# **Permlight** Technologies

## High Output 12VDC Encapsulated Sign Module Wide Beam Angle and High Brightness

### Features & Benefits

- Hybrid constant current for highest efficacy
- Integral lens produces 160° beam angle for improved uniformity, reduced shadows, and even luminance in shallow signs and lighted returns
- IP68 encapsulation provides long-term reliability even in extreme conditions
- Fewer modules per sign required which lowers installed labor cost
- Constant voltage 12VDC input allows single or multiple modules to be run on same power supply up to maximum rated watts
- Latest generation best in class LED for high efficacy and color consistency
- Low profile design, under 1/4" tall for shadow-free luminance
- Pre-applied 3M #468MP peel & stick tape for simple and fast installation
- Pre-wired and equally spaced leads are mechanically robust, assist in proper module placement and reduce labor

## **Ratings and Performance Specifications**

Nominal DC Power ConsumptionSee Table 1Recommended Modules per FootSee Table 1Nominal Beam Angle160°Number of Modules per Package33Estimated Lumen Depreciation (TM-21)70% initial lumens (L70) (a) 100,000 hoursMaximum Operating Ambient Temperature (Ta) (a) 90% relative humidity-40 to +50°CMaximum Solder Pad Temperature (Ts)+105°CRecommended Screw Installation Torque75 inch ouncesNominal Weight7 gramsSafety/Compliance UL Class 2 Recognized ComponentE213411	Maximum DC Input Voltage				
Nominal Beam Angle160°Number of Modules per Package33Estimated Lumen Depreciation (TM-21)70% initial lumens (L70) (a) 100,000 hoursMaximum Operating Ambient Temperature (Ta) (a) 90% relative humidity-40 to +50°CMaximum Solder Pad Temperature (Ts)+105°CRecommended Screw Installation Torque75 inch ouncesNominal Weight7 grams	Nominal DC Power Consumption	See Table 1			
Number of Modules per Package 33   Estimated Lumen Depreciation (TM-21) 70% initial lumens (L70) (a) 100,000 hours   Maximum Operating Ambient Temperature (Ta) (a) 90% relative humidity	Recommended Modules per Foot				
Estimated Lumen Depreciation (TM-21)70% initial lumens (L70) @ 100,000 hours Maximum Operating Ambient Temperature (Ta) @ 90% relative humidity40 to +50°C Maximum Solder Pad Temperature (Ts)	Nominal Beam Angle				
Maximum Operating Ambient Temperature (Ta) @ 90% relative humidity	Number of Modules per Package				
Maximum Solder Pad Temperature (Ts)	Estimated Lumen Depreciation (TM-21)	70% initial lumens (L70) @ 100,000 hours			
Recommended Screw Installation Torque	Maximum Operating Ambient Temperature (Ta) (a) 90% relative humidity40 to +50°C				
Nominal Weight	Maximum Solder Pad Temperature (Ts)				
	Recommended Screw Installation Torque				
Safety/Compliance UL Class 2 Recognized Component E213411	Nominal Weight				
	Safety/Compliance UL Class 2 Recognized Co	mponent			

#### **Compatible Drivers:**

PS60-12V-UNV, PS60-12V-108264-DE, PS15-12V-108264-DE

#### **Application Notes**

- For best adhesion, clean surface where module will be placed with isopropyl alcohol or equivalent. Attach module with supplied 3M #468MP peel & stick tape. For additional attachment, use 4-40 screw and nut or #8 rivet, do NOT use Tek screw (self-tapping).
- This module does not require a heat sink at full power for maximum performance. Modules can be mounted to any surface material. Care should be taken in the sign design to allow heat to escape the system. Contact factory for thermal guidelines.
- 3. Abnormal operating conditions or elevated ambient temperatures can be expected to negatively impact lumen output, product lifetime and/or product performance.



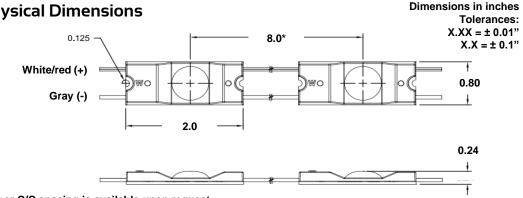


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#### **Physical Dimensions**



\* Other C/C spacing is available upon request

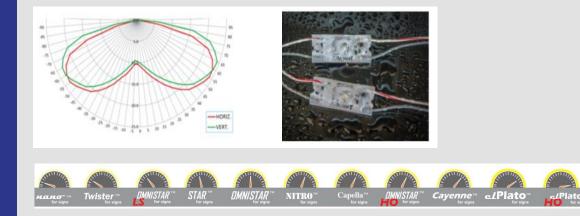
#### Table 1, Performance Characteristics at 25C

Data from laboratory test measurements, actual results may vary.

Part Number	Nominal CCT or Wavelength (Kelvin/nm)	Minimum CRI	Nominal Light Output @ 12VDC (Lumens)	Nominal Power Consumption @ 12VDC (WDC)	Modules per Foot	Maximum Modules per 60W Driver String*	Maximum Modules per 60W Driver T-string**
PFSC1820W80	Arctic White 8000K	80	97	1.062	2	42	46
PFSC1820W65	Daylight 6500K	80	126	1.062	2	42	46
* All modules connected to driver in a single continuous string.							

single continuous string.

\*\* Connect driver to center module "T-string" or use "home run", return both wires from last module to driver.



#### Warranty

5-Year limited warranty in accordance with published warranty conditions. Product must be used with compatible components (modules, drivers, engines and/or accessories) and no maximum ratings (such as Ta) shall be exceeded during any expected operating conditions of the system. If product is used with other manufacturer's product, compatibility must be recognized in writing by Permlight Technologies.

Permlight Technologies owns the following United States patents of which one or more may be applicable to the design and/or manufacture of this product: 6712486, 6578986, 6846093, 7114831, 7306353, 7102172, 7108396, 7329024, 7387406, 7582911, 7649327, 8926145, 8729810. Additional granted patents, patents pending and other IP protection rights may apply.