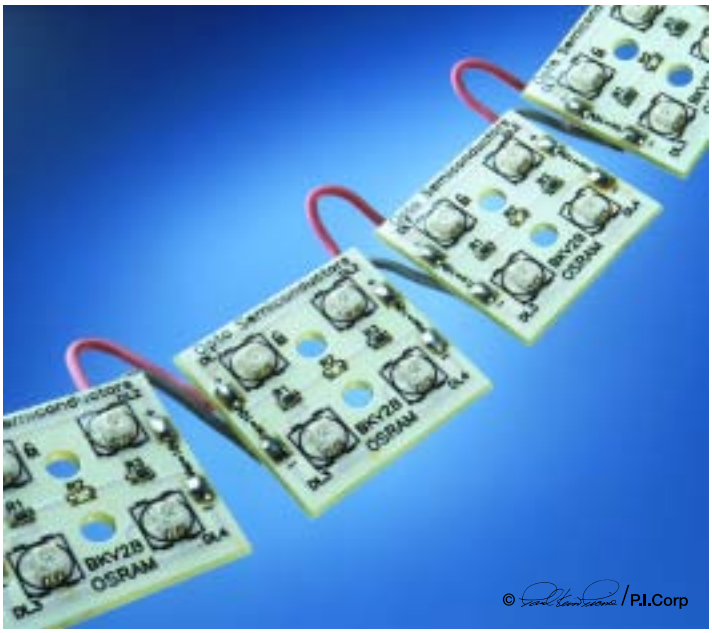
Product Information Bulletin

BACKlight

LED Modules



The OSRAM SYLVANIA BACKlight – an innovative alternative to neon and other conventional lighting.

BACKlight modules offer alternatives to traditional neon sources. The main advantages of LED BACKlight over neon or cold cathode sources are reduced manufacturing costs, durability, reduced maintenance costs, and small size.

BACKlighting lamp modules are ideally suited to fit contours and curves typical to advertising space and channel letters, and can be used for general signage applications too. They are available in red, yellow, true green, white, orange and blue.

OPTOTRONIC® LED power supplies from OSRAM SYLVANIA are specially designed to operate the BACKlight modules at 10.5V. A range of UL Class 2 power supplies are available for indoor and outdoor, dry and damp location use.

- Uniform illumination of channel letter signs
- Long life: up to 100,000 hours depending on color
- OSRAM Power TOPLED® allows high luminous flux
- 120° viewing angle per LED
- Low profile (<5mm) allows installation where space is limited
- Each module has 8 movable coupons connected with wires
- Minimal heat generation
- Wire interconnects allow flexible mounting. Total length can be varied from 0.8 ft. to 1.8 ft.
- Mounting hole allows easy installation by screw or snap-in spacers
- Three modules can be connected head to tail. Up to six modules in series with power fed to the center of the strip
- Many modules can be connected in parallel (limited only by power source capacity and UL considerations)
- Listed in UL Sign Accessory Manual (SAM)
- Conformally coated to protect against moisture and condensation (IP22)
- Available as a system with matching OPTOTRONIC® power supplies (Literature Code ECS049)

Product Availability

Product	Color
BACKLITE/633/OS/LM03A/S	SUPER RED
BACKLITE/615/OS/LM03A/A	AMBER RED
BACKLITE/610/OS/LM03A/O	ORANGE
BACKLITE/587/OS/LM03A/Y	YELLOW
BACKLITE/525/OS/LM03A/T	TRUE GREEN
BACKLITE/470/OS/LM03A/B	BLUE
BACKLITE/OS/LM03A/W1	WHITE
BACKLITE/OS/LM03A/W2-854	WHITE
BACKLITE/OS/LM03A/W2-865	WHITE

Application Information

Applications

Backlighting advertising panels
Signs, channel letters, and displays
General lighting

