DATE:	**20 August 2020**
DESIGNER:	**Parkbourne Consultancy**
PROJECT No:	**19005**
PROJECT NAME:	**Nobber Fire Station**

LIGHTING REALITY

Outdoor Lighting Report

PREPARED BY: Parkbourne Consultancy,
Carlow Gateway Business Centre,
Athy Road,
Carlow

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1	754.93	68.03	74.31	56.12	1.49	1.48
2	Grid 2	773.66	62.74	48.12	21.64	1.46	1.44

Luminaires

Luminaire A Data

Supplier	
Type	VFL520 [R65] IP66:LED-12/24W/4K;VFL520, Street and Area Light
Lamp(s)	LED-12/24W/840 - 4000K
LampFlux(klm)/Colour	2.95 4000K/80
File Name	108-1495.ldt
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	507.5, 118.6, 0.0
No. in Project	3

Luminaire B Data

Supplier	
Type	ZAT434 [R65] IP66:LED-9/27W/4K;ZAT434 LED, Post Top Luminaire
Lamp(s)	LED-9/27W/840 - 4000K
LampFlux(klm)/Colour	4.05 4000K/80
File Name	115-1678.ldt
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	407.4, 198.9, 36.8
No. in Project	4

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	B	779.85	74.23	4.50	293.00	0.00	0.00	0.00			
5	A	795.35	102.92	6.00	0.00	0.00	0.00	1.00			
6	A	807.28	119.02	6.00	269.00	0.00	0.00	1.00			
7	A	820.00	102.43	6.00	180.00	0.00	0.00	1.00			
6	B	784.07	76.00	4.50	293.00	0.00	0.00	0.00			
7	B	788.61	77.89	4.50	293.00	0.00	0.00	0.00			
7	B	792.74	79.67	4.50	293.00	0.00	0.00	0.00			

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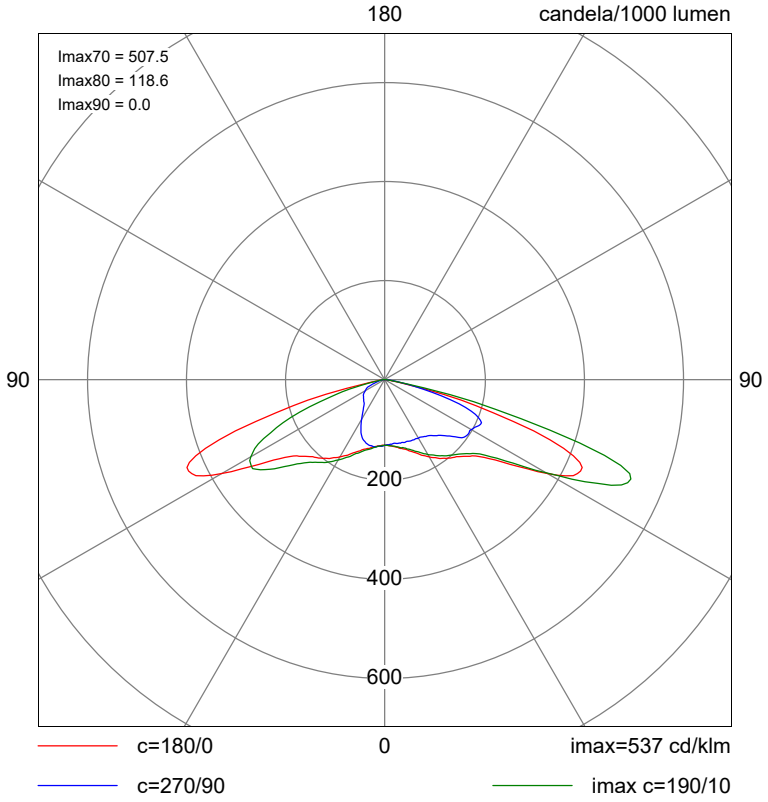
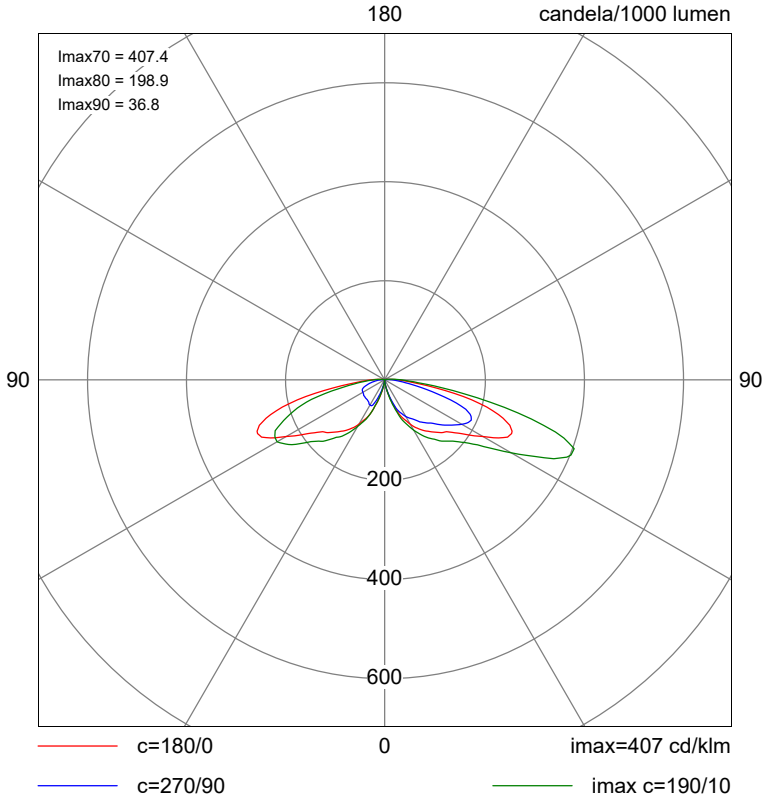
Polar Diagrams

