



Lumec HighFocus LED high mast luminaires provide an energy saving, low-maintenance solution that provides managers and work crews with the freedom to focus on other tasks. HighFocus LED features scalable lumen packages and offers up to 113,875 lumens with up to 162 lumens per watt (Lm/W). Includes Service Tag, innovative way to provide assistance throughout the life of the product.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lamps: _____ Qty: _____
 Notes: _____

Ordering guide

example: HFL-276L1050NW-G2-2-HVU-DMG-TLRD7-HIS-GY3

Luminaire	LED Module	Optical System	Voltage	Driver and Dimming	Twist-Lock Receptacle	Surge Protection	Luminaire Options	Finish
HFL								
HFL HighFocus	Neutral White 92L1050NW-G2 138L530NW-G2 138L700NW-G2 138L1050NW-G2 184L350NW-G2 184L530NW-G2 184L700NW-G2 184L1050NW-G2 230L350NW-G2 230L530NW-G2 230L700NW-G2 230L1050NW-G2 276L530NW-G2 276L700NW-G2 276L1050NW-G2 Warm White 92L1050WW-G2 138L530WW-G2 138L700WW-G2 138L1050WW-G2 184L350WW-G2 184L530WW-G2 184L700WW-G2 184L1050WW-G2 230L350WW-G2 230L530WW-G2 230L700WW-G2 230L1050WW-G2 276L530WW-G2 276L700WW-G2 276L1050WW-G2	2 Type II 3 Type III 4 Type IV 5M Type V Medium 5W Type V Wide	UNV 120-277VAC HVU 347-480VAC 120⁶ 120V 208⁶ 208V 240⁶ 240V 277⁶ 277V 347⁶ 347V 480⁶ 480V	Standard: DMG ¹ Dimmable driver 0-10V	Standard: None ⁴ (leave blank) Optional: TLRD7 ^{3,4} Receptacle for twist-lock photocell or shorting cap, 7-pin	Optional: SP2 ⁵ 20kV / 10kA Surge Protector	HS² External house side shield HIS Internal house side shield, snap-on, 1 per LED light engine PH8^{3,7} Twist-lock Photoelectric Cell, UNIV (120-277VAC) PH8/347^{3,7} Twist-lock Photoelectric Cell, HVU (347VAC) PH8/480^{3,7} Twist-lock Photoelectric Cell, HVU (480VAC) PHXL^{3,7} Twist-lock Photoelectric Cell, extended life, UNIV (120-277VAC) PH9^{3,7} Shorting cap F1⁶ Fusing, single (120, 277 or 347VAC) F2⁶ Fusing, double (208, 240 or 480VAC) F3⁶ Fusing, Canadian double pull (208, 240 or 480VAC)	BK Black finish BR Bronze finish GY3 Gray finish

1. Please note these integrated features come standard with HighFocus luminaires.
 2. Must be field installed. Will ship as separate line item.
 3. Use of photoelectric cell or shorting cap is required to ensure proper illumination.
 4. HighFocus comes standard without a receptacle; to get a NEMA twist-lock receptacle, select TLRD7 7-pin option.

5. When SP2 option is selected you will get SP2 instead of standard SP1.
 6. Specific voltage (120, 208, 240, 277, 347 or 480) must be specified with fusing options (F1, F2 or F3).
 7. TLRD7 must be selected to use this option.



HFL HighFocus

LED High mast luminaire

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L70 is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11 Addendum B. Published L70 hours limited to 6 times actual LED test hours.

Ambient Temperature °C	Driver mA	L70 per TM-21	Lumen Maintenance % at 57,000 hrs
25°C	1050mA	>57,000 hours	>95.8%

LED Wattage values

Ordering Code	Total LEDs	LED Current (mA)	Average System Watts ⁸	Wattage label ⁹
HFL-92L-1050	92	1050	300	300
HFL-138L-530	138	530	223	220
HFL-138L-700	138	700	295	300
HFL-138L-1050	138	1050	452	450
HFL-184L-350	184	350	192	190
HFL-184L-530	184	530	297	300
HFL-184L-700	184	700	394	390
HFL-184L-1050	184	1050	600	600

Ordering Code	Total LEDs	LED Current (mA)	Average System Watts ⁸	Wattage label ⁹
HFL-230L-350	230	350	240	240
HFL-230L-530	230	530	371	370
HFL-230L-700	230	700	492	490
HFL-230L-1050	230	1050	754	750
HFL-276L-530	276	530	445	450
HFL-276L-700	276	700	591	590
HFL-276L-1050	276	1050	904	900

