Product Information Bulletin

LINEARlight
LED Modules

Gilway Technical Lamp
Distributed by
www.gilway.com
781.935-4442
Fax:781.938.5867



The OSRAM SYLVANIA LINEARlight LED modules open new creative design options.

Light Emitting Diodes (LEDs) offer substantially better energy consumption than traditional incandescent lamps. These modules can be used wherever temperature or space limitations prevent the use of conventional means of illumination.

Linear modules in particular are being used to inject light into plastics and to mark pathways and outlines. They are designed for an operating voltage of 10.5 Volts and are available in super red, amber red, orange, yellow, true green, blue and white.

OPTOTRONIC® power supplies from OSRAM SYLVANIA are specially designed to operate the LINEARlight modules. A wide range of 10.5V power supplies are available.

- Long life: Up to 100,000 hours depending on color. New HOW2 white modules service life is up to 50,000 hours.*
- OSRAM Power TOPLED® allows high luminous flux
- 120° viewing angle per LED
- Entire strip consists of 32 LEDs
- Size of entire module (L x W) 1.47 ft. x 0.4 in. (448mm x 10mm)
- Size of smallest unit (L x W) 2.2 in. x 0.4 in. (56mm x 10mm)
- Available in various colors: super red, amber red, true green, blue, orange, yellow and white
- Optimal operation with OPTOTRONIC® OT 10.5V power supplies (Literature code ECS049)
- Minimal heat generation
- Extremely low profile (<4mm)
- Up to three modules can be used in a row
- Optics and connector accessories are available (contact OSRAM SYLVANIA)

* When temperature at the Tc point is maintained at 40°C

Product Availability

Product	Color
LINEAR/633/0S/LM01A/S1	Super Red
LINEAR/615/0S/LM01A/A1	Amber Red
LINEAR/610/0S/LM01A/01	Orange
LINEAR/587/0S/LM01A/Y2	Yellow
LINEAR/525/0S/LM01A/T2	True Green
LINEAR/470/0S/LM01A/B1	Blue
LINEAR/0S/LM01A/W	White
LINEAR/0S/LM01A/H0W2-847	White
LINEAR/0S/LM01A/H0W2-854	White
LINEAR/0S/LM01A/H0W2-865	White

Application Information

Applications

Escape route marker
Border marker
Walkways
Outlines

Application Notes

1. Small dimensions
2. Shock resistance
3. High color efficiency
4. Directional radiation characteristics
5. No IR/UV radiation
6. Edge-lit signs
7. Power supplies for operation
8. General lighting

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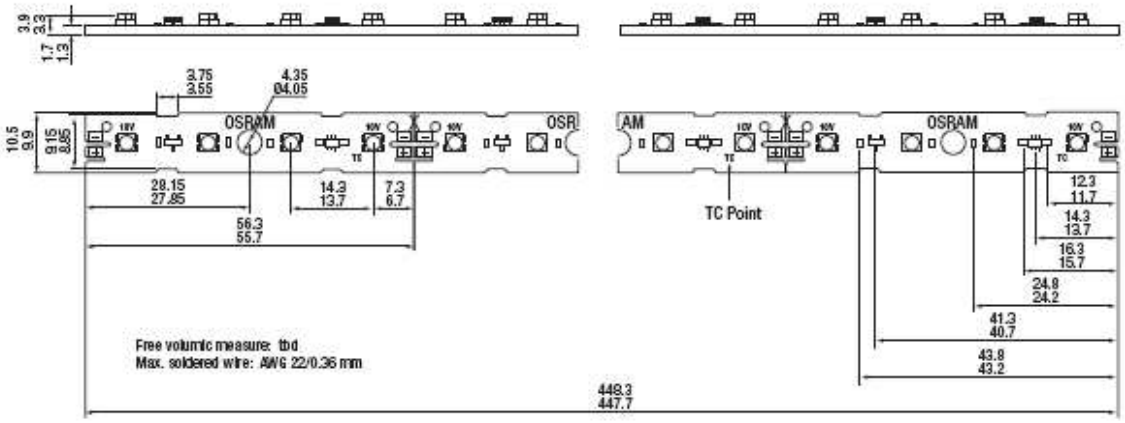
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Maximum Ratings

Parameter	Symbol	Values	Units
Operating Temperature*	T_{op}	-30… +75	°C
Storage Temperature Range	T_{stg}	-30… +85	°C
Maximum Voltage	V_{max}	11.5	V_{dc}
Reverse Voltage	V_R	11.5	V_{dc}

* Temperature should be measured at the Tc point on the module. Operating temperature range for red, orange and yellow modules is -30°C to +85°C.