Luminaire A VFL520 [R65] IP66:LED-12/24W/4K;VFL520, Street and Area Light



Luminaire B ZAT434 [R65] IP66:LED-9/27W/4K;ZAT434 LED, Post Top Luminaire



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Horizontal Illuminance (lux)

Grid 1

Results

Eav	5.76
Emin	2.82
Emax	17.70
Emin/Emax	0.16
Emin/Eav	0.49

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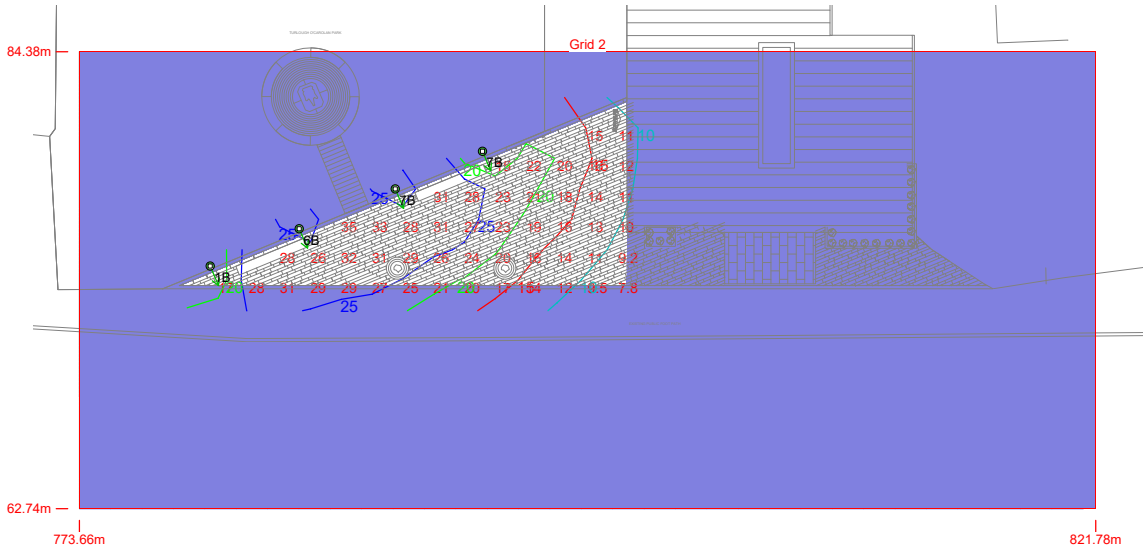
Horizontal Illuminance (lux)

