

Roefield Sports Pitches

Artificial Turf Pitches

Project code: SSL2464
Date: 12-04-2018

Designer: Wes Bugg

Description: FA/FIFA min/ave 200lux 11v11 ATP with min 0.6 uniformity. The lights will naturally diminish by 20% (referred to as a maintenance factor of 0.8) reducing the lighting and spillage levels significantly. The results within this report and scheme are currently not showing a maintenance factor and will be the results when first installed.

ATP Luminaires are mounted at 10m and 15m high

All luminaires have a zero upward light ratio without the use of additional accessories.

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.

Surfacing Standards LTD

1a Perth House
Corbygate Business Park
Corby
Northants
NN17 5JG
E-Mail: wes@surfacingstandards.co.uk

Table of Contents

1.	Project Description	3
1.1	Description	3
1.2	Top Project Overview	4
2.	Summary	5
2.1	Observer Information	5
2.2	Project Luminaires	5
2.3	Calculation Results	5
3.	Calculation Results	7
3.1	Football: Graphical Table	7
3.2	Five-a-side Football: Graphical Table	8
3.3	Spillage: Graphical Table	9
3.4	Spillage: Iso Contour	10
3.5	Spillage: Filled Iso Contour	11
3.6	Evo Spillage: Graphical Table	12
3.7	Evo Spillage: Iso Contour	13
3.8	Evo Spillage: Filled Iso Contour	14
4.	Luminaire Details	15
4.1	Project Luminaires	15
5.	Installation Data	16
5.1	Legends	16
5.2	Luminaire Positioning and Orientation	16

1. Project Description

1.1 Description

1.2 Top Project Overview



A  MVP507 NB/62

Scale
1:5000

2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Aa	Centre	-0.00	-0.00	1.80
Cc	House 1	94.44	8.89	1.80
Dd	House 2	91.11	48.16	1.80
Ee	House 3	-93.03	78.88	1.80
Ff	House 4	68.88	119.27	1.80

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
A	22	MVP507 NB/62	1 * MHN-FC2000W/400V/740	2119.0	1 * 210000

The total installed power: 46.62 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code	Power (kWatt)
	A	
11v11	14	29.67
7v7	8	16.95
All On	22	46.62

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
	A	
7v7	8	16.95
Corners	8	16.95
Mid	6	12.71

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	11v11	1.00
2	7v7	1.00
3	All On	1.00

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min/Ave	Min/Max
Football	1	Surface Illuminance	lux	253	0.60	0.45
Five-a-side Football	2	Surface Illuminance	lux	411	0.71	0.47
Spillage	3	Surface Illuminance	lux	61.5	0.00	0.00
Evo Spillage	3	Illuminance -> Aa	lux	20.6	0.00	0.00

Obtrusive Light Calculations:

Observer Code	Luminaire Code	Position	Aiming Angles	Maximum Intensity (cd)
---------------	----------------	----------	---------------	------------------------

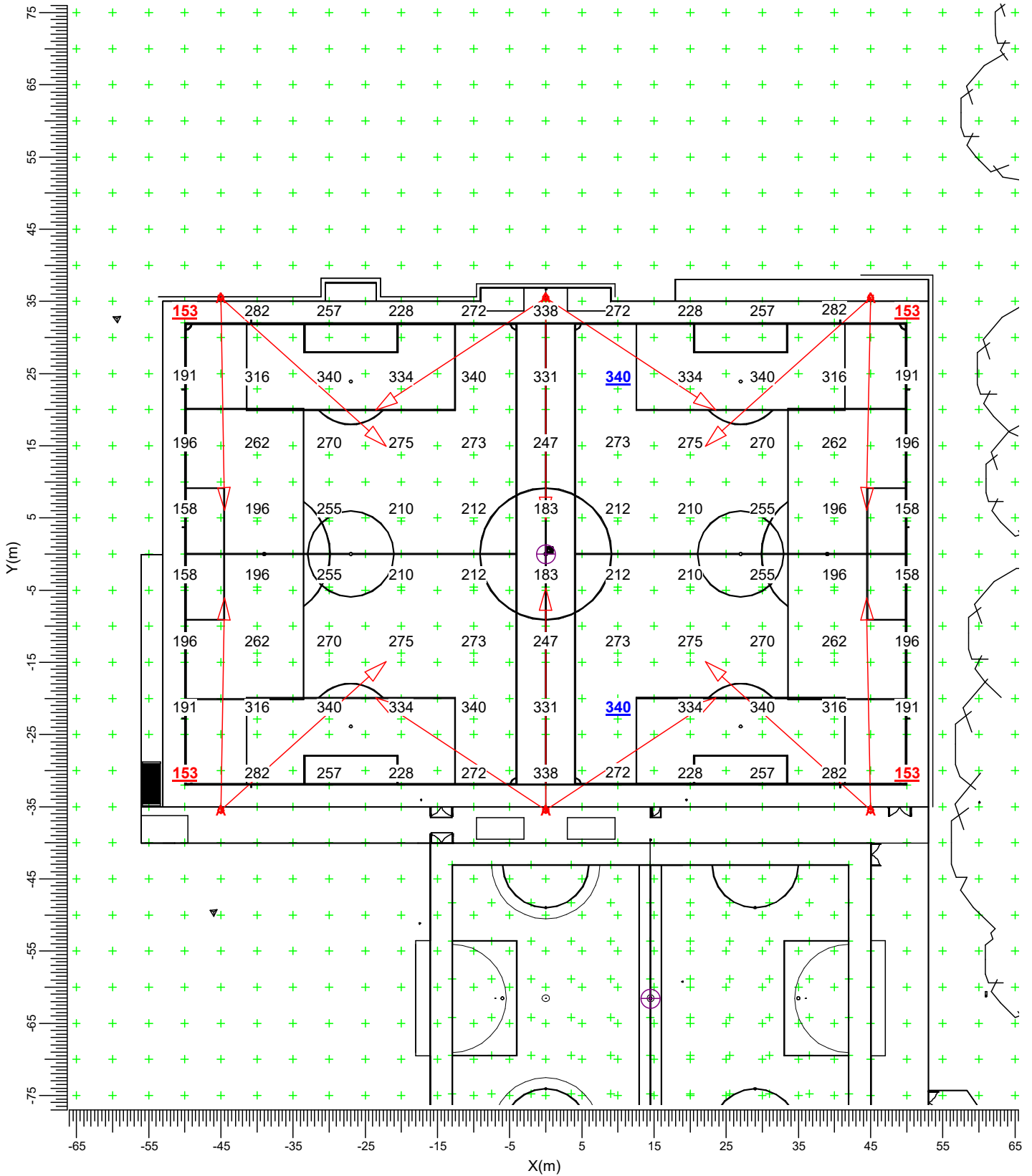
Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
1	Cc	A	45.00	35.50	15.00	-91.00	63.00	-0.00	1005
1	Dd	A	45.00	35.50	15.00	-138.00	64.00	-0.00	575
1	Ee	A	-45.00	35.50	15.00	-42.00	64.00	0.00	171
1	Ff	A	0.00	35.50	15.00	-33.39	62.00	-0.00	163

