

Heron Eccles Playing Fields

Artificial Football Pitches

Project code: SSL1989 HE
Date: 10-06-2016

Designer: Wesley Bugg

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

After the first 100 hours of use the lights will naturally diminish by 20% (referred to as a maintenance factor of 0.8). The results within this report and scheme are currently showing a maintenance factor and will be the results after the first 100hrs of usage.

The levels before the first 100 hours of use will be at:

Sports Luminaires are mounted at 15m above the surface with Philips double asymmetrical Optivision 48no. MVP507 1xMHN-FC/2000W/400V/842.

All luminaires have a zero upward light ration 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

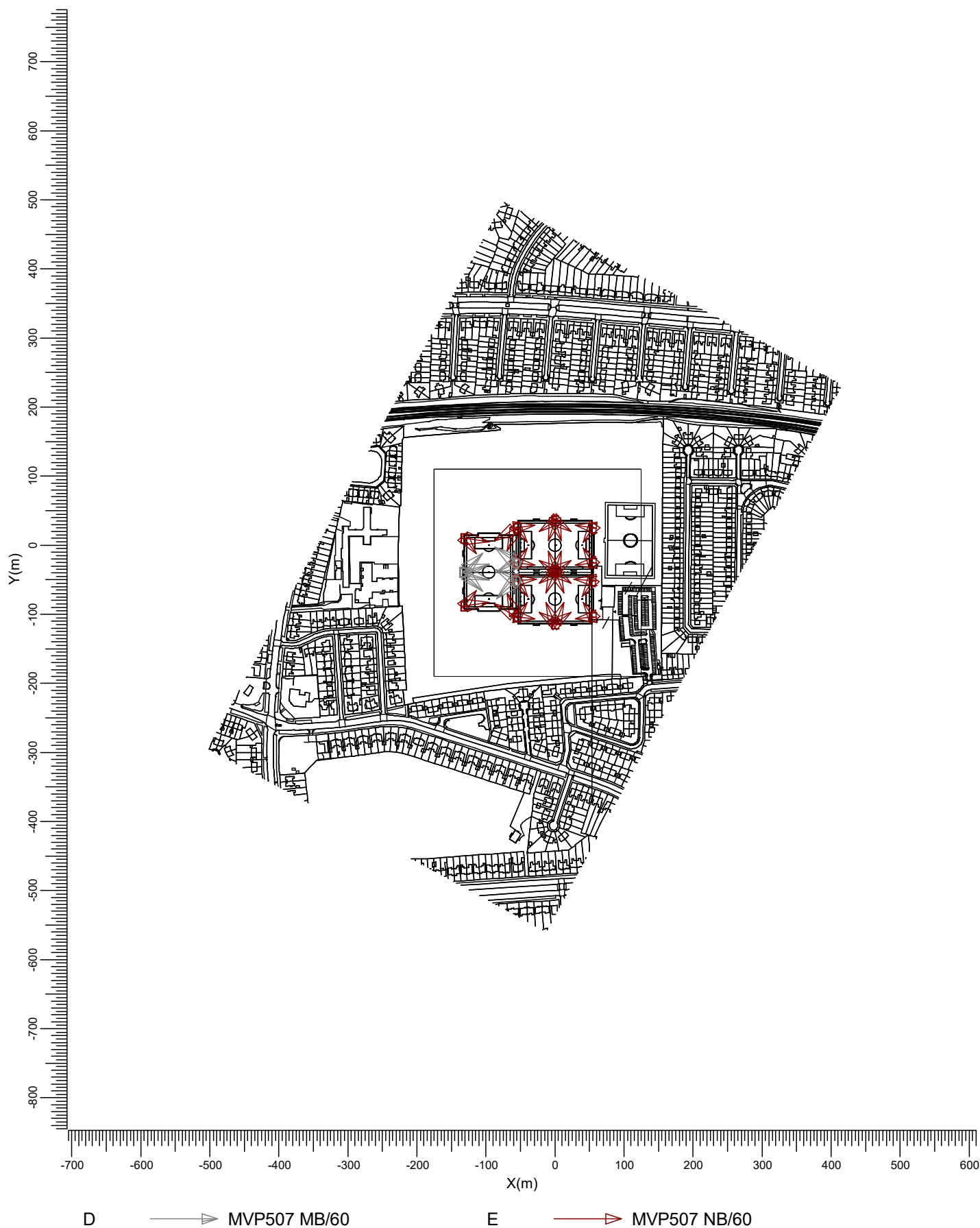
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1. Project Description

1.1 Top Project Overview



Scale
1:7500

2. Summary

2.1 General Information

The overall maintenance factor used for this project is 0.80.

