HOLOPHANE

Advanced
LIGHTING TECHNOLOGIES

PRISMPACK™

prismpack™

Patent Pending / European Design Registration


prismpack™

HIGH BAY PRISMPACK™

Inspired by our history, designed to be distinctively different and taking high bay lighting to new levels of lumen output with superior light control, the new **Prismpack**™ combines the latest in highly efficient LEDs and redefines the standard for digital high-bay lighting. The new generation Prismpack delivers solutions that can be totally tailored to specific customer applications.

For over 120 years Holophane has enjoyed an enviable reputation throughout the world for expertise, quality and innovation in Lighting. From the earliest days, when the company pioneered its famous glass refractor, the Holophane name has been ever present as a leader in the field of luminaire and lighting design. **Prismpack** is a continuation of this proud tradition and builds on our heritage of designing highbay luminaires with exceptional optical performance and thermal management which fused together deliver a solution that is scalable, flexible and fully serviceable.

Applications

- Heavy Industry
- Factories
- Production
- Manufacturing
- Foundries
- Warehouses
- Assembly Areas
- Exhibition Halls
- Sports Halls

Overview

- Available with lumen ranges from 10,000 to 120,000 (delivered lumens).
- Three distribution options (Narrow, Medium and Wide)
- 4000K, 5000K & 6500K options available.
- CRI > 80.
- Efficacies of up to 150lpw.
- Available with integrated control and emergency options (c.1,000lm in emergency mode).
- System Life – 100,000 Hrs at 45°C
- System Life – 50,000 Hrs at 70°C (High Ambient Version)

Approvals

CE

Complies with EN60598

IP65

-25°C to 70°C*

*Max lumen output of 60,000 at TA of 50°C to 70°C

Crafted in Britain

prismaled™

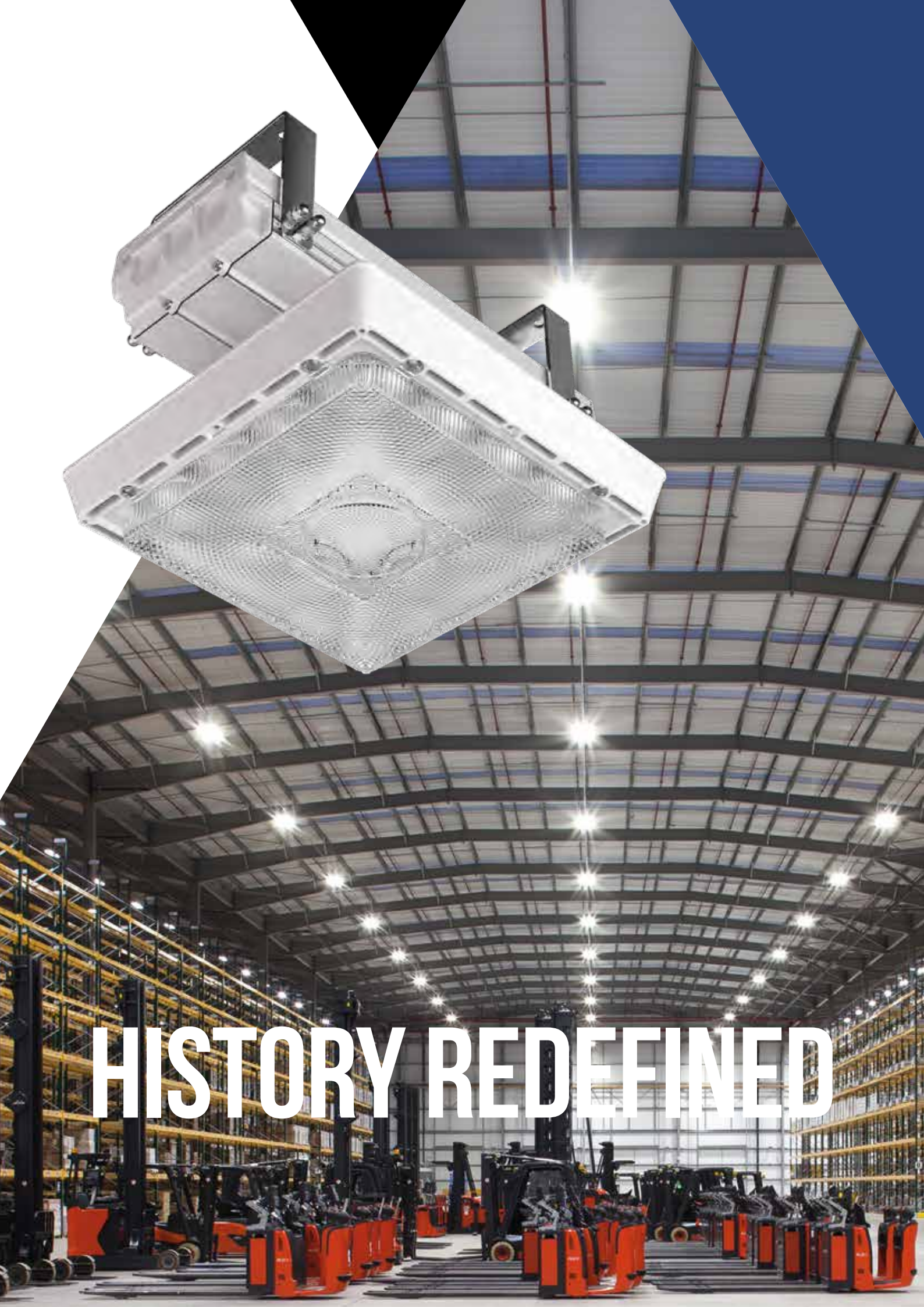
energyefficient

prismpack™

MODULAR DESIGN
OPTICAL PERFORMANCE
THERMAL EXCELLENCE

Advanced
LIGHTING TECHNOLOGIES

HIGH BAY
PRISMPACK™


HISTORY REDEFINED

HIGH BAY PRISMPACK™

Specification

An industrial high-bay luminaire with a thermally separate, but coupled, two-compartment construction. This allows the luminaire to operate in ambient temperatures of up to 70°C. Prismpack can provide the ideal solution for almost all demanding industrial applications.

The marine grade aluminium construction with perimeter vertical ventilation allows for exceptional thermal management of both the LEDs and the drivers.

Building on Holophane's heritage of optical design, the optical system has been developed for mounting heights of up to 25m and over using a bespoke, specular aluminium, facetted reflector system contained within a highly transmissive clear glass lens. A prismatic glass refractor is also available.

The all-aluminium gear compartment consists of a snap-fit cover for quick access to the electrical components including the LED drivers. This reduces and simplifies product maintenance. A wire-rope suspension kit is available separately.

Features and benefits

Scalable System

- Lumen ranges from 10,000 to 120,000 achieved via five system sizes which deliver exceptional ROI for a multitude of applications.
- Mounting options to accommodate a variety of onsite installation challenges.

Exceptional Optical Performance

- Incorporates PrismaLED technology which delivers a wholly luminous lit effect that accurately controls the output of the LEDs and reduces glare.
- Optimax,™ inspired by Holophane's Superglass optical technology, maximises performance with today's digital technologies. Optimax is designed to deliver a low glare, visually comfortable, efficient lighting system.

Enhanced Lumen Maintenance

- Vertical ventilation slots in the luminaire heat-sink convect heat from the housing and creates air movement away from the glass optic to minimise dirt accumulation on the optical surface.
- The glass lens ensures a low electrostatic charge which make it less susceptible to dust and dirt accumulation so improving dirt depreciation over time. This means that higher value Maintenance Factors, MF, can be used in design calculations.

