

DONE

MAS SERIES LED DRIVERS

DL-240H-MAS SPEC V1.0

Features

- Class I type for insulation
- Input voltage range 200-277 V ~ 50/60 Hz
- Efficiency :91%(Typ.)
- Constant current output ,with power limitation for control mode
- Metal case, protection grade against water and dust: IP67
- Surge level:
 - differential mode 6kV
 - common mode 15kV
- 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 : 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-240H-V38A-MAS DL-240H-V38P-MAS	200-277V 50/60Hz	240W	20-38Vdc	7.2A	≥90.5%	≤10%	≥0.95
DL-240H-V58A-MAS DL-240H-V58P-MAS	200-277V 50/60Hz	240W	32-58Vdc	5.5A	≥91%	≤10%	≥0.95

- 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 75W when the input is above 180VAC again. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	200Vac	230Vac	277Vac	
Input voltage range	180Vac		277Vac	Voltage below 165V+/-15VAC will result with a decreament the output
Rated frequency range	47Hz	50/60Hz	63Hz	
Power factor	-	0.95	-	@230Vac input ,with full load
Power factor	-	0.9	-	@200-277Vac input ,with 75%-100%
T.H.D.	-	-	10%	@230Vac input ,with full load
T.H.D.	-	-	20%	@200-277Vac input ,with 80%-100%
Input current	-	-	1.5A	@200Vac input ,with full load
Inrush current	-	-	120A	230Vac, cold start (25°C)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current				
DL-240H-V38A/P-MAS	-	6.32A	-	With loading 38VDC
DL-240H-V58A/P-MAS	-	4.14A	-	With loading 58VDC
Output current range				
DL-240H-V38A/P-MAS	5.2A	-	7.5A	Set by dimmer or external potentiometer
DL-240H-V58A/P-MAS	3.4A	-	5.8A	
Output voltage range				
DL-240H-V38A/P-MAS	20V	-	38V	Constant power output range:32-38VDC
DL-240H-V58A/P-MAS	32V	-	58V	Constant power output range:42-58VDC
Available power(90-180Vac)	-	120W		decrease to a half once input voltage being less than 165±15Vac
Rated power(200-277Vac)	-	240W	-	
No-load voltage				
DL-240H-V38A/P-MAS	-	-	55V	
DL-240H-V58A/P-MAS	-	-	75V	

Three

Output characteristics

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac				
DL-240H-V38A/P-MAS	90%	91%	-	@230Vac input ,with full load
DL-240H-V58A/P-MAS	90%	91%		
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	0	-	12V	Refer to note 2.
	Rated operation voltage range	1V	-	10V	Negative logic dimming mode is also available by program
	Dimming output range	10%	-	100%	Dim-off is available by program in some application.
PWM Dimming (Optional)	PWM high level	9.5V	-	10.5V	-
	PWM low level	0V	-	0.5V	-
	Rated dimming frequency	300Hz	-	2000Hz	-
	PWM duty cycle	10%	-	99%	Output full power at 99% duty cycle
Resistor Dimming (Optional)	Rated external resistance value	10KΩ	-	100KΩ	Bigger resistor won't increase the output.
	Dimming output range	10%	-	100%	Negative logic dimming mode is also available by program
Multiple time-controlled dimming (Optional	MCU control	set dimming function Segment by segment through program		three operation modes for selection.	
	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 maximum voltage applied to the dimming port is suggested below 12V, but it also is protected against wrong voltage up to 230VAC or 300VDC. Please don't keep the wrong voltage apply to the port for a long time. Otherwise, it is possible to be damaged.
3. When over-temperature protection happens, the threshold of output power (or output current) for dim-off and turn-on will keep the same as that in normal condition. Since the output power has been decreased to a half of normal condition, the dimming signal from the port need to be doubled to meet the same threshold as a result. Only for P version.
4. User is suggested to use 1-10V for dimming. However, dim-off function is also available through the software or program if necessary, for some application that don't care the stand-by power. Please consult the technician for details if you have other requirements.
5. All these drivers will not work in the no-load mode.

