

Burbage Parish Council

Millennium Hall

Project code: G-227556
Date: 06-10-2026

Designer: ME

Description: REV02

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

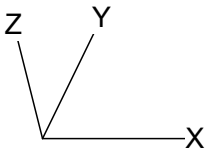
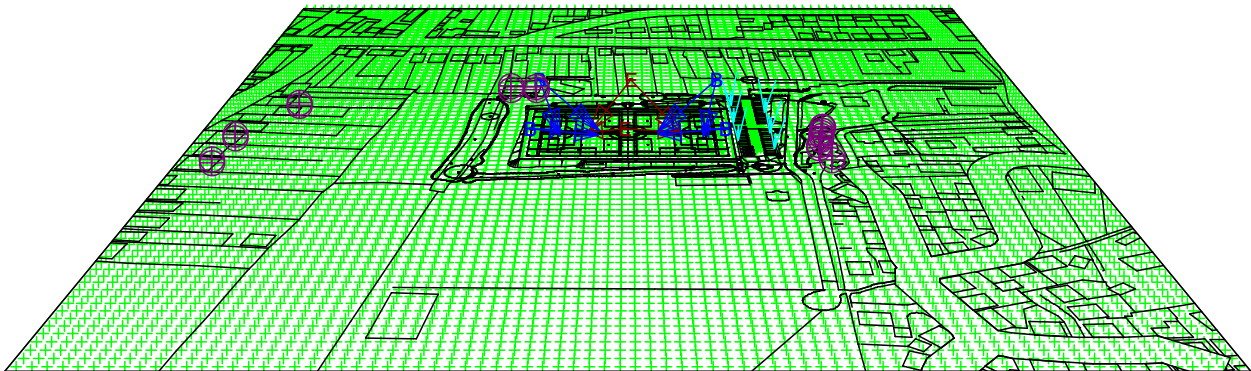
Office 2
Empingham House
Ayston Road
Uppingham
LE15 9NY

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	Observer Information	5
2.2	Project Luminaires	5
2.3	Calculation Results	6
3.	Calculation Results	7
3.1	Football 200 Lux: Graphical Table	7
3.2	Car Park 1: Graphical Table	8
3.3	Ground Spillage: Filled Iso Contour	9
3.4	Glare: Graphical Table	10
4.	Luminaire Details	11
4.1	Project Luminaires	11
5.	Installation Data	13
5.1	Legends	13
5.2	Luminaire Positioning and Orientation	13