8. Typical values, rounded.

9. As per ANSI C136.15-2015. Consult factory for other labeling needs.

4000K LED Lumen values

Ordering Code	Color Temp.	Type 2			Type 3			Type 4			Type 5W			Type 5M		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
HFL-92L-1050-NW-G2-x	4000	37773	B4-U0-G4	126	39671	B3-U0-G5	132	38174	B3-U0-G5	127	40822	B5-U0-G4	136	41128	B5-U0-G2	137
HFL-138L-530-NW-G2-x	4000	31964	B3-U0-G3	144	33571	B3-U0-G4	151	32304	B3-U0-G5	145	34544	B5-U0-G4	155	34803	B5-U0-G2	156
HFL-138L-700-NW-G2-x	4000	40655	B4-U0-G4	138	42698	B3-U0-G5	145	41088	B4-U0-G5	139	43937	B5-U0-G5	149	44266	B5-U0-G2	150
HFL-138L-1050-NW-G2-x	4000	55663	B4-U0-G5	123	58462	B4-U0-G5	129	56255	B4-U0-G5	124	60156	B5-U0-G5	133	60606	B5-U0-G2	134
HFL-184L-350-NW-G2-x	4000	30608	B3-U0-G3	159	32146	B3-U0-G4	167	30934	B3-U0-G5	161	33078	B5-U0-G4	172	33326	B5-U0-G2	174
HFL-184L-530-NW-G2-x	4000	42934	B4-U0-G4	145	45092	B4-U0-G5	152	43391	B4-U0-G5	146	46399	B5-U0-G5	156	46746	B5-U0-G2	157
HFL-184L-700-NW-G2-x	4000	54925	B4-U0-G5	140	57686	B4-U0-G5	147	55508	B4-U0-G5	141	59358	B5-U0-G5	151	59802	B5-U0-G2	152
HFL-184L-1050-NW-G2-x	4000	74766	B5-U0-G5	125	78524	B5-U0-G5	131	75561	B4-U0-G5	126	80801	B5-U0-G5	135	81406	B5-U0-G3	136
HFL-230L-350-NW-G2-x	4000	38007	B4-U0-G4	158	39917	B3-U0-G5	166	38411	B3-U0-G5	160	41075	B5-U0-G4	171	41382	B5-U0-G2	172
HFL-230L-530-NW-G2-x	4000	53312	B4-U0-G4	144	55992	B4-U0-G5	151	53880	B4-U0-G5	145	57616	B5-U0-G5	155	58046	B5-U0-G2	156
HFL-230L-700-NW-G2-x	4000	67808	B5-U0-G5	138	71217	B4-U0-G5	145	68529	B4-U0-G5	139	73282	B5-U0-G5	149	73830	B5-U0-G3	150
HFL-230L-1050-NW-G2-x	4000	92840	B5-U0-G5	123	97507	B5-U0-G5	129	93827	B5-U0-G5	124	100334	B5-U0-G5	133	101084	B5-U0-G4	134
HFL-276L-530-NW-G2-x	4000	64263	B5-U0-G5	144	67492	B4-U0-G5	152	64946	B4-U0-G5	146	69450	B5-U0-G5	156	69969	B5-U0-G3	157
HFL-276L-700-NW-G2-x	4000	81736	B5-U0-G5	138	85844	B5-U0-G5	145	82605	B5-U0-G5	140	88334	B5-U0-G5	150	88994	B5-U0-G3	151
HFL-276L-1050-NW-G2-x	4000	111909	B5-U0-G5	124	117534	B5-U0-G5	130	113099	B5-U0-G5	125	120942	B5-U0-G5	134	121846	B5-U0-G4	135

