

The logo for DONE, featuring the word "DONE" in a bold, teal, sans-serif font. The letter "D" is stylized with a white circular element on its left side. The logo is enclosed in a thin teal rounded rectangular border.

MAS SERIES LED DRIVER

DL-30I-MAS SPEC V1.2

Features

Class I type for insulation

- Input voltage range: 200-277 Vac ~ 50/60 Hz
- Efficiency :88%(Typ.)
- Constant current output ,with power limitation for control mode
- Metal case, protection grade against water and dust : IP67
- Surge level:
 - differential mode :4kV,
 - common mode :6kV
- available version :
 - A version:Output current is dimmed by external potentiometer
 - P version:Output current is dimmed by Isolated 3 in 1 dimmer
- Guaranteed lifetime design: 5 years



Applications

Street lighting、 Industrial lighting、 Venue lighting
 Floodlight lighting、 Landscape lighting 、 Plant lighting

Model list

| Model NO. | Input voltage | Output power | Output voltage | The default current | Eff. | T.H.D | PF |
|------------------------------------|---------------------|--------------|----------------|---------------------|------|-------|-------|
| DL-30I-V38P-MAS DL-30I-V38A-MAS | 200-277V 50/60Hz | 30W | 20-38Vdc | 0.9A | ≥88% | ≤10% | ≥0.90 |
| DL-30I-V58P-MAS DL-30I-V58A-MAS | 200-277V 50/60Hz | 30W | 32-58Vdc | 0.6A | ≥88% | ≤10% | ≥0.90 |

- Note :**
1. Test conditions: Ta=25°C , under 230Vac input,after running for 30 minutes with full load .
 2. When the input is less than 165+/-15Vac,the output power gradually decreases to a half.and it recovers full power of 30W when the input is above 180Vac again. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.
 - 3.When the input is above 320+/-15Vac or 450+/-20Vdc,the driver shut off immediately. It comes back to work when the input drops below 305Vac or 430 Vdc
 4. With the capability of withstanding 48 hours at least under 440Vac

Input characteristics

| Parameter | Min | Typ. | Max | remark |
|-----------------------|--------|---------|--------|---|
| Rated input voltage | 200Vac | 230Vac | 277Vac | |
| Input voltage range | 180Vac | - | 305Vac | The driver shut off when the input is above 320±15VAC, and come back to work when it drops below 305VAC |
| | - | - | 440Vac | Withstanding 48 hours at least. |
| Rated frequency range | 47Hz | 50/60Hz | 63Hz | |
| Power factor | - | 0.95 | - | @230Vac with full load |
| Power factor | - | 0.9 | - | @200-277Vac input ,with 75%-100% |
| T.H.D. | - | - | 10% | @230Vac with full load |
| T.H.D. | - | - | 20% | @200-277Vac input ,with 80%-100% |
| Input current | - | - | 0.22A | @200Vac with full load |
| Inrush current | - | - | 50A | 230Vac, cold start (25°C) |

Output characteristics

| Parameter | Min | Typ. | Max | remark |
|----------------------------|------|--------|-------|---|
| Rated current | | | | |
| DL-30I-V38P/A-MAS | - | 0.790A | - | With loading 38VDC |
| DL-30I-V58P/A-MAS | - | 0.520A | - | With loading 58VDC |
| Output current range | | | | |
| DL-30I-V38P/A-MAS | 0.3A | - | 1A | |
| DL-30I-V58P/A-MAS | 0.2A | - | 0.75A | |
| Output voltage range | | | | |
| DL-30I-V38P/A-MAS | 20V | - | 38V | Constant power output range:32-38VDC |
| DL-30I-V58P/A-MAS | 32V | - | 58V | Constant power output range:42-58VDC |
| Available power(90-180Vac) | - | 15W | - | decrease to a half once input voltage being less than 165+/-15Vac |
| Rated power(200-277Vac) | - | 30W | - | |
| No-load voltage | | | | |
| DL-30I-V38P/A-MAS | - | - | 55V | |
| DL-30I-V58P/A-MAS | - | - | 75V | |
| Efficiency@200Vac | | | | |
| DL-30I-V38P/A-MAS | 86% | 87.5% | - | full load@200Vac |
| DL-30I-V58P/A-MAS | 87% | 88% | - | |

Output characteristics

| Parameter | Min | Typ. | Max | Note |
|---|------------|------------|--------|---|
| Efficiency@230Vac DL-30I-V38P/A-MAS DL-30I-V58P/A-MAS | 86% 87% | 88% 88% | - | @230Vac input ,with full load |
| Accuracy of output current | -5% | - | +5% | For constant-power range , with full load |
| Line regulation | -5% | - | +5% | full load |
| Load regulation | -5% | - | +5% | full load |
| Starting time | - | - | 1000ms | Full load@230Vac |

Note: 1.The output current is limited by the input and output voltage, please refer to “I-V WORKING AREA” for details;

