

Redbank Playing Field

LED Lighting to Full Sized Pitch

Project code: CLS017
Date: 11-08-2022

Designer: Michael Eastman

Description: Revision 1

Match play:
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

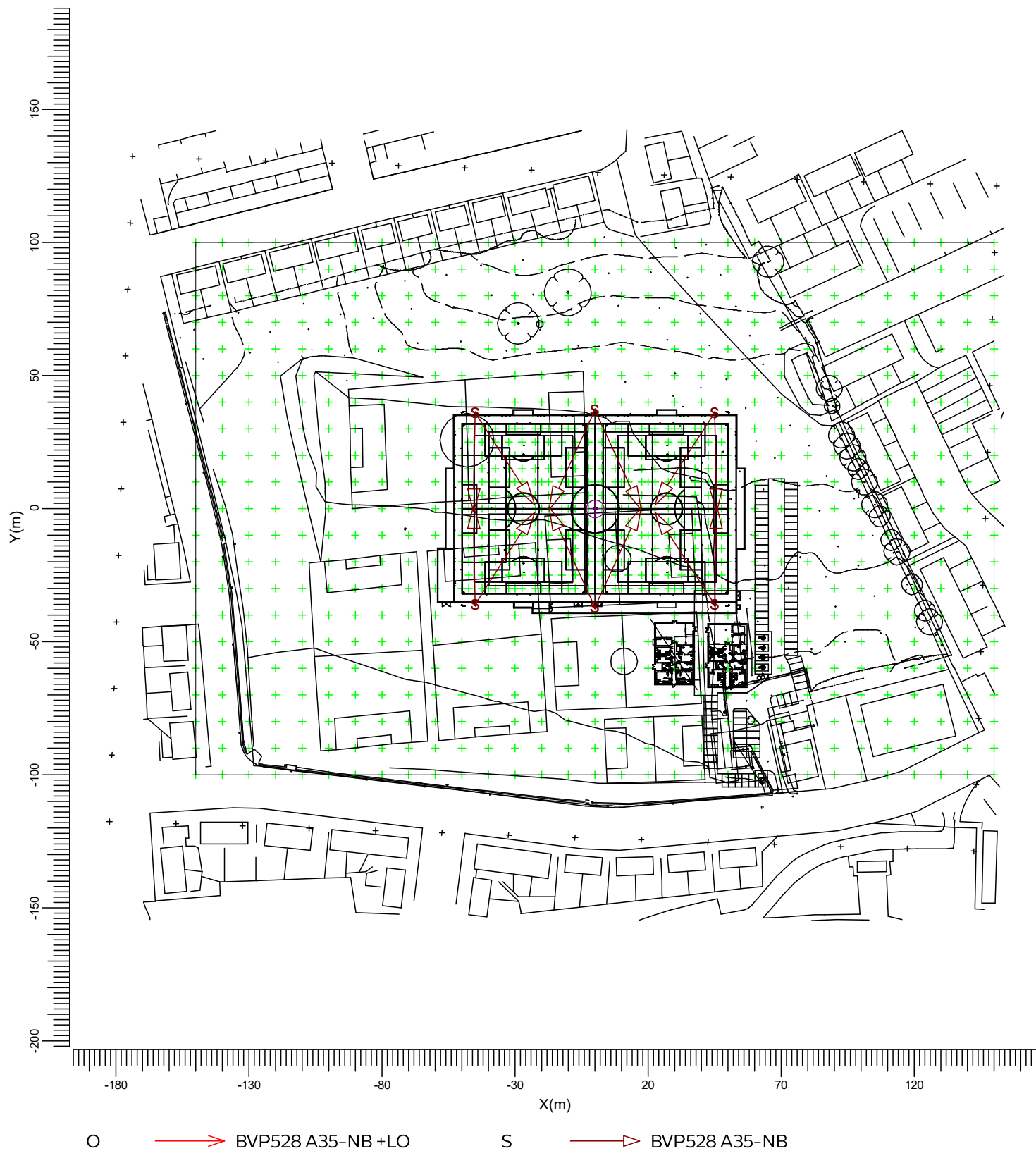
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1. Project Description

1.1 Top Project Overview



Scale
1:2000

2. Summary

2.1 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
S	12	BVP528 A35-NB	1 * LED2220/740 OUT T15 50K	1500.0	1 * 222600

The total installed power: 18.00 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code	Power (kWatt)
	S	
Full Sized Pitch	12	18.00
spill	12	18.00

