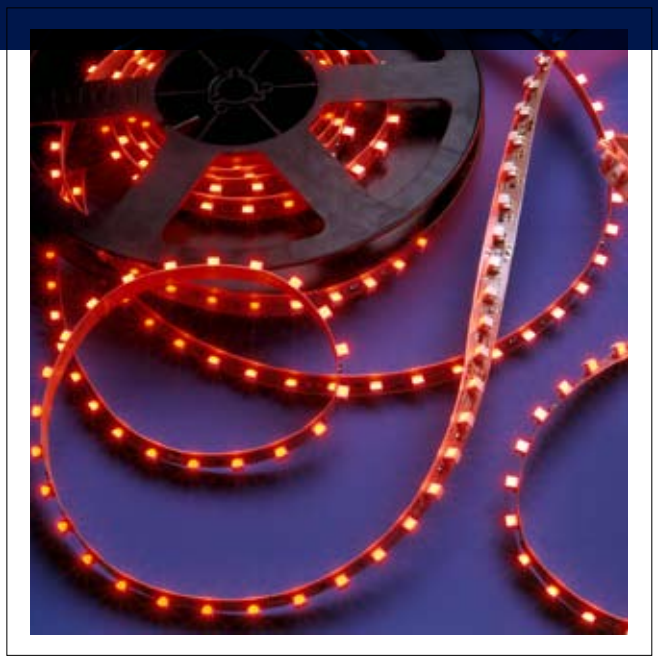
LINEARlight FLEX® SIDELED®

Flexible LED Strip



LINEARlight FLEX SIDELED modules are alternative choices for general lighting linear and contoured applications including cove lighting, architectural niches and pathway marking. LINEARlight FLEX SIDELED modules are also ideal for edge lighting transparent and diffuse materials. They provide an optimal solution for precise backlighting of complex contours.

LINEARlight FLEX SIDELED Modules are mounted on self-adhesive tape and can be conveniently field cut. They are optimally paired with OSRAM OPTOTRONIC® 24Vdc power supplies.

Key Features & Benefits

- OSRAM Hyper SIDELED provides high luminous flux
- Entire strip consists of 300 LEDs
- Conveniently field cut with scissors (smallest unit = 4 LEDs per section)
- LED strip on flexible printed circuit board with self-adhesive back
- Service life of up to 100,000 hours for red and yellow and 50,000 for white, blue, and green when temperature at Tc point is maintained at 40°C
- Optimal operation with OPTOTRONIC 10.5 Vdc power supplies
- Size of entire module (L x W x H) 13.8ft x 0.4in. x 0.19in.

Product Offering

Ordering Description	Wattage (W)	Color
LNRFLXSD/LM11A/W3 13.8FT	31.5	4700K White
LNRFLXSD/LM11A/W3 13.8FT	31.5	5400K White
LNRFLXSD/LM11A/W 13.8FT	31.5	6200K White*
LNRFLXSD/LM11A/W3 13.8 FT	31.5	6500K White
LNRFLXSD/615/LM11A/A 13.8FT	15.75	615nm Red
LNRFLXSD/587/LM11A/Y 13.8FT	23.63	587nm Yellow
LNRFLXSD/525/LM11A/T 13.8FT	31.5	525nm Green
LNRFLXSD/470/LM11A/B 13.8FT	31.5	470nm Blue

* Product to be discontinued. Please check with your OSRAM SYLVANIA representative for availability.

Application Information

Applications

Cove lighting
Edge lighting transparent/diffuse materials
Border marking
Commercial signs
Emergency/rescue signs
Path and contour marking
Backlighting complex contours
Refrigeration cases
Display shelves
Recessed lighting

Specification Data

Catalog #	Type
Project	
Comments	
Prepared by	Date

Ordering Information

Item Number	Ordering Abbreviation	Module Length (ft)	No. of LEDs	Power* (W)	Voltage (Vdc)	Current (Amps)	Color Temp (K) Wavelength (nm)	Lumens (lm)
70090	LNRFLXSD/LM11A/W3-847	13.8	300	31.5	10.5	3	4700K	1000
70088	LNRFLXSD/LM11A/W3-854	13.8	300	31.5	10.5	3	5400K	1000
70070	LNRFLXSD/LM11A/W-862**	13.8	300	31.5	10.5	3	6200K	405
70087	LNRFLXSD/LM11A/W3-865	13.8	300	31.5	10.5	3	6500K	1000
70066	LNRFLXSD/615/LM11A/A	13.8	300	15.75	10.5	1.5	615nm	117
70067	LNRFLXSD/587/LM11A/Y	13.8	300	23.63	10.5	2.25	587nm	405
70068	LNRFLXSD/525/LM11A/T	13.8	300	31.5	10.5	3	525nm	147
70069	LNRFLXSD/470/LM11A/B	13.8	300	31.5	10.5	3	470nm	37

* All data is related to entire module measured at Tc point of 25°C. Data reflects statistical mean values. Actual data may differ depending on variances in the manufacturing process. End users need to take into account the lumen depreciation as the temperature rises with various thermal management solutions installed.

