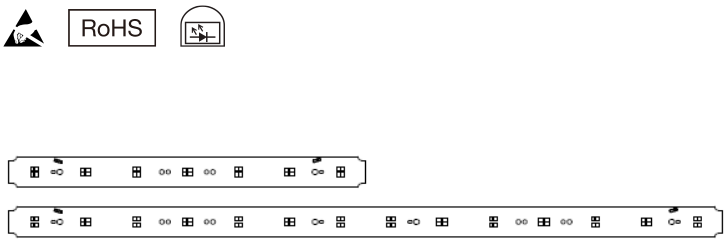
Data Sheet

Linear LED Module for Louver Applications

BLX-LN-280-24-C2-1200-F

BLX-LN-560-24-C2-2400-F



Product Description

- 280/560mm x 24mm linear LED module
- Compatible with Ledil Daisy-7x1-WAS/W/WW-D lens
- Nominal 1200/2400lm @ 350mA, Tc=55°C
- Module efficacy up to 174lm/W
- High CRI of 90+
- High quality of Lambertian white light
- Re-workable push-in connector for easy wiring
- Suitable for robot wiring
- Simple installation with M3 screws (Built-in LED module)
- Long lifetime of 100,000hr

Order Information

Type	Part number
BLX-LN-280-24-C2-1200-927F	7125B191
BLX-LN-280-24-C2-1200-930F	7125B192
BLX-LN-280-24-C2-1200-940F	7125B194
BLX-LN-560-24-C2-2400-927F	7125C191
BLX-LN-560-24-C2-2400-930F	7125C192
BLX-LN-560-24-C2-2400-940F	7125C194

Key Performance Data

Model	Type	Typ lm flux	Nominal CCT	Typ Vf	Typ power consumption	Efficacy of module	CRI
BLX-LN-280-24-C2-1200	927F	1090lm	2700K	19.1V	6.7W	163lm/W	90+
	930F	1110lm	3000K	19.1V	6.7W	167lm/W	
	940F	1160lm	4000K	19.1V	6.7W	174lm/W	
BLX-LN-560-24-C2-2400	927F	2180lm	2700K	38.2V	13.4W	163lm/W	90+
	930F	2230lm	3000K	38.2V	13.4W	167lm/W	
	940F	2320lm	4000K	38.2V	13.4W	174lm/W	

Note) Performance @ If=350mA, Tc=55°C

Photometric Characteristics

Parameter	Model	Type	Min	Typ	Max	Unit	Remark
Luminous flux	BLX-LN-280-24-C2-1200	927F	1010	1090	1200	lm	
		930F	1030	1110	1220	lm	
		940F	1070	1160	1280	lm	
	BLX-LN-560-24-C2-2400	927F	2020	2180	2400	lm	
		930F	2070	2230	2450	lm	
		940F	2150	2320	2550	lm	
Module efficacy	927F			163		lm/W	
	930F			167		lm/W	
	940F			174		lm/W	
CCT	927F			2700		K	
	930F			3000		K	
	940F			4000		K	
CIE	927F			(0.457, 0.409)		-	
	930F			(0.433, 0.402)		-	
	940F			(0.381, 0.379)		-	
Color consistency	-				3	SDCM	
CRI	927F/930F/940F		90			-	
Radiation angle	-			120		deg	Lambertian

Note) Performance @ If=350mA, Tc=55°C unless indicated otherwise

Measurement tolerance: Luminous flux ±5%, CIE ±0.007, CRI ±2

Color measurement indicates integrated color over the module. Color consistency of 3 SDCM is therefore module-to-module consistency. LED-to-LED color consistency in a module could be up to 7 SDCM. We recommend that users design systems to provide enough mixing of the lights from individual LEDs (for example with diffuser placed with large enough distance from the module).

