

East Bierley Community Sports

Date: 22-03-2023

Designer: Dan Shah

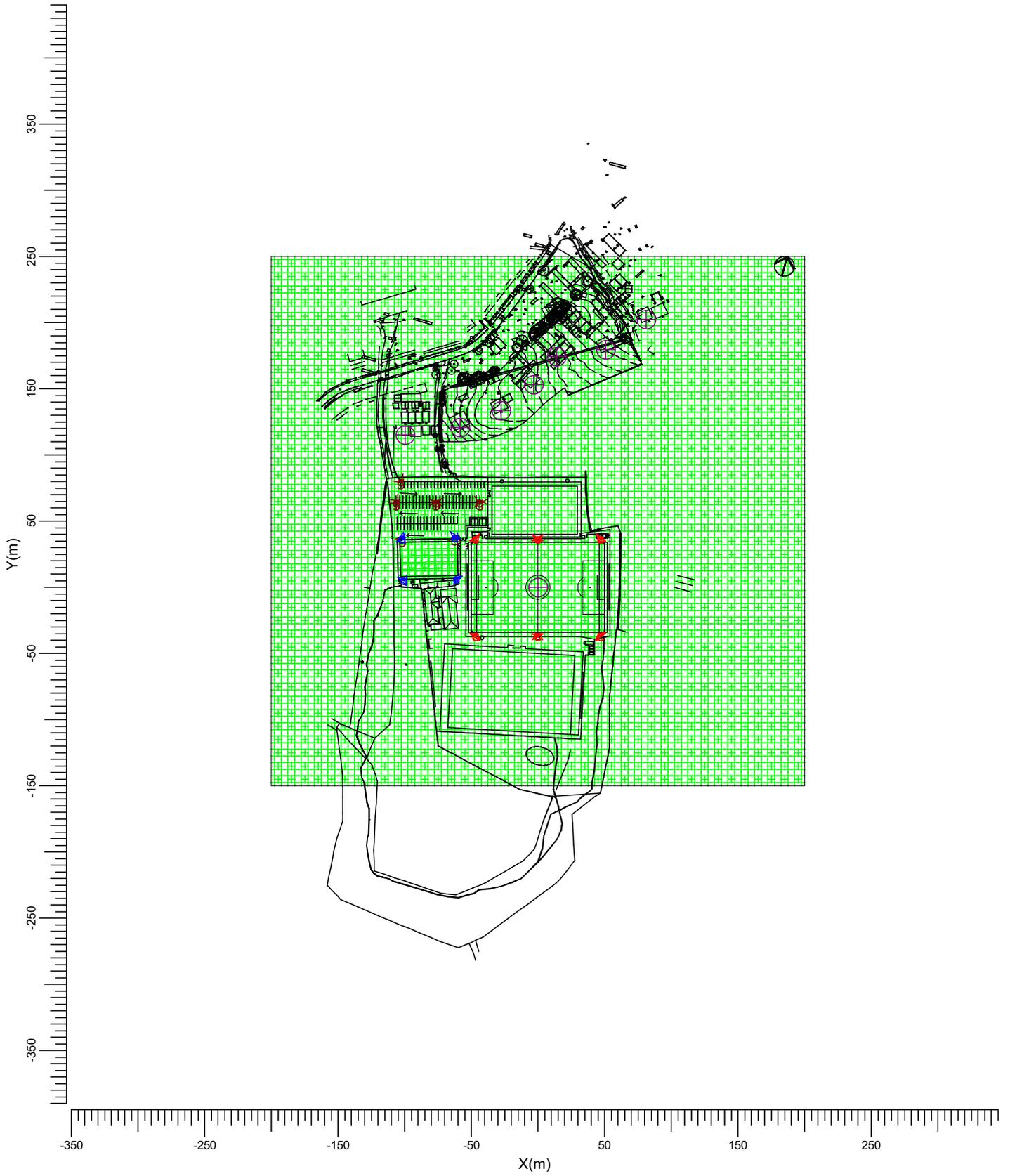
The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

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1. Project Description

1.1 Top Project Overview



- c  Floodlight FL11, FL11mxpro_75
- g  Streetlight 21, ST1.0a
- d  Floodlight FL11, FL11mx_750_P

Scale
1:4000

2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Aa	House1	-99.59	115.27	3.00
Bb	House2	-58.23	121.05	3.00
Cc	House3	-27.69	133.75	3.00
Dd	House4	-3.32	153.38	3.00
Ee	House5	14.05	174.49	3.00
Ff	House6	50.99	179.54	3.00
Gg	House7	81.28	202.39	3.00
Hh	Vertical Spill	0.01	0.01	3.00