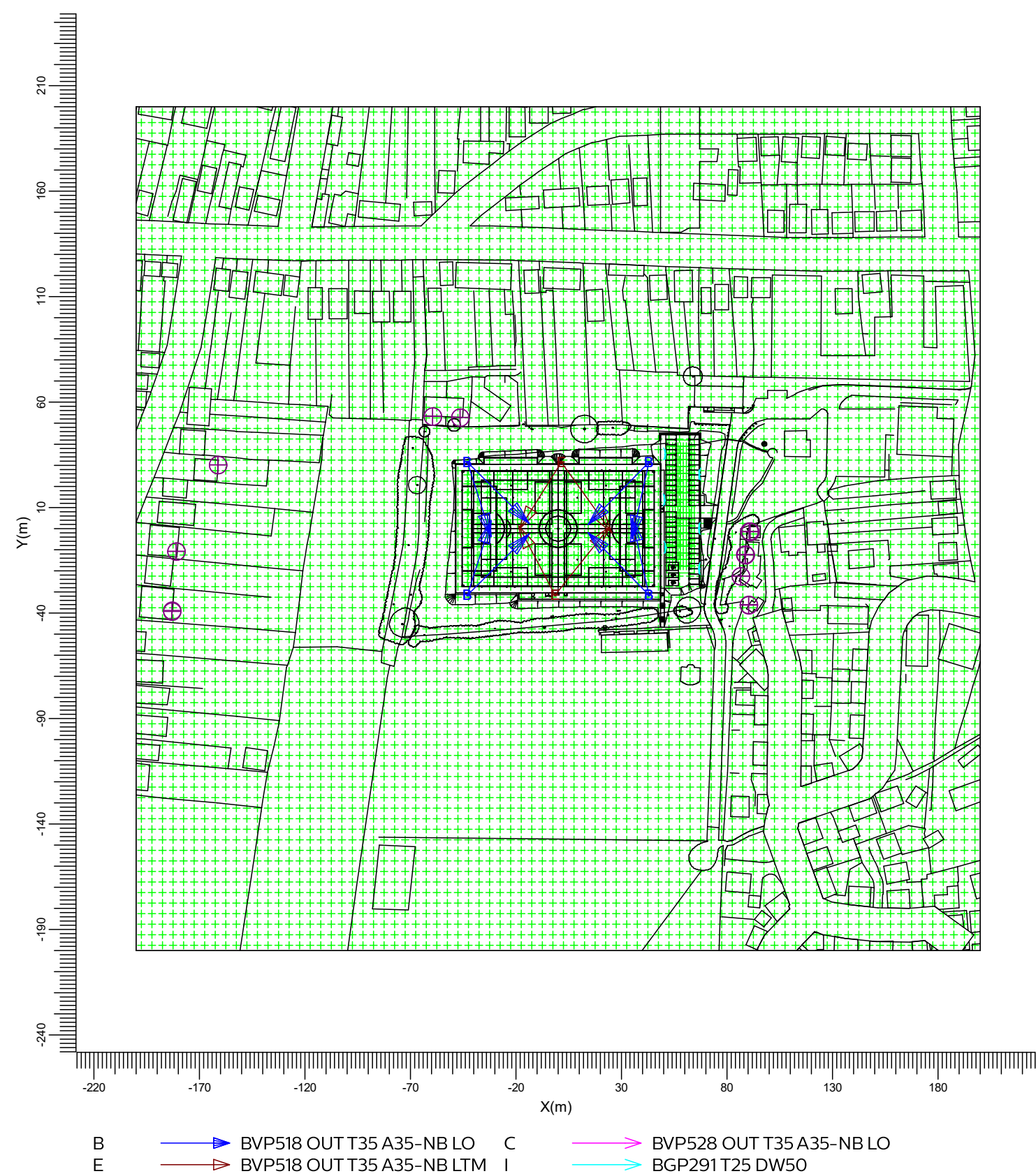
1. Project Description

1.1 3-D Project Overview



- | | | | | | |
|---|---|---------------------------|---|---|--------------------------|
| B |  | BVP518 OUT T35 A35-NB LO | C |  | BVP528 OUT T35 A35-NB LO |
| E |  | BVP518 OUT T35 A35-NB LTM | I |  | BGP291 T25 DW50 |

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	-180.94	-10.63	1.80
Bb	House 1 - 3.6m	-180.94	-10.63	3.60
Cc	House 2 - 1.8m	-161.31	30.36	1.80
Dd	House 2 - 3.6m	-161.31	30.36	3.60
Ee	House 3 - 1.8m	-59.46	53.35	1.80
Ff	House 3 - 3.6m	-59.45	53.35	3.60
Gg	House 4 - 1.8m	-46.62	52.80	1.80
Hh	House 4 - 3.6m	-46.62	52.79	3.60
Ii	House 5 - 1.8m	90.24	-36.19	1.80
Jj	House 5 - 3.6m	90.34	-36.11	3.60
Kk	House 6 - 1.8m	86.39	-22.53	1.80
Ll	House 6 - 3.6m	86.44	-22.55	3.60
Mm	House 7 - 1.8m	-182.90	-39.36	1.80
Nn	House 7 - 3.6m	-183.12	-38.71	3.60
Oo	House 8 - 1.8m	88.58	-12.25	1.80
Pp	House 8 - 3.6m	88.79	-12.47	3.60
Qq	House 8 - 5.2m	88.68	-12.35	5.20
Rr	House 9 - 1.8m	90.86	-1.27	1.80
Ss	House 9 - 3.6m	90.57	-1.29	3.60
Tt	House 9 - 5.2m	90.90	-1.39	3.60

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
B	8	BVP518 OUT T35 A35-NB LO	1 * LED1720-4S/740	1006.0	1 * 172000
E	4	BVP518 OUT T35 A35-NB LTM	1 * LED1720-4S/740	1006.0	1 * 172000
I	6	BGP291 T25 DW50	1 * LED50-4S/727	37.0	1 * 5000

The total installed power: 12.29 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code			Power (kWatt)
	B	E	I	
200lux Switching	8	4	0	12.07
Car Park	0	0	6	0.22
Spillage Switching	8	4	6	12.29

