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VizorLED

Gardco VizorLED luminaire utilizes Non-Direct View (NDV) optics, which shield the LEDs from direct line of site. With 10% uplight for even more visual comfort, VizorLED meets IES criteria for parking garages with only one fixture per bay. One 530 mA driver option draws less power for even greater energy efficiency.

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

Ordering guide

Example: VZ24-60G3-530-B-120-EZ-TSA

Prefix	No. of LEDs	Driver	Distribution	Voltage	Mounting	Options	Finish
VZ24 –	60G3 –	530 –	–	–	–	–	
VZ24[1] VizorLED luminaire	**60G3** 60 LEDs	**530**	**B** Bi-Axial Symmetric **D** Downlight	**120** **208** **240** **277** **UNIV**[3]	**EZ** Easy Hanger Plate (standard) **EZBP** Bulk Pack Easy Hanger Plate **PND-RC-24LDS** Pendant Mount with 24" leads **TW2** Thru-Wire Provision **Y** Yoke Mount	**PX10** Proximo Programmable Occupancy Detector **PXCP**[5] Proximo Custom Factory Programming **LLRC**[4] Limelight Wireless Controls System (see spec. sheet WLSP0404 for additional details and ordering details)	**TSA** Textured Satin Aluminum (standard)

1. Fusing now standard with VizorLED Gen-3 unit.
2. Proximo available in 120-277V only.
3. UNIV includes 120-277V.
4. Limelight available with 120-277V. See pages 4-6 for complete details.
5. 'PXCP' custom factory programming requires approved submittals to set profile.
6. 'PX10-HAP' is for use with 'PX10' option for field programming. Minimum one required per job if field programming is required.

Accessories (order separately)

PX10-KIT[2]

Proximo Occupancy Detector - field installed kit

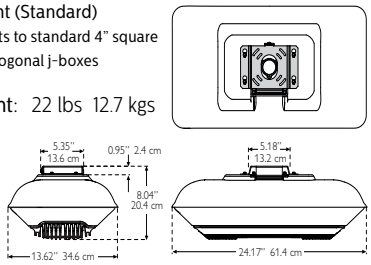
PX10-HAP[6]

Proximo Handheld Programmer

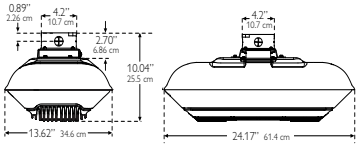
Dimensions

VZ24 'EZ' Easy Hanger Plate Mount (Standard)
mounts to standard 4" square or octogonal j-boxes

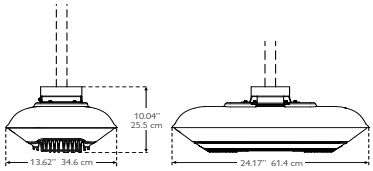
Weight: 22 lbs 12.7 kgs



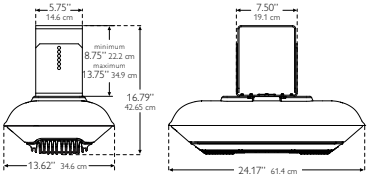
VZ24 Thru-Wire Provision ('TW2')
thru-wire outlet box with 3/4" conduit hub and four 0.875" knockouts



VZ24 Pendant Mount ('PND-RC-24LDS')
pendant by others, 3/4" NPT required.



VZ24 Yoke Mount ('Y')
mounts to standard 4" square or octogonal j-boxes



VZ24 VizorLED parking and canopy luminaire

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Specifications

Rated System Life (LED life per L70)

Driver and LED life: 100,000 hrs @ 25° to 40°C (77° to 104°F). 50,000 hrs @ 50°C (122°F). See page 3 for predicted L70 LED life.

Construction

Single piece die-cast upper housing and aluminum heatsink, optimally engineered. Standard unit constructed to IP65. VizorLED units with TW2 option are wet location listed.

Non-Direct View (NDV) Optics

High-lumen white LED array shielded from direct view, significantly reduces glare and provides up to 8% uplight. Faceted MIRO reflector (min 94% reflectivity).

