

Top Park, Bury

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Designer: Dan Shah

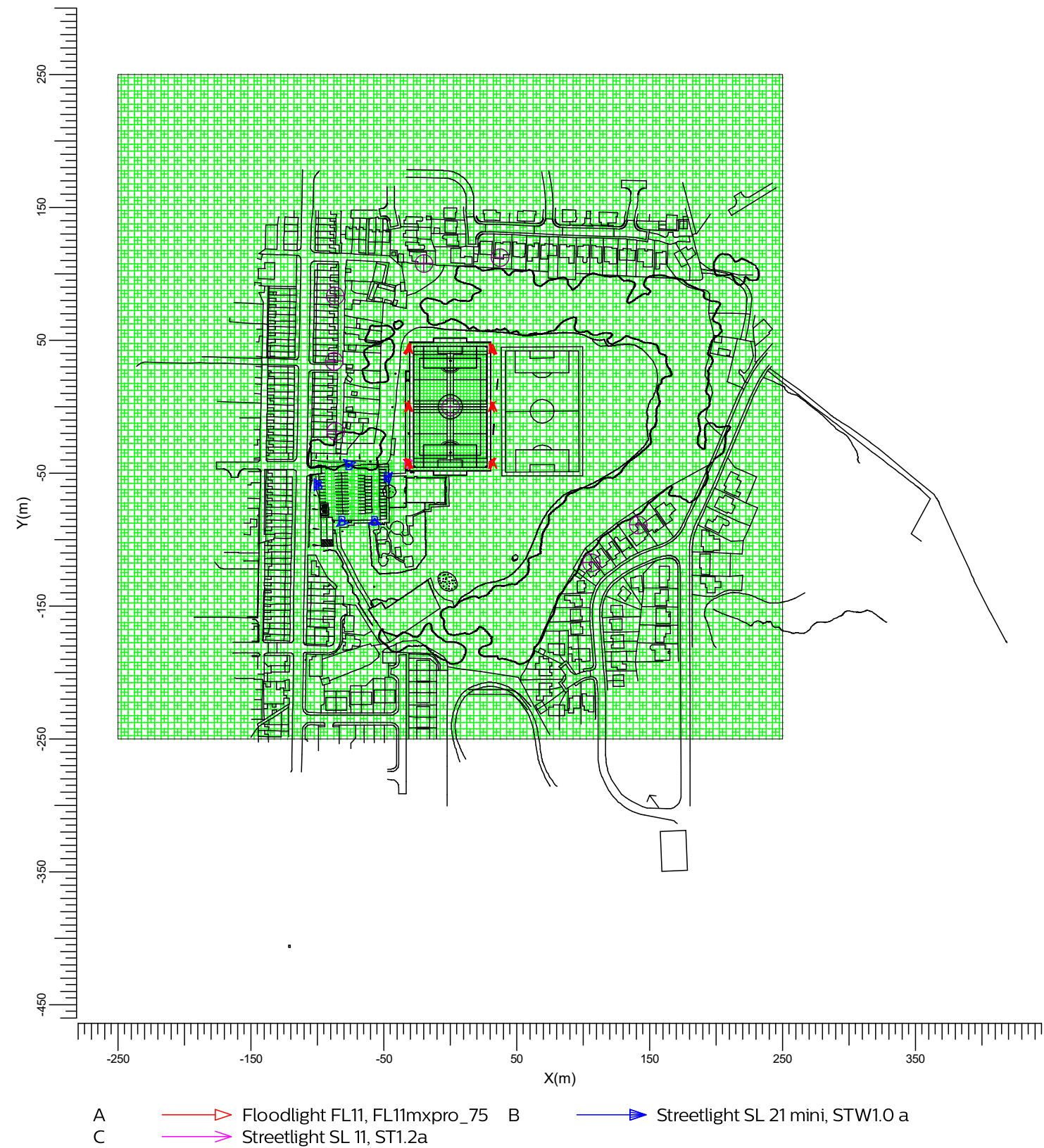
The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties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

