

Technical Submittal

External Lighting

Project: Star Academy, Bury

Project Ref: MC1202

4P Reference: FS1013-AME-ZZ-ZZ-T-E-0007

4P Status: A4

Revision: C02

Date: 16-12-25

Revision	Date	Description	Issued By
P01	02-09-25	Initial Issue	AR
C01	13-11-25	Construction issue	AR
C02	16-12-25	Design Criteria Update BS EN 12193	

Technical Submittal

Technical Data

Please see data sheets below

Design Criteria

- 3G all weather pitch is designed for football & rugby and meets the lighting requirements for **BS EN 12193 Lights & Lighting sports pitches class 3**
- MUGA (new) is designed for basketball, netball & tennis and meets the lighting requirements for **BS EN 12193 Lights & Lighting sports pitches class 3**
- 2nd gen all weather pitch is designed for hockey & football and meets the lighting requirements for **BS EN 12193 Lights & Lighting sports pitches class 3**

See calculations below

Description of System / Operation

All pitches are controlled via manual switches located in staff workroom (premises) 1 4032. Switching groups as per the below.

- Switch 1 – 3G all weather pitch, all lights
- Switch 2 – MUGA (new) all lights
- Switch 3 – 2nd gen all weather pitch all lights

Lighting - Technical Submittal



Project Star Academy
Project No. MC1202
Tech Submittal No.
Revision
Date

Ref.	Location	Manufacturer	Model	Part Number	Dimmable	Emergency	Lamp	Colour Finish	Controls
X1	MUGA, All weather, 2nd Gen Pitch	Whitecroft	Euroflood Maxi LED	EFX1H34KA	No	No	LED	Grey	Manual switch
X1 - 10m - H	All weather	Whitecroft	10m heavy duty column	CT10PRXXH	N/A	N/A	N/A	Galvanised	N/A
X1 - 10m - EH	MUGA, All weather	Whitecroft	10m extra heavy duty column	CT10PRXXEH	N/A	N/A	N/A	Galvanised	N/A
X1 - 12m - H	2nd Gen Pitch	Whitecroft	12m heavy duty column	CT12PRXXH	N/A	N/A	N/A	Galvanised	N/A
EXT - 1	Main Car Park	Whitecroft	Mistral Small Area Optic	MISH24KA	No	No	LED	Black	Manual switch
EXT - 1 - 6m	Main Car Park	Whitecroft	6m column	CT6PRXXMD	N/A	N/A	N/A	Galvanised	N/A
EXT - 2	Pathways	Whitecroft	Mistral Small Path Optic	MISH14KP	No	No	LED	Black	Manual switch
EXT - 2 - 6m	Pathways	Whitecroft	6m Column	CT6PRXXMD	N/A	N/A	N/A	Galvanised	N/A
EXT - 3	Drop Off Area	Whitecroft	Mistral Midi Square Optic	MIMH44KS	No	No	LED	Black	Manual switch
EXT - 3 - 6m	Drop Off Area	Whitecroft	6m column	CT6PRXXMD	N/A	N/A	N/A	Galvanised	N/A
EXT -4E	Perimeter Lighting Building	Whitecroft	Spectre WX	SPXAH14KGEM	No	Yes	LED	Grey	Manual switch

Notes:

- 1)
- 2)
- 3)
- 4)

Euroflood MaxiLED



100+
LL/CW

IK08

IP66

Part number:
EFX1H34KA

Project reference:
X1

Product description:

High output IP66 rated LED floodlight with die cast aluminium body in 1, 2 or 3 module configuration. Asymmetric distribution pattern for accurate lighting design and to minimise light spill. – as Whitecroft Lighting EUROFLOOD MAXILED



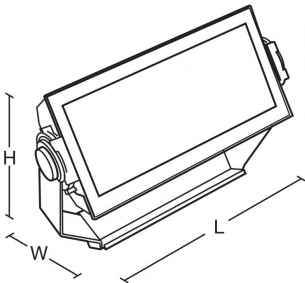
Light source

Light source:	Colour temperature:
LED	4000K
Colour render index:	Colour consistency:
>70	MacAdam 3 SDCM
Control gear:	Integral control:
Fixed Output	N/A
Luminaire finish:	
Grey	

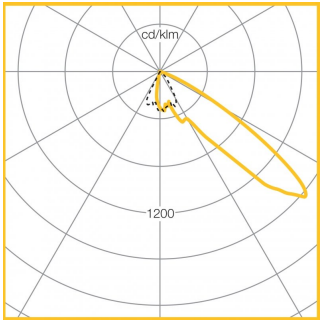
Luminaire performance

Lumens:	Light output ratio:
None	None
Circuit watts:	LL/CW:
None	0
Power factor:	LED life performance:
>0.9	L90B50 @ 50K hours
Emergency:	Emergency output:
N/A	

Dimensions & Weight



Polar Curve (Indicative Only)



VERSION	L	W	H	KG	Windage M²
1 Module	642	214	281	15	0.14
2 Module	757	303	494	27	0.37
3 Module	757	303	673	27	0.47
IP66 Driver	490	146	170	9	

Tubular Columns



Part number:

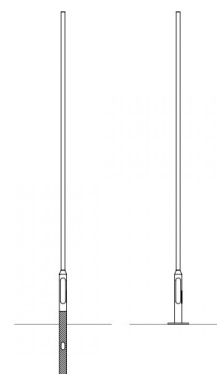
CT10PRXXH

Project reference:

