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P3569 Plot 3, Ashroyd Business Park, Barnsley

External Lighting Proposals



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Document Control

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Reviewer:	SN	**Date:**	22.09.2021

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1	22.09.2021	Issued for Planning to meet Planning Condition 20.	SN

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Project Ref: Ashroyd Business Park Plot 3 - Lighting Proposals		
Location: Plot 3, Ashroyd Business Park, J36 M1, Barnsley		CJR Project Ref: P3569
Date of Report: 21 September 2021	Engineer: Jamie Thompson	Report Revision: A

External Lighting Proposal

Introduction

CJR Midlands Ltd have prepared this report to summarise the External Lighting Design proposals for Plot 3 located on the Ashroyd Business Park, Barnsley, S74 9SB. The site comprises of 6 number units, with appropriate access roads to each.

The proposed site is located in Ashroyd Business Park, which is sited in 36 acres of a well-established development, benefitting from a superb location directly off the A6195 Dearne Valley Parkway, and only 1.5 miles from Junction 36 of the M1. The site is illustrated and described further on the following pages.

When carrying out a Lighting Design of this nature, it is important to refer to the relevant Standards and Guides; the following documents have been used to aid with this design.

- BS 5489-1:2020 Design of Road Lighting. Lighting of Roads and Public Amenity Areas - Code of Practice.
- BS EN 12464-2:2014 Light and Lighting. Lighting of Workplaces. Outdoor Workplaces.
- CIBSE SLL Handbook 2018.
- Institute of Lighting Professionals (ILP) Guidance Notes for the Reduction of Obtrusive Light GN1/21.
- Lighting Guide 6 - The Outdoor Environment.
- Bats and Lighting Overview of Current Evidence and Mitigation - Emma L Stone.

The main design criteria that will be used to meet general illuminance requirements are:

- To provide security lighting to the perimeter of the building and the relevant surrounding areas, such as the Car Park areas and the Delivery Yard to the front.

The Scheme has been designed to meet Planning Condition 20, of which states.

Detailed plans shall accompany the reserved matters application which shall provide full details of security lighting to be submitted to and approved in writing by the Local Planning Authority. The details shall include the location, orientation, angle, and luminance of the lighting. The approved details shall be implemented prior to occupation of the building/commencement of the use and retained as such thereafter. Reason: To protect the amenity of existing and future occupiers from glare and/or nuisance light in accordance with Core Strategy Policy CSP 40.

It should be noted that there is no existing lighting to this Plot of land. The unadopted road, is subject to a Section 38 Agreement. All the works have been completed by others and the Council. Final confirmation is required.

The following sections of this Report detail the current design proposals which aims to fulfil the above performance criteria, whilst using careful design to protect the amenity of existing and future occupiers from glare and/or nuisance light, in accordance with Core Strategy Policy CSP 40.

Site Location

The proposed site is shown below; Unit 3 shaded in green. The site is found/located on Ashroyd Business Park, just off Junction 36 of the M1. The site consists of 6 number industrial/warehouse Units.

At the rear of Unit 3 there are existing trees and hedges. At the time of producing this Report and Calculation, it was unknown if bats are within the foraging areas, so the design has been considered with this in mind.



Ariel view of site location

(*Unit 3 Shaded in green*)

Existing Lighting

The existing lighting in the vicinity of Unit 3, is off the existing access roads, which are considered to have pathway and lighting comprising of 4-6m columns.

Currently we have no knowledge pertaining to the current external Lighting Design / fitting type used (however, this could be obtained from the Council, if required; for this exercise, this information is not really needed.

CJR have not taken any Lighting Levels, but it is safe to assume that this would have been designed for lighting the roads and pathways to either a CE lighting Class, or S Class (being the lighting classes for motorised vehicles and intended for cyclists and pedestrians on footpaths).



Existing lighting to Roads / Pathways

Design Guidance

ILP Guidance Notes for the Reduction of Obtrusive Light GN1/21

International guidance regarding obtrusive light as detailed in CIE 150:2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations. It also considers Industry comment regarding the assessment and definition of obtrusive lighting.

To ensure the proposed new Lighting Design is considerate of the site context and location, the design proposals have been developed in accordance with the relevant Guidance and Standards. One of the main Design Guides that has been used is the ILP Guidance Notes for the Reduction of Obtrusive Light GN1/21.

This Guide provides the main point of reference in the industry, to ensure that obtrusive light is kept to a minimum. The tables shown on the following page and the definitions below, are all taken directly from the Guide for reference.

The site has been assessed against an **Environmental Zone of E3**, a Suburban Medium District Brightness. This means that the values highlighted in Table 2 and Table 3 must not be exceeded if the Guidance is to be met.

(1) Upward Light Ratio - Some lighting schemes will require the deliberate and careful use of upward light, e.g., ground recessed Luminaires, ground mounted floodlights, festive lighting, to which these limits cannot apply. However, care should always be taken to minimise any upward waste light by the proper application of suitably directional Luminaires and light controlling attachments.

(2) Light Intrusion (into Windows) - These values are suggested maxima and need to take account of existing light intrusion at the point of measurement. In the case of road lighting on public highways where building facades are adjacent to the lit highway, these levels may not be obtainable. In such cases where a specific complaint has been received, the Highway Authority should endeavour to reduce the light intrusion into the window down to the post curfew value by fitting a shield, replacing the Luminaire, or by varying the lighting level.

(3) Luminaire Intensity - This applies to each Luminaire in the potentially obtrusive direction, outside of the area being lit.

(4) Building Luminance - This should be limited to avoid over lighting and related to the general district brightness. In this reference, building luminance is applicable to buildings directly illuminated as a night-time feature, against the illumination of a building caused by spill light from adjacent Luminaires or Luminaires fixed to the building but used to light an adjacent area.

Design Guidance Continued/...

Ultimately it will be the Local Planning Authority who will advise / confirm what Zone Classification will need to be applied to Unit 3, but for the purpose of this initial study, E3 has been selected for calculation purposes.

