

## Product Specification

### Features:

- Good Heat Sink system. Low Brightness Decline. Span Life Up to 50,000hours
- Finest 2835 LED Package supplier to Guarantee High Efficacy
- ABS Base and Overall Lens
- Innovative Overmolded Way. Generate Finest LED Module
- Double Faced Tape or Screw Hole to Make Installation Easier
- True 160 view angle
- True IP65

### Specification:

#### Photoelectric parameters

Part No	LED	Color	Temperature	Voltage [ V ]	Watt [ W ]	Lumen [ LM ]	Efficiency [ LM/W ]	View [ ° ]
CL.OPT02	SMD2835	Daily lighth	6000-7500	12	0.72	68	95	160
		Cool white	9000-12000			61	85	
CL.OPT02G		Green				32	44.4	
CL.OPT02B		Blue				7.5	10.4	
CL.OPT02R		Red				12	16.6	
CL.OPT02Y		Yellow				11	15.3	

#### Physical parameters

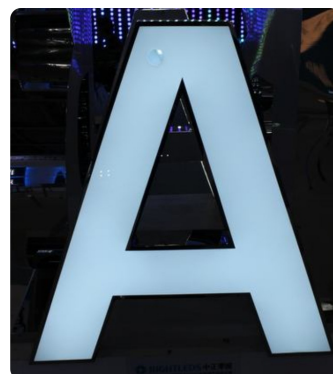
Series connection ( PCS )	Cover material	Driver	Weight ( g ) 20pcs	Span life ( Years )	Size ( mm )	Working environment ( °C )	IP
20	ABS	12V (cv) 12V (cc)	160	4 ( 5 )	57x13x11	-25-+70	IP65

Note: **1** Test Condition Ta=25±2°C **2** CV- constant voltage/CC-constant current  
**3** The mentioned data are typical. The real data are different from typical data.

