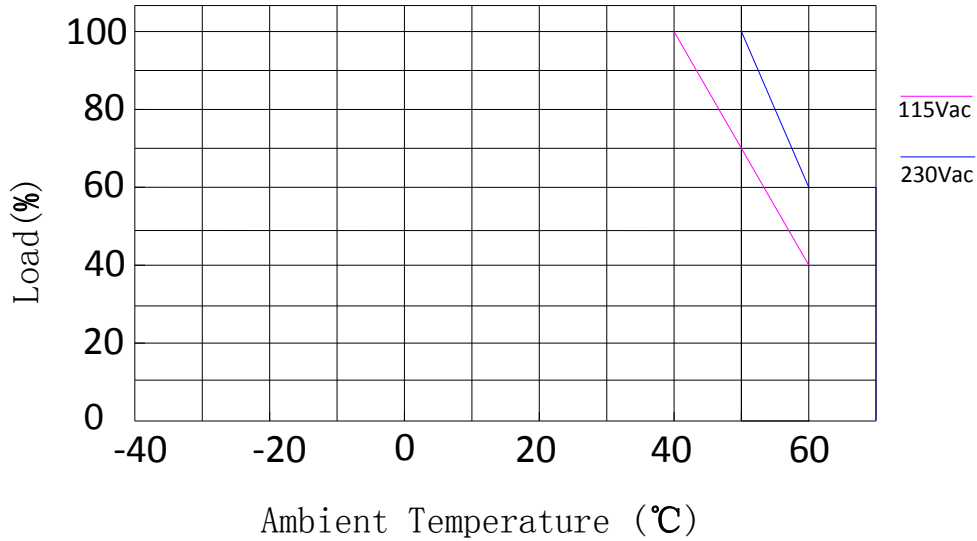
This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