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
c	12	Floodlight FL11, FL11mxpro_750_PL33T_TM10_10.000h	1 * LED 5000 K CRI >= 70	1425.5	1 * 172140
d	4	Floodlight FL11, FL11mx_750_PL33T_TM10_10.000h	1 * LED 5000 K CRI >= 70	967.3	1 * 117140
g	9	Streetlight 21, ST1.0a	1 * LED 4000K CRI >= 70	66.0	1 * 9430

The total installed power: 21.57 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code			Power (kWatt)
	c	d	g	
Football	12	0	0	17.11
MUGA	0	4	0	3.87
Car Park	0	0	9	0.59
Spill	12	4	9	21.57

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Football	1.00
2	MUGA	1.00
3	Car Park	1.00
4	Spill	1.00

(Il)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave Min/AveMin/Max		
Football	1	Surface Illuminance	lux	233	0.65	0.46
MUGA	2	Surface Illuminance	lux	277	0.70	0.46
Car Park	3	Surface Illuminance	lux	21.9	0.25	0.05
Vertical Spill	4	Illuminance -> Hh	lux	6.41	0.01	0.00
Horizontal Spill	4	Surface Illuminance	lux	16.3	0.00	0.00

Obtrusive Light Calculations:

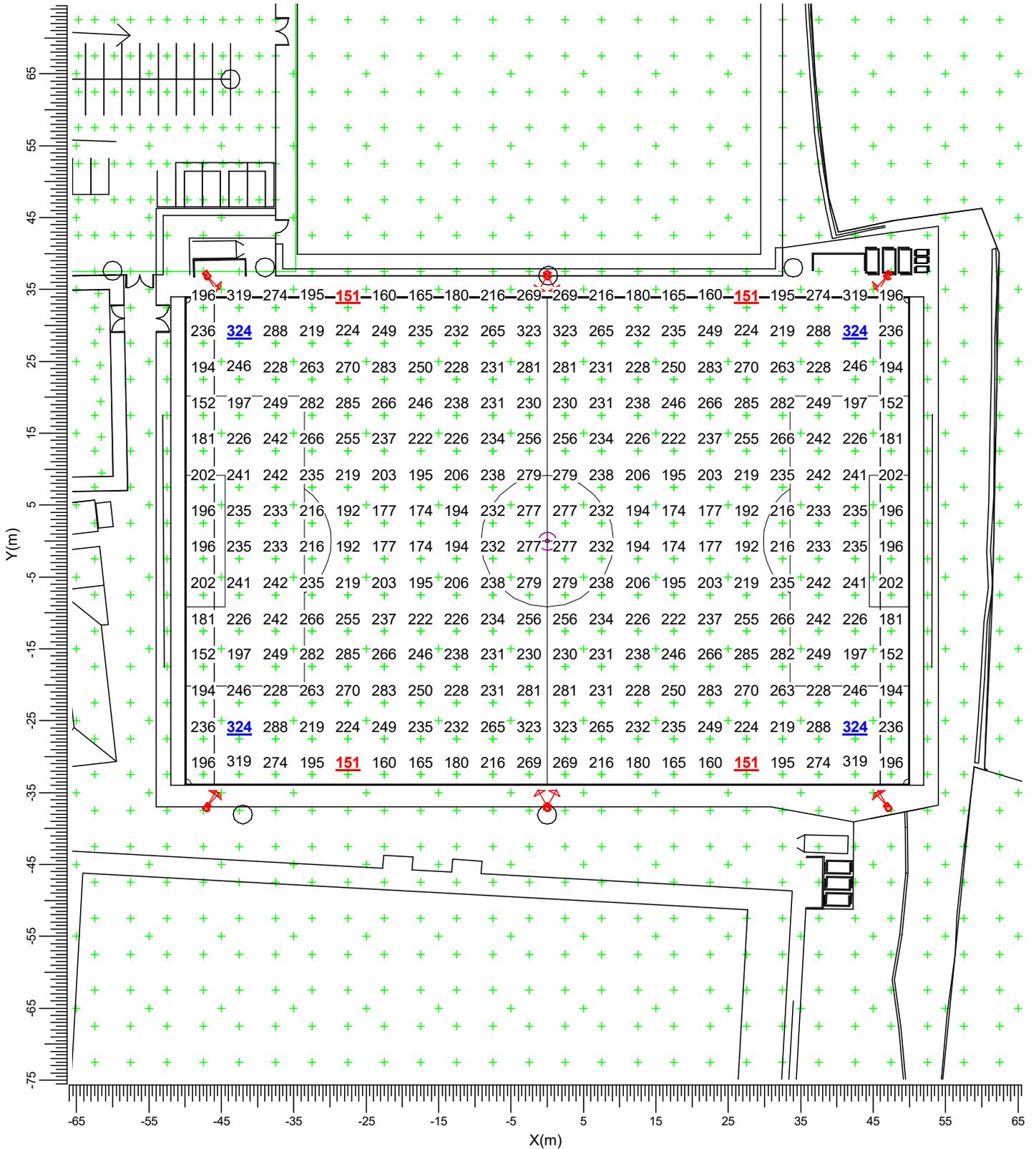
Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
4	Aa	c	47.00	-37.00	15.00	120.93	10.00	0.00	3286
4	Bb	c	-47.00	-37.00	15.00	59.07	10.00	-0.00	4196
4	Cc	c	-47.00	-37.00	15.00	59.07	10.00	-0.00	4373
4	Dd	c	0.00	-37.00	15.00	61.79	10.00	0.00	3925
4	Ee	c	0.00	-37.00	15.00	61.79	10.00	0.00	3628
4	Ff	c	47.00	-37.00	15.00	120.93	10.00	0.00	3536
4	Gg	c	-47.00	-37.00	15.00	47.34	10.00	-0.00	2868