Protection

Protection	description
under-voltage protection	When the input voltage is less than $165 \pm 15V_{ac}$, the output power decreases.
Output over-voltage protection	hiccup mode, and recovers automatically when the fault condition is removed.
Output short circuit protection	Hiccup mode, and recovery automatically when the fault condition is removed.
Over temperature protection	when the temperature of the case is greater than $95 \pm 5^{\circ}C$, 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

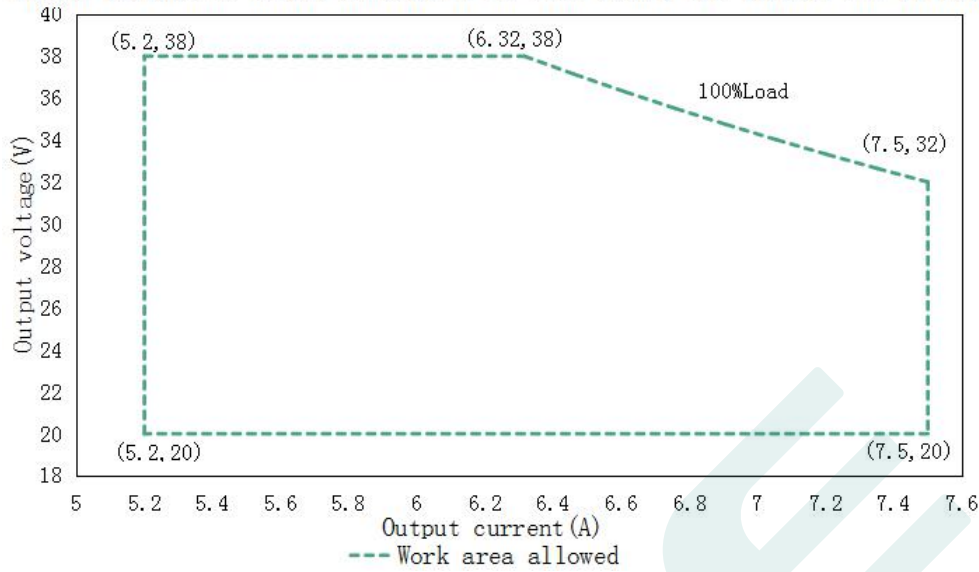
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N ±6KV (2 ohm) ,common mode L, N-PE± 15KV (12 ohm); Refer to 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:100MΩ / 500VDC; I/P-O/P:100MΩ / 500VDC / 25°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.

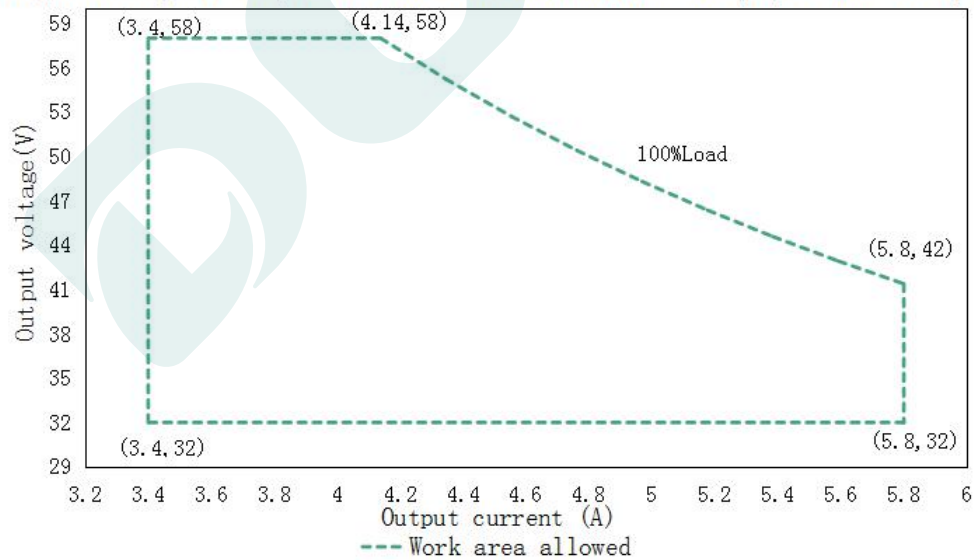
I-V Working area

Output voltage VS output current of DL-240H-V38A/P-MAS (input: 200-277Vac)



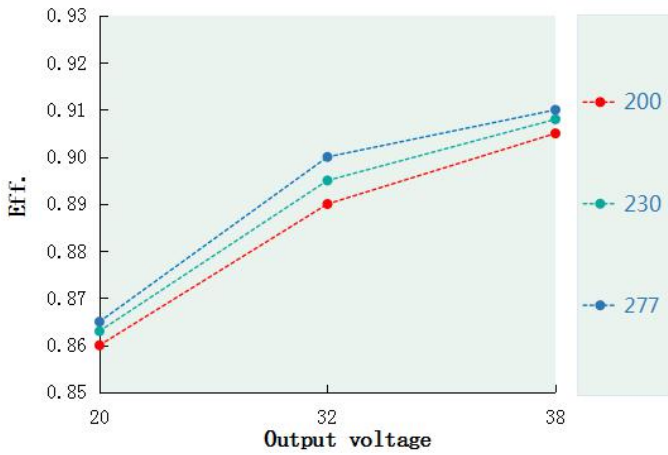
Load	Output								
Load working Voltage	20V	22V	24V	27V	30V	32V	34V	36V	38V
Io_MAX	7.5A	7.5A	7.5A	7.5A	7.5A	7.5A	7.05A	6.66A	6.26A
Po_MAX	150W	165W	180W	202.5W	225W	240W	240W	240W	240W

