

Project Name:	
Type:	

# MCF(G)-200W Series

### 200W 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;
- Protections: SCP / OVP / OTP;
- IP67 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty



Notes : MCF-200 0 is Class I type, MCG-200 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 - 200 - 062 XY**

① ② ③      ④      ⑤ ⑥

SERIAL NUMBER	ITEM	DEFINITION
①	Structure	<b>M:</b> Metal case <b>P:</b> Plastic case <b>O:</b> Open frame  (It can add module power supply, iron shell power supply, and etc.)
②	Type	<b>C:</b> Constant current <b>V:</b> Constant voltage <b>P:</b> Constant current & constant voltage  (Other specifications can be defined later, such as <b>I:</b> Industrial power supply, <b>R:</b> Rainproof power supply, <b>S:</b> Customized power supply, etc.)
③	Series Name	<b>F:</b> Class I <b>G:</b> Class II
④	Rated Wattage	3 to 4 digits (such as 105 means 105)
⑤	Output Voltage	Maximum voltage
⑥	Dimming	<b>X (N):</b> No dimming, <b>P :</b> Programmable with wire dimming and time step dimming, <b>L :</b> DALI dimming <b>Y</b> (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
L5	Dimming capability EN62386-101(DALI-2), EN62386-102(DALI-2), EN62386-207 (DALI-2), 5V auxiliary power supply	
L12	Dimming capability EN62386-101(DALI-2),EN62386-102(DALI-2), EN62386-207 (DALI-2), 12v auxiliary power supply	
L24	Dimming capability EN62386-101(DALI-2),EN62386-102(DALI-2), EN62386-207 (DALI-2), 24V auxiliary power supply	

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200W Outdoor Driver

SPECIFICATION							
MODEL		041	062	096	143	191	286
MCF(G)-200-XXX							
INPUT	Efficiency (230Vac) Typ.	92%					
	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 $\geq$ 50% at 120VAC/ 230VAC THD<15% when output loading $\geq$ 50% at 277VAC (Take refer to THD vs. Load Curve for details)					
	AC Current (Max)	2.3A MAX at 120Vac, 1.2A MAX at 230Vac					
	Inrush Current (Max)	COLD START 100A (twidh=39 $\mu$ s measured at 50% Ipeak) at 230VAC, Per NEMA410					
	Leakage Current (Max)	0.75mA at 277Vac/60Hz					
	MAX. No. of PSUs on 16S 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)	30 – 41	40 – 62	67 – 96	95 – 143	133 – 191	191 – 286
	Output Voltage Range (V)	20 – 41	38 – 62	48 – 96	70 – 143	96 – 191	143 – 286
	Rated Current (A)	4.88 – 6.67	3.23 – 5.00	2.10 – 3.00	1.40 – 2.10	1.05 – 1.50	0.7 – 1.05
	Rated Power (W)	200					
	Output Current Setting Range/ Dimming Range (A)	0.67 – 6.67	0.50 – 5.00	0.30 – 3.00	0.21 – 2.10	0.15 – 1.50	0.10 – 1.05
	Constant Power Setting Range (A)	4.88 – 6.67	3.23 – 5.00	2.10 – 3.00	1.40 – 2.10	1.05 – 1.50	0.70 – 1.05
	Ripple Current (Typ.)	5% of Io_max. ((PK-AV) /AV) with LED loading mode and full load.)					
	Current Tolerance	<5%					
	Line Regulation	<3%					
	Load Regulation	<3%					
	Setup Time	<1s, at 120Vac; <0.5s, at 230Vac					
	DC AUX Power (P12 Type)	5V/12V/24V Selectable; Max Output Current: 200mA; Output Voltage Tolerance: $\pm$ 10%; Max Output Power: 2.4W					
	Dim to Off	21V Max	25V Max	30V Max	40V Max	60V Max	80V Max
	DIM+ Short/Source Current	Yes, but need to take refer to the above turn-off voltage 150uA~350uA					
PROTECTION	Short Circuit Protect (SCP)	Hiccup mode, recover automatically with short circuit removed.					
	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.					
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	I/P-O/P: 3.75kVac, I/P-FG:1.65kVac, 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	EN61000-4-2,3,4,5,6,8,11, EN61547 (Surge: L-N: $\pm$ 5kV, L,N-FG: $\pm$ 10kV)					
OTHERS	MTBF	200000Hrs @25°C $\pm$ 10°C ambient temperature, 230Vac,80% load (MIL-HDBK-217F)					
	Lifetime	50000Hrs@80°C case temperature (Refer to 'Lifetime Curve')					
	Dimension	204 x 66.2 x 38.5 (L x W x H)					
	Weight (Typ.)	1050 $\pm$ 100g					
RELIABILITY	Screen test <sup>(1)</sup>	336Hrs aging test @95°C & full load without temperature protection					

Notes:

- The test results are based on 14 samples with OTP moved
- All the data are measured under room temperature if not specified.

