



## 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

### Specification:

#### Photoelectric parameters

Part No	LED	Color	Temperature	Voltage [ V ]	Watt [ W ]	Lumen [ LM ]	Efficiency [ LM/W ]	View [ ° ]
CL.OPT03	SMD2835	Daily lighth	6000-7500	12	1	95	95	160
		Cool white	9000-12000			85	85	
CL.OPT03G		Green			0.72	49	68	
CL.OPT03B		Blue				11	15.3	
CL.OPT03R		Red				16	22.2	
CL.OPT03Y		Yellow				19	26.4	

#### Physical parameters

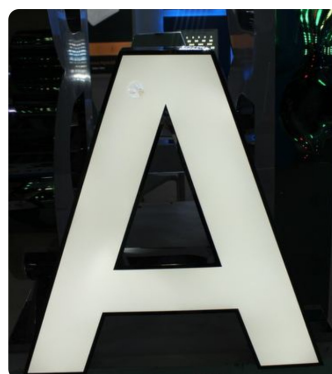
Series connection [ PCS ]	Cover material	Driver	Weight [ g ] 20pcs	Span life [ Years ]	Size [ mm ]	Working environment [ °C ]	IP
20	ABS	12V (cv) 12V (cc)	204	4 ( 5 )	82x13x10	-25-+70	IP65

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.

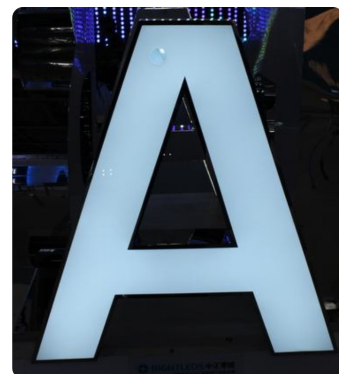
### Appliation: Illuminated Signage. 2. Light Box



