

Burgess Hill Town FC

Artificial Turf Pitch

Project code: SSL3402
Date: 20-11-2024

Designer: WB

Description: Match play requirements:
Maintained average illuminance >200 lux
Uniformity Ratio (Ev.min/Ev.ave) >0.60

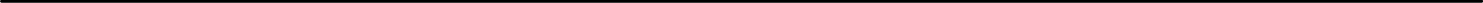
All luminaires have a zero upward light ratio without the use of additional accessories.

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.

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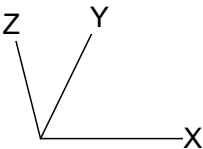
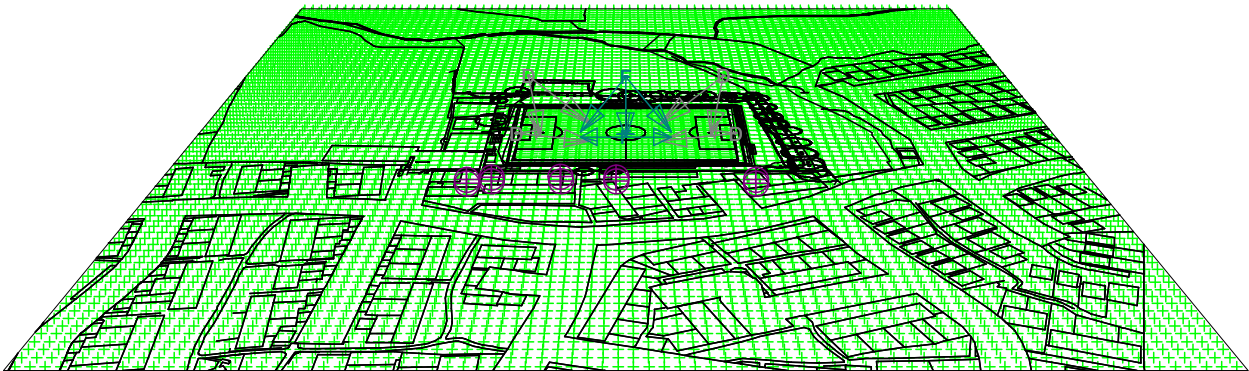
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1. Project Description

