



# PROTECTA X

## LED LUMINAIRE

..... *The Next Generation in Hazardous Area LED Lighting* .....



- 1** Dedicated Project Manager
- 3** Designers
- 4** Patents Pending
- 6** Mounting Accessories
- 4** Customisable Products
- 20** Customers
- 30** Study Groups

# Introducing the next generation in linear luminaires... **Protecta X**



The product of hundreds of hours of study with customers, multiple designs and numerous prototypes, the Protecta X is our largest ever investment in product development. Focusing on the benefits of LED technology and how it could be negatively impacted through installation in a linear Enclosure, our team sought to optimise LED performance in two main ways. Firstly, improving lumen output and secondly, extending the luminaire lifespan. The Protecta X is the result of our work.

**Be prepared to break the linear mould.**





## ➤ Meet The Team

Our world-class team have worked tirelessly throughout the design and development of the Protecta X to provide a luminaire that will delight our end users.

### **Paolo Camillo**

With over 10 years' experience as a designer, Paolo's area of specialism is Mechanical Engineering. During this project, he has been committed to optimising the lifespan of the product.

### **Michael Truswell**

Specialising in Mechanical Engineering and LED Product Design, Michael has been responsible for improving the lumen output of the Protecta X and making it easy for end users to install.

### **Ken Eddleston**

Ken has over ten years of experience in lighting design. As Lighting Product Manager, he is responsible for supporting every aspect of this project from concept to completion.

### **James Ellerker**

Beginning his career in manufacturing, our Project Manager, James, used his vast experience to ensure that the Protecta X development process followed a detailed timeline!



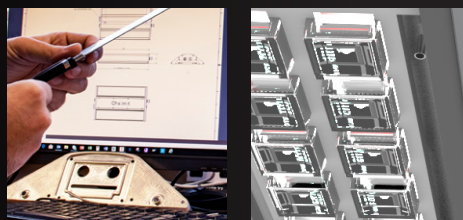
# Breaking the Linear Mould

For over 50 years, traditional 2ft and 4ft linear luminaires have dominated low level lighting applications in hazardous and industrial areas.

The linear shape of the enclosures has been dictated by the length of the conventional fluorescent lamps they housed, for example, 18W lamps in a 2ft linear.

That same shape is still commonly in use now, but why? The most obvious answer is that is how a linear should look. By retrofitting some LEDs into a traditional enclosure, users will be able to easily reap all the benefits of LED, right? The truth is, they won't. To get the most out of LED technology, the LED array must be placed at the centre of the design, not installed within an old enclosure.

**That's where the Protecta X comes in.**



- Longest Lifespan
- Revolutionary Design
- Optimised Lumen Output

## ➤ Small but Powerful

### Optimised lumen output

The Protecta X incorporates specialised optics over the LED chips to ensure that it delivers the performance of a 4ft linear in a smaller, lightweight product. The optics control the light to ensure a targeted bright, white output with minimal wasted spill light.

The luminaire's optics are available in a variety of distinct distributions, allowing it to illuminate a variety of typical site applications from handrails to bay lighting. A higher, more focused output means fewer luminaires on site, reducing installation and inspection times.

## ➤ Market Leading Efficacy

### Ensuring the lowest lifetime cost

Effective thermal management techniques, combined with the use of highly efficient LEDs and optics, all contribute to a market-leading efficacy of  $\geq 135\text{lm/W}$  and provides up to 50% energy savings compared to traditional fluorescent fixtures. Therefore, the Protecta X offers the lowest lifetime cost for our end users.





# Effortless Installation



- Easy Installation & Maintenance
- 120,000 hour System Life
- Market-Leading Lumen Output
- 50% Energy Savings vs Fluorescent Luminaires



We know that every extra minute our end users spend on the installation and maintenance of luminaires is a waste, not just of time, but of money.

That's why the Protecta X incorporates a variety of features to ensure the lowest lifetime cost on the market. From the X's innovative battery stick, to its market-leading efficacy, the Protecta X is built to make our end users lives easier.

Read on to discover more features or get in touch via [info@chalmit.com](mailto:info@chalmit.com) to speak to a member of our expert team.

