MAGTECH
The Power To Drive Innovations

Project Name:	
Type:	

MCF(G)-060 Series

60W Outdoor Driver

PRODUCT FEATURE

- Input voltage range: 90~305 Vac;
- Constant power design, outputs programmable;
- Adjustable output current by software
- Multiple dimming capability (P types): 0/1~10Vdc / PWM / Step time dimming;
- Dim to Off
- Support DALI Dimming (L types): DALI-2 DT6
- Provide auxiliary power: 5V/ 12V/ 24V, 2.4W max:
- Surge protection: 5KV line-line, 10KV line-earth (MCF);
- Protections: SCP / OVP / OTP;
- IP67 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty

Notes : MCF-060 0 is Class I type, MCG-060 is Class II type

APPLICATION

Street Lighting, architecture lighting, industrial lighting, flood lighting, etc.

WARRANTY

- See Limited Warranty Policy for more additional information

MODEL ENCODING

M C F - 060 - 062 XY
① ② ③ ④ ⑤ ⑥

SERIAL NUMBER	ITEM	DEFINITION
①	Structure	**M:** Metal case **P:** Plastic case **O:** Open frame (It can add module power supply, iron shell power supply, and etc.)
②	Type	**C:** Constant current **V:** Constant voltage **P:** Constant current & constant voltage (Other specifications can be defined later, such as **I:** Industrial power supply, **R:** Rainproof power supply, **S:** Customized power supply, etc.)
③	Series Name	**F:** Class I **G:** Class II
④	Rated Wattage	3 to 4 digits (such as 105 means 105)
⑤	Output Voltage	Maximum voltage
⑥	Dimming	**X** (**N:** No dimming, **P :** Programmable with wire dimming and time step dimming, **L :** DALI dimming **Y** (Y=0-24v auxiliary power supply)

DIMMING	FUNCTION	NOTES
P	programmable with wire dimming and time step dimming	
L	Dimming capability EN62386-101(DALI-2),EN62386-102(DALI-2), EN62386-207(DALI-2)	
P12	programmable with wire dimming and time step dimming, 12v auxiliary power supply	Auxiliary power supply isolated from the output
L12	Dimming capability EN62386-101(DALI-2),EN62386-102(DALI-2), EN62386-207(DALI-2), 12v auxiliary power supply	

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60W Outdoor Driver

SPECIFICATION					
MODEL		**41**	**54**	**62**	**108**
MCF(G)-060-XXX					
INPUT	Efficiency (230Vac)(Typ.)	88%	88%	89%	89%
	Voltage Range (V)	90~305Vac, OR 127~ 430Vdc			
	Rated Voltage (V)	100~277Vac			
	Frequency Range (Hz)	47~63			
	Power Factor	PF>0.97/120VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load			
	THD	THD<10% when output loading≧50% at 120VAC/230VAC THD<15% when output loading≧50% at 277VAC (Take refer to THD vs. Load Curve for details)			
	AC Current (Max.)	1.5A MAX at 120Vac, 0.7A MAX at 230Vac			
	Inrush Current (Max.)	COLD START 75A(twidth=316μs measured at 50% Ipeak) at 230VAC, Per NEMA410			
	Leakage Current (Max.)	0.75mA at 277Vac/60Hz			
	MAX. No. of PSUs on 16A Circuit Breaker	3 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC			
	Standby Power Consumption	Standby Power Consumption<0.5W			
OUTPUT	Rated Output Voltage (V)	28-41	36-54	50-62	71-108
	Output Voltage Range (V)	20-41	32-54	38-62	54-108
	Rated Current (A)	1.46-1.88	1.11-1.67	0.97-1.20	0.55-0.84
	Rated Power (W)	60	60	60	60
	Initial Current Setting Range（Iset） (A)	1.32-1.88	1.17-1.67	0.84-1.20	0.59-0.84
	Dimming Range (A)	0.188-1.88	0.167-1.67	0.12-1.20	0.084-0.84
	Initial Current(A)	1.4	1.2	1.05	0.7
	Ripple Current (Typ.)	5% of Io_max. ((PK-AV) /AV) with LED loading mode and full load. Note: All specifications are tested by Cree XLamp XP-G2 and typical measured at 230Vac and 25℃ unless otherwise stated.)			
	Current Tolerance	<5%			
	Line Regulation	<1%			
	Load Regulation	<3%			
	Setup Time	<2s, at 120Vac; <0.5s, at 230Vac(P type);<1s, at 230Vac(L type)			
	DC AUX Power	12V Selectable; Max Output Current：200mA; Output Voltage Tolerance: ±10%; Max Output Power：2.4W			
	DIM+ Short/Source Current	150uA~350uA (P type) ,<2mA (L type)			
PROTECTION	Short Circuit Protect (SCP)	Hiccup mode, recover automatically with short circuit removed（P type）. Latched mode, recover by DALI command or cycling AC input power（L type）.			
	Over Voltage Protect (OVP)	Voltage limiting. Output current is decreased if the required loading voltage is higher than MAX. output voltage.			
	Over Temperature Protect (OTP)	Decrease the output current, but not less than 20% of rated output current, recover automatically once the fault condition is removed.			