Application Notes

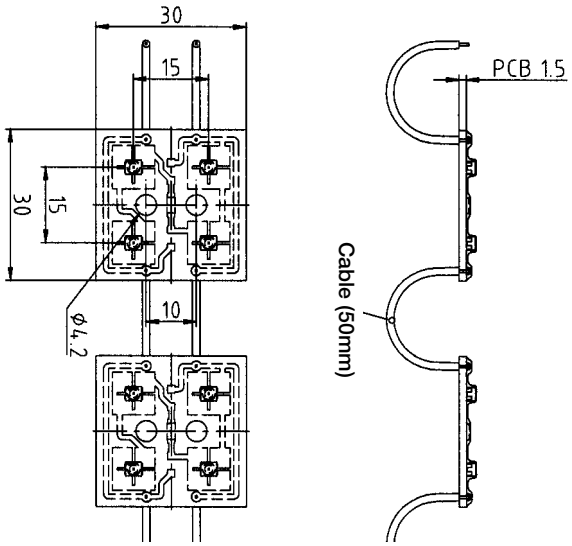
1. Small dimensions
2. Shock resistance
3. High color efficiency
4. Directional radiation characteristics
5. No IR/UV radiation
6. Power supplies for operation

Maximum Ratings

Parameter	Symbol	Values	Units
Operating Temperature*	T_{op}	-30… +75	°C
Storage Temperature Range	T_{stg}	-40… +85	°C
Maximum Voltage	V_{max}	11	V_{dc}
Reverse Voltage	V_R	11	V_{dc}

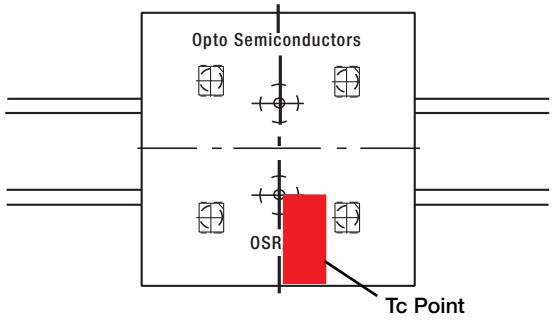
* Temperature should be measured at the T_C point on the module. (Operating temperature for red, amber, orange and yellow modules is -40°C to +85°C)

Dimensions

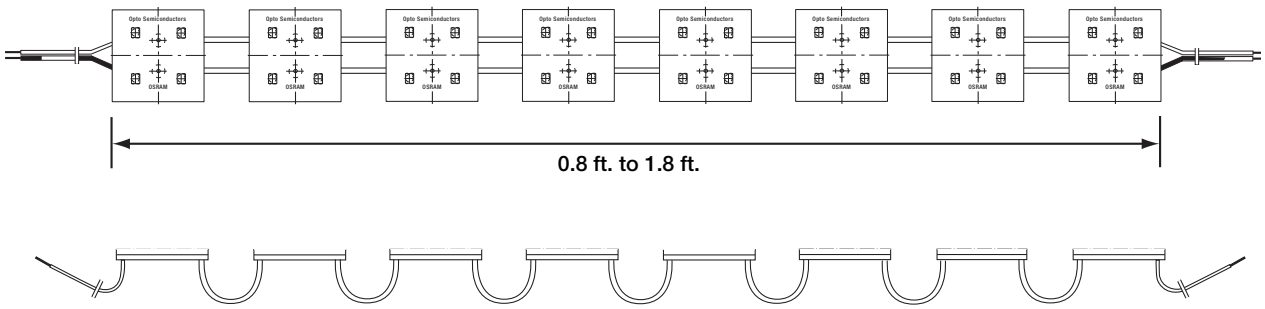


	Length mm (in)	Width mm (in)
Smallest Unit	30 (1.18)	30 (1.18)
LED Grid	15 (0.59)	
Cable	50 (1.97)	

Dimensions on diagrams in mm, unless stated otherwise.



8 Boards electrically connected



Safety Information

1. The LED module and its components should not be mechanically stressed.
2. Assembly must not damage or destroy conducting paths on the circuit board.
3. To avoid mechanical damage to the connecting cables, the boards should be attached securely to the intended substrate. Heavy vibration should be avoided.
4. Detach each circuit board unit of the module only be severing the connecting cables (with power disconnected).

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.