**Appliation:** For 6cm Depth of Illuminated Signage.



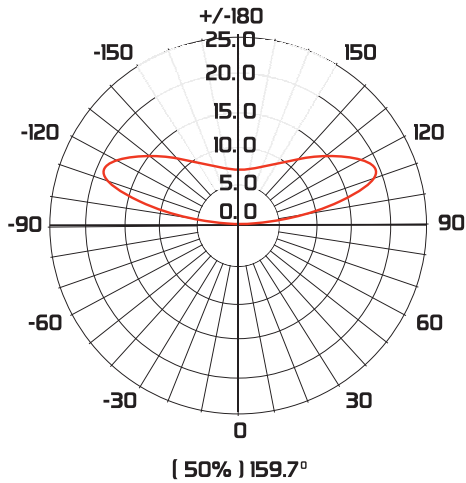
6000~7000K



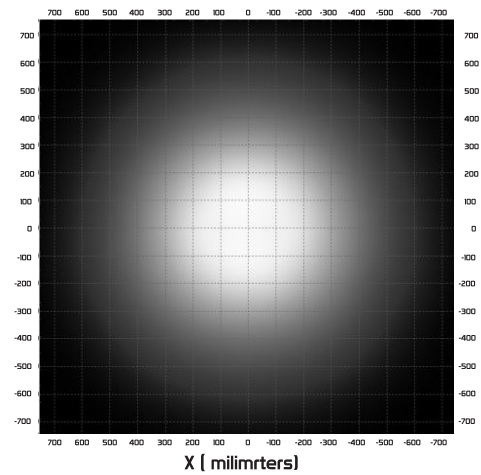
9000~11000k

## Light Diagram and Light Distribution:

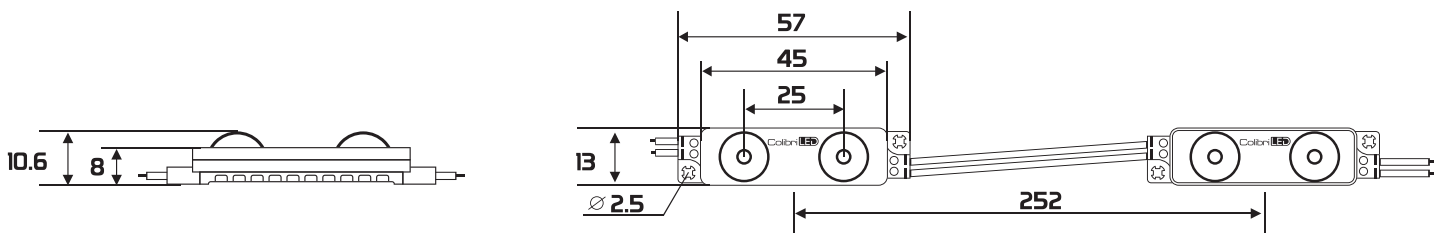
Light Distribution



Light Diagram



## Dimension ( Unit/mm )

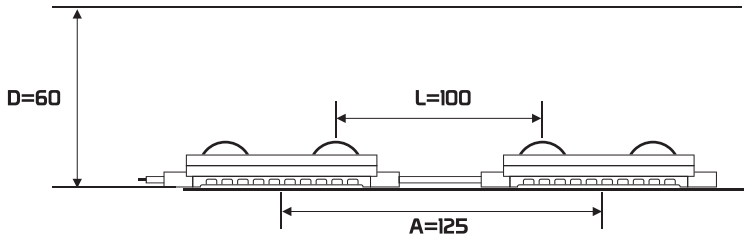


## Best Density Guide

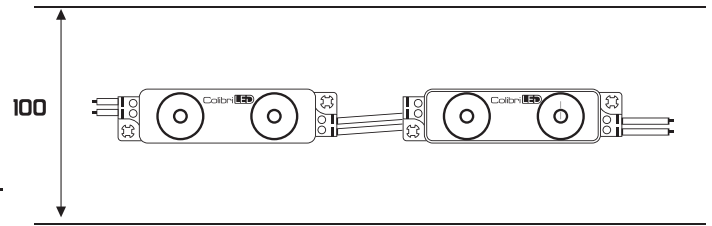
LED	SIGN Depth <sup>1</sup> ( mm )	Stroke <sup>2</sup> ( mm )	Multiple Row Space <sup>3</sup>	Axe to Axe <sup>1</sup> ( mm )	Uniform Light Rank <sup>5</sup>	Surface Brith-ness Difference <sup>6-8</sup>	Min ~ Max ( Lux ) <sup>7-8</sup>	Min ~ Max ( cd/m <sup>2</sup> ) <sup>7-8</sup>
CLOPT02	60	100	87	125	GOOD	10%	1040~1240	403~455

## Different Position Surface Brightness Under 60mm Depth

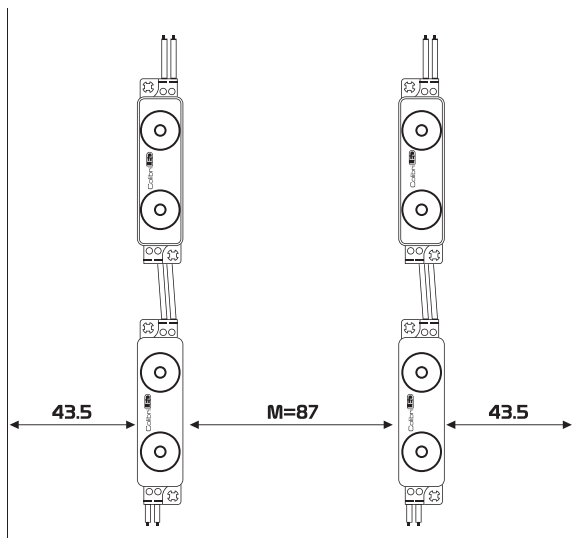
Position <sup>4</sup> *	1cm	2cm	3cm	4cm	5cm	6cm	7cm	8cm	9cm	10cm
cd/m <sup>2</sup>	403	421	442	448	454	455	444	431	410	392
Lux	1080	1130	1180	1210	1230	1240	1230	1190	1140	1080



