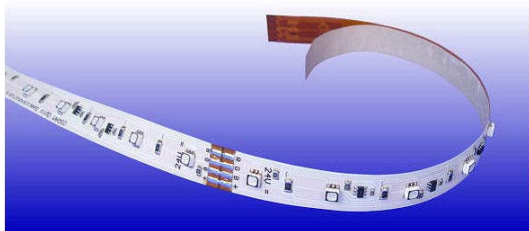


# LINEARlight Colormix Flex

## LM10L



### Benefits

- Flexible self-adhesive module for special coloreffects and moods
- Each LED contains red, green and blue emitters: optimum colormixing

### Applications

- Dynamic color applications
- Edge-lighting of transparent or diffused materials
- Path & contour marking

### Technical Operating Data

Product	Color	Number of LEDs	Voltage [V DC]*	Power [W]*	Current [A]*	Radiance Angle [°]*	Wavelength [nm] Color Temp [K]*	Lum. Flux [lm]*
LM10L-RGB2-B7 +	red	200	24	12,1	0,5	120	625	385
LM10L-RGB2-B7 +	green	200	24	24,0	1	120	525	770
LM10L-RGB2-B7 +	blue	200	24	14,4	0,6	120	467	130
LM10L-RGB2-B8 +	red	200	24	12,1	0,5	120	625	385
LM10L-RGB2-B8 +	green	200	24	24,0	1	120	528	770
LM10L-RGB2-B8 +	blue	200	24	14,4	0,6	120	472	130
LM10L-RGB-B7	red	200	24	12,0	0,5	120	617	213
LM10L-RGB-B7	green	200	24	24,0	1	120	525	336
LM10L-RGB-B7	blue	200	24	19,2	0,8	120	467	54
LM10L-RGB-B8	red	200	24	12,0	0,5	120	617	213
LM10L-RGB-B8	green	200	24	24,0	1	120	525	336
LM10L-RGB-B8	blue	200	24	19,2	0,8	120	472	54

+) Preliminary Data

\*) All Data are related to the entire module

Due to the special conditions of the manufacturing processes of LED the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data. This product was not optimized for white light illumination.

### Technical Features

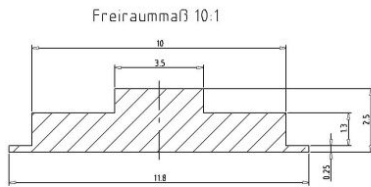
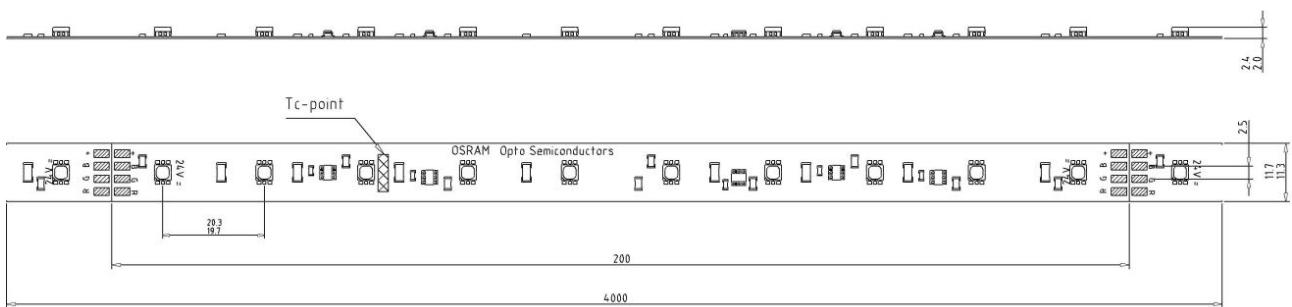
- Maximum total power:  
LM10L-RGB/RGB2: 55,2 / 50,5 W
- Maximum total brightness:  
LM10L-RGB/RGB2: 600/1285 lm
- Smallest unit of 10 LEDs can be cut out at regular intervals without damaging the rest of the module
- Size of printed circuit board (L x W x H):  
4000 mm x 11,5 mm x 2,2 mm
- Driven best by power supply OSRAM OPTOTRONIC®: OT6, OT8, OT20, OT75/E
- Integrated controll gear/ power supply
  - OT EASY 60 driving one LM10L
  - OT DALI 25
- Digital controllgear: DALI/ DMX
  - OT RGB DMX DIM
  - DALI EASY + OTi DALI DIM
- Analog controllgear with 1-10V interface:
  - OT RGB DIM
  - OT RGB Sequenzer

## Minimum and Maximum Ratings

Product	Operating Temperature at Tc-Point [ °C ] *	Storage Temperature [ °C ] *	Voltage Range [ V dc ] *	Reverse Voltage [ V dc ] *
LM10L-RGB2-B7 +	-30 ... 75	-40 ... 85	23 ... 25	25
LM10L-RGB2-B8 +	-30 ... 75	-40 ... 85	23 ... 25	25
LM10L-RGB-B7	-30 ... 75	-40 ... 85	23 ... 25	25
LM10L-RGB-B8	-30 ... 75	-40 ... 85	23 ... 25	25

\*) Exceeding maximum ratings for operation and storage temperature will reduce expected life time or destroy the LED Module.  
 Exceeding maximum ratings for operation voltage will cause hazardous overload and will likely destroy the LED Module.  
 The temperature of the LED module needs to be measured at the Tc-point according to EN60598-1 in a thermally constant status with a temperature sensitive label. For exact location of the Tc-point see drawing below.