1.1 3-D Project Overview



- B

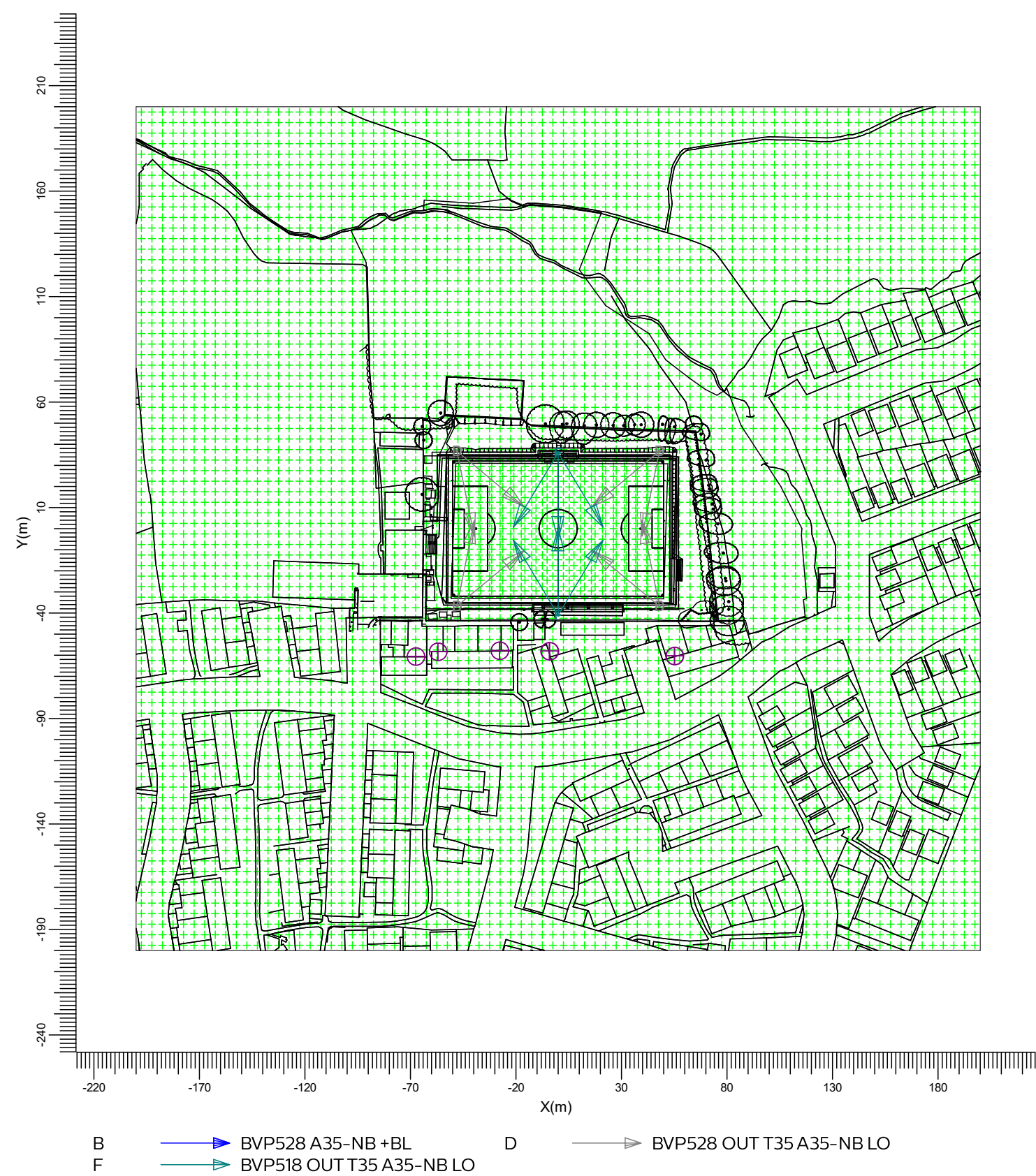
F

BVP528 A35-NB +BL

BVP518 OUT T35 A35-NB LO
- D

BVP528 OUT T35 A35-NB LO

1.2 Top Project Overview



Scale
1:2500

2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Aa	House 1 - 1.8m	-67.57	-60.63	1.80
Bb	House 1 - 3.6m	-67.57	-60.63	3.60
Cc	House 2 - 1.8m	-57.11	-58.15	1.80
Dd	House 2 - 3.6m	-57.11	-58.15	3.60
Ee	House 3 - 1.8m	-27.82	-57.80	1.80
Ff	House 3 - 3.6m	-27.82	-57.80	3.60
Gg	House 4 - 1.8m	-4.21	-58.03	1.80
Hh	House 4 - 3.6m	-4.02	-58.03	3.60
Ii	House 5 - 1.8m	55.12	-60.22	1.80
Jj	House 5 - 3.6m	55.13	-60.15	3.60

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
D	8	BVP528 OUT T35 A35-NB LO	1 * LED2590-4S/740	1505.9	1 * 259000
F	6	BVP518 OUT T35 A35-NB LO	1 * LED1720-4S/740	1006.0	1 * 172000

The total installed power: 18.08 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code		Power (kWatt)
	D	F	
200lux Switching	8	6	18.08
120lux Switching	8	6	18.08
Spillage Switching	8	6	18.08

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code		Power (kWatt)
	D	F	
Mast 1	8	0	12.05
Mast 2	0	6	6.04

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	200lux Switching	0.90
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	201	0.60	0.42
Football 120 Lux	2	Surface Illuminance	lux	123	0.60	0.42
Spillage	3	Surface Illuminance	lux	11.4	0.00	0.00
Spillage Zoomed	3	Surface Illuminance	lux	11.4	0.00	0.00

Glare Rating for Grid of Observers:

Calculation	Switching Mode	Observer Grid	Reference Grid	Reflectance	GR-Max
Glare	3	Football	Football	0.25	49.5

Obtrusive Light Calculations:

Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
3	Aa	D	48.00	36.75	15.00	-140.40	70.00	-0.00	664
3	Bb	D	48.00	36.75	15.00	-140.40	70.00	-0.00	642
3	Cc	D	48.00	36.75	15.00	-140.40	70.00	-0.00	691
3	Dd	D	48.00	36.75	15.00	-140.40	70.00	-0.00	661
3	Ee	D	-48.00	36.75	15.00	-78.47	70.00	0.00	744
3	Ff	D	-48.00	36.75	15.00	-78.47	70.00	0.00	716
3	Gg	D	-48.00	36.75	15.00	-78.47	70.00	0.00	570
3	Hh	D	-48.00	36.75	15.00	-78.47	70.00	0.00	606
1	li	D	-48.00	36.75	15.00	-39.60	70.00	0.00	691
3	Jj	D	-48.00	36.75	15.00	-39.60	70.00	0.00	660