INRUSH CURRENT WAVEFORM

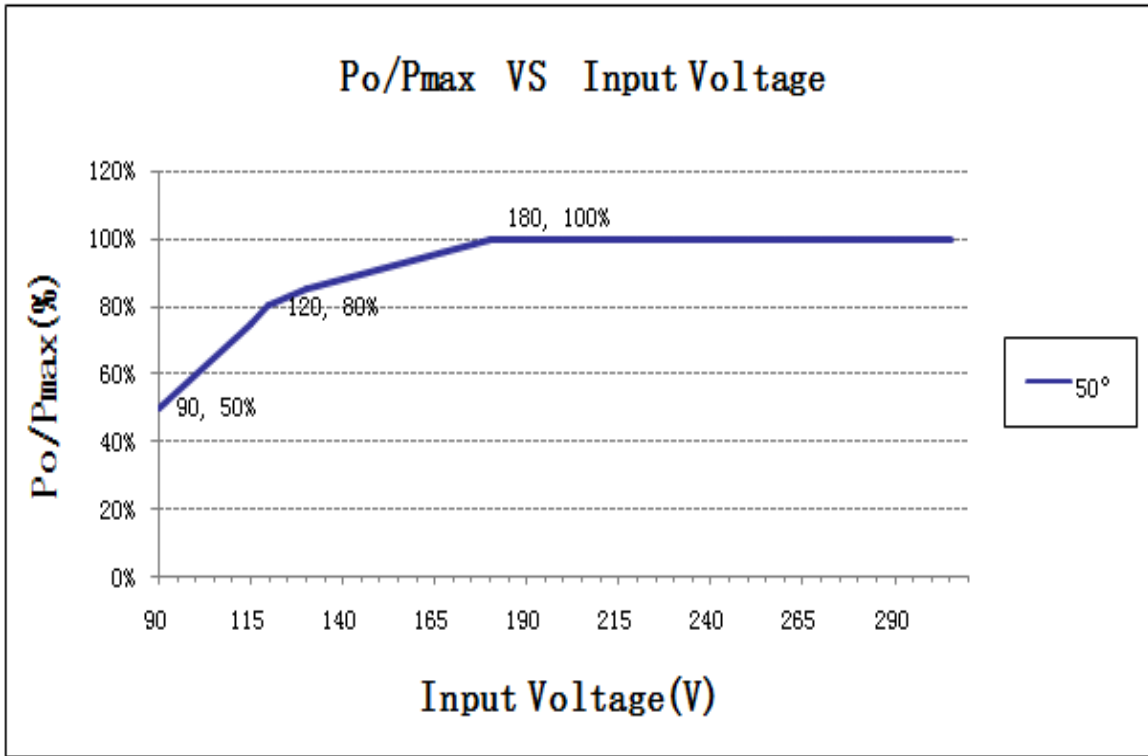


Derating Curve

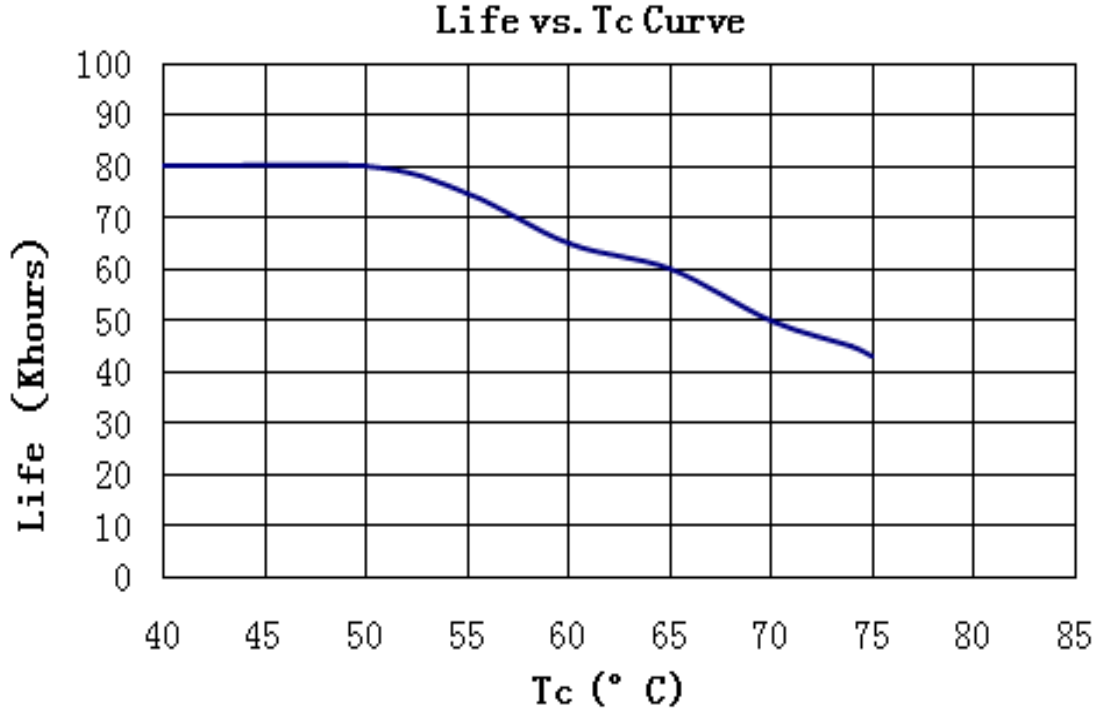
Derating Curve



OUTPUT POWER VS INPUT VOLTAGE

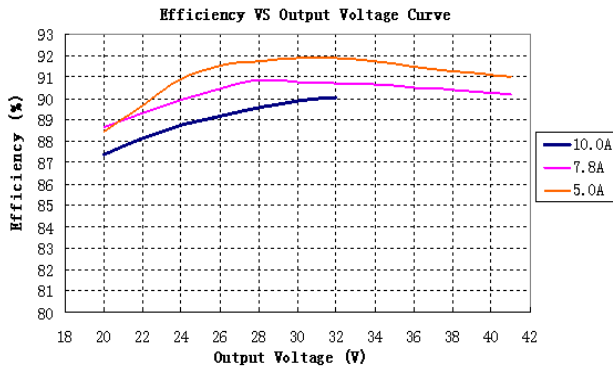


LIFETIME VS CASE TEMPERATURE

