Wrexham Tennis Club

BVP528+LO - LTA

Project code: 04008791395, D-54690
Date: 22-05-2024

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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1. Project Description

1.1 Description

6 No Tennis Courts (3,4,5,6,7,8)
Designed to LTA 500 lux ave, 0.7 Uo - PPA
Designed to LTA 400 lux ave, 0.6 Uo - TPA
MF 0.95 - Performance (Low use LED)
MF 1.0 Spill (Worst Case when new)
10 m columns in each corner of court & in between Courts
2 No BVP528 OUT T40 LED2480-4S/740 A55-MNB LO 4000k
8 No BVP528 OUT T40 LED2480-4S/740 A55-NMB LO 4000k
6 No BVP528 OUT T35 LED2590-4S/740 A55-NMB LO 4000k

All fittings have integral back Spill LO louvre fitted to limit spill and glare.

3 No Paddel Courts are new, these use ClearFlood BVP651 DW10 optic on 6m Columns (4 No per Ct) at sides of court to achieve 500 lux ave. All fittings at 0 degree tilt (Flat Glass)

Scheme is in Environmental Zone E2 - Rural
Max Pre Curfew light at windows is < 5 lux and is within E2 criteria

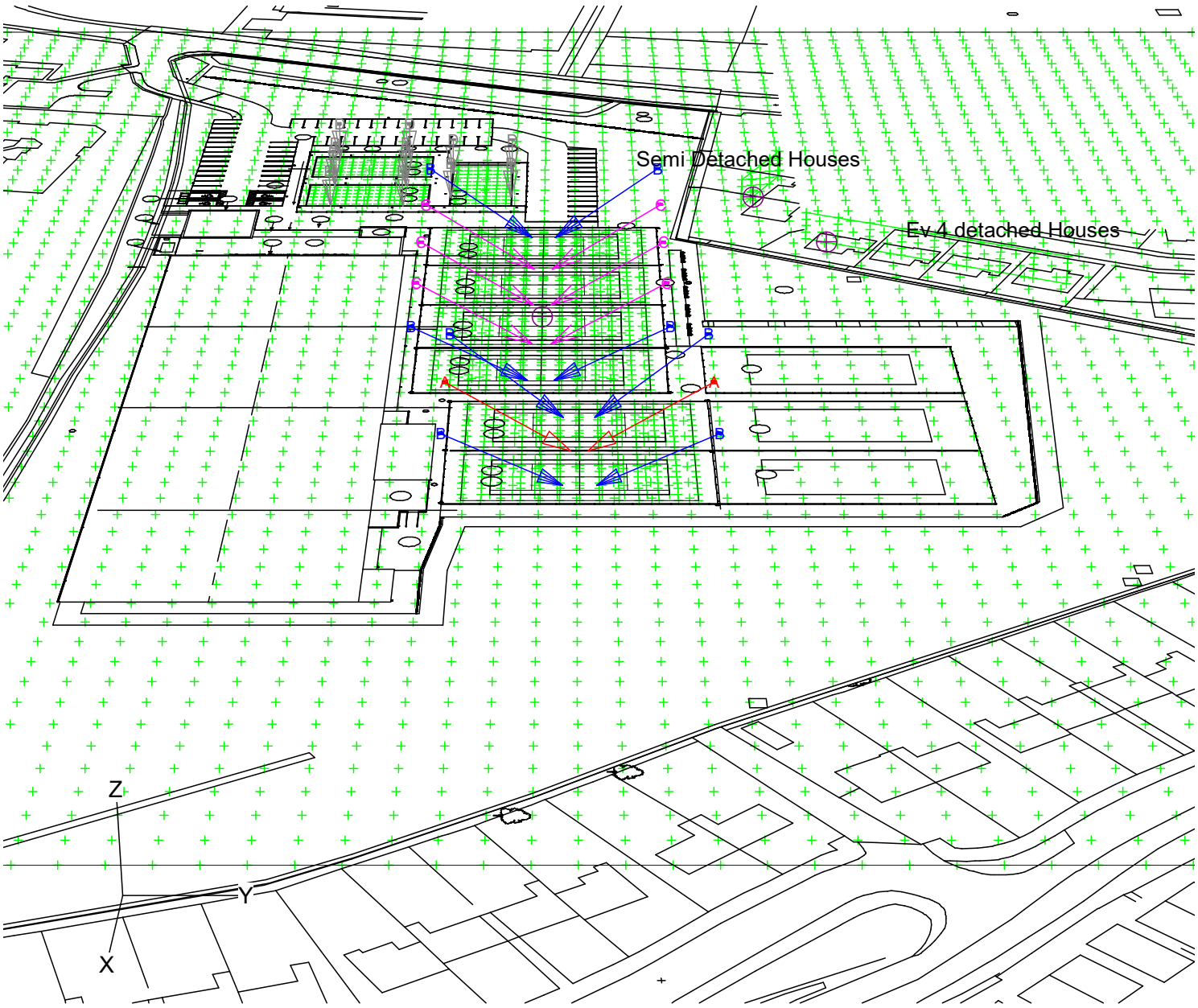
Spill lighting results shown on 300m x 300m grid away from courts
Grid used to show

Eh lighting results at 0m
Ev Lighting results at 1.5m

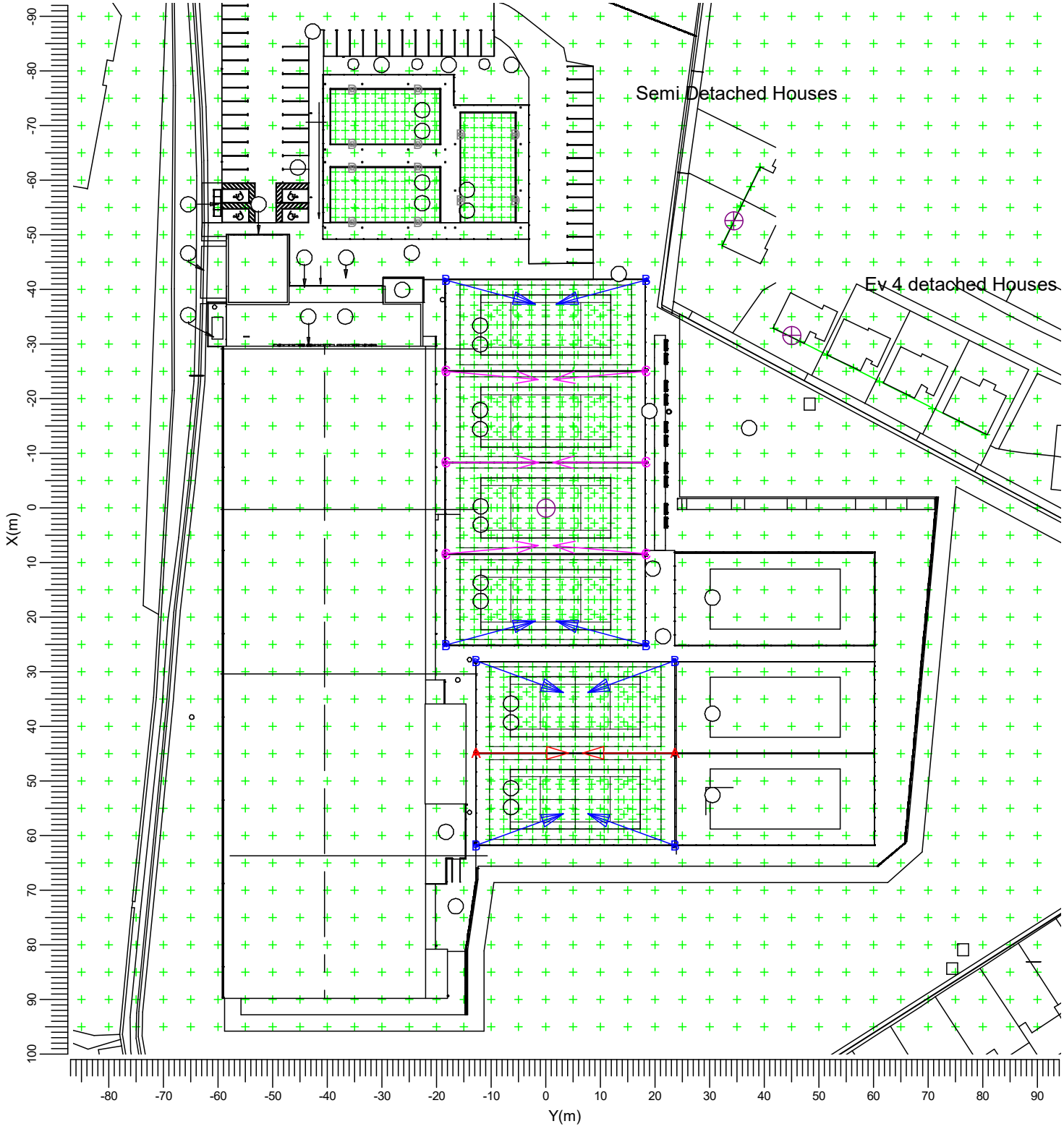
Ev grids are added to 2 No sets of houses west nearest Courts
These houses have Ev Grids added to the facades facing towards the courts, which start at 1.5m up to 6m height.

Tilt 90 includes A55 Asymmetric Peak Beam. Please delete this for Physical tilt
There Tilt90 of 59 deg = 4 deg physical tilt.

1.2 3-D Project Overview



1.3 Top Project Overview



A BVP528 OUT T40 A55-MNB L
B BVP528 OUT T40 A55-NMB L
C BVP528 OUT T35 A55-NMB L
D BVP651 T25 DW10
E BVP518 OUT T35 A35-NMB LT

Scale
1:1000

2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Bb	Obs at 4 detached Houses	-31.59	45.00	1.50
Cc	Obs at Semi Detached Hous	-52.58	34.39	1.50

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
A	2	BVP528 OUT T40 A55-MNB LO	1 * LED2480-4S/740	1427.4	1 * 248000
B	8	BVP528 OUT T40 A55-NMB LO	1 * LED2480-4S/740	1427.4	1 * 248000
C	6	BVP528 OUT T35 A55-NMB LO	1 * LED2590-4S/740	1505.9	1 * 259000
D	12	BVP651 T25 DW10	1 * LED800-4S/740	540.0	1 * 80000

The total installed power: 29.79 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code				Power (kWatt)
	A	B	C	D	
Court 3	0	2	2	0	5.87
Court 4	0	0	4	0	6.02
Court 5	0	0	4	0	6.02
Court 6	0	2	2	0	5.87
Court 7	2	2	0	0	5.71
Court 8	2	2	0	0	5.71
Paddel Court 1	0	0	0	4	2.16
Paddel Court 2	0	0	0	4	2.16
Paddel Court 3	0	0	0	4	2.16
Spill Lighting All On	2	8	6	12	29.79

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code				Power (kWatt)
	A	B	C	D	
Court 3 Lower Left	0	1	0	0	1.43
Court 3 Upper Left	0	1	0	0	1.43
Court 3/4 Lower	0	0	1	0	1.51
Court 3/4 Upper	0	0	1	0	1.51
Court 4/5 Lower	0	0	1	0	1.51
Court 4/5 Upper	0	0	1	0	1.51
Court 5/6 Lower	0	0	1	0	1.51
Court 5/6 Upper	0	0	1	0	1.51
Court 6 Lower Left	0	0	0	0	0.00
Court 6 Lower Right	0	1	0	0	1.43
Court 6 Upper Left	0	0	0	0	0.00
Court 6 Upper Right	0	1	0	0	1.43
Court 7 Lower Left	0	1	0	0	1.43
Court 7 Lower Right	1	0	0	0	1.43
Court 7 Upper Left	0	1	0	0	1.43
Court 7 Upper Right	1	0	0	0	1.43
Court 8 Lower Left	0	0	0	0	0.00

Arrangement	Luminaire Code				Power (kWatt)
	A	B	C	D	
Court 8 Lower Right	0	1	0	0	1.43
Court 8 Upper Right	0	1	0	0	1.43
Individuals	0	0	0	12	6.48

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Court 3	0.95
2	Court 4	0.95
3	Court 5	0.95
4	Court 6	0.95
5	Court 7	0.95
6	Court 8	0.95
7	Paddel Court 1	0.95
8	Paddel Court 2	0.95
9	Paddel Court 3	0.95
10	Spill Lighting All On	1.00

(Il)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min	Max	Min/Ave	Min/Max
PPA Court 3	1	Surface Illuminance	lux	519	360	748	0.69	0.48
TPA Court 3	1	Surface Illuminance	lux	499	358	725	0.72	0.49
PPA Court 4	2	Surface Illuminance	lux	526	390	755	0.74	0.52
TPA Court 4	2	Surface Illuminance	lux	501	377	748	0.75	0.50
PPA Court 5	3	Surface Illuminance	lux	526	389	755	0.74	0.52
TPA Court 5	3	Surface Illuminance	lux	501	377	748	0.75	0.50
PPA Court 6	4	Surface Illuminance	lux	519	361	747	0.69	0.48
TPA Court 6	4	Surface Illuminance	lux	499	359	725	0.72	0.49
PPA Court 7	5	Surface Illuminance	lux	525	403	693	0.77	0.58
TPA Court 7	5	Surface Illuminance	lux	513	371	716	0.72	0.52
PPA Court 8	6	Surface Illuminance	lux	525	403	693	0.77	0.58
TPA Court 8	6	Surface Illuminance	lux	513	372	716	0.72	0.52
Paddel Court 1	7	Surface Illuminance	lux	571	430	680	0.75	0.63
Paddel Court 2	8	Surface Illuminance	lux	571	430	680	0.75	0.63
Paddel Court 3	9	Surface Illuminance	lux	571	430	680	0.75	0.63
Ev Semi Detached Houses	10	Surface Illuminance	lux			1.71		
Ev 4 Detached Houses	10	Surface Illuminance	lux			1.23		
Eh Spill @ 0m	10	Surface Illuminance	lux					

Glare Rating for Grid of Observers:

Calculation	Switching Mode	Observer Grid	Reference Grid	Reflectance	GR-Max
GR Max Typi Ct (Ct 2)	2	PPA Court 4	PPA Court 4	0.25	39.2

Obtrusive Light Calculations:

Switching Mode	Observer Code	Luminaire Code	Position			Aiming Angles			Maximum Intensity (cd)
			X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0	
10	Bb	B	-41.75	-18.30	10.20	75.00	59.00	0.00	1277
10	Cc	B	-41.75	18.30	10.20	-75.00	59.00	0.00	483