Grid 2



Results

Eav	20.97
Emin	7.76
Emax	34.93
Emin/Emax	0.22
Emin/Eav	0.37

Horizontal Illuminance (lux)

Grid 1

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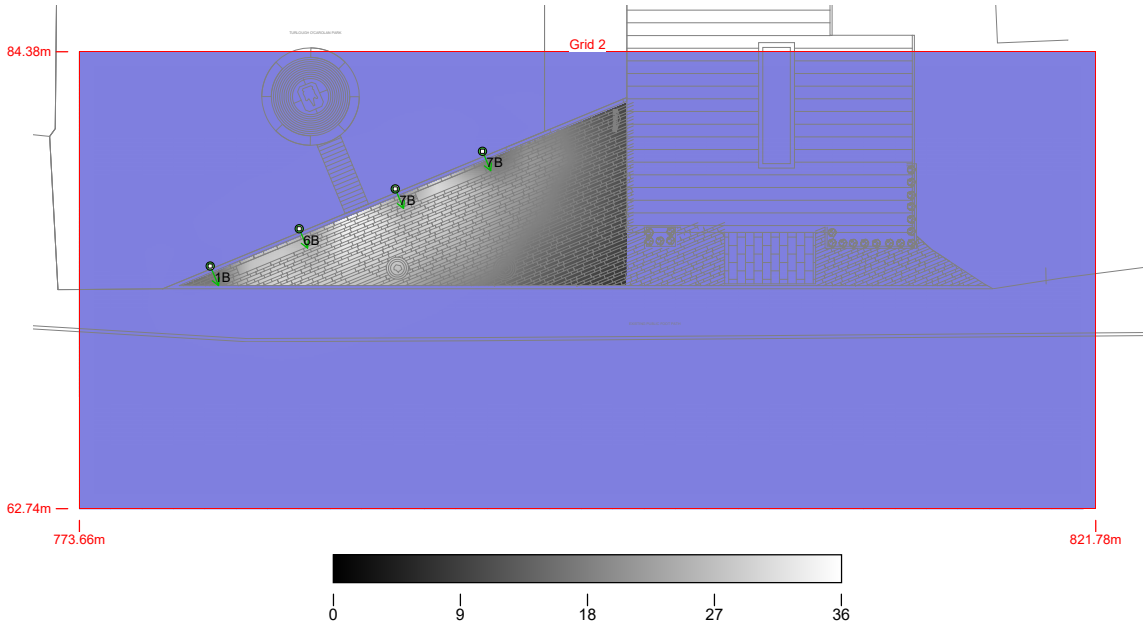
Horizontal Illuminance (lux)

Grid 2



LEGEND:

A — WE-EF VFL520 LED-12/24W - 4000K
COLUMN MOUNTED LUMINAIRE C/W BRACKET
REF: 108-1495
MOUNTING HEIGHT (m): 6

B — WE-EF ZAT434 LED-9/27W 4000K R65
COLUMN MOUNTED LUMINAIRE
REF: 115-1678
MOUNTING HEIGHT (m): 4.5

SITE LIGHTING DUCTWORK

MICRO PILLAR

Revision	Date	Details
PL	26.08.20	PLANNING ISSUE

PARKBOURNE consulting engineers
Tel–087 9481151
Email– bryan@parkbourne.ie
ADDRESS:
Coliemore House
Coliemore Road ,
Dalkey,
Co Dublin
Ireland

Project name:
NOBBER FIRE STATION

Architect:
NODE

Drawing title:
SITE LIGHTING

Scale	1:50 @ A1
Floor	SITE
Date	AUGUST '20
Drawn	IMC
Checked	BMC

Project No: 19005
Drg No.: E-600
Rev: PL

Drg Status: PLANNING

VFL520 LED

108-1495

Description

IP66, Class I or Class II. IK08. Marine-grade, die-cast aluminium alloy. 5CE superior corrosion protection including PCS hardware. Silicone CCG® Controlled Compression Gasket. RFC® Reflection Free Contour main lens. Integral EC electronic converter in thermally separated compartment. CAD-optimised optics for superior illumination and glare control. OLC® One LED Concept. Factory installed LED circuit board. The luminaire is factory-sealed and does not need to be opened during installation. Spigot Ø 60 x 80 mm optional available. Must be indicated during order placement. Recommended mounting height 3.0-6.0 m, depending on lamp type selected.