Flexibility

- Suitable for ambient temperatures of up to 70°C enabling the luminaire to be used in various environments.

Fully Controllable

- Integrated Control and emergency options.
- Compatible with HOLOSAir Lite, HOLOSAir and HOLOS Wired.

OPTIMAX STORY

Optimax™ explained

Holophane's new Optimax™ reflector technology draws on generations of optical expertise to deliver market leading performance and quality of light from an industrial high bay. The modular facetted reflector technology is designed to give precise optical control and deliver the potential for an extensive choice of lighting distributions available to tailor your lighting design to the geometry of the building structure. Light is precisely controlled for optimum efficiency. The deep shielding of the light source reduces glare from the LEDs. This combined with a low reflector wall brightness, ensures maximum visual comfort.

Prismpack provides flexibility in the design process. Many different lumen packages combined with spacing to height ratios (SHR) from 0.5:1 to 1.6:1 (narrow, medium and wide distributions) allow the designer to tailor the lighting needs to fit the shape of the building exactly. This increases light utilisation and improves the efficacy still further.

Low Glare – Visual Comfort

The unique Optimax design dramatically reduces the apparent brightness of the Prismpack when compared with other high output high bays. Light emitted from the LEDs is spread over each Optimax™ reflector which in turn builds up in a modular structure allowing the light to be spread over the optical surface and reducing multiple point sources and producing a visually comfortable appearance.

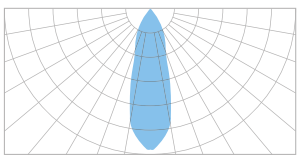
Highest Quality Product

The quality of the Prismpack luminaire is self-evident. The reduced cost of overall installation for Prismpack lighting design which in turn reduces installation costs of switch gear, cables, trunking when compared to a regular LED high bay solution.

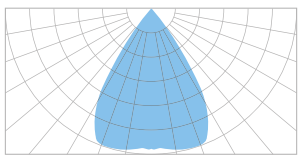
LOW GLARE

Bespoke optical structures created to maximise the performance from LED technology whilst delivering total lighting control.

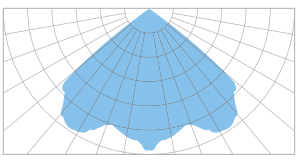
Narrow
0.5:1 SHR



Medium
1:1 SHR



Wide
1.6:1 SHR



PRISMALED STORY

Holophane's history lies in it being the first company to give practical application to the principles of the prism as the ultimate means of light control, harnessing and redirecting the output of light source by prismatic means to provide the best in cost effective, efficient lighting. Over 120 years ago Holophane sold the first patented light diffusing globe using borosilicate glass.

Today these principles remain core to Holophane's products and technologies, culminating in our PrismaLED technology. Holophane products featuring PrismaLED technology deliver the following benefits:

Volumetric Illumination

'Volumetric illumination' delivers an optimal mix of light to walls, partitions, vertical and horizontal work surfaces. This results in reduced shadow and increased perceived volume of space. Studies have indicated that increased lighting levels in horizontal and vertical illuminance increase the productivity up to 5.7%*.

Reduces Glare

Without a lens, LEDs can cause discomfort glare when viewed from certain angles. The PrismaLED prismatic lens reduces glare by increasing the luminated surface area of the fitting thus, providing a more attractive and comfortable lighting environment.

Maximises Colour Consistency

Over time, LEDs can discolour and fade, which leads to an inconsistent colour of light. The PrismaLED lens distributes the light from individual LEDs so that any colour change is consistent.

Representation of a sample industrial building with objects, using direct light high bay luminaires.

Representation of the same scene using luminaires with PrismaLED technology.

Minimises LED Failure effect

When using either a clear glass or plastic lens, individual LED failures can result in black spots in the light distribution. With a PrismaLED prismatic lens, the effect of a failed LED is greatly reduced, resulting in a more uniform appearance.

Provides superior optical control

Standard lenses can create an uneven and poor distribution in lighting environments. PrismaLED optics have superior control over the light output, resulting in a more uniform distribution.

**Source: Mack trucks, Pa. USA, EC&M

WHY GLASS?

Holophane has chosen to focus its R&D energy to deliver two glass lens options (clear or prismatic), which not only protects the reflectors and LEDs, but also delivers a number of benefits to you, the customer.

Glass is actually a very difficult material to work with in manufacturing, but we have chosen to invest heavily in this material because it has great economic advantages in application. Here are just a few of these advantages:

Thermal shock

Glass shows very low thermal expansion or contraction and this means better sealing of joints due to less movement.

UV impervious

Sunlight, daylight and LED radiation do not affect glass. There is no change with prolonged exposure to sunlight, ultra violet or infrared radiation.

Longevity

Doesn't degrade over time!

Temperature resistance

Glass comfortably resists any temperatures reached inside or outside luminaires.

Chemical resistance

Glass is unaffected by just about any chemical found in industrial applications.

Low dirt accumulation

Glass doesn't build electrostatic charge unlike metals and plastics.

Recyclable

Made from recyclable glass.

Advanced
LIGHTING TECHNOLOGIES

THERMAL MANAGEMENT

The reliability and performance of an LED luminaire is dependent on a combination of factors. Keeping the Tc point (the Tc is the hottest part of an electrical component) of the control gear, LEDs etc as low as possible is critical to maintaining the luminaire's efficiency.

The selection of quality materials used in components such as the gear and optical housings is equally as critical in ensuring that the heat generated by the electrical components is thermally managed.

Prismpack utilises all three heat transfer principles of conduction, convection and radiation. This ensures that the LEDs mounted to the aluminium backed PCB and the electronic drivers are thermally managed well within their limit to maximise system life. The drivers are mounted within their own, thermally decoupled, housing away from the LEDs to ensure that heat generated by each individual electronic component does not adversely affect the other.

Conduction

Taking heat away from electronic components, LEDs and drivers.

Convection

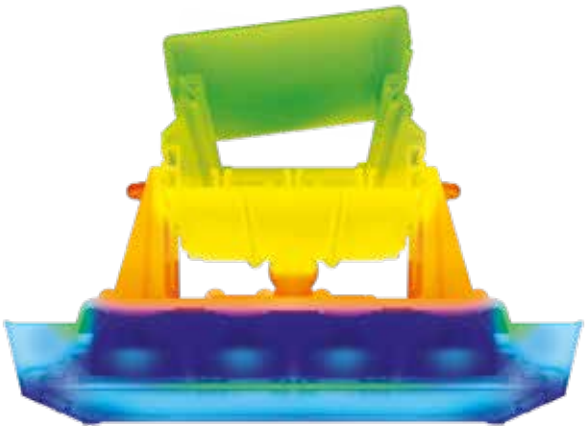
From luminaire heat sink chassis and driver housing to ambient air.