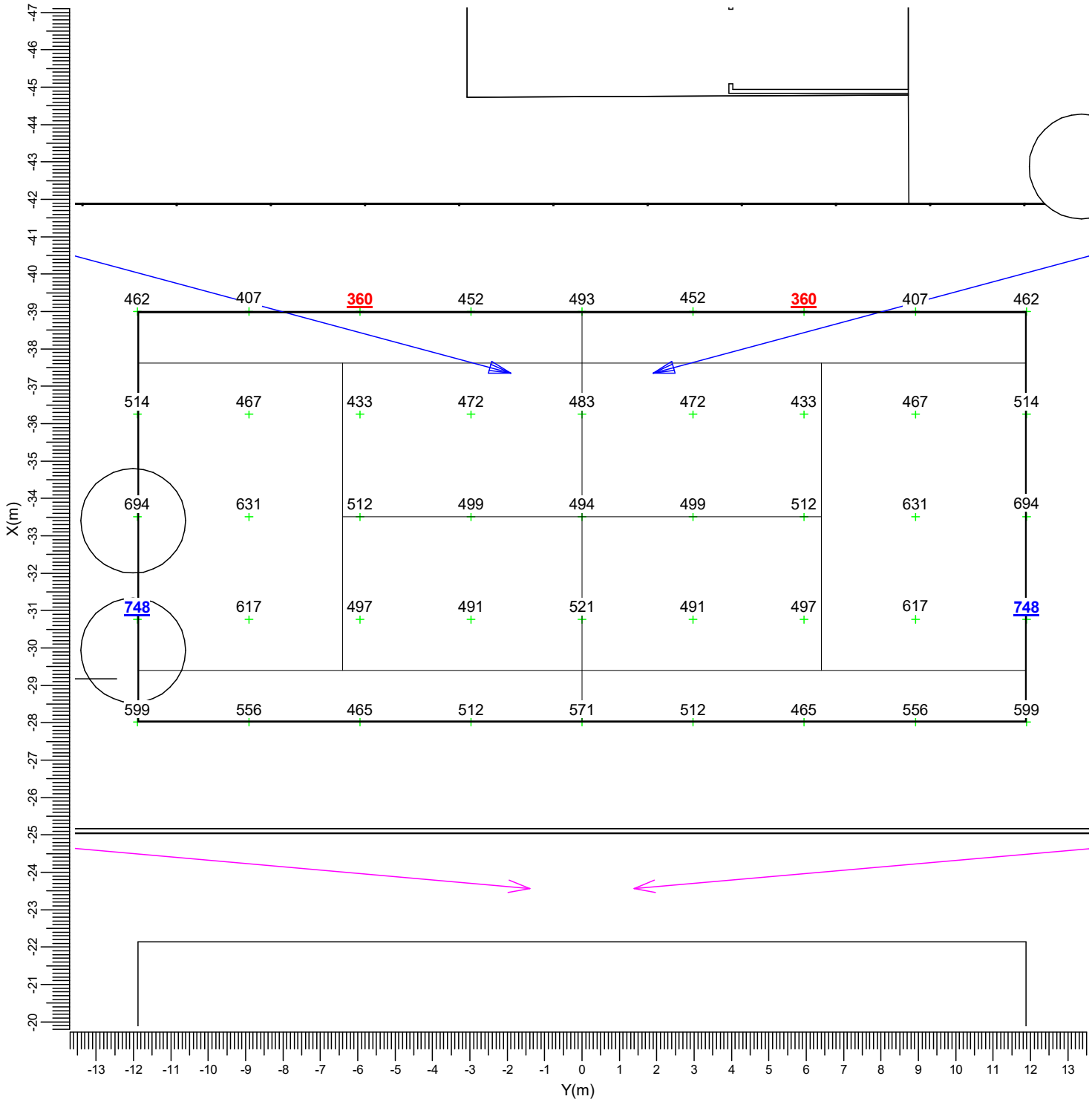
Switching Mode	ULR
1	0.00
2	0.00
3	0.00
4	0.00
5	0.00
6	0.00
7	0.00
8	0.00
9	0.00
10	0.00

3. Calculation Results

3.1 PPA Court 3: Graphical Table

Court 3

Grid : PPA Court 3 at Z = -0.00 m
Calculation : Surface Illuminance (lux)

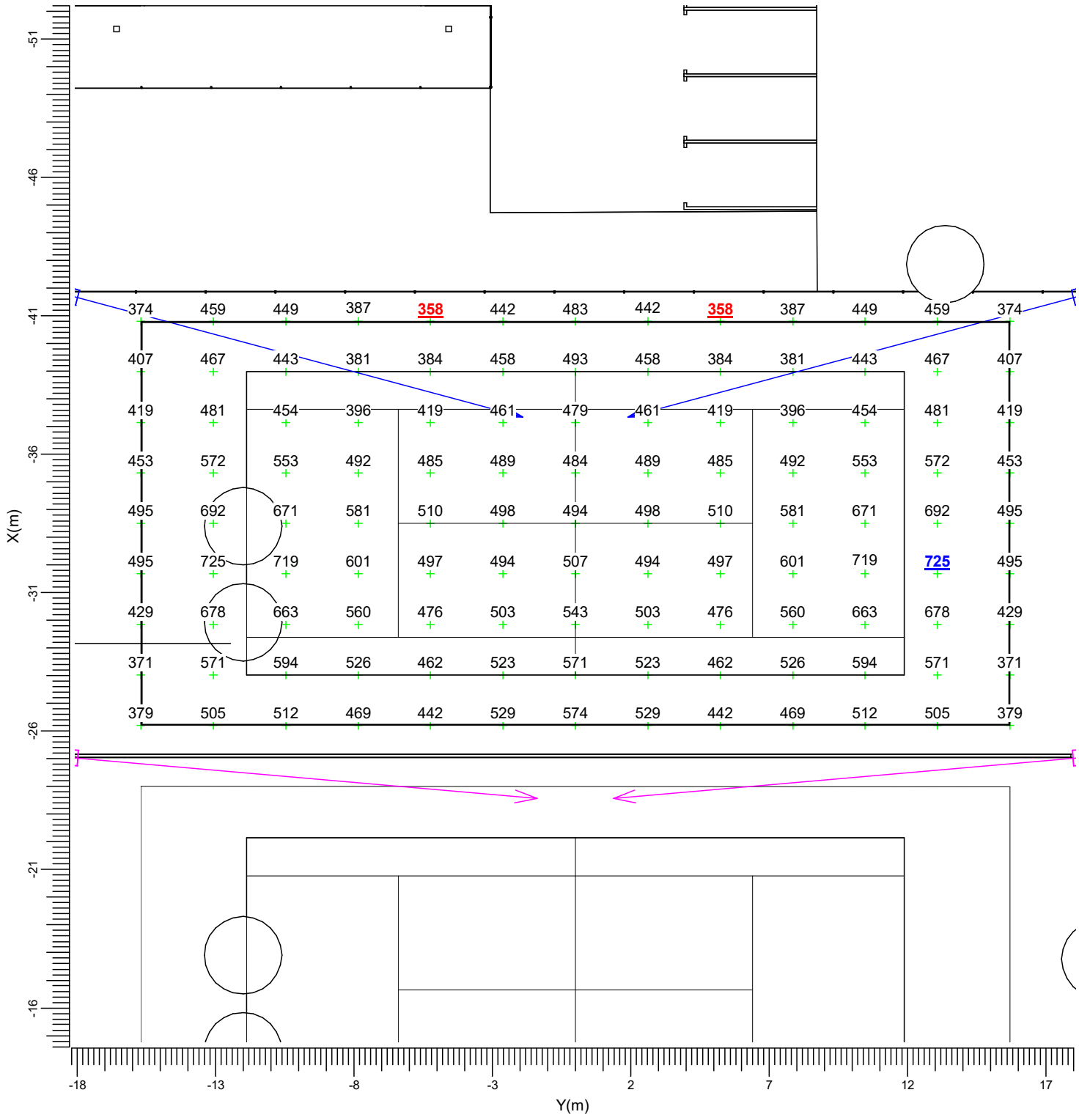


Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
519	360	748	0.69	0.48	0.95	1:150

3.2 TPA Court 3: Graphical Table

Court 3

Grid : TPA Court 3 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



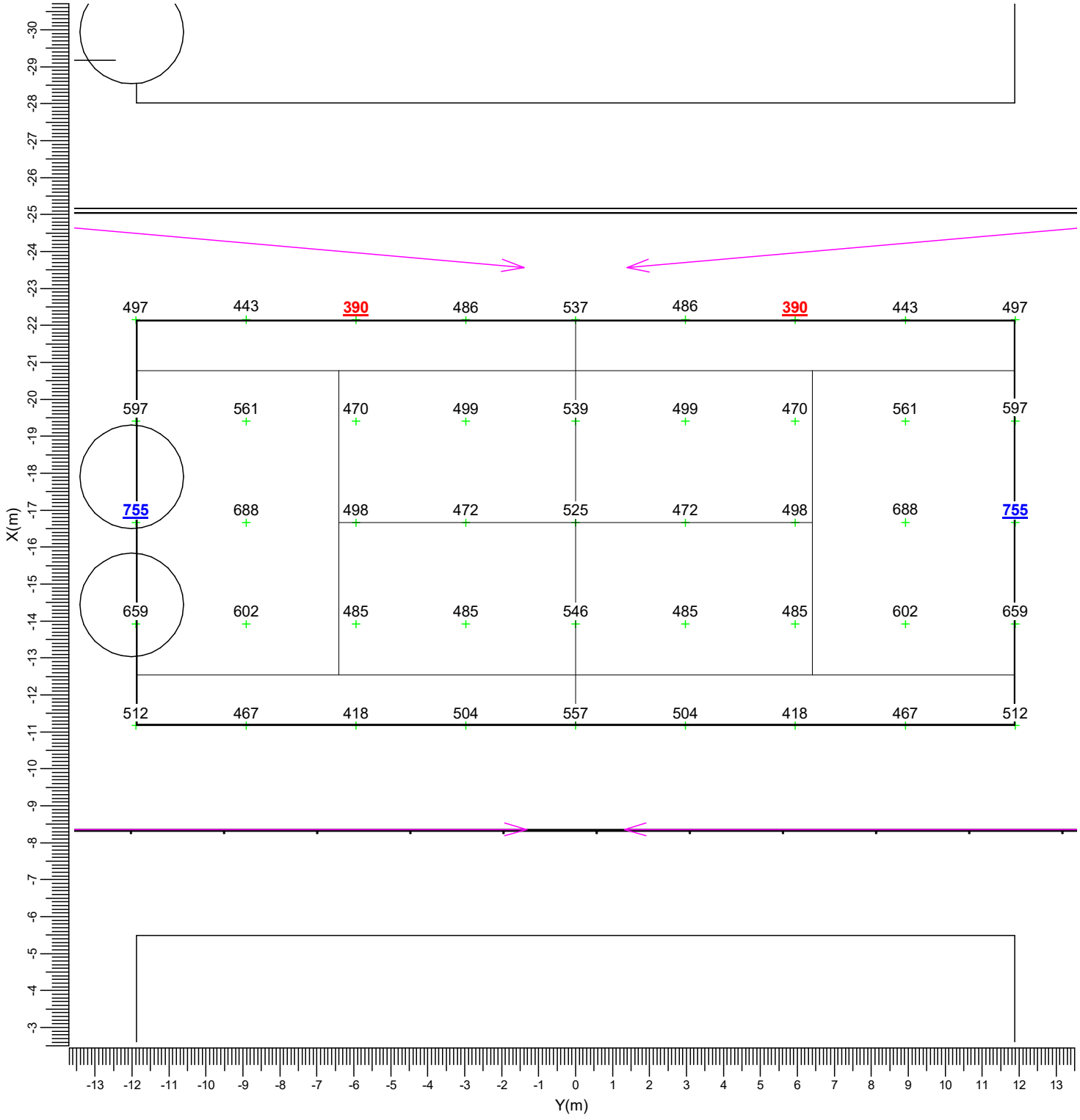
B BVP528 OUT T40 A55-NMB L C BVP528 OUT T35 A55-NMB L

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
499	358	725	0.72	0.49	0.95	1:200

3.3 PPA Court 4: Graphical Table

Court 4

Grid : PPA Court 4 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



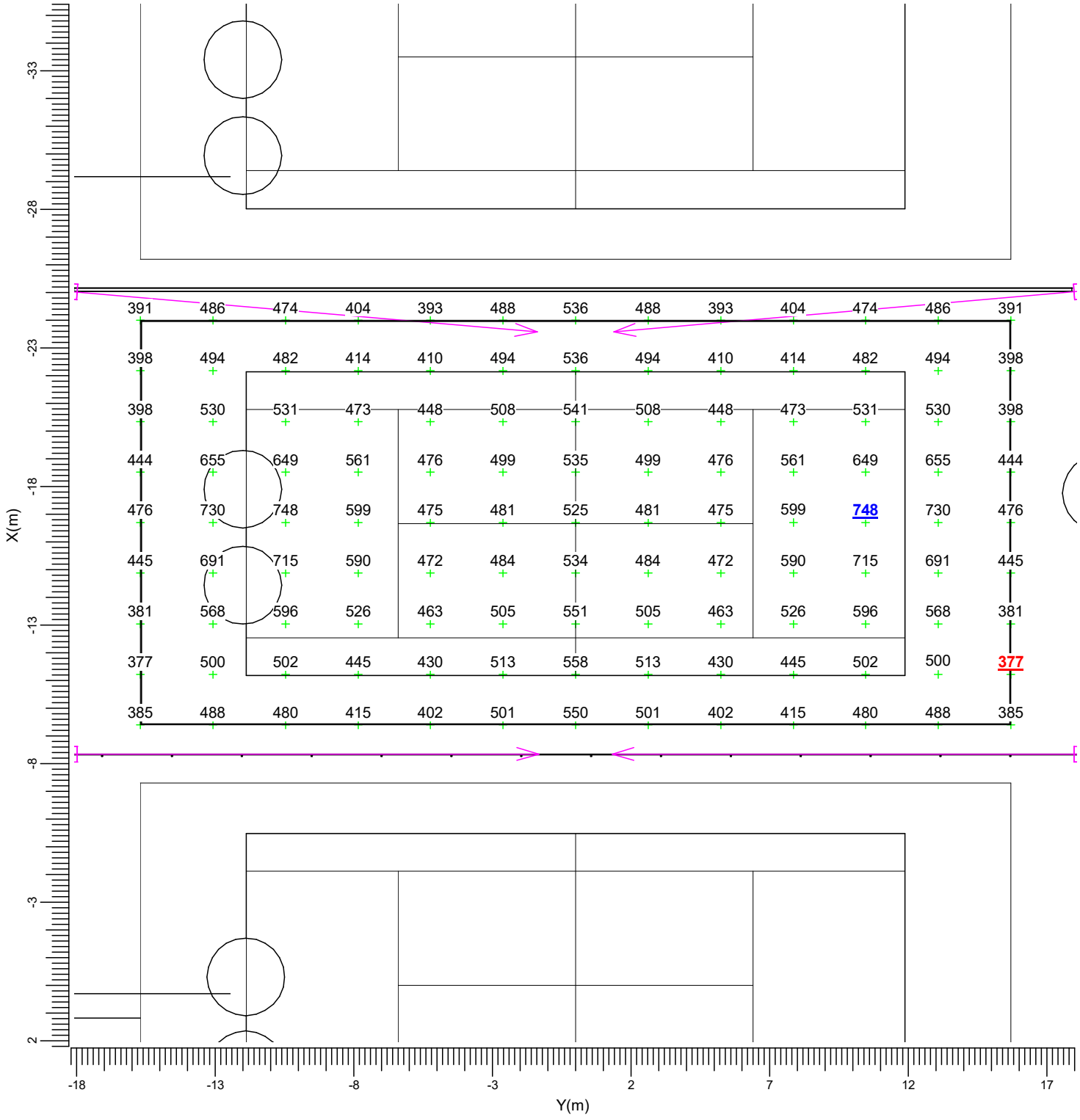
C → BVP528 OUT T35 A55-NMB L

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
526	390	755	0.74	0.52	0.95	1:150