3. Calculation Results

3.1 Football: Graphical Table

Football

Grid : Football at Z = -0.00 m
 Calculation : Surface Illuminance (lux)



c Floodlight FL11, FL11mxpro_75

Average
233

Min/Ave
0.65

Min/Max
0.46

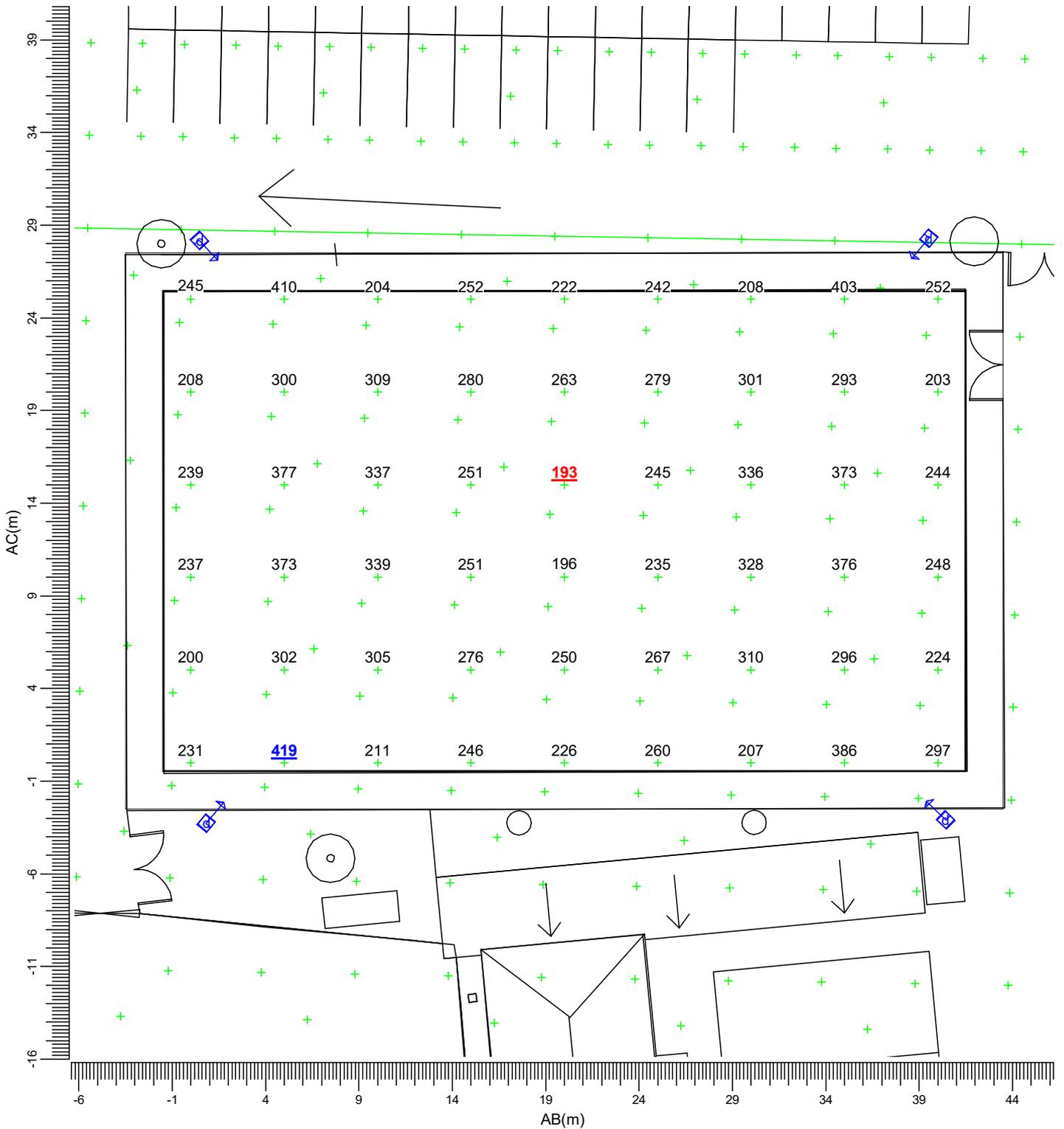
Project maintenance factor
1.00

Scale
1:750

3.2 MUGA: Graphical Table

MUGA

Grid : MUGA
 Calculation : Surface Illuminance (lux)



(-101.92, 33.75, -0.00) C-----D (-61.92, 34.45, 0.00)
 | |
 (-101.48, 8.75, -0.00) A-----B (-61.48, 9.45, -0.00)