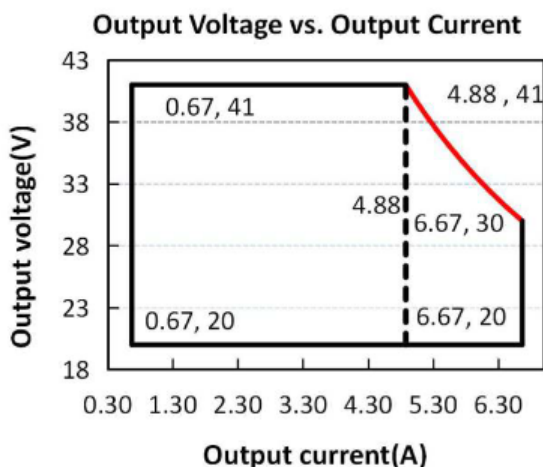
# MCF(G)-200W Series

200W Outdoor Driver

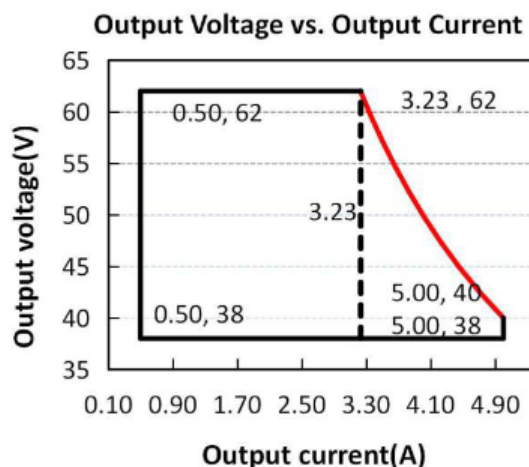
## OPERATING AREA I-V

Project Name:	
Type:	

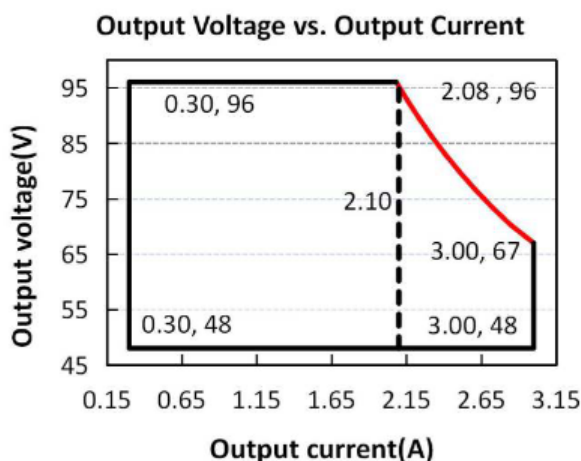
**MCF(G)-200-041XY**



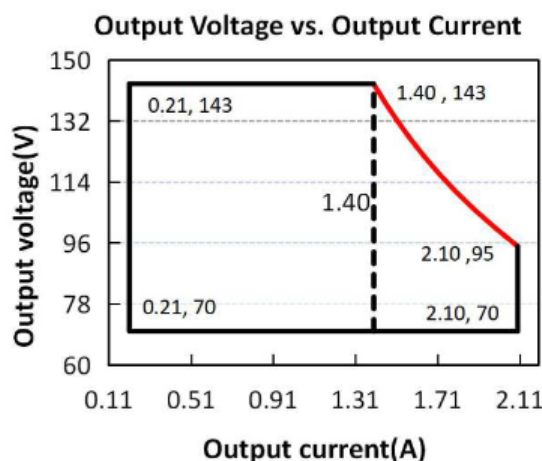
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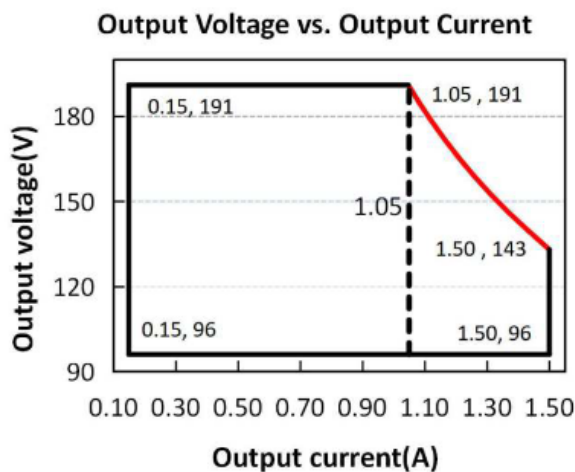
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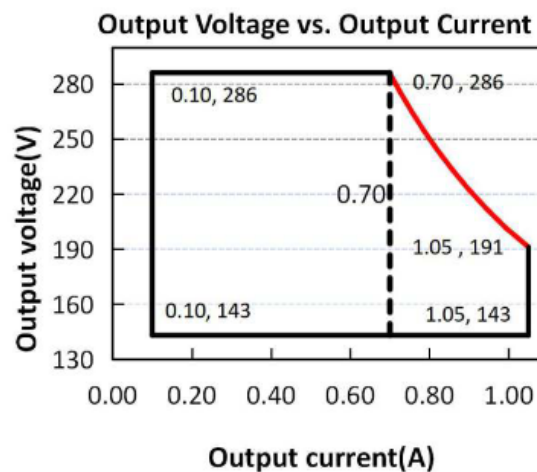
**MCF(G)-200-143XY**