3.4 TPA Court 4: Graphical Table

Court 4

Grid : TPA Court 4 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



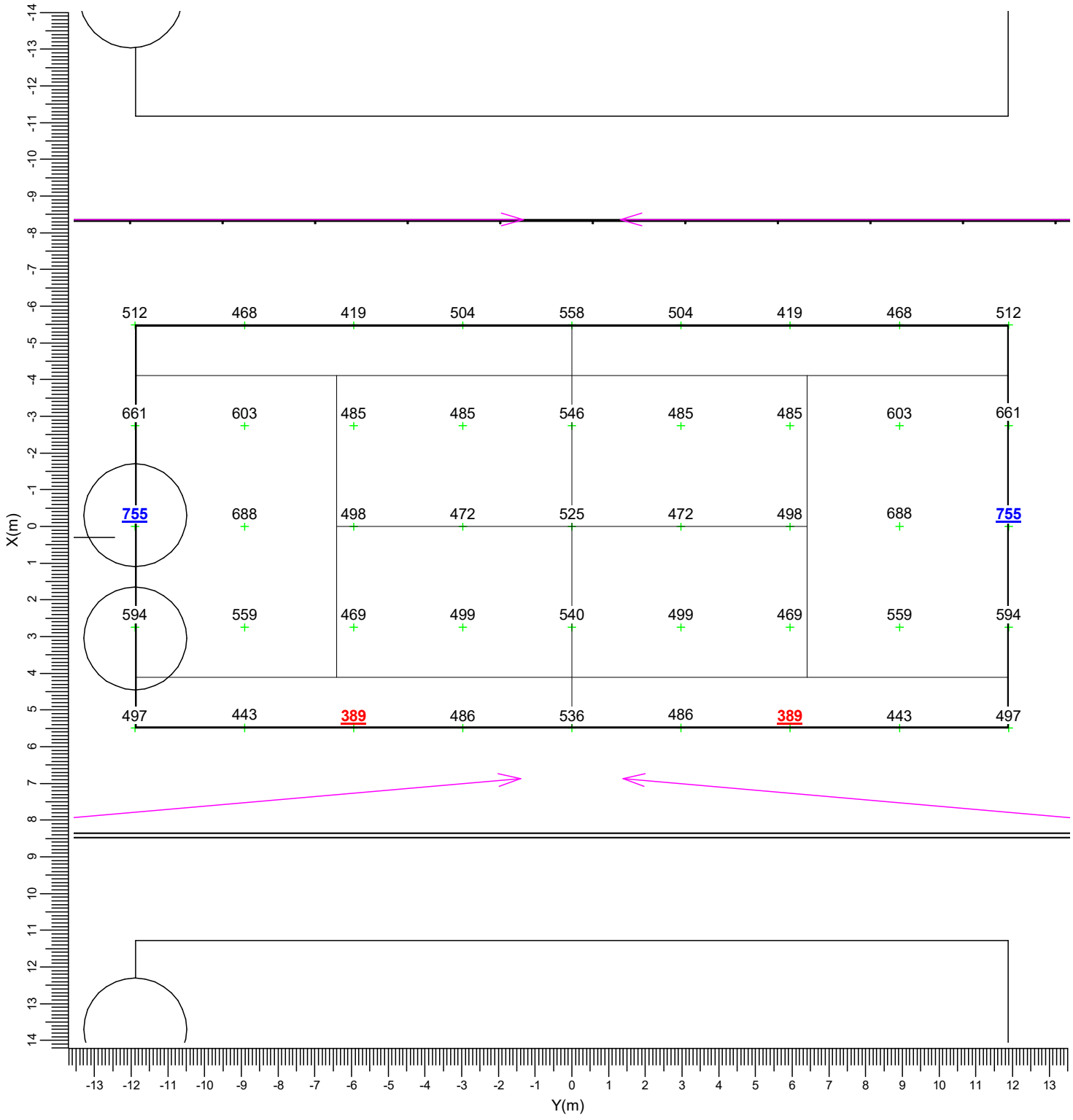
C → BVP528 OUT T35 A55-NMB L

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
501	377	748	0.75	0.50	0.95	1:200

3.5 PPA Court 5: Graphical Table

Court 5

Grid : PPA Court 5 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



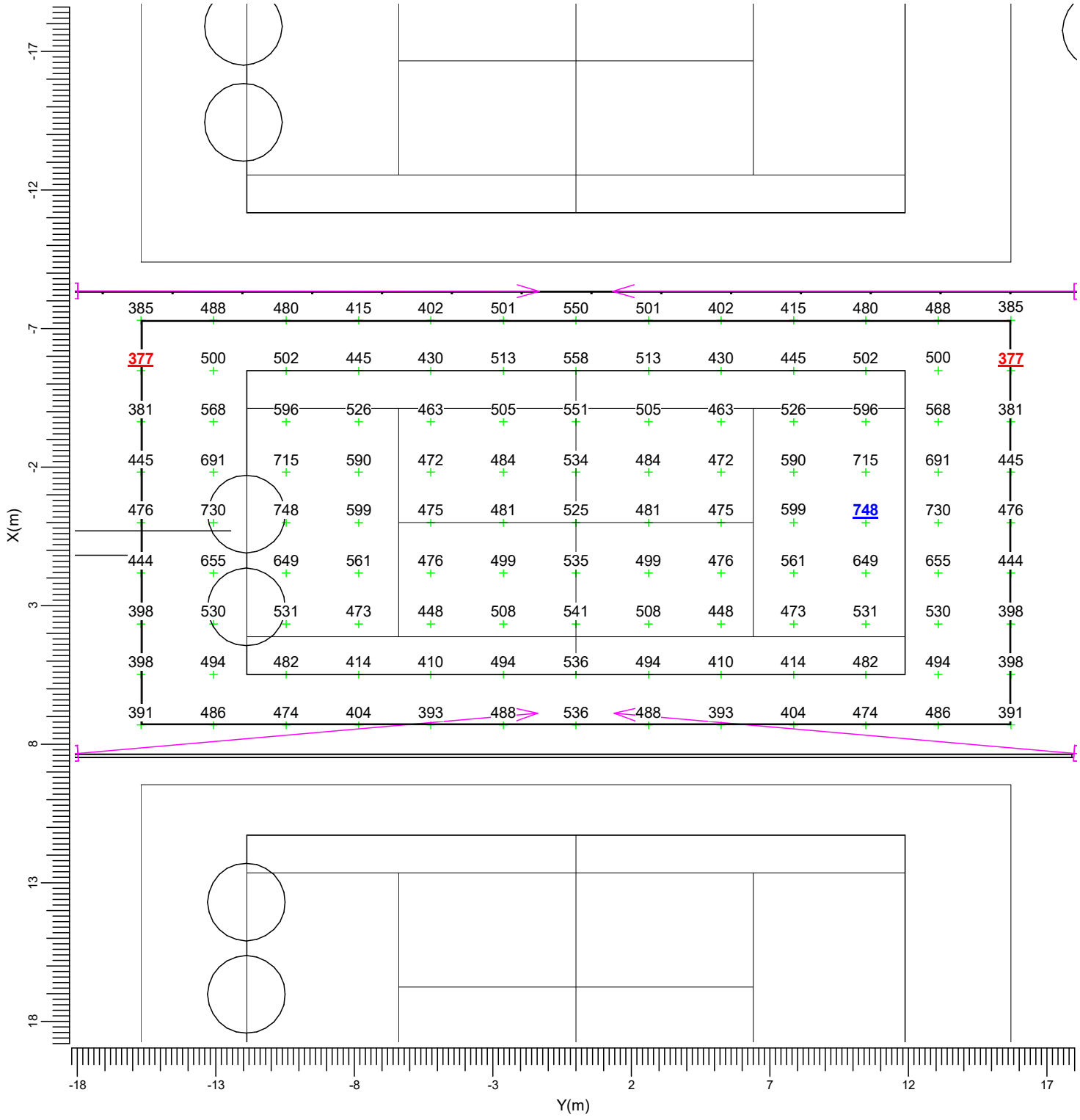
C → BVP528 OUT T35 A55-NMB L

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
526	389	755	0.74	0.52	0.95	1:150

3.6 TPA Court 5: Graphical Table

Court 5

Grid : TPA Court 5 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



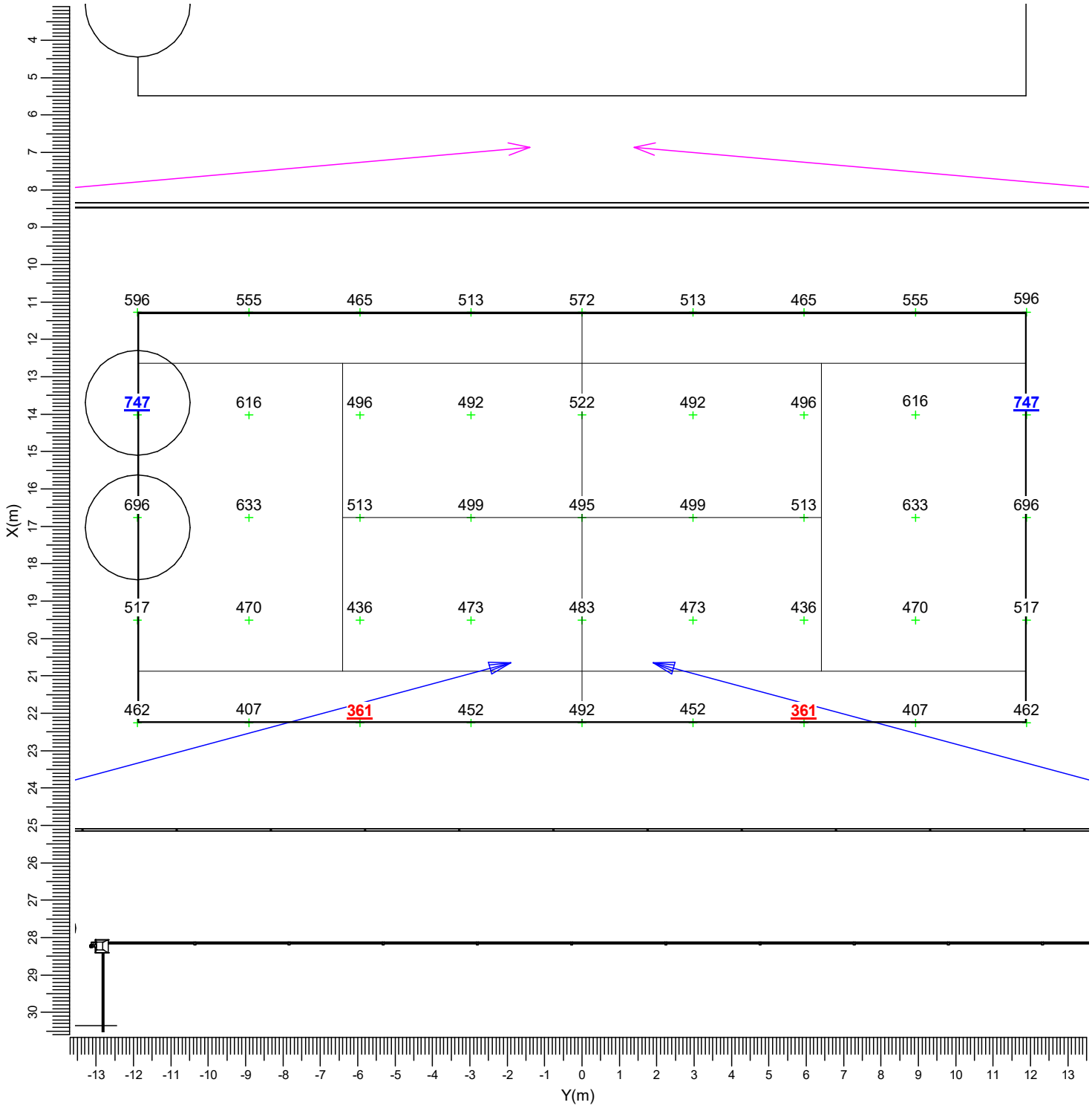
C → BVP528 OUT T35 A55-NMB L

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
501	377	748	0.75	0.50	0.95	1:200

