

# Jericho Lane Playing Fields

## Artificial Pitches

Project code: SSL1989  
Date: 11-04-2016

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.

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.

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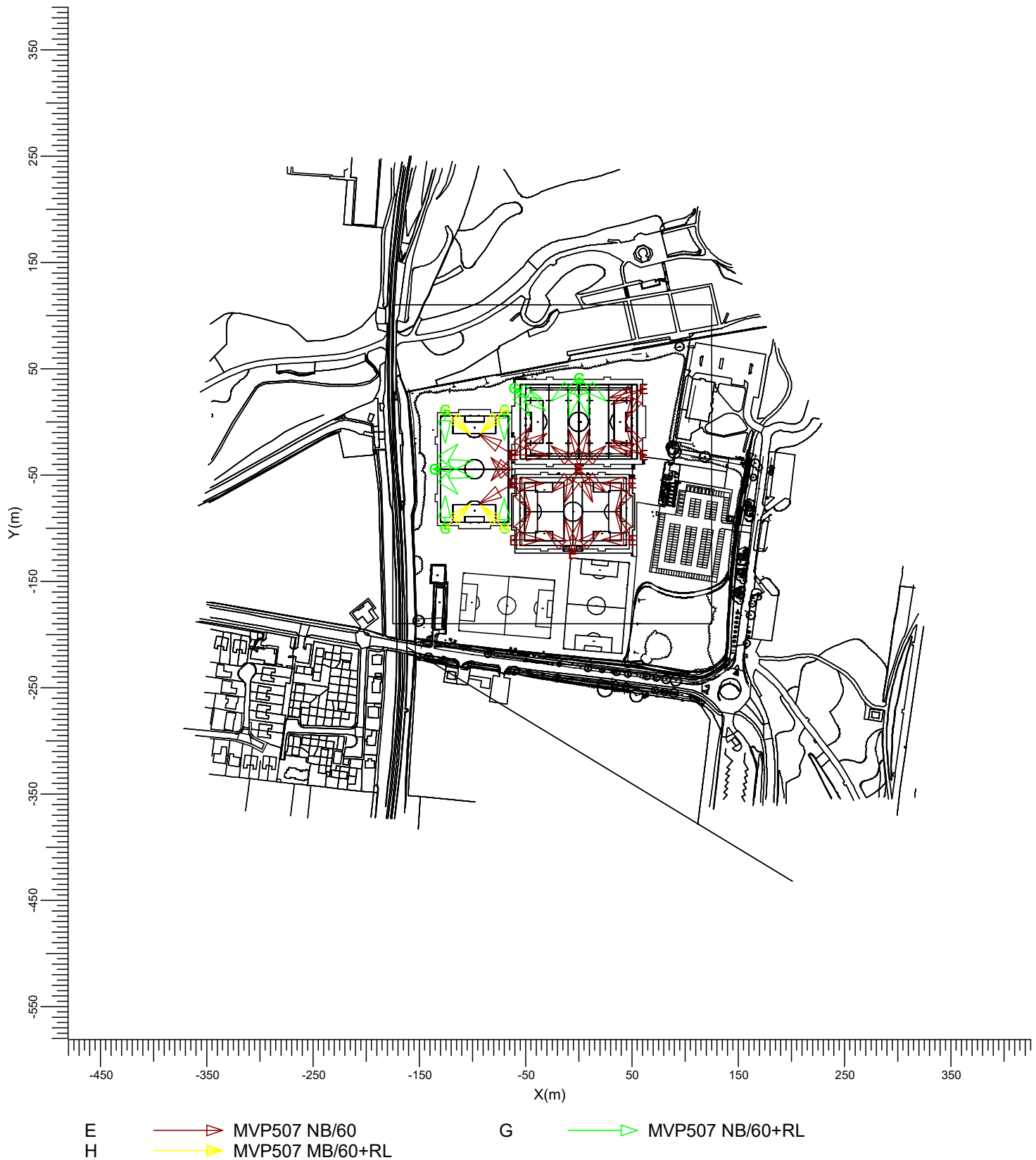
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1. Project Description