Switching Mode	ULR
1	0.00
2	0.00
3	0.00

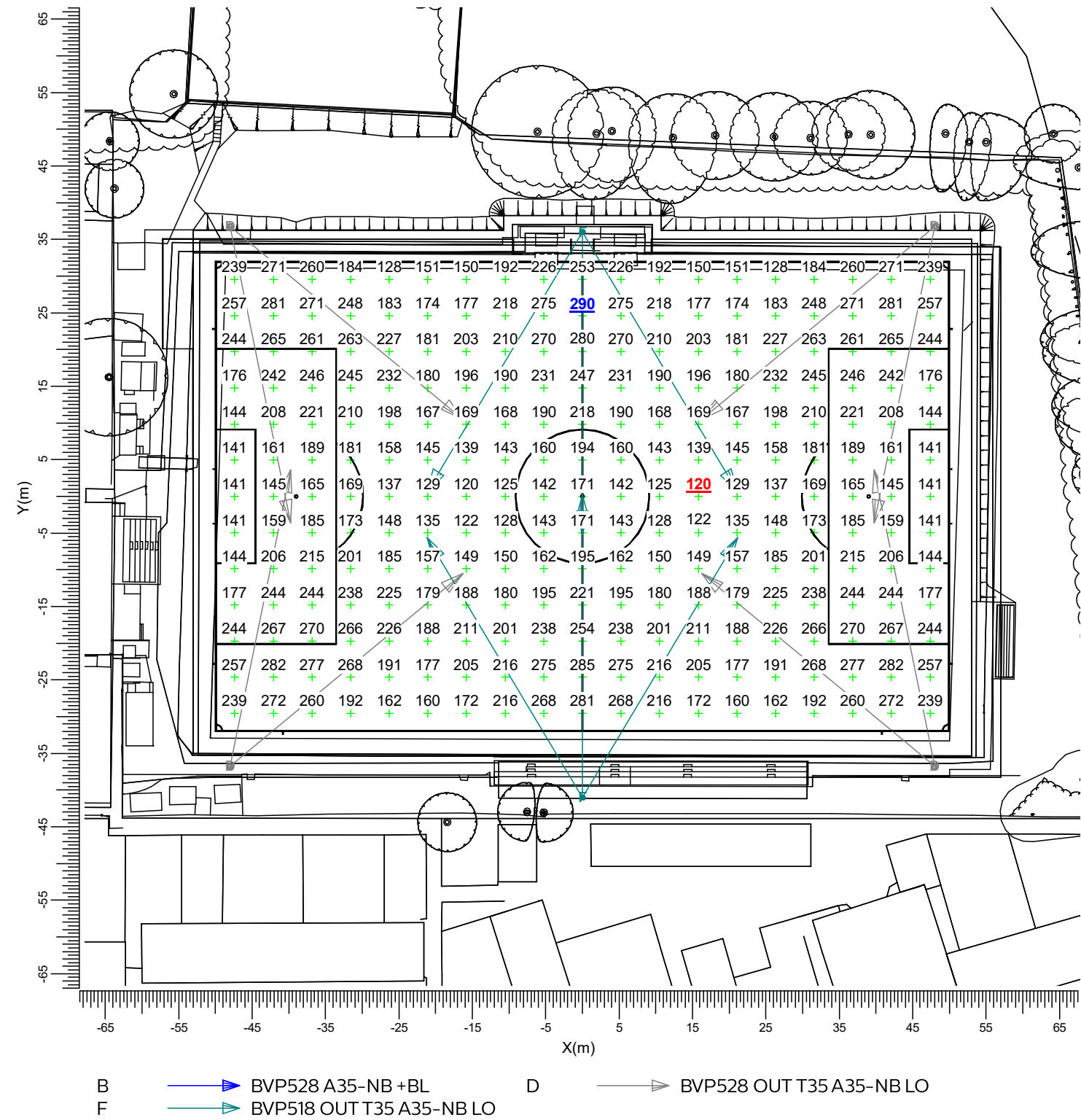
3. Calculation Results

3.1 Football 200 Lux: Graphical Table

200lux Switching

Grid : Football at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Average
201