Beam Type	rectangular, 'side throw' [R65]
Light Source	LED-12/24W / 700 mA - 4000 K
CRI	80
Gear Type	EC

Nominal Luminous Flux (lm)

LED Lumens	245.9 lm
LEDs	12
Total Lumens	2951 lm
Tj	85 °C

Rated Luminous Flux (lm)

LED Lumens	212.9 lm
Total Lumens	2555.3 lm
Ta	25 °C

Rated Input Power	28 W

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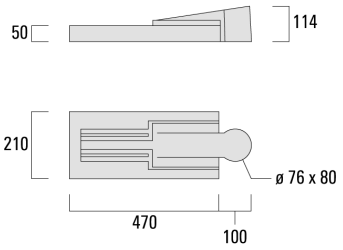
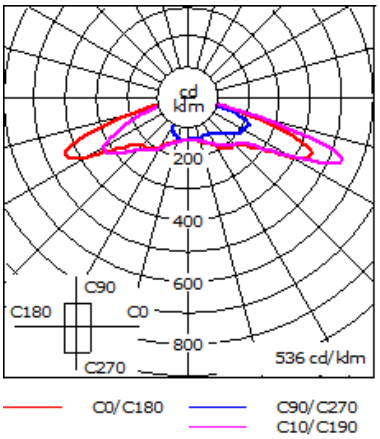
VFL520 LED

108-1495





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VFL520 LED

108-1495

Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (kg):	4.70
Lens:	RFC® Reflection Free Contour technology
Colours:	RAL9004 Signal black RAL9006 White aluminium RAL9007 Grey aluminium RAL7016 Anthracite grey RAL9016 Traffic white
Prepare to Connect	WE-EF luminaires that offer the option of P2C are, in principle, the precursor to the R2C. They are designed to accommodate the necessary equipment for integration into a light management system, yet only contain standard operating equipment. The IPX6 protected and standardized interface are also factory-installed at P2C stage and equipped with a robust protective cap. If a decision for a light management system is later made, only the necessary 'smart' LED driver, with communication interface and power supply for the controller/sensor, must be installed and connected. This P2C solution avoids having to make engineering adjustments to the luminaire housing, which can lead to damage and water ingress. On request.
Ready to Connect	WE-EF luminaires that offer the option of R2C have all the necessary equipment and interfaces on board for integration into a light management system. DALI LED drivers with additional built-in power supply (12-24V DC) are the basic requirements for R2C. In addition, there is an IPX6 protected and standardized interface which is pre-wired and provided with a robust protective cap. Once the decision for a light management system has been made, a controller/sensor can simply be connected to the standardized (Zhaga Book18) interface via a bayonet lock. No additional work on the luminaire is required. On request.
Gasket:	Silicone CCG® Controlled Compression Gasket
Fasteners:	PCS Polymer Coated Stainless Steel Hardware
Ingress protection:	IP66
Impact protection:	IK08
Corrosion protection:	5CE
Surge protection:	6/6 kV (optional SP10)
Windage (EPA):	0.038 m²

Electrical Specification

Power supply:	220-240V / 50-60 Hz
Power factor:	> 0.9
Driver / Ballast:	Integral EC electronic converter

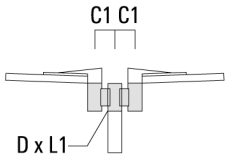
Lifetime
LED 350mA: >80,000 h Ta 25°(L90/B10)
LED 700mA: >80,000 h Ta 25°(L80/B10)
LED 1050mA: >80,000 h Ta 25°(L90/B10)
LED 1400mA: >80,000 h Ta 25°(L80/B10)
Control gear: >50,000 h Ta 25°

Mounting Accessories

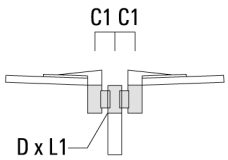
Wall and pole brackets RV

Wall and pole mounted brackets. Corrosion resistant all aluminium construction.