Output voltage VS output current of DL-240H-V58A/P-MAS (input:200-277Vac)

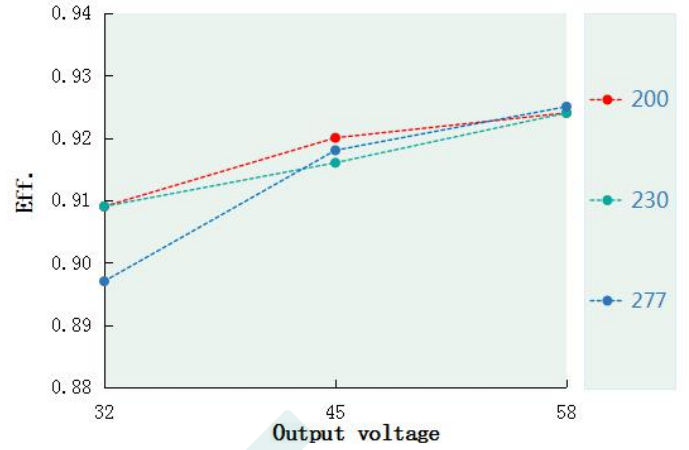


Load	Output								
Load working Voltage	32V	36V	39V	42V	46V	49V	52V	55V	58V
Io_MAX	5.8A	5.8A	5.8A	5.7A	5.22A	4.89A	4.61A	4.36A	4.14A
Po_MAX	185W	209W	226W	240W	240W	240W	240W	240W	240W

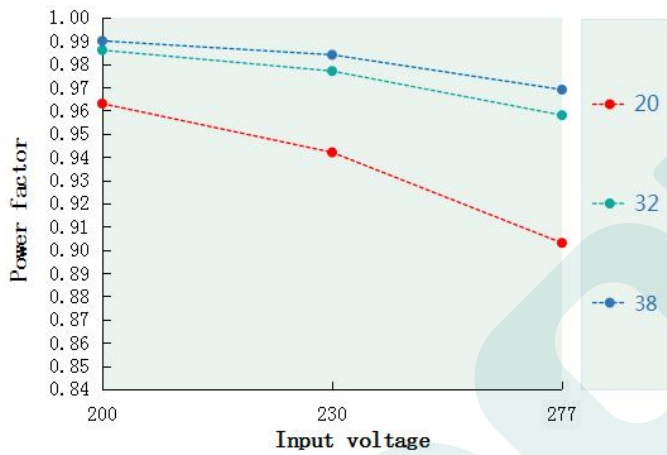
Eff. VS Output voltage(DL-240H-V38A/P-MAS)



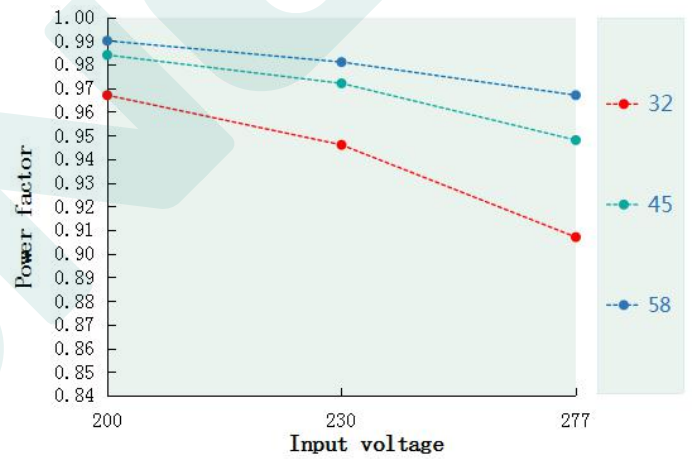
Eff. VS Output voltage(DL-240H-V58P/A-MAS)



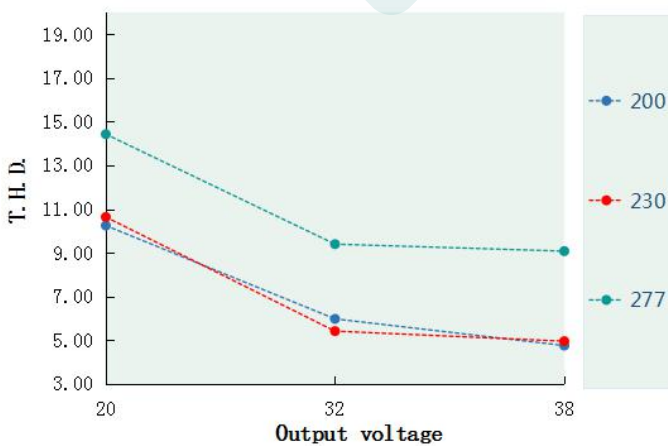
Power factor VS Input voltage(DL-240H-V38P/A-MAS)