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code			Power (kWatt)
	B	E	I	
Mast1	0	2	0	2.01
Mast2	0	2	0	2.01
Mast3	4	0	0	4.02
Mast4	4	0	0	4.02
Individuals	0	0	6	0.22

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	200lux Switching	0.95
2	Car Park	0.95
3	Spillage Switching	1.00

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave Min/AveMin/Max		
Football 200 Lux	1	Surface Illuminance	lux	202	0.64	0.48
Car Park 1	2	Surface Illuminance	lux	14.6	0.30	0.16
Ground Spillage	3	Surface Illuminance	lux	8.23	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	46.5

Obtrusive Light Calculations:

Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
1	Aa	E	1.50	31.50	15.00	-122.26	68.00	0.00	458
1	Bb	E	-1.50	-31.50	15.00	117.83	68.00	0.00	428
1	Cc	E	-1.50	-31.50	15.00	117.83	68.00	0.00	556
1	Dd	E	-1.50	-31.50	15.00	117.83	68.00	0.00	514
1	Ee	E	-1.50	-31.50	15.00	117.83	68.00	0.00	798
1	Ff	E	-1.50	-31.50	15.00	117.83	68.00	0.00	752
1	Gg	E	-1.50	-31.50	15.00	117.83	68.00	0.00	877
1	Hh	E	-1.50	-31.50	15.00	117.83	68.00	0.00	830
1	Ii	E	-1.50	-31.50	15.00	51.54	70.00	0.00	750
1	Jj	E	1.50	31.50	15.00	-54.51	70.00	0.00	727
1	Kk	E	-1.50	-31.50	15.00	51.54	70.00	0.00	1209
1	Ll	E	-1.50	-31.50	15.00	51.54	70.00	0.00	1006
1	Mm	E	1.50	31.50	15.00	-122.26	68.00	0.00	402
1	Nn	E	1.50	31.50	15.00	-122.26	68.00	0.00	384
1	Oo	E	1.50	31.50	15.00	-54.51	70.00	0.00	1648
1	Pp	E	1.50	31.50	15.00	-54.51	70.00	0.00	1240
1	Qq	E	1.50	31.50	15.00	-54.51	70.00	0.00	1064
1	Rr	E	-1.50	-31.50	15.00	51.54	70.00	0.00	1518
1	Ss	E	-1.50	-31.50	15.00	51.54	70.00	0.00	1236
1	Tt	E	-1.50	-31.50	15.00	51.54	70.00	0.00	1221

