Wythenshawe Sports Ground

4Nr. Artificial Grass Pitches

Project code:	G-229824
Date:	04-03-2026
Designer:	ME
Description:	Match play requirements: Maintained average illuminance >200 lux Uniformity Ratio (Ev.min/Ev.ave) >0.60 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
Office 2
Empingham House
Ayston Road
Uppingham
LE15 9NY

Table of Contents

1. Project Description **3**

1.1 3-D Project Overview 3
1.2 Top Project Overview 4

2. Summary **5**

2.1 Project Luminaires 5
2.2 Calculation Results 5

3. Calculation Results **7**

3.1 Football SW: Graphical Table 7
3.2 Football SE: Graphical Table 8
3.3 Football NE: Graphical Table 9
3.4 Football NW: Graphical Table 10
3.5 Ground Spillage: Filled Iso Contour 11
3.6 SW Glare: Graphical Table 12

4. Luminaire Details **13**

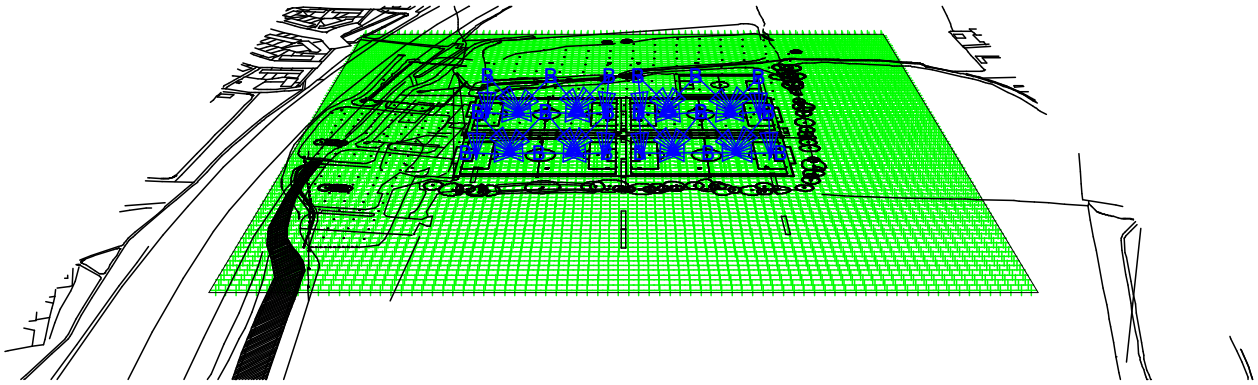
4.1 Project Luminaires 13

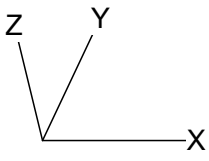
5. Installation Data **14**

5.1 Legends 14
5.2 Luminaire Positioning and Orientation 14

1. Project Description

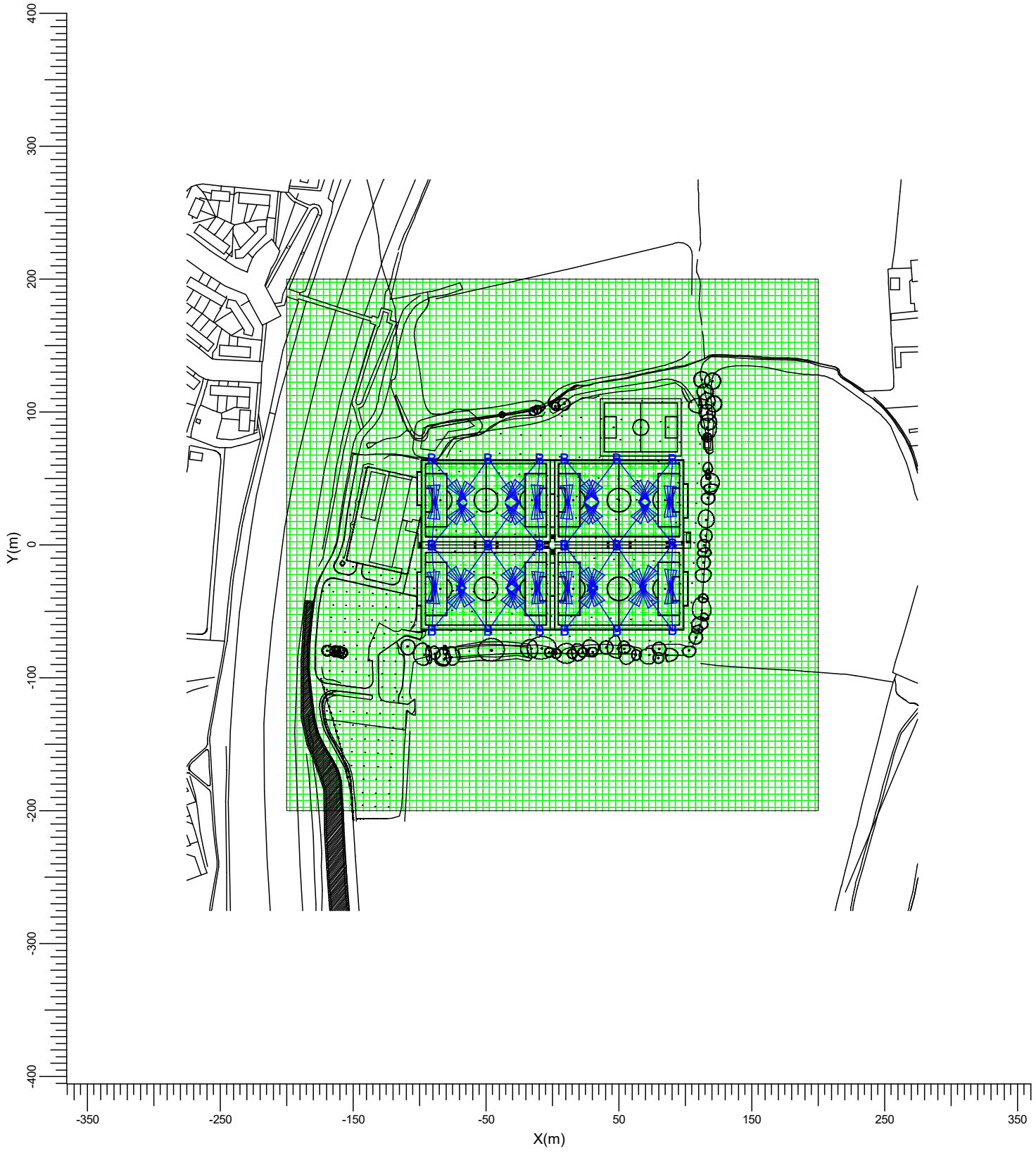
1.1 3-D Project Overview





B BVP518 OUT T35 A35-NB LTM E BVP528 OUT T35 A35-NB LO

1.2 Top Project Overview



Scale
1:4000

2. Summary

2.1 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