## ➤ Keeping it Cool

### Thermal management for a luminaire that lasts longer

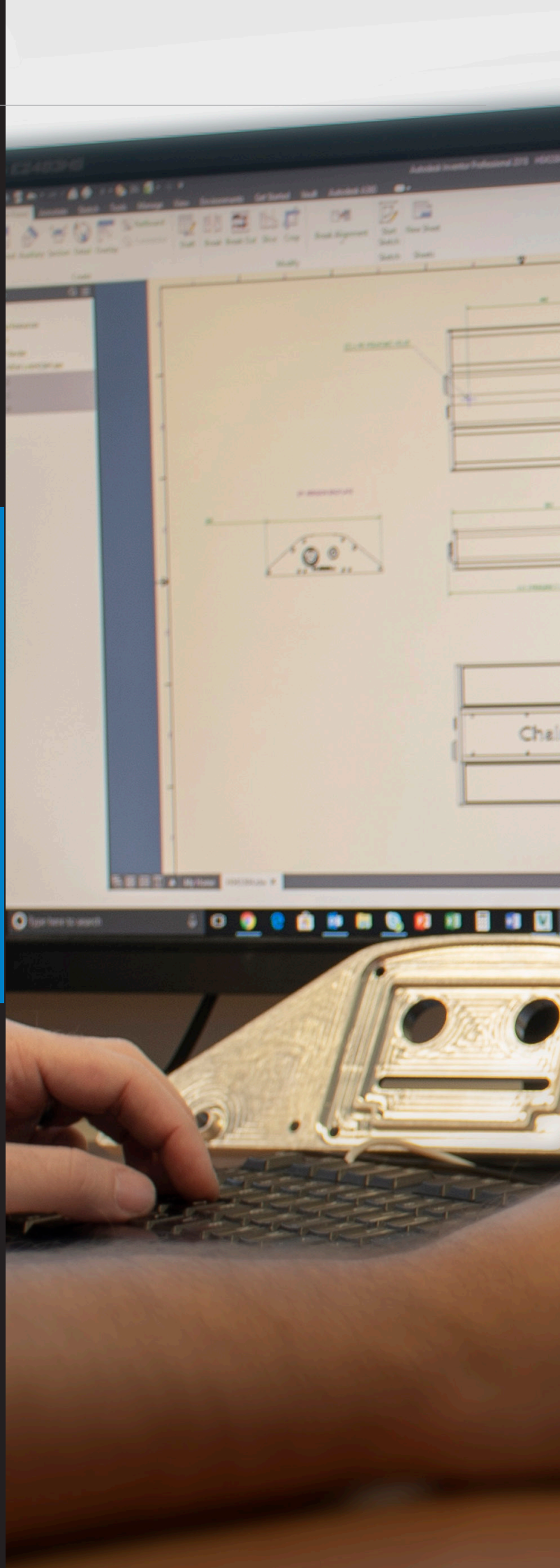
In theory, the Protecta X has a maintenance free lifespan of 120,000 hours at 25°C ambient. However, it can be difficult to ensure that the lifespan is achieved as the single biggest factor in defining product life is temperature. The Protecta X's design incorporates a variety of techniques to keep the luminaire cool so that it achieves the expected lifespan of the LEDs and driver it houses.

### Separate LED's and Driver

In a traditional linear, the LEDs and driver are housed in the same GRP enclosure, causing heat to build up and shorten the life of both components. The Protecta X design separates the driver and LED enclosures, allowing a flow of air between them to efficiently dissipate the heat generated. The small air gap between the wings and central body also prevents the collection of dust and particulates and allows water run-off to keep the thermals as low as possible.

### Marine Grade Aluminium Construction

The poor conductive properties of plastic mean that in a linear enclosure, heat just gets trapped. The Protecta X's marine grade aluminium construction ensures that heat has a direct route from inside the enclosure via an efficient conductor.





# Putting the customer at **the Centre**

Before the Protecta X concept was created, our team carried out an extensive voice of the customer survey. There were two key pieces of feedback that came back because of this:

1. *Battery maintenance on battery-backed Emergency products can be problematic.*
2. *Installation of Cable and Glands in linear luminaires is difficult and time-consuming.*

To solve these issues, our team have designed an innovative battery stick and a front access panel for cable and gland installation.

## ► Innovative Battery Stick

The Emergency Protecta X is powered by an innovative “Hot Swappable” battery stick, meaning that the battery can be easily slotted in and out of the side of the luminaire while it is still energised, and without needing to access/open the driver enclosure.