3.7 PPA Court 6: Graphical Table

Court 6

Grid : PPA Court 6 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



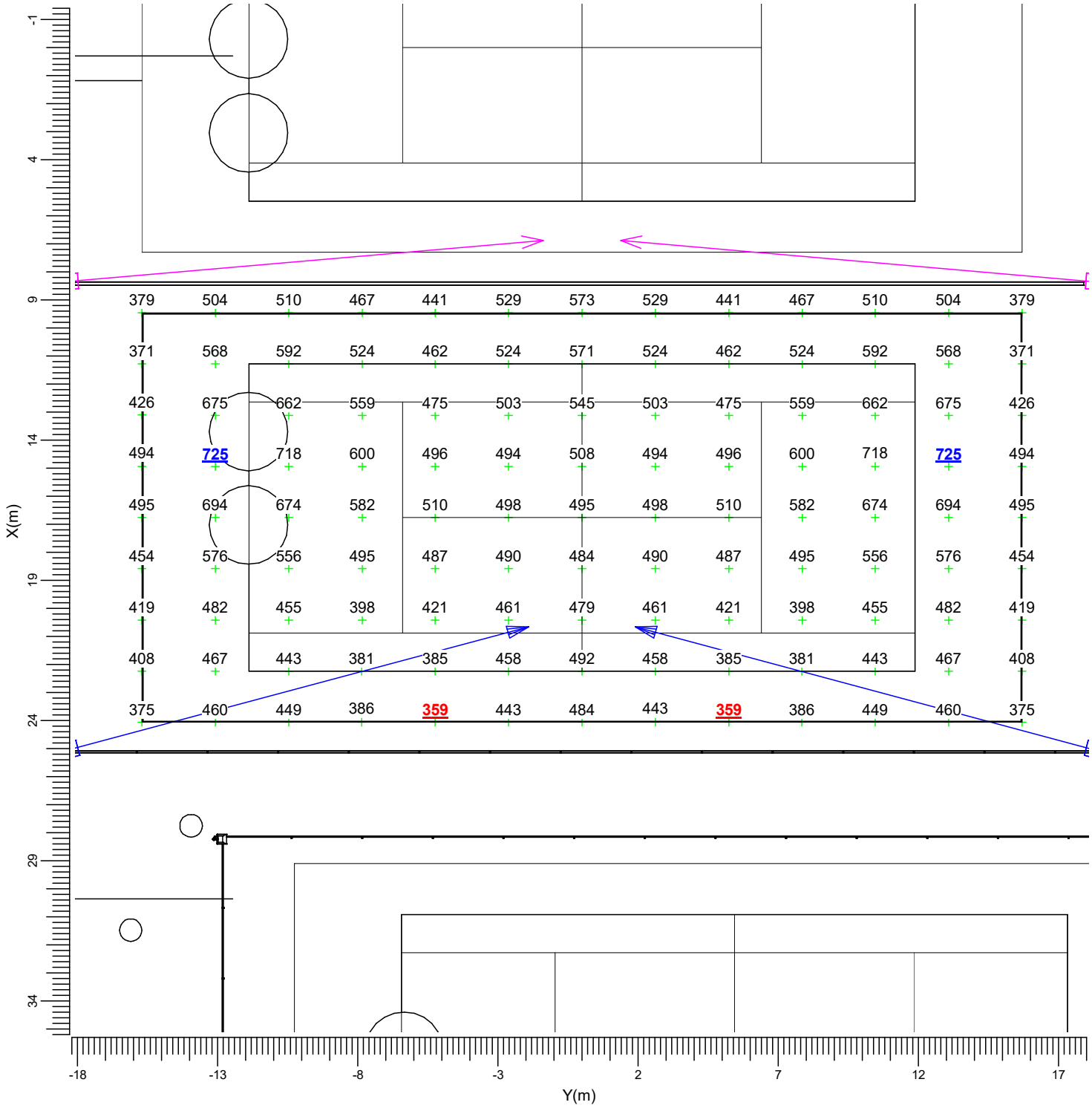
B BVP528 OUT T40 A55-NMB L C BVP528 OUT T35 A55-NMB L
E BVP518 OUT T35 A35-NMB LT

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
519	361	747	0.69	0.48	0.95	1:150

3.8 TPA Court 6: Graphical Table

Court 6

Grid : TPA Court 6 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



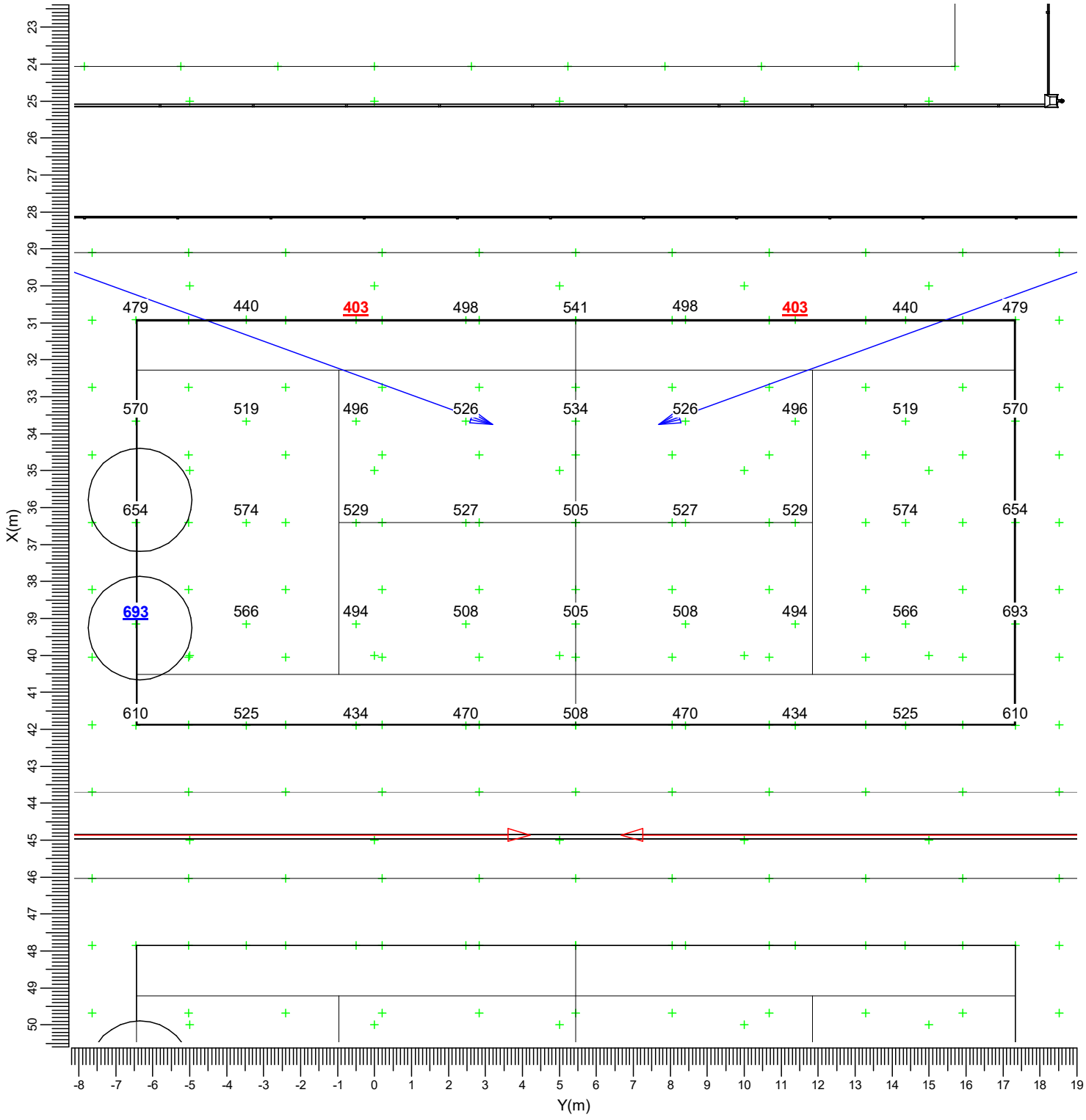
B BVP528 OUT T40 A55-NMB L
C BVP528 OUT T35 A55-NMB L
E BVP518 OUT T35 A35-NMB LT

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
499	359	725	0.72	0.49	0.95	1:200

3.9 PPA Court 7: Graphical Table

Court 7

Grid : PPA Court 7 at Z = -0.00 m
Calculation : Surface Illuminance (lux)

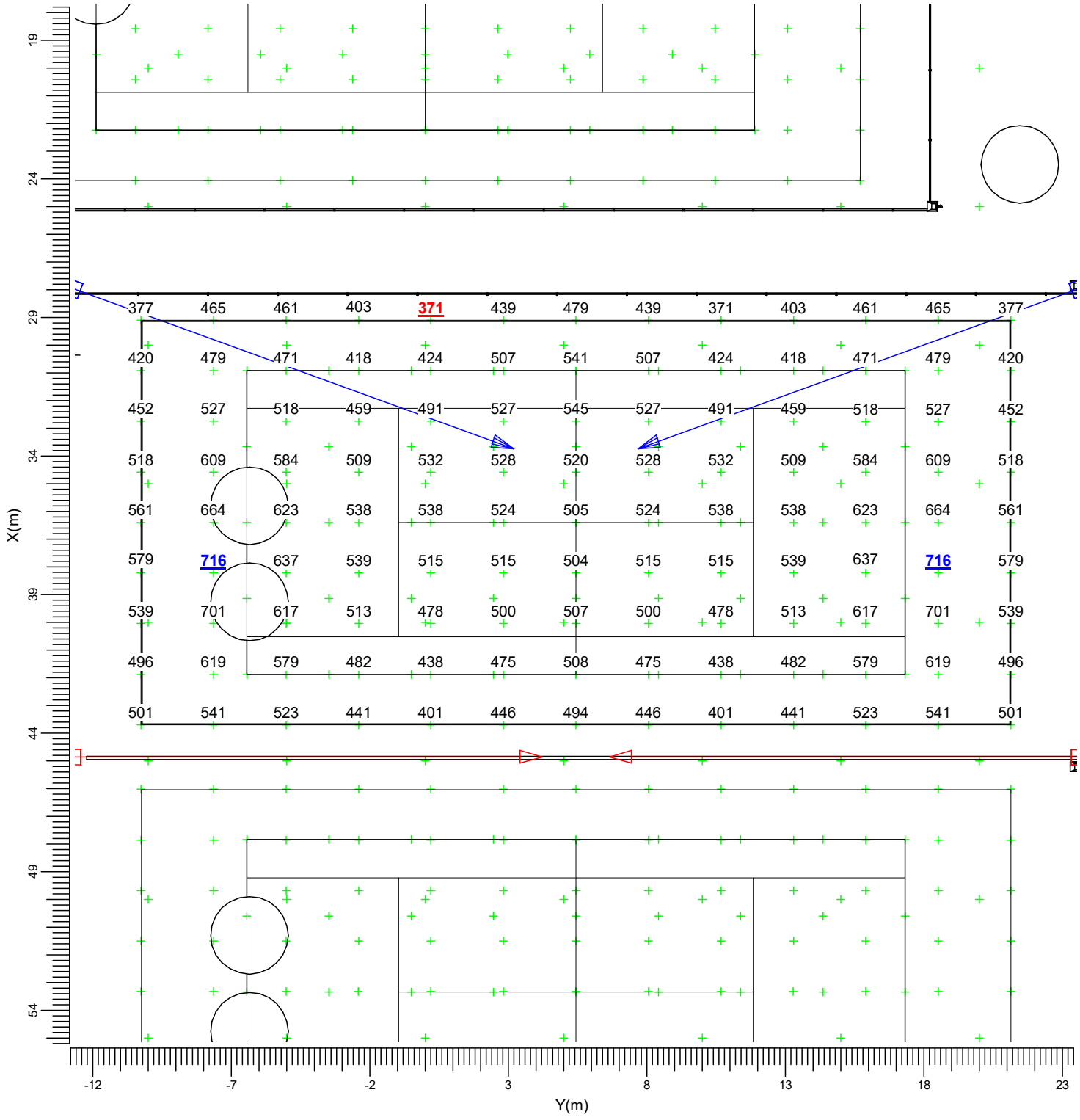


Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
525	403	693	0.77	0.58	0.95	1:150

3.10 TPA Court 7: Graphical Table

Court 7

Grid : TPA Court 7 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



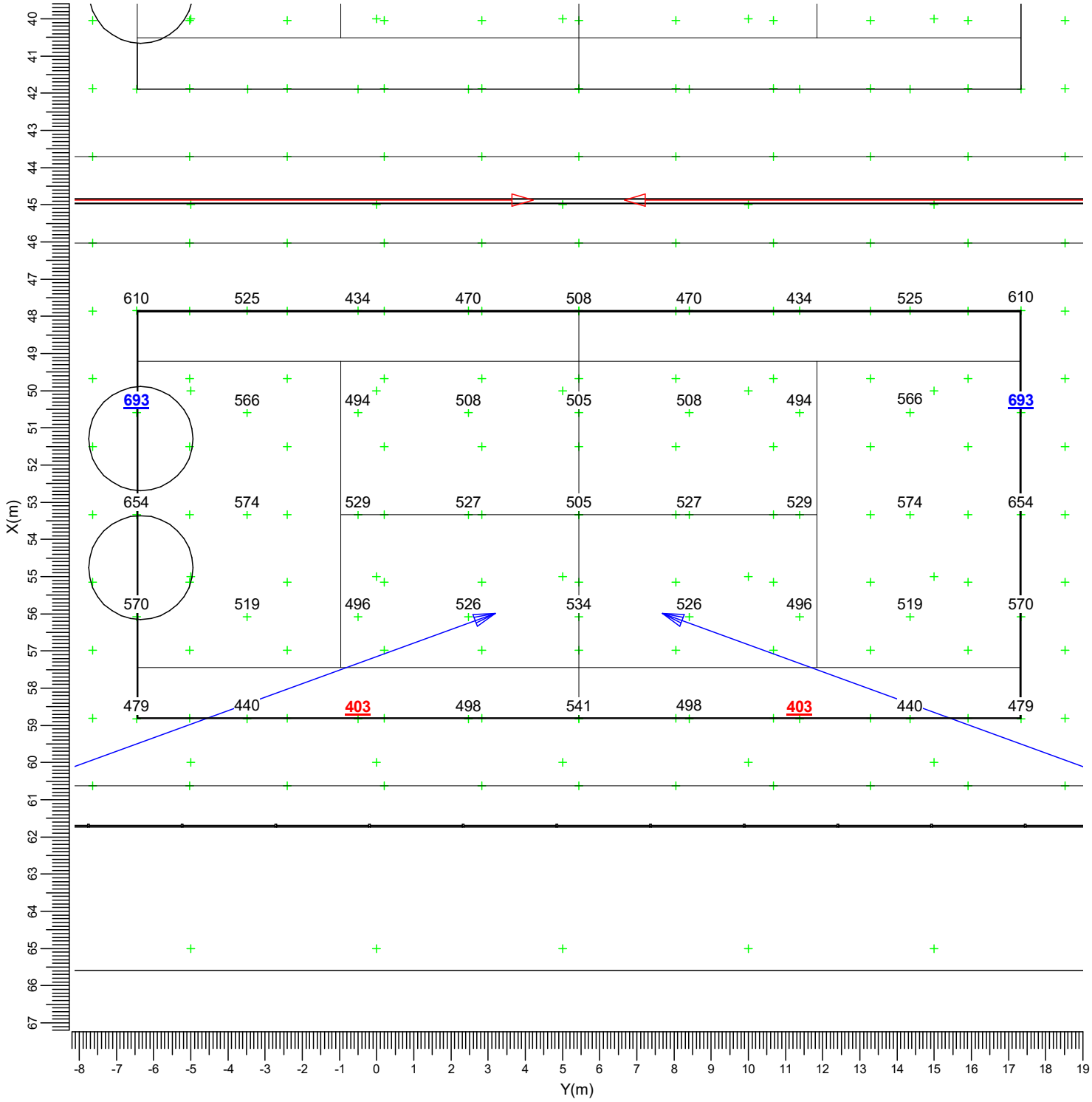
A BVP528 OUT T40 A55-MNB L B BVP528 OUT T40 A55-NMB L

