

| | |
|---------------|--|
| Project Name: | |
| Type: | |

HA-100W Series

100W Outdoor Driver

PRODUCT FEATURE

- Input voltage range: 90~305 Vac;
- Constant power design, outputs programmable;
- Adjustable output current using PC via USB
- Multiple dimming capability (P types): 0~10Vdc / PWM / Step time dimming;
- Dim to Off;
- Surge protection: 4KV line-line, 4KV line-earth;
- Protections: SCP / OVP / OTP;
- IP67 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty

Notes: MCH-680 is Class I type.

APPLICATION

Hazardous Location Applications, Street light, Architecture lighting, Industrial lighting, Flood lighting, etc.



CE EN62385 cULus CB n.ECM 20 A TEX-B DW96 II 2G Ex mb IIC T4 Gb HL

WARRANTY

- See [Limited Warranty Policy](#) for more additional information

| SPECIFICATION | | | |
|---------------|--|---|-------------|
| MODEL | | 072 | 120 |
| HA100-XXX | | | |
| INPUT | Efficiency (2300Vac)(Typ.) | 87% | 88% |
| | Voltage Range (V) | 90~305VAC, or 127 ~ 250VDC | |
| | Rated Voltage (V) | 100~277VAC | |
| | Frequency Range (Hz) | 47~63 | |
| | Power Factor | PF>0.99/120VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load PF>0.90/277VAC at half load | |
| | THD | THD<15% when output loading≥50% at 120VAC/230VAC THD<20% when output loading≥50% at 50VAC/277VAC (Take refer to THD vs. Load Curve for details) | |
| | AC Current (Max.) | 1.18A MAX at 100Vac, 0.6A MAX at 230Vac | |
| | Inrush Current (Max.) | COLD START 20A (twidth=110 us measured at 50% Ipeak) at 230VAC, Per NEMA410 | |
| | Leakage Current (Max.) | 0.7mA at 277VAC / 60Hz | |
| | MAX. No. of PSUs on 16A Circuit Breaker | 3 units (circuit breaker of type B) / 6 units breaker of type C) at 230VAC | |
| | No Load/ Standby Power Consumption | No load power consumption <10W | |
| OUTPUT | Rated Output Voltage (V) | 36 – 72 | 60 – 120 |
| | Output Voltage Range (V) | 36 – 72 | 60 – 120 |
| | Rated Current (A) | 1.6 | 1 |
| | Rated Power (W) | 90 | 90 |
| | Output Current Setting Range/ Dimming Range (A) | 0.16 – 1.60 | 0.10 – 1.00 |
| | Ripple Current (Typ.) | 20% of Io_max. ((PK-AV) /AV) with LED loading mode and full load.) | |
| | Current Tolerance | <5% | |
| | Line Regulation | <5% | |
| | Load Regulation | <5% | |
| | Setup Time | <0.5s, at 230Vac | |
| | DC AUX Power | 12V; Output Current: 200mA; Max Output Power: 2.4W | |
| | Dim to Off | Yes | |
| | DIM+ Short/ Source Current | 150uA~350uA | |

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|-------------------------|--------------------------------|--|
| 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~+70°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: ±5kV, L,N-FG: ±10kV) |
| OTHERS | MTBF | 120000Hrs @25°C±10°C ambient temperature, 230Vac, full load |
| | Lifetime | 50000Hrs@80°C case temperature (Refer to 'Lifetime Curve') |
| | Dimension | 190 x 63.8 x 37mm (LxWxH) |
| | Weight (Typ.) | 900±100g/ PCS |
| RELIABILITY | Screen test ⁽¹⁾ | 336Hrs aging test @95°C & full load without temperature protection |

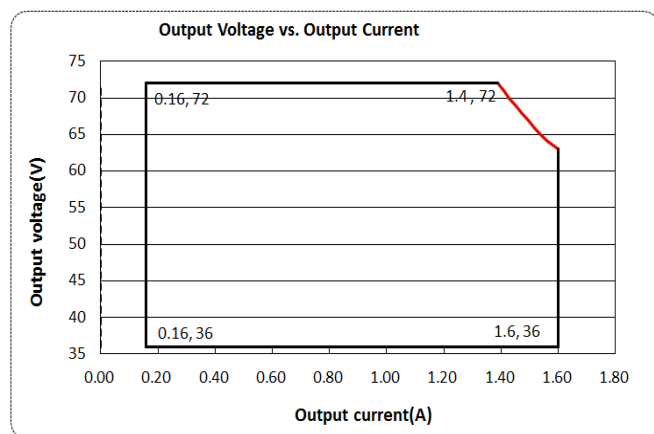
Notes:

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

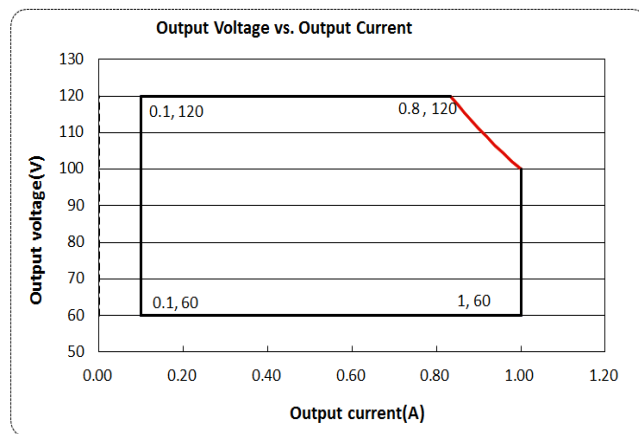
OPERATING AREA I-V

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

HA100-070-1600



HA100-120-1000

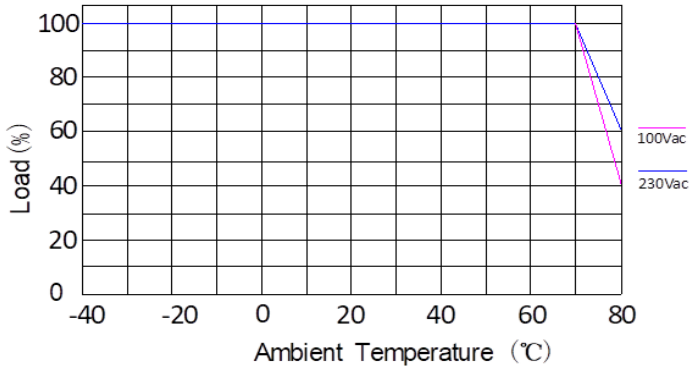


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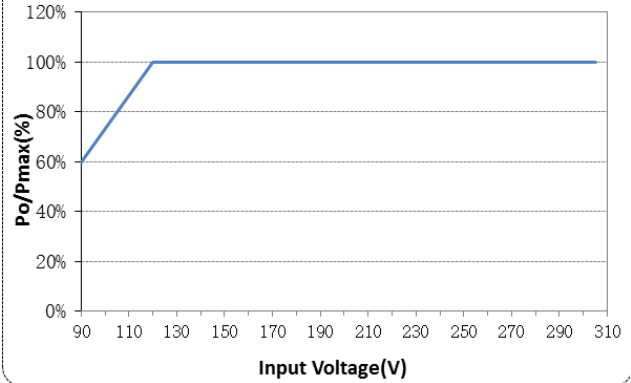
DERATING CUI

