



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℃, 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℃)

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℃±5℃, 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℃;

Environmental characteristics

Environmental categories	Parameter
Working temperature	-40 ~ +55℃
Working humidity	20 ~ 95% RH
Storage temperature、 humidity	-40~+80℃, 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℃)
Lifetime	50000 hours @Tcase=75℃,refer to" Tcase VS Lifetime " curve

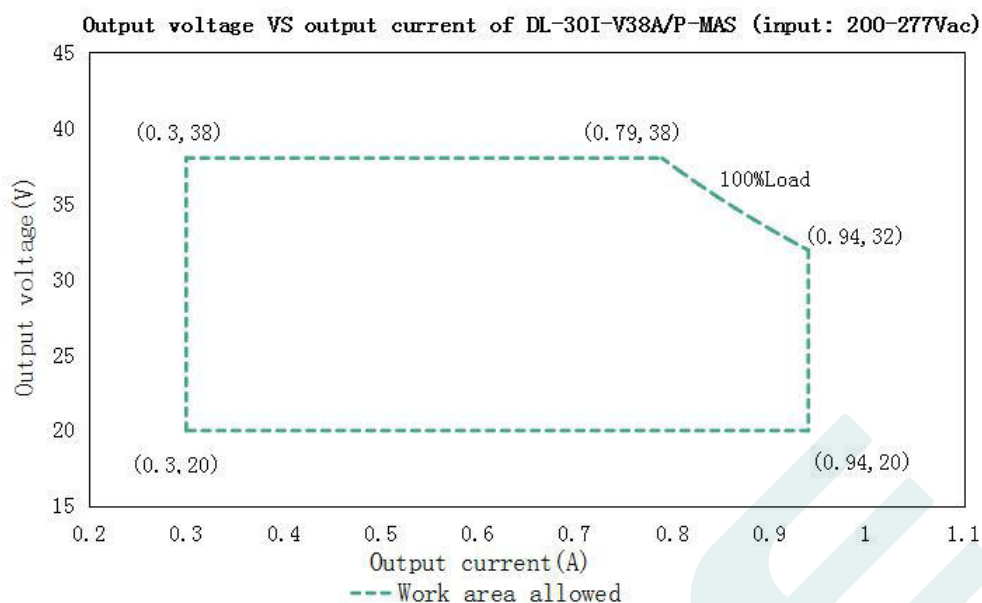
Safety and EMC

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

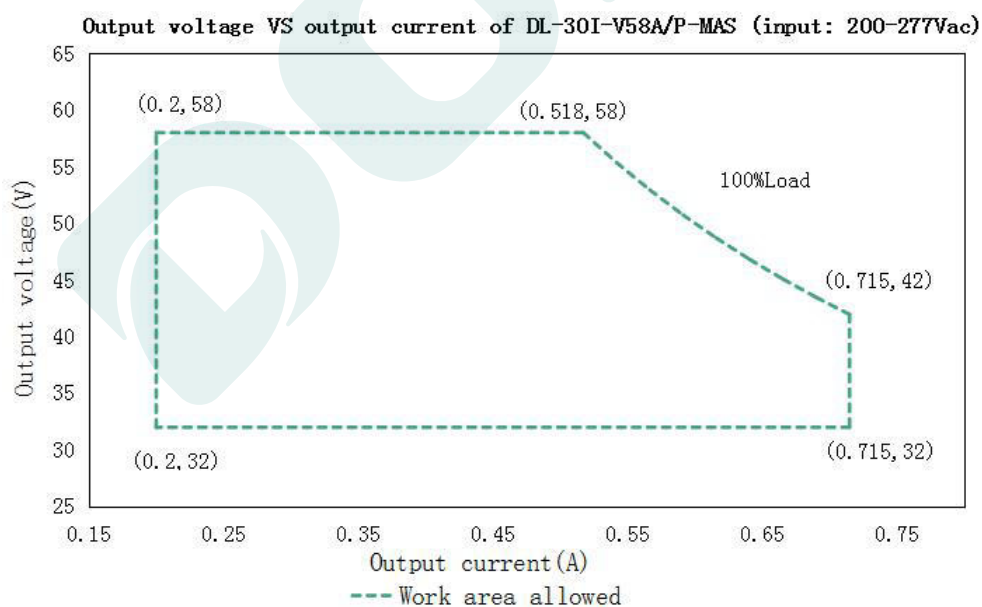
Note:

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

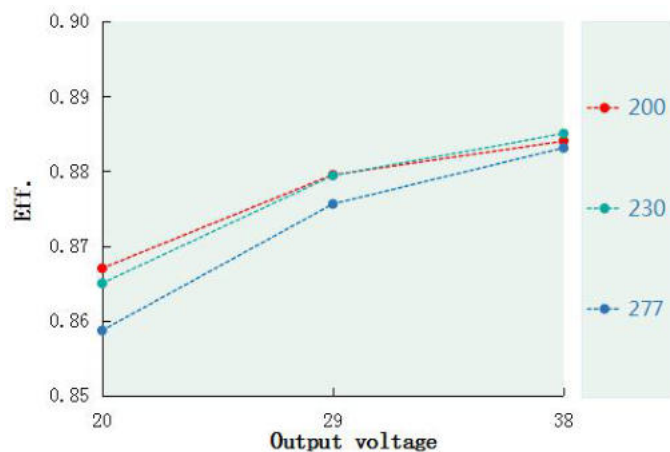


Load	Output								
Load working Voltage	20V	22V	26V	28V	30V	32V	34V	36V	38V
Io_MAX	0.94A	0.94A	0.94A	0.94A	0.94A	0.94A	0.88A	0.84A	0.79A
Po_MAX	18.8W	20.7W	24.4W	26.3W	28.2W	30W	30W	30W	30W

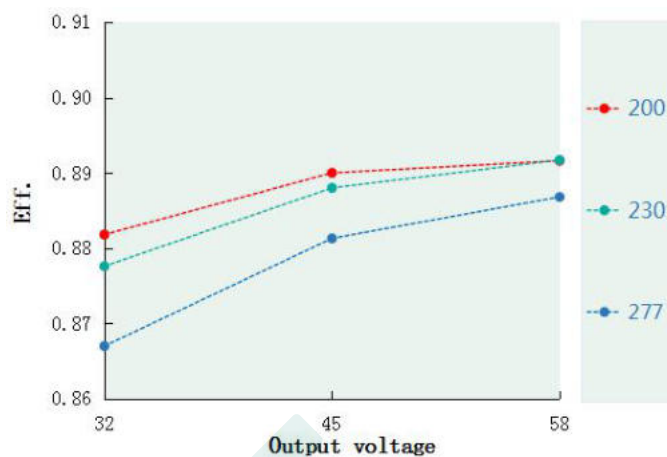


Load	Output								
Load working Voltage	32V	35V	38V	40V	41V	42V	48V	54V	58V
Io_MAX	0.715A	0.715A	0.715A	0.715A	0.715A	0.715A	0.625A	0.556A	0.518A
Po_MAX	22.9W	25W	27.2W	28.6W	29.3W	30W	30W	30W	30W

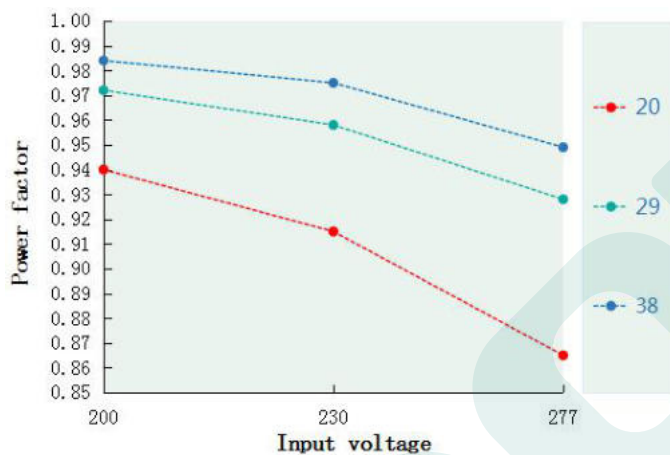
Eff. VS Output voltage(DL-30I-V38P/A-MAS)



