



Day-Brite / CFI FHG LED high bay provides versatility in form and function. With a wide range of lumen packages and accessories available, this luminaire can be used in many different applications ranging from warehouses and manufacturing facilities to retail outlets.



Control options are available

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Cat.No: \_\_\_\_\_

Type: \_\_\_\_\_

Qty: \_\_\_\_\_

Notes: \_\_\_\_\_

### Ordering guide

Example: FHG24L840-UNV-M

Family	Lumens <sup>1</sup>	CRI/CCT	Voltage	Distribution	Options
FHG	12L 12,000 lm	840 80 CRI, 4000K	UNV Universal (120-277V)	M Medium	WP6 <sup>2,3,4</sup> Wired 6' 16/3 cord & NEMA twist lock plug
	18L 18,000 lm	850 80 CRI, 5000K		N Narrow (Aisle)	WP6/4 <sup>2,3,4</sup> Wired 6' 16/4 cord and NEMA twist lock plug for line voltage plus unswitched hot for EMERGENCY
	24L 24,000 lm		120 120V	W Wide	WP6D <sup>2,3,4</sup> Wired 6' 16/3 cord & NEMA twist lock plug for line voltage and wired 6' 16/3 cord & plug for dimming control
	30L 30,000 lm		208 208V		WC6 <sup>5,4</sup> Wired 6' 16/3 cord
	36L 36,000 lm		240 240V		WC6/4 <sup>5,4</sup> Wired 6' 16/4 cord for line voltage plus unswitched hot for EMERGENCY
	48L 48,000 lm		277 277V		WC6/5 <sup>5,4</sup> Wired 6' 18/5 cord for line voltage plus 0-10V dimming
	60L <sup>7</sup> 60,000 lm		347 347V		WC6/6 <sup>5,4</sup> Wired 6' 18/6 cord for line voltage plus unswitched hot for EMERGENCY plus 0-10V dimming
		480 480V			SWZCSH <sup>5,6,7</sup> Interact Pro scalable high bay sensor w/integral daylight & occupancy sensing, advanced grouping w/ dwell time
					MDPIR <sup>5,8</sup> 360° Motion detector PIR
					EM08HV <sup>4,7</sup> Factory wired 8W integral emergency pack, nominal 1100 to 1300 lumens
					EM24HV <sup>4,7</sup> Factory wired 24W integral emergency pack, nominal 3300 to 3900 lumens
					ER100 <sup>9,10,11</sup> UL924 listed sensor bypass relay, factory installed between driver & sensor (Interact Pro compatible) for 30,000 lumen maximum
					ER100/HVPS <sup>9,10,11</sup> UL924 listed sensor bypass relay, factory installed between driver & sensor for 347/480V Power Sense (Interact Pro compatible) for 30,000 lumen maximum
					ER100/HVPI <sup>9,10,11</sup> UL924 listed sensor bypass relay, factory installed between driver & sensor for 347/480V Power Interrupt (Interact Pro compatible) for 30,000 lumen maximum
					GTD/E <sup>2,9</sup> UL924 listed Bodine GTD factory installed on driver input (Note: ONLY available in 120V OR 277V)
					SP1 Optional 10KV surge protector
					GLR Fusing, fast blow (120-277V only)

### Footnotes

- Nominal delivered lumens at 25°C ambient.
- Must specify voltage.
- 6' is standard cord length. For optional 10', 15', or 20' cord length, replace the "6" in the option code with desired length.
- If ordering a cord or cord & plug option, order proper cord option for dimming or emergency.
- High bay motion detector, motion sensing zone is extremely limited if used below 15' mounting height.
- Must order IRT9015 Interact commissioning remote with each system order.
- Not available as a combination of 480V plus SWZCSH plus EM battery at 60,000 lumens
- Not for use with SWZCSH option.
- Must be installed in conjunction with a UL1008 device.
- Only used with SWZCSH integral sensing option.
- 30,000 lumens maximum.

### General Notes

- All accessories are field installed.
- All options are factory installed.
- Many luminaire components, such as reflectors, lenses, sockets, lampholders, and LEDs are made from various types of plastics which can be adversely affected by airborne contaminants. If sulfur based chemicals, petroleum based products, cleaning solutions, or other contaminants are expected in the intended area of use, consult factory for compatibility.

