

LED Hazardous Light

Presentation

2024

VAOPTO

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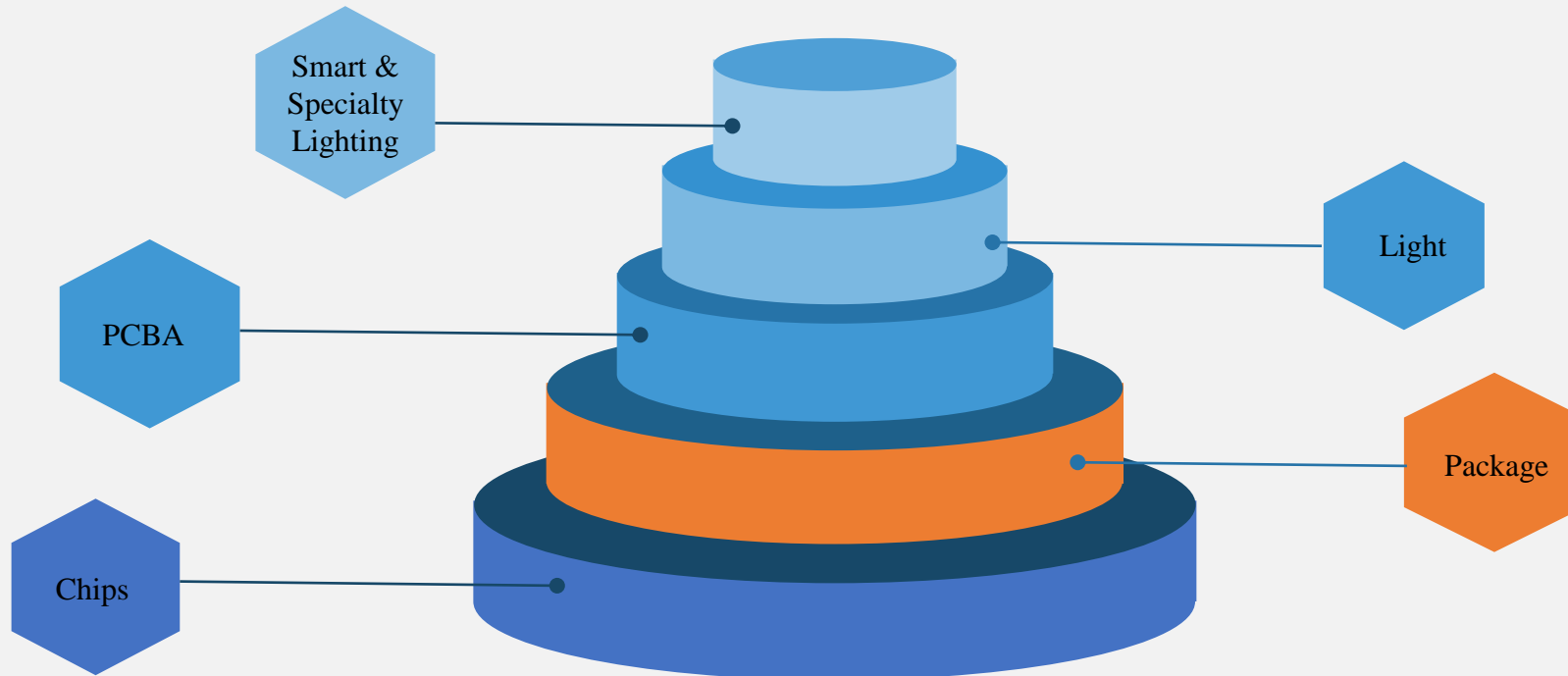
About Us

- We are a leading "vertically integrated" manufacturer of standard and custom LED products specializing in R&D, Design, and Manufacture of LED chip, LED package, LED PCB assembly, and LED light for residential, commercial, and industry.
 - > **Started at Virginia in 2005 and relocated at Las Vegas, Nevada in 2010**
 - > **Vertically-integrated-world class LED manufacturing facilities**
 - > **Certifications: ISO9001/ISO14001/ISO45001/DLC/Energy Star/cULus/cETLus/RoHS/FCC**
 - > **R&D support for customer projects and custom products design to OEM/ODM**

- Some Valued Customers:



Competitive Advantage with our Vertically-Integrated Manufacturing Capabilities



Manufacturing Facilities



Manufacturing Facility

- Duration in industry: 10+ years
- Space: 300,000 ft²
- Workers: 300
- R&D engineers: 30
- Capacity: 1,000,000 pcs per year
- Turnover: USD \$60 million in 2022
- OEM/ODM Service: YES