3. Calculation Results

3.1 Football: Graphical Table

11v11

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



A MVP507 NB/62

Average
253

Min/Ave
0.60

Min/Max
0.45

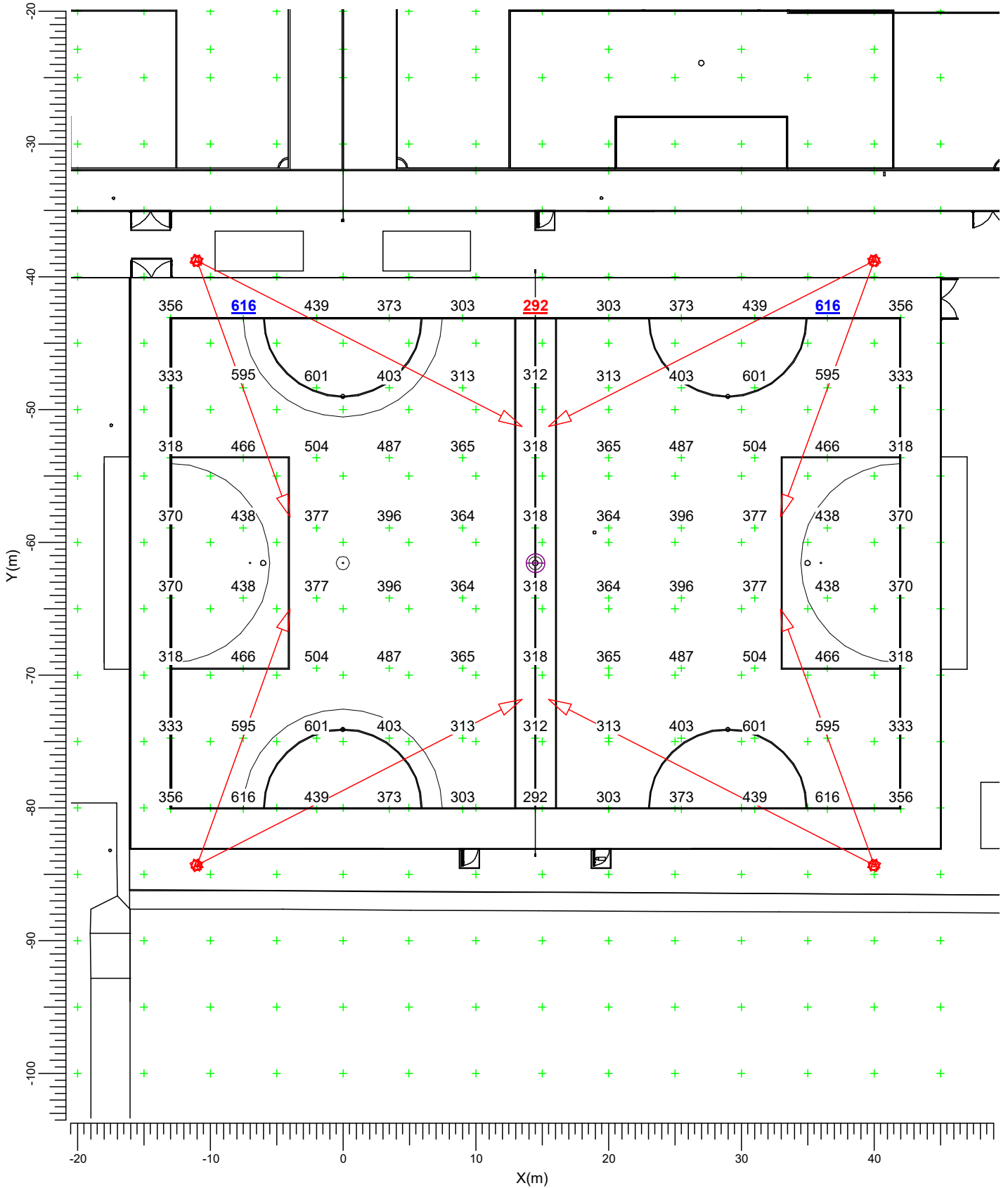
Project maintenance factor
1.00

Scale
1:750

3.2 Five-a-side Football: Graphical Table

7v7

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



