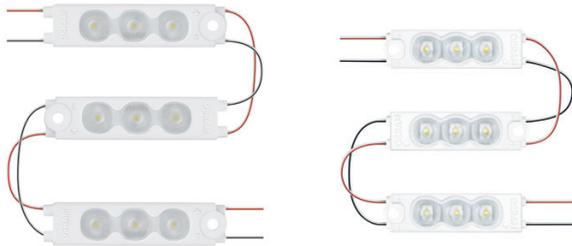


BackLED Plus Square Lens



BackLED S Plus SQ, BackLED M Plus SQ and BackLED M Plus SQ HO



The BackLED Plus Square Lens family has been expanded to include the new BackLED M Plus SQ High Output versions. These new modules produce 28% more lumens than the BackLED M Plus SQ versions while still delivering an exclusive square beam pattern. This enables sign makers to create even brighter sign faces with exceptional uniformity using a minimum number of modules.

The new BackLED Plus Square Lens family is a revolutionary step forward in the optical performance of LED signage modules. These compact modules were designed to provide unparalleled sign face uniformity in smaller channel letters or box signs. Typical signage module optics deliver a round beam pattern, which works well for the higher light output modules used in larger channel letters. However, when channel letters get smaller and more shallow, modules with round beam patterns need to be mounted closer together so the beam patterns overlap to get a uniform distribution on the sign face. In contrast, the square beam pattern of the new Square Lens optics do not need to overlap to deliver a uniform sign face – minimizing the number of modules required to achieve professional results.

With the addition of the new High Output family, the Square Lens optics are now available in three different light levels of white, ranging from 85 lumens per foot up to 166 lumens per foot. There are two module sizes; the BackLED M Plus SQ and BackLED M Plus SQ HO share the same size, shape and pitch with 2 modules per foot and the smaller BackLED S Plus SQ is shipped in chains with 2.44 modules per foot.

Application Information

Applications

- Backlighting of small or medium channel letters
- Backlighting shallow box signs
- Illuminated advertising

Key Features & Benefits

- Exclusive Square Lens optics are precisely matched to the shape of the LED in each module
- The 160° square distribution of the new Square Lens optics deliver a bright, uniform sign face
- Ideal for signs as shallow as 2" and as deep as 6" with the new High Output modules
- Two different sizes and three light outputs enable choosing the ideal product for each application
- BackLED M Plus SQ HO is available in 3000K, 4000K and 6500K
- BackLED M Plus SQ is available in 3000K, 4000K, 6500K and Red
- BackLED S Plus SQ is available in 3000K, 4000K, 6500K, Red, Green and Blue
- Fully integrated heat sink
- IP66 rated to protect against dust, moisture, and condensation in outdoor operation
- Fast accurate installation is simplified through pre-mounted adhesive tape and mounting holes
- Optimal operation on OPTOTRONIC® 12Vdc and 12Vdc dimmable power supplies
- Single board cuttable chain of LED modules with flexible connection cables

All BackLED Plus modules are optimally paired with OPTOTRONIC 12Vdc power supplies, available in both dimming and non-dimming models. These modules are listed in the UL Sign Components Manual (SAM) for new signage installations and are UL Classified for retrofit installations when paired with our OPTOTRONIC power supplies.

Product Offering

Type	Ordering Abbreviation	Lumens/ft.	Color
BackLED M Plus SQ HO	BA-M-PL-SQ-HO-830	160	3000K
BackLED M Plus SQ HO	BA-M-PL-SQ-HO-840	166	4000K
BackLED M Plus SQ HO	BA-M-PL-SQ-HO-865	166	6500K
BackLED M Plus SQ	BA-M-PL-SQ-830	120	3000K
BackLED M Plus SQ	BA-M-PL-SQ-840	130	4000K
BackLED M Plus SQ	BA-M-PL-SQ-865	130	6500K
BackLED M Plus SQ	BA-M-PL-SQ-Red	35.4	Red (625nm)
BackLED S Plus SQ	BA-S-PL-SQ-830	78.3	3000K
BackLED S Plus SQ	BA-S-PL-SQ-840	84.9	4000K
BackLED S Plus SQ	BA-S-PL-SQ-865	84.9	6500K
BackLED S Plus SQ	BA-S-PL-SQ-Red	27.8	Red (625nm)
BackLED S Plus SQ	BA-S-PL-SQ-Green	58.1	Green (523nm)
BackLED S Plus SQ	BA-S-PL-SQ-Blue	13.5	Blue (466nm)

Specifications and Certifications



Listed in the Sign Components Manual (SAM) (File# E258264)



BackLED Plus modules are UL Classified for sign retrofits when paired with our OPTOTRONIC power supplies. (UL File # E311887)