This way, customers have the option to purchase the battery stick at a later date when they’re ready to commission the luminaire, after it has been installed on site. Or replace the stick in minutes, if they encounter any discharge issues with the battery.

## ► Front Access Panel

Gone are the days of removing everything from a linear enclosure, including the LED array, to install wiring. The Protecta X’s front access panel means there’s no need to take the enclosure apart – just take off the front panel, wire and go!

## ► Single Wing Option

The Protecta X is available as a double wing (05L) luminaire as standard but a single wing (02L) version is available on request, for certain applications. The single wing design is ideal for handrail mounting ( $\approx 0.8\text{m}$ ) and offers a focused output with no wasted spill light as well as easy access for installation and maintenance.





# PROTECTA X

Ex eb LED Linear

The next generation in LED linear luminaires, the Protecta X's revolutionary design puts LED at the centre to provide the performance of a 4ft linear in a lightweight and slimline package. With a robust enclosure and excellent IP, the Protecta X is suitable for use in the world's most arduous environments. Expected useful life to 70% of the initial lumens (L70) is >200,000 hours at 25°C, with an incredible 90,000 maintenance free hours at 60°C. For a luminaire with the longest life, the highest output and market-leading efficacy, choose the **Protecta X**.



## Mounting Options

Ceiling. Wall. Suspended. Pole. Handrail.

## Standard Specification

Protecta X Ex eb LED Linear

Type of Protection	Ex db eb mb (Flameproof, Increased Safety, Encapsulation) Ex tb (Dust Protected Enclosure)
ATEX Classification	Group II Category 2 GD
Area Classification	Zone 1 and 21 areas to EN 60079-10-1 and EN 60079-10-2
Certificate	EU Type Examination Certificate CML18ATEX3358X IECEX Certificate of Conformity IECEX CML 18.0167X
Coding	Ex db eb mb op is IIC T5 Gb Ex op is tb IIIC T85°C Db IP6X
Enclosure	Marine grade aluminium body with polycarbonate diffuser. Driver enclosure with epoxy powder finish (RAL 9005)
Geartray	Aluminium
Entry	4 x M20 cable entries - 2 at each end [3 cable entries on Emergency with battery stick]
Termination	3 core 4mm <sup>2</sup> max conductor [4 core on Emergency] with looping one end and 16A rating through wiring
Installation	2 x M8 mounting points located on the rear of the body
Control Gear	Electronic Driver
Optical Distribution	Wide beam
Colour Temperature (CCT)	5000K (Cool White)
Colour Rendering Index (Ra)	>70
Maintenance	Front access panel with Torx screws
LED Lifetime @ 60°C Ambient	L70 > 200,000hrs
System Life @ Ambient	120,000hrs @ 25°C; 90,000hrs @ 60°C [excluding battery]
Battery	Hot-Swappable Ni-MH (6V) battery stick - externally accessed [/EM version only]
Emergency Duration	90 mins (02L = 50% output; 05L = 25% output) [ASL/ASW Asymmetric versions - 3hours only]
Impact Protection	IK10
Ingress Protection	IP66/67 to EN 60529
Surge Protection	4kV
Electrical Supply	110-277V AC, 50/60Hz 127-250V DC

## Features

- ◆ Highly **Energy Efficient** >135lm/W
- ◆ **Battery management** and automatic self test
- ◆ **Multiple beam** distributions available
- ◆ **Front access cover** with screwless mains terminals for easy termination
- ◆ **>90,000 maintenance free hours** at 60°C
- ◆ **Externally accessible battery stick** for ease of maintenance