**Product to be discontinued. Please check with your OSRAM SYLVANIA representative for availability.

Ordering Guide

LNRFLXSD	/	615	/	A
Module Name LINEARlight FLEX SIDELED		Wavelength (nm)		Color Code A = Amber Red, Y = Yellow, T = True Green, B = Blue

Power Supply Information

Maximum allowed length per power supply

	OT6/100-120/10CE (51502)	OT20/120-240/10E (51599)	OT25/120/10 (51505)	OT25/12-/10CORD (51506)	OT50/120/10 (51508)	OT50/120-277/10E (51509)
LED Description	**Length (ft)**	**Length (ft)**	**Length (ft)**	**Length (ft)**	**Length (ft)**	**Length (ft)**
LNRFLXSD/LM11A/W3-847	2.6	8.7	10.8	10.8	21.9	21.9
LNRFLXSD/LM11A/W3-854	2.6	8.7	10.8	10.8	21.9	21.9
LNRFLXSD/LM11A/W-862	2.6	8.7	10.8	10.8	21.9	21.9
LNRFLXSD/LM11A/W3-865	2.6	8.7	10.8	10.8	21.9	21.9
LNRFLXSD/615/LM11A/A	5.1	17.5	21.9	21.9	43.7	43.7
LNRFLXSD/587/LM11A/Y	3.5	11.6	14.5	14.5	29	29
LNRFLXSD/525/LM11A/T	2.6	8.7	10.8	10.8	21.9	21.9
LNRFLXSD/470/LM11A/B	2.6	8.7	10.8	10.8	21.9	21.9

Note: For dimming LINEARlight SIDELEDs with OT DIM or OTRGB 3CH DIM, allow for an additional power consumption of 3 watts for a 50 watt LED load.

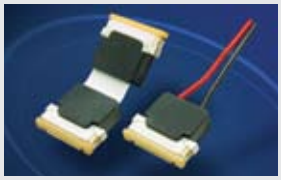
Minimum and Maximum Ratings

Parameter	Symbol	Values
Operating Temperature at Tc point	T_{op}	-30... +70°C (-22 to +158°F)
Storage Temperature Range	T_{stg}	-40... +85°C (-40 to +185°F)
Voltage Range	V_{max}	10 – 11 Vdc
Reverse Voltage	V_R	11 Vdc

Notes:

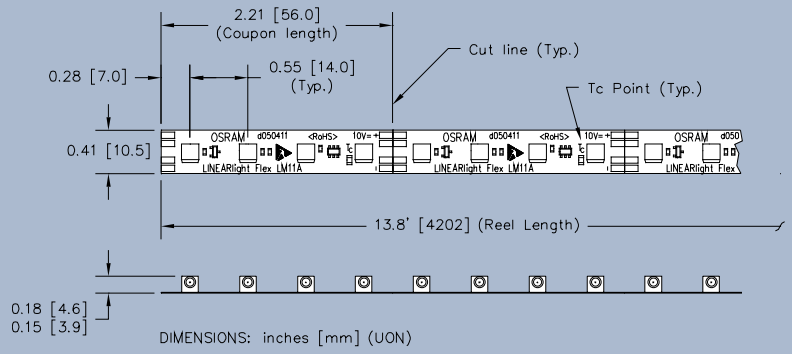
1. Temperature should be measured at the Tc point on the module. Operating temperature range for red and yellow modules is -30 to 80°C.
2. Exceeding maximum ratings may damage the LED module and cause potential safety hazards.
3. Elevated operating temperatures can be expected to negatively impact the service life in terms of lumen output.