# FHG LED high bay

12,000 to 60,000 lumens



## Accessories (order separately)

Catalog Numbers	Descriptions
HCH5-VTOGGLE	5' cables & V toggle hangers
HCH10-VTOGGLE	10' cables & V toggle hangers
HCH15-VTOGGLE	15' cables & V toggle hangers
HCH20-VTOGGLE	20' cables & V toggle hangers
FHG-PENSMKIT <sup>1,2,3</sup>	Pendant hanger/surface mount kit (pendant supplied by others)
FHG-WG2	Wire guard for 12000lm to 30000lm
FHG-WG3	Wire guard for 36000lm
FHG-WG4	Wire guard for 48000lm to 60000lm
FHG-SENSOR	Field installed PIR sensor
FHG-REMOTE	Hand held programmer for sensor
IRT9015	Handheld remote for grouping and configuration (at least one remote required for any SWZCSH installation)

1. For areas where luminaires are subject to high impact (gymnasiums, etc), rigid pendant hanging is not to be used. Use hook or cable/chain assembly for mounting in these areas.
2. FHG-PENSMKIT cannot be used with 2ft 12000lm-30000lm with any EM battery option.
3. If center hook mounting is used, note that many configurations may not hang straight because of unbalanced assembly.

## Ambient Temperature Data

Configuration	Standard Unit (min. -30°C)	w/8W EM (min. 0°C)	w/24W EM (min. 0°C)	w/ Interact (min. -20°C)	w/ER100 (min. -20°C)	w/Interact & 8W EM (min. 0°C)	w/Interact & 24W EM (min. 0°C)
FHG12L UNV	55	50	45	55	55	50	45
FHG18L UNV	55	50	45	55	45	50	45
FHG24L UNV	55	50	45	55	45	50	45
FHG30L UNV	50	50	45	50	40	50	45
FHG36L UNV	55	50	50	55	N/A	50	50
FHG48L UNV	55	50	45	55	N/A	50	45
FHG60L UNV	50	50	50	50	N/A	50	45
Any UNV unit with GTD/E (min. 0°C)	40	N/A	N/A	N/A	N/A	N/A	N/A
FHG12L 347V	55	50	50	55	55	45	45
FHG18L 347V	55	50	50	45	45	45	45
FHG24L 347V	55	50	50	45	45	45	45
FHG30L 347V	50	40	40	40	40	40	40
FHG36L 347V	55	50	50	45	N/A	45	45
FHG48L 347V	55	50	50	45	N/A	45	45
FHG60L 347V	50	40	40	40	N/A	40	40
FHG12L 480V	55	50	45	55	55	50	45
FHG18L 480V	55	50	45	45	45	50	45
FHG24L 480V	55	50	45	45	45	50	45
FHG30L 480V	50	50	45	40	40	50	45
FHG36L 480V	55	50	50	45	N/A	50	50
FHG48L 480V	55	50	45	45	N/A	50	45
FHG60L 480V	50	50	50	40	N/A	N/A	N/A

# FHG LED high bay

12,000 to 60,000 lumens

## Construction/Finish

- Metal housing and reflectors provide excellent thermal transfer to extend component life.
- End holes to attach V toggle hanger for cable hanging.
- Cable/chain mounting capability is standard (ordered separately or furnished by others). Accessories are available for other mounting methods.
- 7/8" K.O. at each end of luminaire.
- Polyester powder finish for excellent impact and corrosion resistance.
- LED light engines and drivers are field replaceable.
- Dimming drivers are standard. Control is 0–10V DC.
- Luminaire comes standard as field installable sensor ready. Sensor sold separately. See page 6 for sensor information.
- Sensor remote can be used to change sensor settings such as high end light output levels and timing.
- Access plate located on top of housing for easy wiring.
- Optional light distributions in narrow (aisle), medium, and wide diffuser lenses.
- 6KV surge protection standard.
- Components are RoHS compliant.
- L70 LED predicted lumen maintenance >100,000 hours.
- cETLus listed to UL 1598 standards. Suitable for use in damp locations. See ambient temperature data table for standard ambient information.
- Complies with FCC Rules and Regulations Part 15 Subpart B Class A.
- DesignLights Consortium qualified. Please see the DLC QPL list for exact catalog numbers (<http://www.designlights.org/QPL>)
- Five year limited luminaire warranty. Visit [www.signify.com/warranties](http://www.signify.com/warranties) for complete warranty information.