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
513	371	716	0.72	0.52	0.95	1:200

3.11 PPA Court 8: Graphical Table

Court 8

Grid : PPA Court 8 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



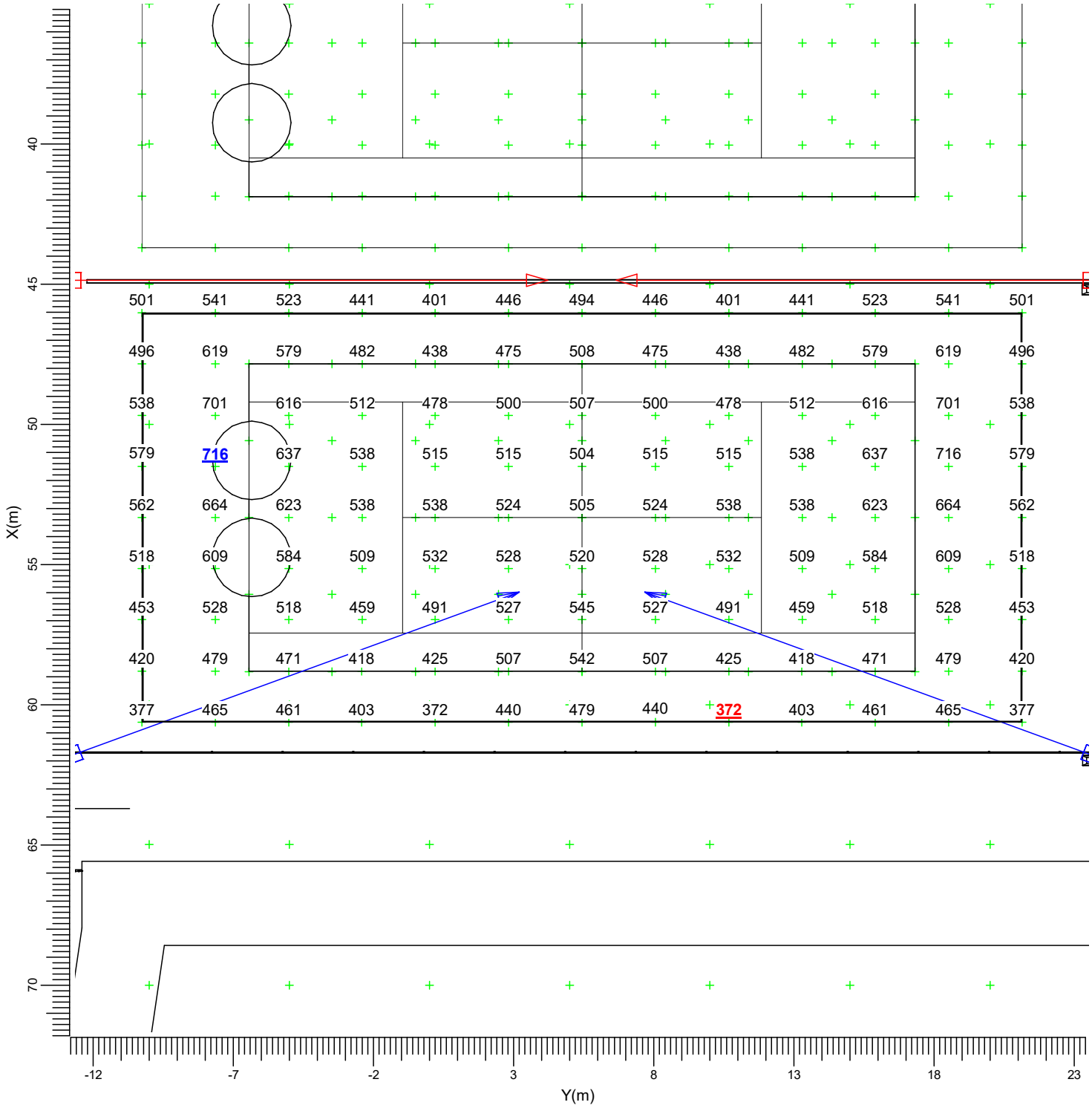
A BVP528 OUT T40 A55-MNB L B BVP528 OUT T40 A55-NMB L
E BVP518 OUT T35 A35-NMB LT

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
525	403	693	0.77	0.58	0.95	1:150

3.12 TPA Court 8: Graphical Table

Court 8

Grid : TPA Court 8 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



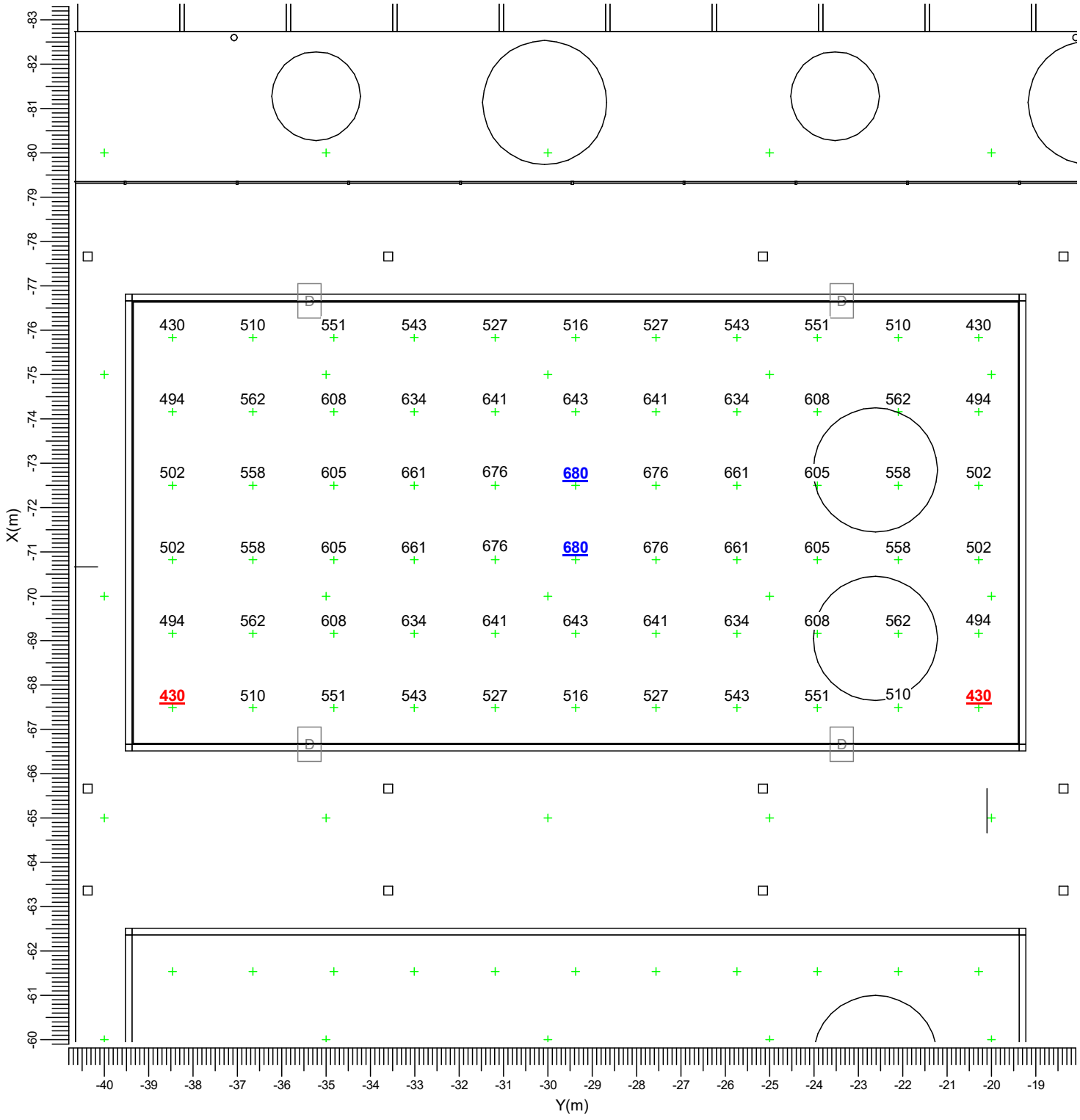
A BVP528 OUT T40 A55-MNB L B BVP528 OUT T40 A55-NMB L
E BVP518 OUT T35 A35-NMB LT

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
513	372	716	0.72	0.52	0.95	1:200

3.13 Paddel Court 1: Graphical Table

Paddel Court 1

Grid : Paddel Court 1 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



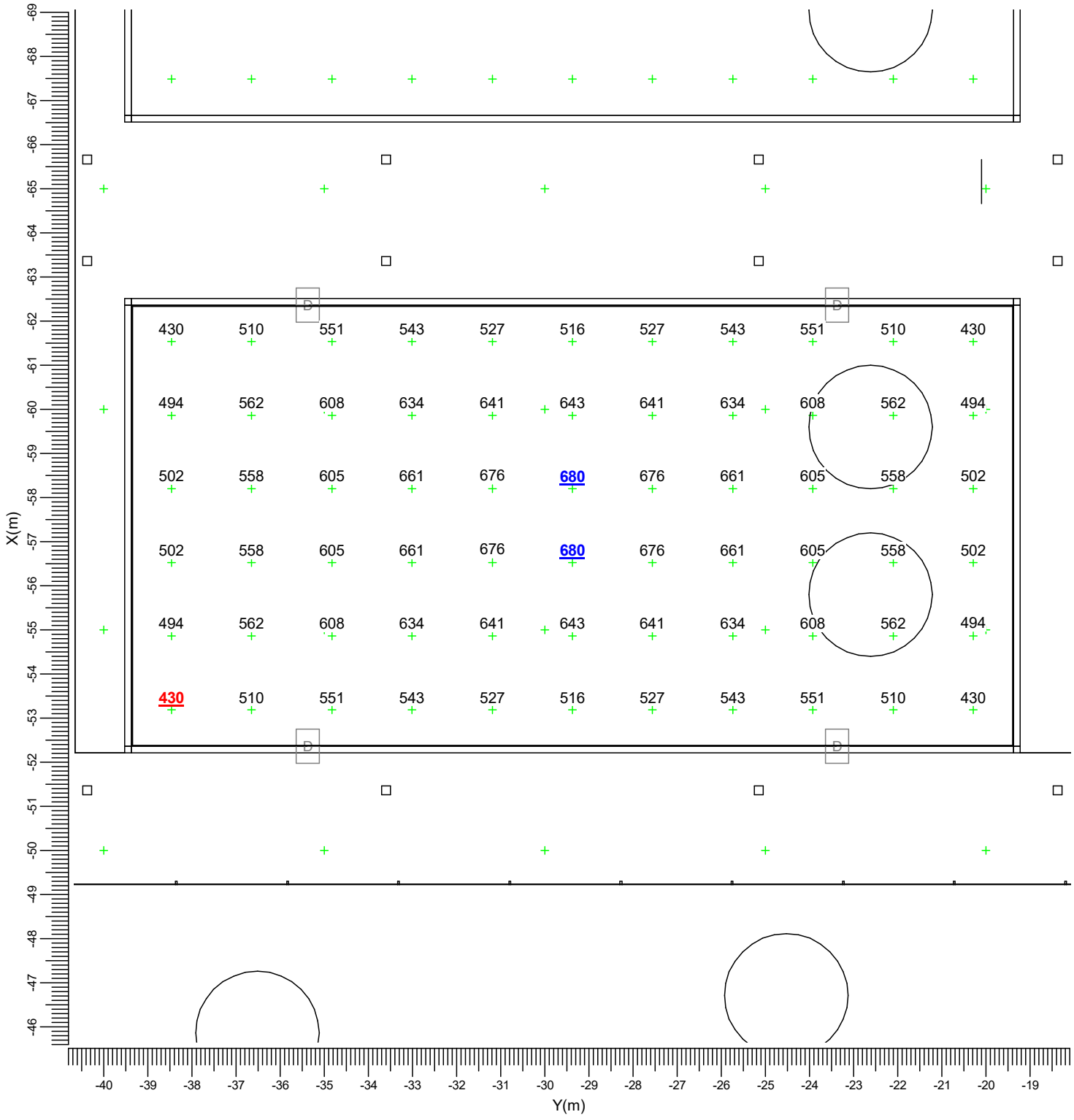
D → BVP651 T25 DW10

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
571	430	680	0.75	0.63	0.95	1:125

3.14 Paddel Court 2: Graphical Table

Paddel Court 2

Grid : Paddel Court 2 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



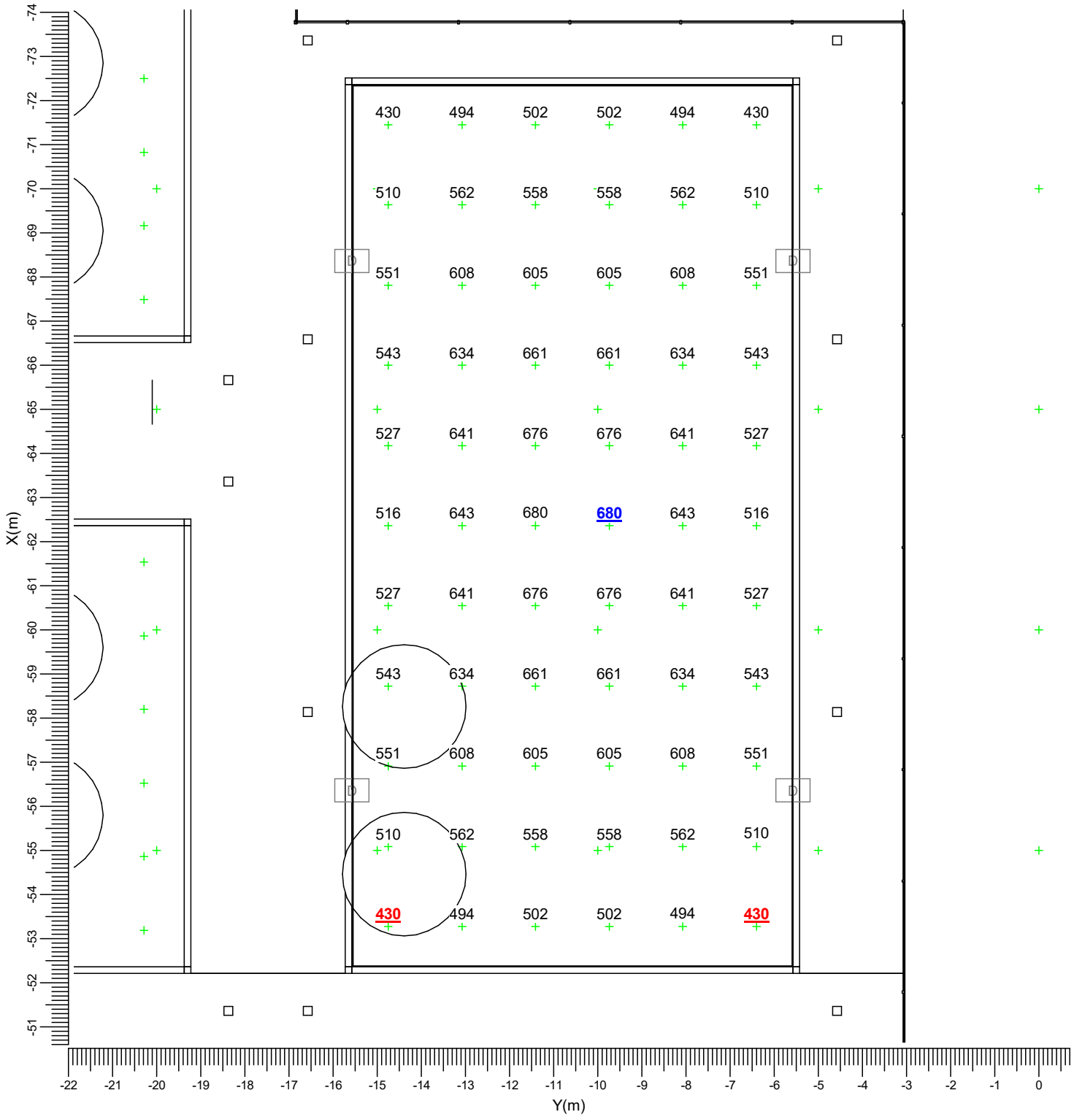
D → BVP651 T25 DW10

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
571	430	680	0.75	0.63	0.95	1:125