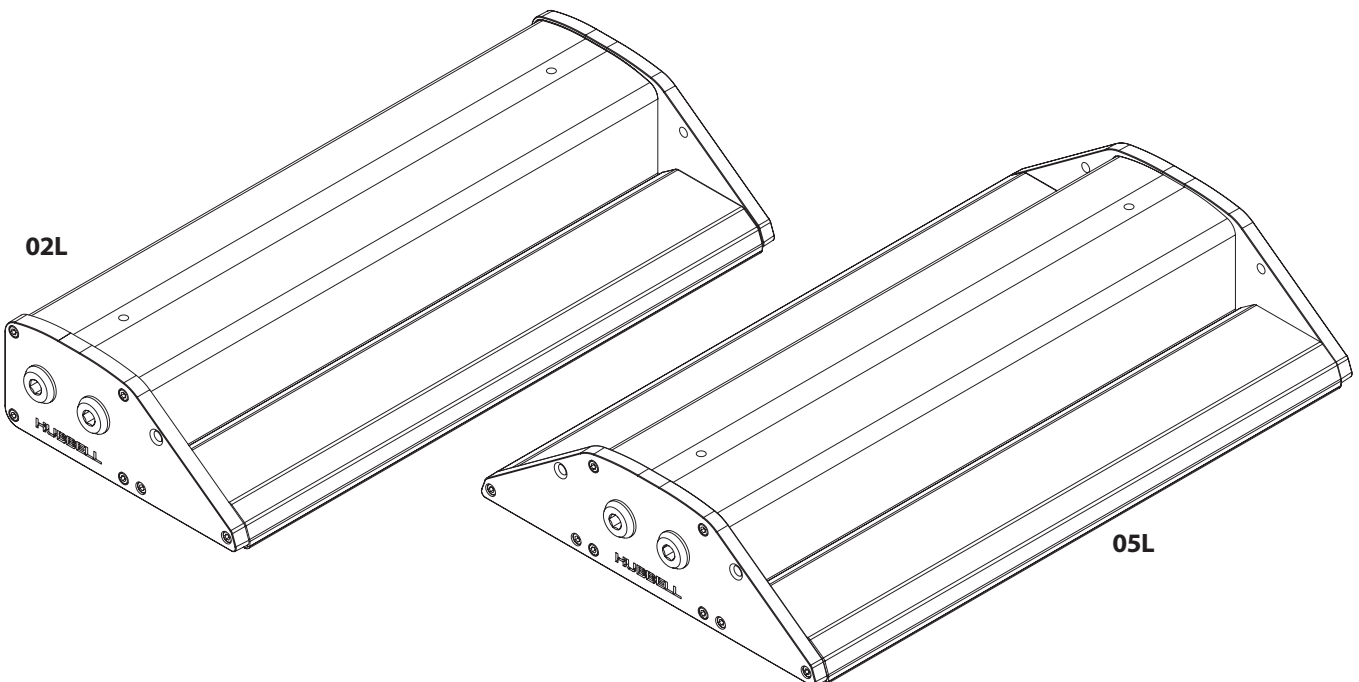
Std. Cat No.	Delivered Output	Power Consumption	Tclass	T°C (Dust)	Ambient °C	Weight
<b>PRXB/02L/LE</b>	2696 lm	16W	T5	85	-40 to +60	7.1kg
<b>PRXB/05L/LE</b>	5230 lm	35W	T5	85	-40 to +60	9.1kg
<b>PRXB/02L/LE/EM</b>	2696 lm	19W	T5	85	-25 to +60	7.6kg
<b>PRXB/05L/LE/EM</b>	5230 lm	38W	T5	85	-25 to +60	9.6kg

Options - Suffix to Catalogue No.

<b>/M25</b>	M25 cable entries	<b>/3H</b>	3 hour battery duration (02L = 25% output; 05L = 12.5% output) [Standard on ASW or ASL versions]
<b>/LBE</b>	Looping both sides [Non Emergency only]	<b>/4K</b>	4000K (Neutral White) LED Strips
<b>/EL</b>	Extra live termination facility (to match emergency circuit)	<b>/SC</b>	Screwed connection terminal block (up to 6mm <sup>2</sup> conductors)
<b>/EMI</b>	Internal battery pack [replace /EM with /EMI]	<b>/BNI</b>	Batteries not included [Emergency version only]
<b>/NST</b>	Non Self Test [Emergency version only]	<b>/DM</b>	DALI Dimmable driver
<b>/ASL</b>	Asymmetric along length optic	<b>/M</b>	Medium beam optic
<b>/ASW</b>	Asymmetric along width optic [05L version only]	<b>/BP</b>	Nickel plated brass plugs
<b>/80</b>	80 CRI LEDs	<b>/OD</b>	Opal diffuser (max. 30% reduction in output)