## Emergency Options (ER100)

- Power Sensing (Factory default) – Recommended UL924 option requires unswitched power sense line, absence of voltage on the normal circuit triggers luminaire to 100% output.
- Power Interruption Detection (Field option) – Detects AC power interruption >30ms triggers 90 minute emergency mode with luminaire at 100% output.
- 347/480V requires either one or two step-down transformers and must be ordered indicating Power Sensing or Power Interruption Detection.

## Interact ready sensor (SWZCSH)

- SWZCSH is a connected sensor with integral occupancy and daylight sensing and supports wireless mesh connectivity.
  - The sensor can be configured to operate in a standalone mode (i.e., without a gateway) or can be connected to a compatible gateway for remote monitoring and reporting capabilities.
  - Startup is implemented via Interact Pro App (Android or iPhone) & BlueTooth connectivity. The App provides flexibility to choose between a standalone or gateway mode for setup.
  - Setup with the gateway requires internet access to the gateway. It is possible to add a gateway at a later point.
  - You can prepare project configuration steps remotely in the Interact Pro App and use IRT9015 remote onsite to quickly identify and group devices together.
  - Interact system includes smart devices, an App, a software portal, and a broad portfolio of wireless luminaires, lamps, and retrofit kits all working on the same system.
- For more information on Interact Pro visit: [www.interact-lighting.com/en-us/interact-offering](http://www.interact-lighting.com/en-us/interact-offering)

# FHG LED high bay

12,000 to 60,000 lumens

## interact



Gateway Connected

	Standalone	Option 1	Option 2
Dimming, grouping, and zoning	✓	✓	✓
Bluetooth and ZigBee enabled	✓	✓	✓
Motion sensing and daylight harvesting	✓	✓	✓
Integration with 0-10V and phase dimming fixtures	✓	✓	✓
Code compliance	✓	✓	✓
Granular dimming and dwell time	✓	✓	✓
Correlated color temperature (CCT) tuning by switch	New	✓	✓
Support for sensor-based Tunable White luminaires	New	✓	✓
Energy reporting and monitoring		✓	✓
Scheduling		✓	✓
Demand response		✓	✓
BMS integration (BACnet)		✓	✓
Floor plan visualization		✓	✓
IoT sensors for wellness		✓	✓
IoT Apps for productivity		✓	✓

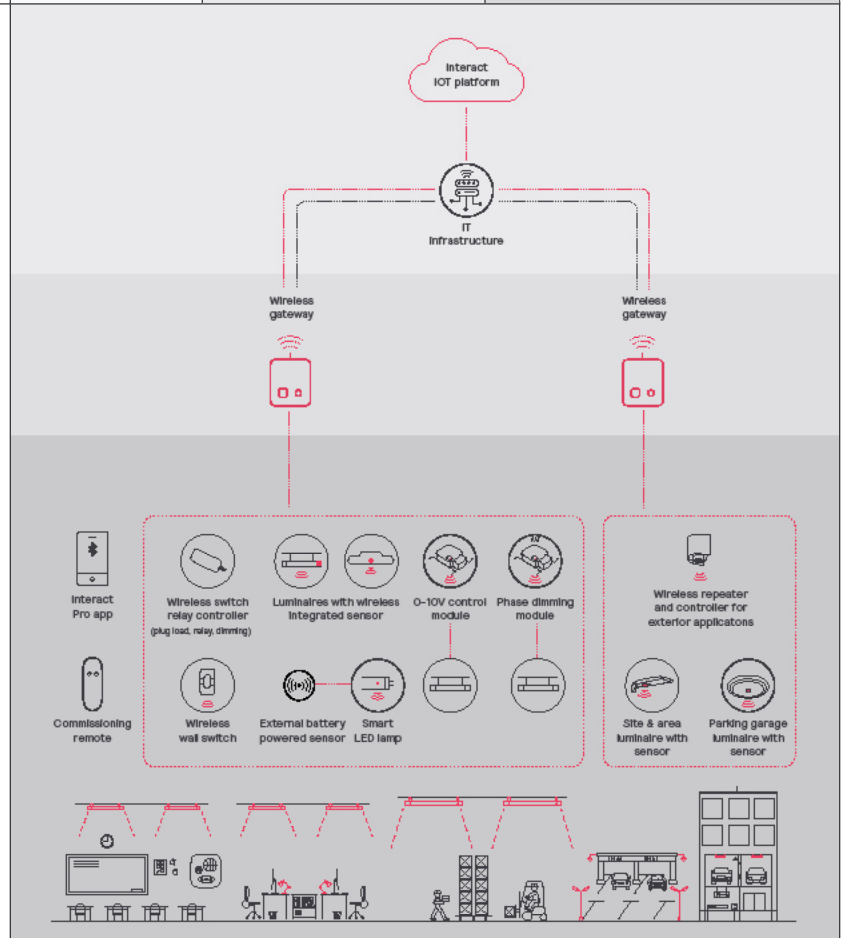
### Currently supported maximum system size