Dimming characteristics

| Dimming function | | Min | Typ. | Max | Instructions |
|--|-------------------------------|-------|--|--------|--|
| 1-10V Dimming (Optional) | Safe operation voltage range | 0V | - | 12V | Please refer to note 2. |
| | Rated operation voltage range | 1V | - | 10V | Negative logic dimming mode is also available by program |
| | Dimming output range | 10% | - | 100% | Refer to note 3. |
| PWM Dimming (Optional) | PWM high level | 9.5V | - | 10.5V | - |
| | PWM low level | 0 | - | 0.5V | - |
| | Rated dimming frequency | 300Hz | - | 2000Hz | - |
| | PWM duty cycle | 10% | - | 99% | Negative logic dimming mode is also available by program |
| Resistor Dimming (Optional) | External resistance value | 10KΩ | - | 100KΩ | Negative logic dimming mode is also available by program |
| | Dimming output range | 10% | - | 100% | Refer to note 3 |
| Multiple time-controlled dimming (Optional) | MCU control | | set dimming function Segment by segment through program | | The default is six segments, Can be customized. 24H a cycle. |
| | Timer control | | The default is six segments, Can be customized. 24H a cycle. | | With extra timer controller outside. |

Note:1.Output current of dimming port: 100uA (typical value);

2.The dimming port can withstand short-time over voltage up to 230VAC or 300VDC without damage. However,Long-time connection of this over-voltage will still have the possibility to destroy the port, please try to avoid to do so.

3.The default dimming way is to use a 3-in-1 dimmer,with positive logic dimming mode,and negative logic dimming is also available through the software. A 1-10V dimmer or equivalent is appreciated here, further more, the user also can dim-off the light through the software, if you don't care the standby power, which is required be less than 0.5W for ERP compliance.

4.For negative logic dimming, the default output is 100% when the voltage applied to the dimming port is greater than 10.3+/-0.2V, user also can set the output to be 0% or the minimum light through software.

Protection

| Protection | description |
|---------------------------------|---|
| under-voltage protection | When the input voltage is less than 165+/-15Vac, the output power decreases. |
| Output overload protection | hiccup mode,and recovers automatically when the fault condition is removed. |
| Output short circuit protection | hiccup mode,and recovers automatically when the fault condition is removed. |
| Over temperature protection | when the temperature of the case is greater than 90°C±5°C, the output power decreases to a half. |
| Output over-power protection | The maximum output power is limited to about 1.1 time of the rating automatically. Only for P version |

Note:

1. Unless otherwise specified, all parameters should be measured at the condition of 230Vac (50Hz) input ,with rated load ,and ambient temperature of 25°C;

Environmental characteristics

| Environmental categories | Parameter |
|-------------------------------|---|
| Working temperature | -40 ~ +55°C |
| Working humidity | 20 ~ 95% RH |
| Storage temperature、 humidity | -40~+80°C, 10 ~ 95% RH |
| Resistant to vibration | 10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each |
| MTBF | 230Khrs min. MIL-HDBK-217F (Ta=25°C) |
| Lifetime | 50000 hours @Tcase=75°C, refer to "Tcase VS Lifetime" curve |

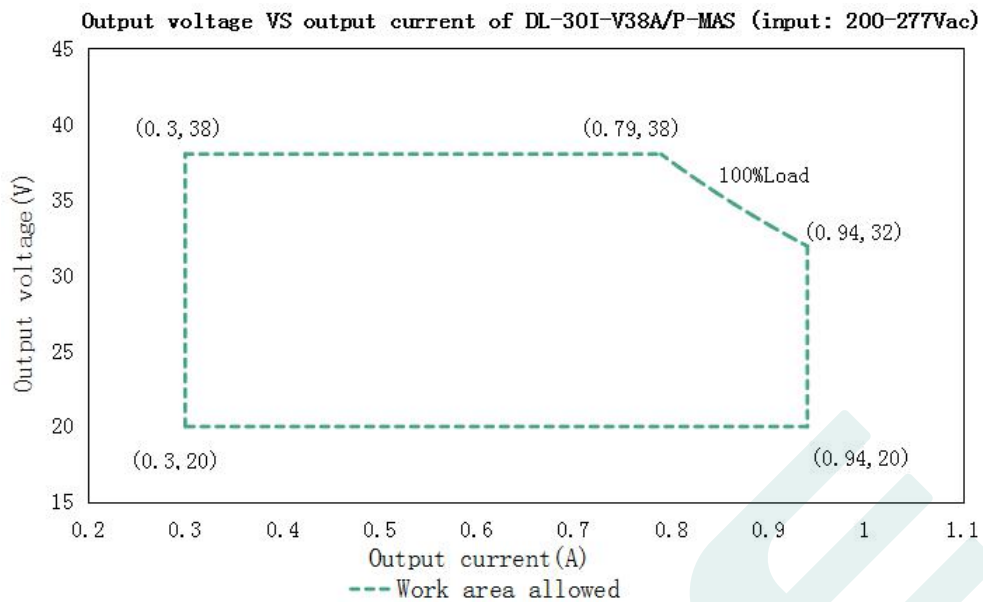
Safety and EMC

| Safety categories | Standard |
|----------------------|---|
| Safety | GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384; |
| EMC | EN 55015、EN 61000-3-2 、GB/T 17743、GB17625.1、 EN 61000-3-3、 EN 61547 |
| Surge level | Differential mode L-N $\pm 4\text{KV}$ (2 ohm) ,common mode L, N-PE $\pm 6\text{KV}$ (12 ohm); Refer to IEC61000-4-5 2014 Criterion B |
| High-pot test | I/P-O/P:3.75KVac I/P-PE :1.5KVac O/P-PE : 0.5KVac I/P-DIM:3.75KVac O/P-DIM:1.5KVac |
| Insulation impedance | I/P-PE:100M Ω / 500VDC; I/P-O/P:100M Ω / 500VDC / 25 $^{\circ}\text{C}$ / 70% RH |
| Leakage current | <0.7mA@277Vac |