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MCF(G)-060 Series

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SPECIFICATION					
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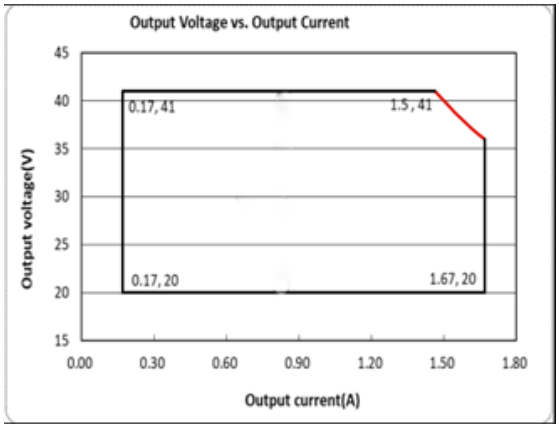
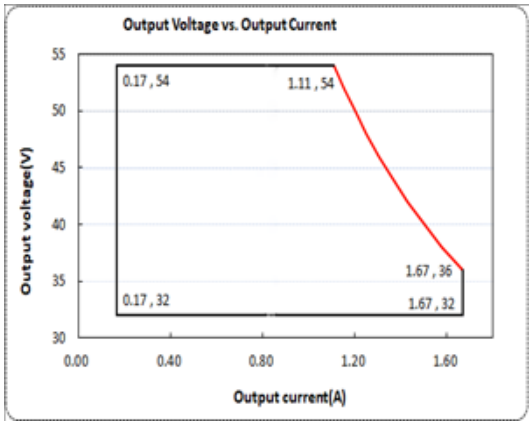
MCF(G)-060-XXX					
ENVIRONMENTAL	Working Temperature	-40~+60°C(Refer to 'Derating Curve')			
	Max. Case Temperature (Tc)	90°C max			
	Working Humidity	20~95%RH			
	Storage Temp., Humidity	-40~+85°C，10-95%RH			
	Vibration	10-500Hz, 5G 12min/cycle, period for 72min each along X、Y、Z axes			
SAFETY & EMC	Safety Standard	UL8750, CSA C22.2 No. 250.13-12; ENEC EN61347-1, EN61347-2-13 independent, EN62384; GB19510.1,GB19510.14			
	Withstand Voltage	MCF: I/P-O/P: 3.75kVac, I/P-FG:1.65kVac, O/P-FG:1.5kVac MCG: I/P-O/P: 3.75kVac, I/P-FG:3.75kVac, O/P-FG:1.5kVac			
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms (500VDC / 25°C/ 70% RH)			
	EMC Emission	FCC Part 15 Class B/ EN55015, EN61000-3-2 Class C, EN61000-3-3			
	EMC Immunity	MCF: EN61000-4-2,3,4,5,6,8,11, EN61547 (Surge: L-N: ±5kV, L,N-FG: ±10kV) MCG: EN61000-4-2,3,4,5,6,8,11, EN61547 (Surge: L-N: ±5kV, L,N-FG: ±5kV)			
DALI INTERFACE	DALI Standards	EN62386-101(DALI-2),EN62386-102(DALI-2), EN62386-207(DALI-2)			
OTHERS	MTBF	200000Hrs @25℃±10℃ ambient temperature, 230Vac,80% load (MIL-HDBK-217F)			
	Lifetime	50000Hrs@80℃ case temperature (Refer to 'Lifetime Curve')			
	Dimension	134 x 66.2 x 36.8mm (L x W x H)			
	Weight (Typ.)	580±50g /pcs			

