

HF²DISPLAYStick

Linear LED Module for Display Lighting



HF²DISPLAYStick is a linear LED module designed to replace conventional light sources used in display lighting applications. The HF²DISPLAYStick delivers excellent color and sparkle to various display lighting applications such as jewelry, showcases, and accenting high value products. The HF²DISPLAYStick is available in short and long versions to make it easy to design into a variety of case configurations. The long module is equipped with an on-board fan to actively cool the system when installed using the extrusion accessory.

The HF²DISPLAYStick module is designed with a metal core circuit board, which fosters effective heat dissipation. The module is optimally paired

Key Features & Benefits

- High brightness LED package for display lighting
- Available in 6-inch and 12-inch lengths (5 and 10 LEDs)
- 12-inch module supplied with active cooling
- Optimal thermal management with display extrusion
- Easy board-to-board connector with integrated pins
- Replaceable module board sections for easy long-term maintenance
- 110° beam angle
- Optimal operation with 24Vdc OPTOTRONIC® power supplies
- RoHS compliant



The HF²DISPLAYStick is UL2108 recognized



The HF²DISPLAYStick system* when properly assembled is UL2108 listed

* The HF²DISPLAYStick system is comprised of the HF²DISPLAYStick modules, anodized extrusion, and mounting hardware.

Product Offering

Ordering Description	Wattage (W)	Color
HF ² DISPLAYStick 842S	7	4200K
HF ² DISPLAYStick 842L	16	4200K
HF ² DISPLAYStick 942S	7	4200K
HF ² DISPLAYStick 942L	16	4200K

with OPTOTRONIC 24Vdc power supplies. For easy installation, connector accessories are also available.

Application Information

Applications

- Jewelry showcase
- Easel and endcap display case
- Color matching display kiosks

Application Information

1. Installation of the HF²DISPLAYStick must provide for thermal management to avoid premature failure of the product and to obtain expected service life. The active cooling system in the 12" HF²DISPLAYStick together with our recommended 1" diameter aluminum extrusion is sufficient to maintain the Tc point around 65°C in an ambient environment of 25°C. Service life is primarily a function of LED temperature which is to be monitored on the circuit board at the designated "Tc point". A Tc point temperature of designed 65°C should be sufficient to enable a service life of 40,000 hours.
2. 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 enclosure may ultimately be of little use.
3. The construction and evaluation of a prototype fixture is recommended where the temperature at the Tc point may be monitored after reaching thermal equilibrium. Tc point temperature can be measured with a standard thermocouple in direct contact with the circuit board at the Tc point or by use of the ML4C Series non-reversible OMEGALABELS (www.omega.com) or equivalent.

Specification Data

Catalog #	Type
Project	
Comments	
Prepared by	Date

Ordering Information

Item Number	Ordering Abbreviation	Module Length (in.)	No. of LEDs	Power (W)	Voltage (Vdc)	Current (Amp)	Correlated Color Temperature (K)	CRI	Beam Angle	Initial Lumens (lm)*
71232	HF2DISPLAYStick 942S***	5.9	5	7	24	0.29	4200	90	110°	248
70227	HF2DISPLAYStick 942L**	11.4	10	16	24	0.67	4200	90	110°	495
71234	HF2DISPLAYStick 842S***	5.9	5	7	24	0.29	4200	80	110°	298
71233	HF2DISPLAYStick 842L**	11.4	10	16	24	0.67	4200	80	110°	596

* All data is related to entire module measured at Tc point of 25°C. Data reflects statistical mean values. Actual data may differ depending on variances in the manufacturing process. End users need to put into account the lumen depreciation as the temperature rises with various thermal management solutions installed.

** All modules are UL 2108 recognized.

*** No more than one short module can be used with a SYLVANIA specified extrusion.

Ordering Guide

HF ²	DISPLAYStick	/	9	42	L
High Flux Second Generation	Module Name		CRI 8 > 80 9 > 90	Color Temperature 4200K	Long 11.4 inches Short 5.9 inches

Power Supply Information

Item Number	Ordering Description	Maximum Number of Short Modules Per Power Supply*	Maximum Number of Long Modules Per Power Supply	Maximum Combination of Long (L) & Short (S) Modules Per Power Supply*
51512	OT20/120-240/24S	2	1	—
51598	OT50/120/24LP	7	3	—
51513	OT75/120/24	10	4	4(L) & 1(S) or 3(L) & 4(S)
51514	OT75/120-277/24E	10	4	4(L) & 1(S) or 3(L) & 4(S)
51511	OT96/120-277/24	13	6	5(L) & 2(S)
51515	OT240/120-240/24/CH3	11 x 3	4 x 3	4(L) & 2(S) x 3

*No more than one short module should be used with a SYLVANIA specified extrusion. Customized designs employing more than one short module require proper thermal management.

