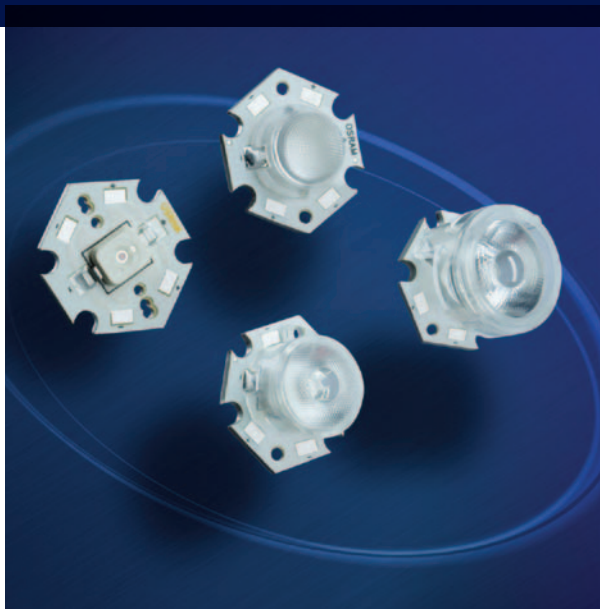


HF²X

LED for Directional Lighting Applications



The HF²X LED module is rapidly bridging the gap between the requirements of white light illumination and the capabilities of LED technology. These new modules offer bright and intense light for specialty illumination, including architectural, retail as well as solar luminaires and fixtures.

The HF²X LED modules consist of a hi-flux LED on a metal core circuit board, which acts as a heat sink, and has an integrated optic.

In continuing its leadership in the lighting industry by providing complete system solutions, HF²X is optimally paired with OPTOTRONIC® constant current power supplies.

Key Features & Benefits

- Available with different integrated optics (12°, 30°, 60° and 120°) that allows light distribution to be tailored to the needs of the application
- Higher efficiency than incandescent or halogen light sources leading to energy savings
- Long life: up to 50,000 hours (L₅₀) when temperature at Tc point is maintained at 40°C
- Small form factor enables integration into small and compact structures

Product Offering

Ordering Abbreviation	Wattage	Color
HF2X/12/W3-733	1.2	3300K
HF2X/30/W3-733	1.2	3300K
HF2X/60/W3-733	1.2	3300K
HF2X/120/W3-733	1.2	3300K
HF2X/12/W3-854	1.2	5400K
HF2X/30/W3-854	1.2	5400K
HF2X/60/W3-854	1.2	5400K
HF2X/120/W3-854*	1.2	5400K

*Product has lead wires

Application Information

Applications

- Accent lighting
- Display case lighting
- Landscape lighting
- Safety lighting
- Shelf lighting
- Signs
- Task lighting
- Vehicle cabin lighting

Specifications and Certifications



The OSRAM SYLVANIA HF²X is UL2108 Recognized for US and Canada Class 2 Unit (UL file # E258264)

RoHS compliant

Listed in Sign Components Manual (SAM)



Specification Data

Catalog #	Type
Project	
Comments	
Prepared by	Date

Ordering Information

Item Number	Ordering Abbreviation	Power (W)	Current (mA)	Luminous Intensity (cd)	Color Temperature	Beam Angle (degrees)
70192	HF2X/12/W3-733	1.2	350	540	3300K	12
70193	HF2X/30/W3-733	1.2	350	210	3300K	30
70194	HF2X/60/W3-733	1.2	350	45	3300K	60
70164	HF2X/120/W3-733	1.2	350	18	3300K	120
70201	HF2X/12/W3-854	1.2	350	600	5400K	12
70202	HF2X/30/W3-854	1.2	350	230	5400K	30
70191	HF2X/60/W3-854	1.2	350	50	5400K	60
70184*	HF2X/120/W3-854	1.2	350	20	5400K	120

Packaging Notes: Case qty. - 120 pcs. Minimum order qty. - 6 pcs.

*Product has lead wires

Power Supply Information

Max. No. Modules per Power Supply

LED Description	OT3 (51524)	OT9 (51525, 51526)	OT10 (51635)
All Item Numbers	2	6	8

Notes:

1. A maximum of 6 LED modules can be operated on a single feed.
2. OPTOTRONIC® power supplies are optimally paired with SYLVANIA LED Modules and are specifically designed with protection features for safe operation.
3. The module is designed to work with constant current power supplies only. Reference the Power Supply PIB # ECS052 for product specific information.

