External Lighting

Installation : The Manchester College - City Centre Project

Project number	:	C4C17532
Customer	:	Briggs & Forrester
Processed by	:	Tim Clark
Date	:	21.05.2020

The following values are based on exact calculations on calibrated lamps, luminaires and their arrangement. In practice, gradual divergences can occur.

Guarantee claims for luminaire data are excluded.

Relux and the luminaire manufacturers accept no liability for consequential damage and damage which is occasioned to the user or to third parties.

1 Luminaire data

1.1 LEVH14KG on 6m Column ()

1.1.1 Data sheet

LEVH14KG on 6m Column

Luminaire arrangement for:

	Position			Rotation		
	x[m]	y[m]	z[m]	Z[°]	C0[°]	C90[°]
LEVH14KG :	0.000	0.500	6.000	0	5	0

Position is the LDC position of the luminaire.

LEVH14KG Wall / pole mounted luminaire Levanter
Levanter Post Top

IP66 LED post top lantern with slim die cast aluminium body. A choice of distribution patterns to suit a range of applications, all having zero upward light. Electronic control gear with voltage surge protection and double insulated safety switch

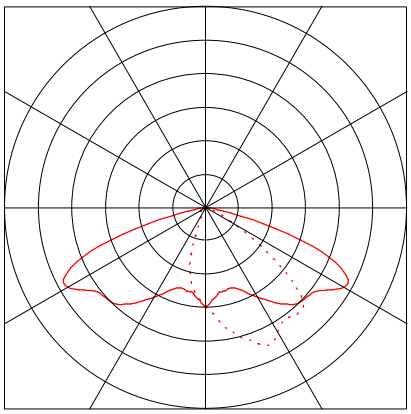
Luminaire data

Luminaire efficiency	:	100%
Luminaire efficacy	:	111.9 lm/W
Classification	:	A30 ↓100.0% ↑0.0%
CIE Flux Codes	:	40 77 98 100 100
Glare	:	G*4 / D4
Control gear	:	electronic ballast
Power	:	42 W
Luminous flux	:	4700 lm

Equipped with

Quantity	:	1
Designation	:	LED
Colour	:	4000
Luminous flux	:	4700 lm
Colour reproduction	:	70

Dimensions : 603 mm x 300 mm x 180 mm



1 Luminaire data

1.2 LEVH24KGF on 6m Column ()

1.2.1 Data sheet

LEVH24KGF on 6m Column

Luminaire arrangement for:

	Position			Rotation		
	x[m]	y[m]	z[m]	Z[°]	C0[°]	C90[°]
LEVH24KGF :	0.000	0.500	6.000	0	5	0

Position is the LDC position of the luminaire.

LEVH24KGF Wall / pole mounted luminaire Levanter
Levanter Post Top

IP66 LED post top lantern with slim die cast aluminium body. A choice of distribution patterns to suit a range of applications, all having zero upward light. Electronic control gear with voltage surge protection and double insulated safety switch

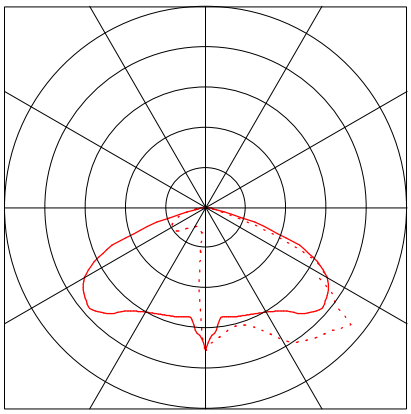
Luminaire data

Luminaire efficiency	:	100%
Luminaire efficacy	:	82.97 lm/W
Classification	:	A30 ↓100.0% ↑0.0%
CIE Flux Codes	:	32 70 97 100 100
Glare	:	G*4 / D5
Control gear	:	electronic ballast
Power	:	69 W
Luminous flux	:	5725 lm

