

FRHBV - Round HighBay Value Series, Internal Field Installed Plug & Play Sensor with Controls



Product Description

FRHBV™ luminaire has built-in microwave sensor, which adopts patent design and can save over 90% of labor time, as it doesn't need wiring. Meanwhile, it greatly reduces user inventory. While using together with intelligent microwave sensor, FRHBV™ can realize both functions of motion and light sensing. Three Beam Degree's are available 60°, 90° & 120° along with frosted option for the 120° only. In the end all Polycarbonate, Anti UV & High Impact IK08 certified Lens are interchangeable in regards to beam degree's so you can apply any changes you like, which is convenient and practical.

Features & Benefits

- Built-in Microwave sensor option, Field installed Plug & Play
- No Dip Switch's - and is Hand Held Remote Control Programming Only
- Lighting efficacy up to 140 l/pw
- Optical device with PC lens, IK08, Anti UV
- CRI>80, good color rendering performance
- LEDs are circularly arranged in symmetric, heat source are efficiently distributed in balance

Applications

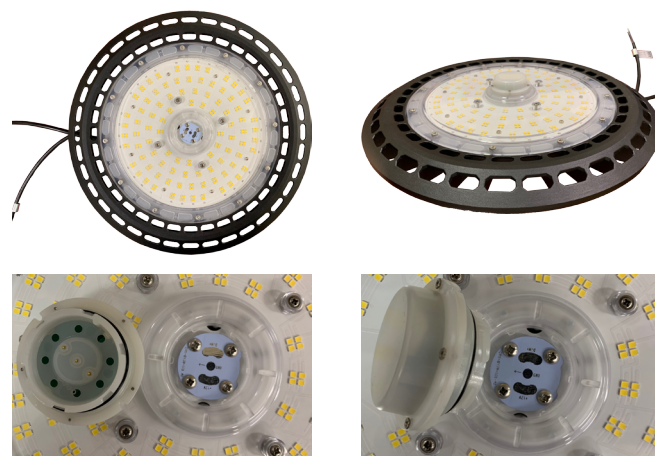
- Large Workshops
- Airports
- Warehouses
- Car Parkings
- Cold Storage
- Indoor & Outdoor

Mounting Options

- **YM** - Yoke / U bracket for Surface Mount, (comes with CM mount option)
- **PM** - Pendant Mount Adapter for 1/2" threaded rigid pipe pendant)
- **HM** - Hook Mount, Open end hook with safety clip
- **ST5** - 5ft Safety Tether, Aircraft Cable, STD, (Consult Factory for custom length quote)

Approval Listings

- Most of our products are DLC listed, qualifying them for the highest rebates. Please check individual product specs for DLC status. Refer to DLC website by clicking this link: <https://www.designlights.org>



Performance Summary

Efficacy: 140 l/pw

CRI: >80

CCT: 3000K, 3500K, 4000K & 5000K

Dimming: 0-10v Standard

Operating Temp: -35°C - +45°C

Input Voltage: 100-277vac / 480V (consult factory)

TM21 Lifetime: L70 @ 240,000, L80 @ 186,000

Ingress Protection Rating: IP65 / IK08, ANTI UV

Beam Angles: 60°, 90°, 120° (Frosted only available in 120°)