Min/Ave
0.60

Min/Max
0.42

Project maintenance factor
0.90

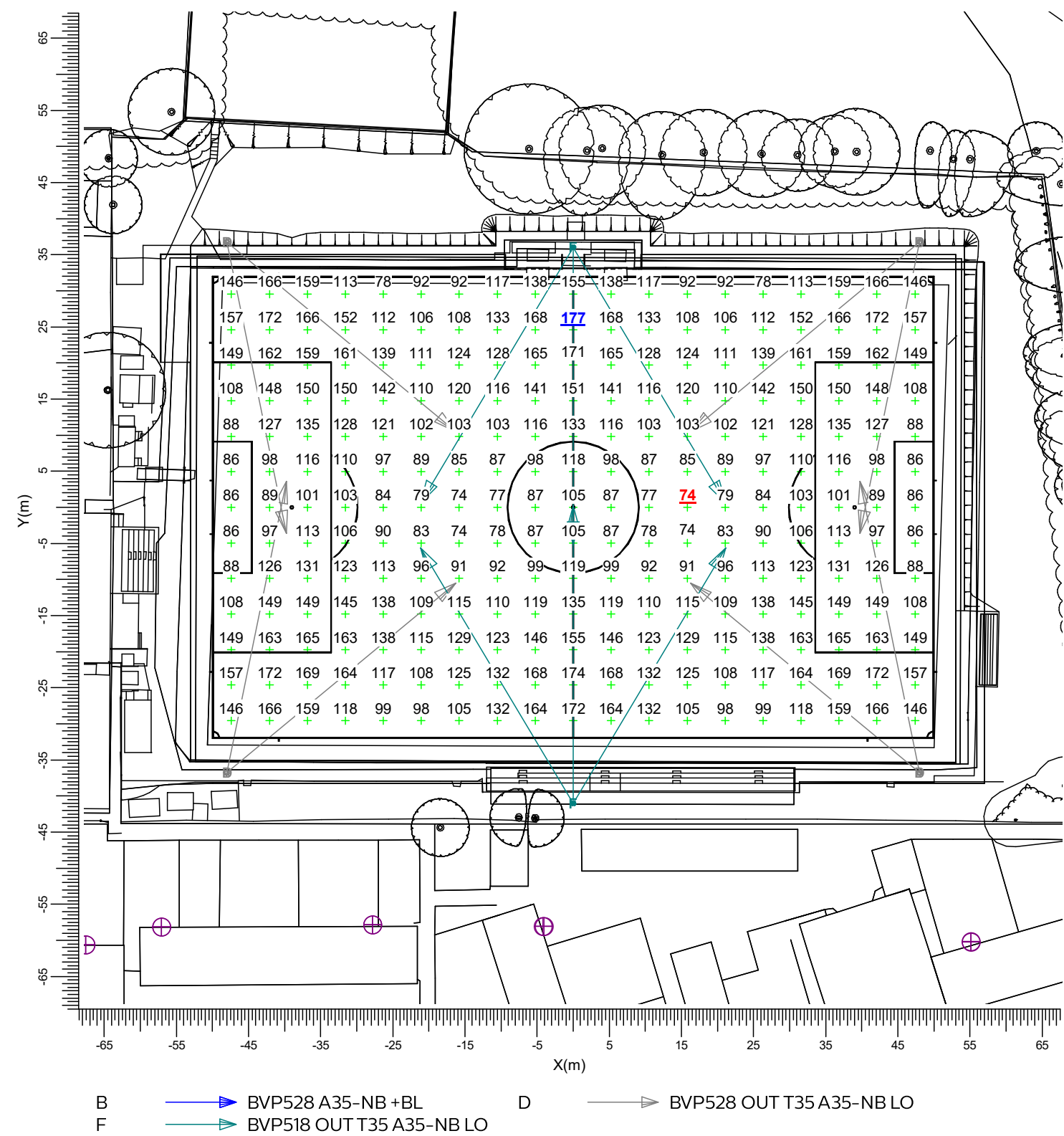
Scale
1:750

3.2 Football 120 Lux: Graphical Table

120lux Switching

Grid : Football at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Average
123