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
D	8	MVP507 MB/60	1 * MHN-LA2000W/400V/842	2123.0	1 * 220000
E	40	MVP507 NB/60	1 * MHN-LA2000W/400V/842	2123.0	1 * 220000

The total installed power: 101.90 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code		Power (kWatt)
	D	E	
Football Pitch One	0	16	33.97
Football Pitch Two	0	16	33.97
Football Pitch Three	8	8	33.97
Spillage	8	40	101.90

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code		Power (kWatt)
	D	E	
Football Pitch 1 Mast 1	0	8	16.98
Football Pitch 1 Mast 3	0	8	16.98
Football Pitch 2 Mast 1	0	4	8.49
Football Pitch 2 Mast 2	0	8	16.98
Football Pitch 2 Mast 3	0	4	8.49
Rugby Pitch Mast 1	0	2	4.25
Rugby Pitch Mast 2	2	0	4.25
Rugby Pitch Mast 3	2	0	4.25
Rugby Pitch Mast 4	0	2	4.25
Rugby Pitch Mast 5	0	4	8.49
Rugby Pitch Mast 6	4	0	8.49

2.3 Calculation Results

Switching Modes:

Code	Switching Mode
1	Football Pitch One
2	Football Pitch Two
3	Football Pitch Three
4	Spillage

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min/Ave	Min/Max
Football Pitch One	1	Surface Illuminance	lux	228	0.61	0.36
Football Pitch Two	2	Surface Illuminance	lux	226	0.62	0.35
Football Pitch Three	3	Surface Illuminance	lux	203	0.60	0.36
Spillage	4	Surface Illuminance	lux	65.9	0.00	0.00

Obtrusive Light Calculations:

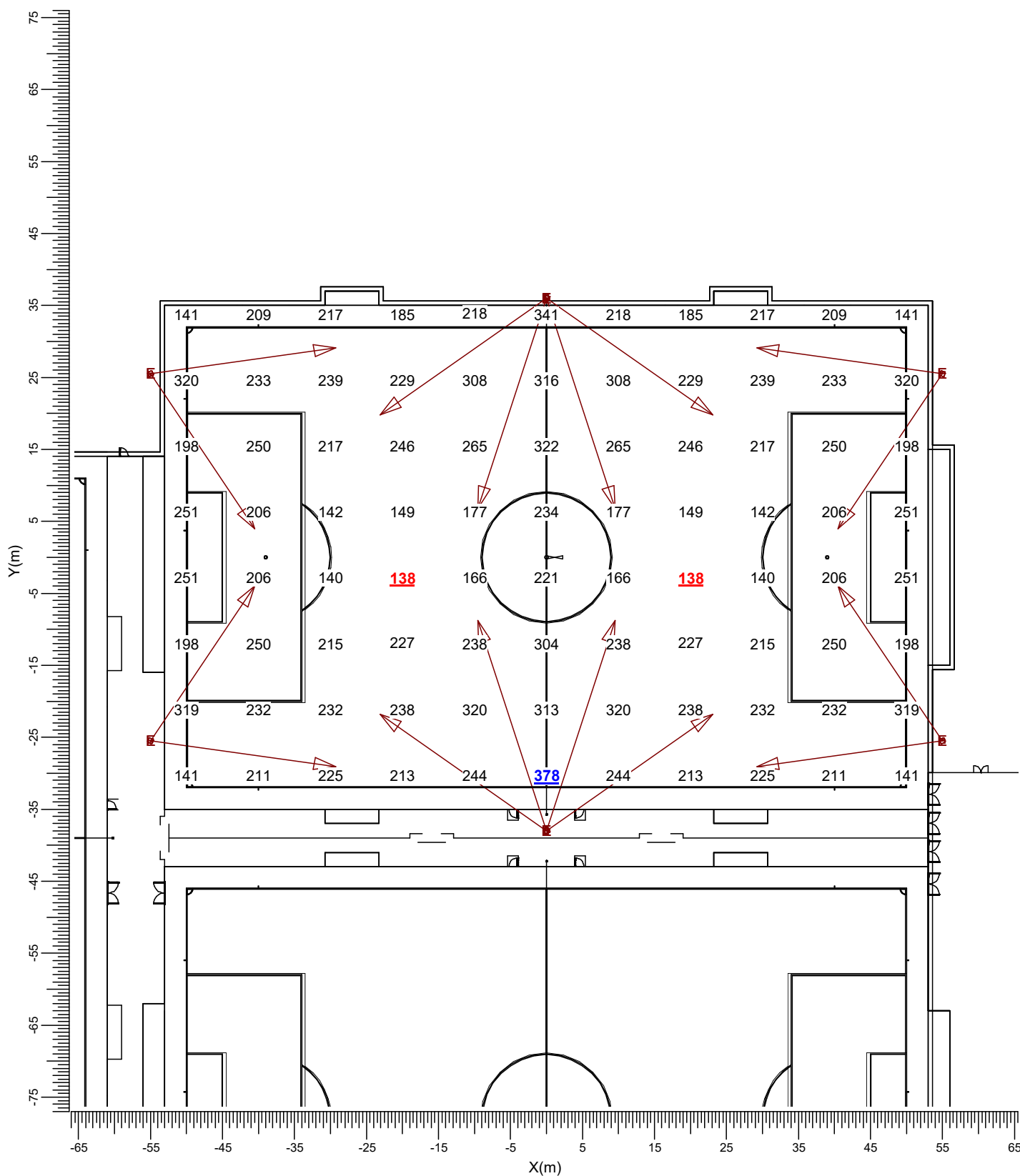
Switching Mode	ULR
1	0.00
2	0.00
3	0.00
4	0.00