FRHBV Series Specification Summary

Product Number	FRHBV-100W-MPS	FRHBV-150W-MPS	FRHBV-200W-MPS	FRHBV-240W-MPS
Nominal Efficacy l/pw @ 5000k	136	140	140	135
Input Power: Watts @ 5000k	101.6	148.5	194.2	240.2
Lumens @ 3000K	13,142	19,340	25,777	31,331
Lumens @ 3500K	13,312	19,716	25,302	31,853
Lumens @ 4000K	13,482	20,091	26,251	31,834
Lumens @ 5000K	13,823	20,842	27,199	32,337
Optical / Beam Degrees	PC lens, Frosted Lens in 120° only, IK08, Anti UV / 60°, 90°, 120°			
IP / IK Ratings	IP65 / IK08			
Qualifications	UL, DLC Premium (4.4) / Integral control (sensor) / Dimmable (No Sensor)			
CCT/Kelvin Temp Options	3000K* / 3500K* / 4000K / 5000K			
Dimming & Control	0-10v, Dimming / Plug-in, Bi-level, Microwave sensor with Remote Control Programming Only			
Input Voltage Options	100-277vac / 480vac (Consult factory)			
CRI	>84.4	>84.2	>84.2	>84.3
Power Factor	>0.95	>0.95	>0.93	>0.95
THD @ 120v	8.6%	7.8%	7.2%	6.7%
Projected Lifetime Hrs	L70 @ 240,000 Hrs, L80 @ 186,000 Hrs			
Operating Temperature	-35°C - +45°C			
Max Dimensions (in)	12.60" x 7.91"	14.17" x 7.99"	15.55" x 7.99"	15.55" x 8.30"
Total Weight	6.17 lbs	8.49 lbs	10.80 lbs	14.11 lbs
Limited Warranty	7 year with option for 10 year (Consult Customer Service for quote to add the 10year option)			

Notes

Values are nominal unless noted +/- 5%
Specifications change without notice

FRHBV Series Product Ordering Guide

Example: FRHBV-150W-50K-MPS-120-FEM/T25-CM

Product	CCT/Color Temp	Voltage	Controls & Dimming	Lens/ Beam Degree	EM Drivers	Power Input	Mounting Options
FRHBV-100W	30K (3000K)	Blank (100-277v)	Blank (0-10v) STD	60 (60° PC Lens)	FEM-T25 (25w Tubular Emergency Pack 100w & 150w)	Blank (5ft 5pin Power Cord)	YM (Yoke / U bracket for Surface Mount)
FRHBV-150W	35K (3500K)	480v (Consult Factory)	MPS (12vdc-MW Bi-Level-Field Installed Sensor)	90 (90° PC Lens)	FEM-T40 (40w Tubular Emergency Pack 200w & 240w)	PC#(Custom Lengths consult factory)	HM (Hook Mount, open end hook with safety clip, for suspension cable, chain or etc)
FRHBV-200W	40K (4000K)		MPS is programmed with Remote Control only. RC is ordered as Line Item SEE SENSOR OPTIONS BELOW	120 (120° PC Lens) STD		SB4R(Splice Box 4" Round)	PM (Pendant Mount Adapter for 1/2" threaded rigid pipe pendant)
FRHBV-240W	50K (5000K)			FL 120 (120° Frosted PC Lens, 60&90 is not available in Frosted)	FEM-Field Installed		ST5 (5ft Safety-Tether)

Sensor Options

MPS-RC Hand-Held Remote control for MPS Sensor Field programming *All Sensor Orders Need Remote Control, Order as Separate Line Item*
(All fixtures come standard with plug & play board in center of lens for adding sensor at anytime)
Factory Default settings - Detection-100%, Hold -10min, Standby Dim-30%, Standby Period-10min, Daylight -disable
Consult Factory if specific sensor presets are required m, add MPS-PRE to line item.

FEM - T Options

FEM-T-RTS Hand-Held Remote control Test Switch *Order as Separate Line Item*

Accessories

Polycarbonate Lens 60° & 90°

See ordering Bar to order all (60°, 90° or 120° Polycarbonate Lens
All Lens are factory installed)

PC100-60	100w , 60° Lens
PC100-90	100w , 90° Lens
PC150-60	150w , 60° Lens
PC150-90	150w , 90° Lens
PC200-60	200/240w , 60° Lens
PC200-90	200/240w , 90° Lens



Aluminium Lampshade (field installed only)

AL100	100w Black Aluminium Shade (90°)
AL150	150w Black Aluminium Shade (90°)
AL200	200/240w Black Aluminium Shade (90°)



Polycarbonate Lampshade (field installed only)

PS100	100w Clear Polycarbonate Shade (70°)
PS150	150w Clear Polycarbonate Shade (70°)
PS200	200/240w Clear Polycarbonate Shade (70°)

Power Input Options

See ordering Bar to order all (PC) options and SB4R .

SB4R is Pre-Assembled for easy installation using one bolt to attach.