Switching Mode	ULR
1	0.00
2	0.00
3	0.00

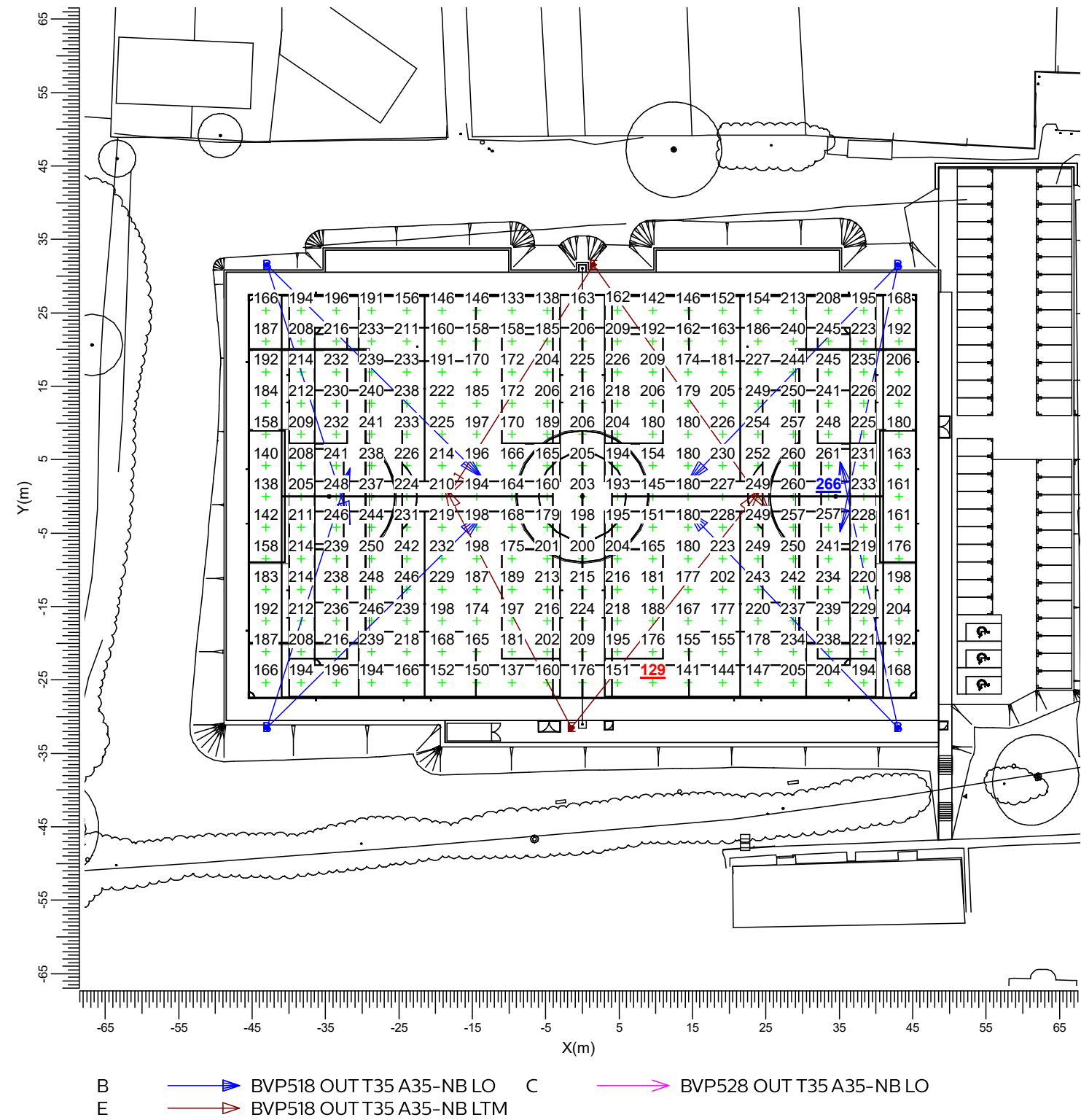
3. Calculation Results

3.1 Football 200 Lux: Graphical Table

200lux Switching

Grid : Football at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Average
202