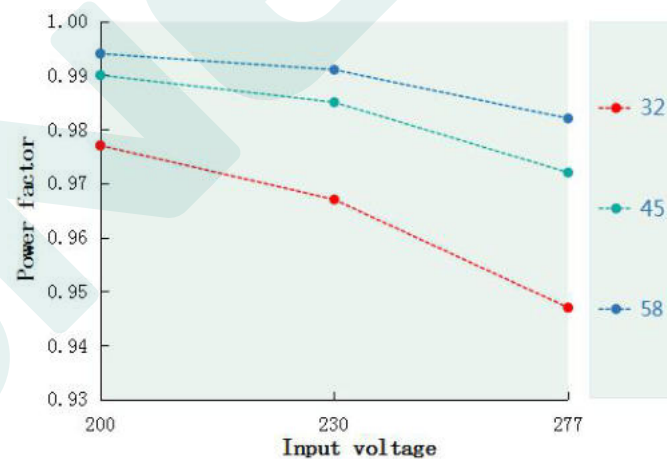
Eff. VS Output voltage(DL-30I-V58P/A-MAS)



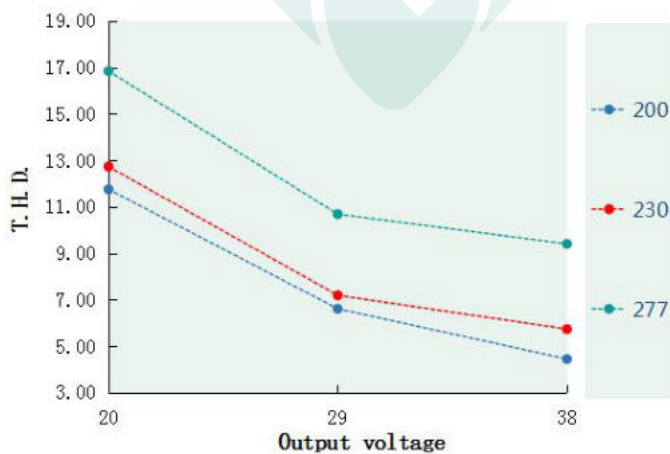
Power factor VS Input voltage(DL-30I-V38P/A-MAS)



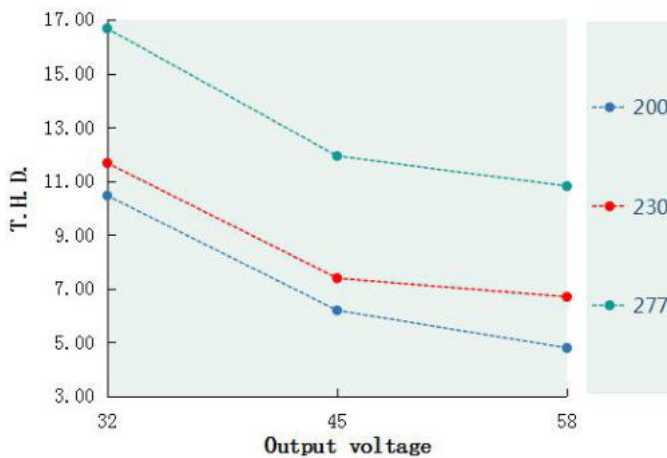
Power factor VS Input voltage(DL-30I-V58P/A-MAS)



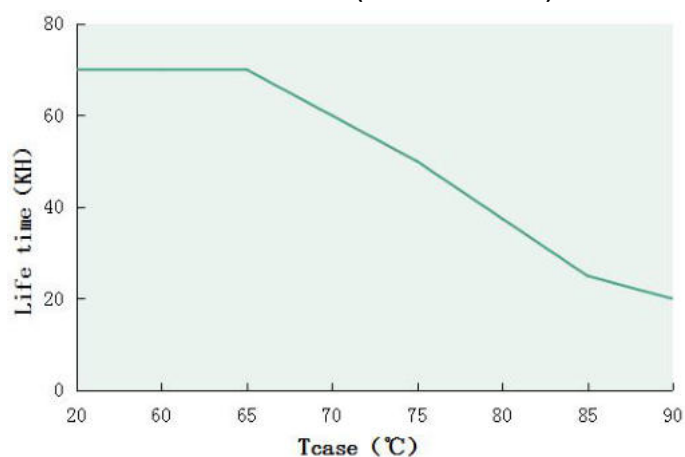
T.H.D. VS Output voltageDL-30I-V38P/A-MAS)