Energy saving benefits

System efficacy up to 79 lms/W with energy savings up to 70% over PSMH systems. Optional Proximo occupancy detector provides added energy savings of up to 94% during unoccupied periods and works as a 'Smart Fixture,' requiring no added wiring or controls.

Driver

Driver efficiency (>90% standard). Constant current (G3): 530 mA. 120-277 V. Temp range: -40°C (-40°F) to 50°C (122°F). Open/short circuit protection. Optional 0-10V dimming to 10% power. RoHS compliant. Surge protector standard. The surge protector is in accordance with IEEE / ANSI C62.41.2 guidelines, with a surge current rating of 10,000 amps.

LED Board and Array

Lumiled Luxeon R (G3): LED only: minimum 220 lms/W, System only: 75-79 lms/W. Color temp: 4000 K +/- 250 K. CRI is 70. Aluminum metal clad board. Thermal resistance LED solder point to ambient: <0.63°C per watt. LED junction to ambient: <0.69°C per watt. RoHS compliant.

Distribution

Bi-axial symmetric or downlight distribution. VZ24 unit available using a 60 LED array.

Mounting

Standard mounting shall include a galvanized steel Easy Hanger Plate. Alternately, unit may be pendant mounted to rigid conduit (by others), yoke mounted or specified with a through-wire provision.

Finish

Standard finish of die-cast upper housing shall be Textured Satin Aluminum.

Proximo Occupancy Detector

Option may be specified for additional energy savings during unoccupied periods. Standard dim level factory set to 10% and comes pre-programmed ready to install, no additional wiring required. Can be factory or field programmed. See Proximo spec sheet WLSP0406 for factory preset settings and field programming instructions.

Wireless Controls

LimeLight is an intelligent web-based system that operates through a high density mesh (HDM) wireless technology. Radio modules with motion and photocell sensors are integrated into each VizorLED luminaire that enables the fixtures to communicate with the ZigBee protocol. The Gateway is a mini computer that connects to the internet, and is located in the parking structure. The central LimeLight database channels communication to and from the gateway, allowing data to be viewed or accessed through the web-based graphical user interface (GUI). For detailed technical information, see pages 4-6.

Listings

ETL/cETL listed to the UL 1598 standard, suitable for Wet Locations. Standard unit suitable for use in ambients from -20° to 50°C (-4° to 122°F). Units with 'PX10' suitable for use in ambients up to 40°C. 'LLRC' units suitable for ambients up to 35°C. The quality systems of this facility have been registered by UL to the ISO 9001 standards. Standard unit constructed to IP65.

Warranty

5 year limited warranty. See Signify.com/outdoorluminaires for complete details and exclusions.

Lumen Output

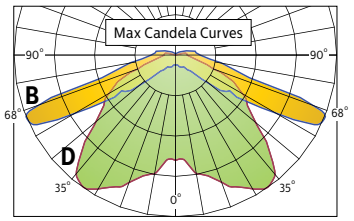
TABLE 1: Lumen Output

	VZ24-60G3-530-B
Input Watts	97
Initial Lumens @ 25°C Ambient	7520
Lumens per Watt @ 25°C Ambient	78

Notes:

1. Technical data and performance are subject to change.
2. Due to LED forward voltage variations and driver efficiency, total system watts could vary +/-4%.
3. LimeLight Wireless Controls system uses an additional 3W.

Typical VizorLED Candela Curves



Note: Provides up to 10% Uplight

Lumen Maintenance Life

TM-21[1] Reported and projected lumen maintenance life[5]

Model	Reported[2,3] Lumen L_{70}(9K)[4] Life	Projected[2] Lumen L_{70}(9K)[4] Life
VZ24 (All Configurations)	>54,000 hours	>239,000 hours

Notes:

1) TM-21-11 is the IESNA's recommended method of projecting long term maintenance of LED light sources.
2. Lumen maintenance values are calculated in accordance with TM-21-11.
3. Reported lumen maintenance life is limited to six times (6x) the total test duration of the device under testing ([DUT] i.e. the packaged LED chip).
4. L_{70}(9K) = The elapsed operating time to 70% lumen maintenance based on 9000 hours of testing per LM-80.
5. LM80 report, in-situ thermal report, and TM-21 calculations available upon request.