Equipped with

Quantity	:	1
Designation	:	LED
Colour	:	4000
Luminous flux	:	5725 lm
Colour reproduction	:	70

Dimensions : 603 mm x 300 mm x 180 mm



1 Luminaire data

1.3 Whitecroft Lighting, EUROFLOOD MIDI LED (EFLH24KG)

1.3.1 Data sheet

Manufacturer: Whitecroft Lighting

EFLH24KG EXTERIOR EUROFLOOD MIDI LED
EUROFLOOD MIDI LED IP66 Slimline asymmetric floodlight with diw cast body and 5mm thick thermal shock and impact resistant glass. High quality efficient LED light engine.

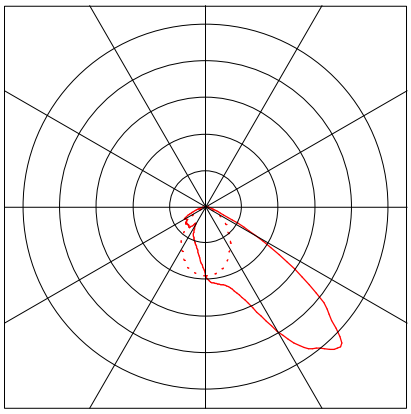
Luminaire data

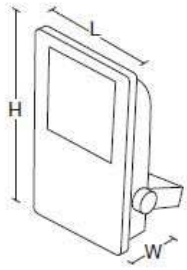
Luminaire efficiency	:	100%
Luminaire efficacy	:	105.28 lm/W
Classification	:	A40 ↓100.0% ↑0.0%
CIE Flux Codes	:	54 92 99 100 100
UGR 4H 8H	:	34.7 / 25.9
Control gear	:	electronic ballast
Power	:	81 W
Luminous flux	:	8528 lm

Equipped with

Quantity	:	1
Designation	:	LED
Power	:	81 W
Colour	:	4000k
Luminous flux	:	8528 lm

Dimensions : 333 mm x 568 mm x 85 mm





L	W	H	KG
333	85	568	9.30

1 Luminaire data

1.4 Whitecroft Lighting, CENTURION L65 (CENLH14K)

1.4.1 Data sheet

Manufacturer: Whitecroft Lighting

CENLH14K EXTERIOR CENTURION L65
CENTURION PP65 - L65

IIP65 wall mounted LED luminaire for building perimeter applications. Black polycarbonate body with UV stabilised prismatic polycarbonate diffuser producing a wide, forward throw lighting distribution. High quality fixed output or Dali driver and LED module with a choice of light outputs for optimised lighting designs

Note:

Emergency output 244lm

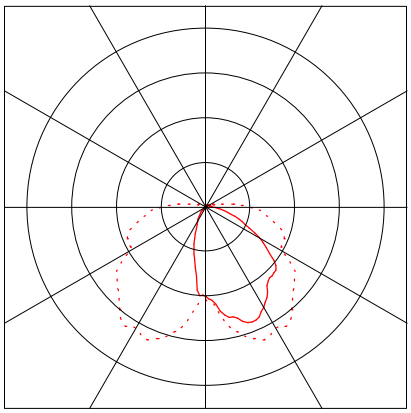
Luminaire data

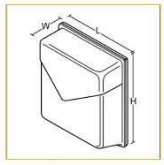
Luminaire efficiency	:	100%
Luminaire efficacy	:	74.17 lm/W
Classification	:	A31 ↓92.7% ↑7.3%
CIE Flux Codes	:	40 69 88 93 101
UGR 4H 8H	:	21.5 / 24.8
Control gear	:	electronic ballast
Power	:	12 W
Luminous flux	:	890 lm

Equipped with

Quantity	:	1
Designation	:	LED
Colour	:	4000K
Luminous flux	:	890 lm
Colour reproduction	:	80