d Floodlight FL11, FL11mx_750_P

Average
277

Min/Ave
0.70

Min/Max
0.46

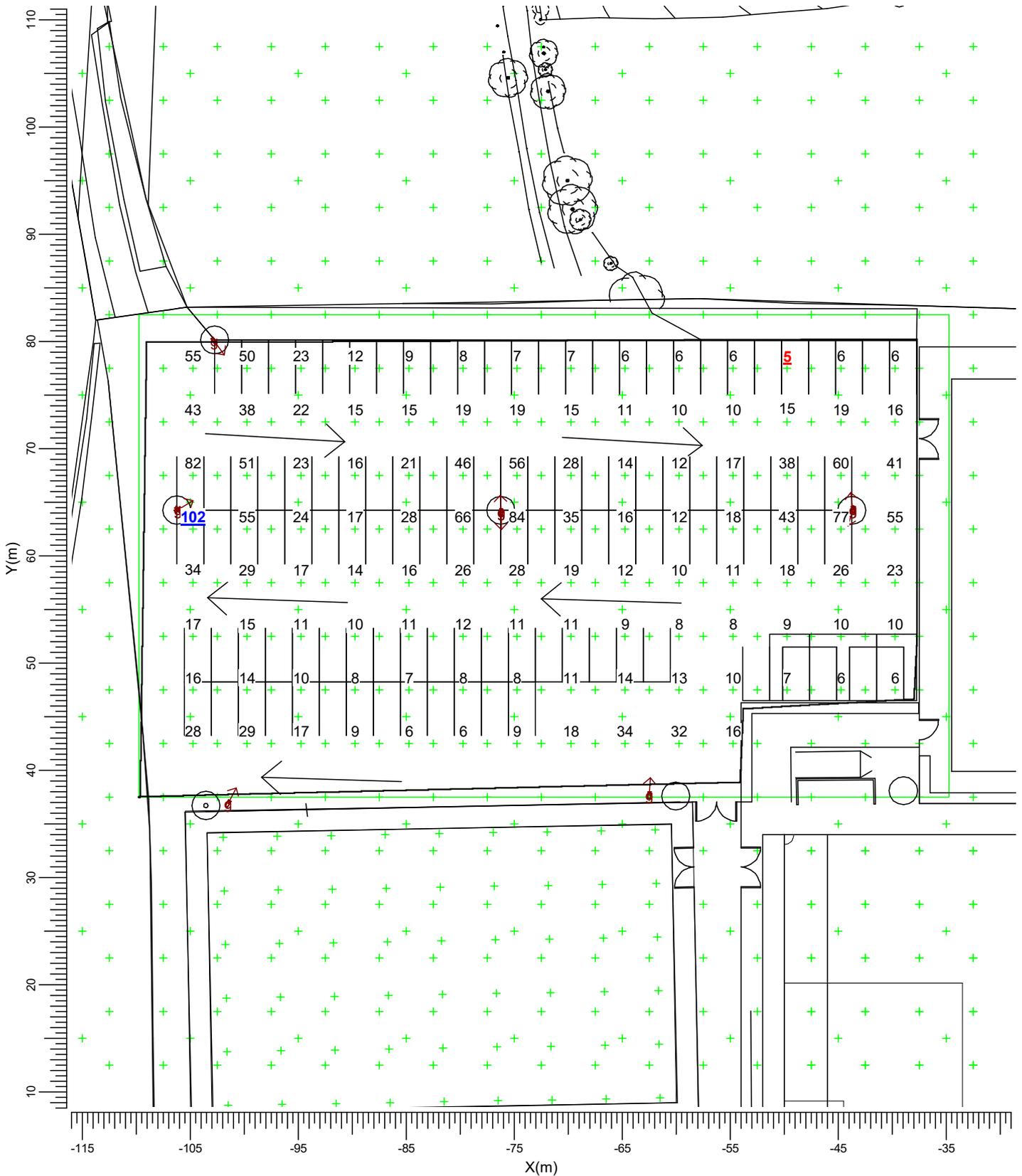
Project maintenance factor
1.00

Scale
1:300

3.3 Car Park: Graphical Table

Car Park

Grid : Car Park at Z = 0.00 m
 Calculation : Surface Illuminance (lux)