1.1 Top Project Overview



Scale  
1:5000

## 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)
E	33	MVP507 NB/60	1 * MHN-LA2000W/400V/842	2123.0	1 * 220000
G	15	MVP507 NB/60+RL	1 * MHN-LA2000W/400V	2123.0	1 * 220000
H	4	MVP507 MB/60+RL	1 * MHN-LA2000W/400V	2123.0	1 * 220000

The total installed power: 110.40 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code			Power (kWatt)
	E	G	H	
Rugby Pitch One	13	7	0	42.46
Stadia Pitch	16	0	0	33.97
Football Pitch	4	8	4	33.97
Spillage	33	15	4	110.40

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code			Power (kWatt)
	E	G	H	
Football Mast 1	0	2	2	8.49
Football Mast 2	0	2	2	8.49
Football Mast 3	0	4	0	8.49
Football Mast 4	2	0	0	4.25
Football Mast 5	2	0	0	4.25
Rugby Pitch 1 Mast 1	0	3	0	6.37
Rugby Pitch 1 Mast 2	0	4	0	8.49
Rugby Pitch 1 Mast 3	6	0	0	12.74
Rugby Pitch 1 Mast 4	3	0	0	6.37
Rugby Pitch 1 Mast 5	4	0	0	8.49
Stadia Pitch Mast 1	8	0	0	16.98
Stadia Pitch Mast 2	4	0	0	8.49
Stadia Pitch Mast 3	4	0	0	8.49

### 2.3 Calculation Results

Switching Modes:

Code	Switching Mode
1	Rugby Pitch One
2	Stadia Pitch
3	Football Pitch
4	Spillage

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min	Min/Ave	Min/Max
Football Pitch One	3	Surface Illuminance	lux	223		0.61	0.37
Rugby	1	Surface Illuminance	lux	236		0.62	0.34

Calculation	Switching Mode	Type	Unit	Ave	Min	Min/Ave	Min/Max
Stadia Pitch	2	Surface Illuminance	lux	222	147	0.66	0.39
Spillage	4	Surface Illuminance	lux	71.4		0.00	0.00

Obtrusive Light Calculations:

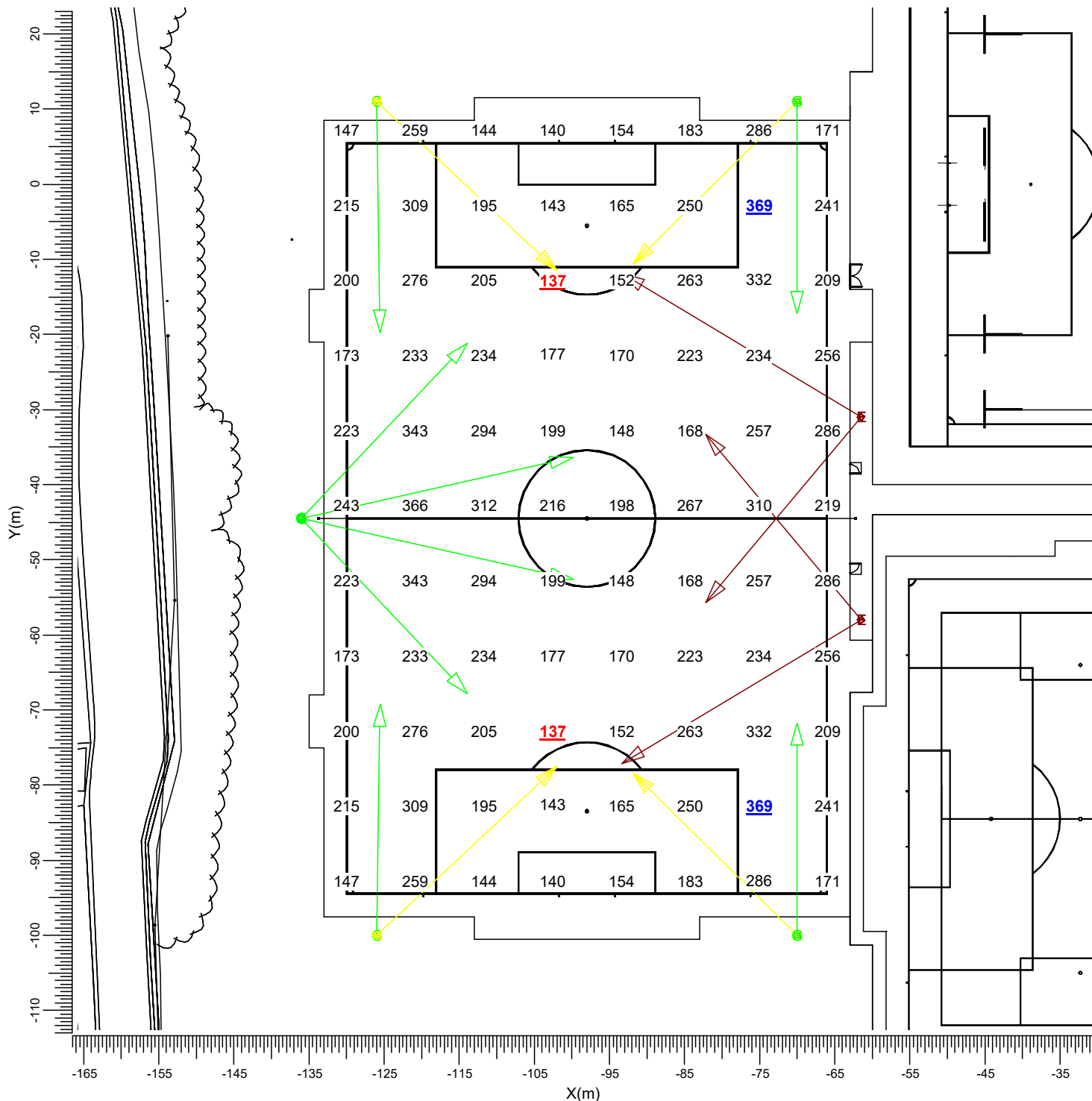
Switching Mode	ULR
1	0.00
2	0.00
3	0.00
4	0.00