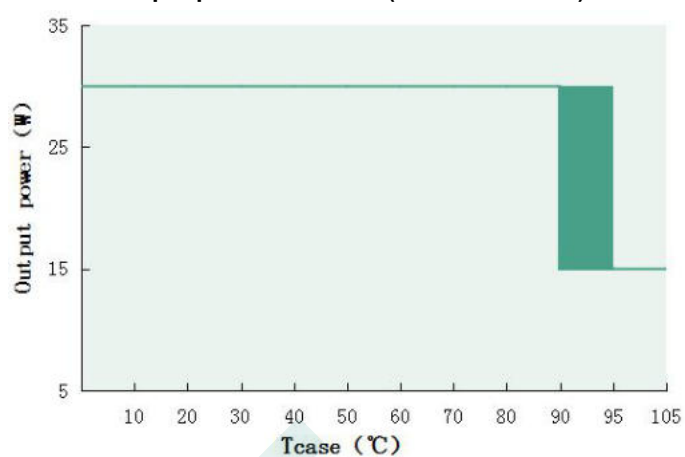
T.H.D. VS Output voltage(DL-30I-V58P/A-MAS)



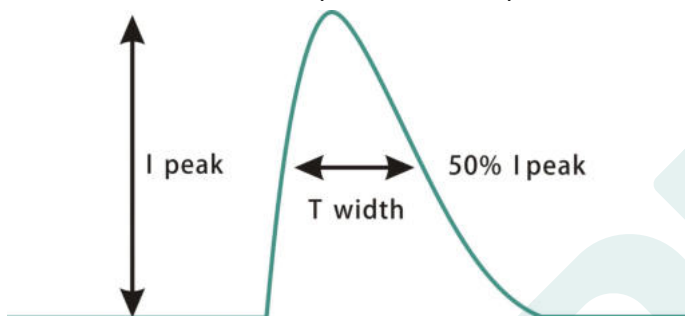
Tcase VS Lifetime(DL-30I-P/A-MAS)



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

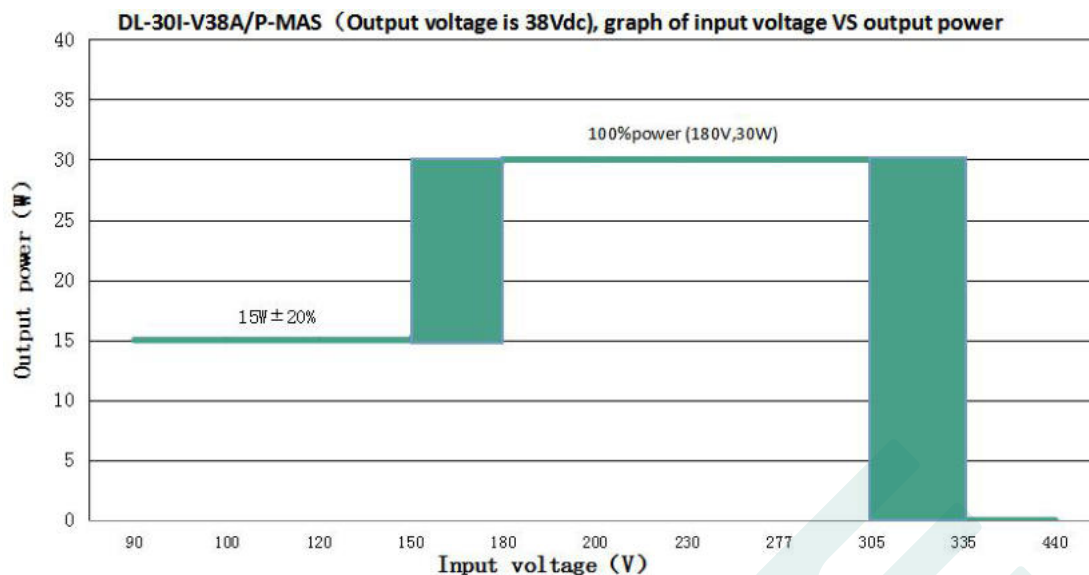


Inrush Current(DL-30I-A/P-MAS)



