MAS SERIES LED DRIVERS

DL-100H-C-MAS SPEC V1.0

GUANGDONG DONE POWER TECHNOLOGY CO.,LTD

Features

• Class I type for insulation

• Input voltage range 200-277 V ~ 50/60 Hz

• Efficiency :90%(Typ.)

• Constant current for the total output of channel A and B, with power limitation.

• Continuous dimming and color tuning(Mixed by channel A and B).

• Metal case, protection grade against water and dust: IP67

• Surge level:

differential mode 6kV

common mode 15kV

•available version :

P version: both output current and color is adjusted 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-100H-V38C-MAS	200-277V 50/60Hz	100W	20-38Vdc	3A	≥89%	≤10%	≥0.95
DL-100H-V58C-MAS	200-277V 50/60Hz	100W	32-58Vdc	2.1A	≥90%	≤10%	≥0.95

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 recoveries full power of 30W 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 in a decrement of 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 75%-100%
Input current	-	-	0.63A	@200Vac input ,with full load
Inrush current	-	-	75A	230Vac, cold start (25℃)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-100H-V38C-MAS DL-100H-V58C-MAS	 - -	 2.63A 1.73A	 - -	With loading 38VDC,100% output for single A channel or B channel. With loading 58VDC,100% output for single A channel or B channel
Output current range DL-100H-V38C-MAS DL-100H-V58C-MAS	 1.9A 1.3A	 - -	 3.5A 2.5A	The range of the maximum output current set by the user.
Output voltage range DL-100H-V38C-MAS DL-100H-V58C-MAS	 20V 32V	 - -	 38V 58V	Constant power output range:32-38VDC Constant power output range:42-58VDC
Available power(90-180Vac)	-	50W		decrease to a half once input voltage being less than 165±15Vac
Rated power(200-277Vac)	-	100W	-	
No-load voltage DL-100H-V38C-MAS DL-100H-V58C-MAS	 - -	 - -	 55V 75V	

Output characteristics

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac DL-100H-V38C-MAS DL-100H-V58C-MAS	-	 89% 90%	-	@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;

2. All these parameters are measured with the color tuning terminals short or float, to keep only one channel output.

3. If both the two channels are occupied, make sure the rating voltage of the lamp being the same. The two output conduct complementary and the total current flowing through the positive cable keeps constant.

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.

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 applications that don't care the stand-by power. Please consult the technician for details if you have other requirements.

5.In negative logic dimming mode, the default output is 100% when the dimming cable keep float. And that also can be set dim- off through the program. The threshold is10.3+/-0.2V for the program to distinguish if the dimming terminals keep float or not.

Color modulation characteristics

Dimming function	Min	Typ.	Max	Dimming function	Dimming function
0-10V signal (Optional)	Safe operation voltage	0	-	12V	Refer to note 2
	Rated operation voltage （VDim）	0		10V	For positive logic color modulation, Channel A turn off when Vdim<0.3V，and 100% output when Vdim>9.7V。
	Duty ratio D	0		100%	D=VDim/10,the conduction proportion for channel A; and that for channel B is (1-D）。
	Color temperature K	K1	-	K2	Color temperature K=K1*D+K2*(1-D)，K1 and K2 is the color temperature of the two lamp beads respectively。
PWM signal (Optional)	PWM High level	9.5V	-	10.5V	-
	PWM Low level	0V	-	0.3V	-
	PWM Frequency range	300Hz	-	2000Hz	-
	PWM Duty cycle (D)	0%	-	100%	For positive logic color tuning, Channel A turn off when D<3%，and 100% output when D>97%。
	Color temperature (K)	K1	-	K2	Color temperature K=K1*D+K2*(1-D)，K1 and K2 is the color temperature of the two lamp beads respectively。
Resistor (Optional)	External resistor（R）	0KΩ	-	100KΩ	For positive logic color tuning, Channel A turn off when R<3K，and 100% output when R>97K
	Color palette output range	K1	-	K2	Color temperature=K1*（R/100）+K2*(1-R/100)，K1，K2 Is the color temperature of the two lamp beads. -

Note:

1、Color modulation port output current: 100uA (typical);

2、The maximum voltage applied to the color modulation 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、The default color modulation method is also using a 3-in-1 dimmer, with positive logic .0-5V or other color modulation method can be set through software if necessary. People can turn to the technician for help if you want to get the detail. Something more, negative logic color modulation can be set through the program too. When the negative logic modulation is set, it is equivalent to the positive logic of channel B.

4、In positive logic color modulation mode, the default output is 100% output from channel A when the modulation cable keep float. The threshold is10.3+/-0.2V for the program to distinguish if the terminals of the port keep float or not.