OPERATING AREA I-V

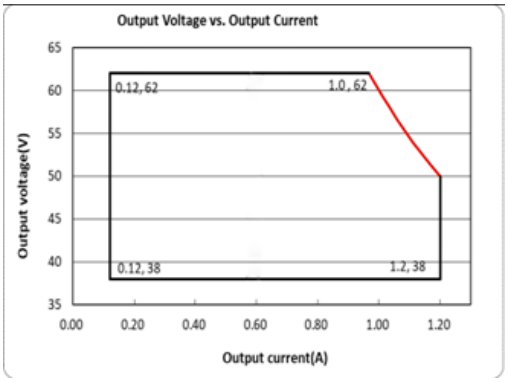
MCF(G)-060-041XY



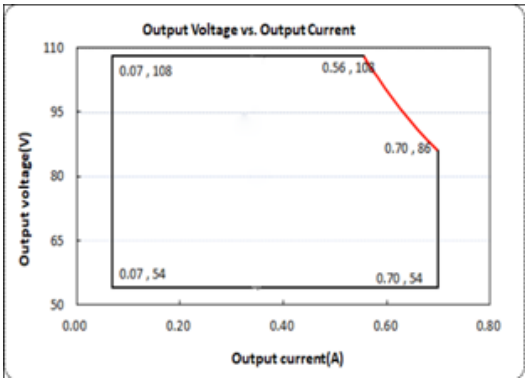
MCF(G)-060-054XY



MCF(G)-060-062XY



MCF(G)-060-108XY



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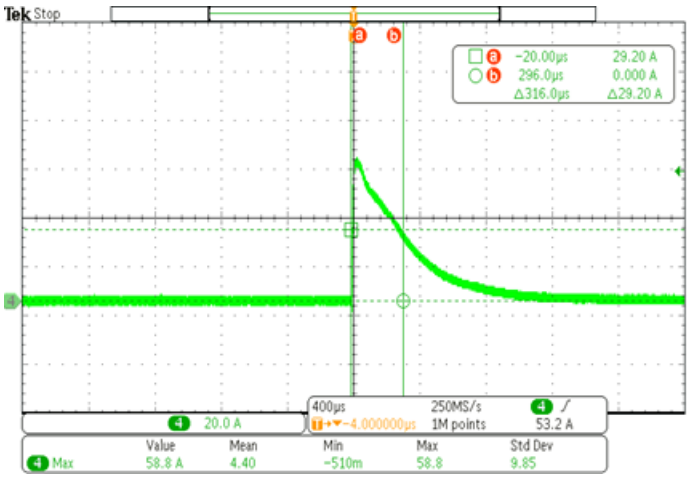
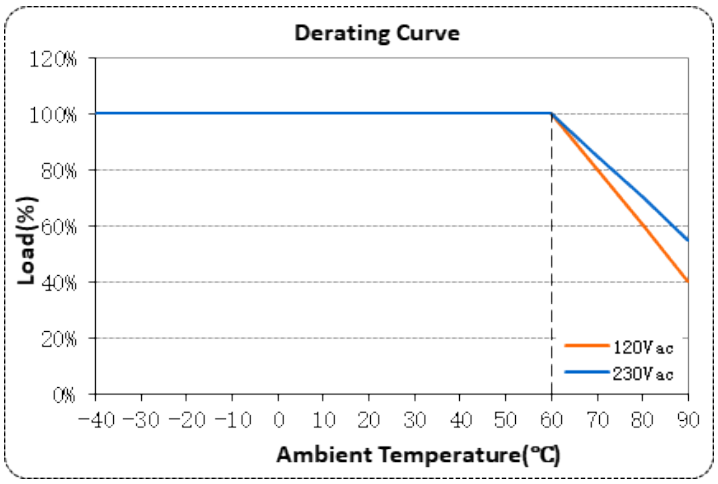
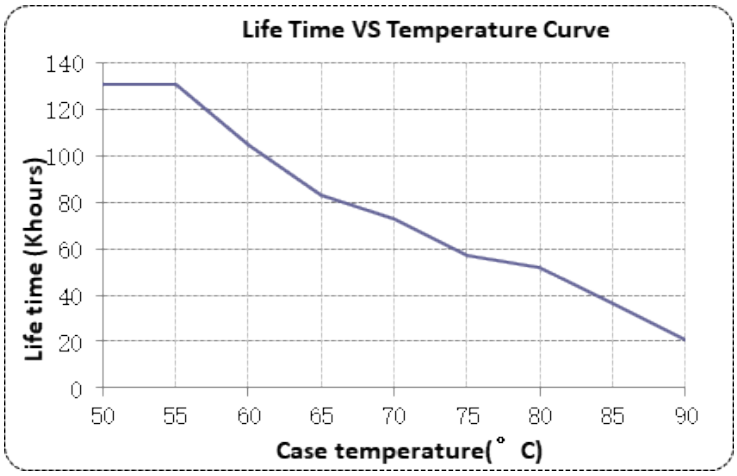
INRUSH CURRENT WAVEFORM



