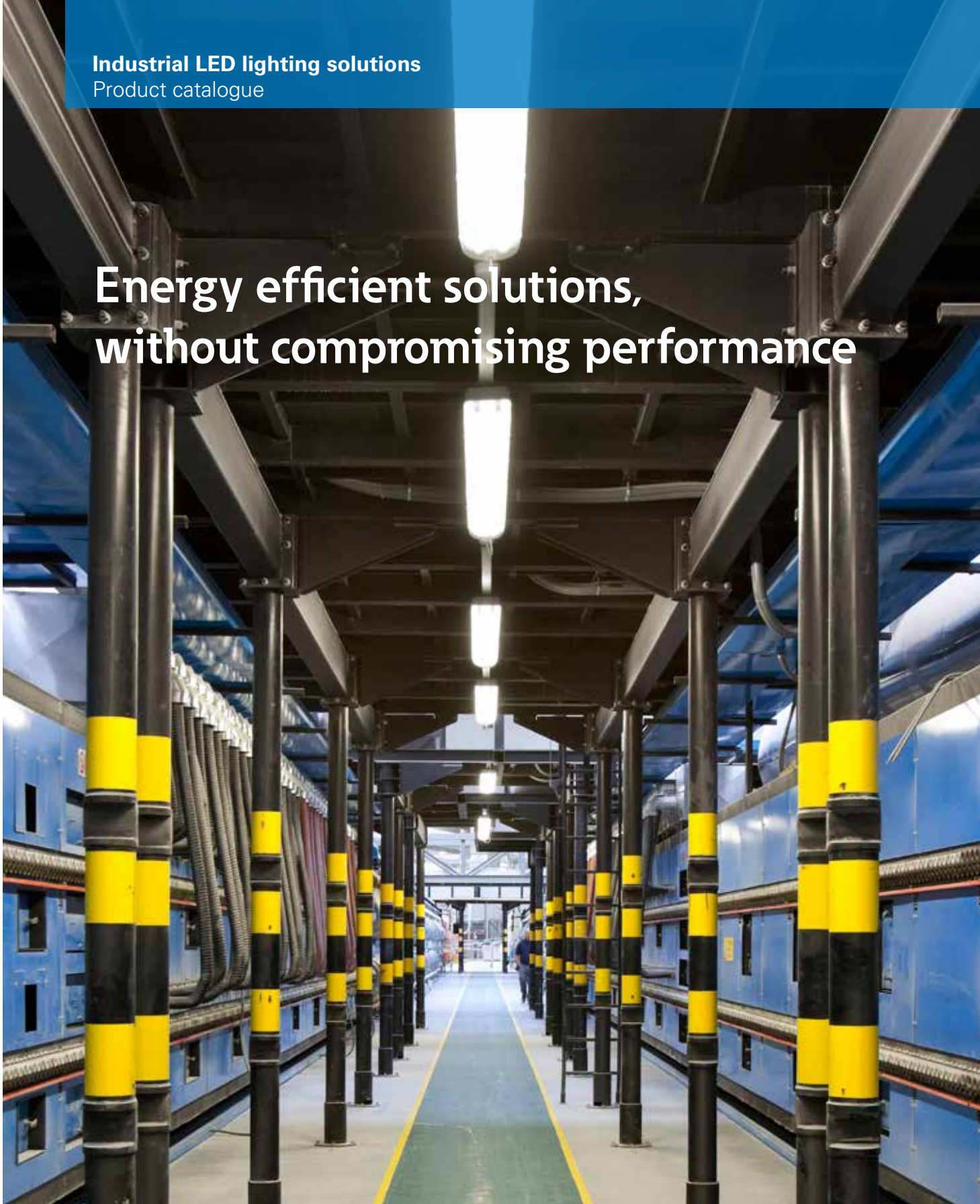


**Energy efficient solutions,
without compromising performance**



EATON

Powering Business Worldwide



Energizing a world that demands more.

We deliver:

- **Electrical solutions** that use less energy, improve power reliability and make the places we live and work safer and more comfortable
- **Hydraulic and electrical solutions** that enable machines to deliver more productivity without wasting power
- **Aerospace solutions** that make aircraft lighter, safer and less costly to operate, and help airports operate more efficiently
- **Vehicle drivetrain and powertrain solutions** that deliver more power to cars, trucks and buses, while reducing fuel consumption and emissions

Discover today's Eaton.

Powering business worldwide

Eaton is a power management company with 2016 sales of \$19.7 billion. We provide energy-efficient solutions that help our customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably.

Eaton is dedicated to improving the quality of life and the environment through the use of power management technologies and services. Eaton has approximately 95,000 employees and sells products to customers in more than 175 countries. For more information, visit Eaton.com

EATON

Powering Business Worldwide

Industrial LED lighting solutions

Eaton's range of industrial LED luminaires offer a reliable, energy efficient solution without compromising on the performance required in an industrial environment.

Why LED?

Operating life

Rated lifetime of up to 120,000 hours, with virtually maintenance-free operation

Robust and nearly maintenance free

Shock and vibration resistant solid-state devices have no filaments or glass components that could break, greatly reducing the risk of premature failure

Energy-efficient

In comparison with HID or incandescent lamps, LEDs are up to 50% more efficient

Start and re-start time

Immediate start, provides instant and full illumination; no delay or restart time as with fluorescent or HID lamps

High light quality

Better colour rendering and optimised colour temperature; no UV/IR radiation

General Industrial Spaces

Litex Elite	03
Linery LED+	11
Linery LED	16
Tufflite LED+	23
Tufflite LED	26
Crompack LED+	30
Crompack LED	34
Caius	38
Zeta 4	55

Harsh Industrial Spaces

Litex Elite	03
i-P65+	51

Distribution and Storage

Litex Elite	03
Linery LED+	11
Linery LED	16
Tufflite LED+	23
Tufflite LED	26
Crompack LED+	30
Crompack LED	34
i-P65+	51
Zeta 4	55

Exterior

Caius	38
Galaxy LED	43
Aethon	45
Chatham	48
Vienza	51

Emergency lighting

AG Bulkhead and AG LED Bulkhead	54
i-P65+	57
Zeta 4	61

Central battery systems

Lighting controls



Elite Performance

Features and benefits

up to
170
Llm/CW

Class leading efficiency

65% energy savings vs metal halide and T5 fluorescent gives rapid payback



Fully tested data

Verified and validated performance you can trust

IP65

IP65 ingress protection

Dust and low pressure jet wash protection for industrial environments

5000K
Ra +80

High quality white light

Ideal for high activity areas and excellent colour recognition

IK10

IK10 impact protection

Robust / zero maintenance luminaire, 20 joule rating

EM

Integral emergency option

Lower install costs with reduced requirement for separate EM scheme

-40°C
to
+50°C

Extended operation temp

Suitable for wide range of sites, including cold storage

LED

High performance LED

Long-life LED, in excess of L80 80,000 hours



Integral controls options

PIR occupancy and daylight controls maximise energy savings



5 year warranty as standard

Simple and dependable warranty for quality you can rely on, all the way up to 24/7 operation

Litex Elite

LED	IP65
-40°C to +50°C	IK10
DIMMING	5000K Ra +80
CONTROLS	EM
WARRANTY 5 YEAR WARRANTY	CG+ Line

Up to 170Llm/cW



Litex Elite is the next generation IP65 Litex LED, and a performance leading luminaire in its class. Designed for high efficiencies, the Litex Elite delivers massive energy savings (ECA compliant) and rapid capital investment payback.

Available with a wide range of enabling options - 15K, 22K and 35K lumens, a selection of optical distributions, IP65 PIR sensor and integrated emergency. Litex Elite is the most complete and flexible high bay available.

Built to industrial specifications - IP65, IK10 and extended operating temperature - Litex Elite is the perfect luminaire for industrial applications such as maintenance sheds, cold store, and a wide range of manufacturing, warehouse and amenity locations.

- 170Llm/cW – class leading luminaire efficiency
- Energy savings – over 65% vs metal halide and T5 fluorescent
- IP65 – dust and low pressure jet wash protection
- IK10 – robust, impact protection, 20 joule rating
- -40°C to +50°C extended operating temperature – suitable for a wide range of sites, including cold storage*^{1,2}
- Integral emergency option – lower costs with reduced requirement for separate EM installation
- Sensor options – PIR, occupancy and daylight control
- DALI Dimming – allows for control of light levels to maximize savings
- Long life LED – in excess of L80 85,000 hours
- High quality white light (5000K, Ra80) – ideal for high activity areas and excellent colour recognition
- Rapid install – plug and play connector, suspension and surface mount bracket options
- 5 year warranty as standard – no registration of product required

Industrial portfolio

Litex Elite

LED and LED driver

- High performance linear LED strip and LED driver system
- Leading efficiency LEDs
- 5000K, Ra +80

Materials

- IP65, IK10 luminaire
 - Sealed body mild steel housing - powder coated RAL9016
 - Impact resistant TPa Polycarbonate cover
- Aluminium gear tray, for optimised LED thermal management
- Anodised aluminium reflectors for maximum optical efficiency
- IP65 Plug and Play panel mounted connector
- Versatile mild steel mounting brackets

Installation notes

- Mounting bracket options - BESA and suspended
- No requirement to access IP65 sealed unit
- Plug and play connection with IP65 panel mount connector supplied
- Fused as standard

Specification

To specify state: IP65 IK10 LED highbay luminaire with wide and narrow optic versions. High output high efficacy 5000K Ra 80 LED chip with high efficiency fixed output or DALI LED driver as standard with plug and socket connection to the end, as Eaton's Litex Elite, part no: _____

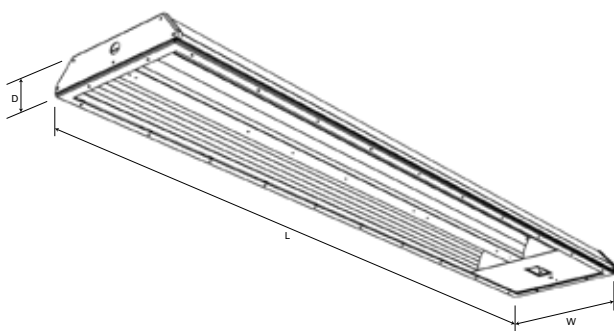
LED Lifetime Performance Data

Litex Elite luminaire life values from TM21 calculator

Drive current	Ambient temp	Led Tc point	Operating hours to:		
			L90	L80	L70
500mA	25°C	47	55,000	120,000	195,000
500mA	45°C	65	48,000	100,000	160,000
700mA	45°C	73	40,000	85,000	140,000

Note: using the TM21 algorithm for extrapolation of lifetime expectancy way beyond 6x tested duration has risks. Please contact the Eaton technical team for further info.

Dimensions



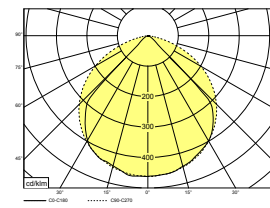
	Length (L)	Width (W)	Depth (D)	Weights (Kg)
4 foot standard	1205mm	295mm	65mm	7.3
4 foot standard with emergency	1405mm	295mm	65mm	8.4
6 foot standard	1766mm	295mm	65mm	10.9
6 foot standard with emergency	1881mm	295mm	65mm	12
Sensor unit add on	150mm	-	-	0.15

Options

- Nominal lumen and wattage
 - 15000 lumens , 93W
 - 22500 lumens , 142W
 - 35000 lumens, 222W
- Optical distribution - wide and narrow
- Fixed output or DALI LED driver
- Emergency
 - IP65 fully integrated conversion
 - 3 hour duration
- High-bay option - narrow-beam reflector 'H' variant for up to 26 meters
- Mid-bay option - wide-beam optic 'L' variant for up to 14 meters
- Fully integrated IP65 PIR sensor module options for presence, occupancy and daylight control
- Wireless control solution available upon request
- Polycarbonate impact resistant front cover, acrylic on upon request

Photometric data

Area distribution
Cat. no. LTEA1505KZ

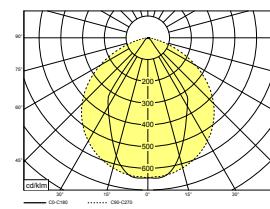


LOR: 100%
Total flux: 15945lm
SHR nom: 1.25
SHR max: 1.379

Utilisation factors/TM5

Reflectances			Room index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
0.7	0.5	0.2	67	77	84	88	94	99	101	105	107
0.7	0.3	0.2	60	71	78	83	90	94	97	102	104
0.7	0.1	0.2	55	66	73	78	86	91	94	99	102
0.5	0.5	0.2	65	75	81	86	92	95	98	101	103
0.5	0.3	0.2	59	69	76	81	88	92	95	98	101
0.5	0.1	0.2	55	65	72	77	84	89	92	96	99
0.3	0.5	0.2	64	73	79	83	89	92	94	97	99
0.3	0.3	0.2	59	68	75	79	85	89	92	95	97
0.3	0.1	0.2	55	65	71	76	83	87	90	94	96
0	0	0	53	62	69	73	79	83	86	89	91
BZ-class			2	2	2	2	2	2	2	2	2

Narrow distribution
Cat. no. LTEN1505KZ



LOR: 100%
Total flux: 15684lm
SHR nom: 1.00
SHR max: 1.141

Utilisation factors/TM5

Reflectances			Room index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
0.7	0.5	0.2	70	79	85	90	96	100	102	105	108
0.7	0.3	0.2	63	73	80	85	91	95	98	102	105
0.7	0.1	0.2	59	69	75	80	87	92	95	100	103
0.5	0.5	0.2	68	77	83	87	93	96	99	102	103
0.5	0.3	0.2	63	72	78	83	89	93	96	99	101
0.5	0.1	0.2	58	68	75	79	86	90	93	97	100
0.3	0.5	0.2	67	76	81	85	90	93	95	98	100
0.3	0.3	0.2	62	71	77	81	87	90	93	96	98
0.3	0.1	0.2	58	67	74	78	84	88	91	94	97
0	0	0	56	65	71	75	81	84	87	90	92
BZ-class			2	2	2	2	2	2	2	2	2

Emergency options

- Litex Elite has the option of an IP65 fully integral emergency unit built centrally into the body of the luminaire
- Utilising Eaton's efficient optical system, capital and installation costs are reduced with class leading spacings
- High-bay and mid-bay variants allow the luminaire to be tailored to the application requirements
 - The high-bay (narrow-beam reflector) 'ELH' option is especially suitable for higher rack or aisle areas and escape routes up to 26 meters
 - The mid-bay (wide-beam optic) 'EL' option provides a square light distribution. It is most suitable for illuminating open areas up to 14 meters

1Note: Use of the Litex Elite Emergency option reduces the certified operating temperature from -40°C - +50°C to 0-25°C.

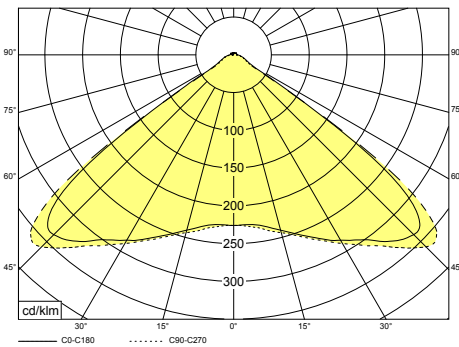
Please contact our technical support team for further details on 01302 303240 or email LightingTechnicalUK@Eaton.com



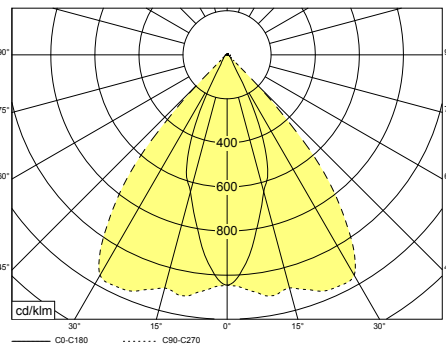
Detail showing integrated wide beam emergency module (distribution illustrated below)



Detail showing integrated narrow beam emergency module (distribution illustrated below)



Mid-bay emergency - wide-beam optic
Based on Factors K 0.85 S 0.95



High-bay emergency- narrow-beam reflector
Based on Factors K 0.85 S 0.95

Escape route - 1 lux Open area - 0.5 Lux

	Mounting height (m)	Lux level directly under	↔	↔	↔	↔	↔	↔
Highbay	6	9.92	5.8	12.1	5.5	11.6	7.3	3.7
	7	7.30	6.4	13.8	6.2	13.2	8.2	4.0
	8	5.61	7.1	15.4	7.1	14.9	9.0	4.1
	9	4.48	7.8	16.9	7.8	16.5	9.7	4.2
	10	3.65	8.2	18.3	8.5	18.1	10.4	4.3
	17	1.26	6.4	24.7	10.5	27.7	14.4	5.0
	20	0.91	-	-	10.0	31.0	16.0	4.5
	25	0.58	-	-	7.3	36.0	16.2	2.5
26	0.54	-	-	6.5	35.6	16.2	1.7	
Midbay	6	2.91	7.3	16.6	7.6	15.8	15.8	7.6
	7	2.12	7.5	18.4	8.5	18.1	18.1	8.5
	8	1.6	6.5	19.3	9.3	20.4	20.4	9.3
	9	1.27	4.7	19.1	10.0	22.5	22.5	10.0
	10	1.04	-	-	10.5	24.4	24.4	10.5
	14	0.54	-	-	4.6	27.0	27.0	4.6

Industrial portfolio

Litex Elite

Controls

Energy saving is key to sustainable buildings and businesses. By adopting a clear strategy for managing the occupancy and daylight, significant energy savings may be achieved.

Application dependent, energy savings against constant illumination can be up to 70%.

IP65 PIR sensor

The Litex Elite is available with a high sensitivity IP65 PIR detector suitable for high bay applications, such as warehouses and factories.

The Litex Elite sensor has exceptionally sensitive and long range detection, sensing movement up to 40m at a 15m mounting height, making it suitable for high bay applications.

Features

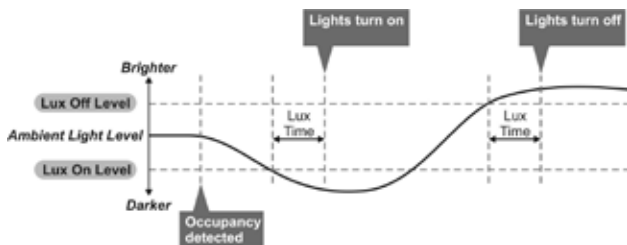
- Presence, occupancy and daylight harvesting
- Maximum mounting height up to 20m
- Detection range of up to 40m at 15m mounting height
- Supplied with masking shields to focus detection
- Operating temperatures between -10c to +35c
- Infrared handset control for quick and easy set up

Detection mode

Presence

When movement is detected the load will automatically turn on. When the area is no longer occupied the load will automatically switch off after an adjustable time period.

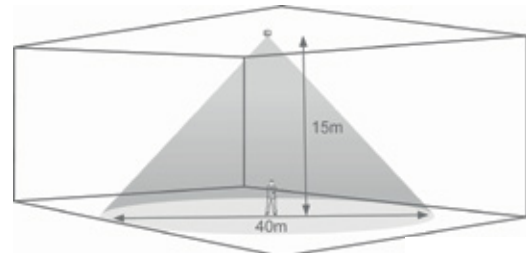
Sensitivity to movement of the PIR sensor can be adjusted using the sensitivity parameter.



The sensor is supplied with masking shields that allow the pattern to be modified to suit the requirement. Simply click into the lens body and mask areas of the lens that are not required.

All functionality is fully programmable via an SLTEC and SLTEPC infrared handset.

Range



Maximum mounting height 20m

Occupancy detection:

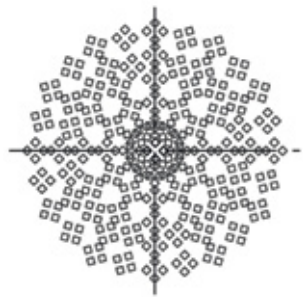
Can be made dependant on the ambient light level using the Lux On Level and Lux Off Level parameters.

Maintained illuminance (daylight harvesting) - DD variants only

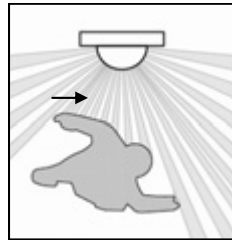
The detector measures the overall light level in the detection area and calculates the correct output for the luminaires, to achieve a pre-set lux level (maintained illuminance or daylight harvesting).

Sensor details cont.

Detection pattern

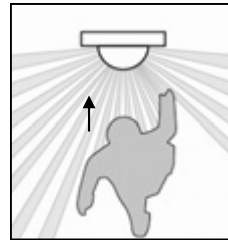


Walk through



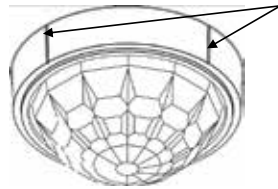
Range	Diameter
15m	40m
10m	26m
6m	16m
3m	9m

Walk towards



Range	Diameter
15m	30m
10m	20m
6m	12m
3m	8m

Alignment marks



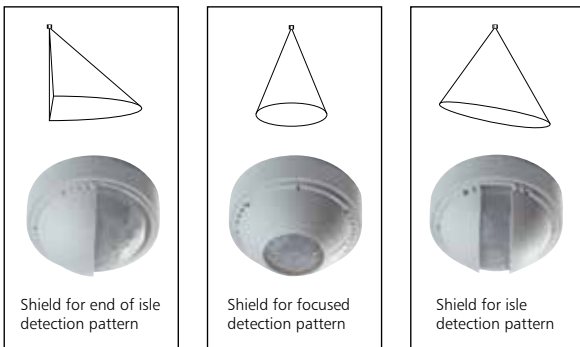
The sensor head has 4 alignment marks. These correspond to the 4 outer passive infrared sensors under the lens. Use these marks to align with aisles and corridors to ensure the best detection characteristics.

Masking shields

The sensor includes two clip-on masking shields to allow for precise masking of the detection shape.

The masks can be easily shaped to produce detection patterns suitable for application such as aisles and corners and for the narrowing of the detection diameter.

Before shield use, please refer to sensor installation leaflet supplied, or contact our technical support team on 01302 303240 or email LightingTechnicalUK@Eaton.com.



Typical Detection permutations (illustrative purposes only)

Industrial portfolio

Litex Elite

Luminaire efficiency

Option	Lumen output (lm)	Wattage (W)	Efficiency (Llm/cW)
Wide area reflector	15945	93.41	170.7
Narrow reflector	15684	93.45	167.8
Wide area reflector	23803	141.6	168.1
Narrow reflector	23097	141.6	163.1
Wide area reflector	35417	222	159.5
Narrow reflector	34434	222	155.1

Catalogue numbers

Cat. no.	Nominal lumen output (lm)	Optic	Length (mm)
LTEA1505KZ	15000lm	Wide area reflector	1205
LTEN1505KZ	15000lm	Narrow reflector	1205
LTEA2255KZ	22500lm	Wide area reflector	1766
LTEN2255KZ	22500lm	Narrow reflector	1766
LTEA3505KZ	35000lm	Wide area reflector	1766
LTEN3505KZ	35000lm	Narrow reflector	1766

For DALI dimming option, replace catalogue number character **Z** with **DD**, e.g. LTEA1505KZ becomes LTEA1505KDD

For IP65 sensor option add **S** in front of catalogue number e.g. - LTEA1505KZ becomes SLTEA1505KZ

For Emergency Mid Bay (up to 14m) option add **EL** in front of catalogue number, e.g. - LTEA1505KZ becomes ELLTEA1505KZ

For Emergency High Bay (up to 26m) option add **ELH** in front of catalogue number, e.g. - LTEA1505KZ becomes ELHLTEA1505KZ

Accessories

Cat. no.	Description
LTEMB1	Suspension mounting brackets
LTEMB2	BESA Mounting brackets
SLTEC	Commissioning handset ¹
SLTEPC	Professional commissioning handset ²

¹ SLTEC Infrared Handset for most basic programming operations .