A MVP507 NB/62

Average
411

Min/Ave
0.71

Min/Max
0.47

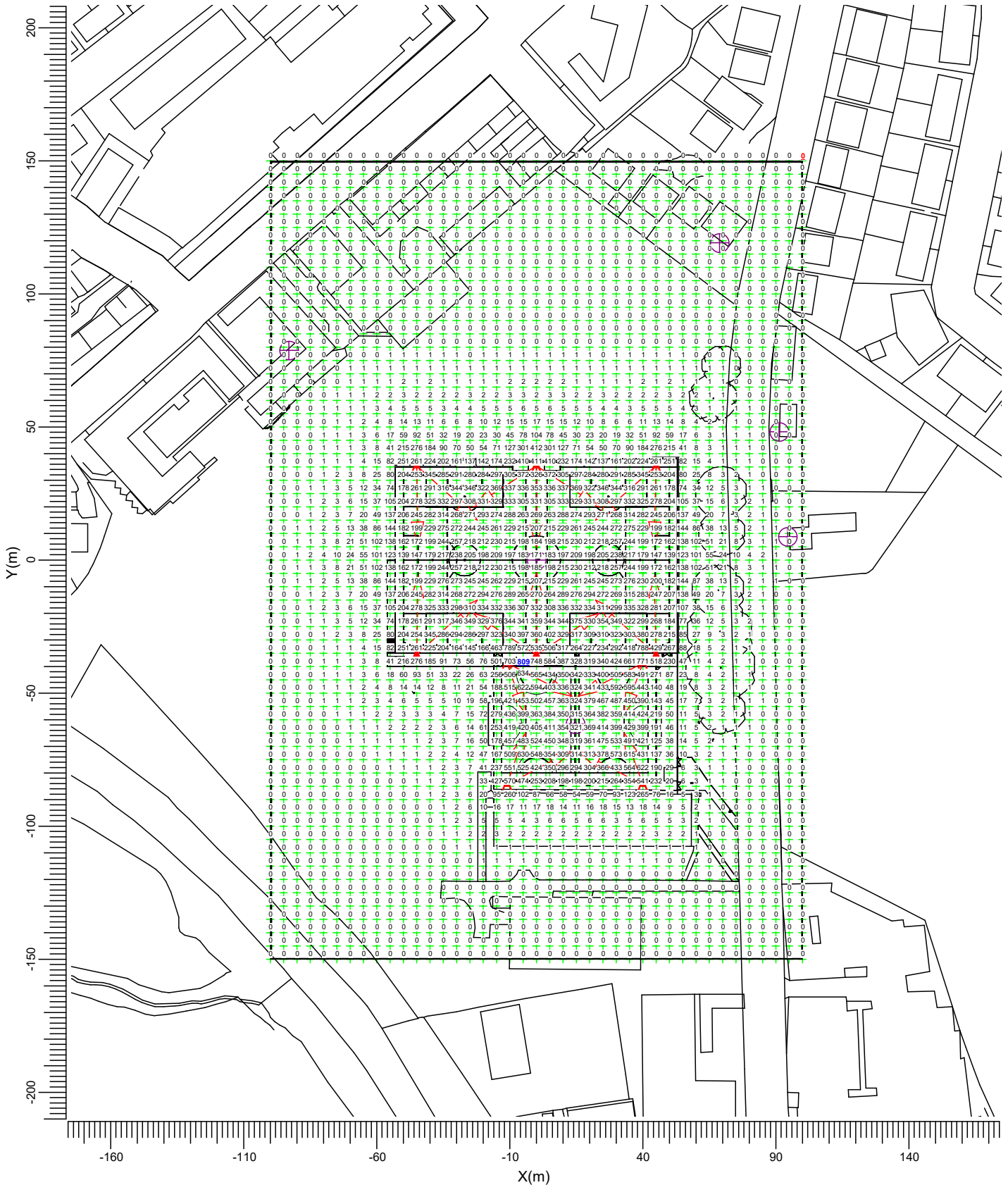
Project maintenance factor
1.00

Scale
1:400

3.3 Spillage: Graphical Table

All On

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



A MVP507 NB/62

Average
61.5

Min/Ave
0.00

Min/Max
0.00

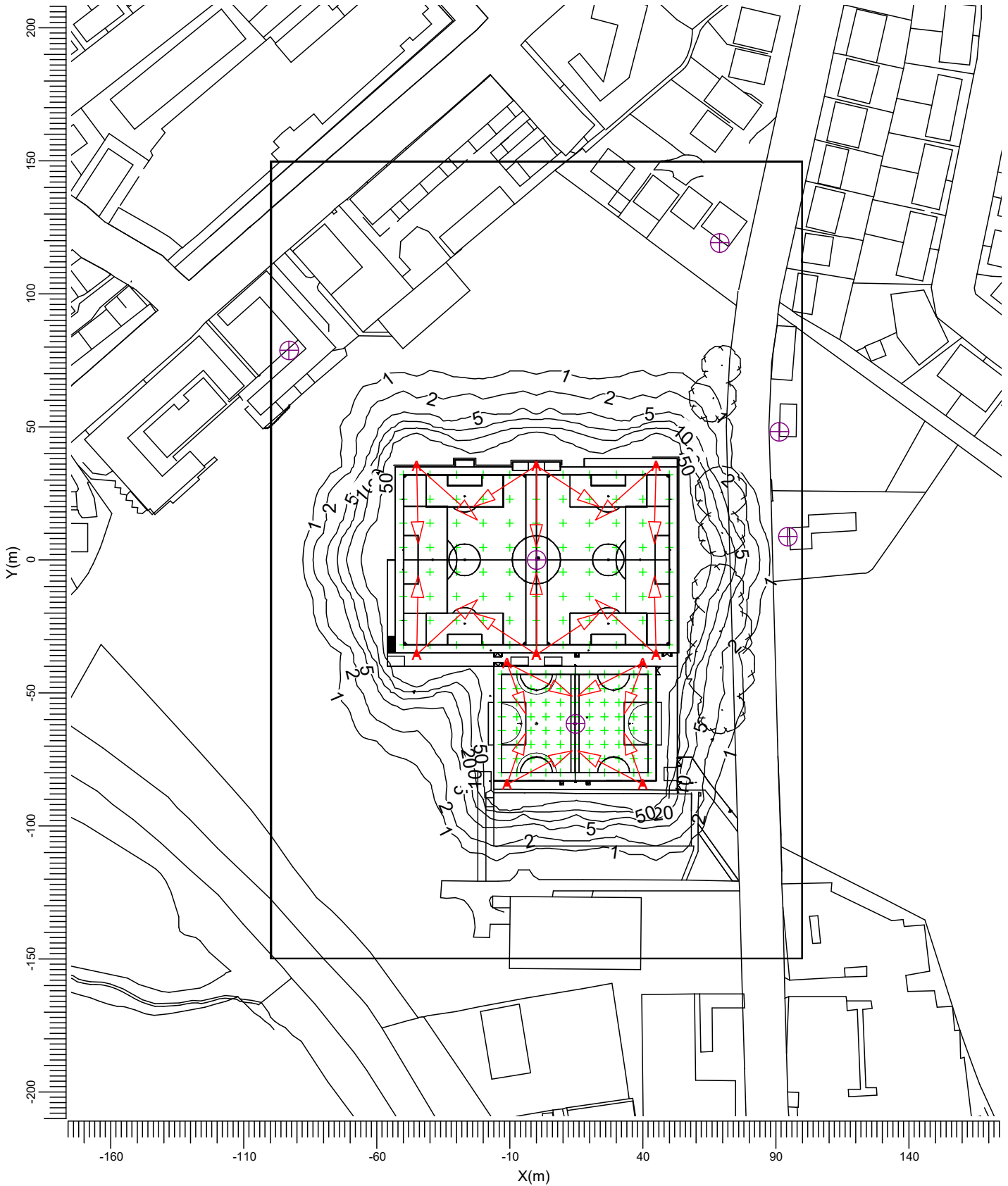