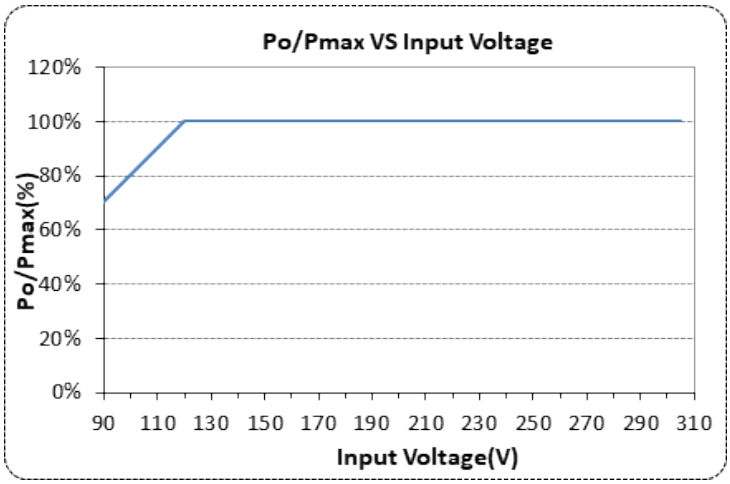
DERATING CURVE



LIFETIME VS CASE TEMPERATURE

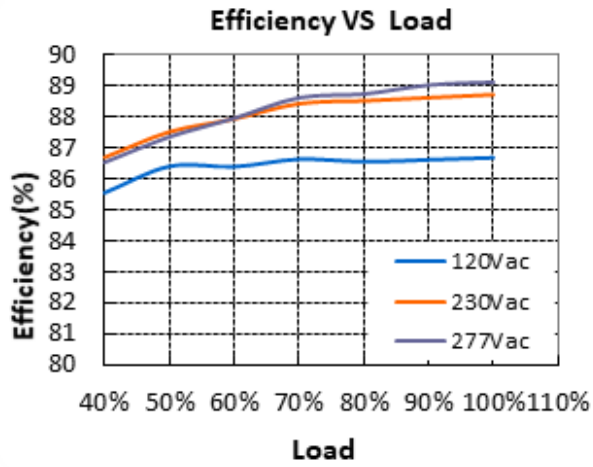


OUTPUT POWER VS INPUT VOLTAGE

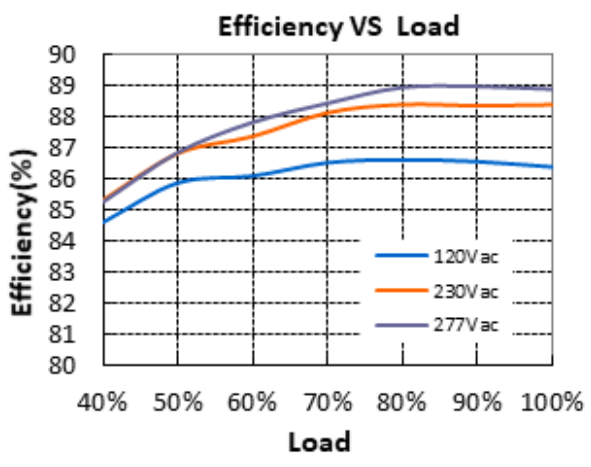


EFFICIENCY VS LOAD

MCF(G)-060-041XY (Uo=36V)



MCF(G)-060-054XY (Uo=42V)



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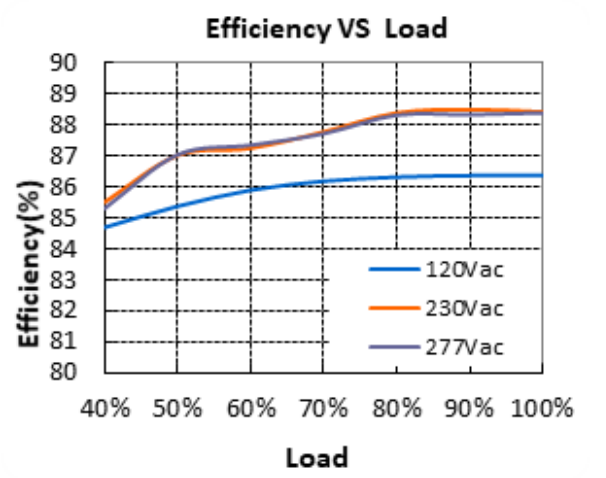
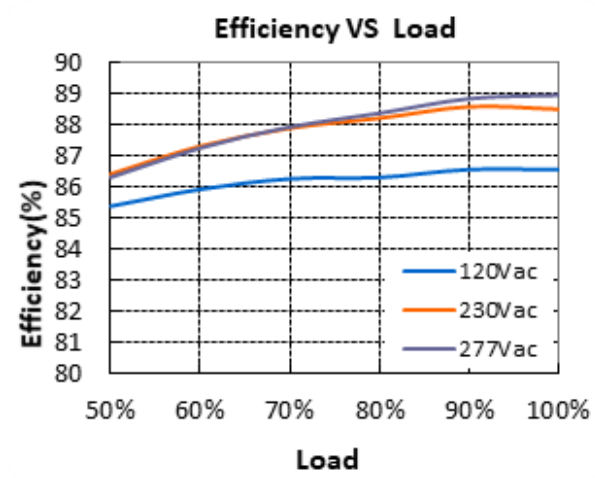
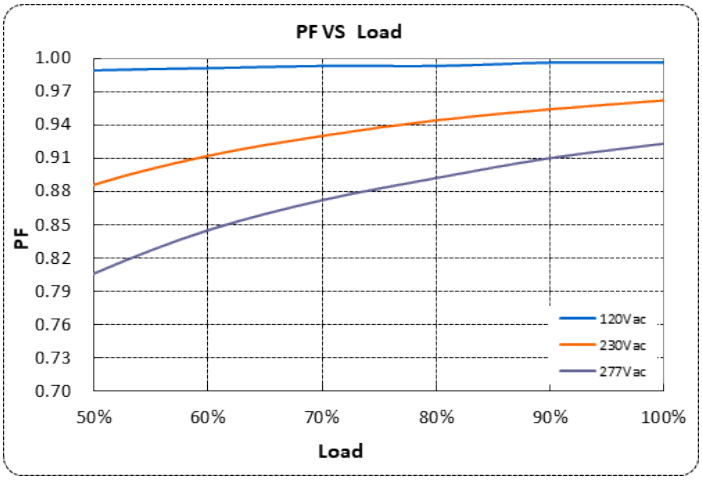
MCF(G)-060-062XY (Uo=48V)



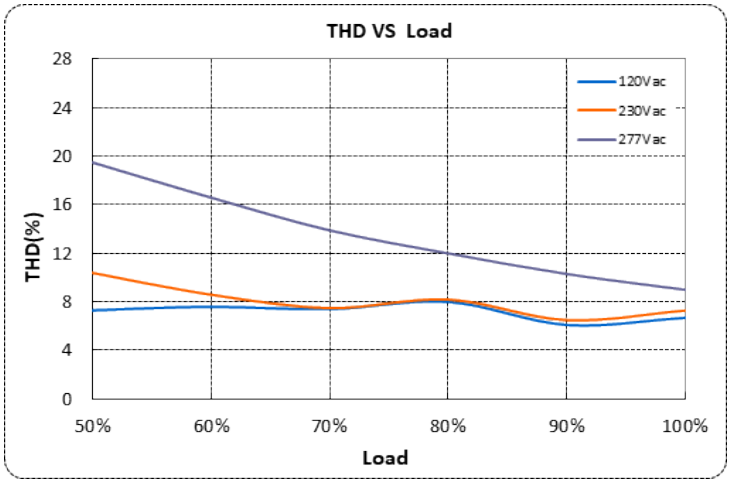
MCF(G)-060-108XY (Uo=0.7A)