² SLTEPC Infrared Handset (with LCD) for advanced programming features.

For full commissioning and programming information please refer to the manufacturer installation notes which are supplied or please contact our technical support team for further details on 01302 303240 or email LightingTechnicalUK@Eaton.com



Plug and play connection



IP65 PIR sensor



Programming handset - SLTEC



Suspension brackets - LTEMB2
(BESA mounting bracket also available - not shown)





Linergy LED+



The Linergy LED+ is a premium, highly efficient version of the standard Linergy LED, designed to provide the same lumen values whilst using less power.

The Linergy LED+ delivers even greater energy savings with a leading efficiency performance of up to 144 luminaire lumens per circuit watt (144Llm/cW).

The Linergy LED+ closely replicates the familiar mechanical and material specifications of the standard Linergy LED. Additionally, this new range includes a high rack option.

A choice of 15,000 and 23,000 nominal lumen output options, along with integrated occupancy and daylight control options, complete the range.

- Latest LED light engine technology delivers leading power savings - up to 144Llm/cW
- Enhanced Capital Allowance (ECA) Compliance across the complete range
- Four light distribution models are available; wide area, narrow, rack and high rack.
- Integral emergency available which allows mounting to a maximum height of 20m
- Low, mid and high bay integral programmable occupancy detector variants available to maximise performance and coverage
- DALI dimming options available for increased comfort, lighting control and energy savings
- Wire guard option for increased security in environments where impact resistance is needed

Industrial portfolio

Linery LED+

Lamp and control gear options

- High efficacy linear LED light engines
- >80 CRI 4000°K
- Energy efficient control gear as standard
- DALI dimmable options available

Materials

- Body – Full box steel construction powder coated in RAL 9016 white finish
- Reflectors – Faceted finish (Wide Area) and satin finish (narrow and rack) zero iridescence anodised aluminium
- Wire Guard – Heavy duty zinc plated steel, 25mm grid size (not available with high rack option)

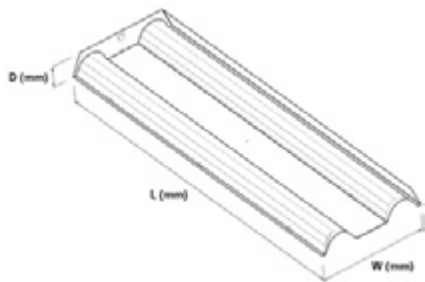
Installation notes

- Suitable for ceiling, conduit, chain, rod and trunking mounting
- Optional quick fit mounting brackets for surface mounting (LNLMB)
- Supplied with diffuser and light engines pre-fitted, no need to remove during installation
- Access flap on the rear of housing to aid wiring during installation
- Fused as standard
- Wire guard is a retrofit accessory secured by screws, hangs for ease of maintenance

Specification

To specify state: Surface mounted, LED high/low bay luminaire, of full box welded construction with post coat powder paint finish, high performance faceted/satin reflectors for Wide Area/Narrow/Rack with high output light engines and integrated emergency sensor/wire guard options, as Eaton's Linery LED+ range, part no. _____

Dimensions



	Nominal lengths	Length (L)	Width (W)	Depth (D)
Wide area/narrow/rack	4'	1142mm	358mm	76mm
High Rack	4'	1142mm	475mm	180mm
Wide area/narrow rack	6'	1705mm	358mm	76mm
High rack	6'	1705mm	475mm	180mm



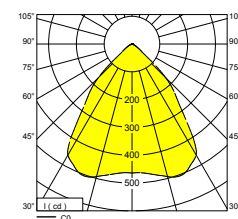
Integral emergency and sensor option

Options

- Fully integral emergency conversion, 3 hour duration
- Emergency versions available with automatic test functionality as an option, reducing maintenance costs and offers ease of compliance with testing requirements
- Suitable for use on defined escape routes
- Wide Area, Narrow, Rack and High Rack reflector options
- Lighting control options including integrated occupancy and daylight detectors for mounting up to 16m
- We offer a range of product support contracts to aid commissioning, reduce your maintenance costs, comply with legislative test requirements and increase the lifespan of your lighting equipment

Photometric data

Wide area: Cat. no. LNP1504KZ

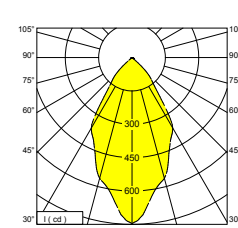


LO: 15144lm
SHR nom: 1.25
SHR max: 1.341

Utilisation factors/TM5

Reflectances		Room index									
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	69	79	85	90	95	99	102	105	107
70	30	20	63	73	79	84	91	95	98	102	105
70	10	20	58	68	75	80	87	92	95	100	103
50	50	20	67	77	83	87	93	96	98	101	103
50	30	20	62	72	78	83	89	93	95	99	101
50	10	20	58	67	74	79	85	90	93	97	99
30	50	20	66	75	81	85	90	93	95	98	100
30	30	20	61	71	77	81	87	90	93	96	98
30	10	20	57	67	73	78	84	88	91	94	96
0	0	0	55	65	71	75	81	84	87	90	92
BZ-class	2	2	2	2	2	2	2	2	2	2	2

Narrow: Cat. no. LNP1504KZ

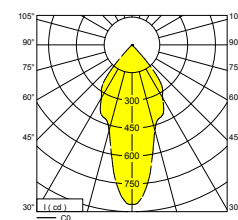


LO: 15422lm
SHR nom: 1.00
SHR max: 1.098

Utilisation factors/TM5

Reflectances		Room index									
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	70	80	86	90	96	100	102	105	108
70	30	20	64	74	80	85	91	96	99	102	105
70	10	20	59	69	76	81	88	92	95	100	103
50	50	20	69	78	84	88	93	96	99	102	103
50	30	20	63	73	79	83	89	93	96	99	101
50	10	20	59	69	75	80	86	90	93	97	100
30	50	20	67	76	81	85	90	93	95	98	100
30	30	20	62	72	77	82	87	91	93	96	98
30	10	20	59	68	74	78	84	88	91	94	97
0	0	0	57	66	72	76	81	85	87	90	92
BZ-class	2	2	2	2	2	2	2	2	2	2	2

Rack: Cat. no. LNPR1504KZ

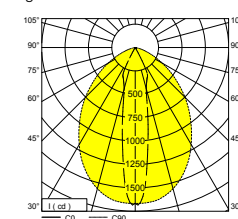


LO: 14597lm
SHR nom: 0.50
SHR max: 0.673

Utilisation factors/TM5

Reflectances		Room index									
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	67	77	84	88	95	99	101	105	107
70	30	20	60	70	78	83	90	94	98	102	104
70	10	20	55	66	73	78	86	91	94	99	102
50	50	20	65	75	81	86	92	95	98	101	103
50	30	20	59	69	76	81	88	92	95	99	101
50	10	20	55	65	72	77	84	89	92	96	99
30	50	20	64	73	79	83	89	92	95	97	99
30	30	20	59	68	75	79	86	89	92	95	98
30	10	20	55	64	71	76	83	87	90	94	96
0	0	0	53	62	69	73	79	83	86	89	91
BZ-class	2	2	2	2	2	2	2	2	2	2	2

High rack: Cat. no. LNPHR2254KZ



LO: 22875lm
SHR nom: 0.50
SHR max: -0.100

Utilisation factors/TM5

Reflectances		Room index									
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	73	82	88	92	97	101	103	106	108
70	30	20	67	76	82	87	93	97	100	103	106
70	10	20	63	72	78	83	89	94	97	101	104
50	50	20	72	80	85	89	94	97	100	102	104
50	30	20	66	75	81	85	91	94	97	100	102
50	10	20	63	71	77	82	88	92	94	98	101
30	50	20	70	78	83	87	92	94	96	99	100
30	30	20	66	74	80	83	89	92	94	97	99
30	10	20	62	71	76	81	88	90	92	95	97
0	0	0	60	69	74	78	83	86	88	91	94
BZ-class	1	1	1	1	1	1	1	1	1	1	1

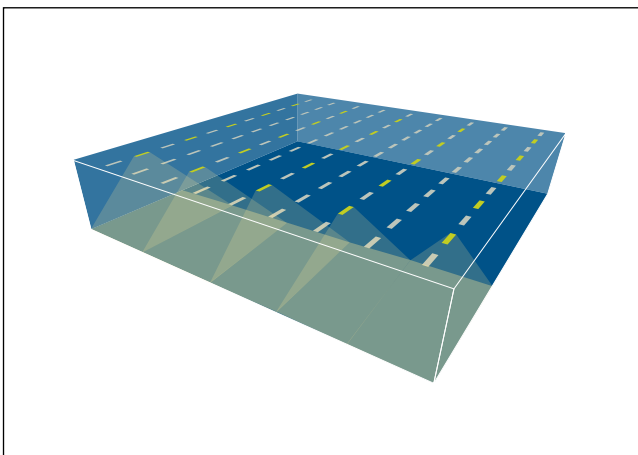
Emergency operation

Linergy LED+ has the option of an integral emergency built centrally into the body of the luminaire. Utilising the efficient Eaton optical system, capital and installation costs are reduced with class leading spacings achievable. Two variants allow for maximised utilisation in the space, up to 10m mounting height and up to 20m mounting height.

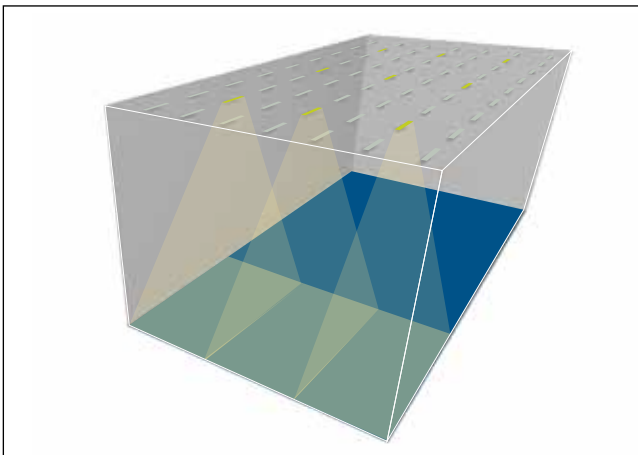
For applications to 10m mounting height, the optic distribution is a square footprint allowing the designer scope for achieving compliance with reduced quantities of emergency points.

Applications with mounting heights above this, up to 20m, the optic is utilised to be elongated in one plane. This allows optimum spacing, following the linear installation direction.

For application mounting heights of up to 10m the standard variant should be used, the prefix is 'ELL'. Emergency operation for mounting heights up to 20m, the prefix 'ELH' should be used. See the catalogue numbers for more detail.



10m mounting height - square distribution



20m mounting height - elongated linear distribution

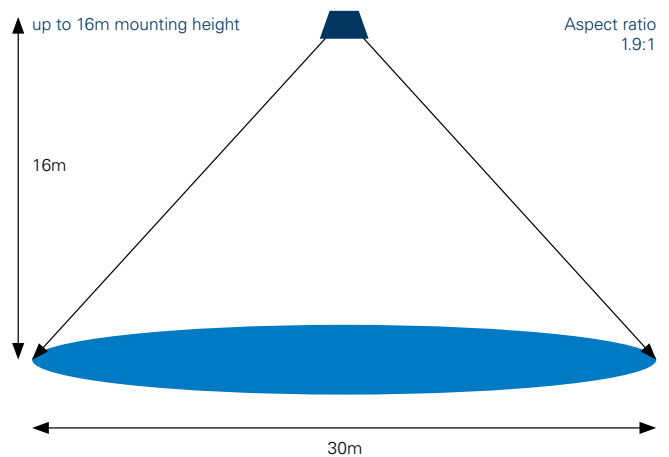
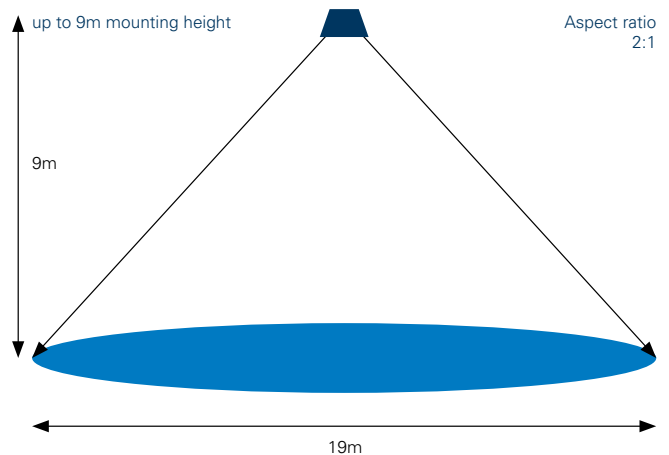
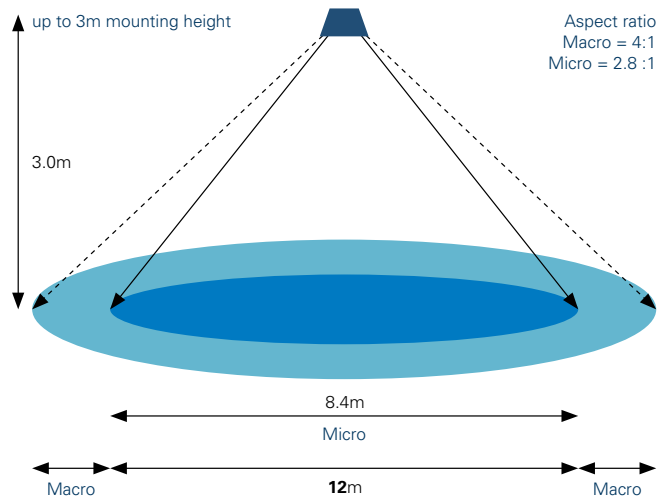
Detection

Energy saving is key to sustainable buildings and businesses. By adopting a clear strategy for managing the occupancy and absence of a space, significant savings may be achieved in energy usage. Application dependent, savings against constant illumination can be up to 70%.

Standard high frequency PIRs have a daylight linking function, with thresholds determinable by the user, as well as a switching function. In DALI luminaires, the PIRs have a daylight linking function, with thresholds determinable by the user, as well as a full dimming function.

PIR coverage

Linergy LED+ offers three standard options for PIR detection mounting heights. Up to 3 metres, 9 metres and 16 metres. The 3m detector boasts a high sensitivity micro detection range. The aspect ratios and coverage are shown on the diagrams to aid in scheme design.



Industrial portfolio

Lineryy LED+

Accessories

Catalogue numbers

Description	Cat. no.
Wire guard* - 1200mm	LNLWG4
Wire guard* - 1800mm	LNLWG6
Infrared user controller	LCSQC
Infrared programmer	LCSQS
Digital 2 way programmer	LCSQSP
Rear mounting brackets	LNLMB

*Unavailable for high rack

Luminaire efficiency

Variant	Lumen output	Wattage (W)	Efficacy (Llm/cW)
Wide area			
LNPA1504KZ	15144	107	142
LNPA2254KZ	22875	168	136
Narrow			
LNPN1504KZ	15422	107	144
LNPN2254KZ	22996	167	137
Rack			
LNPR1504KZ	14597	107	136
LNPR2254KZ	23109	170	136
High rack			
LNPHR1504KZ	14481	107	135
LNPHR2254KZ	22537	165.5	136



Digital 2 way programmer



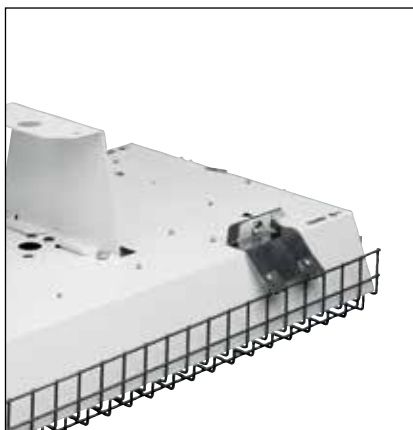
Infrared programmer



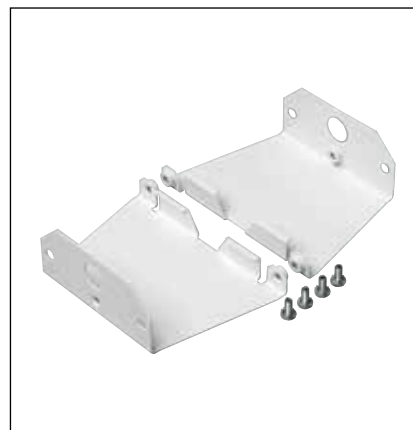
Infrared user controller



Wire guard (not available with high rack)



Mounting bracket detail



Rear mounting brackets

Catalogue numbers

Variant	Nominal lumen output (lm)	Length (mm)	Cat. no.	Weight (kg)	Emergency Cat. no.	Weight (kg)
Standard luminaires (Emergency versions up to 10m)						
Wide area reflector	15000lm	1142mm	LNPA1504KZ	5.5	ELLNPA1504KZ	6.2
Wide area reflector	23000lm	1705mm	LNPA2254KZ	8.1	ELLNPA2254KZ	9.0
Narrow reflector	15000lm	1142mm	LNPN1504KZ	5.5	ELLNPN1504KZ	6.2
Narrow reflector	23000lm	1705mm	LNPN2254KZ	8.1	ELLNPN2254KZ	9.0
Rack reflector	15000lm	1142mm	LNPR1504KZ	5.7	ELLNPR1504KZ	6.4
Rack reflector	23000lm	1705mm	LNPR2254KZ	8.2	ELLNPR2254KZ	9.1
High rack reflector	15000lm	1142mm	LNPHR1504KZ	10.6	ELLNPHR1504KZ	10.6
High rack reflector	23000lm	1705mm	LNPHR2254KZ	12.1	ELLNPHR2254KZ	12.1
Emergency luminaire - for mounting heights up to 20m						
Wide area reflector	15000lm	1142mm			ELHLNPA1504KZ	6.2
Wide area reflector	23000lm	1705mm			ELHLNPA2254KZ	9.0
Narrow reflector	15000lm	1142mm			ELHLNPN1504KZ	6.2
Narrow reflector	23000lm	1705mm			ELHLNPN2254KZ	9.0
Rack reflector	15000lm	1142mm			ELHLNPR1504KZ	6.4
Rack reflector	23000lm	1705mm			ELHLNPR2254KZ	9.4
High rack reflector	15000lm	1142mm			ELHLNPHR1504KZ	10.6
High rack reflector	23000lm	1705mm			ELHLNPHR2254KZ	12.1
Luminaire with switching high level sensor (up to 16m mounting height)						
Wide area reflector	15000lm	1142mm	ULNPA1504KZ	5.7	ELHLNPA1504KZ	6.4
Wide area reflector	23000lm	1705mm	ULNPA2254KZ	8.5	ELHLNPA2254KZ	9.4
Narrow reflector	15000lm	1142mm	ULNPN1504KZ	5.7	ELHLNPN1504KZ	6.4
Narrow reflector	23000lm	1705mm	ULNPN2254KZ	8.5	ELHLNPN2254KZ	9.4
Rack reflector	15000lm	1142mm	ULNPR1504KZ	5.9	ELHLNPR1504KZ	6.6
Rack reflector	23000lm	1705mm	ULNPR2254KZ	8.6	ELHLNPR2254KZ	9.5
High rack reflector	15000lm	1142mm	ULNPHR1504KZ	10.8	ELHLNPR1504KZ	10.8
High rack reflector	23000lm	1705mm	ULNPHR2254KZ	12.5	ELHLNPR2254KZ	12.5
Luminaire with switching high level sensor (up to 9m mounting height)						
Wide area reflector	15000lm	1142mm	MLNPA1504KZ	5.7	ELMLNPA1504KZ	6.4
Wide area reflector	23000lm	1705mm	MLNPA2254KZ	8.5	ELMLNPA2254KZ	9.4
Narrow reflector	15000lm	1142mm	MLNPN1504KZ	5.7	ELMLNPN1504KZ	6.4
Narrow reflector	23000lm	1705mm	MLNPN2254KZ	8.5	ELMLNPN2254KZ	9.4
Rack reflector	15000lm	1142mm	MLNPR1504KZ	5.9	ELMLNPR1504KZ	6.6
Rack reflector	23000lm	1705mm	MLNPR2254KZ	8.6	ELMLNPR2254KZ	9.5
High rack reflector	15000lm	1142mm	MLNPHR1504KZ	10.8	ELMLNPHR1504KZ	10.8
High rack reflector	23000lm	1705mm	MLNPHR2254KZ	12.5	ELMLNPHR2254KZ	12.5
Luminaire with switching high level sensor (up to 3m mounting height)						
Wide area reflector	15000lm	1142mm	CLNPA1504KZ	5.7	ELCLNPA1504KZ	6.4
Wide area reflector	23000lm	1705mm	CLNPA2254KZ	8.5	ELCLNPA2254KZ	9.4
Narrow reflector	15000lm	1142mm	CLNPN1504KZ	5.7	ELCLNPN1504KZ	6.4
Narrow reflector	23000lm	1705mm	CLNPN2254KZ	8.5	ELCLNPN2254KZ	9.4
Rack reflector	15000lm	1142mm	CLNPR1504KZ	5.9	ELCLNPR1504KZ	6.6
Rack reflector	23000lm	1705mm	CLNPR2254KZ	8.6	ELCLNPR2254KZ	9.5
High rack reflector	15000lm	1142mm	CLNPHR1504KZ	10.8	ELCLNPHR1504KZ	10.8
High rack reflector	23000lm	1705mm	CLNPHR2254KZ	12.5	ELCLNPHR2254KZ	12.5

For DALI dimming option, replace part number character **Z** with **DD**, e.g. LNPA1504KZ becomes LNPA1504KDD

Linergy LED



Eaton's commitment to supplying energy saving innovative products is the driving force behind Linergy LED. Linergy LED follows in the tradition of our highly efficient large space luminaires which have the performance and flexibility for today's multi-use, multi occupancy locations.

Offering both a range of lumen outputs and light distribution, Linergy LED variants can be used seamlessly alongside each other to give a complete solution in complex spaces.

High lumen outputs and corresponding class leading efficacies, when combined with occupancy and daylight sensors offer the real possibility of substantial energy savings for the end user.

Three light distribution models, wide area, narrow and rack, means the highest utilisation of light, where it is most effective.

