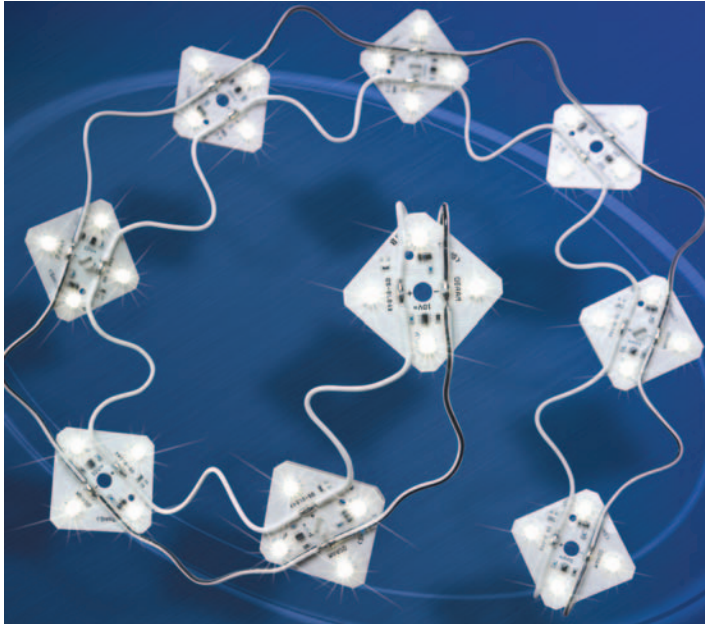


BACKlight 2G BL04

LED Modules



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

BACKlight 2G BL04 modules offer alternatives to traditional neon sources. The main advantages of LEDs over neon or cold cathode sources are reduced manufacturing costs, durability, reduced maintenance costs, and small size.

The BL04 LED modules are ideally suited to fit contours and curves typical to advertising space and channel letters, and can also be used for general signage applications. They are available in green, white and blue.

OPTOTRONIC® 10.5Vdc LED power supplies from OSRAM SYLVANIA are specially designed to operate the BACKlight family of LED modules. A range of UL Class 2 power supplies are available for dry and damp location use. Contact your OSRAM SYLVANIA representative for specific information on these products and possible additions to the OPTOTRONIC 10.5Vdc series.

Application Information

Applications

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

- Uniform illumination of channel letter signs
- Long life: up to 50K hours at a $T_c = 40^\circ\text{C}$
- 120° viewing angle per LED
- Narrow width (<0.50 in.) allows installation in narrow channel letter or where space is limited
- Flexible wiring between boards allows bending up to 180°
- A complete reel has 60 circuit boards with 4 LEDs, connected by flexible wires
- Chain configuration allows for uninterrupted circuits for ease of installation
- Two 8 ft. LED modules per reel. Total length can be varied up to 16 ft.
- Wire interconnects allow flexible mounting
- Minimal heat generation
- Equipped with self-adhesive backing (every other board) for easy installation
- Mounting holes allow for installation by screw, rivet or snap-in spacers
- Two LED modules can be connected head to tail with power fed to the center
- Modules can be connected in parallel (limited by power source capacity and UL considerations)
- Listed in UL Sign Accessory Manual (SAM)
- Conformally coated to protect against moisture, dust and dripping water
- Available as a system with matching OPTOTRONIC® 10.5Vdc power supplies (Literature Code ECS049R1)
- No IR/UV
- Shock resistant

Product Availability

Product	Wattage (W)	Color
B2G/BL04ST/W2-865 15.75 FT	38	White
B2G/525/BL04ST/T2 15.75 FT	32	Green
B2G/470/BL04ST/B1 15.75 FT	32	Blue
B2G/BL04S/W3-854 15.75 FT	32	White
B2G/BL04S/W3-865 15.75 FT	32	White

Features

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

Maximum Ratings

Ordering Description	Color	Operating Temperature at Tc Point °C (°F) ^{1,2,3}	Storage Temperature °C (°F)	Voltage Range Vdc	Reverse Voltage Vdc
B2G/BL04ST/W2-865 15.75 FT	White	-20 to 85 (-4 to 185)	-20 to 85 (-4 to 185)	10 to 11	11
B2G/525/BL04ST/T2 15.75 FT	Green	-20 to 75 (-4 to 167)	-20 to 85 (-4 to 185)	10 to 11	11
B2G/470/BL04ST/B1 15.75 FT	Blue	-20 to 75 (-4 to 167)	-20 to 85 (-4 to 185)	10 to 11	11
B2G/BL04S/W3-854 15.75 FT	White	-20 to 85 (-4 to 185)	-20 to 85 (-4 to 185)	10 to 11	11
B2G/BL04S/W3-865 15.75 FT	White	-20 to 85 (-4 to 185)	-20 to 85 (-4 to 185)	10 to 11	11