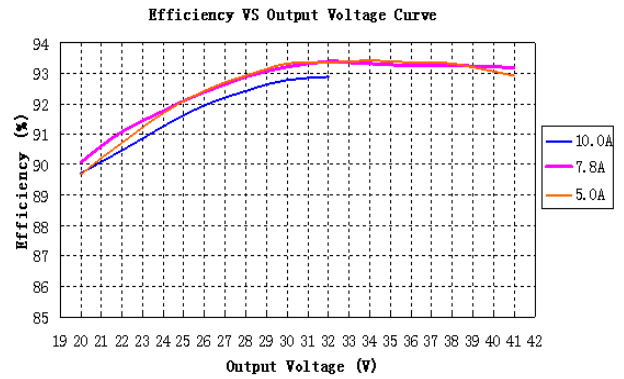


EFFICIENCY VS LOAD

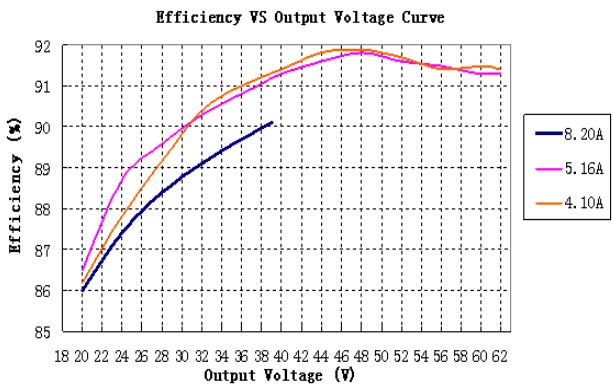
LDP-320X041 (Vin=115Vac)



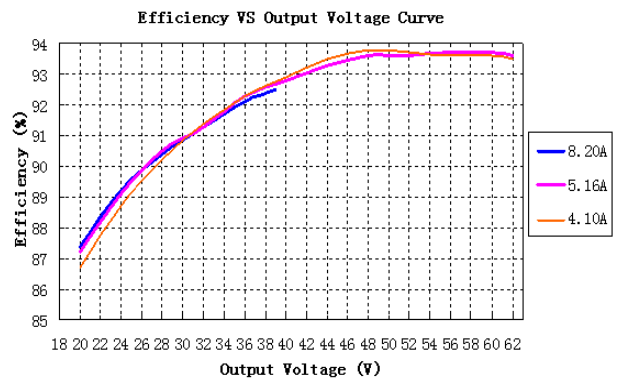
LDP-320X041 (Vin=230Vac)



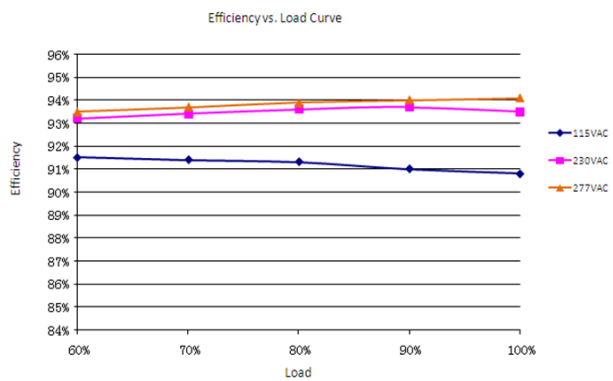
LDP-320X062 (Vin=115Vac)