- Utilisation of LED light engine technology allows for an increased energy efficiency - up to 115lm/cw
- Excellent light transmission and LED source obscurity from opal diffuser
- Enhanced Capital Allowance (ECA) Compliance across the complete range
- Three reflector options allowing complete flexibility for the required application
- Integral emergency available which allows mounting to a maximum height of 20m
- Low, mid and high bay integral programmable occupancy detector variants available to maximise performance and coverage
- DALI dimming options available for increased comfort, lighting control and energy savings
- Wire guard option for increased security in environments where impact resistance is needed

Lamp and Control Gear Options

- High efficacy linear LED light engines
- >80 CRI 4000K
- Energy efficient control gear as standard
- DALI dimmable options available

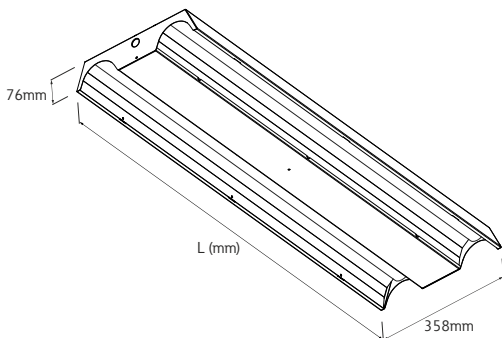
Materials

- Body – full box steel construction powder coated in RAL 9016 white finish
- Reflectors – faceted finish (wide area) and satin finish (Narrow and Rack) zero iridescence anodised aluminium
- Wire guard – heavy duty zinc plated steel, 25mm grid size

Installation Notes

- Suitable for ceiling, conduit, chain, rod and trunking mounting
- Optional quick fit mounting brackets for surface mounting (LNLMB)
- Supplied with diffuser and light engines pre-fitted, no need to remove during installation
- Access flap on the rear of housing to aid wiring during installation
- Fused as standard
- Wire guard is a retrofit accessory secured by screws, hangs for ease of maintenance

Dimensions



Nominal Lengths	Length (L)
1200mm	1142mm
1800mm	1704mm



Integral Emergency and Sensor Option

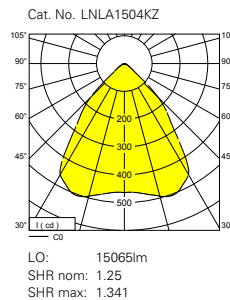
Options

- Fully integral emergency conversion, 3 hour duration
- Emergency versions available with automatic test functionality as an option, reducing maintenance costs and offers ease of compliance with testing requirements
- Suitable for use on defined escape routes
- Wide area, narrow and rack reflector options provide efficient utilisation for specific applications
- Lighting control options including integrated occupancy and daylight detectors for mounting up to 16m
- We offer a range of product support contracts to aid commissioning, reduce your maintenance costs, comply with legislative test requirements and increase the lifespan of your lighting equipment

Specification

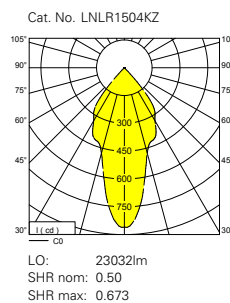
To specify state: Surface mounted, LED high/low bay luminaire, of full box welded construction with post coat powder paint finish, high performance faceted/satin reflectors for Wide Area/Narrow/Rack with high output light engines and integrated emergency sensor/wire guard options, as Eaton's Lineryg LED range, part no. _____

Photometric Data



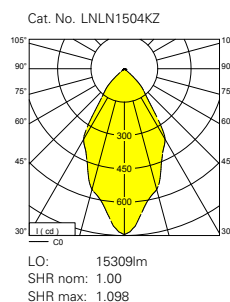
Utilisation factors / TM5

Reflectances			Room Index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	69	79	85	90	95	99	102	105	107
70	30	20	63	73	79	84	91	95	98	102	105
70	10	20	58	68	75	80	87	92	95	100	103
50	50	20	67	77	83	87	93	96	98	101	103
50	30	20	62	72	78	83	89	93	95	99	101
50	10	20	58	67	74	79	85	90	93	97	99
30	50	20	66	75	81	85	90	93	95	98	100
30	30	20	61	71	77	81	87	90	93	96	98
30	10	20	57	67	73	78	84	88	91	94	96
0	0	0	55	65	71	75	81	84	87	90	92
BZ-class			2	2	2	2	2	2	2	2	2



Utilisation factors / TM5

Reflectances			Room Index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	67	77	84	88	95	99	101	105	107
70	30	20	60	70	78	83	90	94	98	102	104
70	10	20	55	66	73	78	86	91	94	99	102
50	50	20	65	75	81	86	92	95	98	101	103
50	30	20	59	69	76	81	88	92	95	99	101
50	10	20	55	65	72	77	84	89	92	96	99
30	50	20	64	73	79	83	89	92	95	97	99
30	30	20	59	68	75	79	86	89	92	95	98
30	10	20	55	64	71	76	83	87	90	94	96
0	0	0	53	62	69	73	79	83	86	89	91
BZ-class			2	2	2	2	2	2	2	2	2



Utilisation factors / TM5

Reflectances			Room Index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	70	80	86	90	96	100	102	105	108
70	30	20	64	74	80	85	91	96	99	102	105
70	10	20	59	69	76	81	88	92	95	100	103
50	50	20	69	78	84	88	93	96	99	102	103
50	30	20	63	73	79	83	89	93	96	99	101
50	10	20	59	69	75	80	86	90	93	97	100
30	50	20	67	76	81	85	90	93	95	98	100
30	30	20	62	72	77	82	87	91	93	96	98
30	10	20	59	68	74	78	84	88	91	94	97
0	0	0	57	66	72	76	81	85	87	90	92
BZ-class			2	2	2	2	2	2	2	2	2

Industrial portfolio

Linergy LED

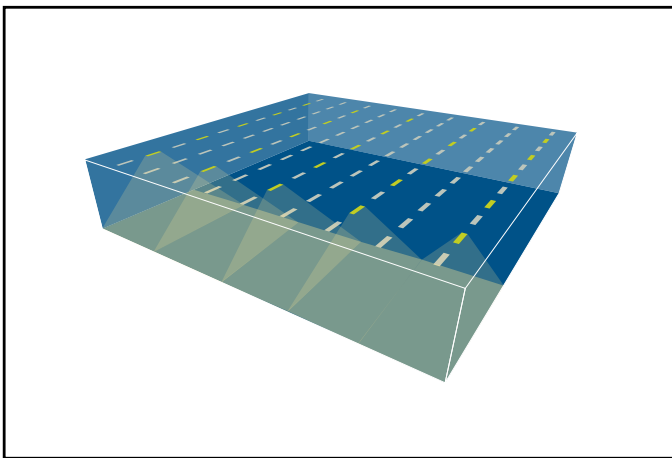
Emergency Operation

Linergy LED has the option of an integral emergency light built centrally into the body of the luminaire. Utilising the efficient Eaton optical system, capital and installation costs are reduced with class leading spacings achievable. Two variants allow for maximised performance in the space, up to 10m mounting height and up to 20m mounting height.

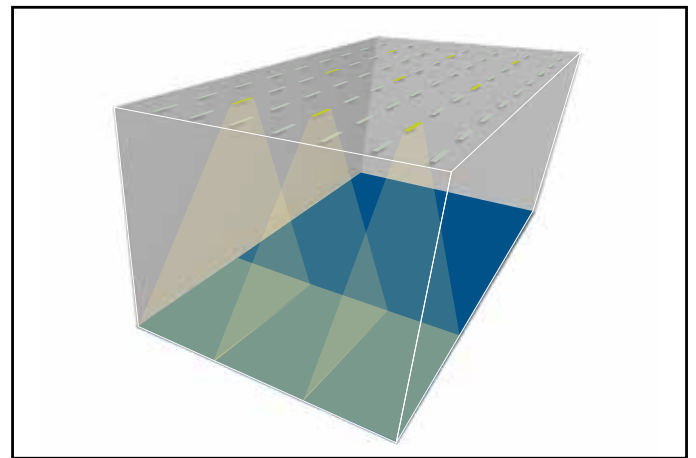
For applications up to 10m mounting height, the optic distribution is a square footprint allowing the designer scope for achieving compliance with reduced quantities of emergency points.

For applications with mounting heights above this, up to 20m, the optic is designed to be elongated in one plane. This allows optimum spacing, following the linear installation direction.

For application mounting heights of up to 10m the standard variant should be used, the prefix is 'ELL'. Emergency operation for mounting heights up to 20m, the prefix 'ELH' should be used. See the catalogue numbers for more detail.



10m mounting height - square distribution



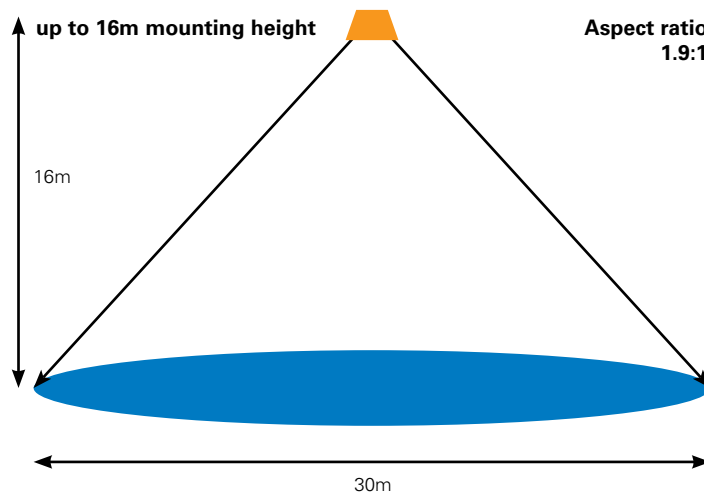
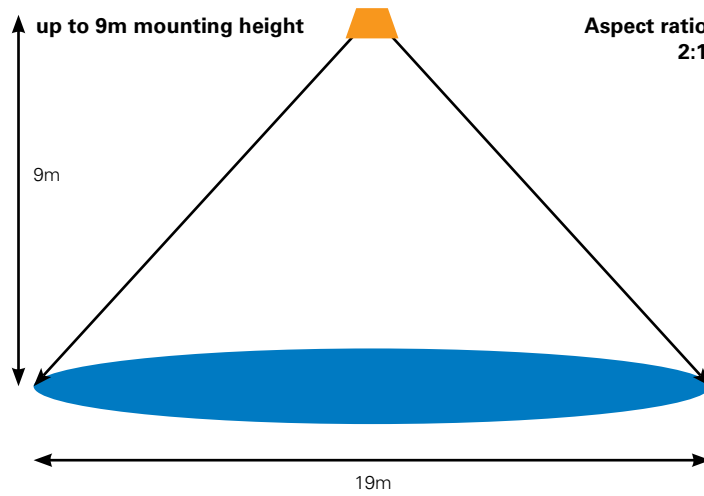
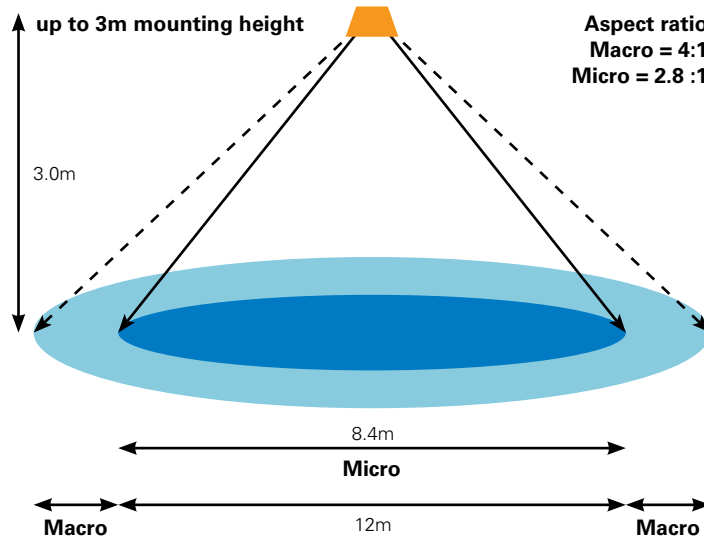
20m mounting height - elongated linear distribution

Detection

Energy saving is key to sustainable buildings and businesses. By adopting a clear strategy for managing the occupancy and absence in a space, significant savings may be achieved in energy usage. Application dependent, savings against constant illumination can be up to 70%.

Standard high frequency PIRs have a daylight linking function, with thresholds determinable by the user, as well as a switching function. In DALI luminaires, the PIRs have a daylight linking function, with thresholds determinable by the user, as well as a full dimming function.

Linergy LED offers three standard options for PIR detection mounting heights. Up to 3 metres, 9 metres and 16 metres. The 3m detector boasts a high sensitivity micro detection range. The aspect ratios and coverage are shown on the diagrams to aid in scheme design.



Industrial portfolio

Linergy LED

Accessories

Catalogue Numbers

Description	Cat No
Wire guard - 1200mm	LNLWG4
Wire guard - 1800mm	LNLWG6
Infrared user controller	LCSQC
Infrared programmer	LCSQS
Digital 2 way programmer	LCSQSP
Rear mounting brackets	LNLMB

Luminaire Efficacy

Variant	Lumen output (lm)	Wattage (w)	Efficacy (Llm/cW)
Wide Area			
LNLA1504KZ	15065	144	104.62
LNLA2254KZ	22785	210	108.5
Narrow			
LNLN1504KZ	15309	144	106.31
LNLN2254KZ	23032	210	109.68
Rack			
LNLR1254KZ	12914	101	128.00
LNLR1954KZ	19531	157	124.00



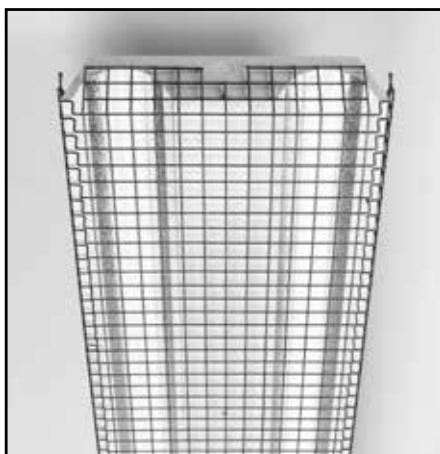
Digital 2 way programmer



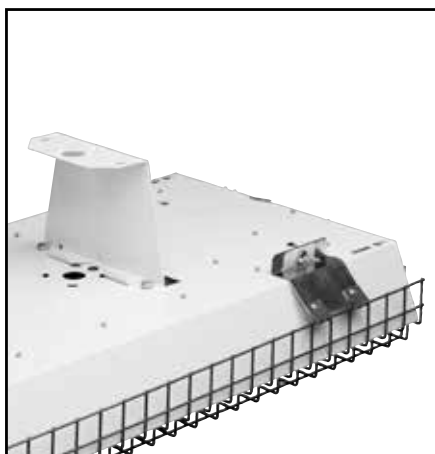
Infrared programmer



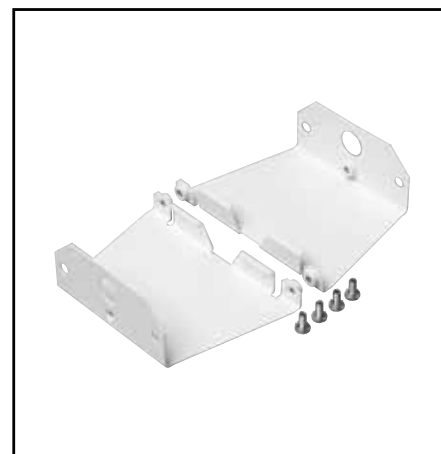
Infrared user controller



Wire guard



Mounting bracket detail



Rear mounting brackets





Tufflite LED+



Up to 155Llm/cW



The Tufflite LED+ is a premium, highly efficient version of the standard Tufflite LED, designed to provide the same lumen values whilst using less power - delivering even greater energy savings with a leading efficiency performance of up to 155 luminaire lumens per circuit watt (Llm/ cW).

Tufflite LED+ is a versatile general purpose, IP66 rated, luminaire constructed from a tough GRP (glass reinforced polymer) base and polycarbonate diffuser with a high impact resistance rating of IK08.

Options include; 3 hour combined non-maintained emergency functionality, dimmable control gear and integrated lighting controls options to maximise energy savings, user comfort and control.

With a comprehensive range of lumen outputs across 2 luminaire lengths, Tufflite LED+ delivers choice and flexibility to suit a wide range of applications such as warehousing, plant rooms, carparks, loading/storage spaces and assembly areas where high ingress protection and robust construction are required.

- Latest LED light engine technology delivers leading power savings - up to 155Llm/cW
- 3200 to 12000 nominal lumen options
- Nominal 4' and 6' formats, in wide housings, ideal for both new and retro fit applications
- Impact and heat resistant opal polycarbonate diffuser and GRP base housing construction, IK08 rated, and secured with anti-tamper diffuser clips
- Deep poured continuous polyurethane gasket to maintain IP66 rating
- Integrated lighting control options to maximise energy saving, user comfort and control
- Integral 3 hour maintained functionality option
- Fast fix stainless steel mounting clips for rapid installation. (No need to drill the housing avoiding a potential ingress path)
- Enhanced Capital Allowance (ECA) Compliance across the complete range
- 5 year Eaton warranty as standard

Industrial portfolio

Tufflite LED+

Light Engine and Control Gear

- High efficacy linear LED light engines
- >80CRI, 4000°K
- Energy efficient high frequency control gear as standard
- DALI dimmable control gear option

Materials

- Body – polyester GRP in RAL7035 grey with integrated gear tray supports and deep poured polyurethane gasket
- Diffuser – UV stabilised fire retardant polycarbonate
- Diffuser clips – polyamide - offering strength and integral locking screw function
- Gear tray – sheet steel, white finish
- Mounting brackets – stainless steel (grade 501)

Installation notes

- Surface/suspension mount rear brackets supplied, removing the need to drill the housing base
- 20mm cable entry holes at each end, supplied complete with sealing plugs
- Terminal block with 2 x 2.5mm² cable capacity per termination
- Geartray hangs on the body for ease of install, locates in final position with tool free clips
- Simple to use diffuser clips, 4 of which have security screws to lock them in the closed position as an anti-tamper feature and ensures access only through tooled entry to the luminaire
- This luminaire is IP66 rated, this rating only applies when the luminaire is installed observing the correct orientation and must not be positioned in direct sunlight

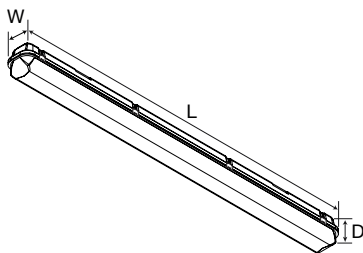
In exterior applications it is recommended the luminaires are protected under a canopy or cover, the housing is not suitable for mounting with the base directly on a vertical surface in the horizontal orientation. Please refer to the installation leaflet for further details.

NOTE: Must be installed observing the correct orientation and must not be positioned in direct sunlight

Specification

To specify state: General purpose IP66 rated luminaire with GRP base and reeded opal polycarbonate light controller, secured by tamper resistant hinged latches and removable geartray retained by tool free clips, as Eaton's Tufflite LED+ range, part no. _____

Dimensions



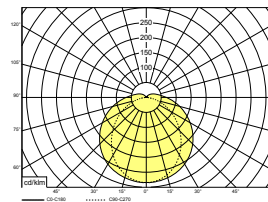
Type	L (mm)	W (mm)	D (mm)	Fixing Centres (mm)	Weight (kg)			
					HF	HF Em	DALI	DALI Em
4' twin	1282	145	101	800	4.27	4.62	4.35	4.70
6' twin	1840	145	101	515/1545	6.45	6.80	6.70	7.10

Options

- DALI dimming option
- Intelligent light and energy management options:
- End mounted IP65 rated sensor with switching or dimming function, with/without photocell
- 'Corridor Function' control available to special order with the 'CO' suffix
- Fully integral maintained emergency, 3 hour duration. Suitable for use on defined escape routes
- We offer a range of product support contracts to aid commissioning, reduce your maintenance costs, comply with legislative test requirements and increase the lifespan of your lighting equipment

Photometric data

Cat. no. TXP4334KZ



Luminaire Output = 3258 lumens
SHR nom: 1.25
SHR max: 1.497

Reflectances		Utilisation factors/TM5 Room index									
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	51	61	68	73	80	85	89	94	97
70	30	20	43	53	60	65	73	79	83	89	93
70	10	20	37	47	54	59	68	74	78	85	89
50	50	20	49	58	64	69	76	80	84	88	91
50	30	20	41	51	57	63	70	75	79	84	88
50	10	20	36	45	52	57	65	71	75	81	84
30	50	20	46	55	61	65	71	76	79	83	86
30	30	20	40	49	55	60	67	71	75	80	83
30	10	20	35	44	50	55	63	68	71	77	80
0	0	0	32	40	46	51	58	62	66	70	74
BZ-class	6	5	5	5	5	5	5	5	5	5	5

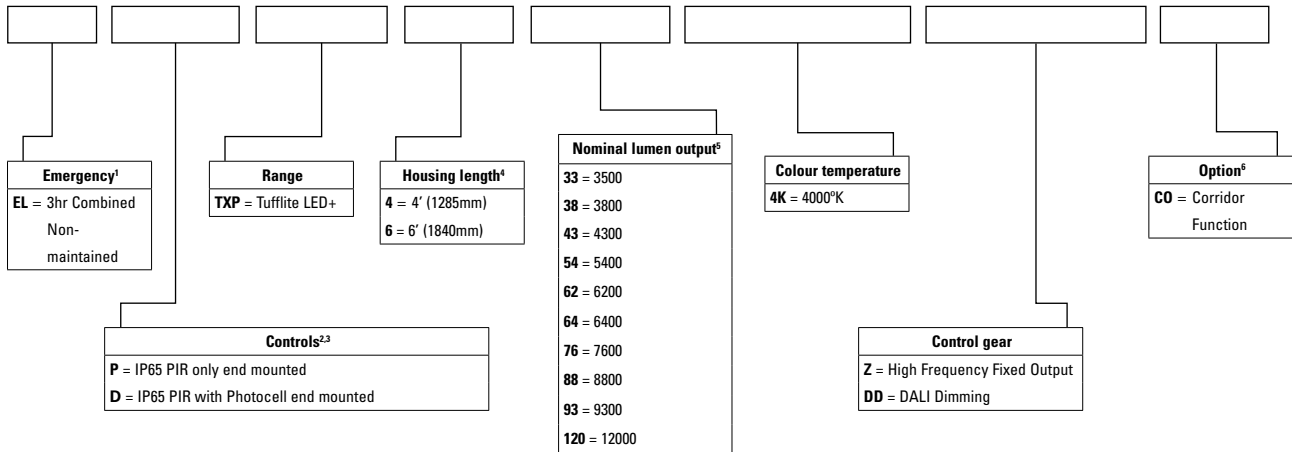
Chemical resistance

Chemical Agent	Body (Polyester)	Diffuser (Polycarbonate)
Acetic acid 10%	●	●
Acetone	○	×
Alcoholic beverages	●	●
Aluminium sulphate	●	●
Ammonia 5%	○	×
Aniline	○	×
Arsenic acid 20%	○	●
Benzene	×	×
Bencylic alcohol	×	×
Bromine	×	×
Calcium chloride	●	●
Calcium nitrate	●	●
Carbon tetrachloride	×	×
Carbonic acid	●	×
Caustic potash 5%	×	×
Cement	●	●
Hydrochloric acid 1-5%	○	●
Chlorine liquids (vapours)	×	×
Chloroform	×	×
Chromic acid	×	○
Citric acid 20%	●	●
Copper sulphate	●	●
Diesel-naphta oil	●	○
Ethyl alcohol 30%	●	●
Ethyl chloride	×	×
Ethyl ether	●	×
Food oils and fats	●	×

● Resistant ○ Relatively resistant
× Non-resistant

Chemical Agent	Body (Polyester)	Diffuser (Polycarbonate)
Formic acid 10%	○	●
Glycerine	○	●
Hexane	○	●
Iodine	●	×
Iron chloride	●	●
Isopropyl alcohol	●	○
Lubricating oil	●	●
Magnesium sulphate	●	●
Methanol	●	×
Mineral oils	●	●
Nitric acid 20%	×	○
Oxygen	●	●
Ozone	●	●
Perchloric acid 10%	×	●
Petrol	●	×
Phenol	○	×
Potassium bromide	●	●
Potassium nitrate	●	●
Potassium permanganate	●	●
Sea climate	●	●
Silicon oils	●	●
Soda bleach 15%	●	×
Sodium chloride	●	●
Sodium hydroxide 5%	●	×
Sodium sulphate	●	●
Sugar	●	●
Sulphur	●	●
Sulphuric acid 30%	×	●
Toluene	×	×
Trichloroethylene	×	×
Zinc sulphate	●	●

Catalogue numbers



- Emergency versions use a dedicated LED which operates only when in emergency mode
- The 'P' prefix sensor is a switching PIR only for use on fixed output control gear (unless in conjunction with DD and CO for Corridor Function). The 'D' prefix sensor is a switching PIR with photocell, the control gear option dictates the sensor type i.e: Switching with a threshold sensor for HF gear, DALI digital dimming gear uses a regulating photocell version
- 'P' and 'D' prefix sensors are mounted in the end of the luminaire, they are IP20 rated and suitable for up to 5m mounting heights - note. The type 'P' and 'D' sensors are only suitable for temperature ranges of 0°C to 25°C
- Please refer to the dimension table and diagram for exact dimensions
- The lumen output values are not all available in all lengths, please refer to HF catalogue listing
- Corridor Function' (remote detection control) is a Tridonic specific option available with their dimmable control gear, this 'CO' suffix must be added to ensure the correct driver is used. Add the 'CO' after the DD suffix

Luminaire example

Cat. no.	Description
ELDTP61204KDD	Tufflite LED+ 12000 4000K HF 1.8 twin, DALI, with integral maintained emergency functionality and fitted with end mounted. IP65 PIR/photocell DALI sensor

Cat. no.	Description	Lumen output (lm)	Circuit watts (W)	Efficacy (lm/cW)
Standard fixed output				
TXP4334KZ	Tufflite LED+ 3300 4000K HF 1.2 twin	3258	21.1	154.3
TXP4384KZ	Tufflite LED+ 3800 4000K HF 1.2 twin	3816	24.6	155.1
TXP4434KZ	Tufflite LED+ 4300 4000K HF 1.2 twin	4315	27.8	155.3
TXP4544KZ	Tufflite LED+ 5400 4000K HF 1.2 twin	5398	34.8	155.0
TXP624KZ	Tufflite LED+ 6200 4000K HF 1.8 twin	6199	39.9	155.4
TXP4644KZ	Tufflite LED+ 6400 4000K HF 1.2 twin	6382	41.4	154.0
TXP4764KZ	Tufflite LED+ 7600 4000K HF 1.2 twin	7616	50.2	151.7
TXP6764KZ	Tufflite LED+ 7600 4000K HF 1.8 twin	7637	49.3	154.8
TXP4884KZ	Tufflite LED+ 8800 4000K HF 1.2 twin	8791	58.3	150.7
TXP6934KZ	Tufflite LED+ 9300 4000K HF 1.8 twin	9284	60.4	153.8
TXP61204KZ	Tufflite LED+ 12000 4000K HF 1.8 twin	11472	76.0	151.0

For emergency versions please add the EL prefix, e.g. TXP4334KZ becomes ELTXP4334KZ

For emergency versions the circuit watts will increase by 1.5W to account for the charging circuit

For DALI dimmable options please replace the Z suffix with DD e.g. TXP4334KZ becomes ELTXP4334KDD

Refer to the catalogue number matrix for other options

For further information contact our technical support and application department on 01302 303240 or email LightingTechnicalUK@Eaton.com



Rear quick fit bracket and tamper proof clip



Batten fit sensors (IP65 rated), 0°C - 25°C ambient

Tufflite LED



Tufflite LED is a versatile general purpose, IP66 rated, luminaire. It is supplied with fast fit mounting clips for ease of installation, avoiding the need to drill the housing. Options include; 3 hour combined non-maintained emergency functionality, dimmable control gear and integrated lighting controls options to maximise energy savings, user comfort and control.