Min/Ave
0.60

Min/Max
0.42

Project maintenance factor
0.55

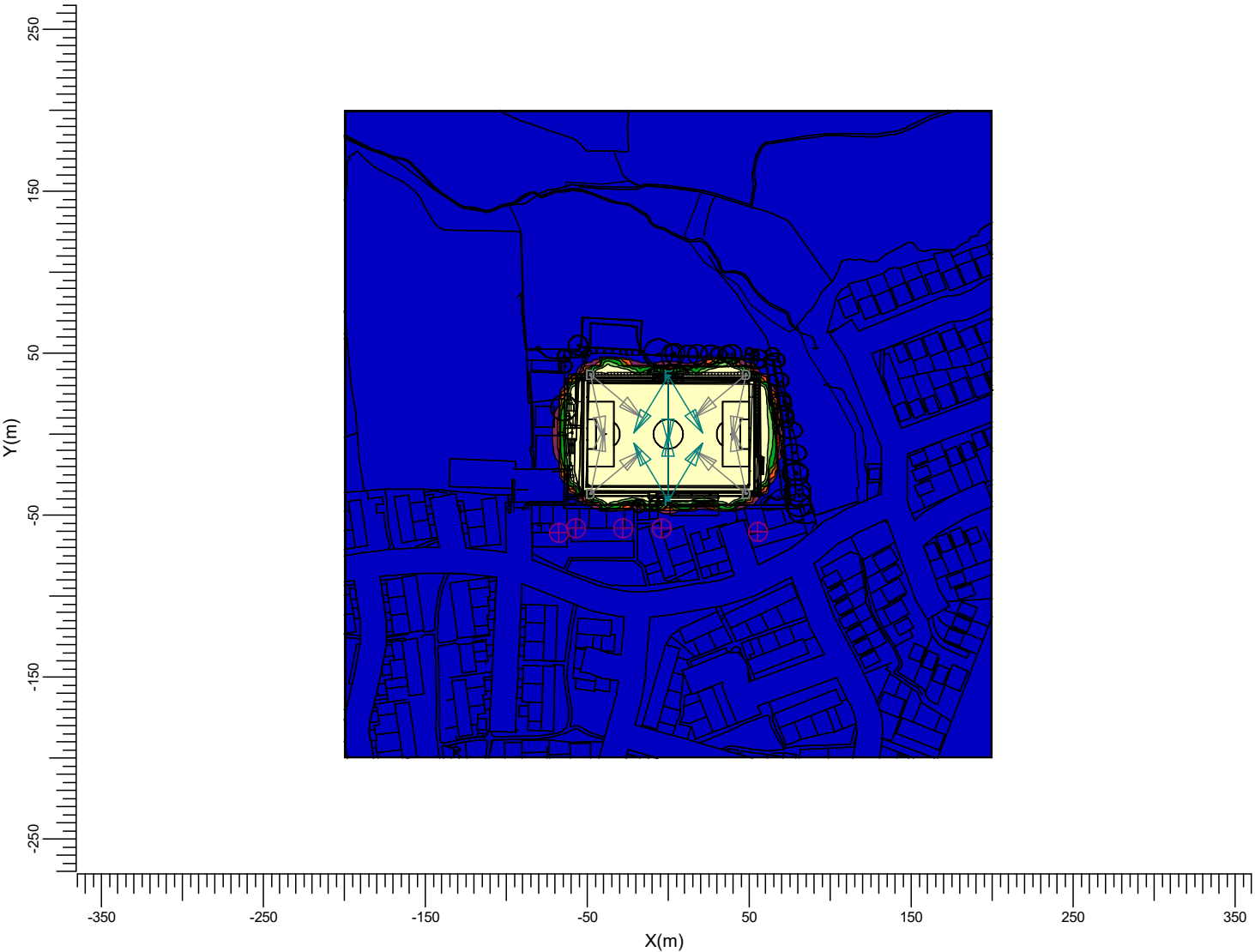
Scale
1:750

3.3 Spillage: Filled Iso Contour

Spillage Switching

Grid : Spillage Grid at Z = -0.00 m

Calculation : Surface Illuminance (lux)