SB4R (Field Installed 4" Round Splice Box)

Specifications: IP65, 4" Round RAB style junction box. SB4R comes standard with 3/4" Rigid pipe connector on top center for pipe/pendant mount, 5- 1/2" Knockouts 3 sides/ 2 top cover. Specify 3/4" KO's if needed. SB4R is 15.8 cubic inch and can fit up to 7- 12 gauge wires. Only a Certified Electrician is qualified to make all line voltage connections and determine wire sizes, per NEC Codes.. 120-277vac version only

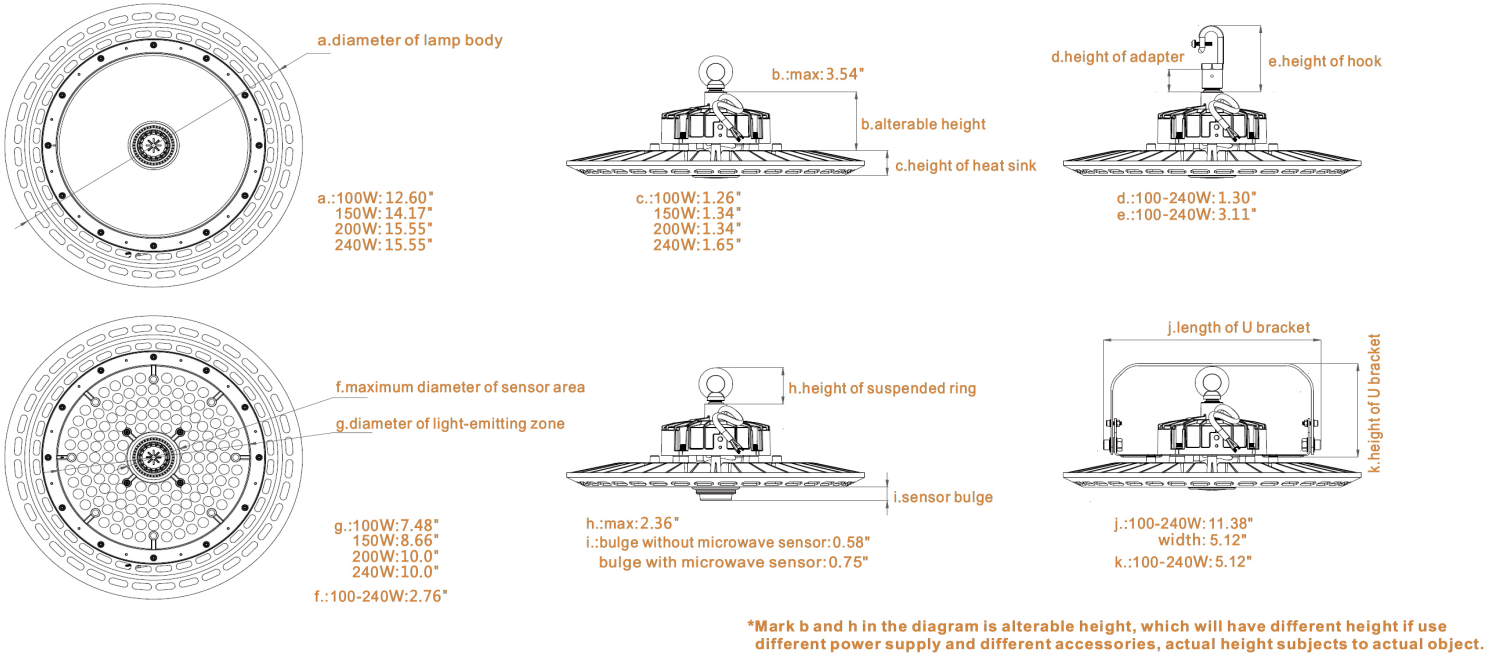


Polycarbonate Lampshade with Cover (field installed only)

