

# Data Sheet

## 1210 SMD LED

### Module LED



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## General Informations:

Injection molding technical, ABS overmolded design protects components from moisture, damage and corrosion. Aluminum PCB, constant current design, ABS housing to make sure excellent heat dissipation. With lens create wide viewing angle, while protect LED well.

## Features:

- SMD3528 TopLED as light source,super luminous flux.
- Large viewing angle with even light shadow.
- Lower light decay and long life span up to 50000 hours.
- Low cost against high light flux, good color uniformity.
- Energy saving,environment-friendly..Suitable for backlighting to mini and slim channel letters.
- Suitable for accent lighting, edge lighting.
- Waterproof, IP65, ideal for outdoor use
- Easy installation and maintenance free.

## Application :

- Back Lighting for Signage & Channel Letter
- Outdoor Lighting for Advertising
- Decorative Lighting
- Architectural Lighting; Shelf Lighting, Garden, Building and others

## Electrical and Flux Characteristics

Table 1: Flux Characteristics

Code	Number of LEDs	Case	Color	Wavelength	Lm (Mod)	Angle
4590	3	SMD 1210	Red	620-625nm	700mcd	120°
4591	3	SMD 1210	Yellow	590-595nm	300mcd	120°
4592	3	SMD 1210	Blue	460-465nm	550mcd	120°
4593	3	SMD 1210	Green	520-525nm	1700mcd	120°
4594	3	SMD 1210	Cold White	8000-9000K	2200mcd	120°
4595	3	SMD 1210	Warm White	3000-3200K	1950mcd	120°

### Notes for Table 1:

1. Parts are tested in pulsed conditions,  $T_j = 25^\circ\text{C}$ . Pulse width is 10 ms at rated test current.
2. İlker Elektronik maintains a  $\pm 10\%$  tolerance on flux measurements.
3. Typical R9 value for 80CRI can be change with 90CRI.
4. Center beam candle power is a calculated value based on Lambertian radiation pattern at nominal test current.

Table 2: Electrical Characteristics

Code	Color	Forward Current	Input Voltage (V)	Power (W/mod)	Lm (Mod)
4590	Red	20mA	12 VDC	0,24W	700mcd
4591	Yellow	20mA	12 VDC	0,24W	300mcd
4592	Blue	20mA	12 VDC	0,24W	550mcd
4593	Green	20mA	12 VDC	0,24W	1700mcd
4594	Cold White	20mA	12 VDC	0,24W	2200mcd
4595	Warm White	20mA	12 VDC	0,24W	1950mcd

### Notes for Table 2:

1. Parts are tested in pulsed conditions,  $T_j = 25^\circ\text{C}$ . Pulse width is 10 ms at rated test current.
2. İlker Elektronik maintains a  $\pm 10\%$  tolerance on Current values.
3. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
4. Voltages must be 12VDC.

**Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$  unless otherwise noted)**

Table 3: Maximum Ratings

Parameter	Maximum Performance
Storage Temperature Range	-50 ~ +80° C
Operating Temperature Range	-40 ~ +60° C
Mounting Surface Temperature	60° C
Input Voltage (DC)	12 V
LED Junction Temperature <sup>1</sup>	120° C
Electrostatic Discharge Classification (JEDEC-JESD22-A114F)	Class 1C
Reverse Voltage <sup>[2,3]</sup>	-5V x Number of series LEDs
UL Recognition	UL recognized

**Notes for Table 3:**

1. Proper current de-rating must be observed to maintain junction temperature below the maximum.
2. SMD LEDs are not designed to be driven in reverse bias.
3. At maximum reverse current of 10 $\mu$ A/LED.