Accessories



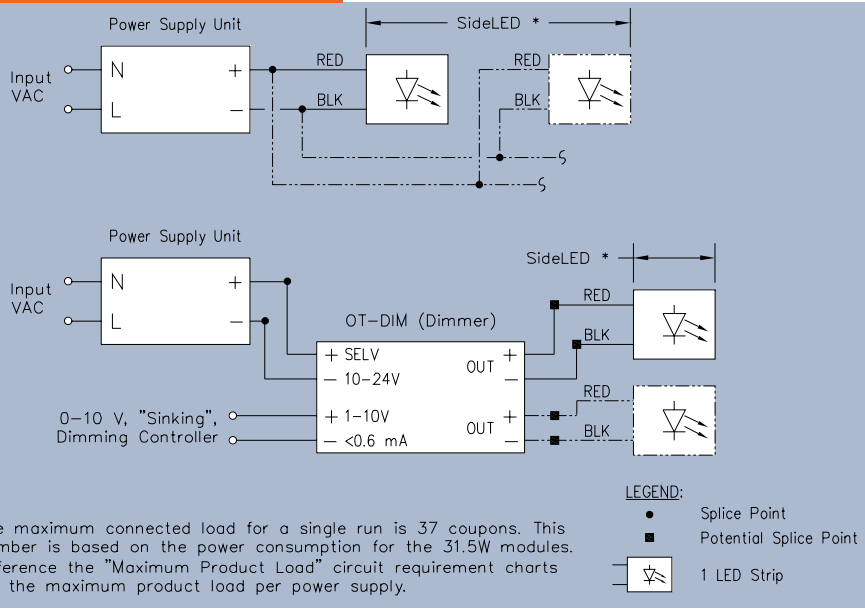
Item Number	Ordering Description	Length (in.)
70269	LM2PINFLEXCONN	0.48
70263	LM2PIN5FLEXCONNBB	1.4

Assembly Diagram



	Length in. (mm)	Width in. (mm)
Entire PCB	165.35 (4200)	0.4 (10)
Smallest Unit	2.20 (56)	0.4 (10)
LED Spacing	0.55 (14)	

Wiring Diagram



* The maximum connected load for a single run is 37 coupons. This number is based on the power consumption for the 31.5W modules. Reference the "Maximum Product Load" circuit requirement charts for the maximum product load per power supply.

Safety Information

1. The LED module itself and all its components may not be mechanically stressed.
2. 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 necessary to operate the modules with an electronically stabilized power supply offering protection against the above mentioned safety risks.

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 should be verified in addition to any other application specific concerns and local safety codes:

- Short circuit protection
- Overload protection
- Overheat protection
- Correct output voltage, including consideration for ripple and spikes.

Safety Information (continued)

3. 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.
4. Correct electrical polarity needs to be observed. Wrong polarity will result in no light emission and may destroy the module.
5. Please ensure that the power supply is of adequate power rating to operate the total load. Follow appropriate NEC requirements.
6. When mounting on metallic or otherwise conductive surfaces, an electrical isolation is required at soldering points between the module and the mounting surface.
7. The maximum length of LINEARlight FLEX OS-LM11 is 6.8 ft. for green, blue, white and yellow and 13.8 ft. for red with a power feed at one end. The complete module (13.8 ft.) can be operated with a power feed in the middle of the module or from both ends.
8. Pay attention to standard ESD precautions when installing the module.
9. 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.
10. 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.
11. For applications involving exposure to humidity and dust the module must be protected by a fixture or housing with a suitable protection glass. 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 x 10^-6 cm/cm/K
    – Low permeability of steam for all climatic conditions
    – Resistance against corrosive environment

    The lacquer APL of the company Electrolube http://www.electrolube.com has met the conditions for LINEARlight FLEX in our tests.
12. 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.

Assembly Information

1. Solder connections should only be performed on designated solder pads (marked "10V +/-"). During soldering, do not exceed the maximum soldering time of 10 seconds and the maximum soldering temperature of 260°C.
2. The smallest unit (2.2" – 4 LEDs) can be removed by cutting with scissors between the designated solder pads.
3. 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 particles. 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^2 (refer to application techniques of 3M adhesive transfer tapes).
4. 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. Such bends should be made only once and fixed in position to avoid cyclic fatigue.
5. The thermal expansion coefficient along the length of the module is 17 x 10^-6cm/cm/K. When installing in environments with large variations in temperature (e.g. outdoor applications) and operating length of more than 2m, 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.

OSRAM SYLVANIA
National Customer
Service and Sales Center
18725 N. Union Street
Westfield, IN 46074 USA

Industrial Commercial
Phone: 1-800-255-5042
Fax: 1-800-255-5043

National Accounts
Phone: 1-800-562-4671
Fax: 1-800-562-4674

OEM/Special Markets
Phone: 1-800-762-7191
Fax: 1-800-762-7192

Display/Optic
Phone: 1-888-677-2627
Fax: 1-800-762-7192

In Canada
OSRAM SYLVANIA LTD
Headquarters
2001 Drew Road
Mississauga, ON L5S 1S4

Industrial Commercial
Phone: 1-800-263-2852
Fax: 1-800-667-6772

Special Markets
Phone: 1-800-265-2852
Fax: 1-800-667-6772

Visit our website: www.sylvania.com