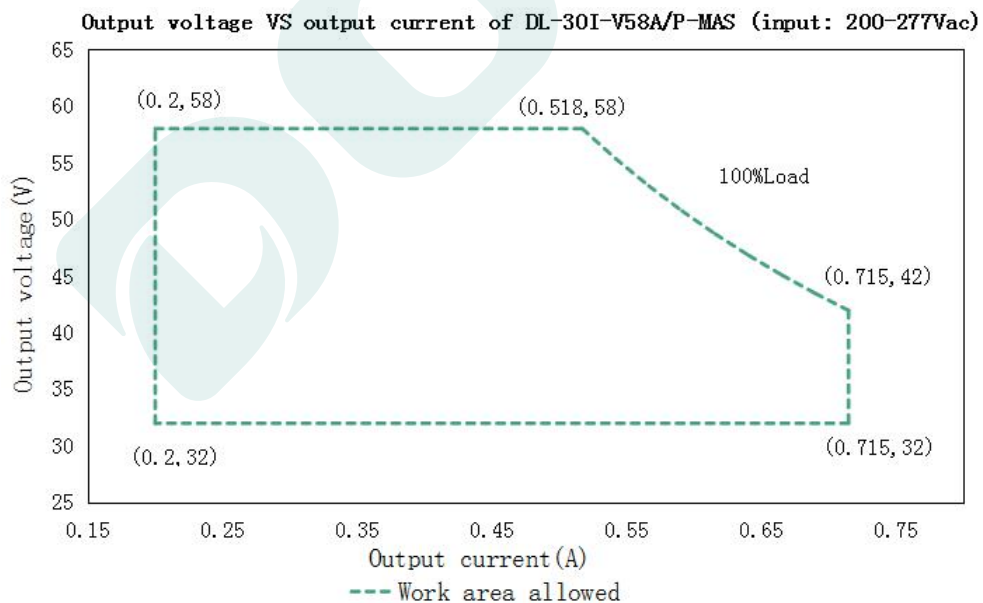
Note:

1.Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.

I-V Working area

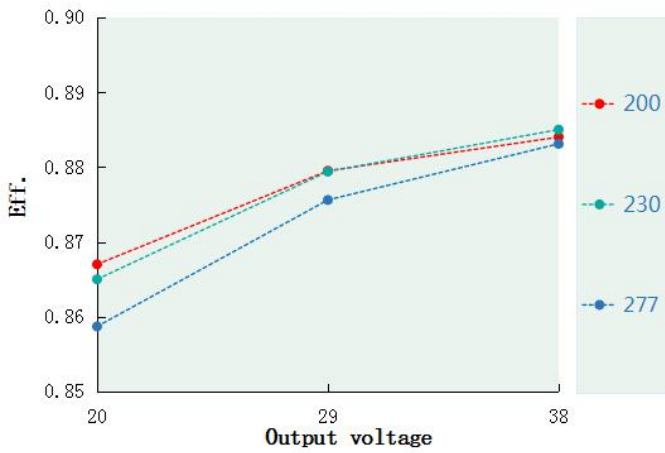


| Load | Output | | | | | | | | |
|----------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Load working Voltage | 20V | 22V | 26V | 28V | 30V | 32V | 34V | 36V | 38V |
| Io_MAX | 0.94A | 0.94A | 0.94A | 0.94A | 0.94A | 0.94A | 0.88A | 0.84A | 0.79A |
| Po_MAX | 18.8W | 20.7W | 24.4W | 26.3W | 28.2W | 30W | 30W | 30W | 30W |

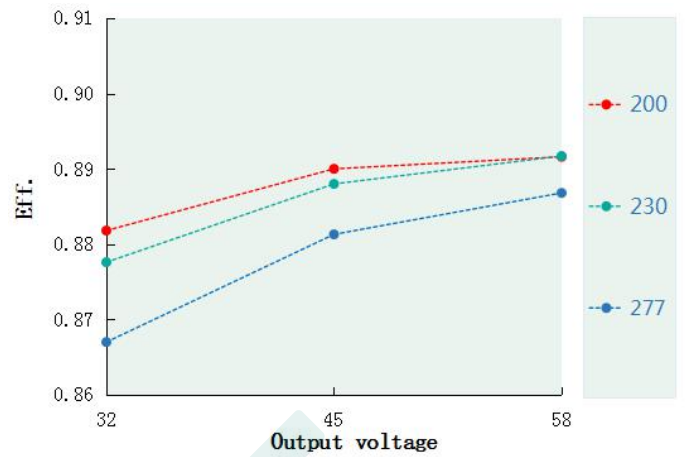


| Load | Output | | | | | | | | |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Load working Voltage | 32V | 35V | 38V | 40V | 41V | 42V | 48V | 54V | 58V |
| Io_MAX | 0.715A | 0.715A | 0.715A | 0.715A | 0.715A | 0.715A | 0.625A | 0.556A | 0.518A |
| Po_MAX | 22.9W | 25W | 27.2W | 28.6W | 29.3W | 30W | 30W | 30W | 30W |