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

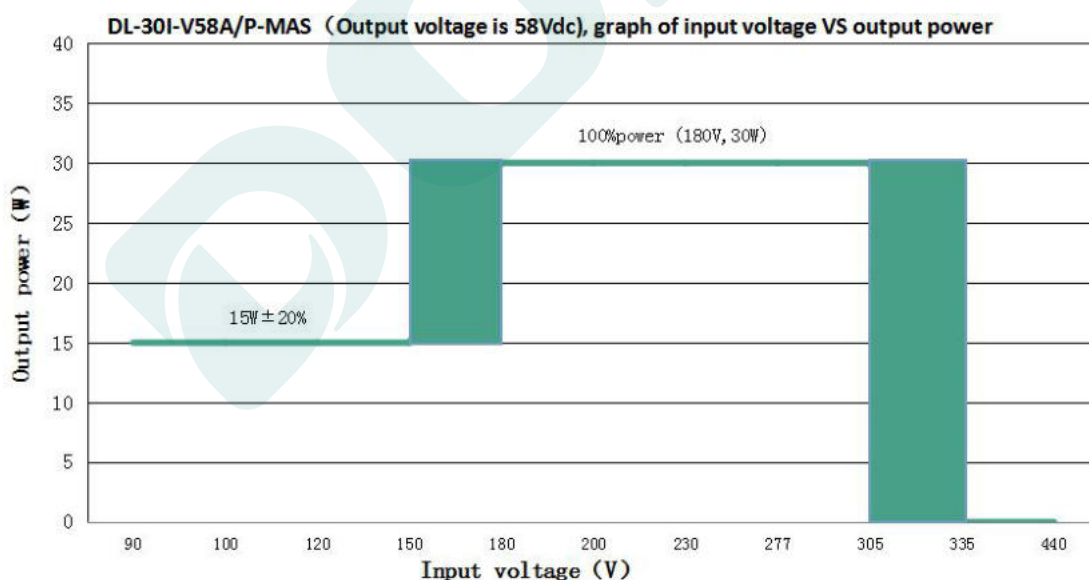
Output power VS Input voltage



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%.

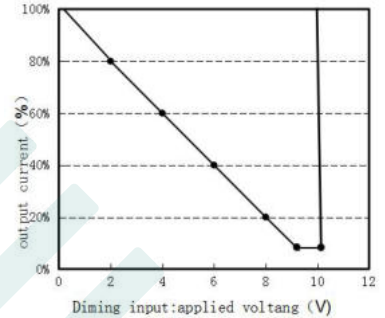
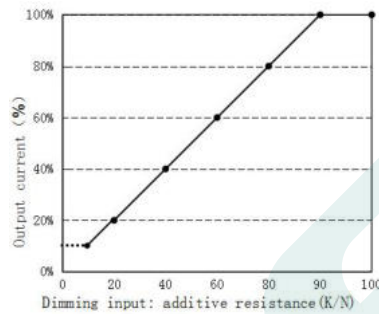
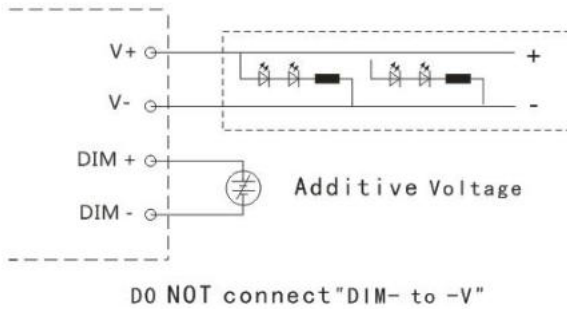
Dimming function

※ 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).