POWER FACTOR VS LOAD



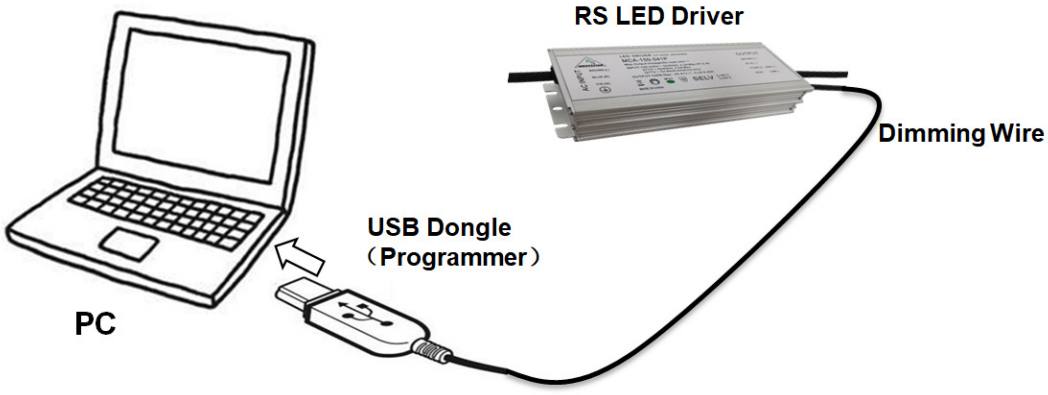
TOTAL HARMONIC DISTORTION



INSTRUCTION

1. Field Programmable Topology.

The programmable driver can be programmed by using special PC software and the programmer module.



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2. Dimming Interface Description
Pin description

PIN	NAME	VALUE	DESCRIPTION	COLOR
1	VAUX 5V/ 12V/ 24V	4.5V – 5.5V 10.8V – 13.2V 21.6V – 26.4V	Auxiliary DC power supply	Brown
2	VAUX GND	0V	Auxiliary DC power ground	Blue
3	Dim+/ Prog+	0 – 10V	Dimming/ Programming input	White
4	Dim-/ Com	0V	Common terminal of Dim/ Prog./ Aux	Black

3. Dimming Software Function Instruction

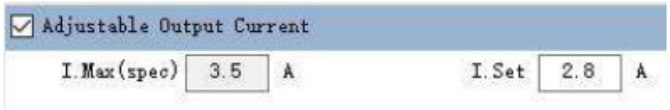
- **Communication Setup**

Click "Connect" to set up the link between the computer and the USB dongle.

- **Driver Identification**

Click "Read" to identify the driver, then fill in the part number and max current automatically.

- **Adjustable Output Current (AOC)**

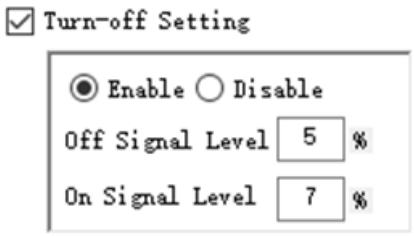


Click ON "☑" to activate the output current configuration, I. Max(Spec) is filled in automatically during identify driver, I. Set can be filled in any value lower than I. Max(spec).

- **Dimming Selection and Setting**

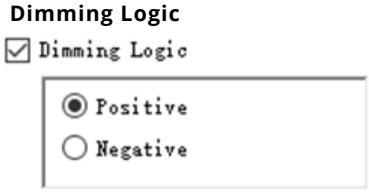
Click ON "☑" to activate the dimming selection and setting, or else no update during current setting. Choose one of the control method listed below to go with, then the related setting interface will appear.

- **Turn-Off signal setting**



Click ON "☑" to active the turn-off function configuration. Choose "enable" or "disable", and set the turn on and off dimming signal when "enable" selected. In turn off status, the driver will output minimum output voltage, please make sure the LED lamp can be turned off when applied with this level voltage.

- **Dimming Logic**



Click ON " ☑ " to activate the dimming logic configuration, default setting is "Positive" logic, it means the output current will increase with the dimming signal level up; and "Negative" logic will decrease the output current with dimming signal level up.