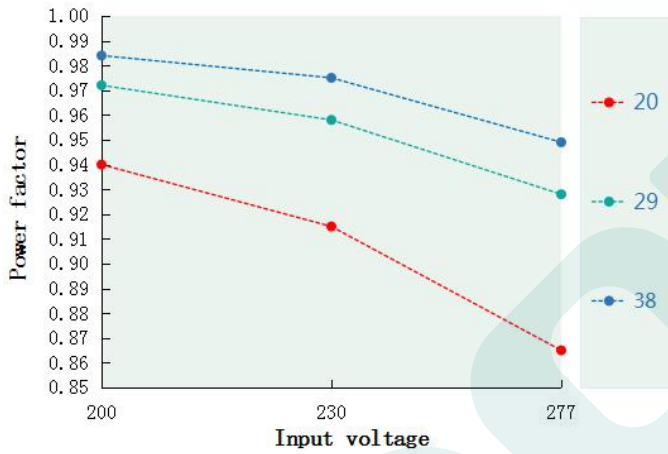
Eff. VS Output voltage(DL-30I-V38P/A-MAS)



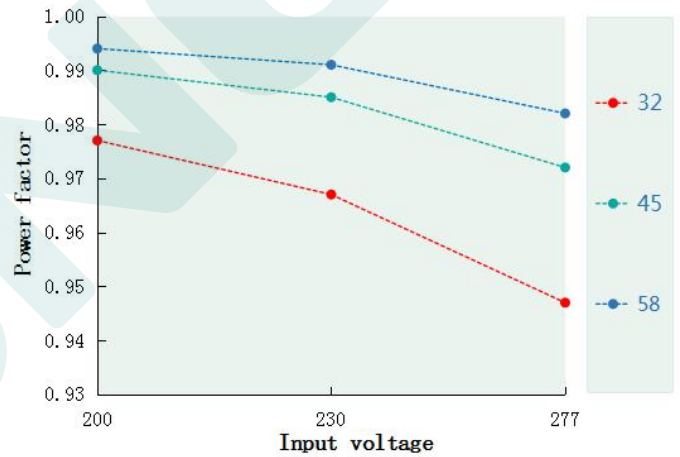
Eff. VS Output voltage(DL-30I-V58P/A-MAS)



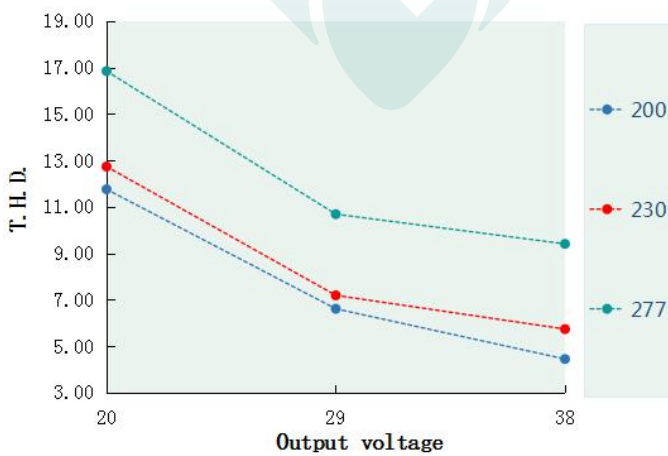
Power factor VS Input voltage(DL-30I-V38P/A-MAS)



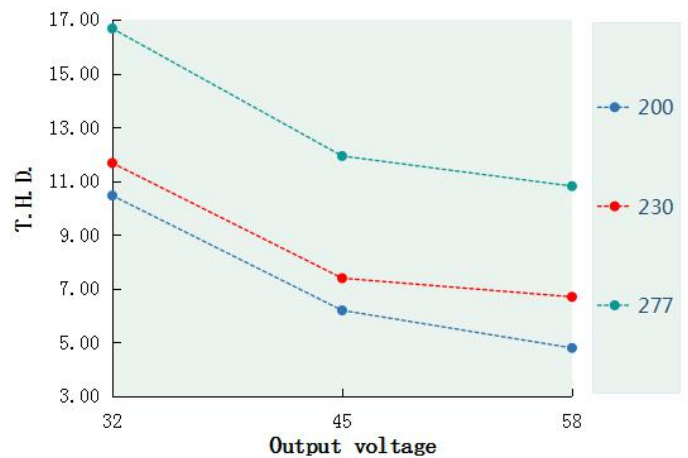
Power factor VS Input voltage(DL-30I-V58P/A-MAS)



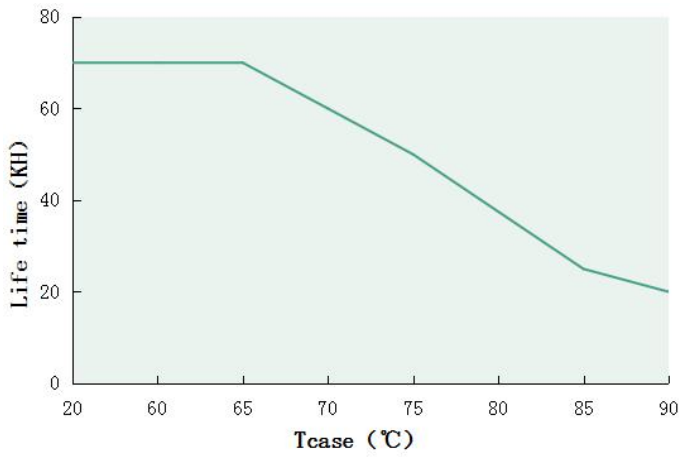
T.H.D. VS Output voltage(DL-30I-V38P/A-MAS)