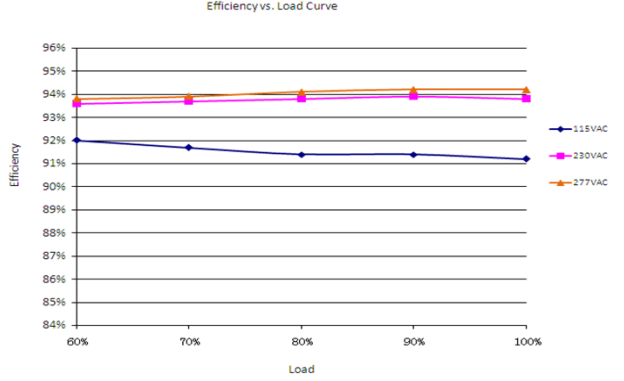
LDP-320X062 (Vin=230Vac)



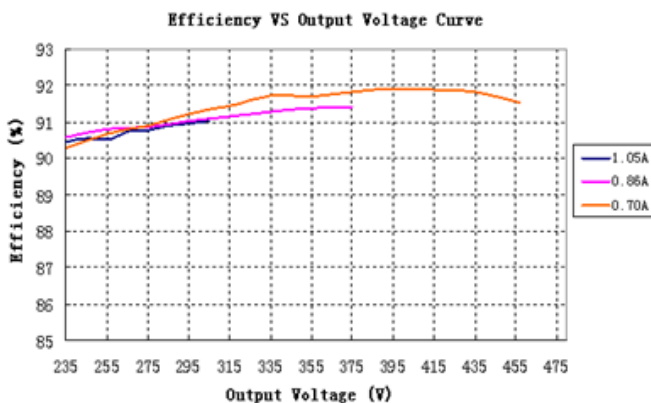
LDP-320X230-A(U=152V)



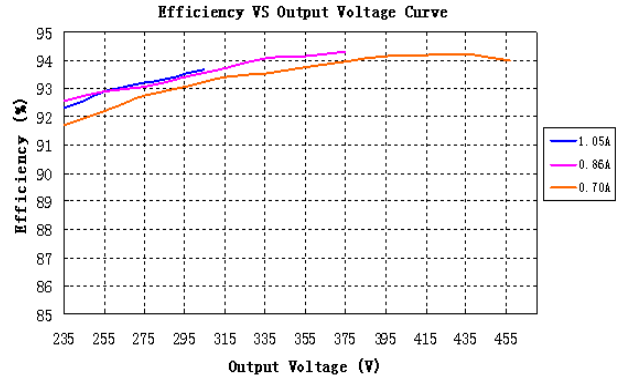
LDP-320X230-B(U=228V)



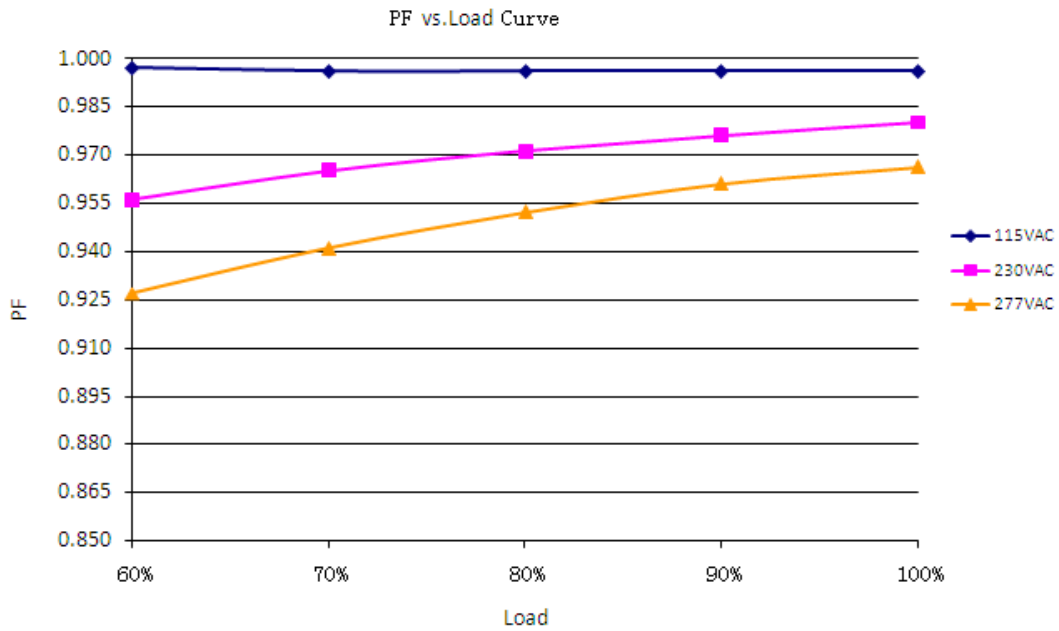
LDP-320X457(Vin=115Vac)



