

Northfleet School

Project code: G218481
Date: 30-10-2024

Designer: Andy Poplett

Description:

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

Main Pitch 91m x 55m (Fenced Area 97m x 61m) 200lux:-

Maintenance Factor:- 0.90

The design has been completed using the Philips
Asymmetric OptiVision LED GEN 3.5 Floodlights.
A total of 12 no have been used.

Floodlights are mounted on 6 x 15 metre columns

All Floodlights fitted with integral LO (maximum cut off) louvres
to reducespill and glare.

Tennis courts (4no) - 400lux:-

Maintenance Factor:- 0.95

The design has been completed using the Philips
Asymmetric OptiVision LED GEN 3.5 Floodlights.
A total of 10 no have been used.

All floodlights mounted on 10 x 8.0 metre columns

1.2 Top Project Overview



Scale
1:2500

2. Summary

2.1 Observer Information

Code	Observer	Position		
		X (m)	Y (m)	Z (m)
Aa	OB 1 - 145 Hall Rd	-93.50	-100.00	1.50
Bb	OB 2 - 155 Hall Rd	-97.00	-62.50	1.50
Cc	OB 3 - 165 Hall Rd	-96.50	-21.50	1.50
Dd	OB 4 - 175 Hall Rd	-99.00	16.80	1.50
Ee	OB 5 - 185 Hall Rd	-99.50	52.70	1.50
Ff	OB 6 - 195 Hall Rd	-100.00	79.00	1.50
Gg	OB 7 - 59 Tennyson Walk	215.00	-65.50	1.50
Hh	OB 8 - 69 Tennyson Walk	165.00	-99.00	1.50
Ii	OB 9 - Riverdale	190.00	25.00	1.50

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
E	8	BVP528 OUT T35 A55-NMB LO	1 * LED2590-4S/757	1505.9	1 * 259000
K	4	BVP518 OUT T35 A55-NMB LO	1 * LED1720-4S/757	1006.0	1 * 172000
N	6	BVP518 OUT T35 A55-MNB LT	1 * LED1720-4S/757	1006.0	1 * 172000
T	4	BVP518 OUT T40 A55-NMB LT	1 * LED1640-4S/757	946.2	1 * 164000

The total installed power: 25.89 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code				Power (kWatt)
	E	K	N	T	
Main Pitch	8	4	0	0	16.07
Half Pitch	2	2	0	0	5.02
Tennis Court 1	0	0	2	2	3.90
Tennis Court 2	0	0	4	0	4.02
Tennis Court 3	0	0	4	0	4.02
Tennis Court 4	0	0	2	2	3.90
Netball Court 1	0	0	2	2	3.90
Netball Court 2	0	0	6	0	6.04
Netball Court 3	0	0	2	2	3.90
All ON	8	4	6	4	25.89

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code				Power (kWatt)
	E	K	N	T	
Centre 1	2	0	0	0	3.01
Centre 2	2	0	0	0	3.01
Corner 1	2	2	0	0	5.02
Corner 2	2	2	0	0	5.02
Individuals	0	0	6	4	9.82

2.3 Calculation Results

Switching Modes:

Code	Switching Mode	Maintenance factor
1	Main Pitch	0.90
2	Half Pitch	0.90
3	Tennis Court 1	0.95
4	Tennis Court 2	0.95
5	Tennis Court 3	0.95
6	Tennis Court 4	0.95
7	Netball Court 1	0.95
8	Netball Court 2	0.95
9	Netball Court 3	0.95
10	All ON	1.00

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Max	Min/Ave	Min/Max
Football	1	Surface Illuminance	lux	221	0.70	0.45	
Half Pitch	2	Surface Illuminance	lux	120	0.67	0.47	
Court 1 PPA	3	Surface Illuminance	lux	457	0.80	0.57	
Court 1 TPA	3	Surface Illuminance	lux	450	0.65	0.44	
Court 2 PPA	4	Surface Illuminance	lux	417	0.82	0.63	
Court 2 TPA	4	Surface Illuminance	lux	409	0.63	0.47	
Court 3 PPA	5	Surface Illuminance	lux	408	0.82	0.64	
Court 3 TPA	5	Surface Illuminance	lux	403	0.66	0.49	
Court 4 PPA	6	Surface Illuminance	lux	430	0.81	0.59	
Court 4 TPA	6	Surface Illuminance	lux	430	0.78	0.54	
Netball Court 1	7	Surface Illuminance	lux	444	0.68	0.45	
Netball Court 2	8	Surface Illuminance	lux	422	0.61	0.45	
Netball Court 3	9	Surface Illuminance	lux	422	0.73	0.50	
Eh Spillage	10	Surface Illuminance	lux	38.4	0.00	0.00	
Ev 145 - 197 Hall Road	10	Surface Illuminance	lux		0.56		
Ev 57-71 Tennyson Walk	10	Surface Illuminance	lux		0.74		
Ev Riverdale	10	Surface Illuminance	lux		0.48		

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	Aa	E	-0.40	31.00	15.00	-116.00	66.00	-0.00	2176
10	Bb	E	-0.40	31.00	15.00	-116.00	66.00	-0.00	1456
10	Cc	E	-0.40	31.00	15.00	-116.00	66.00	-0.00	834
10	Dd	N	115.91	-23.24	8.20	143.30	63.00	0.00	1183
10	Ee	N	115.91	-23.24	8.20	143.30	63.00	0.00	1253
10	Ff	N	115.91	-23.24	8.20	143.30	63.00	0.00	1597
10	Gg	N	104.83	21.34	8.20	-36.70	63.00	0.00	2348
10	Hh	N	87.65	-2.14	8.20	-36.70	63.00	0.00	2258
10	Ii	N	104.83	21.34	8.20	-36.70	63.00	0.00	1045

Switching Mode	ULR
1	0.00
2	0.00
3	0.00
4	0.00

Switching Mode	ULR
5	0.00
6	0.00
7	0.00
8	0.00
9	0.00
10	0.00

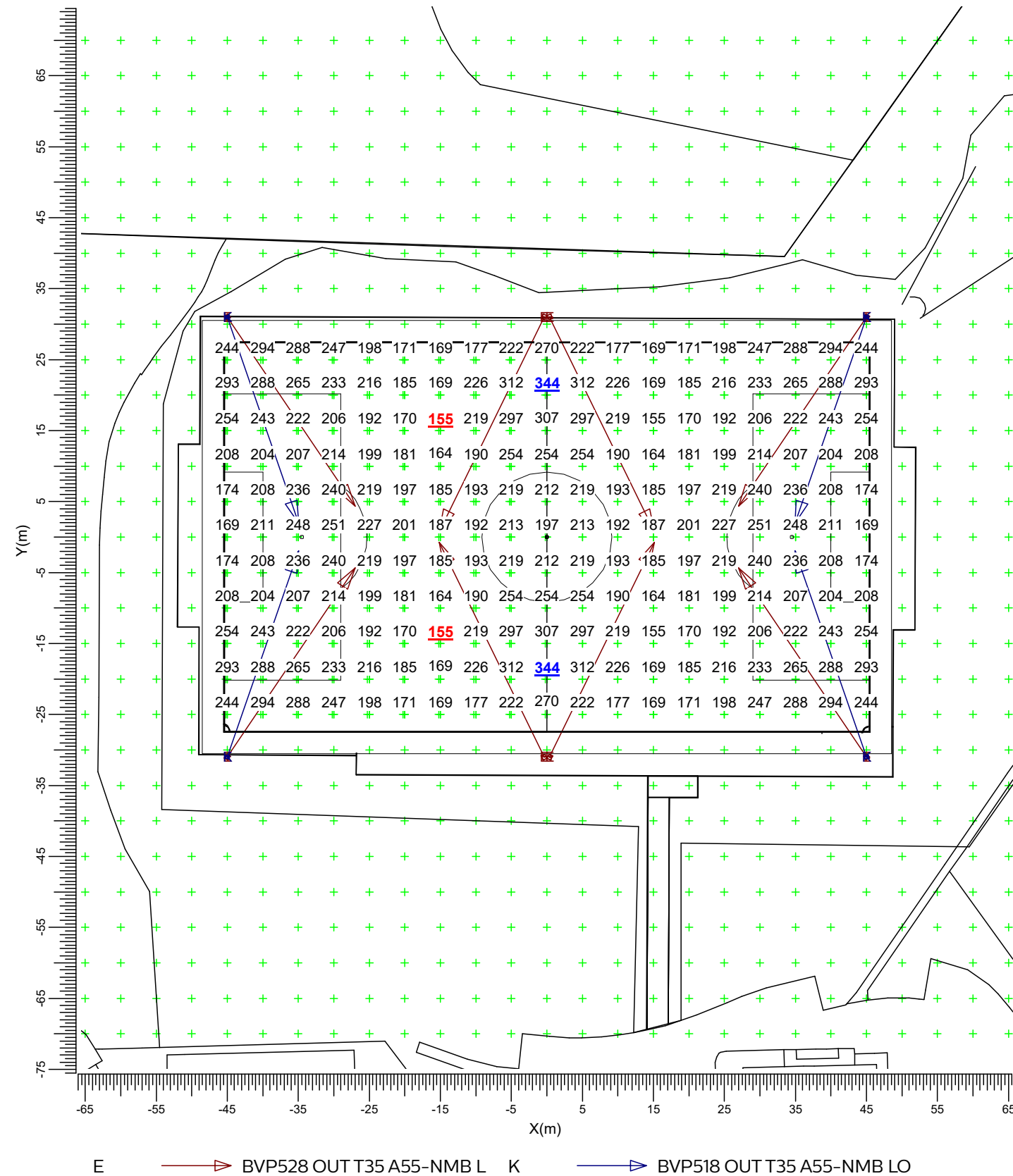
3. Calculation Results

3.1 Football: Graphical Table

Main Pitch

Grid : Football at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Average
221