Min/Ave
0.64

Min/Max
0.48

Project maintenance factor
0.95

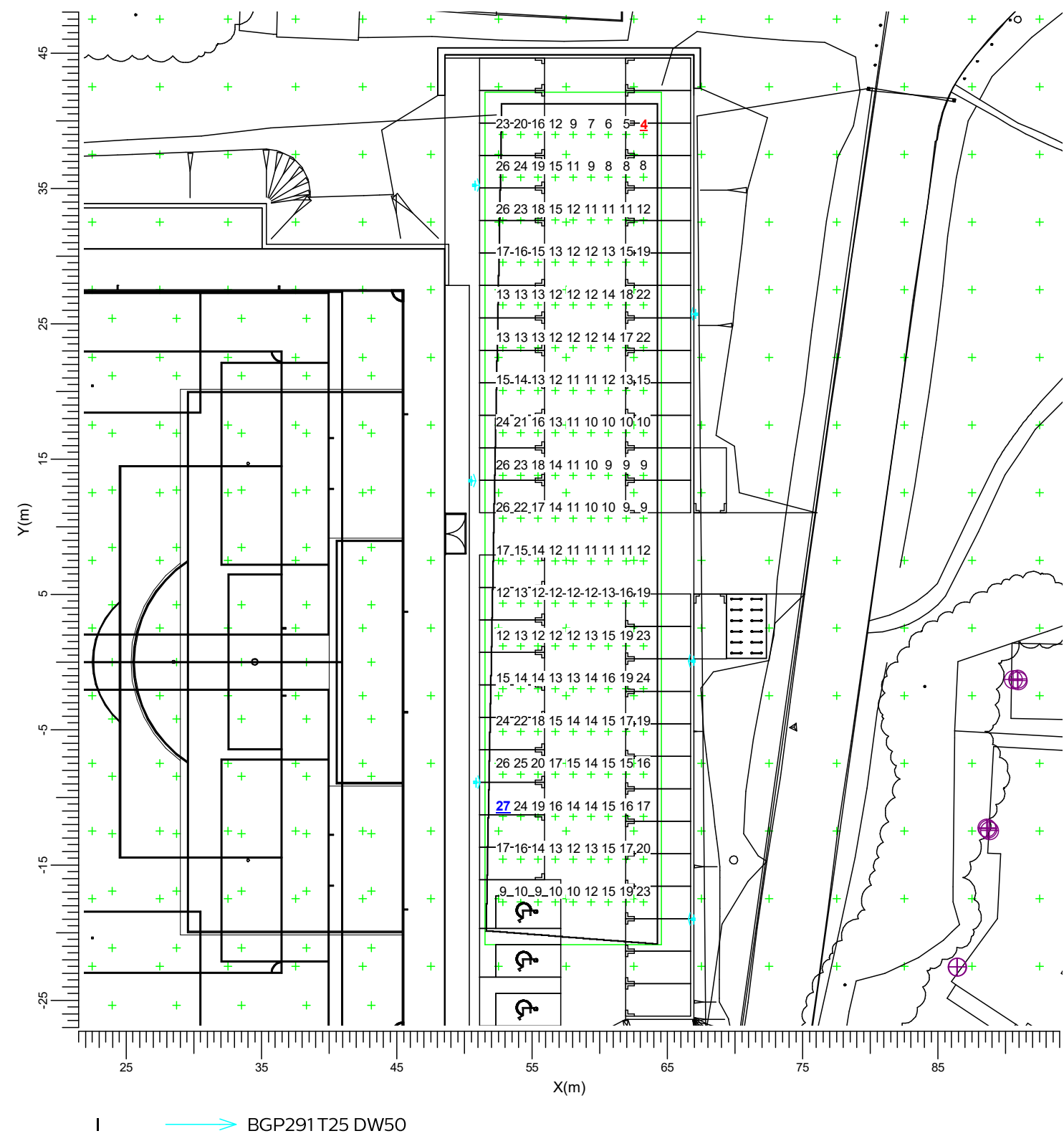
Scale
1:750

3.2 Car Park 1: Graphical Table

Car Park

Grid : Car Park 1 at Z = -0.00 m

Calculation : Surface Illuminance (lux)



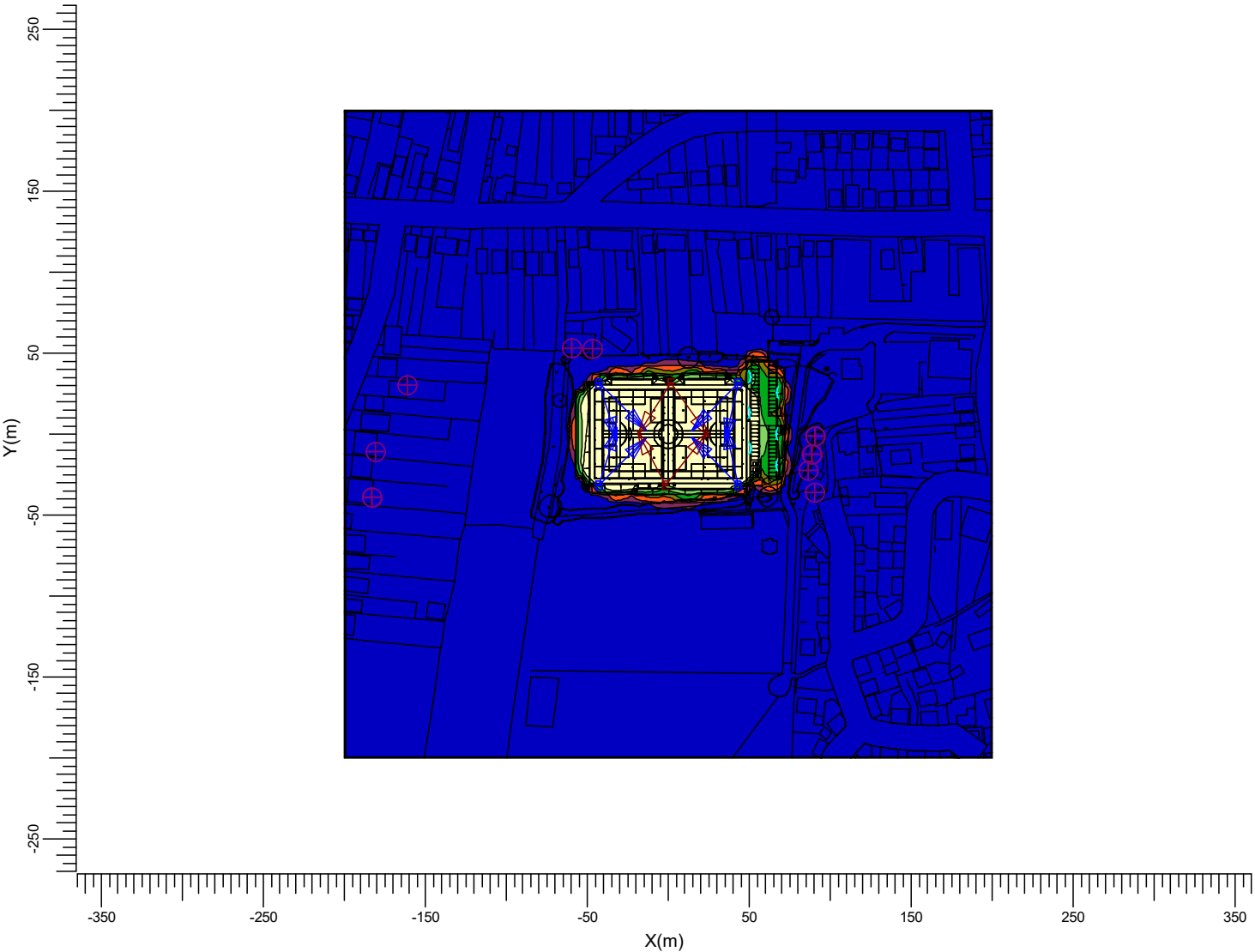
Average	Min/Ave	Min/Max	Project maintenance factor	Scale
14.6	0.30	0.16	0.95	1:400