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1. Project Description

1.1 Top Project Overview



2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Aa	House1	37.24	112.13	3.00
Bb	House2	-19.75	107.88	3.00
Cc	House3	-86.58	83.42	3.00
Dd	House4	-87.60	34.22	3.00
Ee	House5	-86.37	-18.67	3.00
Ff	House6	105.87	-117.44	3.00
Gg	House7	141.28	-88.88	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)
A	12	Floodlight FL11, FL11mxpro_750_PL33TBLC_TM10_10.000h	1 * LED 5000 K CRI >= 70	1426.2	1 * 128070
B	5	Streetlight SL 21 mini, STW1.0 a Comfort, 4000 K, DIM	1 * LED 4000K CRI >= 70	87.3	1 * 13390
C	1	Streetlight SL 11, ST1.2a	1 * LED 4000K CRI >= 70	29.1	1 * 3830

The total installed power: 17.58 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code			Power (kWatt)
	A	B	C	
Pitch	12	0	0	17.11
Car Park	0	5	0	0.44
Spill	12	5	1	17.58

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Pitch	1.00
2	Car Park	1.00
3	Spill	1.00

(Il)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave Min/AveMin/Max		
Football	1	Surface Illuminance	lux	246	0.63	0.42
Car Park	2	Surface Illuminance	lux	24.2	0.24	0.08
Vertical Spill	3	Illuminance -> Hh	lux	1.20	0.01	0.00
Horizontal Spill	3	Surface Illuminance	lux	6.42	0.00	0.00

Obtrusive Light Calculations:

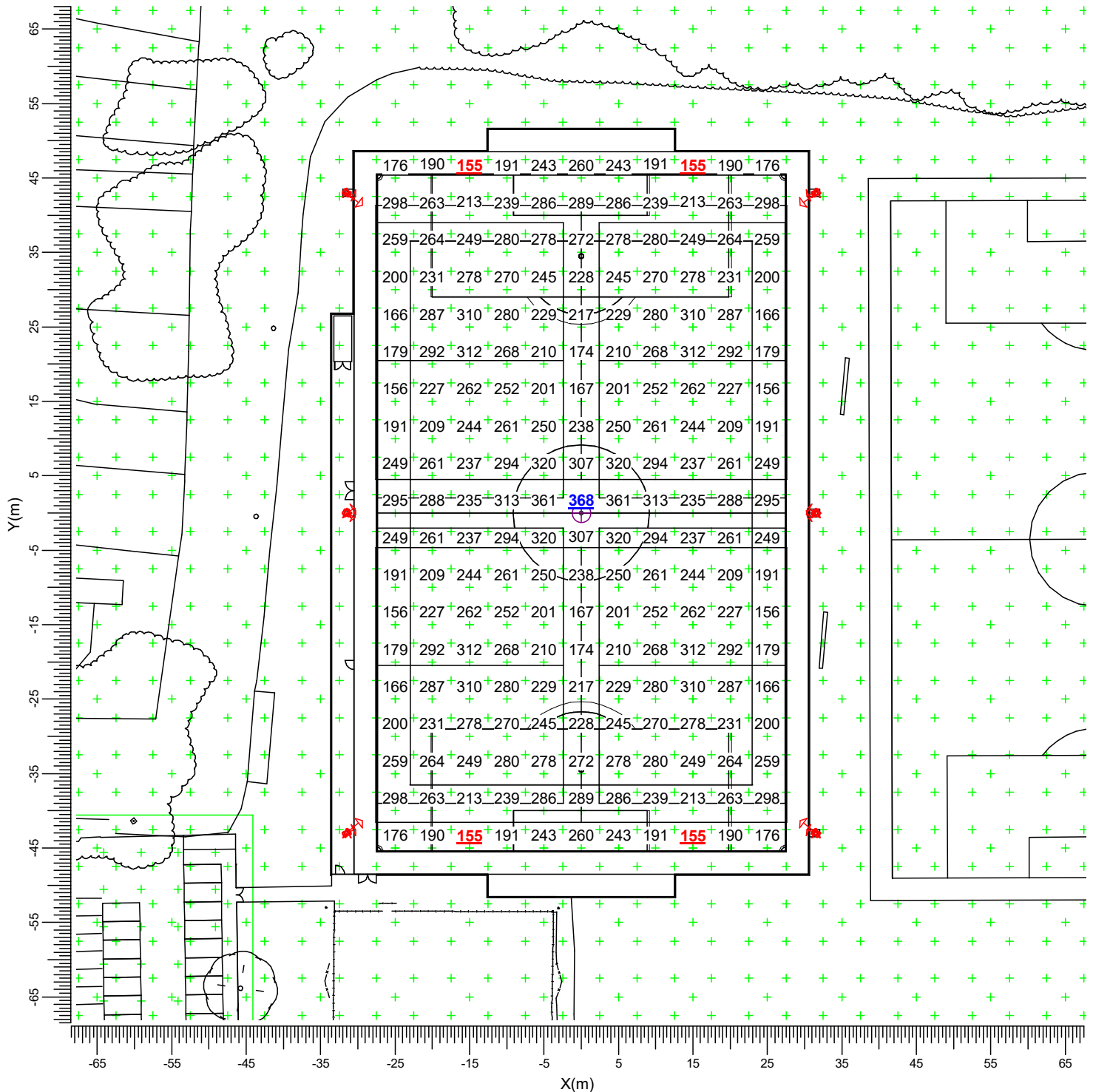
Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
1	Aa	A	-31.50	-43.00	15.00	38.59	10.00	-0.00	1778
1	Bb	A	31.50	-43.00	15.00	141.41	10.00	0.00	2069
1	Cc	A	31.50	-43.00	15.00	141.41	10.00	0.00	965
1	Dd	A	31.50	43.00	15.00	-141.41	10.00	-0.00	3501
1	Ee	A	31.50	-43.00	15.00	141.41	10.00	0.00	2803
1	Ff	A	-31.50	43.00	15.00	-38.59	10.00	0.00	889
1	Gg	A	-31.50	43.00	15.00	-38.59	10.00	0.00	907