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
	S	
Free	0	0.00
Mast 1	8	12.00
Mast 2	4	6.00

2.2 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Full Sized Pitch	0.90
2	spill	1.00

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave Min/AveMin/Max		
Spillage	2	Surface Illuminance	lux			
Vertical Spillage	2	Horizontal Illuminance	lux			
Football	1	Surface Illuminance	lux	240	0.64	0.47

3. Calculation Results

3.1 Spillage: Iso Contour

spill

Grid

Calculation

: Spillage at Z = -0.00 m

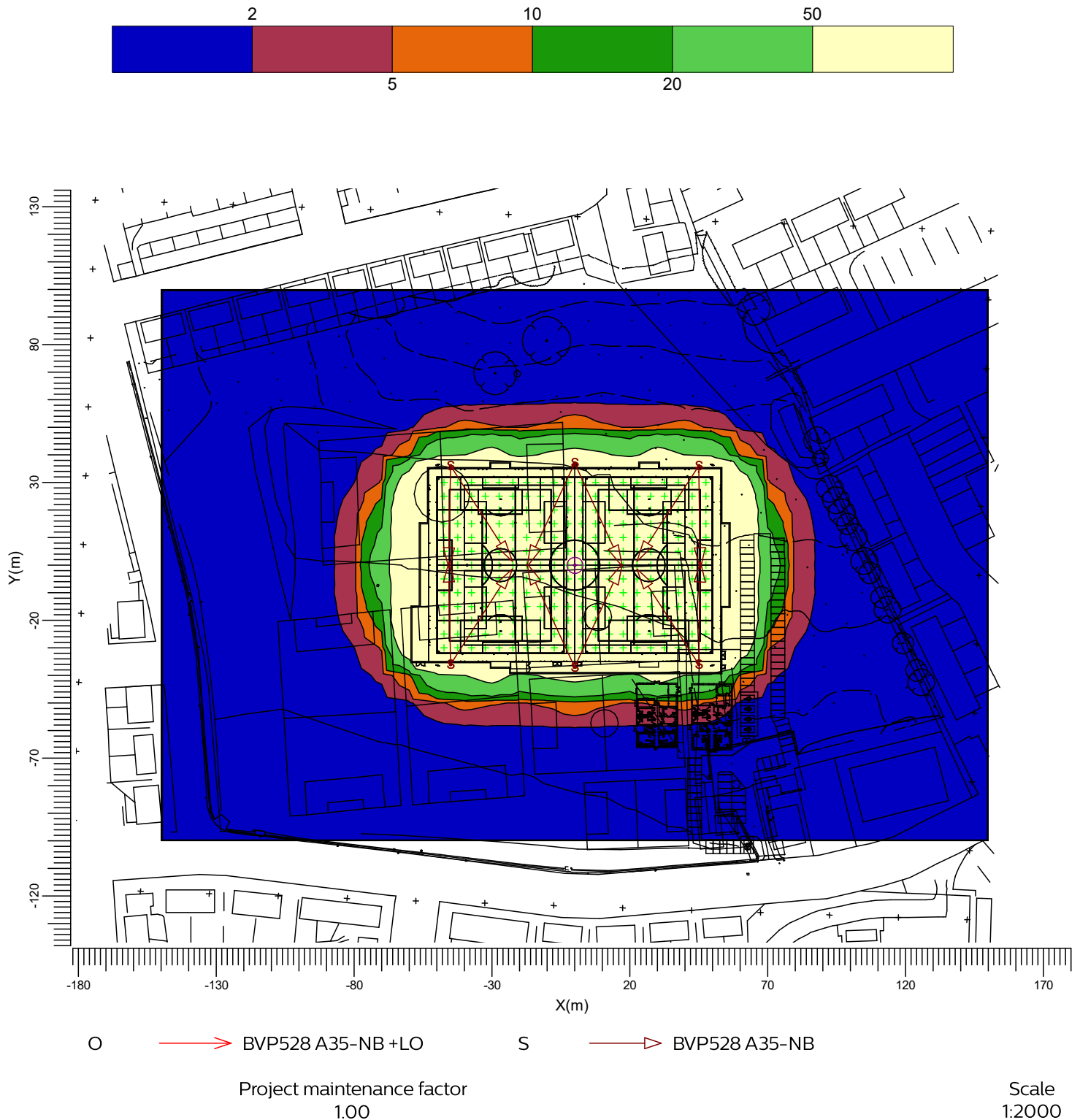
: Surface Illuminance (lux)