B

F

BVP528 A35-NB +BL

BVP518 OUT T35 A35-NB LO

D

BVP528 OUT T35 A35-NB LO

Average
11.4

Min/Ave
0.00

Min/Max
0.00

Project maintenance factor
1.00

Scale
1:4000

Spillage Switching

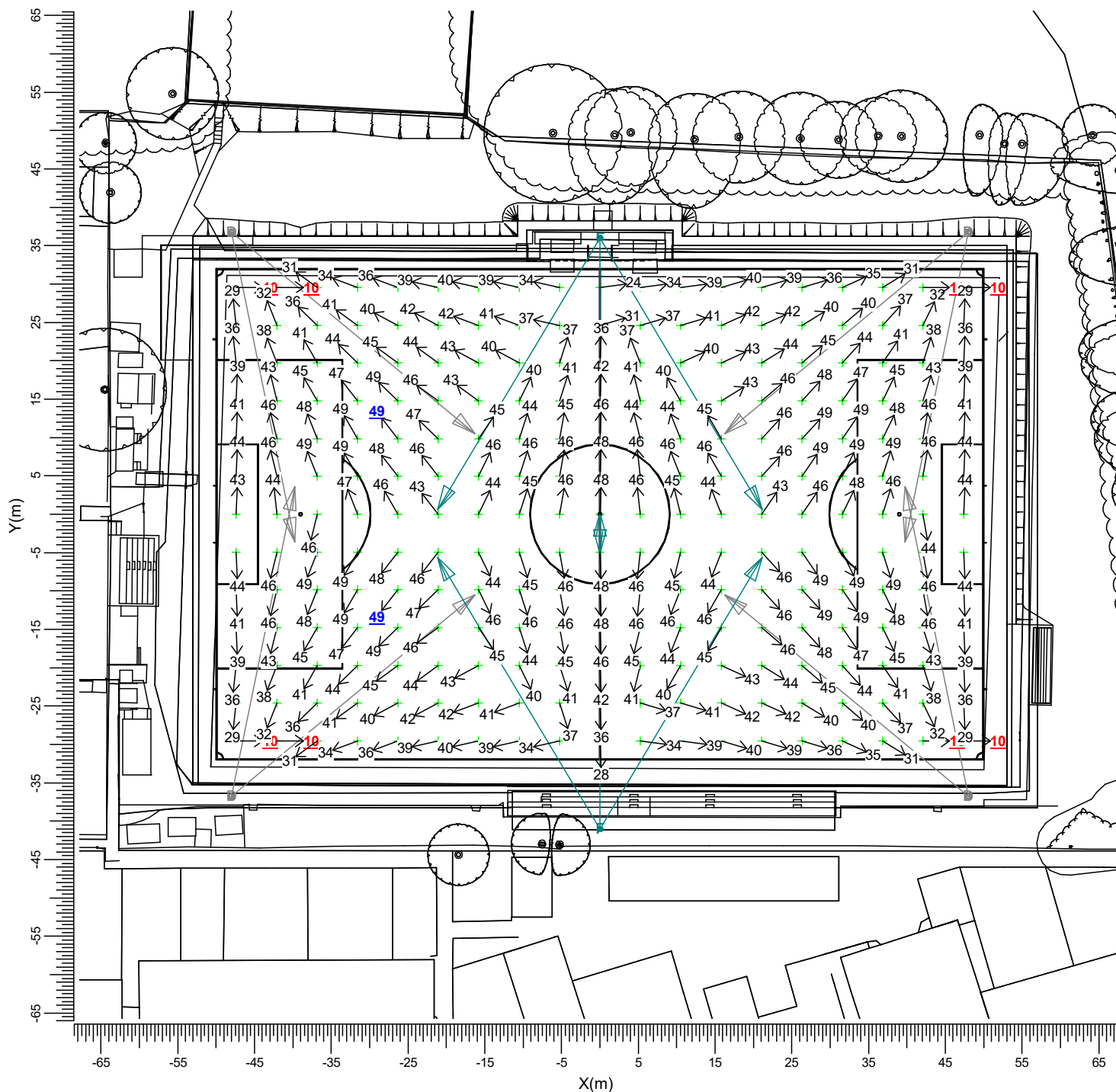
Grid : Spillage Grid at Z = -0.00 m
Calculation : Surface Illuminance (lux)