Derating Curve



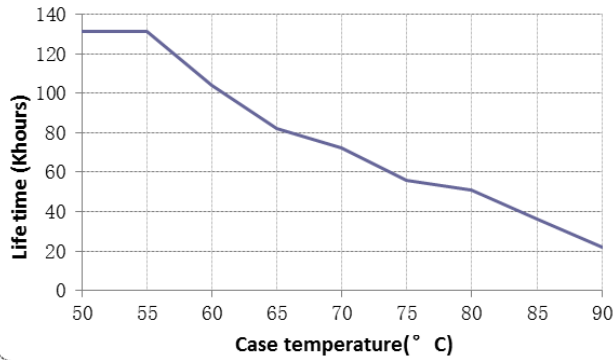
OUTPUT POWER VS INPUT VOLTAGE

Po/Pmax VS Input Voltage



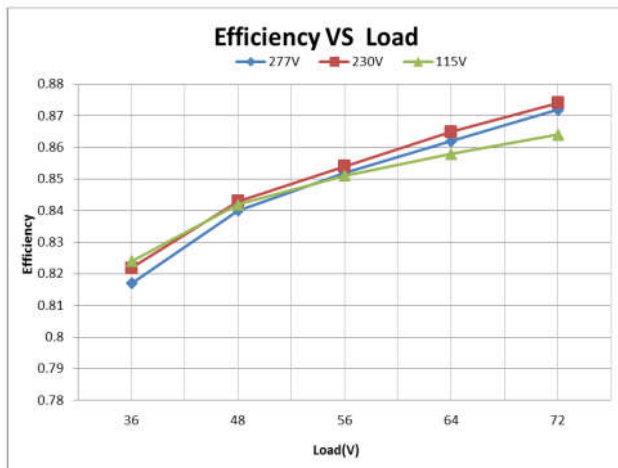
LIFETIME VS CASE TEMPERATURE

Life Time VS Temperature Curve



EFFICIENCY VS LOAD

HA100-070-1600



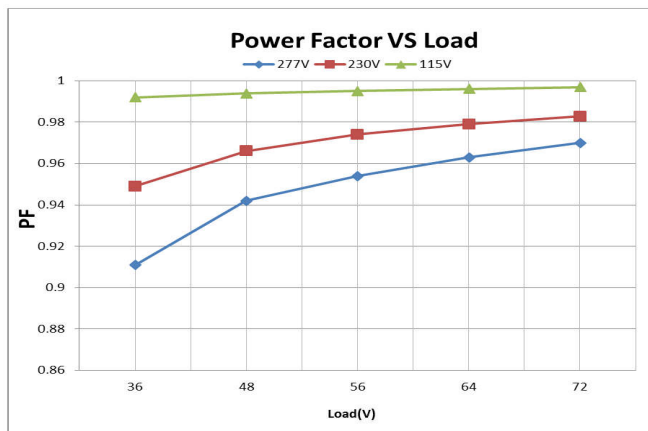
HA100-120-1000



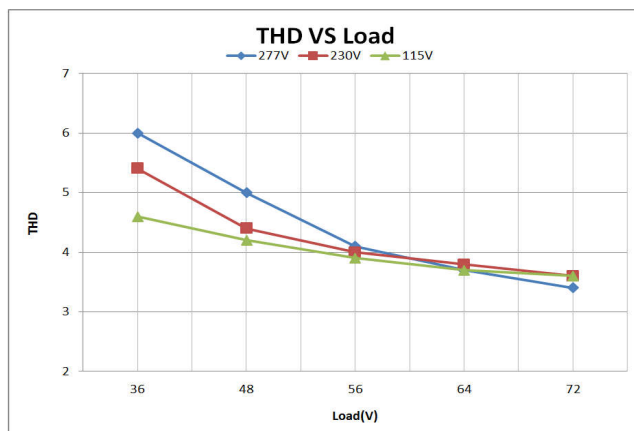
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POWER FACTOR VS LOAD



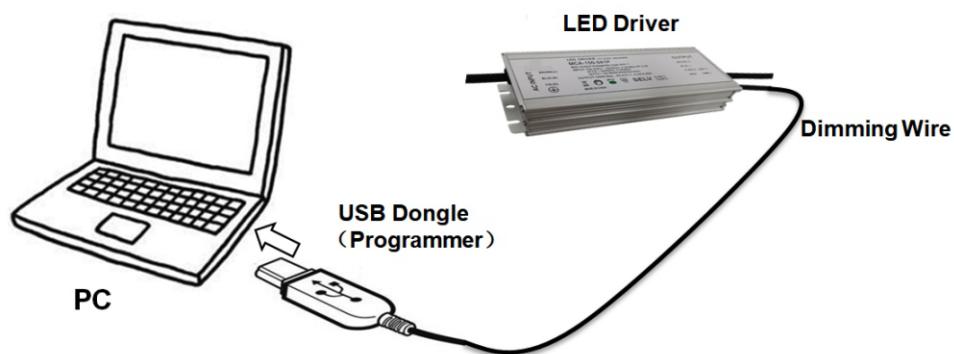
TOTAL HARMONIC DISTORTION



INSTRUCTION

1. Field Programmable Topology.

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



2. Dimming Interface Description

PIN DESCRIPTION

| PIN | NAME | VALUE | DESCRIPTION | COLOR |
|-----|-------------|---------------|-----------------------------------|---------|
| 1 | Vaux 12V | 10.8V – 13.2V | Auxiliary DC power supply | WHT/BLK |
| 2 | Dim+/ Prog+ | 0-10V | Dimming/ Programming inout | PURPLE |
| 3 | Dim-/ Com | 0V | Common terminal of Dim/ Prog./Aux | GRAY |