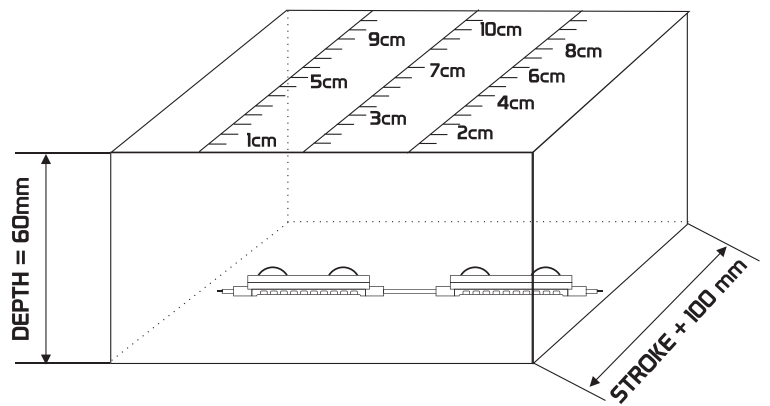
1\* D-Depth Sign ( mm )  
A - Axe To Axe ( mm )  
L - Distance Of Leds ( mm )



2\* Sign Stroke ( mm )



3\* M - Multiple Row Space ( mm )



4\* Test Position

## 5\* Uniform Light Rank Standard

## 6\* Surface Brightness Difference Standard

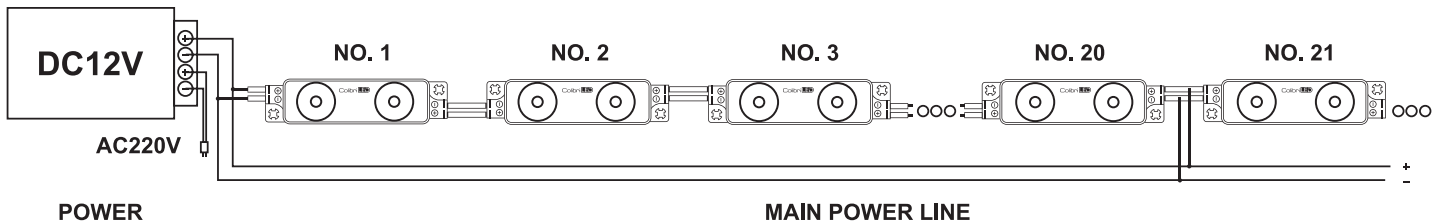
Best	The difference of area brightness is less 5%
Better	The difference of area brightness is from 5%~8%
Good	The difference of area brightness is from 8%~10%
Ok	The difference of area brightness is from 10%~15%
Bad	The difference of area brightness is over 15%

5%	Perfect uniform light. Many lumens are wasted.
5%~8%	Excellent uniform light..Part lumens are wasted
8%~10%	Good uniform light..No lumens are wasted
10%~15%	Feel light shadow on far edge of light but ok.
Above15%	Obviously shadow and spot

## 5\* Uniform Light Rank Standard

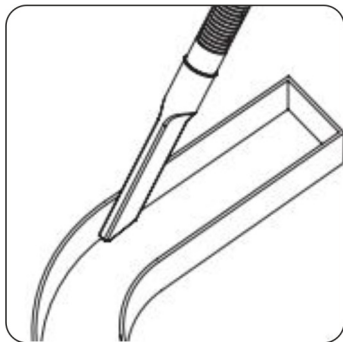
- 1 3mm Depth Mitsubishi White Acrylic. Other face materials may vary light uniformity and brightness
- 2 The all inside are painted with white. Other color may vary brightness
- 3 Modules are spaced with wires at not 100% stretch. Left 2cm wires may be needed in corner or turn
- 4 The color temperature is 6500K