3.5 Glare: Graphical Table

Spillage Switching

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



B — BVP528 A35-NB +BL
F — BVP518 OUT T35 A35-NB LO

D — BVP528 OUT T35 A35-NB LO

Project maintenance factor
1.00

Scale
1:750

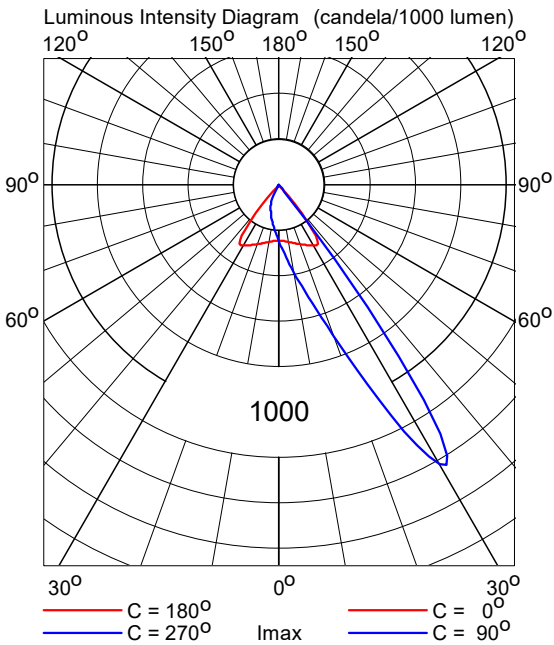
4. Luminaire Details

4.1 Project Luminaires

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

Light output ratios	
DLOR	: 0.59
ULOR	: 0.00
TLOR	: 0.59
Ballast	: E3/D4I
Lamp flux	: 259000 lm
Luminaire wattage	: 1505.9 W
Measurement code	: LVM2047300

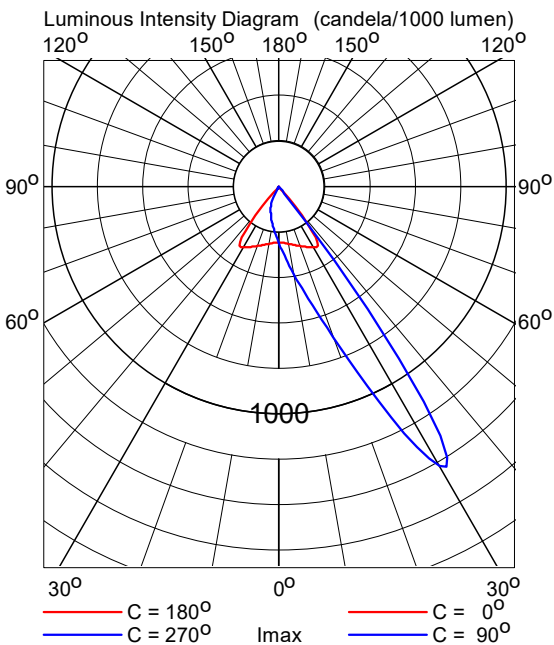
Note: Luminaire data not from database.



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

Light output ratios	
DLOR	: 0.59
ULOR	: 0.00
TLOR	: 0.59
Ballast	: E3/D4I
Lamp flux	: 172000 lm
Luminaire wattage	: 1006.0 W
Measurement code	: LVM2047300

Note: Luminaire data not from database.



5. Installation Data

5.1 Legends

Project Luminaires:				
Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
D	8	BVP528 OUT T35 A35-NB LO	1 * LED2590-4S/740	1 * 259000
F	6	BVP518 OUT T35 A35-NB LO	1 * LED1720-4S/740	1 * 172000

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 * D	-48.00	-36.75	15.00	39.6	70.0	-0.0	+	+	+
1 * D	-48.00	-36.75	15.00	78.5	70.0	-0.0	+	+	+
1 * D	-48.00	36.75	15.00	-39.6	70.0	0.0	+	+	+
1 * D	-48.00	36.75	15.00	-78.5	70.0	0.0	+	+	+
1 * F	-0.00	-41.00	15.00	90.0	70.0	-0.0	+	+	+
1 * F	-0.00	-41.00	15.00	120.9	70.0	-0.0	+	+	+
1 * F	-0.00	-41.00	15.00	59.1	70.0	0.0	+	+	+
1 * F	-0.00	36.00	15.00	-90.0	70.0	0.0	+	+	+
1 * F	-0.00	36.00	15.00	-120.9	70.0	0.0	+	+	+
1 * F	-0.00	36.00	15.00	-59.1	70.0	-0.0	+	+	+
1 * D	48.00	-36.75	15.00	140.4	70.0	0.0	+	+	+
1 * D	48.00	-36.75	15.00	101.5	70.0	0.0	+	+	+
1 * D	48.00	36.75	15.00	-140.4	70.0	-0.0	+	+	+
1 * D	48.00	36.75	15.00	-101.5	70.0	-0.0	+	+	+