## 3. Calculation Results

### 3.1 Football Pitch One: Graphical Table

### Football Pitch

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



E  
H

—▶ MVP507 NB/60  
—▶ MVP507 MB/60+RL

G

—▶ MVP507 NB/60+RL

Average  
223

Min/Ave  
0.61

Min/Max  
0.37

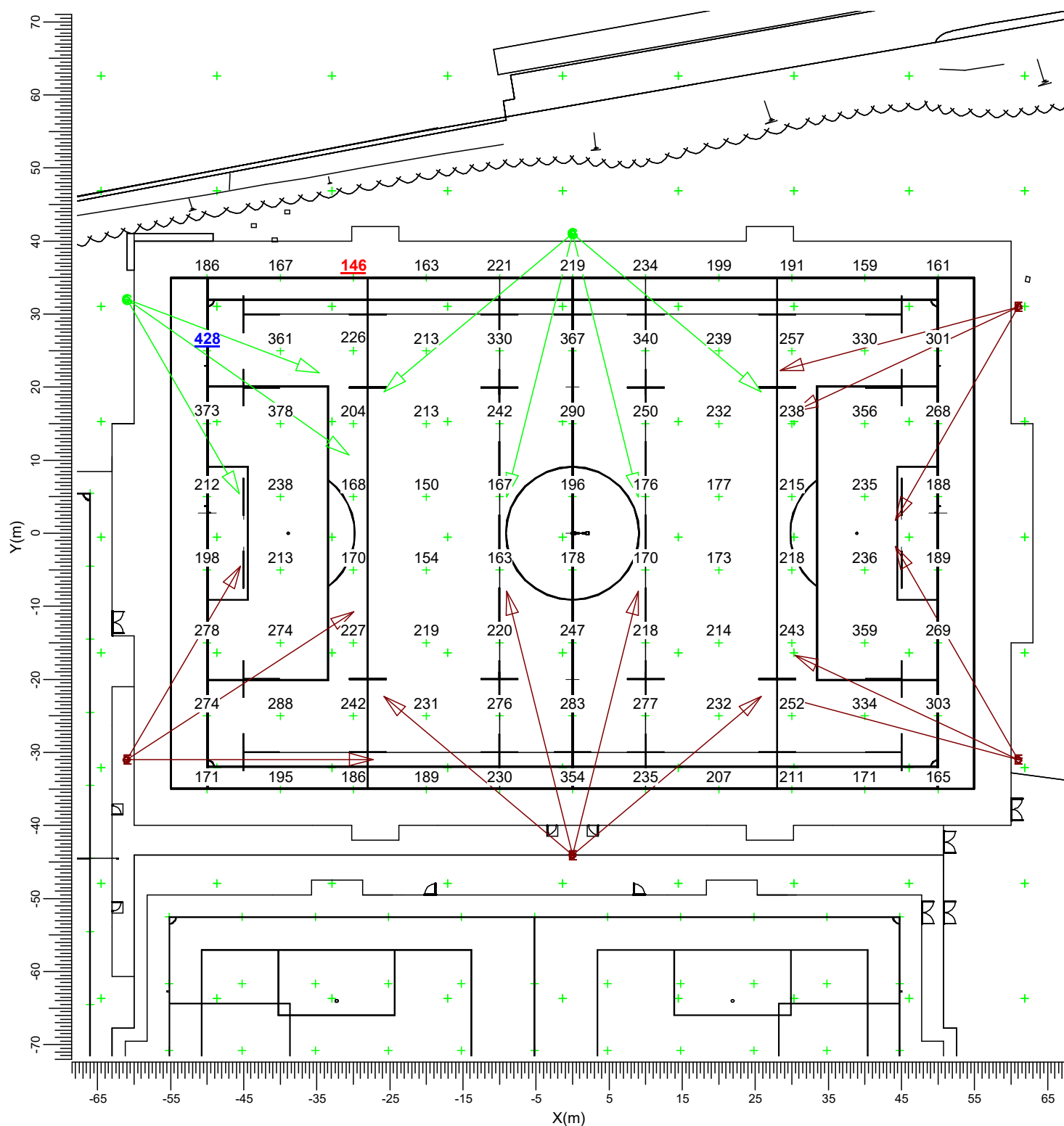
Project maintenance factor  
0.80

Scale  
1:750