5. 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.
6. Correct electrical polarity needs to be observed. Wrong polarity may destroy the module!
7. Parallel connection is highly recommended for safe electrical operation mode. Serial connection of more than 3 modules is not recommended. Unbalanced voltage drop can cause hazardous overload and damage the LED module.
8. Electrical contact is achieved with the contact cables. A maximum of 3 modules can be installed consecutively from one power feed. Operation with more than 3 consecutive BACKlight modules will reduce photometric performance and exceed the current carrying capacity of the module. If more than 3 modules are connected in series (maximum 6), power feed should be to the center of the string.
9. The module itself is protected against condensation water with a polymeric conformal coating. Supplementary soldering on any solder pad will destroy the conformal coating and with it protection against condensation water.
10. Operation in or under water is not allowed.

Assembly Information

1. Mounting of the LED module may be performed with screws or Snap-In spacer (e.g. from Richco www.richco-int.com) by using 4 mm holes in the circuit board. See the “BACKlight Intallation Guide” for more details.
2. The mounting of the module is carried out by attaching it at the mounting holes. Mounting screws should be used with synthetic washers to prevent circuit board damage and possible short circuiting.
3. A maximum of 3 modules can be installed consecutively from any power feed. Installation with more than 3 BACKlight Modules may take the form of, for example, either 6 modules installed consecutively with a power feed to the center or with a splitting of the power feed to contact groups of 3 modules.
4. To connect the LED modules with each other or with OPTOTRONIC Power Supply we recommend standard connectors (e.g. WAGO 243-214 or 224-201).
5. Derate maximum LED load for remote mounting or exterior applications. Contact OSRAM SYLVANIA for details.

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)
70081	BACKLITE/633/OS/LM03A/S	Super Red	4.2	10.5	0.40	120	32	633 nm	54
70011	BACKLITE/615/OS/LM03A/A	Amber Red	4.2	10.5	0.40	120	32	617 nm	54
70071	BACKLITE/610/OS/LM03A/O	Orange	4.2	10.5	0.40	120	32	606 nm	86
70012	BACKLITE/587/OS/LM03A/Y	Yellow	4.2	10.5	0.40	120	32	587 nm	69
70013	BACKLITE/525/OS/LM03A/T	True Green	4.2	10.5	0.40	120	32	525 nm	57
70014	BACKLITE/470/OS/LM03A/B	Blue	4.2	10.5	0.40	120	32	470 nm	9
70045	BACKLITE/OS/LM03A/W1	White	3.4	10.5	0.32	120	32	x = 0.32; y =0.31	29
70102**	BACKLITE/OS/LM03A/W2-854	White	5.3	10.5	0.50	120	32	5400K	69
70103**	BACKLITE/OS/LM03A/W2-865	White	5.3	10.5	0.50	120	32	6500K	69

* All Information relates to entire module with 32 LEDs. Modules may be sub-divided into 8 coupons of 4 LEDs each. Data reflects statistical mean values. Actual data may differ depending on variances in the manufacturing process.

** New product. Contact OSRAM SYLVANIA for availability.

Power Supply Ordering Information

		OPTOTRONIC® 6W (51500)		**OPTOTRONIC 25W** (51505)		**OPTOTRONIC 50W** (51508, 51509)	
LED Item Number	**Color**	**No. of Modules***	**Max. Length (ft)**	**No. of Modules***	**Max. Length (ft)**	**No. of Modules***	**Max. Length (ft)**
70081	Super Red	1	1.8	6	10.8	12	21.6
70011	Amber red	1	1.8	6	10.8	12	21.6
70071	Orange	1	1.8	6	10.8	12	21.6
70012	Yellow	1	1.8	6	10.8	12	21.6
70013	True Green	1	1.8	6	10.8	12	21.6
70014	Blue	1	1.8	6	10.8	12	21.6
70045	White	1	1.8	7	12.6	14	25.2
70102	White (W2)	1	1.8	4	7.2	9	16.2
70103	White (W2)	1	1.8	4	7.2	9	16.2

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

Ordering Guide

BACKLITE	/	**470**	/	**OS**	/	**LM03A**	/	**B**
Backlight Module		Wavelength 470 nm		Opto Semiconductor		ID No.		Color Code B = Blue

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