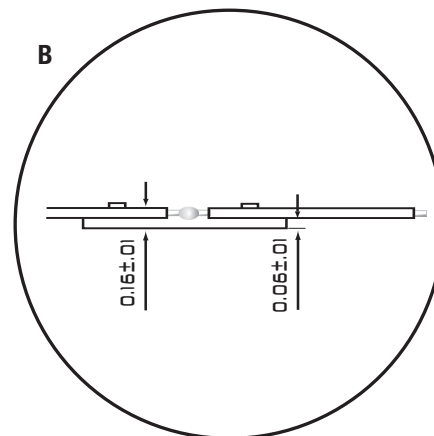
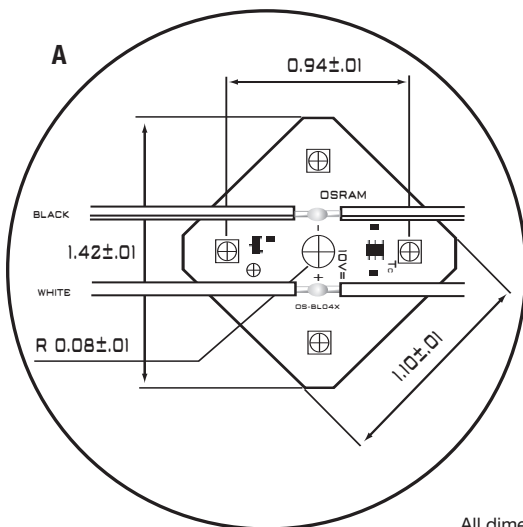
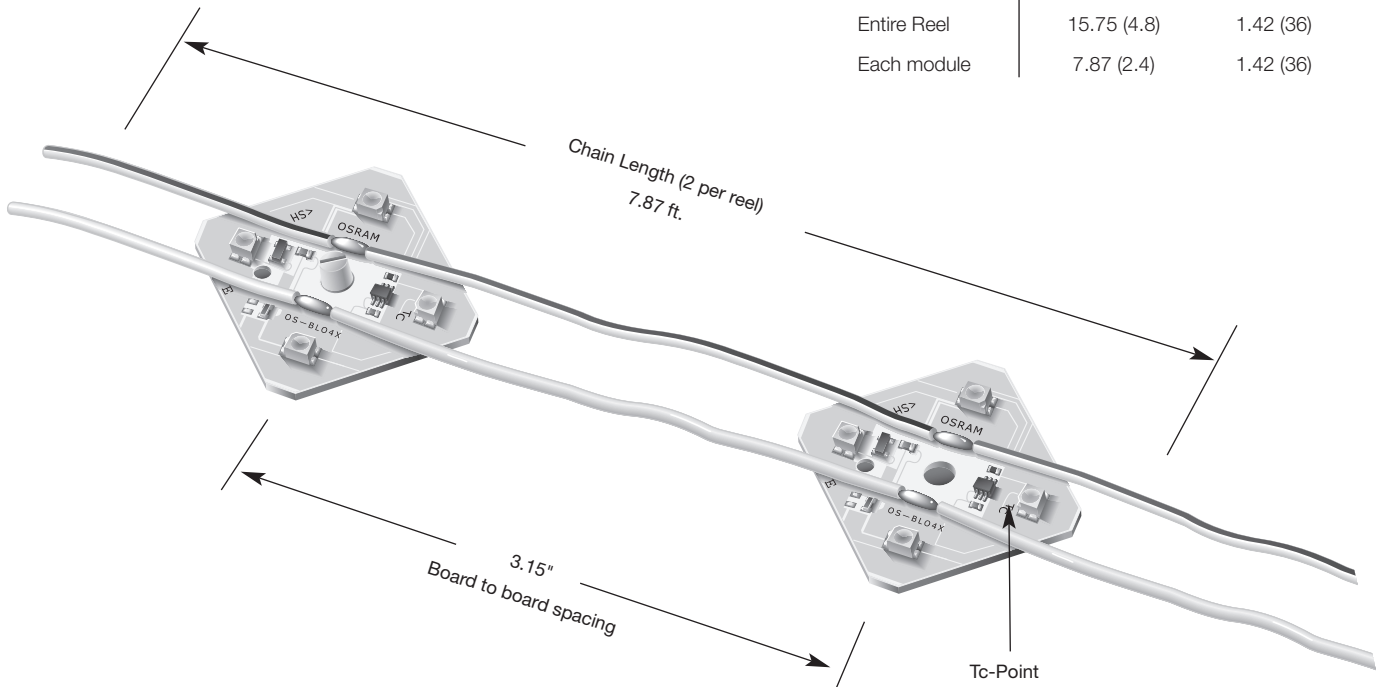
1. Temperature should be measured at the Tc point on the module.

2. The maximum operating range of the Tc point (up to 75°C or 85°C depending on color) is to specify the absolute maximum Tc temperature without causing permanent damage to the LEDs.