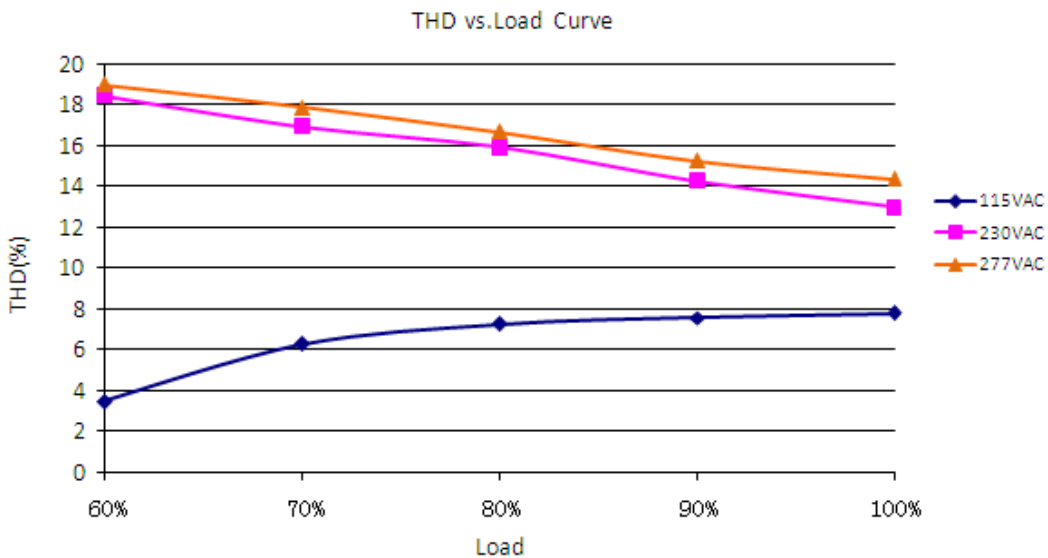
LDP-320X457(Vin=230Vac)