Protection

Protection	description
under-voltage protection	When the input voltage is less than 165±15Vac, 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 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

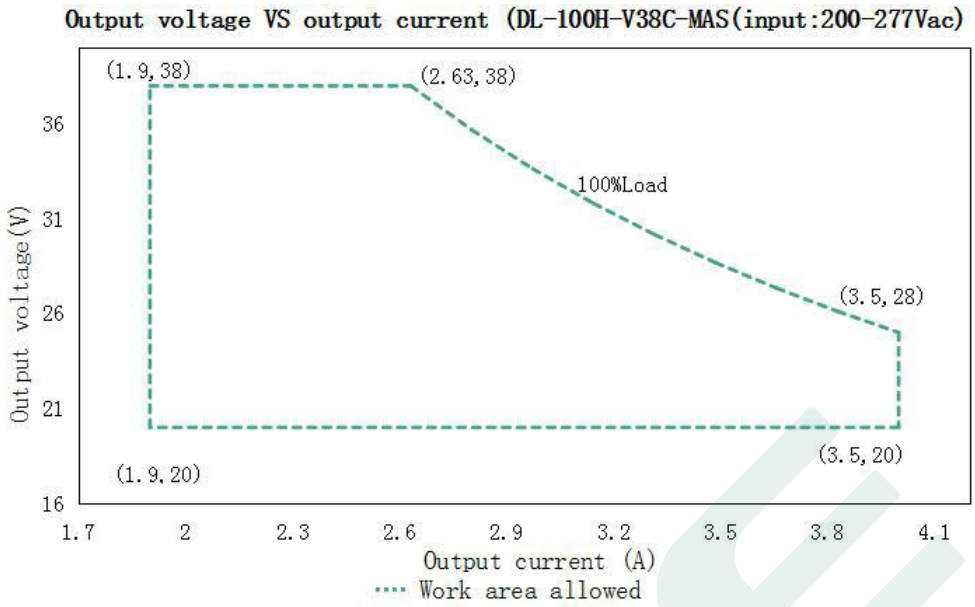
Safety and EMC

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 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N ±4KV（2 ohm）,common mode L，N-PE± 6 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:100MΩ / 500VDC; I/P-O/P:100MΩ / 500VDC / 25℃/ 70% RH
Leakage current	<0.7mA@277Vac

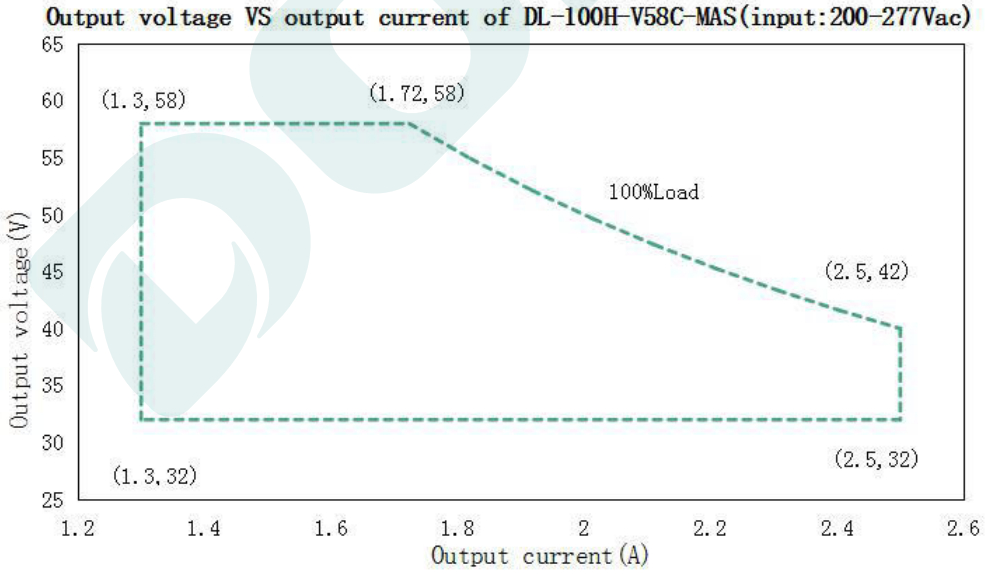
Note:

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

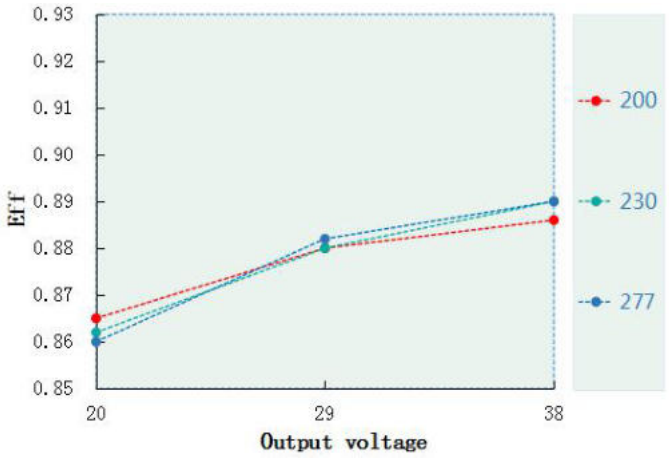


Load	Output								
Load working Voltage	20V	22V	26V	28V	30V	32V	34V	36V	38V
Io_MAX	3.5A	3.5A	3.5A	3.5A	3.33A	3.12A	2.94A	2.77A	2.63A
Po_MAX	70W	77W	91W	98W	100W	100W	100W	100W	100W