10M

Product description:

Stepped tubular or octagonal tapered steel lighting column with planted root or flange plate mounted base. With highly protective galvanised finish as standard and colour overpaint options – as Whitecroft Lighting TUBULAR COLUMN



Light source

Light source:

Colour temperature:

Colour render index:

Colour consistency:

Control gear:

Integral control:

N/A

Luminaire finish:

Luminaire performance

Lumens:

None

Circuit watts:

None

Power factor:

>0.9

Emergency:

Light output ratio:

None

LL/CW:

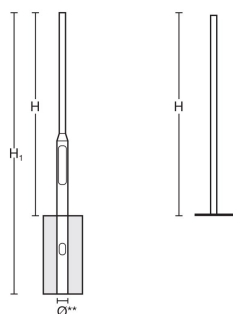
0

LED life performance:

L90B50 @ 50K hours

Emergency output:

Dimensions & Weight



VERSION	H	H1	KG	Base Ø	Spigot Ø	Shaft Ø
4m Light	4000	4800	36.6	140	76	76
5m Medium & Heavy	5000	5800	48.0	140	76	76
6m Medium	6000	7000	49.2	140	76	76
6m Heavy	6000	7000	85.0	168	76	89
8m Medium	7750	8950	94.0	168	76	89
8m Heavy	7750	8950	110.8	168	101	114
8m Extra Heavy	7750	8950	139.7	194	127	140
10m Medium	9750	11250	134.0	168	101	114
10m Heavy	9750	11250	165.6	194	127	140
10m Extra Heavy	9750	11250	205.6	194	127	140
12m Heavy	11750	13450	184.0	194	127	140
12m Extra Heavy	12000	13700	230.0	300	N/A	N/A
15m Heavy	15000	17000	250.0	342	N/A	N/A

Tubular Columns



Part number:

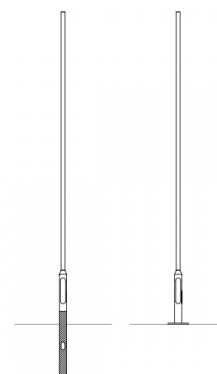
CT10PRXXEH

Project reference:

10M - EH

Product description:

Stepped tubular or octagonal tapered steel lighting column with planted root or flange plate mounted base. With highly protective galvanised finish as standard and colour overpaint options – as Whitecroft Lighting TUBULAR COLUMN



Light source

Light source:

Colour temperature:

Colour render index:

Colour consistency:

Control gear:

Integral control:

N/A

Luminaire finish:

Luminaire performance

Lumens:

None

Circuit watts:

None

Power factor:

>0.9

Emergency:

Light output ratio:

None

LL/CW:

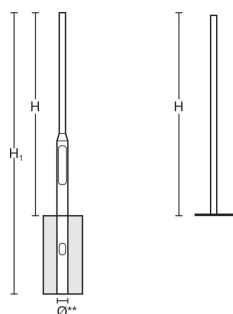
0

LED life performance:

L90B50 @ 50K hours

Emergency output:

Dimensions & Weight



VERSION	H	H1	KG	Base Ø	Spigot Ø	Shaft Ø
4m Light	4000	4800	36.6	140	76	76
5m Medium & Heavy	5000	5800	48.0	140	76	76
6m Medium	6000	7000	49.2	140	76	76
6m Heavy	6000	7000	85.0	168	76	89
8m Medium	7750	8950	94.0	168	76	89
8m Heavy	7750	8950	110.8	168	101	114
8m Extra Heavy	7750	8950	139.7	194	127	140
10m Medium	9750	11250	134.0	168	101	114
10m Heavy	9750	11250	165.6	194	127	140
10m Extra Heavy	9750	11250	205.6	194	127	140
12m Heavy	11750	13450	184.0	194	127	140
12m Extra Heavy	12000	13700	230.0	300	N/A	N/A
15m Heavy	15000	17000	250.0	342	N/A	N/A

Tubular Columns



Part number:

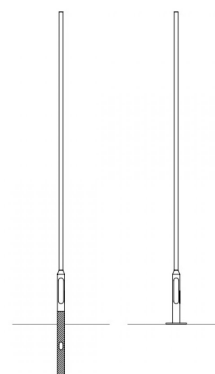
CT12PRXXH

Project reference:

12M

Product description:

Stepped tubular or octagonal tapered steel lighting column with planted root or flange plate mounted base. With highly protective galvanised finish as standard and colour overpaint options – as Whitecroft Lighting TUBULAR COLUMN



Light source

Light source:

Colour temperature:

Colour render index:

Colour consistency:

Control gear:

Integral control:

N/A

Luminaire finish:

Luminaire performance

Lumens:

None

Circuit watts:

None

Power factor:

>0.9

Emergency:

Light output ratio:

None

LL/CW:

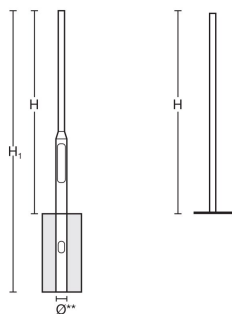
0

LED life performance:

L90B50 @ 50K hours

Emergency output:

Dimensions & Weight



VERSION	H	H1	KG	Base Ø	Spigot Ø	Shaft Ø
4m Light	4000	4800	36.6	140	76	76
5m Medium & Heavy	5000	5800	48.0	140	76	76
6m Medium	6000	7000	49.2	140	76	76
6m Heavy	6000	7000	85.0	168	76	89
8m Medium	7750	8950	94.0	168	76	89
8m Heavy	7750	8950	110.8	168	101	114
8m Extra Heavy	7750	8950	139.7	194	127	140
10m Medium	9750	11250	134.0	168	101	114
10m Heavy	9750	11250	165.6	194	127	140
10m Extra Heavy	9750	11250	205.6	194	127	140
12m Heavy	11750	13450	184.0	194	127	140
12m Extra Heavy	12000	13700	230.0	300	N/A	N/A
15m Heavy	15000	17000	250.0	342	N/A	N/A

Mistral Small



Part number:
MISH24KA

Project reference:
EXT - 1

Product description:
Post Top luminaire for side or post top mounting on to compatible column or wall mounting bracket (supplied separately). Die cast aluminium housing with 4mm clear tempered glass, ventilation gland and finished in polyester powder coat. – as Whitecroft Lighting MISTRAL SMALL



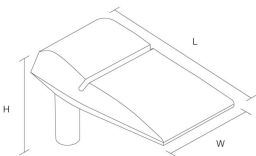
Light source

Light source:	Colour temperature:
LED	4000K
Colour render index:	Colour consistency:
70	MacAdam 3 SDCM
Control gear:	Integral control:
Fixed Output	N/A
Luminaire finish:	
Black	

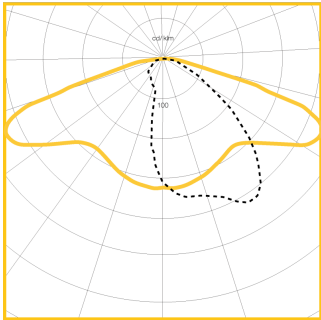
Luminaire performance

Lumens:	Light output ratio:
5148	100%
Circuit watts:	LL/CW:
34.6	149
Power factor:	LED life performance:
>0.9	L90B50 @ 50K hours
Emergency:	Emergency output:
N/A	

Dimensions & Weight



Polar Curve (Indicative Only)



VERSION	L	W	H	KG	Side windage (m2)
All versions	422	288	269	6.3	0.05

Mistral Small



Part number:
MISH14KP

Project reference:
EXT - 2

Product description:
Post Top luminaire for side or post top mounting on to compatible column or wall mounting bracket (supplied separately). Die cast aluminium housing with 4mm clear tempered glass, ventilation gland and finished in polyester powder coat. – as Whitecroft Lighting MISTRAL SMALL



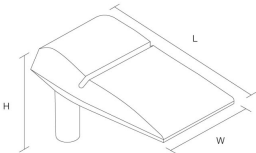
Light source

Light source:	Colour temperature:
LED	4000K
Colour render index:	Colour consistency:
70	MacAdam 3 SDCM
Control gear:	Integral control:
Fixed Output	N/A
Luminaire finish:	
Black	

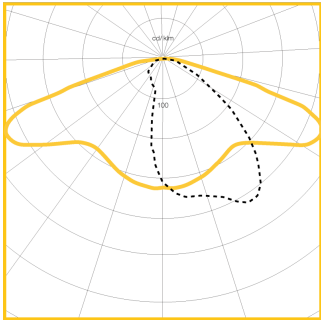
Luminaire performance

Lumens:	Light output ratio:
3001	100%
Circuit watts:	LL/CW:
17.9	168
Power factor:	LED life performance:
>0.9	L90B50 @ 50K hours
Emergency:	Emergency output:
N/A	

Dimensions & Weight



Polar Curve (Indicative Only)



VERSION	L	W	H	KG	Side windage (m2)
All versions	422	288	269	6.3	0.05

Mistral Midi



Part number:
MIMH44KS

Project reference:
EXT - 3

Product description:



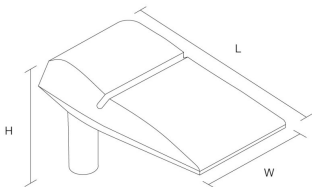
Light source

Light source:	Colour temperature:
LED	4000K
Colour render index:	Colour consistency:
70	MacAdam 3 SDCM
Control gear:	Integral control:
Fixed Output	N/A
Luminaire finish:	
Black	

Luminaire performance

Lumens:	Light output ratio:
14541	100%
Circuit watts:	LL/CW:
95.3	153
Power factor:	LED life performance:
>0.9	L90B50 @ 50K hours
Emergency:	Emergency output:
N/A	

Dimensions & Weight



VERSION	L	W	H	KG	Side windage (m2)
All versions	550	344	266	8.9	0.06

Tubular Columns



Part number:

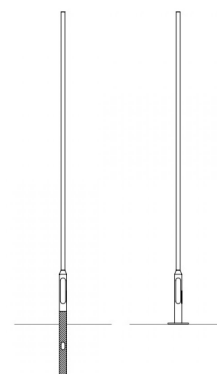
CT6PRXXMD

Project reference:

6M

Product description:

Stepped tubular or octagonal tapered steel lighting column with planted root or flange plate mounted base. With highly protective galvanised finish as standard and colour overpaint options – as Whitecroft Lighting TUBULAR COLUMN



Light source

Light source:

Colour temperature:

Colour render index:

Colour consistency:

Control gear:

Integral control:

N/A

Luminaire finish:

Luminaire performance

Lumens:

None

Circuit watts:

None

Power factor:

>0.9

Emergency:

Light output ratio:

None

LL/CW:

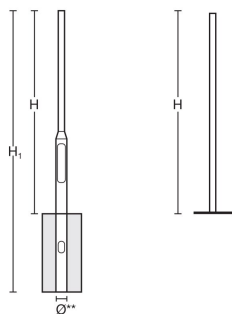
0

LED life performance:

L90B50 @ 50K hours

Emergency output:

Dimensions & Weight



VERSION	H	H1	KG	Base Ø	Spigot Ø	Shaft Ø
4m Light	4000	4800	36.6	140	76	76
5m Medium & Heavy	5000	5800	48.0	140	76	76
6m Medium	6000	7000	49.2	140	76	76
6m Heavy	6000	7000	85.0	168	76	89
8m Medium	7750	8950	94.0	168	76	89
8m Heavy	7750	8950	110.8	168	101	114
8m Extra Heavy	7750	8950	139.7	194	127	140
10m Medium	9750	11250	134.0	168	101	114
10m Heavy	9750	11250	165.6	194	127	140
10m Extra Heavy	9750	11250	205.6	194	127	140
12m Heavy	11750	13450	184.0	194	127	140
12m Extra Heavy	12000	13700	230.0	300	N/A	N/A
15m Heavy	15000	17000	250.0	342	N/A	N/A

Spectre WX



Part number:
SPXAH14KGEM

Project reference:
EXT - 4E

Product description:
IP65 Wall mounted conical LED luminaire with die cast aluminium body. With forward throw downward distribution having less than 2% upward light – as Whitecroft Lighting SPECTRE WX



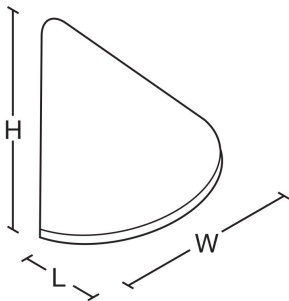
Light source

Light source:	Colour temperature:
LED	4000K
Colour render index:	Colour consistency:
>80	MacAdam 4 SDCM
Control gear:	Integral control:
HF	N/A
Luminaire finish:	
Grey	

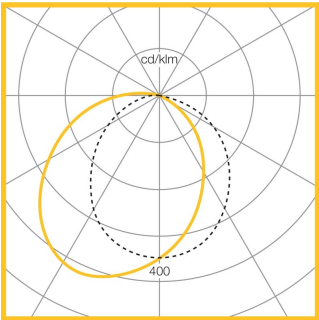
Luminaire performance

Lumens:	Light output ratio:
1119	100.00%
Circuit watts:	LL/CW:
14.00	80
Power factor:	LED life performance:
>0.9	L90B50 @ 50K hours
Emergency:	Emergency output:
3 hr EM LiFeP04	

Dimensions & Weight



Polar Curve (Indicative Only)



L	W	H	KG	KG(EM)
224	375	329	4	4.5

Star Academy

Installation : External Sports Pitch

Project number : 29704
Customer : ENGINEERING SERVICES DESIGN LTD
Processed by : Whitecroft Lighting
Date : 28.08.2025

Project description:

Design Parameters:

3G All Weather Pitch 75lx 0.5Uo @ 10M
MUGA 200lx 0.6Uo @ 10M
2nd Gen All Weather 200lx 0.7Uo @ 12M

- REV 1 - 2nd Gen All Weather Re-design

The following values are based on precise calculations performed on calibrated lamps and luminaires, and their configurations, whereby gradual, unavoidable deviations can occur in practice. All guarantee claims are excluded for the specified data.

This exclusion of liability applies irrespective of the legal grounds for both damages and consequential damages suffered by users and third parties.

1 Luminaire data

1.1 Whitecroft Lighting, Euroflood MaxiLED 1 module 400... (EFX1H34KA)

1.1.1 Data sheet

Manufacturer: Whitecroft Lighting

EFX1H34KA Euroflood MaxiLED 1 module 4000K asymmetric 456W

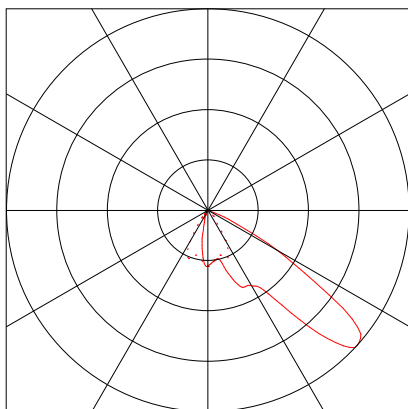
Luminaire data

Luminaire efficiency : 100%
Luminaire efficacy : 99.72 lm/W
Classification : A40 ↓100.0% ↑0.0%
CIE Flux Codes : 54 95 100 100 100
UGR 4H 8H : 41.2 / 18.5
Power : 456.8 W
Luminous flux : 45552 lm

Equipped with

Quantity : 1
Designation : LED
Colour : 4000
Luminous flux : 45552 lm
Colour reproduction : 70