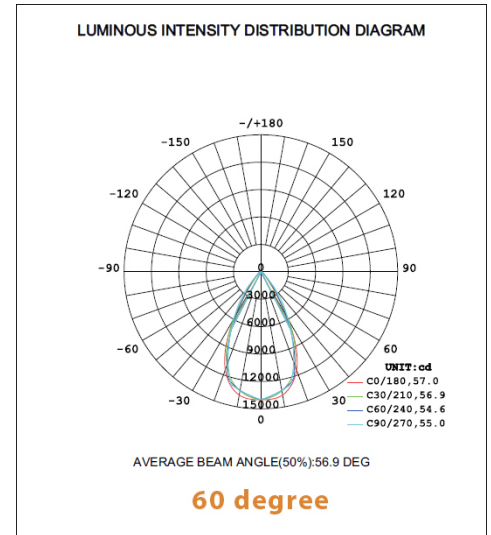
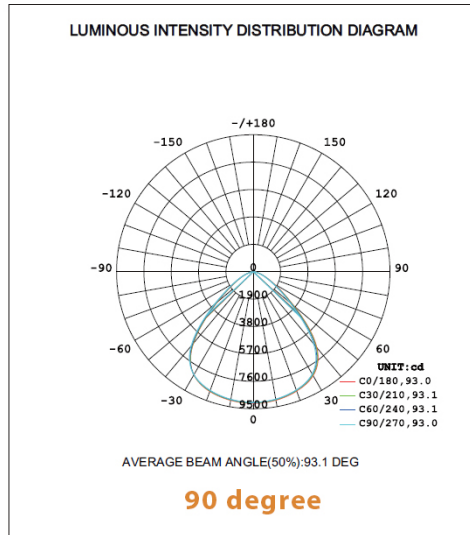
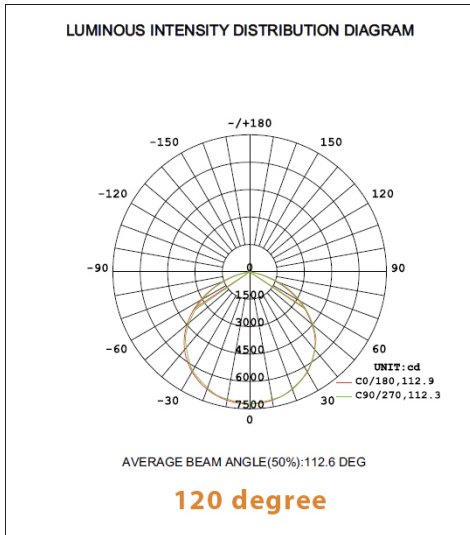
PSC100	100w Clear Polycarbonate Shade with Cover (70°)
PSC150	150w Clear Polycarbonate Shade with Cover (70°)
PSC200	200/240w Clear Polycarbonate Shade with Cover (70°)

FRHBV Series Design Details & Photometry

Dimensions



Distribution Diagrams



FRHBV Series Installation Instructions

For all FRHBV Series Mounting

WARNING:

To avoid the risk of fire, or electric shock this product should be installed, inspected, and maintained by a qualified electrician only. Installation should be completed by an individual familiar with the construction and operation of the luminaire. Installation of luminaire must be in accordance with national and local building and electrical codes.

Safety Warning: To avoid electric shock: Be certain electrical power is OFF before and during installation and maintenance. Luminaire must be supplied by a wiring system with an equipment grounding conductor.

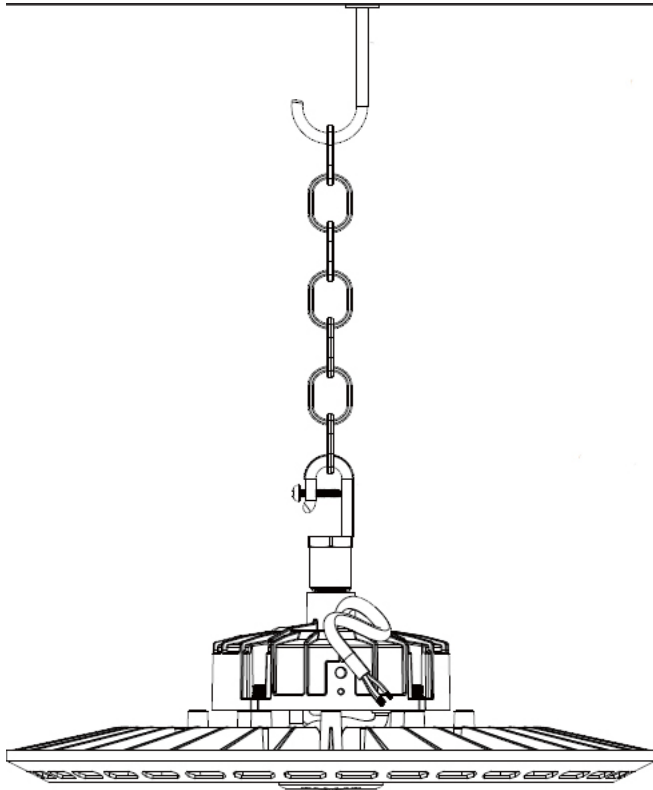
To avoid burning hands: Make sure lens and housing are cool when performing maintenance.