3. 50K hour service life for a Tc of 40°C for White.

Dimensions

Product	Length ft (m)	Width in (mm)
Entire Reel	15.75 (4.8)	1.42 (36)
Each module	7.87 (2.4)	1.42 (36)



All dimensions given in inches

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 Underwriter's Laboratories (UL) safety standards for the installation, location and application may cause serious personal injury, death, property damage and/or product malfunction.

These instructions are guidelines for installation of OSRAM LED modules and power supplies. Installation requirements may vary depending on the application. Licensed electricians should provide all installation services for connection of both primary and secondary (input/output) of the power supplies.

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 by severing the connecting cables (with power disconnected).
5. Verify the polarity of all electrical connections. The connections from power supply to the module must be positive to positive and negative to negative. Reverse polarity connections may damage the LEDs and void the product warranty.
6. Parallel connection is highly recommended for safe electrical operation mode. Serial connection of 2 LED modules is not allowed. Unbalanced voltage drop can cause hazardous overload and damage the LED module. Electrical connection is achieved through the conductors. Do not exceed the rated output capacity of the power supplies. (Application Note: Determining the maximum LED load on a constant voltage power supply module LED026).
7. The LED module can be cut into smaller segments at any interval.
8. 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.
9. Operation in or under water is not allowed.

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.

Assembly Information

1. The LED module is equipped with a self-adhesive foam backed tape for installation on a clean surface. Additional adhesive mounting tape is available. (BACKlight TAPE/OS/LM03A NAED 70125).
2. Mounting of the LED module may also be performed with screws (#4 round head screw & plastic washer) by using the 5/32" (4 mm) holes in the circuit board. See the "BACKlight 2G Installation Guide" LED032 for more details.
3. Care should be taken not to over torque the mounting screws and damage the circuit board.
4. To connect the LED modules with each other or with an OPTOTRONIC Power Supply we recommend standard wire connectors. A push in style permanent locking connector is available. (BACKlight Connector/OS/LM03A/CONN NAED 70126).
5. De-rate maximum LED load for remote mounting or exterior applications. Application Note: Determining the maximum LED load on a constant voltage power supply. (LED026)

Ordering and Specification Information*

Item Number	Ordering Abbreviation	Color	Reel Length (ft.)	Coupon Spacing (in.)	LED Load				Viewing Angle	No. of LEDs/Reel	Wavelength (nm)		Luminous Flux (lm)	Lm/Ft
					Watts/Reel	Watts (ft.)	Volts (Vdc)	Current (Amps)			Color Temp. (K)			
70173**	B2G/BL04ST/W2-865	White	15.75	3.15	38	2.4	10.5	3.6	120°	240	16	6500K	520	33
70172**	B2G/525/BL04ST/T2	Green	15.75	3.15	32	2.0	10.5	3.0	120°	240	16	525	430	27
70171**	B2G/470/BL04ST/B1	Blue	15.75	3.15	32	2.0	10.5	3.0	120°	240	16	470	100	6
70273	B2G/BL04S/W3-854	White	15.75	3.15	44	2.8	10.5	4.2	120°	240	16	5400K	880	55.9
70274	B2G/BL04S/W3-865	White	15.75	3.15	44	2.8	10.5	4.2	120°	240	16	6500K	880	55.9

*All Information relates to entire module with 240 LEDs.

Data reflects statistical mean values. Actual data may differ depending on variances in the manufacturing process.

**Please contact your OSRAM SYLVANIA representative on availability.

Power Supply Ordering Information

Item Number	Ordering Description	Color	OPTOTRONIC 25W			OPTOTRONIC 50W		
			Maximum Length (ft.)	LED Load Watts	No. of Reels	Maximum Length (ft.)	LED Load Watts	No. of Reels
70173	B2G/BL04ST/W2-865	White	10	25	0.6	20	48	1.3
70172	B2G/525/BL04ST/T2	Green	12	24	0.8	25	50	1.6
70171	B2G/470/BL04ST/B1	Blue	12	24	0.8	25	50	1.6
70273	B2G/BL04S/W3-854	White	8.75	25.5	0.6	17.75	49.7	1.1
70274	B2G/BL04S/W3-865	White	8.75	25.5	0.6	17.75	49.7	1.1

Note: Maximum length for a fully extended module. Derate the LED load for exterior or remote mount applications.

Note: Each reel contains 2 modules.

Packaging Information

Reel quantity: 2 LED chains (15.75 ft)

Case quantity: 5 reels

Minimum order quantity: 1 reel

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Westfield, IN 46074

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Phone: 1-888-677-2627
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Special Markets

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Fax: 1-800-667-6772

Ordering Guide

BACKlight 2G	/	470	/	BL04ST	/	B1
BACKlight Second Generation Module		Wavelength 470 nm		ID No.		Color Code B1 = Blue

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