

Heath Lane

Artificial Turf Pitch

Project code: SSL3505
Date: 09-05-2024

Designer: ME

Description: Floodlighting Design to utilise the existing 8 column system

Lighting design meets the standards for ILP GN01:2021.

Football match play:
Maintained average illuminance >200 lux
Uniformity Ratio (Ev.min/Ev.ave) >0.60

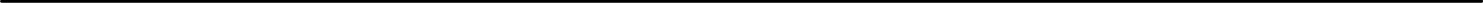
All luminaires have a zero upward light ratio without the use of additional accessories.

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 LTD

1a Perth House
Corbygate Business Park
Corby
Northants
NN17 5JG

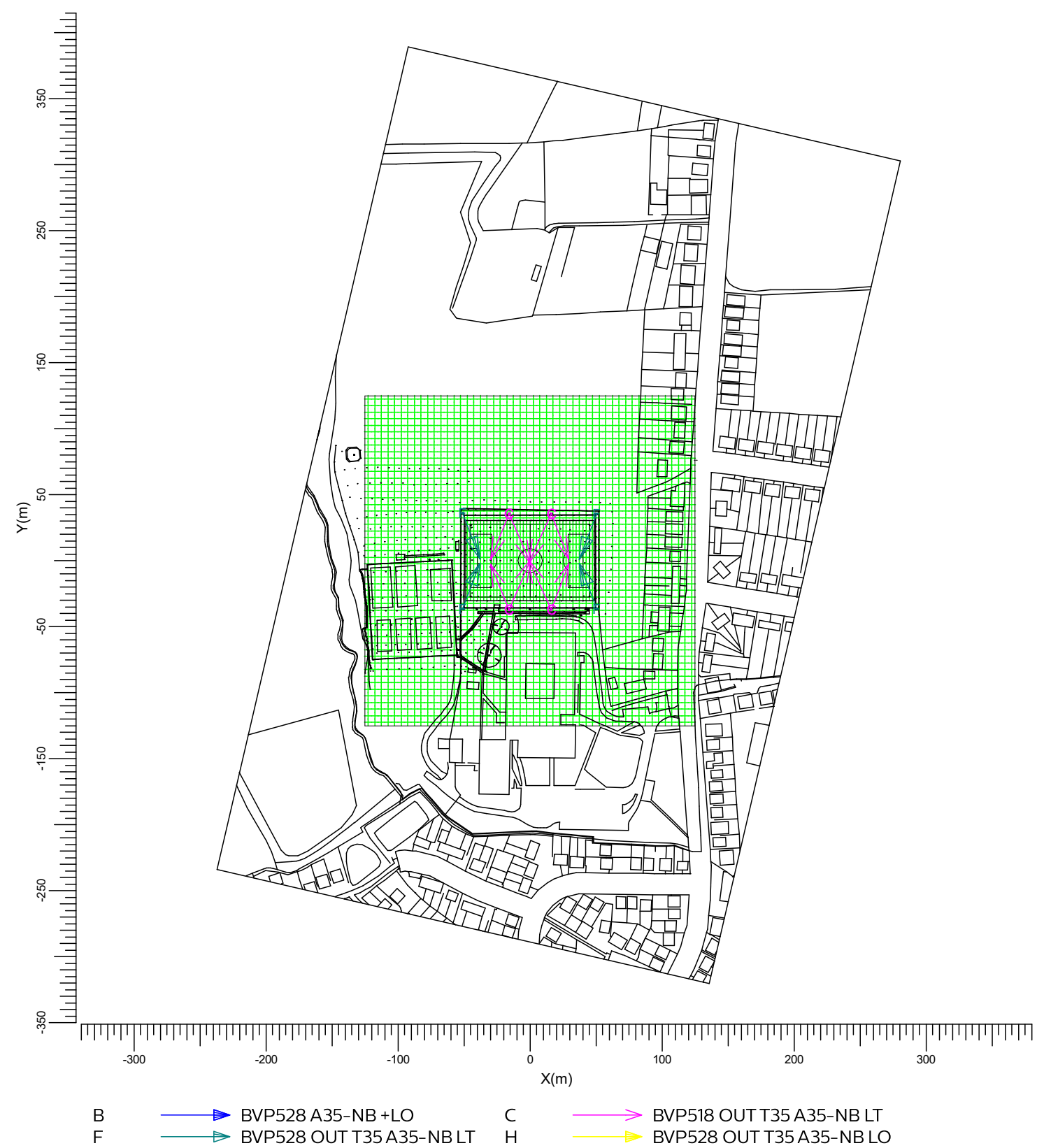
Table of Contents



1.	Project Description	3
1.1	Top Project Overview	3
2.	Summary	4
2.1	Project Luminaires	4
2.2	Calculation Results	4
3.	Calculation Results	5
3.1	Football 200 Lux: Graphical Table	5
3.2	Football 120 Lux: Graphical Table	6
3.3	Spillage Grid: Filled Iso Contour	7
3.4	Horizontal @ 1.8m: Filled Iso Contour	8
4.	Luminaire Details	9
4.1	Project Luminaires	9
5.	Installation Data	10
5.1	Legends	10
5.2	Luminaire Positioning and Orientation	10

1. Project Description

1.1 Top Project Overview



Scale
1:4000

2. Summary

2.1 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
C	8	BVP518 OUT T35 A35-NB LT	1 * LED1720-4S/740	1006.0	1 * 172000
F	4	BVP528 OUT T35 A35-NB LT	1 * LED2590-4S/740	1505.9	1 * 259000

The total installed power: 14.07 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code		Power (kWatt)
	C	F	
200lux Switching	8	4	14.07
120lux Switching	8	4	14.07
Spillage Switching	8	4	14.07

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code		Power (kWatt)
	C	F	
Mast	4	0	4.02
Mast Corner 2	4	0	4.02
Mast1	0	0	0.00
Point	0	2	3.01

2.2 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	200lux Switching	0.95
2	120lux Switching	0.55
3	Spillage Switching	1.00

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave Min/AveMin/Max		
Football 200 Lux	1	Surface Illuminance	lux	214	0.71	0.57
Football 120 Lux	2	Surface Illuminance	lux	124	0.71	0.57
Spillage Grid	3	Surface Illuminance	lux			
Horizontal @ 1.8m	3	Horizontal Illuminance	lux			

Obtrusive Light Calculations:

Switching Mode	ULR
1	0.01
2	0.01
3	0.01

3. Calculation Results

3.1 Football 200 Lux: Graphical Table

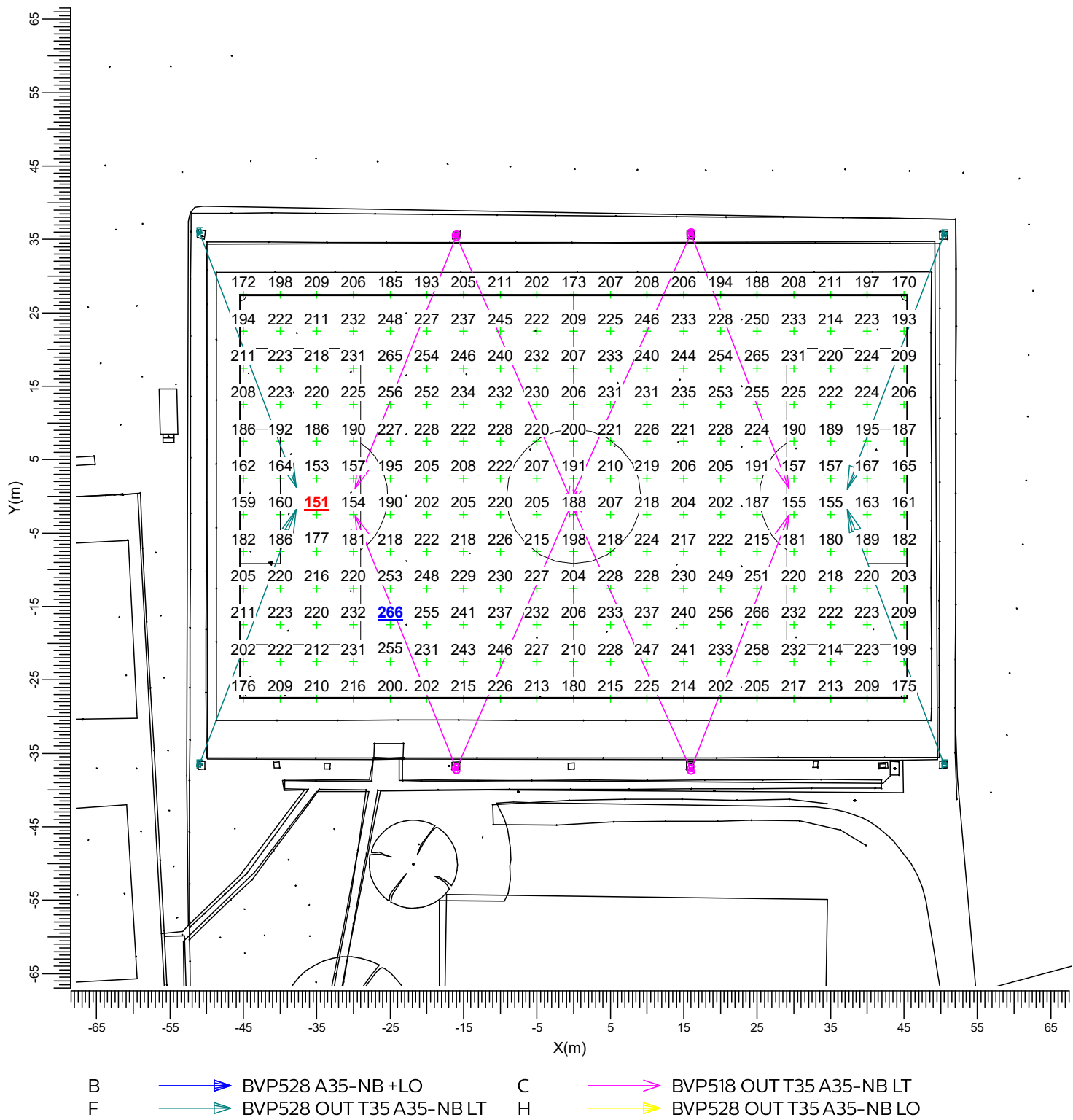