To be able to design the lighting system correctly for the customer, it is important to know the prime characteristics of the system, its possibilities and limitations.

System level	
Total number of gateways	Unlimited
Total number of devices	200 per network
• Luminaires with integrated sensors	150
• Smart TLEDs	150
• Zones + groups	64
Total number of ZGP devices (sensors and switches)	50
• Sensors	30
• Switches	50

Group level	
Recommended number of lights	40 (maximum 150)
Number of ZGP devices	5
Number of scenes	16



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12,000 to 60,000 lumens

## Electro-Connect Modular Wiring System

Electro-Connect is a pre-assembled modular wiring system designed to simplify the process of wiring and installing fixtures ultimately providing time and cost savings. With only three basic components, EC can be used to supply power in both high bay and low bay applications. For more information, visit us online at <https://www.signify.com/en-us/products/indoor-luminaires/modular-wiring/wiring-devices/electro-connect-ec-three> and <https://www.signify.com/en-us/products/indoor-luminaires/modular-wiring/wiring-devices/electro-connect-ec-three-plus>

## EC3 Modular Wiring System

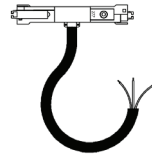
Distribution Cable



Extender Cable



Lighting 'T'



## EC3+ Modular Wiring System

Double Headed Extender Cable



Double Headed Distribution Cable

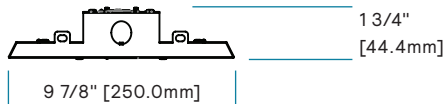


Whip End Fixture Drop



## Dimensions

Side View



36,000lm with EM and 480V together



48,000lm - 60,000lm all with 480V and EM together



12,000lm - 30,000lm  
12,000lm - 30,000lm all with GTD/E and all with 347/480V and ER100 together



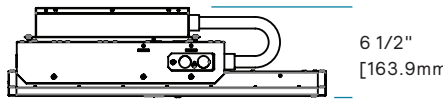
36,000lm all with GTD/E



48,000lm - 60,000lm all with GTD/E



12,000lm - 30,000lm  
12,000lm - 30,000lm all with EM



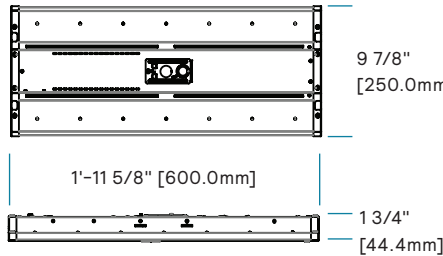
36,000lm all with EM (except 480V)



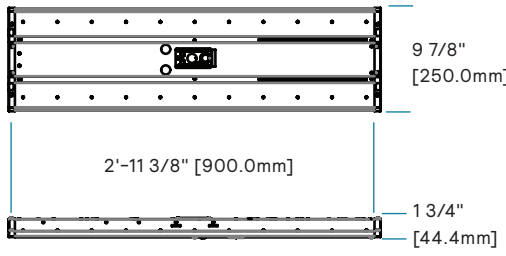
48,000lm - 60,000lm all with EM (except 480V)