Min/Ave
0.70

Min/Max
0.45

Project maintenance factor
0.90

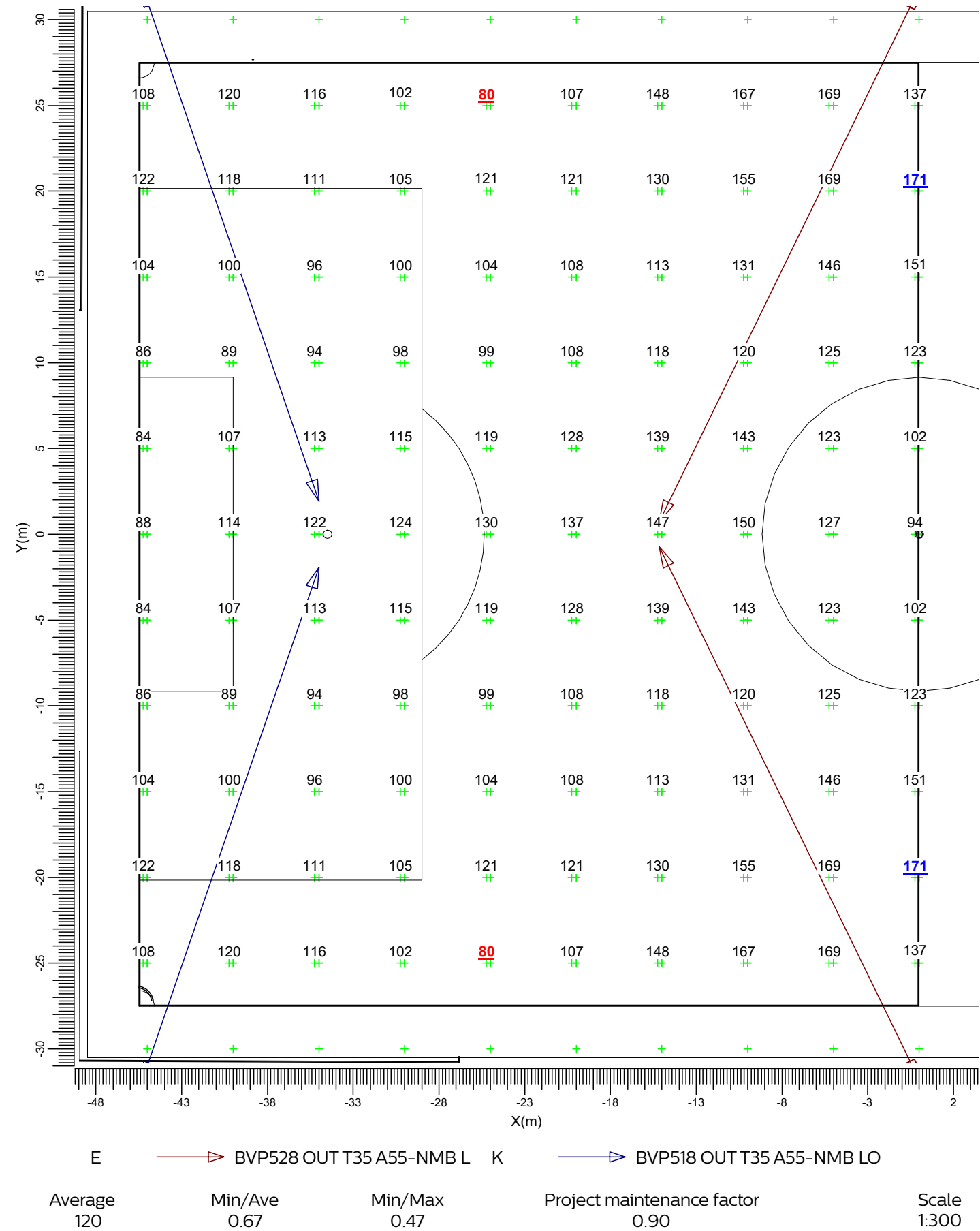
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3.2 Half Pitch: Graphical Table

Half Pitch

Grid : Half Pitch at Z = -0.00 m

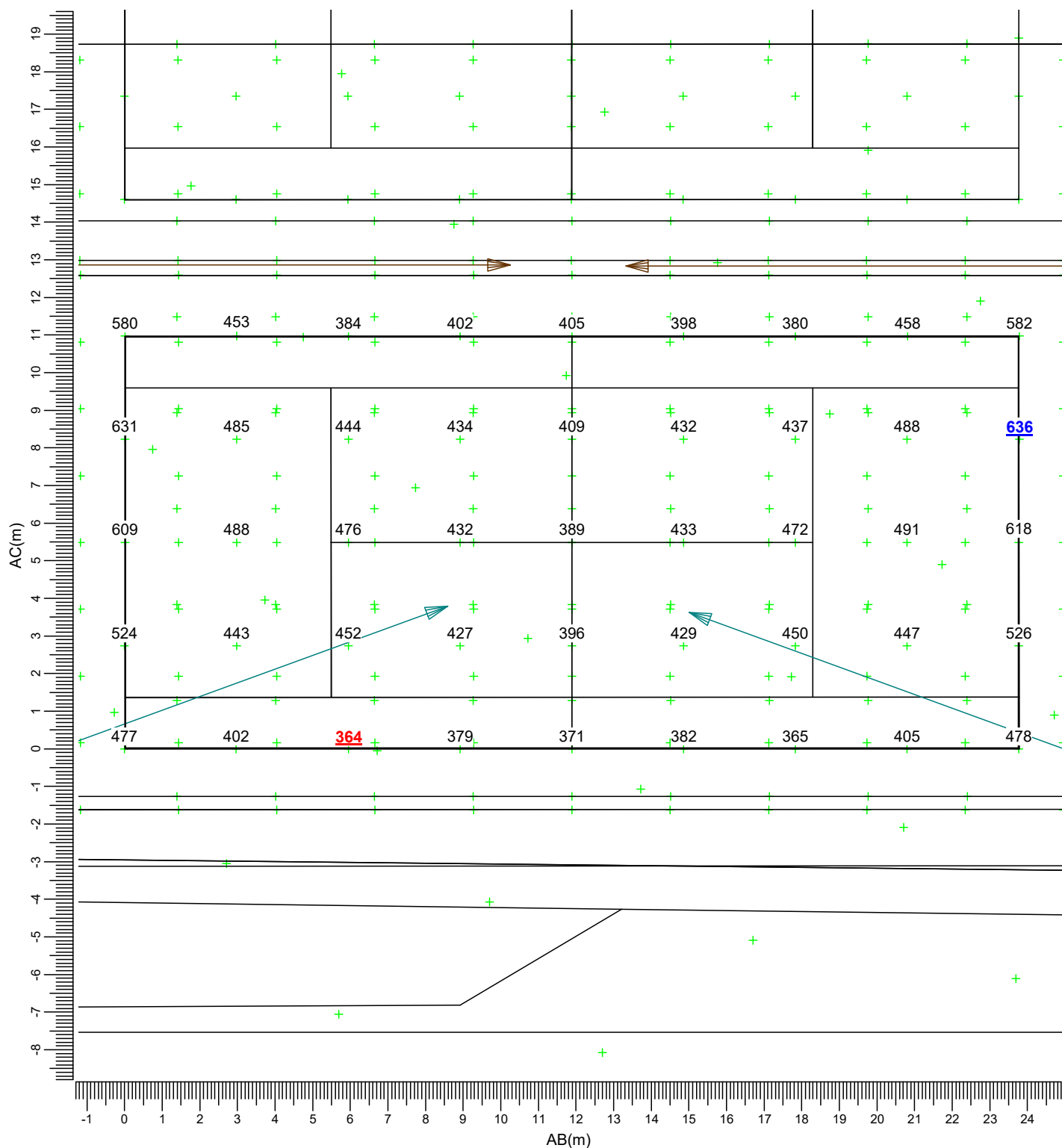
Calculation : Surface Illuminance (lux)



3.3 Court 1 PPA: Graphical Table

Tennis Court 1

Grid : Court 1 PPA
Calculation : Surface Illuminance (lux)



(91.21, -7.15, -0.00) C-----D (110.27, -21.36, 0.00)
(84.65, -15.94, -0.00) A-----B (103.71, -30.15, -0.00)