200lux Switching

Grid

Calculation

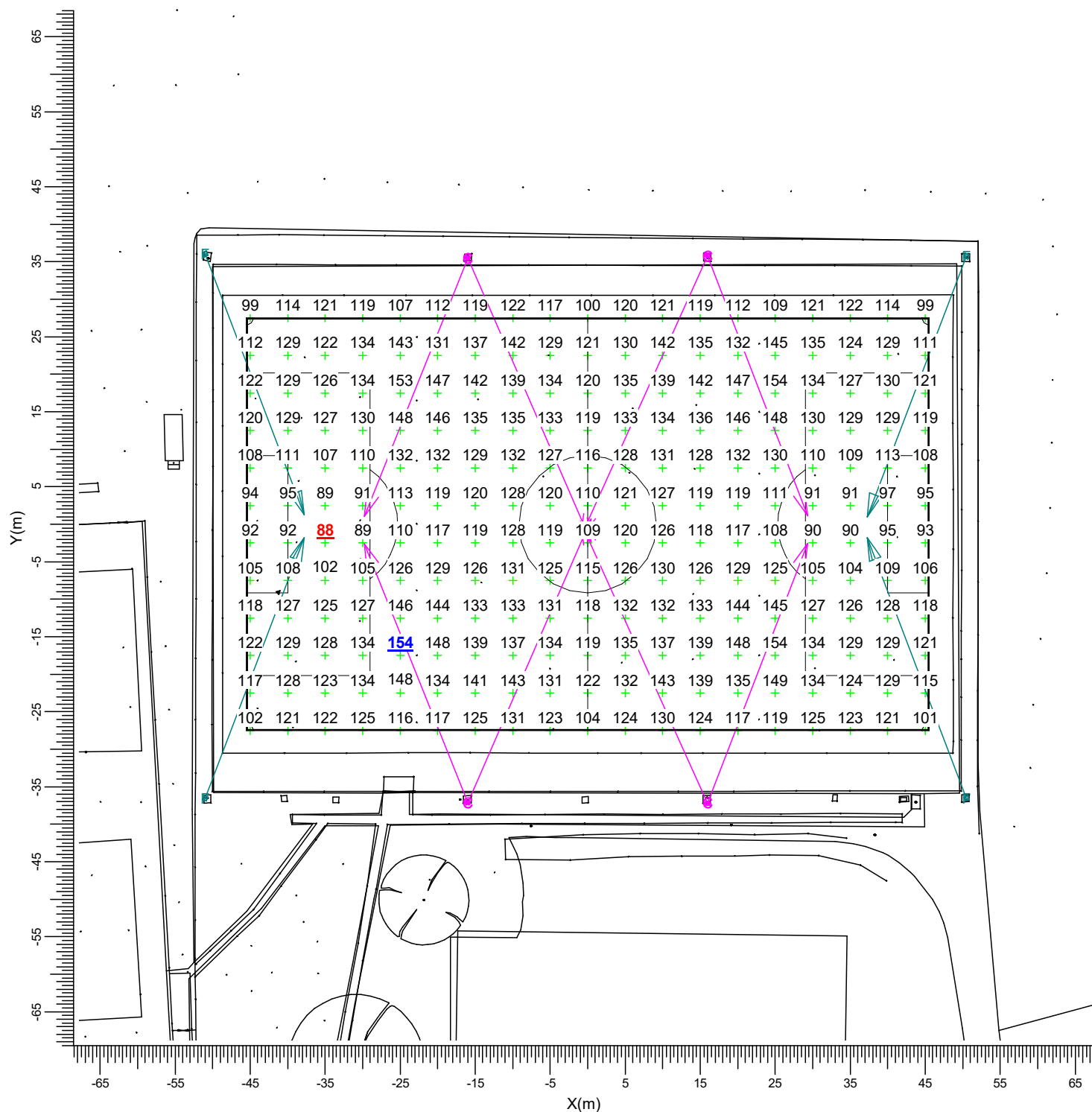
: Football at Z = -0.00 m

: Surface Illuminance (lux)