B	48	BVP518 OUT T35 A35-NB LTM	1 * LED1720-4S/740	1006.0	1 * 172000

The total installed power: 48.29 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code	Power (kWatt)
	B	
Football SW	12	12.07
Football SE	12	12.07
Football NE	12	12.07
Football NW	12	12.07
Spillage Switching	48	48.29

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
	B	
NE Mast1	4	4.02
NE Mast2	4	4.02
NE Mast3	4	4.02
NW Mast1	8	8.05
NW Mast2	4	4.02
SE Mast1	4	4.02
SE Mast2	4	4.02
SE Mast3	4	4.02
SW Mast1	8	8.05
SW Mast2	4	4.02

2.2 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Football SW	0.95
2	Football SE	0.95
3	Football NE	0.95
4	Football NW	0.95
5	Spillage Switching	1.00

(Il)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min/Ave	Min/Max
Football SW	1	Surface Illuminance	lux	211	0.64	0.47
Football SE	2	Surface Illuminance	lux	209	0.62	0.45
Football NE	3	Surface Illuminance	lux	208	0.63	0.48

Calculation	Switching Mode	Type	Unit	Ave	Min/Ave	Min/Max
Football NW	4	Surface Illuminance	lux	207	0.68	0.53
Ground Spillage	5	Surface Illuminance	lux	36.4	0.00	0.00

Glare Rating for Grid of Observers:

Calculation	Switching Mode	Observer Grid	Reference Grid	Reflectance	GR-Max
SW Glare	5	Football SW	Football SW	0.25	45.6

Obtrusive Light Calculations:

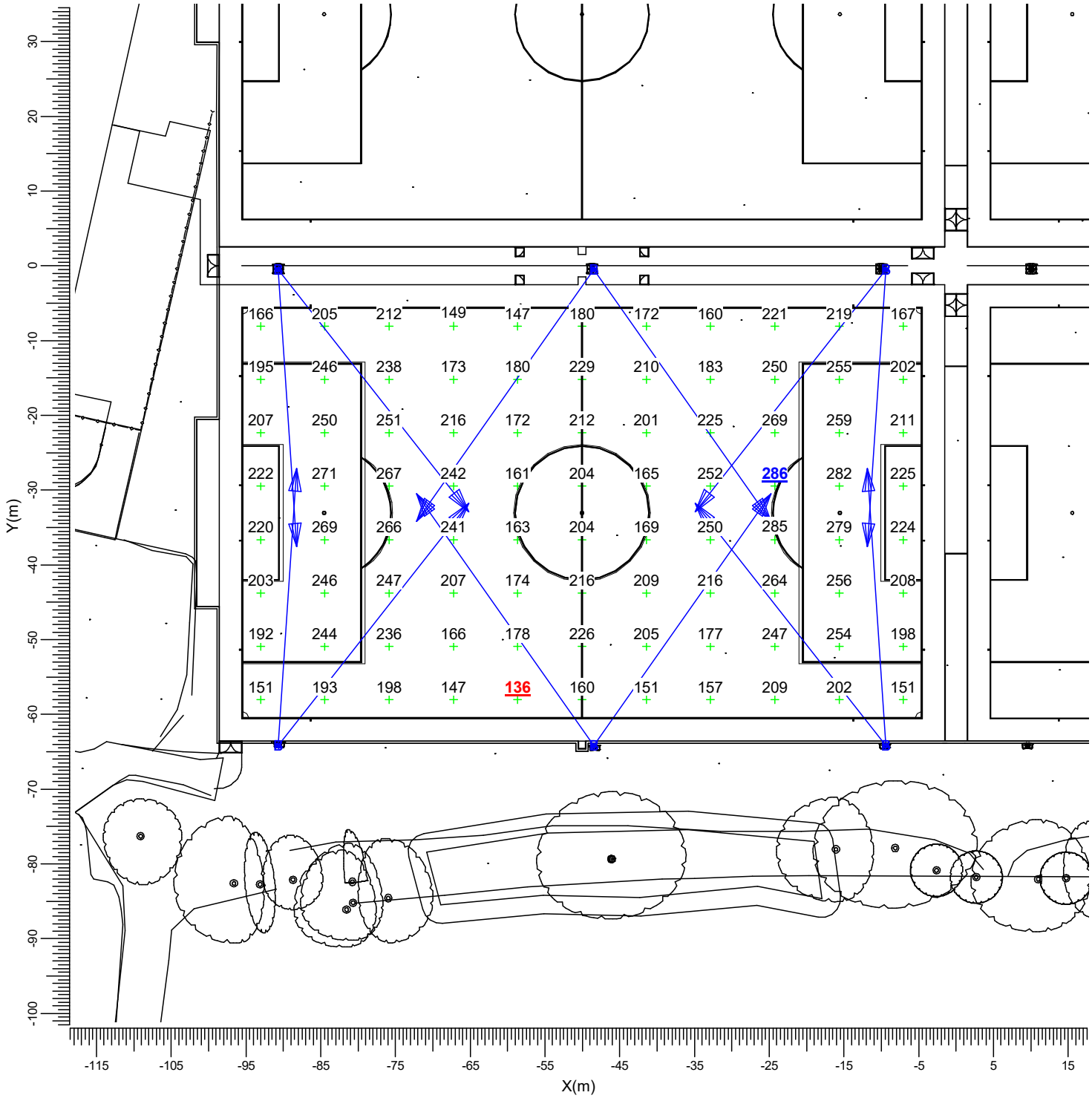
Switching Mode	ULR
1	0.00
2	0.00
3	0.00
4	0.00
5	0.00

3. Calculation Results

3.1 Football SW: Graphical Table

Football SW

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



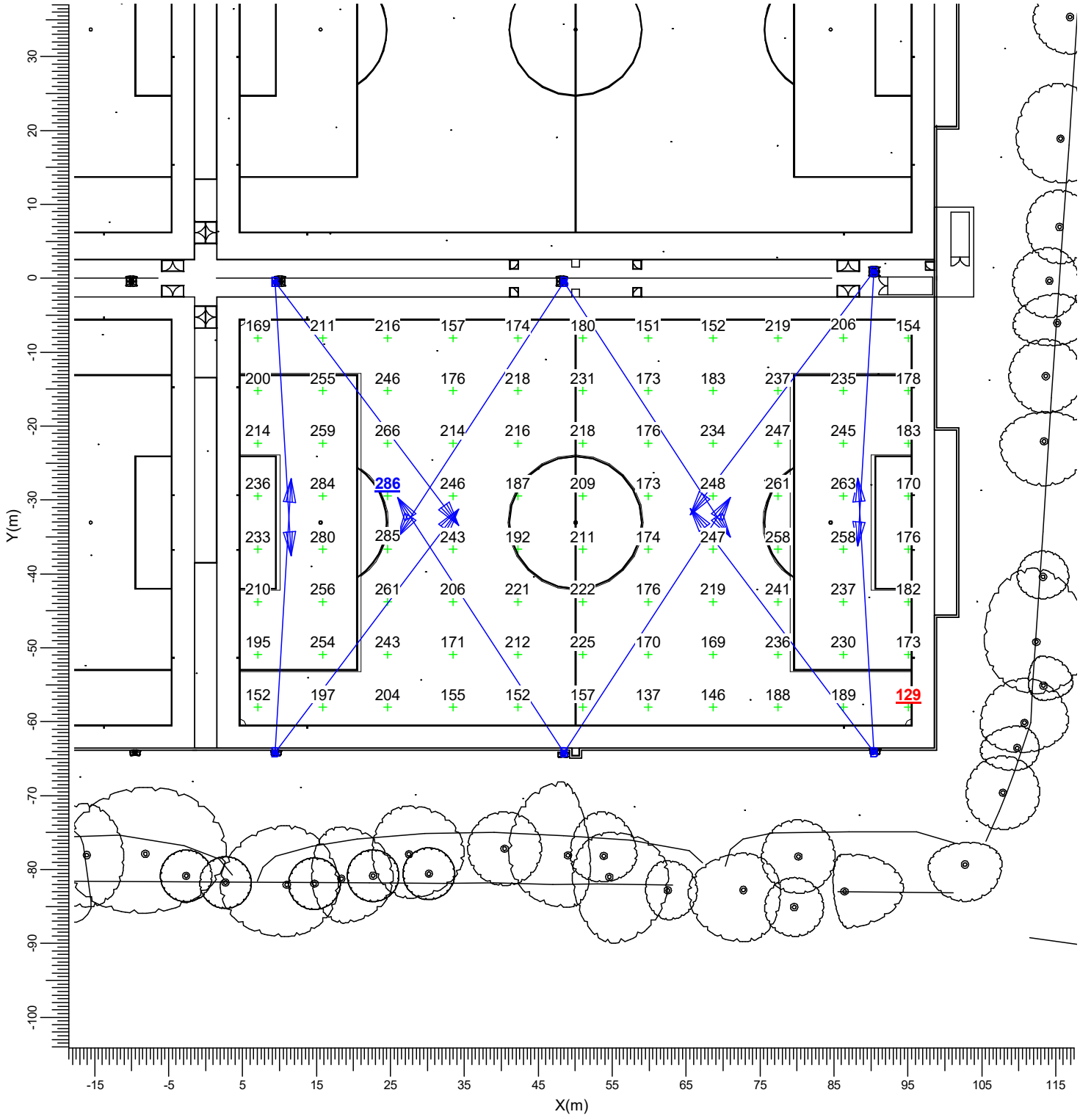
B BVP518 OUT T35 A35-NB LTM E BVP528 OUT T35 A35-NB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
211	0.64	0.47	0.95	1:750