Ordering Guide

HF2X	/	120	/	W3	-	7	33
LED module		Beam Angle 12°, 30°, 60° and 120°		White 3rd Generation		CRI 7 > 70 8 > 80	Color Temperature 33=3300K 54=5400K

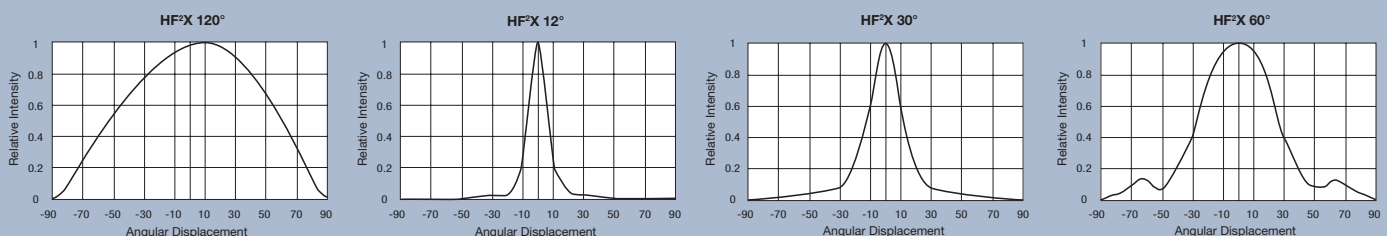
Minimum and Maximum Ratings

Parameter	Values
Operating Temperature at Tc point	-30... +85°C (-22 to +149°F)
Storage Temperature	-40... +90°C (-40 to +185°F)
Maximum Allowable Current (dc)	0.5A
Maximum Reverse Voltage	0V

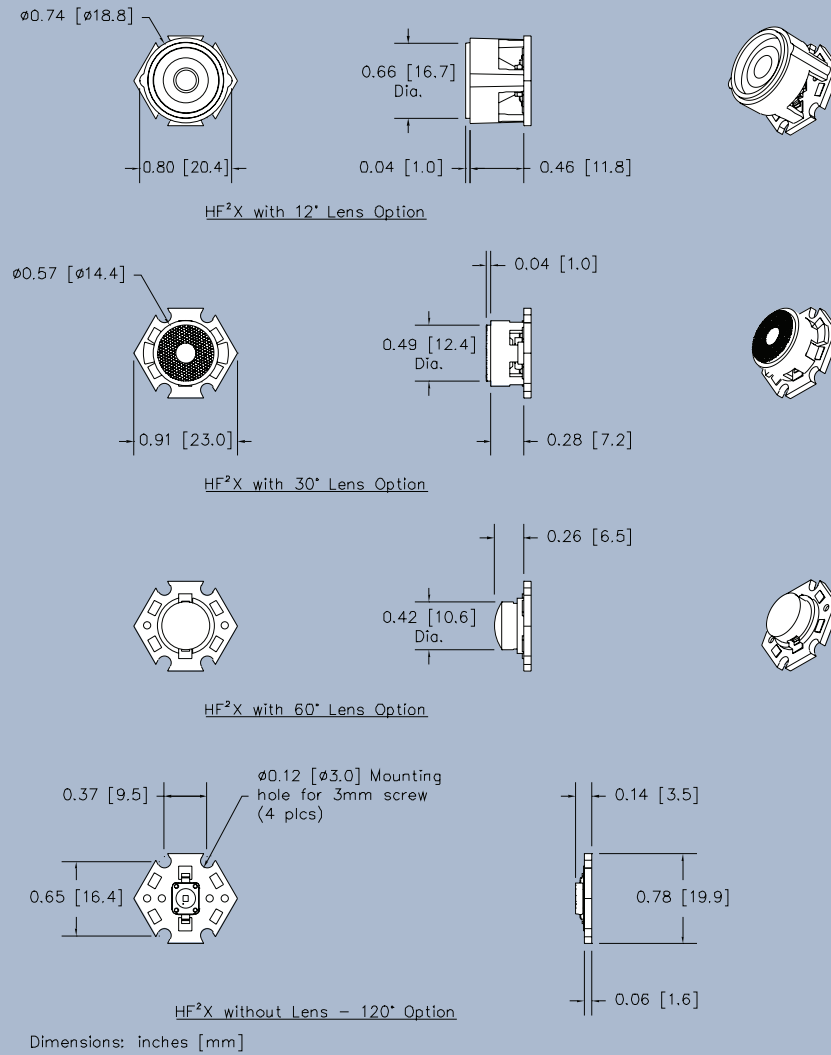
Notes:

1. Exceeding maximum ratings may damage the LED module and pose potential safety hazards.
2. Elevated operating temperatures can be expected to negatively impact service life in terms of lumen output.