Parameter	Type	Value	Remark
Photometric code	927F	927/359	@ If=800mA, Tc=75°C
	930F	930/359	@ If=800mA, Tc=75°C
	940F	940/359	@ If=800mA, Tc=75°C
Risk group (IEC 62471:2006)	927F/930F/940F	RG 1	@ If≤800mA

Electrical Characteristics

Parameter	Model	Min	Typ	Max	Unit	Remark
Forward voltage	BLX-LN-280-24-C2-1200-F	18.1	19.1	20.0	V	
	BLX-LN-560-24-C2-2400-F	36.2	38.2	40.1	V	
Power consumption	BLX-LN-280-24-C2-1200-F	6.3	6.7	7.0	W	
	BLX-LN-560-24-C2-2400-F	12.7	13.4	14.0	W	

Note) Performance @ If=350mA, Tc=55°C

Measurement tolerance: Forward voltage ±4%

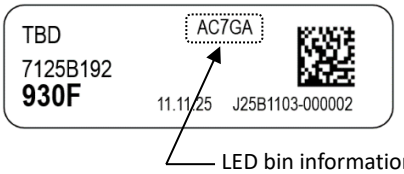
Max range of Vf considering entire operating temperature range (-25 to 85°C) is **17.8V to 20.7V** for BLX-LN-280-24-C2-1200-F and **35.7V to 41.4V** for BLX-LN-560-24-C2-2400-F. Please choose a driver with proper Vf range for your operating condition. If you plan to dim the module, check the Vf range of the module at minimum dimming level using Performance Graphs in this data sheet and choose a driver with proper Vf range.

Vf Bins

When connecting multiple modules in parallel, please be aware that it can cause difference in brightness among modules. To minimize such brightness difference in parallel modulation, please use modules with the same Vf bin in one chain.

LED Vf bins are marked on the bar code label as shown below. There are 3 Vf bins (AB < AC < AD in increasing order). In the following example, AC Vf bin is used (AC7GA).

Bar code label example showing Vf bin

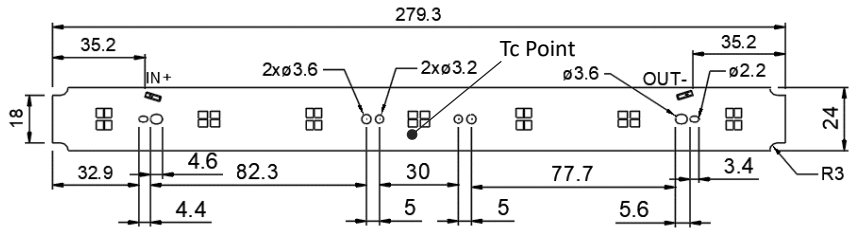


Serial modulation does not cause such brightness difference among modules with different Vf bins.

Mechanical Characteristics

BLX-LN-280-24-C2-1200

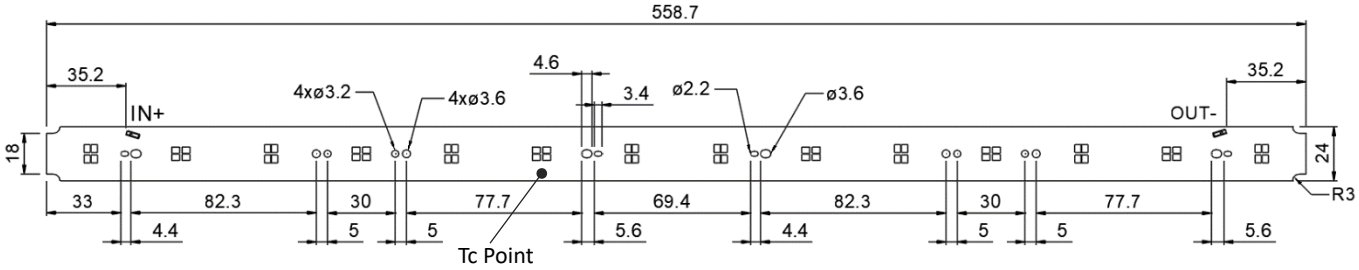
Dimension



- Length: 279.3mm, Width: 24.0mm
- Height: 3.5mm (including connector), 1.6mm (PCB only, in area without copper layer underneath)

BLX-LN-560-24-C2-2400

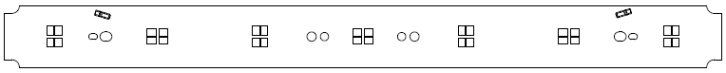
Dimension



- Length: 558.7mm, Width: 24.0mm
- Height: 3.5mm (including connector), 1.6mm (PCB only, in area without copper layer underneath)

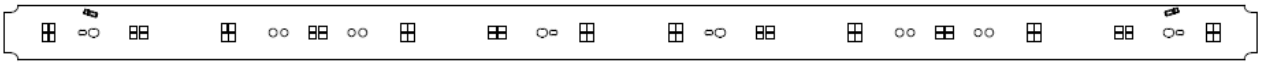
BLX-LN-280-24-C2-1200

Module Image



BLX-LN-560-24-C2-2400

Module Image



Fixing Screws

- Use M3 screws and together with lens array. (6mm diameter metal screw head provides creepage distance for RMS working voltage of 150V when mounted without insulating material between LED module and screw head.)
- Max torque: 0.5 N·m
- Do not use metal washers as it becomes difficult to maintain proper creepage distance.