3.2 Football SE: Graphical Table

Football SE

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



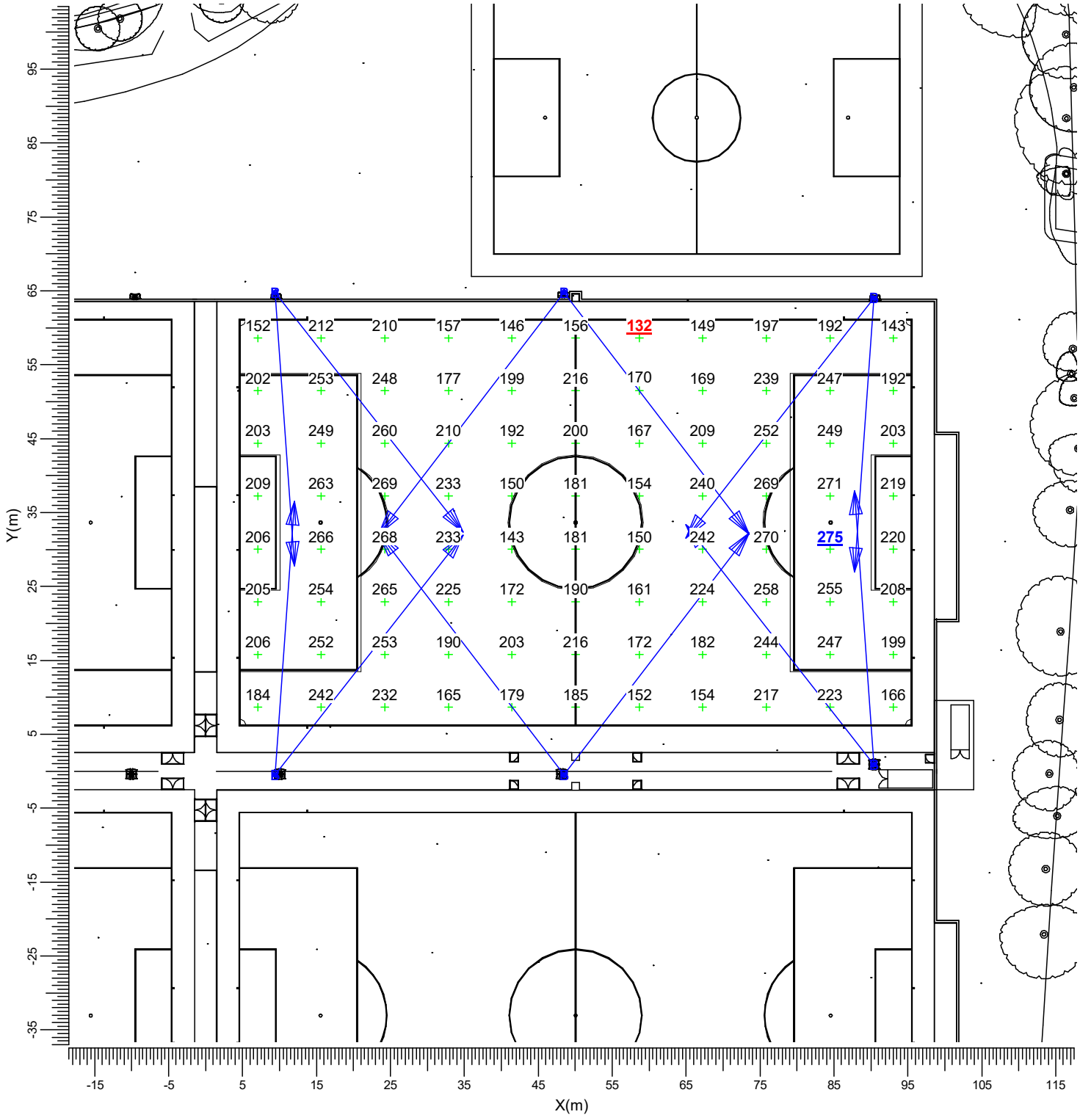
B BVP518 OUT T35 A35-NB LTM E BVP528 OUT T35 A35-NB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
209	0.62	0.45	0.95	1:750

