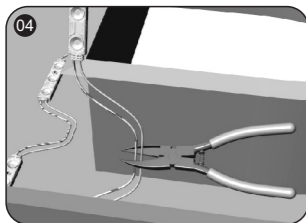
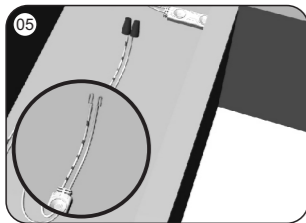


修订					
版本	标记	处数	内容	日期	变更者
V0			N/A		

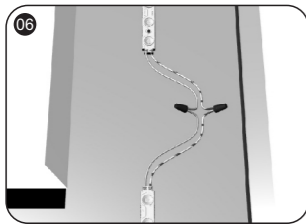


- Cut LED string to achieve required quantity, and strip the wires for about 10mm(0.4in).

⚠ Note: Please cut at the middle of the wires.

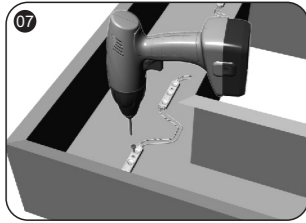


- When the wires of the last module exposed, firstly strip the wires for about 10mm(0.4in), then cap the "+" wire and the "-" wire with the twist-on wire connectors to protect against moisture and corrosion.

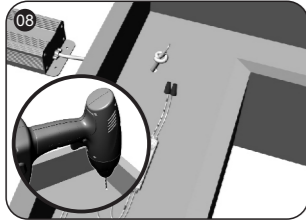


- When the modules need to be connected, please strip the wires for about 10mm(0.4in), then connect the modules with twist-on wire connectors ( red stripe wire "+" to red stripe wire "+", white wire "-" to white wire "-").

⚠ Note: The maximum connectable quantity per string is not more than 20 modules.

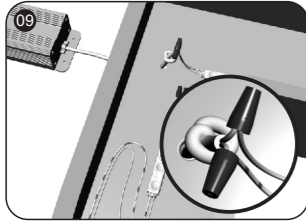


- Adjust LED modules to the better place, then fix them with the screws.



- Drill a hole in proper place, then, run the supply wires through the hole and fix them for good protection.

⚠ Note: Drill a hole with proper strength to avoid damaging the panel of the channel letter.



- Make sure the polarities of the LED modules are correctly connected to that of the power supply.

### NOTES

1. Installation notes:  
Make sure the polarities of connection made at modules and power supply are correct, otherwise the sign will not light.
2. Notes for Optional Supplies:  
When the standard module quantity per string is 20pcs, it is recommended to choose the safety-certificated power supply with 18W rated power and DC 12V output voltage (with short-circuit, overvoltage and overload protections). Tolerance range for output voltage of power supply is  $\pm 5\%$ . If more modules are needed, ensure the power supply has more than 20% load allowance.

### Malfunction&Solutions Table

Malfunction & Solutions Table		
Malfunctions	Possible Causes	Solutions
None LED works	1. There is no primary power.	Remove any short or open circuits and other malfunctions, and energize the fixture.
	2. The power supply is auto protected since the short or open circuit occurs at the output of the SMPS.	
	3. The input wires of the modules are connected reversely.	
Some LED modules don't work	1. Some SMPS don't get primary power.	Check the power supply and remove malfunctions.
	2. Some modules are wrongly connected to the power supply.	
	3. Some modules' polarities are connected reversely.	Connect the wires correctly.
Brightness of the LED is dim or not even	1. Power Supply is overloaded.	Change a power supply with high power according to the actual load.
	2. The wire loss of power supply or the wire loss difference between each branch is too much.	Make sure the working voltage of each module is within $\pm 5\%$ of rated voltage (1. shorten the wire between the power supply and the first module or use thicker supply wires; ensure the quantity run on each branch is not more than the maximum connectable quantity, and ensure each branch has similar module quantity, it will be better with the quantity difference within 3 modules).
	3. Too many LED modules are connected.	Adjust the module quantity of each branch to meet the maximum connectable quantity.
LEDs are blinking	1. Loose connections exist.	Find the loose connections and remove any malfunctions.
	2. SMPS doesn't work.	Replace the power supply.