### 3.2 Rugby: Graphical Table

### Rugby Pitch One

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



E

—▶ MVP507 NB/60

G

—▶ MVP507 NB/60+RL

Average  
236

Min/Ave  
0.62

Min/Max  
0.34

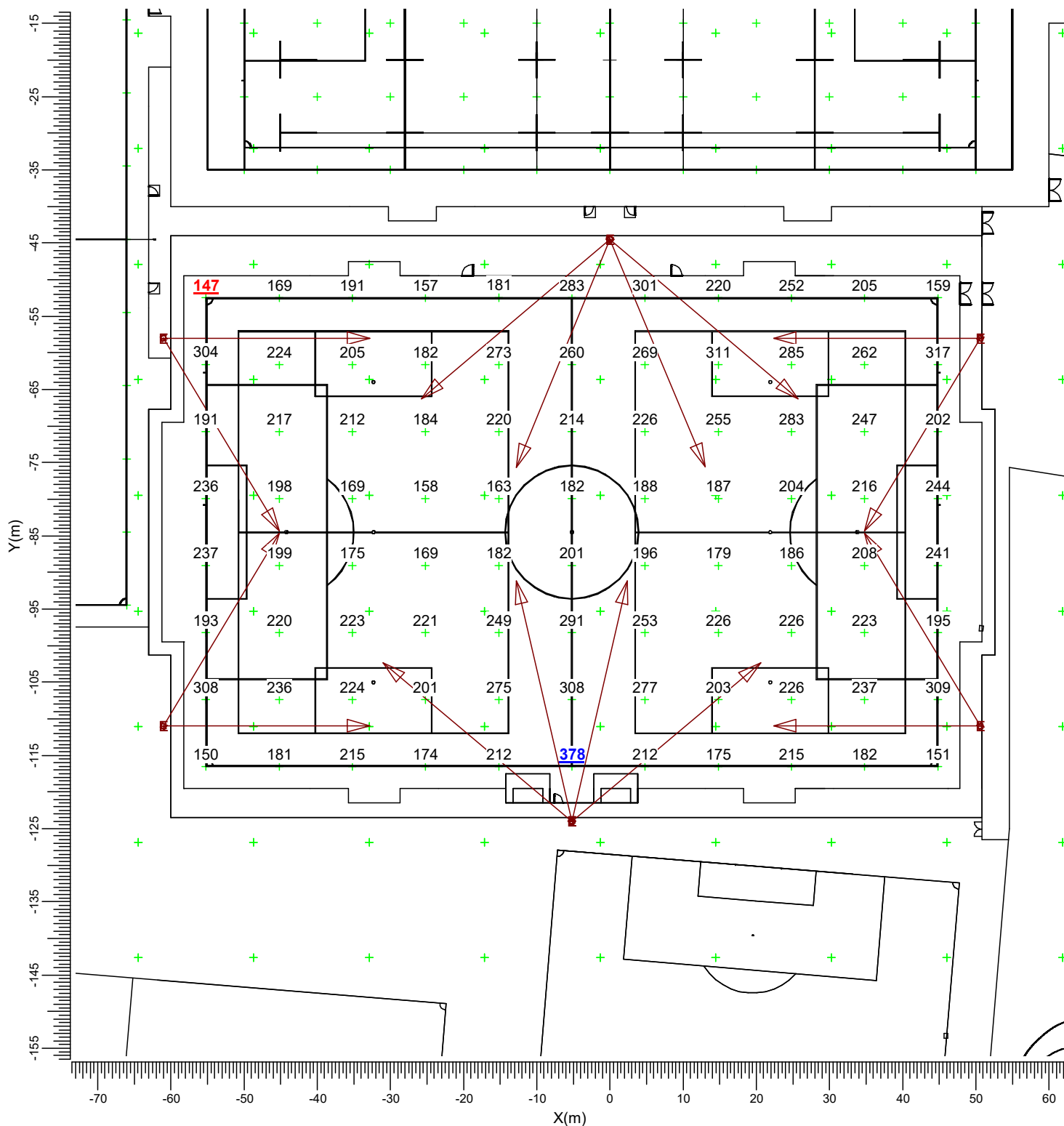
Project maintenance factor  
0.80

Scale  
1:750

### 3.3 Stadia Pitch: Graphical Table

### Stadia Pitch

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



E MVP507 NB/60

Average  
222

Minimum  
147