g Streetlight 21, ST1.0a

Average
21.9

Min/Ave
0.25

Min/Max
0.05

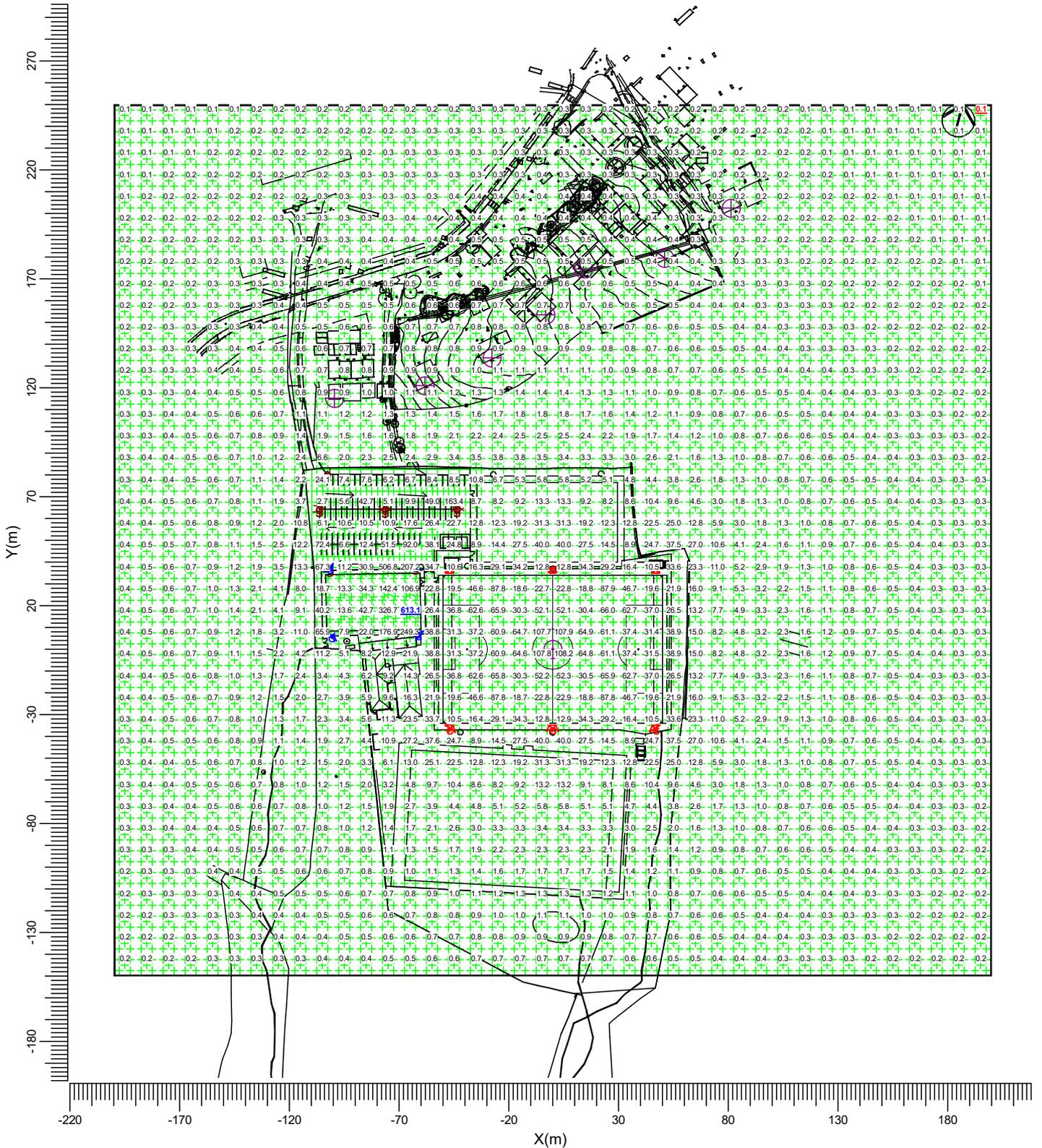
Project maintenance factor
1.00

Scale
1:500

3.4 Vertical Spill: Graphical Table

Spill

Grid : Vertical Spill at Z = -0.00 m