120lux Switching

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



B BVP528 A35-NB +LO C BVP518 OUT T35 A35-NB LT
F  BVP528 OUT T35 A35-NB LT H  BVP528 OUT T35 A35-NB LO

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
124	0.71	0.57	0.55	1:750

3.3 Spillage Grid: Filled Iso Contour

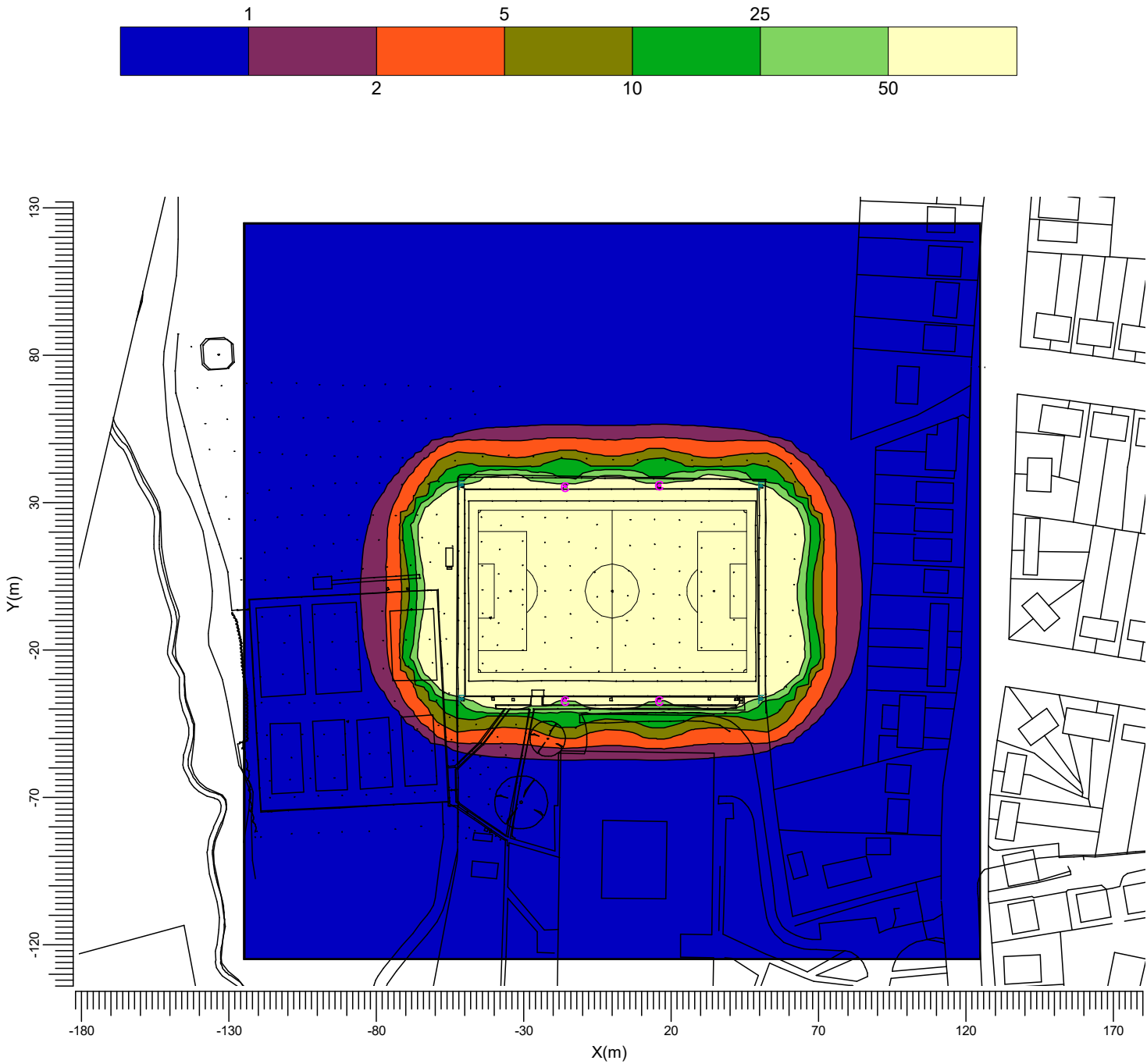
Spillage Switching

Grid

Calculation

: Spillage Grid at Z = -0.00 m

: Surface Illuminance (lux)