N

➤ BVP518 OUT T35 A55-MNB LT T

➤ BVP518 OUT T40 A55-NMB LT

Average
457

Min/Ave
0.80

Min/Max
0.57

Project maintenance factor
0.95

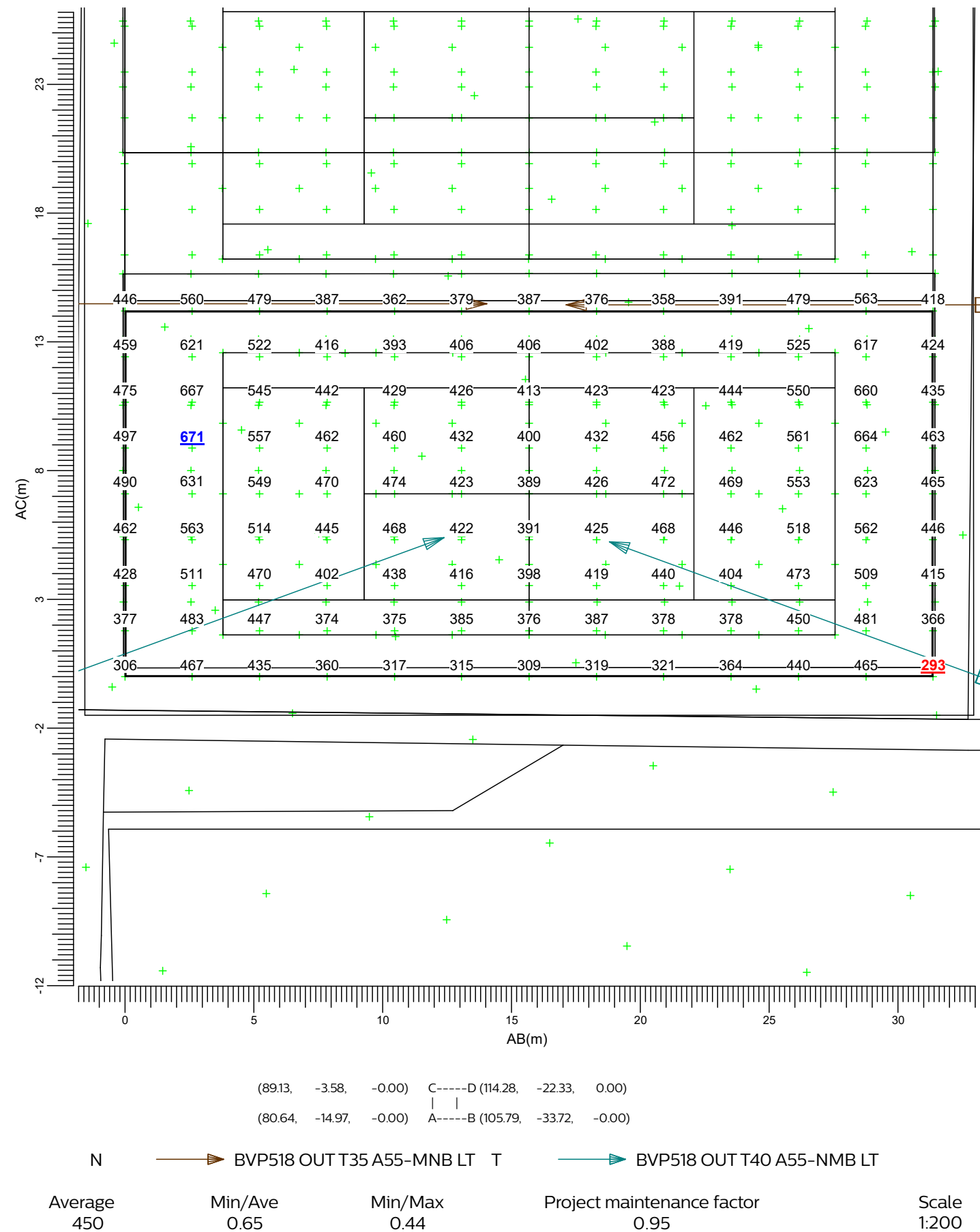
Scale
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3.4 Court 1 TPA: Graphical Table

Tennis Court 1

Grid : Court 1 TPA

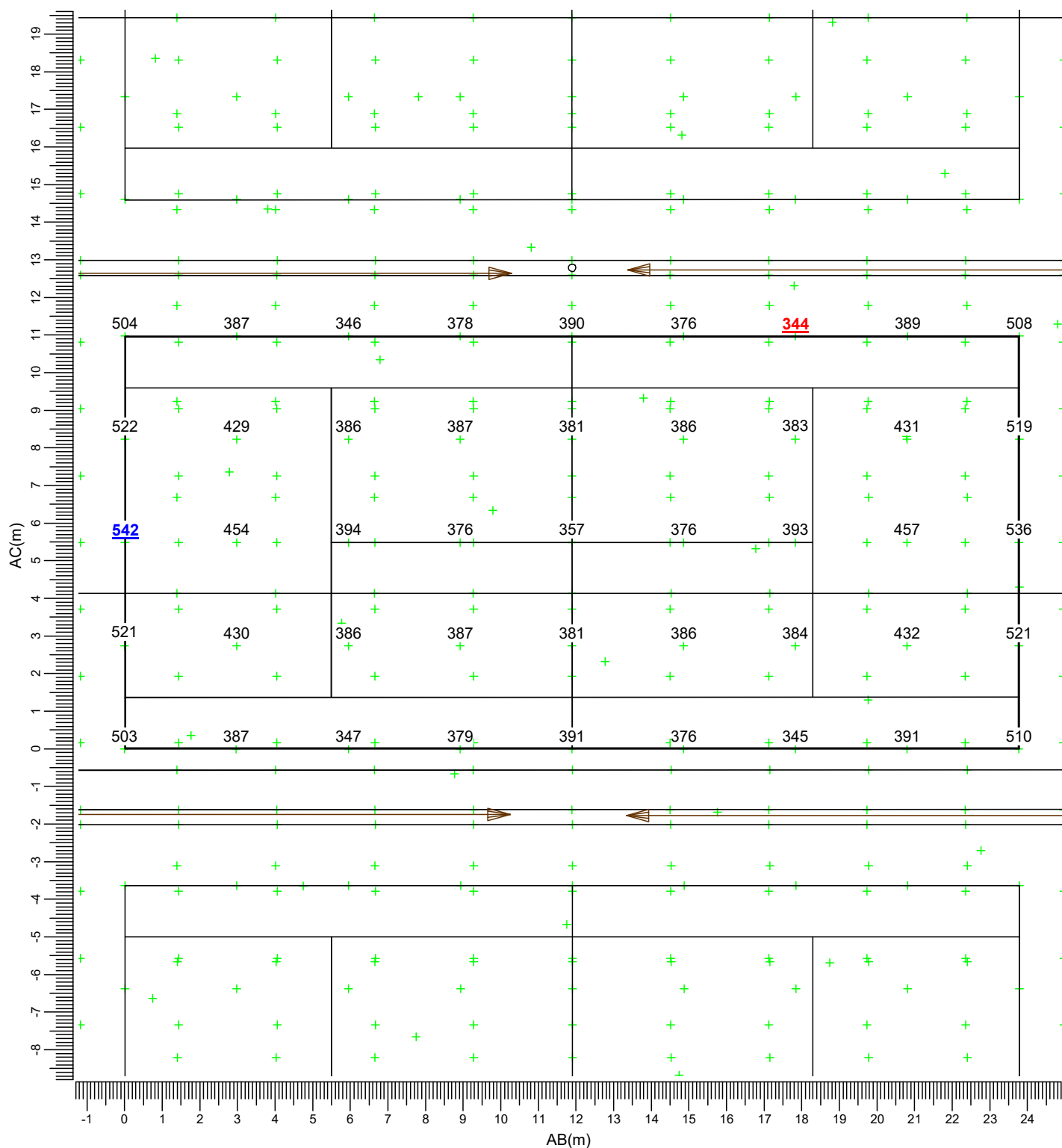
Calculation : Surface Illuminance (lux)



3.5 Court 2 PPA: Graphical Table

Tennis Court 2

Grid : Court 2 PPA
Calculation : Surface Illuminance (lux)



(99.93, 4.56, -0.00) C-----D (118.99, -9.65, 0.00)
| |
(93.37, -4.23, -0.00) A-----B (112.43, -18.44, -0.00)

N  BVP518 OUT T35 A55-MNB LT

Average
417

Min/Ave
0.82

Min/Max
0.63

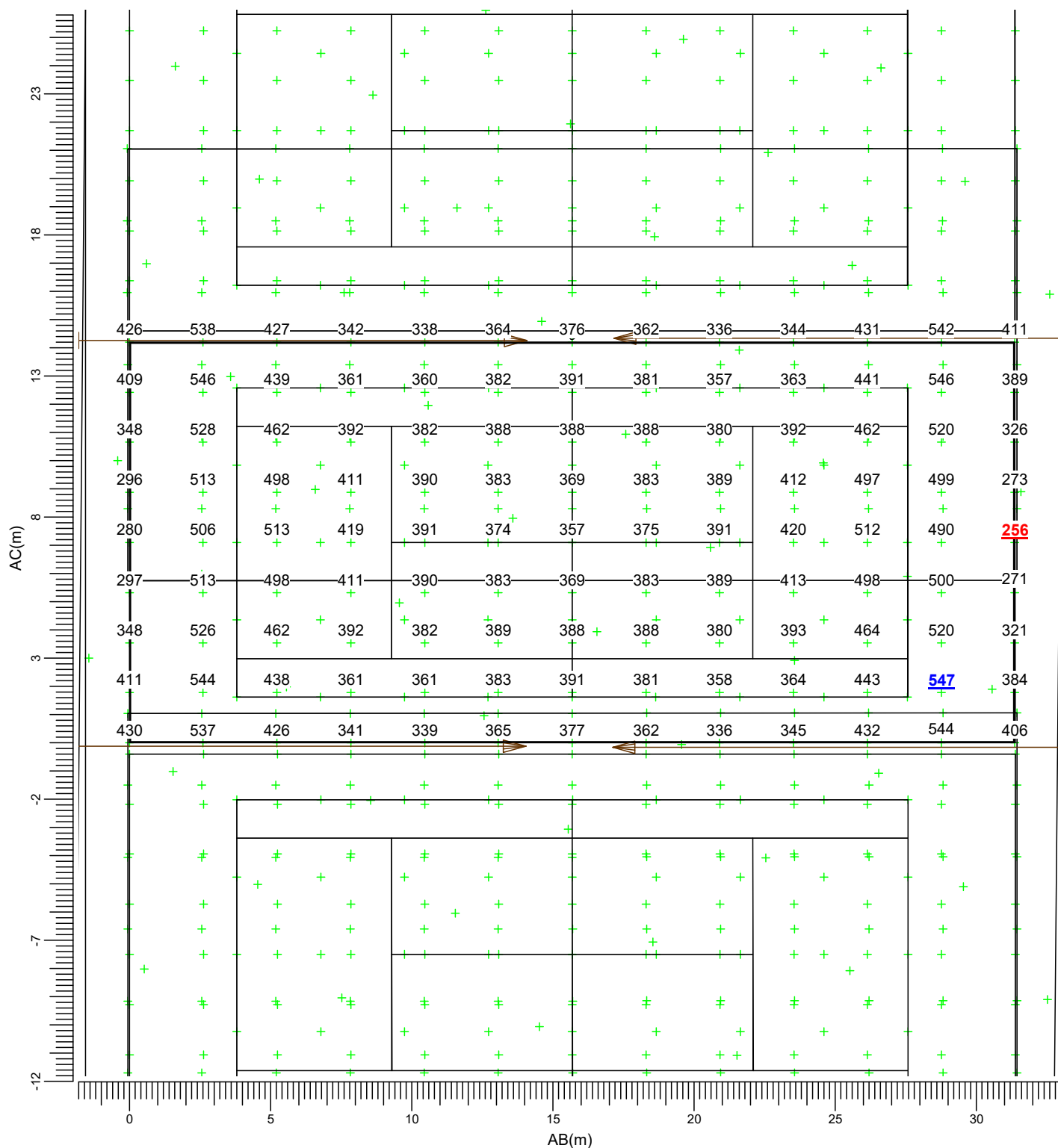
Project maintenance factor
0.95

Scale
1:150

3.6 Court 2 TPA: Graphical Table

Tennis Court 2

Grid : Court 2 TPA
Calculation : Surface Illuminance (lux)