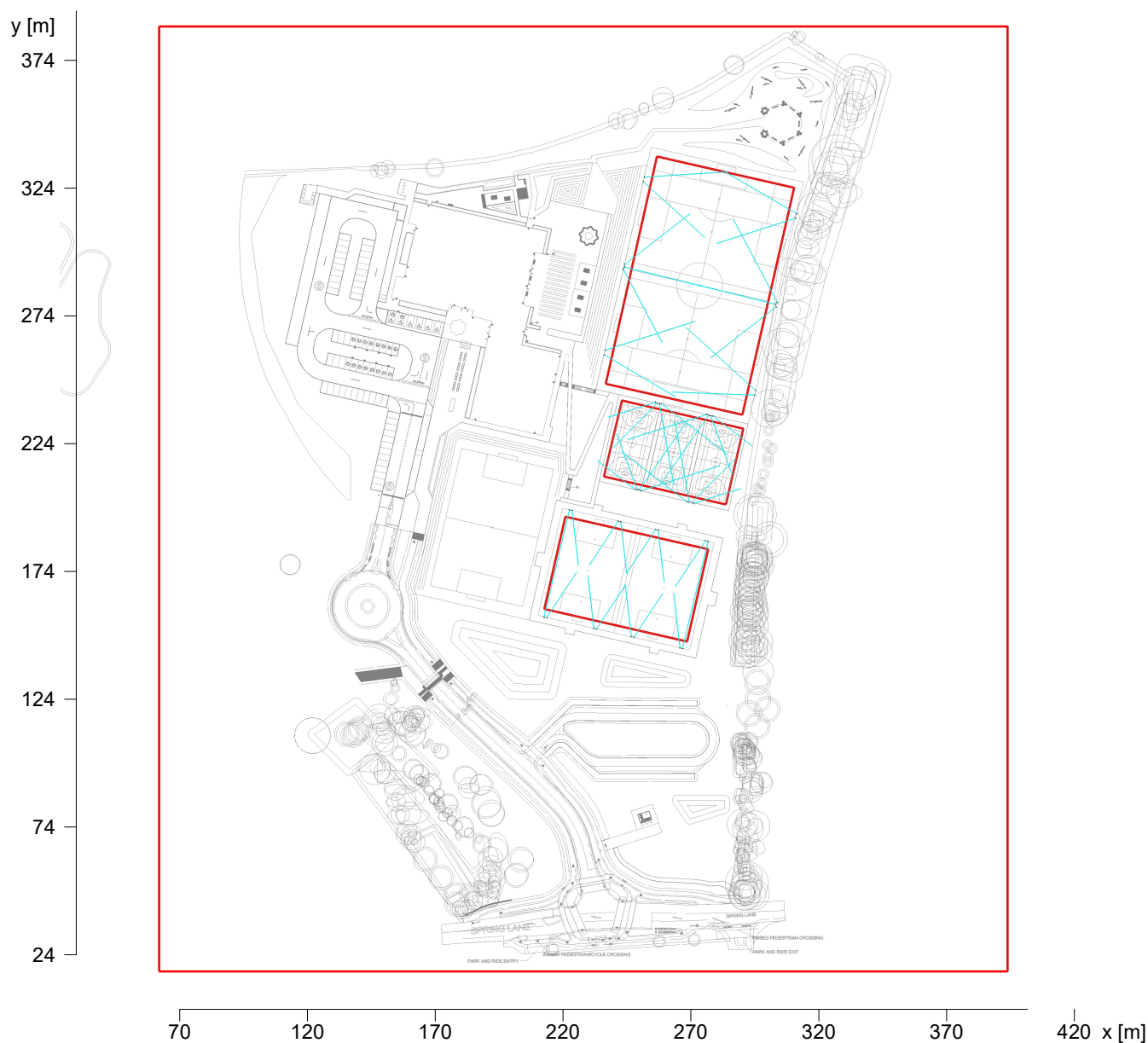
Dimensions : 640 mm x 195 mm x 214 mm



2 EXTERNAL PITCHES

2.1 Description, EXTERNAL PITCHES

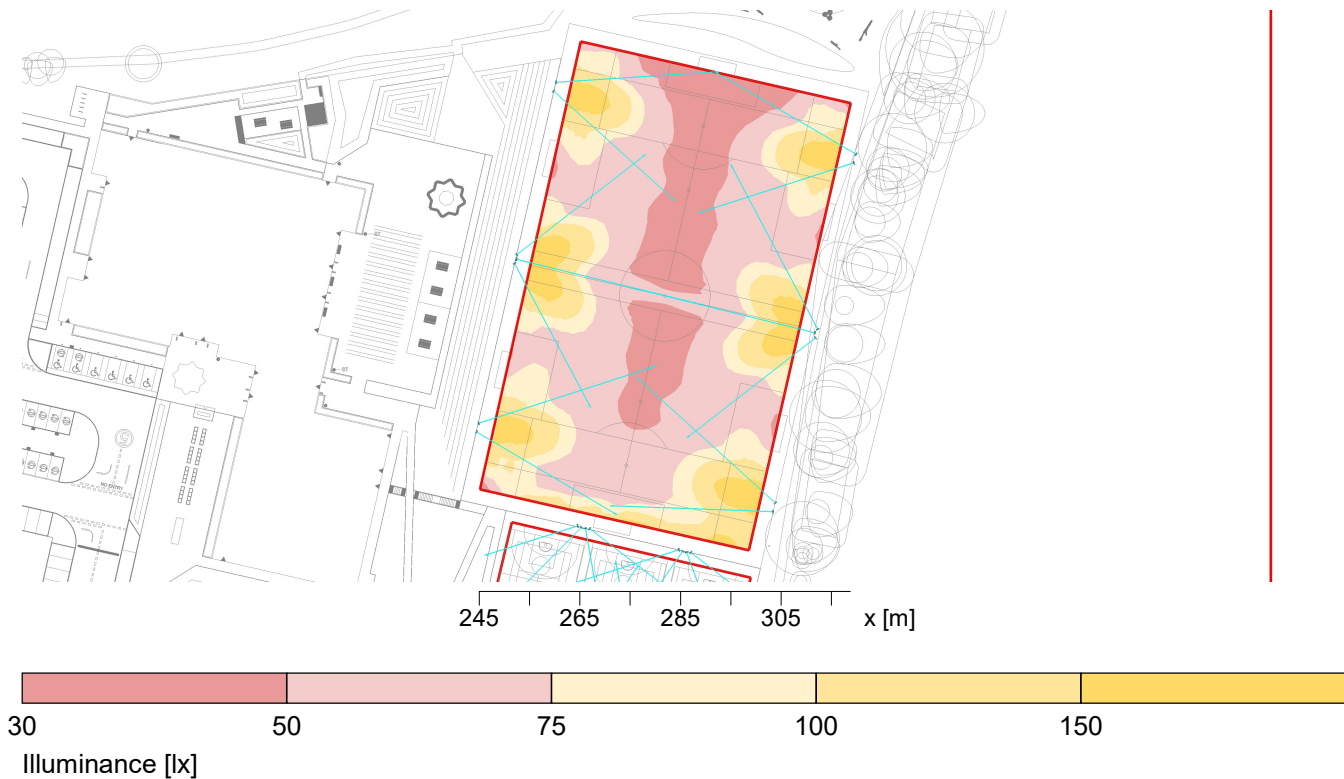
2.1.1 Floor plan



2 EXTERNAL PITCHES

2.2 Summary, EXTERNAL PITCHES

2.2.1 Result overview, 3G All Weather Pitch



General

Calculation algorithm used	High indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80