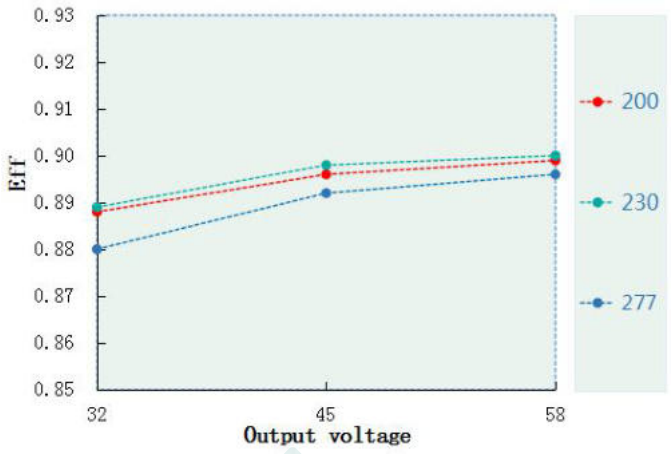


Load	Output								
Load working Voltage	32V	35V	40V	42V	45V	48V	51V	54V	58V
Io_MAX	2.5A	2.5A	2.5A	2.38A	2.22A	2.08A	1.96A	1.85A	1.73A
Po_MAX	80W	87.5W	100W	100W	100W	100W	100W	100W	100W

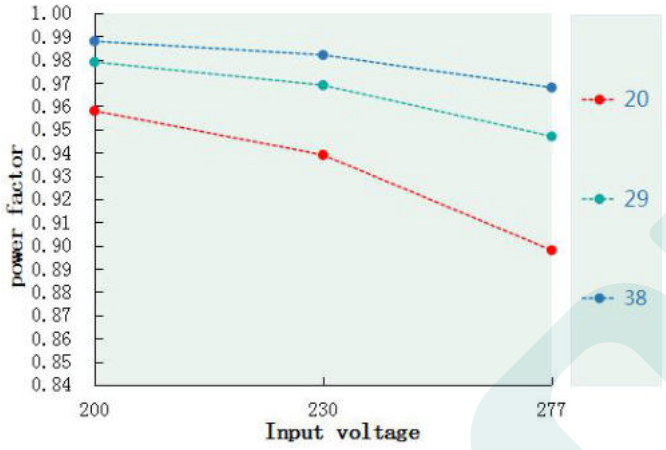
Eff. VS Output voltage(DL-100H-V38C-MAS)



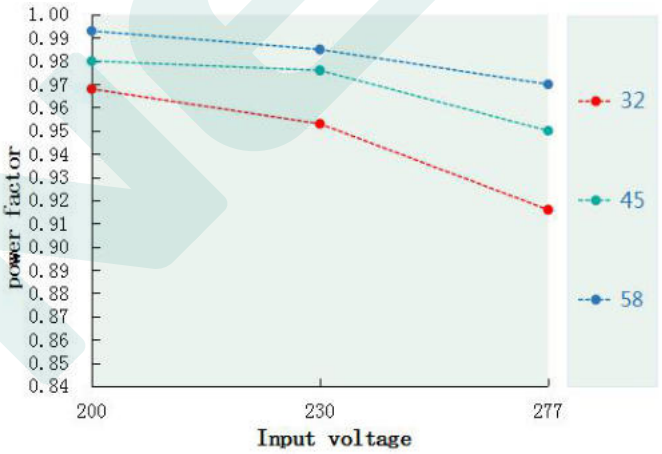
Eff. VS Output voltage(DL-100H-V58C-MAS)



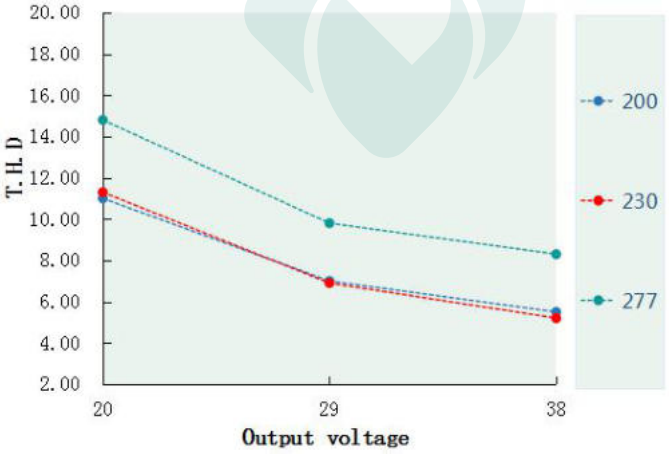
Power factor VS Input voltage(DL-100H-V38C-MAS)



