

Gateacre School

Full Sized Artificial Football Pitch

Project code: SSL1946
Date: 03-09-2015

Designer: Wesley Bugg

Description: FA/FIFA min/ave 200lux full pitch with min 0.6 uniformity.

The results within this report and scheme are currently not showing a maintenance factor and will be the results when first installed and up to the first 100hrs of usage. After the first 100 hours of use the lights will naturally diminish by 20% (referred to as a maintenance factor of 0.8) further reducing the lighting and spillage levels significantly lower than those portrayed within this report. The levels after the first 100 hours of use will be at:

Football = 266ave/lux at 0.7 uniformity

Sports Luminaires are mounted at 15m above the surface with Philips double asymmetrical Optivision 16no. MVP507 1xMHN-FC/2000W/400V/740.

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

The glare rating and intensity to the nearest property will be 1285 l.max cd the threshold for the environmental zone is 7500 l.max cd.

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

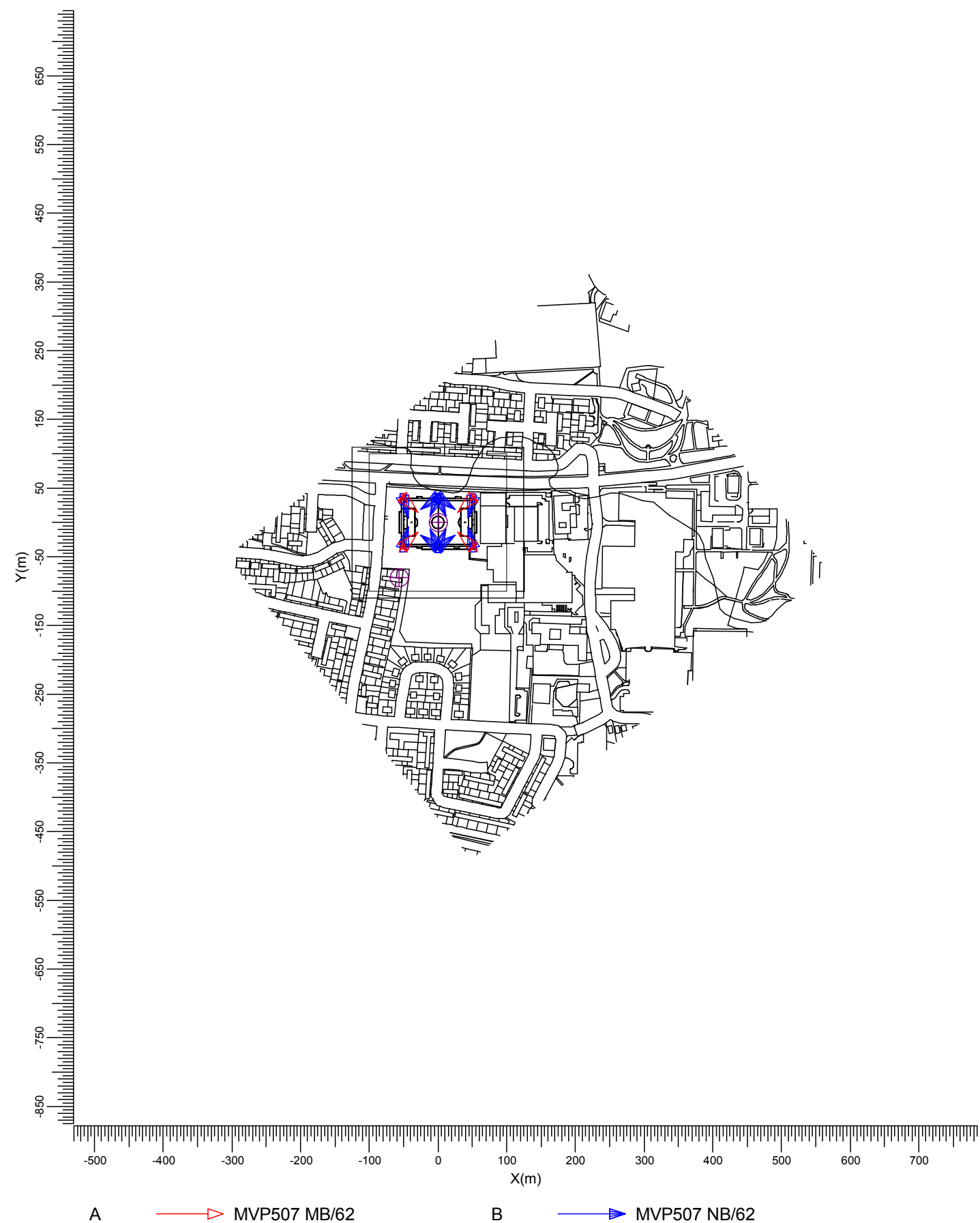
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1. Project Description