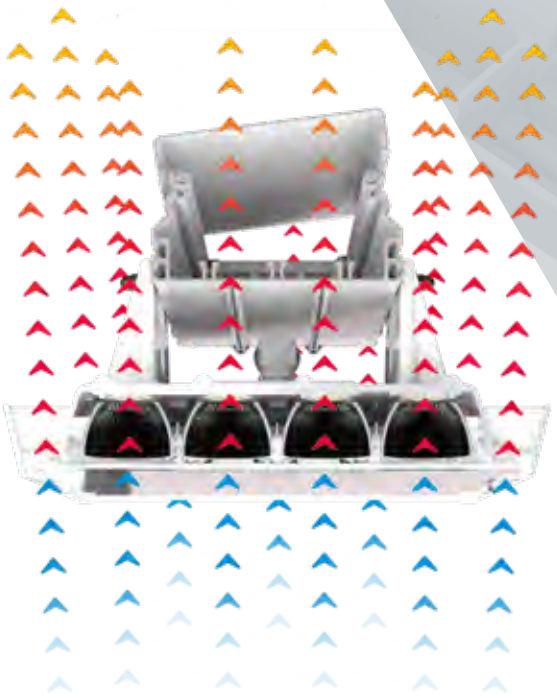
Radiation

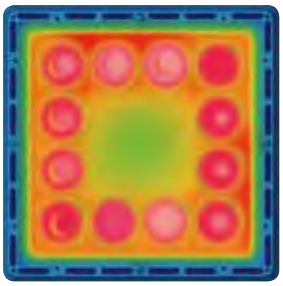
Surface finish and form designed to maximise heat radiation.

up to
70°C

Suitable for ambient temperatures of up to 70˚C enabling the luminaire to be used in various environments.







Thermally balanced LED Module

Prismpack has been designed to operate in a thermal equilibrium. The LED clusters are placed at equal-distance from both the LED Module cooling vents and the adjacent LED clusters.

This ensures a minimal temperature variation across the LED population within the fitting giving the following:

- Improved system reliability, minimising premature LED failures
- LEDs degrade at equal rates, ensuring the validity of system life data

Modularity

Prismpack has a modular design that has been developed with an approach that subdivides the luminaire system into individual modules (LED) and gear housing that are fully scalable, maintainable and upgradeable.

Scalability

Prismpack is a fully scalable luminaire that has been developed around one LED module that has the capability to be used in an arrangement of 1 to 6 modules. This creates a luminaire that ensures visual and performance consistency with a lumen package from 10,000 to 120,000 thus enabling it to be used for all types of interior applications.