Project maintenance factor
1.00

Scale
1:2000

3.4 Spillage: Iso Contour

All On

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



A MVP507 NB/62

Average
61.5

Min/Ave
0.00

Min/Max
0.00

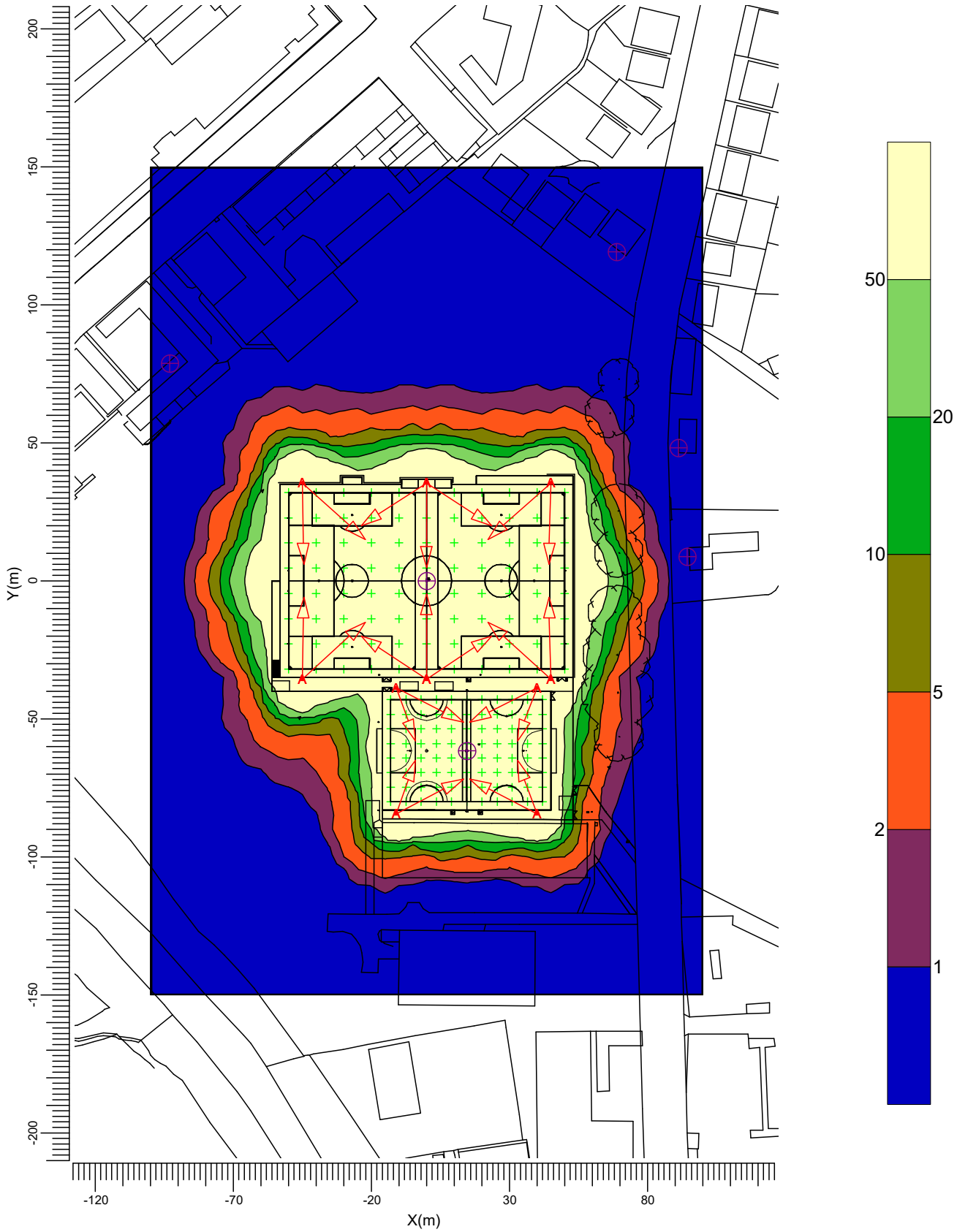
Project maintenance factor
1.00

Scale
1:2000

3.5 Spillage: Filled Iso Contour

All On