3.3 Football NE: Graphical Table

Football NE

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



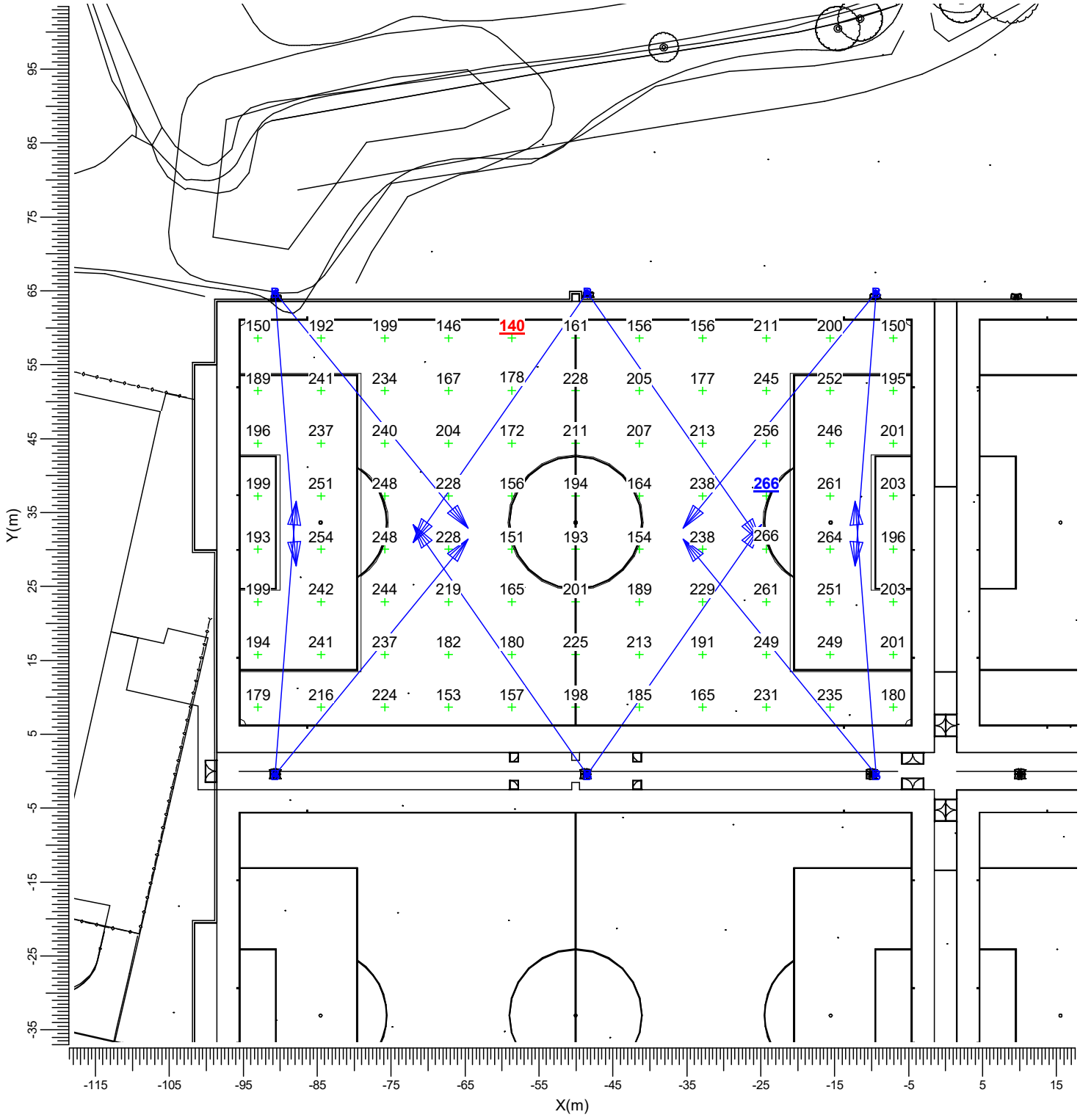
B BVP518 OUT T35 A35-NB LTM E BVP528 OUT T35 A35-NB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
208	0.63	0.48	0.95	1:750