Linear LED light engines and efficient control gear provide class leading performance; they are protected by a GRP (glass reinforced polymer) base and polycarbonate diffuser with a high impact resistance rating of IK08.

With a comprehensive range of lumen outputs across 3 luminaire lengths, Tufflite LED delivers choice and flexibility to suit a wide range of applications such as warehousing, plant rooms, car parks, loading/storage spaces and assembly areas where high ingress protection and robust construction are required.

- Nominal 4', 5' and 6' formats, in narrow and wide housings, ideal for both new and retro fit applications
- Impact and heat resistant opal polycarbonate diffuser and GRP base housing construction, IK08 rated, and secured with anti-tamper diffuser clips
- Deep poured continuous polyurethane gasket to maintain IP66 rating
- Class leading LED luminaire performance and efficacy with lumen packages to match and exceed traditional fluorescent technology with reduced energy consumption
- Integrated lighting control options to maximise energy saving, user comfort and control
- Integral 3 hour combined non-maintained functionality option
- Fast fix stainless steel mounting clips for rapid installation. (No need to drill the housing avoiding a potential ingress path)

Light Engine and Control Gear

- High efficacy linear LED light engines
- >80CRI, 4000K
- Energy efficient fixed output control gear as standard
- DALI dimmable control gear option

Materials

- Body – polyester GRP in RAL7035 grey with integrated gear tray supports and deep poured polyurethane gasket
- Diffuser – UV stabilised fire retardant polycarbonate
- Diffuser clips – polyamide - offering strength and integral locking screw function
- Gear tray – sheet steel, white finish
- Mounting brackets – stainless steel (grade 501)

Installation Notes

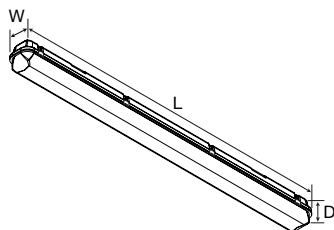
- Surface/suspension mount rear brackets supplied, removing the need to drill the housing base
- 20mm cable entry knockouts at each end, supplied complete with sealing plugs
- Terminal block with 2 x 2.5mm² cable capacity per termination
- Through wiring kits available
- Geartray hangs on the body for ease of install, locates in final position with tool free clips
- Simple to use diffuser clips, 4 of which have security screws to lock them in the closed position as an anti-tamper feature and ensures access only through tooled entry to the luminaire.
- This luminaire is IP66 rated, this rating only applies when the luminaire is installed observing the correct orientation and must not be positioned in direct sunlight.

In exterior applications it is recommended the luminaires are protected under a canopy or cover, the housing is not suitable for mounting with the base directly on a vertical surface in the horizontal orientation. Please refer to the installation leaflet for further details.

Options

- DALI dimming option
- Intelligent light and energy management options:
 - End mounted IP65 rated sensor with switching or dimming function, with/without photocell

Dimensions



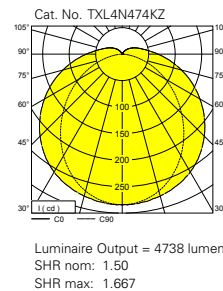
Cat No	W (mm)	D (mm)	L (mm)
TXL4N254KZ	101	101	1282
TXL4N344KZ	101	101	1282
TXL4N474KZ	101	101	1282
TXL4W644KZ	145	101	1282
TXL5N274KZ	101	101	1578
TXL5N364KZ	101	101	1578
TXL5N514KZ	101	101	1578
TXL5W554KZ	145	101	1578
TXL5W754KZ	145	101	1578
TXL5W904KZ	145	101	1578
TXL6N534KZ	101	101	1840
TXL6W954KZ	145	101	1840
TXL6W1124KZ	145	101	1840

- 'Corridor Function' control available to special order with the 'CO' suffix
- Fully integral combined non-maintained emergency, 3 hour duration. Suitable for use on defined escape routes.
- We offer a range of product support contracts to aid commissioning, reduce your maintenance costs, comply with legislative test requirements and maximise the lifespan of your lighting equipment.

Specification

To specify state: General purpose IP66 rated luminaire with GRP base and reeded opal polycarbonate light controller, secured by tamper resistant hinged latches and removable geartray retained by tool free clips, as Eaton's Tufflite LED range, part no. _____

Photometric Data



		Utilisation factors / TM5									
Reflectances		Room Index									
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	54	62	69	74	81	86	90	94	98
70	30	20	46	54	62	67	75	80	84	90	93
70	10	20	41	48	56	61	69	75	79	85	90
50	50	20	52	59	66	70	77	81	84	89	92
50	30	20	45	52	59	64	71	76	80	85	88
50	10	20	40	47	54	59	66	72	76	81	85
30	50	20	49	56	62	67	73	77	80	83	86
30	30	20	43	50	57	61	68	72	76	80	83
30	10	20	39	46	52	57	64	69	72	77	81
0	0	0	36	42	48	53	59	63	67	71	74
BZ-class			5	5	5	5	5	5	5	5	5

Chemical Resistance

Chemical Agent	Body (Polyester)	Diffuser (Polycarbonate)
Acetic acid 10%	●	●
Acetone	○	X
Alcoholic beverages	●	●
Aluminium sulphate	●	●
Ammonia 5%	○	X
Aniline	○	X
Arsenic acid 20%	○	●
Benzene	X	X
Bencylic alcohol	X	X
Bromine	X	X
Calcium chloride	●	●
Calcium nitrate	●	●
Carbon tetrachloride	X	X
Carbonic acid	●	X
Caustic potash 5%	X	X
Cement	●	●
Hydrochloric acid 1-5%	○	●
Chlorine liquids (vapours)	X	X
Chloroform	X	X
Chromic acid	X	○
Citric acid 20%	●	●
Copper sulphate	●	●
Diesel-naphta oil	●	○
Ethyl alcohol 30%	●	●
Ethyl chloride	X	X
Ethyl ether	●	X
Food oils and fats	●	X
Formic acid 10%	○	●
Glycerine	●	●

Chemical Agent	Body (Polyester)	Diffuser (Polycarbonate)
Hexane	○	●
Iodine	●	X
Iron chloride	●	●
Isopropyl alcohol	●	○
Lubricating oil	●	●
Magnesium sulphate	●	●
Methanol	●	X
Mineral oils	●	●
Nitric acid 20%	X	○
Oxygen	●	●
Ozone	●	●
Perchloric acid 10%	X	●
Petrol	●	X
Phenol	○	X
Potassium bromide	●	●
Potassium nitrate	●	●
Potassium permanganate	●	●
Sea climate	●	●
Silicon oils	●	●
Soda bleach 15%	●	X
Sodium chloride	●	●
Sodium hydroxide 5%	●	X
Sodium sulphate	●	●
Sugar	●	●
Sulphur	●	●
Sulphuric acid 30%	X	●
Toluene	X	X
Trichloroethylene	X	X
Zinc sulphate	●	●

● Resistant ○ Relatively Resistant X Non-Resistant

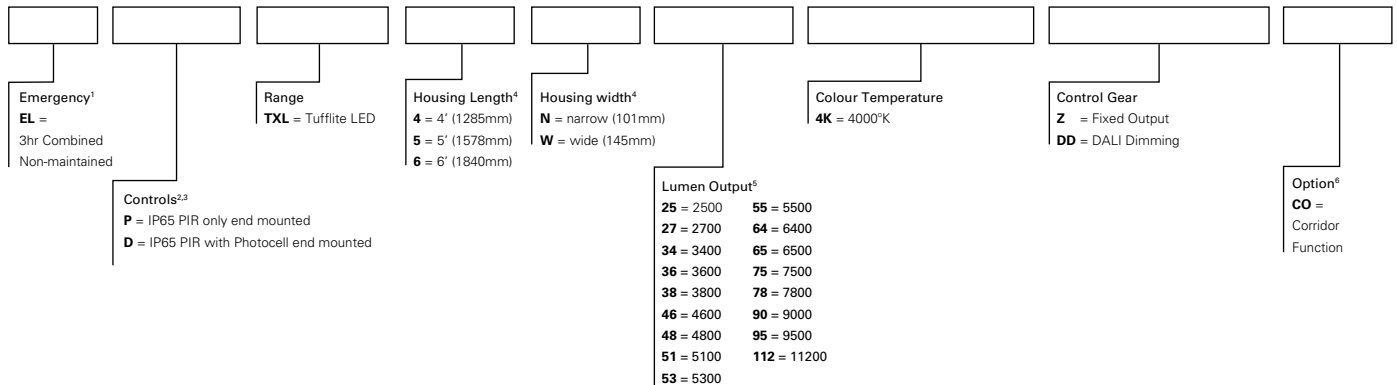
Weight (kg)

Type	L(mm)	W(mm)	D(mm)	Fixing Centres (mm)	LED	LED Emerg	DALI	DALI Emerg
4' single	1282	101	101	800	3.05	3.40	3.15	3.50
4' twin	1282	145	101	800	4.27	4.62	4.35	4.70
5' single	1578	101	101	1100	3.75	4.10	3.95	4.30
5' twin	1578	145	101	1100	5.35	5.70	5.30	5.60
6' single	1840	101	101	1540	4.85	5.20	5.10	5.40
6' twin	1840	145	101	515/1545	6.45	6.80	6.70	7.10

Industrial portfolio

Tufflite LED

Catalogue Numbers



- Emergency versions use a dedicated LED which operates only when in emergency mode
- The 'P' prefix sensor is a switching PIR only for use on fixed output control gear (unless in conjunction with DD and CO for Corridor Function)
The 'D' prefix sensor is a switching PIR with photocell, the control gear option dictates the sensor type i.e:
Switching with a threshold sensor for HF gear, DALI digital dimming gear uses a regulating photocell version
- 'P' and 'D' prefix sensors are mounted in the end of the luminaire, they are IP20 rated and suitable for up to 5m mounting heights - note. The type 'P' and 'D' sensors are only suitable for temperature ranges of 0°C to 25°C
- Please refer to the dimension table and diagram for exact dimensions
- The lumen output values are not all available in all lengths, please refer to HF catalogue listing
- 'Corridor Function' is a Tridonic specific option available with their dimmable control gear, this 'CO' suffix must be added to ensure the correct driver is used. Add the 'CO' after the DD suffix.

Luminaire Example

Cat. no.	Description
ELDTXL5W754KDD	Tufflite LED 5' 4000K, DALI, with integral combined non-maintained emergency functionality and fitted with end mounted IP65 PIR/photocell DALI sensor



Twin width housing



Narrow width housing



Single lamp rear quick fit bracket and tamper proof clip



Twin lamp rear quick fit bracket and tamper proof clip



Industrial portfolio

Crompack LED+

Crompack LED+



Up to 150lm/cW



The Crompack LED+ is a premium, highly efficient version of the standard Crompack LED, designed to provide the same lumen values whilst using less power.

The Crompack LED+ delivers even greater energy savings with a leading efficiency performance of 150 luminaire lumens per circuit Watt (150lm/cW).

The Crompack LED+ closely replicates the familiar mechanical and material specifications of the standard Crompack LED but with an even more efficient LED module and power supply configuration.

- Low power, high efficiencies of up to 150lm/cW
- Lumen outputs from 2500 to 10000lm
- Nominal 4' and 6' length formats
- Leading branded LED module and driver configurations
- Precision optical control generating high efficiencies and ECA compliance
- Superior thermal management maximising the LED module and control gear life and performance
- Emergency functionality - integral 3hr combined non-maintained
- Integrated controls options, occupancy detection and daylight harvesting to maximise energy saving, user comfort and control
- First fix base and plug and socket housing connection for rapid installation
- Traditional mounting options make retro fit straightforward, e.g. BESA, fixing embosses, suspension features
- IK07 impact protection

Lamps and control gear options

- High efficacy linear LED light engines
- >85CRI, 4000°K
- High frequency control gear as standard
- DALI dimmable control gear option
- L70 - 50,000 hours

Materials

- First fix plate and heatsink – steel, powder coated in RAL9016 white finish
- End caps – injection moulded ABS, UV stabilised and fire retardant, colour matched white finish
- Emergency/controls cover pod - injection moulded ABS, UV stabilised and fire retardant, colour matched white finish
- Diffuser – UV stabilised opal polycarbonate

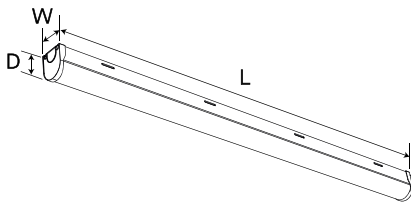
Installation notes

- Suitable for direct fix, trunking, conduit or chain/wire suspension
- BESA entry points central and at 600mm centres (one of the 600mm BESA cable entry holes may be covered on some versions, the 4 fixing holes around the cable entry hole remain accessible)
- Terminal block with 2 x 2.5mm² wire capacity per termination
- Plug and socket connection between first fix plate and optic unit for rapid installation
- 20mm conduit entry feature in both ends with clearance feature that can be removed in the end cap

Note: End mounted 'batten fit' sensor options would use the cable entry at one end)

- Integral emergency and sensor versions have a longer housing though the major mounting features remain the same in the first fix plate

Dimensions



Nominal Lengths	Length (mm)	Emergency/controls	W (mm)	H (mm)	Weight (Kg)	
	Standard				Standard	Emergency
4'	1163	1318	62	76	1.9	2.4
6'	1728	1883	62	76	2.7	3.2

Options

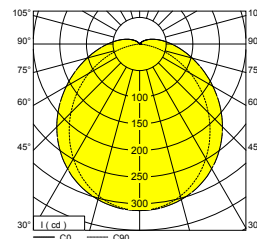
- Intelligent light and energy management options:
 - Integrated mini-sensor with PIR and photocell to suit DALI control gear
 - End mounted 'batten fit' sensor with switching or dimming function, with/without photocell
- 'Corridor Function' control available to special order with the 'CO' suffix
- Fully integral self-contained 3 hour duration emergency option
- Lumen packages and length options to suit the application

Specification

To specify state: Linear LED batten with steel channel profile with durable powder coat RAL9016 white finish and reeded opal polycarbonate diffuser IK07. Embossed snap-fit feature optical unit with plug and socket connection and screw-secured colour matched and textured ABS end caps (optional integral controls and emergency functionality), as Eaton's Crompack LED+, part no. _____

Photometric data

Cat. no. CXP4704KZ



Utilisation factors/TM5

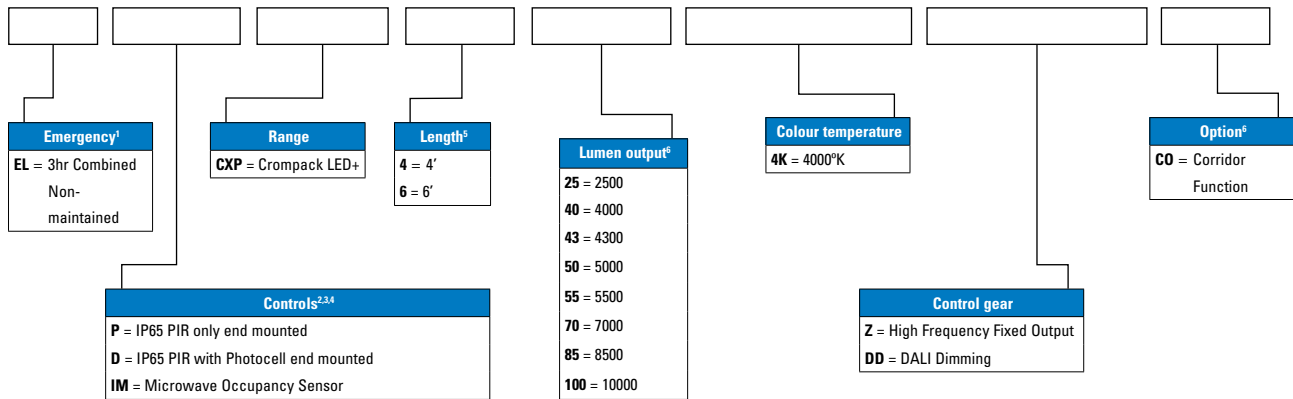
Reflectances			Room index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	56	64	71	76	83	88	92	96	99
70	30	20	49	57	64	69	77	82	86	92	95
70	10	20	43	51	58	64	72	77	81	87	92
50	50	20	54	62	68	73	79	84	87	91	94
50	30	20	47	55	62	67	74	79	82	87	90
50	10	20	42	50	57	62	69	74	78	84	88
30	50	20	52	59	65	69	75	79	82	86	89
30	30	20	46	53	60	64	71	75	79	83	86
30	10	20	42	49	55	60	67	72	75	80	84
0	0	0	39	45	52	56	62	67	70	75	78
BZ-class	5	5	5	5	5	5	5	5	5	5	5

SHR nom: 1.50
SHR max: 1.610

Industrial portfolio

Crompack LED+

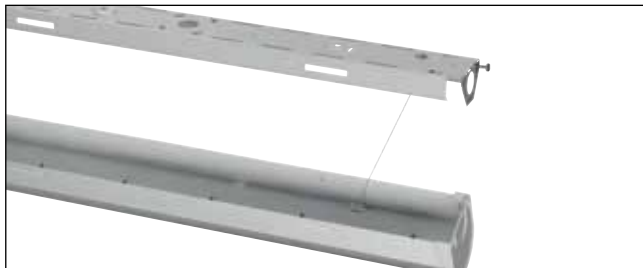
Catalogue numbers



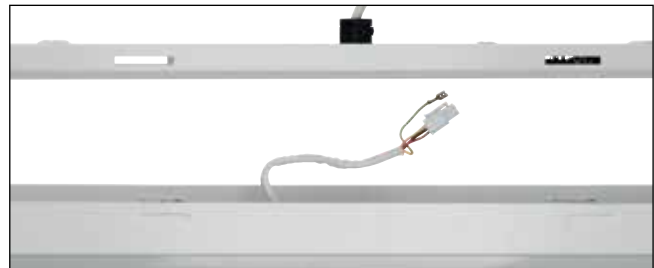
- Emergency versions use a dedicated LED which operates only when in emergency mode
- The 'P' prefix sensor is a switching PIR only for use on fixed output control gear (unless in conjunction with DD and CO for Corridor Function). The 'D' prefix sensor is a switching PIR with photocell, the control gear option dictates the sensor type i.e: 'P' sensor off delay fixed at 20mins, D sensor off delay more flexible. Switching with a threshold sensor for HF gear, DALI digital dimming gear uses a regulating photocell version
- 'P' and 'D' prefix sensors are mounted in the end of the luminaire and suitable for up to 5m mounting heights
- ISM mini head sensor for use with DALI control gear only, also suits BUS Loop Communication
- The length character gives the generic luminaire length, please refer to the dimension table for exact dimensions
- The lumen output values are not all available in all lengths, please refer to HF catalogue listing
- 'Corridor Function' is a Tridonic specific option available with their dimmable control gear, this 'CO' suffix must be added to ensure the correct drives is used. Add the 'CO' after the DD suffix

Luminaire example

Cat. no.	Description
ELISMXP4404DD	Crompack LED+ 4' 4000lm, 4000K, DALI with integral mini sensor and integral 3hr combined non-maintained emergency functionality



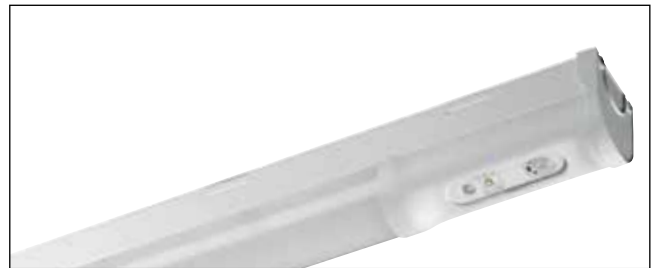
First fix backplate with optical unit suspended on safety cords



Rapid fit plug and socket



End mounted PIR/photocell



Lighting control sensor and integral emergency LED

Catalogue numbers

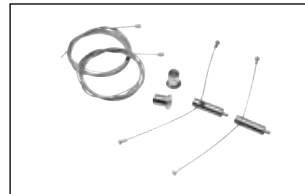
Cat. no.	Description	Lumen output (lm)	Circuit watts (W)	Efficacy (Lm/cW)
Standard fixed output				
CXP4254KZ	Crompack LED+ 2500 4K HF 1.2m	2487	16.8	148.0
CXP4404KZ	Crompack LED+ 4000 4K HF 1.2m	4096	28.0	146.3
CXP4504KZ	Crompack LED+ 5000 4K HF 1.2m	5010	34.8	144.1
CXP4704KZ	Crompack LED+ 7000 4K HF 1.2m	7174	52.1	137.7
CXP4854KZ	Crompack LED+ 8500 4K HF 1.2m	8649	64.9	133.2
CXP6554KZ	Crompack LED+ 5500 4K HF 1.8m	5438	36.1	150.7
CXP6854KZ	Crompack LED+ 8500 4K HF 1.8m	8501	58.9	144.3
CXP61004KZ	Crompack LED+ 10000 4K HF 1.8m	9993	71.1	140.6
Emergency fixed output				
ELCXP4254KZ	Crompack LED+ 2500 4K HF 1.2m Emerg	2487	17.8	139.7
ELCXP4404KZ	Crompack LED+ 4000 4K HF 1.2m Emerg	4096	29.0	141.2
ELCXP4504KZ	Crompack LED+ 5000 4K HF 1.2m Emerg	5010	35.8	139.9
ELCXP4704KZ	Crompack LED+ 7000 4K HF 1.2m Emerg	7174	53.1	135.1
ELCXP4854KZ	Crompack LED+ 8500 4K HF 1.2m Emerg	8649	65.9	131.2
ELCXP6554KZ	Crompack LED+ 5500 4K HF 1.8m Emerg	5438	36.1	150.7
ELCXP6854KZ	Crompack LED+ 8500 4K HF 1.8m Emerg	8501	59.9	141.9
ELCXP61004KZ	Crompack LED+ 10000 4K HF 1.8m Emerg	9993	72.1	138.6

For DALI dimming option, replace part number character **Z** with **DD**, eg. CXL5454K**Z** becomes CXL5454K**DD**

For sensor option, add prefix '**P**'; eg. CXL5454K**Z** becomes **PCXL5454KZ**

For further information contact our technical support and application department on 01302 303240 or email LightingTechnicalUK@Eaton.com

Cat. no.	Description	Weight (kg)
SWKITP15SY	Suspension Wire Kit, 1.5m, Short Yoke (Pair)	0.1
If greater than 1.5m suspension is required, use VTX50005K		
CXLNW	Crompack LED Coupling strap	0.04



Suspension Kit - SWKITP15SY (ordered separately)



Painted Mild Steel Crompack LED Coupling strap for continuous mount applications

Crompack LED



The all new Crompack LED delivers a comprehensive range of linear LED luminaires incorporating a range of lumen outputs across 3 luminaire lengths. Options include dimmable control gear and a range of integrated controls options to maximise energy savings.