**Accessories** *order separately*

	Order Code
Pole mounting bracket assembly (38-42mm diameter poles)	<b>SPOL4-100001</b>
Pole mounting bracket assembly (48-52mm diameter poles)	<b>SPOL4-100002</b>
Pole mounting bracket assembly (58-62mm diameter poles)	<b>SPOL4-100003</b>
Hook type ceiling bracket assembly	<b>SPRO4-0005</b>
Flush mounted wall bracket assembly	<b>SPRO4-0006</b>
Ceiling bracket assembly	<b>SPRO4-0002</b>
Standard wall mounting outreach bracket (use with SPOL4-100001)	<b>NPRO4-0008</b>
Eyebolt mounting assembly	<b>SPRO5-0005</b>
Protecta 4ft adaptor bracket	<b>SPRO5-0006</b>





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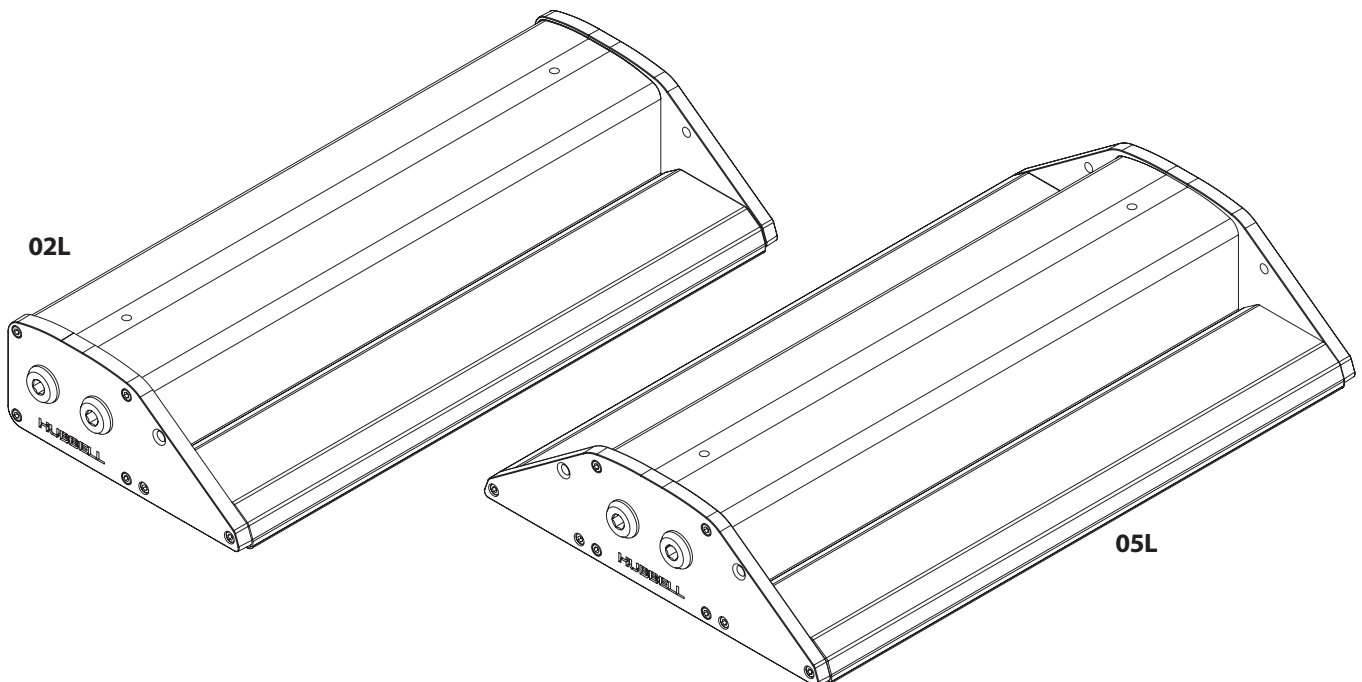
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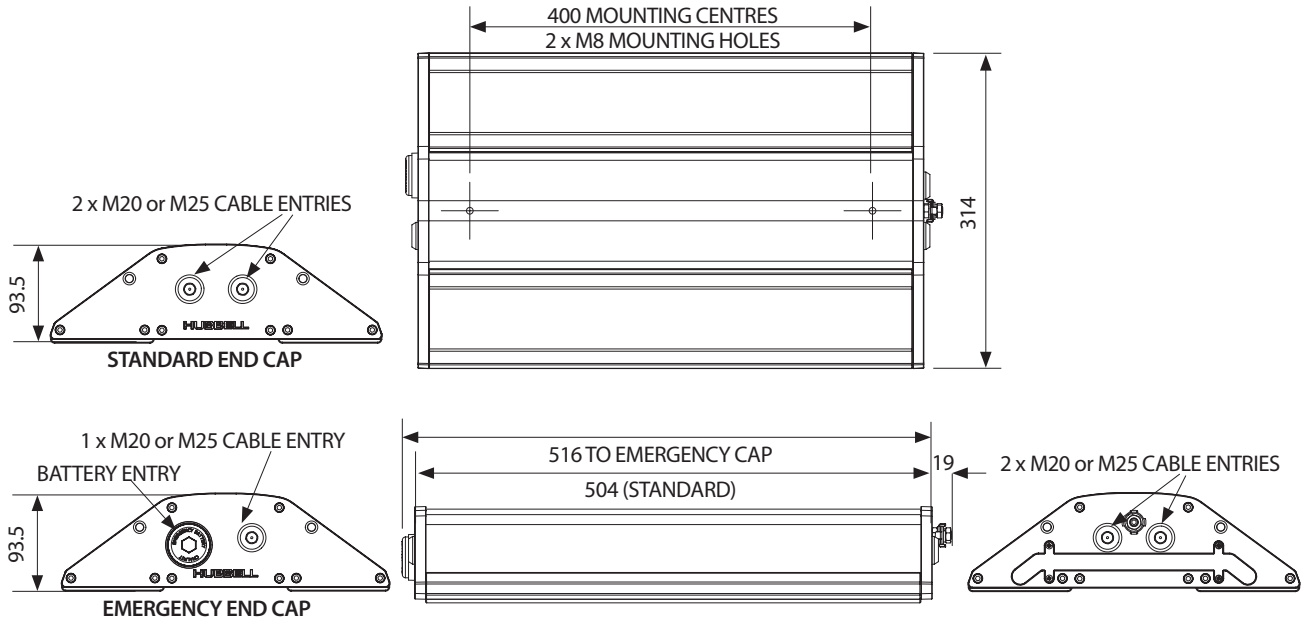
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Please also refer to the complete set of Protecta X dimensioned drawings on P.8

