

Data Sheet

Linear LED Module

BLX-LN-560-24-H1-2400



Product Description

- 560mm x 24mm linear LED module
- Nominal 2400lm @ 300mA, Tc=65°C
- Module efficacy up to 124lm/W
- High CRI of 80+
- High quality of Lambertian white light
- Re-workable push-in connectors for easy wiring
- Suitable for robot wiring
- Simple installation with M3 screws
- Long lifetime of 50,000hr



Order Information

Type	Part number
BLX-LN-560-24-H1-2400-830	71140001
BLX-LN-560-24-H1-2400-840	71140002

Key Performance Data

Type	Typ lm flux	Nominal CCT	Typ Vf	Typ power consumption	Efficacy of module	CRI
BLX-LN-560-24-H1-2400-830	2380lm	3000K	66.1V	19.8W	120lm/W	80+
BLX-LN-560-24-H1-2400-840	2470lm	4000K	66.1V	19.8W	124lm/W	80+

Note) Performance @ If=300mA, Tc=65°C

Photometric Characteristics

Parameter	Type	Min	Typ	Max	Unit	Remark
Luminous flux	830	2240	2380	2600	lm	
	840	2340	2470	2710	lm	
Module efficacy	830		120		lm/W	
	840		124		lm/W	
CCT	830		3000		K	
	840		4000		K	
CIE	830		(0.433, 0.397)		-	
	840		(0.381, 0.373)		-	
Color consistency	-	3.5			SDCM	
CRI	-	80			-	
Radiation angle	-		115		deg	Lambertian

Note) Performance @ If=300mA, Tc=65°C

Measurement tolerance: Luminous flux ±7%, CIE ±0.007

Color measurement indicates integrated color over the module. Color consistency of 3.5 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).

Electrical Characteristics

Parameter	Min	Typ	Max	Unit	Remark
Forward voltage	62.8	66.1	69.4	V	
Power consumption	18.8	19.8	20.8	W	

Note) Performance @ If=300mA, Tc=65°C

Measurement tolerance: Forward voltage ±4%

Max range of Vf considering entire operating temperature range (-25 to 85°C) is 62.3V to 73.3V. 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

This module is designed to be mainly used in serial modulation connecting multiple modules in series. Serial modulation does not require Vf bin matching among modules in one chain.

There are 5 Vf bins (Z0 < Z+ < A0 < A+ < B0 in increasing order) which all lie within the specification range. The Vf bin is marked on the bar code label as shown below.

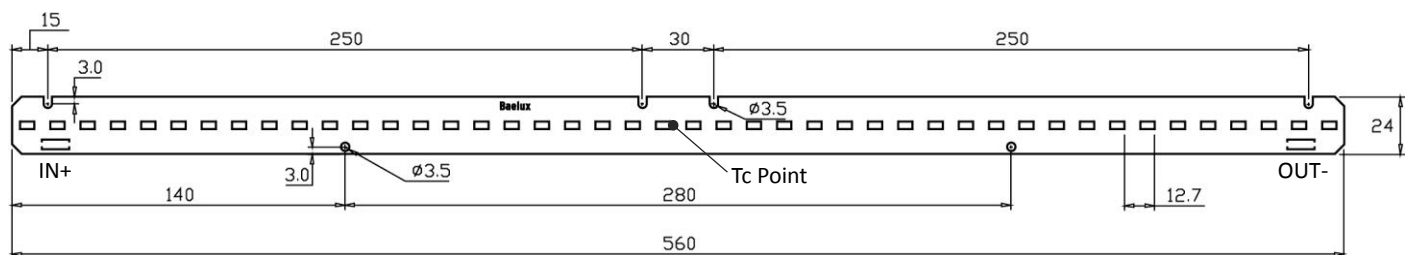
However, parallel wiring of multiple modules can result in a difference in brightness among modules. To minimize such brightness difference in parallel modulation, please use modules with the same Vf bin in one chain.