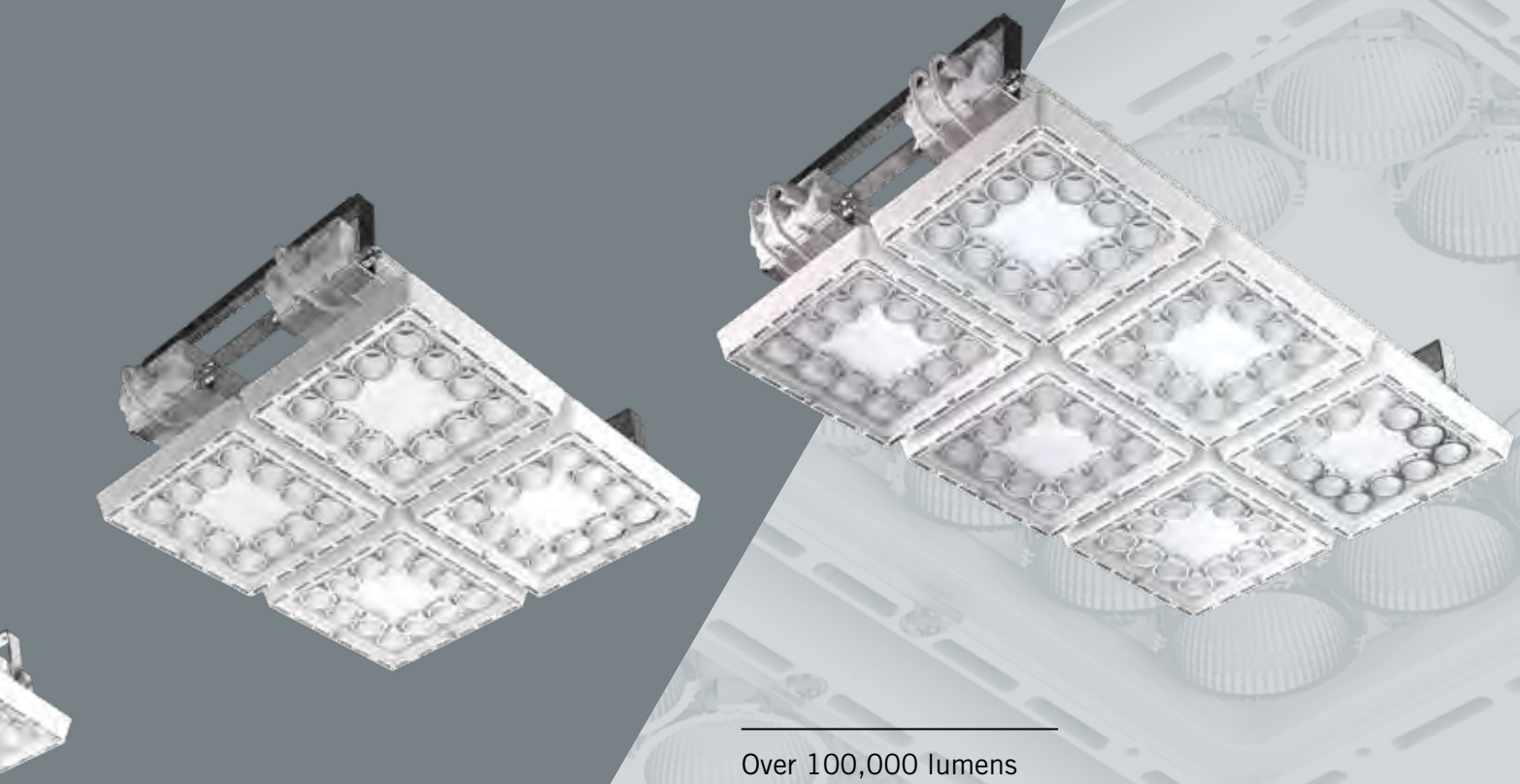
Up to 20,000 lumens

Up to 40,000 lumens

Up to 60,000 lumens

Recommended mounting height range: 5m - 16m

MODULARITY SCALABILITY



Up to 80,000 lumens

Over 100,000 lumens

Recommended mounting height range: 16m - 25m+

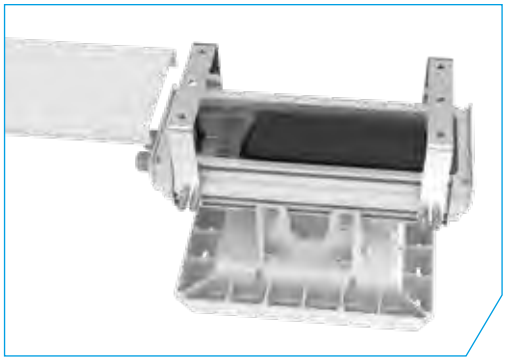
up to
150
lm/W

Across 1 to 6 module configurations

Step 1

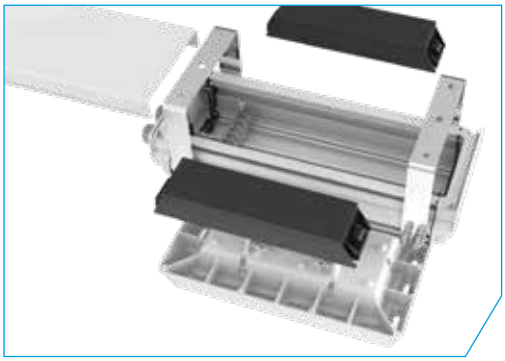
Remove gear housing cover

Step 2



Remove driver (or emergency battery) and disconnect from housing

Step 3



Install new driver (or emergency battery) with existing fasteners and reconnect

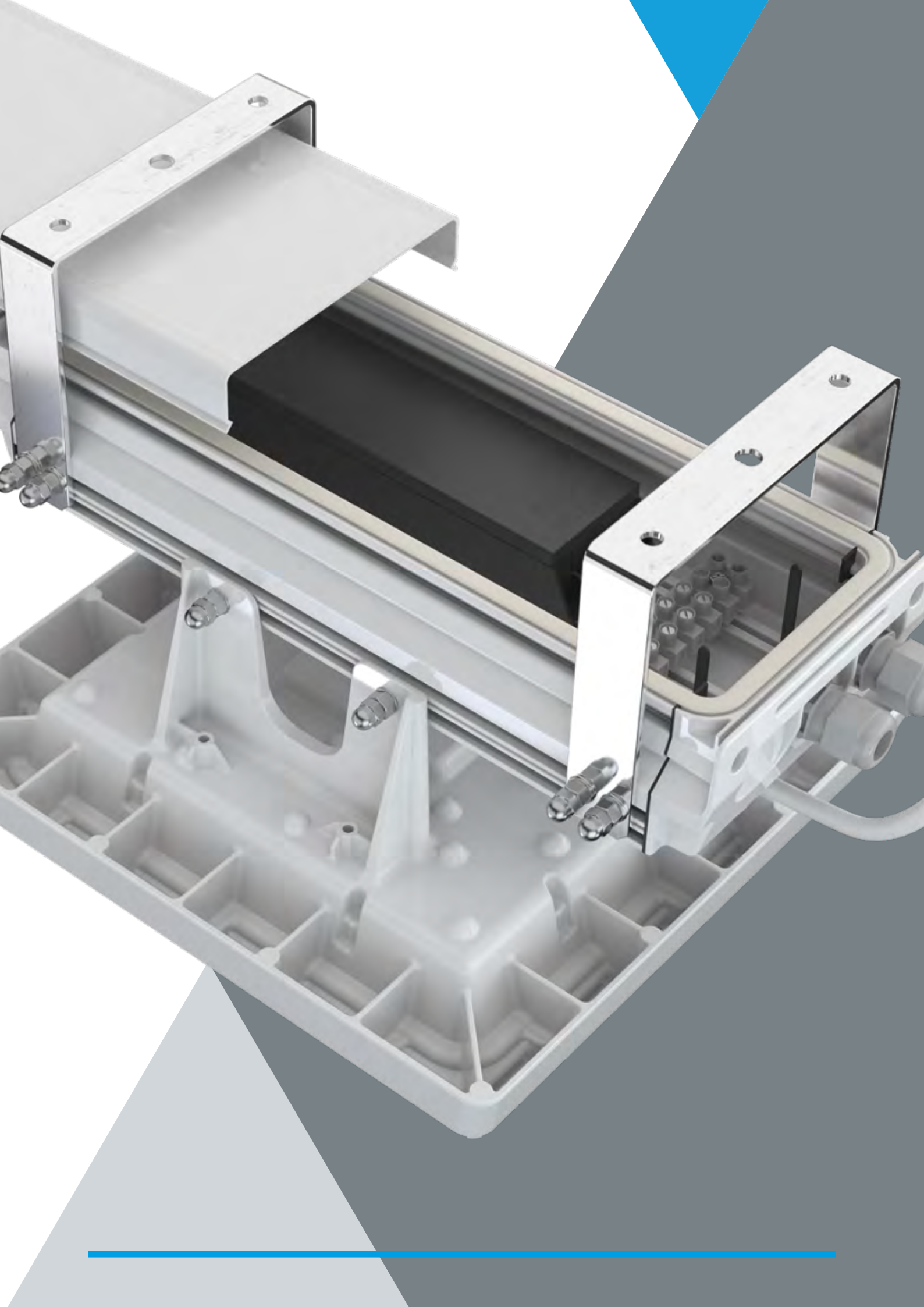
Serviceability

Serviceability is the ease with which a product can be maintained or serviced in order to isolate and replace any faulty components without having to replace the whole gear compartment or optical system. Prismpack has been designed to deliver all of these benefits to the end user – throughout the lifecycle of the product. With its easily removeable gear cover, it allows the electronic gear to be accessed and replaced in-situ.

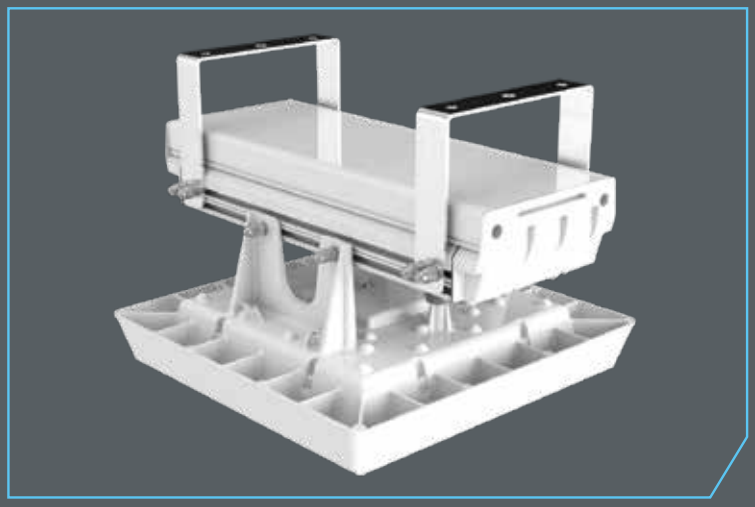
Step 4

Put gear cover back on

SERVICEABILITY

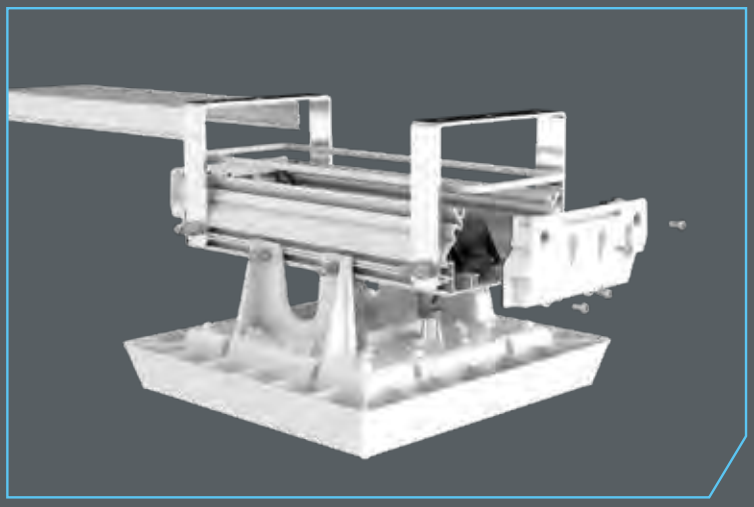


Step 1



Remove gear housing cover

Step 2



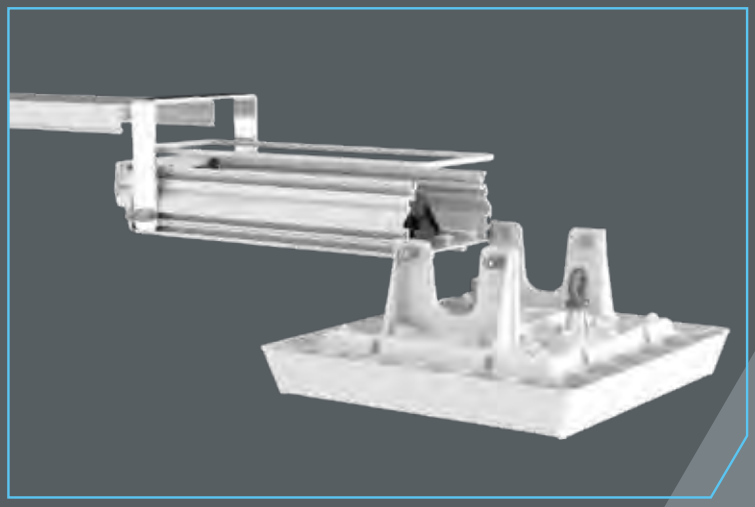
Remove gear cover and undo electrical termination. Remove end cap and mounting bracket.