3.4 Football NW: Graphical Table

Football NW

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



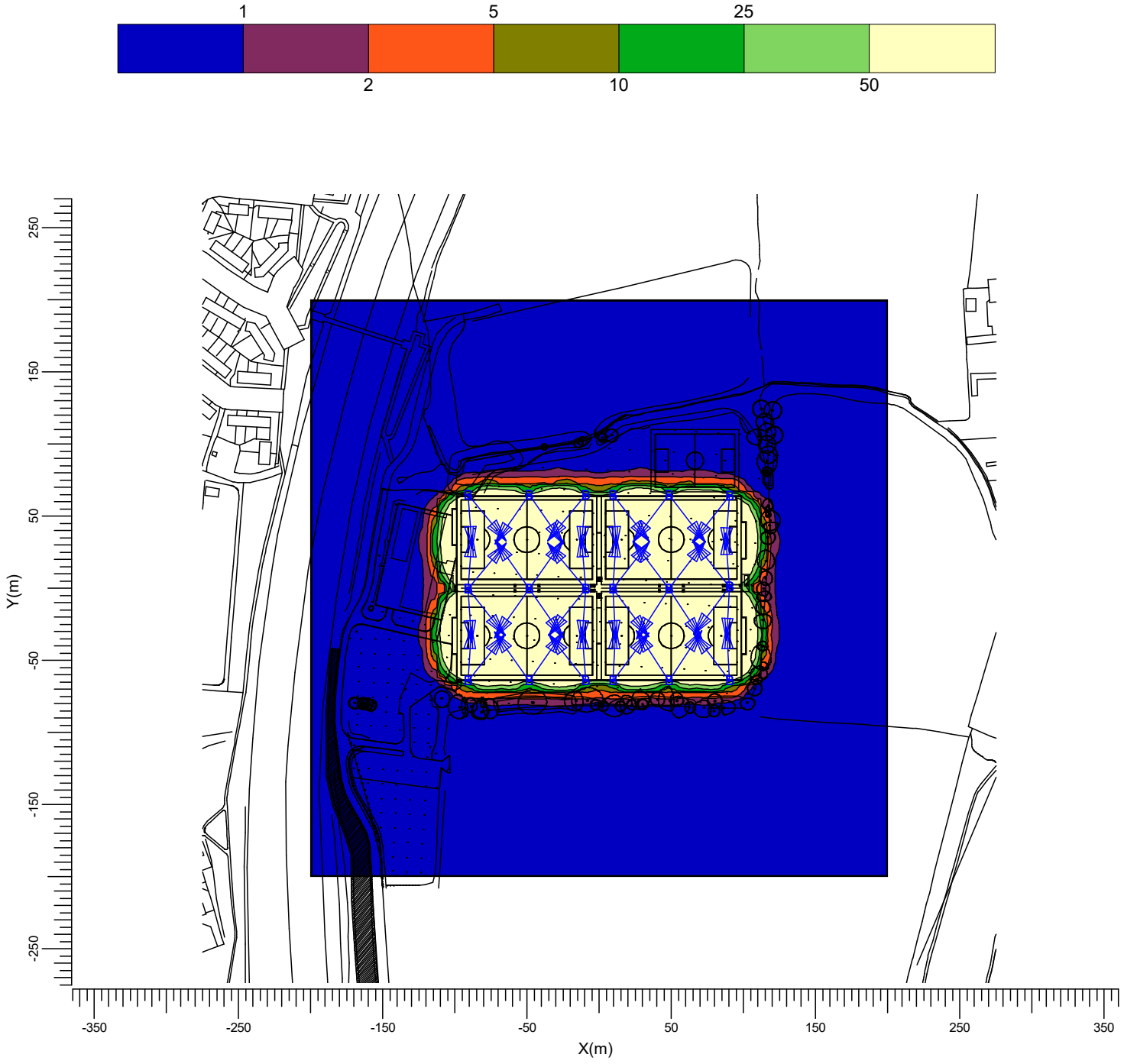
B BVP518 OUT T35 A35-NB LTM E BVP528 OUT T35 A35-NB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
207	0.68	0.53	0.95	1:750