Inside of letter



6000~7000K

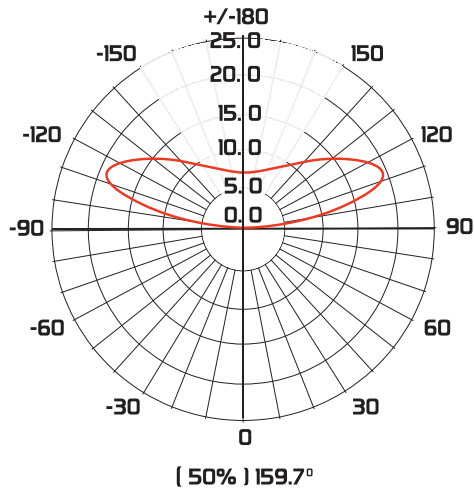


9000~11000k

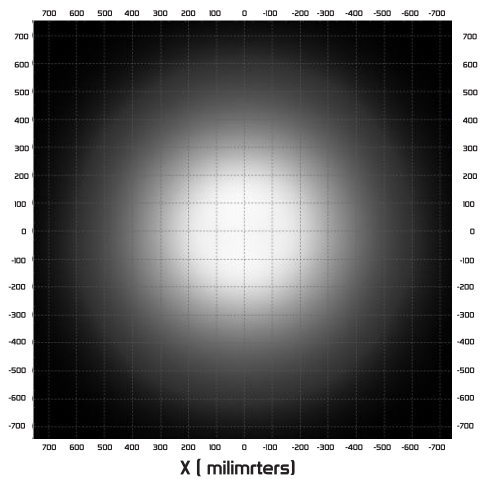


## Light Diagram and Light Distribution:

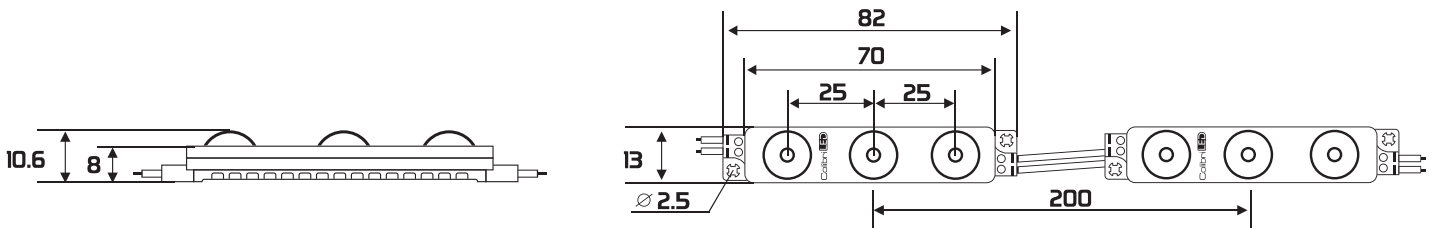
Light Distribution



Light Diagram



## Dimension ( Unit/mm )



## Best Density Guide

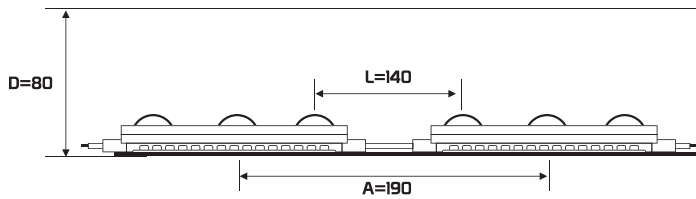
LED	SIGN Depth <sup>1</sup> ( mm )	Stroke <sup>2</sup> ( mm )	Multiple Row Space <sup>3</sup>	Axe to Axe <sup>1</sup> ( mm )	Uniform Light Rank <sup>5</sup>	Surface Brith- ness Difference <sup>6-8</sup>	Min ~ Max ( Lux ) <sup>7-8</sup>	Min ~ Max ( cd/m <sup>2</sup> ) <sup>7-8</sup>
CL.OPT03	80	140	127	190	GOOD	10%	1210~1350	408~470
CL.OPT03	100	140	127	190	BEST	5%	1090~1150	380~405

### Different Position Surface Brightness Under 80mm Depth

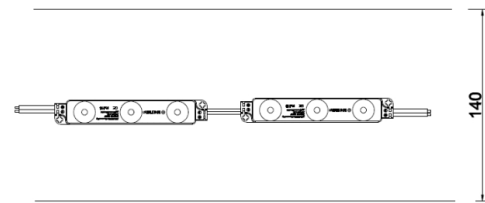
Position <sup>4</sup>	1cm	2cm	3cm	4cm	5cm	6cm	7cm	8cm	9cm	10cm	11cm	12cm	13cm	14cm
cd/m <sup>2</sup>	431	440	448	457	465	471	470	469	466	455	445	434	422	418
Lux	1250	1260	1270	1290	1310	1310	1350	1350	1330	1310	1290	1270	1230	1210

### Different Position Surface Brightness Under 100mm Depth

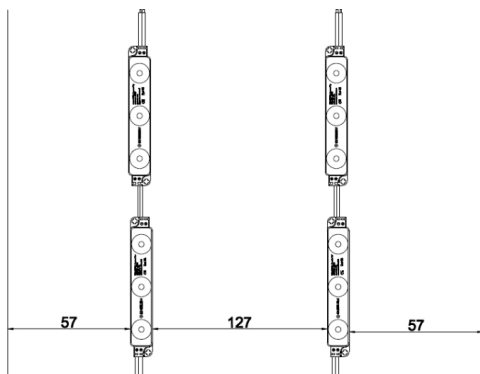
Position <sup>4</sup>	1cm	2cm	3cm	4cm	5cm	6cm	7cm	8cm	9cm	10cm	11cm	12cm	13cm	14cm
cd/m <sup>2</sup>	380	384	389	394	397	402	404	405	404	402	398	393	386	380
Lux	1090	1100	1110	1110	1130	1140	1150	1150	1150	1140	1130	1120	1110	1100



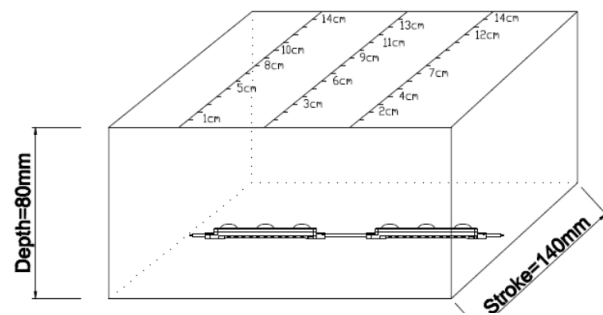
1\* D-Depth Sign ( mm )  
A - Axe To Axe ( mm )  
L - Distance Of Leds ( mm )



2\* Sign Stroke ( mm )



3\* M - Multiple Row Space ( mm )