POWER FACTOR VS LOAD



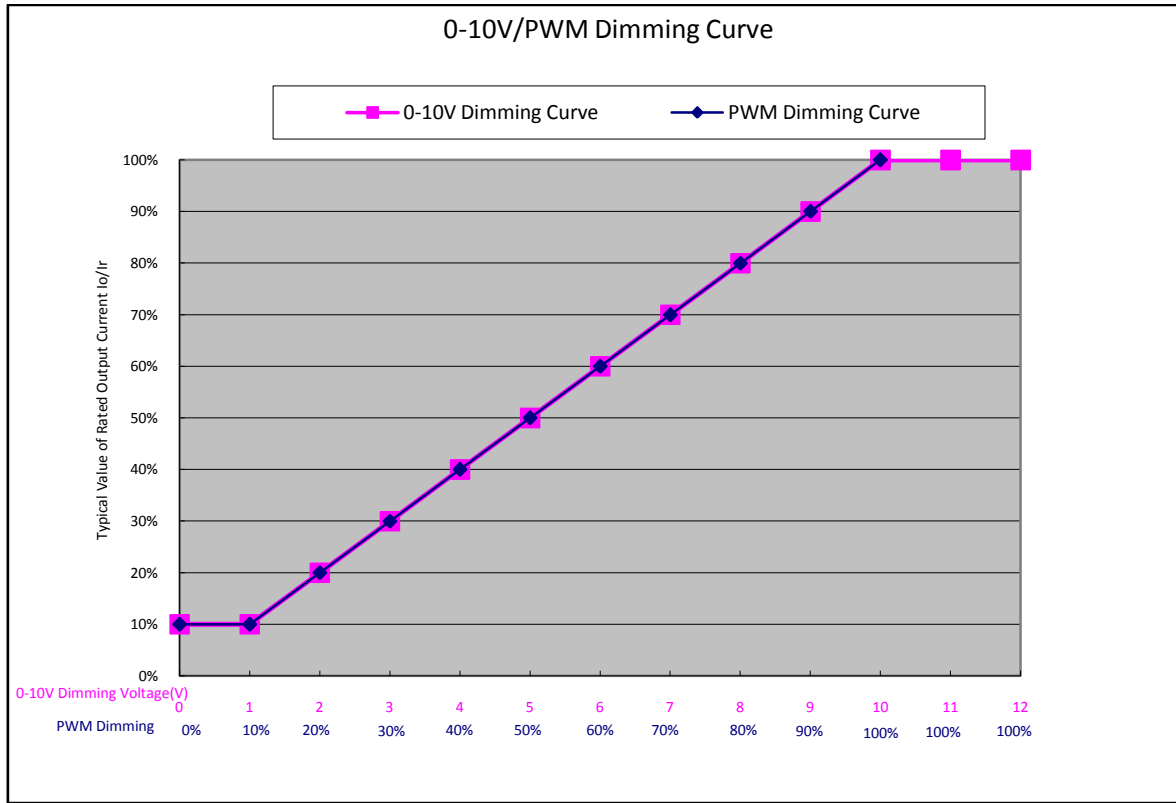
TOTAL HARMONIC DISTORTION



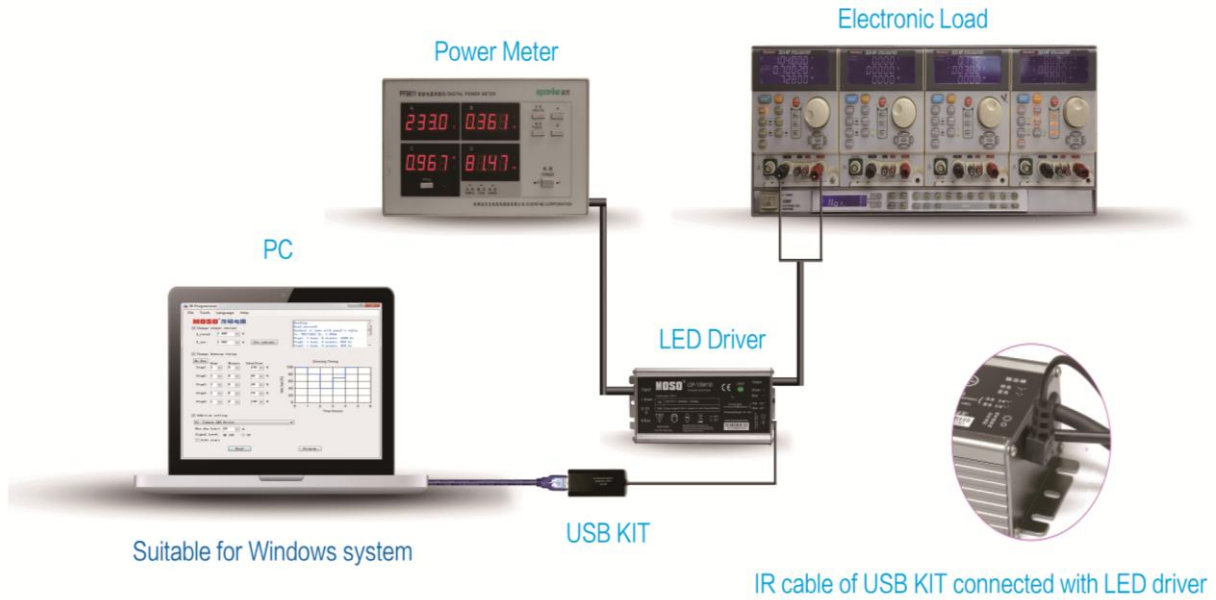
PROTECTIONS

| 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 |

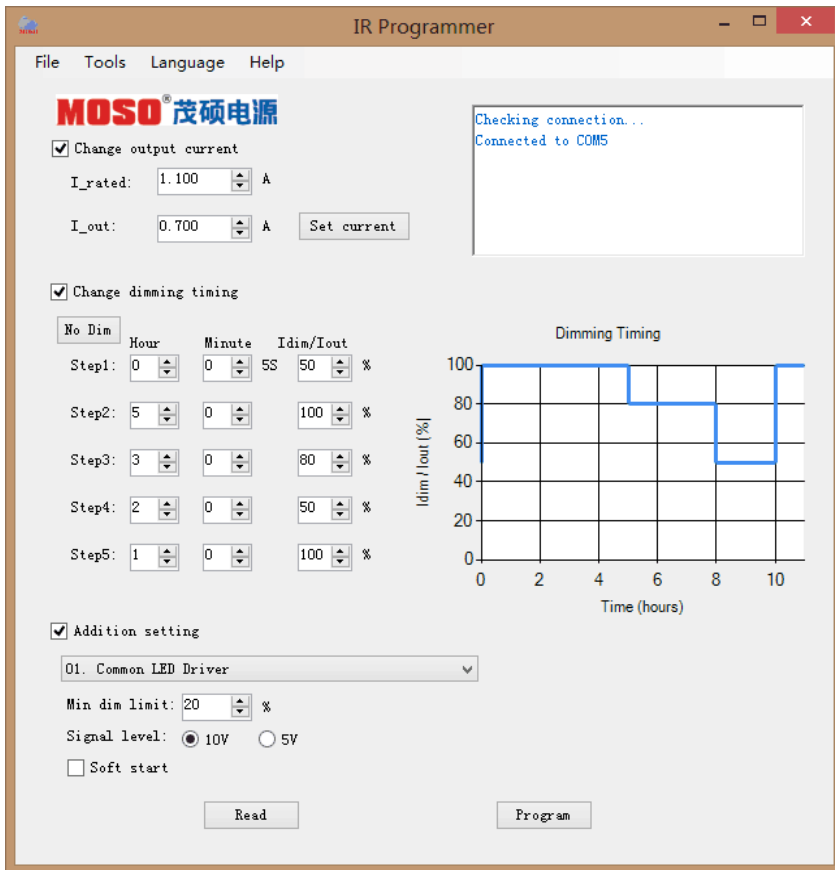
0-10V/PWM DIMMING



PROGRAMMING CONNECTION



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:

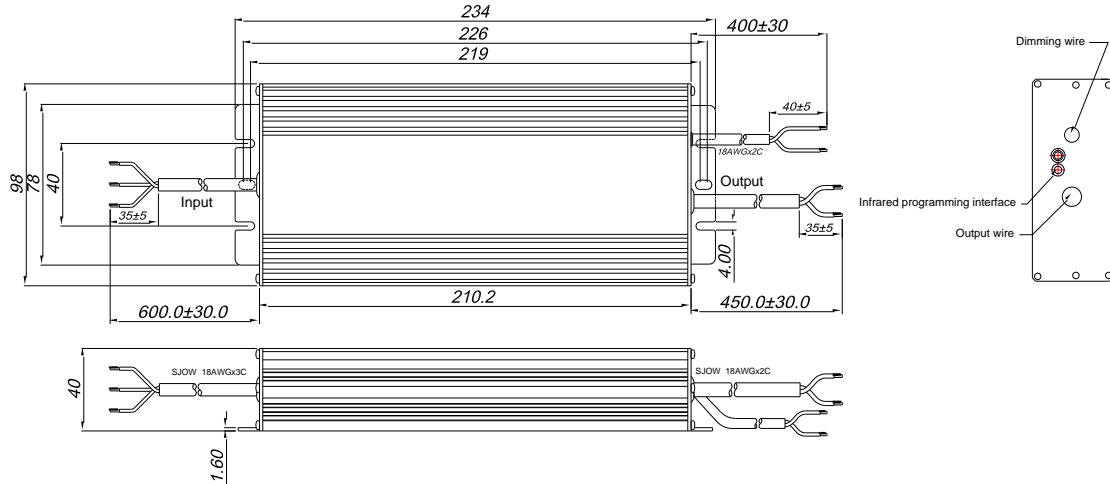
- 1) Insert cable terminal of the infrared controller into the infrared communication port, which is at the DC output side of the LED driver.
- 2) Press "ON" key to power on the controller;
- 3) Within 10S interval, press a function key to adjust output current to the percentage of max delivered current;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