⚠ This module is designed for RMS working voltage not exceeding 300V when mounted with insulating material between LED module and screw head.

Wiring

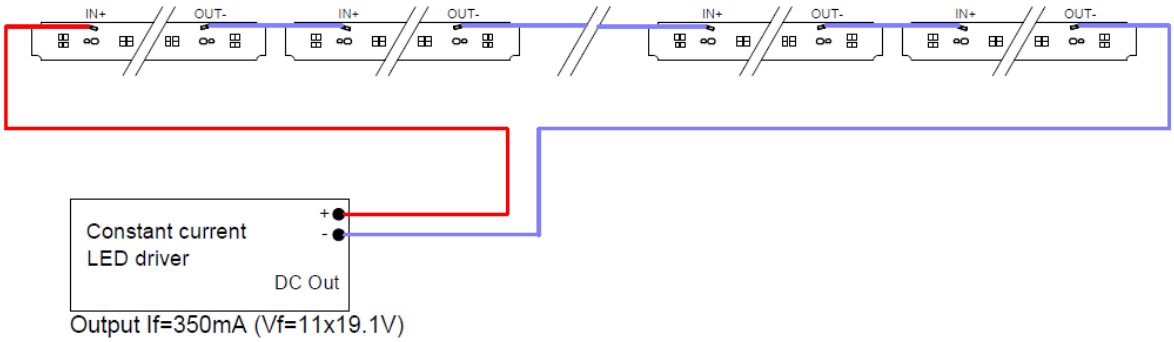
Item	Min	Typ	Max	Unit	Remark
Wire cross section	24		20	AWG	Use solid wire
	0.2		0.5	mm^2	
Strip length	5.5	6.0	6.5	mm	

To release wire, twist and pull the wire simultaneously.

There is no reverse polarity protection. Please use caution and do not drive the module in reverse polarity. It can damage the module.

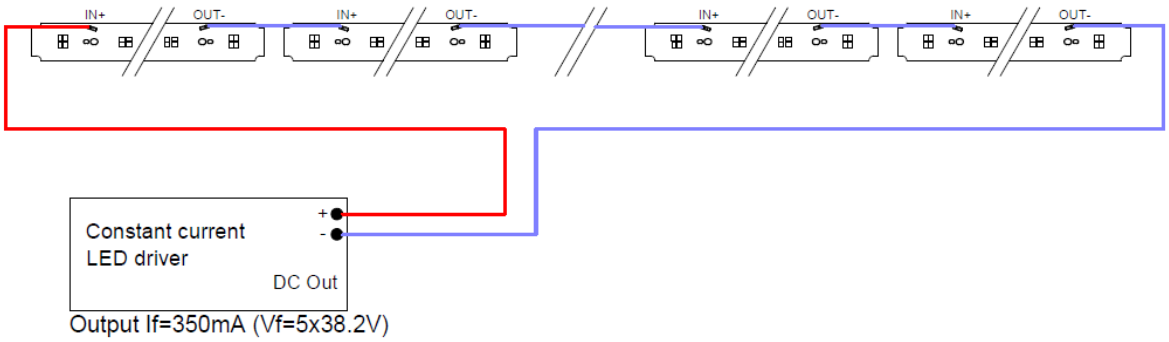
Wiring Example

BLX-LN-280-24-C2-1200



Output If=350mA (Vf=11x19.1V)

BLX-LN-560-24-C2-2400



Output If=350mA (Vf=5x38.2V)

This module is designed for RMS working voltage not exceeding 300V when mounted with insulating material between LED module and screw head.

Lifetime

Lumen Maintenance

Drive current	Tc	L70B50	L80B50	L90B50	L70B10	L80B10	L90B10
800mA	55°C	> 100,000hr	> 100,000hr	59,000hr	> 100,000hr	> 100,000hr	50,000hr
	65°C	> 100,000hr	> 100,000hr	50,000hr	> 100,000hr	88,000hr	42,000hr
	75°C	> 100,000hr	88,000hr	43,000hr	> 100,000hr	74,000hr	36,000hr

Note) The above values are derived from LM80 test and represent statistical values. Individual modules may exhibit variations.