Manufacturing Facility



Assembly production lines



CNC lathe



SMT room



Aging test room

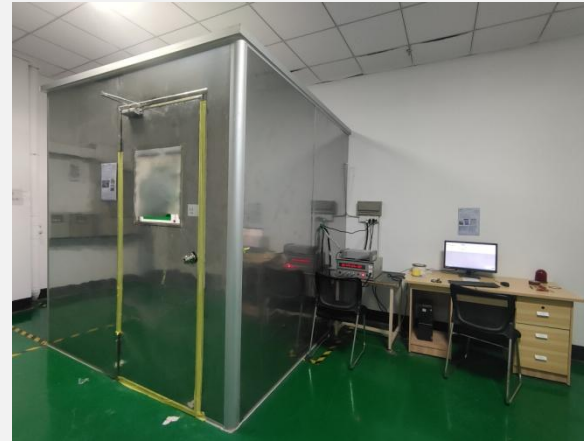
Manufacturing Facility



Integrating Sphere Tester



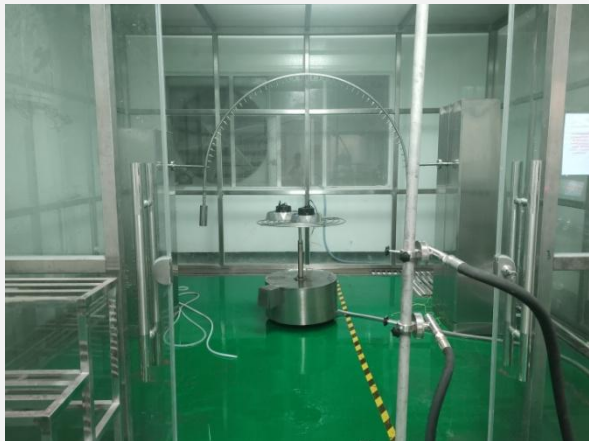
Goniophotometers System



High Temperature Resistant Testing



IPX Testing Room



IPX Waterproof Testing Room



IPX7-8 Waterproof Testing Room



High Precision Low Temperature Chamber



Thermal Shock Chamber

Manufacturing Facility



Salt Spray Chamber



Aging Testing Chamber



Hydrostatic Test Chamber



Enclosure Hydrolic Pressure Tester



Temperature & Humidity Chamber



Constant Temperature & Humidity Chamber



Programmable Dust Test Machine



Precision High Temperature Test Chamber



Enclosure Hydrolic Pressure Tester

Project Cases



Petroleum Industry



Foods Industry



University

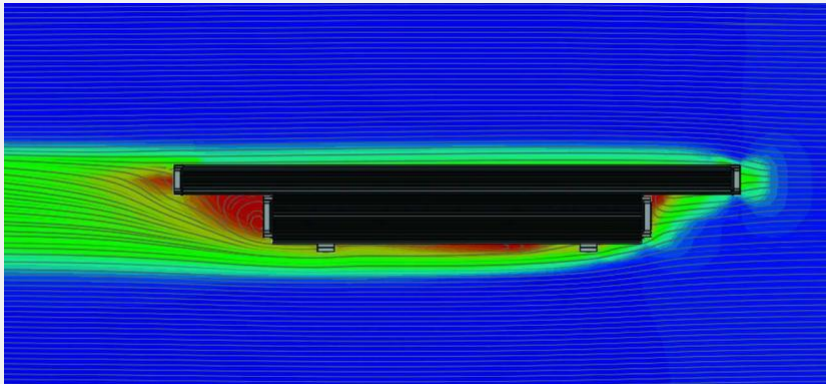


Metal Industry



Power Industry

EPA - Effective Projected Area

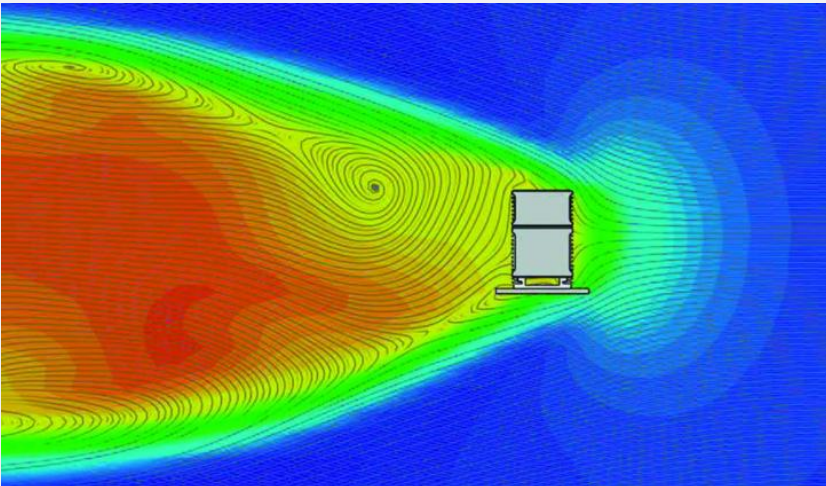


➤ Indicating the **wind resistance** of the particular luminaire (and thus the forces it will impose on the pole)

➤ Calculating **loads/strain** on the light

➤ Determining **the structural capacity** of outdoor light poles

➤ The **larger** the fixture the **higher** the EPA rating

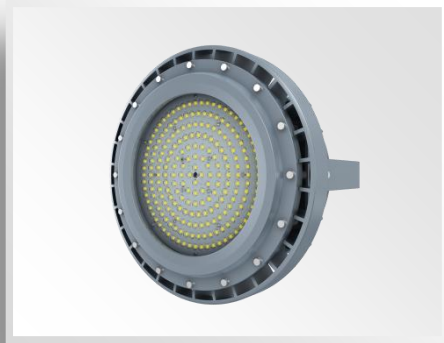


Product Category

- LIGHTING FIXTURES
- EMERGENCY LIGHTS
- ELECTRONICS APPARATUS
- PORT LIGHTS
- OUTDOOR & UTILITY LIGHTING



VO-HZD-Lighting Fixtures (CID1/CID2/CIID1/CIID2)



VO-HZD-
C/C2/C3 Series



VO-HZD-D/D2
Series



VO-HZD-I2/I4
Series



VO-HZD-G
series



VO-HZD-L
series



VO-HZD-ES03
Series



VO-HZD-J
series



VO-HZD-WKE
series



VO-HZD-MV01
series

VO-HZD-LIGHTING FIXTURES (CID2/CID1/CID2)