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



A → MVP507 NB/62

Average
61.5

Min/Ave
0.00

Min/Max
0.00

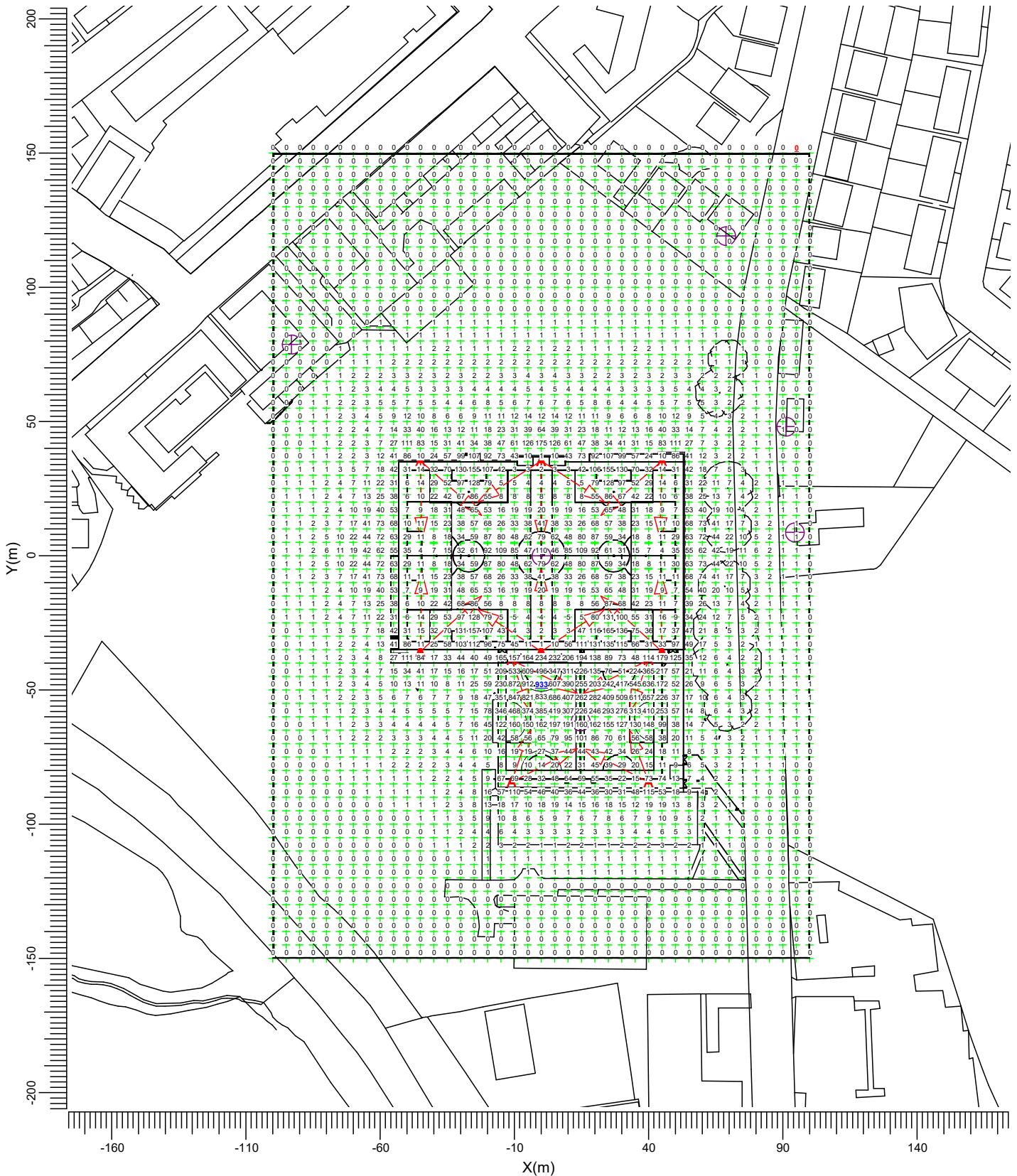
Project maintenance factor
1.00

Scale
1:2000

3.6 Evo Spillage: Graphical Table

All On

Grid : Spillage at Z = -0.00 m
 Calculation : Illuminance towards Centre (lux)
 Height above grid : 1.79 m