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

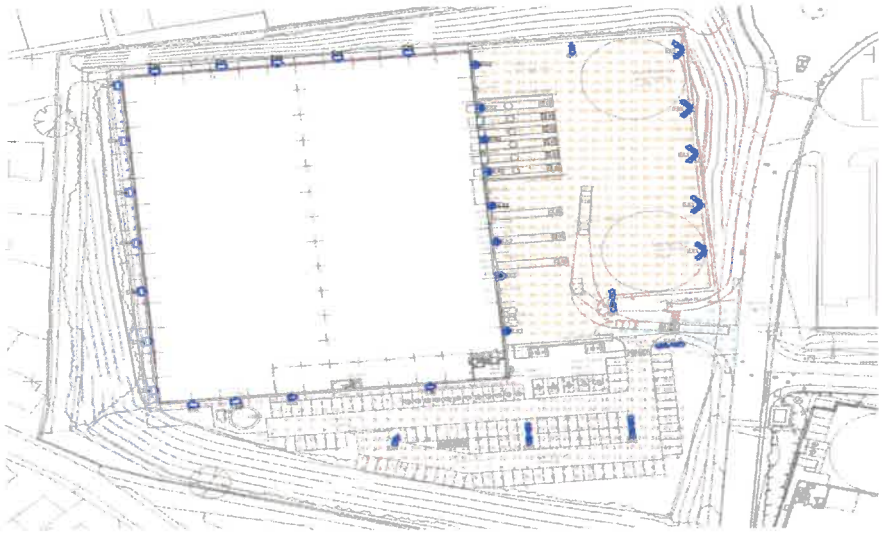
ULR = Upward Light Ratio of the Installation is the maximum permitted percentage of Luminaire flux that goes directly into the sky.

Ev = Vertical Illuminance in Lux—measured flat on the glazing at the centre of the window.

I = Light Intensity in Candelas (cd) L = Luminance in Candelas per Square Metre (cd/m2)

Curfew = The time after which stricter requirements (for the control of obtrusive light) will apply; often a Condition of Use of Lighting is applied by the Local Planning Authority. If not otherwise stated, 23.00hrs is suggested.

Proposed Lighting Arrangement Overview



The proposed positions for the columns are positioned to provide lighting where required. The lighting arrangement also consists of building mounted Luminaires to the front elevation, and walkways to the perimeter of the Industrial Unit / Building.

The Installation height for the columns is 8 meters. The Columns are proposed to be hinged to assist with future maintenance, in being able to lower the column to access the luminaire.

All the lighting used has a very tight light distribution, keeping any spill lighting to a minimum.

The Luminaire selected has flat glass so no upward light, but due to the areas to be lit being so close to foliage (potentially where bats may be) it is almost impossible to achieve the required light levels, as well as having no light on the foliage. We have kept the light away from the foliage as much as possible.

The columns to the Service Yard shall be root mounted and positioned to the boundary fence line, to minimise the risk of drivers colliding with same when reversing and turning within the Service Yard.

The lighting to the Service Yard shall be controlled via a timeclock and photocell arrangement.

The Lighting Design has been carefully considered to prevent and consider any glare to the drivers, when reversing into the Service Yard. All Luminaries are positioned away from the Hedgerow.

It is proposed to illuminate the service yard utilising column mounted Luminaires, supported by means of a manufacturer's 90° angle bracket.

The building mounted perimeter Luminaires shall be mounted at 6m, to provide sufficient perimeter illuminance to the walkways, but also provide the required uniformity.

The said Luminaries will utilise LED technology to ensure maximum energy efficiency and controllability. The proposed fittings also provide tight optical control, to ensure that the illumination only goes where it is needed with minimum light spillage.

Proposed Lighting Arrangement Overview Continued/...

It should be noted that further development will be required to consider but, to also incorporate the Fire Strategy plan to pick up the Fire Assembly points. This will need to be picked up separately and does not form part of this planning external lighting report.

No Emergency lighting has been designed for in this scheme.

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Proposed Lighting Specification

Luminaire Schedule					
Symbol	Qty	Label	LLF	Description	Height
	3	A-2	0.800	WE-EF VFL530 [R65.3K] 24LED 72W (108-2044)	8m
	1	B	0.800	WE-EF VFL530 [S65.3K] 24LED 72W (108-2048-70)	8m
	1	F	0.800	WE-EF PFL540 [A60.3K] 48LED 207W (108-2651)	8m
	5	F-2	0.800	WE-EF PFL540 [A60.3K] 48LED 207W (108-2651)	8m
	1	F-2A	0.800	WE-EF PFL540 [A60.3K] 48LED 207W (108-2651)	8m
	8	F-wall	0.800	WE-EF PFL540 [A60.3K] 48LED 207W (108-2651)	10m
	2	A-wall	0.800	WE-EF VFL530 [R65.3K] 24LED 72W (108-2044)	8m
	14	I	0.800	WE-EF PLS420 [S70.3K] 6LED 18W (131-9565)	6m

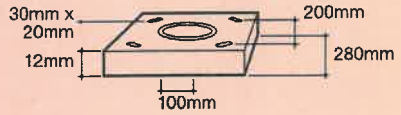
LIGHT DUTY

4-8M BASE-HINGED COLUMN Patent No: 968113

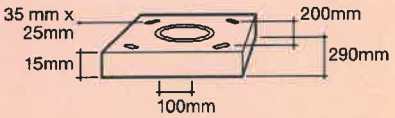
Designed to EN40. Hot dip galvanised to BS EN ISO 1461:2009. Manufactured in steel tube to EN10210

Flange Plate

Type 0 FA000G Bolts/cross brace M16 x 500mm
FC020 Template



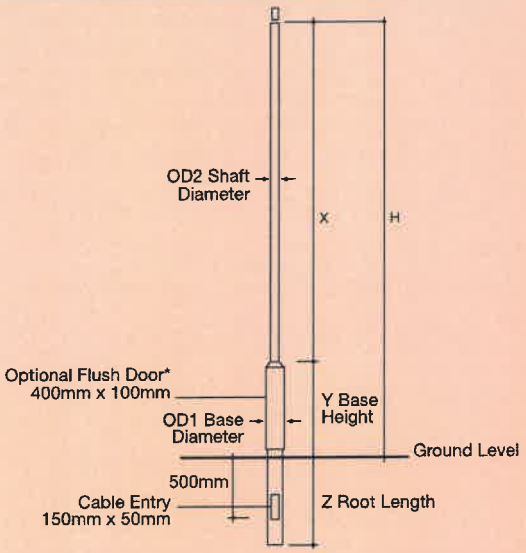
Type 1 FA001G Bolts/cross brace M20 x 500mm
FC021 Template