**Application Notes:**

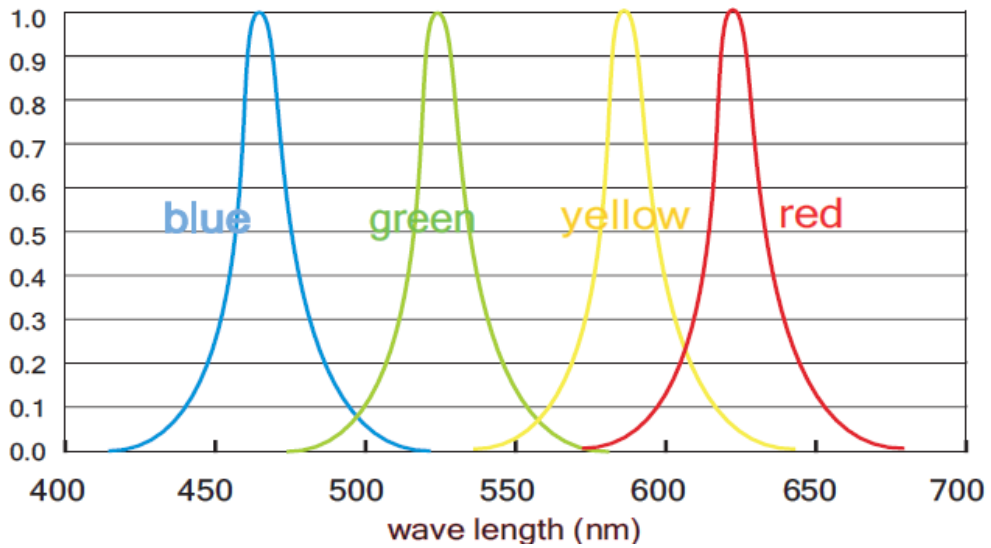
- Please ensure that when connecting to supply, the correct polarity printed on module is observed.
- Use of a regulated 12V DC supply is recommended.
- To prevent voltage drop, a power feed at each end is recommended for chains longer than 20 modules in length. For very long lengths it is recommended to connect a power feed after every 20 modules.

**Precautions:**

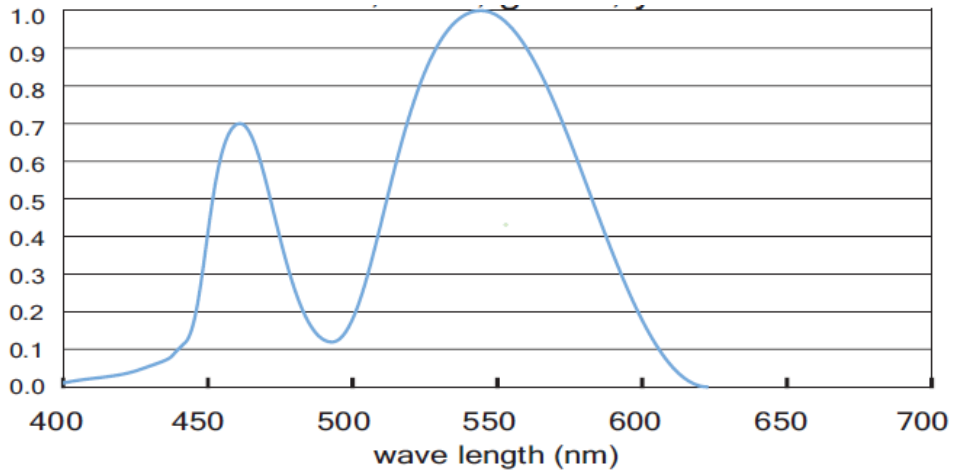
- Current should be derated in order to keep junction temperature below maximum by reducing power dissipation.
- Current spikes should be avoided especially during power up. It is good practice to initially connect PCB to inactivated supply, then gradually ramp up voltage to desired value.
- Proper management of the thermal path should be observed. Adequate heatsinking of strip should be provided in order to maintain junction temperature below maximum. Proper thermal conduction layers should be introduced at all interfaces to prevent insulating air gaps in the thermal path.
- As with all semiconductor devices, it is good practice to avoid electrostatic discharge (ESD).

### Color Wavelength Diagram:

LED Color Spectrum for Red, Green, Blue, Yellow:



LED Color Spectrum for White (80 CRI) :