N BVP518 OUT T35 A55-MNB LT

Average
409

Min/Ave
0.63

Min/Max
0.47

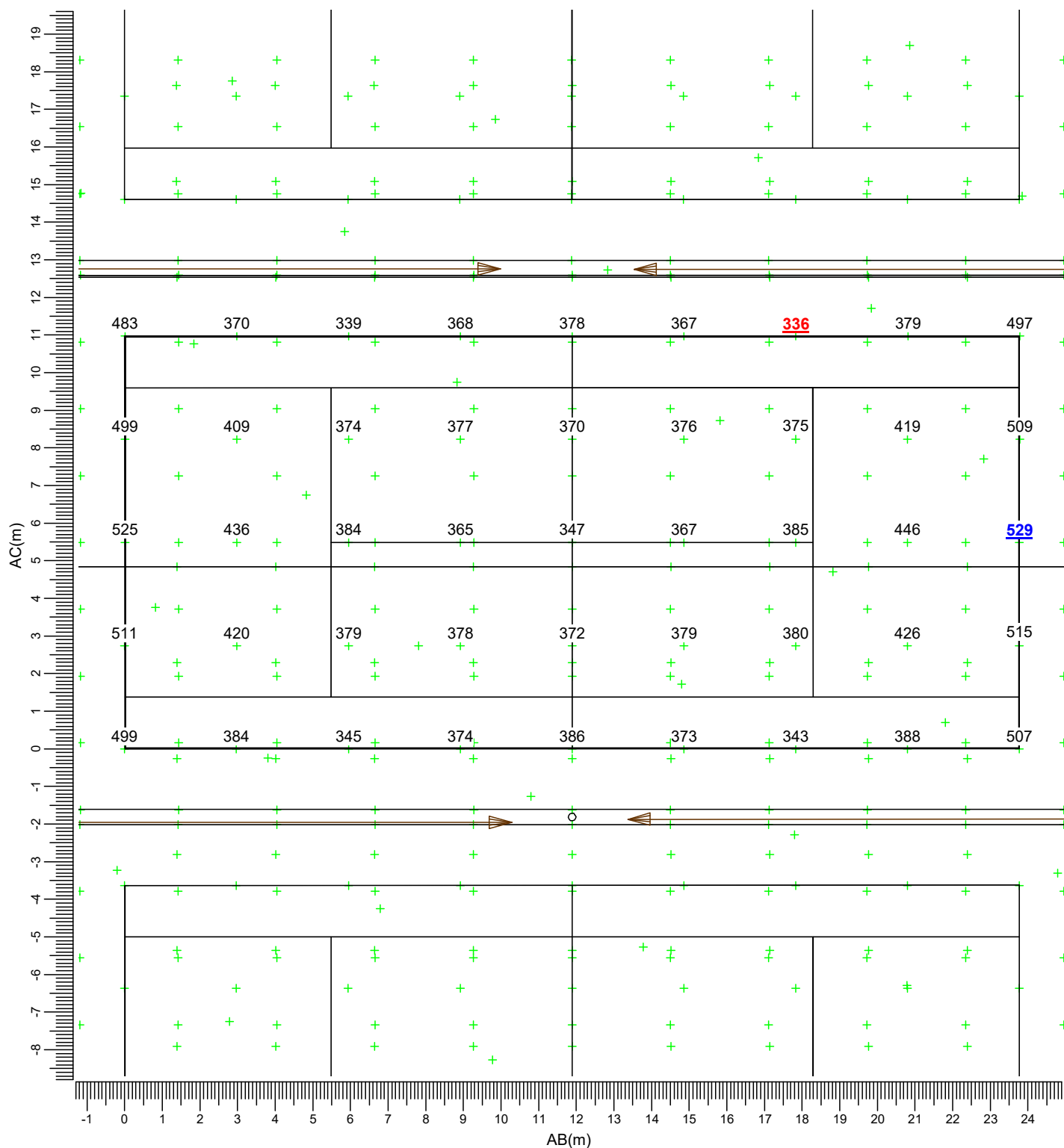
Project maintenance factor
0.95

Scale
1:200

3.7 Court 3 PPA: Graphical Table

Tennis Court 3

Grid : Court 3 PPA
Calculation : Surface Illuminance (lux)



(108.66, 16.26, -0.00) C-----D (127.72, 2.05, 0.00)
| |
(102.10, 7.47, -0.00) A-----B (121.16, -6.74, -0.00)

N BVP518 OUT T35 A55-MNB LT

Average
408

Min/Ave
0.82

Min/Max
0.64

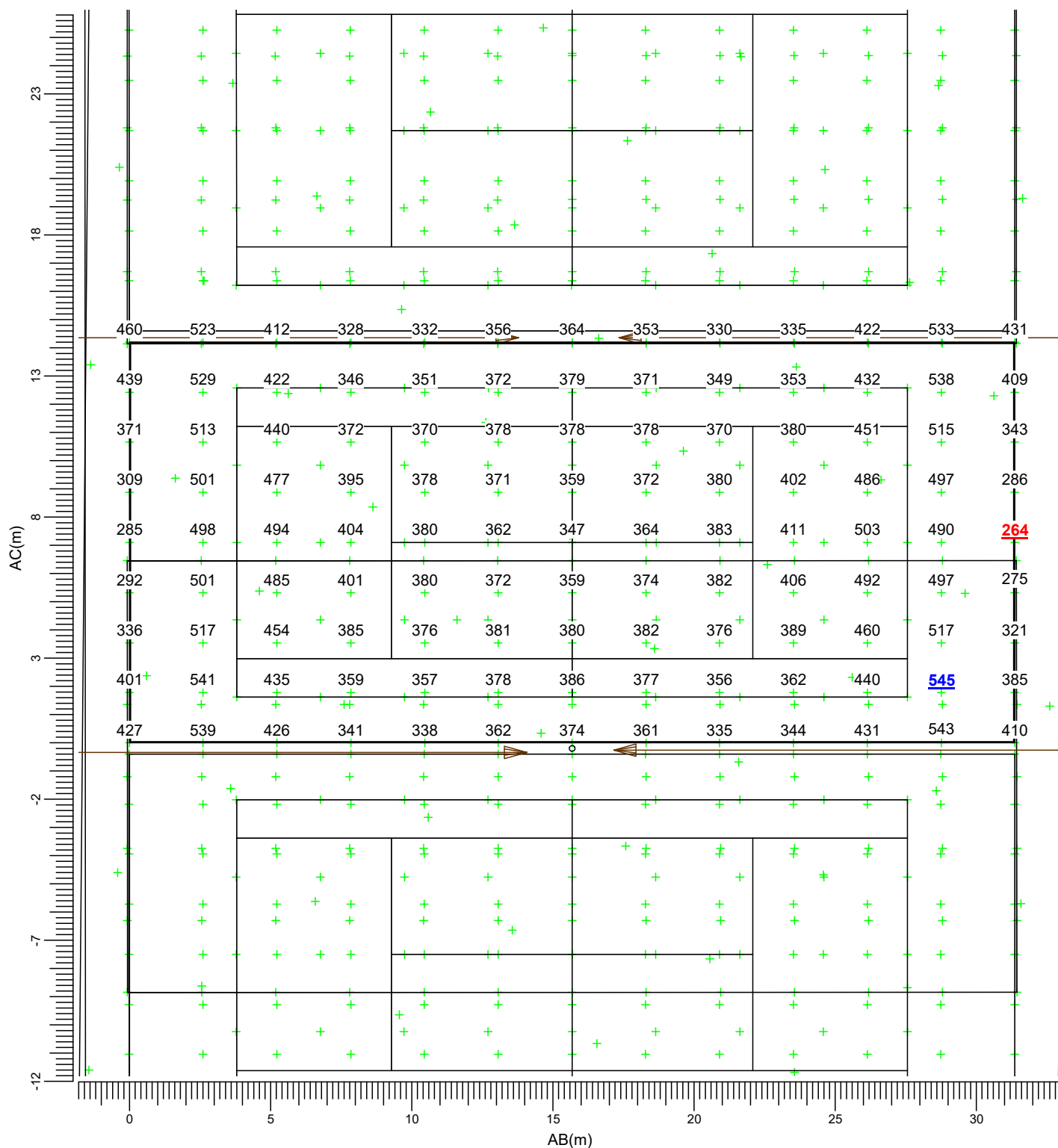
Project maintenance factor
0.95

Scale
1:150

3.8 Court 3 TPA: Graphical Table

Tennis Court 3

Grid : Court 3 TPA
Calculation : Surface Illuminance (lux)