Available with 3 hour combined non-maintained emergency functionality delivering excellent spacing and uniformity.

The simple 2 part housing facilitates quick and simple installation, a first fix plate allows mechanical mounting and electrical connections to be made, the optic unit then connects on a plug and socket and snap fits to the base, with 2 retained screws adding additional integrity to the installation ensuring tool access only.

Optical control and performance generate high efficacies and deliver ECA compliance.

- Excellent light transmission and LED source obscurity from the reeded opal diffuser
- Nominal 4', 5' and 6' length formats, ideal for both new installations and retro fit applications
- The range offers luminaire lumen outputs of up to 10500lm delivering high efficacies of up to 133lm/cW
- High efficiency LED strip technology and driver combinations, with purpose designed optics and thermal management, maximise the LED and control gear life and performance
- Long LED life and no lamps to change particularly in 24/7 operations and inaccessible areas
- Integrated controls options providing occupancy detection and daylight harvesting to maximise energy saving, user comfort and control
- Integral 3hr combined non-maintained functionality variants
- First fix base and plug and socket housing connection for rapid installation
- IK07 impact protection

Lamps and Control Gear Options

- High efficacy linear LED light engines
- >85CRI, 4000°K
- Fixed outpt control gear as standard
- DALI dimmable control gear option
- L70 - 50,000 hours

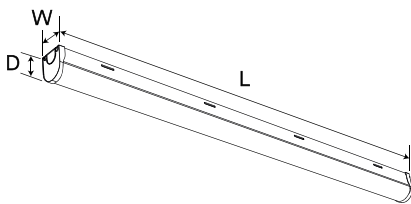
Materials

- First fix plate and heatsink – steel, powder coated in RAL9016 white finish
- End caps – injection moulded ABS, UV stabilised and fire retardant, colour matched white finish
- Emergency/controls cover pod - injection moulded ABS, UV stabilised and fire retardant, colour matched white finish
- Diffuser – UV stabilised opal polycarbonate

Installation Notes

- Suitable for direct fix, trunking, conduit or chain/wire suspension
- BESA entry points central and at 600mm centres (one of the 600mm BESA cable entry holes may be covered on some versions, the 4 fixing holes around the cable entry hole remain accessible)
- Terminal block with 2 x 2.5mm² wire capacity per termination
- Plug and socket connection between first fix plate and optic unit for rapid installation
- 20mm conduit entry feature in both ends with clearance feature that can be removed in the end cap (Note: end mounted 'batten fit' sensor options would use the cable entry at one end)
- Integral emergency and sensor versions have a longer housing though the major mounting features remain the same in the first fix plate

Dimensions



Nominal Lengths	Length (mm)		W (mm)	H (mm)	Weight (Kg)	
	Standard	Emergency/Sensor			Standard	Emergency
4'	1163	1318	62	76	1.9	2.4
5'	1463	1618	62	76	2.3	2.8
6'	1728	1883	62	76	2.7	3.2

Options

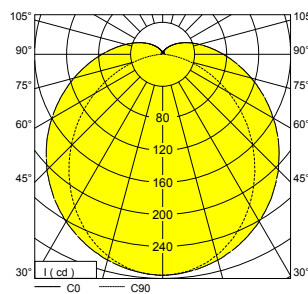
- Intelligent light and energy management options:
 - Integrated mini-sensor with PIR and photocell to suit DALI control gear
 - End mounted 'batten fit' sensor with switching or dimming function, with/without photocell
- 'Corridor Function' control available to special order with the 'CO' suffix
- Fully integral self-contained 3 hour duration emergency option
- Lumen packages and length options to suit the application

Specification

To specify state: Linear LED batten with steel channel profile with durable powder coat RAL9016 white finish and reeded opal polycarbonate diffuser IK07. Embossed snap-fit feature optical unit with plug and socket connection and screw-secured colour matched and textured ABS end caps (optional integral controls and emergency functionality), as Eaton's Crompack LED, part no. _____

Photometric Data

Cat. No. CXL4704KZ



Utilisation factors / TM5

Reflectances			Room Index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	53	61	68	73	80	85	89	93	96
70	30	20	46	53	61	66	73	79	83	88	92
70	10	20	40	47	55	60	68	74	78	84	88
50	50	20	51	58	64	69	75	80	83	87	90
50	30	20	44	51	58	63	70	75	78	83	87
50	10	20	39	46	53	58	65	70	74	80	83
30	50	20	48	55	61	65	71	75	78	81	84
30	30	20	42	49	55	60	66	71	74	78	81
30	10	20	38	44	51	55	62	67	71	75	79
0	0	0	35	40	46	51	57	61	64	69	72
BZ-class			5	5	5	5	5	5	5	5	5

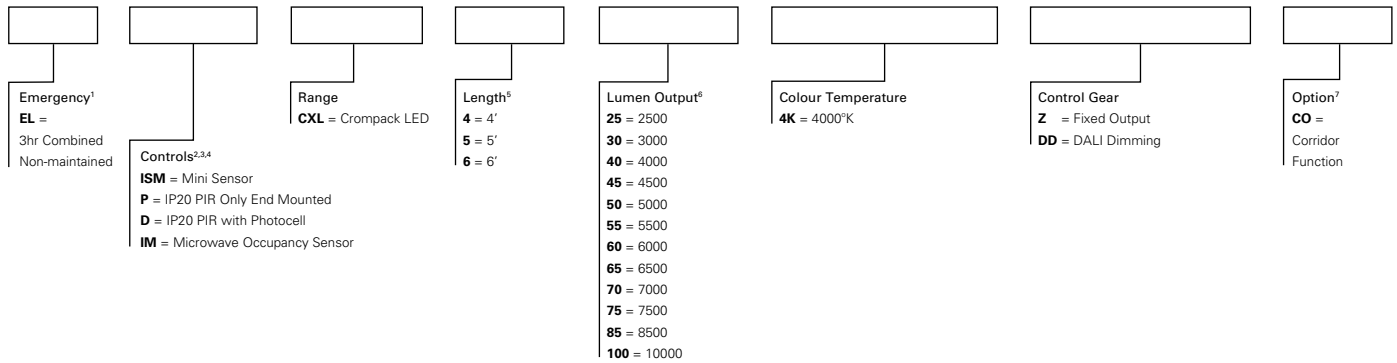
LOR: 1.00
ULOR: 0.12
DLOR: 0.88

SHR nom: 1.50
SHR max: 1.63

Industrial portfolio

Crompack LED

Catalogue Numbers



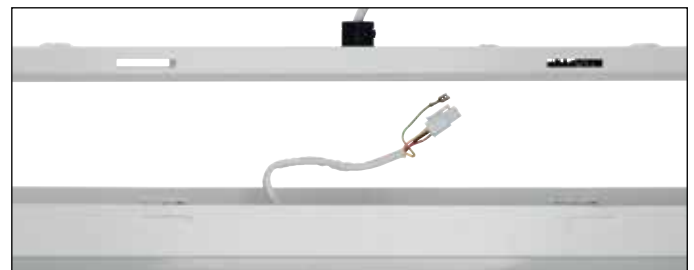
- Emergency versions use a dedicated LED which operates only when in emergency mode
- The 'P' prefix sensor is a switching PIR only for use on fixed output control gear (unless in conjunction with DD and CO for Corridor Function)
 The 'D' prefix sensor is a switching PIR with photocell, the control gear option dictates the sensor type i.e:
 'P' sensor off delay fixed at 20mins, D sensor off delay more flexible
 Switching with a threshold sensor for fixed output gear, DALI digital dimming gear uses a regulating photocell version
- 'P' and 'D' prefix sensors are mounted in the end of the luminaire and suitable for up to 5m mounting heights
- ISM mini head sensor for use with DALI control gear only, also suits BUS Loop Communication
- The length character gives the generic luminaire length, please refer to the dimension table for exact dimensions
- The lumen output values are not all available in all lengths, please refer to HF catalogue listing
- 'Corridor Function' is a Tridonic specific option available with their dimmable control gear, this 'CO' suffix must be added to ensure the correct drives is used. Add the 'CO' after the DD suffix.

Luminaire Example

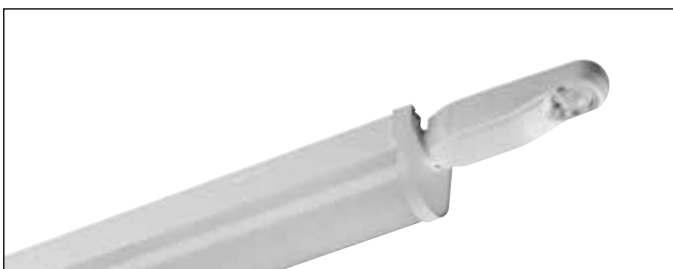
Cat No	Description
ELISM CXL5454KDD	Crompack LED 5' 4500lm, 4000K, DALI with integral mini sensor and integral 3hr combined non-maintained emergency functionality



First fix backplate with optical unit suspended on safety cords



Rapid fit plug and socket



End mounted PIR/photocell



Lighting control sensor and integral emergency LED

Catalogue Numbers

Cat No	Description	Lumen Output (lm)	Circuit Watts (W)	Efficacy (Llm/cW)
Standard Fixed Output				
CXL4254KZ	Crompack LED 2500 4000K HF 1.2m	2663	20.1	133.0
CXL4304KZ	Crompack LED 3000 4000K HF 1.2m	3308	25.5	129.7
CXL4404KZ	Crompack LED 4000 4000K HF 1.2m	4105	32.8	125.0
CXL4454KZ	Crompack LED 4500 4000K HF 1.2m	4808	40.1	119.9
CXL4504KZ	Crompack LED 5000 4000K HF 1.2m	5185	40.7	127.2
CXL4604KZ	Crompack LED 6000 4000K HF 1.2m	6054	49.1	123.5
CXL4704KZ	Crompack LED 7000 4000K HF 1.2m	7366	63.6	115.8
CXL5404KZ	Crompack LED 4000 4000K HF 1.5m	4308	32.9	130.7
CXL5454KZ	Crompack LED 4500 4000K HF 1.5m	4750	36.9	128.5
CXL5504KZ	Crompack LED 5000 4000K HF 1.5m	5162	40.8	126.6
CXL5604KZ	Crompack LED 6000 4000K HF 1.5m	6031	49.2	122.5
CXL5704KZ	Crompack LED 7000 4000K HF 1.5m	7131	61.6	116.4
CXL6554KZ	Crompack LED 5500 4000K HF 1.8m	5775	45.1	127.9
CXL6654KZ	Crompack LED 6500 4000K HF 1.8m	6616	53.6	123.4
CXL6754KZ	Crompack LED 7500 4000K HF 1.8m	7651	59.4	128.8
CXL6854KZ	Crompack LED 8500 4000K HF 1.8m	8800	70.8	124.2
CXL61004KZ	Crompack LED 10000 4000K HF 1.8m	10526	91.7	114.8

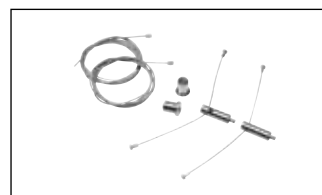
Emergency Fixed Output

ELCXL4254KZ	Crompack LED 2500 4000K HF 1.2m Emergency	2663	21.0	126.6
ELCXL4304KZ	Crompack LED 3000 4000K HF 1.2m Emergency	3308	26.5	124.7
ELCXL4404KZ	Crompack LED 4000 4000K HF 1.2m Emergency	4105	33.8	121.3
ELCXL4454KZ	Crompack LED 4500 4000K HF 1.2m Emergency	4808	41.1	117.0
ELCXL4504KZ	Crompack LED 5000 4000K HF 1.2m Emergency	5185	41.7	174.1
ELCXL4604KZ	Crompack LED 6000 4000K HF 1.2m Emergency	6054	50.0	121.0
ELCXL4704KZ	Crompack LED 7000 4000K HF 1.2m Emergency	7366	64.6	113.9
ELCXL5404KZ	Crompack LED 4000 4000K HF 1.5m Emergency	4308	33.9	126.8
ELCXL5454KZ	Crompack LED 4500 4000K HF 1.5m Emergency	4750	37.9	125.1
ELCXL5504KZ	Crompack LED 5000 4000K HF 1.5m Emergency	5162	41.8	123.5
ELCXL5604KZ	Crompack LED 6000 4000K HF 1.5m Emergency	6031	50.2	120.0
ELCXL5704KZ	Crompack LED 7000 4000K HF 1.5m Emergency	7131	62.6	114.5
ELCXL6554KZ	Crompack LED 5500 4000K HF 1.8m Emergency	5775	46.1	125.1
ELCXL6654KZ	Crompack LED 6500 4000K HF 1.8m Emergency	6616	54.61	121.1
ELCXL6754KZ	Crompack LED 7500 4000K HF 1.8m Emergency	7651	60.4	126.6
ELCXL6854KZ	Crompack LED 8500 4000K HF 1.8m Emergency	8800	71.8	122.5
ELCXL61004KZ	Crompack LED 10000 4000K HF 1.8m Emergency	10526	92.7	113.5

For DALI dimming option, replace part number character **Z** with **DD**, eg. CXL5454KZ becomes CXL5454KDD

For further information contact our technical support and application department on 01302 303240 or email LightingTechnicalUK@Eaton.com

Cat No	Description	Weight (kg)
SWKITP15SY	Suspension Wire Kit, 1.5m, Short Yoke (Pair)	0.1
If greater than 1.5m suspension is required, use VTX50005K		
CXLNW	Crompack LED Coupling strap	0.04



Suspension Kit - SWKITP15SY (ordered separately)



Painted Mild Steel Crompack LED Coupling strap for continuous mount applications

Caius



For a wide range of applications where flexibility needs to be married to performance, the Caius range offers a complete solution. Caius combines practical attributes with contemporary clean lines and form. Although at home in most interior applications, Caius offers ingress protection to IP65 so suits a wide range of locations. Caius gives a highly efficient design solution, minimising installation points.

High output LED sets offer high levels of efficacy combined with class leading emergency operation helping to reduce the number of installed points whilst maintaining compliant lighting designs.

- Polycarbonate lens and ABS body for durability
- TPa material means compliance with the requirements for escape routes
- Opal diffuse lens for homogenous light output
- Choice of two complimentary body sizes
- Fully integral emergency versions
- Microwave option
- Corridor control function option (DALI/ DSI version)
- IP65 dust tight and water jet proof
- Balanced looks maximise the efficiency and output of Caius
- Installation friendly design reduces on site costs

Lightsource and control gear options

- LED – high output, high efficiency LED chip set optimised for maximum efficiency
- Energy efficient LED drivers - high frequency as standard
- DALI/ DSI options

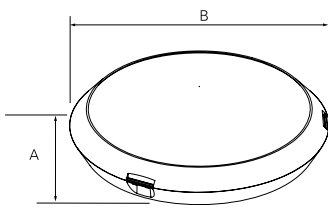
Materials

- Body – ABS structurally strong and impact resistant
- Lens – TPa polycarbonate opal

Installation notes

- Terminal block with a 2 x 2.5mm² cable capacity per termination

Dimensions



Variant	A (mm)	B (mm)
Small	125	350
Large	135	430



Captive diffuser and LED board for ease of installation

Options

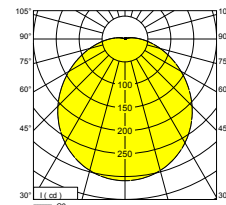
- Fully integrated LED emergency conversion, 3 hour duration
- Microwave sensor inbuilt option
- Corridor function control option (only available on DALI/DSI versions)
- Suitable for use on defined escape routes
- We offer a range of product support contracts to aid commissioning, reduce your maintenance costs, comply with legislative test requirements and increase the lifespan of your lighting equipment

Specification

To specify state: Surface mounted luminaire, IP65 with polycarbonate lens and ABS construction body. White trim with 3/4 point closures. High efficiency LED and fully integrated emergency gear, as Eaton's Caius range, part no. _____

Photometric data

Cat. no.: CBHS174KZ

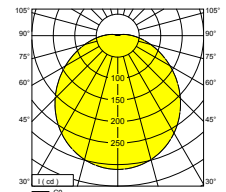


LO1707lm
20W

Utilisation factors/TM5

Reflectances			Room index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	56	64	71	77	84	88	92	96	100
70	30	20	49	56	64	69	77	82	86	92	95
70	10	20	43	51	58	64	71	77	82	88	92
50	50	20	54	62	68	73	80	84	87	92	94
50	30	20	47	55	62	67	74	79	83	88	91
50	10	20	42	50	57	62	69	75	79	84	88
30	50	20	52	59	66	70	76	80	83	87	90
30	30	20	46	53	60	65	71	76	79	84	87
30	10	20	42	49	55	60	67	72	76	81	84
0	0	0	39	46	52	57	63	68	71	76	79
BZ-class			5	5	5	5	5	5	5	5	5

Cat. no.: CBHL234KZ



LO2388lm
28W

Utilisation factors/TM5

Reflectances			Room index								
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0
70	50	20	56	64	71	77	84	88	92	96	100
70	30	20	48	56	64	69	77	82	86	92	95
70	10	20	43	50	58	63	71	77	82	88	92
50	50	20	54	62	68	73	80	84	87	92	94
50	30	20	47	55	62	67	74	79	83	88	91
50	10	20	42	49	57	62	69	75	79	84	88
30	50	20	52	59	66	70	76	80	83	87	90
30	30	20	46	53	60	65	71	76	79	84	87
30	10	20	42	49	55	60	67	72	76	81	85
0	0	0	39	46	52	57	63	68	71	76	79
BZ-class			5	5	5	5	5	5	5	5	5

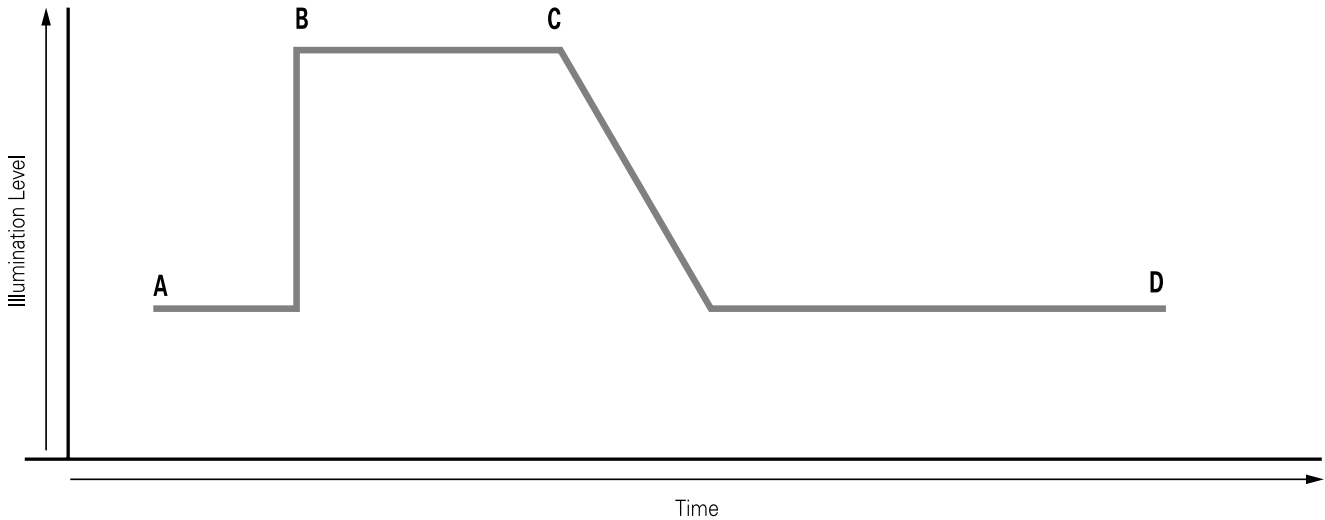
Industrial portfolio

Caius

Corridor function

Caius is available with a DALI/ DSI corridor function option for applications where comfort, path finding and safety are considerations. Typically used in transit areas, corridor function allows the safe passage of people by utilising local detection to switch products on rapidly either adjacent to detection, or in some cases ahead of the direction of movement. Caius can be used to trigger this by means of the optional built in microwave detector or by linking to remotely mounted devices.