To avoid product degradation: Make sure the wire supply voltage is the same as the luminaire supply. Use proper supply wiring as specified on the luminaire nameplate. Avoid use in environments containing sulfur, chlorine or other halides, methyl acetate or ethyl acetate, cyanoacrylates, glycol ether, formaldehyde or butadiene.

Notes: Instructions do not cover all details and all possible product configurations. Do not restrict luminaire ventilation. Ensure LED luminaire is not covered with material that will prevent convection or conduction cooling. Ensure LED luminaire has the correct polarity before installation. Avoid exposing wiring to metal edges and sharp objects.

Maintenance: Perform visual, electrical and mechanical inspections on a regular basis. The environment and frequency of use should determine this. However it is recommended that checks be made at least once a year. Electrically check to make sure that all connections are clean and tight. Mechanically check that all parts are properly assembled.

(HM) Hook Installation

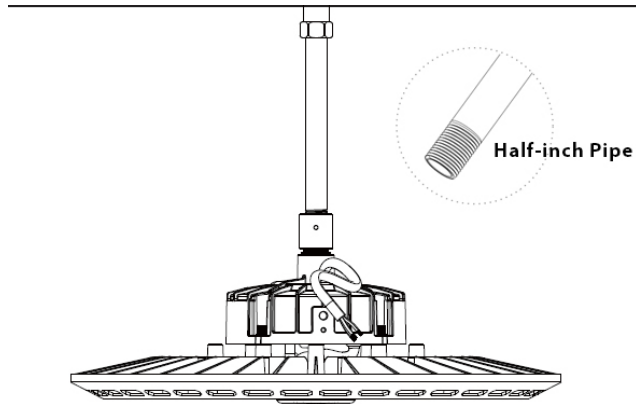


1. Please prepare 1 ceiling hook, matching installation screws and install them into installation carrier, reaching bearing requirement.
2. Screw hook of the lamp into screw connection on the top of the lamp body and be careful not to omit the auxiliary skidproof of gasket. If there is auxiliary skidproof screw near the screw connection, please tighten it up and the skidproof gasket on adapter after installing the suspended ring.
3. Unscrew the anti-off screws in the opening of hook, and hook the lamp body on the ceiling hook.
4. Prepare on iron chain as extension carrier, then tighten anti-off screws up in the opening of hook.