Accessories

XXSC003F	Tamper resistant locking screw
XXSC003F	Key for locking screw
ELSAB1/6A	Single fuse cut-out, 6A, loop in/out (not fitted)
ELSAB12/6A	Twin fuse cut-out, 6A, loop in/out (not fitted)

Column Dimensions





***Flush Door Option**
Flush door enables internal locking mechanism. Side fitted locking screw not required on this model. Add /FD suffix.

Root Mounted

Product Code	Height	OD1	OD2	x	y	z	Weight (kg)	OTM (kNm)	Shear (kN)	Min. Concrete Diameter*	Counterbalance Type & Max. Weight
T041RLS	4m	168	76	2875	1050	800	50	4.9	1.4	607	**RLS168 - Yellow** 18kg **RLS168 - White** 28kg **RLS168 - Red** 38kg **RLS168 - Blue** 53kg **RLH168 -** 53kg
T051RLS	5m	168	76	3875	1050	800	59	4.7	1.2	569	**RLS168 - Yellow** 11kg **RLS168 - White** 19kg **RLS168 - Red** 28kg **RLS168 - Blue** 40kg **RLH168 -** 40kg
T061RLS	6m	168	76	4860	1050	1000	67	4.6	1.1	291	**RLS168 - White** 11kg **RLS168 - Red** 19kg **RLS168 - Blue** 29kg **RLH168 -** 29kg
T081RLS	8m	168	89	6830	1050	1200	87	5.3	1.2	198	**RLS168 - Blue** 11kg **RLS168 - Green** 17kg **RLH168 -** 17kg

*Root concrete diameter based on poor soil or better, min. 230kN/m² per m

Flange Plate Mounted

Dimensions (mm) Product Code	Height	OD1	OD2	x	y	Flange Plate	Weight (kg)	OTM (kNm)	Shear (kN)	Concrete Dimension*	Counterbalance Type & Max. Weight
T041RLS /FP	4m	168	76	2875	1050	Type 0	47	4.9	1.4	750 x 800	**RLS168 - Yellow** 10kg **RLS168 - White** 20kg **RLS168 - Red** 29kg **RLS168 - Blue** 53kg **RLH168 -** 53kg
T051RLS /FP	5m	168	76	3875	1050	Type 0	52	4.7	1.2	750 x 800	**RLS168 - Yellow** 10kg **RLS168 - White** 18kg **RLS168 - Red** 27kg **RLS168 - Blue** 40kg **RLH168 -** 40kg
T061RLS /FP	6m	168	76	4860	1050	Type 0	57	4.6	1.1	750 x 800	**RLS168 - White** 10kg **RLS168 - Red** 18kg **RLS168 - Blue** 28kg **RLH168 -** 29kg
T081RLS /FP	8m	168	89	6830	1050	Type 1	72	5.3	1.2	750 x 900	**RLS168 - Blue** 11kg **RLS168 - Green** 17kg **RLH168 -** 17kg

*Concrete dimension based on a minimum ground bearing pressure of 150kN/m² (Passive concrete design). (S = square dimension, H = depth)

Outreach & Floodlight Brackets

Height	Projection Length	Outreach Brackets: Overlap Fit on Shaft	Outreach Brackets: Flush Fit on Spigot
4m		**T041RLS**	**T041RLS/SP+/SP1***
	0.30m	PR2-03/S or /D	PR1-03/S or /D*
	0.50m	PR2-05/S or /D	PR1-05/S or /D*
5m		**T051RLS**	**T051RLS/SP+/SP1***
	0.30m	PR2-03/S or /D	PR1-03/S or /D*
	0.50m	PR2-05/S or /D	PR1-05/S or /D*
6m		**T061RLS**	**T061RLS/SP+/SP1***
	0.30m	PR2-03/S or /D	PR1-03/S or /D*
	0.50m	PR2-05/S or /D	PR1-05/S or /D*
8m		**Post top lanterns only**	

Outreach Brackets: Single (S), Double (D)

Spigot Lengths /SP 230mm /SP1 100mm Type/Bolt Centres (mm)	Floodlight Brackets: Overlap Fit on Shaft	Floodlight Brackets: Flush Fit on Spigot
	T041RLS	**T041RLS/SP**
Single	FL1/1	FL0/1
Double (600)	FL1/2	FL0/2
	T051RLS	**T051RLS/SP**
Single	FL1/1	FL0/1
Double (600)	FL1/2	FL0/2
	T061RLS	**T061RLS/SP**
Single	FL1/1	FL0/1
Double (800)	FL1/3	FL0/3
	T081RLS	**T081RLS/SP**
Single	FL2/1	FL1/1
Double (800)	Post top floodlight only	

*Outreach brackets series PR1 & PR2 below 0.50m projection fit onto 100mm spigot (/SP1). 0.50m + on standard 230mm spigot (/SP). Please refer to pages 37-39.

Column Headload Capacity (m²)

Based on UK rationalised wind loading factors for EN40

Product Code	Lantern Mounting/ Projection	Max. Headload (kg)	Light 396	Medium 429	Heavy 466	Very Heavy 576
T041RLS	Post Top	53	1.161	1.062	0.969	0.763
	0.25m Single Outreach	15	0.305	0.279	0.254	0.2
	0.50m Single Outreach	10	0.225	0.206	0.187	0.145
T051RLS	Post Top	38	0.787	0.714	0.645	0.493
	0.25m Single Outreach	15	0.25	0.227	0.205	0.157
	0.50m Single Outreach	10	0.186	0.168	0.151	0.114
T061RLS	Post Top	28	0.543	0.485	0.43	0.312
	0.25m Single Outreach	10	0.204	0.183	0.163	0.12
	0.50m Single Outreach	10	0.147	0.131	0.116	0.083
T081RLS	Post Top	17	0.16	0.133	0.109	0.06
	0.25m Single Outreach	8	0.06	0.05	–	–

For complete information on foundation options please refer to www.abacuslighting.com/base-hinged-fixed-columns.asp

VFL530 LED

108-2044



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. Optional 2200 K version available. To be specified at time of ordering. Spigot Ø 60 x 80 mm optional available. Must be indicated during order placement.