3.15 Paddel Court 3: Graphical Table

Paddel Court 3

Grid : Paddel Court 3 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



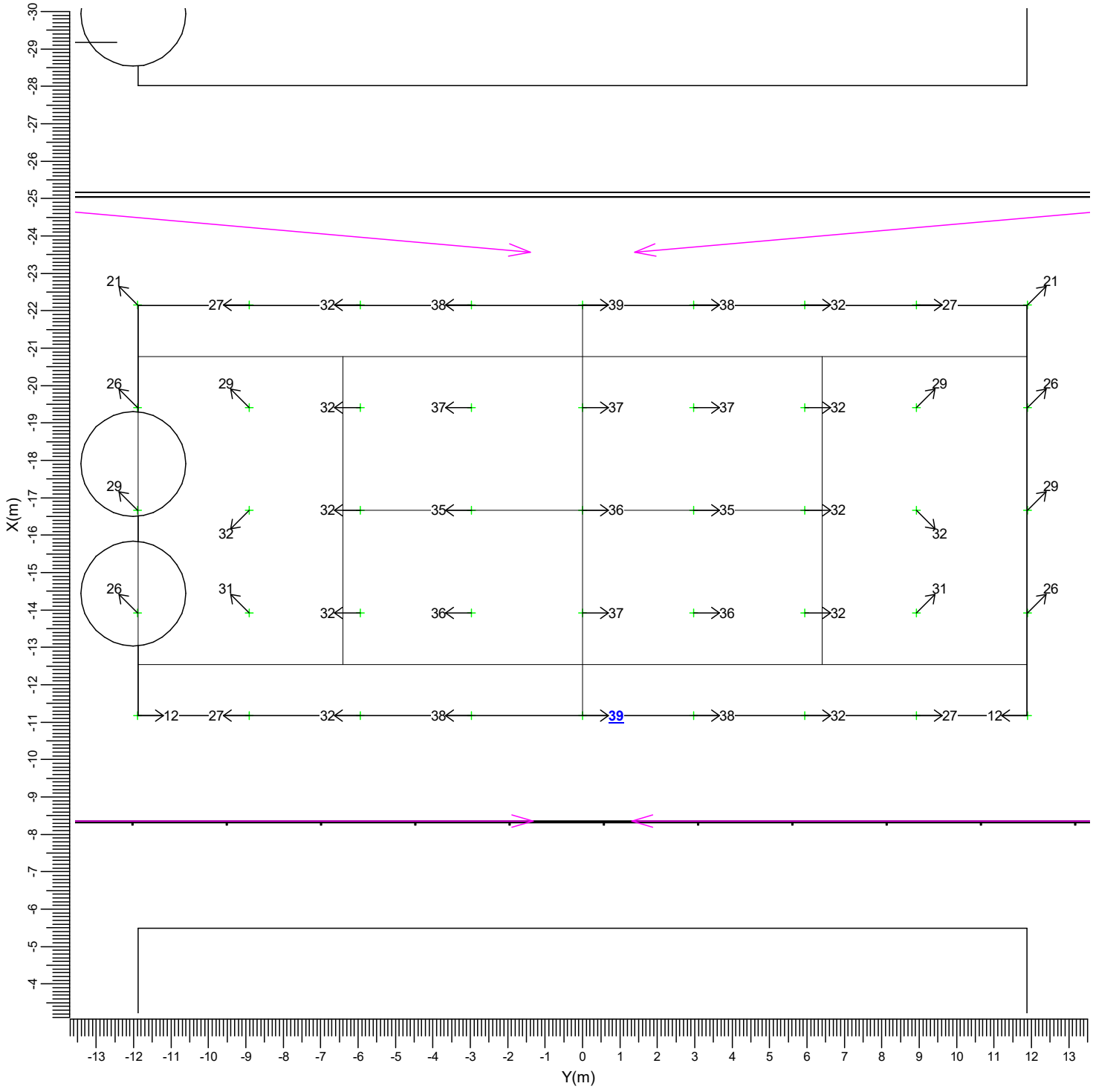
D → BVP651 T25 DW10

Average	Minimum	Maximum	Min/Ave	Min/Max	Project maintenance factor	Scale
571	430	680	0.75	0.63	0.95	1:125

3.16 GR Max Typi Ct (Ct 2): Graphical Table

Court 4

Grid of Observers : PPA Court 4
Calculation : Glare Rating
Grid for Background Luminance: PPA Court 4 (Reflectance: 0.25)
Vertical Viewing Angle : -2.0 deg



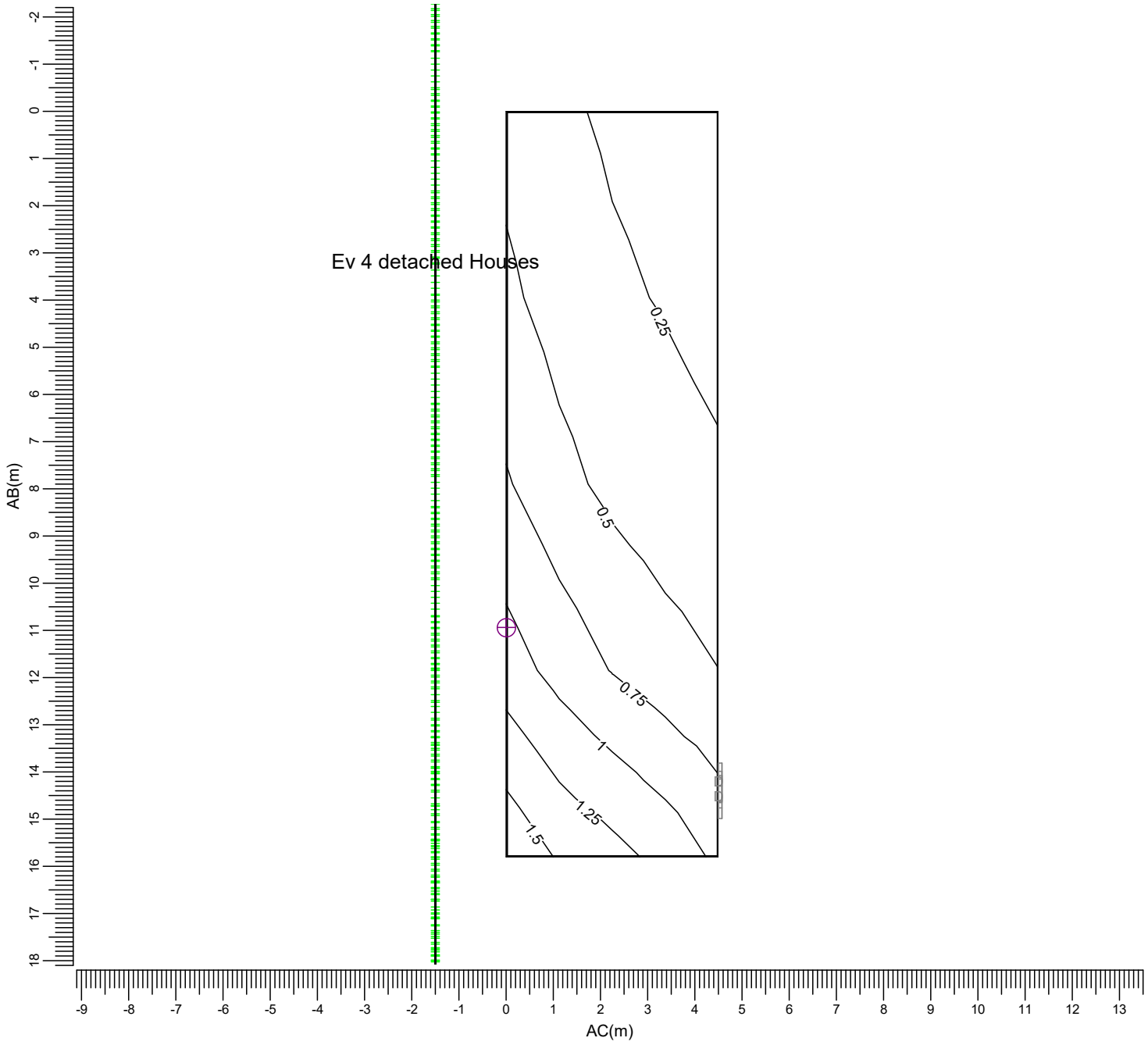
C → BVP528 OUT T35 A55-NMB L

Maximum	Project maintenance factor	Scale
39.2	0.95	1:150

3.17 Ev Semi Detached Houses: Iso Contour

Spill Lighting All On

Grid : Ev Semi Detached
Calculation : Surface Illuminance (lux)



(-62.40, 39.20, 6.00) C-----D (-48.20, 32.30, 6.00)
| |
(-62.40, 39.20, 1.50) A-----B (-48.20, 32.30, 1.50)

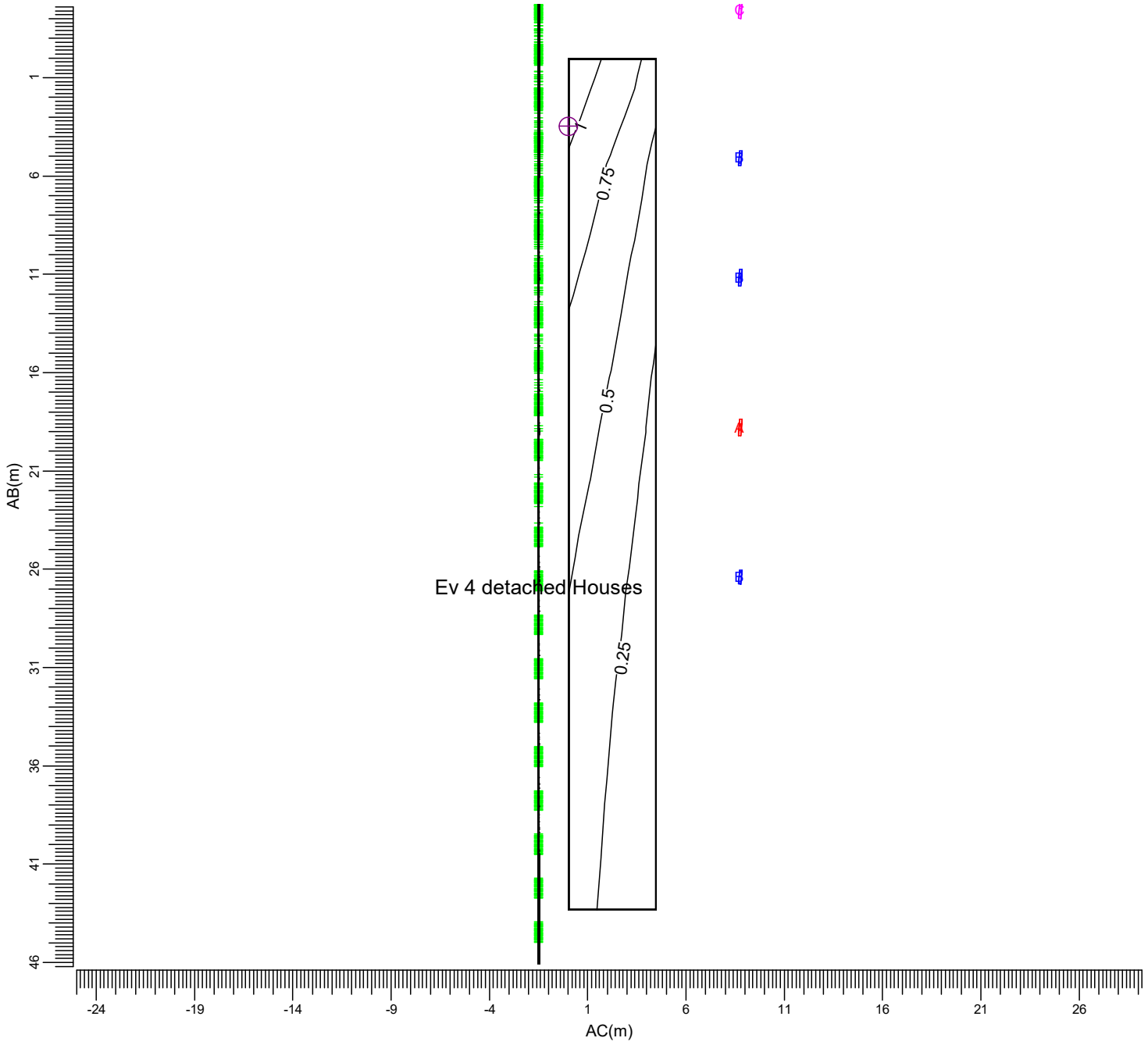
A : BVP528 OUT T40 A55-MNB LO
B : BVP528 OUT T40 A55-NMB LO
C : BVP528 OUT T35 A55-NMB LO
D : BVP651 T25 DW10
E : BVP518 OUT T35 A35-NMB LTM