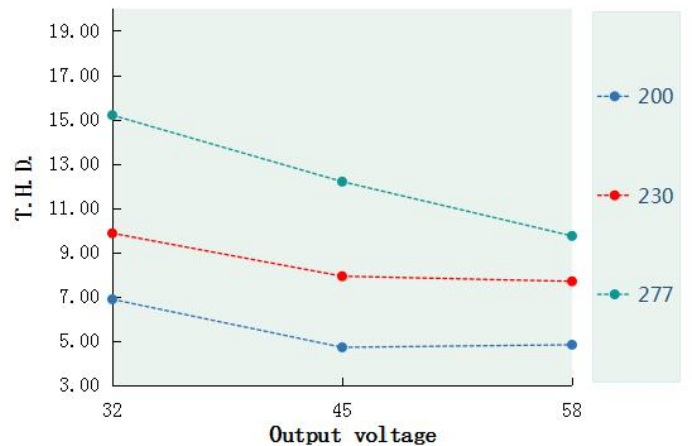
Power factor VS Input voltage(DL-240H-V58P/A-MAS)



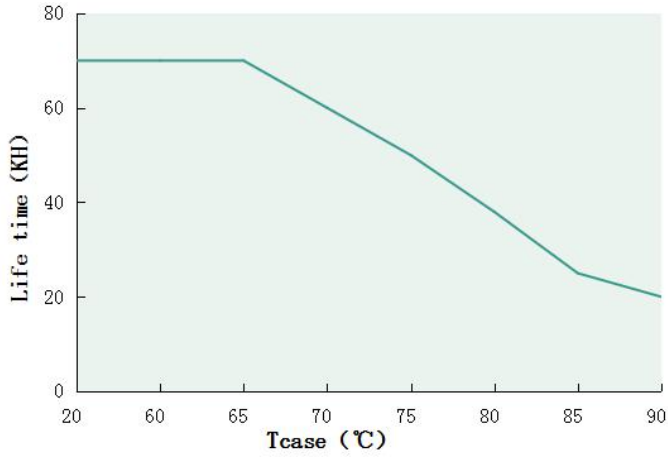
T.H.D. VS Output voltage(DL-240H-V38P/A-MAS)



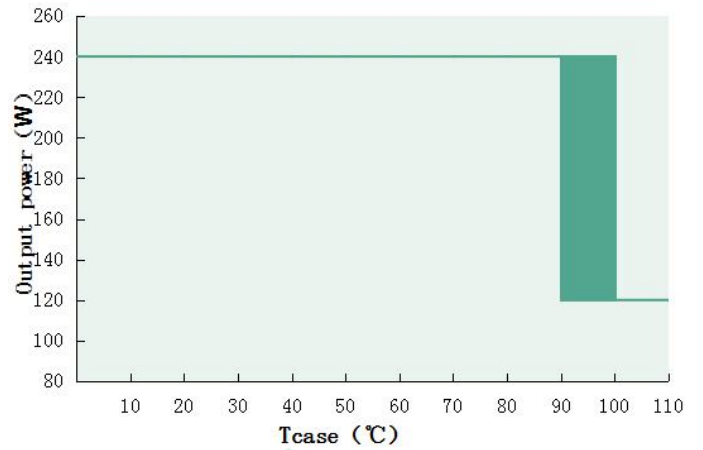
T.H.D. VS Output voltage(DL-240H-V58P/A-MAS)



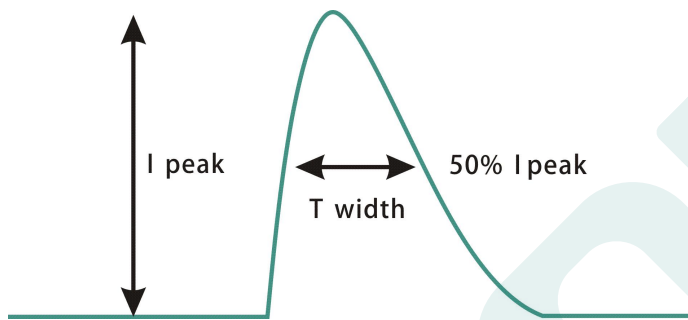
Tcase VS Lifetime(DL-240H-P/A-MAS)



Output power VS Tcase (DL-240H-P/A-MAS)