(106.58, 19.83, -0.00) C-----D (131.73, 1.08, 0.00)
(98.09, 8.44, -0.00) A-----B (123.24, -10.31, -0.00)

N BVP518 OUT T35 A55-MNB LT

Average
403

Min/Ave
0.66

Min/Max
0.49

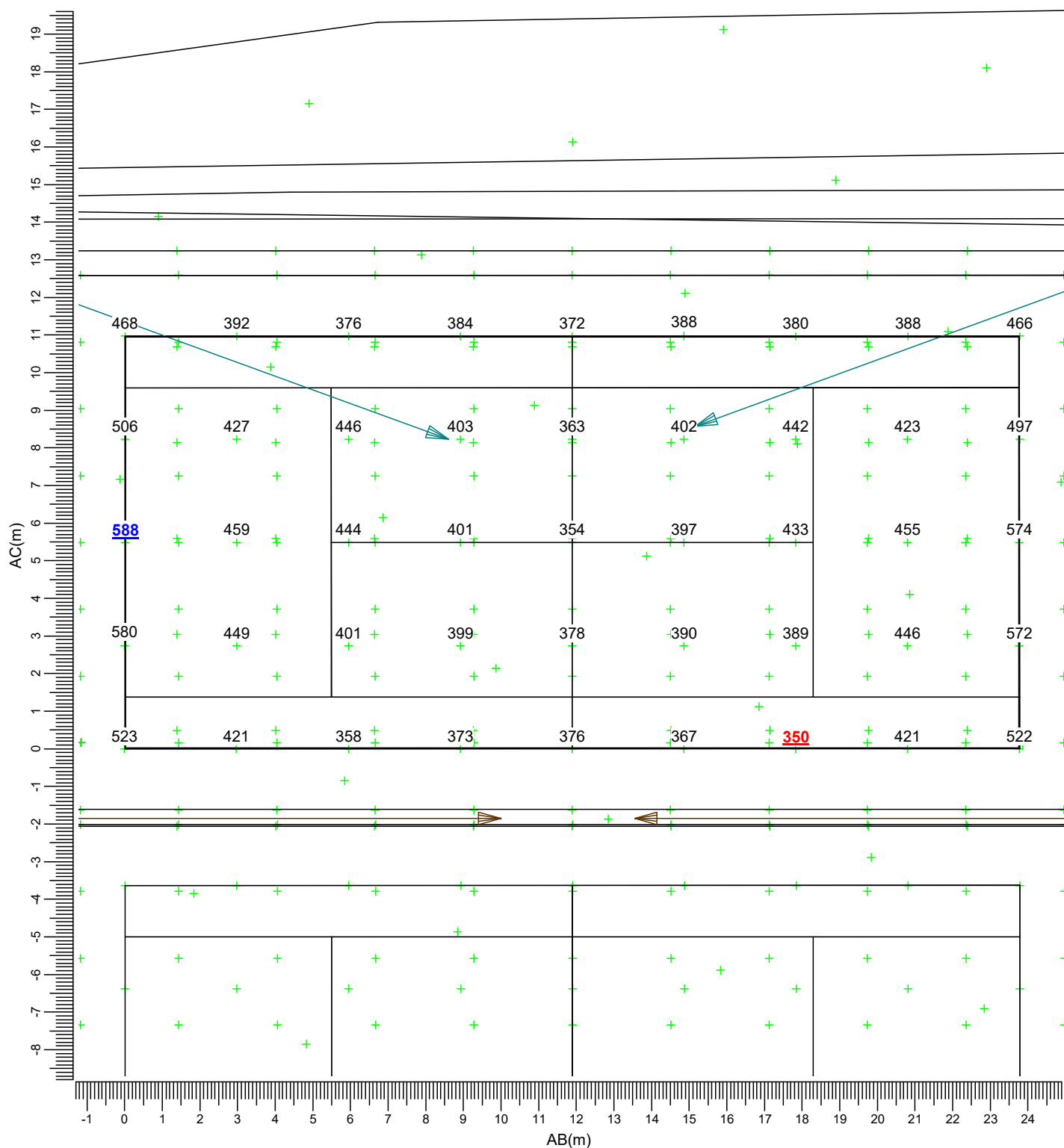
Project maintenance factor
0.95

Scale
1:200

3.9 Court 4 PPA: Graphical Table

Tennis Court 4

Grid : Court 4 PPA
Calculation : Surface Illuminance (lux)



(117.38, 27.97, -0.00) C-----D (136.44, 13.76, 0.00)
| |
(110.82, 19.18, -0.00) A-----B (129.88, 4.97, -0.00)