3.2 Spillage: Filled Iso Contour

spill

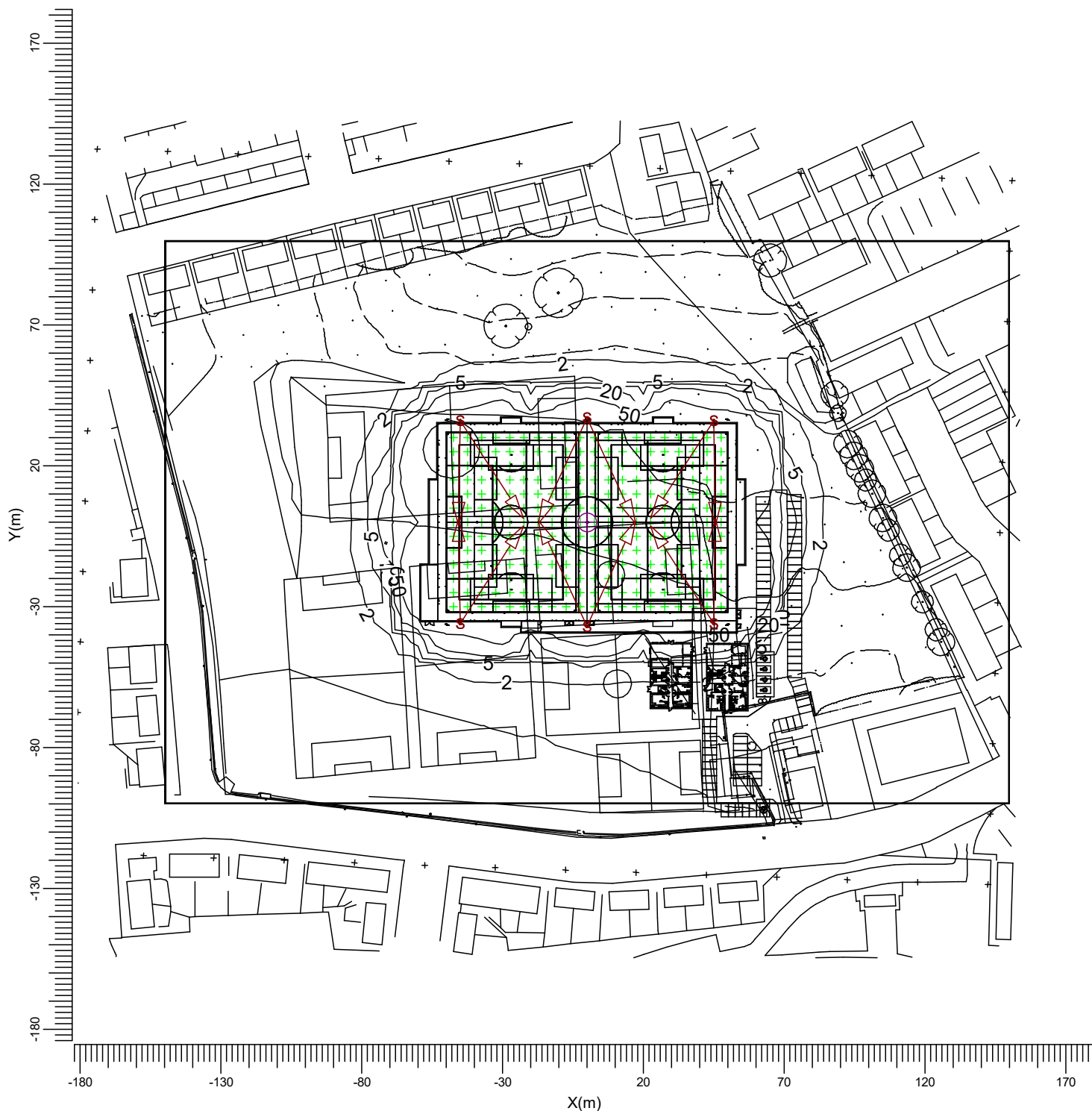
Grid : Spillage at Z = -0.00 m
Calculation : Surface Illuminance (lux)



3.3 Vertical Spillage: Iso Contour

spill

Grid : Spillage at Z = -0.00 m
Calculation : Horizontal Illuminance (lux)
Height above grid : 1.80 m