3. Calculation Results

3.1 Football: Graphical Table

Pitch

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



A  Floodlight FL11, FL11mxpro_75

Average
246

Min/Ave
0.63

Min/Max
0.42

Project maintenance factor
1.00

Scale
1:750

Car Park

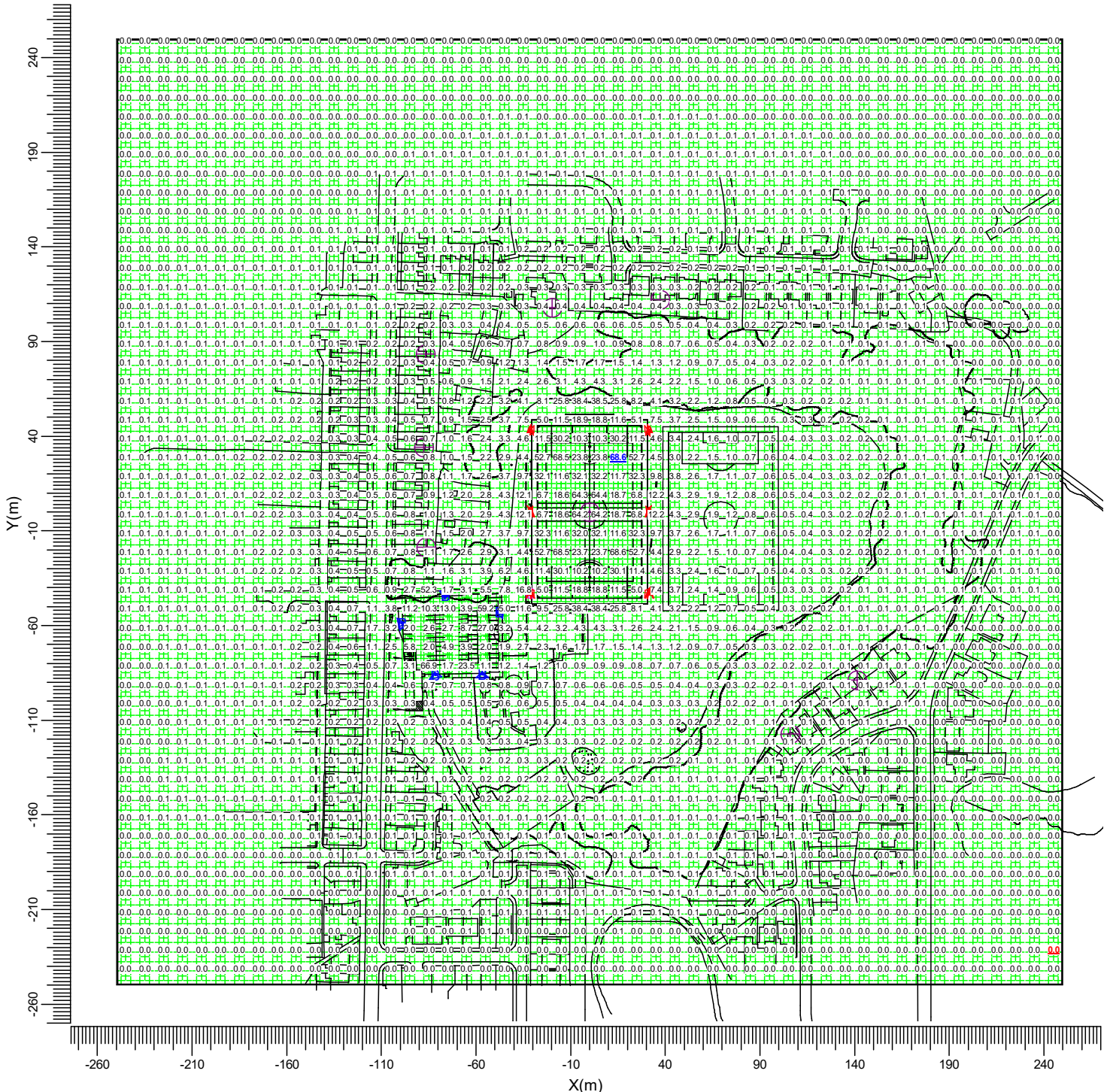
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Average	Min/Ave	Min/Max	Project maintenance factor	Scale
24.2	0.24	0.08	1.00	1:400