3.3 Ground Spillage: Filled Iso Contour

Spillage Switching

Grid : Spillage Grid at Z = -0.00 m

Calculation : Surface Illuminance (lux)



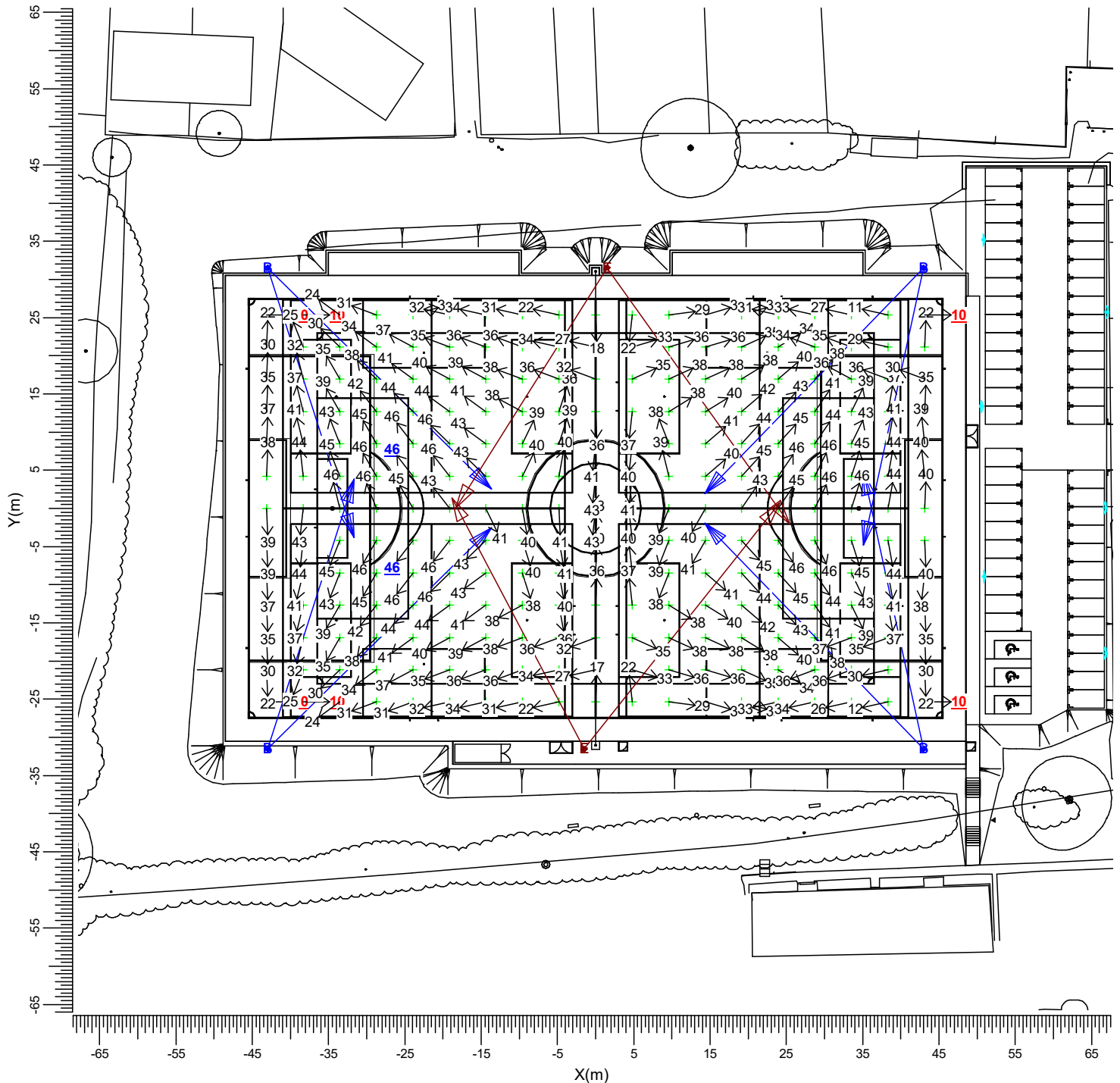
B		BVP518 OUT T35 A35-NB LO	C		BVP528 OUT T35 A35-NB LO
E		BVP518 OUT T35 A35-NB LTM	I		BGP291 T25 DW50