1.1 Top Project Overview



Scale
1:7500

2. Summary

2.1 General Information

The overall maintenance factor used for this project is 1.00.

2.2 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Aa	Evo Spill	-0.00	-0.00	1.50
Bb	Nearest Property	-56.34	-80.30	1.80

2.3 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
A	4	MVP507 MB/62	1 * MHN-FC2000W/400V/740	2119.0	1 * 210000
B	12	MVP507 NB/62	1 * MHN-FC2000W/400V/740	2119.0	1 * 210000

The total installed power: 33.90 (kWatt)

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code		Power (kWatt)
	A	B	
Mast 1	4	4	16.95
Mast 2	0	8	16.95

2.4 Calculation Results

(II)luminance Calculations:

Calculation	Type	Unit	Ave	Min/Ave	Min/Max
Football	Surface Illuminance	lux	283	0.70	0.45
Spillage	Surface Illuminance	lux	63.3	0.00	0.00
Evo Spill	Illuminance -> Aa	lux	10.9	0.00	0.00

Obtrusive Light Calculations:

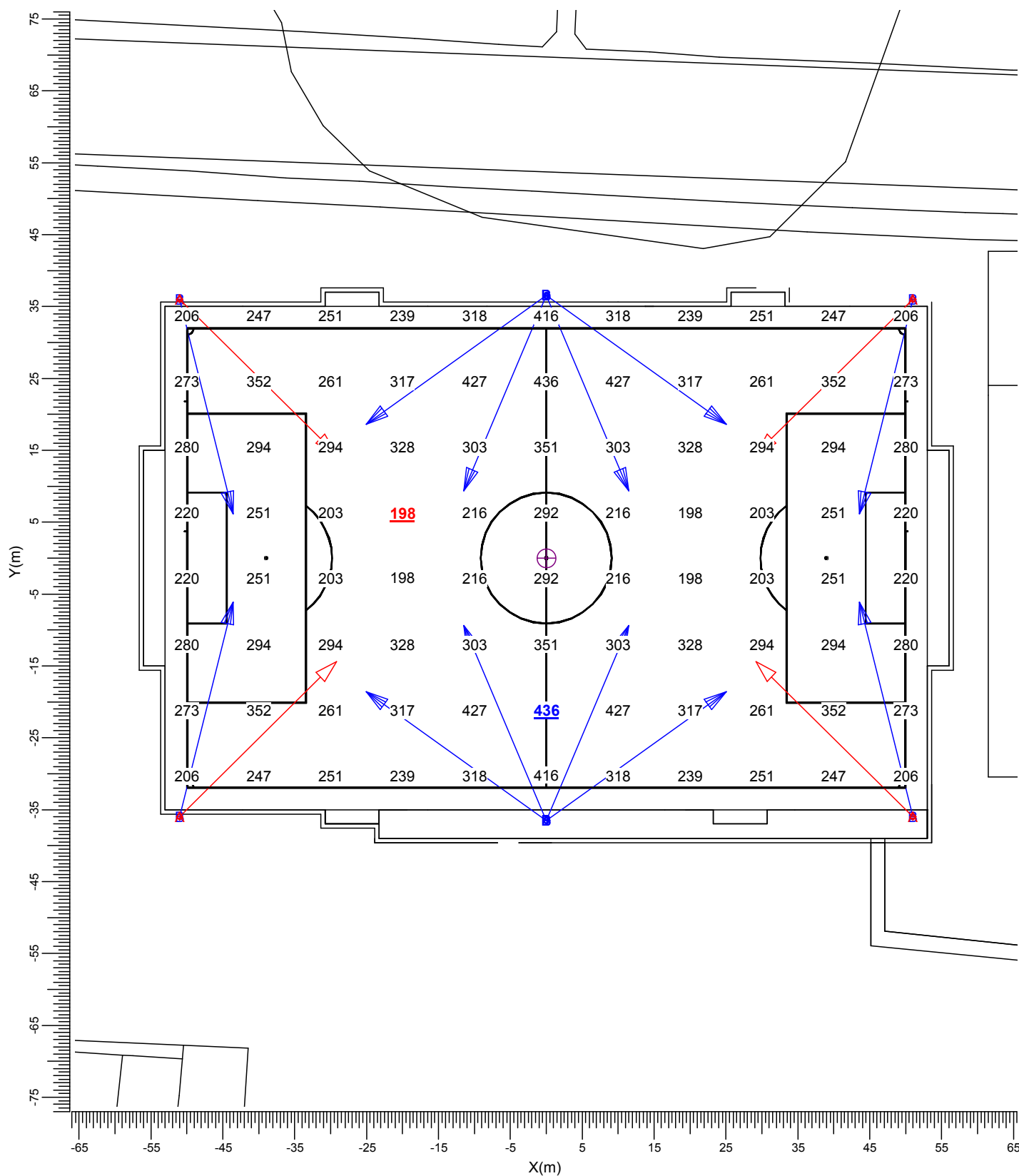
Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
		X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
Bb	B	-51.00	-36.00	15.00	76.05	64.00	-0.00	1285