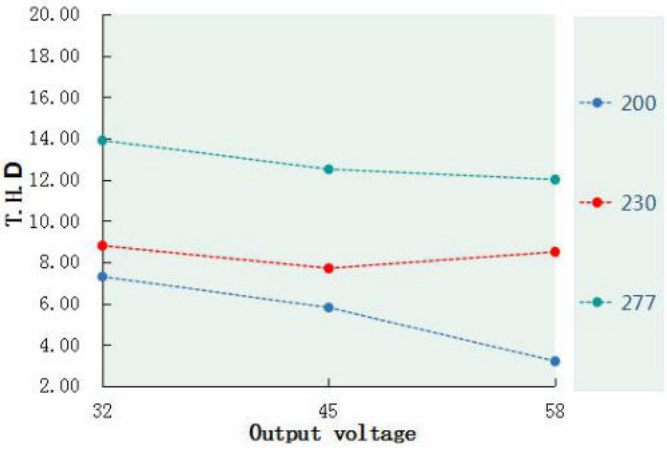
Power factor VS Input voltage(DL-100H-V58C-MAS)



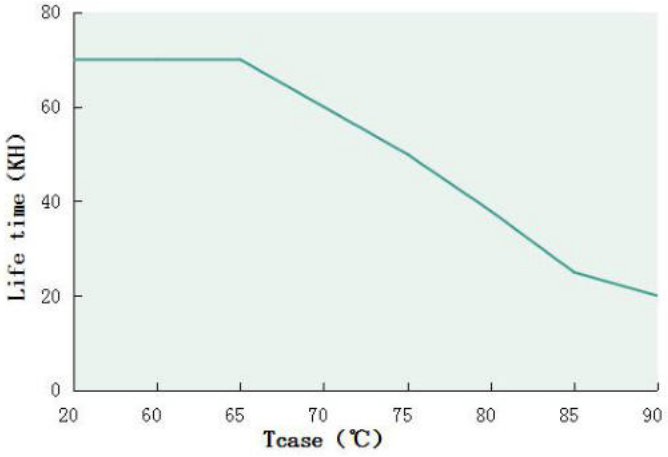
T.H.D. VS Output voltage(DL-100H-V38C-MAS)



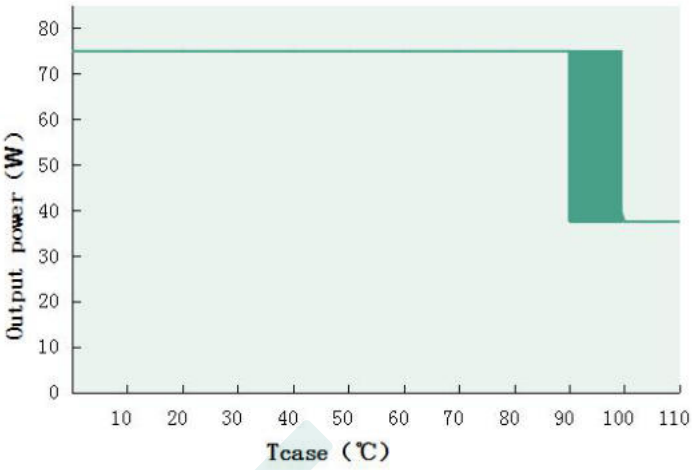
T.H.D. VS Output voltage(DL-100H-V58C-MAS)



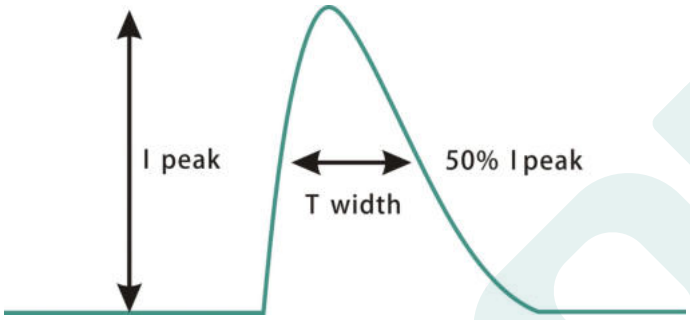
Tcase VS Lifetime(DL-100H-C-MAS)



Output power VS Tcase (DL-100H-C-MAS)