N



BVP518 OUT T35 A55-MNB LT T



BVP518 OUT T40 A55-NMB LT

Average
430

Min/Ave
0.81

Min/Max
0.59

Project maintenance factor
0.95

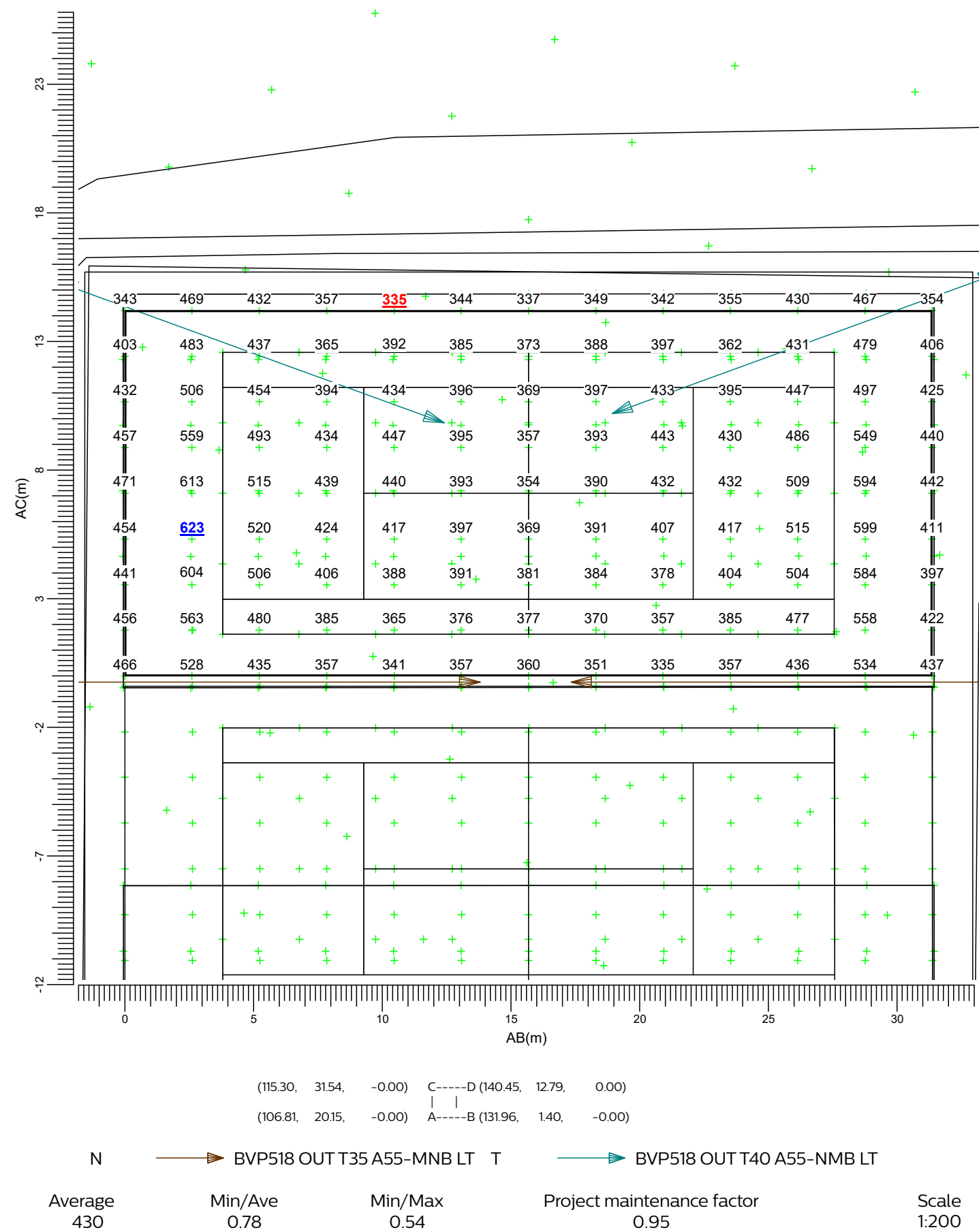
Scale
1:150

3.10 Court 4 TPA: Graphical Table

Tennis Court 4

Grid : Court 4 TPA

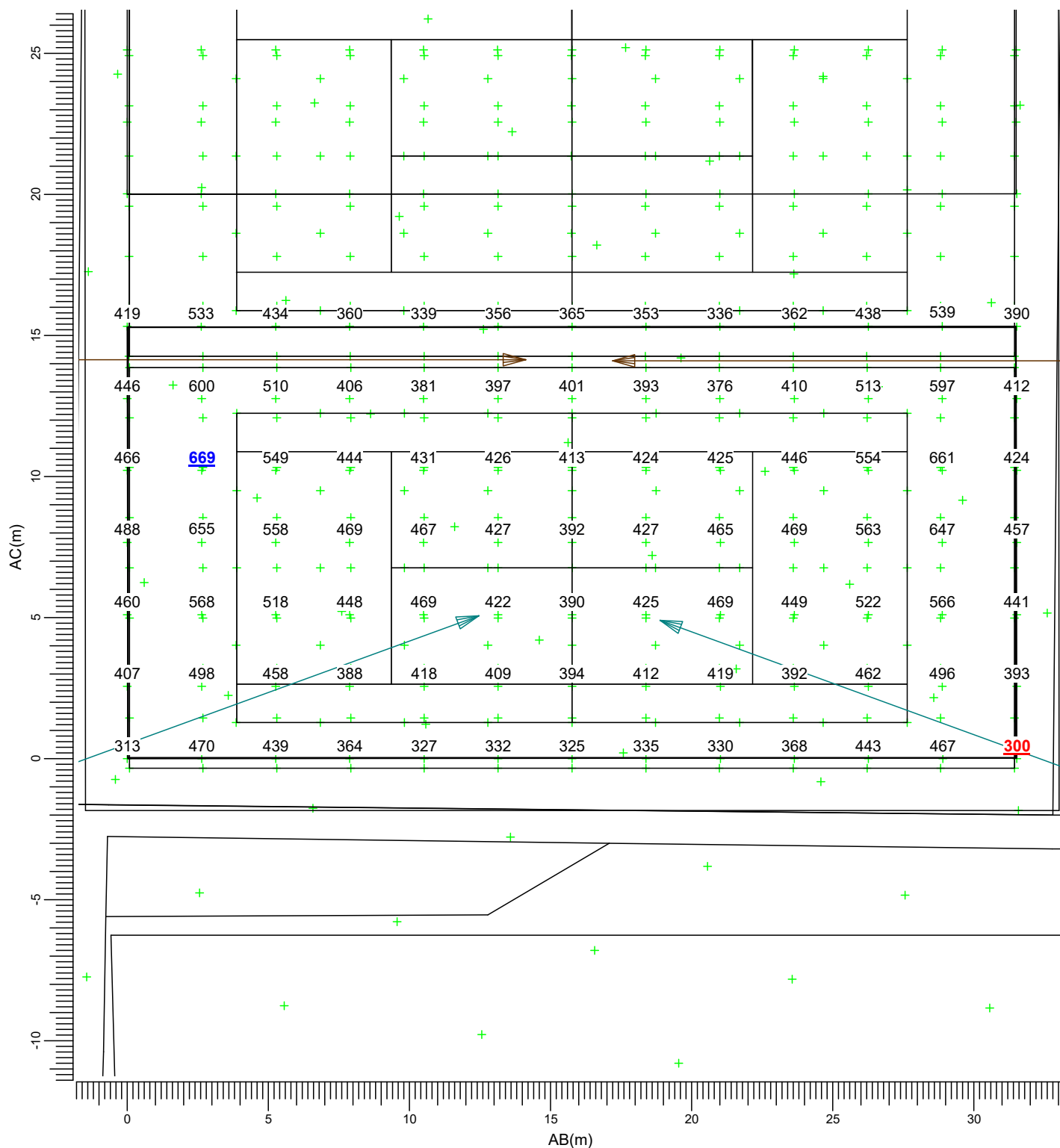
Calculation : Surface Illuminance (lux)



3.11 Netball Court 1: Graphical Table

Netball Court 1

Grid : Netball Court 1
Calculation : Surface Illuminance (lux)



(89.94, -2.38, -0.00) C-----D (115.20, -21.21, 0.00)
(80.80, -14.65, -0.00) A-----B (106.06, -33.48, -0.00)

N



BVP518 OUT T35 A55-MNB LT T



BVP518 OUT T40 A55-NMB LT

Average
444

Min/Ave
0.68

Min/Max
0.45

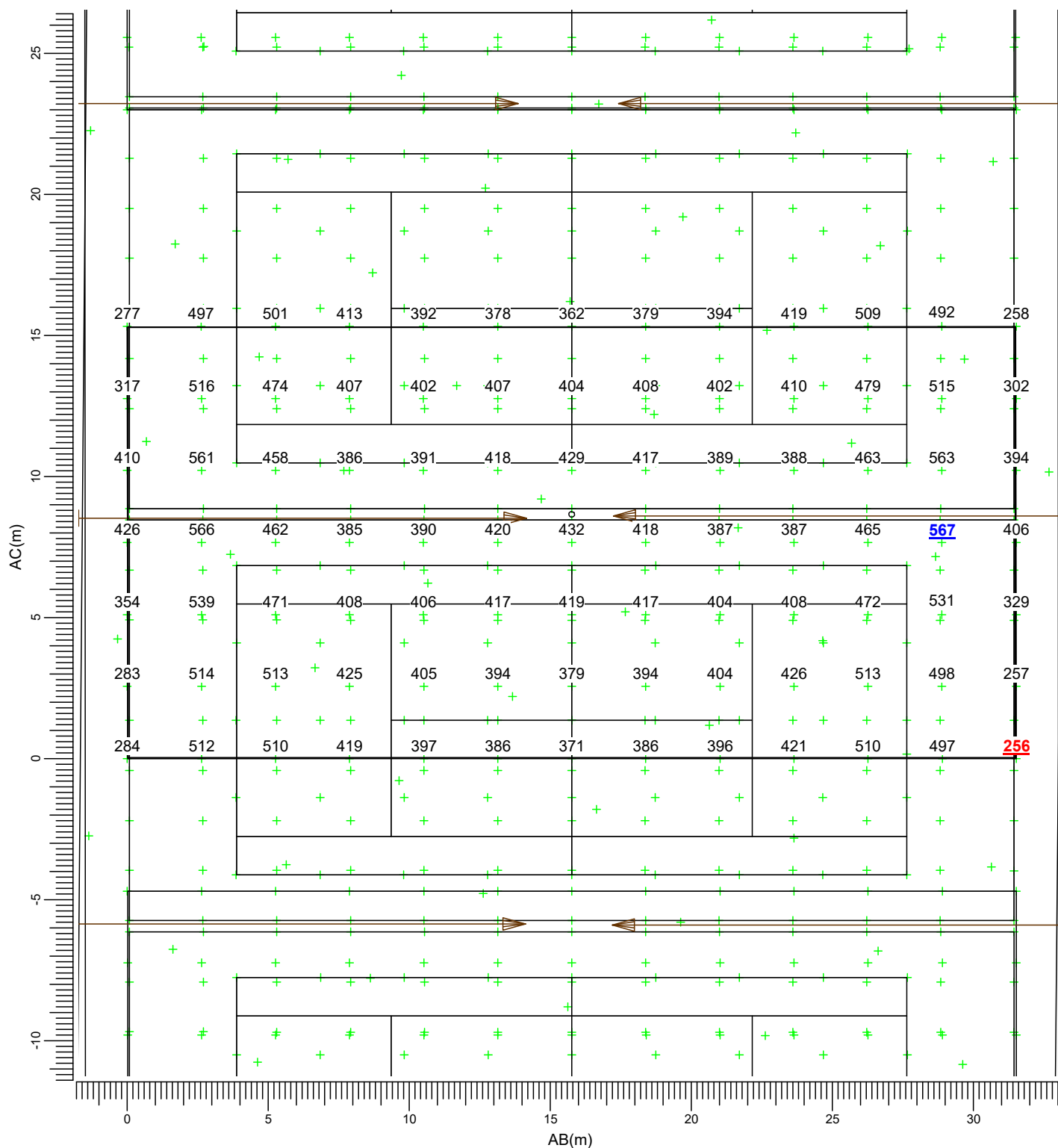
Project maintenance factor
0.95

Scale
1:200

3.12 Netball Court 2: Graphical Table

Netball Court 2

Grid : Netball Court 2
Calculation : Surface Illuminance (lux)



(101.89, 13.66, -0.00) C-----D (127.15, -5.17, 0.00)
(92.75, 1.39, -0.00) A-----B (118.01, -17.44, -0.00)