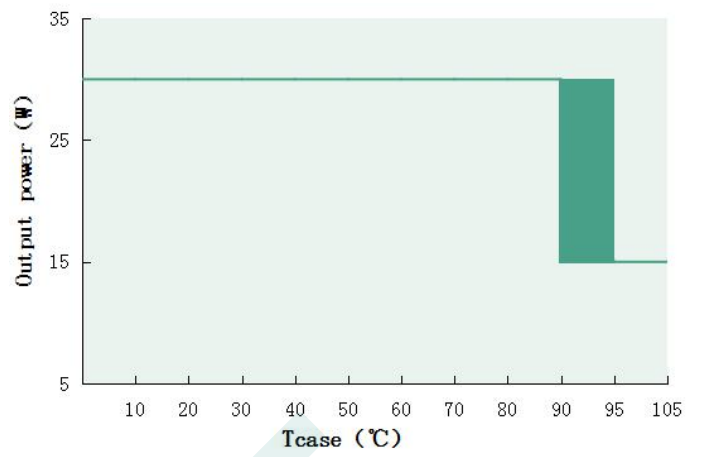
T.H.D. VS Output voltage(DL-30I-V58P/A-MAS)



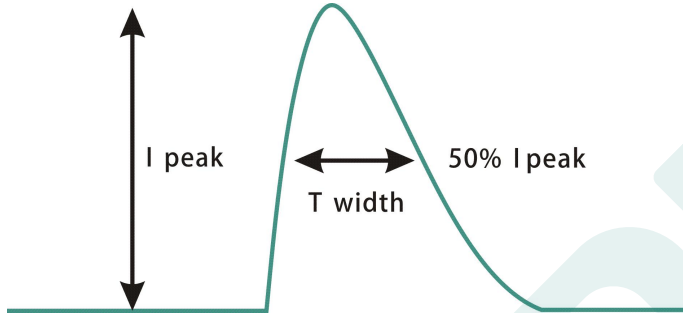
Tcase VS Lifetime(DL-30I-P/A-MAS)



Output power VS Tcase (DL-30I-P/A-MAS)

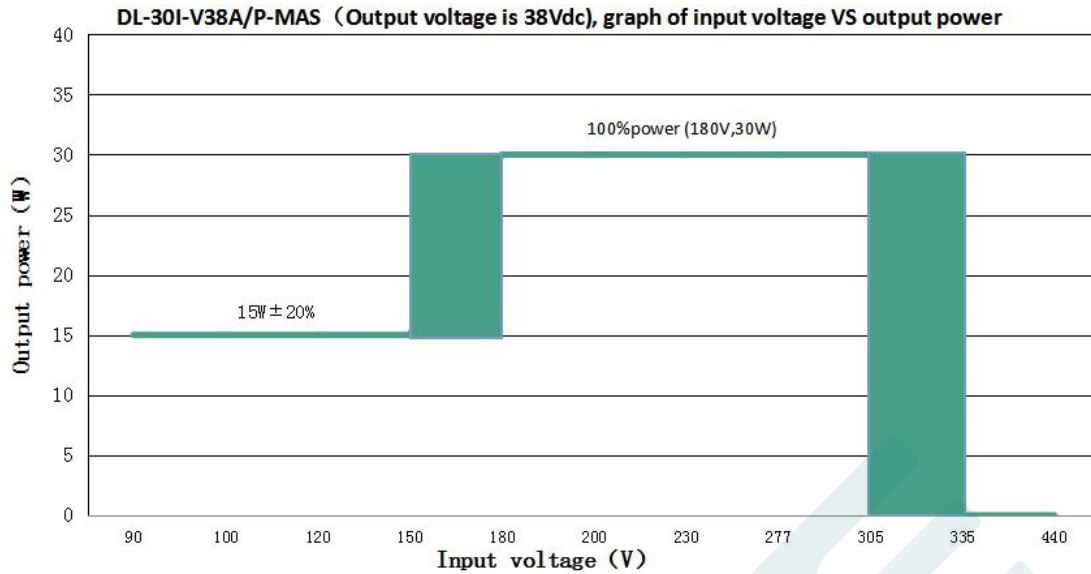


Inrush Current(DL-30I-A/P-MAS)



| Input voltage | Peak current | T(@50% Peak current) |
|---------------|--------------|----------------------|
| 200Vac | 14.6A | 9.8us |
| 230Vac | 14.9A | 10.6us |
| 277Vac | 14.9A | 10.4us |

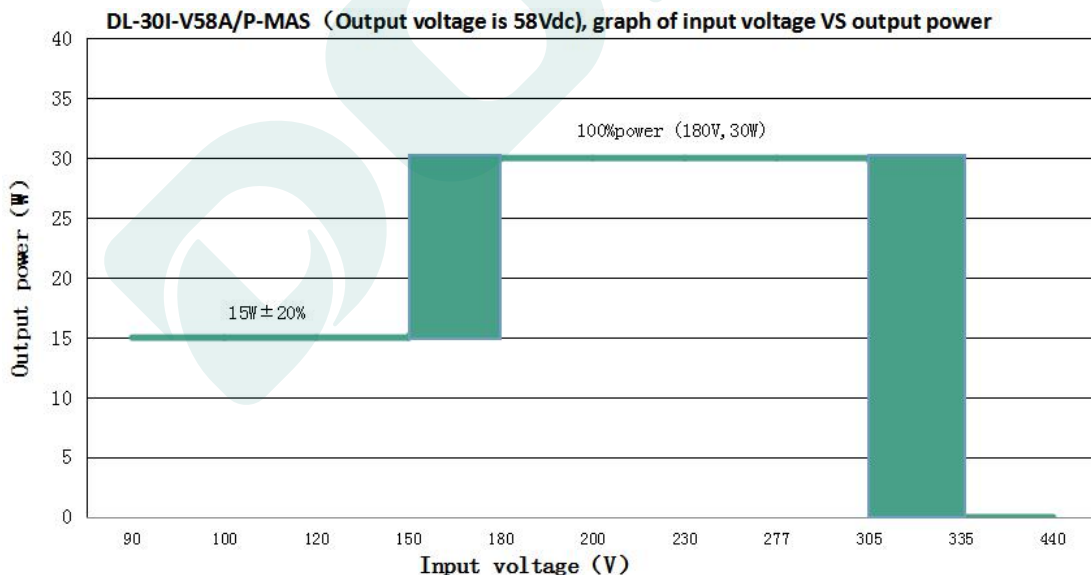
Output power VS Input voltage



DL-30I-V38P/A-MAS (For output 38Vdc, the rated output current & power under different input voltage)