3.5 Ground Spillage: Filled Iso Contour

Spillage Switching

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



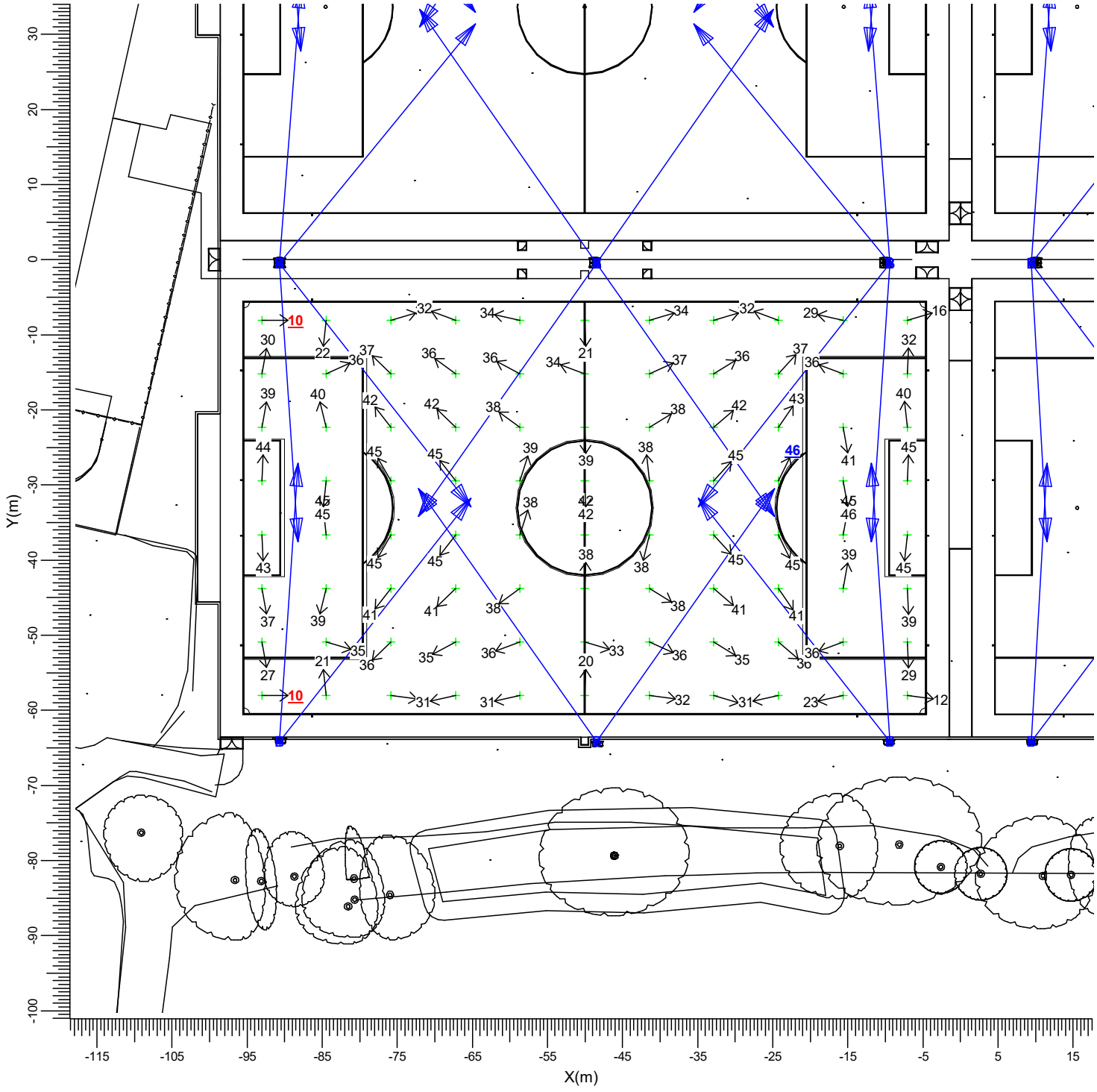
B BVP518 OUT T35 A35-NB LTM E BVP528 OUT T35 A35-NB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
36.4	0.00	0.00	1.00	1:4000

3.6 SW Glare: Graphical Table

Spillage Switching

Grid of Observers : Football SW
Calculation : Glare Rating
Grid for Background Luminance: Football SW (Reflectance: 0.25)
Vertical Viewing Angle : -2.0 deg



B BVP518 OUT T35 A35-NB LTM E BVP528 OUT T35 A35-NB LO

Project maintenance factor
1.00

Scale
1:750

4. Luminaire Details

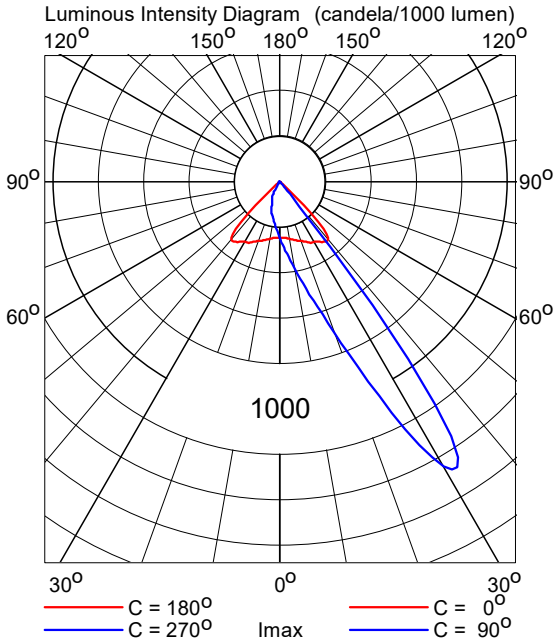
4.1 Project Luminaires

OptiVision LED gen3.5 2022
BVP518 OUT T35 1xLED1720-4S/740/740 E3/D4I A35-NB LTM

Light output ratios

DLOR	:	0.71
ULOR	:	0.00
TLOR	:	0.71
Ballast	:	E3/D4I
Lamp flux	:	172000 lm
Luminaire wattage	:	1006.0 W
Measurement code	:	LVM2047600

Note: Luminaire data not from database.