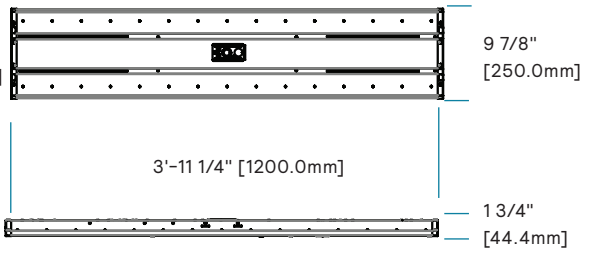
12,000lm - 30,000lm standard construction and SWZCSH construction (without EM or ER100)



36,000lm standard construction (all except with EM)



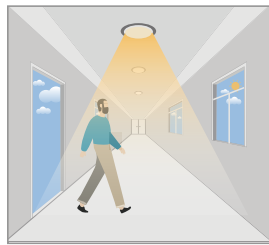
48,000lm - 60,000lm standard construction (all except with EM)



# FHG LED high bay

12,000 to 60,000 lumens

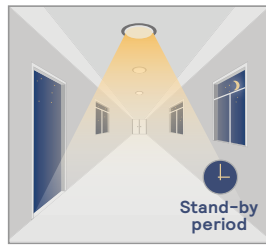
## Motion Detection Operation



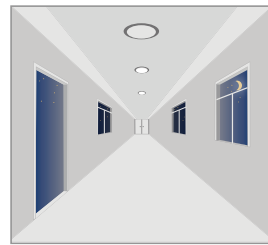
Sensor turns ON light to set brightness level when motion is detected



Sensor keeps for a hold time period after motion leaves.

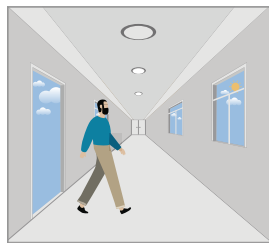


Sensor dims light to standby dimming level after hold time if there is still no motion.

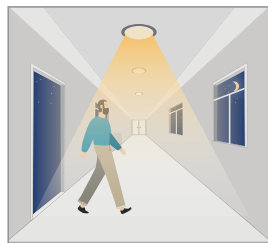


Sensor turns OFF light after standby period.

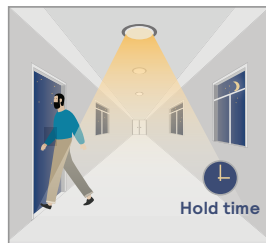
## Daylight Operation



With sufficient daylight, the sensor keeps light OFF even motion gets detected.



With insufficient daylight, the sensor turns light ON when motion gets detected.



After there's no motion detected, the sensor keeps light ON 100% for holdtime.



After holdtime, sensor dims light to standby dimming level for standby period. If standby period has been set as 0s, sensor turns light OFF automatically after holdtime.

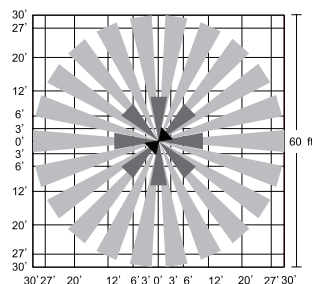
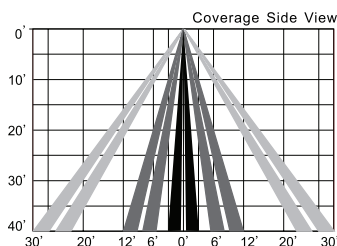


The sensor turns OFF light automatically after the standby period when there's no motion detected.