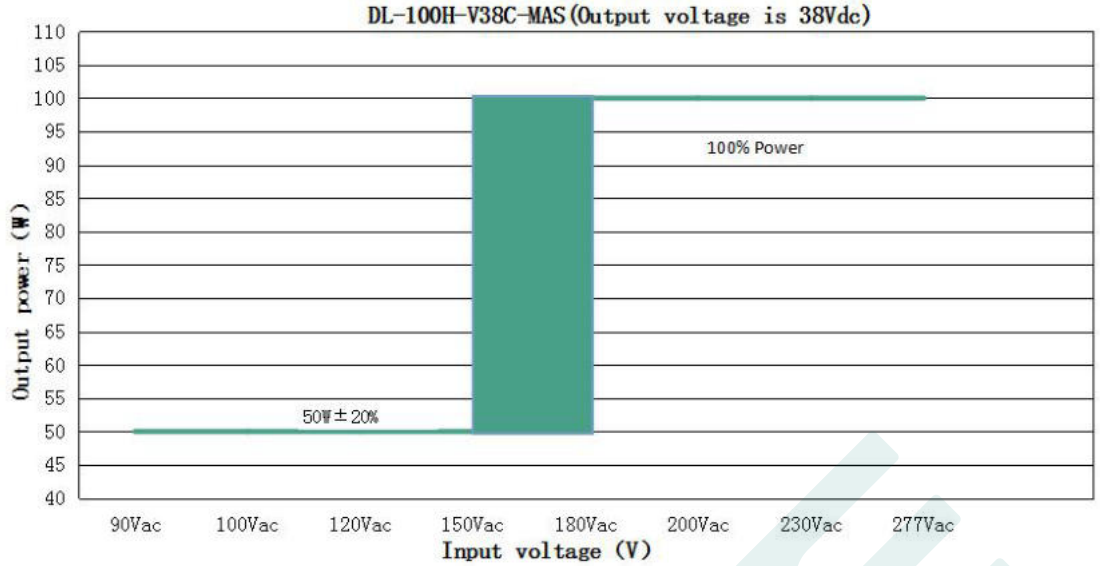


Inrush Current(DL-100H-C-MAS)

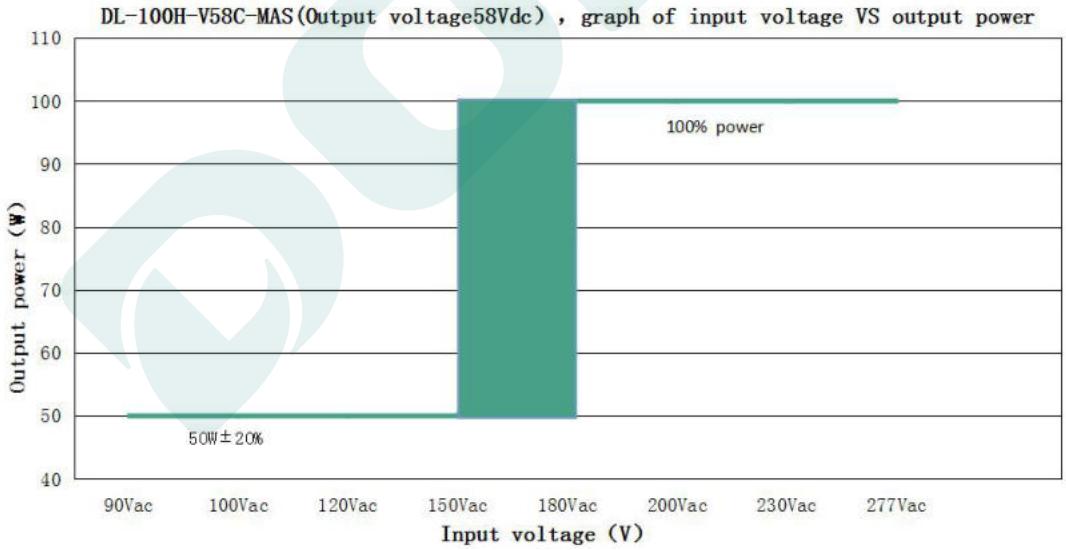


Input voltage	Peak current	T(@50% Peak current)
200Vac	58A	1.2us
230Vac	66A	1.40us
277Vac	75A	1.600us

Output power versus Input voltage



DL-100H-V38C-MAS(When the output voltage is38Vdc, the rated output current value and output power corresponding to different input voltage)								
Input Voltage	100Vac	120Vac	150Vac	180Vac	200Vac	230Vac	277Vac	100Vac
Iout	1.32A	1.32A	1.32A	2.63A	2.63A	2.63A	2.63A	1.32A
Pout	50W	50W	50W	100W	100W	100W	100W	50W



DL-100H-V58C-MAS (When the output voltage is 58Vdc, the rated output current value and output power corresponding to different input voltage)								
Input Voltage	100Vac	120Vac	150Vac	180Vac	200Vac	230Vac	277Vac	100Vac
Iout	0.865A	0.865A	0.865A	1.73A	1.73A	1.73A	1.73A	0.865A
Pout	50W	50W	50W	100W	100W	100W	100W	50W

Note:

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

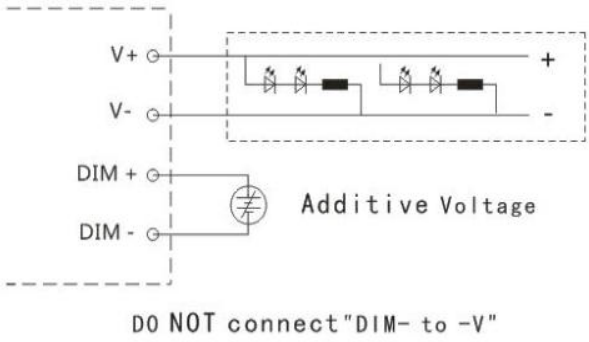
Dimming function

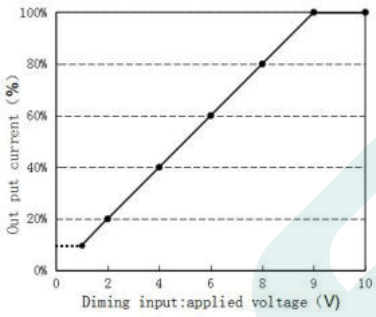
※ Three-in-one dimming function

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. .