The upward light ratio (ULR) is 0.00.

3. Calculation Results

3.1 Football: Graphical Table

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



A MVP507 MB/62

B MVP507 NB/62

Average
283

Min/Ave
0.70

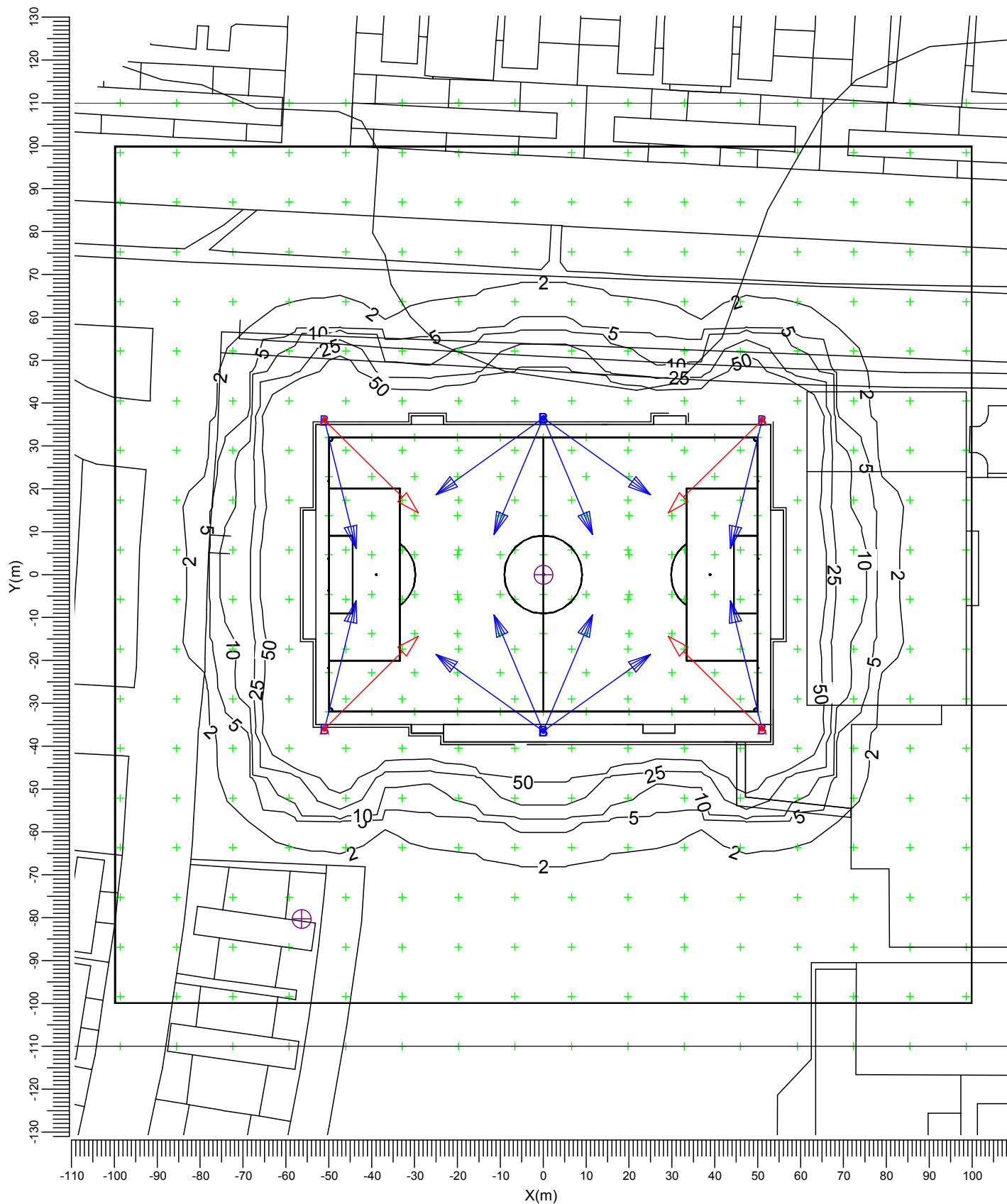
Min/Max
0.45