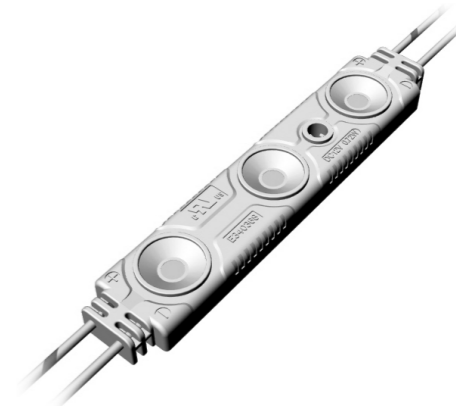
### ⚠ WARNING

- Do not disassemble or modify the module; Don't touch LED surface with the sharp stuff.
- Don't install the modules with power on.
- Forbid using any organic chemical solvents.
- Have a licensed electrician install, maintain and serve the products!
- Use the neutral glass glue to fix this products, do not seal the products until the glue solidified in open environment 4 hours later.
- During installing, please insulate the exposed wires and the connection points; meanwhile, please treat the wires to protect against moisture and corrosion.
- Please choose 20AWG wires or thicker wires to avoid overload or other hazard when the supply wires of modules need extension .
- The maximum connectable quantity per string is 20pcs LED modules. Forbid exceeding! The supply wire between the module and the power supply should be no longer than 2m(78.7in), or it will cause over-heated or other unwanted consequences.
- This product is applicable to the inside of the light box or channel letter, forbid exposing it to outdoor or semi-outdoor environment directly!

### Declaration

- Warranty: 3 years or 13,000 hours, whichever comes first.
- During installing, first stick the products into places and then secure the products with screws after adjusting them well.
- If the external flexible cord of this luminaire is damaged, it shall be exclusively replaced by the manufacturer or his service agent or a similar qualified person in order to avoid a hazard.
- All the data and pictures in this manual are subject to actual products.
- Information provided is subject to change without notice.

## Sunrise Series LED Module Manual M603AA



Read this manual carefully before using this product and keep it!

V1.0

- 备注:
1. 尺寸: 385\*210mm;
  2. 材质: 80g书纸;
  3. 公差:  $\pm 1$ mm;
  4. 灰度双面印刷;
  5. 虚线不印刷, 来料必须从虚线处折好;
  6. 适用型号: M603AA。

## 说明书正面

		深圳市日上光电有限公司 SHENZHEN RISHANG OPTO-ELECTRONICS CO., LTD.				
零件名称	旭日系列产品说明书 (英文 无LOGO)	设计	方艳平	日期	2012.05.23	表面处理
零件编码	308-01-071	审核		日期		重量
图纸编号	RD-M603AA-BZ005	标准化		日期		比例
页数	共 2 张 第 1 张	批准		日期		单位

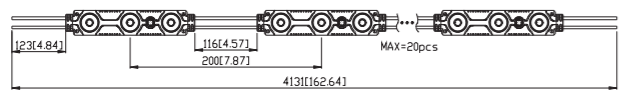
修订					
版本	标记	处数	内容	日期	变更者
V0			N/A		

### Model and Specification

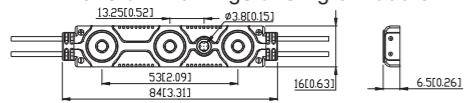
Model:	M603AA
Rated Power (W/piece):	0.72
Working Voltage (V):	DC12
IP Grade:	IP65
Operating Temperature(°C/°F):	-25~60[-13~140]
Storage Temperature(°C/°F):	-25~70[-13~158]

### Profile

Dimension Drawings of Standard Connection Unit: mm[in]

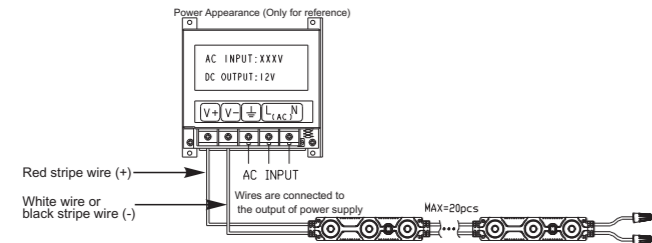


Dimension Drawings of Single Module



### Parts and Tools

#### 1. Installation and Connection Illustration:

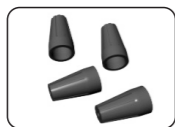


#### 2. Product parts and Tools required:

##### (1) Product Parts



M603AA(20pcs)



Twist-on Wire Connector (4pcs)