Color Maintenance

- Δu'v' < 0.005 @ 6,000hr (For If < 800mA, Tc < 75°C)

Temperature at Tc Point

- Note that the lifetime of module is strongly dependent upon the temperature at Tc point.
- Please check the temperature at Tc point in your luminaire and make sure that it is below the values in the following table.

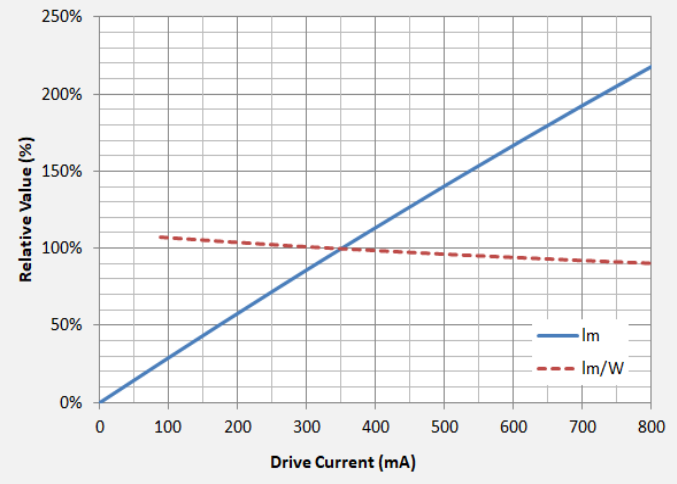
Category	Temperature at Tc point	Drive current per channel	Remark
Nominal	55°C	350mA	Nominal value at which performance is specified
Life	75°C	800mA	Value at which 100,000hr L70B50 lifetime is specified
Max	85°C	800mA	Max value for safety

Absolute Max Ratings

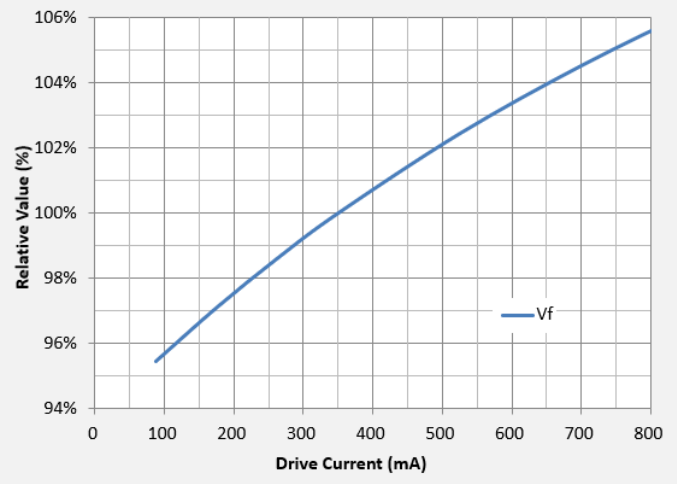
Parameter	Min	Typ	Max	Unit	Remark
Drive current			800	mA	
Tc	-25		85	°C	@ Tc Point
ESD		Class 2		-	JEDEC JS-001-2012
Ambient Temperature	-25		85	°C	

Performance Graphs

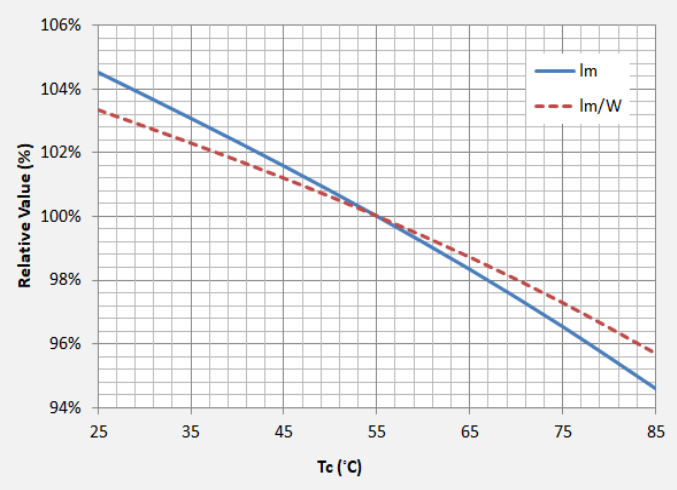
Luminous flux and module efficacy vs. Drive current *