A MVP507 NB/62

Average
20.6

Min/Ave
0.00

Min/Max
0.00

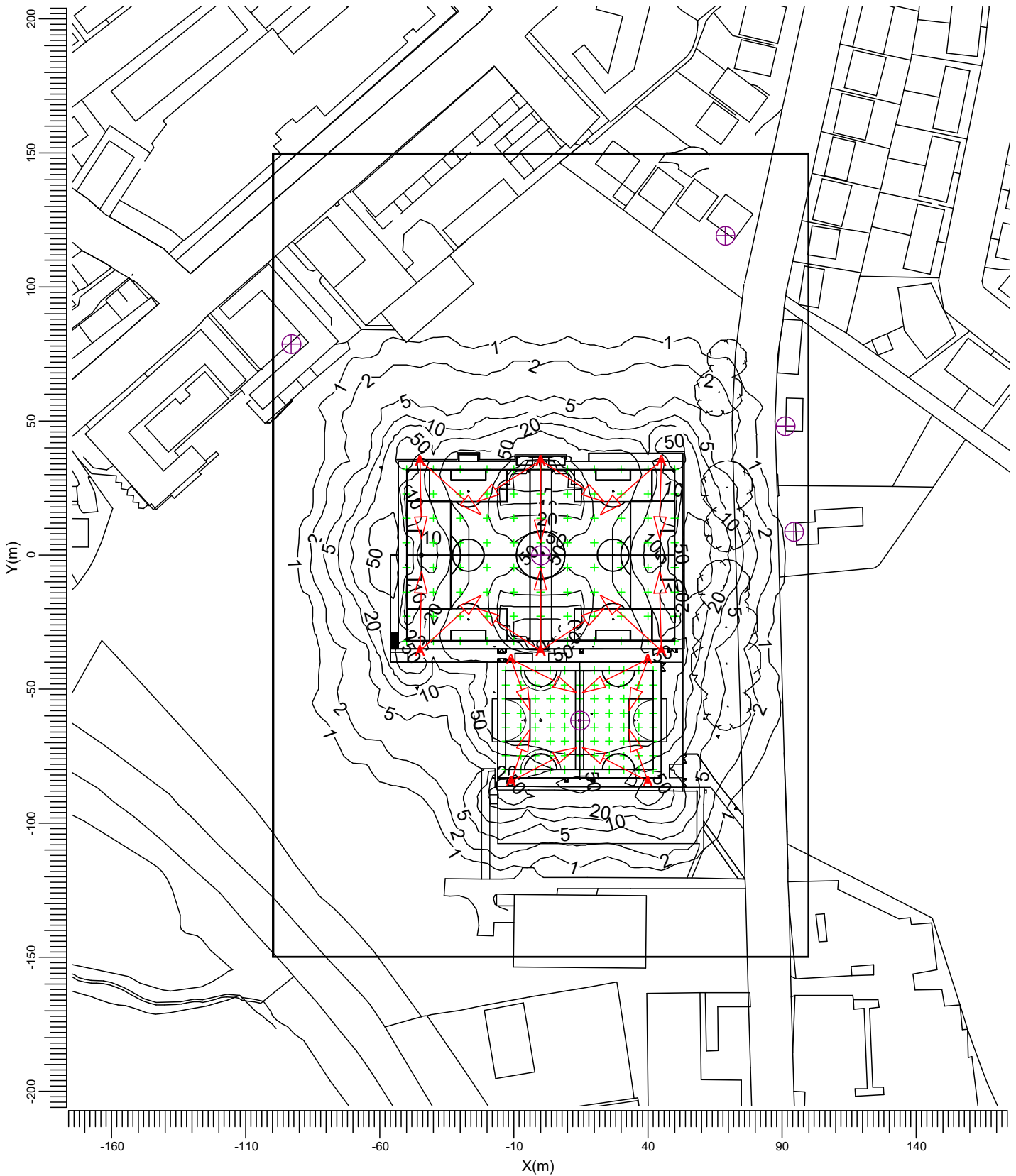
Project maintenance factor
1.00

Scale
1:2000

3.7 Evo Spillage: Iso Contour

All On

Grid : Spillage at Z = -0.00 m
 Calculation : Illuminance towards Centre (lux)
 Height above grid : 1.79 m