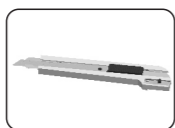
##### (2) Tools required



Cutting Nipper, Electrical Drill&Drilling Bit



Self-tapping Screw (ST2.9)



Art Knife

### Installation & Application Examples

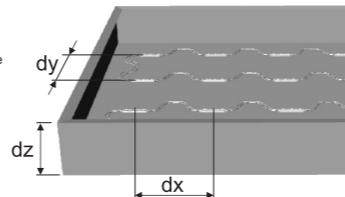
#### 1. Layout Density Guidelines for Light box

##### Reference Scheme

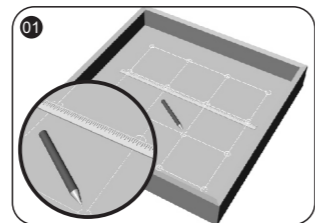
Depth of Light Box(mm[in])	Layout Spacing (mm[in])	Installation Density (pcs/m <sup>2</sup> [pcs/ft <sup>2</sup> ])	Illuminance Range(lux)
dz=80[3.2]	dx=90[3.5] dy=50[2.0]	222[21]	6200-7500
dz=100[3.9]	dx=90[3.5] dy=70[2.8]	159[15]	4000-4900
dz=120[4.7]	dx=110[4.3] dy=90[3.5]	101[9]	2700-3050
dz=150[5.9]	dx=120 [4.7] dy=110[4.3]	76[7]	1900-2200
dz=180[7.1]	dx=150[5.9] dy=130[5.1]	51[5]	1440-1570

##### Notes:

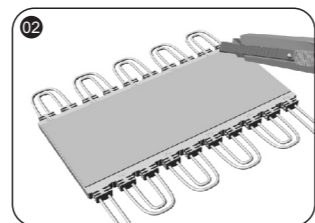
- 1, The above layout data are tested with M603AA-UL-W1 module (Color Temperature: 6000K);
- 2, Tested in 3mm(0.12in) depth white acrylic board with 54.4% luminous transmittance;
- 3, All data in the table are minimum illuminance with the uniform surface illumination;
- 4, The above data are for reference only.



#### Installation Procedures

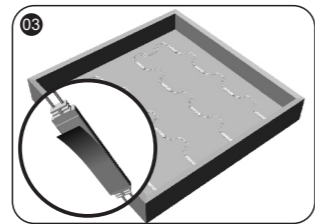


- Clean the light box, and then determine the installation position and quantity.

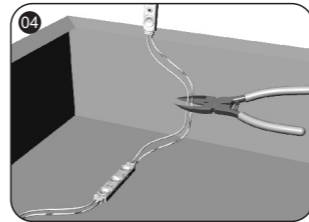


- If the modules are packed in a row with back double-sided adhesive tape, please divide them with a knife.

⚠ Note: Don't scratch the module and the wire.

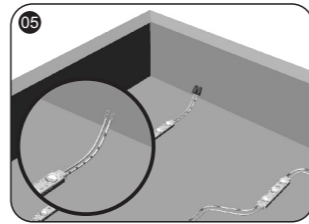


- Remove the tape backing and stick LED modules into places.

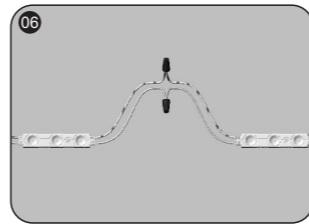


- Cut LED string to achieve required quantity, and strip the wires for about 10mm(0.4in).

⚠ Note: Please cut at the middle of the wires.

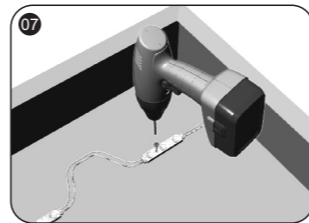


- When the wires of the last module exposed, firstly strip the wires for about 10mm(0.4in), then cap the "+" wire and the "-" wire with the twist-on wire connectors to protect against moisture and corrosion.

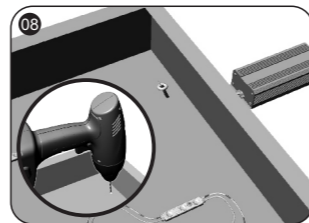


- When the modules need to be connected, please strip the wires for about 10mm(0.4in), then connect the modules with twist-on wire connectors (red stripe wire "+" to red stripe wire "+", white wire "-" to white wire "-").