| Input Voltage | 100Vac | 120Vac | 150Vac | 180Vac | 200Vac | 230Vac | 277Vac | 305Vac |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Iout | 0.395A | 0.395A | 0.395A | 0.79A | 0.79A | 0.79A | 0.79A | 0.79A |
| Pout | 15W | 15W | 15W | 30W | 30W | 30W | 30W | 30W |

Note: When the input voltage is below 165+/-15Vac, the output power decreases to 15W±20%.



DL-30I-V58P/A-MAS (For output 58Vdc, the rated output current & power under different input voltage)

| Input Voltage | 100Vac | 120Vac | 150Vac | 180Vac | 200Vac | 230Vac | 277Vac | 305Vac |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Iout | 0.259A | 0.259A | 0.259A | 0.518A | 0.518A | 0.518A | 0.518A | 0.518A |
| Pout | 15W | 15W | 15W | 30W | 30W | 30W | 30W | 30W |

Note: When the input voltage is below 165+/-15Vac, the output power decreases to 15W±20%.

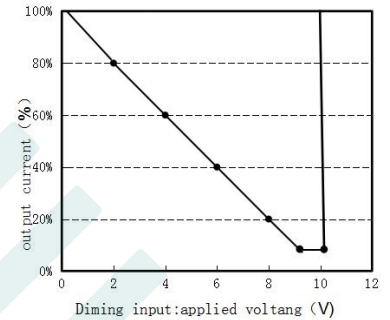
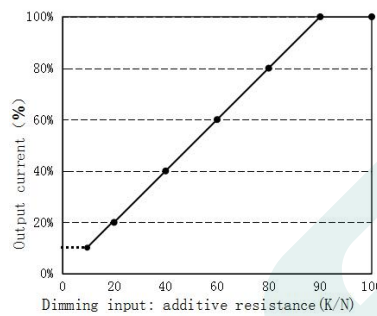
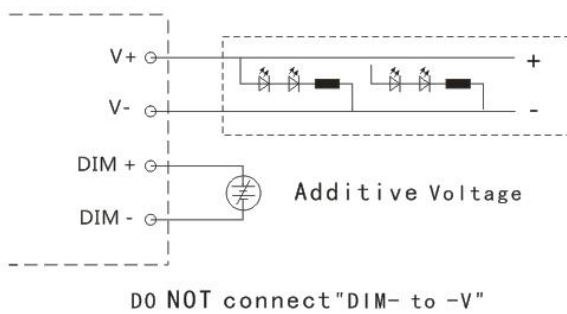
Dimming function

※ Three-in-one dimming function (P version only)

A. To adjust the output current, applying one of the three methods between DIM+ and DIM- : a resistor of 0-100K, or any voltage of 0-10V , or a PWM signal with amplitude of 10V. .

B. output current of dimming port: 100uA (typical value).

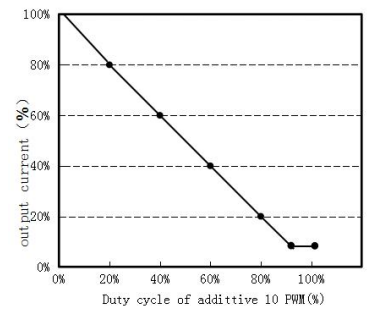
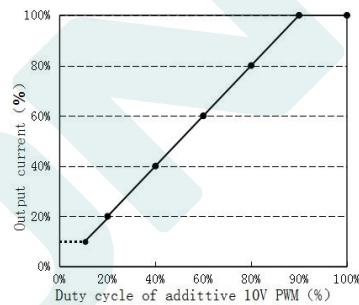
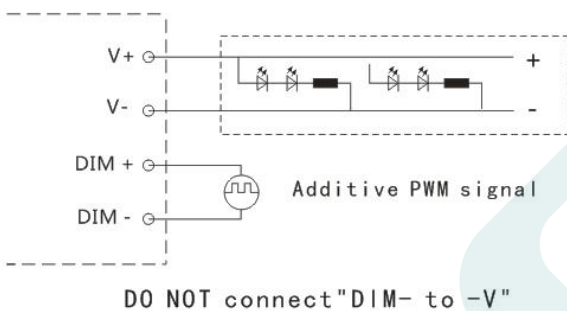
◎ With 1-10V dimming voltage(for both logic,negative and positive):