3000K LED Lumen values

Ordering Code	Color Temp.	Type 2			Type 3			Type 4			Type 5W			Type 5M		
		Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating	Lumen Output	Efficacy (LPW)	BUG Rating
HFL-92L-1050-WW-G2-x	3000	35884	B4-U0-G4	120	37688	B3-U0-G4	126	36266	B3-U0-G5	121	38780	B5-U0-G4	129	39071	B5-U0-G2	130
HFL-138L-530-WW-G2-x	3000	30366	B3-U0-G3	136	31892	B3-U0-G4	143	30689	B3-U0-G5	138	32817	B5-U0-G4	147	33063	B5-U0-G2	148
HFL-138L-700-WW-G2-x	3000	38622	B4-U0-G4	131	40564	B3-U0-G5	137	39034	B3-U0-G5	132	41741	B5-U0-G4	141	42053	B5-U0-G2	142
HFL-138L-1050-WW-G2-x	3000	52880	B4-U0-G4	117	55538	B4-U0-G5	123	53442	B4-U0-G5	118	57149	B5-U0-G5	126	57576	B5-U0-G2	127
HFL-184L-350-WW-G2-x	3000	29078	B3-U0-G3	152	30539	B3-U0-G4	159	29388	B3-U0-G5	153	31424	B5-U0-G4	164	31660	B5-U0-G2	165
HFL-184L-530-WW-G2-x	3000	40787	B4-U0-G4	137	42837	B3-U0-G5	144	41221	B4-U0-G5	139	44080	B5-U0-G5	148	44409	B5-U0-G2	150
HFL-184L-700-WW-G2-x	3000	52179	B4-U0-G4	133	54801	B4-U0-G5	139	52733	B4-U0-G5	134	56390	B5-U0-G5	143	56813	B5-U0-G2	144
HFL-184L-1050-WW-G2-x	3000	71028	B5-U0-G5	118	74598	B5-U0-G5	124	71783	B4-U0-G5	120	76761	B5-U0-G5	128	77335	B5-U0-G3	129
HFL-230L-350-WW-G2-x	3000	36107	B4-U0-G4	150	37922	B3-U0-G4	158	36490	B3-U0-G5	152	39022	B5-U0-G4	163	39313	B5-U0-G2	164
HFL-230L-530-WW-G2-x	3000	50646	B4-U0-G4	136	53193	B4-U0-G5	143	51186	B4-U0-G5	138	54736	B5-U0-G5	147	55145	B5-U0-G2	149
HFL-230L-700-WW-G2-x	3000	64418	B5-U0-G5	131	67656	B4-U0-G5	137	65103	B4-U0-G5	132	69618	B5-U0-G5	141	70139	B5-U0-G3	143
HFL-230L-1050-WW-G2-x	3000	88198	B5-U0-G5	117	92632	B5-U0-G5	123	89136	B5-U0-G5	118	95318	B5-U0-G5	126	96029	B5-U0-G3	127
HFL-276L-530-WW-G2-x	3000	61050	B5-U0-G5	137	64118	B4-U0-G5	144	61698	B4-U0-G5	139	65978	B5-U0-G5	148	66471	B5-U0-G2	149
HFL-276L-700-WW-G2-x	3000	77649	B5-U0-G5	131	81552	B5-U0-G5	138	78475	B4-U0-G5	133	83917	B5-U0-G5	142	84544	B5-U0-G3	143
HFL-276L-1050-WW-G2-x	3000	106314	B5-U0-G5	118	111658	B5-U0-G5	123	107444	B5-U0-G5	119	114896	B5-U0-G5	127	115754	B5-U0-G4	128

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at signify.com/outdoorluminaires. Consult DLC QPL to confirm your specific fixture selection is DLC approved.

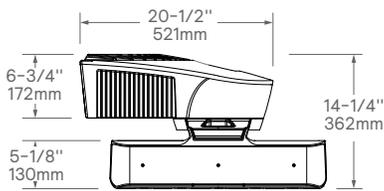
Note: Some data may be scaled based on tests of similar but not identical luminaires.

HFL HighFocus

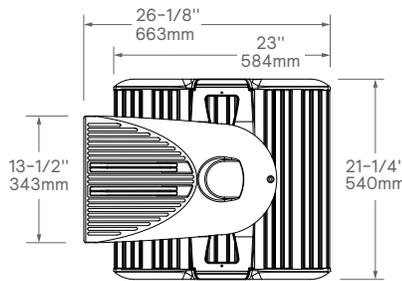
LED High mast luminaire

Dimensions

Side View



Bottom View

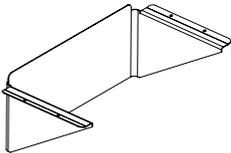


Weight -	2 Modules: 44 lbs / 20.0 kg
	3 Modules: 51 lbs / 23.2 kg
	4 Modules: 59 lbs / 26.8 kg
	5 Modules: 67 lbs / 30.4 kg
	6 Modules: 75 lbs / 34.1 kg

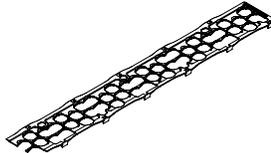
EPA - 1.89 sq. ft.

Luminaire options

HS external house side shield



HIS internal house side shield, 1 per LED light engine



Specifications

Housing

Made of a low copper die cast Aluminum alloy (A360) for a high resistance to corrosion, 0.100" (2.5mm) minimum thickness. Fits on a 2 3/8" (60mm) O.D. (2" NPS) by 5 1/2" (140mm) minimum long tenon. Comes with a zinc plated clamp fixed by 4 zinc plated hexagonal bolts 3/8-16 UNC for ease of installation. Provides an easy step adjustment of +/- 3° tilt in 3° increments. A single screw with sealing washer, hinged, removable door opens upward to provide access to electronic components and to a terminal block. Door is secured to prevent accidental dropping or disengagement. Electrical compartment rated IP65 seal per ANSI C136.25, provided with a pre-installed gasket. Complete with a bird guard installed which seals around tenon and protects against birds and similar intruders. ANSI label as per C136.15-2015 to identify wattage and source (included in box).