Project maintenance factor
1.00

Scale
1:750

3.2 Spillage: Iso Contour

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



A  MVP507 MB/62

B  MVP507 NB/62

Average
63.3

Min/Ave
0.00

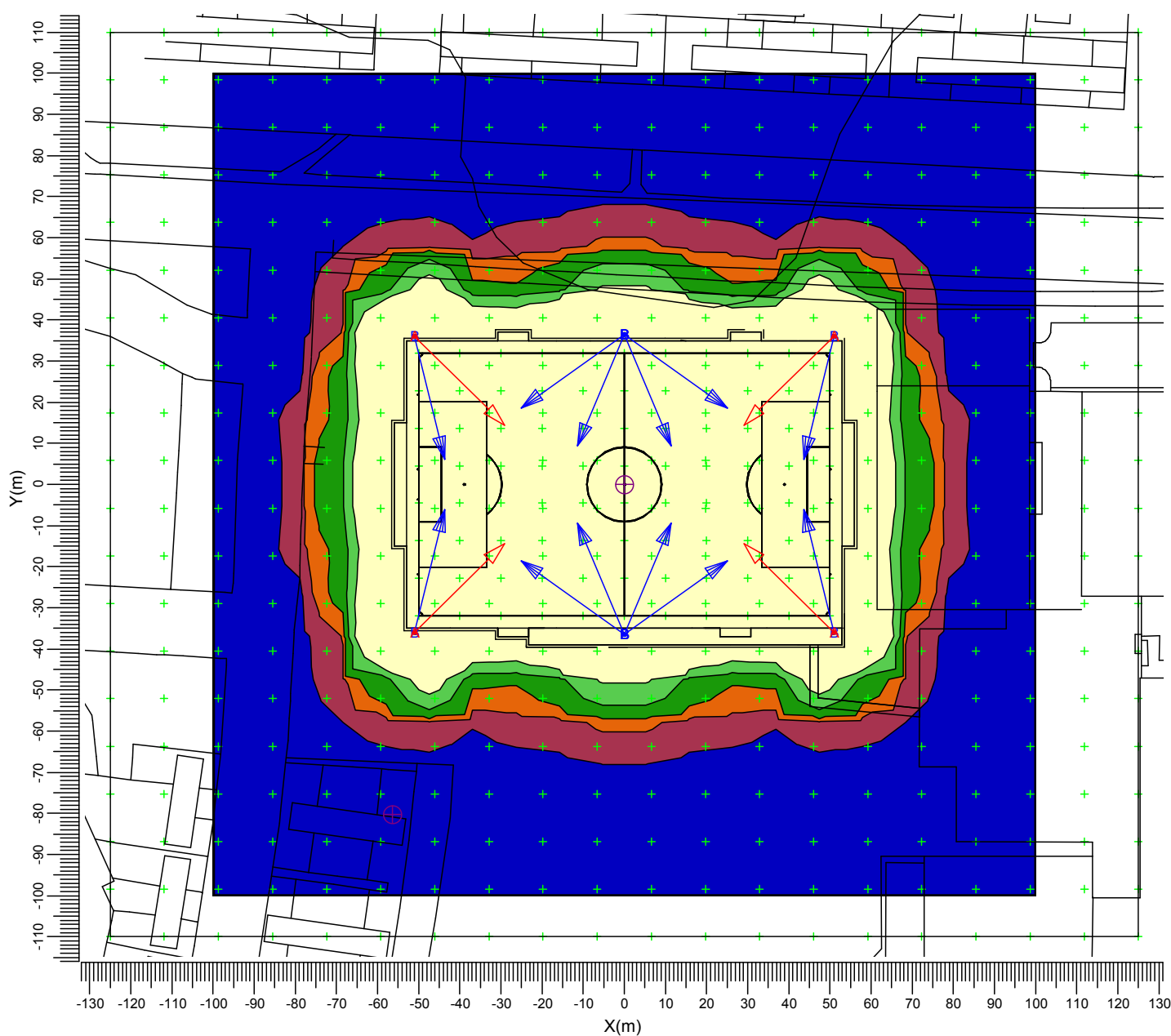
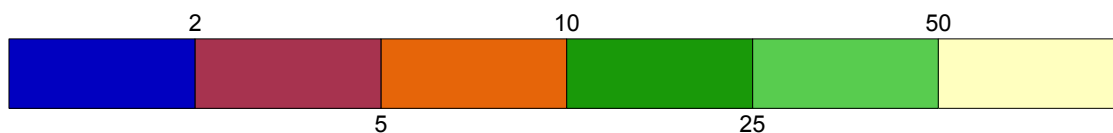
Min/Max
0.00