3.3 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



A → Floodlight FL11, FL11mxpro_75 B → Streetlight SL 21 mini, STW1.0 a
 C → Streetlight SL 11, ST1.2a

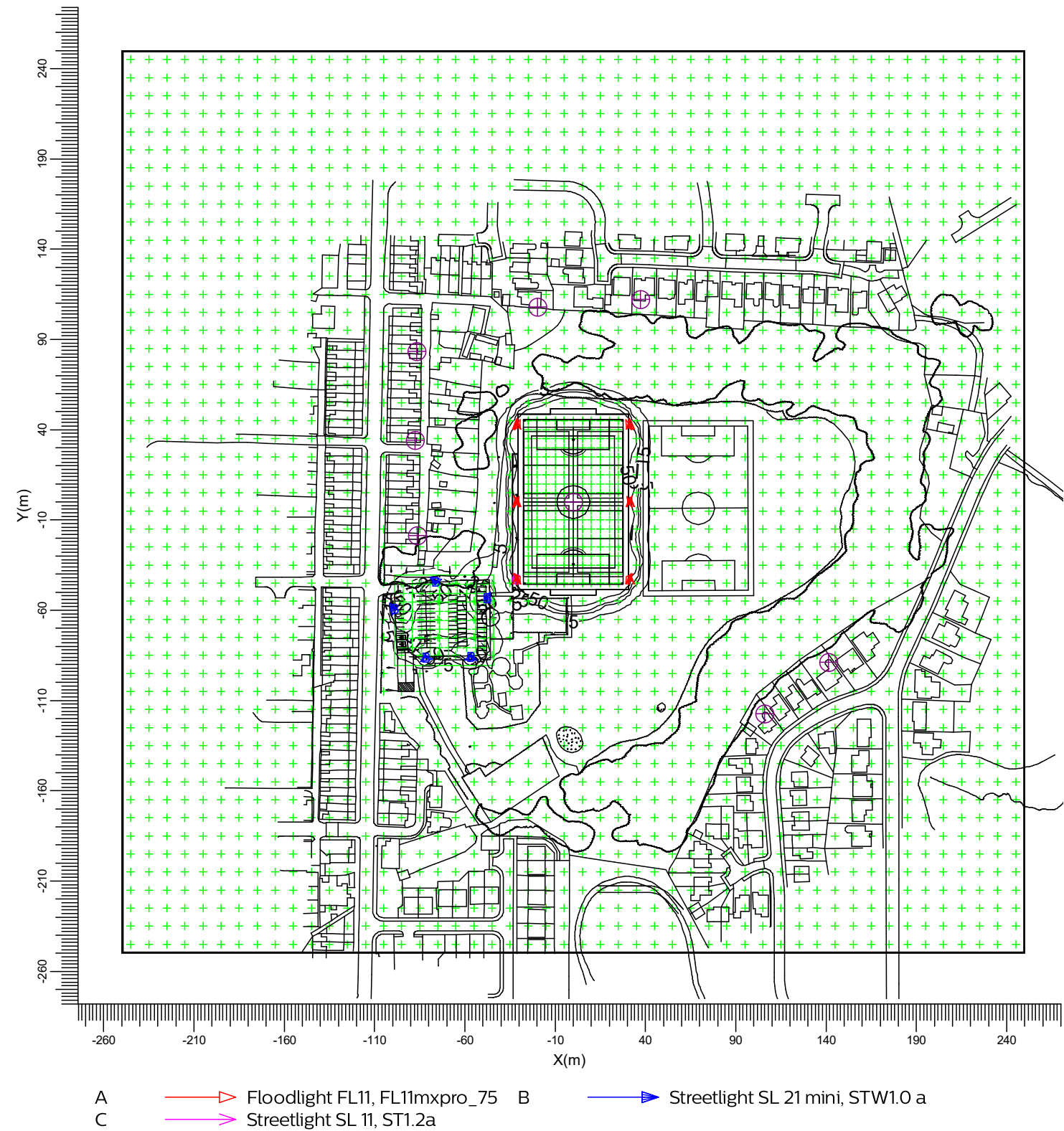
Average 1.20 Min/Ave 0.01 Min/Max 0.00 Project maintenance factor 1.00 Scale 1:3000