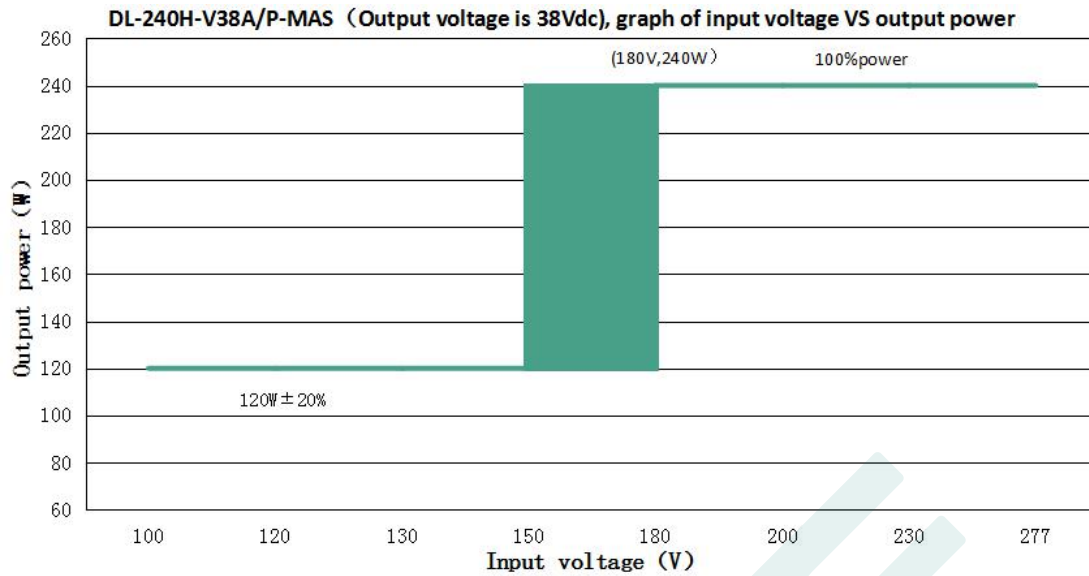


Inrush Current(DL-240H-A/P-MAS)



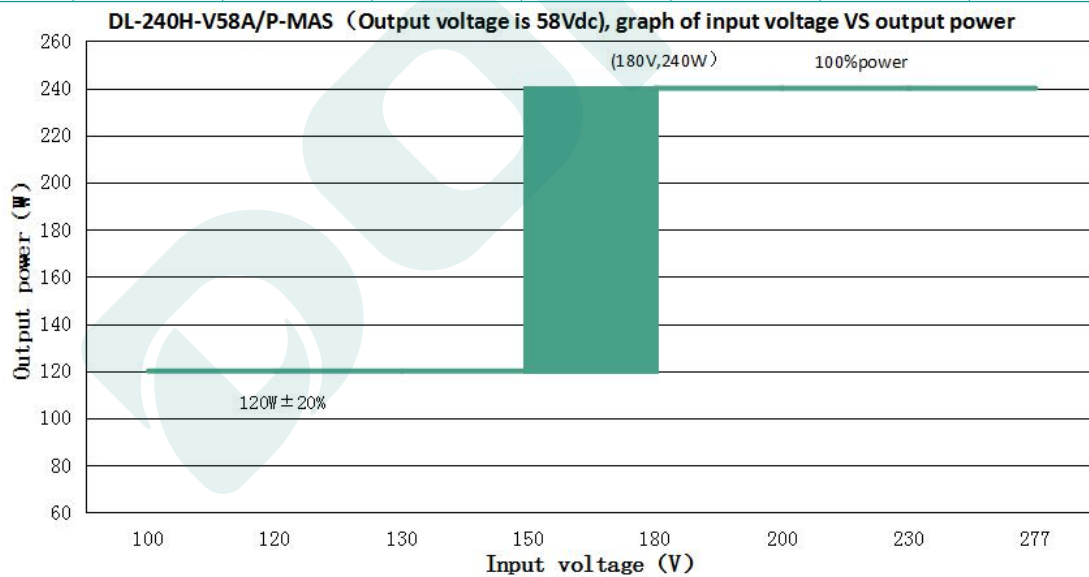
Input voltage	Peak current	T(@50% Peak current)
120Vac	\	\
230Vac	85A	56.8us
277Vac	98A	57.6us

Output power versus Input voltage



DL-240H-V38A/P-MAS(When the output voltage is 38Vdc, the rated output current value and output power corresponding to different input voltage)

Input Voltage	100Vac	120Vac	130Vac	150Vac	180Vac	200Vac	230Vac	277Vac
I _{out}	3.16A	3.16A	3.16A	3.16A	6.32A	6.32A	6.32A	6.32A
P _{out}	120W	120W	120W	120W	240W	240W	240W	240W



DL-240H-V58A/P-MAS (When the output voltage is 58Vdc, the rated output current value and output power corresponding to different input voltage)