B : BVP528 A35-NB +LO

F : BVP528 OUT T35 A35-NB LT

C : BVP518 OUT T35 A35-NB LT

H : BVP528 OUT T35 A35-NB LO

Project maintenance factor

1.00

Scale

1:2000

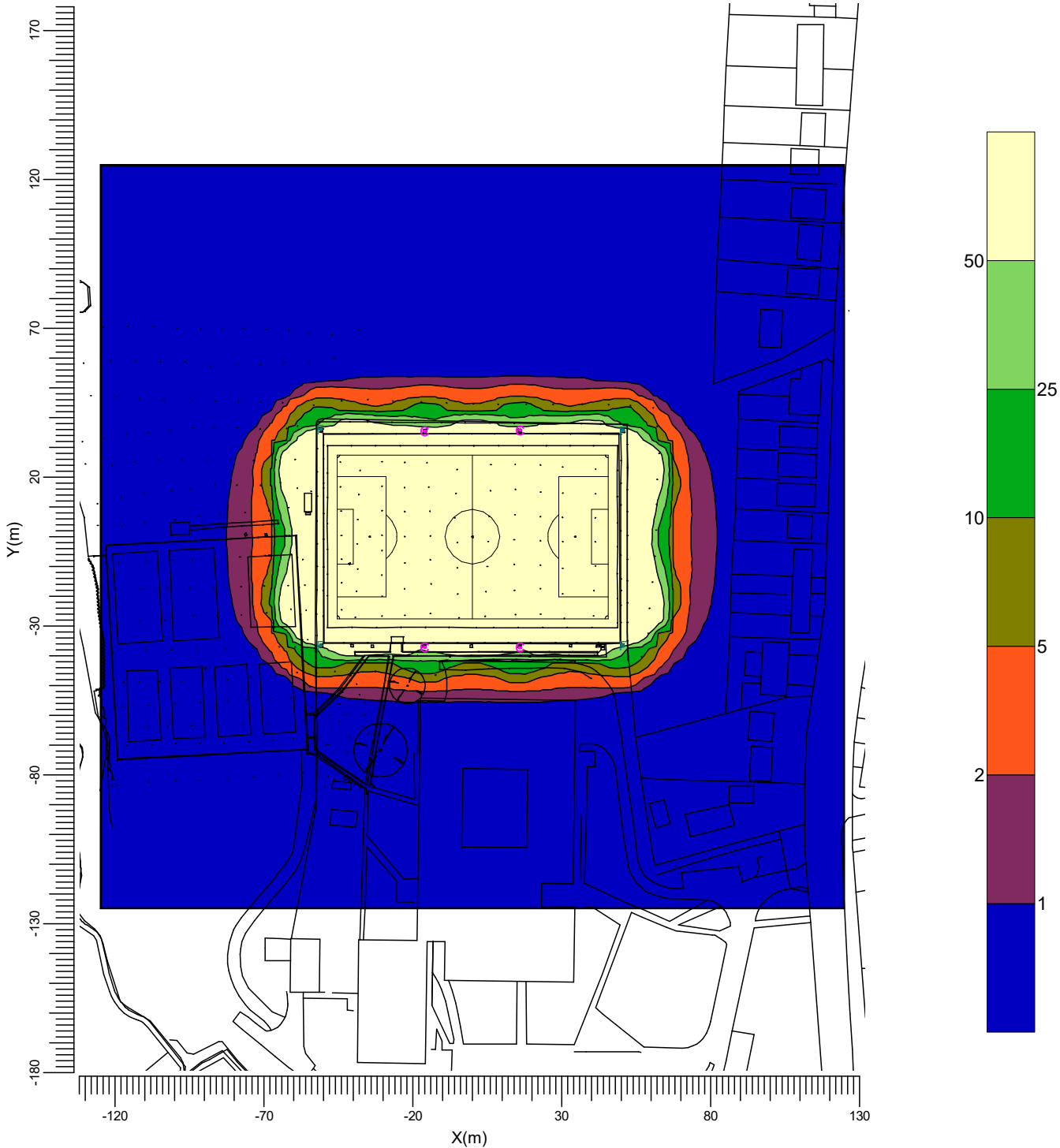
3.4 Horizontal @ 1.8m: Filled Iso Contour

Spillage Switching

Grid : Spillage Grid at Z = -0.00 m

Calculation : Horizontal Illuminance (lux)