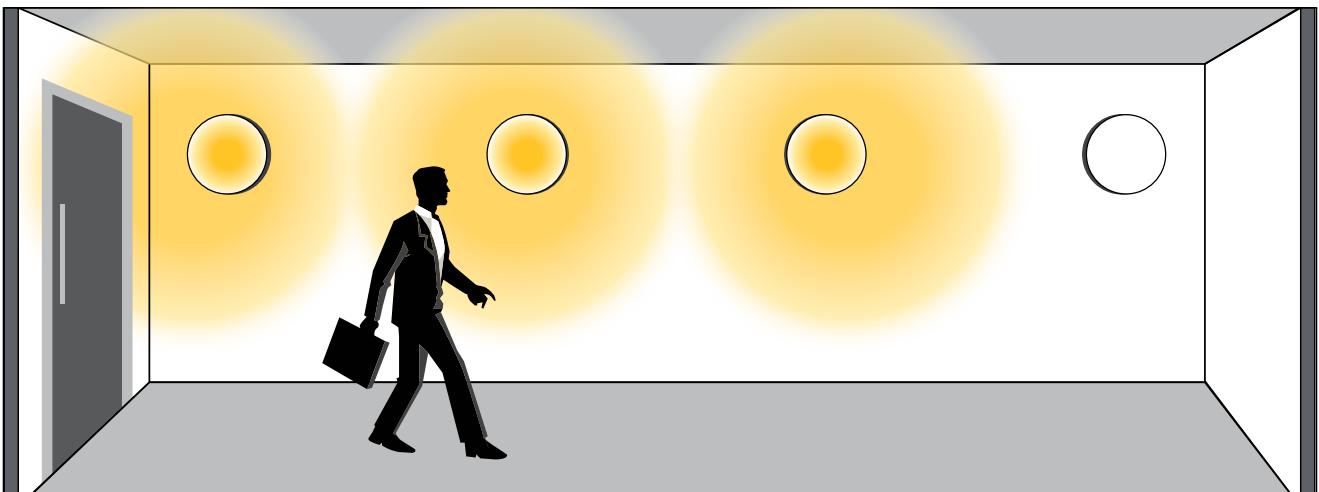
Operation



- A - Set-back illumination level - typically 10%
- B - Presence detected - rapid rise to full illuminance level
- C - Gradual dimming after presence no longer detected
- D - Set-back illumination level

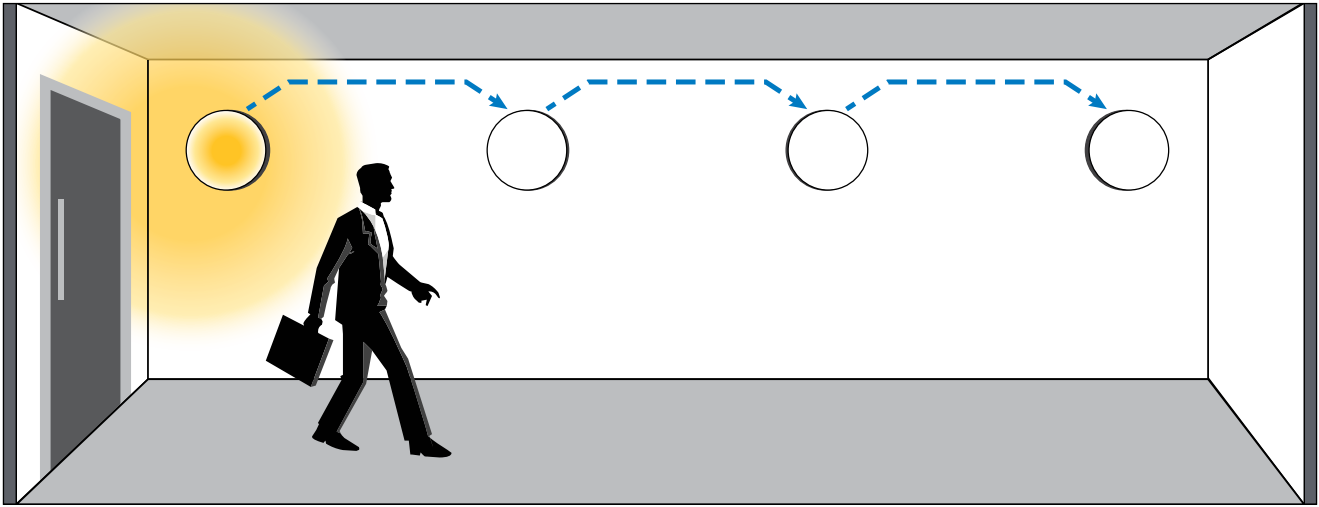
Corridor function - individual internal control

In this scenario, each luminaire is individually controlled and offers a 'pathway' effect as progress is made along a route. Gradual dimming takes place as the individual leaves the detection zone.



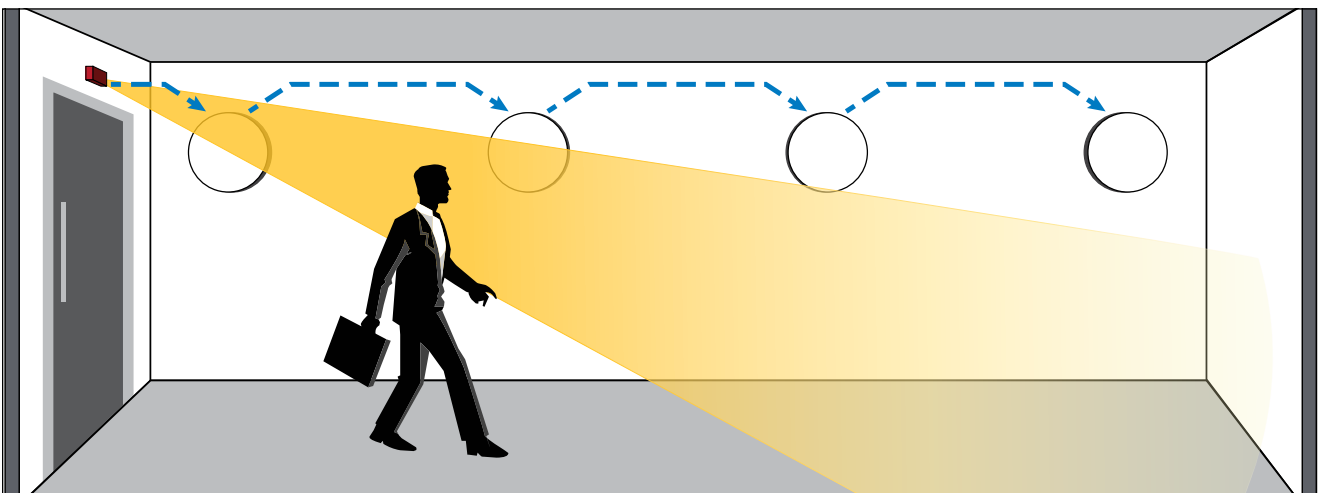
Corridor function – single internal microwave in master/slave configuration

In this scene, an individual luminaire operates as a master and other slaves are linked. All luminaires operate at the same time.



Corridor function – remote detection control

Remote device may also be used to control luminaires in corridor function. This may be appropriate where the detection position and luminaire position may not be the same.



Catalogue numbers

Variant	Cat. no.	Lumen output	Wattage (W)	Llm/ cW	Weight (kg)	Em Cat. no.	Weight (kg)
Small	CBHS174KZ	1856	18	103.1	1.3	ELCBHS174KZ	2.2
Large	CBHL234KZ	2516	24.13	104.3	1.9	ELCBHL234KZ	2.8

For DALI Dimming option replace character **Z** with **DD**, e.g. CBHS174**KZ** becomes CBHS174**KDD**

Emergency versions also available with automatic test functionality.

For corridor function, add the suffix **CO**, e.g. CBHS174**KDD** becomes CBHS174**KDDCO**

Note: Corridor function is only available as an option on DALI products, not on HF variants



Galaxy LED



Galaxy LED is a new low energy solution to a varied range of applications. High efficiency is a key part of its appeal and with a wide range of outputs, is ideal in a multitude of applications.

Galaxy LED is rated to IP65, dust tight and low pressure water jet proof, with a robust die-cast aluminium body.

- High efficacy LED
- Die-cast aluminium construction for a long durable life
- IP65 dust tight and water jet proof for stay clean operation
- Inbuilt inclinometer aids aim and set up
- Outstanding optical performance reduces installed points
- Supplied with three core 1m flying lead
- 10W and 30W versions are available with integrated PIR as an option

Industrial portfolio

Galaxy LED

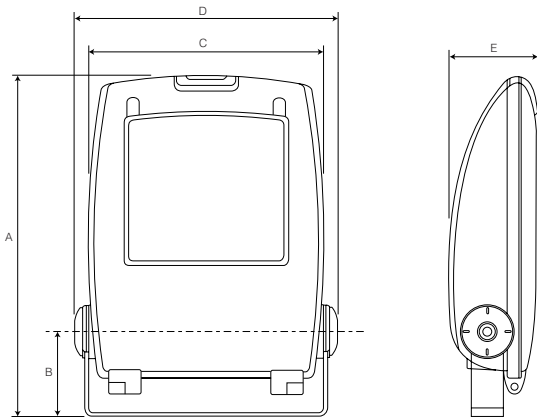
LED options

- Five lumen packages
- >70 CRI
- L70 30,000 hours
- 5000K cool white

Materials

- Body - die-cast aluminium powder coated black
- Lens - toughened glass
- Reflector - high purity, high reflectance, anodised aluminium
- Stirrup - steel powder coated in black finish

Dimensions



	A	B	C	D	E
GLL105KZ (10W)	220	83	147	172	55
GLL105KZPIR (10W + PIR)	220	83	147	172	106
GLL305KZ (30W)	314	78	218	243	80
GLL305KZPIR (30W + PIR)	314	78	218	243	131
GLL505KZ (50W)	395	103	291	321	106
GLL1005KZ (100W)	456	119	336	380	112
GLL2005KZ (200W)	620	195	432	482	158



Galaxy LED with PIR Sensor

Installation notes

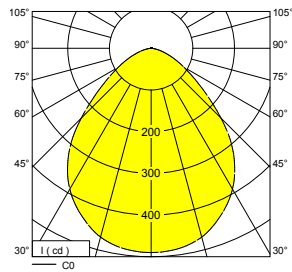
- Suitable for column, wall and floor mounting
- Stirrup bolts directly to vertical surface for area floodlighting or to floor for façade lighting
- 3 way, 1 x 2.5mm² terminal block
- Aimed by slackening side bolts and positioning angle using inclinometer on stirrup
- Front lens secured by latching clip
- Supplied complete with 1m 3 core 1mm² lead

Specification

To specify state: Die cast aluminium floodlight, with symmetrical reflector and toughened safety glass. Finished in black paint finish and dust tight and water jet proof to IP65, as Eaton's Galaxy LED range, part no. _____

Photometric data

Cat. no. GLL1005KZ



LO 7817 Lumens

Catalogue numbers

Part no.	With PIR	Lumen output	Wattage	Llm/cW	Weight (kg)	Weight + PIR (kg)
GLL105KZ	GLL105KZPIR	838	11.85	70.70	1.10	1.22
GLL305KZ	GLL305KZPIR	2655	32.80	81.30	2.97	2.99
GLL505KZ	-	4410	51.50	85.50	5.21	-
GLL1005KZ	-	7817	101.40	77.10	7.32	-
GLL2005KZ	-	17495	220.00	79.30	14.08	-

Aethon



Aethon represents a new generation in area floodlighting. Along with a striking aesthetic, Aethon gives the designer real choice when considering a multitude of applications and scenarios. Pressure cast aluminium provides a robust housing and frame and also acts as an excellent heat sink, ensuring optimum performance from the LED chip array at both low and high ambient temperatures.

Careful design and light shielding helps avoid light trespass helping to alleviate potential planning issues. The Aethon advantage is the suite of optical distributions available combined with multiple outputs gives total design flexibility and scheme efficacy.

- High efficacies of up to 111 Llm/cW which exceed the requirements of UK Building Regulations: Part L and Section 6 (Scotland)
- Operating temperatures of -40°C to +50°C
- Close colour tolerance: MacAdam 3 SDCM
- Complete with ready fixed brackets for efficient installation times
- A choice of three optical distributions means controlled lighting to suit many applications
- NEMA socket included with shorting plug (Large only)
- Low upward distribution element helps in 'dark sky' locations and where light trespass is to be avoided
- IP67 certified

Industrial portfolio

Aethon

Light Engine and Control Gear Options

- High output, high efficacy LED array optimised for precision floodlights
- Energy efficient fixed output control gear
- 5000°K Ra 80 LED array

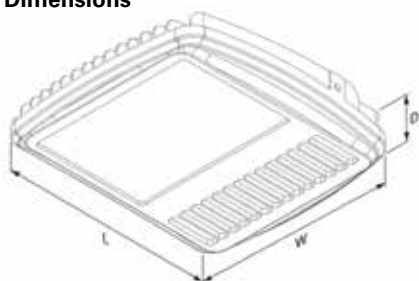
Materials






- Body - Pressure die cast aluminium housing, heat sink and frame. Chromate conversion coating with powdercoat paint finish, RAL 9005
- Lens - Clear flat glass
- Brackets - Steel / Pressure cast aluminium (dependent on option)

Installation Notes

- Complete with pre-attached bracket - select at order stage
- Includes 300mm 3 core 1.5mm² flexible flying lead - easily demountable internally

Dimensions



Aethon Small Bracket	L	W	D
	382.6	335.0	91.0
A 	491.0	335.0	147.6
B 	487.2	335.0	91.0
C 	463.5	339.0	91.0
D 	521.3	335.0	91.0
E 	404.4	335.0	91.0

Light Engine and Control Gear Options





- High output, high efficacy LED array optimised for precision floodlights
- Energy efficient fixed output control gear
- 5000K Ra 80 LED array

Materials

- Body - Pressure die cast aluminium housing, heat sink and frame. Chromate conversion coating with powdercoat paint finish, RAL 9005
- Lens - Clear flat glass
- Brackets - Steel / Pressure cast aluminium (dependent on option)

Photometric Data

Aethon offers the choice of three optical distributions, based on the IESNA standard patterns of light distribution, these are defined as Type 1, Type 3 and Type 5

Aethon Large Bracket	L	W	D
	561.9	395.0	110.8
A 	700.9	395.0	147.6
B 	666.6	395.0	110.8
C 	674.2	403.0	110.8
D 	701.0	395.0	110.8

Brackets



Type A - Mounting Arm



Type B - Pole Mount Arm



Type C - Large Yoke

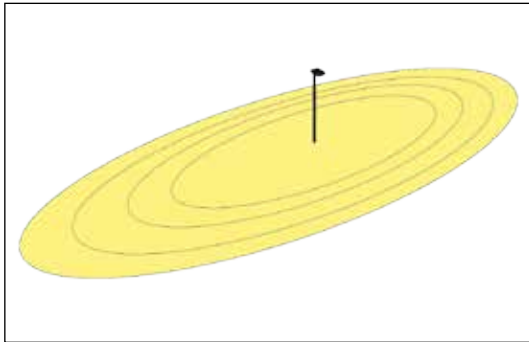


Type D - Two Piece Bracket



Type E - Easy Hang Wall Plate (Aethon Small only)

Type 1

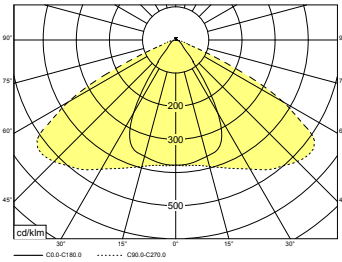


The lighting distribution is generally narrow and symmetrical in two directions. Its application lends itself to perimeter lighting either on a post or fixed to the side of a building. This distribution is efficient and puts light where it is needed allowing for greater linear spacing potential than wholly symmetrical floodlights.

Application – pedestrian paths, perimeter security zones, unadopted narrow roads within private premises.

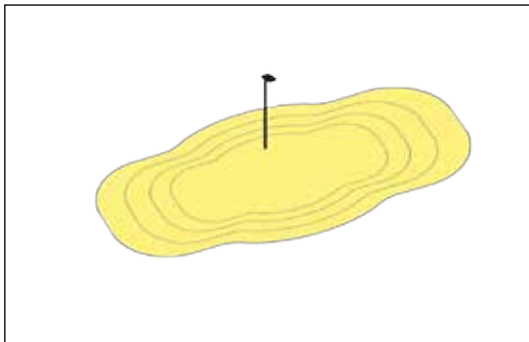
Type 1

Cat. No: AET1S865KAZ



LO 9308 lumens

Type 3

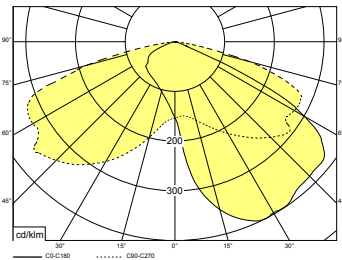


This pattern of distribution is used where a greater throw of light is required directly in front of the mounting position as well as maintaining some light distribution to the sides.

Application – general area floodlighting, unadopted twin carriageway roads within private premises, car parks, marshalling yards.

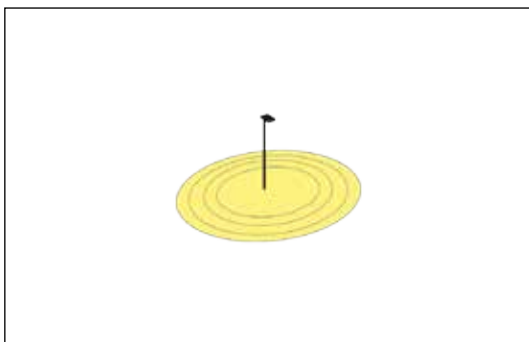
Type 3

Cat. No: AET3S865KAZ



LO 8338 Lumens

Type 5

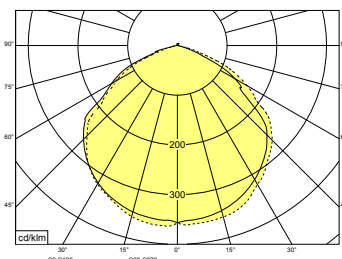


Having a symmetrical distribution in all directions, this type of pattern gives good general lighting characteristics where a broad beam is required. This may be mounted on a post, wall or can be used to highlight architectural features.

Application – general areas, car parks, highlighting building, art and structures, marshalling yards, industrial installations.

Type 5

Cat. No: AET5S865KAZ



LO 9220 Lumens

Chatham



Aluminium - Domed top



Stainless Steel - Domed top

The Chatham range provides a classic and durable solution for a wide variety of outdoor applications. The housing is constructed from either extruded and die cast aluminium or 316 marine grade stainless steel with a tough UV stabilised polycarbonate lens protecting the optical section. Externally rated to IP65 the Chatham range is suited to many environments.

All versions are also available with a three hour maintained emergency option where required. The emergency module is housed securely in an internally mounted IP44 rated chamber.

In addition to the supplied tri-frame mounting bolts, there is a further choice of sturdy mounting options including a root mount post for soft ground and an extended base section for added stability in certain applications.

- A classical slim design that blends into most environments
- Robust aluminium construction for a long durable life – stainless steel option available
- Low glare distribution from the directionally mounted LED array
- A shielded LED array means a very low upward light distribution. This helps towards 'dark sky' environments
- Choice of dome or flat top versions for architectural integration (aluminium only)
- High lumen output from the energy efficient LED system
- All variants are complete with tri-frame mounting bolts – these must be cast in and used as a minimum standard mounting method. For soft ground the alternative Root Mounting Post must be installed
- Operating temperatures of -40°C to +40°C (EM variants +5°C to +35°C)

Light Engine and Control Gear

- High efficacy linear LED light engines
- >80 CRI 5000°K
- Energy efficient LED system

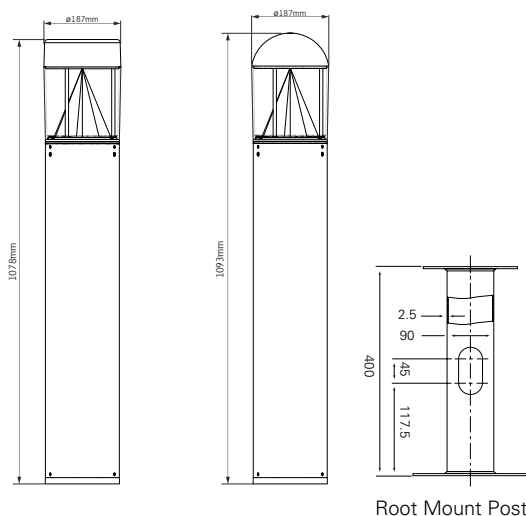
Materials

- Extruded and die cast aluminium, Black powder coated RAL 9005 / 316L Stainless Steel body
- Polycarbonate UV stabilised lens

Installation Notes

- All variants are complete with tri-frame mounting bolts – these must be cast in and used as a minimum standard mounting method below hard standing or compacted sub-layer.
- A minimum of 0.02m³ cast concrete shall be used in conjunction with the tri-frame mounting bolts. The concrete shall be to a minimum depth of 300mm allowing 70mm of thread above finished level
- For soft ground the alternative Root Mounting Post (CHARMP) must be installed
- It is recommended that the base of all bollards are filled with 300mm of sharp sand or other desiccate to inhibit condensation.
- All ground mounted luminaires are liable to some condensation. Condensation may be visible in the Chatham lens area when switched off and will dissipate in use

Dimensions



Options

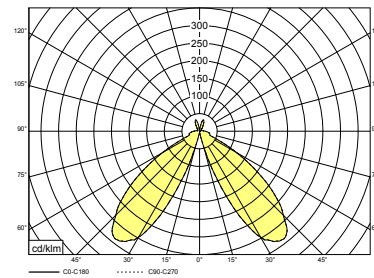
- 3 hour maintained emergency versions
- Additional Support Collar for added stability in challenging environments
- Root Mounting Post for soft ground installations, for added stability and durability
- We offer a range of product support contracts to aid commissioning, reduce your maintenance costs, comply with legislative test requirements and increase the lifespan of your lighting equipment

Specification

To specify state: Chatham range, extruded aluminium construction with powder coat paint finish, / 316 Stainless Steel. High performance low glare distribution with high output light engines. Dust tight and water jet proof to IP65 with IP44 internal chamber for 3 hour integrated emergency versions, as Eaton's Chatham range, part no. _____

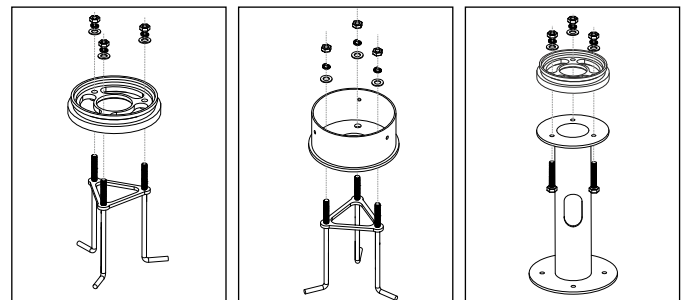
Photometric Data

Cat. No: CHAF17144ZBA



Performance

Description	Lumen Output (lm)	Wattage (W)	Efficacy (Llm/cW)
Chatham bollard	1320	17.4	75.8



Tri-frame mounting bolts

Support collar with tri-frame mounting bolts

Root mounting post

Catalogue Numbers

Description	Cat No.	Weight (kg)	Emergency Cat No.	Weight (kg)
Flat top black aluminium	CHAF17145KZBA	5.8	EBCHAF17145KZBA	7.5
Domed top black aluminium	CHAD17145KZBA	5.6	EBCHAD17145KZBA	7.3
Domed top Stainless Steel	CHAD17145KZSS	9.0	EBCHAD17145KZSS	10.7

Accessories

Description	Cat No	Weight (kg)
Root mounting post	CHARMP	4.2
Support collar	CHASUC	2.4



6

Vienza / LED



Designed for the latest LED technology the Vienza range brings a touch of style to interior and exterior applications requiring a tough, water proof, energy efficient light source. Designed to offer a variety of finished appearances, the Vienza blends effortlessly into a multitude of environments with the help of its smooth seamless profile. All versions have vandal resistant polycarbonate body and diffuser in both square and round, and a choice of opal or clear prismatic diffusers with internal prisms, providing a smooth, wipe clean exterior. Mounting skirt and eyelid attachments for the round version, together with photocell kits complete the range, making Vienza a truly versatile lighting solution. Also available in conventional fluorescent.