 Calculation : Illuminance towards Vertical Spill (lux)
 Height above grid : 3.00 m



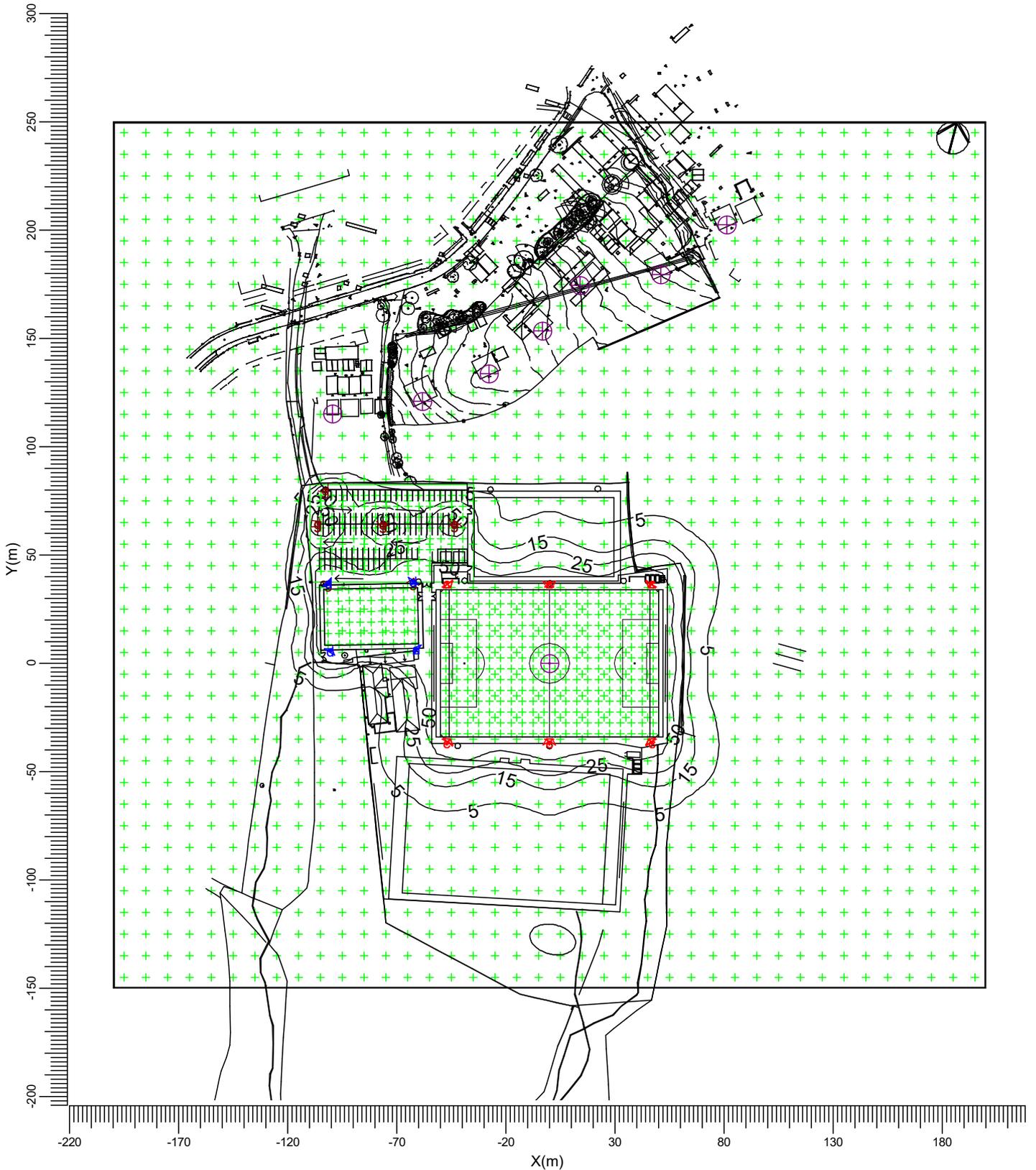
- c ➤ Floodlight FL11, FL11mxpro_75
- d ➤ Floodlight FL11, FL11mx_750_P
- g ➤ Streetlight 21, ST1.0a