## Connection Layout



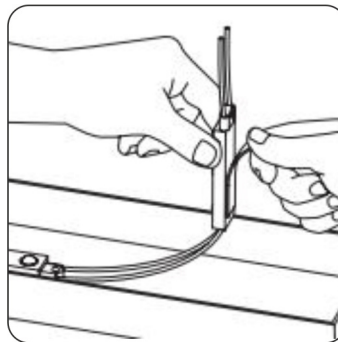
## Installation

1

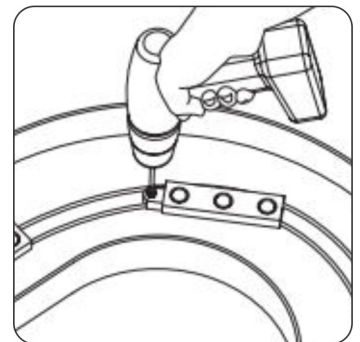


Clean & remove all debris from the inside of the signage before you begin

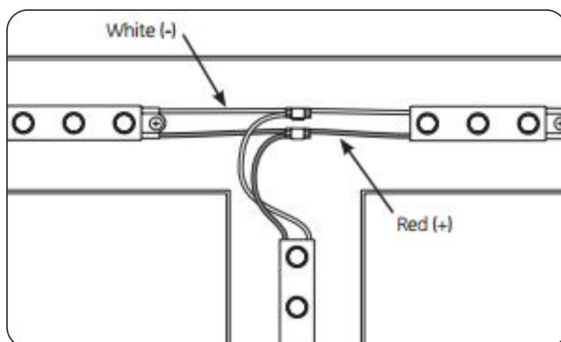
2



Remove tape backing and stick LED modules into place. Potting glass glue on both side of led module or screwing is recommended as security. Use screws, or silicone to secure at least every fifth LED module within the channel letter.



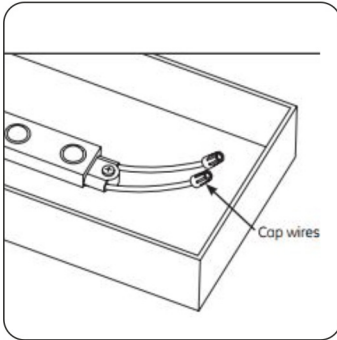
3



Connect different lines of led module together.  
 ( 1 ) Connect LED strips using in-line connectors or twist-on wire connectors.  
 ( 2 ) cut from middle of led modules. Peel off 10mm cover from wire. Connect the red wire (+) of the LED to the red wire (+) of another led strip.  
 Connect the white wire (-) of the LED strip to white

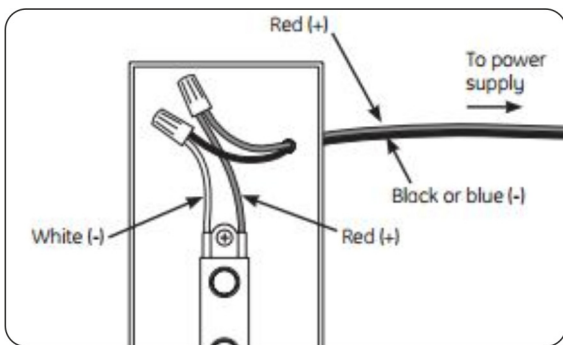
wire (-) of the another led strip. Insulate the connections. Test wire connections by hand. It is qualified if you can not pull off by hand. Test wire connections by turn on power supply.

4



**Must cap all exposed wires with appropriate wire connectors**

5



**The connections between led strips and power supply should be covered by silicone or glass glue to prevent from water and rot**

**The Max series connection should ne not over 20 when power supply run only from one side**

**All electrical connections should be made within the Signage. Operate under turn off power**

**Quality of power supply are strongly recommended to make sure the signage lighting last longer**