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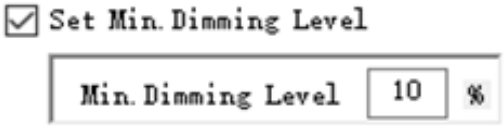
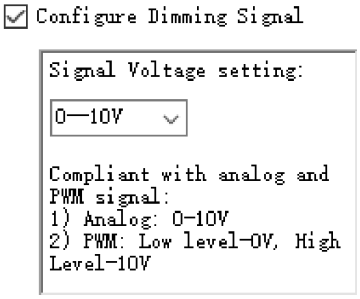
- **Set Minimum Dimming Level**



Set the minimum dimming output current, default setting is 10%

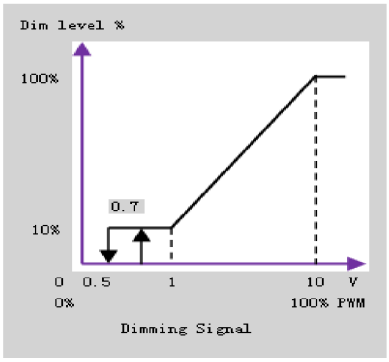
- **Dimming Signal Configuration**



Click ON "☑" to activate dimming signal configuration, the dimming signal can be analog or PWM signal, here to set the value of the high level of these two signals, the setting can be:

0-3.3V, 0-5V, 0-9V, 0-10V

For example, if 0-10V is selected, the dimming signal will be:
1.) Analog: 0-10V.
2.) PWM: Low level-0V, High Level-10V.



This graph presents how the output current will react to the dimming signal, including analog and PWM dimming signal.

- **Configure Time Step Dimming (TSD)**

Click ON "☑ " to activate Time Step Dimming configuration

Step(0): Setting the fading time of soft start, maximum value can be 10 seconds.

Step (1)-(7): Maximum time step number is 7, and the output current can be set according to the customer requirements to save energy.

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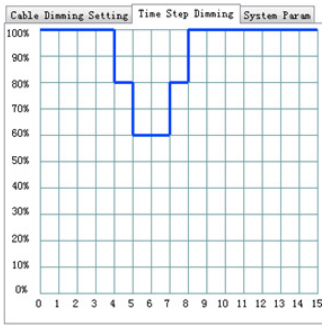
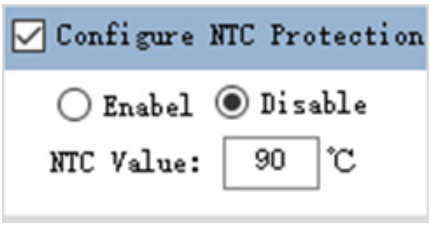


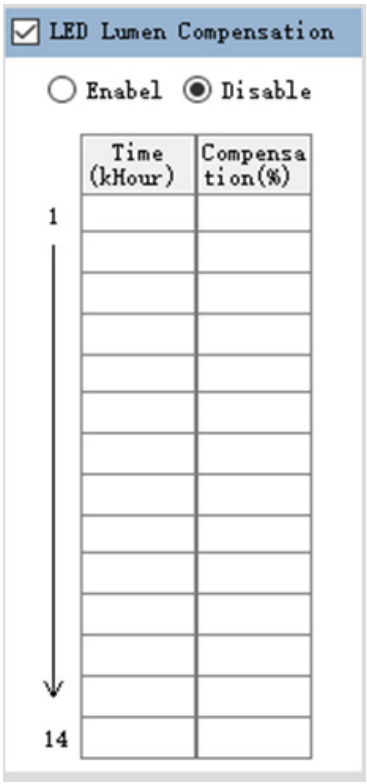
The graph presents how the output current will react to the setting of time step dimming.

- **Configure NTC Protection**



Click ON "☑" to activate NTC configuration Choose "enable" or "disable", and set NTC value when "enable" selected.

- **LED Lumen Compensation (LLC)**



Click ON "☑" to activate NTC configuration Choose "enable" or "disable", and set Time VS Compensation value when "enable" selected.

The compensation can be set for maximum 14 periods, "Time" Column define the working hours for the defined "Compensation" ratio. For example, if "compensation" is set to 1%, and the corresponding "Time" is set to 10, that means the output current will be set to 101% of rated current for 10K hours at this interval.

- **Program**

Click "Program" button to burn the setting into drivers.

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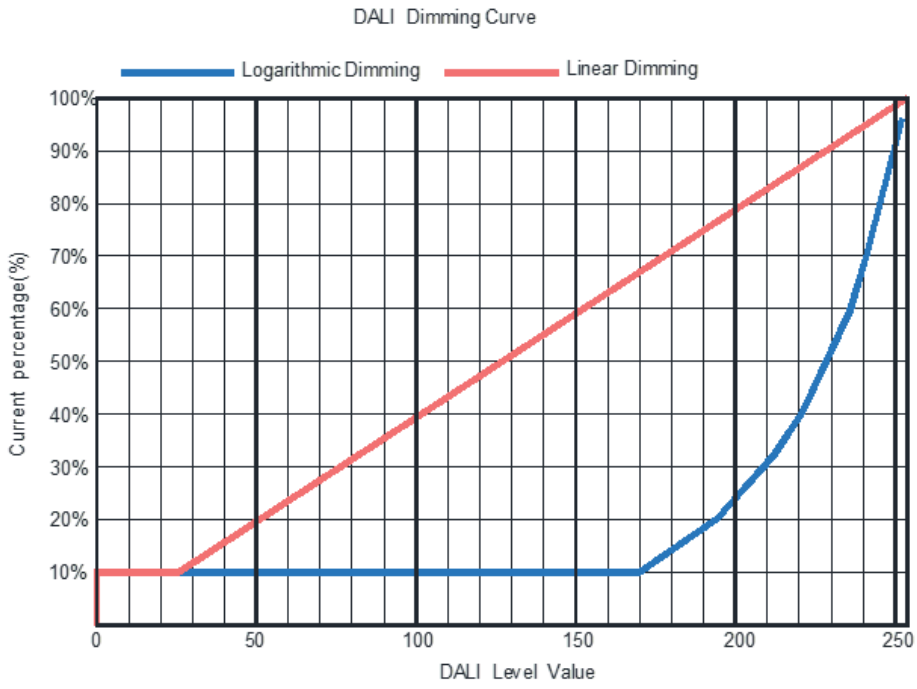
INSTRUCTION (L type)