VO-HZD-A/A2/A3/A4 Series



VO-HZD-B/B2/B3/B4 Series



VO-HZD-O Series



VO-HZD-R2/R4 Series



VO-HZD-V Series



VO-HZD-H2/H4 Series



VO-HZD-FLF2/FLF4 Series



VO-HZD-FLD2/FLD4 Series



VO-HZD-ST A1/2 Series

VO-HZD-LIGHTING FIXTURES



VO-HZD-Q1/Q2 Series
CID2/CIID1/CIID2



VO-HZD-RL2/RL4 Series
CID2/CIID1/CIID2



VO-HZD-S1/S2 Series
CID1/CID2/CIID1/CIID2



VO-HZD-LH Series
CID2/CIID1/CIID2



VO-HZD-D3/D4 Series
C1DI/CID2/CIID1/CIID2



VO-HZD-FLB2/FLB4 Series
CID1/CID2/CIID1/CIID2

Applications

- **Oil and gas Industry**

- ★ All petroleum production and refining
- ★ Petroleum loading and transportation
- ★ LNG industry
- ★ All mining operations and service

- **Ocean, marine and aerospace field**

- ★ Ocean platform operation facilities and structure
- ★ Aerospace clean room and production
- ★ Ocean vessel operations

- **Food and alcohol industry**

- ★ Flour and fine particle production and storage
- ★ Food and distilling production
- ★ Alcohol industry

- **Chemical industry**

- ★ All types of paint facilities
- ★ Chemical production and storage

- **Metal treatment**

- ★ Steel and aluminum factories
- ★ Pumping stations in any environment
- ★ Metal smelting, foundry and fabrication

- **Other high humidity, high dust, high temperature, vapor locations**

VO-HZD-A



A2



A



A3



A4



Compliance

ATEX Standard:

⊕ II 2 G Ex eb mb IIC T6...T4 Gb

⊕ II 2 D Ex tb IIIC T80°C...T100°C Db

IECEX Standard:

Ex eb mb IIC T6...T4 Gb

Ex tb IIIC T80°C...T100°C Db

Zone 1&2, Zone 21&22

CB (Ref. Certif. No.: DE 2-038462-M1)

IP66/IP67

IK08 (glass cover)

IK10 (with wire guard)

1000 hours salt spray

5G vibration

Wattage	Color Temperature	Voltage	Lumens	Warranty	CRI	
20	2200K-7000K	AC100-277V(by driver or by IC) Or DC12-48V	2800	5 years	80	
40			5600			
60			8400			
80			AC100-277V(by driver or by IC) Or DC12-48V Or AC200-488V(<100W)			11200
100						14000
150						21000
180		AC100-277V(by driver or by IC) Or DC12-48V Or AC200-488V	25200			
200			28000			
150			21000			
180			25200			
200			28000			
250			35000			
300		42000				
400		56000				

ATEX Standard:

- ⊕ II 2 G Ex eb mb IIC T6...T4 Gb
- ⊕ II 2 D Ex tb IIIC T80°C...T100°C Db

IECEx Standard:

- Ex eb mb IIC T6...T4 Gb
- Ex tb IIIC T80°C...T100°C Db

Zone 1&2, Zone 21&22

CB (Ref. Certif. No.: DE 2-038462-M1)

NSF

Ta. -40°C~+65°C

1000 hours salt spray

IP66 (according to IEC 60079-0)/IP67

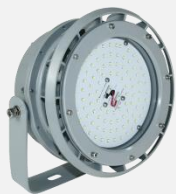
IK08 (glass cover)

IK10 (with wire guard)

5G vibration



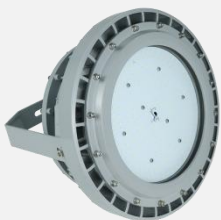
VO-HZD-B



B2



B



B3



B4



Convex Glass
(Optional)

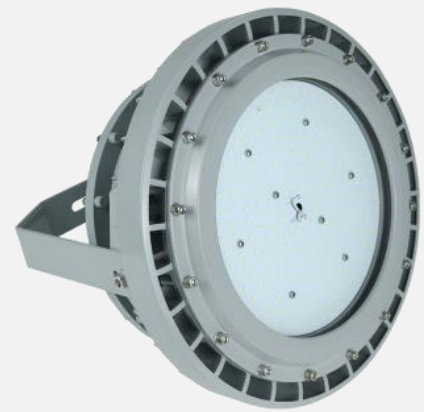


Globe Glass with Wire Guard
(Optional)



Wattage	Color Temperature	Voltage	Lumens	Warranty	CRI
20	2200K-7000K	AC100-277V(by driver or by IC) Or DC12-48V	2800	5 years	80
40			5600		
60		AC100-277V(by driver or by IC) Or DC12-48V Or AC200-480V(<65W)	8400		
80			11200		
100			14000		
120		AC100-277V(by driver or by IC) Or DC12-48V Or AC200-480V	16800		
150			21000		
200			28000		
250			35000		
300			42000		
350			49000		
400			56000		

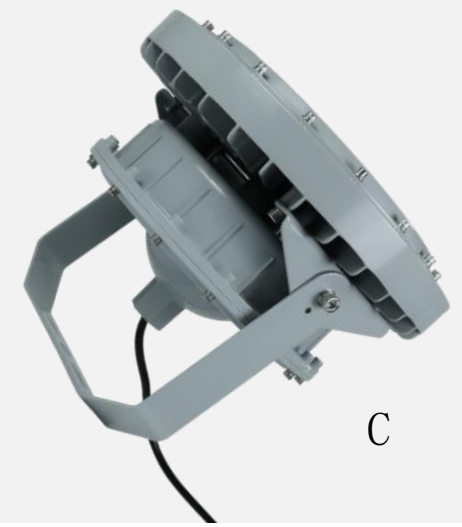
VO-HZD-C



C2



C3



C

ATEX Standard:

- ⊕ II 2 G D
- Ex db IIB T6...T3 Gb
- Ex tb IIC T80°C...T195°C Db

IECEX Standard:

- Ex db IIB T6...T3 Gb
- Ex tb IIIC T80°C...T195°C Db

- Zone 1&2, Zone 21&22
- CB (Ref. Certif. No.: DE 2-038462-M1)
- IP66/IP67
- IK08 (glass cover)
- IK10 (with wire guard)
- 1000 hours salt spray
- 5G vibration

Wattage	Color Temperature	Voltage	Lumens	Warranty	CRI
20W	2200K-7000K	AC100-277V Or AC200-480V Or DC12-48V	2800	5 years	80
60W			8400		
80W			11200		
100W			14000		
150W			21000		
200W			28000		
250W			35000		
280W			39200		

VO-HZD-D



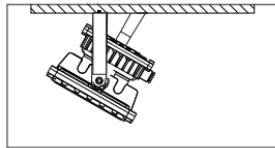
D2



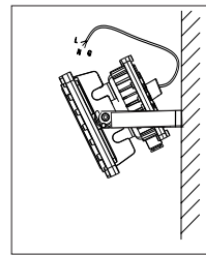
D

Mounting

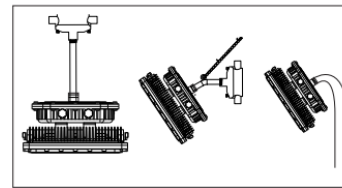
No.1: Ceiling Mounting



No.2: Wall Mounting



No.3: Pole Mounting



Compliance

- UL 844 Hazardous Locations
- Class I Division 1, Group C, D
- Class I Division 2, Group A, B, C, D
- Class II Division 1, Group E, F, G
- Class II Division 2, Group F, G
- Class III
- Class I, Zone 1, Group IIB
- Class II, Zone 21, Group IIIC
- UL 1598 Wet Locations
- UL 1598A Marine Outside Type
- UL 924 Emergency Lighting
- CSA C22.2#137:2018 Ed.2
- CSA C22.2#250.0:2021 Ed.5
- ETL (ATM for Report 105342415DAL-001/003)
- CB (Ref. Certif. No.: DE 2-028898)
- ABS
- DLC*
- DLC*
- IP66/IP67
- IK08 (glass cover)
- IK10 (with wire guard)
- 1000 hours salt spray
- 5G vibration

* Not all product variations listed on this spec sheet are DLC qualified. Visit www.designlights.org/search to confirm qualification.

Wattage	Color Temperature	Voltage	Lumens	Warranty	CRI	Emergency Time
20W	2200K-7000K	AC100-277V (by driver or by IC) Or AC200-480V (<65W) Or DC12-48V	2800	5 years	80	3 Hours
40W			5600			
60W			8400			
80W			11200			
100W			14000			
150W		21000				
200W		28000				
		AC100-277V (by driver or by IC) Or AC200-480V Or DC12-48V				

UL 844 Hazardous Locations
 Class I Division 1, Group C, D
 Class I Division 2, Group A, B, C, D
 Class II Division 1, Group E, F, G
 Class II Division 2, Group F, G
 Class III
 Class I, Zone 1, Group IIB
 Class II, Zone 21, Group IIIC
 UL 1598 Wet Locations
 CSA C22.2#137:2018 Ed.2
 CSA C22.2#250.0:2021 Ed.5
 ETL (ATM for Report 105342415DAL-001/003)
 ABS
 IP66
 IK10



VO-HZD-G



G with Wire Guard



G



Waitege	CCT	Voltage Options	Lumens	Warranty	CRI	Emergency Time(Optional)
10	2200-7000K	AC 100-277V(by driver) DC 12-48V	1400	5 years	80	3 hours
20			2800			
30			4200			
40			5600			
50			7000			

Zone 2, 21, 22

IECEX Standard:

Ex ec IIC T6...T3 Gc

Ex tb IIIC T80°C/T95°C/T130°C Db

CB (Ref. Certif. No.: DE 2-038462-M1)

IP66/IP67

IK08 (glass cover)

IK10 (with wire guard)

1000 hours salt spray

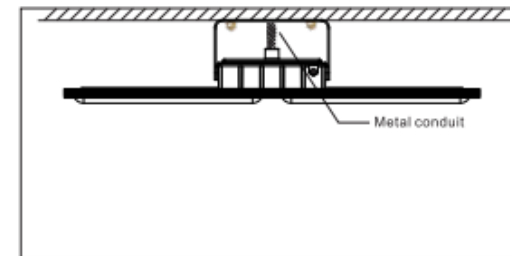
5G vibration



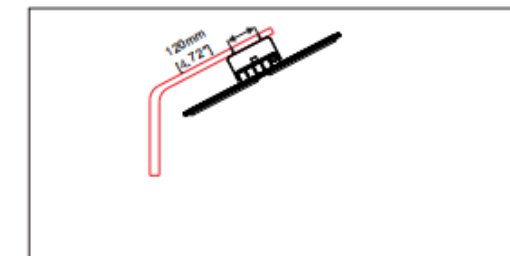
VO-HZD-H

Mounting

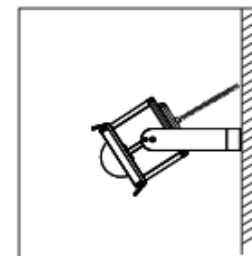
No.1 Ceiling Mounting



No.2 Pole Bracket Mounting



No.3 Wall Mounting



Side Opening Cover Model
(Convex Glass)



Side Opening Cover Model
(Flat Glass)



Wattage	Color Temperature	Voltage	Lumens	Warranty	CRI
20	2200K-7000K	AC100-277V	2800	5 years	80
40		IC 100-277V	5600		
40		AC 200-480V	5600		
60		DC 12-48V	8400		
80			11200		