## PIR Sensor

- Field installed into sensor socket
- PIR sensor with motion and daylighting
- Maximum mounting height: 40ft
- Handheld remote programmer used to change settings
- Default Settings:  
 Brightness level: 100%  
 Hold Time: 5 minutes  
 Standby Dim Level : 30%  
 Standby Time : 60 minutes  
 Daylighting: Disabled

## Sensor Coverage



# FHG LED high bay

12,000 to 60,000 lumens

## Photometric Test List

Catalog Numbers	Delivered Lumens	Input Watts	Efficacy
FHG12L840-UNV-M	12832	80.8	159
FHG12L840-UNV-N	12592	80.8	156
FHG12L840-UNV-W	12580	80.8	156
FHG18L840-UNV-M	19032	120.7	158
FHG18L840-UNV-N	18675	120.7	155
FHG18L840-UNV-W	18658	120.7	155
FHG24L840-UNV-M	24827	159.0	156
FHG24L840-UNV-N	24361	159.3	153
FHG24L840-UNV-W	24339	159.1	153
FHG30L840-UNV-M	29441	196.1	150
FHG30L840-UNV-N	28888	196.1	147
FHG30L840-UNV-W	28862	196.1	147
FHG36L840-UNV-M	38056	245.3	155
FHG36L840-UNV-N	37341	245.3	152
FHG36L840-UNV-W	37308	245.3	152
FHG48L840-UNV-M	49748	320.2	155
FHG48L840-UNV-N	48814	320.2	152
FHG48L840-UNV-W	48770	320.2	152
FHG60L840-UNV-M	59634	395.4	151
FHG60L840-UNV-N	58515	395.4	148
FHG60L840-UNV-W	58461	395.4	148

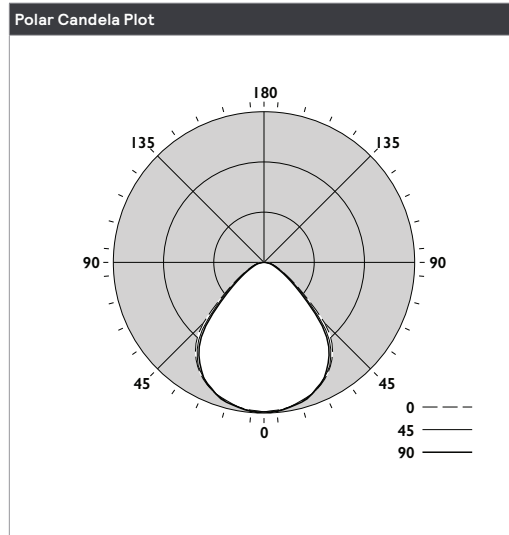
Catalog Numbers	Delivered Lumens	Input Watts	Efficacy
FHG12L850-UNV-M	12889	80.8	160
FHG12L850-UNV-N	12647	80.8	157
FHG12L850-UNV-W	12635	80.8	156
FHG18L850-UNV-M	19116	120.7	158
FHG18L850-UNV-N	18757	120.7	155
FHG18L850-UNV-W	18740	120.7	155
FHG24L850-UNV-M	24911	159.0	157
FHG24L850-UNV-N	24350	159.1	153
FHG24L850-UNV-W	24331	159.0	153
FHG30L850-UNV-M	29571	196.1	151
FHG30L850-UNV-N	29015	196.1	148
FHG30L850-UNV-W	28989	196.1	148
FHG36L850-UNV-M	38273	245.0	156
FHG36L850-UNV-N	37505	245.3	153
FHG36L850-UNV-W	37472	245.3	153
FHG48L850-UNV-M	50429	319.6	158
FHG48L850-UNV-N	49029	320.2	153
FHG48L850-UNV-W	48984	320.2	153
FHG60L850-UNV-M	59897	395.4	151
FHG60L850-UNV-N	58772	395.4	149
FHG60L850-UNV-W	58719	395.4	149

# FHG LED high bay

12,000 to 60,000 lumens

FHG24L840-UNV-M	
Luminaire Lumens:	24827
Luminaire Efficacy Rating (LER):	156
Total Luminaire Watts:	159
Spacing Criterion (0-180):	1.28
Spacing Criterion (90-270):	1.24

Candela Distribution						Flux
	0	22.5	45	67.5	90	Lumens
0	11908	11908	11908	11908	11908	
5	11815	11847	11871	11870	11919	1127
15	11479	11444	11412	11459	11533	3235
25	10740	10642	10699	10595	10655	4911
35	9437	9382	9254	9070	9034	5747
45	6840	6611	6183	5860	5769	4765
55	3060	3044	2888	2698	2602	2629
65	1452	1506	1432	1337	1216	1423
75	776	793	747	704	619	778
85	246	205	160	139	126	212
90	13	8	10	13	13	
95	0	0	0	0	0	2
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	