- Smooth seamless profile
- Tough, vandal resistant polycarbonate
- Opal or clear prismatic diffusers
- Black or white body colour
- Hinged geartray for easy installation and maintenance
- Round eyelid and mounting skirt attachments


Industrial portfolio

Vienza / LED

Lightsource and Control Gear Options - LED

- LED – high output, high efficiency LED chip set optimised for maximum efficiency
- Energy efficient fixed output as standard
- DALI dimming option

Lamp and Control Gear Options - Fluorescent

- 28W, 38W 2D compact fluorescent, 3500°K - GR10q-4 cap 
- High frequency control gear as standard

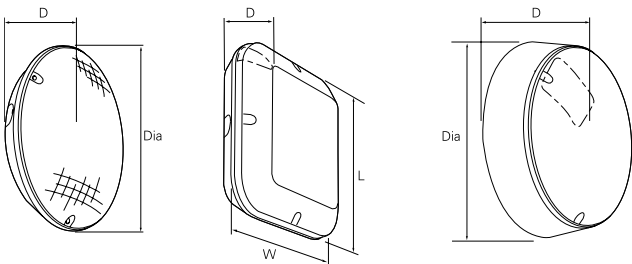
Materials

- Base - polycarbonate, white or black
- Diffuser - opal or clear polycarbonate with internal prisms
- Geartray - steel, powder coated white
- Eyelid - polycarbonate, white or black
- Round mounting skirt - polycarbonate, white or black

Installation Notes

- Suitable for ceiling or wall mounting
- BESA drill points on rear, and alternative drill points for screw fixing
- Round mounting skirt attachment allows flush fixing over 20mm conduit and BESA box
- Cable entry points from 3 directions, with cover caps to maintain body profile
- Geartray hinges for ease and speed of installation
- 3 way, 2 x 1.5mm² terminal block
- Diffuser retained by captive screws, with cover caps to maintain body profile
- Fully retained eyelid attachment
- Supplied complete with lamp

Dimensions



Lmap Rating	L (mm)	W (mm)	Dia (mm)	D (mm)
Round	-	-	319	105
Square	310	310	-	85
Mounting skirt installed	-	-	346	135

Options

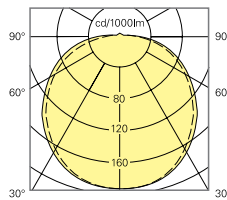
- Fully integral emergency conversion, 3 hour duration
- Suitable for use on defined escape routes
- Round eyelid and mounting skirt attachment
- Photocell kit
- Fused option available
- Microwave sensor (LED only)

Specification

To specify state: Square/Round IP65 vandal resistant compact LED/fluorescent luminaire, black/white polycarbonate base, tough wipe clean opal/prismatic polycarbonate diffuser with internal prisms, eyelid and mounting skirt attachment, and hinged geartray as Eaton's Vienza range, part no. _____

Photometric Data

Cat. No. VRWP28Z



LOR: 0.70
ULOR: 0.05
DLOR: 0.65
SHR nom: 1.50
SHR max: 1.65

Utilisation factors / TM5

Reflectances			Room Index										
C	W	F	0.75	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0		
70	50	20	38	43	48	52	57	60	63	66	68		
	30		32	38	43	47	52	56	59	63	65		
	10		28	33	39	42	48	52	55	60	63		
50	50	20	36	41	46	49	54	57	59	62	64		
	30		31	36	41	45	50	53	56	60	62		
	10		28	33	38	41	46	50	53	57	60		
30	50	20	35	39	44	47	51	54	56	59	61		
	30		30	35	40	43	48	51	53	57	59		
	10		27	32	37	40	45	48	51	55	57		
0	0	0	25	29	34	37	42	45	47	50	53		
BZ-class			5	5	5	5	5	5	5	5	5		

Vienza Square



Vienza Round with Eyelid



Vienza construction



Catalogue Numbers

LED models

Variant	Cat No	Lumen Output	Wattage (W)	Llm/ cW	Weight (kg)	Em Cat No	Weight (kg)
1600	VRW0164KZ	1608	20.7	77.6	1.37	ELVRW0164KZ	1.87
2000	VRW0204KZ	2048	26.4	77.5	1.38	ELVRW0204KZ	1.88

For Black bodied variants replace the character **W** with **B**, e.g. VRW0164KZ becomes VRB0164KZ

For DALI dimming option replace character **Z** with **DD**, e.g. VRW0164KZ becomes VRW0164KDD

For Microwave sensor (LED only) add **M** to the end of the part number, e.g. VRW0164KZM

Fluorescent models

Lamp Rating	Gear Option	Body Colour	Diffuser Type	Cat No	Weight (kg)	Emergency Cat No	Weight (kg)
Vienza Round							
1 x 28W	High Frequency	White	Opal	VRWO28Z	1.4	EBVRWO28Z	1.9
1 x 38W	High Frequency	White	Opal	VRWO38Z	1.4	-	-
1 x 28W	High Frequency	White	Prismatic	VRWP28Z	1.4	EBVRWP28Z	1.9
1 x 38W	High Frequency	White	Prismatic	VRWP38Z	1.4	-	-
1 x 28W	High Frequency	Black	Opal	VRBO28Z	1.4	EBVRBO28Z	1.9
1 x 38W	High Frequency	Black	Opal	VRBO38Z	1.4	-	-
1 x 28W	High Frequency	Black	Prismatic	VRBP28Z	1.4	EBVRBP28Z	1.9
1 x 38W	High Frequency	Black	Prismatic	VRBP38Z	1.4	-	-

Vienza Square

1 x 28W	High Frequency	White	Opal	VSWO28Z	1.6	EBVSWO28Z	2.1
1 x 38W	High Frequency	White	Opal	VSWO38Z	1.6	-	-
1 x 28W	High Frequency	White	Prismatic	VSWP28Z	1.6	EBVSWP28Z	2.1
1 x 38W	High Frequency	White	Prismatic	VSWP38Z	1.6	-	-
1 x 28W	High Frequency	Black	Opal	VSBO28Z	1.6	EBVSBO28Z	2.1
1 x 38W	High Frequency	Black	Opal	VSBO38Z	1.6	-	-
1 x 28W	High Frequency	Black	Prismatic	VSBP28Z	1.6	EBVSBP28Z	2.1
1 x 38W	High Frequency	Black	Prismatic	VSBP38Z	1.6	-	-

Attachments	Cat No	Weight (kg)
Round white eyelid	VRWE	0.11
Round black eyelid	VRBE	0.11
Round white mounting skirt	VRWS	0.52
Round black mounting skirt	VRBS	0.52
Photocell kit (fluorescent only)	VPC	0.10

Emergency versions available with automatic test functionality

For further information contact our technical support and application department on 01302 303240 or email LightingTechnicalUK@Eaton.com

Industrial portfolio

AG Bulkhead and AG LED Bulkhead

AG Bulkhead and AG LED Bulkhead




AG Bulkhead is a competitively priced exterior emergency bulkhead that does not compromise on quality.

The compact and tough die cast construction, vandal resistant diffuser, IP65 weatherproof rating and time saving installation features make AG Bulkhead excellent value for money for a variety of applications, from public buildings and car parks to industrial facilities. A high output mains version, using an 11W CFL lamp, allows this versatile luminaire to also be used for the general lighting of circulation areas, both exterior and interior, such as stairwells. A useful semi-recessing trim plate enhances the appearance of the AG range when mounted into canopies or in corridors.

- BSI kitemarked for peace of mind
- ICEL registered with verified light performance
- Competitive and versatile range
- Weatherproof, heavy duty vandal resistant construction
- Matching 11W PL mains version
- Tamper resistant diffuser ideal for public areas
- Self-contained, slave, and addressable testing options
- Available in self-contained, AC/DC and AC mains slave versions
- Supplied with lamp
- Long life 50,000 hour LED version available (self-contained only)

Lamp options

- 8W T5 fluorescent, 3500°K - G5 cap 
- 11W TC-S compact fluorescent, 3500°K - G23 cap
- High output 16 LED strip

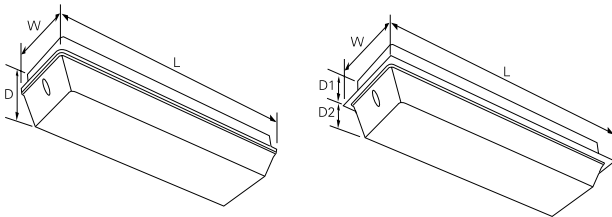
Materials

- Base - die cast aluminium, powder coated in RAL9016 finish
- Diffuser - opal polycarbonate
- Geartray - steel, powder coated in RAL9016 finish
- Recessing trim plate - steel, powder coated in RAL9016 finish
- Batteries (self-contained versions) - NiCd

Installation notes

- Suitable for ceiling or wall mounting
- BESA entry drill-out on rear
- 20mm conduit entry on each end, with blanking plugs
- Geartray hinged, retained in closed position by single screw
- Diffuser retained by allen key security screws
- Supplied complete with lamp

Dimensions



Options	L (mm)	W (mm)	D1 (mm)	D2 (mm)	Cut out (mm)
Surface mounted	390	110	90	-	-
Semi-recessed	430	150	27	63	380 x 102

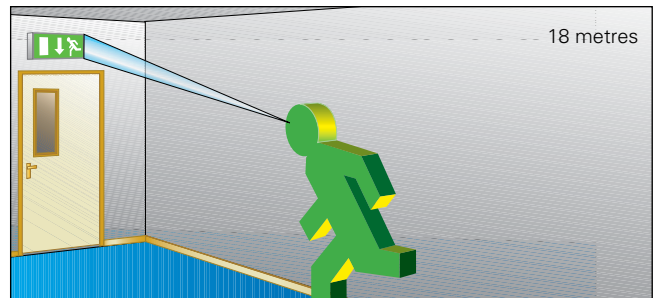
Options

- Maintained and non-maintained operation, 3 hour duration
- EasiCheck addressable testing (fluorescent only)
- Central system slave versions (fluorescent only)
- Semi-recessing trim plate accessory
- Matching mains only version (1x11W TC-S compact fluorescent)

Specification

Self contained - To specify state: BSI Kitemarked and ICEL registered, IP65 vandal resistant self-contained emergency luminaire, die cast aluminium base with BESA drill-out, 2 x conduit entries with blanking plugs, hinged geartray with plug and socket terminal block and tamper resistant opal diffuser, as AG Bulkhead range, part no. _____

Self-test/Slave - To specify state: Intelligent self-testing/Central system compatible slave, IP65 vandal resistant emergency luminaire, die cast aluminium base with BESA drill-out, 2 x conduit entries with blanking plugs, hinged geartray with plug and socket terminal block and tamper resistant opal diffuser, as AG Bulkhead range, part no. _____



Industrial portfolio

AG Bulkhead and AG LED Bulkhead

Photometric data

Luminaire type	Mounting height (m)	Escape route 2m wide 1 lux min					Open (anti-panic) area 0.5 lux min			
Self-contained										
NM	2.5	1.8	5.6	4.7	1.5	2.0	5.4	4.4	1.6	
	3.0	1.4	5.5	4.6	1.1	1.9	5.5	4.6	1.6	
	4.0	-	-	-	-	1.6	5.5	4.6	1.3	
M	2.5	1.5	5.2	4.2	1.2	1.8	5.1	4.2	1.5	
	3.0	0.9	4.9	4.1	0.7	1.7	5.2	4.3	1.5	
	4.0	-	-	-	-	1.2	5.0	4.2	1.0	
Slave										
AC/DC	2.5	2.5	7.0	5.8	2.1	2.5	6.6	5.3	2.0	
	4.0	1.5	6.6	5.7	1.2	2.4	7.0	5.8	2.0	
	6.0	-	-	-	-	-	-	-	-	
AC/AC	2.5	3.0	8.0	6.0	2.2	2.8	9.8	7.0	1.5	
	4.0	2.3	7.8	6.6	1.8	2.7	10.8	8.4	1.7	
	6.0	-	6.8	5.6	-	2.4	11.8	9.9	1.4	
LED										
Self-contained										
M	2.5	2.6	7.1	6.5	2.4	3.4	7.4	7.0	2.8	
	2.8	2.6	7.2	6.7	2.4	3.5	8.0	7.3	2.9	
	3.0	2.6	7.3	6.8	2.4	3.5	8.5	7.5	2.9	
	4.0	2.2	7.4	6.1	2.0	3.4	9.4	8.5	3.0	

Catalogue numbers

System mode	Cat. no.	Weight (kg)
Non Maintained 3Hr	AG83ICEL	1.8
Maintained 3Hr	AG83MICEL	1.9
Maintained 3Hr EasiCheck	AG83MEC	1.9
230V CeaGuard Slave	AG8230CG	0.9
230V AC Mains Slave	AG8230	1.5
230V AC Mains Slave EasiCheck	AG8230EC	1.6
50V AC/DC Central System Slave	AG850	1.5
110V AC/DC Central System Slave	AG8110	1.5
LED		
Maintained/ Non maintained 3Hr	AGL3M	1.5

Accessories

Description	Cat. no.	Weight (kg)
Legend kit		
European Format Self-Adhesive Legend Kit	LEXSAM	0.05
ISO7010 Format Self-Adhesive Legend Kit	LEXSAM-ISO	0.05
Trim plate		
Semi-recess plate	AG8FM	0.1

i-P65+



The i-P65+ combines the performance of a traditional High Bay emergency luminaire with the aesthetics of the i-P65 to create a new robust and multi-functional luminaire range.

i-P65+ provides a highly superior alternative to traditional Twin Spot projectors which are not well suited for large open areas. The i-P65+ has far greater performance for the escape route also.

The i-P65+ range is available with either a Die-cast Aluminium or high-impact Polycarbonate base. This coupled with the IP65 rating make it an ideal product for industrial applications but its aesthetic appearance also lends itself to more commercial applications where a higher level of emergency illumination is required i.e. high risk task areas

The i-P65+ range is split into two variants with a mid-bay solution for low to medium mounting and a high-bay solution for mounting up to 34m.

- 60,000 hour maintained operation L80
- Mid-bay and high-bay variants allow the luminaire to be tailored to the application and reduces overall cost of ownership by reducing number of luminaires required
- Weatherproof IP65 ingress protection suitable for outdoor and wet environments
- Suitable for high risk task areas and specific locations as defined in EN1838 and BS 5266 respectively
- Polycarbonate and Die-cast Aluminium variants available
- Tamper resistant diffuser for increased safety
- Self-contained, slave, self-test and addressable testing options available

Industrial portfolio

i-P65+

Lamp options

- 6.5W high power white LED
- 100,000 Hours @ L80 in maintained operation

Materials

- Base variants– Impact resistant polycarbonate & die-cast Aluminium, finished in white powder coated paint
- Diffuser – Clear polycarbonate
- Battery - NiCd (Self-Contained version)

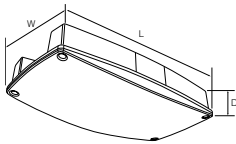
Installation notes

- Suitable for ceiling mounting
- Suitable for mounting heights of 2-34m
- Single BESA entry drill-out on rear
- 20mm conduit entry to each end and three laterally on one side
- Direct screw fix option, with fixing holes outside of the IP rated area for improved ingress protection
- 4 Pole screwless terminal block, accommodating 2 x 1.5mm² solid or stranded wiring
- Diffuser retained by allen key security screws

Options

- Self-Contained – Can be operated in maintained or non-maintained mode
- Intellem self-test
- CGLine+ addressable test system
- Central battery slave versions
- Easichck slave addressable test versions
- CEAG slave versions

Dimensions



	L (mm)	W (mm)	D (mm)
iP65+	340	167.9	80.5

Reflector options

- Dependent on the application, an optic or reflector variant is available to best suit project requirements.
- The wide-beam optic 'L' variant provides a square light distribution. It is most suitable for illuminating open areas
- The narrow-beam reflector 'H' variant is especially suitable for escape route illumination

Specification

To specify state: Self-Contained – High output high performance IP65 rated self-contained luminaire complete with NiCd battery, control gear and purpose designed optic/reflector suitable for medium and high level mounting heights. Impact resistant polycarbonate base and heavy duty clear diffuser as i-P65+ part number _____

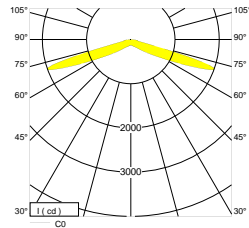
Slave – High output high performance IP rated slave luminaire complete with control gear and purpose designed optic/reflector suitable for medium and high level mounting heights. Impact resistant polycarbonate base and heavy duty clear diffuser as i-P65+ part number _____

Additional notes

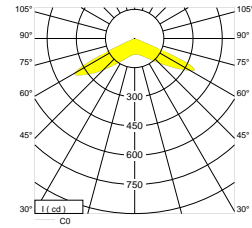
- Robust IK08 rated design
- i-P65+ is also suitable for meeting the following requirements:
 - Areas which require increased illumination as detailed in BS 5266 & BS EN 1838
 - Areas with a requirement of 10.8 lux according to NFPA 101

Photometric data

Cat. no. IP65LEDE
Escape Route



Cat. no. IP65LEDO
Open Area Anti-Panic



Escape Optics (Asymmetric)
Based on Factors K 0.85 S 0.95

Escape Route 2M wide 1 lux min to centre line

Mode	Mounting height (m)	Lux level directly under	Escape route		Open area			
			☞☞	☞☞☞	☞☞	☞☞☞	☞☞☞☞	☞☞☞☞☞☞
Self contained Highbay	2	84.50	High risk task applications		High risk task applications			
	2.8	39.40	2.9	6.2	3.0	6.2	4.8	2.4
	3	38.80	3.2	6.6	3.3	6.7	4.8	2.4
	4	22.10	4.1	8.4	4.3	8.3	5.2	2.7
	5	14.20	4.9	10.3	4.8	9.8	6.3	3.3
	6	9.92	5.8	12.1	5.5	11.6	7.3	3.7
	7	7.30	6.4	13.8	6.2	13.2	8.2	4.0
	8	5.61	7.1	15.4	7.1	14.9	9.0	4.1
	9	4.48	7.8	16.9	7.8	16.5	9.7	4.2
	10	3.65	8.2	18.3	8.5	18.1	10.4	4.3
	17	1.26	6.4	24.7	10.5	27.7	14.4	5.0
	20	0.91	-	-	10.0	31.0	16.0	4.5
	25	0.58	-	-	7.3	36.0	16.2	2.5
	26	0.54	-	-	6.5	35.6	16.2	1.7
Self contained Midbay	2	20.4	High risk task applications		High risk task applications			
	2.8	12	4.2	8.6	4.3	8.4	8.4	4.3
	3	11.7	4.4	9.1	4.4	8.9	8.9	4.4
	4	5.85	5.7	11.8	5.6	11.1	11.1	5.6
	5	3.98	6.7	14.3	6.6	13.5	13.5	6.6
	6	2.91	7.3	16.6	7.6	15.8	15.8	7.6
	7	2.12	7.5	18.4	8.5	18.1	18.1	8.5
	8	1.6	6.5	19.3	9.3	20.4	20.4	9.3
	9	1.27	4.7	19.1	10.0	22.5	22.5	10.0
	10	1.04	-	-	10.5	24.4	24.4	10.5
	14	0.54	-	-	4.6	27.0	27.0	4.6
Slave Highbay	2	151.0	High risk task applications		High risk task applications			
	2.8	75.0	3.1	7.0	3.0	7.3	7.0	2.8
	3	63.8	3.3	7.3	3.4	7.5	7.0	2.9
	4	37.4	4.2	8.8	4.4	8.8	6.3	3.1
	5	24.5	5.1	10.6	5.1	10.0	6.6	3.7
	6	17.1	6.0	12.5	5.8	11.4	7.5	4.1
	7	12.6	6.8	14.3	6.8	13.5	8.5	4.2
	8	9.7	7.7	16.1	7.5	15.3	9.4	4.3
	9	7.7	8.5	17.8	8.2	17.2	9.8	4.6
	10	6.2	9.2	19.6	8.5	18.8	10.7	5.0
	15	2.8	11.8	27.1	11.0	26.2	14.8	6.4
	20	1.5	12.2	32.5	12.1	31.6	17.8	7.2
	24	1.0	7.0	33.4	11.6	35.8	20.3	6.6
	30	0.65	-	-	10.7	42.7	20.2	4.4
34	0.5	-	-	7.7	44.4	20.2	2.5	
CEAG Slave Highbay	2.0	123.00	High risk task applications		High risk task applications			
	2.8	60.20	3.0	6.6	3.2	7.1	6.0	2.4
	3	51.00	3.3	6.9	3.4	7.5	6.0	2.6
	4	30.00	4.2	8.6	4.1	8.7	5.7	3.0
	5	19.60	5.1	10.5	4.9	10.1	6.4	3.4
	6	13.70	6.0	12.3	5.5	11.5	7.4	3.9
	7	10.20	6.7	14.1	6.0	13.2	8.2	4.3
	8	7.70	7.5	15.9	6.7	15.0	9.1	4.6
	9	6.10	8.2	17.6	7.3	16.5	10.0	4.9
	10	5.00	8.8	19.2	7.7	17.8	10.8	5.3
	15	2.20	10.9	26.4	9.7	24.2	14.2	6.5
	20	1.2	9.5	30.3	9.8	30.2	17.4	6.6
	22	1.0	5.1	28.8	9.2	32.2	18.6	6.0
	25	0.80	-	-	8.4	34.2	18.6	4.6
30	0.53	-	-	6.8	35	18.2	2.6	
CEAG Slave Midbay	2.0	28.6	High risk task applications		High risk task applications			
	2.8	16.3	4.1	8.8	4.4	8.1	8.1	4.4
	3.0	14.3	4.4	9.4	4.5	8.7	8.7	4.5
	4.0	8.1	5.6	11.9	5.6	11.1	11.1	5.6
	5.0	5.1	6.8	14.4	6.8	13.6	13.6	6.8
	6.0	3.5	7.9	16.9	7.8	16.0	16.0	7.8
	7.0	2.6	8.6	19.2	8.9	18.4	18.4	8.9
	8.0	2.0	9.0	21.2	9.8	20.7	20.7	9.8
	9.0	1.6	9.0	22.9	10.8	23.0	23.0	10.8
	10.0	1.3	7.2	23.7	11.6	25.1	25.1	11.6
	15.0	0.55	-	-	6.4	30.6	30.6	6.4

Industrial portfolio

I-P65+

Catalogue numbers

System mode	Cat. no.	Weight (kg)
Self-contained high bay		
Self-contained 3Hr (Polycarbonate)	IP65PHP3H	1.85
Self-contained 3Hr (Aluminium)	IP65PHA3H	2.25
Self-contained 3Hr intellem self-test (Polycarbonate)	IP65PHP3HIS	1.85
Self-contained 3Hr intellem self-test (Aluminium)	IP65PHA3HIS	2.25
Self-contained 3Hr CGLine+ (Polycarbonate)	IP65PHP3HCGL	1.85
Self-contained 3Hr CGLine+ (Aluminium)	IP65PHA3HCGL	2.25
Self-contained mid bay		
Self-contained 3Hr (Polycarbonate)	IP65PLP3H	1.85
Self-contained 3Hr (Aluminium)	IP65PLA3H	2.25
Self-contained 3Hr intellem self-test (Polycarbonate)	IP65PLP3HIS	1.85
Self-contained 3Hr intellem self-test (Aluminium)	IP65PLA3HIS	2.25
Self-contained 3Hr CGLine+ (Polycarbonate)	IP65PLP3HCGL	1.85
Self-contained 3Hr CGLine+ (Aluminium)	IP65PLA3HCGL	2.25
230VAC slave high bay		
230V AC mains slave (Polycarbonate)	IP65PHP230	1.25
230V AC mains slave (Aluminium)	IP65PHA230	1.65
230V AC mains easicheck slave (Polycarbonate)	IP65PHP230EC	1.25
230V AC mains easicheck slave (Aluminium)	IP65PHA230EC	1.65
230VAC slave mid bay		
230V AC mains slave (Polycarbonate)	IP65PLP230	1.25
230V AC mains slave (Aluminium)	IP65PLA230	1.65
230V AC mains easicheck slave (Polycarbonate)	IP65PLP230EC	1.25
230V AC mains easicheck slave (Aluminium)	IP65PLA230EC	1.65
CEAG high bay		
230V CEAG slave (Polycarbonate)	IP65PHPCGS	1.25
230V CEAG slave (Aluminium)	IP65PHACGS	1.65
CEAG mid bay		
230V CEAG slave (Polycarbonate)	IP65PLPCGS	1.25
230V CEAG slave (Aluminium)	IP65PLACGS	1.65
Accessories		
Mounting bracket for chain suspension/trunking systems etc.	IP65PSUSPB	0.4

Zeta 4



Continuing the success of the Zetalite family of products is the improved and upgraded Zeta 4.