Upgradability

The modularity of **Prismpack** makes this LED luminaire future proof. The LED modules can be upgraded - not only making the luminaire fully maintainable but completely upgradeable - as LED efficiency improves so can your luminaire. Prismpack also has an optional, centrally mounted Zhaga socket for future upgrades and the addition of sensors.

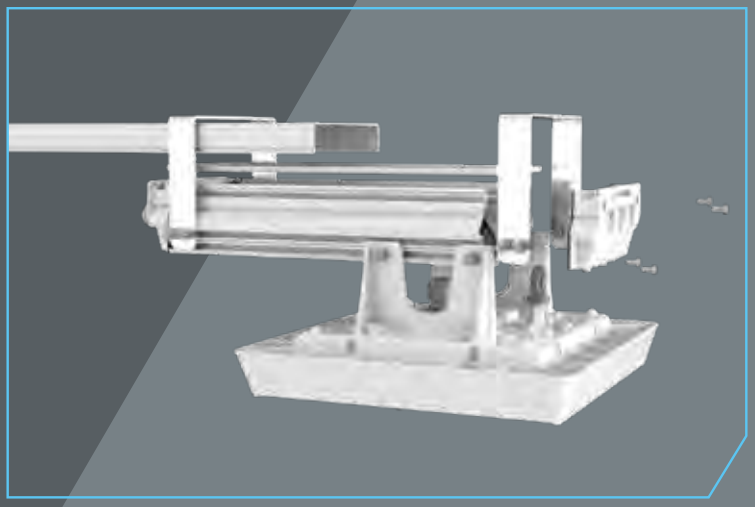
UPGRADABILITY

Step 3



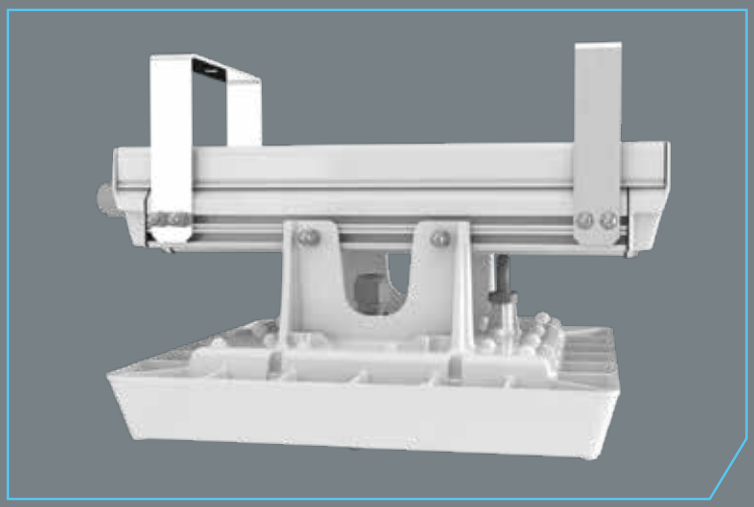
Loosen LED module fixing nut and slide out module.

Step 4



Bring new module in and rewire into gear housing. Redo bolt and secure bracket then end caps.

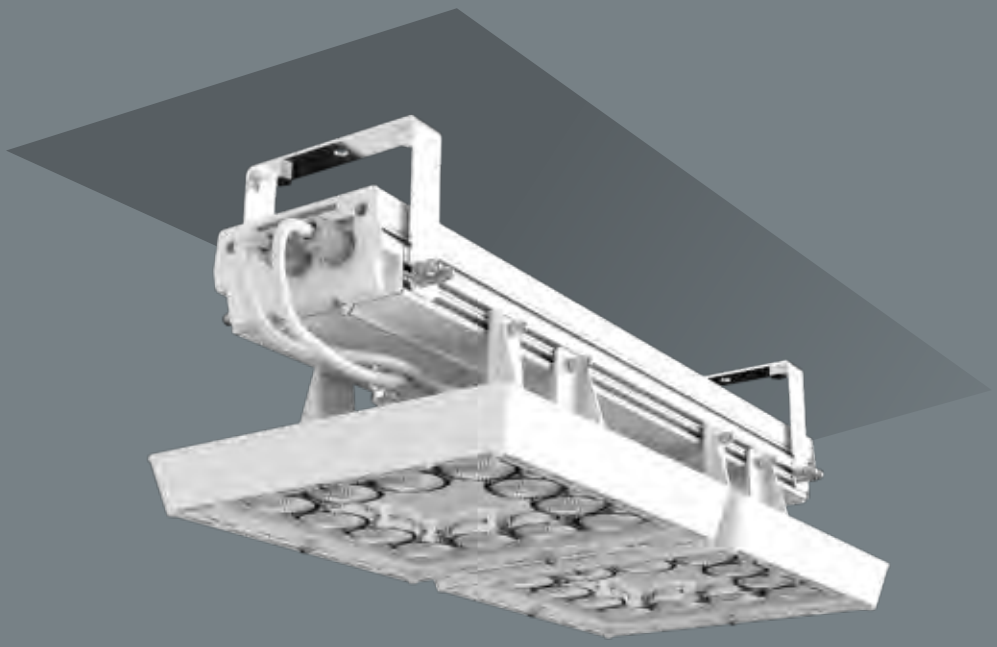
Step 5



Replace gear cover.