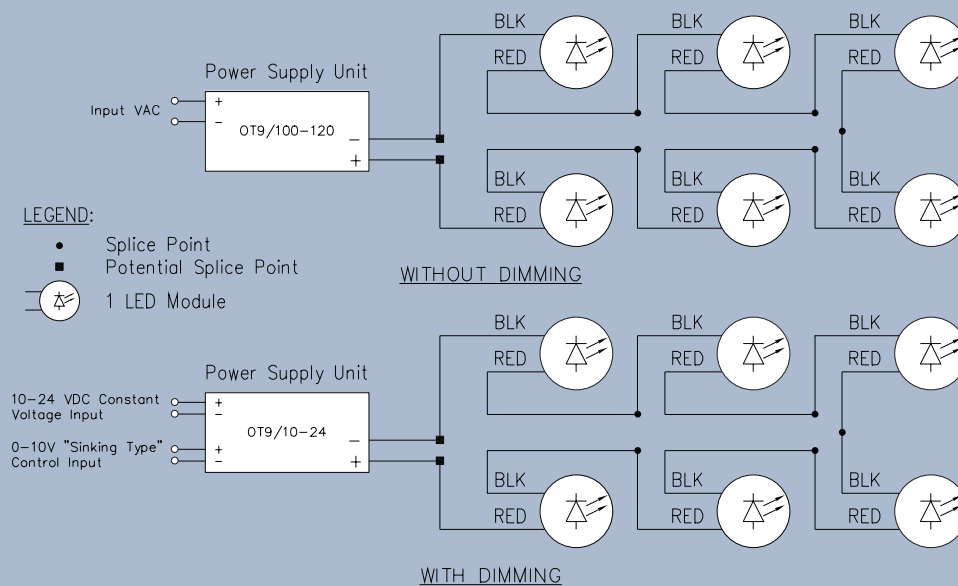
Optical Specifications



Assembly Diagram



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. (Depending on the product, incorrect polarity may lead to emission of red, or no light.)
4. Ensure the power supply is of adequate power to operate the total load.
5. Electrostatic Discharge (ESD) precautions shall be incorporated when handling or installation the module.
6. Damage by corrosion and improper heat sinking will not be honored as a materials defect claim. It is the user's responsibility to ensure adequate heat sink and protection against corrosive agents such as moisture, condensation and other harmful elements.
7. Modules may be hot to the touch. Use caution when handling.

Assembly Information

1. The module should be in good thermal contact with the designed metallic mounting surface. Use of an appropriate heat sink compound is recommended to eliminate air gaps. The LED module can be mounted using m3 screws and the screw holes/slots on the metal core circuit board.
2. To obtain maximum LED-lifetime please read carefully the recommended procedures concerning thermal management in our application note "Lifetime of LED modules" before beginning construction of luminaires. This application note is available from your SYLVANIA representative.
3. Module is intended for use with 350mA constant current drive condition as is provided by the OT9/100-120/350, OT9/10-24/350 DIM E and OT3/120-240/350 (see PIB ECS052 for details). The module is not intended for use with constant voltage power supplies, including other SYLVANIA LED power supplies.
4. Installation of the HF²X must include provisions for thermal management to avoid premature failure of the product and to obtain expected service life. Service life (i.e. lumen depreciation) is primarily a function of LED temperature which is to be monitored on the circuit board at the designated "Tc point".
5. There is no exact installation prescription to obtaining an appropriate Tc point temperature because every fixture design is different. In general, the HF²X module should be mounted on a clean, flat metal surface with enough surface area to transfer the heat from the module to the surrounding air. The metal surface can be part of a conventional finned heat sink or can be part of the mass of the fixture itself.
6. Concerning fixture design, it is important to understand that once heat is transferred to a "heat sink", that heat must still be allowed to escape the "system". A heat sink transferring the thermal energy to the inside of an enclosed cavity may ultimately be of little use.
7. Tc point temperatures can be measured with a standard thermocouple in direct contact with the circuit board at the Tc point or by use of ML4C series non-reversible OMEGALABELS (www.omeg.com) or equivalent.
8. In environments with significant vibrations we recommend securely mounting the module.

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