3.4 Horizontal Spill: Iso Contour

Spill

Grid : Horizontal Spill at Z = -0.00 m

Calculation : Surface Illuminance (lux)



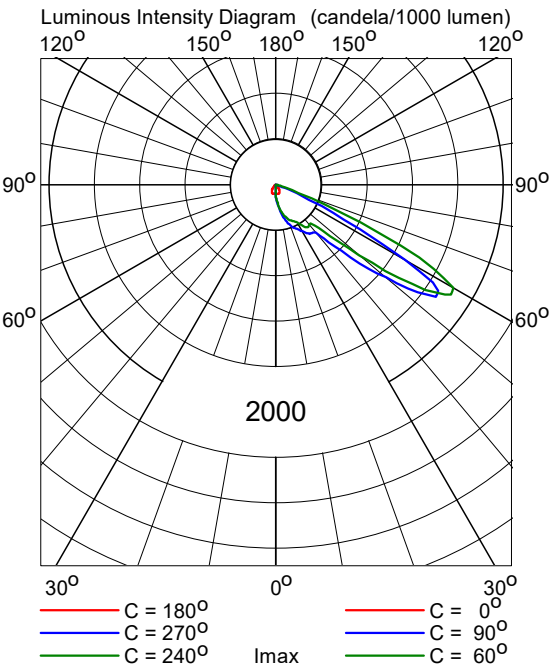
4. Luminaire Details

4.1 Project Luminaires

FL11, FL11mxproblc_750 1xLED 5000 K | CRI >= 70/5000

Light output ratios	
DLOR	: 1.00
ULOR	: 0.00
TLOR	: 1.00
Lamp flux	: 128070 lm
Luminaire wattage	: 1426.2 W
Measurement code	: 59257_7

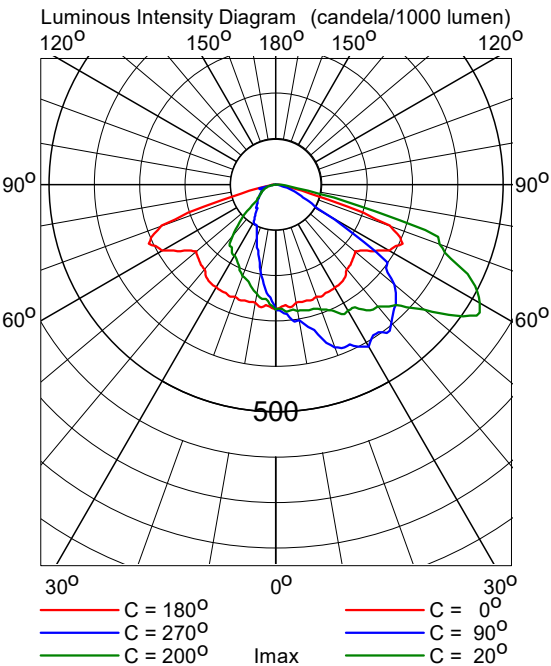
Note: Luminaire data not from database.