	C1	D x L	Weight (kg)
108-0980 RV2-76 Pole bracket, double	147	76 x 100	4.80



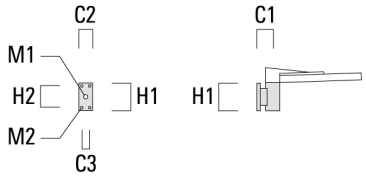
	C1	D x L	Weight (kg)
108-0981 RV2-60 Pole bracket, double	147	60 x 100	4.80



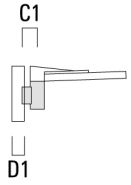
VFL520 LED

108-1495

	C1	C2	C3	H1	H2	M1	M2	Weight (kg)
108-0979 RV0 Wall bracket	108	100	60	200	160	38	12	2.00



	C1	D1	Weight (kg)
108-0982 RV5 Pole bracket	108	76-240	1.70



Post top fitter AKV

Corrosion resistant aluminium alloy, uncoated.

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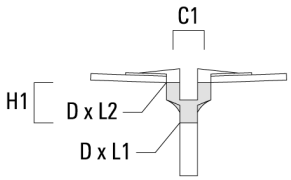
VFL520 LED

108-1495

6/9

	C1	D x L	D x L2	H1	Weight (kg)
300-0053 AKV2-76	180	76x100	76x80	235	1.50



Electrical Accessories

Surge Protection SP10

The luminaire is fitted with an electronic converter featuring high voltage surge protection 6/6kV exceeding the requirements of EN 61000-4-5. For installation in high-risk areas, the optional SP10 (10/10kV) surge protection accessory is recommended. For comprehensive protection of the luminaires with LED light sources and electronic drivers against the effects of lightning and electrical surges, we generally recommend primary (Type 1) and secondary (Type 2) surge arrestors be installed in the sub-distribution.

430-0020 SP10 Integral

Control

Eco Step Dim® Advanced LED

A factory programmed Electronic Controller is fitted in the luminaire to reduce the luminous flux and power. The luminaires are operated in stand-alone mode, so no special supply and/or control cables are required. Up to five different dimming levels (D1-D5) may be individually and optionally specified for a maximum of five time periods (T1-T5). Set and programmed at the factory by agreement. Reprogramming on site is also possible. Contact WE-EF direct or your local WE-EF sales representative for an individual solution designed to precisely meet your needs.

430-0002 Eco Step Dim® Advanced LED

VFL520 LED

108-1495

Eco Step Dim® Basic LED

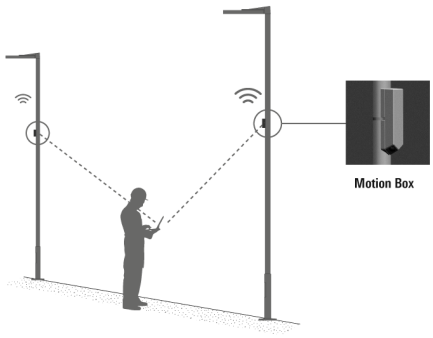
A factory programmed Electronic Controller is fitted in the luminaire to reduce luminous flux and power to a preset value. Control phases such as those that are, for example, used in networks using luminaires with two conventional lamps is required to activate the switch. One step dimming only is available. As standard, lumen output is reduced to 50 per cent. Intermediate values (e.g., 25 per cent) may also be optionally realised by agreement. Contact WE-EF direct or your local WE-EF sales representative for an individual solution designed to precisely meet your needs.