INSTALLATION
OPTIONS

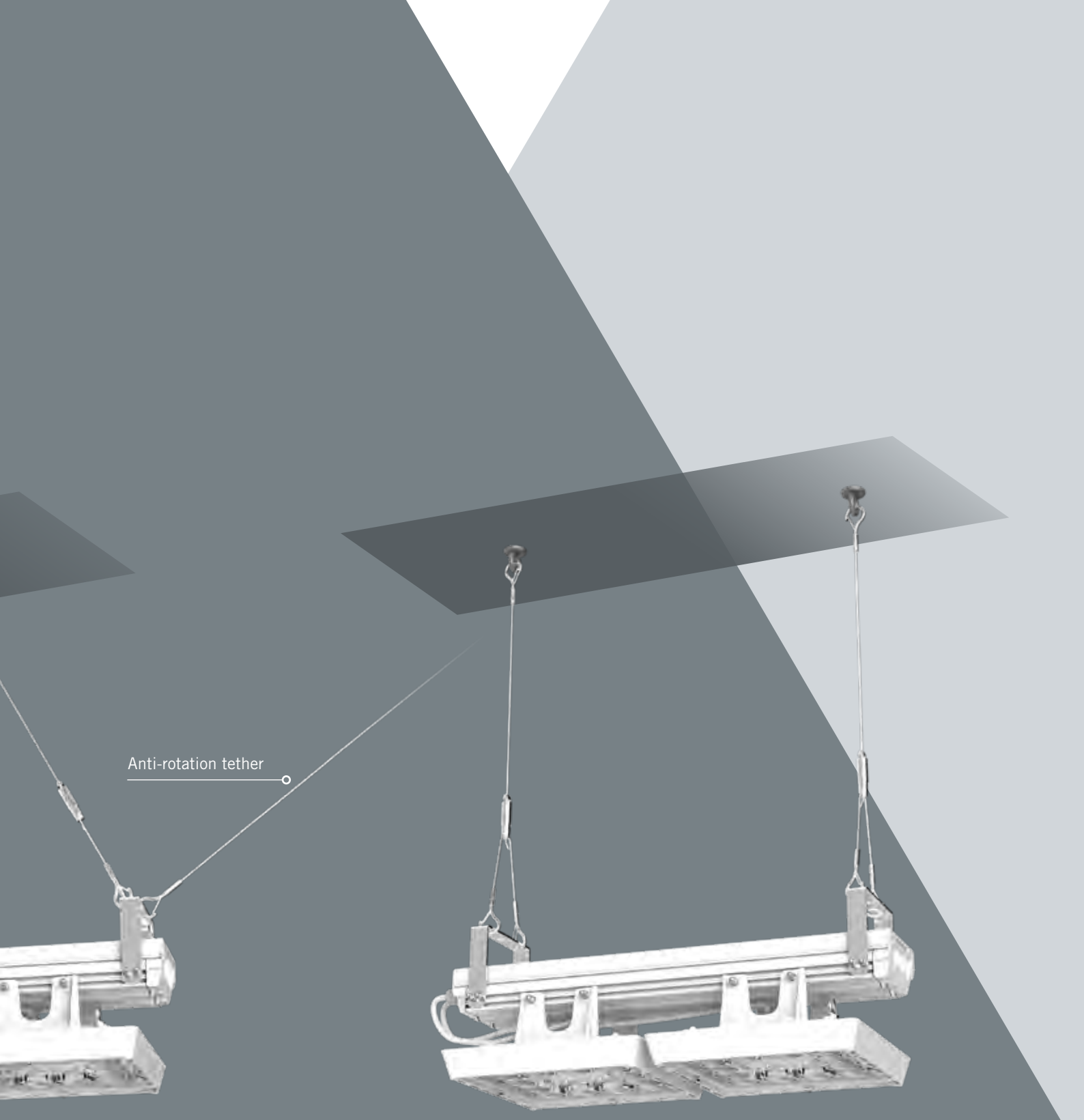
Prismpack is a versatile and efficient lighting system that provides intelligent solutions for any lighting task. The luminaire system can be used surface mounted, single point suspended or twin point suspended. The luminaire will always be supplied with a universal bracket that allows for surface mounting or suspension mounting (suspension kits available as accessory item). For ease of electrical installation and to ensure that the integrity of the luminaire is not compromised each luminaire is supplied with 3m flying lead (5-core or 6-core if emergency).



Surface mount

Single-point suspension
with anti-rotation tether*

*Suspension kit sold separately (PPS.SUS)



Twin-point suspension*

FLEXIBILITY

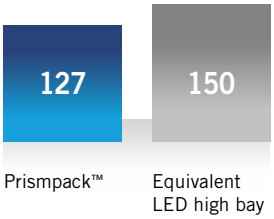
Advanced
LIGHTING TECHNOLOGIES

PERFORMANCE COMPARISON

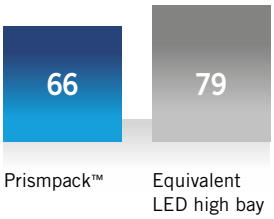
53%
energy saving

It is critical that customers of production and manufacturing applications find ways to reduce the amount of energy required to light their facilities. Global climate change initiatives, such as the Paris Climate Agreement, mean that countries and the businesses within them have targets to meet in the overall reduction of carbon emissions. Prismpack is an LED luminaire system that can enable significant energy savings whilst also providing instant light and the possibility to dim the light level instantly.

Year 1
Energy consumption (kWh)



Year 1
Total CO_2 (tonnes)



New Build

Design Parameter Scenario 1

Production Space

- Dirty Environment
- Reflectances - C40% W30% F20%
- Room Dimensions (m) 100 x 100
- Total Area 10,000m²
- Luminaire installation height of 16m
- Target Lux - 300 lux Uniformity - >0.6 as per EN12464-1:2011
- Facility operating 12 hours per day, 365 days a year
- 2 years cleaning cycle

Product Used

110 Prismpack high bay luminaires

- Luminous flux: c 38,000
- Luminous efficiency: 145 lm/W
- Uniformity: 0.68
- UGR: 20
- 2.89 W/m²

132 Equivalent LED high bay luminaires

- Luminous flux: c 33,602
- Luminous efficiency: 129 lm/W
- Uniformity: 0.61
- UGR: 23
- 3.43 W/m²

Benefits

- **17% less luminaires reducing capital and installation costs**
- **16% energy reduction for the installation**
- **Lower glare rating**
- **Over 12 tonnes of CO_2 saved**

REDUCE COSTS

100
tonnes
CO_2 saved

Retro Fit

Design Parameter Scenario 1
Heavy Industry Space

- Dirty Environment
- Reflectances - C40% W30% F20%
- Room Dimensions (m) 100 x 100
- Total Area 10,000m^2
- Luminaire installation height of 26m
- Target Lux - 300 lux Uniformity - >0.6 as per EN12464-1:2011
- Facility operating 24 hours per day, 365 days a year
- 2 years cleaning cycle

Existing Luminaires

49 1000W HID high bay luminaires

- Luminous flux: 88,781
- Luminous efficiency: 89 lm/W
- Uniformity: 0.57
- UGR: 27
- 4.90 W/m^2

Product Used

49 Prismpack high bay luminaires

- Luminous flux: 70,441
- Luminous efficiency: 150 lm/W
- Uniformity: 0.75
- UGR: 18
- 2.30 W/m2

49 Equivalent LED high bay luminaires

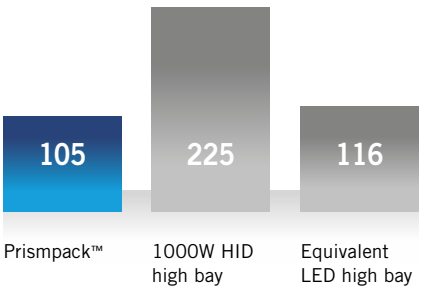
- Luminous flux: 68,002
- Luminous efficiency: 132 lm/W
- Uniformity: 0.67
- UGR: 21
- 2.56 W/m2

Benefits

- **53% Year 1 energy saving vs 1000W HID**
- **10% Year 1 energy saving vs LED equivalent**
- **Over 100 tonnes of CO_2 saved**
- **24% improvement in uniformity**
- **Reduction in glare**

Year 1
Energy consumption (kWh)

Year 1
Total CO_2 (tonnes)



CONTROLS

When equipped with optional embedded controls devices, the Prismpack luminaire can provide additional energy savings. These fully programmable sensors dim the luminaire to pre-set illumination levels when motion is no longer detected and will return the luminaire to full illumination, without distracting flash, within three seconds of sensing movement. Each sensor also detects ambient light, so perimeter fixtures can be dimmed to minimum when sufficient daylight enters the structure. The factory fitted HOLOSAir wireless node introduces the latest “mesh” wireless technology and replaces wired communication signals between luminaires with trouble free wireless system that reduces the requirement for controls cables to each luminaire. PIR option (3 to 17m mounting height).