FRHBV Series Installation Instructions

For all FRHBV Series Mounting

(PM) Pendant Mount - 1/2" Rigid Pipe Installation

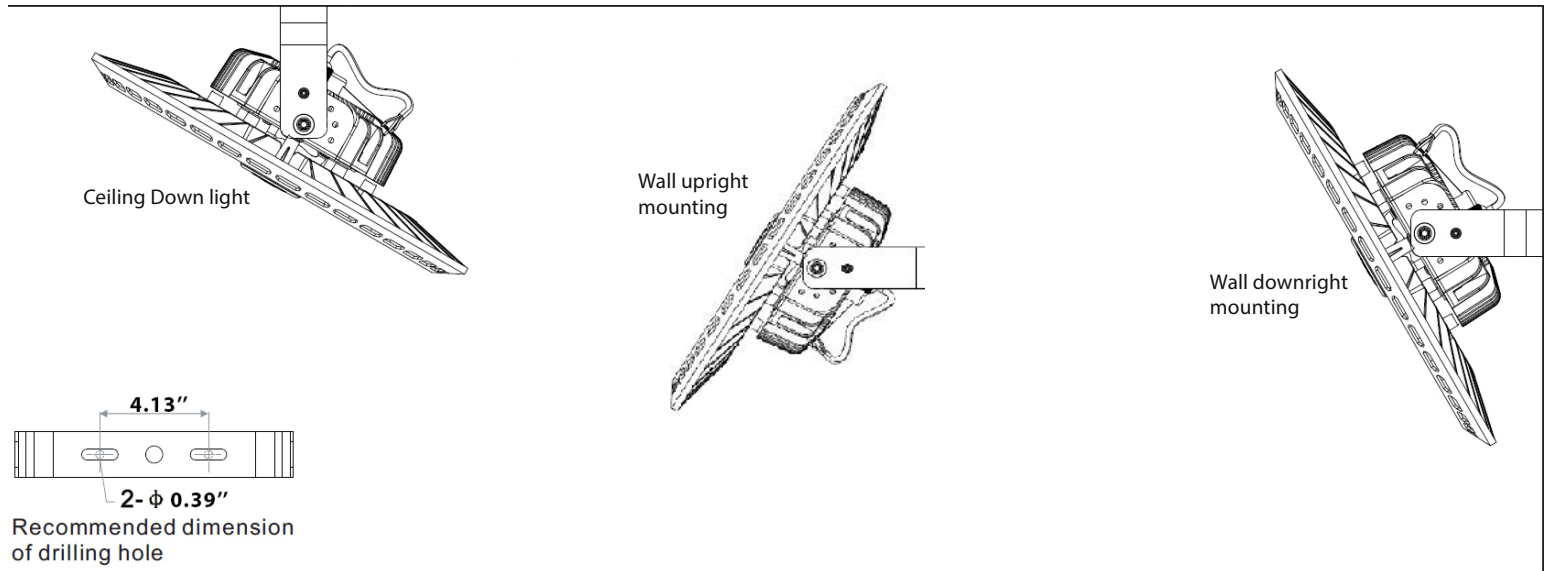


Pipe installation is only suitable for specific installation environment, as we only provide M20 adapter, thus matched pipe end shall match the requirements below.

1. Ensure pipe can reach weight bearing requirements
2. Pipe should have M20 screw connection
3. Thread depth of pipe <25mm, 20mm recommended.

Pipe installation can also match with center-outlet power supply to realize concealed installation which threads wire from the pipe. If this requirement is needed, please consult first.

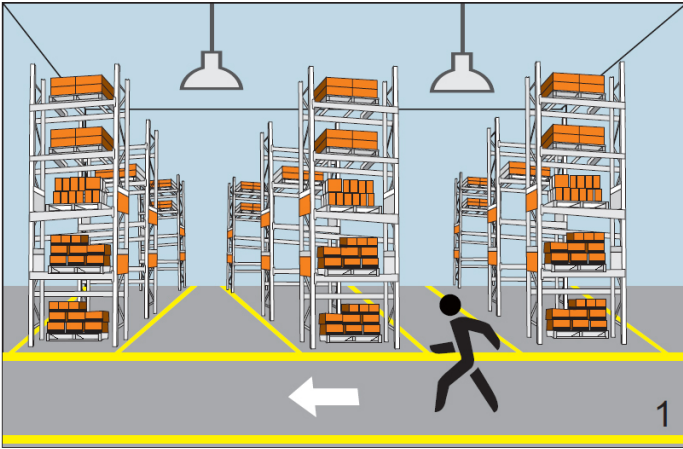
(YM) Yoke / U Bracket Mounting Installation can be used for Ceiling, Wall or Up-lighting