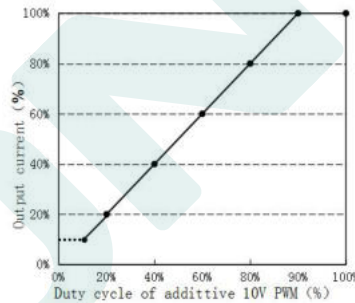
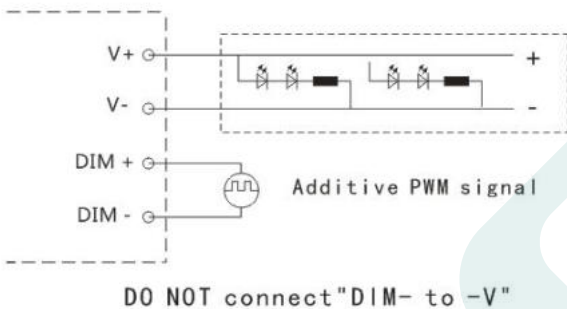
◎ With 1-10V dimming voltage(for both logic,negative and positive):



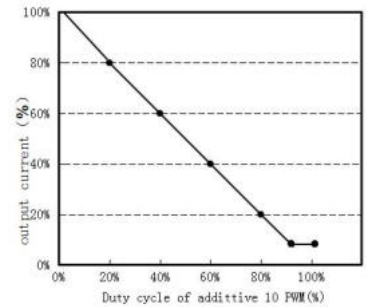
Positive logic dimming curve

Negative logic dimming curve

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

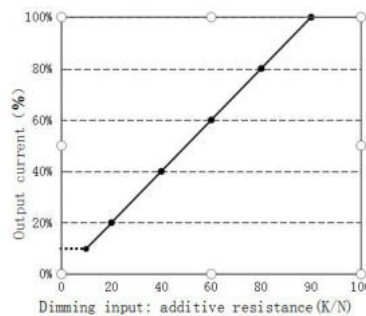
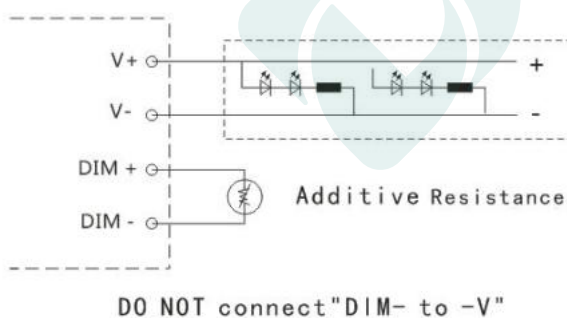


Positive logic dimming curve

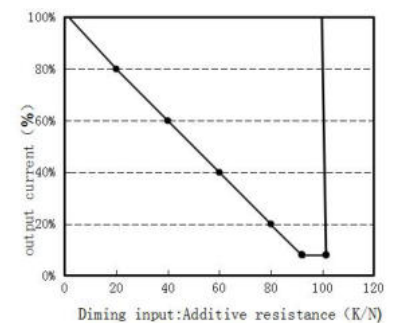


Negative logic dimming curve

◎ 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.