Maximum	Project maintenance factor	Scale
1.71	1.00	1:125

3.18 Ev 4 Detached Houses: Iso Contour

Spill Lighting All On

Grid : Ev 4 Detached Houses
Calculation : Surface Illuminance (lux)



(-32.90, 41.80, 6.00) C-----D (-13.40, 80.50, 6.00)
| |
(-32.90, 41.80, 1.50) A-----B (-13.40, 80.50, 1.50)

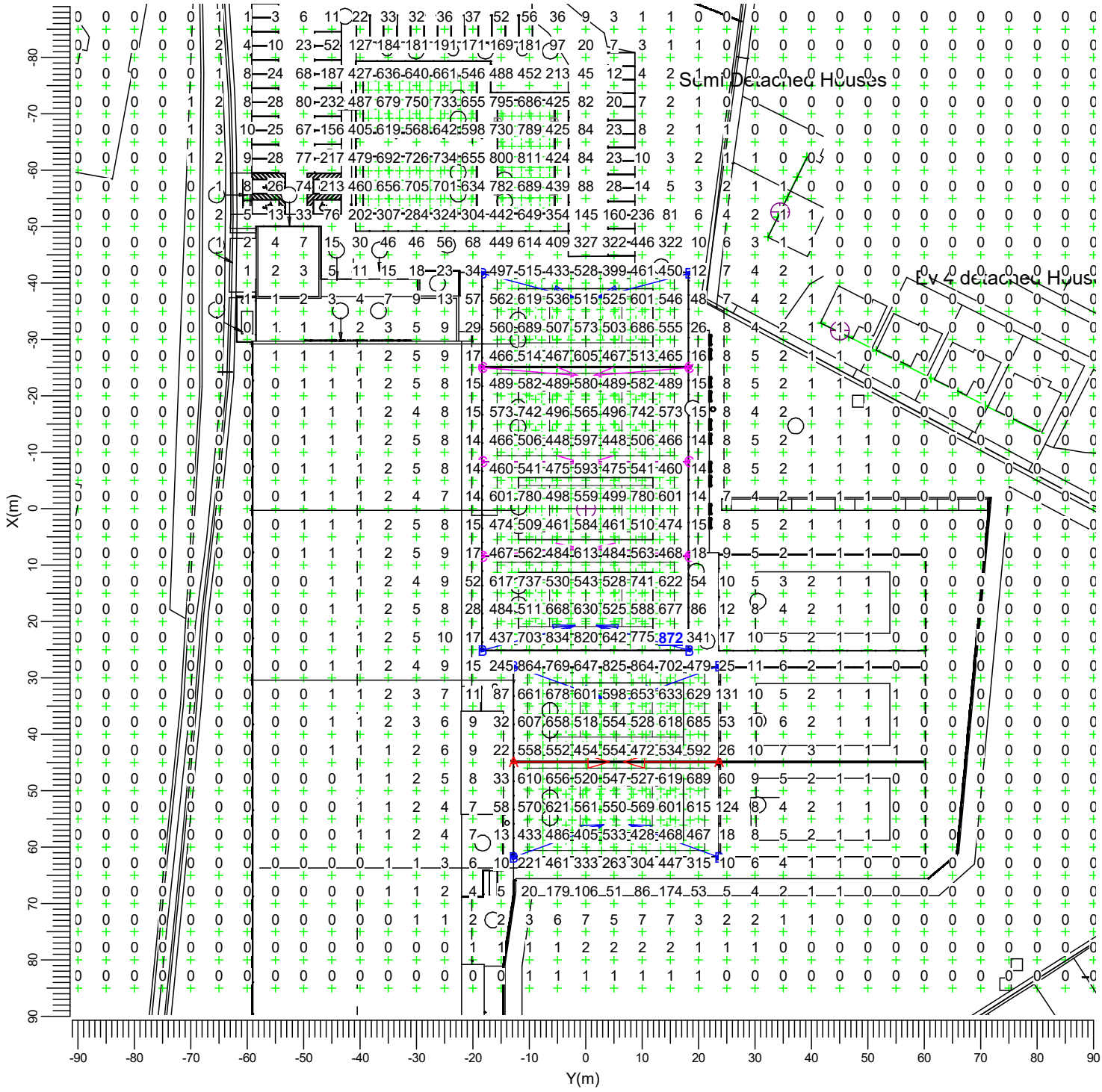
A : BVP528 OUT T40 A55-MNB LO
B : BVP528 OUT T40 A55-NMB LO
C : BVP528 OUT T35 A55-NMB LO
D : BVP651 T25 DW10
E : BVP518 OUT T35 A35-NMB LTM

Maximum	Project maintenance factor	Scale
1.23	1.00	1:300

3.19 Eh Spill @ 0m: Graphical Table

Spill Lighting All On

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



A BVP528 OUT T40 A55-MNB L
B BVP528 OUT T40 A55-NMB L
C BVP528 OUT T35 A55-NMB L
D BVP651 T25 DW10
E BVP518 OUT T35 A35-NMB LT

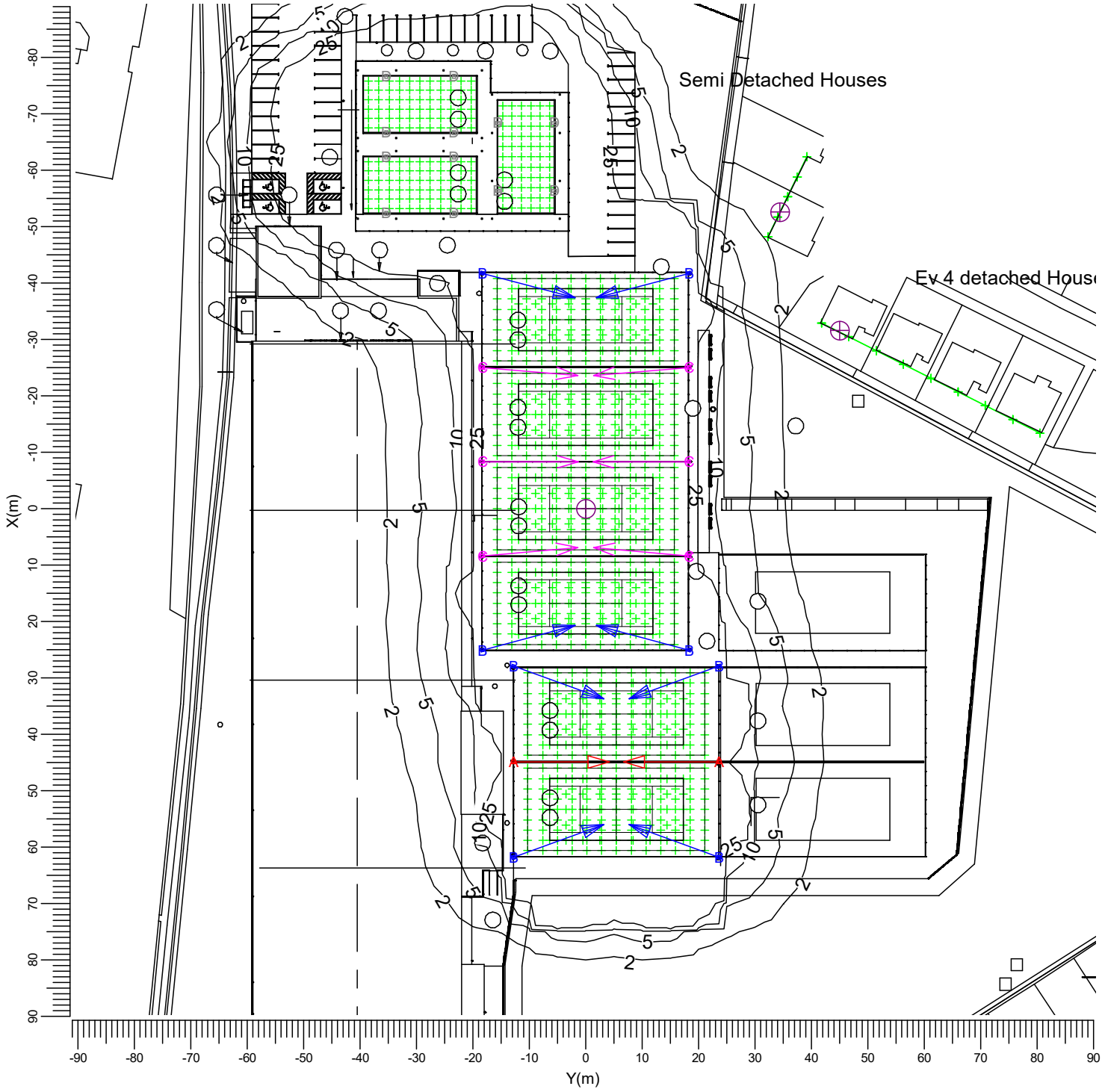
Project maintenance factor
1.00

Scale
1:1000

3.20 Eh Spill @ 0m: Iso Contour

Spill Lighting All On

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



A BVP528 OUT T40 A55-MNB L
B BVP528 OUT T40 A55-NMB L
C BVP528 OUT T35 A55-NMB L
D BVP651 T25 DW10
E BVP518 OUT T35 A35-NMB LT

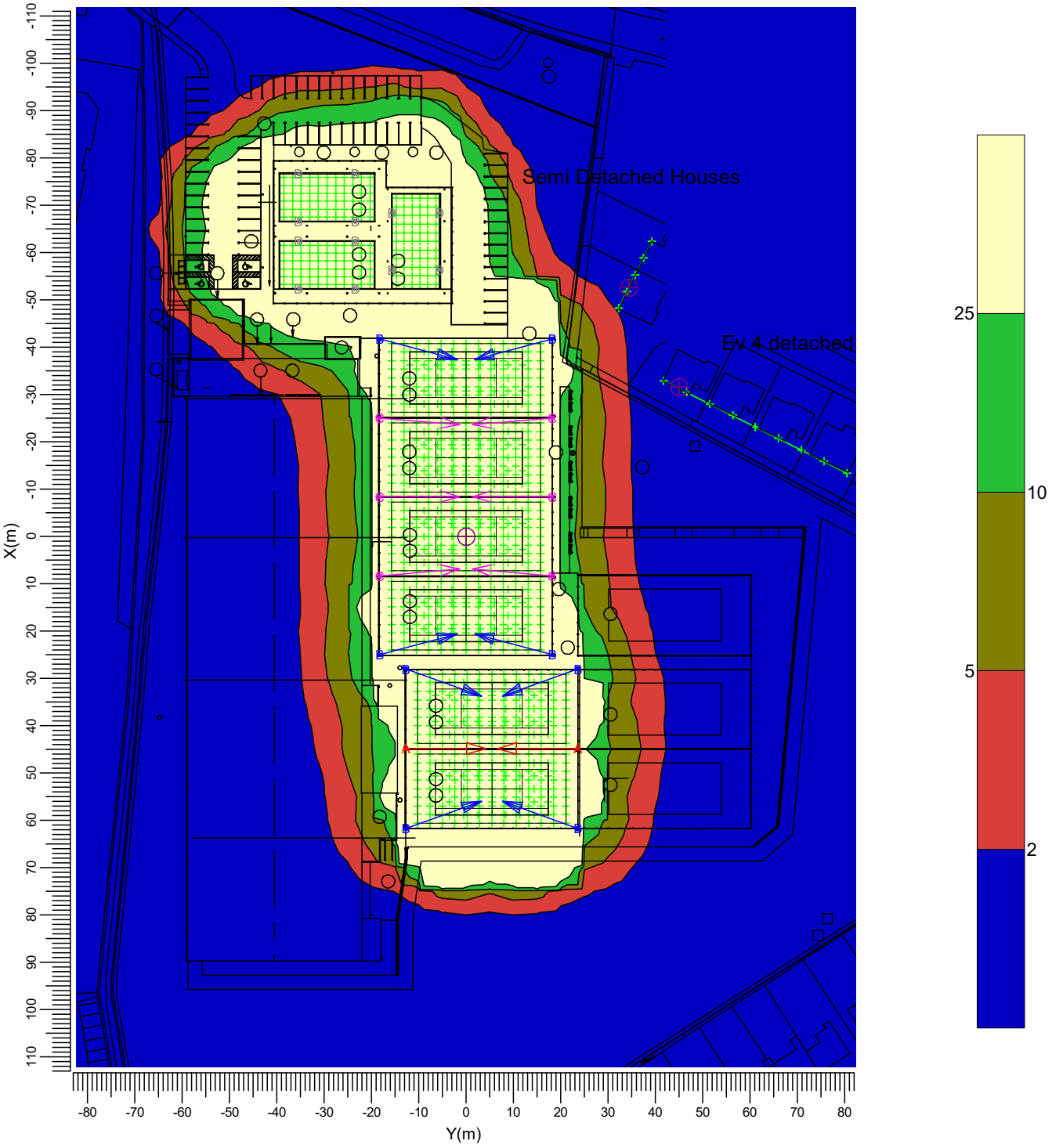
Project maintenance factor
1.00

Scale
1:1000

3.21 Eh Spill @ 0m: Filled Iso Contour

Spill Lighting All On

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



A BVP528 OUT T40 A55-MNB L
B BVP528 OUT T40 A55-NMB L
C BVP528 OUT T35 A55-NMB L
D BVP651 T25 DW10
E BVP518 OUT T35 A35-NMB LT

Project maintenance factor
1.00

Scale
1:1250

4. Luminaire Details

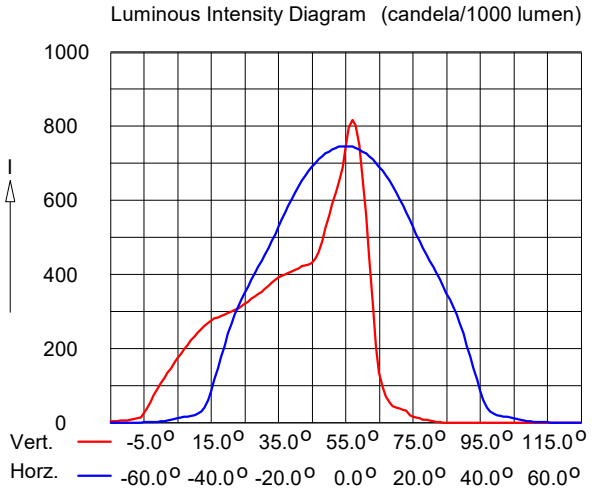
4.1 Project Luminaires

OptiVision LED gen3.5 2022
BVP528 OUT T40 1xLED2480-4S/740/740 E3/D4I A55-MNB LO

Light output ratios
- DLOR : 0.57
- ULOR : 0.00
- TLOR : 0.57

Ballast : E3/D4I
Lamp flux : 248000 lm
Luminaire wattage : 1427.4 W
Measurement code : LVM2I005AU

Note: Luminaire data not from database.