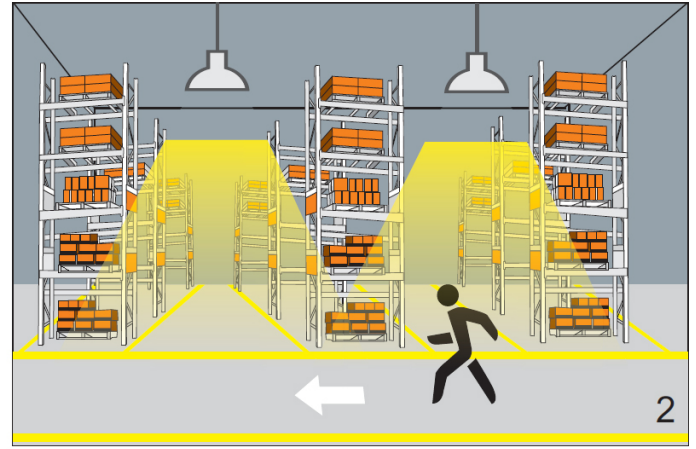
1. Prepare 2 ϕ 0.39" expansion screw and ensure their material and installation position matches the requirements
2. Insert expansion screws into holes and make the holes in the bracket according to heads of expansion screws, then tighten the screws up
3. Dismantle small auxiliary screws on both sides, slightly loose fixing screws of bracket and rotate lamp body to suitable installation angle
4. Install small auxiliary screws of the bracket back, finally tighten up all main screws and auxiliary screws.

(MPS) Motion Sensor Function

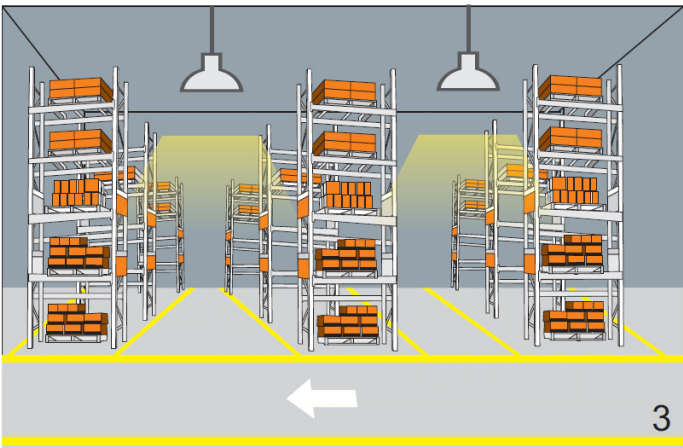
The sensor can detect brightness of ambient light and moving objects. With insufficient ambient light, the sensor switches lamp on when motion is detected.



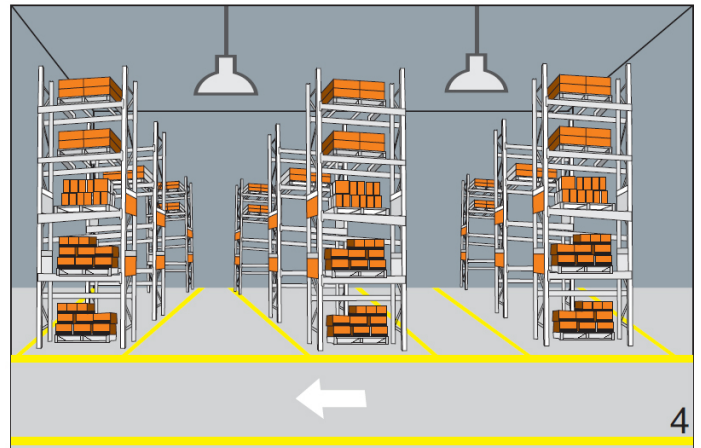
When brightness of ambient light $> 50\text{Lux}$, the sensor won't switch on the lamp even if motion is detected.



When brightness of ambient light $< 50\text{Lux}$, the sensor will switch on the lamp when motion is detected.

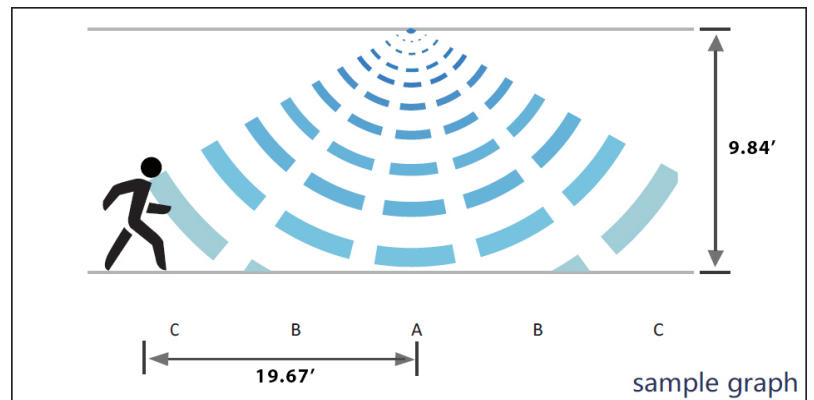


After pedestrian left detection range, brightness of the lamp will decrease to 30% after 5 minutes.
