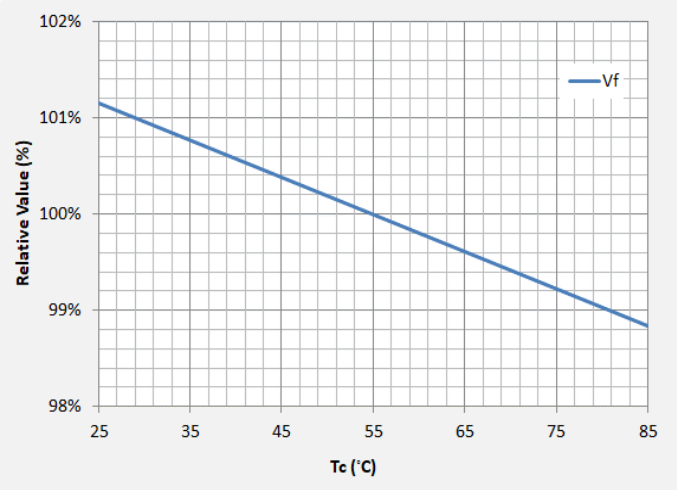
Forward voltage vs. Drive current *



Luminous flux and module efficacy vs. Temperature at Tc point



Forward voltage vs. Temperature at Tc point



Note) The above graphs show representative values. Each module can have different values.

*) These two graphs are at fixed Tc of 55°C.

EU Energy Labeling Data

Supplier's name	Baelux Co., Ltd.
Supplier's address	82-4 Donggwang-ro, Seocho-gu, Seoul 06585, Korea
Model identifier	BLX-LN-280-24-C2-1200-927F
	BLX-LN-280-24-C2-1200-930F
	BLX-LN-280-24-C2-1200-940F
	BLX-LN-560-24-C2-2400-927F
	BLX-LN-560-24-C2-2400-930F
	BLX-LN-560-24-C2-2400-940F

Type of Light Source

Lighting technology used	LED	Non-directional or Directional	NDLS
Light source cap-type	SMT connector	Mains or Non-mains	NMLS
Connected light source (CLS)	No	High luminance light source	No
Color-tunable light source	No	Envelope	No
Anti-glare shield	No	Dimmable	Yes

Product Parameters

General product parameters

Energy consumption in on-mode	**Dimension**		**P_{on}**	On-mode power (P_{on})	**Dimension**	**P_{on}**
	280-24 :		7W		280-24 :	6.7W
	560-24 :		13W		560-24 :	13.4W
Standby power (P_{sb})	N/A			Networked standby power (P_{net}) for CLS	N/A	
Outer dimensions (mm)	280-24	H :	4	Claim of equivalent power	N/A	
		W :	280			
		D :	24			
	560-24	H :	4			
		W :	560			
		D :	24			
If yes, equivalent power (W)	N/A					
Useful luminous flux (Φuse in sphere)	280-24	927F :	1090lm	Energy efficiency class	280-24	927F : D
		930F :	1110lm			930F : D
		940F :	1160lm			940F : C
	560-24	927F :	2180lm		560-24	927F : D
		930F :	2230lm			930F : D
		940F :	2320lm			940F : C

Parameters for LED and OLED light sources

R9 color rendering index value	927F :	50	The lumen maintenance factor	0.96
	930F :	50		
	940F :	50		
Survival factor	0.90			

Parameters for directional light sources

Peak luminous intensity (cd)	N/A	Beam angle in degree	N/A

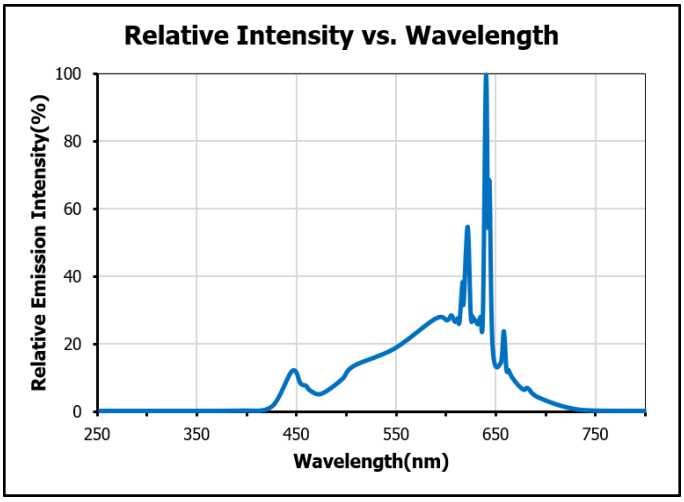
Parameters for LED and OLED mains light sources