A MVP507 NB/62

Average
20.6

Min/Ave
0.00

Min/Max
0.00

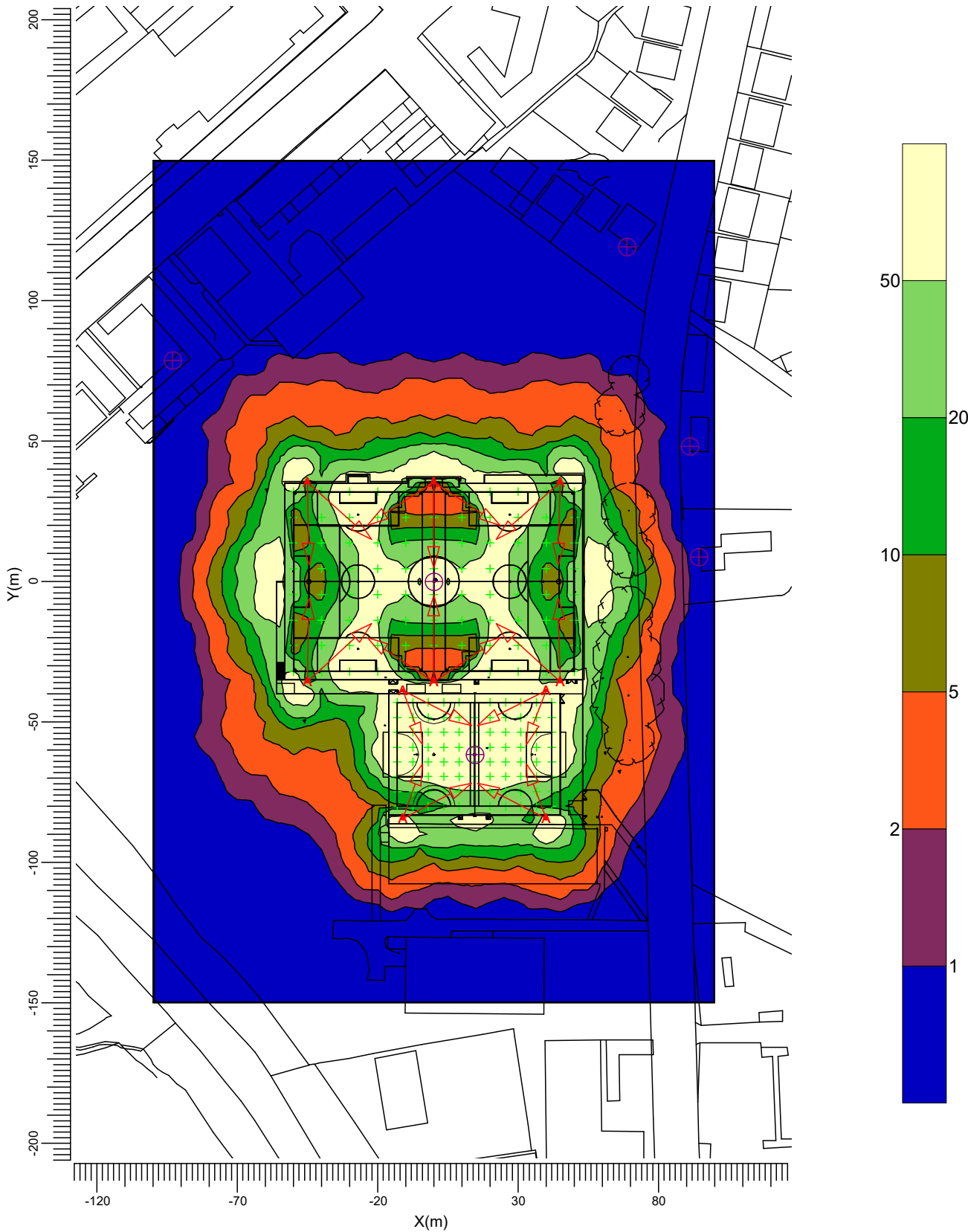
Project maintenance factor
1.00

Scale
1:2000

3.8 Evo Spillage: Filled Iso Contour

All On

Grid : Spillage at Z = -0.00 m
 Calculation : Illuminance towards Centre (lux)
 Height above grid : 1.79 m



A  MVP507 NB/62

Average
20.6

Min/Ave
0.00

Min/Max
0.00

Project maintenance factor
1.00

Scale
1:2000

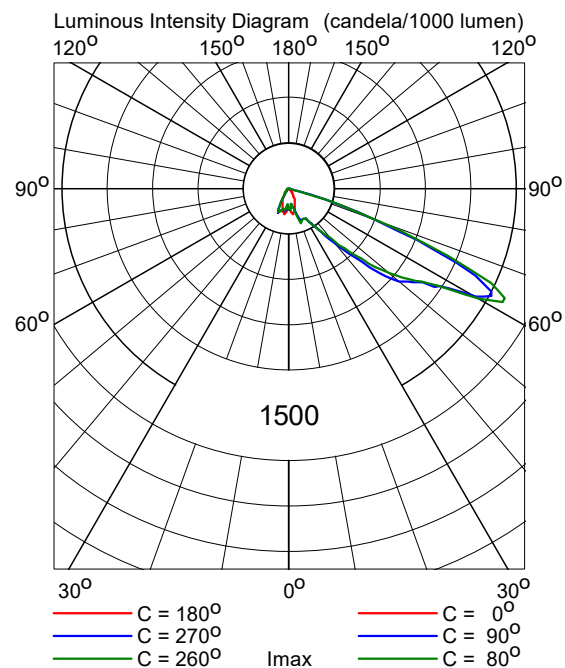
4. Luminaire Details

4.1 Project Luminaires

OptiVision MVP507
MVP507 1xMHN-FC2000W/400V/740 NB/62



Light output ratios	
DLOR	: 0.83
ULOR	: 0.00
TLOR	: 0.83
Ballast	: Conventional
Lamp flux	: 210000 lm
Luminaire wattage	: 2119.0 W
Measurement code	: LVMA700101



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
A	22	MVP507 NB/62	1 * MHN-FC2000W/400V/740	1 * 210000

Switching Modes:

Code	Switching Mode
1	11v11
2	7v7
3	All On

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 * A	-45.00	-35.50	15.00	42.0	64.0	-0.0	+	-	+