430-0001 Eco Step Dim® Basic LED

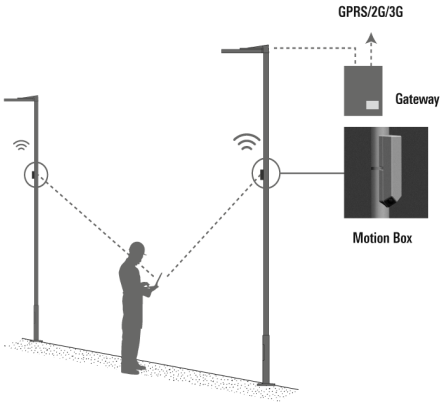
Eco Step Dim® Motion LED

Eco Step Dim Motion® is an energy efficient light management system based on motion data captured by PIR sensors (passive infrared). It is a wireless system for controlling street & area lighting luminaires. The sensors are usually mounted directly on a pole. The luminaires are controlled by DALI and are connected via wireless protocol. The system is easily set up with an Android app. Several luminaires connected via wireless protocol. Data exchange/transmission between the luminaires. - Presence is detected via two PIR sensors - Wireless communication 128bit encryption - Android app and dongle - Adjustable amount of light (high and low) depending on presence / time via app - Adjustable ramps between the light levels via app - Firmware update via wireless protocol - Luminaire information (firmware, programs, date, etc.) via app - Records (voltage, burning hours, power factor, temperature etc.) - Communication and motion detection via Motion Box - GPS (optional) - Temperature and impact sensor - Recommended maximum distance between luminaires 100 metres - Luminaires share presence message - Connected luminaires react to the PIR sensor (adjustable) - Settings can be inherited - Access to all luminaires from one luminaire for commissioning and installation via app

430-0021 Eco Step Dim® Motion - Linked



430-0022 Eco Step Dim® Motion - Connected



P2C Prepare to Connect

Entry level conversion of the luminaire into a 'semi-smart' P2C luminaire, for future integration into a light management system. Factory installed IP-X6-protected and standardized interface (Zhaga Book18). For future integration into a light management system, the necessary 'smart' LED driver with built-in power supply for the controller / sensor (3rd party supplier) needs to be installed and connected. P2C allows for the future inclusion into a light management system without having to make engineering adjustments to the luminaire housing, which can lead to damage and water ingress. On request.

430-0023 P2C Prepare to Connect

VFL520 LED

108-1495

R2C Ready to Connect

Complete conversion of the luminaire into a ‘smart’ R2C luminaire, for future integration into a light management system. Factory installed IP x6 protected and standardized interface (Zhaga Book18) with DALI LED driver including additional built-in power supply (24V DC) for end controller / sensor (3rd party supplier). Pre-wired and provided with a robust protective cap, the controller / sensor can simply be connected to the standardized interface via a bayonet lock. No additional work on the luminaire required.

430-0019 R2C Ready to Connect

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ZAT434 LED

115-1678

Description

IP66, Class I. IK09. Marine-grade, die-cast aluminium alloy. 5CE superior corrosion protection including PCS hardware. Silicone CCG® Controlled Compression Gasket. PMMA main lens. Integral EC electronic converter in thermally separated compartment. CAD-optimised OLC® One LED Concept optics for superior illumination and glare control. Factory installed LED circuit board. The luminaire is factory-sealed and does not need to be opened during installation. Recommended mounting height 3.0 - 6.0 m.

Beam Type	rectangular, 'side throw' [R65]
Light Source	LED-9/27W / 1050 mA - 4000 K
CRI	80
Gear Type	EC

Nominal Luminous Flux (lm)

LED Lumens	450 lm
LEDs	9
Total Lumens	4050 lm
Tj	85 °C

Rated Luminous Flux (lm)

LED Lumens	344.6 lm
Total Lumens	3101 lm
Ta	25 °C

Rated Input Power	30 W

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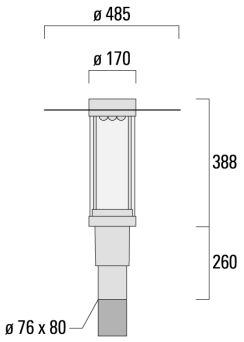
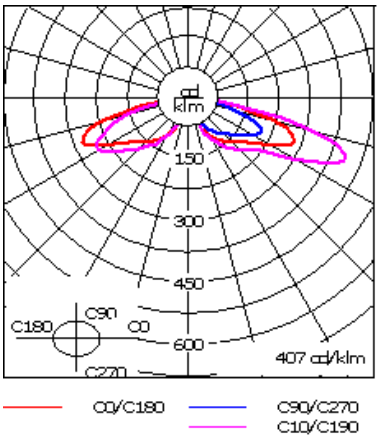
ZAT434 LED

115-1678





Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (kg):	7.80
Lens:	PMMA
Colours:	RAL9004 Signal black RAL9006 White aluminium RAL9007 Grey aluminium RAL7016 Anthracite grey RAL9016 Traffic white
Gasket:	Silicone CCG® Controlled Compression Gasket
Fasteners:	PCS Polymer Coated Stainless Steel Hardware
Ingress protection:	IP66
Impact protection:	IK09
Corrosion protection:	5CE
Surge protection:	6/6 kV (optional SP10)