**MCF(G)-200-191XY**



**MCF(G)-200-286XY**



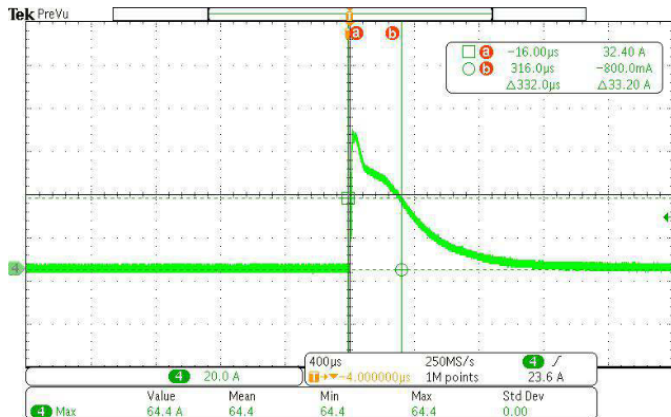
Notes: X=N is suitable for the right area of the dotted line; X=P is suitable for the solid line contain area.

# MCF(G)-200W Series

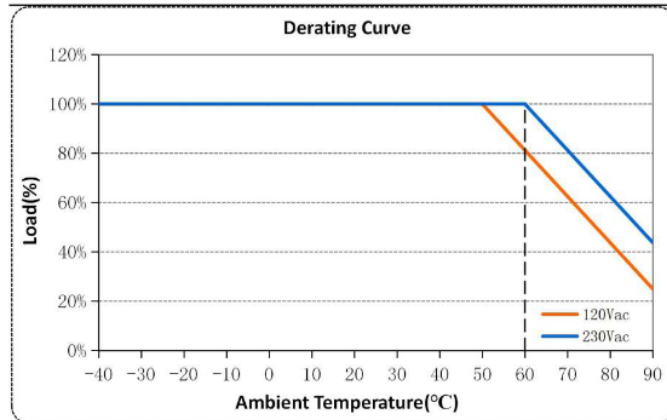
200W Outdoor Driver

Project Name:	
Type:	