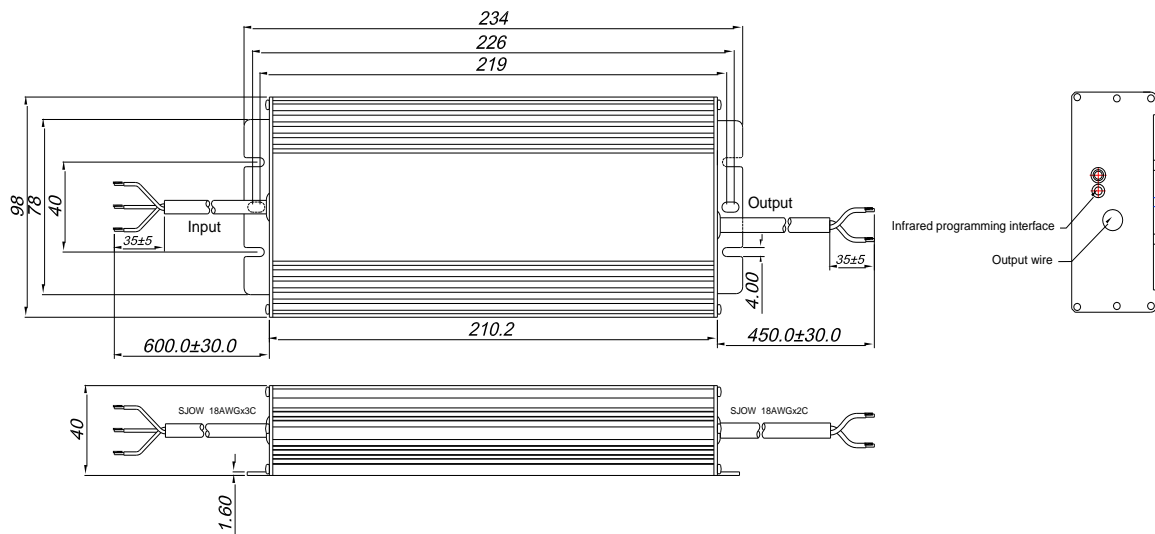
- Please do not hold "+" key, to avoid the over power protection and unstable output.
- Each step of operation should be done within 10S interval, otherwise the controller is power off automatically.

MECHANICAL OUTLINE

LDP-320M types



LDP-320R 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 |
| | CCC+VDE H07RN-F 2*1.5mm ² L=450mm | for LDP-320X041&LDP-320X062 |
| | 18AWG*2C SJOW L=450mm | for UL |
| Dimming | 16AWG*2C SJOW L=450mm | for LDP-320X041&LDP-320X062 |
| | 22AWG*2C UL1332 L=400mm | for CE |
| | 18AWG*2C SJOW L=400mm | for UL |

REVISION HISTORY

| Version | Description of Change | | Date | Notes |
|---------|-----------------------|---|------------|-------|
| | Before | Now | | |
| A.1 | — | Datasheets Release | 2018-03-05 | |
| B.2 | - | Update Operating Area I-V Curve | 2018-09-18 | |
| | - | Update Output Power vs. Input Voltage Curve | 2018-09-18 | |