HOLOSAir

HOLOSAirlite

HOLOSWired

.TZ02 Option

Complete with 4-Pin Zhaga Socket - Bottom

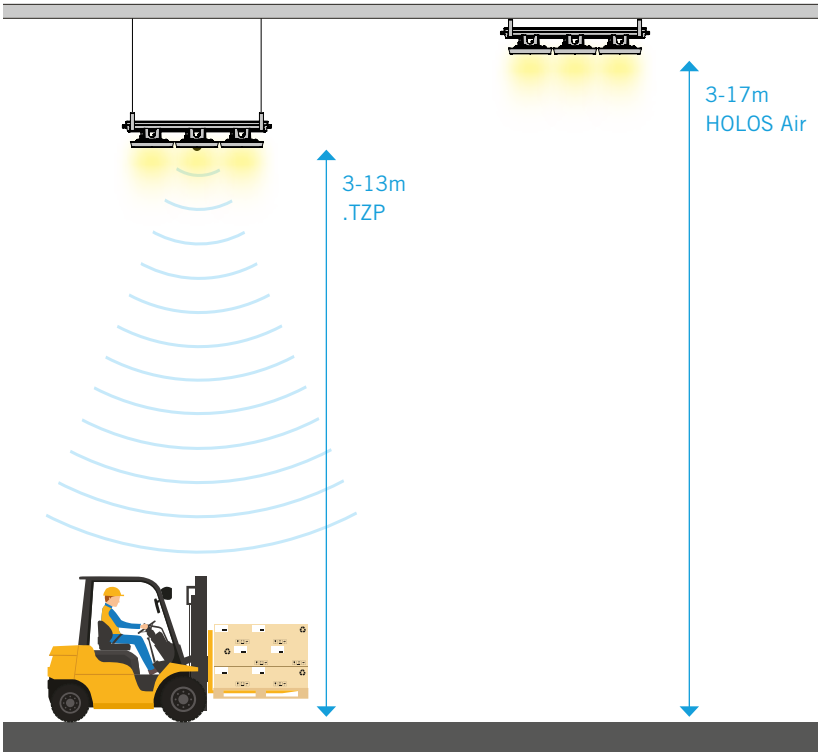
.TZP Option

Complete with 4-Pin Zhaga Socket - Bottom with a PIR attached

Factory Defaults for .TZP

High mode: 100%
Low mode: 40%
Time delay: 5 minutes
Cut off: Disabled
Setpoint: Disabled
Sensitivity: Max
Ramp up time: Disabled
Fade down time: Disabled
Photocell On/Off: Disabled

The **D4i architecture** provides a future-proof foundation that enables users to build on whenever their site/ project is ready to opt into new advances in technology. It is designed to work with industry-recognized, futureproof drivers and sensors that have the potential to increase energy efficiency and collect different types of data. By having Prismpack D4i ready customers can upgrade/adjust the controllability of their lighting whenever they are ready.



ORDERING DETAILS

Code	**Luminaire** (required)
PPS	Prismpack
PPH	Prismpack High Ambient (Suitable for up to 70°C)

Code	**Lamp Type** (required)
.LM10X8	LED light engine producing c.10,000 lm with a nominal 4000K colour temperature
.LM20X8	LED light engine producing c.20,000 lm with a nominal 4000K colour temperature
.LM30X8	LED light engine producing c.30,000 lm with a nominal 4000K colour temperature
.LM40X8	LED light engine producing c.40,000 lm with a nominal 4000K colour temperature
.LM50X8	LED light engine producing c.50,000 lm with a nominal 4000K colour temperature
.LM60X8	LED light engine producing c.60,000 lm with a nominal 4000K colour temperature
.LM70X8*	LED light engine producing c.70,000 lm with a nominal 4000K colour temperature
.LM80X8*	LED light engine producing c.80,000 lm with a nominal 4000K colour temperature
.LM90X8*	LED light engine producing c.90,000 lm with a nominal 4000K colour temperature
.LM100X8*	LED light engine producing c.100,000 lm with a nominal 4000K colour temperature
.LM110X8*	LED light engine producing c.110,000 lm with a nominal 4000K colour temperature
.LM120X8*	LED light engine producing c.120,000 lm with a nominal 4000K colour temperature

Replace X with 4 for 4000K, 5 for 5000K and 6 for 6500K

Code	**Light Engine** (required)
.M1	1 Module
.M2	2 Module
.M3	3 Module
.M4	4 Module
.M6	6 Module

Please consult 'typical luminaire performance' table on page 29 to establish lumen and module compatibility

Code	**Distribution** (required)
.ND	Narrow Distribution
.MD	Medium Distribution
.WD	Wide Distribution

Code	**Colour** (required)
.C1	Smooth White (RAL9016)
.RAL****	RAL Colour (Customer choice)

Code	**Lens** (option)
.PGL	Prismatic Glass Lens

Code	**Dimming Outputs** (option)
.LRD	DALI enabled (any on site controls wiring should be completed in compliance with the respective control system's Installation instructions (and limitations). Holophane cannot be held responsible for the operation of its luminaires with third party control systems)
.CL7	Programmed to deliver 70% of the initial lumens over the life of the luminaire
.CL8	Programmed to deliver 80% of the initial lumens over the life of the luminaire
.CL9	Programmed to deliver 90% of the initial lumens over the life of the luminaire

Code	**Emergency** (option)
.VDC	Luminaire supplied with internal DC fuse to accept 176-275VDC. Luminaire will dim to 15%.
.EM1*	Self-contained (self-test) 1hr maintained emergency battery and invertor - c.1000 lumens
.EM3*	Self-contained (self-test) 3hr maintained emergency battery and invertor - c.1000 lumens

Code	**Controls**
.PH0	Integrated PIR, suitable up to 16m. Switches off after 10 minutes of inactivity - switching-only functionality. Remotely re-programmable with accessory HEL.PRG (purchased separately).
.PH1	Integrated PIR, suitable up to 16m. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL.PRG (purchased separately).
.WIH	Integrated wireless node, supports grouping, suitable up to 16m - includes PIR & photocell (Requires SER.COM.DAY or SER.COM.NIGHT commissioning)
.TZ02*	Complete with 4-Pin Zhaga Socket – 'Bottom' (suitable node/presence detector supplied by others) with weather proof locking top†
.TZP*	Complete with 4-Pin Zhaga Socket – 'Bottom' with a PIR (attached) for 360°, aisle and end of aisle. From 3 to 13 metres mounting. fitted

Code	**Guard**
.WG	Wire guard

Code	**Fixing Method**
.CA	Safety Chain Attachment (chain not included)