1. Dimming Interface Description

Pin Description

PIN	NAME	VALUE	DESCRIPTION	COLORS
1	Vaux 12V	10.8V-13.2V	Auxiliary DC power supply	BROWN
2	Vaux GND	0V	Auxiliary DC power ground	BLUE
3	DA		Dimming input	WHITE(L12)/PURPLE(L)
4	DA		Dimming input	BLACK(L12)/GRAY(L)

2. DALI Interface



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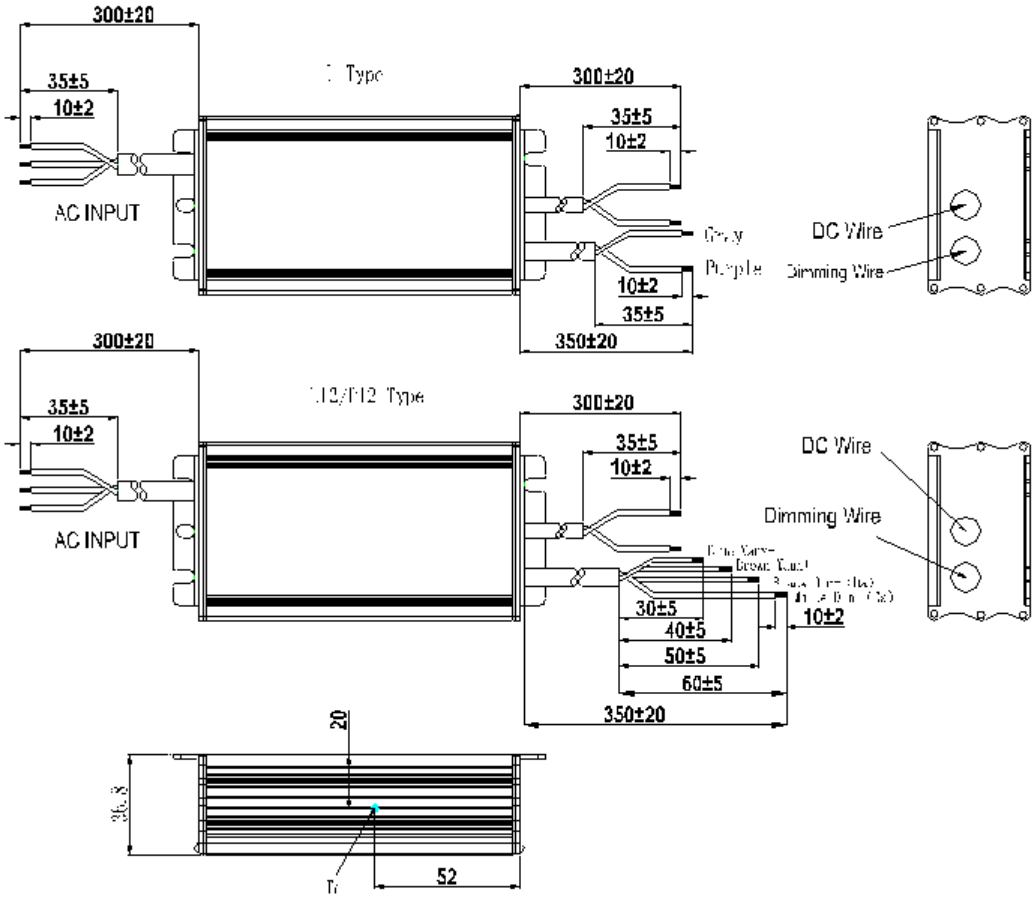
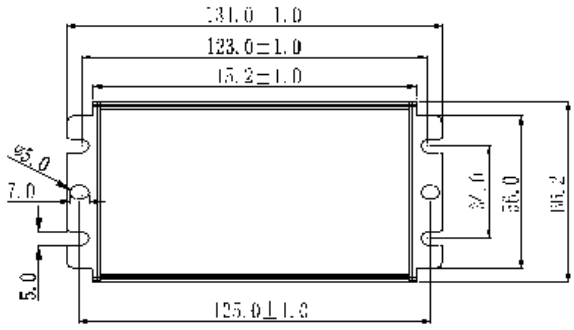
MECHANICAL OUTLINE