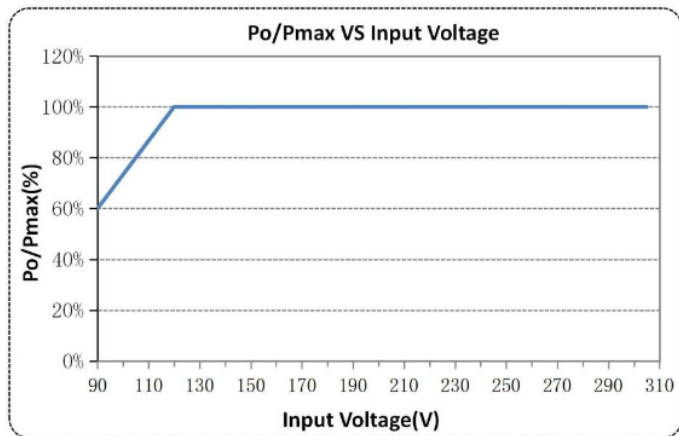
## INRUSH CURRENT WAVEFORM



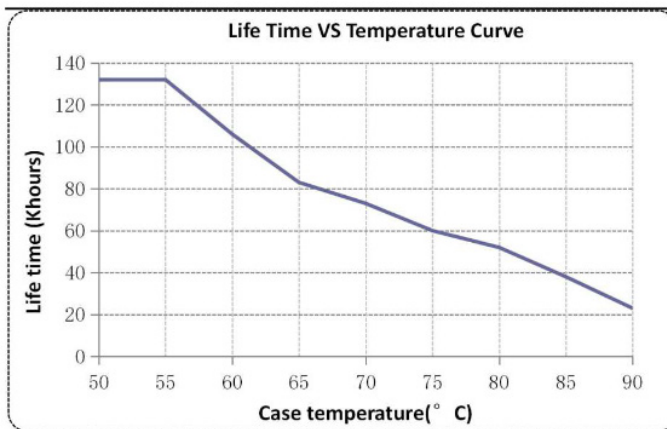
## DERATING CURVE



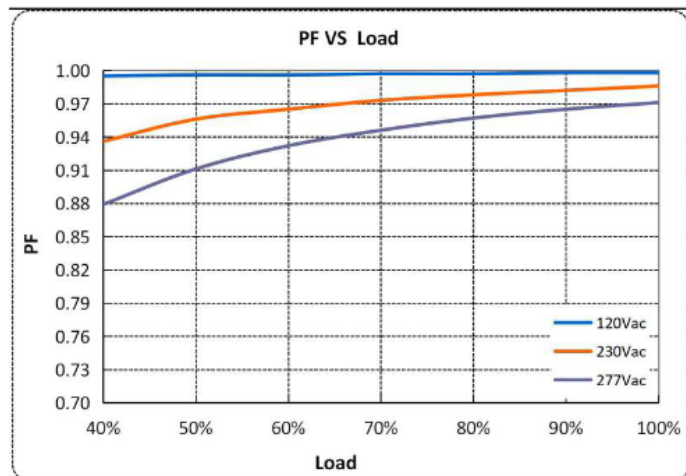
## OUTPUT POWER VS INPUT VOLTAGE



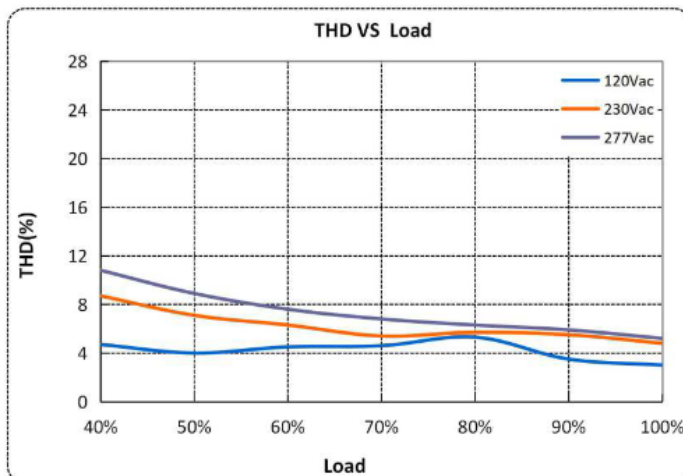
## LIFETIME VS CASE TEMPERATURE



## POWER