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
6.41	0.01	0.00	1.00	1:2500

3.5 Horizontal Spill: Iso Contour

Spill

Grid : Horizontal Spill at Z = -0.00 m
Calculation : Surface Illuminance (lux)



- c ➤ Floodlight FL11, FL11mxpro_75
- d ➤ Floodlight FL11, FL11mx_750_P
- g ➤ Streetlight 21, ST1.0a

Average 16.3	Min/Ave 0.00	Min/Max 0.00	Project maintenance factor 1.00	Scale 1:2500
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4. Luminaire Details

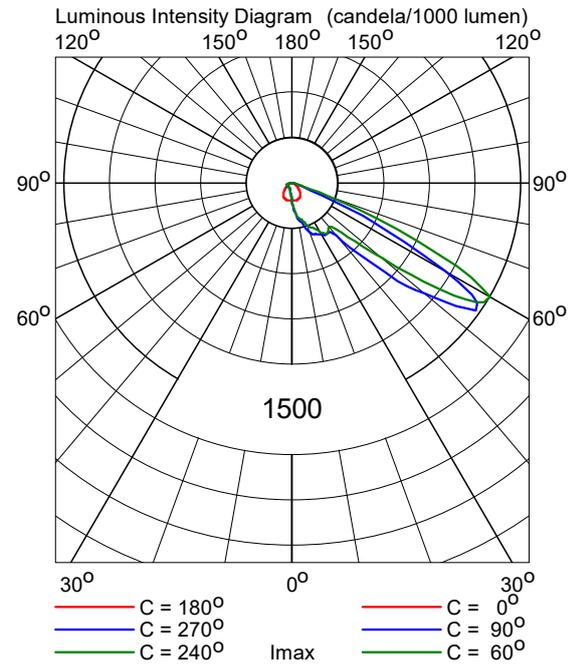
4.1 Project Luminaires

Floodlight FL11, FL11mxpro_750 1xLED 5000 K | CRI >= 70/5000

Light output ratios

DLOR	:	1.00
ULOR	:	0.00
TLOR	:	1.00
Lamp flux	:	172140 lm
Luminaire wattage	:	1425.5 W
Measurement code	:	59254_7

Note: Luminaire data not from database.

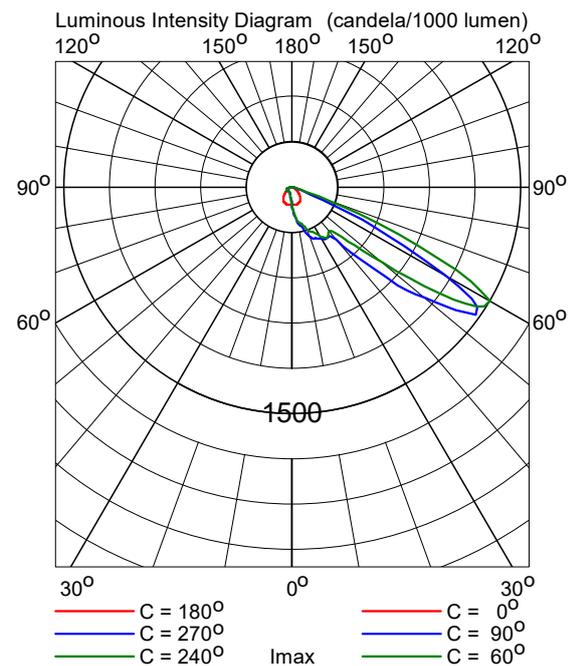


Floodlight FL11, FL11mx_750_PL 1xLED 5000 K | CRI >= 70/5000

Light output ratios

DLOR	:	1.00
ULOR	:	0.00
TLOR	:	1.00
Lamp flux	:	117140 lm
Luminaire wattage	:	967.3 W
Measurement code	:	59254_17

Note: Luminaire data not from database.