Positive logic dimming curve

Negative logic dimming curve

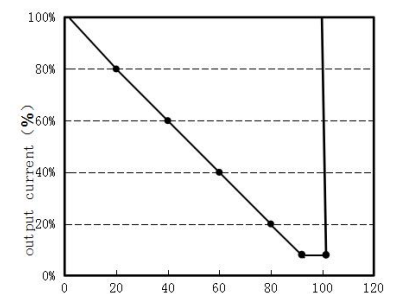
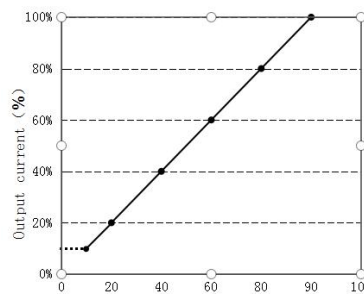
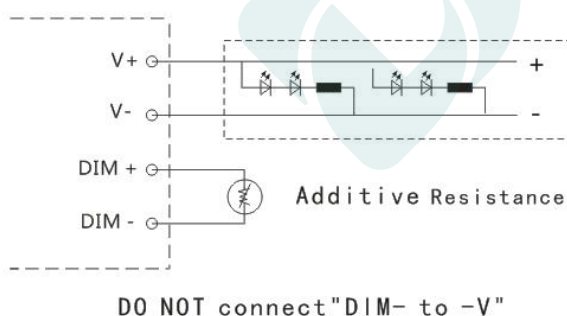
◎ With 10V PWM signal (Frequency range: 300Hz-2K Hz) :



Positive logic dimming curve

Negative logic dimming curve

◎ With an additional 0-100K resistor:



Positive logic dimming curve

Negative logic dimming curve

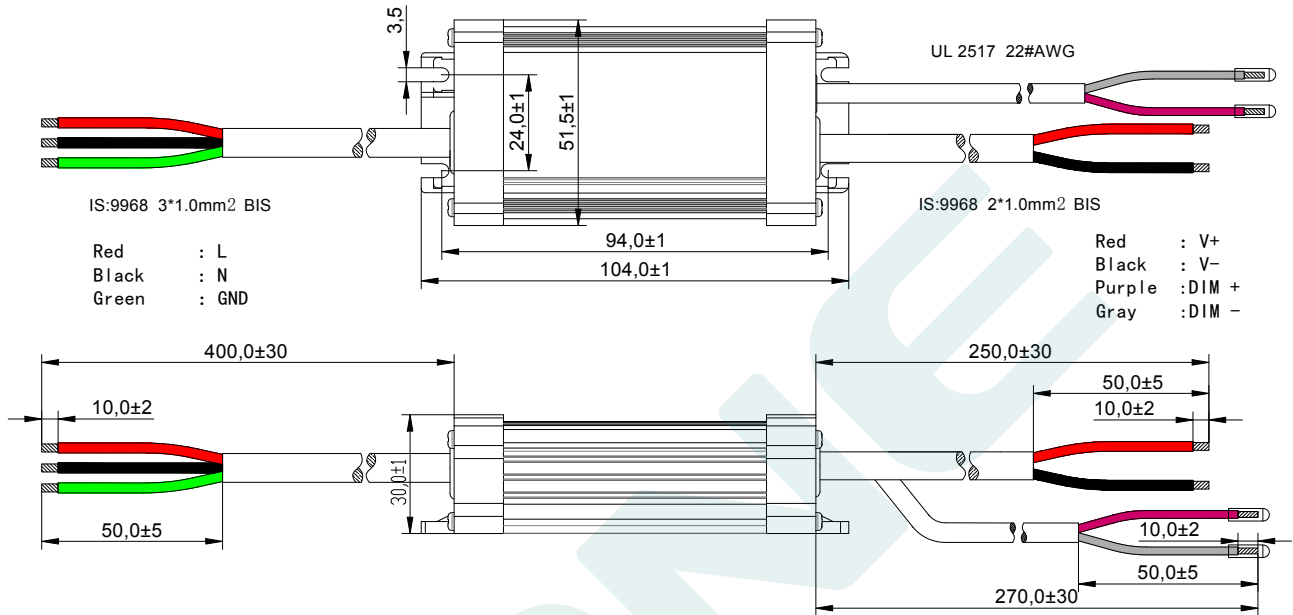
Remark:

1. Both operation way, of positive logic or negative logic, can be selected by program.
2. It is recommended to use 1-10V or equivalent 3-in-1 dimmer. Dimming off can also be set through the program if necessary. Any other requirements, Please contact the technician for help.
3. For negative logic dimming mode, the default output is 100% brightness to keep the terminals of the dimming port float. User also can set it to be the minimum or 0% through the software.