Project maintenance factor
1.00

Scale
1:1250

3.3 Spillage: Filled Iso Contour

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



A MVP507 MB/62

B MVP507 NB/62

Average
63.3

Min/Ave
0.00

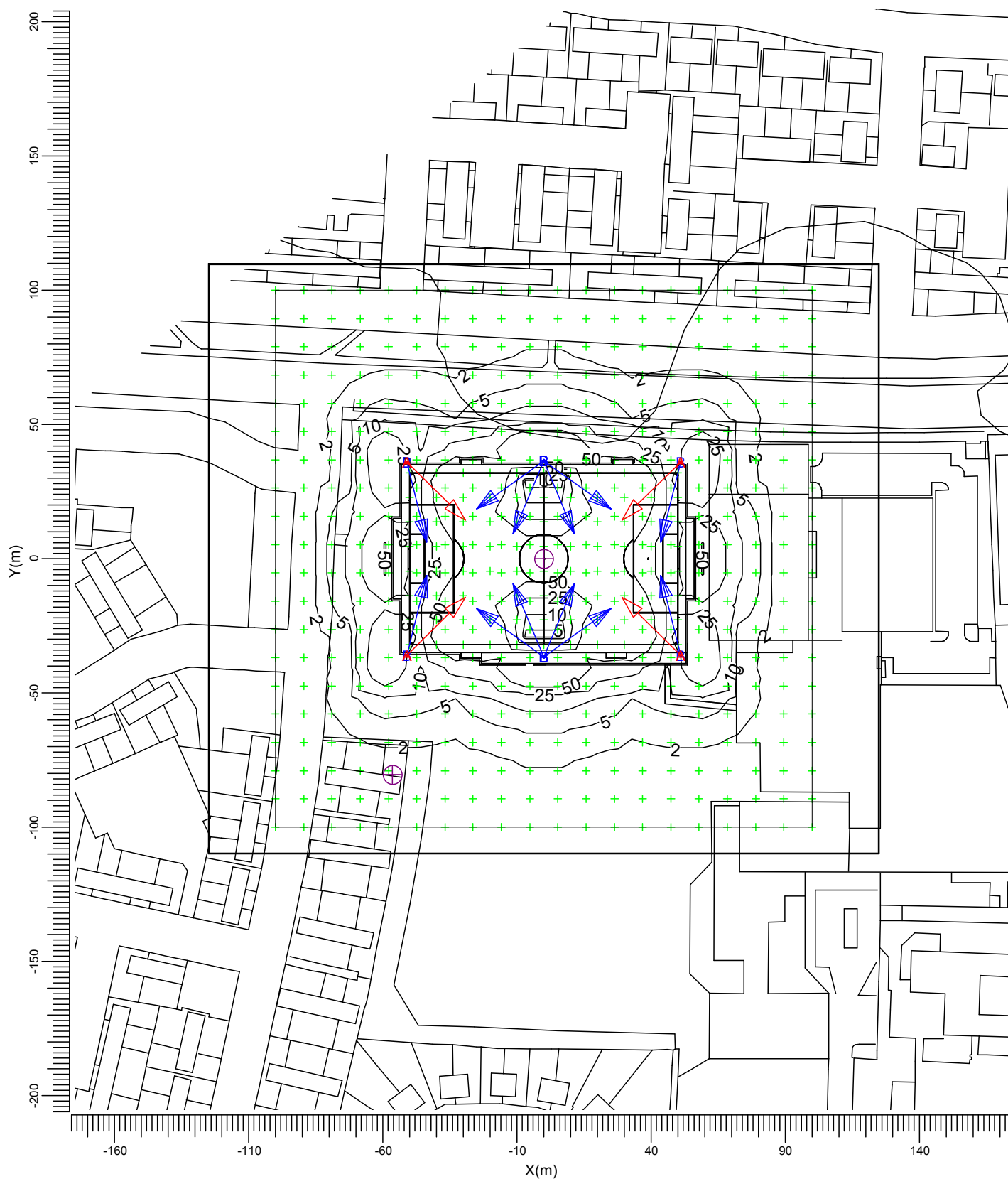
Min/Max
0.00

Project maintenance factor
1.00

Scale
1:1500

3.4 Evo Spill: Iso Contour

Grid : Evo Spill at Z = -0.00 m
Calculation : Illuminance towards Evo Spill (lux)
Height above grid : 1.75 m