Height above grid : 1.80 m



B : BVP528 A35-NB +LO

F : BVP528 OUT T35 A35-NB LT

C : BVP518 OUT T35 A35-NB LT

H : BVP528 OUT T35 A35-NB LO

Project maintenance factor
1.00

Scale
1:2000

4. Luminaire Details

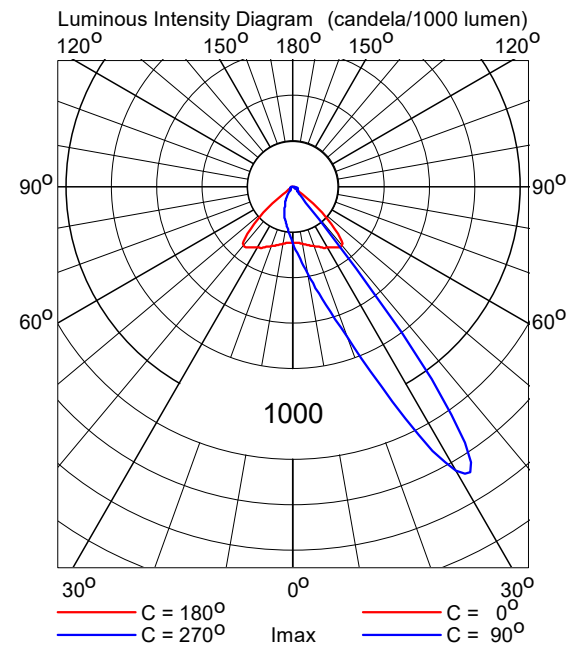
4.1 Project Luminaires

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

Light output ratios

DLOR	: 0.77
ULOR	: 0.00
TLOR	: 0.77
Ballast	: E3/D4I
Lamp flux	: 172000 lm
Luminaire wattage	: 1006.0 W
Measurement code	: LVM2048800

Note: Luminaire data not from database.

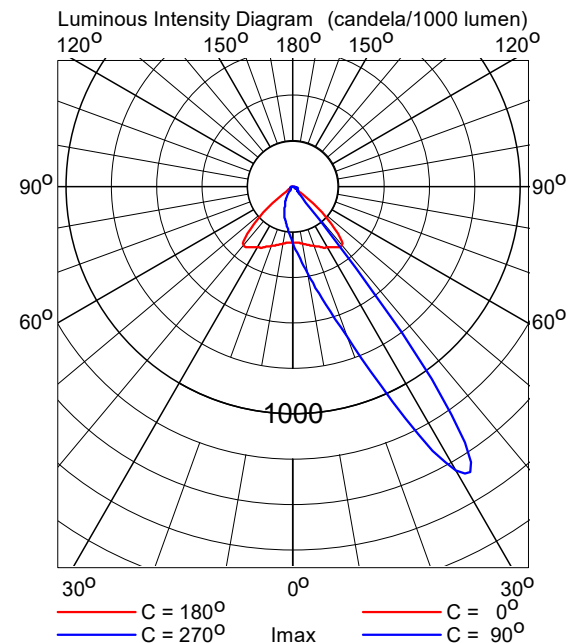


OptiVision LED gen3.5 2022
BVP528 OUT T35 1xLED2590-4S/740/740 E3/D4I A35-NB LT

Light output ratios

DLOR	: 0.77
ULOR	: 0.00
TLOR	: 0.77
Ballast	: E3/D4I
Lamp flux	: 259000 lm
Luminaire wattage	: 1505.9 W
Measurement code	: LVM2048800

Note: Luminaire data not from database.



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
C	8	BVP518 OUT T35 A35-NB LT	1 * LED1720-4S/740	1 * 172000
F	4	BVP528 OUT T35 A35-NB LT	1 * LED2590-4S/740	1 * 259000

Switching Modes:

Code	Switching Mode
1	200lux Switching
2	120lux Switching
3	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
1 * F	-51.00	-36.50	15.00	69.1	68.0	-0.0	+	+	+
1 * F	-51.00	36.00	15.00	-69.1	68.0	0.0	+	+	+
1 * C	-16.00	-37.10	15.00	66.5	70.0	-0.0	+	+	+
1 * C	-16.00	-37.10	15.00	111.8	68.0	-0.0	+	+	+
1 * C	-16.00	35.50	15.00	-66.5	70.0	0.0	+	+	+
1 * C	-16.00	35.50	15.00	-111.8	68.0	0.0	+	+	+
1 * C	16.00	-37.20	15.00	114.3	70.0	-0.0	+	+	+
1 * C	16.00	-37.20	15.00	69.0	68.0	-0.0	+	+	+
1 * C	16.00	35.80	15.00	-114.3	70.0	0.0	+	+	+
1 * C	16.00	35.80	15.00	-69.0	68.0	0.0	+	+	+
1 * F	50.50	-36.50	15.00	110.9	68.0	-0.0	+	+	+
1 * F	50.50	35.70	15.00	-110.9	68.0	0.0	+	+	+