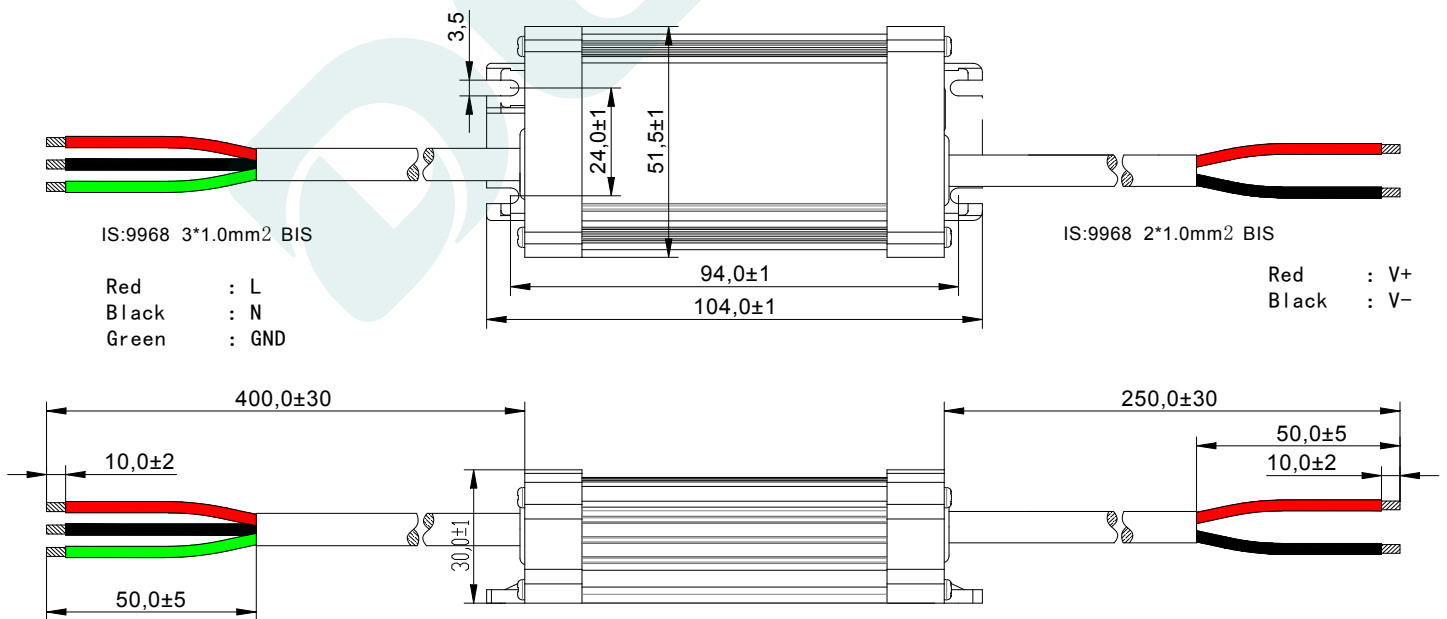
Mechanical specification

Size (mm) L104mm*W51.5mm*H30mm

Dimension drawing
DL-30I-V38P-MAS
DL-30I-V58P-MAS



Dimension drawing
DL-30I-V38A-MAS
DL-30I-V58A-MAS



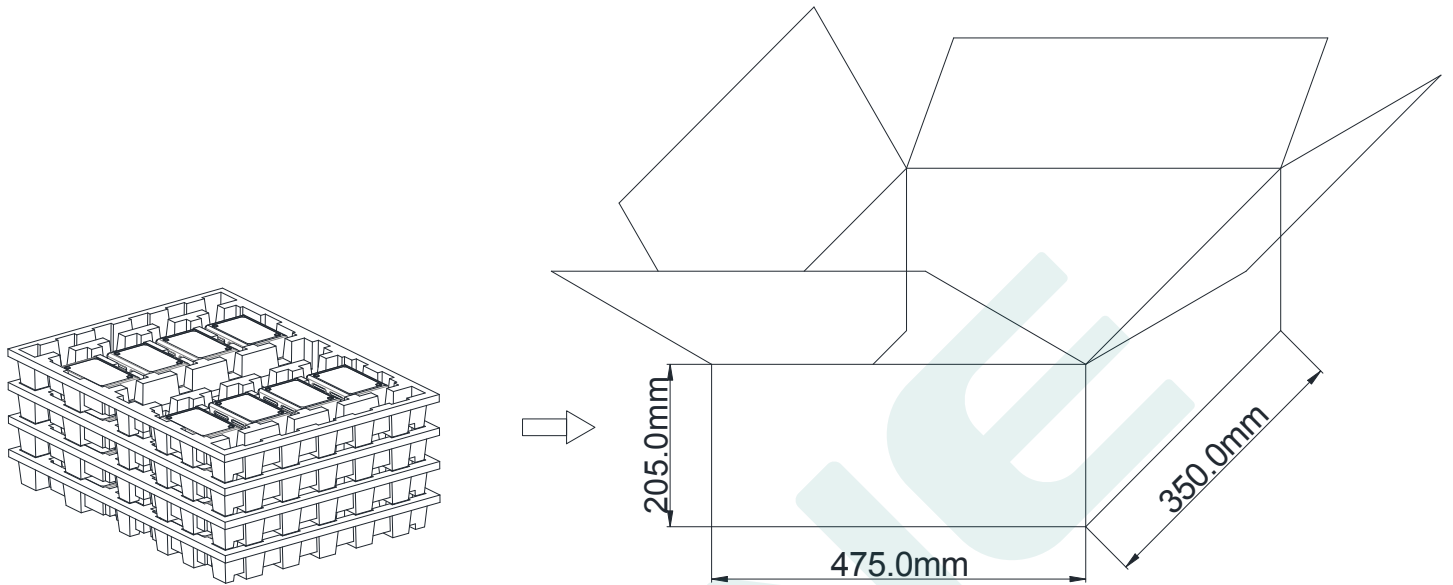
Weight

Weight 265 g

Twelve

Packaging

Packaging (mm) L475*W350*H205



Note: One Carton 4 layers and 8 pcs each layer, total 32pcs/carton.

Note:

1. According to the qualified certificate of the LED DRIVER, that with English label is for sale in Europe, America and India.
2. That with Chinese label are used for Chinese market.

Version

| DATE | DESCRIPTION | REV. | CHECK |
|------------|--|------|-------|
| 2022.03.28 | Initial version. | V1.0 | |
| 2023.09.11 | Dimming adds 230VAC or 300VDC protection. | V1.1 | |
| 2024.03.18 | The size is changed from L98*W51.5*H30mm to L104*W51.5*H30mm | V1.2 | |
| | | | |
| | | | |

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