Electrical Specification

Power supply:	220-240V / 50-60 Hz
Power factor:	> 0.9
Driver / Ballast:	Integral EC electronic converter

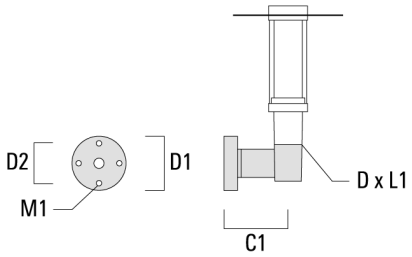
Lifetime
LED 350mA: >80,000 h Ta 25°(L90/B10)
LED 700mA: >80,000 h Ta 25°(L80/B10)
LED 1050mA: >80,000 h Ta 25°(L90/B10)
LED 1400mA: >80,000 h Ta 25°(L80/B10)
Control gear: >50,000 h Ta 25°

Mounting Accessories

Wall and pole brackets RZ

Wall and pole mounted brackets for post top luminaires. Corrosion resistant all aluminium construction. All pole brackets are supplied pre-wired, for easy assembly and connection on site.

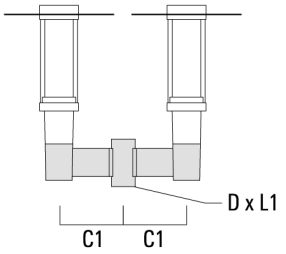
	C1	D1	D2	D x L	M1	Weight (kg)
115-1324 RZ0-400 Wall bracket, single	277	231	195	76 x 80	12	3.50



ZAT434 LED

115-1678

	C1	D x L	Weight (kg)
115-1323 RZ2-400 Pole bracket, double	258	76 x 100	4.90



Electrical Accessories

Surge Protection SP10

The luminaire is fitted with an electronic converter featuring high voltage surge protection 6/6kV exceeding the requirements of EN 61000-4-5. For installation in high-risk areas, the optional SP10 (10/10kV) surge protection accessory is recommended. For comprehensive protection of the luminaires with LED light sources and electronic drivers against the effects of lightning and electrical surges, we generally recommend primary (Type 1) and secondary (Type 2) surge arrestors be installed in the sub-distribution.

430-0020 SP10 Integral

Control

Eco Step Dim® Advanced LED

A factory programmed Electronic Controller is fitted in the luminaire to reduce the luminous flux and power. The luminaires are operated in stand-alone mode, so no special supply and/or control cables are required. Up to five different dimming levels (D1-D5) may be individually and optionally specified for a maximum of five time periods (T1-T5). Set and programmed at the factory by agreement. Reprogramming on site is also possible. Contact WE-EF direct or your local WE-EF sales representative for an individual solution designed to precisely meet your needs.

430-0002 Eco Step Dim® Advanced LED

ZAT434 LED

115-1678

Eco Step Dim® Basic LED

A factory programmed Electronic Controller is fitted in the luminaire to reduce luminous flux and power to a preset value. Control phases such as those that are, for example, used in networks using luminaires with two conventional lamps is required to activate the switch. One step dimming only is available. As standard, lumen output is reduced to 50 per cent. Intermediate values (e.g., 25 per cent) may also be optionally realised by agreement. Contact WE-EF direct or your local WE-EF sales representative for an individual solution designed to precisely meet your needs.

430-0001 Eco Step Dim® Basic LED

Eco Step Dim® Motion LED

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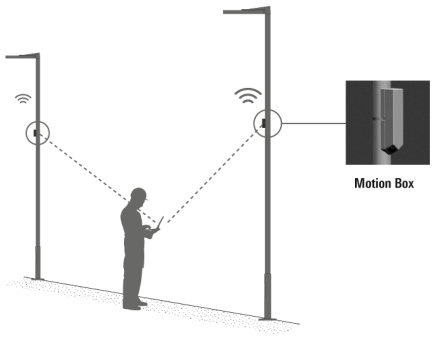
430-0021 Eco Step Dim® Motion - Linked



430-0022 Eco Step Dim® Motion - Connected