Input Voltage	100Vac	120Vac	130Vac	150Vac	180Vac	200Vac	230Vac	277Vac
I _{out}	2.069A	2.069A	2.069A	2.069A	4.137A	4.137A	4.137A	4.137A
P _{out}	120W	120W	120W	120W	240W	240W	240W	240W

Note:

1. When the input voltage is below 165±15Vac, the output power decreases to 120W±20%

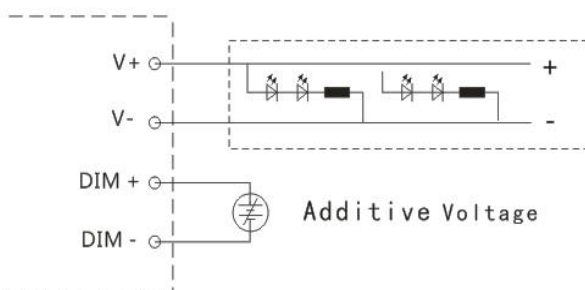
Dimming function

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

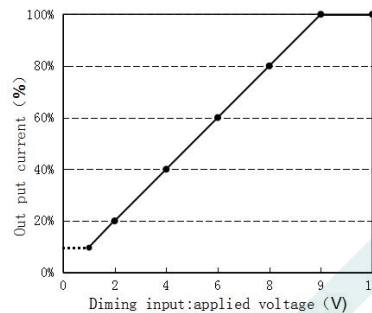
A. To adjust the output current, applying one of the three methods between DIM+ and DIM- : a resistor of 0-100K, or any voltage of 1-10V , or a PWM signal with amplitude of 10V. .

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

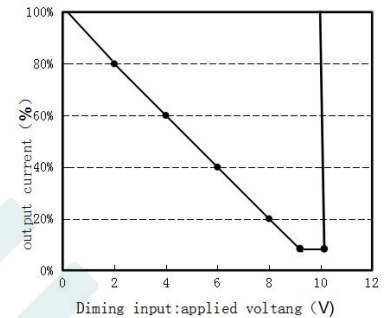
◎ With 1-10V dimming voltage(for both logic,negative and positive):



DO NOT connect "DIM- to -V"

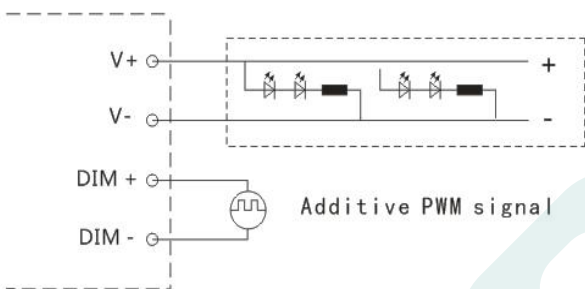


Positive logic dimming curve

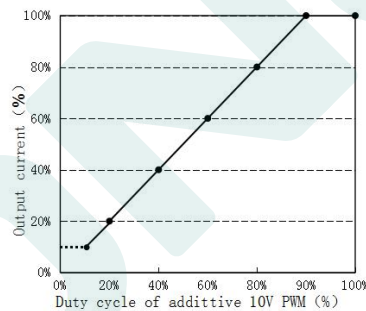


Negative logic dimming curve

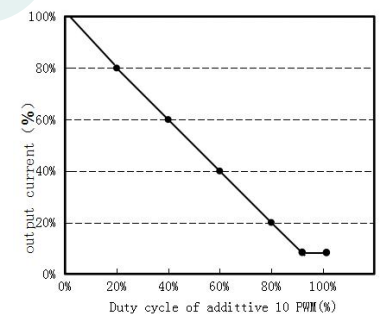
◎ Applying additive 10V PWM signal (Frequency range: 300Hz-2K Hz) :



DO NOT connect "DIM- to -V"

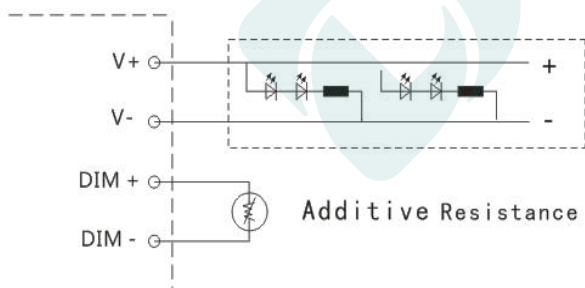


Positive logic dimming curve

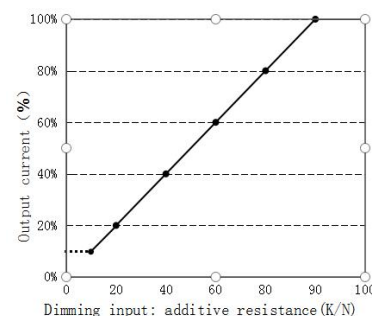


Negative logic dimming curve

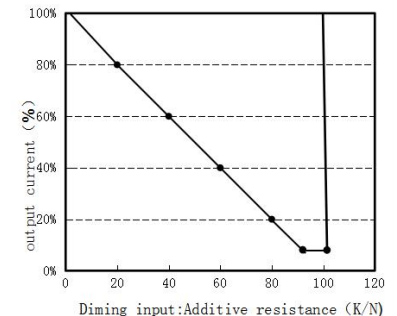
◎ With an additional 0-100K resistor:



DO NOT connect "DIM- to -V"



Positive logic dimming curve



Negative logic dimming curve

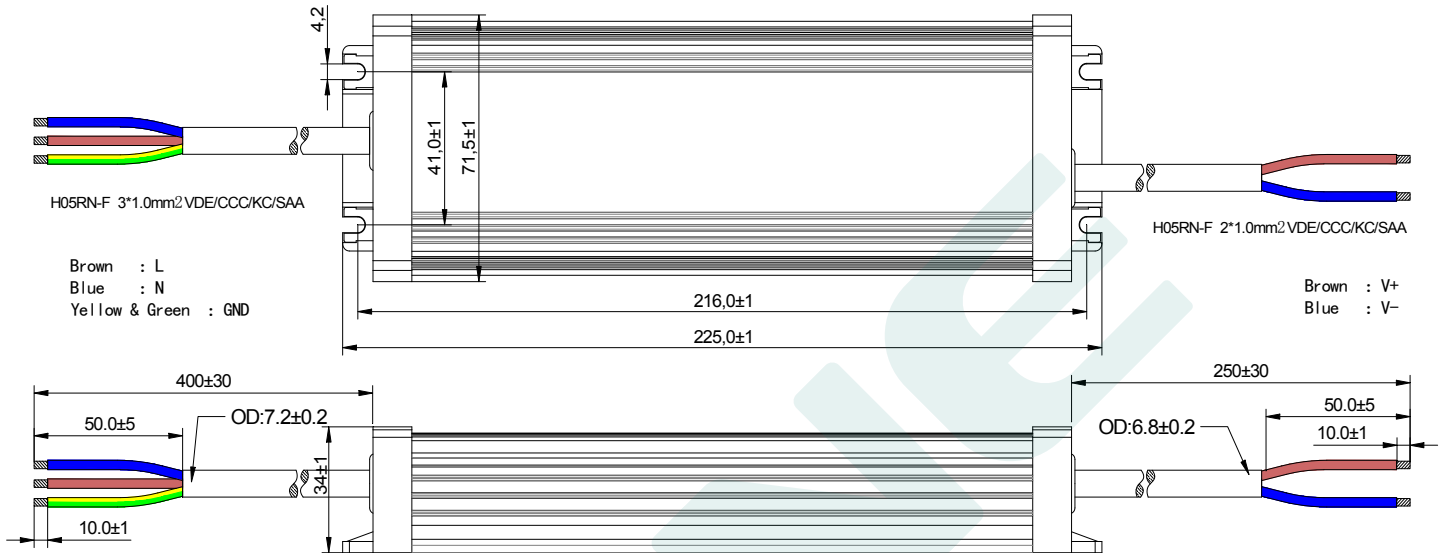
Remark:

1. Both operation way, of positive logic or negative logic,can be selected by program.
2. Dim -off is only available for positive logic dimming .Other requirements need to contact with the technician for help.