Bar code label showing Vf bin



Mechanical Characteristics

Dimension



- Length: 560mm, Width: 24mm
- Height: 5.95mm (including connectors), 1.60mm (PCB only, in area without copper layer underneath)

Module Image



Fixing Screws

- Use M3 screws (Max head diameter: 5.6mm to ensure electrical isolation when using metal screws)
- Max torque: 0.5 N·m
- Do not use metal washers whose diameter exceeds that above screw head guideline as it becomes difficult to maintain proper creepage distance. Use insulating washers instead.

Wiring

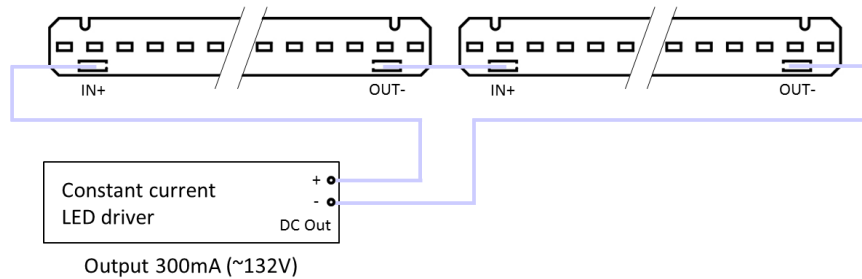
Item	Min	Typ	Max	Unit	Remark
Wire cross section	18		24	AWG	Use solid wire
	0.2		0.8	mm ²	
Insulation diameter			2.1	mm	
Strip length	7.5	8.0	8.5	mm	

To release wire, gently press down the button on top of connector with fingers or tools, and pull the wire.

For stranded wires, use AWG 20 - 22 and apply pre-soldering to bond the strands together before inserting the wire into the connector. Conductor diameter must be less than 1.1mm after pre-soldering.

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

Modulation Example



Lifetime

Lumen Maintenance

Drive current	Tc	L70B50	L80B50	L90B50
300mA	55°C	> 60,000hr	> 60,000hr	33,000hr
	65°C	> 60,000hr	50,000hr	24,000hr
	75°C	59,000hr	37,000hr	18,000hr

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

Color Maintenance

- $\Delta u'v' < 0.007$ @ 6,000hr (For $I_f < 300\text{mA}$, $T_c < 75^\circ\text{C}$)

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.

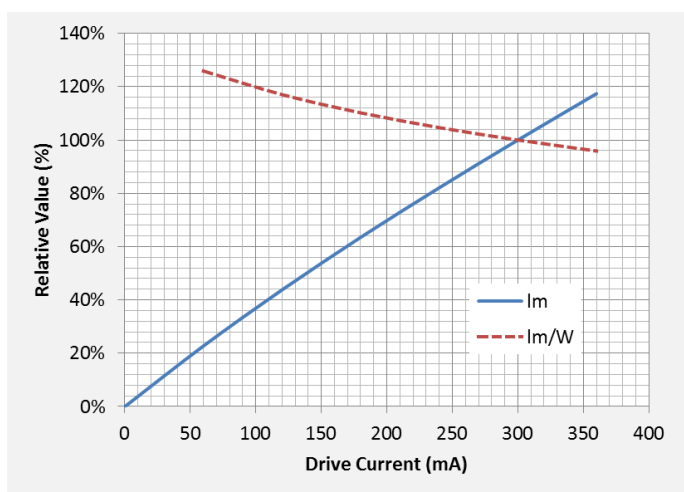
Category	Temperature at Tc point	Drive current	Remark
Nominal	65°C	300mA	Nominal value at which performance is specified
Life	75°C	300mA	Value at which 50,000hr L70B50 lifetime is specified
Max	85°C	360mA	Max value for safety