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
B	48	BVP518 OUT T35 A35-NB LTM	1 * LED1720-4S/740	1 * 172000

Switching Modes:

Code	Switching Mode
1	Football SW
2	Football SE
3	Football NE
4	Football NW
5	Spillage Switching

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	5
1 * B	-90.70	-64.20	15.00	86.2	68.0	-0.0	+	-	-	-	+
1 * B	-90.70	-64.20	15.00	51.8	70.0	-0.0	+	-	-	-	+
1 * B	-90.70	-0.50	15.00	85.6	68.0	0.0	-	-	-	+	+
1 * B	-90.70	-0.50	15.00	50.7	70.0	0.0	-	-	-	+	+
1 * B	-90.70	-0.50	15.00	-86.2	68.0	0.0	+	-	-	-	+
1 * B	-90.70	-0.50	15.00	-51.8	70.0	0.0	+	-	-	-	+
1 * B	-90.70	64.80	15.00	-85.6	68.0	-0.0	-	-	-	+	+
1 * B	-90.70	64.80	15.00	-50.7	70.0	-0.0	-	-	-	+	+
1 * B	-48.50	-64.20	15.00	54.9	70.0	-0.0	+	-	-	-	+
1 * B	-48.50	-64.20	15.00	125.1	70.0	0.0	+	-	-	-	+
1 * B	-48.50	-0.50	15.00	55.2	70.0	0.0	-	-	-	+	+
1 * B	-48.50	-0.50	15.00	124.8	70.0	-0.0	-	-	-	+	+
1 * B	-48.50	-0.50	15.00	-54.9	70.0	0.0	+	-	-	-	+
1 * B	-48.50	-0.50	15.00	-125.1	70.0	-0.0	+	-	-	-	+
1 * B	-48.50	64.80	15.00	-55.2	70.0	-0.0	-	-	-	+	+
1 * B	-48.50	64.80	15.00	-124.8	70.0	0.0	-	-	-	+	+
1 * B	-9.40	-64.20	15.00	93.8	68.0	0.0	+	-	-	-	+
1 * B	-9.40	-64.20	15.00	128.2	70.0	0.0	+	-	-	-	+
1 * B	-9.40	-0.50	15.00	94.4	68.0	-0.0	-	-	-	+	+
1 * B	-9.40	-0.50	15.00	129.3	70.0	-0.0	-	-	-	+	+
1 * B	-9.40	-0.50	15.00	-93.8	68.0	-0.0	+	-	-	-	+
1 * B	-9.40	-0.50	15.00	-128.2	70.0	-0.0	+	-	-	-	+
1 * B	-9.40	64.80	15.00	-94.4	68.0	0.0	-	-	-	+	+
1 * B	-9.40	64.80	15.00	-129.3	70.0	0.0	-	-	-	+	+
1 * B	9.40	-64.20	15.00	86.7	68.0	0.0	-	+	-	-	+
1 * B	9.40	-64.20	15.00	53.0	70.0	0.0	-	+	-	-	+
1 * B	9.40	-0.50	15.00	85.9	68.0	-0.0	-	-	+	-	+

Qty and Code	Position			Aiming Angles			Switching Modes				
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	1	2	3	4	5
1 * B	9.40	-0.50	15.00	51.9	70.0	-0.0	-	-	+	-	+
1 * B	9.40	-0.50	15.00	-86.7	68.0	-0.0	-	+	-	-	+
1 * B	9.40	-0.50	15.00	-53.0	70.0	-0.0	-	+	-	-	+
1 * B	9.40	64.80	15.00	-85.9	68.0	0.0	-	-	+	-	+
1 * B	9.40	64.80	15.00	-51.9	70.0	0.0	-	-	+	-	+
1 * B	48.50	-64.20	15.00	56.9	70.0	-0.0	-	+	-	-	+
1 * B	48.50	-64.20	15.00	123.1	70.0	0.0	-	+	-	-	+
1 * B	48.50	-0.50	15.00	52.6	70.0	0.0	-	-	+	-	+
1 * B	48.50	-0.50	15.00	127.4	70.0	-0.0	-	-	+	-	+
1 * B	48.50	-0.50	15.00	-56.9	70.0	0.0	-	+	-	-	+
1 * B	48.50	-0.50	15.00	-123.1	70.0	-0.0	-	+	-	-	+
1 * B	48.50	64.80	15.00	-52.6	70.0	-0.0	-	-	+	-	+
1 * B	48.50	64.80	15.00	-127.4	70.0	0.0	-	-	+	-	+
1 * B	90.40	-64.10	15.00	93.3	68.0	-0.0	-	+	-	-	+
1 * B	90.40	-64.10	15.00	127.0	70.0	-0.0	-	+	-	-	+
1 * B	90.40	0.90	15.00	94.1	68.0	0.0	-	-	+	-	+
1 * B	90.40	0.90	15.00	128.1	70.0	0.0	-	-	+	-	+
1 * B	90.40	0.90	15.00	-93.3	68.0	0.0	-	+	-	-	+
1 * B	90.40	0.90	15.00	-127.0	70.0	0.0	-	+	-	-	+
1 * B	90.40	64.00	15.00	-94.1	68.0	-0.0	-	-	+	-	+
1 * B	90.40	64.00	15.00	-128.1	70.0	-0.0	-	-	+	-	+