3. Calculation Results

3.1 Football Pitch One: Graphical Table

Football Pitch One

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



E → MVP507 NB/60

Average
228

Min/Ave
0.61

Min/Max
0.36

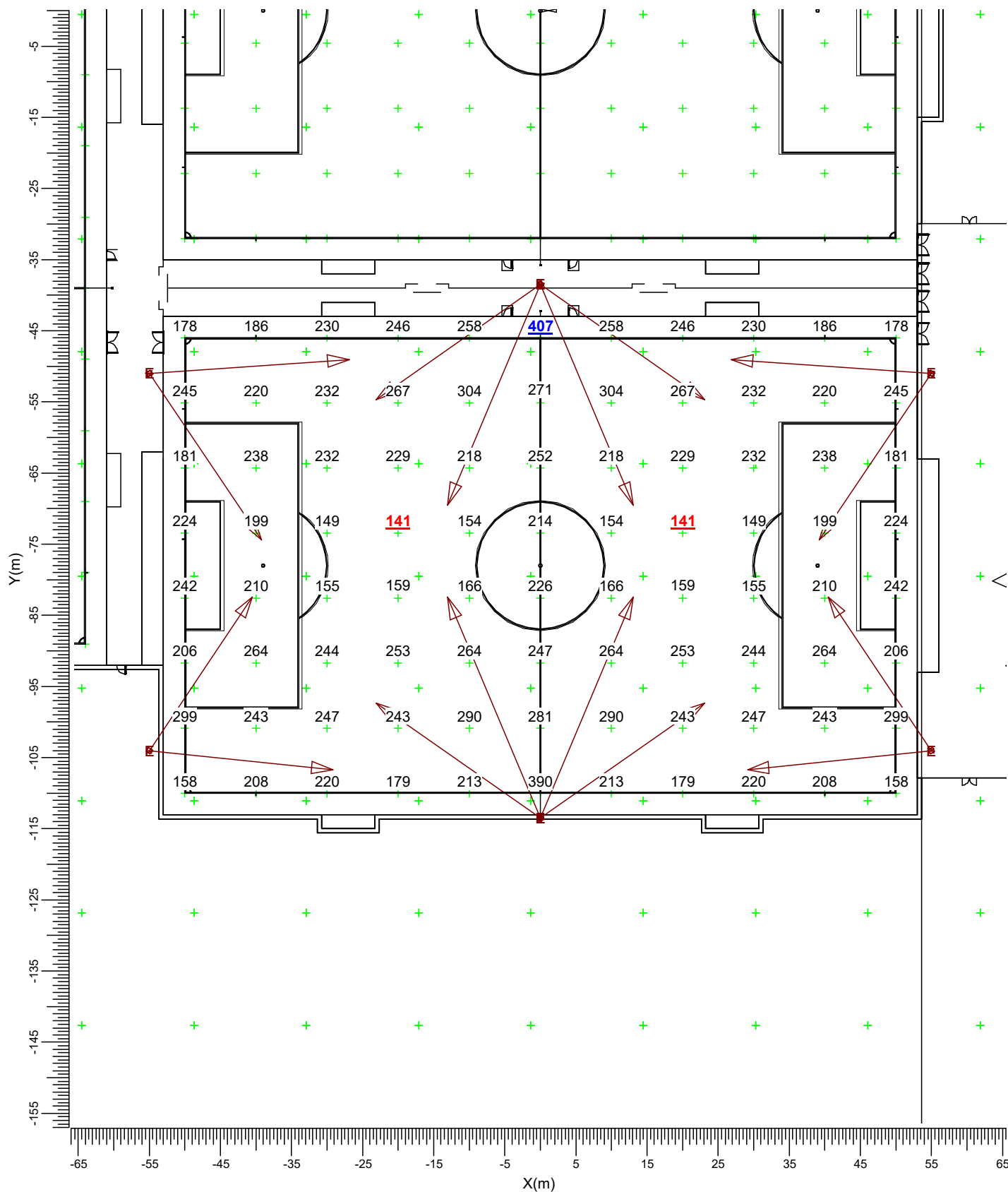