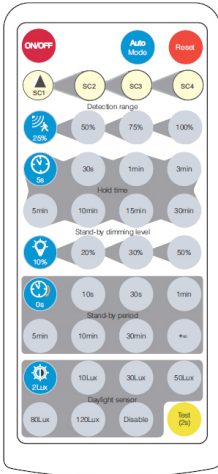
If no pedestrian pass the detection range, the sensor will switch off the lamp after 30 minutes.

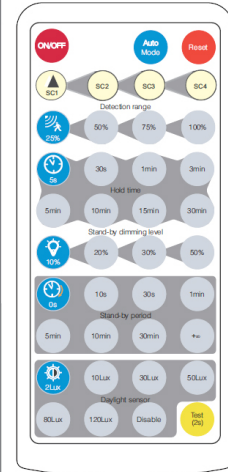
Operating Voltage	DC12V
Microwave Frequency	5.8 GHz ISM frequency band
Microwave Power	$< 0.3\text{mW}$
Detection Angle	120°
Detection Range	Max (DxH): $39' \times 49'$
Detection Speed	$1.64\text{ fps} \sim 9.84\text{ fps}$



MPS-RC Handheld Remote Control Programming Functions

Button	Function	Description																														
	ON/OFF	Press the “ON/OFF” button, the light goes to constant on or constant off, sensor is disabled. Press “Reset” or “Auto Mode” to quit from this mode.																														
	Reset	Press “Reset” button, sensing function restores to default setting.																														
	Auto Mode	Press “Auto Mode” button, the sensor starts to work and all parameter setting will be remained the same as the previous status before the light is set constant on or constant off.																														
	Test pattern	<p>The button “Test(2s)” is for factory testing purpose only. The sensor will go to test mode.</p> <p>Detection sensitivity: 100%</p> <p>Hold time: 2 s</p> <p>Stand-by period: 0 s</p> <p>Daylight sensor: disable</p> <p>Test mode can be quit by pressing any button</p>																														
   		<table><tr><th>Scene mode</th><th>Detection area</th><th>Hold time</th><th>Daylight sensor</th><th>Stand-by period</th><th>Stand-by dimming level</th></tr><tr><td>Sc1</td><td>100%</td><td>30S</td><td>2Lux</td><td>1min</td><td>10%</td></tr><tr><td>Sc2</td><td>100%</td><td>5min</td><td>10Lux</td><td>10min</td><td>10%</td></tr><tr><td>Sc3</td><td>100%</td><td>10min</td><td>50Lux</td><td>30min</td><td>10%</td></tr><tr><td>Sc4</td><td>100%</td><td>30min</td><td>Disable</td><td>+ ∞</td><td>10%</td></tr></table>	Scene mode	Detection area	Hold time	Daylight sensor	Stand-by period	Stand-by dimming level	Sc1	100%	30S	2Lux	1min	10%	Sc2	100%	5min	10Lux	10min	10%	Sc3	100%	10min	50Lux	30min	10%	Sc4	100%	30min	Disable	+ ∞	10%
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Sc4	100%	30min	Disable	+ ∞	10%																											
	Detection area (sensitivity)	Set the sensor's sensitivity and detection area of detecting moving objects.																														
	Hold time	Refers to the time period the lamp remains at 100% illumination after no motion detected.																														
	Stand-by dimming level	After hold time, the lamp will have faint light instead of switching off immediately. Here the setting is 100% of faint light, which is the stand-by dimming level																														
	Stand-by period	The time the lamp keeps on stand-by dimming level																														
	Brightness	Set threshold value, when ambient light is lower than threshold value, sensor will respond.																														





MPS-RC Handheld Remote Control Functions