Dimensions : 315 mm x 259 mm x 156 mm





L	W	H	KG	KG(EM)
259	156	315	2.2	3.1

1 Luminaire data

1.5 Whitecroft Lighting, ACL EXTREME (AXLH424K)

1.5.1 Data sheet

Manufacturer: Whitecroft Lighting

AXLH424K ceiling mounted luminaire ACL EXTREME
ACL EXTREME

IP65 surface mounted LED luminaire for outdoor applications.
With die cast aluminium body and opal polycarbonate retained diffuser

Emergency Output - 659lm

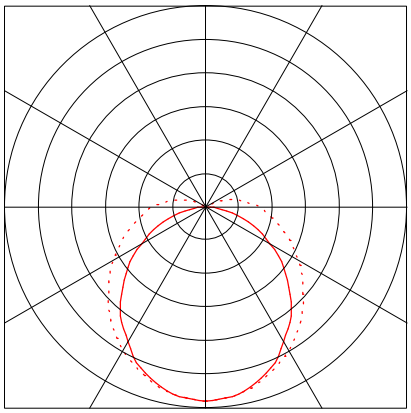
Luminaire data

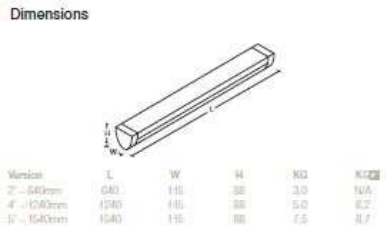
Luminaire efficiency	:	100%
Luminaire efficacy	:	118.75 lm/W
Classification	:	A31 ↓93.2% ↑6.8%
CIE Flux Codes	:	42 71 89 93 98
UGR 4H 8H	:	21.7 / 26.7
Control gear	:	electronic ballast
Power	:	28 W
Luminous flux	:	3325.1 lm

Dimensions : 115 mm x 1240 mm x 88 mm

Equipped with

Quantity	:	1
Designation	:	LED
Colour	:	4000K
Luminous flux	:	3325.1 lm
Colour reproduction	:	80