Min/Ave  
0.66

Min/Max  
0.39

Project maintenance factor  
0.80

Scale  
1:750



### 3.4 Spillage: Iso Contour

### Spillage

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



E MVP507 NB/60  
H MVP507 MB/60+RL

G MVP507 NB/60+RL

Average  
71.4

Min/Ave  
0.00

Min/Max  
0.00

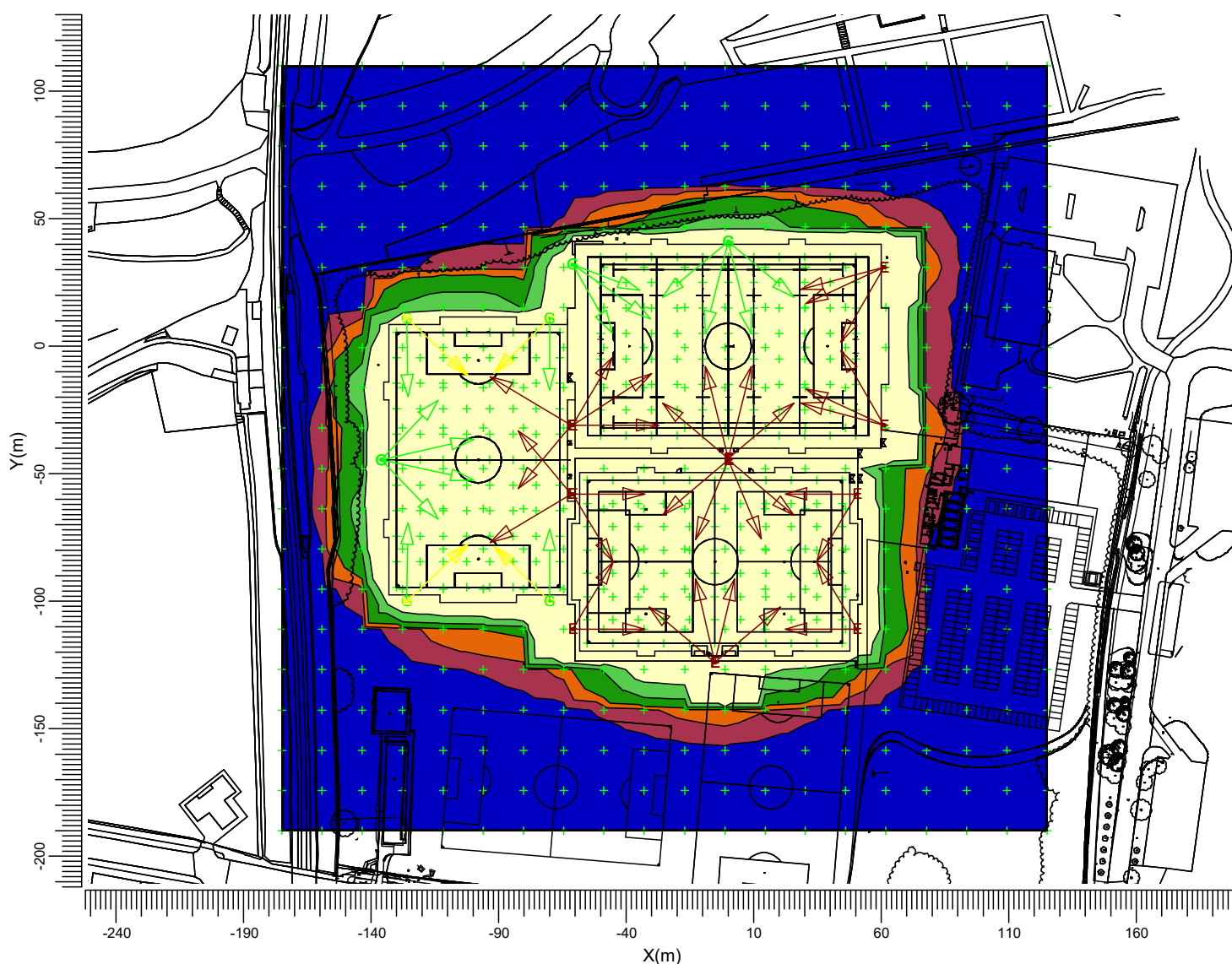
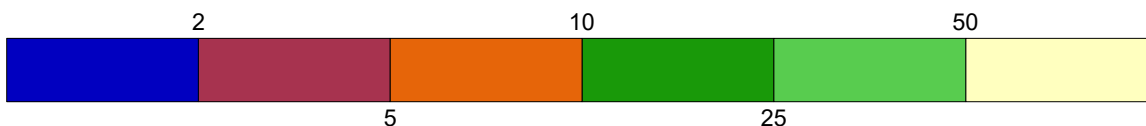
Project maintenance factor  
0.80