O



BVP528 A35-NB +LO

S



BVP528 A35-NB

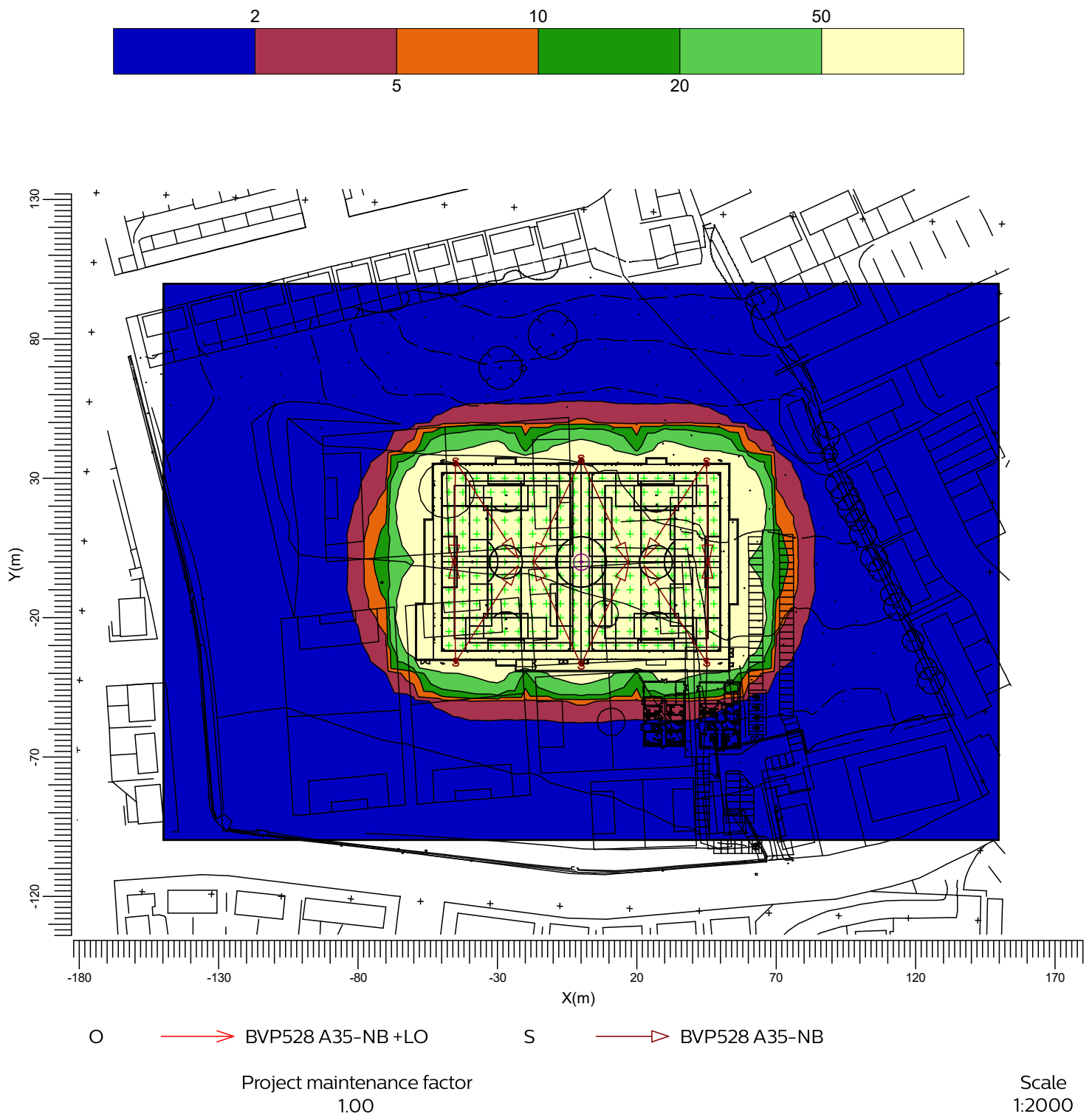
Project maintenance factor
1.00

Scale
1:2000

3.4 Vertical Spillage: Filled Iso Contour

spill

Grid : Spillage at Z = -0.00 m
Calculation : Horizontal Illuminance (lux)
Height above grid : 1.80 m