## Drawing



## Safety Information

- The LED module itself and all its components may not be mechanically stressed.
- Assembly must not damage or destroy conducting paths on the circuit board.

The LED Module incorporates no protection against short circuits, overload or overheating. Therefore it is absolutely necessary to operate the modules with a electronically stabilised power supply offering protection against the above mentioned safety risks. For dimming applications attention should be paid to specific references in "OPTOTRONIC® Technical Guide".

### **OSRAM OPTOTRONIC® power supplies are specifically designed with protection features for safe operation.**

When using power supplies other than OPTOTRONIC® the following basic safety features are required, in addition to any other application specific concerns and local safety codes:

- Short circuit protection
  - Overload protection
  - Overheat protection
- 
- Installation of LED modules (with power supplies) needs to be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installations.
  - Correct electrical polarity needs to be observed. Wrong polarity will result in no light emission.
  - Parallel connection is highly recommended as safe electrical operation mode. Serial connection is not recommended. Unbalanced voltage drop can cause hazardous overload and damage the LED module.
  - Please ensure that the power supply is of adequate power to operate the total load.
  - When mounting on metallic or otherwise conductive surfaces, there needs to be a electrical isolation at soldering points between module and the mounting surface.
  - The maximum run length of LINEARlight Colormix Flex LM10L from any power feed should be limited to 4000 mm.
  - Pay attention to standard ESD precautions when installing the module.
  - The module, as manufactured, has no conformal coating and therefore offers no inherent protection against corrosion. The ability to customize the length of the module by cutting at specifically marked points is a key feature of the product and hence the reason for no factory installed conformal coating. For these reasons, it is recommended that the user complete all module modifications first (cutting, wiring) and then apply a conformal coating in the final stages of installation.
  - Damage by corrosion will not be honored as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful elements.
  - For applications involving exposure to humidity and dust the module must be protected by a fixture or housing with a suitable protection class. The module can be protected against condensation water by treatment with an appropriate circuit board grade conformal coating. The conformal coating should have the following features:
    - Optical transparency
    - UV-resistance
    - thermal expansion matching the thermal expansion of the module  $15-30 \cdot 10^{-6} \text{ cm/cm/K}$
    - low permeability of steam for all climatic conditions
    - resistance against corrosive environmentThe lacquer APL of the company Electrolube <http://www.electrolube.com> met the conditions for the LINEARlight Flex in our tests.

## Assembly Information

- Solder connections should only be performed on designated solder pads (marked "24V +/-RGB"). During soldering, do not exceed the maximum soldering time of 10 seconds and the maximum soldering temperature of 260°C.
- The smallest unit (200 mm- 10 LEDs) can be removed by cutting with scissors between the designated solder pads.
- The mounting of the module is facilitated by means of the double-sided adhesive on the back-surface of the module. Care must be taken to provide a clean and dry mounting surface, free of oils or silicone coatings as well as dirt particle. The mounting substrate must have sufficient structural integrity. Take care to completely remove the adhesive backing. Once the module is appropriately positioned, press on the module with about 20N/cm<sup>2</sup> (refer to application techniques of 3M adhesive transfer tapes).
- The minimum bending radius is 2 cm. The module may be bent over a smaller radius but only in regions of the circuit board containing no electronic components and such bends should be made once and fixed in position to avoid cyclic fatigue.
- The thermal length expansion coefficient of the modul is 17\*10<sup>-6</sup>cm/cm/K. When installing in environments with large variations in temperature (e.g. outdoor applications) and operating length of more than 2 m, the use of metallic mounting surfaces is necessary. Otherwise it is advisable to use an additional thicker adhesive tape to absorb the stress of any mismatch in expansion coefficients.

## Ordering Guide

Productgroup	Productname	EAN *	S-Unit *
LINEARlight Colormix Flex	LM10L-RGB2-B7 +	4008321169402	8
LINEARlight Colormix Flex	LM10L-RGB2-B8 +	4008321169426	8
LINEARlight Colormix Flex	LM10L-RGB-B7	4008321008824	8
LINEARlight Colormix Flex	LM10L-RGB-B8	4008321008886	8

\*) EAN: Ordering number per single module  
S-Unit: Modules per shipping unit

Note: Typical performance data are subject to change without any further notice, particularly as LED technology evolves.

## Sales and Technical Support

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Sales and technical support is given by the local OSRAM subsidiaries.  
On our world wide homepage all OSRAM subsidiaries are listed with complete address and phone numbers.

## Related and Further Information

- The new dimension of light 153 S006 GB
- New creativity in lighting design  
LED Modules for illuminated signs 138 W002 GB
- OPTOTRONIC® Technical Guide 130 T008 GB
- OPTOTRONIC® Technical Guide - Download:  
Electronic Control Gear - Handbook OPTOTRONIC® [www.osram.com/service\\_corner/download\\_center](http://www.osram.com/service_corner/download_center)
- OSRAM LED systems [www.osram.com/products/led-systems](http://www.osram.com/products/led-systems)