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Lumen Maintenance Multipliers

Lumen Output Calculation Example

Luminaire:**VZ24-60G3-530-B**
Location: **Chicago, IL**

Hours of Operation: **50,000**
Average Ambient Temperature: **10°C**

TABLE 1 Initial Lumen Output at 25°C: **7520**

TABLE 2 Lumen Depreciation Multiplier: **0.95**

TABLE 3 Ambient Temperature Multiplier: **1.02**

Multiply the initial lumen output by the lumen depreciation and average ambient temperature multipliers.

7520 X 0.95 X 1.02 = 7287 Lumens

TABLE 2: Lumen Depreciation Multipliers[1,2]

Multiply the numbers below by the lumen value provided in **Table 1** to calculate the LED lumen output at desired operating hours. Contact factory for additional lumen maintenance values.

0 hours	25,000 hours	50,000 hours	75,000 hours	100,000 hours
1	0.99	0.95	0.92	0.88

Notes:

1) TM-21-11 is the IESNA's recommended method of projecting long term maintenance of LED light sources.
2. Lumen depreciation multipliers are calculated in accordance with TM-21-11.

TABLE 3: Lumen Ambient Temperature Multipliers[1]

After determining the average ambient temperature of the specific application, multiply the numbers below by the lumen value provided in the **Table 1** to calculate the LED lumen output at desired ambient operating temperatures.

	Ambient Temperature								
Model	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C
VZ24-60G3-530-B	1.03	1.03	1.02	1.01	1.01	1.00	1.00	0.99	0.98

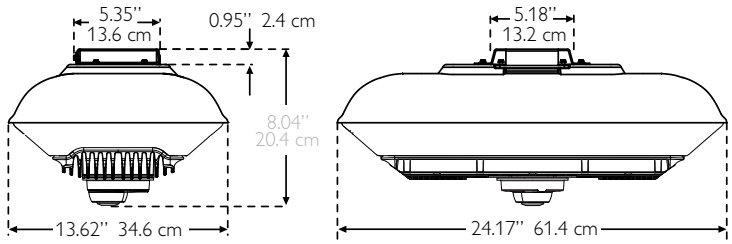
Notes:

1. Data references the relative light output versus temperature chart supplied by LED manufacturer.

Wireless Controls System Details

The LimeLight wireless Controls System includes: Gateway, radio, motion sensors, and on-site commissioning.

Dimensions



VZ24 VizorLED parking and canopy luminaire

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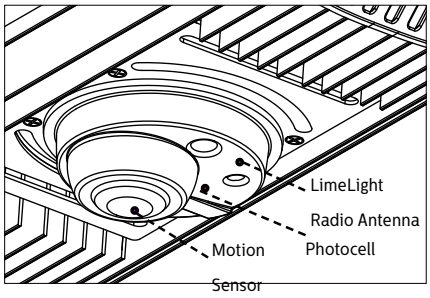
Radio and Motion Sensor Details

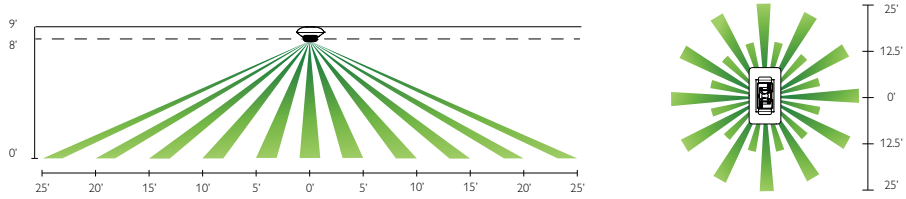
VizorLED



- 1.8 Watts max (no load draw)
- Operating voltage 102-277 VAC RMS
- Operating Temperature up to 35˚C (95˚F)
- Communicates using the ZigBee protocol
- Carries out dimming commands from Gateway
- Reports internal PCB temperature
- Reports ambient light readings to 1500 Ft-Cd
- Transmission Systems Operating within the band 2400-2483.5Mhz
- IEEE 82.15.4
- ROHS Compliant

- Wattstopper FS-305 lens configuration
- Detects motion through passive InfraRed sensing technology
- Connects directly to radio through modular jack
- 25 ft. radius sensing coverage at 8ft. mounting height