Zone 1, 2, 21, 22

ATEX Standard:

- ⊕ II 2 G Ex db IIB T4 Gb
- ⊕ II 2 D Ex tb IIIC T63.5°C Db IP65

IECEX Standard:

- Ex db IIB T4 Gb
- Ex tb IIIC T63.5°C Db IP65

CB (Ref. Certif. No.: DE 2-038462-M1)

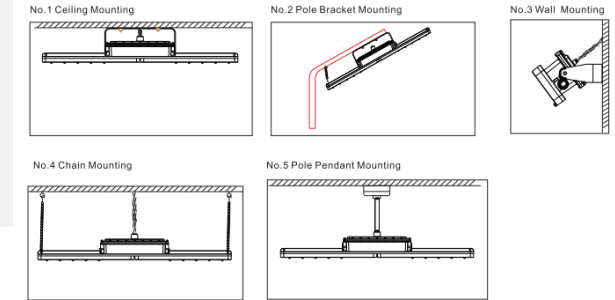
IP66/IP67

IK08 (glass cover)

IK10 (with wire guard)

5G vibration

Mounting



VO-HZD-I

Regular Model

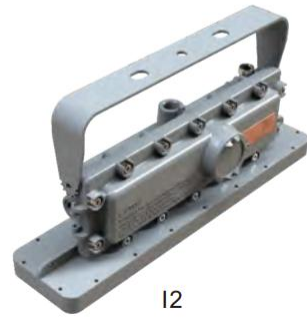


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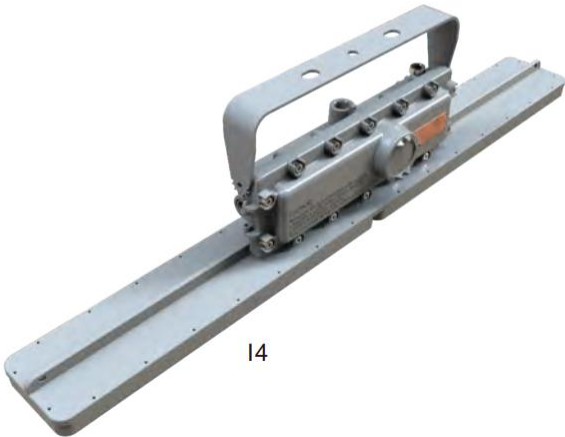


14

Side Opening Cover Model



12



14



Wattage	CCT	Voltage Options	Lumens	Warranty	CRI	Emergency Time(Option)
20	2200K-7000K	AC 100-277V AC 200-480V DC12-36V	2800	5 years	>70	3 hours
40			5600			
60			8400			
60			8400			
80			11200			
100			14000			
120			16800			

VO-HZD-J

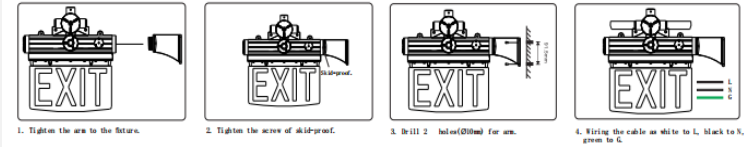
- LED Exit Light



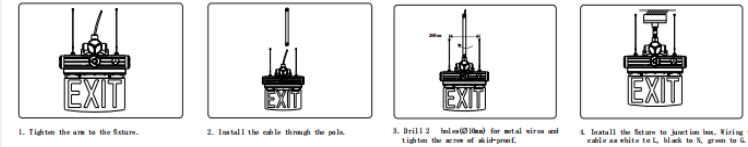
Certifications:

- Marking UL844 (North American)
Class I, Division 1, Groups B, C, D
Class I, Division 2, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G
Class III
- UL924
- UL844
- UL 121201/CSA NO.213
- CSA C22.2 No.137-18

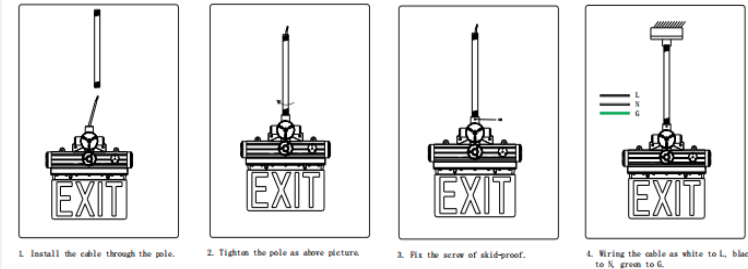
Wall Mounting with Arm



Pendant



Wall Mounting with Arm



Wattage	CCT	Voltage Options	Warranty	Emergency Time (Option)
3	Red/Green/Yellow	AC: 100-277V	5 years	3 hours
5		AC/DC: 12-36V		

VO-HZD-STA



STA3



STA1



STA2

Wattage	10~300W	10~200W
UL844 Standard	Class I, Division 2 Groups A, B, C, D Class II, Division 1 Groups E, F, G Class II, Division 2 Groups F, G Class III	
ATEX & IECEX Standard	II 2 G Ex eb mb IIC T5/T6 Gb II 2 D Ex tb op is IIIC T95/80°C Db	
Housing Material	Aluminum + Tempered Glass	
Voltage	100-305VAC or 180-525VAC	
Lumen Efficiency	120-140 LM/W	
CCT	2700-7000K	
CRI	70	
Beam Angle	Typical 10-120 degrees	
Operation Temperature	-40°C to 60°C	
IP Rating	IP66/ IP67	
IK	10	
Dimming	0-10V	

Compliance

ATEX Standard (Zone 1):