Total luminous flux	2095392 lm
Total power	21012.8 W
Total power per area (122484.33 m²)	0.17 W/m²

Illuminance

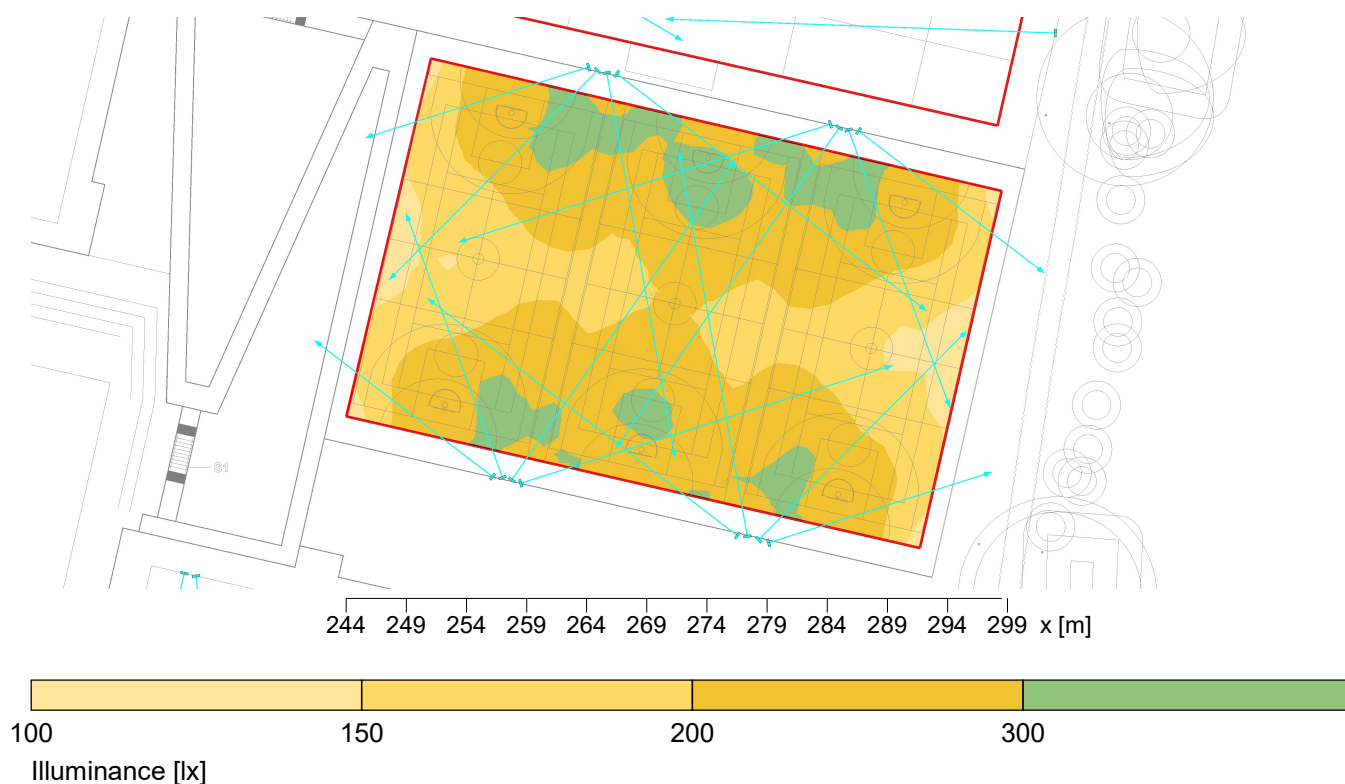
Average illuminance	$\bar{E}_m$	78 lx
Minimum illuminance	E_{min}	38.9 lx
Maximum illuminance	E_{max}	199 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:2.01 (0.5)
Diversity U_d	E_{min}/E_{max}	1:5.13 (0.2)