Typical Sensor Coverage



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LimeLight Gateway

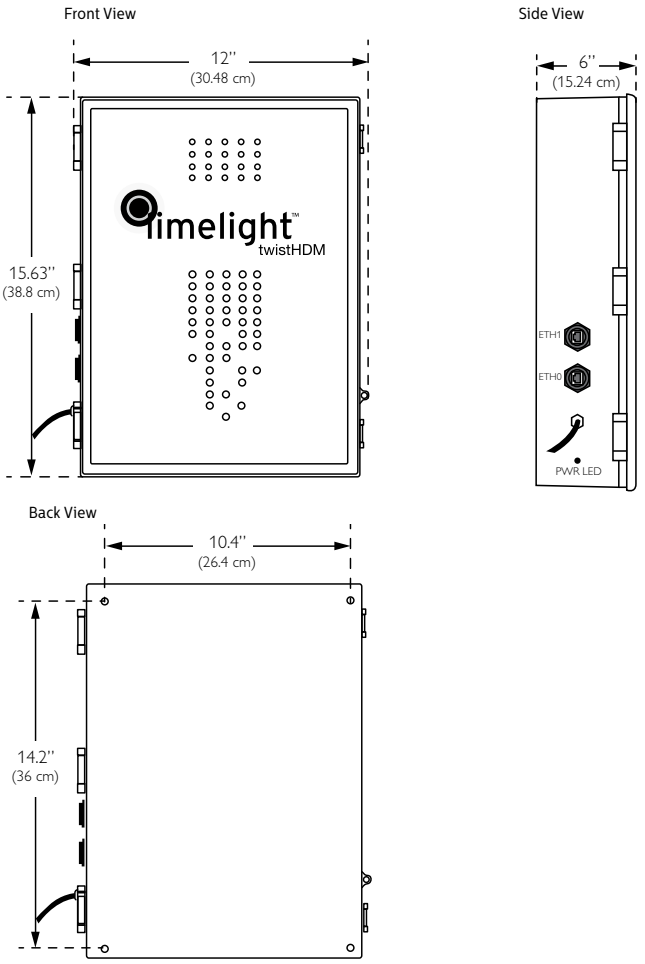
Overview:
One LimeLight gateway is included with the wireless controls system. The gateway is the High Density RF Mesh ZigBee coordinator, allowing for real-time, two way communication between the graphical user interface and the VizorLED luminaires in the parking garage. One LimeLight Gateway can communicate with up to 800 fixtures.
The gateway sends out an RF safety tone every 5 minutes. If a fixture does not receive the safety tone within 30 minutes, that fixture will be powered to high until connection is restored.

Installation:
The back of the Gateway is equipped with (4) blind threaded holes that accept 10-32 screws. Mount spacing is 10.41" across and 14.19" vertical.

Specifications:
- High density RF Mesh coordinator
- Ethernet or cellular connection to LimeLight server
- Proprietor of software "rules of operation"
- Constructed to IP65 when used with waterproof connectors by others
- Highly protected, long life ac/dc power supply
- Single board, ARM compliant 520Mhz Intel computer.
- Tamper proof housing

Requirements:
Installed within the garage facility, the Gateway is powered by a 120V source and connected to the internet via an Ethernet cable or an integrated cellular modem. A 20 foot distance between the gateway and the first fixture is optimal.

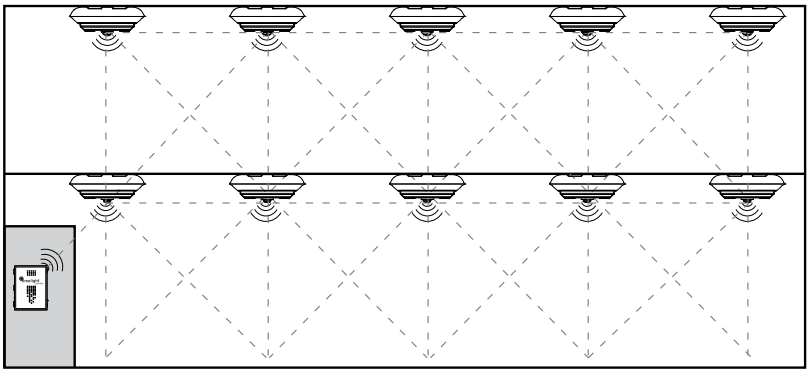
Dimensions



Mesh Network

The LimeLight system operates through high density mesh (HDM) wireless technology. When the mesh network is established, a path of communication will always find a way to each and every luminaire. It is this mesh network that allows us to eliminate the need to individually wire each fixture and gives us the infinite flexibility to control luminaires, create and update fixture groupings, and update and check fixture status instantly via the web based GUI tool.

