

Advantages:

- three high quality XLamp 4550 LEDs of CREE Lighting,
- able to be driven separately,
- possibility of having different CCTs,
- possibility of having many colour effects,
- drive by current up to 3x125 mA,
- safe low operating voltage,
- very long life time.

Applications:

- decorative illumination,
- dynamic light effects,
- traffic lights,
- stage lightning DMX.

Technical data¹⁾

Product	Colour	Numb er of LEDs	Advisable power type	Operating voltage		Typ. operating current	Power	Viewing angle ²⁾	Wavelength	Luminous flux
				[V]		[mA]	[W]	[°]	[nm]	[lm]
				min	max	max	max	typ.	typ. (I = max)	
RGB 4550	Red	1	Current	2,3	3,0	125	0,25	100	620	12
	Green	1	Current	3,4	4,0	125	0,45	100	525	18
	Blue	1	Current	3,4	4,0	125	0,45	100	470	4,5

¹⁾All data concern particular module. Values of each parameters are average values and in particular copy they can be differ than in the table above. Correlated colour temperature and wavelength have been defined by range, which contains this value.

²⁾ Maximum angle at which LED intensity value is 50% of maximum intensity, observed at mechanical axis of LED.

Qualities:

- great thermal flow thanks to MCPCB substrate,
- easy to montage,
- separate cathode for each LED, common anode,
- brand mark, high quality product,
- substrate shape that allows to connect RGB 4550 modules in hexagonal matrices (Fig.2),
- high light efficiency.

Tolerated work parameters*

Product	Operating temperature [°C]		DC Voltage [V]	Reverse voltage [V]	Junction temperature [°C]
	min	max	max	max	max
RGB 4550	-40	85	3 / 4 / 4	5 / 5 / 5	145

*) Table of physical work parameters, that must not be exceeded because of possibility of lifetime reduction or permanent damage of LED module.

Drawing and mechanical dimensions

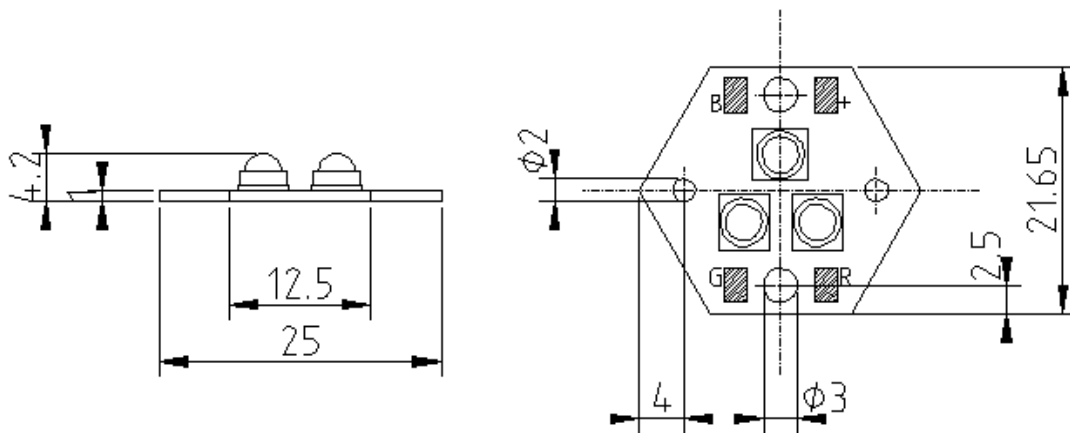


Fig.1. Mechanical dimensions of RGB 4550 module.

Safety information

1. Modules must not be weigh down mechanically to work safe.
2. Montage elements must not destroy LEDs or paths on the plate.
3. Modules have no short circuit, overcharge and thermal protection. It is absolutely necessary for LED power circuits to have such protections.
4. Modules installation (with driving circuits) must be in accordance with all electric and safe standards.
5. It is necessary to keep proper polarization of driving voltages. Wrong polarization could cause LED damage.
6. During installation it is important to remember about influence of electrostatic charge. Before installation charges should be neutralized by touching metal parts of grounded elements (e.g. copper pipe, tap, etc.).
7. It is recommended to keep chip temperature below 85°C. In order to draw heat away from LED junction external radiators can be used. Parameters and dimensions of radiator can be computed using proper equations. Each application, depending on number of LEDs, power, montage and many other parameters, need to be process separately. LEDIKO provides optimal solutions for each customer.
8. LEDs have not corrosion resistant elements. User should provide safe work conditions of circuit. LEDIKO products do not fall within complaint on the basis of damages caused by humidity and chemical conditions.
9. LEDIKO modules are not appropriate to use direct outdoor or in conditions that may damage electric parts (e.g. low or high temperature, humidity, chemical conditions). In such applications it is necessary to use special packages.
10. Package should fulfil such requirements:
 - optical transparency from light emitted side,
 - UV protection (in case of sun light exposure),
 - drawing heat away, to keep safe work of circuit,
 - heat produced by LED resistance,
 - low transmission in all climate conditions.