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3. Dimming Software Function Instruction

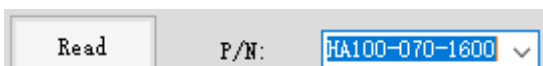
• Communication Setup



Connect Status: **Disconnected**

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

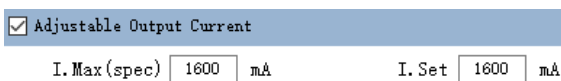
• Driver Identification



Read P/N: HA100-070-1600

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

• Adjustable Output Current (AOC)



☒ Adjustable Output Current
I. Max(spec) 1600 mA I. Set 1600 mA

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).

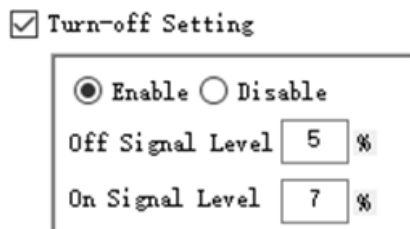
• Dimming Selection and Setting



☒ Dimming Selection and Setting
☒ Cable Dimming ☐ Time Dimming ☐ No Dimming

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.

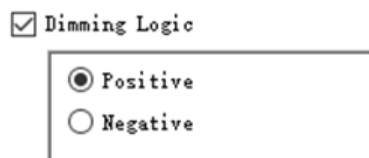
• Turn-Off signal setting



☒ Turn-off Setting
☒ Enable ☐ Disable
Off Signal Level 5 %
On Signal Level 7 %

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.

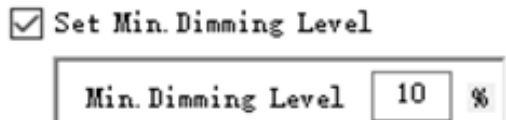
• Dimming Logic



☒ 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 10 %

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

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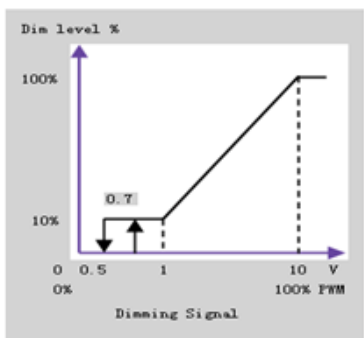
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• Dimming Signal Configuration

☒ 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"/> | 10 | | Second(Soft Start) |
| (1) <input checked="" type="checkbox"/> | 4 | 0 | 100 % |
| (2) <input checked="" type="checkbox"/> | 1 | 0 | 80 % |
| (3) <input checked="" type="checkbox"/> | 2 | 0 | 60 % |
| (4) <input checked="" type="checkbox"/> | 1 | 0 | 80 % |
| (5) <input checked="" type="checkbox"/> | 3 | 0 | 100 % |
| (6) <input type="checkbox"/> | 0 | 0 | 10 % |
| (7) <input type="checkbox"/> | 0 | 0 | 10 % |

Click ON "☒" to activate Time Step Dimming configuration

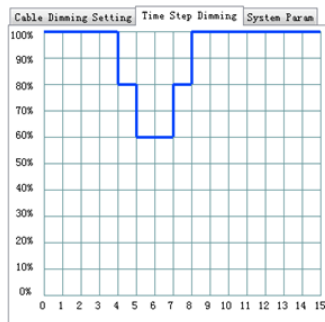
Step(0): Setting the fading time of soft start, maximum value can be 10 seconds.

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

• Configure NTC Protection

☒ Configure NTC Protection

☐ Enable
 ☒ Disable

NTC Value: °C

Click ON “☒” to activate NTC configuration Choose “enable” or “disable”, and set NTC value when “enable” selected.