The aesthetics have been enhanced to create a more modern and discreet appearance which is suitable for most project applications.

By utilising the latest LED technology the result is increased spacing performance while still maintaining low energy usage.

Zeta 4 is suitable for use as an Escape route and open area luminaire, while providing extra versatility as an exit sign via the application of an optional adhesive legend kit.

- Multi-functional usability (escape route, open-area and exit signage)
- Exit sign with 20m & 30m viewing distance options available
- IP65 ingress protection suitable for indoor and outdoor applications (small version only)
- Maintained and non-maintained configurable
- 60,000 hour life LED (L80) for reduced maintenance costs

Industrial portfolio

Zeta 4

Lamp options

- 8 x 0.6W (small) and 12 x 0.6W (large) LED

Power consumption

- Maintained – 6.5 VA/5.5W
- Non-maintained – 5.5 VA/4.25W

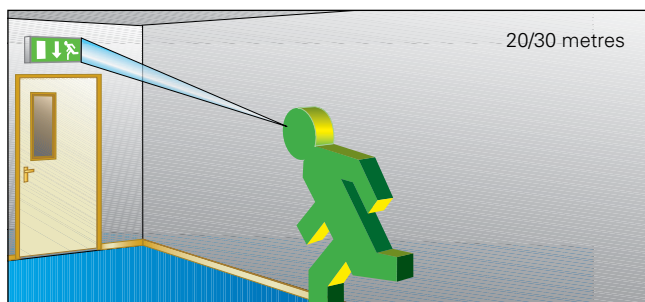
Materials

- Luminaire body – white polycarbonate RAL9003
- Battery - NiCd

Installation notes

- Surface ceiling or wall mount
- BESA entry drilling template on rear
- Cable entry to top, bottom and rear
- Lens snap fits into position
- Three screw less terminals (L, N, L2)
- Terminals take wire up to 2 x 2.5mm²
- IP65 rating is achievable with sealing plugs included. (Small version only)
- Large version is IP42 rated.

Maximum viewing distance



Catalogue numbers

System mode	Cat. no.	Weight (kg)
Maintained/Non maintained 3Hr Small	ZE42ML3	0.5
Maintained/Non maintained 3Hr Large	ZE43ML3	0.9
Legend kits		
20m viewing distance (Small) Euro legend kit	ZE42LEG	0.03
20m viewing distance (Small) ISO7010 legend kit	ZE42LEG-ISO	0.03
30m viewing distance (Large) Euro legend kit	ZE43LEG	0.06
30m viewing distance (Large) ISO7010 legend kit	ZE43LEG-ISO	0.06
Accessories		
20m viewing distance (Small) double sided diffuser	ZE42DB	0.2
20m viewing distance (Small) double sided diffuser	ZE43DB	0.5

Options

- Switch-maintained or non-maintained
- Can be used as an emergency luminaire or exit sign
- Optional double sided diffuser accessory is available for use as a double sided exit luminaire (Legend Kit purchased separately)

Specification

Self-Contained (Small Version) – To specify: IP65 self-contained emergency luminaire, suitable for use as an emergency luminaire or 20m viewing distance exit sign by application of a self-adhesive legend, NiCd battery, as per Zeta 4 range, part no. _____

Self-Contained (Large Version) – To specify: IP65 self-contained emergency luminaire, suitable for use as an emergency luminaire or 30m viewing distance exit sign by application of a self-adhesive legend, NiCd battery, as per Zeta 4 range, part no. _____

Photometric data

Mounting height (m)	Lux level directly under	Escape Optics (Asymmetric) Escape Route 2M wide 1 lux min to centre line					Open area optics (symmetric) Open (anti panic) area 0.5 lux min			
		Diagram 1	Diagram 2	Diagram 3	Diagram 4	Diagram 5	Diagram 6	Diagram 7	Diagram 8	Diagram 9
2.5	5.7	3.1	7.8	7.7	3.1	3.3	7.7	8.0	3.3	
2.8	4.6	3.2	8.2	8.0	3.1	3.4	8.6	8.6	3.3	
3.0	4.0	3.2	8.4	8.2	3.1	3.5	8.9	8.8	3.4	
3.5	2.9	3.2	8.8	8.5	3.1	3.6	9.7	9.7	3.5	
4.0	2.2	3.0	8.9	8.6	3.0	3.7	10.1	10.0	3.6	
4.5	1.8	2.8	8.9	8.7	2.8	3.7	10.5	10.3	3.6	
5.0	1.4	2.5	8.8	8.6	2.4	3.6	10.7	10.6	3.6	
5.5	1.2	1.9	8.5	8.4	1.8	3.6	11.0	10.9	3.5	
6.0	N/A	N/A	N/A	N/A	N/A	3.4	11.4	11.2	3.3	
6.5	N/A	N/A	N/A	N/A	N/A	3.2	11.4	11.4	3.1	
7	N/A	N/A	N/A	N/A	N/A	3.0	11.5	11.6	2.9	
7.5	N/A	N/A	N/A	N/A	N/A	2.7	11.6	11.9	2.6	
8	N/A	N/A	N/A	N/A	N/A	2.2	11.6	12.1	2.1	
2.5	5.2	3.0	7.5	7.5	2.9	3.4	7.4	7.3	3.4	
2.8	4.2	3.0	8.0	7.8	3.0	3.5	7.9	7.8	3.4	
3.0	3.6	3.1	8.3	8.0	3.0	3.5	8.3	8.2	3.4	
3.5	2.7	3.0	8.5	8.2	2.9	3.5	9.2	9.1	3.4	
4.0	2.1	2.8	8.6	8.4	2.8	3.6	9.9	9.6	3.5	
4.5	1.6	2.6	8.5	8.4	2.5	3.6	10.5	9.9	3.5	
5.0	1.3	2.1	8.3	8.2	2.0	3.5	10.8	10.3	3.5	
5.5	1.1	1.2	8.0	7.9	1.2	3.4	10.8	10.5	3.4	
6.0	N/A	N/A	N/A	N/A	N/A	3.3	10.8	10.6	3.3	
6.5	N/A	N/A	N/A	N/A	N/A	3.0	10.9	10.8	3.0	
7	N/A	N/A	N/A	N/A	N/A	2.7	10.9	10.8	2.7	
7.5	N/A	N/A	N/A	N/A	N/A	2.2	10.9	10.8	2.2	
8	N/A	N/A	N/A	N/A	N/A	1.3	10.9	10.8	1.3	



Central Battery Systems



Z-BS self testing
AC/DC systems



Loadstar
AC/DC systems



Loadstar economy AC/DC



Loadstar AC/AC systems



Loadstar compact AC/AC



Switch tripping units



Central battery system based emergency lighting is ideal for medium to large installations. For projects where central control and testing is desirable, a central battery system is a viable and cost effective alternative to self-contained emergency lighting products. The main advantages of central battery systems over self-contained systems are:

- Testing and maintenance is much easier to carry out
- Battery replacement is much quicker and less disruptive
- Battery life is generally 10 years or more
- Luminaires can be centrally controlled
- High light levels can easily be achieved
- The emergency lighting system can be completely unobtrusive

Eaton manufactures a wide range of central battery emergency lighting systems.

Loadstar

The cost effective Loadstar range consists of AC/AC static inverter systems and a comprehensive range of traditional AC/DC systems, including compact economy ranges designed for use in smaller installations, all compatible with Eaton's Easichk testing system.

ZB-S

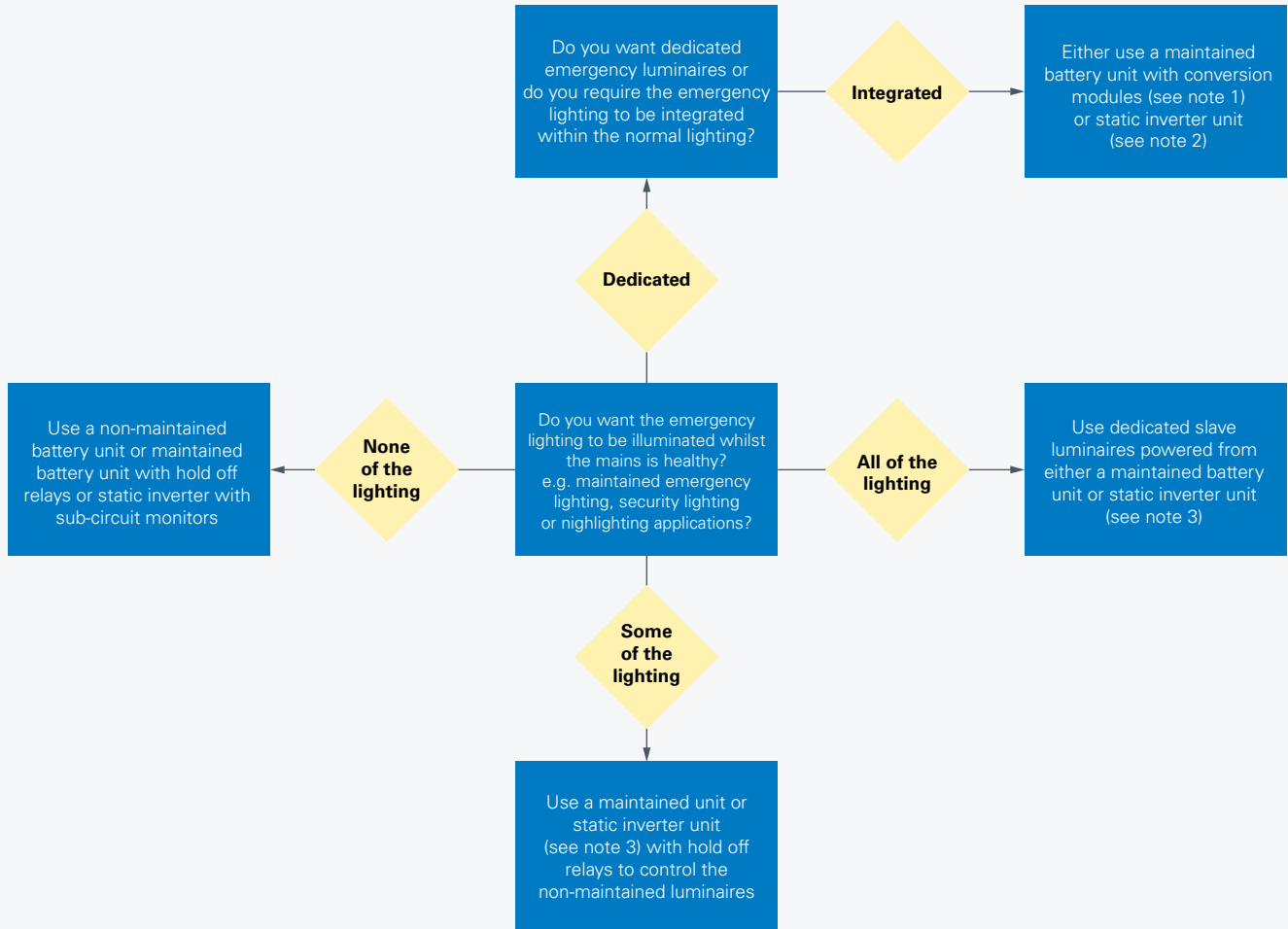
The higher specification ZB-S system provides a dependable supply of power to safety and exit luminaires, as well as testing itself automatically and individually monitoring each CG-S luminaire (up to 20 per circuit), all using the power supply cable alone.

Bespoke systems to suit the exact requirements of the specifier are also available.

Type of system

There are numerous different combinations of central battery system type and the correct choice depends as much on customer preference as on design criteria. The selection chart below gives some general guidance. Should you wish to discuss a proposed system type for a particular application, our technical department is available to provide assistance.

**Contact the Central System Technical Sales department,
Tel: 01302 303317**



Industrial portfolio

Central Battery Systems

Notes:

1. Conversion modules are designed to be incorporated into a conventional mains luminaire. During normal conditions the luminaire operates at full brightness (using the normal switched mains supply and conventional control gear). In emergency conditions the luminaire continues to operate at reduced brightness (with the emergency lamp being powered from the conversion module instead of the conventional control gear). Conversion modules are ideal for use with mains luminaires which have louvres with a sharp cut off angle, or for projects where the mains luminaires have multiple tubes, but only one tube is required to be illuminated during emergency conditions.
2. Static inverters provide mains voltage output during both normal and emergency conditions. They are designed to run conventional mains fittings at full brightness even in emergency conditions. Static inverters are ideal for projects with large open areas, or hazardous areas requiring higher than normal emergency lighting levels, or for powering compact fluorescent luminaires where there is often insufficient space within the fitting to accommodate a conversion module.
3. Static inverter systems operate the emergency luminaires at full brightness throughout the emergency autonomy period, which usually results in significantly improved luminaire spacing for mains slave luminaires compared with an equivalent low voltage AC/DC unit. In addition, the combination of higher supply voltage and the resultant reduced input current reduces installation costs by allowing the use of smaller distribution cables than would be required with a lower voltage AC/DC system.



Lighting Controls

Intelligent lighting controls



Eaton's Intelligent Lighting System (ILS) is one of the most advanced lighting and energy management systems available today. System intelligence is built into every luminaire, monitoring and reacting to occupancy, pre-selected light levels and changes in ambient daylight levels. Absence functionality is incorporated to maximise energy saving and controls factor compliance with building regulations.

The result is a highly efficient and intelligent system, which is easily re-configured as room layout or usage changes, via a simple hand-held infra-red programmer. Importantly, ILS fully considers the human dimension. Luminaires communicate with each other, allowing selected fittings to switch on together offering a pleasant, safe and correctly illuminated environment. A handy infra-red override unit also provides local control for individuals on a temporary basis. Whatever the application, ILS delivers automatic energy savings combined with outstanding flexibility.

- Energy saving - typically between 50% and 70%
- Occupancy detection, daylight linking and constant illumination
- Absence functionality (manual on, auto off) maximises energy saving and compliance with building regulations and ECA control factors
- Flexible programming via a hand-held unit
- Luminaire communication for high light quality via BUS communication loop
- User infra-red override facility for local control
- Simple to install and set up
- Easy to re-configure when office layout changes
- Groups can be created and controlled together
- Choice of standard 50mm 'cube' or mini head sensor to best suit the chosen luminaire or application
- Designed for use with DALI dimming control gear (DSI or Analogue 1-10V versions to special order)

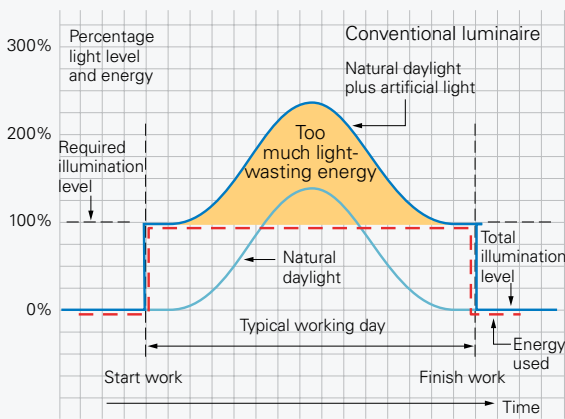
Daylight linking

Natural daylight can often provide either sufficient or a significant contribution to workplace illumination, particularly in the 5 metre area next to windows known as the window zone. Potential savings due to daylight alone are typically between 50% and 70%, dependent on the size, position and compass direction of windows. However, most people will not turn off the lights and the perceived difference between 100% on and switched off appear to be large. Additionally, turning the lights off will affect everybody, including some who may still require illumination.

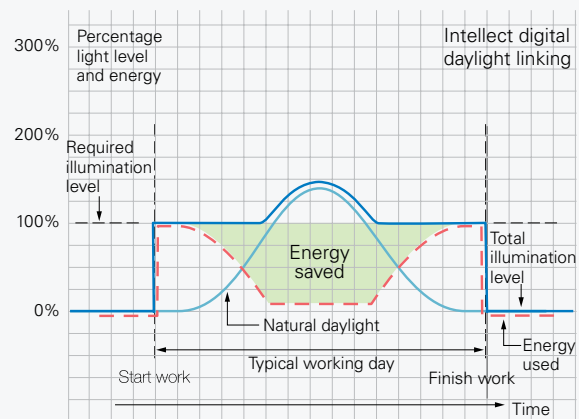
ILS overcomes this by having a built-in light sensitive cell that monitors daylight levels and adjusts lamp output accordingly, so that the pre-set light level is maintained. As daylight becomes available, the luminaires react by dimming the lamps,

continuing until minimum output is reached. With continuing or sustained daylight availability, the luminaires can be instructed to stay on and continue to operate at low levels of output, or switch off after a timed period. If daylight decreases, lamps are automatically brightened to maintain the pre-selected light level.

Each luminaire reacts independently, to take into account that the further away from the window it is installed, the influence of daylight decreases. ILS automatically compensates for light received from other luminaires and the use of window blinds or curtains. It also has a built in time delay so that it is unaffected by temporary changes in level due to reflections or clouds passing over the sun. The luminaire provides light according to the actual conditions directly beneath it.



Using a conventional luminaire, artificial light is needed at the start and end of the day, but provides too much light for most of the day (because of daylight) thus wasting energy



ILS daylight linking feature reduces light output and energy used but ensures that the installation has enough light

Absence function

Absence detection, as it is often referred to, requires the user to manually demand the lights on, usually by means of a simple wall switch. This can result in further energy savings as the luminaires will only be switched on when they are needed, regulate accordingly during operation, then switch off following the pre set time delay after the sensor last detected occupancy.

Absence is now an acknowledged energy saver and has been integrated into recommendations for many energy related incentive schemes. The manual 'on' command can be activated by a number of inputs.

Presence/absence detection

ILS can also be programmed to turn on the luminaire while people are present, but off shortly after they leave, using a passive infra-red (PIR) presence detection system fitted within each luminaire.

PIR detectors have a sophisticated lens which divides the area into three dimensional zones. Crossing from one zone to another triggers the device. Generally, the closer the person is to the PIR, the closer the zones and therefore a smaller movement is needed to trigger the device.

ILS uses a 360° lens which has a high zone density immediately beneath the luminaire to detect small movements, ensuring the luminaire remains lit when reading or writing at a desk. Further away, larger movements are required. As luminaires are usually spaced less than 3 metres apart, people are almost always working in detection zones of high sensitivity.

Illumination control

The problem with most conventional lighting systems is that:

- They deliver a fixed illumination level
- They are expensive to reconfigure if the layout or use changes
- They cannot be dimmed if the light level is higher than required
- They cannot be brightened if more light is required

These problem areas are solved by using ILS luminaires, as they can be set to operate at any light output within their range, either individually or as a whole.

This is set up using the infra-red master programmer, to provide illumination that achieves the recommended level to perform general or specific tasks. Light levels can be accurately set, as the programmer can instruct each luminaire to operate at any value setting between minimum and maximum output of the ballast.

If the usage of an area changes on a long term basis, the master programmer can be used to quickly re-configure the pre-set level. The luminaires will then continue to react automatically to changes in ambient daylight and compensate for lamp ageing, to maintain the set level.

Industrial portfolio

Lighting Controls

Luminaire communication system

Most commercially available presence detection luminaires act independently and turn off if no one is directly under them.

Whilst providing energy savings, it can lead to intimidating circumstances. In addition, individual luminaires generally do not provide the correct illumination level or adequate uniformity.

Staff working late could be left sitting in a pool of light, surrounded by intimidating darkness or have to negotiate a dark corridor, where luminaires only switch on as the person passes under them.

ILS solves this problem by enabling luminaires to communicate with each other. Every luminaire can be programmed with up to 4 of 100 available address numbers. When a luminaire is activated, by detecting presence beneath it, a signal is sent out via the 2 wire communication BUS to every other luminaire.

Any sharing the same address number will switch on. As a result selected surrounding luminaires can be instructed to remain on, along with chosen luminaires on a notional walkway or by doors. This ensures the correct level of illumination and recommended uniformity wherever people are working, along with essential circulation lighting.

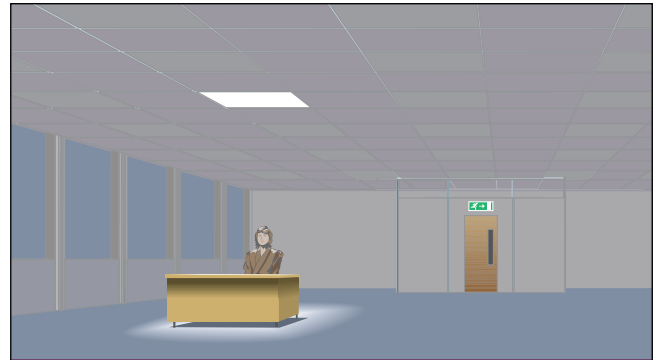
An additional feature is common zone addresses. Any luminaire can have a common zone address allocated, as one of the 4 addresses. If designated with a common zone address, that luminaire will switch on or stay illuminated if any other luminaire on the BUS is activated. This feature is useful to instruct selected areas, e.g. stairway luminaires to stay on if any person is in the building. Additionally 2 corridor zones can be created to activate a corridor or area triggered by another occupied space.

As building layout or usage is changed, the address numbers allocated to any luminaire can be simply re-programmed via the infra-red master programmer, effortlessly accommodating the ever increasing churn rate experienced in commercial buildings.

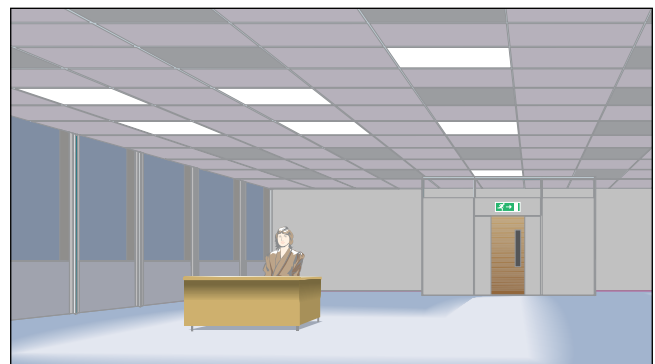
Stand-alone ILS luminaires

The stand alone version of the ILS range shares the same basic lighting and energy management functionality, of occupancy detection, daylight linking and constant illumination in every luminaire. Infra-red programming and override provides flexibility with re-configuration easily performed as requirements change.

As the stand-alone versions don't communicate with each other, a special background light feature prevents lone room occupants being stranded in a pool of light surrounded by darkness, whilst maintaining a high quality, gently lit environment and good uniformity. Particularly suited to refurbishment projects, this system provides advanced energy management and value for money.



Luminaires which don't communicate cause small pools of light surrounded by intimidating darkness



ILS luminaires communicate with each other, providing a pleasant, safe and energy saving environment

- Competitive energy management package
- Energy saving - typically between 50% and 70%
- Occupancy detection, daylight linking and constant illumination
- Background light feature
- Easy to set-up via simple I.R. programming
- Each detector acts independently

For further information contact our technical support and application department on +44 (0)1302 303240 or email LightingTechnicalUK@Eaton.com



FE

FD

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INTER

Eaton's electrical business is a global leader with expertise in power distribution and circuit protection; backup power protection; control and automation; lighting and security; structural solutions and wiring devices; solutions for harsh and hazardous environments; and engineering services. Eaton is positioned through its global solutions to answer today's most critical electrical power management challenges.

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