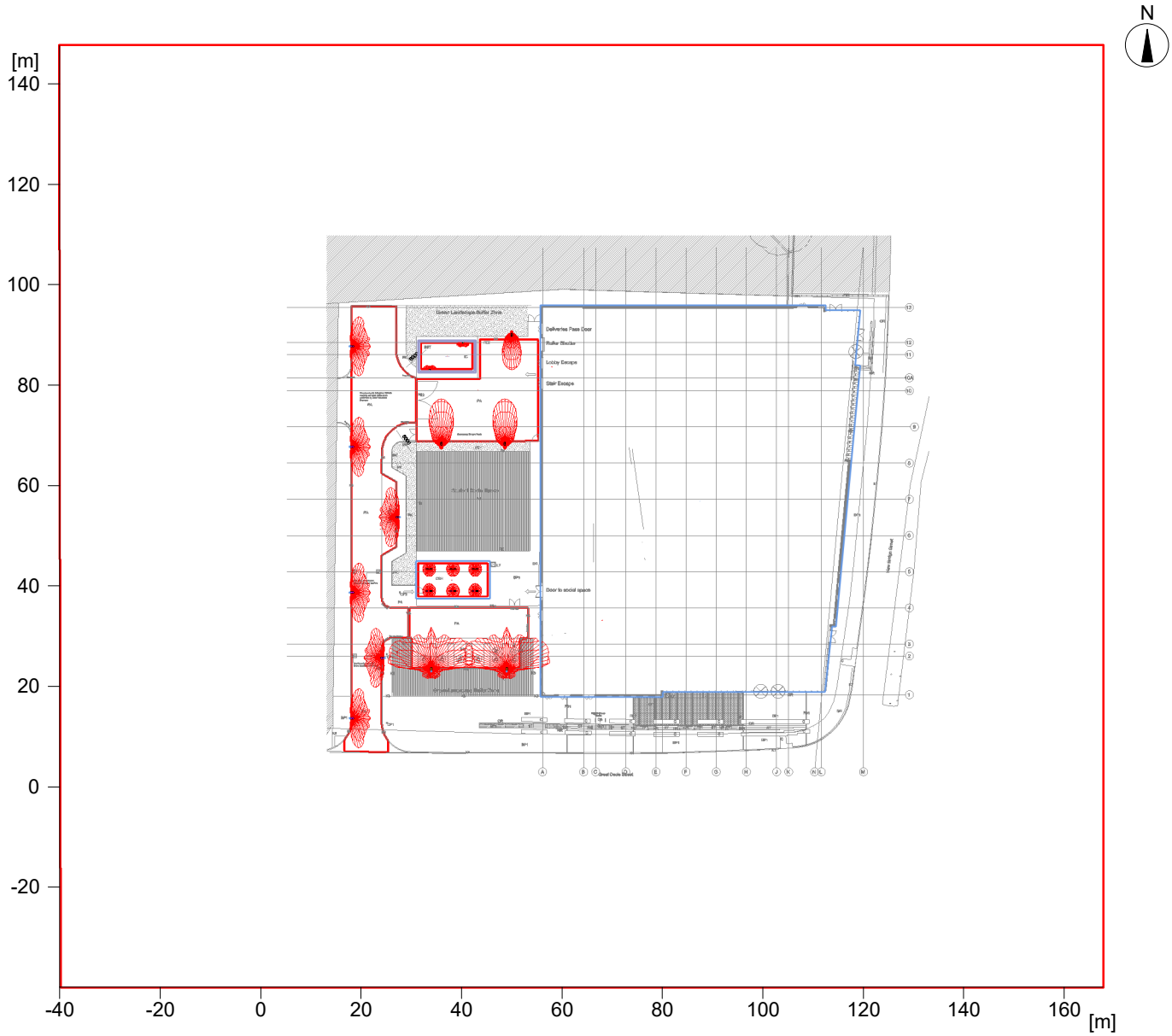




2 Exterior 1

2.1 Description, Exterior 1

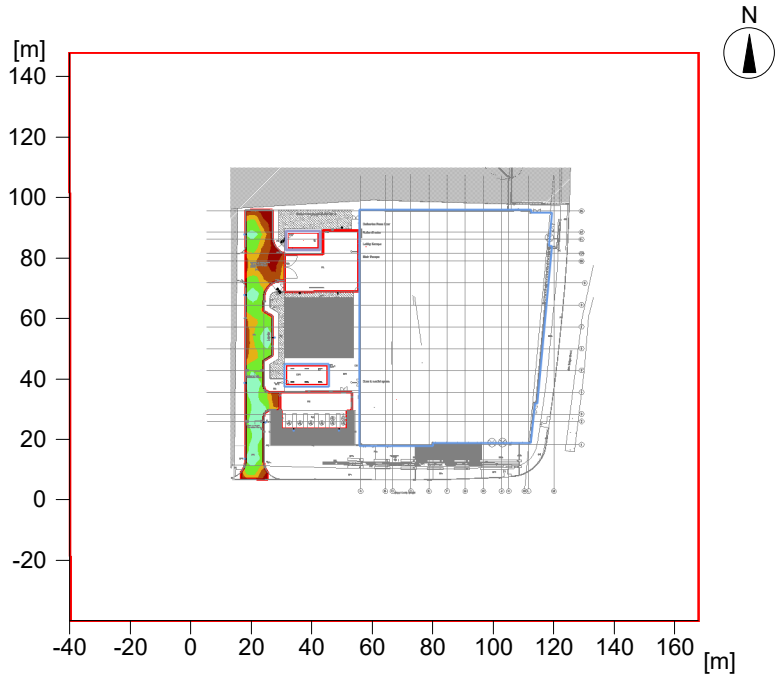
2.1.1 Floor plan

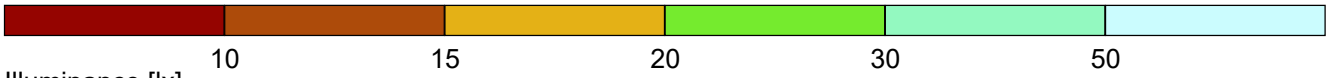


2 Exterior 1

2.2 Summary, Exterior 1

2.2.1 Result overview, Access Road





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	86964.6 lm
Total power	825 W
Total power per area (38949.66 m²)	0.02 W/m²