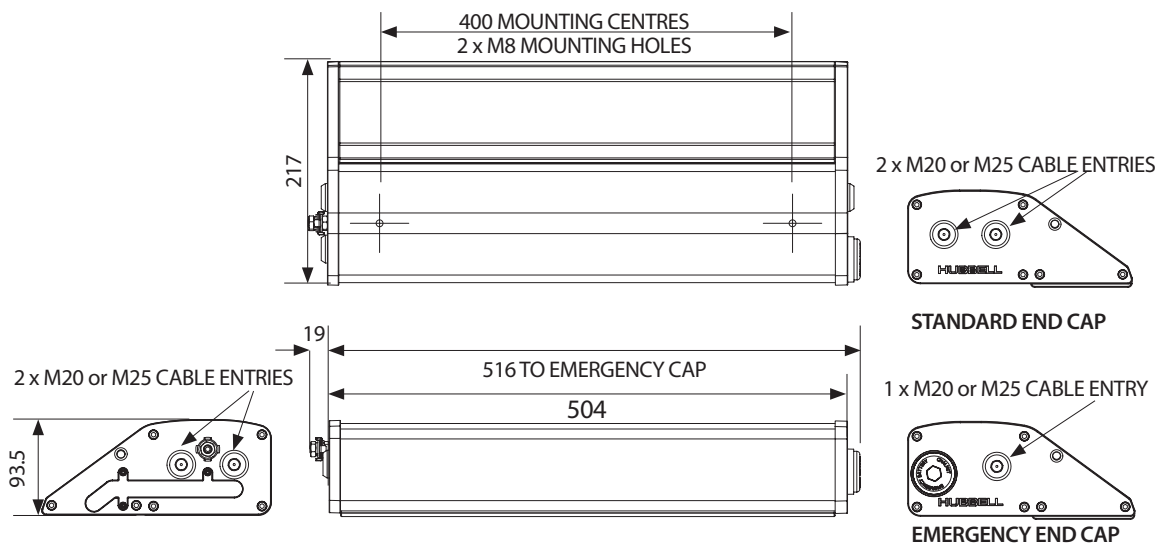


# Dimensioned Drawings

## PROTECTA X - 05L



## PROTECTA X - 02L







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