FACTOR VS LOAD



## TOTAL HARMONIC DISTORTION

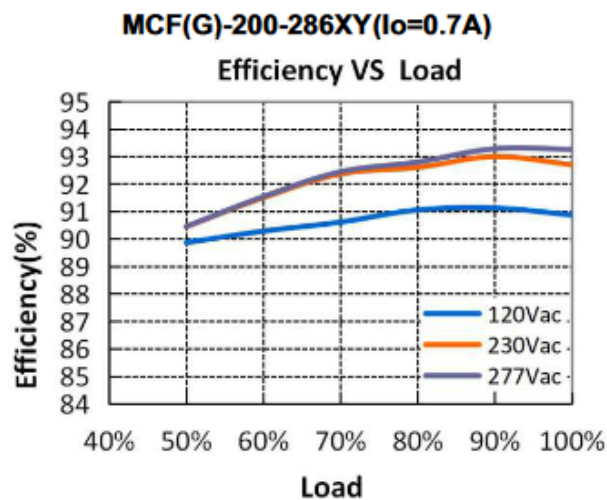
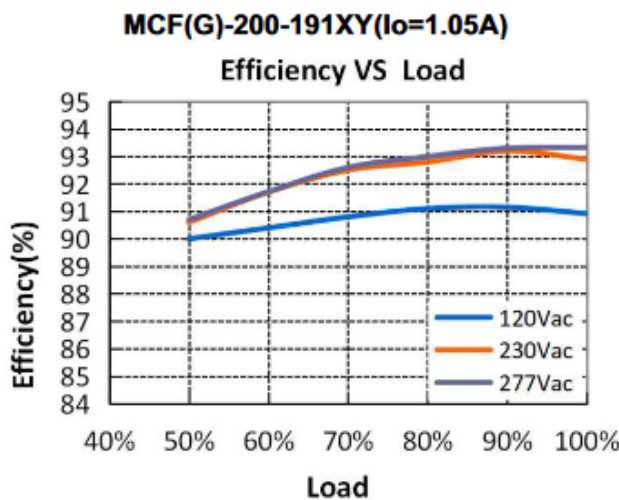
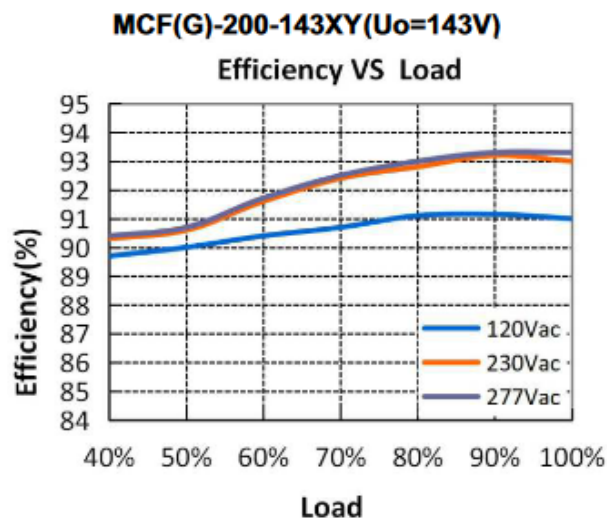
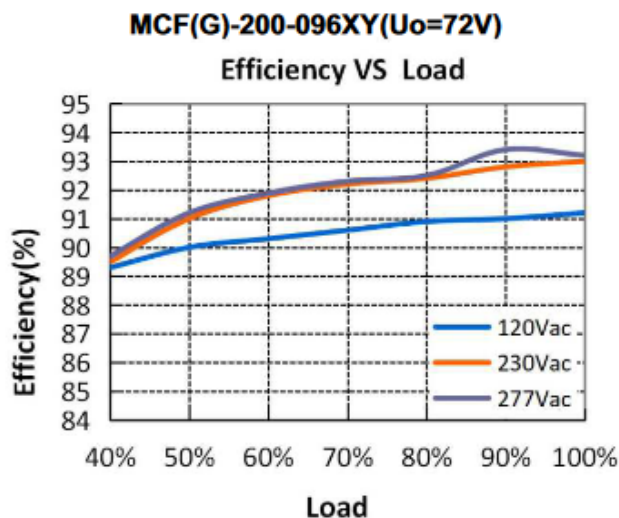
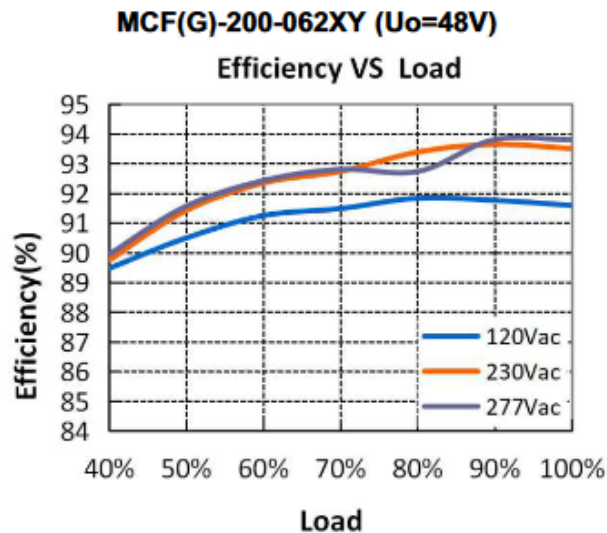
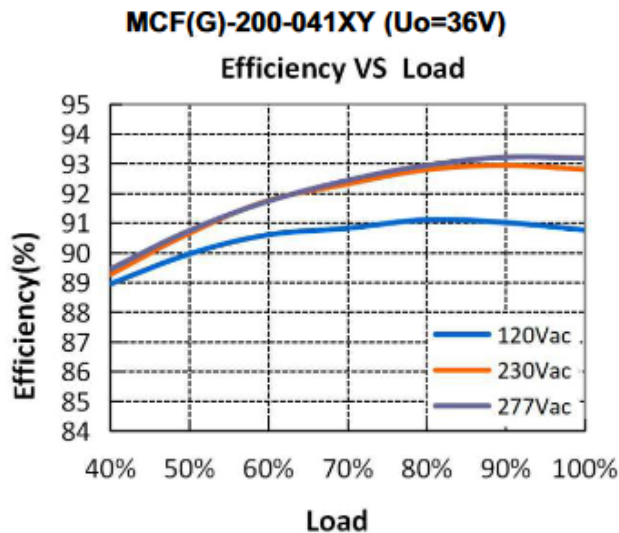