Project maintenance factor
0.80

Scale
1:750

3.2 Football Pitch Two: Graphical Table

Football Pitch Two

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



E → MVP507 NB/60

Average
226

Min/Ave
0.62

Min/Max
0.35

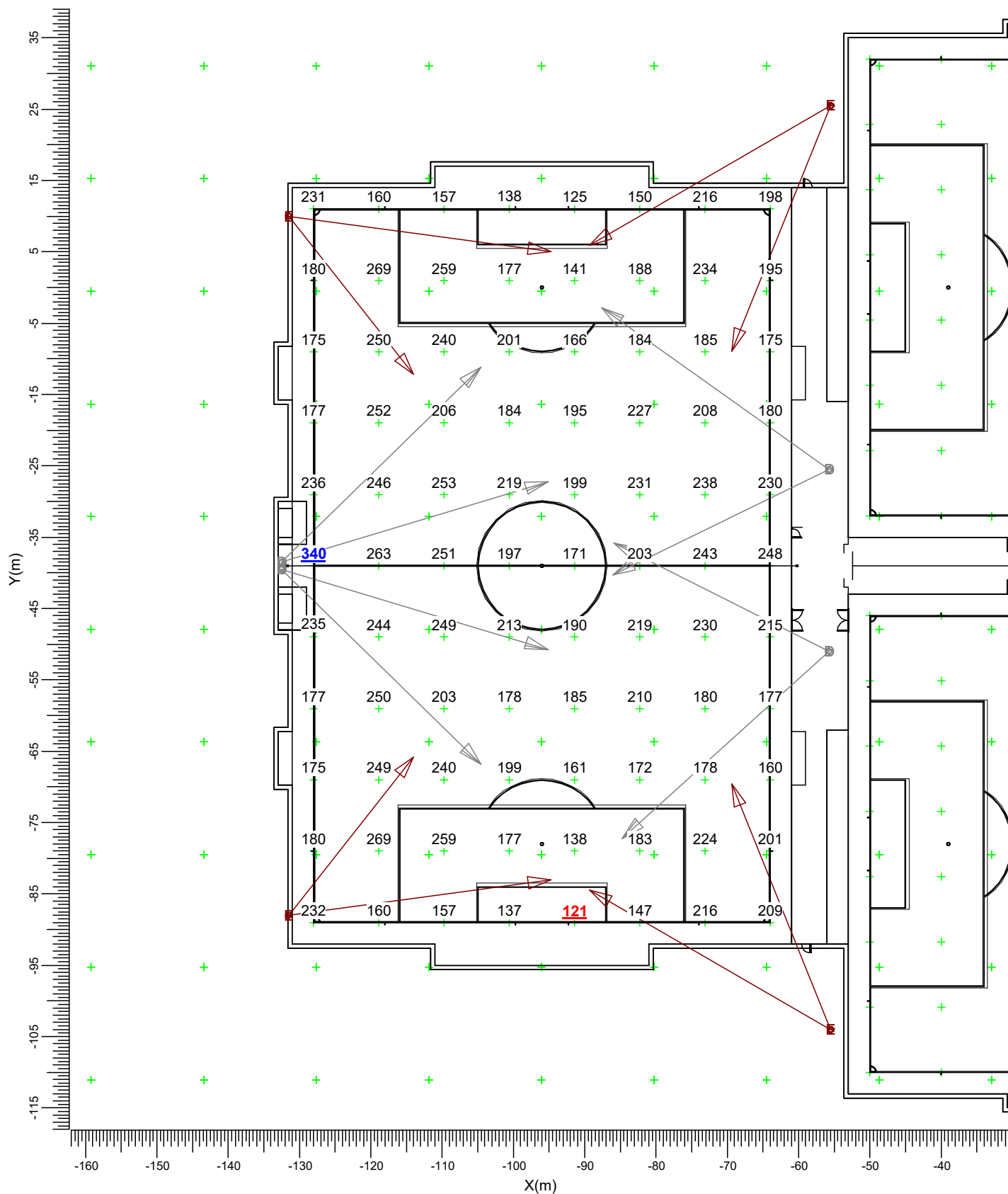
Project maintenance factor
0.80

Scale
1:750

3.3 Football Pitch Three: Graphical Table

Football Pitch Three

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