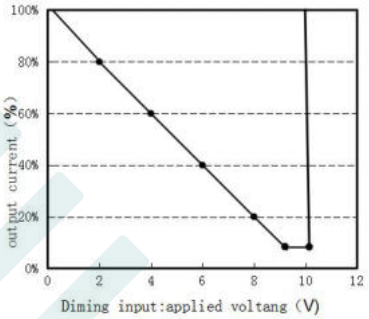
B. output current of dimming port: 100uA (typical value).

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



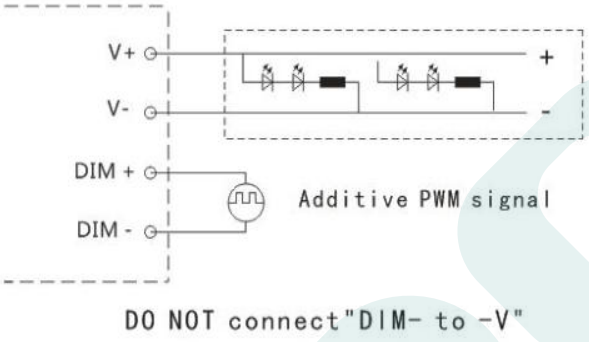


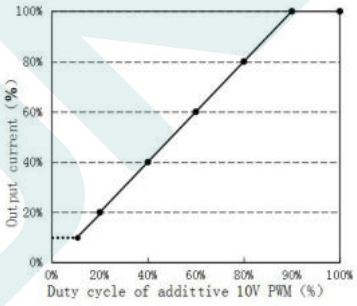
Positive logic dimming curve



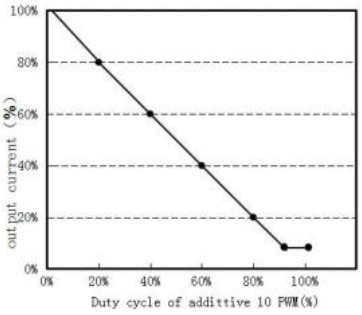
Negative logic dimming curve

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



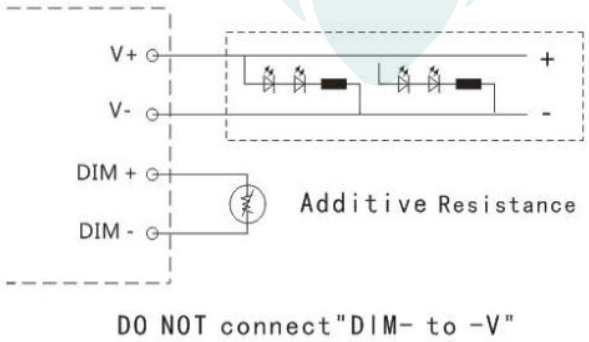


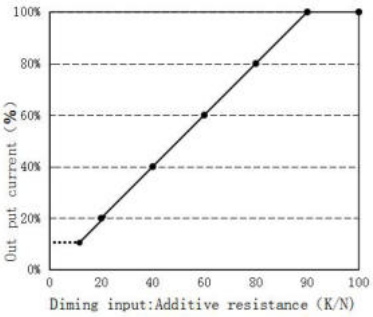
Positive logic dimming curve



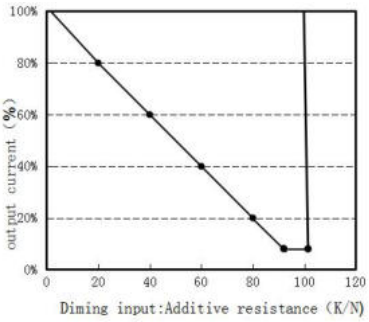
Negative logic dimming curve

◎ With an additional 0-100K resistor:





Positive logic dimming curve



Negative logic dimming curve

Remark:

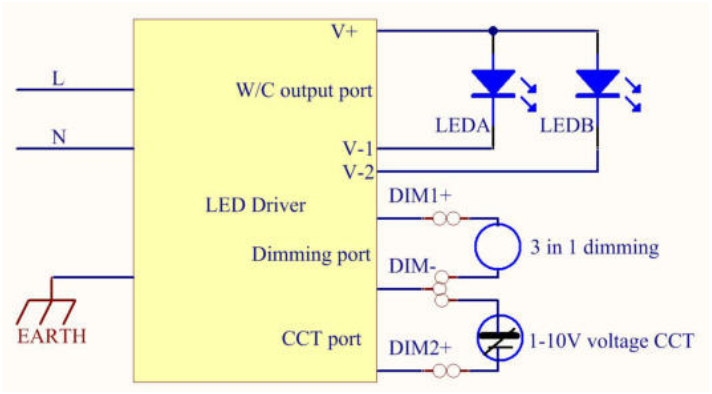
1. Both operation way, of positive logic or negative logic,can be selected by program.