Illuminance

Average illuminance	Em	21.4 lx
Minimum illuminance	Emin	5 lx
Maximum illuminance	Emax	46.7 lx
Uniformity Uo	Emin/Em	1:4.31 (0.23)
Diversity Ud	Emin/Emax	1:9.39 (0.11)

Type No.\Make

1 6

Order No. :
Luminaire name : LEVH14KG on 6m Column
with : 1 x LEVH14KG
Equipment : 1 x LED 42 W / 4700 lm

2 2

Order No. :
Luminaire name : LEVH24KGF on 6m Column
with : 1 x LEVH24KGF
Equipment : 1 x LED 69 W / 5725 lm

2 Exterior 1

2.2 Summary, Exterior 1

2.2.1 Result overview, Access Road

Whitecroft Lighting

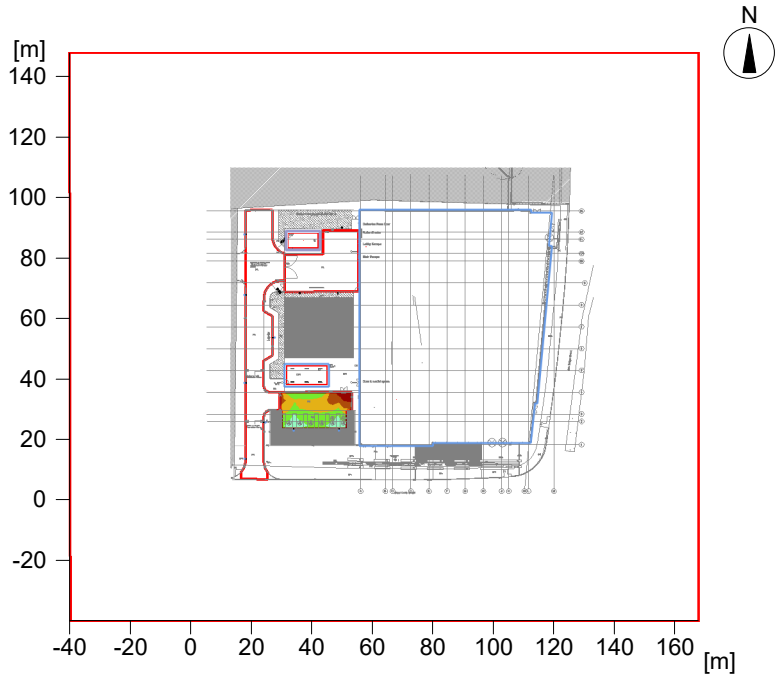
3 3
Order No. : EFLH24KG
Luminaire name : EUROFLOOD MIDI LED
Equipment : 1 x LED 81 W / 8528 lm

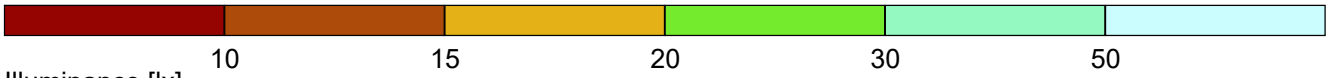
4 2
Order No. : CENLH14K
Luminaire name : CENTURION L65
Equipment : 1 x LED 12 W / 890 lm

5 6
Order No. : AXLH424K
Luminaire name : ACL EXTREME
Equipment : 1 x LED 28 W / 3325.1 lm

2.2 Summary, Exterior 1

2.2.2 Result overview, Car Park





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	86964.6 lm
Total power	825 W
Total power per area (38949.66 m²)	0.02 W/m²

