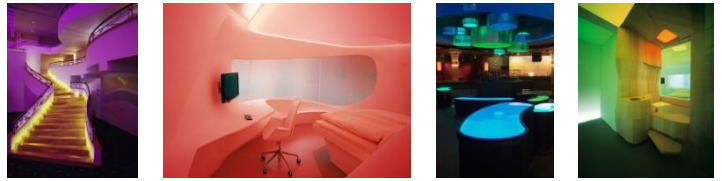


# LINEARlight Colormix Flex – LF05CA2

Technical Datasheet



## Benefits

Flexible, cuttable & self-adhesive RGB module

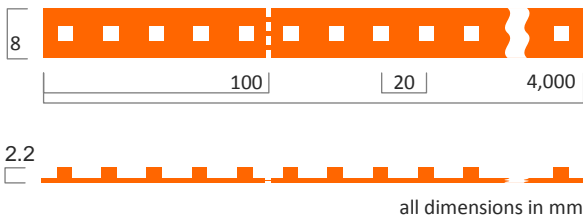
Optimum color mixing:

- each LED contains red, green and blue emitters
- All emitters centered on the board

Developed for colourful ambient, mood and decorative lighting.

## Applications

Light boxes / back lighting  
 Edge-coupling of transparent or diffuse materials  
 Path illumination, contour accentuation  
 Ambient, mood and decorative lighting



## Quick reference

Product	Order Code	Color	Dominant Wavelength	W/m	lm/m	lm/W	Shipping Units
LF05CA2-RGB3	4008321851536	RGB		18	470	26	1 / 8
		Red	625	7.2	161	22	
		Green	525	5.4	256	47	
		Blue	465	4.8	53	11	

## Technical features

<b>Dimming / Color control</b>	Pulse width modulation (PWM)
<b>RGB</b>	Each LED with 3 separate emitters for RED, GREEN, BLUE All emitters centered on the board
<b>Lifetime</b>	50,000 h (L70B50 @ Tc = 40°C)
<b>Adhesive tape on backside</b>	3M VHB 9460
<b>Cut &amp; Connect</b>	Cuttable every 10 cm / Easy connect with SLIMCONNECTsystem
<b>Complementary systems</b>	SLIMCONNECTsystem, SLIM TRACK, OPTOTRONIC

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## Technical operating data (for overall module)

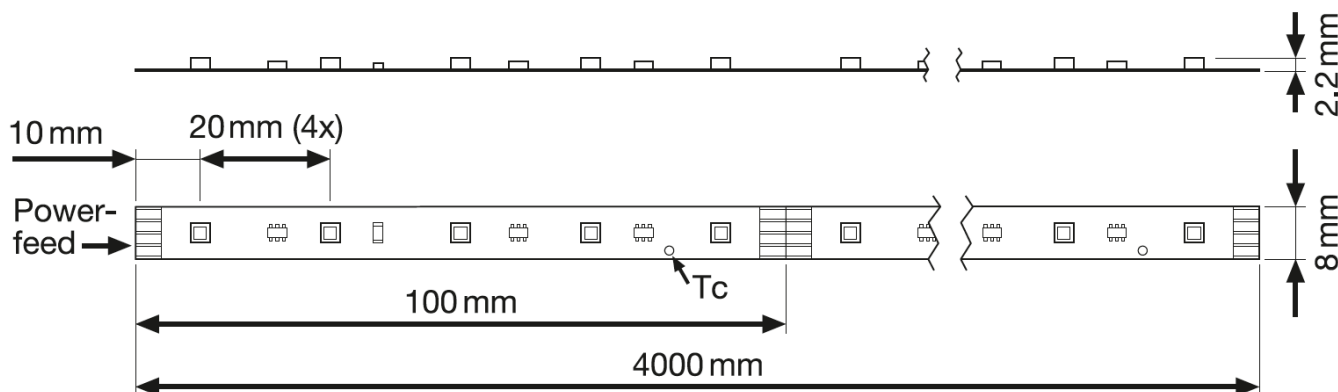
Product	Order Code	Color	Voltage [V]	Power [W]	Current [A]	Luminous Flux [lm]	Radiance Angle [°]	Overall Length
LF05CA2-RGB3	4008321851536	RGB	24	72	3	1883	120	4 m
		Red	24	28.8	1.2	645		
		Green	24	22	0.9	1025		
		Blue	24	19.2	0.8	213		