Coefficients of Utilization % (Based on a floor reflectance of 0.2)													
Pc---	80				70				50				0
Pw---	70	50	30	10	70	50	30	50	30	10	0	0	
RCR													
0	119	119	119	119	116	116	116	111	111	111	111	100	
1	111	107	103	100	108	105	101	100	98	95	88	88	
2	102	96	90	85	100	94	89	90	86	82	77	77	
3	95	86	79	73	92	84	78	81	76	71	67	67	
4	88	77	70	64	86	76	69	74	68	63	59	59	
5	81	70	62	56	80	69	62	67	61	55	52	52	
6	76	64	56	50	74	63	55	61	55	50	47	47	
7	71	58	51	45	69	58	50	56	49	45	42	42	
8	66	54	46	41	65	53	46	52	45	40	38	38	
9	62	50	42	37	61	49	42	48	41	37	35	35	
10	58	46	39	34	57	45	38	44	38	34	32	32	

\*Based on a floor reflectance of 0.2

Zonal Lumen Summary			
Zone	Lumens	%Fixture	%Lamp
0-30	9273	37.4%	37.4%
0-40	15020	60.5%	60.5%
0-60	22413	90.3%	90.3%
0-90	24825	100.0%	100.0%
90-180	2	0.0%	0.0%
0-180	24827	100.0%	100.0%

Avg. Luminance (cd/m²)			
	0	45	90
45	72241	65306	60934
55	39837	37604	33879
65	25667	25313	21497
75	22387	21556	17852
85	21045	13685	10764

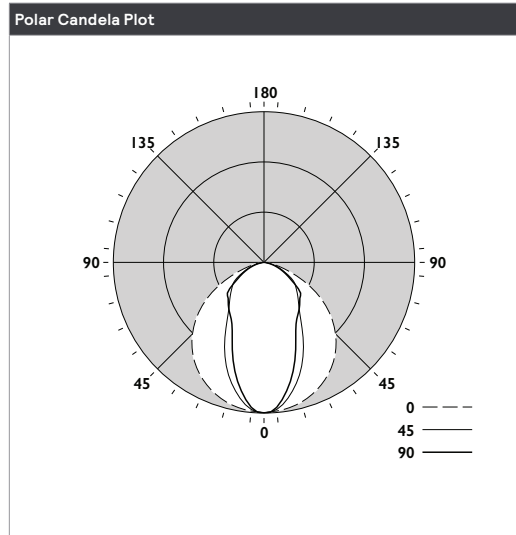


# FHG LED high bay

12,000 to 60,000 lumens

FHG24L840-UNV-N	
Luminaire Lumens:	24361
Luminaire Efficacy Rating (LER):	153
Total Luminaire Watts:	159.3
Spacing Criterion (0-180):	1.28
Spacing Criterion (90-270):	0.76

Candela Distribution	Flux					
	0	22.5	45	67.5	90	Lumens
0	13876	13876	13876	13876	13876	
5	13762	13745	13612	13450	13430	1272
15	13347	12770	11542	10666	10385	3275
25	12474	10948	8616	7231	6937	4206
35	11175	8469	5762	5506	5565	4404
45	9331	5445	4407	4570	4676	4154
55	6953	3351	3503	3577	3436	3478
65	4020	2187	2096	1956	1908	2292
75	1463	1096	947	829	806	1074
85	247	189	120	114	112	204
90	13	9	13	16	16	
95	0	0	0	0	0	2
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	



Coefficients of Utilization % (Based on a floor reflectance of 0.2)												
Pc---	80				70				50			
	70	50	30	10	70	50	30	50	30	10	0	
Pw---	70	50	30	10	70	50	30	50	30	10	0	
RCR												
0	119	119	119	119	116	116	116	111	111	111	100	
1	110	106	102	99	107	104	100	99	97	94	87	
2	101	94	88	83	99	92	86	89	84	80	74	
3	93	84	76	70	91	82	75	79	73	68	64	
4	86	75	67	61	84	74	66	71	65	60	56	
5	80	68	59	53	78	67	59	65	58	52	49	
6	74	62	53	47	72	61	53	59	52	47	44	
7	69	56	48	42	67	56	48	54	47	42	40	
8	64	52	44	38	63	51	44	50	43	38	36	
9	61	48	40	35	59	47	40	46	39	35	33	
10	57	44	37	32	56	44	37	43	36	32	30	

