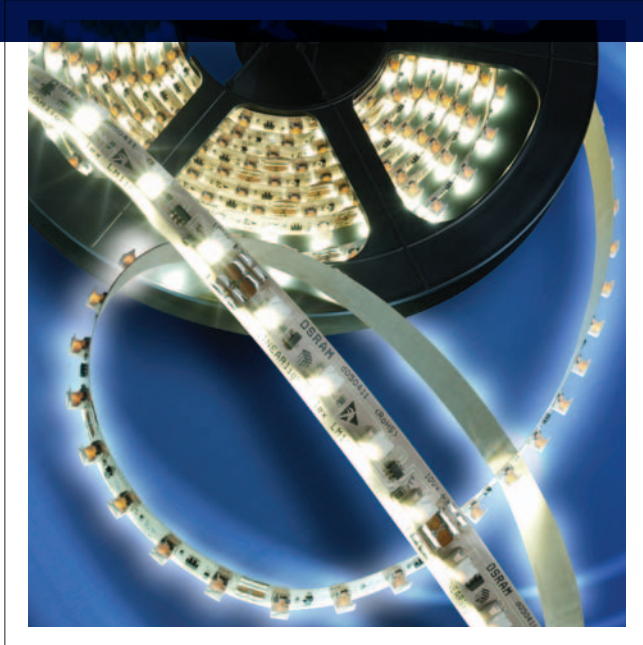


LINEARlight FLEX® SIDELED®

Flexible LED Strip



LINEARlight FLEX SIDELED LED 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 OPTOTRONIC® 24Vdc power supplies.

Key Features & Benefits

- Side emitting LEDs allow the module to be mounted on one plane and light another
- Flexible circuit board with self-adhesive backing allows for easy installation in complex contours
- Low profile module enables mounting in compact spaces
- 14 foot module decreases complexity of wiring and programming, simplifying installation for long linear runs
- Modules can be field cut to achieve a customized fit (smallest unit = 4 LEDs per section)
- LEDs are closely spaced to minimize hot spots in shallow installations
- Dimmable by pulse width modulation, a method that maintains consistent lumen output and color
- Long life: up to 50,000 (L₅₀) hours when temperature at Tc point is maintained at 40°C minimizing maintenance frequency

Product Offering

Ordering Abbreviation	Wattage	Color
LNRFLXSD/LM11A/W3	31.5	6500K

Application Information

Applications

- Backlighting complex contours
- Border marking
- Commercial signs
- Cove lighting
- Edge lighting
- Illuminated advertising
- Path and contour marking
- Recessed lighting

Specifications and Certifications

RoHS compliant
Listed in the Sign Components Manual (SAM)



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)	Module Current (Amps)	Color Temperature	Lumens (lm)*
70087	LNRFLEXD/LM11A/W3-865	13.8	300	31.5	10.5	3	6500K	1000

* 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.

Ordering Guide

LNRFLEXD	/	LM11A	/	W3	8	65
Module Name		Identification		White 3rd Generation	CRI	Color Temperature
LINEARlight FLEX® SIDELED®		Code			8>80	65 = 6500K

Power Supply Information

Item Number	Maximum Allowed Length per Power Supply			
	OT6 (51502) Length (ft)	OT20 (51599) Length (ft)	OT25 (51505) Length (ft)	OT50 (51509) Length (ft)
70087	2.6	8.7	10.8	21.9

Notes:

1. A maximum of 37 coupons can be connected on a single run.
2. OPTOTRONIC® power supplies are optimally paired with SYLVANIA LED modules and are specifically designed with protection features for safe operation.
3. The module is designed to work with constant voltage power supplies only. Reference the power supply PIB # ECS050 for product specification information.
4. These values are an approximation based on the typical "power" values listed under the "Ordering Information" parameters. To accurately determine the maximum LED load, evaluate the application based on the application note "Determine the maximum LED load on a constant voltage power supply" LED026. This document can be found at www.sylvania.com.
5. For dimming LINEARlight FLEX SIDELED modules with OT DIM or OTRGB 3CH DIM, allow for an additional power consumption of 3 watts for a 50 watt LED load.

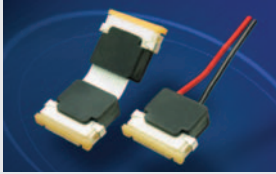
Minimum and Maximum Ratings

Parameter	Values
Operating Temperature at Tc point	-30... +70°C (-22 to +158°F)
Storage Temperature Range	-40... +85°C (-40 to +185°F)
Voltage Range	10 – 11 Vdc
Reverse Voltage	0 Vdc

Notes:

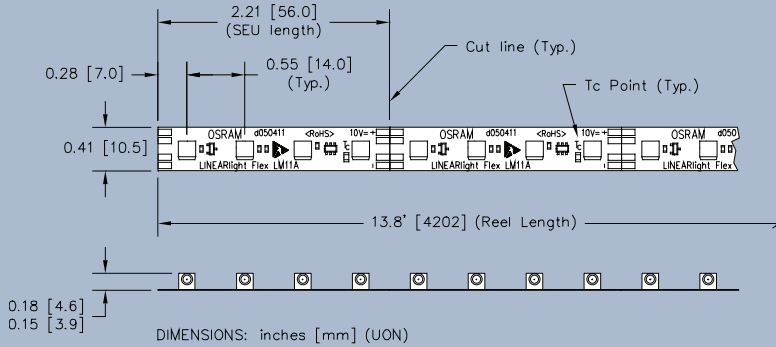
1. Temperature should be measured at the Tc point on the module. Operating temperature range for red and yellow modules is -30 to 80°C.
2. Exceeding maximum ratings may damage the LED module and cause potential safety hazards.
3. Elevated operating temperatures can be expected to negatively impact the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

Accessories



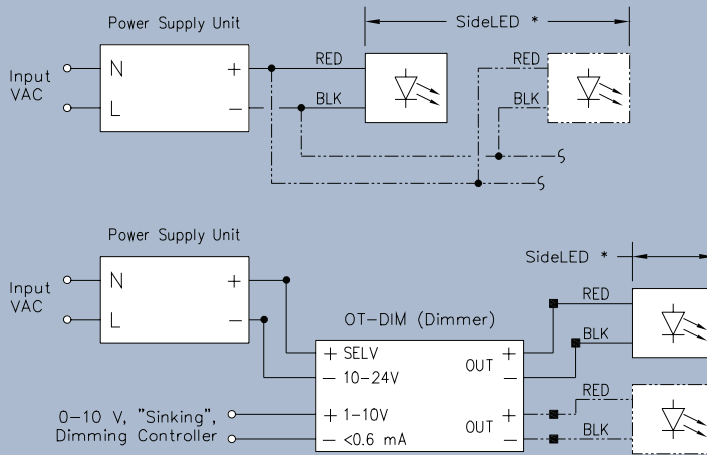
Item Number	Ordering Abbreviaion	Description	Length (in.)	Width (in.)	Wire Length (in.)	Order Qty.
70269	LM2PINFLEXCONN	Input Connector	20.21	0.64	19.69	10
70263	LM2PIN5FLEXCONNBB	Board to Board (short)	1.43	0.64	0.39	10
70131	LINEARlightFLEXCONNBB	Board to Board (long)	6	0.64	0.39	10

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.

LEGEND:

- Splice Point
- Potential Splice Point
- ☐ 1 LED Strip

Safety Information

**WARNING: ONLY QUALIFIED PERSONNEL SHOULD PERFORM INSTALLATION.
TO AVOID ELECTRICAL SHOCK OR COMPONENT DAMAGE, DISCONNECT POWER BEFORE
ATTEMPTING INSTALLATION OF THE POWER SUPPLIES AND/OR MODULES.**

Failure to install the power supplies and/or LED modules in accordance with the National Electric Code (NEC), all applicable Federal, State and local electric codes as well as the specific Underwriters Laboratories (UL) safety standards for the installation, location and application may cause serious personal injury, death, property damage and/or product malfunction.

1. The LED module itself and all its components shall not be subjected to mechanical stress and assembly must not damage or destroy conducting paths on the circuit board.
2. Installation of LED modules shall be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installations.
3. Observe correct electrical polarity, incorrect polarity may destroy the module. (Depending on the product, incorrect polarity may lead to emission of red or no light.)
4. Ensure the power supply is of adequate power to operate the total load.
5. When mounting on metallic or otherwise conductive surfaces, an electrical isolation is required at soldering points between the module and the mounting surface.
6. Electrostatic Discharge (ESD) precautions shall be incorporated when handling or installing the module. (For more information, reference document # LED093 ESD Protection for LED Systems.)
7. 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 modification first (cutting, wiring) and then apply a conformal coating in the final stages of installation.
8. Damage by corrosion and improper heat sinking will not be honored as a materials defect claim. It is the user's responsibility to ensure adequate heat sink and protection against corrosive agents such as moisture, condensation and other harmful elements.

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/cm² (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 $17 \times 10^{-6} \text{cm/cm/K}$. 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.
6. 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 by treatment with an appropriate circuit board grade conformal coating. The conformal coating should have the following features:
 - a. Optical transparency
 - b. UV – resistance
 - c. Thermal expansion matching the thermal expansion of the module $15\text{-}30 \times 10^{-6} \text{cm/cm/K}$
 - d. Low permeability of steam for all climate conditions
 - e. Resistance against corrosive environment

The Acrylic Protective Lacquer (APL) from the company Electrolube (www.electrolube.com) has been tested and meets the conditions for this product (Or equivalent). Please reference "Assembly Information" for any preparation instructions.

United States
OSRAM SYLVANIA
100 Endicott Street
Danvers, MA 01923

Trade
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

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

Trade
Phone: 1-800-263-2852
Fax: 1-800-667-6772

OEM/Special Markets/Display/Optic
Phone: 1-800-265-2852
Fax: 1-800-667-6772