1 * A	-45.00	-35.50	15.00	89.0	63.0	-0.0	+	-	+
1 * A	-45.00	35.50	15.00	-42.0	64.0	0.0	+	-	+
1 * A	-45.00	35.50	15.00	-89.0	63.0	0.0	+	-	+
1 * A	-11.00	-84.30	10.00	27.0	70.0	-0.0	-	+	+
1 * A	-11.00	-84.30	10.00	70.0	64.0	-0.0	-	+	+
1 * A	-11.00	-38.80	10.00	-27.0	70.0	0.0	-	+	+
1 * A	-11.00	-38.80	10.00	-70.0	64.0	0.0	-	+	+
1 * A	-0.00	-35.50	15.00	90.0	64.0	-0.0	+	-	+
1 * A	-0.00	-35.50	15.00	146.6	62.0	-0.0	+	-	+
1 * A	-0.00	-35.50	15.00	33.4	62.0	0.0	+	-	+
1 * A	-0.00	35.50	15.00	-90.0	64.0	0.0	+	-	+
1 * A	-0.00	35.50	15.00	-146.6	62.0	0.0	+	-	+
1 * A	-0.00	35.50	15.00	-33.4	62.0	-0.0	+	-	+
1 * A	40.00	-84.30	10.00	153.0	70.0	0.0	-	+	+
1 * A	40.00	-84.30	10.00	110.0	64.0	0.0	-	+	+
1 * A	40.00	-38.80	10.00	-153.0	70.0	-0.0	-	+	+
1 * A	40.00	-38.80	10.00	-110.0	64.0	-0.0	-	+	+
1 * A	45.00	-35.50	15.00	138.0	64.0	0.0	+	-	+
1 * A	45.00	-35.50	15.00	91.0	63.0	0.0	+	-	+
1 * A	45.00	35.50	15.00	-138.0	64.0	-0.0	+	-	+
1 * A	45.00	35.50	15.00	-91.0	63.0	-0.0	+	-	+