Ordering Information

Item Number	Ordering Abbreviation	Length (ft.)	Number of Modules	Module Pitch (in)	Color Temperature	Voltage (Voc)	Power per Module (W) ¹	Lumens per Module	Watts/ft	Lumens/ft	LPW	Case Qty.
57862	BA-M-PL-SQ-HO-830	20	40	6	3000K	12	0.84	80	1.68	160	95.2	5
57863	BA-M-PL-SQ-HO-840	20	40	6	4000K	12	0.84	83	1.68	166	98.8	5
57864	BA-M-PL-SQ-HO-865	20	40	6	6500K	12	0.84	83	1.68	166	98.8	5
73774	BA-M-PL-SQ-830	20	40	6	3000K	12	0.75	60	1.5	120	80.0	5
73672	BA-M-PL-SQ-840	20	40	6	4000K	12	0.75	65	1.5	130	86.7	5
73671	BA-M-PL-SQ-865	20	40	6	6500K	12	0.75	65	1.5	130	86.7	5
73849	BA-M-PL-SQ-Red	20	40	6	Red (625nm)	12	0.63	17.7	1.25	35.4	28.3	5
73939	BA-S-PL-SQ-830	37.2	90	4.92	3000K	12	0.38	32.1	0.93	78.3	84.5	5
73940	BA-S-PL-SQ-840	37.2	90	4.92	4000K	12	0.38	34.8	0.93	84.9	91.5	5
73941	BA-S-PL-SQ-865	37.2	90	4.92	6500K	12	0.38	34.8	0.93	84.9	91.5	5
73843	BA-S-PL-SQ-Red	37.2	90	4.92	Red (625nm)	12	0.38	11.4	0.92	27.8	30.3	5
73844	BA-S-PL-SQ-Green	18.7	45	4.92	Green (523nm)	12	0.38	23.8	0.92	58.1	63.4	5
73845	BA-S-PL-SQ-Blue	18.7	45	4.92	Blue (466)	12	0.38	5.6	0.92	13.5	14.9	5

Notes:

1. Nominal ratings at ambient of 25°C.
2. All data is related to the entire module. Data reflects statistical mean values. Actual data may differ depending on variances in the manufacturing process.
3. Performance values were taken at steady state. Instant-on measurements may be higher.

Ordering Guide

BA	-	M	-	PL	-	SQ	-	HO	-	8	30
BA = BackLED		Module Size M = Medium S = Small		Module with Lens PL = Plus		Square Optic		High Output		CRI >80	Color Temperature 30 = 3000K 40 = 4000K 65 = 6500K

Power Supply Information

Item Number	Ordering Abbreviation	BackLED M Plus SQ White		BackLED M Plus SQ HO	BackLED S Plus SQ (White, Red, Green, Blue)
		Max. No. of Modules White	Max. No. of Modules Red		
51604	OT20W/12V/UNV	20	23	21	40
51632	OT60W/12V/UNV	60	70	40 in Series Plus 24 in Parallel	121
51633	OT60W/12V/UNV/DIM	60	70	40 in Series Plus 24 in Parallel	121

Note:

1. Parallel runs may be required to achieve the numbers listed in this table. Please reference this bulletin's "Wiring Diagram" for product specific wiring instructions.

Minimum and Maximum Ratings

Parameter	BackLED M Plus SQ HO Values	BackLED M Plus SQ Values	BackLED S Plus SQ Values
Operating Temperature at Tc point	-25 to +75°C (-13 to +167°F)	-25 to +70°C (-13 to +158°F)	-25 to +70°C (-13 to +158°F)
Storage Temperature Range	-25 to +85°C (-13 to +185°F)	-25 to +85°C (-13 to +185°F)	-25 to +85°C (-13 to +185°F)
Voltage Range	12–13Voc	12–13Voc	12–13Voc

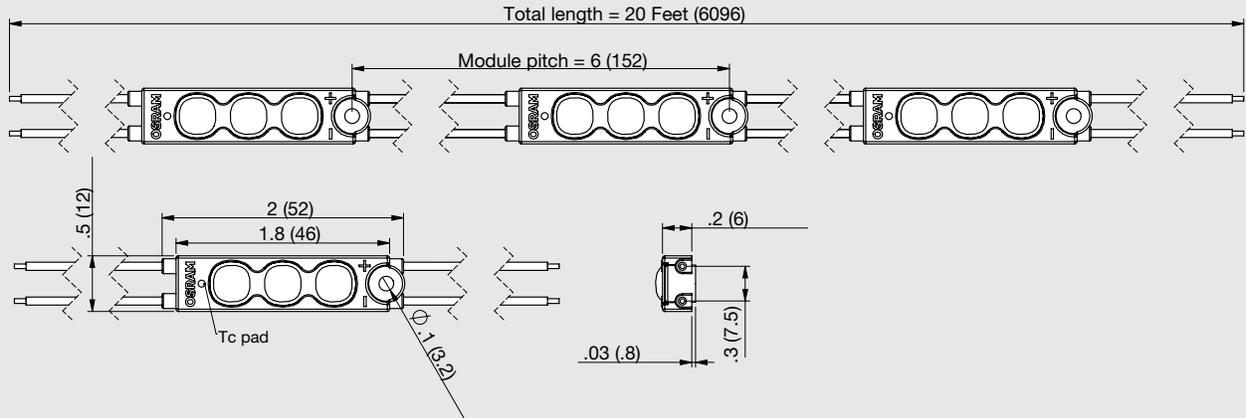
Notes:

1. Exceeding maximum ratings for operating and storage temperature will reduce expected lifetime or destroy the LED module.
2. Exceeding maximum ratings for operating voltage will cause hazardous overload and will likely destroy the LED module.
3. The temperature of the LED module must be measured at the Tc point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label.

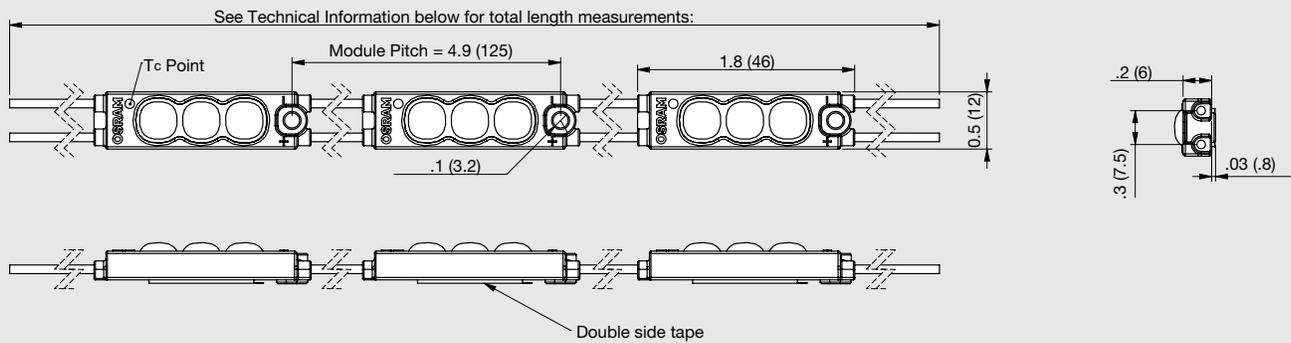
Assembly Diagram

BackLED M Plus SQ H0

BackLED M Plus SQ



BackLED S Plus SQ

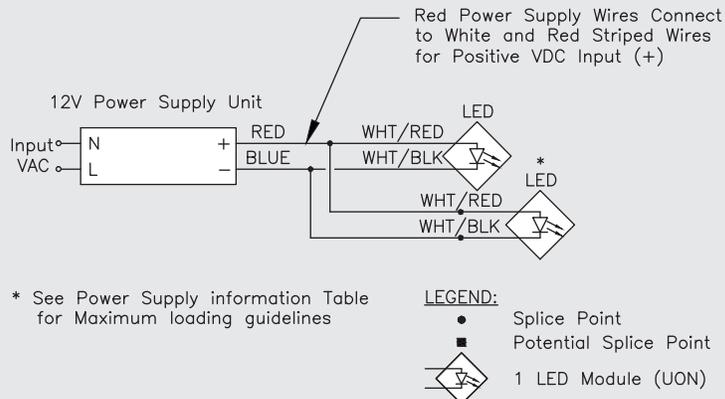


Technical Information:

1. White and Red chains; 90 modules per chain – overall length 36.9 feet (11250mm)
2. Blue and Green chains; 45 modules per chain – overall length 18.45 feet (5625mm)

All dimensions in inches (mm) unless noted.

Wiring Diagram



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.
4. Electrostatic Discharge (ESD) precautions shall be incorporated when handling or installing the module. (For more information, reference document # LED093 ESD Protection for LED Systems.)
5. Modules should be attached securely to the intended substrate, but do not over-tighten screws or rivets. Heavy vibration should be avoided.

Assembly Information

1. Mounting tape is provided as an installation aid only, not for permanent adhesion. It is required that all modules are secured to the mounting surface using an adhesive such as silicone or screws of appropriate size.
2. Do not over-tighten mounting screws as over-torque could damage the module housing. Do not exceed 10 in-lbs torque.
3. The LED module shall not be subject to mechanical stress or heavy vibration.
4. When using power supplies other than OSRAM OPTOTRONIC®, power supply voltage must not fall below 12Vdc.
5. For complete installation instructions, refer to BackLED Plus Installation Instructions LED349.

Warranty

Covered by a limited 7 Year System Warranty. Please Refer to Signage Warranty (LED087).

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