- ⊕ II 2 G Ex eb mb IIC T6...T4 Gb
- ⊕ II 2 D Ex tb IIIC T95°C...T125°C Db IP66

ATEX Standard (Zone 2):

- ⊕ II 3G Ex ec mb IIC T6...T4 Gc
- ⊕ II 2D Ex tb IIIC T80°C...T125°C Db

IECEX Standard (Zone 1):

- Ex eb mb IIC T6...T4 Gb
- Ex tb IIIC T95°C...T125°C Db IP66

IECEX Standard (Zone 2):

- Ex ec mb IIC T6...T4 Gc
- Ex tb IIIC T80°C...T125°C Db


- Class I Zone 2 Group IIC
- Class II Zone 21 Group IIIC
- IP66/IP67
- IK06/07 (without wire guard)
- IK09 (with wire guard)
- 1000 hours salt spray

Remote Area Lighting System

VO-HZD-MV01



Certifications:

- ◆ ATEX Marking:
 - ◆  II 1G Ex ia IIC T4 Ga
- ◆ IECEx Marking:
 - ◆ Ex ia IIC T4 Ga
- ◆ UL913 Marking (North American):
 - ◆ Class I, Division 1, Groups A, B, C and D, T4
 - ◆ Ex ia IIC T4 Ga
 - ◆ Class I, Zone 0, AEx ia IIC T4 Ga
- ◆ Housing : IP20
Lamp head and power box: IP65

Explosion-proof Rechargeable LED Hand Lamp

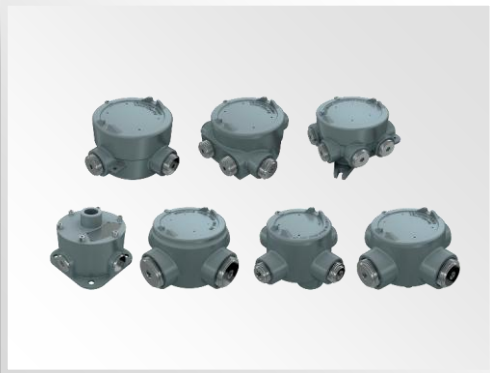
VO-HZD-WKE



Certifications:

- ◆ Marking ATEX & IECEx
 - ◆ Industrial: II 1G Ex ia IIC T4 Ga IP67
 - ◆ Industrial: II 2D Ex ib IIIC T135°C Db
 - ◆ Mining: I M1 Ex ia I Ma IP67
- ◆ Area of Classification (Gas):
 - ◆ Zones 0,1 and 2 Gas Groups IIA, IIB, IIC
- ◆ Area of Classification (Dust):
 - ◆ Zones 21 and 22
- ◆ Type of Protection: "ia" intrinsic safety
- ◆ IP67
- ◆ Marking UL844 (North American)
 - ◆ Class I, Division 1, Groups A, B, C, D
 - ◆ Class I, Division 2, Groups A, B, C, D
 - ◆ Class II, Division 1, Groups E, F, G
 - ◆ Class II, Division 2, Groups F, G
 - ◆ Class III
- ◆ Working Temperature: -22°F to 104°F (-30°C to 40°C)
- ◆ Temperature Classification (Gas): T4
- ◆ Max. Surface Temperature (Dust): (135°C)275°F