Minimum and Maximum Ratings

Parameter	Symbol	Values
Operating Temperature at Tc Point	T _{op}	0 to +70°C
Storage Temperature	T _{stg}	-30 to +85°C
Voltage Range	V _{max}	25 Vdc
Maximum Reverse Voltage	V _R	25 Vdc

Notes:

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

Accessories

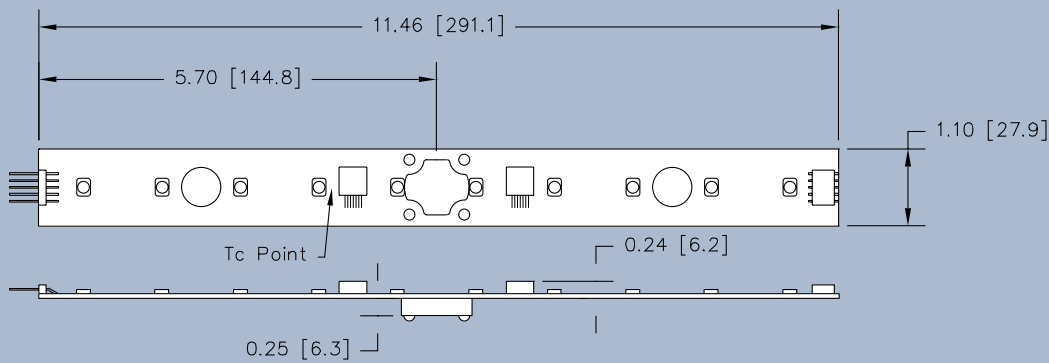


Item Number	Ordering Description	Length
70311*	HF2 5-PIN 12" INPUT CONN	12 in.
70315*	HF2 5-PIN 60" INPUT CONN	60 in.
70085	HF2 5-PIN 2" CONN	2 in.
70312	HF2 5-PIN 4" CONN	4 in.
70086	HF2 5 PIN 8" CONN	8 in.
70275**	HF2DISPLAYStick Extr. 4'	50.5 in.
70276**	HF2DISPLAYStick Extr. 5'	62 in.
70277**	HF2DISPLAYStick Extr. 6'	73.5 in.
70349	Disp. Stick Spring Ends	1 in.
70348	Disp. Stick 90D Angle	1 in.

* Note: The middle white cable should not be connected to the power supply should be properly terminated.

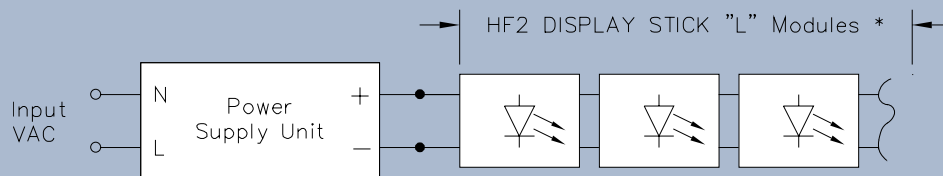
** The HF²DISPLAYStick modules installed with the HF²DISPLAYStick Extrusion System is UL 2108 listed, any modules installed without the extrusions will be UL 2108 recognized components.

Assembly Diagrams



DIMENSIONS: inches [mm]

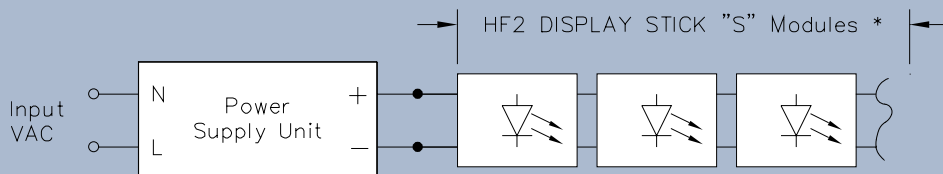
Wiring Diagrams



* Maximum number of modules connected in a single in-line run (NAED # 70227 & 71233 only) = 6 modules.

To accurately determine maximum LED load, the derating values listed in the App. Note # LED026 must be factored in. Reference the "Maximum Product Load" circuit requirement charts for the maximum product load per power supply.

LEGEND:



* Maximum number of modules connected in a single, in-line run (NAED # 71232 & 71234 only) = 12 modules.

To accurately determine maximum LED load, the derating values listed in the App. Note # LED026 must be factored in. Reference the "Maximum Product Load" circuit requirement charts for the maximum product load per power supply.

LEGEND:



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.

These instructions are guidelines for installation of SYLVANIA 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 all of its components must not be subject to mechanical stress.
2. Assembly must not damage or destroy the conducting paths on the circuit board.
3. The LED module incorporates no protection against short circuits, overload, or over heating. Therefore, it is absolutely necessary to operate the modules with an electrically stabilized power supply offering protections against the above mentioned safety risks. OSRAM OPTOTRONIC power supplies are specifically designed with protection features for safe operation. Use of third party power supplies is not recommended
4. Installation of the LED Modules and OSRAM LED power supplies need to be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installations.
5. Correct electrical polarity needs to be observed. Incorrect polarity may destroy the module.
6. All LED modules, up to the maximum number allowable for the power supply, should be installed in parallel electrical connection (red to red and black to black).
7. Pay attention to standard ESD precautions when handling and installing the module.
8. Only install according to the heat sinking parameters when handling and installing the module.
9. Modules may be hot to touch; use caution.

Assembly Information

1. The 6" module should be installed on flat surfaces or in a recommended extrusion to facilitate intimate contact between the circuit board and the substrate material. The module should not be installed on curved surfaces.
2. The 12" module with integrated active cooling system should be installed in an extrusion with enough air flow space to effectively transfer heat out of the module.
3. The mounting of the module is carried out by attaching it at the mounting holes.
4. Heat sink compounds may be used to facilitate heat transfer from the module to the heat sink material.



HF²DISPLAYStick System* is UL 2108 Listed
for US and Canada Class 2 Unit (UL file #E247649)

* The HF²DISPLAYStick system is comprised of the HF²DISPLAYStick modules, anodized extrusion, and mounting hardware.

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