Scale  
1:2000

### 3.5 Spillage: Filled Iso Contour

### Spillage

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



E MVP507 NB/60  
H MVP507 MB/60+RL

G MVP507 NB/60+RL

Average  
71.4

Min/Ave  
0.00

Min/Max  
0.00

Project maintenance factor  
0.80

Scale  
1:2500

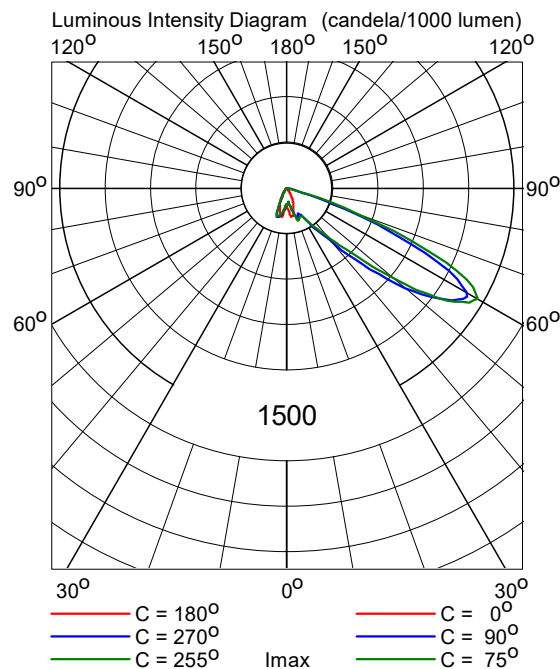
## 4. Luminaire Details

### 4.1 Project Luminaires

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



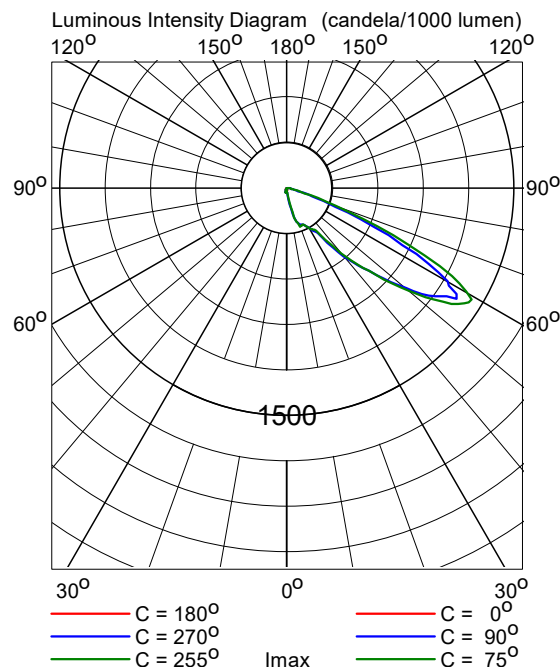
Light output ratios  
DLOR : 0.78  
ULOR : 0.00  
TLOR : 0.78  
Ballast : Conventional  
Lamp flux : 220000 lm  
Luminaire wattage : 2123.0 W  
Measurement code : LVMA107801

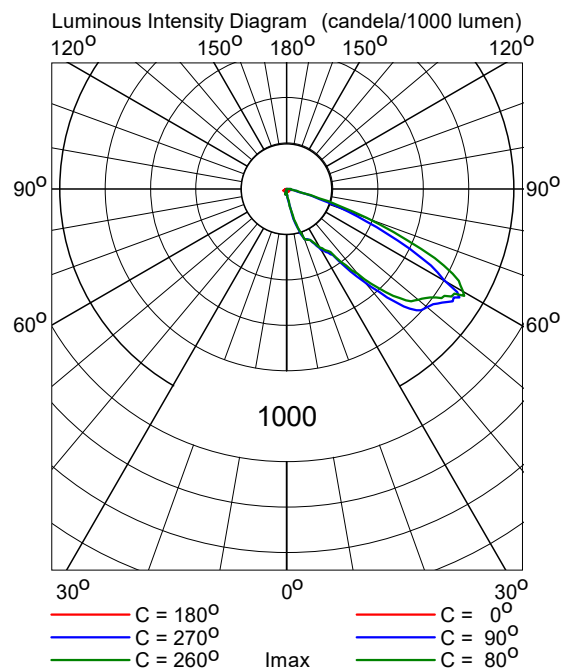


OPTIVISION  
MVP507 1xMHN-LA2000W/400V/842 Conventional NB/60+RL

Light output ratios  
DLOR : 0.69  
ULOR : 0.00  
TLOR : 0.69  
Ballast : Conventional  
Lamp flux : 220000 lm  
Luminaire wattage : 2123.0 W  
Measurement code : LVA1302001

Note: Luminaire data not from database.





## 5. Installation Data

### 5.1 Legends

#### Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
E	33	MVP507 NB/60	1 * MHN-LA2000W/400V/842	1 * 220000
G	15	MVP507 NB/60+RL	1 * MHN-LA2000W/400V	1 * 220000
H	4	MVP507 MB/60+RL	1 * MHN-LA2000W/400V	1 * 220000