Dimensions



	Length in (mm)	Width in (mm)
Entire PCB	17.6 (448)	0.4 (10)
Smallest Unit	2.2 (56)	0.4 (10)
LED Spacing	0.55 (14)	

Safety Information

1. The LED module itself and all its components must 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

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. A maximum of 3 Modules can be installed consecutively from any power feed. Operation with more than 3 LINEARlight modules will reduce photometric performance and exceed the current carrying capacity of the module.
6. The LINEARlight can typically survive transient current levels of up to 2 Amps. As a general design precaution, if the maximum output current of the power supply is more than 2 Amps, fast-blow fuses should be incorporated into the wiring plan.
7. Pay attention to standard ESD precautions when installing the module.
8. 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.

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9. 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.
10. For application 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

Note: The "APL" grade conformal coating from Electrolube, Inc. (www.electrolube.com) has met the conditions for the LINEARlight Colormix in our tests.

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. Each module can be separated into submodules of 4 LEDs each by carefully sawing or cutting at the marked lines.
3. For connector information contact OSRAM SYLVANIA.
4. The mounting of the module is carried out by attaching it at the mounting holes. Mounting screws should be treated with synthetic washers to prevent circuit board damage and possible short circuiting.

Ordering and Specification Information

Item Number	Ordering Abbreviation	Color	Watts	Volts (V DC)	Current (Amps)	Viewing Angle(°)	Number of LEDS	Wave Length (nm) or Color Temp (K)	Luminous Flux (lm)
70044	LINEAR/633/OS/LM01A/S	Super Red	4.2	10.5	0.4	120	32	633nm	54
70007	LINEAR/615/OS/LM01A/A	Amber Red	4.2	10.5	0.4	120	32	617nm	86
70083	LINEAR/610/OS/LM01A/O	Orange	4.2	10.5	0.4	120	32	606nm	98
70006	LINEAR/587/OS/LM01A/Y	Yellow	4.2	10.5	0.4	120	32	587nm	69
70008	LINEAR/525/OS/LM01A/T	True Green	4.2	10.5	0.4	120	32	525nm	57
70009	LINEAR/470/OS/LM01A/B	Blue	4.2	10.5	0.4	120	32	469nm	10
70010	LINEAR/OS/LM01A/W	White	3.4	10.5	0.4	120	32	x=0.32; y=0.31	29
70111*	LINEAR/OS/LM01A/H0W2-847	White	4.2	10.5	0.4	120	32	4700K	57
70112*	LINEAR/OS/LM01A/H0W2-854	White	4.2	10.5	0.4	120	32	5400K	57
70113*	LINEAR/OS/LM01A/H0W2-865	White	4.2	10.5	0.4	120	32	6500K	57

* New product. Contact OSRAM SYLVANIA for availability.

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Power Supply Ordering Information

Power Supply

LED Item Number	Color	OPTOTRONIC® 6W (51500) No. of Modules**	OPTOTRONIC® 6W (51500) Max. Length (ft)	OPTOTRONIC 25W (51505) No. of Modules**	OPTOTRONIC 25W (51505) Max. Length (ft)	OPTOTRONIC 50W (51508, 51509) No. of Modules**	OPTOTRONIC 50W (51508, 51509) Max. Length (ft)
70044	Super Red	1	1.47	5	7.4	11	16.2
70007	Amber Red	1	1.47	5	7.4	11	16.2
70083	Orange	1	1.47	5	7.4	11	16.2
70006	Yellow	1	1.47	5	7.4	11	16.2
70008	True Green	1	1.47	5	7.4	11	16.2
70009	Blue	1	1.47	5	7.4	11	16.2
70010	White	1	1.47	7	10.3	14	20.6
70111	White (W2)	1	1.47	5	7.4	11	16.2
70112	White (W2)	1	1.47	5	7.4	11	16.2
70113	White (W2)	1	1.47	5	7.4	11	16.2

** Each module can be sub-divided into 8 coupons.

Ordering Guide

LINEAR	/	470	/	OS	/	LM01A	/	B
LINEARlight Module		Wavelength 470nm		OSRAM		ID No.		Color Code B = Blue