• LED Lumen Compensation (LLC)

☒ LED Lumen Compensation

☐ Enable
 ☒ Disable

| | Time (kHour) | Compensation (%) |
|----|--------------|------------------|
| 1 | | |
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| | | |
| 14 | | |

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

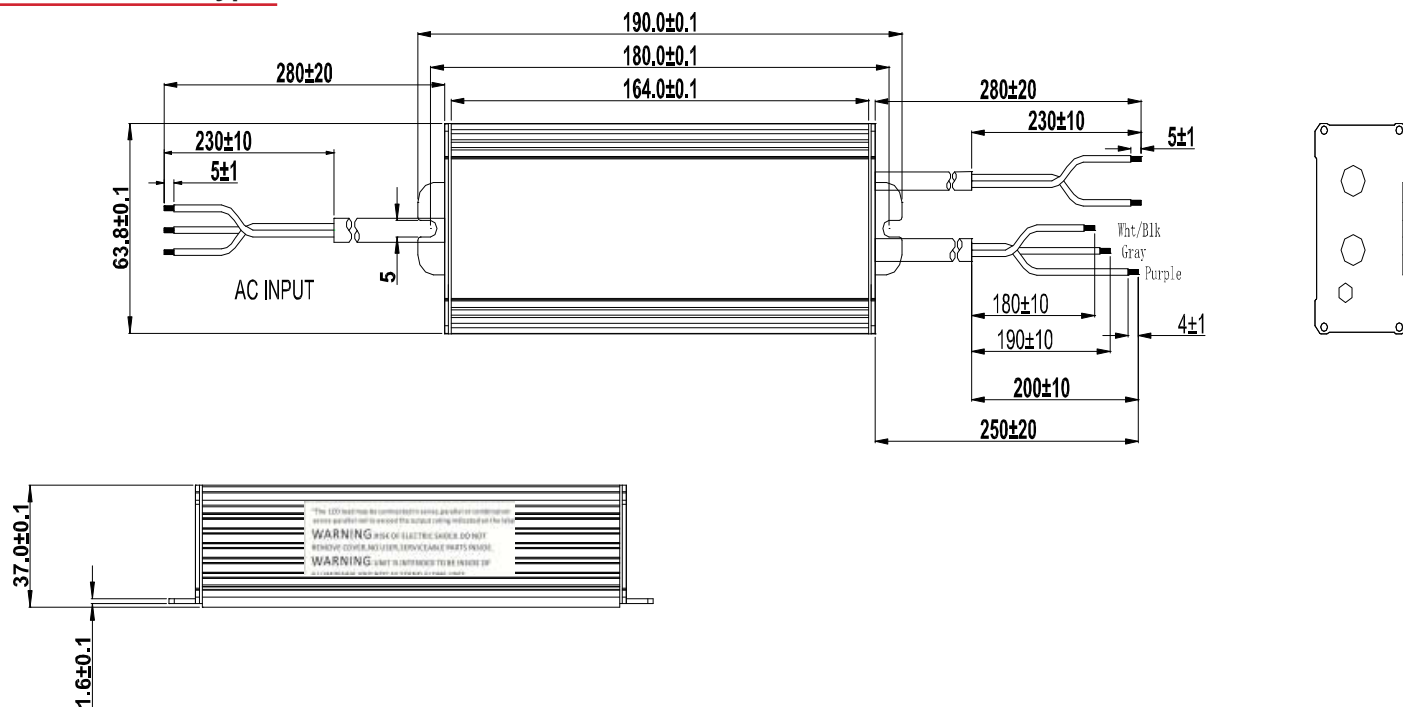
Program

Click “Program” button to burn the setting into drivers.

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INSTRUCTION (L type)



"The LED load may be connected in series, parallel or combination series-parallel net to exceed the output rating indicated on the label"

WARNING: RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER, NO USER, SERVICEABLE PARTS INSIDE.

WARNING: UNIT IS INTENDED TO BE INSIDE OF A LUMINAIRE AND NOT AS STAND ALONE UNIT.

Notes: The word "WARNING" shall be in letters not less than 3.2mm tall, remaining letters not less than 1.6mm tall.

| WIRE | SPECIFICATION | NOTE |
|-----------|------------------------------------|------|
| AC INPUT | UL SJTW 18AWG/ 3C L=280mm | UL |
| | L (BLACK), N (WHITE), G (GREEN) | |
| DC OUTPUT | UL SJTW 18AWG/ 2C L=280mm | UL |
| | + (RED) – (BLACK) | |
| DIMMING | 22# 3c L=250mm | UL |
| | +(WHT/ BLK) – (GRAY) DIM+ (PURPLE) | |

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LABEL - HA100-070-1600

Initial Current: 1.6A



LABEL - HA100-120-1000

Initial Current: 1.0A