\*Based on a floor reflectance of 0.2

Zonal Lumen Summary			
Zone	Lumens	%Fixture	%Lamp
0-30	8753	35.9%	35.9%
0-40	13157	54.0%	54.0%
0-60	20789	85.3%	85.3%
0-90	24359	100.0%	100.0%
90-180	2	0.0%	0.0%
0-180	24361	100.0%	100.0%

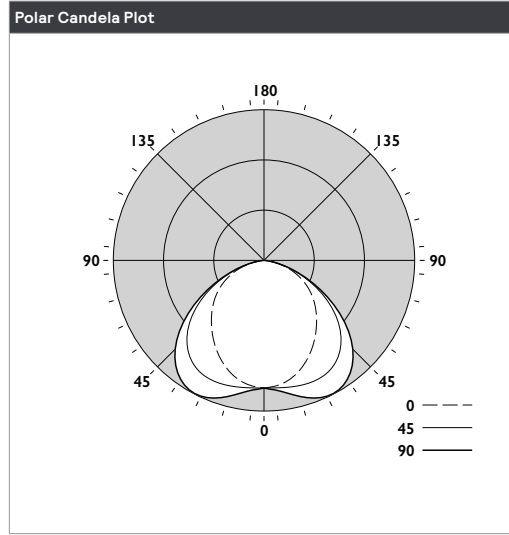
Avg. Luminance (cd/m²)			
	0	45	90
45	98548	46545	49389
55	90538	45606	44745
65	71035	37036	33710
75	42214	27337	23255
85	21127	10314	9571

# FHG LED high bay

12,000 to 60,000 lumens

FHG24L840-UNV-W	
Luminaire Lumens:	24339
Luminaire Efficacy Rating (LER):	153
Total Luminaire Watts:	159.1
Spacing Criterion (0-180):	1.16
Spacing Criterion (90-270):	1.66

Candela Distribution						Flux
	0	22.5	45	67.5	90	Lumens
0	7627	7627	7627	7627	7627	
5	7544	7580	7648	7714	7771	732
15	7110	7301	7765	8209	8422	2199
25	6322	6761	7791	8627	8946	3553
35	5375	6002	7447	8387	8677	4508
45	4410	5027	6510	7307	7502	4770
55	3435	3836	4963	5478	5523	4180
65	2342	2470	3047	3279	3238	2868
75	1135	1099	1268	1313	1290	1315
85	158	139	142	133	129	213
90	6	7	11	15	15	
95	0	0	0	0	0	2
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0



Coefficients of Utilization % (Based on a floor reflectance of 0.2)													
Pc---	80				70				50				0
Pw---	70	50	30	10	70	50	30	50	30	10	0		
RCR													
0	119	119	119	119	116	116	116	111	111	111	100		
1	109	105	101	97	107	103	99	98	95	92	85		
2	100	92	85	79	97	90	84	86	81	77	71		
3	91	80	72	66	88	79	71	76	69	64	60		
4	83	71	62	56	81	70	62	67	60	55	51		
5	76	63	54	48	74	62	54	60	53	47	44		
6	70	57	48	42	68	56	48	54	47	41	38		
7	65	52	43	37	63	51	42	49	42	36	34		
8	60	47	38	33	59	46	38	45	37	32	30		
9	56	43	35	29	55	42	34	41	34	29	27		
10	53	40	32	26	52	39	31	38	31	26	24		

\*Based on a floor reflectance of 0.2

Zonal Lumen Summary			
Zone	Lumens	%Fixture	%Lamp
0-30	6484	26.6%	26.6%
0-40	10992	45.2%	45.2%
0-60	19941	81.9%	81.9%
0-90	24337	100.0%	100.0%
90-180	2	0.0%	0.0%
0-180	24339	100.0%	100.0%

Avg. Luminance (cd/m²)			
	0	45	90
45	46578	68753	79235
55	44728	64616	71916
65	41380	53844	57226
75	32742	36602	37228
85	13521	12127	11082