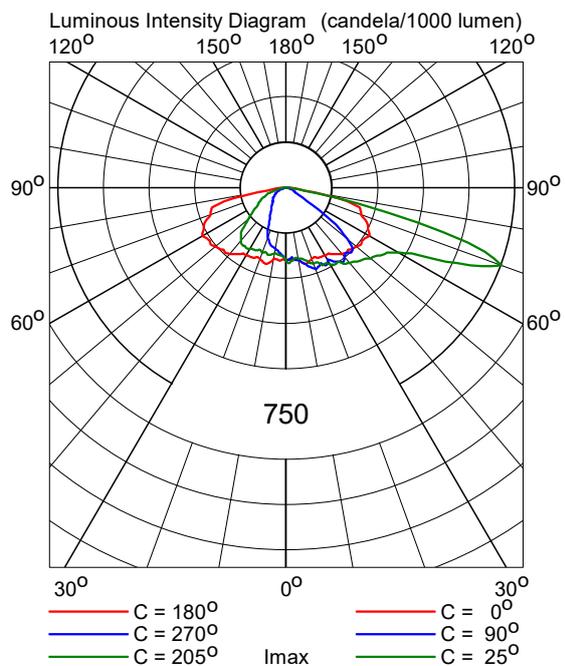


Streetlight 21, ST1.0a 1xLED 4000K | CRI >= 70/4000 K

Light output ratios

DLOR	:	1.00
ULOR	:	0.00
TLOR	:	1.00
Lamp flux	:	9430 lm
Luminaire wattage	:	66.0 W
Measurement code	:	59076_1138

Note: Luminaire data not from database.



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
c	12	Floodlight FL11, FL11mxpro_750_PL33T_TM10_10.000h	1 * LED 5000 K CRI >= 70	1 * 172140
d	4	Floodlight FL11, FL11mx_750_PL33T_TM10_10.000h	1 * LED 5000 K CRI >= 70	1 * 117140
g	9	Streetlight 21, ST1.0a	1 * LED 4000K CRI >= 70	1 * 9430

Switching Modes:

Code	Switching Mode
1	Football
2	MUGA
3	Car Park
4	Spill

5.2 Luminaire Positioning and Orientation

Qty and Code	Position			Aiming Angles			Switching Modes			
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	1	2	3	4
1 * g	-106.14	64.32	6.00	-44.3	15.0	0.0	-	-	+	+
1 * g	-106.14	64.32	6.00	30.6	15.0	0.0	-	-	+	+
1 * g	-102.78	80.06	6.00	-55.0	15.0	0.0	-	-	+	+
1 * g	-101.49	36.91	6.00	62.1	15.0	0.0	-	-	+	+
1 * d	-101.49	36.91	8.00	-46.6	10.0	0.0	-	+	-	+
1 * d	-100.58	5.53	8.00	51.2	10.0	0.0	-	+	-	+
1 * g	-76.21	64.06	6.00	92.8	15.0	0.0	-	-	+	+
1 * g	-76.21	64.06	6.00	-90.0	15.0	0.0	-	-	+	+
1 * g	-62.48	37.71	6.00	86.2	15.0	0.0	-	-	+	+
1 * d	-62.48	37.71	8.00	-128.9	10.0	0.0	-	+	-	+
1 * d	-61.03	6.39	8.00	137.1	10.0	0.0	-	+	-	+
1 * c	-47.00	-37.00	15.00	59.1	10.0	-0.0	+	-	-	+
1 * c	-47.00	-37.00	15.00	47.3	10.0	-0.0	+	-	-	+
1 * c	-47.00	37.00	15.00	-59.1	10.0	0.0	+	-	-	+
1 * c	-47.00	37.00	15.00	-47.3	10.0	0.0	+	-	-	+
1 * g	-43.62	64.32	6.00	-106.9	15.0	0.0	-	-	+	+
1 * g	-43.62	64.32	6.00	97.1	15.0	0.0	-	-	+	+
1 * c	-0.00	-37.00	15.00	118.2	10.0	-0.0	+	-	-	+
1 * c	-0.00	-37.00	15.00	61.8	10.0	0.0	+	-	-	+
1 * c	-0.00	37.00	15.00	-118.2	10.0	0.0	+	-	-	+
1 * c	-0.00	37.00	15.00	-61.8	10.0	-0.0	+	-	-	+
1 * c	47.00	-37.00	15.00	120.9	10.0	0.0	+	-	-	+
1 * c	47.00	-37.00	15.00	132.7	10.0	0.0	+	-	-	+
1 * c	47.00	37.00	15.00	-120.9	10.0	-0.0	+	-	-	+
1 * c	47.00	37.00	15.00	-132.7	10.0	-0.0	+	-	-	+