Beam Type	rectangular, 'side throw' [R65]
Light Source	LED-24/72W / 1050 mA - 3000 K
CRI	80
Gear Type	EC

Nominal Luminous Flux (lm)

LED Lumens	390 lm
LEDs	24
Total Lumens	9360 lm
Tj	85 °C

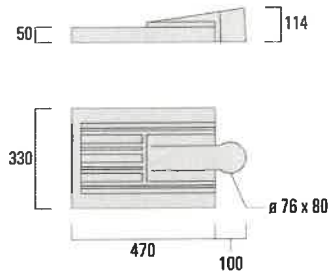
Rated Luminous Flux (lm)

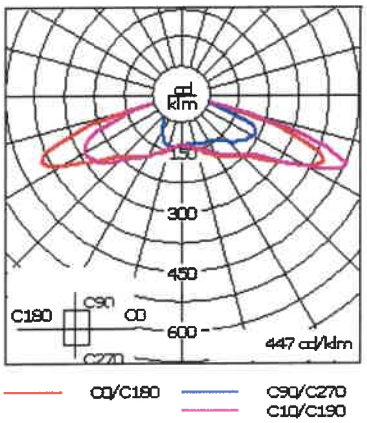
LED Lumens	328.8 lm
Total Lumens	7890.5 lm
Ta	25 °C

Rated Input Power	81 W

VFL530 LED

108-2044





WE-EF LIGHTING Ltd
Suite 2C | East Bridgford Business Park | Kneeton Road | East Bridgford | Nottingham NG13 8PJ| U.K.| Tel +44 844 880 5346 | Fax +44 844 880 5347 | info.uk@we-ef.com | www.we-ef.com | 21-09-2021 13:29

VFL530 LED

108-2044

Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (kg):	6.60
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):	0.04 m²

Electrical Specification

Power supply:	220-240V / 50-60 Hz

VFL530 LED

108-2044

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Power factor:	> 0.9
Driver / Ballast:	DALI

Lifetime
Ta=25° L90B10 > 90000h

Control
Eco Step Dim® on request

LED and LED driver can be exchanged by qualified personnel.

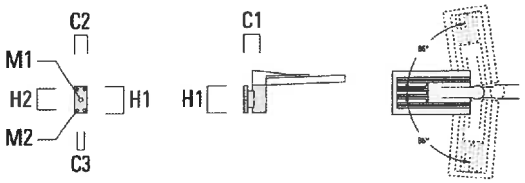


Mounting Accessories

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

RV0 Wall bracket

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



VFL530 LED

108-2044

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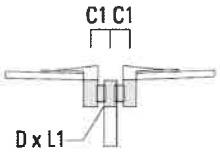
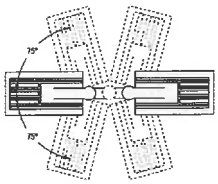
RV2-60 Pole bracket, double

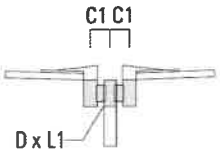
	C1	D x L	Weight (kg)
108-0981	147	60 x 100	4.80

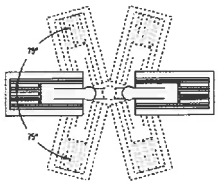




RV2-76 Pole bracket, double

	C1	D x L	Weight (kg)
108-0980	147	76 x 100	4.80





VFL530 LED

108-2044

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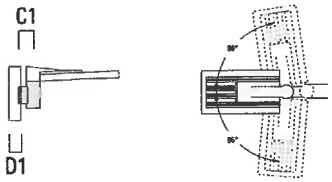
RV5 Pole bracket

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

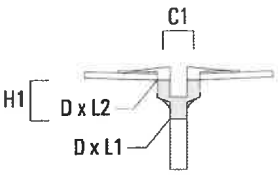


Post top fitter AKV

Corrosion resistant aluminium alloy, uncoated.

AKV2-76

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



Electrical Accessories

VFL530 LED

108-2044

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.

SP10 Integral

430-0020

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.

Eco Step Dim® Advanced LED

430-0002

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.

Eco Step Dim® Basic LED

430-0001

Eco Step Dim® Motion LED

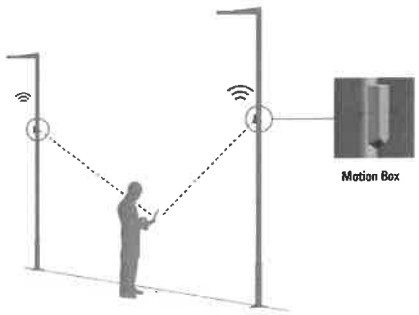
Eco Step Dim Motion® is an energy efficient light management system based on motion data captured by PIR sensors (passive infrared). It is a wireless system for controlling street & area lighting luminaires. The sensors are usually mounted directly on a pole. The luminaires are controlled by DALI and 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

VFL530 LED

108-2044

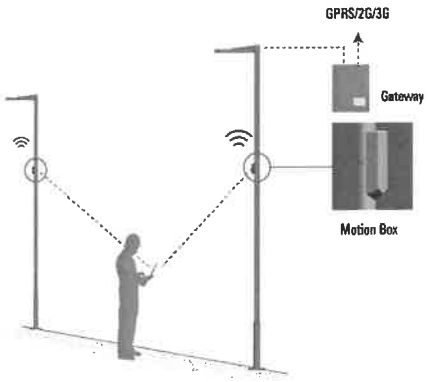
Eco Step Dim® Motion - Linked

430-0021



Eco Step Dim® Motion - Connected

430-0022



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.