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200W Outdoor Driver

## EFFICIENCY VS LOAD



# MCF(G)-200W Series

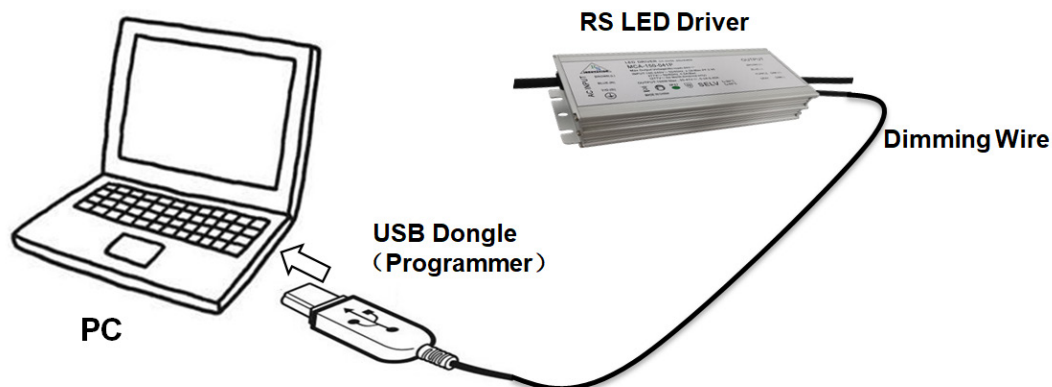
200W Outdoor Driver

Project Name:	
Type:	

## INSTRUCTION

### 1. Field Programmable Topology.

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



## 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

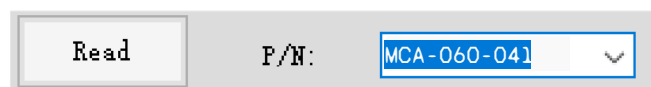
### 3. Dimming Software Function Instruction

#### • Communication Setup



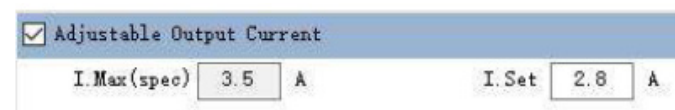
Click "Connect" to set up the link between the computer and the USB dongle.

#### • Driver Identification



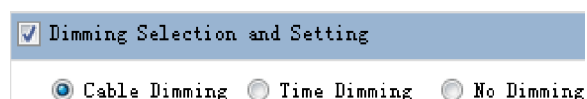
Click "Read" to identify the driver, then fill in the part number and max current automatically.

#### • 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.

# MCF(G)-200W Series

200W Outdoor Driver

## • Turn-Off signal setting

### ☒ Turn-off Setting

☒ Enable ☐ Disable

Off Signal Level  %

On Signal Level  %

Click ON “☒” to activate 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

### ☒ Dimming Logic

☒ Positive

☐ Negative

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.

## • Set Minimum Dimming Level

### ☒ Set Min. Dimming Level

Min. Dimming Level  %

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

## • Dimming Signal Configuration

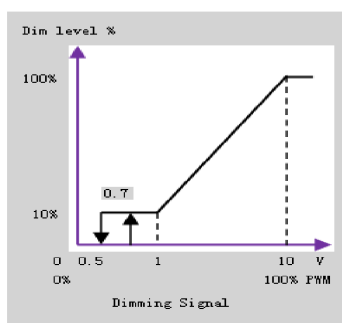
### ☒ Configure Dimming Signal

Signal Voltage setting:

Compliant with analog and PWM signal:

1) Analog: 0-10V

2) PWM: Low level-0V, High Level-10V



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)

### ☒ Configure Time Step Dimming

	Hour	Minute	Power
(0)	<input checked="" type="checkbox"/>	<input type="text" value="10"/>	Second(Soft Start)
(1)	<input checked="" type="checkbox"/>	<input type="text" value="4"/>	<input type="text" value="0"/> <input type="text" value="100"/> %
(2)	<input checked="" type="checkbox"/>	<input type="text" value="1"/>	<input type="text" value="0"/> <input type="text" value="80"/> %
(3)	<input checked="" type="checkbox"/>	<input type="text" value="2"/>	<input type="text" value="0"/> <input type="text" value="60"/> %
(4)	<input checked="" type="checkbox"/>	<input type="text" value="1"/>	<input type="text" value="0"/> <input type="text" value="80"/> %
(5)	<input checked="" type="checkbox"/>	<input type="text" value="3"/>	<input type="text" value="0"/> <input type="text" value="100"/> %
(6)	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="10"/> %
(7)	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="10"/> %

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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200W Outdoor Driver