## Minimum & maximum ratings

	Operating temperature at Tc-Point [°C]	Storage temperature [°C]	Voltage range [V dc]	Reverse Voltage [V dc]
LF05CA2	-30 ... +75°C	-40 ... +85°C	23 ... 25 V	25 V

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

## Technical drawing



## Safety information

- ▶ The module has to be protected from mechanical loads
- ▶ Assembly must not damage or destroy conducting paths on the circuit board.
- ▶ Installation of LED modules (with power supplies) needs to be made with regard to all applicable and safety standards. Only qualified personnel should be allowed to perform installations.
- ▶ Observe correct polarity!  
Depending on the product incorrect polarity will lead to emission of no light. The module can be damaged after a few seconds. To prevent this, correct polarity immediately! (see "reverse voltage", page 2)
- ▶ Parallel connection is highly recommended as safe electrical operation mode.  
Serial connection is not recommended. Unbalanced voltage drop can cause hazardous overload the LED module.
- ▶ ESD protection methods have to be observed when cutting and connecting the module. Check on ESD handling in the application note ESD protection for LED modules.
- ▶ The LED Module must not be operated under water
- ▶ 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 an electrical isolation at soldering points between module and the mounting surface.
- ▶ The maximum run length from any power feed should be limited to 4000 mm.
- ▶ 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:

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- Optical transparency
  - UV-resistance
  - Thermal expansion coefficient  $15 - 30 \cdot 10^{-6} \text{ K}^{-1}$
  - low permeability of steam for all climatic conditions
  - resistance against corrosive environment
- ▶ Dimming/ color controlling is only possible with PWM.
  - ▶ The LINEARlight Colormix Flex is driven ideally by OSRAM OPTOTRONIC power supplies and control gear. Control gear is available with 1..10V, DALI or DMX interface.
  - ▶ Please refer to the maximum currents of the control gear when calculating the whole installation (OT DIM: 5A, OTi DALI DIM: 5A, OT DMX, 3-Channel DIM or Sequencer: 2A per channel). Please read our OPTOTRONIC technical installation guide for more detailed information about calculation and wiring diagrams.

**In order to drive OSRAM LED-Modules safely, it is absolutely necessary to operate them with an electronically stabilized power supply protecting against short circuits, overload and overheating.**

To also ease the luminaire/installation approval, electronic control gear for LED or LED modules should carry the CE mark and be ENEC certified. In Europe the declarations of conformity must include the following standards:

CE: EC 61347-2-13, EN 55015, IEC 61547 and IEC 61000-3-2 - ENEC: 61347-2-13 and IEC/EN 62384.

Also check for the mark of an independent authorized certification institute.

Please see the relevant brochure for more detailed information (see "Related and Further Information")

**OSRAM OPTOTRONIC® control gear complies to all relevant standards and guarantees safe operation.**

## Assembly Information

- ▶ The module can be connected easily and without any tools with the optional SLIMCONNECTsystem. Please note the maximum ampacity.
- ▶ Connection with soldering wires on unmounted module:  
Do not pre-tin the solderpads (marked "24V +/RGB") but pre-tin the wires and solder for max 4 s at 300 °C. Allow solderpoints to completely cool down before the next soldering. Prevent shear- or peel forces.
- ▶ Soldering of wires with the module mounted on a heatsink:  
Pre-tin solderpads and wires and solder for max 3 s at 350 °C. Allow solderpoints to completely cool down before the next soldering. Prevent shear- or peel forces.
- ▶ 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 protective film. 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 20 mm.
- ▶ 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.
- ▶ We do not recommend the use of LINEARlight Colormix Flex® in applications where only white light is needed. For those, rather use LINEARlight POWER Flex®, LINEARlight Flex® ADVANCED & LINEARlight Flex® Eco.

## Complementary systems and accessories

### Accessories

Type	Product	EAN	Shipping units
<b>SLIMCONNECTsystem</b>			
4pin Feeder	LF-4PIN Flex SC	4052899904835	10 / 250
Jumper (board-to-board)	LF-CONN Flex SC	4008321832467	25 / 250
Extension wire 30mm	LF-WIRE-30 FLEX SC	4008321875587	100 / 10,000
Extension wire 150mm	LF-WIRE-150 FLEX SC	4008321875563	50 / 5,000
<b>SLIM TRACK System</b>			
SLIM TRACK	LF-LTS-2100 SLIM TRACK	4008321978981	40
Mounting Bracket for SLIM TRACK	LF-LTS-MB	4008321979025	35 / 280
Clear SLIM TRACK Cover	LF-LTS COVER C	4008321790187	40
Diffuse SLIM TRACK Cover	LF-LTS-COVER-DIFFUSE	4008321979001	40
Endcap for Diffuse Cover	LF-LTS-ENDCAP	4008321979049	20 / 160
Semi-Diffuse SLIM TRACK Cover	LF-LTS COVER S	4008321790200	40