⚠ Note: The maximum connectable quantity per string is not more than 20 modules.

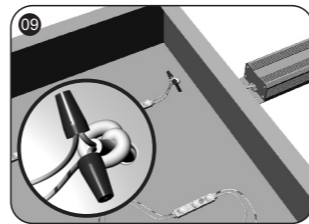


- Adjust LED modules to the better place, then fix them with the screws.



- Drill a hole in proper place, then, run the supply wires through the hole and fix them for good protection.

⚠ Note: Drill the hole with proper strength to avoid damaging the panel of light box.



- Make sure the polarities of the LED modules are correctly connected to that of the power supply.

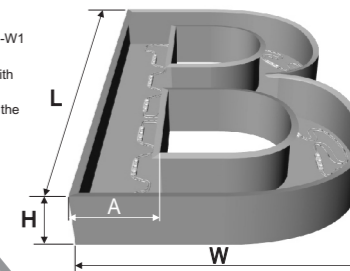
#### 2. Layout Density Guidelines for Channel Letter

##### Reference Scheme

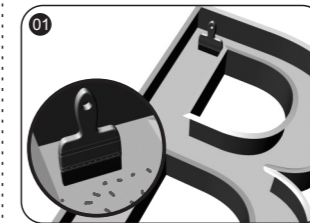
Channel Letters				Modules			Illuminance Range (lux)
Stroke Width (mm[in])	Thickness (mm[in])	Dimension (mm[in])	Area (m <sup>2</sup> [ft <sup>2</sup> ])	Maximum Space between Modules (mm[in])	Overall Quantity (pcs)	Installation Density (pcs/m <sup>2</sup> [pcs/ft <sup>2</sup> ])	
A60[2.4]	H60[2.4]	L473*W290 [L18.6*W11.4]	0.14[1.5]	100[3.9]	14	100[9]	4500-5500
A90[3.5]	H80[3.1]	L710*W430 [L28.0*W16.9]	0.3[3.2]	100[3.9]	14	47[4]	3600-4100
A110[4.3]	H100[3.9]	L855*W525 [L33.7*W20.7]	0.45[4.9]	120[4.7]	22	49[5]	2200-2680
A140[5.5]	H120[4.7]	L1040*W653 [L40.9*W25.7]	0.68[7.3]	130[5.1]	26	38[4]	2000-2380
A150[5.9]	H150[5.9]	L1194*W710 [L47.0*W28.0]	0.85[9.2]	150[5.9]	29	34[3]	1940-2200
A180[7.1]	H180[7.1]	L1490*W900 [L58.7*W35.4]	1.34[14.4]	160[6.3]	33	25[2]	1390-1500

##### Notes:

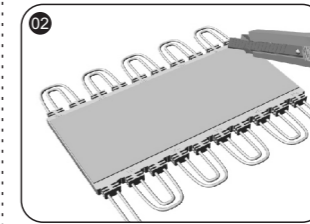
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- 2, Tested in 3mm(0.12in) depth white acrylic board with 54.4% luminous transmittance;
- 3, All data in the table are minimum illuminance with the uniform surface illumination;
- 4, The above data are for reference only.



##### Installation Procedures

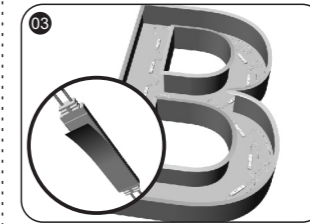


- Clean the inside of the channel letter.



- If the modules are packed in a row with back double-sided adhesive tape, please divide them with a knife.

⚠ Note: Don't scratch the module and the wire.



- Remove the tape backing and stick LED modules into places.

- 备注:
1. 尺寸: 385\*210mm;
  2. 材质: 80g书纸;
  3. 公差: ±1mm;
  4. 灰度双面印刷;
  5. 虚线不印刷, 来料必须从虚线处折好;
  6. 适用型号: M603AA.

## 说明书背面

深圳市日上光电有限公司 SHENZHEN RISHANG OPTO-ELECTRONICS CO., LTD.						
零件名称	旭日系列产品说明书 (英文无LOGO)	设计	方艳平	日期	2012.05.23	表面处理
零件编码	308-01-071	审核		日期		重量
图纸编号	RD-M603AA-BZ005	标准化		日期		比例
页数	共 2 张 第 2 张	批准		日期		单位