A  MVP507 MB/62

B  MVP507 NB/62

Average
10.9

Min/Ave
0.00

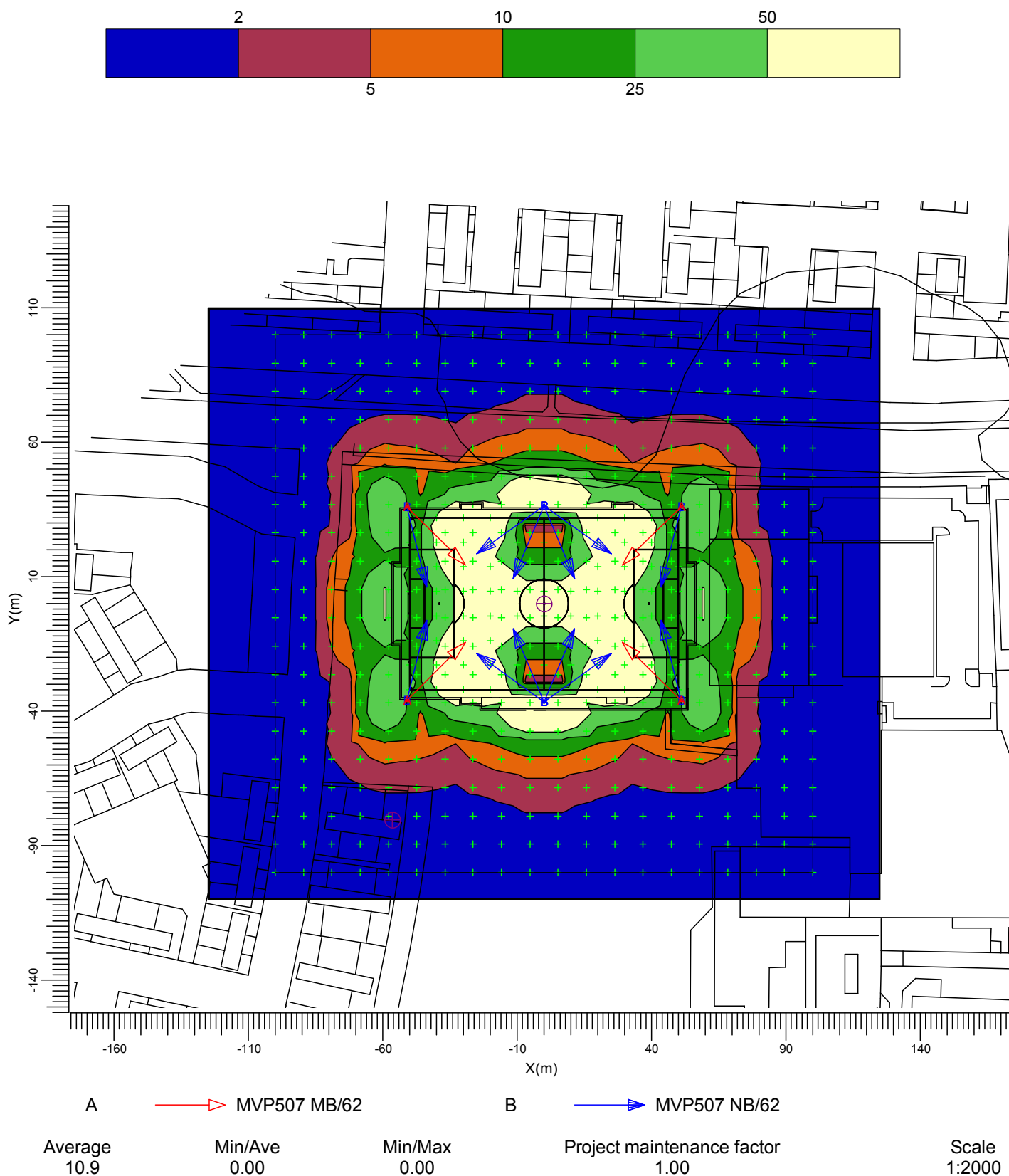
Min/Max
0.00

Project maintenance factor
1.00

Scale
1:2000

3.5 Evo Spill: Filled Iso Contour

Grid : Evo Spill at Z = -0.00 m
Calculation : Illuminance towards Evo Spill (lux)
Height above grid : 1.75 m