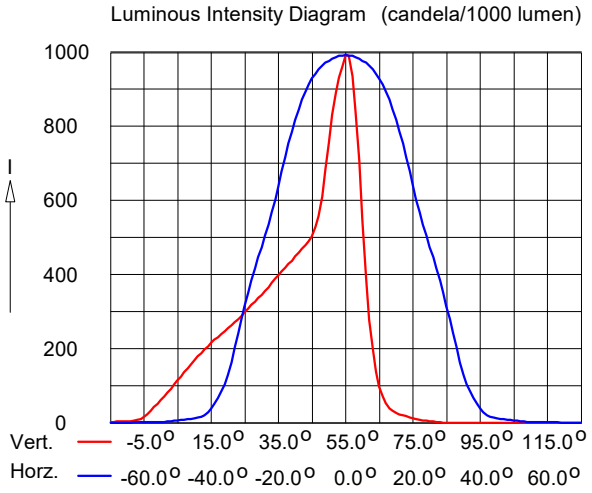


OptiVision LED gen3.5 2022
BVP528 OUT T40 1xLED2480-4S/740/740 E3/D4I A55-NMB LO

Light output ratios
- DLOR : 0.57
- ULOR : 0.00
- TLOR : 0.57

Ballast : E3/D4I
Lamp flux : 248000 lm
Luminaire wattage : 1427.4 W
Measurement code : LVM2I482U1

Note: Luminaire data not from database.

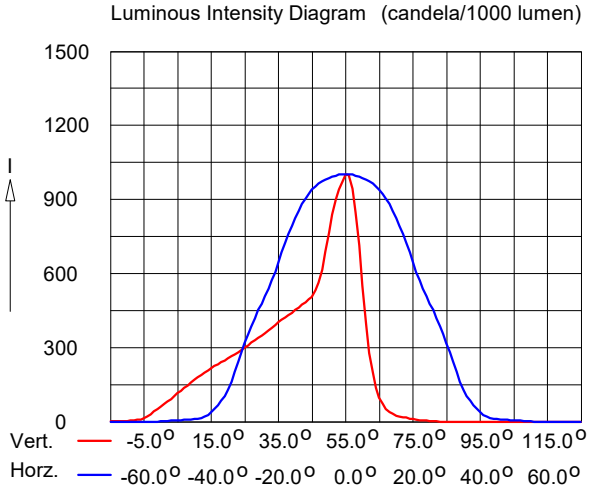


OptiVision LED gen3.5 2022
BVP528 OUT T35 1xLED2590-4S/740/740 E3/D4I A55-NMB LO

Light output ratios
- DLOR : 0.58
- ULOR : 0.00
- TLOR : 0.58

Ballast : E3/D4I
Lamp flux : 259000 lm
Luminaire wattage : 1505.9 W
Measurement code : LVM2I482U1

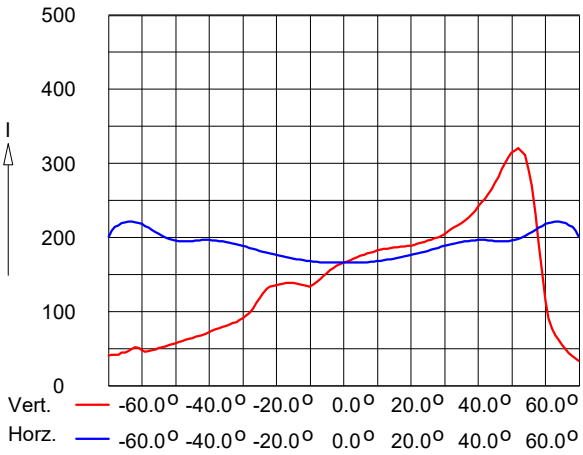
Note: Luminaire data not from database.



ClearFlood Large
BVP651 T25 1 xLED800-4S/740 DW10



Luminous Intensity Diagram (candela/1000 lumen)



Light output ratios

DLOR	:	0.83
ULOR	:	0.00
TLOR	:	0.83
Ballast	:	-
Lamp flux	:	80000 lm
Luminaire wattage	:	540.0 W
Measurement code	:	LVE16A7063

5. Installation Data

5.1 Legends

Project Luminaires:

Code	Qty	Luminaire Type	Lamp Type	Flux (lm)
A	2	BVP528 OUT T40 A55-MNB LO	1 * LED2480-4S/740	1 * 248000
B	8	BVP528 OUT T40 A55-NMB LO	1 * LED2480-4S/740	1 * 248000
C	6	BVP528 OUT T35 A55-NMB LO	1 * LED2590-4S/740	1 * 259000
D	12	BVP651 T25 DW10	1 * LED800-4S/740	1 * 80000

Arrangements:

Code	Arrangement
0	Individuals
1	Court 3 Lower Left
2	Court 4/5 Lower
3	Court 5/6 Lower
4	Court 6 Lower Left
5	Court 6 Lower Right
6	Court 3/4 Lower
7	Court 3 Upper Left
8	Court 3/4 Upper
9	Court 4/5 Upper
10	Court 5/6 Upper
11	Court 6 Upper Left
12	Court 6 Upper Right
13	Court 7 Lower Left
14	Court 7 Upper Left
15	Court 7 Lower Right
16	Court 7 Upper Right
17	Court 8 Lower Left
18	Court 8 Lower Right
19	Court 8 Upper Right

Switching Modes:

Code	Switching Mode
1	Court 3
2	Court 4
3	Court 5
4	Court 6
5	Court 7
6	Court 8
7	Paddel Court 1
8	Paddel Court 2
9	Paddel Court 3
10	Spill Lighting All On

5.2 Luminaire Positioning and Orientation

Including Aiming Points:

Qty and Code	Position			Aiming Points			ULR	ULOR_i	Arr.	Switching Modes									
	X (m)	Y (m)	Z (m)	X (m)	Y (m)	Z (m)				1	2	3	4	5	6	7	8	9	10
1 * D	-76.66	-35.38	6.00	-76.66	-35.38	0.00	0.00	0.00	0	-	-	-	-	-	-	+	-	-	+
1 * D	-76.66	-23.38	6.00	-76.66	-23.38	0.00	0.00	0.00	0	-	-	-	-	-	-	+	-	-	+
1 * D	-68.36	-15.58	6.00	-68.36	-15.58	0.00	0.00	0.00	0	-	-	-	-	-	-	-	-	+	+
1 * D	-68.36	-5.58	6.00	-68.36	-5.58	0.00	0.00	0.00	0	-	-	-	-	-	-	-	-	+	+
1 * D	-66.66	-35.38	6.00	-66.66	-35.38	0.00	0.00	0.00	0	-	-	-	-	-	-	+	-	-	+
1 * D	-66.66	-23.38	6.00	-66.66	-23.38	0.00	0.00	0.00	0	-	-	-	-	-	-	+	-	-	+
1 * D	-62.36	-35.38	6.00	-62.36	-35.38	0.00	0.00	0.00	0	-	-	-	-	-	-	-	+	-	+
1 * D	-62.36	-23.38	6.00	-62.36	-23.38	0.00	0.00	0.00	0	-	-	-	-	-	-	-	+	-	+
1 * D	-56.36	-15.58	6.00	-56.36	-15.58	0.00	0.00	0.00	0	-	-	-	-	-	-	-	-	+	+
1 * D	-56.36	-5.58	6.00	-56.36	-5.58	0.00	0.00	0.00	0	-	-	-	-	-	-	-	-	+	+
1 * D	-52.36	-35.38	6.00	-52.36	-35.38	0.00	0.00	0.00	0	-	-	-	-	-	-	-	+	-	+
1 * D	-52.36	-23.38	6.00	-52.36	-23.38	0.00	0.00	0.00	0	-	-	-	-	-	-	-	+	-	+
1 * B	-41.75	-18.30	10.20	-37.36	-1.90	0.00	0.00	0.00	1	+	-	-	-	-	-	-	-	-	+
1 * C	-8.35	-18.30	10.20	-8.35	-1.32	0.00	0.00	0.00	2	-	+	+	-	-	-	-	-	-	+
1 * C	8.35	-18.30	10.20	6.87	-1.39	0.00	0.00	0.00	3	-	-	+	+	-	-	-	-	-	+
1 * B	25.05	-18.30	10.20	20.66	-1.90	0.00	0.00	0.00	5	-	-	-	+	-	-	-	-	-	+
1 * C	-25.05	-18.30	10.20	-23.57	-1.39	0.00	0.00	0.00	6	+	+	-	-	-	-	-	-	-	+
1 * B	-41.75	18.30	10.20	-37.36	1.90	0.00	0.00	0.00	7	+	-	-	-	-	-	-	-	-	+
1 * C	-25.05	18.30	10.20	-23.57	1.39	0.00	0.00	0.00	8	+	+	-	-	-	-	-	-	-	+
1 * C	-8.35	18.30	10.20	-8.35	1.32	0.00	0.00	0.00	9	-	+	+	-	-	-	-	-	-	+
1 * C	8.35	18.30	10.20	6.87	1.39	0.00	0.00	0.00	10	-	-	+	+	-	-	-	-	-	+
1 * B	25.05	18.30	10.20	20.66	1.90	0.00	0.00	0.00	12	-	-	-	+	-	-	-	-	-	+
1 * B	27.94	-12.76	10.20	33.75	3.19	0.00	0.00	0.00	13	-	-	-	-	+	-	-	-	-	+
1 * B	27.94	23.64	10.20	33.75	7.69	0.00	0.00	0.00	14	-	-	-	-	+	-	-	-	-	+
1 * A	44.87	-12.76	10.20	44.87	4.22	0.00	0.00	0.00	15	-	-	-	-	+	+	-	-	-	+
1 * A	44.87	23.64	10.20	44.87	6.66	0.00	0.00	0.00	16	-	-	-	-	+	+	-	-	-	+
1 * B	61.80	-12.76	10.20	55.99	3.19	0.00	0.00	0.00	18	-	-	-	-	-	+	-	-	-	+
1 * B	61.80	23.64	10.20	55.99	7.69	0.00	0.00	0.00	19	-	-	-	-	-	+	-	-	-	+

Including Aiming Angles:

Qty and Code	Position			Aiming Angles			ULR	ULOR_i	Arr.	Switching Modes									
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0				1	2	3	4	5	6	7	8	9	10
1 * D	-76.66	-35.38	6.00	0.0	0.0	0.0	0.00	0.00	0	-	-	-	-	-	-	+	-	-	+
1 * D	-76.66	-23.38	6.00	-0.0	0.0	-0.0	0.00	0.00	0	-	-	-	-	-	-	+	-	-	+
1 * D	-68.36	-15.58	6.00	90.0	0.0	0.0	0.00	0.00	0	-	-	-	-	-	-	-	-	+	+
1 * D	-68.36	-5.58	6.00	-90.0	0.0	-0.0	0.00	0.00	0	-	-	-	-	-	-	-	-	+	+
1 * D	-66.66	-35.38	6.00	180.0	0.0	-0.0	0.00	0.00	0	-	-	-	-	-	-	+	-	-	+
1 * D	-66.66	-23.38	6.00	180.0	0.0	0.0	0.00	0.00	0	-	-	-	-	-	-	+	-	-	+
1 * D	-62.36	-35.38	6.00	0.0	0.0	0.0	0.00	0.00	0	-	-	-	-	-	-	-	+	-	+
1 * D	-62.36	-23.38	6.00	-0.0	0.0	-0.0	0.00	0.00	0	-	-	-	-	-	-	-	+	-	+
1 * D	-56.36	-15.58	6.00	90.0	0.0	-0.0	0.00	0.00	0	-	-	-	-	-	-	-	-	+	+
1 * D	-56.36	-5.58	6.00	-90.0	0.0	0.0	0.00	0.00	0	-	-	-	-	-	-	-	-	+	+
1 * D	-52.36	-35.38	6.00	180.0	0.0	-0.0	0.00	0.00	0	-	-	-	-	-	-	-	+	-	+
1 * D	-52.36	-23.38	6.00	180.0	0.0	0.0	0.00	0.00	0	-	-	-	-	-	-	-	+	-	+
1 * B	-41.75	-18.30	10.20	75.0	59.0	0.0	0.00	0.00	1	+	-	-	-	-	-	-	-	-	+

Qty and Code	Position			Aiming Angles			ULR	ULOR_i	Arr.	Switching Modes									
	X (m)	Y (m)	Z (m)	Rot.	Tilt90	Tilt0				1	2	3	4	5	6	7	8	9	10
1 * C	-8.35	-18.30	10.20	90.0	59.0	0.0	0.00	0.00	2	-	+	+	-	-	-	-	-	-	+
1 * C	8.35	-18.30	10.20	95.0	59.0	0.0	0.00	0.00	3	-	-	+	+	-	-	-	-	-	+
1 * B	25.05	-18.30	10.20	105.0	59.0	0.0	0.00	0.00	5	-	-	-	+	-	-	-	-	-	+
1 * C	-25.05	-18.30	10.20	85.0	59.0	0.0	0.00	0.00	6	+	+	-	-	-	-	-	-	-	+
1 * B	-41.75	18.30	10.20	-75.0	59.0	0.0	0.00	0.00	7	+	-	-	-	-	-	-	-	-	+
1 * C	-25.05	18.30	10.20	-85.0	59.0	0.0	0.00	0.00	8	+	+	-	-	-	-	-	-	-	+
1 * C	-8.35	18.30	10.20	-90.0	59.0	0.0	0.00	0.00	9	-	+	+	-	-	-	-	-	-	+
1 * C	8.35	18.30	10.20	-95.0	59.0	0.0	0.00	0.00	10	-	-	+	+	-	-	-	-	-	+
1 * B	25.05	18.30	10.20	-105.0	59.0	0.0	0.00	0.00	12	-	-	-	+	-	-	-	-	-	+
1 * B	27.94	-12.76	10.20	70.0	59.0	0.0	0.00	0.00	13	-	-	-	-	+	-	-	-	-	+
1 * B	27.94	23.64	10.20	-70.0	59.0	0.0	0.00	0.00	14	-	-	-	-	+	-	-	-	-	+
1 * A	44.87	-12.76	10.20	90.0	59.0	0.0	0.00	0.00	15	-	-	-	-	+	+	-	-	-	+
1 * A	44.87	23.64	10.20	-90.0	59.0	0.0	0.00	0.00	16	-	-	-	-	+	+	-	-	-	+
1 * B	61.80	-12.76	10.20	110.0	59.0	0.0	0.00	0.00	18	-	-	-	-	-	+	-	-	-	+
1 * B	61.80	23.64	10.20	-110.0	59.0	0.0	0.00	0.00	19	-	-	-	-	-	+	-	-	-	+