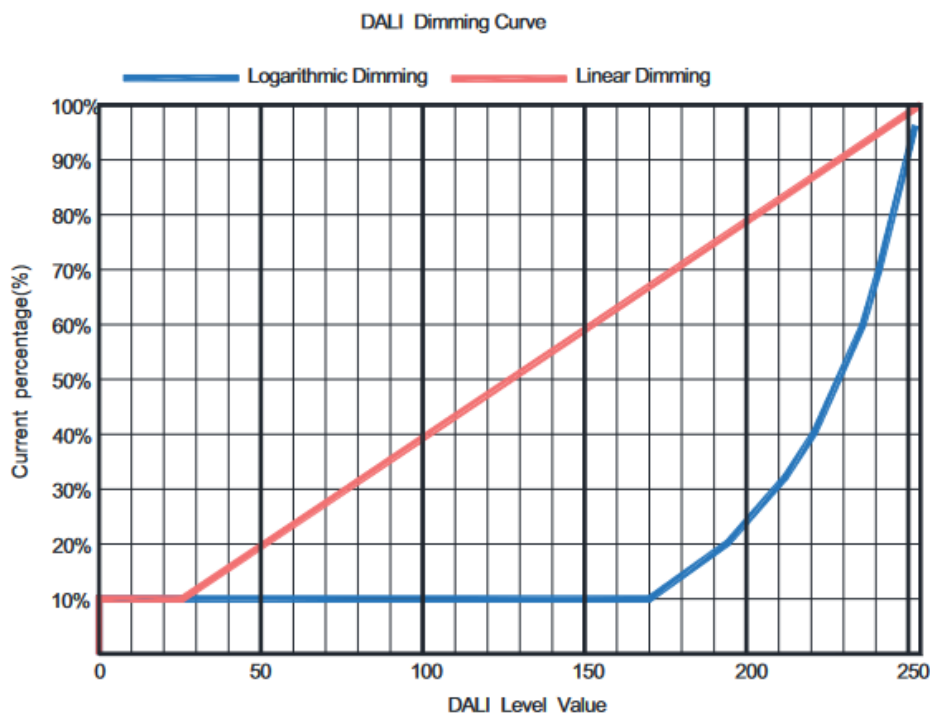
## INSTRUCTION (L type)

### 1. 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	DA		Dimming input	White
4	DA		Dimming input	Black

### 2. DALI Interface



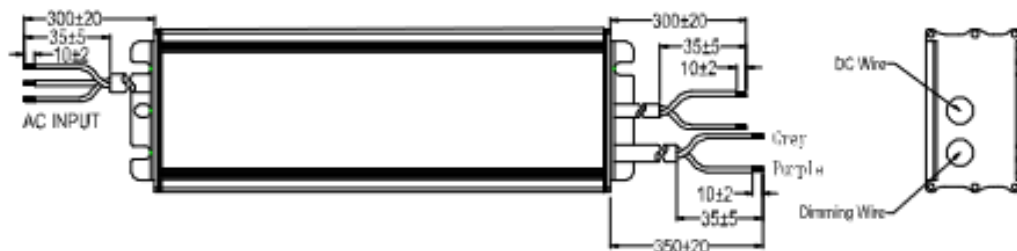
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200W Outdoor Driver