Illuminance

Average illuminance	Em	21 lx
Minimum illuminance	Emin	5.7 lx
Maximum illuminance	Emax	42.5 lx
Uniformity Uo	Emin/Em	1:3.68 (0.27)
Diversity Ud	Emin/Emax	1:7.44 (0.13)

Type No.\Make

1 6

Order No. :
Luminaire name : LEVH14KG on 6m Column
with : 1 x LEVH14KG
Equipment : 1 x LED 42 W / 4700 lm

2 2

Order No. :
Luminaire name : LEVH24KGF on 6m Column
with : 1 x LEVH24KGF
Equipment : 1 x LED 69 W / 5725 lm

2.2 Summary, Exterior 1

2.2.2 Result overview, Car Park

Whitecroft Lighting

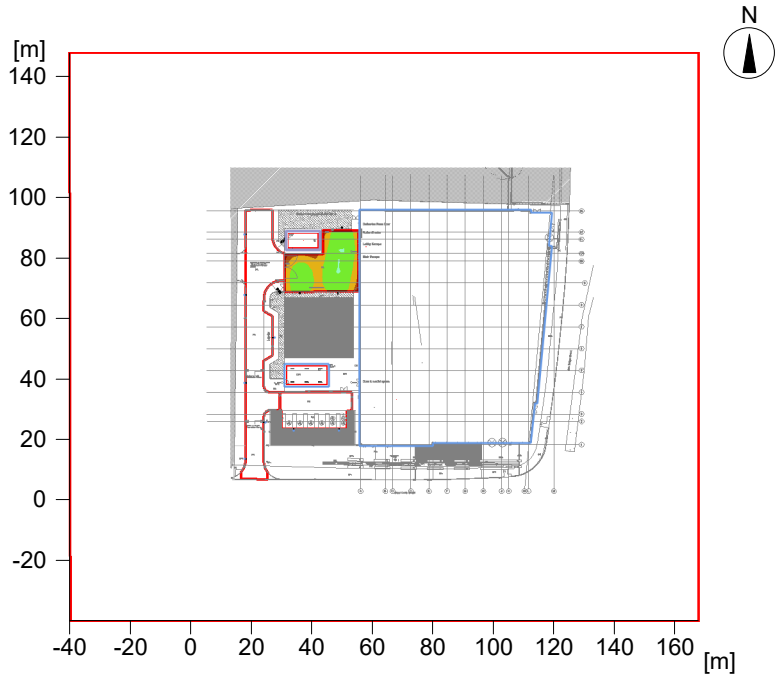
3 3
Order No. : EFLH24KG
Luminaire name : EUROFLOOD MIDI LED
Equipment : 1 x LED 81 W / 8528 lm

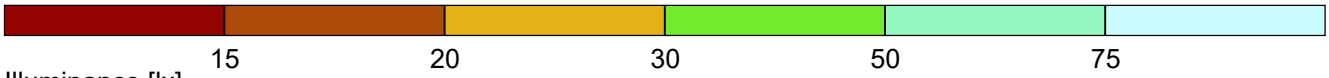
4 2
Order No. : CENLH14K
Luminaire name : CENTURION L65
Equipment : 1 x LED 12 W / 890 lm

5 6
Order No. : AXLH424K
Luminaire name : ACL EXTREME
Equipment : 1 x LED 28 W / 3325.1 lm

2.2 Summary, Exterior 1

2.2.3 Result overview, Service Yard





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	86964.6 lm
Total power	825 W
Total power per area (38949.66 m²)	0.02 W/m²

Illuminance

Average illuminance	Em	32.4 lx
Minimum illuminance	Emin	13.7 lx
Maximum illuminance	Emax	49.1 lx
Uniformity Uo	Emin/Em	1:2.36 (0.42)
Diversity Ud	Emin/Emax	1:3.58 (0.28)

Type No.\Make

1 6

Order No. :
Luminaire name : LEVH14KG on 6m Column
with : 1 x LEVH14KG
Equipment : 1 x LED 42 W / 4700 lm