N BVP518 OUT T35 A55-MNB LT

Average
422

Min/Ave
0.61

Min/Max
0.45

Project maintenance factor
0.95

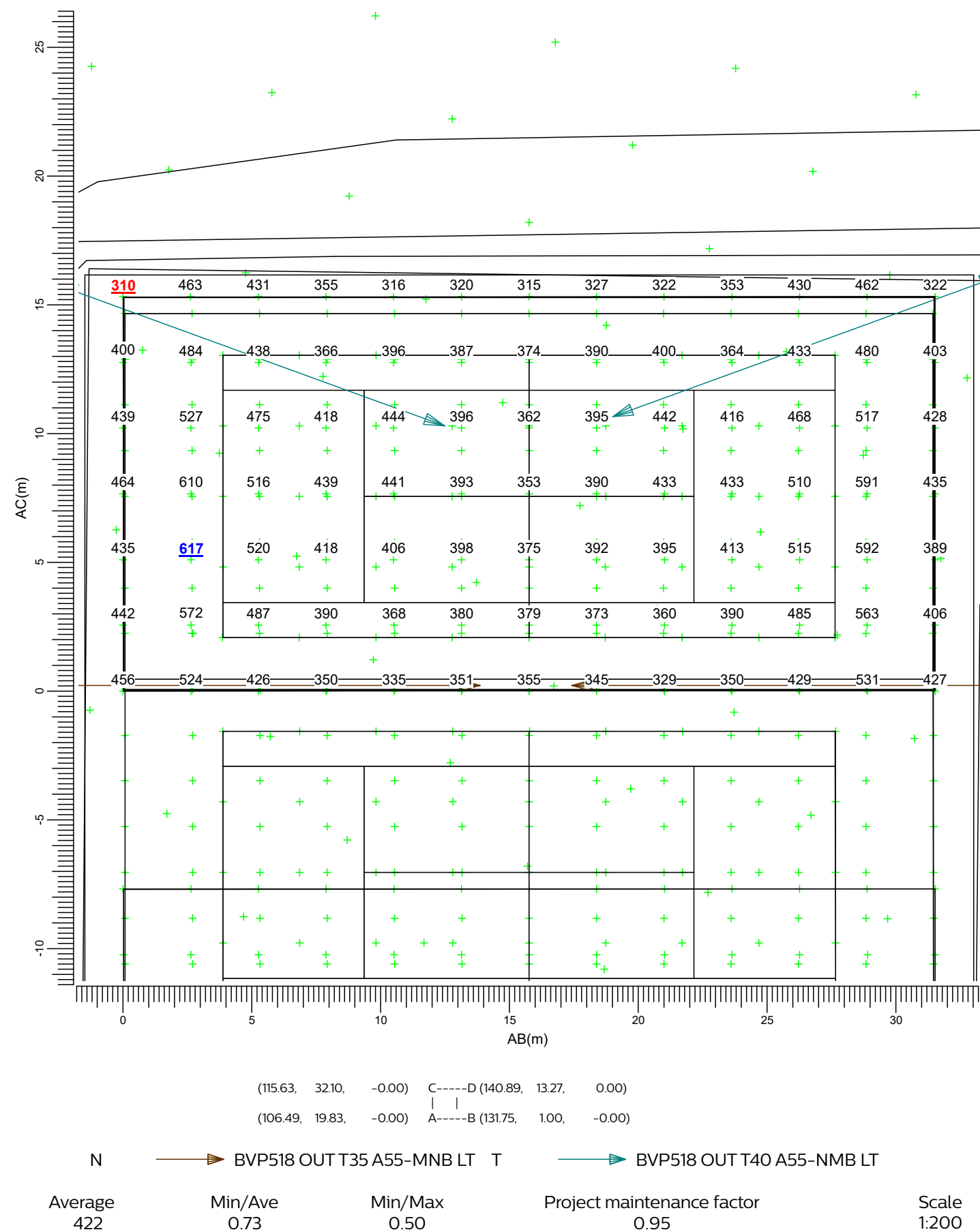
Scale
1:200

3.13 Netball Court 3: Graphical Table

Netball Court 3

Grid : Netball Court 3

Calculation : Surface Illuminance (lux)



3.14 Eh Spillage: Graphical Table

All ON

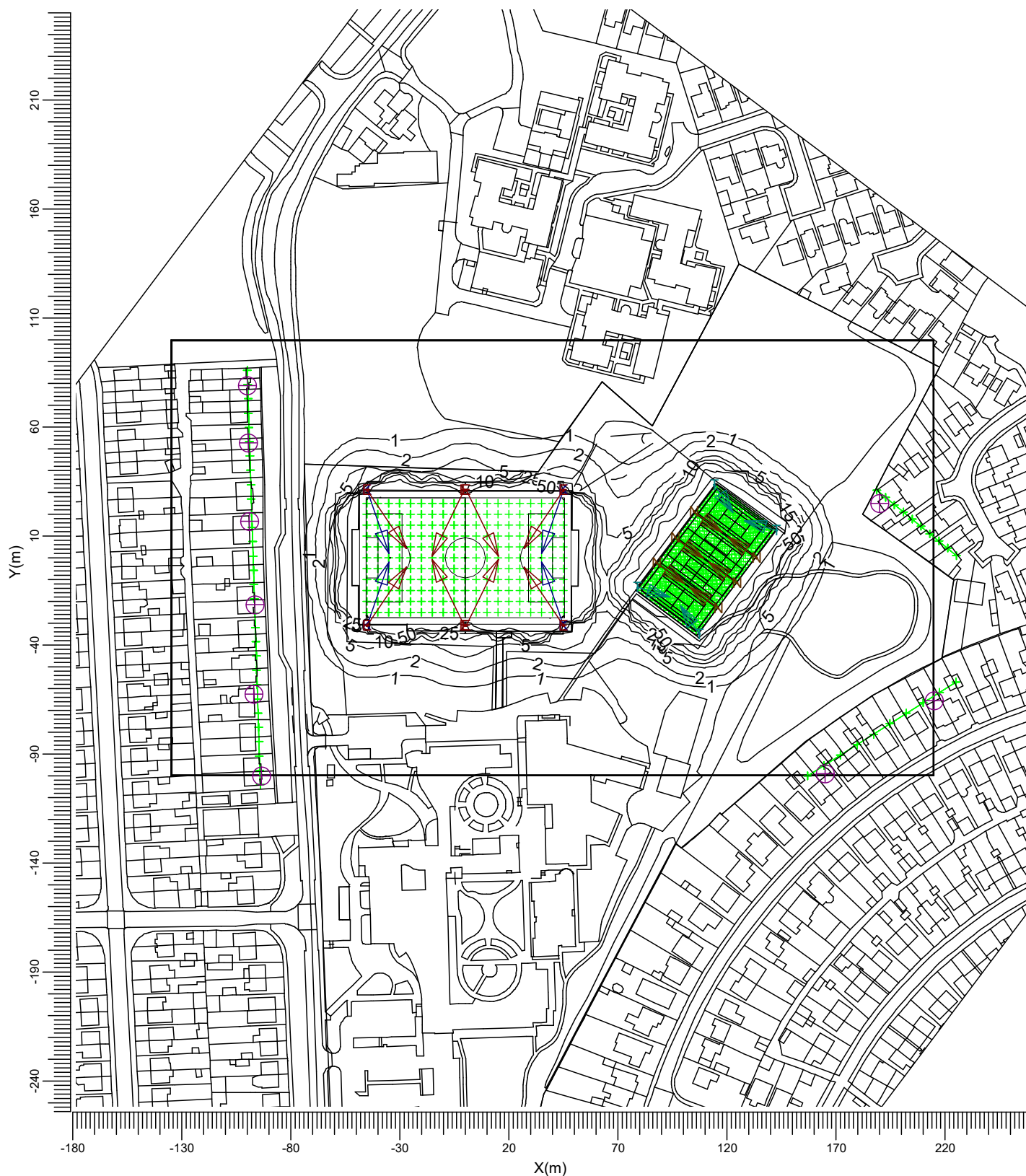
Grid : Spillage at Z = -0.00 m

Calculation : Surface Illuminance (lux)



ALL ON

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



E  BVP528 OUT T35 A55-NMB L K  BVP518 OUT T35 A55-NMB LO

N BVP518 OUT T35 A55-MNB LT T BVP518 OUT T40 A55-NMB LT

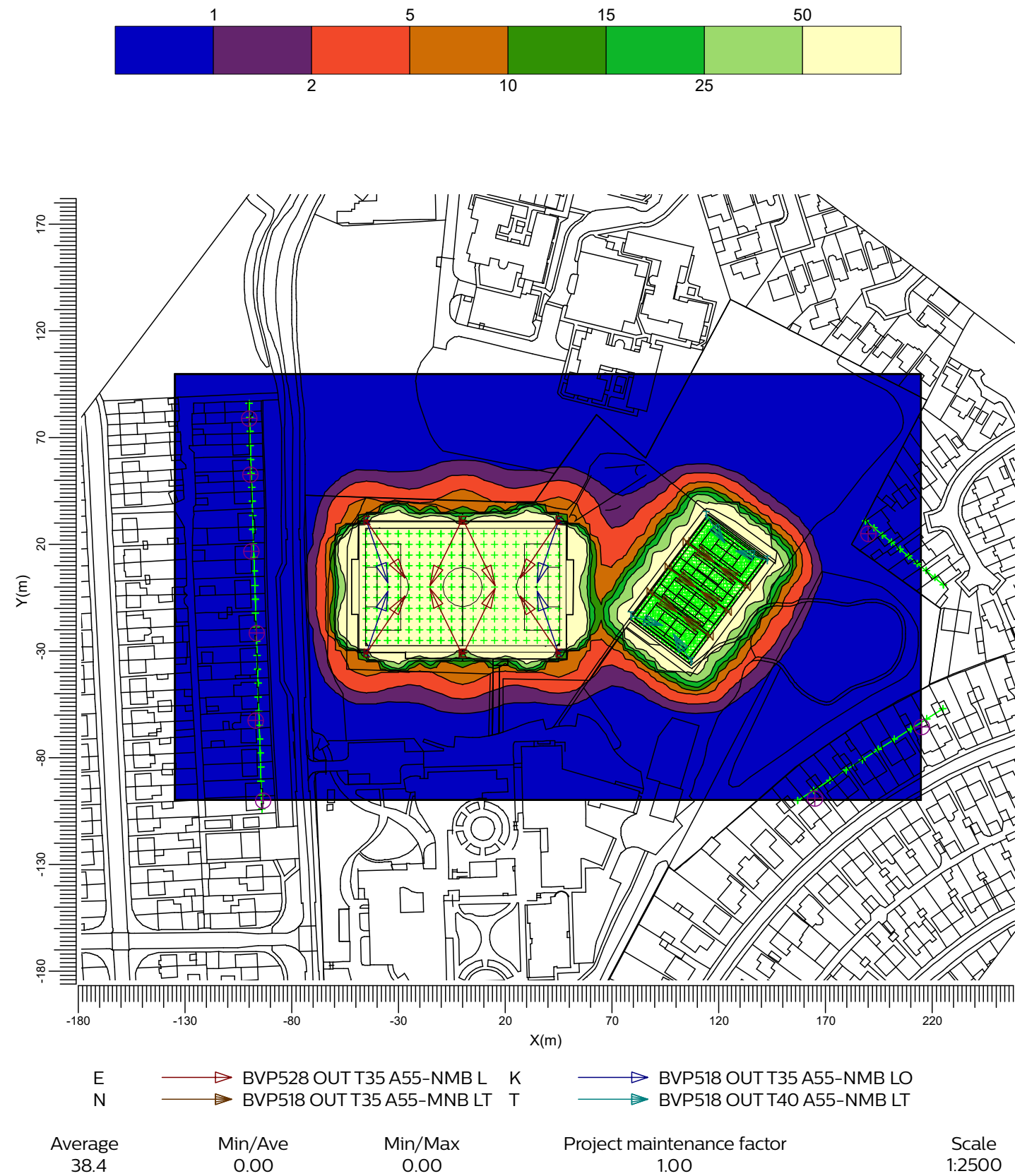
Average	Min/Ave	Min/Max	Project maintenance factor	Scale
38.4	0.00	0.00	1.00	1:2500