Type No.\Make

		Whitecroft Lighting	
1	46 x	Order No.	: EFX1H34KA
		Luminaire name	: Euroflood MaxiLED 1 module 4000K asymmetric 456W
		Equipment	: 1 x LED 456.8 W / 45552 lm

2.2 Summary, EXTERNAL PITCHES

2.2.2 Result overview, Smaller MUGA x 3



General

Calculation algorithm used	High indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80
Total luminous flux	2095392 lm
Total power	21012.8 W
Total power per area (122484.33 m ²)	0.17 W/m ²

Illuminance

Average illuminance	$\bar{E}_m$	232 lx
Minimum illuminance	E_{min}	139 lx
Maximum illuminance	E_{max}	366 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.67 (0.6)
Diversity U_d	E_{min}/E_{max}	1:2.63 (0.38)

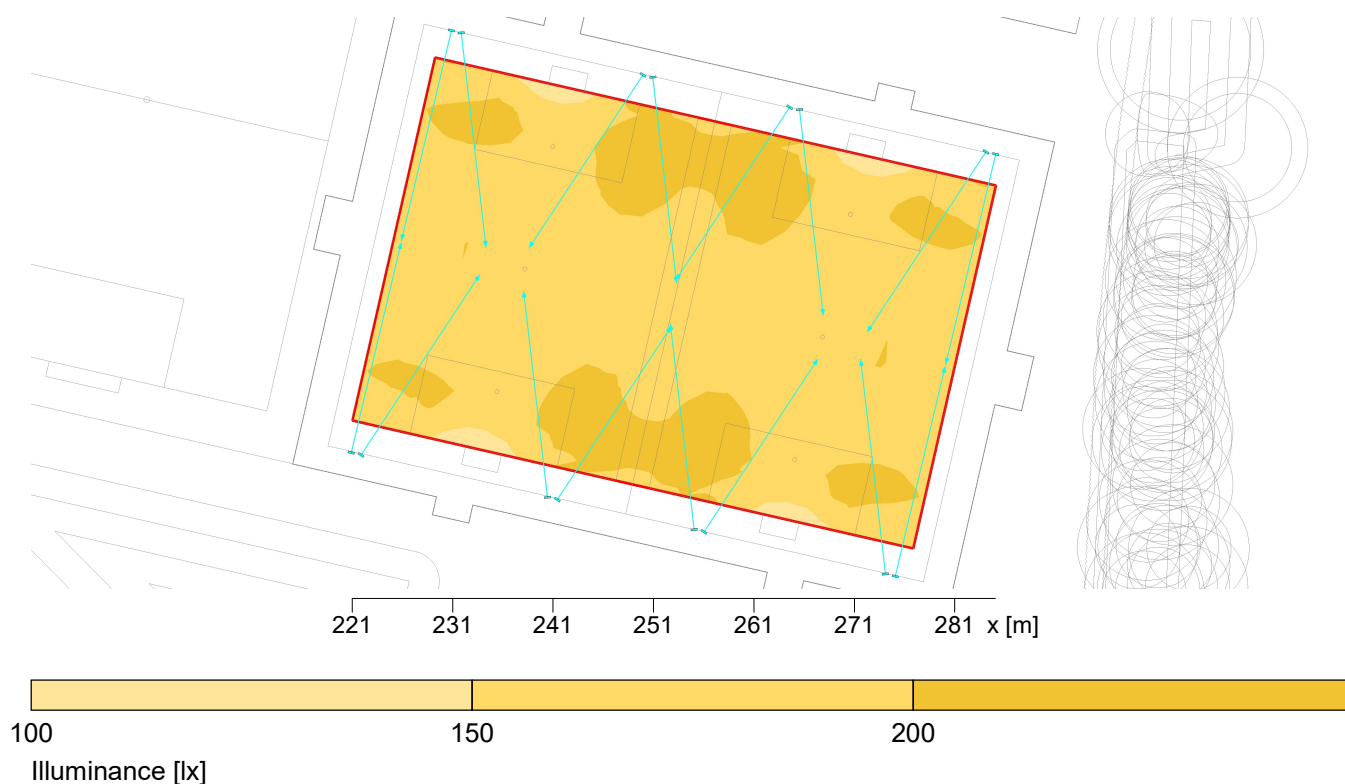
Type No.\Make

Whitecroft Lighting

1	46 x	Order No.	: EFX1H34KA
		Luminaire name	: Euroflood MaxiLED 1 module 4000K asymmetric 456W
		Equipment	: 1 x LED 456.8 W / 45552 lm