Average	Min/Ave	Min/Max	Project maintenance factor	Scale
8.23	0.00	0.00	1.00	1:4000

3.4 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 — BVP518 OUT T35 A35-NB LO C — BVP528 OUT T35 A35-NB LO
E — BVP518 OUT T35 A35-NB LTM I — BGP291 T25 DW50

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 LO

Light output ratios

DLOR : 0.59

ULOR : 0.00

TLOR : 0.59

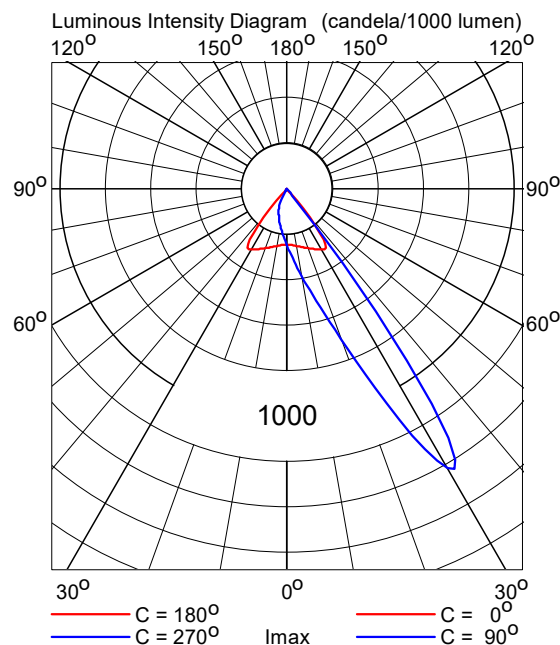
Ballast : E3/D4I

Lamp flux : 172000 lm

Luminaire wattage : 1006.0 W

Measurement code : LVM2047300

Note: Luminaire data not from database.