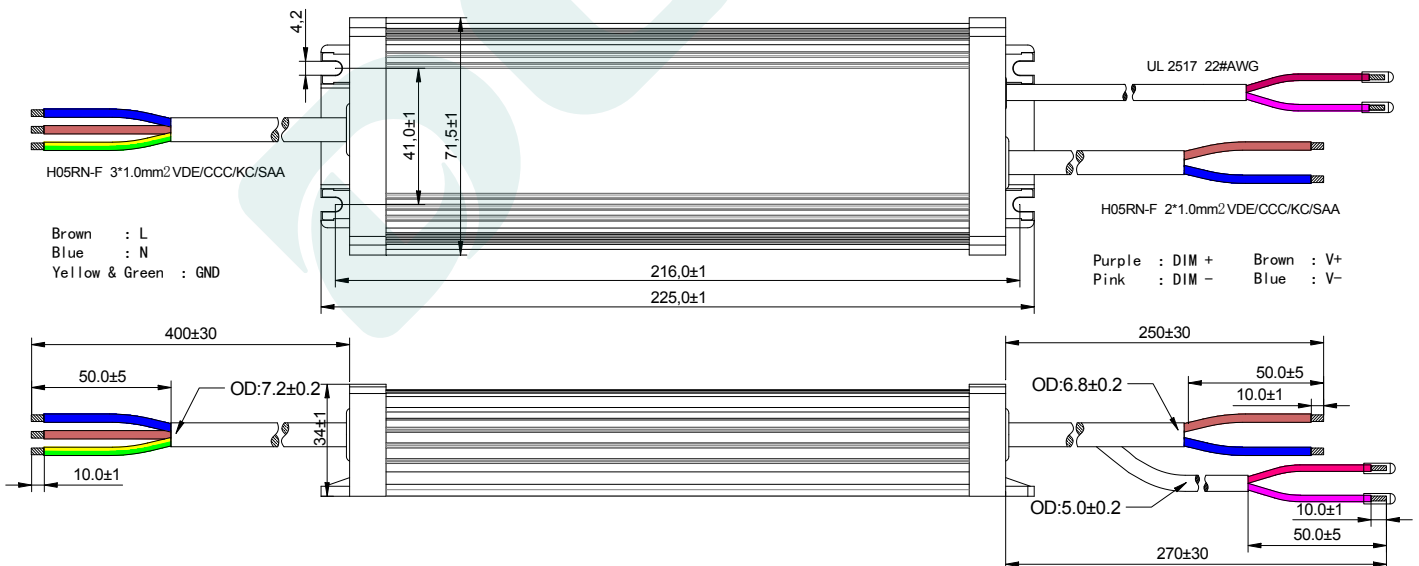
Mechanical specification

Size (mm) L225mm*W71.5mm*H34mm

DL-240H-V38P/V58P/-MAS



DL-240H-V38A/V58A/-MAS

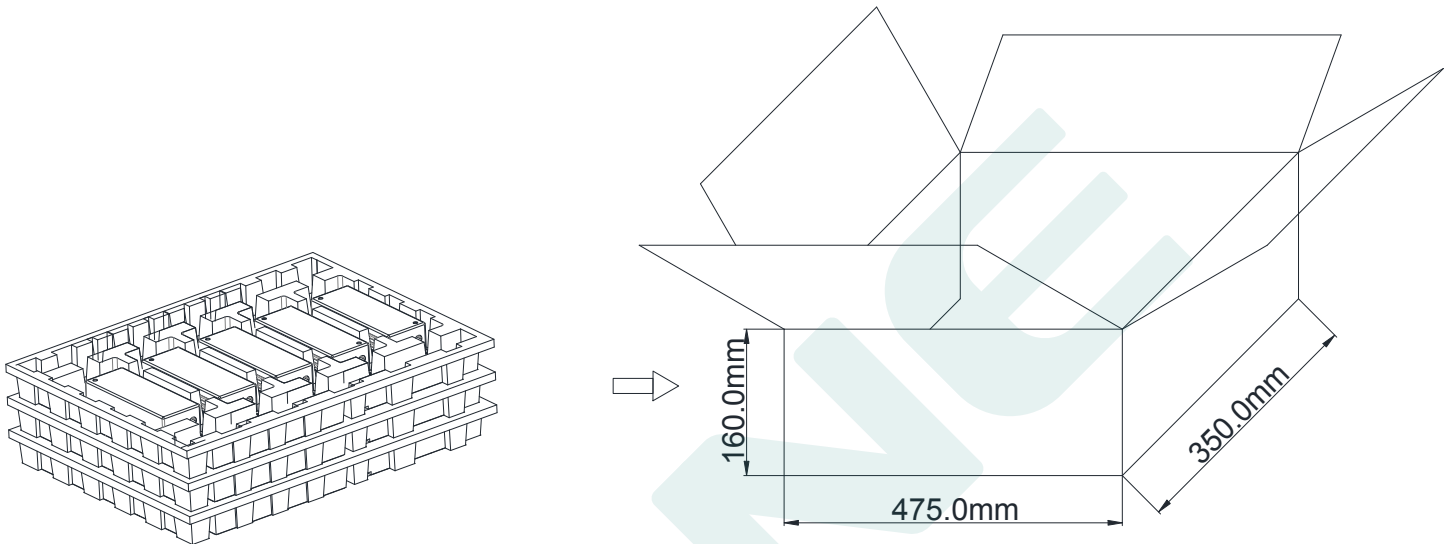


Weight

Weight 790 g

Packaging

Packaging (mm) L475*W350*H160



Note: One Carton 3 layers and 5 pcs each layer, total 15pcs/carton.

Note:

1. According to the certificate obtained by the LED DRIVER, the LED DRIVER with the English label is sold in Europe, America and India.
2. The LED DRIVER with Chinese label is only used for China market.

Version

DATE	DESCRIPTION	REV.	CHECK
2023.05.29	Initial version.	V1.0	

MANUFACTRUER

EDIT

CHECK

APPROVE