3.5 Football: Textual Table

Full Sized Pitch

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

X (m)	-47.50	-42.50	-37.50	-32.50	-27.50	-22.50	-17.50	-12.50	-7.50	-2.50	2.50	7.50	12.50
Y (m)													
30.00	266	322>	283	226	189	179	173	166	227	294	294	227	166
25.00	293	318	305	273	239	192	187	234	263	298	298	263	234
20.00	282	303	296	290	267	199	190	232	279	286	286	279	232
15.00	261	281	286	278	265	207	192	219	264	263	263	264	219
10.00	247	268	269	258	243	199	181	199	244	239	239	244	199
5.00	233	252	248	234	217	186	161	174	220	221	221	220	174
0.00	223	242	236	223	206	180	152	158	208	213	213	208	158
-5.00	233	252	248	234	217	186	161	174	220	221	221	220	174
-10.00	247	268	269	258	243	199	181	199	244	239	239	244	199
-15.00	261	281	286	278	265	207	192	219	264	263	263	264	219
-20.00	282	303	296	290	267	199	190	232	279	286	286	279	232
-25.00	293	318	305	273	239	192	187	234	263	298	298	263	234
-30.00	266	322>	283	226	189	179	173	166	227	294	294	227	166

Continue >

Average
240

Min/Ave
0.64

Min/Max
0.47

Project maintenance factor
0.90

< Continue

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

X (m)	17.50	22.50	27.50	32.50	37.50	42.50	47.50
Y (m)							
30.00	173	179	189	226	283	322>	266
25.00	187	192	239	273	305	318	293
20.00	190	199	267	290	296	303	282
15.00	192	207	265	278	286	281	261
10.00	181	199	243	258	269	268	247
5.00	161	186	217	234	248	252	233
0.00	152<	180	206	223	236	242	223
-5.00	161	186	217	234	248	252	233
-10.00	181	199	243	258	269	268	247
-15.00	192	207	265	278	286	281	261
-20.00	190	199	267	290	296	303	282
-25.00	187	192	239	273	305	318	293
-30.00	173	179	189	226	283	322>	266