VO-HZD-Electronics Apparatus



VO-HZD-HD51
Junction Box CIDI/CID2



VO-HZD-IN01-A/B/C/D
Gas Detectors
CIDI/CID2



VO-HZD-IN01-02
Sensors CID2



VO-HZD-IN01-B
Sensors CIDI/CID2



VO-HZD-QM
Cable Glands



VO-HZD-ZA65
Control Unit CIDI/CID2



VO-HZD-HD51-KYD
Installation Arm
CIDI/CID2



Emergency Driver

LED Sport Lights



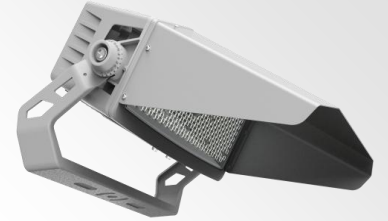
VO-HZD-SP-J/L
series



VO-HZD-SP-M
series



VO-HZD-SP-F10
series



VO-HZD-SP-F11
series



VO-HZD-SP-F18
series



VO-HZD-SP-N
series



VO-HZD-SP-Q
series



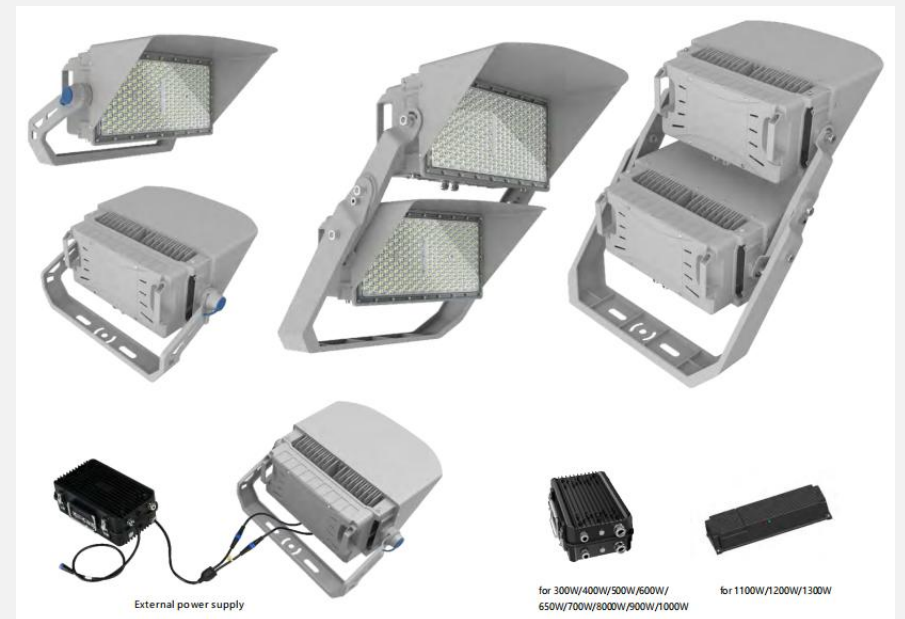
VO-HZD-SP-TC 60W

VO-HZD-SP-J and L Series

Specifications	
Wattage	300W~1800W
Lumen	155lm/w
Voltage	100-277V/277V-480V
Beam Angle	15°/20°/30°/45°/60°/80°
CCT	2700K-6500K/RGB/RGBW
EPA	0.95Ft²/1.40Ft²/3.0Ft²
Surge Protection	10kv(Standard)/20kv(Optional)
Intelligent Control	0-10V Dimming
Housing	Cold forging aluminum housing
Ingress Protection	IK66
IK Rating	IK09
Ambient Temp.	-40°C to 50°C



VO-HZD-SP-M Series



Specifications	
Wattage	300W~1300W
Lumen	150lm/w
Voltage	100-277V/277V-480V
Beam Angle	15°/20°/30°/40°/60°/120°
CCT	2700K-6500K/RGB/RGBW
EPA	1.68Ft ² /3.27Ft ²
Surge Protection	10kv (Standard) /20kv(Optional)
Intelligent Control	0-10V Dimming
Housing	Die-cast aluminum housing
Ingress Protection	IK66
IK Rating	IK09
Ambient Temp.	-40°C to 50°C

VO-HZD-SP-FL10 Series

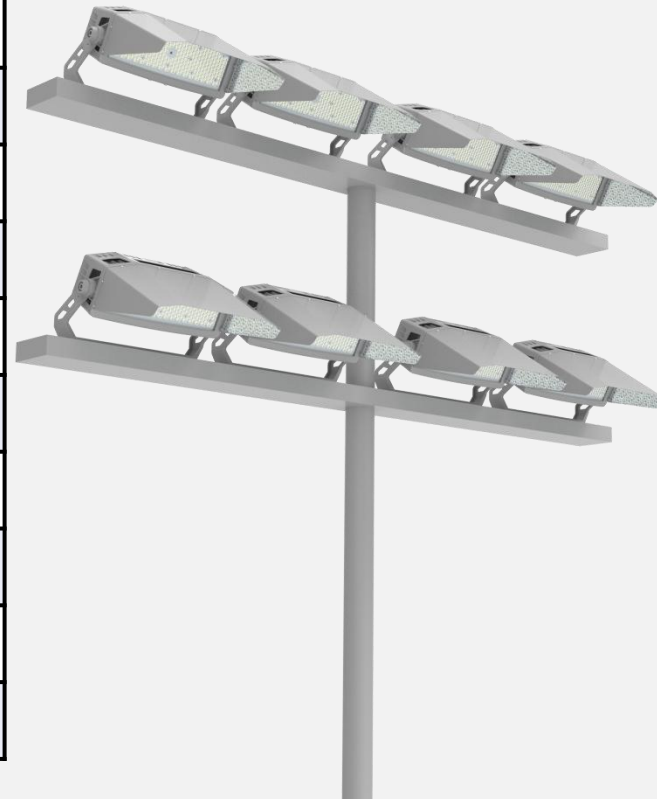
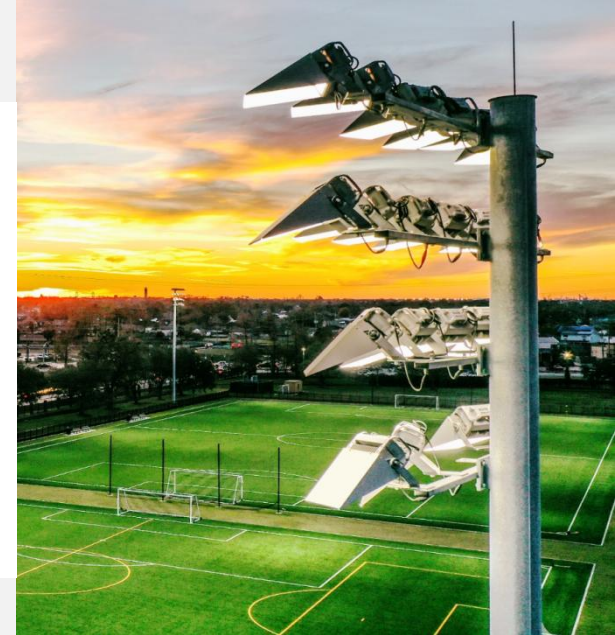
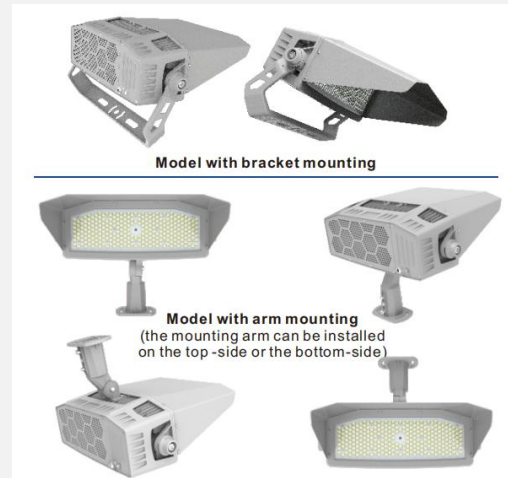