P2C Prepare to Connect

430-0023

VFL530 LED

108-2044

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) on the top of the housing, 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.

R2C Ready to Connect (top)

430-0019

VFL530 LED

108-2048-70



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. Optional 2200 K version available. To be specified at time of ordering. Spigot Ø 60 x 80 mm optional available. Must be indicated during order placement.

Beam Type	asymmetric, side-throw beam [S65]
Light Source	LED-24/72W / 1050 mA - 3000 K
CRI	70
Gear Type	EC

Nominal Luminous Flux (lm)

LED Lumens	430.9 lm
LEDs	24
Total Lumens	10342.8 lm
Tj	85 °C

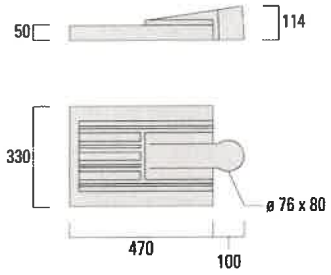
Rated Luminous Flux (lm)

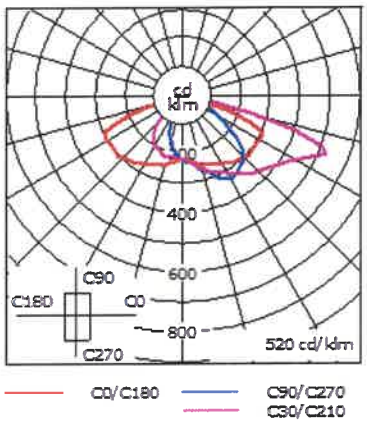
LED Lumens	391.7 lm
Total Lumens	9401.1 lm
Ta	25 °C

Rated Input Power	81 W

VFL530 LED

108-2048-70





WE-EF LIGHTING Ltd
Suite 2C | East Bridgford Business Park | Kneeton Road | East Bridgford | Nottingham NG13 8PJ| U.K.| Tel +44 844 880 5346 | Fax +44 844 880 5347 | info.uk@we-ef.com | www.we-ef.com | 13-09-2021 13:18

VFL530 LED

108-2048-70

Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (kg):	6.60
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):	0.04 m²

Electrical Specification

Power supply:	220-240V / 50-60 Hz

VFL530 LED

108-2048-70

Power factor:	> 0.9
Driver / Ballast:	DALI

Lifetime
Ta=25° L90B10 > 90000h

Control
Eco Step Dim® on request

LED and LED driver can be exchanged by qualified personnel.

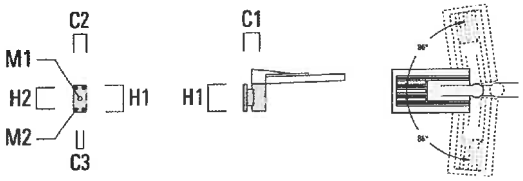


Mounting Accessories

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

RV0 Wall bracket

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

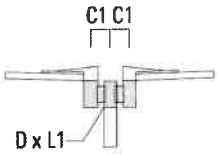


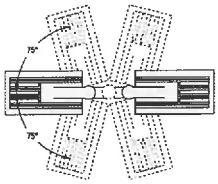
VFL530 LED

108-2048-70

RV2-60 Pole bracket, double

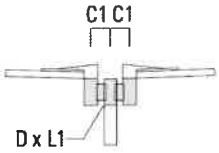
	C1	D x L	Weight (kg)
108-0981	147	60 x 100	4.80

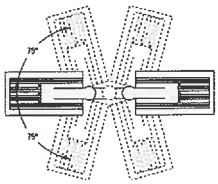




RV2-76 Pole bracket, double

	C1	D x L	Weight (kg)
108-0980	147	76 x 100	4.80



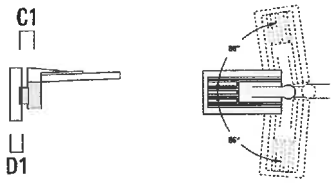


VFL530 LED

108-2048-70

RV5 Pole bracket

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

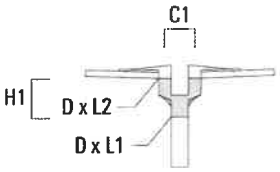


Post top fitter AKV

Corrosion resistant aluminium alloy, uncoated.

AKV2-76

	C1	D x L	D x L2	H1	Weight (kg)
300-0053	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.

SP10 Integral

430-0020

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.

Eco Step Dim® Advanced LED

430-0002

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.

Eco Step Dim® Basic LED

430-0001

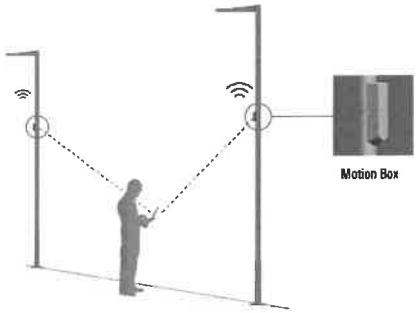
Eco Step Dim® Motion LED
Eco Step Dim Motion® is an energy efficient light management system based on motion data captured by PIR sensors (passive infrared). It is a wireless system for controlling street & area lighting luminaires. The sensors are usually mounted directly on a pole. The luminaires are 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

VFL530 LED

108-2048-70

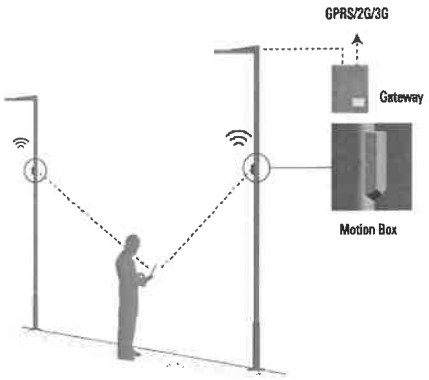
Eco Step Dim® Motion - Linked

430-0021



Eco Step Dim® Motion - Connected

430-0022



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.

P2C Prepare to Connect

430-0023

VFL530 LED

108-2048-70

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) on the top of the housing, 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.