#### Switching Modes:

Code	Switching Mode
1	Rugby Pitch One
2	Stadia Pitch
3	Football Pitch
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 * G	-136.00	-44.50	15.00	-12.6	68.0	0.0	-	-	+	+
1 * G	-136.00	-44.50	15.00	12.6	68.0	-0.0	-	-	+	+
1 * G	-136.00	-44.50	15.00	-46.5	65.0	0.0	-	-	+	+
1 * G	-136.00	-44.50	15.00	46.5	65.0	-0.0	-	-	+	+
1 * H	-126.00	-100.00	15.00	43.0	65.5	0.0	-	-	+	+
1 * G	-126.00	-100.00	15.00	89.2	64.0	0.0	-	-	+	+
1 * H	-126.00	11.00	15.00	-43.0	65.5	-0.0	-	-	+	+
1 * G	-126.00	11.00	15.00	-89.2	64.0	-0.0	-	-	+	+
1 * G	-70.00	-100.00	15.00	90.0	62.0	0.0	-	-	+	+
1 * H	-70.00	-100.00	15.00	135.3	64.0	0.0	-	-	+	+
1 * G	-70.00	11.00	15.00	-90.0	62.0	-0.0	-	-	+	+
1 * H	-70.00	11.00	15.00	-135.3	64.0	-0.0	-	-	+	+
1 * E	-61.50	-58.00	15.00	130.0	65.0	0.0	-	-	+	+
1 * E	-61.50	-58.00	15.00	-149.0	68.0	0.0	-	-	+	+
1 * E	-61.50	-31.00	15.00	-130.0	65.0	0.0	-	-	+	+
1 * E	-61.50	-31.00	15.00	149.0	68.0	0.0	-	-	+	+
1 * E	-61.00	-111.00	15.00	59.0	64.0	-0.0	-	+	-	+
1 * E	-61.00	-111.00	15.00	-0.0	62.0	-0.0	-	+	-	+
1 * E	-61.00	-58.00	15.00	-59.0	64.0	0.0	-	+	-	+
1 * E	-61.00	-58.00	15.00	0.0	62.0	0.0	-	+	-	+
1 * E	-61.00	-31.00	15.00	59.6	64.0	0.0	+	-	-	+
1 * E	-61.00	-31.00	15.00	33.1	68.0	0.0	+	-	-	+
1 * E	-61.00	-31.00	15.00	0.0	66.0	0.0	+	-	-	+
1 * G	-61.00	32.00	15.00	-20.8	62.0	0.0	+	-	-	+
1 * G	-61.00	32.00	15.00	-60.0	64.0	0.0	+	-	-	+
1 * G	-61.00	32.00	15.00	-35.0	68.0	0.0	+	-	-	+
1 * E	-5.20	-124.00	15.00	40.0	66.0	0.0	-	+	-	+
1 * E	-5.20	-124.00	15.00	140.0	66.0	-0.0	-	+	-	+
1 * E	-5.20	-124.00	15.00	77.0	66.0	0.0	-	+	-	+
1 * E	-5.20	-124.00	15.00	103.0	66.0	-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	-44.50	15.00	-67.3	66.0	0.0	-	+	-	+
1 * E	-0.00	-44.50	15.00	-40.2	66.0	0.0	-	+	-	+
1 * E	-0.00	-44.50	15.00	-139.8	66.0	-0.0	-	+	-	+
1 * E	-0.00	-44.50	15.00	-112.3	66.0	0.0	-	+	-	+
1 * E	-0.00	-44.00	15.00	40.0	66.0	0.0	+	-	-	+
1 * E	-0.00	-44.00	15.00	140.0	66.0	-0.0	+	-	-	+
1 * E	-0.00	-44.00	15.00	76.0	68.0	0.0	+	-	-	+
1 * E	-0.00	-44.00	15.00	104.0	68.0	-0.0	+	-	-	+
1 * G	-0.00	41.00	15.00	-40.0	66.0	0.0	+	-	-	+
1 * G	-0.00	41.00	15.00	-140.0	66.0	-0.0	+	-	-	+
1 * G	-0.00	41.00	15.00	-76.0	68.0	0.0	+	-	-	+
1 * G	-0.00	41.00	15.00	-104.0	68.0	-0.0	+	-	-	+
1 * E	50.60	-111.00	15.00	121.0	64.0	0.0	-	+	-	+
1 * E	50.60	-111.00	15.00	180.0	62.0	0.0	-	+	-	+
1 * E	50.60	-58.00	15.00	-121.0	64.0	-0.0	-	+	-	+
1 * E	50.60	-58.00	15.00	180.0	62.0	-0.0	-	+	-	+
1 * E	61.00	-31.00	15.00	165.0	66.0	-0.0	+	-	-	+
1 * E	61.00	-31.00	15.00	120.0	66.0	-0.0	+	-	-	+
1 * E	61.00	-31.00	15.00	155.0	66.0	-0.0	+	-	-	+
1 * E	61.00	31.00	15.00	-165.0	66.0	0.0	+	-	-	+
1 * E	61.00	31.00	15.00	-120.0	66.0	0.0	+	-	-	+
1 * E	61.00	31.00	15.00	-155.0	66.0	0.0	+	-	-	+