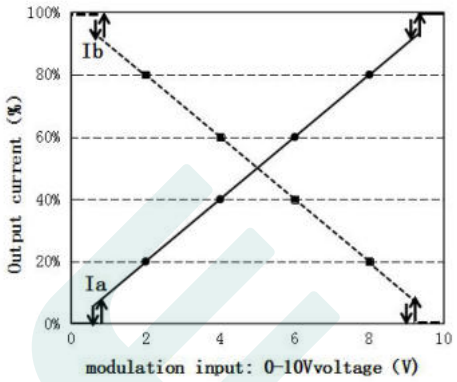
2. Dim -off is available also through software if necessary, in some applications that don't care the standby power.

Three-in-one color modulation function

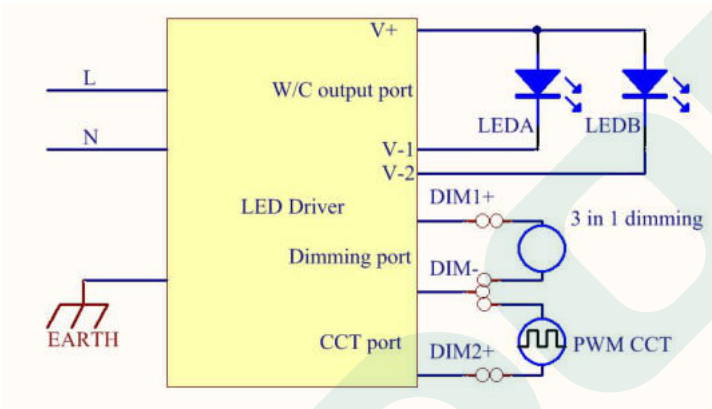
※ **A**. Applying a signal between DIM2+and DIM-, the signal can be a resistor of 0-100K ,or 0-10V Dc voltage, or 10V PWM signal.
B.Color port output current：100uA(Typ）

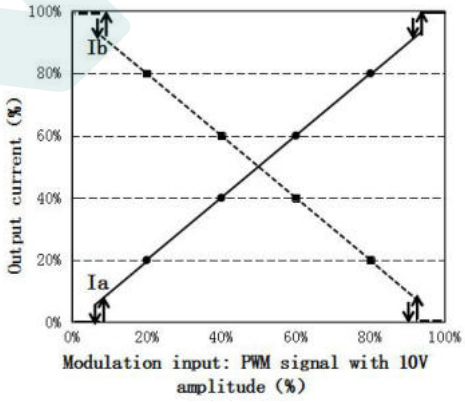
◎ With 0-10V dimming voltage：



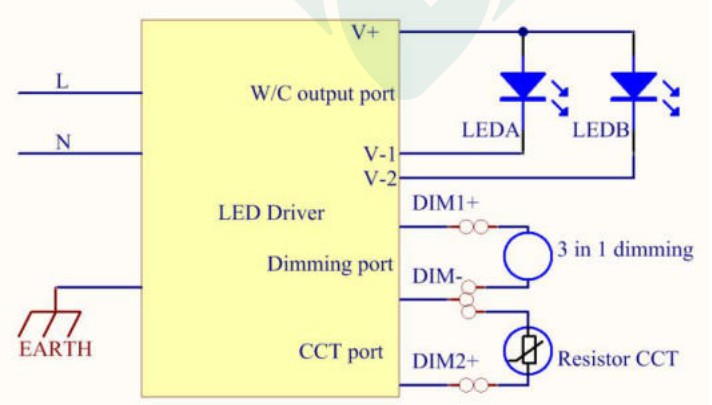


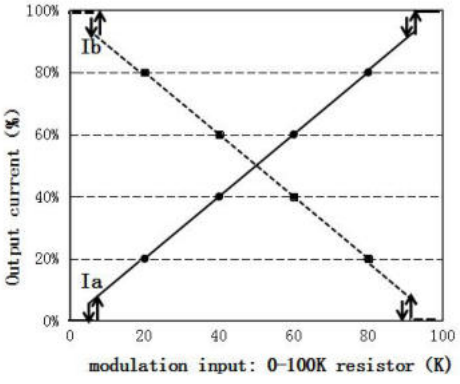
◎ Applying additive 10V PWM signal（Frequency range：300Hz-2K Hz）：





◎ With an additional 0-100K resistor:





Remark:

1.IA Is the average current of channel A，and Ia=IA/Ioset，Is the current proportion of channel A；IB Is the current of channel B，and Ib=IB/Ioset，Is the current proportion of channel B。Ioset Is the total output current preset。