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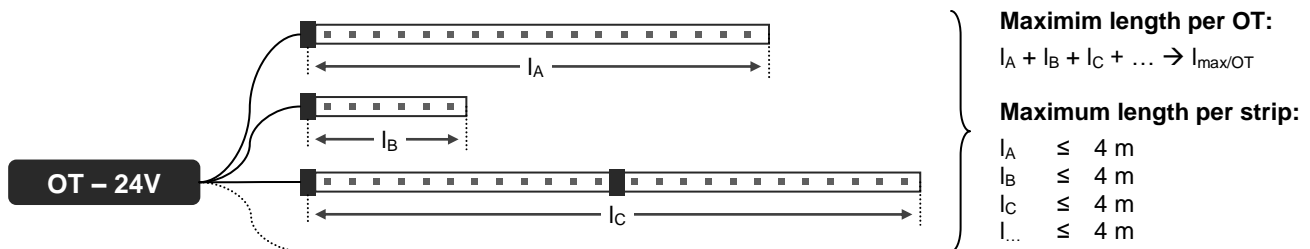
## OPTOTRONIC

► Please consider that lengths may differ if further controls are installed.

Recommended OPTOTRONIC® drivers	EAN	Recommended max. length per driver
<b>Non-dimmable</b>		
OPTOTRONIC OT 6/200-240/24 CE	4008321113269	0,1 m <sup>(*)</sup> - 0,3 m
OPTOTRONIC OT 8/200-240/24	4008321040169	0 m - 0,4 m
OPTOTRONIC OT 20/220-240/24	4050300618111	0,1 m <sup>(*)</sup> - 1,1 m
OPTOTRONIC OT 20/120-240/24 S	4050300662626	0,1 m <sup>(*)</sup> - 1,1 m
OPTOTRONIC OT 75/220-240/24	4050300817477	0 m - 4,1 m <sup>(**)</sup>
OPTOTRONIC OT 75/220-240/24 E	4008321362476	0 m - 4,1 m <sup>(**)</sup>
OPTOTRONIC OT 80/220-240/24 P	4008321981684	1,4 m <sup>(*)</sup> - 4,4 m <sup>(**)</sup>
OPTOTRONIC OT 120/220-240/24 P	4008321981707	3,4 m <sup>(*)</sup> - 6,6 m <sup>(**)</sup>
OPTOTRONIC OT 240/220-240/24 P	4008321981721	6,7 m <sup>(*)</sup> - 13,3 m <sup>(**)</sup>
<b>Dimmable</b>		
OPTOTRONIC OT EASY 60 II	4008321187796	0 m - 3,3 m
<b>OPTOTRONIC OT EASY 80</b> [RECOMMENDATION]	<b>4008321808363</b>	<b>0 m - 4,4 m<sup>(**)</sup></b>
OPTOTRONIC OT 65/220-240/24 3DIM E	4008321964403	0 m - 3,6 m
OPTOTRONIC OTi DALI 75/220-240/24 1-4 CH	4008321371560	0 m - 4,1 m <sup>(**)</sup>
OPTOTRONIC OT 80/220-240/24 DIM P	4008321981677	1,4 m <sup>(*)</sup> - 4,4 m <sup>(**)</sup>
OPTOTRONIC OT 120/220-240/24 DIM P	4008321981691	3,4 m <sup>(*)</sup> - 6,6 m <sup>(**)</sup>
OPTOTRONIC OT 240/220-240/24 DIM P	4008321981714	6,7 m <sup>(*)</sup> - 13,3 m <sup>(**)</sup>

(\*) Operation with shorter length possible. Recommended minimum length to achieve optimum operating conditions.

(\*\*) Total lengths per driver. Length of single strip must not exceed 4 m.



## Contacts & information

German engineering meets Italian elegance – **creating a European product**  
 All LINEARlight Colormix Flex® are Made in Italy by OSRAM, with over 100 years of experience in light solutions.



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Sales and technical support is given by the local OSRAM subsidiaries.

On the OSRAM website all subsidiaries are listed with complete address and phone numbers.

OSRAM LED Systems  
 OSRAM catalogue  
 General information

[www.osram.com/led-systems](http://www.osram.com/led-systems)  
<http://catalog.osram.com>  
[www.osram.com](http://www.osram.com)

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