R2C Ready to Connect (top)

430-0019

PFL540 LED

108-2651



Description

IP66, Class I. 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. Optional 2200 K version up to max. 1050mA available. To be specified at time of ordering. Brackets to be ordered separately.

Beam Type	asymmetric, 'forward throw' [A60]
Light Source	LED-48/207W / 1400 mA - 3000 K
CRI	80
Gear Type	EC

Nominal Luminous Flux (lm)

LED Lumens	498.8 lm
LEDs	48
Total Lumens	23943 lm
Tj	85 °C

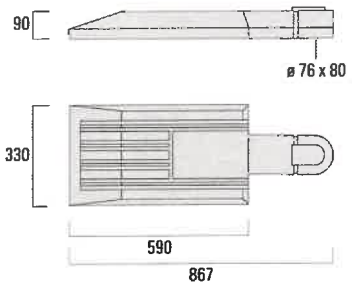
Rated Luminous Flux (lm)

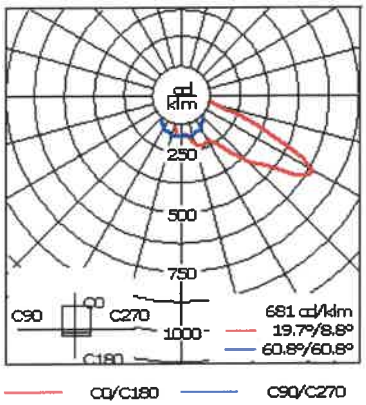
LED Lumens	411.1 lm
Total Lumens	19734.7 lm
Ta	25 °C

Rated Input Power	214 W

PFL540 LED

108-2651





PFL540 LED

108-2651

Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (kg):	13.00
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):	0.23

Electrical Specification

Power supply:	220-240V / 50-60 Hz

PFL540 LED

108-2651

Power factor:	> 0.9
Driver / Ballast:	DALI up to 1050 mA

Lifetime
Ta=25° L90B10 > 90000h

Control
Eco Step Dim® up to 1050 mA on request

LED and LED driver can be exchanged by qualified personnel.



Mounting Accessories

Side Entry
Modification for Side Entry 60 x 100 mm

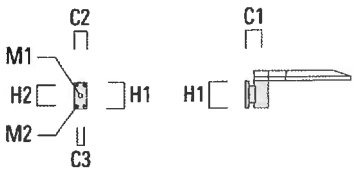
Side Entry 60 x 100

430-0014

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

RV0 Wall bracket

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

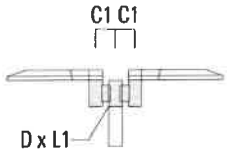


PFL540 LED

108-2651

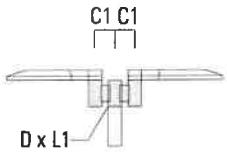
RV2-60 Pole bracket, double

	C1	D x L	Weight (kg)
108-0981	147	60 x 100	4.80



RV2-76 Pole bracket, double

	C1	D x L	Weight (kg)
108-0980	147	76 x 100	4.80



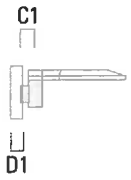
PFL540 LED

108-2651

6/9

RV5 Pole bracket

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

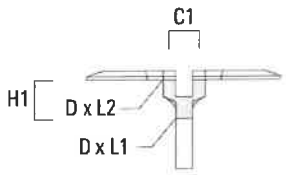


Post top fitter AKV

Corrosion resistant aluminium alloy, uncoated.

AKV2-76

	C1	D x L	D x L2	H1	Weight (kg)
300-0053	180	76x100	67x	235	1.50



Electrical Accessories

PFL540 LED

108-2651

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.

SP10 Integral

430-0020

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.

Eco Step Dim® Advanced LED

430-0002

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.

Eco Step Dim® Basic LED

430-0001

Eco Step Dim® Motion LED

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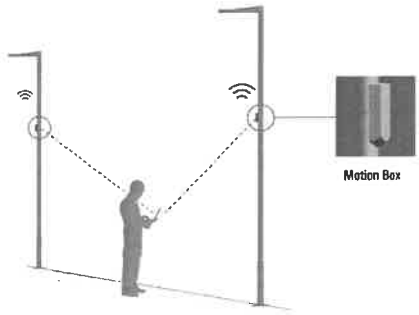
PFL540 LED

108-2651

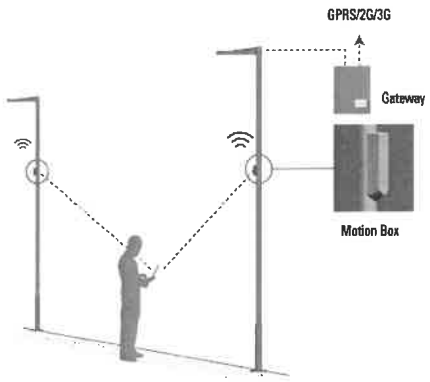
Eco Step Dim® Motion - Linked

430-0021



Eco Step Dim® Motion - Connected

430-0022



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.

P2C Prepare to Connect

430-0023

PFL540 LED

108-2651

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) on the top of the housing, 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.

R2C Ready to Connect (top)

430-0019

PLS420 LED

131-9565



Description

IP66. Class I. IK08. Marine-grade, die-cast aluminium alloy. 5CE superior corrosion protection including PCS hardware. Safety glass lens. Silicone CCG® Controlled Compression Gasket. Luminaire is factory-sealed and does not need to be opened during installation. Integral EC electronic converter. Advanced thermal management protects LEDs while optimising lumens output. CAD-optimised optics for superior illumination and glare control. Optional 2200 K version up to max. 1050mA available. To be specified at time of ordering. Luminaire can be mounted for up or down lighting.