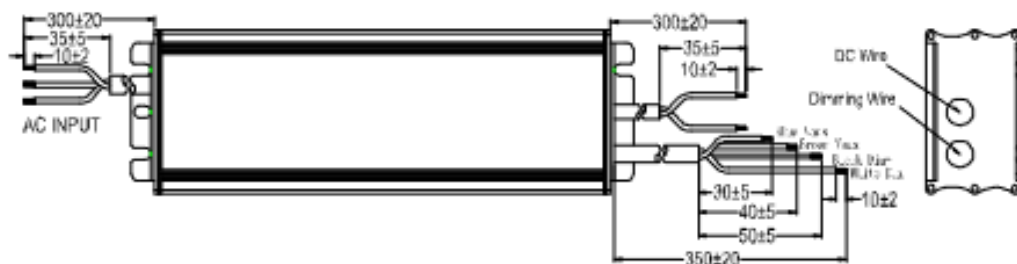
## MECHANICAL OUTLINE

MCF-200W

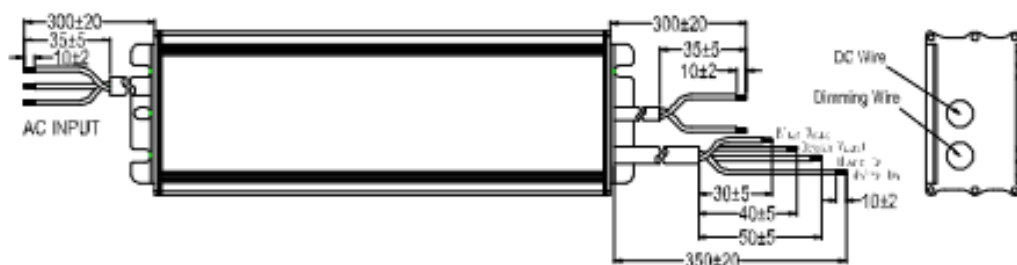
P Type



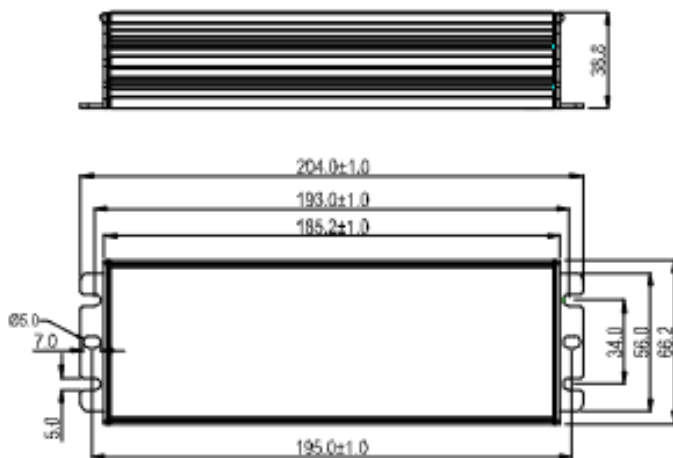
P15 Type



L05/L12/L24 Type



WIRE	SPECIFICATION	NOTE
INPUT	CCC+VDC H05RN-F 3*1.0mm <sup>2</sup> L=300mm	For CE
	18AWG*3C SJOW L=300mm	For UL
OUTPUT	CCC+VDE H05RN-F 2*1.0mm <sup>2</sup> L=300mm	For CE
	18AWG*2C SJOW L=300mm	For UL
DIMMING	22AWG*4C UL2733 L=350mm Dim+ (Purple) Dim- (Grey)	For P, for L
	22AWG*4C UL2517 L=350mm Vaux+ (Brown) Vaux- (Blue) Dim+ (White) Dim- (Black)	
	22AWG*4C UL2517 L=350mm Vaux+ (Brown) Vaux- (Blue)	For P12
	DA (White) DA (Black)	For PL05, for L12

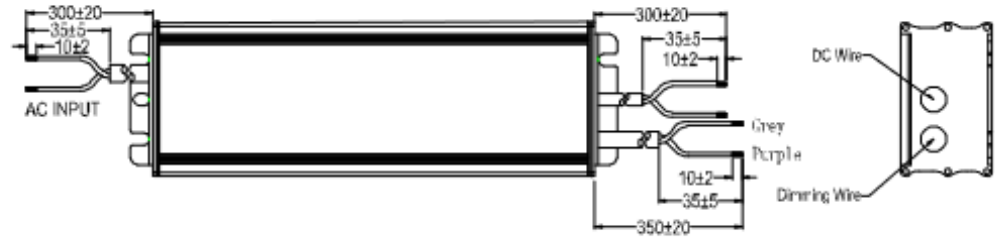


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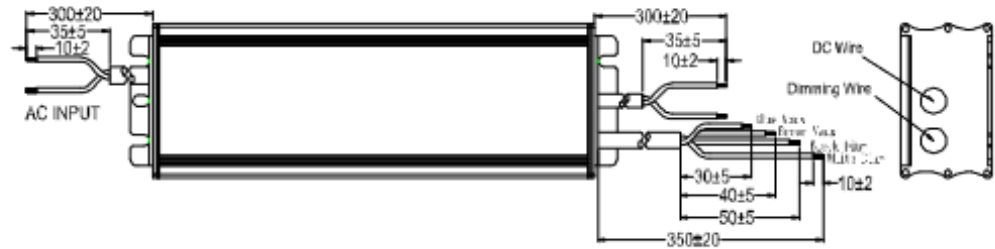
200W Outdoor Driver

## MCG-200W

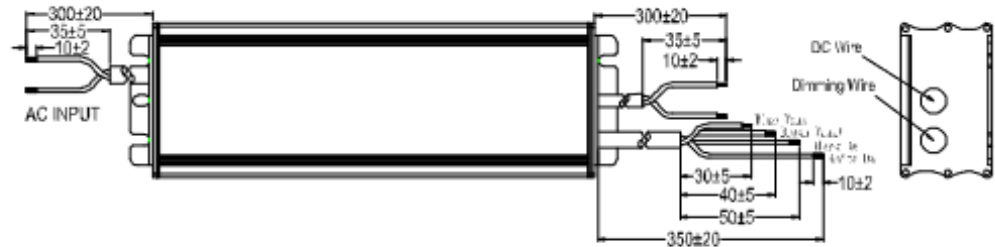
P Type



P12 Type



L05/L12/L24 Type



WIRE	SPECIFICATION	NOTE
INPUT	CCC+VDC H05RN-F 2*1.0mm <sup>2</sup> L=300mm	For CE
OUTPUT	18AWG*2C SJOW L=300mm	For CE
DIMMING	22AWG*4C UL2733 L=350mm Dim+ (Purple) Dim- (Grey)	For P, for L
	22AWG*4C UL2517 L=350mm Vaux+ (Brown) Vaux- (Blue) Dim+ (White) Dim- (Black)	For P12
	22AWG*4C UL2517 L=350mm Vaux+ (Brown) Vaux- (Blue) DA (White) DA (Black)	For L05, L12, L24