2.2 Summary, EXTERNAL PITCHES

2.2.3 Result overview, 2nd Gen All Weather



General

Calculation algorithm used	High indirect fraction
Height of evaluation surface	0.00 m
Maintenance factor	0.80

Total luminous flux	2095392 lm
Total power	21012.8 W
Total power per area (122484.33 m ²)	0.17 W/m ²

Illuminance

Average illuminance	$\bar{E}_m$	191 lx
Minimum illuminance	E_{min}	135 lx
Maximum illuminance	E_{max}	251 lx
Uniformity U_o	$E_{min}/\bar{E}_m$	1:1.42 (0.71)
Diversity U_d	E_{min}/E_{max}	1:1.86 (0.54)

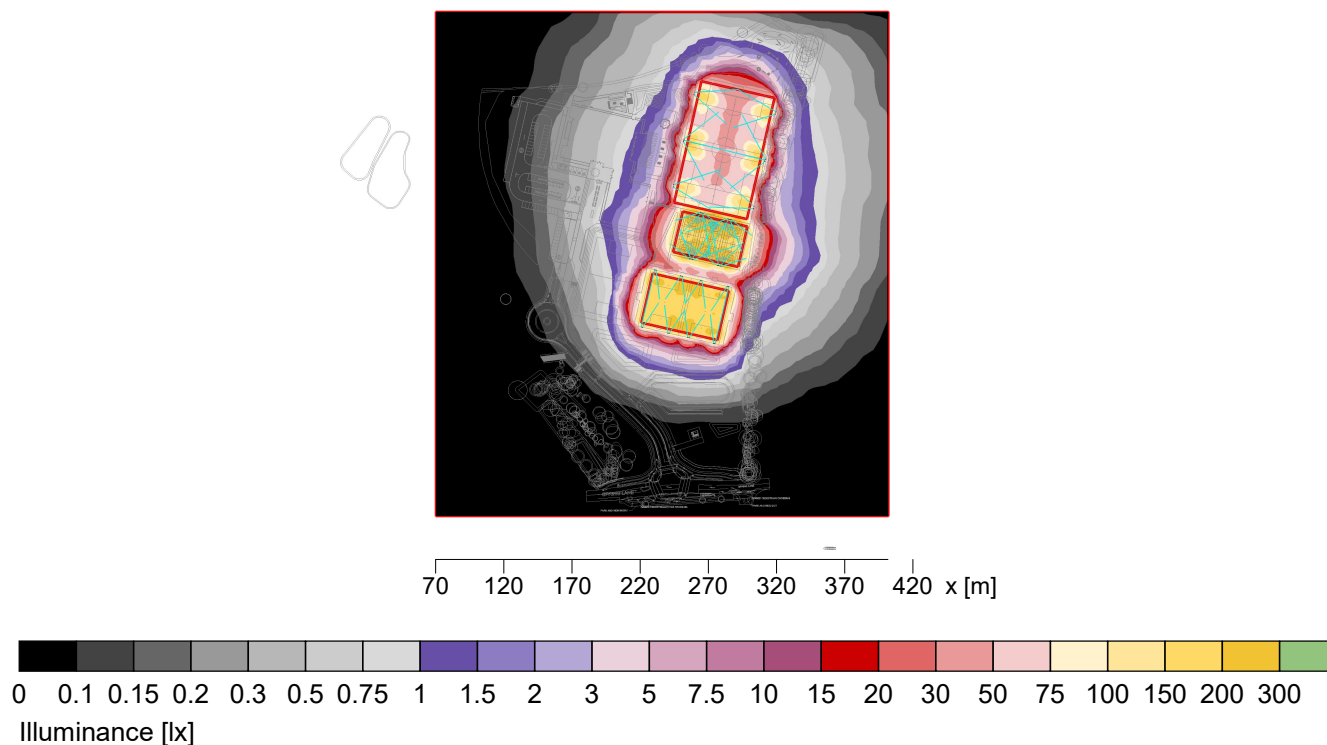
Type No.\Make

Whitecroft Lighting

1	46 x	Order No.	: EFX1H34KA
		Luminaire name	: Euroflood MaxiLED 1 module 4000K asymmetric 456W
		Equipment	: 1 x LED 456.8 W / 45552 lm

2.2 Summary, EXTERNAL PITCHES

2.2.4 Result overview, Evaluation area 1



General

Calculation algorithm used
 Maintenance factor

High indirect fraction
 0.80

Total luminous flux
 Total power
 Total power per area (122484.33 m²)

2095392.00 lm
 21012.8 W
 0.17 W/m² (1.25 W/m²/100lx)

Evaluation area 1

Reference plane 1.1

Horizontal
 $\bar{E}_m$ 13.8 lx
 E_{min} 0 lx
 $E_{min}/\bar{E}_m (U_o)$ 0.00
 $E_{min}/E_{max} (U_d)$ 0.00
 Position 0.00 m

Type No.\Make

Whitecroft Lighting

1	46 x	Order No.	: EFX1H34KA
		Luminaire name	: Euroflood MaxiLED 1 module 4000K asymmetric 456W
		Equipment	: 1 x LED 456.8 W / 45552 lm