Code	**Enclosure** (option)
.SF	Silicon free*

PPS	.LM10X8	.1M	.ND	.C1	.PGL	.LRD	.VDC	.WI	.WG	.CA	.SF
Example											

* Not available with PPH. † Not available with .LRD

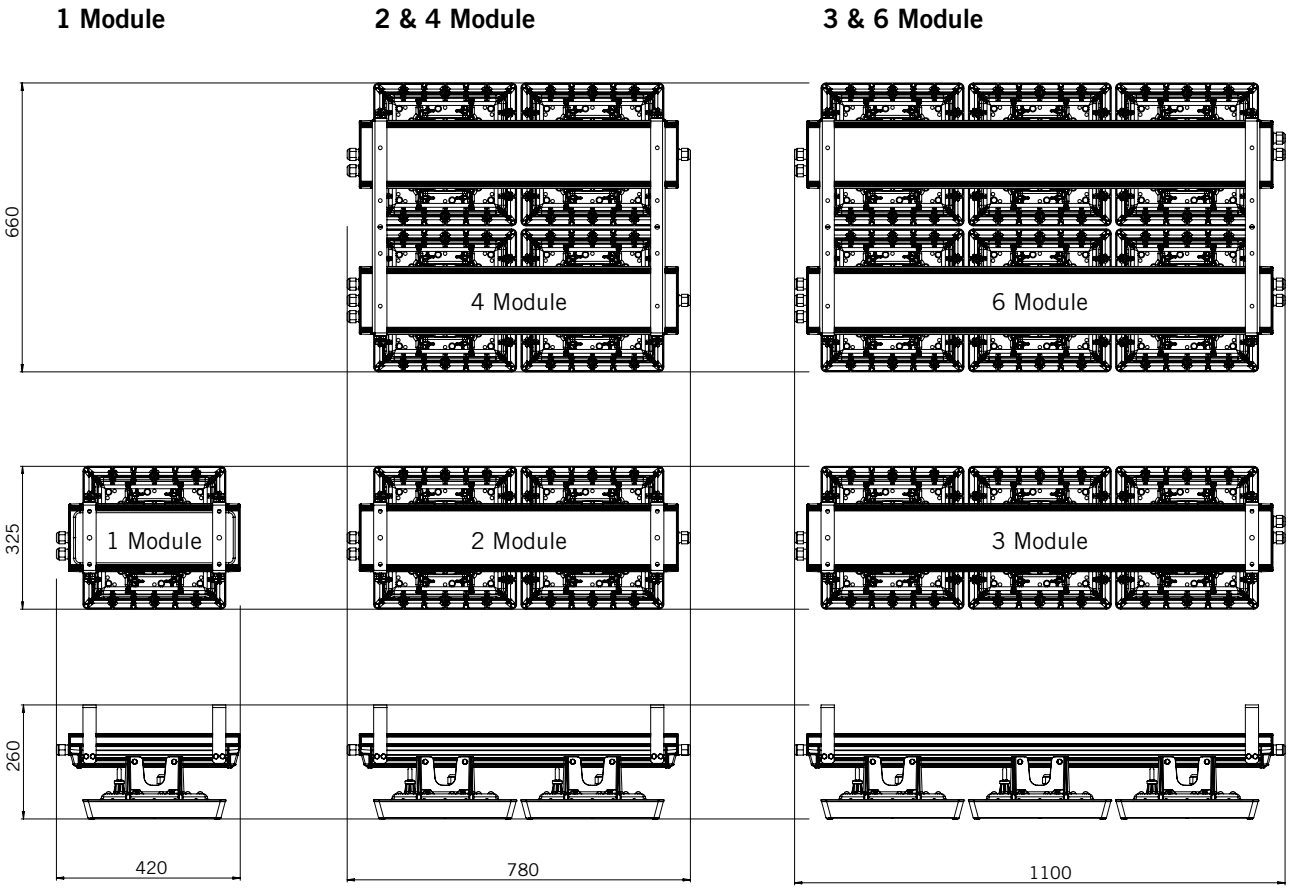
Note: Luminaire will always be supplied with a universal bracket that allows for surface mounting or suspension mounting (suspension kits available as accessory item). Supplied with 3m flying lead (5-core or 6-core if emergency).

Lumen data is considered to be representative of the configuration shown, and may vary, with a tolerance on flux of +/- 7% (typical of LED manufacturer's data) and luminaire power of +/- 5%.

Accessories

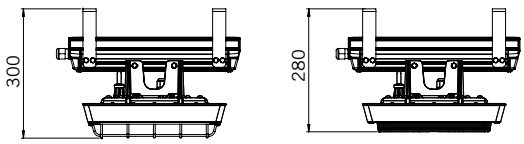
PPS.SUS	Suspension kit (1m) - includes 2 x suspension wire, fixing kit and anti rotation tether for single point suspension
HEL.PRG	Remote programming device. Suitable for luminaires with options PH0/PL1/PH1 PIR devices. Programming range up to 20m.

DIMENSIONS
& PERFORMANCE



Note: Mechanical dimensions only. Space taken up by led-module to electrical compartment cabale not included. Please allow an extra 60mm in each side for cable. Please allow an extra 150mm for side mounted sensor.

dimensions in mm



.WG: HEIGHT

.PGL: HEIGHT

Weight kg*

1 Module	7.1
2 Module	13.0
3 Module	19.1
4 Module	27.7
6 Module	39.8

Note: The specifications of the Holophane luminaire represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue and website represent only general particulars of the goods to which they apply and shall not form part of any contract. The company reserves the right to change specifications at its discretion without prior notification or public announcement.

*Refers to standard luminaire only. Does not account for weight of any additional options or accessories.

Typical luminaire performance

Configuration	Delivered Lumens*	LED Modules	Drivers	Power Usage (W)	Luminaire Efficacy (lpw)	Rated Life of LED Module (L70B50 @tq 40°C)
Standard Version						
PPS.LM1048.M1	9,600	1	1	64	150	100,000 hrs
PPS.LM2048.M1	19,100	1	1	138	139	100,000 hrs
PPS.LM2048.M2	19,700	2	2	131	150	100,000 hrs
PPS.LM3048.M2	29,600	2	2	204	145	100,000 hrs
PPS.LM3048.M3	29,500	3	3	197	150	100,000 hrs
PPS.LM4048.M2	38,200	2	2	276	139	100,000 hrs
PPS.LM4048.M4	39,900	4	4	266	150	100,000 hrs
PPS.LM5048.M3	49,700	3	3	348	143	100,000 hrs
PPS.LM6048.M3	57,400	3	3	414	139	100,000 hrs
PPS.LM6048.M6	59,800	6	6	399	150	100,000 hrs
PPS.LM7048.M4	69,900	4	4	494	141	100,000 hrs
PPS.LM8048.M4	76,500	4	4	551	139	100,000 hrs
PPS.LM9048.M6	89,500	6	6	617	145	100,000 hrs
PPS.LM10048.M6	100,000	6	6	701	143	100,000 hrs
PPS.LM11048.M6	109,600	6	6	781	140	100,000 hrs
PPS.LM12048.M6	114,700	6	6	827	139	100,000 hrs

System Life – 100,000 Hrs at 45°C

						Rated Life of LED Module (L70B50 @tq 70°C)
High Ambient Version						
PPH.LM1048.M1	9,600	1	1	64	150	100,000 hrs
PPH.LM2048.M2	19,700	2	2	131	150	100,000 hrs
PPH.LM3048.M3	29,500	3	3	197	150	100,000 hrs
PPH.LM4048.M4	39,900	4	4	266	150	100,000 hrs
PPH.LM5048.M6	50,000	6	6	333	150	100,000 hrs
PPH.LM6048.M6	59,800	6	6	399	150	100,000 hrs

System Life – 50,000 Hrs at 70°C (High Ambient Version)

*Average of all distribution types.

HIGH BAY PRISMPACK™

HIGH BAY PRISMPACK™

prismpack™

HOLOPHANE®

Advanced
LIGHTING TECHNOLOGIES

Advanced Lighting Technologies Australia Inc	Australia	+61 3 9800 5600	www.adlt.com.au
Advanced Lighting Technologies New Zealand Ltd	New Zealand	+64 9 415 6332	www.adlt.co.nz
Advanced Lighting Technologies Asia Pte Ltd	Singapore	+65 6844 2338	www.adlt.com.sg

ADLT Upload Date 02 05 2022