2 2

Order No. :
Luminaire name : LEVH24KGF on 6m Column
with : 1 x LEVH24KGF
Equipment : 1 x LED 69 W / 5725 lm

2.2 Summary, Exterior 1

2.2.3 Result overview, Service Yard

Whitecroft Lighting

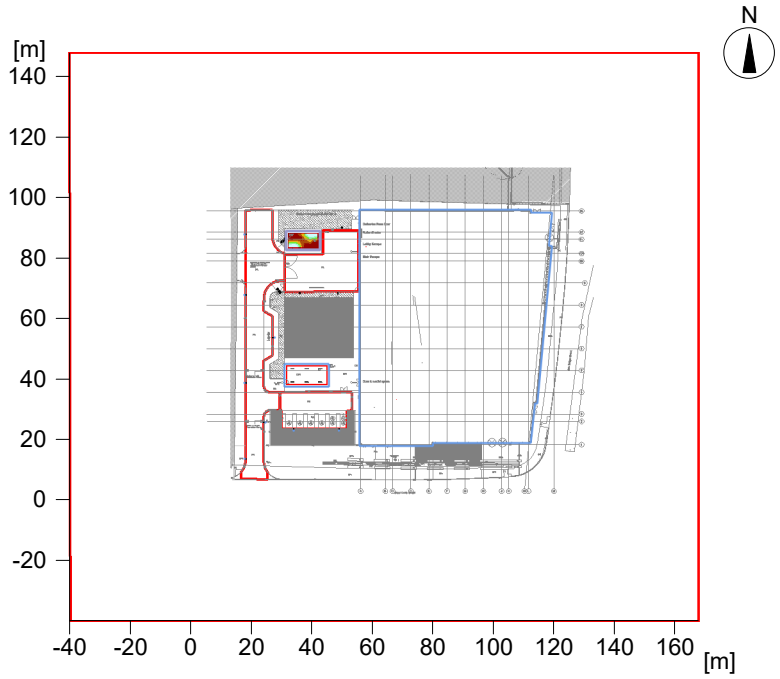
3 3
Order No. : EFLH24KG
Luminaire name : EUROFLOOD MIDI LED
Equipment : 1 x LED 81 W / 8528 lm

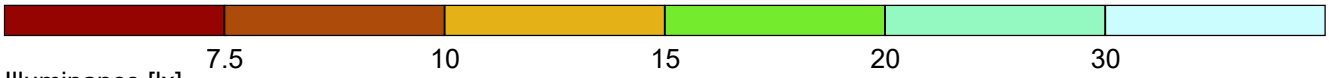
4 2
Order No. : CENLH14K
Luminaire name : CENTURION L65
Equipment : 1 x LED 12 W / 890 lm

5 6
Order No. : AXLH424K
Luminaire name : ACL EXTREME
Equipment : 1 x LED 28 W / 3325.1 lm

2.2 Summary, Exterior 1

2.2.4 Result overview, Bin Store





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	86964.6 lm
Total power	825 W
Total power per area (38949.66 m²)	0.02 W/m²

Illuminance

Average illuminance	Em	16.1 lx
Minimum illuminance	Emin	2.2 lx
Maximum illuminance	Emax	69.1 lx
Uniformity Uo	Emin/Em	1:7.31 (0.14)
Diversity Ud	Emin/Emax	1:31.4 (0.03)

Type No.\Make

1 6

Order No. :
Luminaire name : LEVH14KG on 6m Column
with : 1 x LEVH14KG
Equipment : 1 x LED 42 W / 4700 lm

2 2

Order No. :
Luminaire name : LEVH24KGF on 6m Column
with : 1 x LEVH24KGF
Equipment : 1 x LED 69 W / 5725 lm

2.2 Summary, Exterior 1

2.2.4 Result overview, Bin Store

Whitecroft Lighting

3 3

Order No. : EFLH24KG
Luminaire name : EUROFLOOD MIDI LED
Equipment : 1 x LED 81 W / 8528 lm