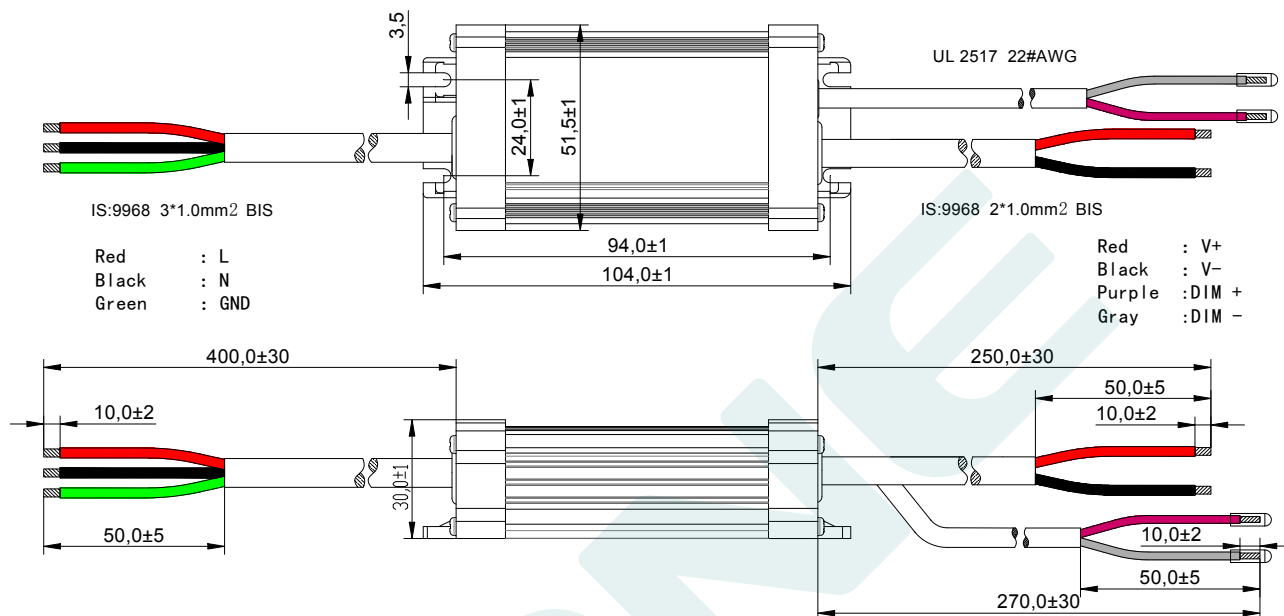
Mechanical specification

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

Dimension drawing

DL-30I-V38P-MAS

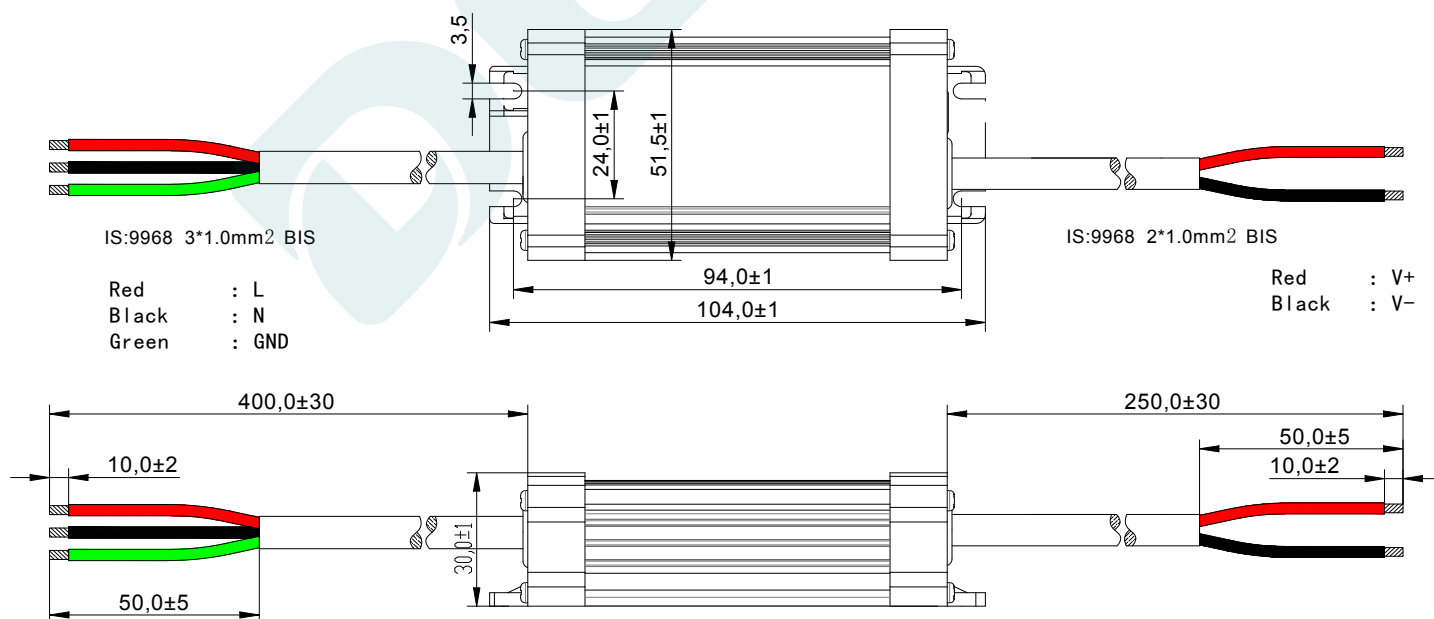
DL-30I-V58P-MAS



Dimension drawing

DL-30I-V38A-MAS

DL-30I-V58A-MAS



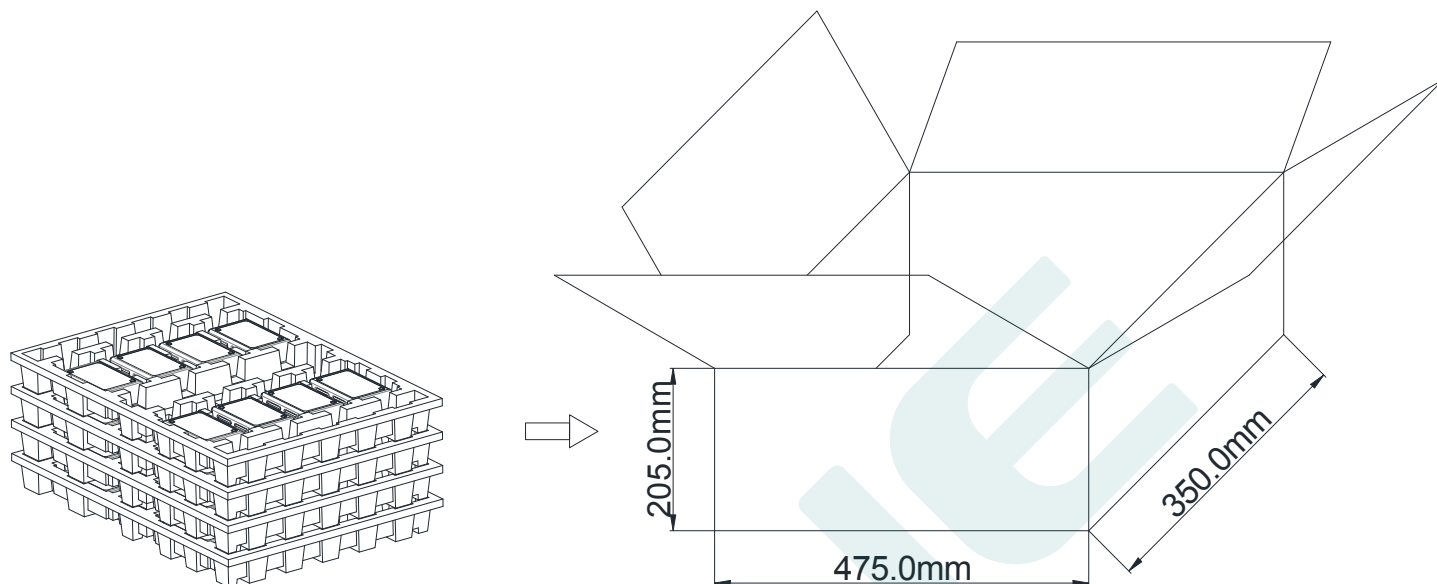
Weight

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	蒋洪 2024.03.21 14:23:45 +08'00' LQ 李兆 2024.03.21 16:45:10 +08'00'

MANUFACTRUER

EDIT	CHECK	APPROVE
黄勇 HY 2024.03.20 08:34:19 +08'00'	同前程 TQC 2024.03.21 09:06:40 +08'00'	张鸿生 数字签名者：张鸿生 DN：cn=张鸿生, o, ou, email=978425630@qq.com, c=<无 日期：2024.03.23 13:58:38 +08'00'