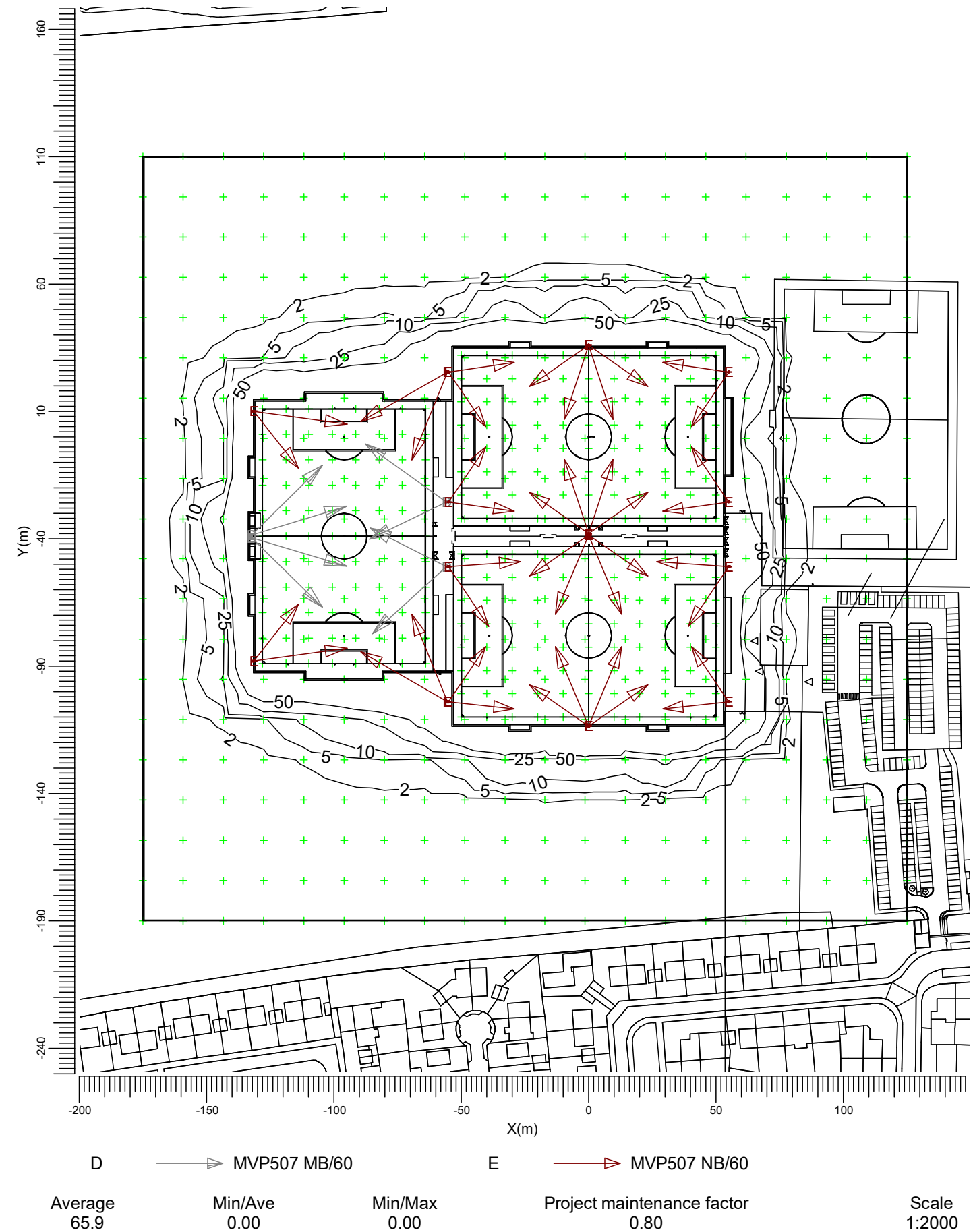


3.4 Spillage: Iso Contour

Spillage

Grid : Spillage at Z = -0.00 m

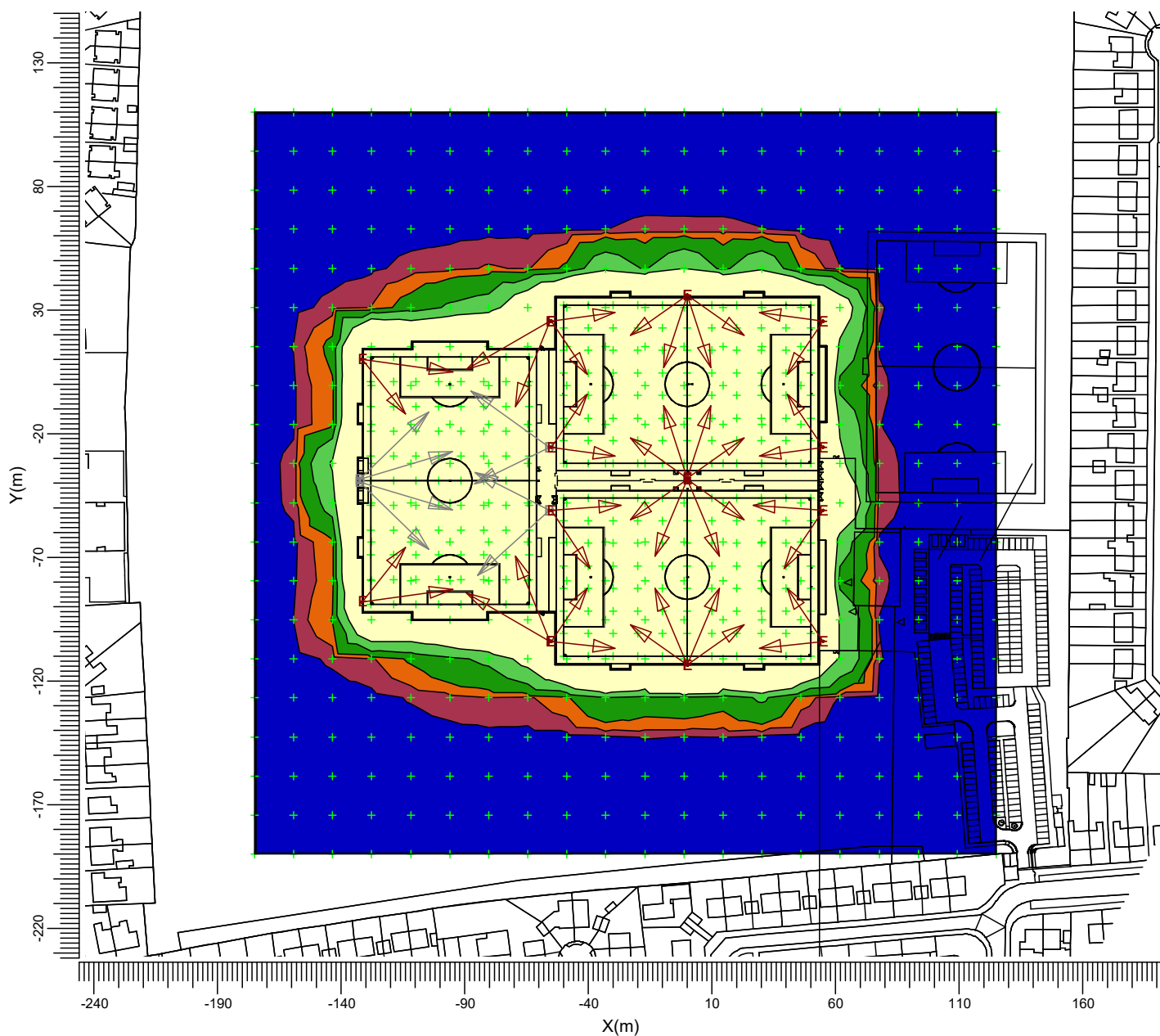
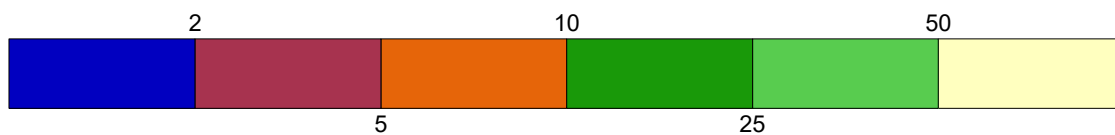
Calculation : Surface Illuminance (lux)