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

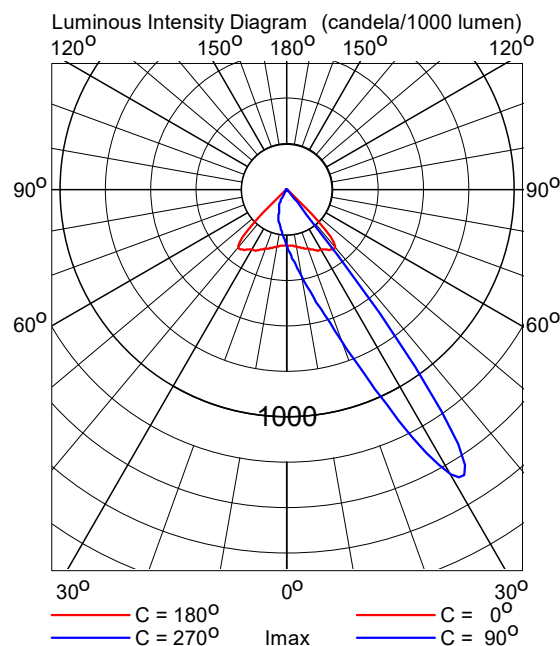
Ballast : E3/D4I

Lamp flux : 172000 lm

Luminaire wattage : 1006.0 W

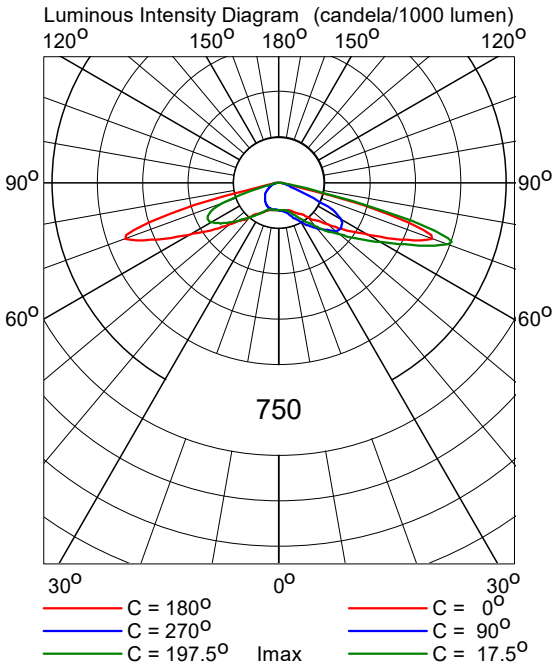
Measurement code : LVM2047600

Note: Luminaire data not from database.



LumiStreet gen2
BGP291 T25 1 xLED50-4S/727 DW50

Light output ratios
DLOR : 0.84
ULOR : 0.00
TLOR : 0.84
Ballast : -
Lamp flux : 5000 lm
Luminaire wattage : 37.0 W
Measurement code : LVM1643A00



5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
B	8	BVP518 OUT T35 A35-NB LO	1 * LED1720-4S/740	1 * 172000
E	4	BVP518 OUT T35 A35-NB LTM	1 * LED1720-4S/740	1 * 172000
I	6	BGP291 T25 DW50	1 * LED50-4S/727	1 * 5000

Switching Modes:

Code	Switching Mode
1	200lux Switching
2	Car Park
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 * B	-43.00	-31.50	15.00	72.2	68.0	0.0	+	-	+
1 * B	-43.00	-31.50	15.00	44.6	70.0	0.0	+	-	+
1 * B	-43.00	31.50	15.00	-72.2	68.0	-0.0	+	-	+
1 * B	-43.00	31.50	15.00	-44.6	70.0	-0.0	+	-	+
1 * E	-1.50	-31.50	15.00	117.8	68.0	0.0	+	-	+
1 * E	-1.50	-31.50	15.00	51.5	70.0	0.0	+	-	+
1 * E	1.50	31.50	15.00	-122.3	68.0	0.0	+	-	+
1 * E	1.50	31.50	15.00	-54.5	70.0	0.0	+	-	+
1 * B	43.00	-31.50	15.00	102.3	68.0	0.0	+	-	+
1 * B	43.00	-31.50	15.00	134.1	70.0	0.0	+	-	+
1 * B	43.00	31.50	15.00	-102.3	68.0	-0.0	+	-	+
1 * B	43.00	31.50	15.00	-134.1	70.0	-0.0	+	-	+
1 * I	50.48	13.38	4.00	-0.0	5.0	0.0	-	+	+
1 * I	50.76	35.21	4.00	0.0	5.0	0.0	-	+	+
1 * I	50.82	-8.91	4.00	-0.0	5.0	0.0	-	+	+
1 * I	66.91	-19.01	4.00	-180.0	5.0	0.0	-	+	+
1 * I	66.91	0.07	4.00	-180.0	5.0	0.0	-	+	+
1 * I	67.09	25.69	4.00	-180.0	5.0	0.0	-	+	+