4\* Test Position

## 5\* Uniform Light Rank Standard

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%

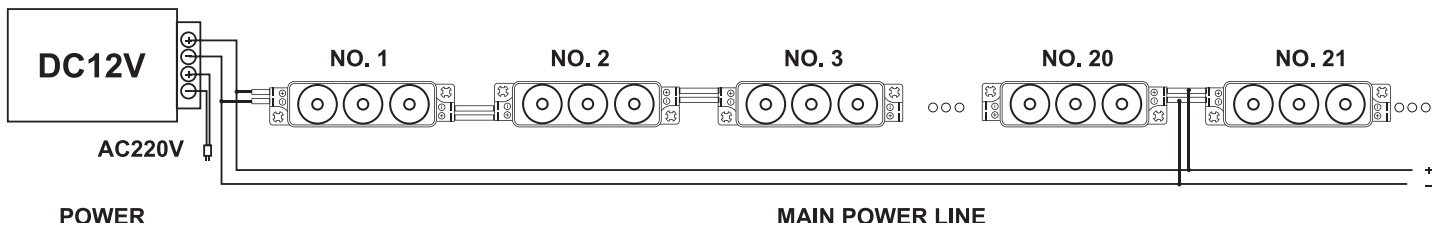
## 6\* Surface Brightness Difference Standard

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

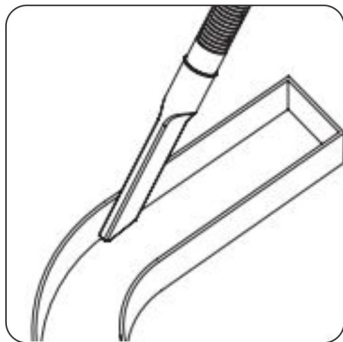
1	3mm Depth Mitsubishi White Acrylic. Other face materials may vary light uniformity and brightness
2	The all inside are painted with white. Other color may vary brightness
3	Modules are spaced with wires at not 100% stretch. Left 2cm wires may be needed in corner or turn
4	The color temperature is 6500K

## Connection Layout



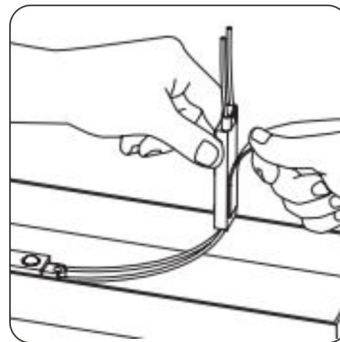
## Installation

1



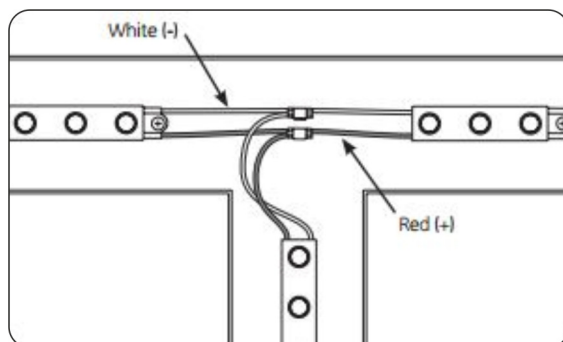
Clean & remove all debris from the inside of the signage before you begin

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.

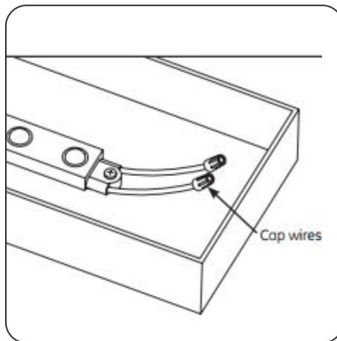
3



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

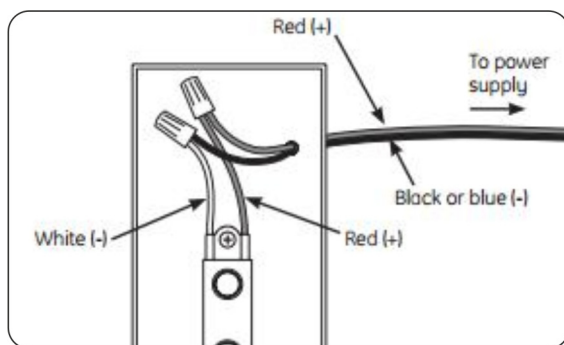
wire (-) of the another led strip. Insulate the connections. Test wire connections by hand. It is qualified if you can not pull off by hand. Test wire connections by turn on power supply.

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