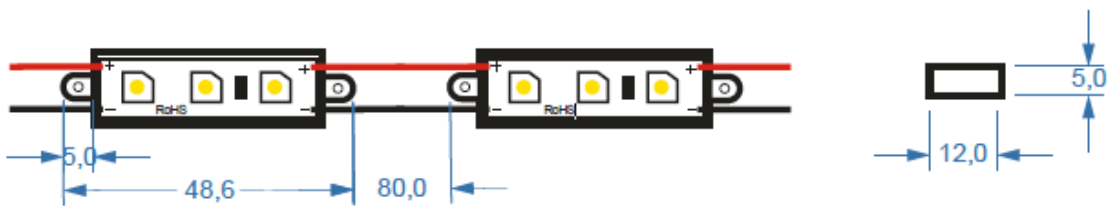


**DO NOT LOOK DIRECTLY  
AT LED WITH UNSHIELDED  
EYES OR DAMAGE TO  
RETINA MAY OCCUR.**

**Mechanical Dimensions:**

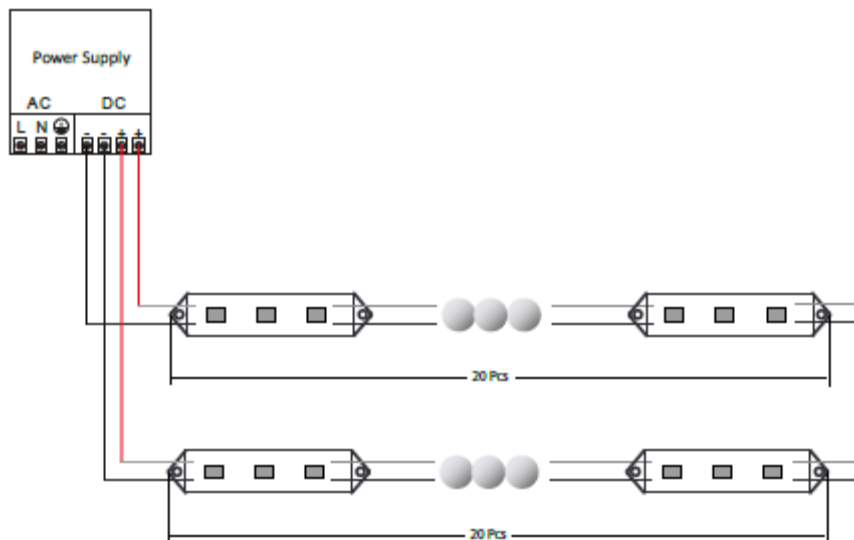
**Technical Drawing:**

4590-4595

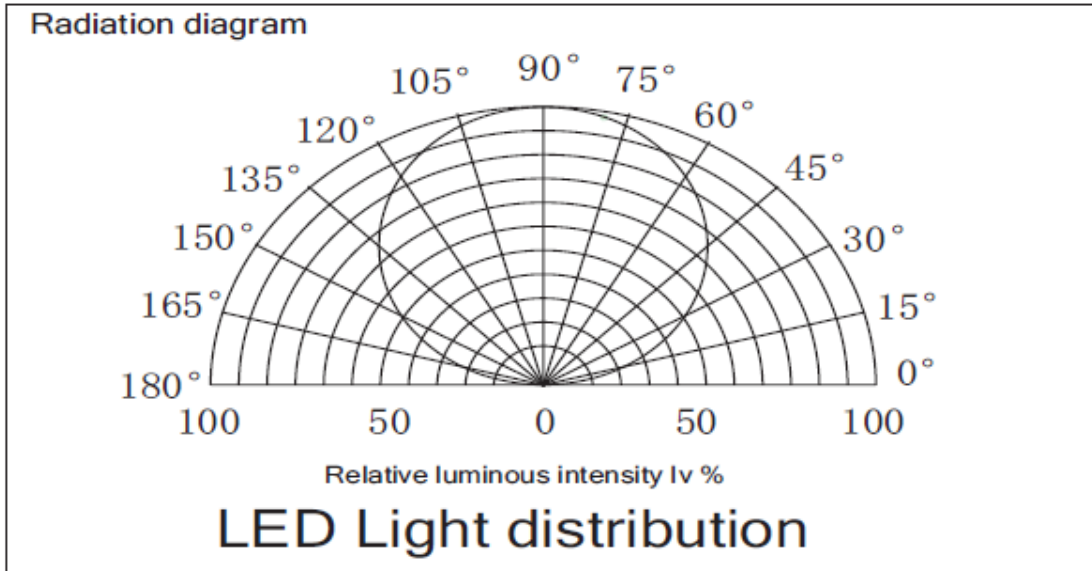


**Electrical Connection:**

**Connection Diagram for LED Modules:**



Optical Characteristics:



Packing:

Outer Package Dimension (Unit: mm) :