Average
240

Min/Ave
0.64

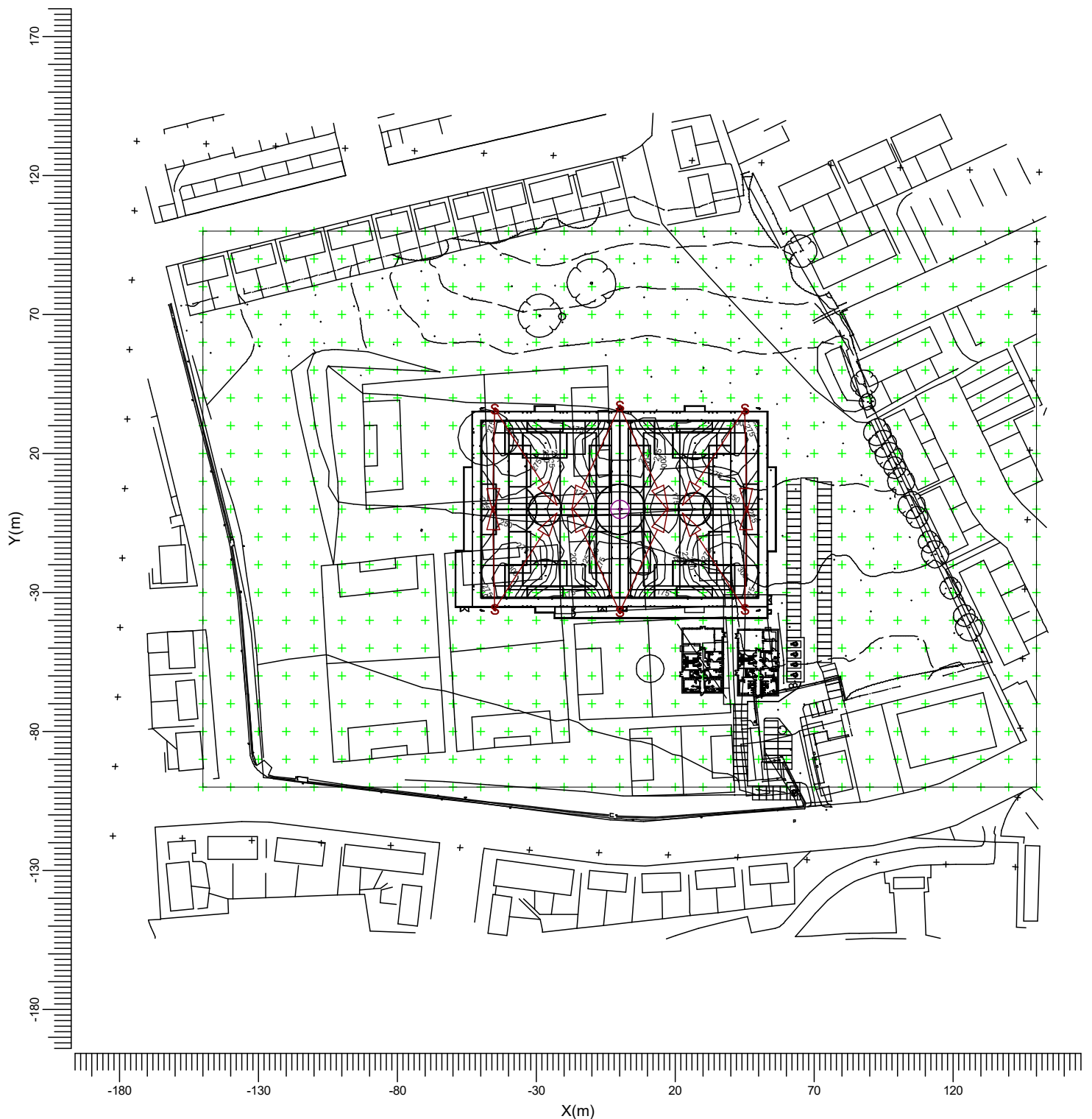
Min/Max
0.47

Project maintenance factor
0.90

3.6 Football: Iso Contour

Full Sized Pitch

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



O



BVP528 A35-NB +LO

S



BVP528 A35-NB

Average
240

Min/Ave
0.64

Min/Max
0.47

Project maintenance factor
0.90

Scale
1:2000

4. Luminaire Details

4.1 Project Luminaires

OptiVision LED

BVP528 1xLED2220/740 OUT T15 50K A35-NB

Light output ratios

DLOR : 0.88

ULOR : 0.00

TLOR : 0.88

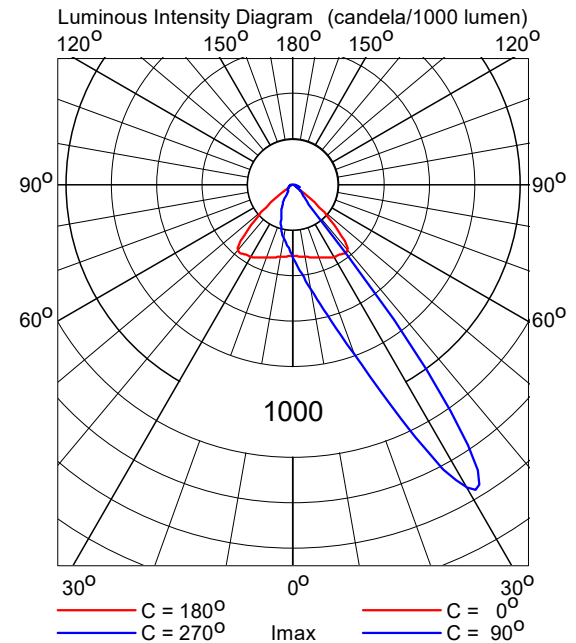
Ballast : N/A

Lamp flux : 222600 lm

Luminaire wattage : 1500.0 W

Measurement code : LVM2044500

Note: Luminaire data not from database.



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
S	12	BVP528 A35-NB	1 * LED2220/740 OUT T15 50K	1 * 222600

Switching Modes:

Code	Switching Mode
1	Full Sized Pitch
2	spill

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
1 * S	-45.00	-36.00	15.00	57.1	70.0	-0.0	+	+
1 * S	-45.00	-36.00	15.00	91.0	68.0	-0.0	+	+
1 * S	-45.00	36.00	15.00	-57.1	70.0	0.0	+	+
1 * S	-45.00	36.00	15.00	-91.0	68.0	0.0	+	+
1 * S	-0.00	-37.00	15.00	65.2	70.0	0.0	+	+
1 * S	-0.00	-37.00	15.00	114.8	70.0	-0.0	+	+
1 * S	-0.00	37.00	15.00	-65.2	70.0	-0.0	+	+
1 * S	-0.00	37.00	15.00	-114.8	70.0	0.0	+	+
1 * S	45.00	-36.00	15.00	122.9	70.0	0.0	+	+
1 * S	45.00	-36.00	15.00	89.0	68.0	0.0	+	+
1 * S	45.00	36.00	15.00	-122.9	70.0	-0.0	+	+
1 * S	45.00	36.00	15.00	-89.0	68.0	-0.0	+	+