Beam Type	asymmetric, 'side throw' [S70]
Light Source	LED-6/18W / 1050 mA - 3000 K
CRI	80
Gear Type	EC

Nominal Luminous Flux (lm)

LED Lumens	390 lm
LEDs	6
Total Lumens	2340 lm
Tj	85 °C

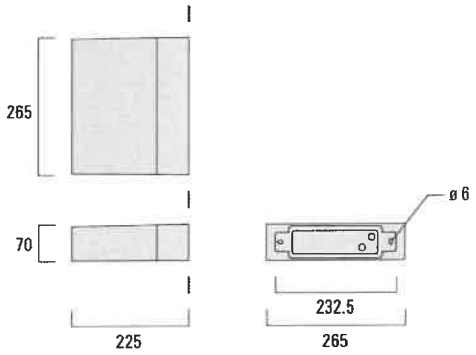
Rated Luminous Flux (lm)

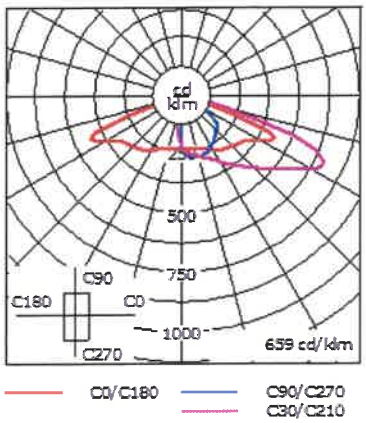
LED Lumens	226.7 lm
Total Lumens	1360.4 lm
Ta	25 °C

Rated Input Power	21 W

PLS420 LED

131-9565





Material Specification

Body:	Marine-grade, die-cast aluminium alloy
Weight (kg):	4.20
Lens:	Safety glass lens
Colours:	RAL9004 Signal black RAL9006 White aluminium RAL9007 Grey aluminium RAL7016 Anthracite grey RAL9016 Traffic white
Gasket:	Silicone CCG® Controlled Compression Gasket
Fasteners:	PCS hardware
Ingress protection:	IP66
Impact protection:	IK08
Corrosion protection:	5CE
Surge protection:	1/2 kV

Electrical Specification

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

Lifetime

Ta=25° L90B10 > 90000h

LED and LED driver can be exchanged by qualified personnel.



Optical Accessories

PLS420 LED

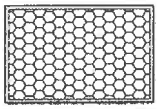
131-9565

Honeycomb louvre

Honeycomb louvre. Suitable for luminaires with [E] light distribution. Factory-installed, must be specified at time of ordering.

- IW-PLS420

131-9596



Control

DALI interface

Dali compatible control gear

- DALI interface

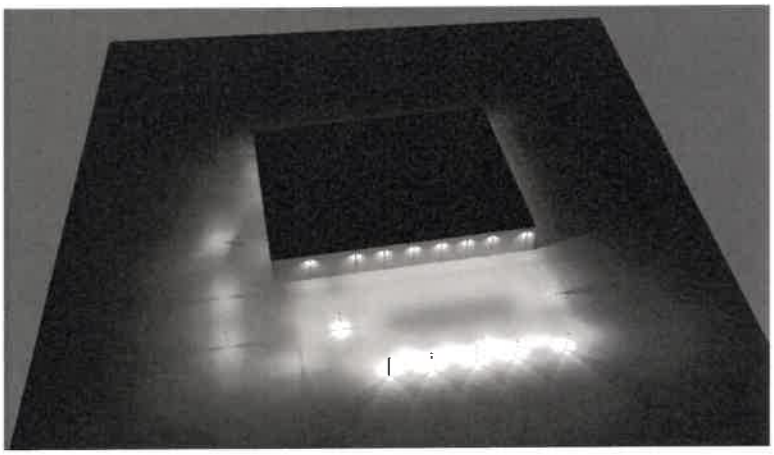
430-0013

Lighting Calculation Results

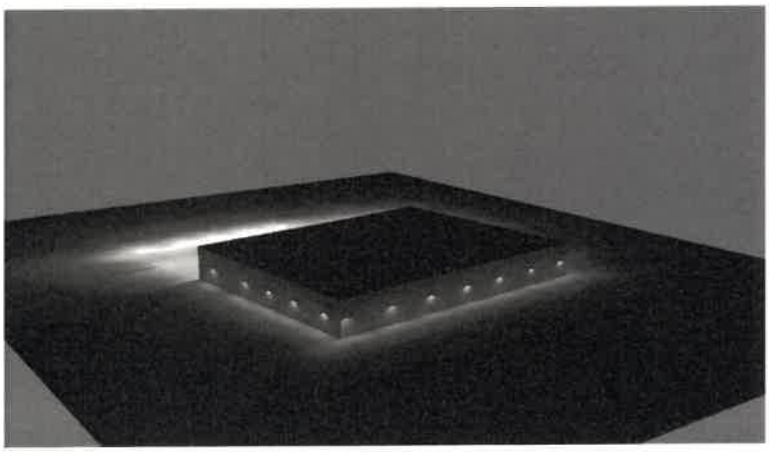
The Lighting software used to calculate the project was AGI32 V20. The software is a calculation tool for accurate photometric predications. AGI32 performs numerical point-by-point calculations of incident direct or reflected light on any surface of plane.

The results of the calculation are as followed.