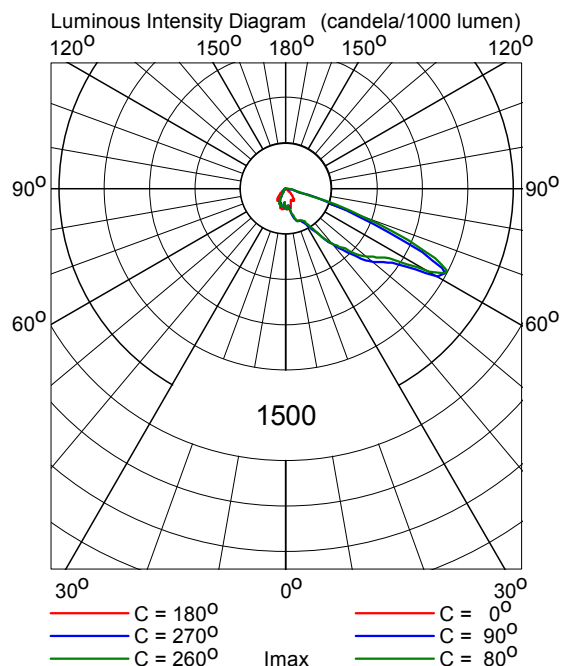
4. Luminaire Details

4.1 Project Luminaires

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



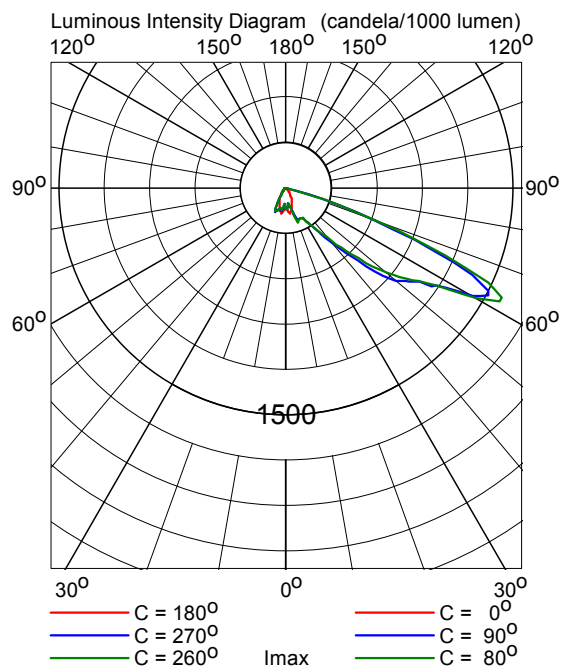
Light output ratios
DLOR : 0.85
ULOR : 0.00
TLOR : 0.85
Ballast : Conventional
Lamp flux : 210000 lm
Luminaire wattage : 2119.0 W
Measurement code : LVMA700000



OptiVision
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 : LVMA700100



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
A	4	MVP507 MB/62	1 * MHN-FC2000W/400V/740	1 * 210000
B	12	MVP507 NB/62	1 * MHN-FC2000W/400V/740	1 * 210000

5.2 Luminaire Positioning and Orientation

Qty and Code	Position			Aiming Angles		
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0
1 * B	-51.00	-36.00	15.00	76.0	64.0	-0.0
1 * A	-51.00	-36.00	15.00	44.7	64.0	-0.0
1 * B	-51.00	36.00	15.00	-76.0	64.0	0.0
1 * A	-51.00	36.00	15.00	-44.7	64.0	0.0
1 * B	-0.00	-36.50	15.00	35.5	64.0	-0.0
1 * B	-0.00	-36.50	15.00	144.5	64.0	0.0
1 * B	-0.00	-36.50	15.00	67.1	63.0	-0.0
1 * B	-0.00	-36.50	15.00	112.9	63.0	0.0
1 * B	-0.00	36.50	15.00	-35.5	64.0	0.0
1 * B	-0.00	36.50	15.00	-144.5	64.0	-0.0
1 * B	-0.00	36.50	15.00	-67.1	63.0	0.0
1 * B	-0.00	36.50	15.00	-112.9	63.0	-0.0
1 * B	51.00	-36.00	15.00	104.0	64.0	0.0
1 * A	51.00	-36.00	15.00	135.3	64.0	0.0
1 * B	51.00	36.00	15.00	-104.0	64.0	-0.0
1 * A	51.00	36.00	15.00	-135.3	64.0	-0.0