3.5 Spillage: Filled Iso Contour

Spillage

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



D MVP507 MB/60

E MVP507 NB/60

Average
65.9

Min/Ave
0.00

Min/Max
0.00

Project maintenance factor
0.80

Scale
1:2500

4. Luminaire Details

4.1 Project Luminaires

OptiVision MVP507

MVP507 1xMHN-LA2000W/400V/842 MB/60



Light output ratios

DLOR : 0.79

ULOR : 0.00

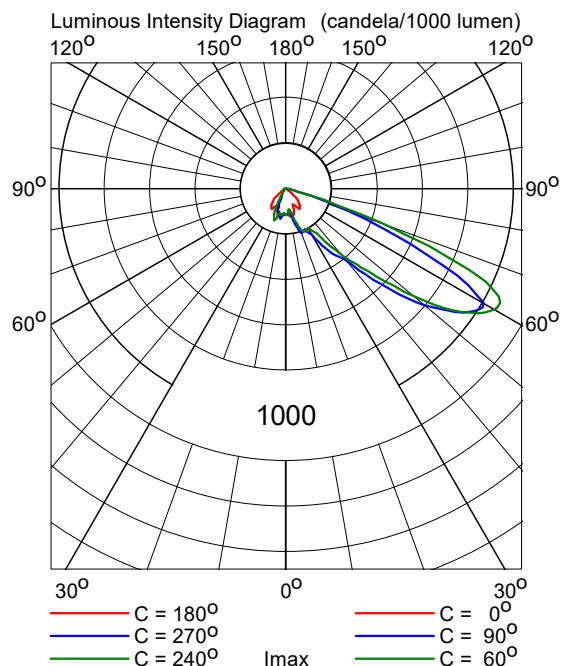
TLOR : 0.79

Ballast : Conventional

Lamp flux : 220000 lm

Luminaire wattage : 2123.0 W

Measurement code : LVMA106901



OptiVision MVP507

MVP507 1xMHN-LA2000W/400V/842 NB/60



Light output ratios

DLOR : 0.78

ULOR : 0.00

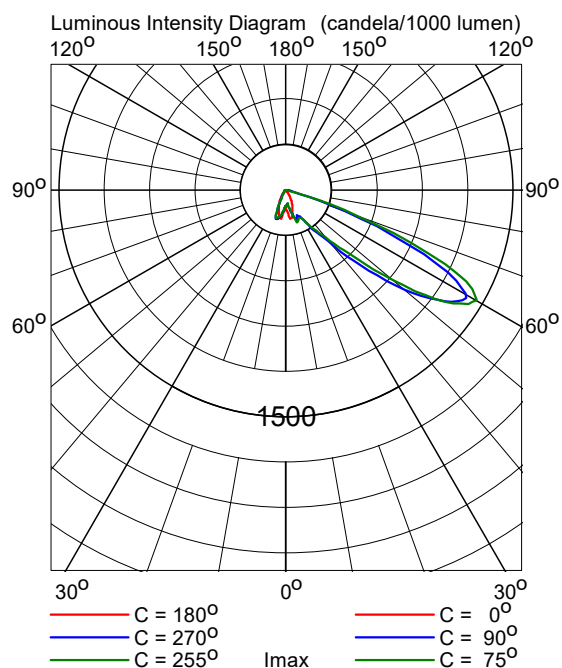
TLOR : 0.78

Ballast : Conventional

Lamp flux : 220000 lm

Luminaire wattage : 2123.0 W

Measurement code : LVMA107801



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
D	8	MVP507 MB/60	1 * MHN-LA2000W/400V/842	1 * 220000
E	40	MVP507 NB/60	1 * MHN-LA2000W/400V/842	1 * 220000

Switching Modes:

Code	Switching Mode
1	Football Pitch One
2	Football Pitch Two
3	Football Pitch Three
4	Spillage