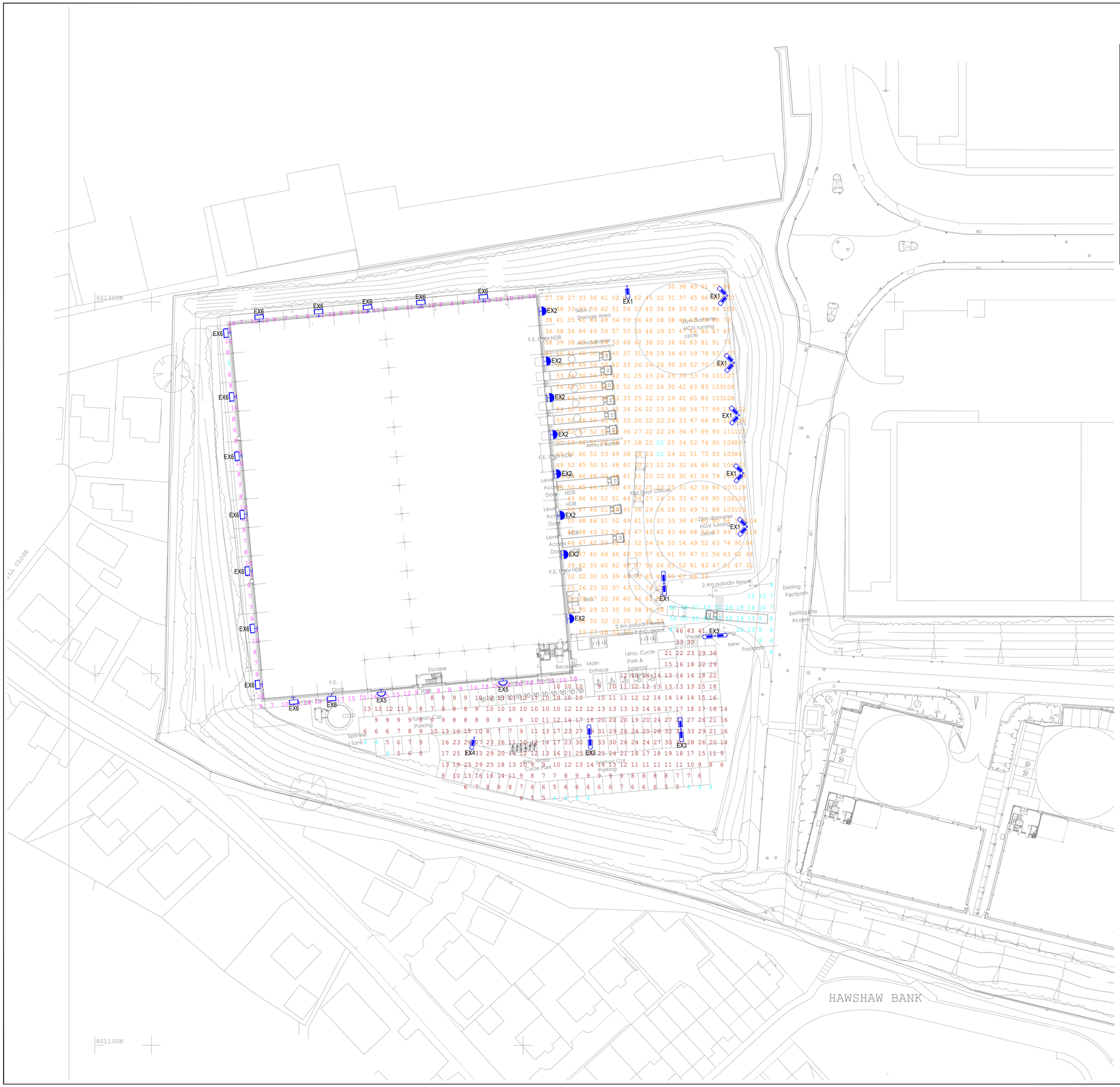
- Car Park – Medium Usage – 10 Lux average and 0.25Uo
- Service Yard – Loading and unloading of freight – 50 Lux average and 0.4 Uo
- Building perimeter – Pedestrian throughfare – 10 Lux average and 2 Lux minimum



Overview view of scheme to the Service Yard.



Side view and Perimeter Lighting.



Lighting Legend

Symbol	Description
EX1	External Post Mounted Fitting @8m
EX2	External Wall Mounted Fitting @10m
EX3	External Column Mounted Fitting @8m
EX4	External Post Mounted Fitting @8m
EX5	External Wall Mounted Downlight @8m
EX6	External Wall Mounted Fitting @6m

Do Not Scale

Use only written dimensions. All dimensions must be verified prior to the works being put into hand and any discrepancies reported to the originator.

M&E Designer Risk Assessment

Reference should be made to the specific Design Risk Assessment document which provides details of significant risks which could not be fully designed out or mitigated. Document reference as below;

Document: **P3569-DRA**
Engineer: **JT**
Dated: **21/09/2021**

General Notes

ELECTRICAL SERVICES

This drawing shall be read in conjunction with all other documentation relating to this project.

Installation shall be in-line with CJR Standard Specification and Particular Specification for this project.

Regulations & Standards

The works shall conform as a minimum to the following:-

Standards
- BS 7671 - IET The Wiring regulations.
- British Standard Codes of Practice.
- All associated CIBSE Codes, Guides, Application Manuals and Technical Memoranda.

Regulations
- Health & Safety at Work Act 1974
- Electricity at Work Regulations 1989.
- Construction (Design & Management) Regulations 2015.
- Electrical Equipment Safety regulations 1994.
- Building Regulations - Requirements of Building Control and the Local Fire Officer; Regulatory Reform (Fire Safety) Order 2005.
- Local authority Byelaws and Planning Regulations.
- Regional Electricity District Network Operator and Electricity Supplier requirement.
- Control of Pollution Act 1974 (in particular noise).
- Equality Act 2010

The Contractor is to familiarise themselves with the site, in order to determine quantity/volume of the services requirements and methods of work in order to fulfil their duties under this project.

The Contractor(s) shall include for all necessary works, including supply, delivery, off-loading, positioning, installation, and commissioning to provide complete installations as indicated on the layout drawing and described.

All symbols are indicative positions only and final locations shall be confirmed on by detailed design and on site.

This drawing must be read in colour.

Refer to CJR External Lighting Proposal Report for details of Lighting specification and site details.

Rev.	Details of Revision	Sign	Date	Chk	Date
S3.01	Issued to support Planning Condition 20.	JT	21.09.21	SJC	22.09.21

Client:
Network Space Ltd.

Project:
Ashroyd Business Park
Plot 3, Barnsley
S74 9SB

Title:
Electrical Services
External Lighting
Planning Condition 20

Drawing No:	Revision:
P3569-CJR-00-ZZ-DR-E-7000	S3.01

Scale:	Drawn:	Designed:	Checked:
1:100	RF	JT	SJC
Original Size:	**Date:**	**Date:**	**Date:**
A1	Sep. 2021	Sep. 2021	Sep. 21

Status: FOR PLANNING

Drawing Approval.	Date.
	22/09/2021

Client Approval.	Date.
Signature.	22/09/2021

Originated By:

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