Specifications	
Wattage	1500W~1800W
Lumen	165lm/w
Voltage	100-277V/277V-480V
Beam Angle	10°/15°/20°/60°
CCT	2700-6500k/RGB/RGBW
EPA	3.31Ft ²
Surge Protection	10kv
Intelligent Control	0-10V Dimming
Housing	Cold forging aluminum housing
Ingress Protection	IK66
IK Rating	IK08
Ambient Temp.	-40°C to 50°C
Driver	Inventronics/Sosen

VO-HZD-SP-FL11 Series

Specifications

Wattage	600-800W
Lumen	155lm/w
Voltage	100-277V/277V-480V
Beam Angle	15°/20°/30°/45°/60°
CCT	2700-6500K
EPA	1.58Ft ²
Surge Protection	10kv(Standard)/20kv(Optional)
Intelligent Control	0-10V Dimming
Housing	Cold Forging Aluminum
Ingress Protection	IK66
IK Rating	IK09
Ambient Temp.	-40°C to 50°C
Driver	Inventronics/Sosen



VO-HZD-SP-FL18 Series

Specifications

Specifications	
Wattage	800-1000W
Lumen	155lm/w
Voltage	100-277V/277V-480V
Beam Angle	15°/20°/30°/45°/60°
CCT	2700-6500K
EPA	1.45Ft ²
Surge Protection	10kv(Standard)/20kv(Optional)
Intelligent Control	0-10V Dimming
Housing	Cold Forging Aluminum
Ingress Protection	IK66
IK Rating	IK09
Ambient Temp.	-40°C to 50°C
Driver	Inventronics/Sosen



External power supply

VO-HZD-SP-N Series

Specifications	
Wattage	250W~1750W
Lumen	Up to 150lm/w
Voltage	100-277V/277V-480V
Beam Angle	15°/30°/45°/60°/90°/120°/T30x90/T3V S/T2VS
CCT	4000-6500k/RGB/RGBW
EPA	0.66Ft²/1.33Ft²/2.02Ft²/2.71Ft²/3.39Ft²
Surge Protection	10kv
Intelligent Control	0-10V Dimming
Housing	ADC12 Aluminum
IK Rating	IK08
Ambient Temp.	-40°C to 50°C
Driver	Inventronics/Sosen



Protective Outlet Design
The wire outlet on the back of the fixture is wrapped by a 304 stainless-steel glass tube to protect the wires from bird pecking.

VO-HZD-SP-Q Series

Specifications	
Wattage	500W~1400W
Lumen	Up to 150lm/w
Voltage	100-277V/277V-480V/220-240V/220-240V
Beam Angle	30°/45°/60°/90°/120°/T30x90/T3VS/T2VS
CCT	4000-6500k/RGB/RGBW
EPA	1.16Ft²/1.76Ft²/2.34Ft²
Surge Protection	10kv
Intelligent Control	0-10V Dimming
Housing	ADC12 Aluminum
IK Rating	IK08
Ambient Temp.	-40°C to 50°C
Driver	Inventronics/Sosen/Meanwell



VO-HZD-SP-TC 60W

Specifications

Wattage	60W/1200W
Lumen	170lm/w
Voltage	220-240V/277V-480V,50/60Hz
CCT	5000-5700K(Optional)
EPA	0.15Ft ²
Surge Protection	10kv(Standard)/20kv(Optional)
Intelligent Control	0-10V Dimming
Housing	6060 Aluminum,SPCC Iron
Ingress Protection	IK66
IK Rating	IK08
Ambient Temp.	-40°C to 50°C
Driver	VAOPTO



No poles required



No engineers required



No machines required



Traditional Flood Light

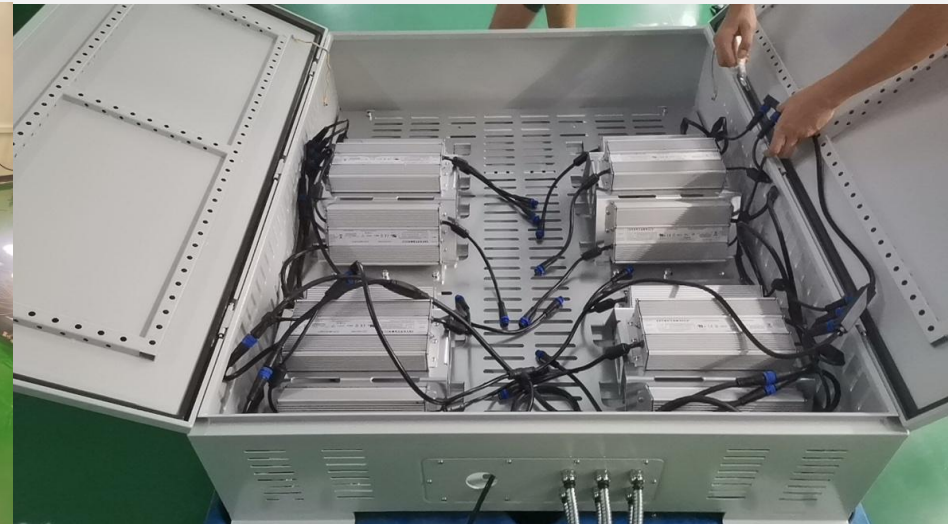
- Installation and maintenance need poles, higher labor costs and machine costs.



Venas Tennis Court Light

- Easy installation and maintenance with no poles, no engineers, no machines required.
- Softer and more uniform lighting compared to traditional flood light.

DISTRIBUTION BOX



Dimensions	
Length	1340mm
Width	1000mm
Height	280mm

Control System



Your Requirement, Volume, and Target Price?

Thanks!