Radio modules, with motion and photocell sensors, are integrated into each fixture and allow the LED luminaires to talk to one another via the ZigBee protocol. All radios can communicate with up to 16 neighboring fixtures to create the reliable mesh network.



VZ24 VizorLED parking and canopy luminaire

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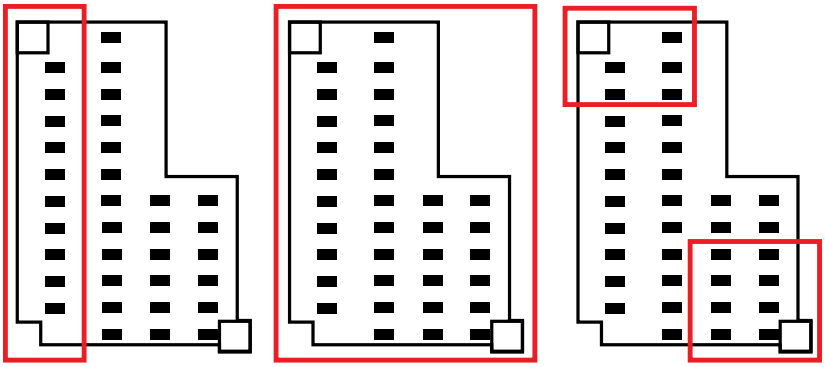
Fixture Grouping

Each luminaire can be part of one group, or multiple groups - up to 50 groups can be created per gateway, and managed through the web.

Fixture grouping eliminates the "domino effect" caused by independant luminaire controls.
Group an entire floor to provide full line of site when motion is detected in the evening hours, or group the entrance so that fixtures remain at 100% power at all hours.
Grouping fixtures ensures maximum energy savings, overall improved visual experience and a safe entry and exit for pedestrians at all hours.



Ground Level
(Perimeter Group Example)

Second Level
(Entire Floor Group Example)

Third Level
(Entry Group Example)

LimeLight Wireless Controls Features and Benefits

Features	Benefits
Eliminates the cost and need for any low voltage control design & wiring	Luminaires come ready-to-install, (no front-end design or on-site controls wiring required) helps to reduce installation costs
Provides energy forecasts and reduces environmental waste	Extreme energy savings realized, decreases CO_2 emissions and significantly lowers energy bills, provides detailed reports to manage and monitor usage
Environmentally-friendly solution	Projects a green image that attracts citizens and investors while controlling energy waste
Web-based login & GUI interface	No proprietary software required, can access from any web based PC using our GUI portal, eliminating the need to manually adjust luminaires in the field
Sensors and GUI interface include daylight harvesting capability	Perimeter luminaires can be configured per ambient light levels to dim and provide additional energy savings during the day while extending fixture life
Fixtures can be wirelessly grouped and dimmed by zonal control	Eliminates the domino or popcorn lighting effect caused by standalone control for a seamless visual experience, requires no complicated design and wiring schemes of hard-wired zonal systems
Respects minimum IES and CBEA requirements during occupied periods	Dimming is done seamlessly, always keeping light to a safe and comfortable level
Creates a high density mesh network of communication between luminaires	Wireless mesh network ensures continuous communication between luminaires and eliminates the need for zonal wiring and added installation costs
24/7 monitoring service	Ensures safety and security for patrons and owners, eliminates the need for costly maintenance spot checks, helps reduce total cost of ownership
Temperature Guardrail feature pings weather information every 30 minutes	By monitoring extreme weather conditions via the web, products can be dimmed if ambient temperatures are too high to extend fixture life

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