Light Engine

Composed of 4 main components: Heat Sink / LED Module / Optical System / Driver
Electrical components are RoHS compliant, IP66 sealed light engines. LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

Heat Sink

Anodized 6063-T5 Aluminum for a high resistance to corrosion, designed to ensure high efficacy and superior cooling by natural vertical convection air flow pattern always close to LEDs and driver optimizing their efficiency and life. Product does not use any cooling device with moving parts (only passive cooling). Wide openings enable natural cleaning and removal of dirt and debris. Entire luminaire is rated for operation in ambient temperature of -40°C / -40°F up to +40°C / +104°F.

LED Module

Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin 3000 Kelvin nominal (3045K +/- 175K) for WW selection or 4000 Kelvin nominal (3985K +/- 275K) for NW selection, CRI 70 Min. 75 Typical. Other CCT/CRI also available, consult factory.

Optical System

Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. 0% uplight and UO per IESNA TM-15.

NOTE: Entire optical assembly rotatable, enabling alignment of asymmetric optics parallel with roadway to optimize optical performance.

Driver

High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max.

The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Integrated Features

DMG: Dimmable driver 0-10V.

SP1: Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line Ground, Line Neutral and Neutral Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid State Street Lighting Consortium) Model Specification for LED

Roadway Luminaires Appendix D Electrical Immunity High Test Level 10kV / 10kA.

Please note that these integrated features always come with HighFocus luminaires.

Driver and Luminaire Options

NOTE: HighFocus LED high mast luminaires will be shipped controls ready when you select 7-pin receptacle option; 0-10V dimming driver is standard. Contact your local Sales Representative for more information and for help with putting together the entire system solution.

TLRD7*: Receptacle with 7 pins enabling dimming additional functionality (to be determined), can be used with a twist lock control node or photoelectric cell or a shorting cap. **Please note:** Additional hardware will be required to utilize the additional 2 pins on this receptacle.

PH8*: Twist-lock Photoelectric Cell, UNIV (120-277VAC).

PH8/347*: Twist-lock Photoelectric Cell, HVU (347VAC).

PH8/480*: Twist-lock Photoelectric Cell, HVU (480VAC).

PHXL*: Twist-lock Photoelectric Cell, extended life, UNIV (120-277VAC).

PH9*: Shorting cap.

* Use of photoelectric cell or shorting cap is required to ensure proper illumination.

HS: External house side shield.

HIS: Internal house side shield, 1 per LED light engine.

F1: Fusing, single (for 120, 277 or 347VAC).

F2: Fusing, double (for 208, 240 or 480VAC).

F3: Fusing, Canadian double pull (for 208, 240 or 480VAC).

SP2: 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

HFL HighFocus

LED High mast luminaire

Specifications (continued)

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, System Reliability Tool, driver data and LED LM-80/TM-21, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C. Luminaire Useful Life accounts for LED lumen maintenance AND all of these additional factors including: LED life, driver life, PCB substrate, solder joints, on/off cycles, burning hours and corrosion.

Wiring

The connection of the luminaire is done using a terminal block connector 600V, 85A for use with #2-#14 AWG wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a time delay or slow blow fuse to avoid unnecessary and unwanted fuse blowing that can occur with fast acting fuses.

Hardware

All exposed screws shall be stainless for a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 5000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Vibration Resistance

The HFL meets the ANSI C136.31-2018, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications.

Certifications and Compliance

cULus Listed for Canada and USA. Luminaire meets DOE and MSSLC Model Specification for LED Roadway Luminaires. Most versions of HighFocus LED high mast luminaires are DesignLights Consortium qualified, consult DLC QPL to confirm your specific fixture selection is approved. CCTs 3000K and warmer are International Dark-Sky Association (IDA) Approved. Luminaire complies with or exceeds the following ANSI C136 standards: .2, .3, .10, .15, .18, .22, .25, .31, .37, .41.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product

Limited Warranty

10-year limited warranty.

See signify.com/warranties for details and restrictions.

Buy American Act of 1933 (BAA):

This product is manufactured in one of our US factories and, as of the date of this document, this product was considered a commercially available off-the-shelf (COTS) item meeting the requirements of the BAA. This BAA designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies. Prior to ordering, please visit www.signify.com/baa to view a current list of BAA-compliant products to confirm this product's current compliance.