2.When setting negative logic toning，Ia and Ib swap。

3. 0-5V color modulation is available through software。

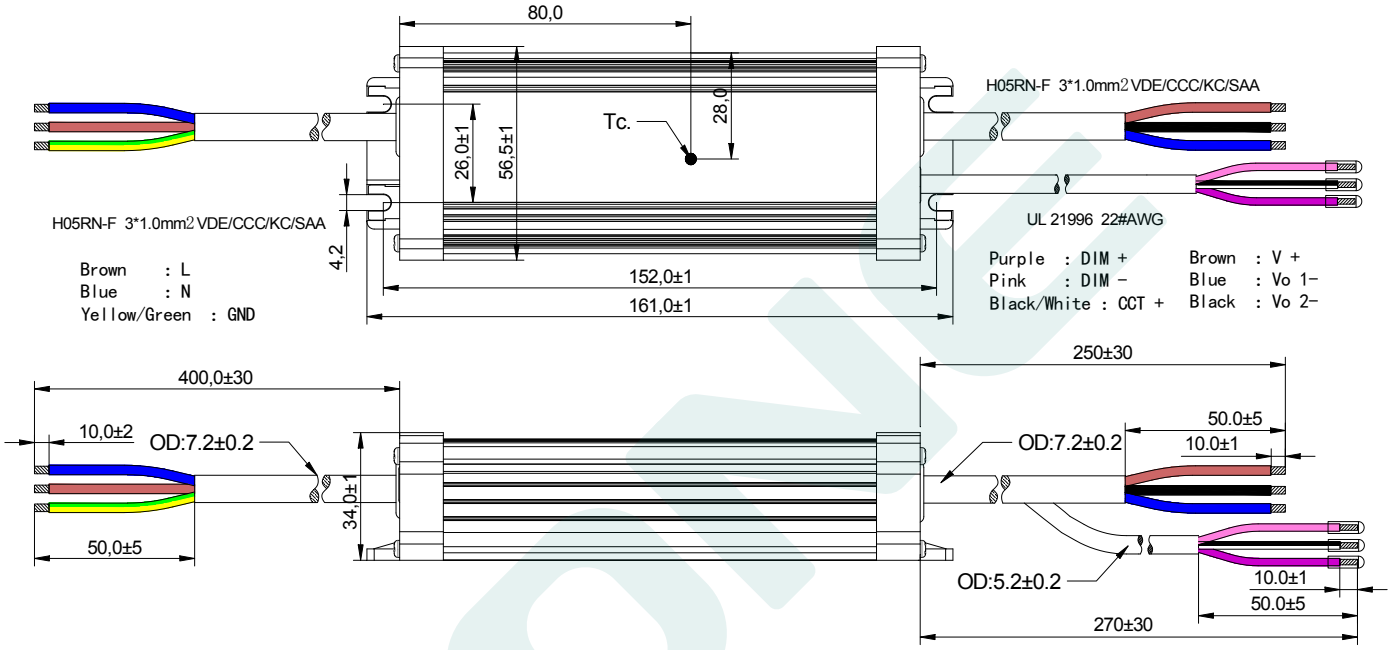
Mechanical specification

Size（mm）	L161mm*W56.5mm*H34mm

Dimension drawing

DL-100H-V38C-MAS

DL-100H-V58C-MAS

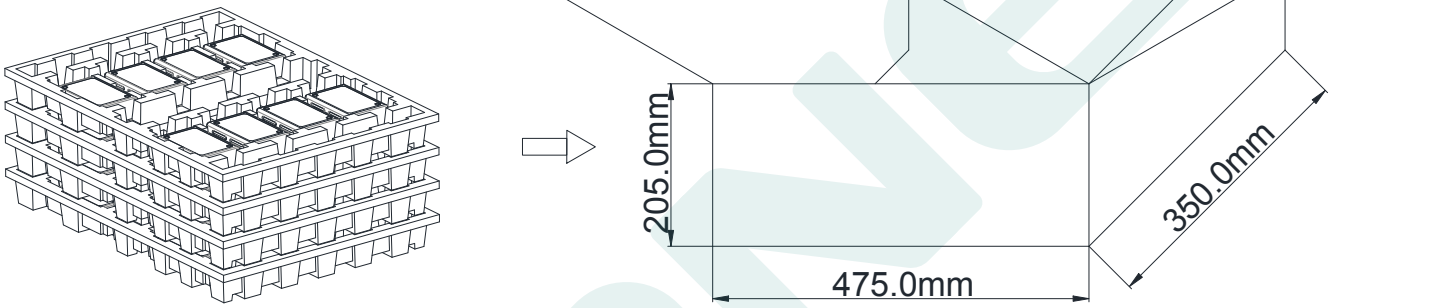


Weight

Weight	630g

Packaging

Packaging（mm）	L475*W350*H205



Note：One Carton 4 layers and 8 pcs each layer, total 32pcs/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
2023.4.18	Initial version.	V1.0	2023.04.27 10:49:39 +08'00'

MANUFACTRUER		
EDIT	CHECK	APPROVE
WCW 2023.04.24 14:29:44 +08'00'	TQC 2023.04.26 08:02:33 +08'00'	数字签名者：张鸿生 DN：cn=张鸿生, o, ou, email=978425630@qq.com, c=<无 日期：2023.05.03 13:44:23 +08'00'