Absolute Max Ratings

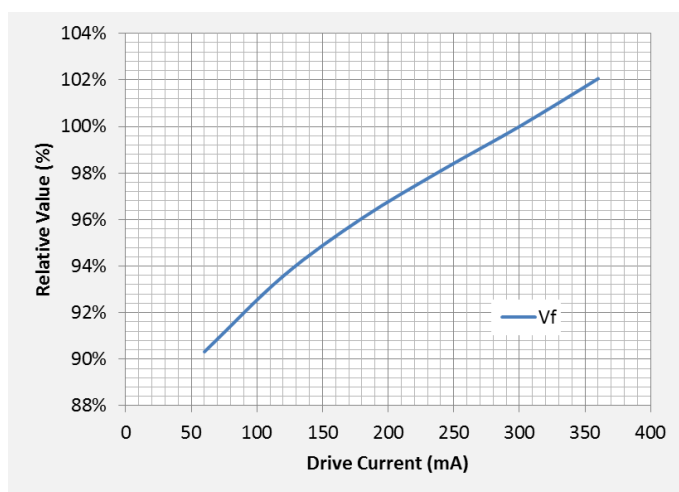
Parameter	Min	Typ	Max	Unit	Remark
Drive current			360	mA	
Tc	-25		85	°C	@ Tc Point
ESD			5	kV	Human body model
Ambient Temperature	-25		85	°C	

Performance Graphs

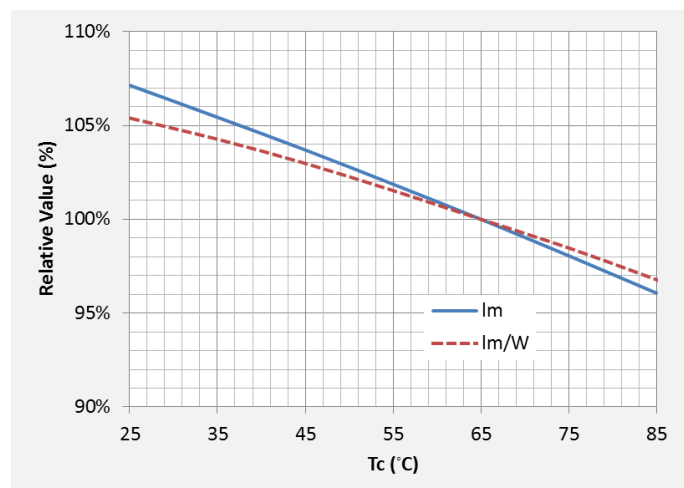
Luminous flux and module efficacy vs. Drive current *



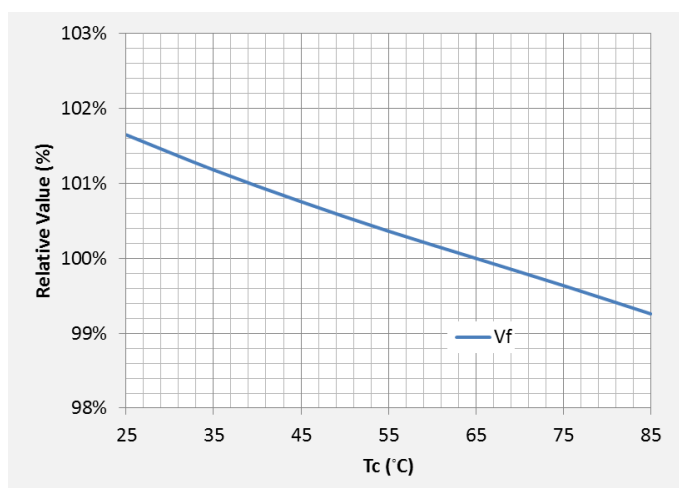
Forward voltage vs. Drive current *



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 65°C.

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. It is recommended that LED modules be stored in aluminum moisture barrier bag or PE (Polyethylene) bag together with silica gel.

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.

This product is manufactured in ISO certified facility with strict quality control.

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