Montage information

1. LED modules must be connected to power supply in accordance with all electric and safe standards. Before switching power on it is always required to check all the electric connections and make sure that power supply has proper electric parameters.
2. RGB 4550 LED module has four big electric pads. Anodes of all LEDs are connected to common '+' pad. For separate driven there are three '-' pads (R – red LED, G – green LED, B – Blue LED). To solder cables, standard soldering gun is needed.
3. RGB 4550 LED modules are made of high quality MCPCB substrates. These substrates have very good thermal conductivity and they minimize thermal resistance between LEDs and radiator.
4. It is very important to mount module to the element which helps to draw heat away (e.g. aluminium plate, radiator). In case of montage using screws, some separators (silicone, mica, silicone paste or other material that conduct heat) are needed between radiator and substrate of the module. Such a separator needs to be used, because it helps to transfer heat from the substrate to the radiator and makes LED work conditions better. Module can also be mount to the radiator using special glue or tape, which conduct heat.
5. Depends on the power of power supply it is important to use radiator with proper thermal resistance. When power supply is 3x125mA, radiator should have maximum thermal resistance at a level of 20 K/W, it corresponds e.g. aluminium sheet, 2 mm thickness and 25cm² area (e.g. 5 cm side square).

Power supply information

Current power

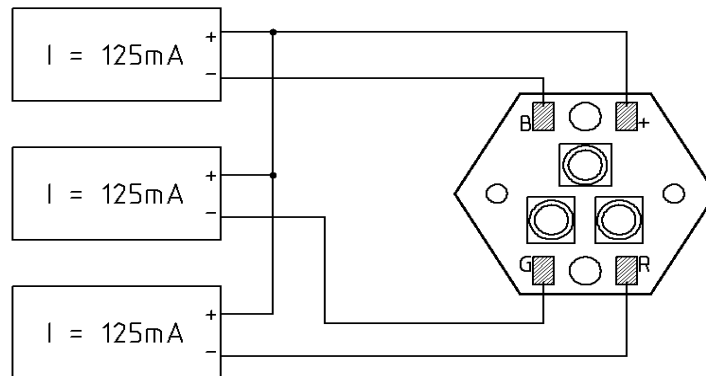


Fig.2. Current power of RGB 4550 LED module.

It is advisable to use steering current power supplies. It is possible to achieve any colour effects, by steering currents. Current must be not higher than 125 mA per LED.

Voltage power

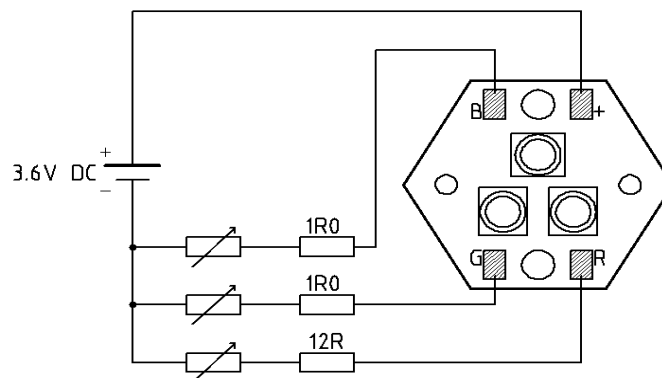


Fig.3. Voltage stabilized power of RGB 4550 LED module.

It is possible to drive modules by voltage using stabilized voltage power supplies with serial resistor (Fig.4) to limit current (up to 125 mA). To have expected colour effects or CCTs, you can decrease current on each LED (increase resistance of resistor).

Instead of resistors, potentiometers can be used. It lets to change light colour fluently. In this case additional resistors are also needed to protect module from current higher than 125 mA..

Shown schemes are not all possible ways of connecting, they only illustrate how RGB 4550 modules can be driven. To get more information about LED driving please visit our web page www.lediko.com and see section [Technology](#).

Order particulars

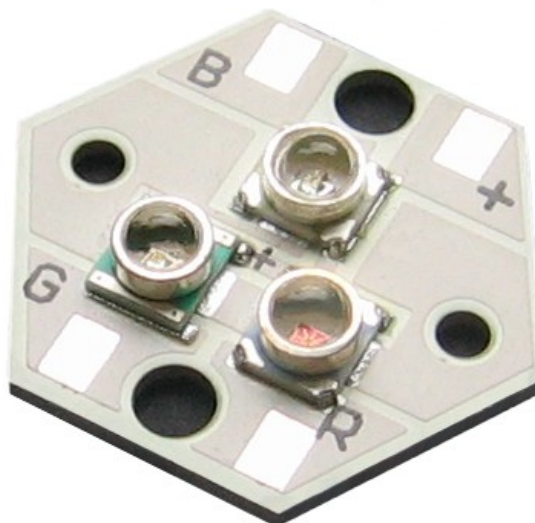
LED Module	LEDs	Wavelength	Typ. luminous flux (125mA)
RGB 4550	Red, green, blue	625 / 525 / 470 nm	12 / 18 / 4,5 lm

When placing an order please write:

- 1) Name and surname of orderer,
- 2) Company name,
- 3) Company Tax Identification Number,
- 4) Address of company or private address for individual customers,
- 5) City and post code,
- 6) Index of elements: number of elements, product code,
- 7) Sending address (if differ from company address).

Welcome to contact us and place orders.
Phone: +48 71 79 85 785

www.lediko.com



Notice: "LEDIKO Walendowski i Wilanowski" Sp.J. stipulate the information in this document is subject to change without notice.