MCF-060W



WIRE	SPECIFICATION	NOTE
Input	CCC+VDE H05RN-F 3*1.0mm² L=300mm	for CE
	L（BROWN） N（BLUE） G（Y/G）	
	18AWG*3C SJOW L=300mm	for UL
	L（BLACK） N（WHITE） G（GREEN）	
Output	CCC+VDE H05RN-F 2*1.0mm² L=300mm	for CE
	+（BROWN）-（BLUE）	
	18AWG*2C SJOW L=300mm	for UL
	+（RED）-（BLACK）	
Dimming	22AWG*2C UL2733 L=350mm	for CE (for L)
	DIM+（PURPLE）DIM-（GRAY）	
	22AWG*2C UL2733 L=350mm	for UL (for L)
	DIM+（PURPLE）DIM-（PINK）	
	22AWG*4C UL2517 L=350mm	for CE(for P12,for L12)
	DIM+DA（WHITE） DIM-DA（BLACK） 12V+（BROWN）12V-（BLUE）	
	22AWG*4C UL2517 L=350mm	for UL(for P12,for L12)
	DIM+DA（WHITE） DIM-DA（PINK）12V+（BROWN）12V-（BLUE）	



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Project Name:	
Type:	

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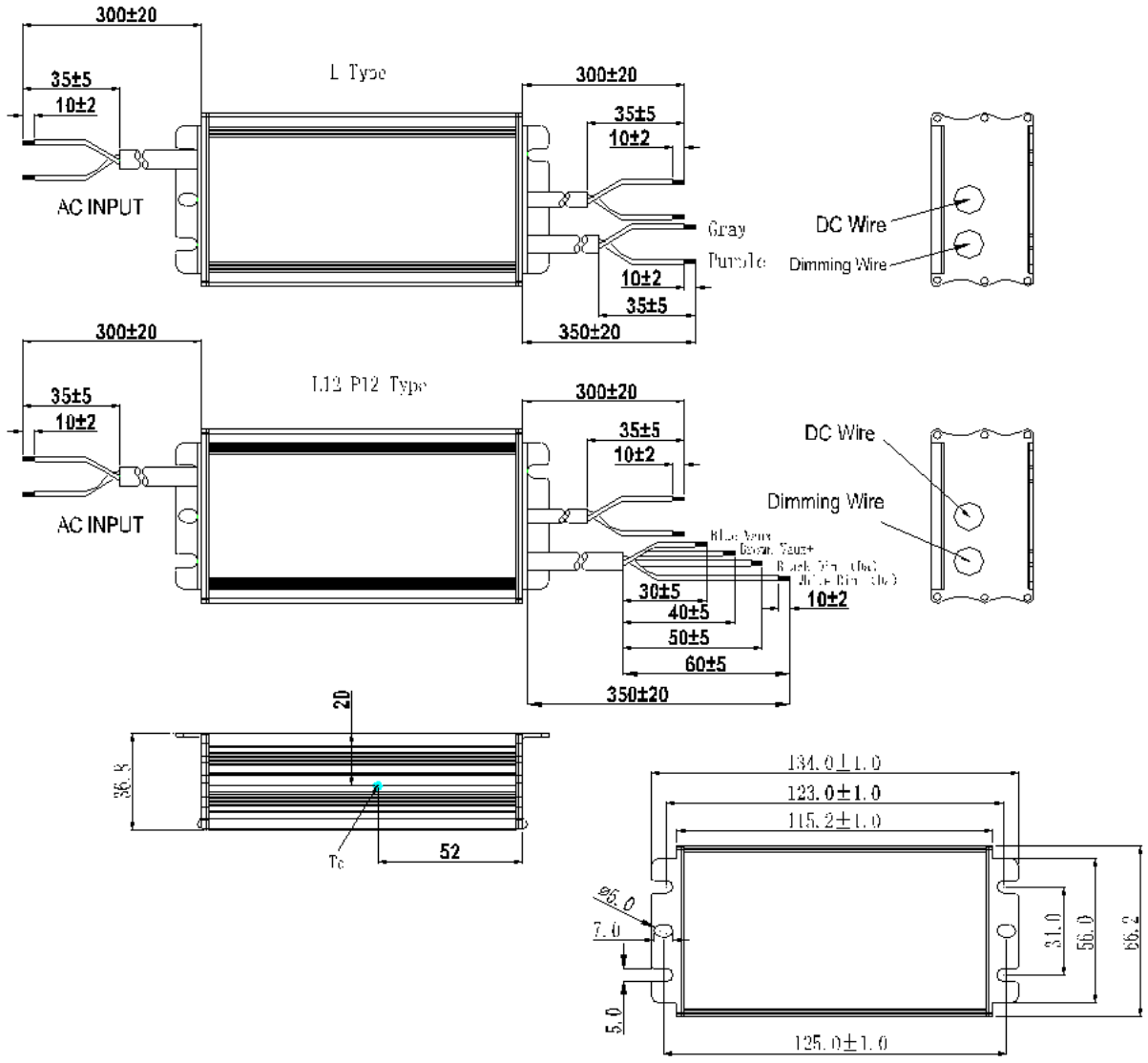
MECHANICAL OUTLINE

MCG-060W



WIRE	SPECIFICATION	NOTE
Input	CCC+VDE H05RN-F 2*1.0mm² L=300mm	for CE
	L（BROWN） N（BLUE）	
Output	CCC+VDE H05RN-F 2*1.0mm² L=300mm	
	+（BROWN）-（BLUE）	
Dimming	22AWG*2C UL2733 L=350mm	for L
	DIM+（PURPLE）DIM-（GRAY）	
	22AWG*4C UL2517 L=350mm	for P12,for L12
	DIM+DA（WHITE） DIM-DA（BLACK） 12V+（BROWN）12V-（BLUE）	

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