4 2

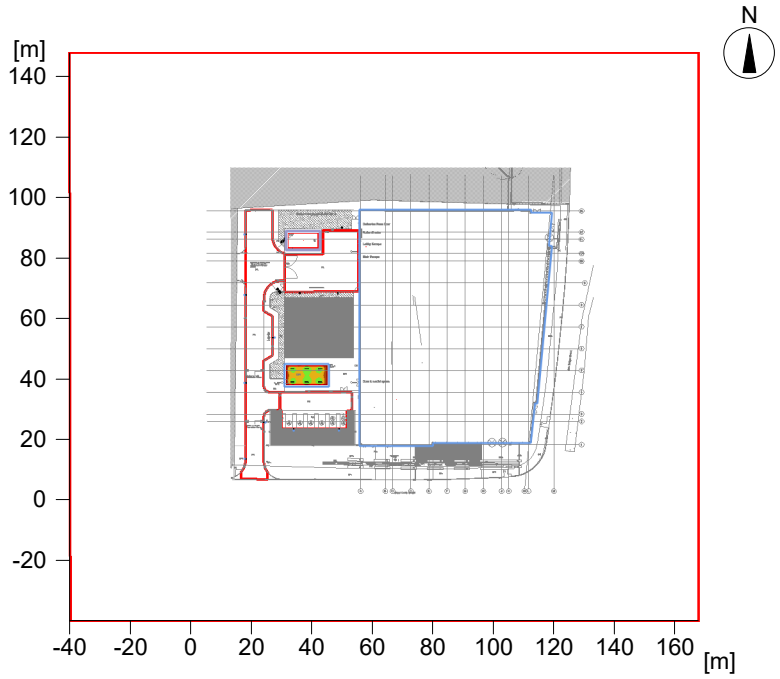
Order No. : CENLH14K
Luminaire name : CENTURION L65
Equipment : 1 x LED 12 W / 890 lm

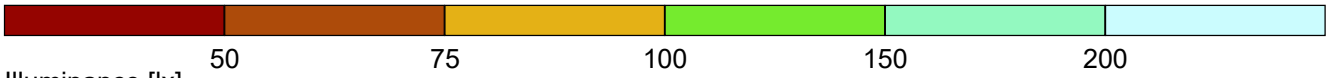
5 6

Order No. : AXLH424K
Luminaire name : ACL EXTREME
Equipment : 1 x LED 28 W / 3325.1 lm

2.2 Summary, Exterior 1

2.2.5 Result overview, Cycle Store





Illuminance [lx]

General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux of all lamps	86964.6 lm
Total power	825 W
Total power per area (38949.66 m²)	0.02 W/m²

Illuminance

Average illuminance	Em	87 lx
Minimum illuminance	Emin	44 lx
Maximum illuminance	Emax	118 lx
Uniformity Uo	Emin/Em	1:1.99 (0.5)
Diversity Ud	Emin/Emax	1:2.68 (0.37)

Type No.\Make

1 6

Order No.	:
Luminaire name	: LEVH14KG on 6m Column
with	: 1 x LEVH14KG
Equipment	: 1 x LED 42 W / 4700 lm

2 2

Order No.	:
Luminaire name	: LEVH24KGF on 6m Column
with	: 1 x LEVH24KGF
Equipment	: 1 x LED 69 W / 5725 lm

2.2 Summary, Exterior 1

2.2.5 Result overview, Cycle Store

Whitecroft Lighting

3 3

Order No. : EFLH24KG
Luminaire name : EUROFLOOD MIDI LED
Equipment : 1 x LED 81 W / 8528 lm

4 2

Order No. : CENLH14K
Luminaire name : CENTURION L65
Equipment : 1 x LED 12 W / 890 lm

5 6

Order No. : AXLH424K
Luminaire name : ACL EXTREME
Equipment : 1 x LED 28 W / 3325.1 lm