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 * D	-132.50	-39.50	15.00	-16.7	69.0	0.0	-	-	+	+
1 * D	-132.50	-39.50	15.00	-44.4	69.0	0.0	-	-	+	+
1 * D	-132.50	-38.50	15.00	16.7	69.0	-0.0	-	-	+	+
1 * D	-132.50	-38.50	15.00	44.4	69.0	-0.0	-	-	+	+
1 * E	-131.50	-88.00	15.00	7.7	68.0	-0.0	-	-	+	+
1 * E	-131.50	-88.00	15.00	51.6	62.0	-0.0	-	-	+	+
1 * E	-131.50	10.00	15.00	-7.7	68.0	0.0	-	-	+	+
1 * E	-131.50	10.00	15.00	-51.6	62.0	0.0	-	-	+	+
1 * D	-55.75	-51.00	15.00	-137.8	69.0	0.0	-	-	+	+
1 * D	-55.75	-51.00	15.00	153.3	66.0	0.0	-	-	+	+
1 * D	-55.75	-25.50	15.00	-154.0	66.0	0.0	-	-	+	+
1 * D	-55.75	-25.50	15.00	144.5	69.0	0.0	-	-	+	+
1 * E	-55.50	-104.00	15.00	112.0	68.0	0.0	-	-	+	+
1 * E	-55.50	-104.00	15.00	150.0	69.0	0.0	-	-	+	+
1 * E	-55.50	25.50	15.00	-112.0	68.0	0.0	-	-	+	+
1 * E	-55.50	25.50	15.00	-150.0	69.0	0.0	-	-	+	+
1 * E	-55.00	-104.00	15.00	56.0	60.0	0.0	-	+	-	+
1 * E	-55.00	-104.00	15.00	-6.0	60.0	0.0	-	+	-	+
1 * E	-55.00	-51.00	15.00	-56.0	62.0	0.0	-	+	-	+
1 * E	-55.00	-51.00	15.00	4.0	62.0	0.0	-	+	-	+
1 * E	-55.00	-25.50	15.00	56.0	60.0	-0.0	+	-	-	+
1 * E	-55.00	-25.50	15.00	-8.0	60.0	-0.0	+	-	-	+
1 * E	-55.00	25.50	15.00	-56.0	60.0	0.0	+	-	-	+
1 * E	-55.00	25.50	15.00	8.0	60.0	0.0	+	-	-	+
1 * E	-0.00	-113.50	15.00	35.0	62.0	-0.0	-	+	-	+
1 * E	-0.00	-113.50	15.00	145.0	62.0	0.0	-	+	-	+
1 * E	-0.00	-113.50	15.00	67.2	66.0	-0.0	-	+	-	+
1 * E	-0.00	-113.50	15.00	112.8	66.0	0.0	-	+	-	+
1 * E	-0.00	-38.50	15.00	-35.0	62.0	0.0	-	+	-	+
1 * E	-0.00	-38.50	15.00	-145.0	62.0	-0.0	-	+	-	+
1 * E	-0.00	-38.50	15.00	-67.2	66.0	0.0	-	+	-	+
1 * E	-0.00	-38.50	15.00	-112.8	66.0	-0.0	-	+	-	+
1 * E	-0.00	-38.00	15.00	35.0	62.0	0.0	+	-	-	+
1 * E	-0.00	-38.00	15.00	145.0	62.0	-0.0	+	-	-	+
1 * E	-0.00	-38.00	15.00	72.0	64.0	0.0	+	-	-	+

Qty and Code	Position			Aiming Angles			Switching Modes			
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	1	2	3	4
1 * E	-0.00	-38.00	15.00	108.0	64.0	-0.0	+	-	-	+
1 * E	-0.00	36.00	15.00	-35.0	62.0	-0.0	+	-	-	+
1 * E	-0.00	36.00	15.00	-145.0	62.0	0.0	+	-	-	+
1 * E	-0.00	36.00	15.00	-72.0	64.0	-0.0	+	-	-	+
1 * E	-0.00	36.00	15.00	-108.0	64.0	0.0	+	-	-	+
1 * E	55.00	-104.00	15.00	124.0	60.0	-0.0	-	+	-	+
1 * E	55.00	-104.00	15.00	-174.0	60.0	-0.0	-	+	-	+
1 * E	55.00	-51.00	15.00	-124.0	62.0	-0.0	-	+	-	+
1 * E	55.00	-51.00	15.00	176.0	62.0	-0.0	-	+	-	+
1 * E	55.00	-25.50	15.00	124.0	60.0	0.0	+	-	-	+
1 * E	55.00	-25.50	15.00	-172.0	60.0	0.0	+	-	-	+
1 * E	55.00	25.50	15.00	-124.0	60.0	-0.0	+	-	-	+
1 * E	55.00	25.50	15.00	172.0	60.0	-0.0	+	-	-	+