Displacement factor (cosΦ1)	N/A	Color consistency in McAdam ellipses	N/A
Claims that an LED light source replaces a fluorescent light source without integrated ballast of a particular wattage	N/A	If yes, then replace claim (W)	N/A
Flicker metric (P_{st}^{LM})	N/A	Stroboscopic effect metric (SVM)	N/A

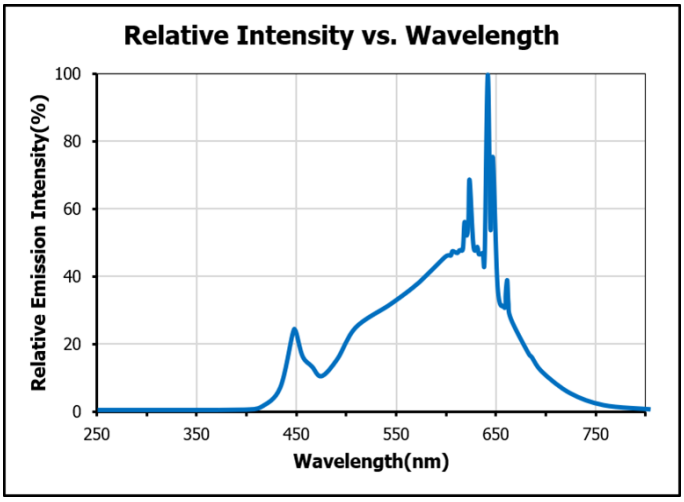
Note) Performance @ If=350mA, Tc=55°C

Spectrum Distributions

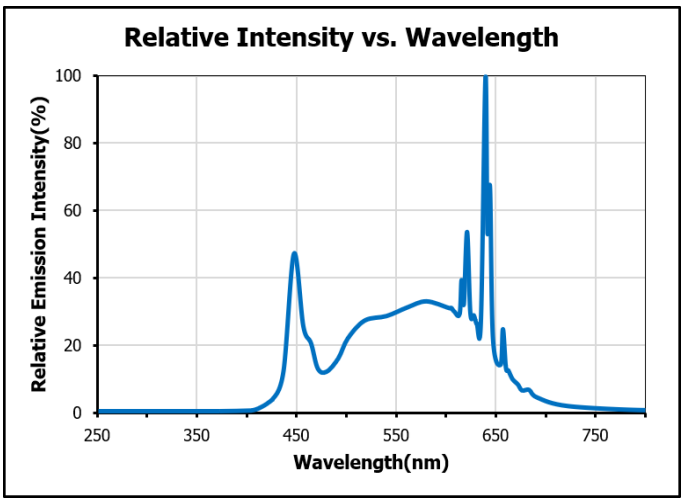
CRI90 2700K



CRI90 3000K



CRI90 4000K



Note) The above spectrum distributions show representative values. Each module can have different values.

Precautions for Use

Chemical Substances

Certain chemical substances listed below may harm LED modules by causing corrosions which result in reduced luminous flux, color shift, and no light output in the worst case. Please use caution when storing LED modules and designing the luminaire system so that LED modules are not exposed to such chemical substances.

- Examples of harmful chemical substances: Sulfur, chlorine, phthalate, halogen, VOCs (volatile organic compound)
- Example sources of harmful chemical substances: Organic rubber, corrugated paper, lead solder paste, epoxy

When designing a sealed luminaire, one must use silicone based sealing instead of rubber based ones and make sure that there is no source of harmful chemical in the luminaire. Do not store LED modules with corrugated paper or rubber.

ESD

This LED module is sensitive to electrostatic discharge. Please handle the module in an environment with appropriate ESD protection measures.

DC Polarity

There is no reverse polarity protection. Please use caution and do not drive the module in reverse polarity. It can damage the module.

Constant Current

This LED module must be driven by constant current LED drivers. Constant voltage driver may damage the module.

LED Handling

LED is a delicate component. Do not touch or apply pressure on the yellow light emitting window of LEDs. This may damage the LED causing no light output.