Streetlight SL 21 mini, STW1.0 1xLED 4000K | CRI >= 70/4000

Light output ratios	
DLOR	: 1.00
ULOR	: 0.00
TLOR	: 1.00
Lamp flux	: 13390 lm
Luminaire wattage	: 87.3 W
Measurement code	: 59079_1138

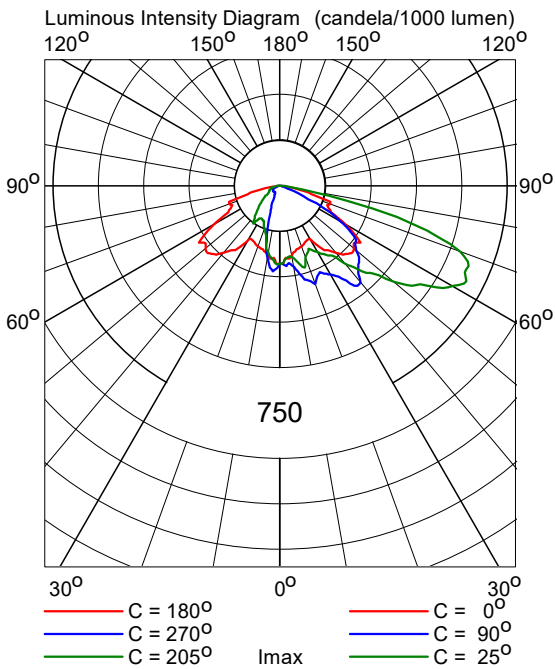
Note: Luminaire data not from database.



Streetlight SL 11, ST1.2a 1xLED 4000K | CRI >= 70/4000 K

Light output ratios
DLOR : 1.00
ULOR : 0.00
TLOR : 1.00
Lamp flux : 3830 lm
Luminaire wattage : 29.1 W
Measurement code : 58065_1117

Note: Luminaire data not from database.



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
A	12	Floodlight FL11, FL11mxpro_750 _PL33TBLC_TM10_10.000h	1 * LED 5000 K CRI >= 70	1 * 128070
B	5	Streetlight SL 21 mini, STW1.0 a Comfort, 4000 K, DIM	1 * LED 4000K CRI >= 70	1 * 13390
C	1	Streetlight SL 11, ST1.2a	1 * LED 4000K CRI >= 70	1 * 3830

Switching Modes:

Code	Switching Mode
1	Pitch
2	Car Park
3	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
1 * B	-99.09	-58.99	6.00	2.8	15.0	0.0	-	+	+
1 * B	-81.63	-86.06	6.00	94.5	15.0	0.0	-	+	+
1 * B	-76.29	-44.23	6.00	-102.2	15.0	0.0	-	+	+
1 * B	-56.70	-85.87	6.00	94.0	15.0	0.0	-	+	+
1 * B	-47.72	-53.14	6.00	173.5	15.0	0.0	-	+	+
1 * C	-31.50	-43.00	10.00	-148.8	10.0	0.0	-	-	+
1 * A	-31.50	-43.00	15.00	20.0	5.0	-0.0	+	-	+
1 * A	-31.50	-43.00	15.00	38.6	10.0	-0.0	+	-	+
1 * A	-31.50	-0.00	15.00	-28.3	5.0	0.0	+	-	+
1 * A	-31.50	-0.00	15.00	28.3	5.0	-0.0	+	-	+
1 * A	-31.50	43.00	15.00	-20.0	5.0	0.0	+	-	+
1 * A	-31.50	43.00	15.00	-38.6	10.0	0.0	+	-	+
1 * A	31.50	-43.00	15.00	160.0	5.0	0.0	+	-	+
1 * A	31.50	-43.00	15.00	141.4	10.0	0.0	+	-	+
1 * A	31.50	-0.00	15.00	-151.7	5.0	-0.0	+	-	+
1 * A	31.50	-0.00	15.00	151.7	5.0	0.0	+	-	+
1 * A	31.50	43.00	15.00	-160.0	5.0	-0.0	+	-	+
1 * A	31.50	43.00	15.00	-141.4	10.0	-0.0	+	-	+