3.16 Eh Spillage: Filled Iso Contour

All ON

Grid : Spillage at Z = -0.00 m

Calculation : Surface Illuminance (lux)

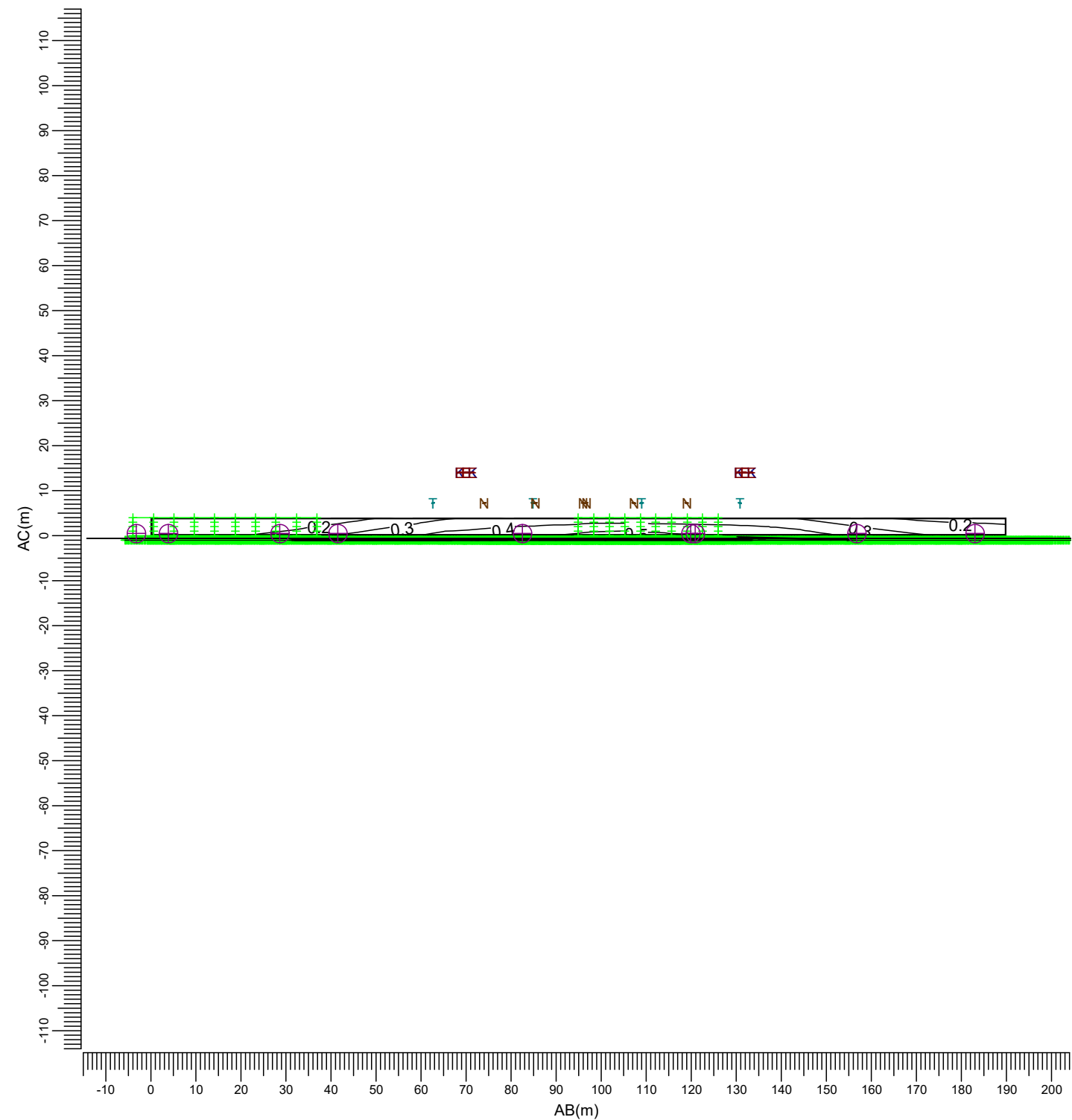


3.17 Ev 145 - 197 Hall Road: Iso Contour

All ON

Grid : Ev 145 - 197 Hall Road

Calculation : Surface Illuminance (lux)



(-94.00, -104.00, 5.00) C-----D (-100.00, 86.00, 5.00)

(-94.00, -104.00, 1.00) A-----B (-100.00, 86.00, 1.00)

E : BVP528 OUT T35 A55-NMB LO K : BVP518 OUT T35 A55-NMB LO

N : BVP518 OUT T35 A55-MNB LT T : BVP518 OUT T40 A55-NMB LT

Maximum Project maintenance factor Scale

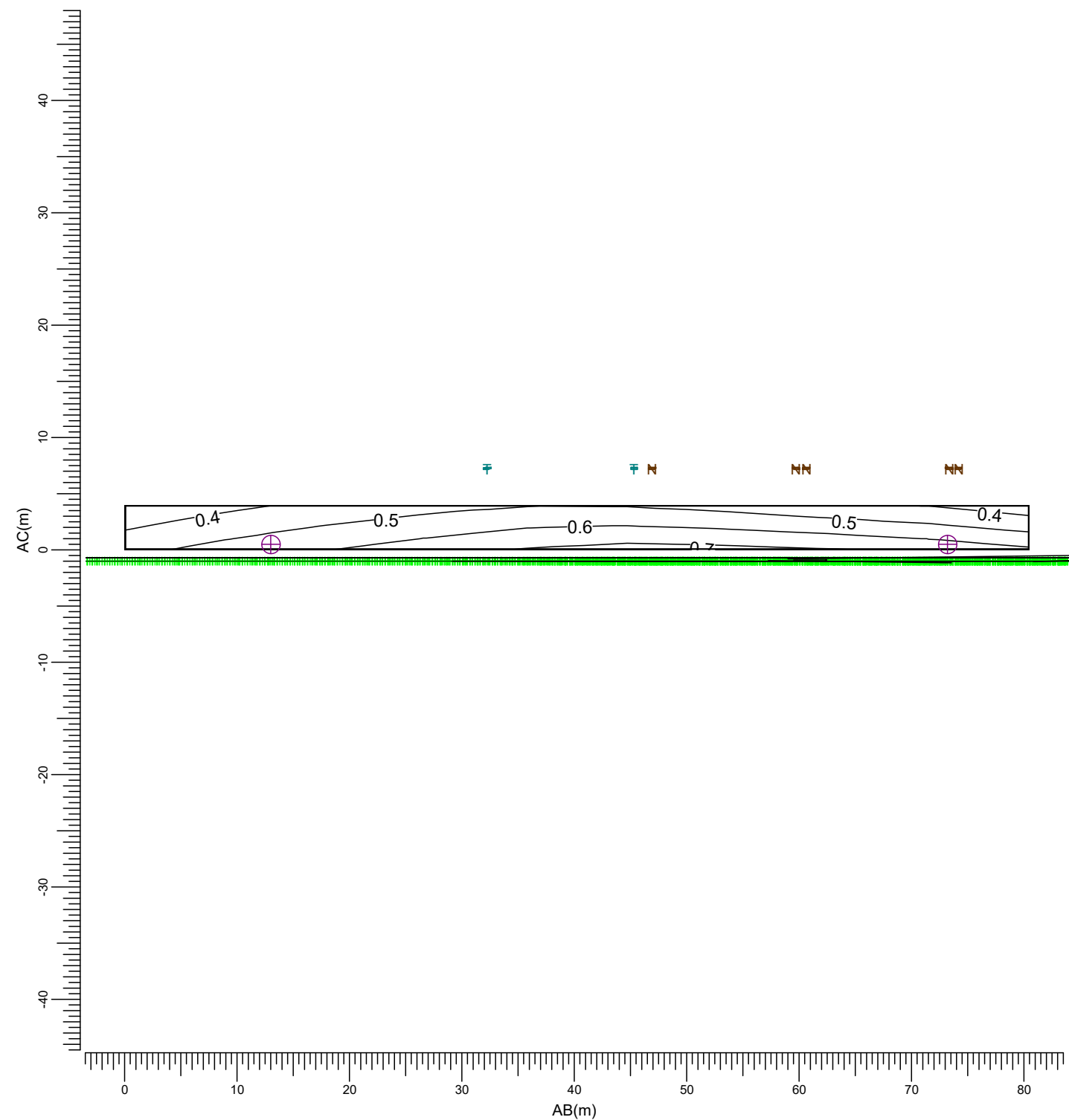
0.56 1.00 1:1250

3.18 Ev 57-71 Tennyson Walk: Iso Contour

All ON

Grid : Ev 57-71 Tennyson Walk

Calculation : Surface Illuminance (lux)



(225.00, -57.00, 5.00) C-----D (157.00, -100.00, 5.00)

(225.00, -57.00, 1.00) A-----B (157.00, -100.00, 1.00)

E : BVP528 OUT T35 A55-NMB LO K : BVP518 OUT T35 A55-NMB LO

N : BVP518 OUT T35 A55-MNB LT T : BVP518 OUT T40 A55-NMB LT

Maximum Project maintenance factor Scale

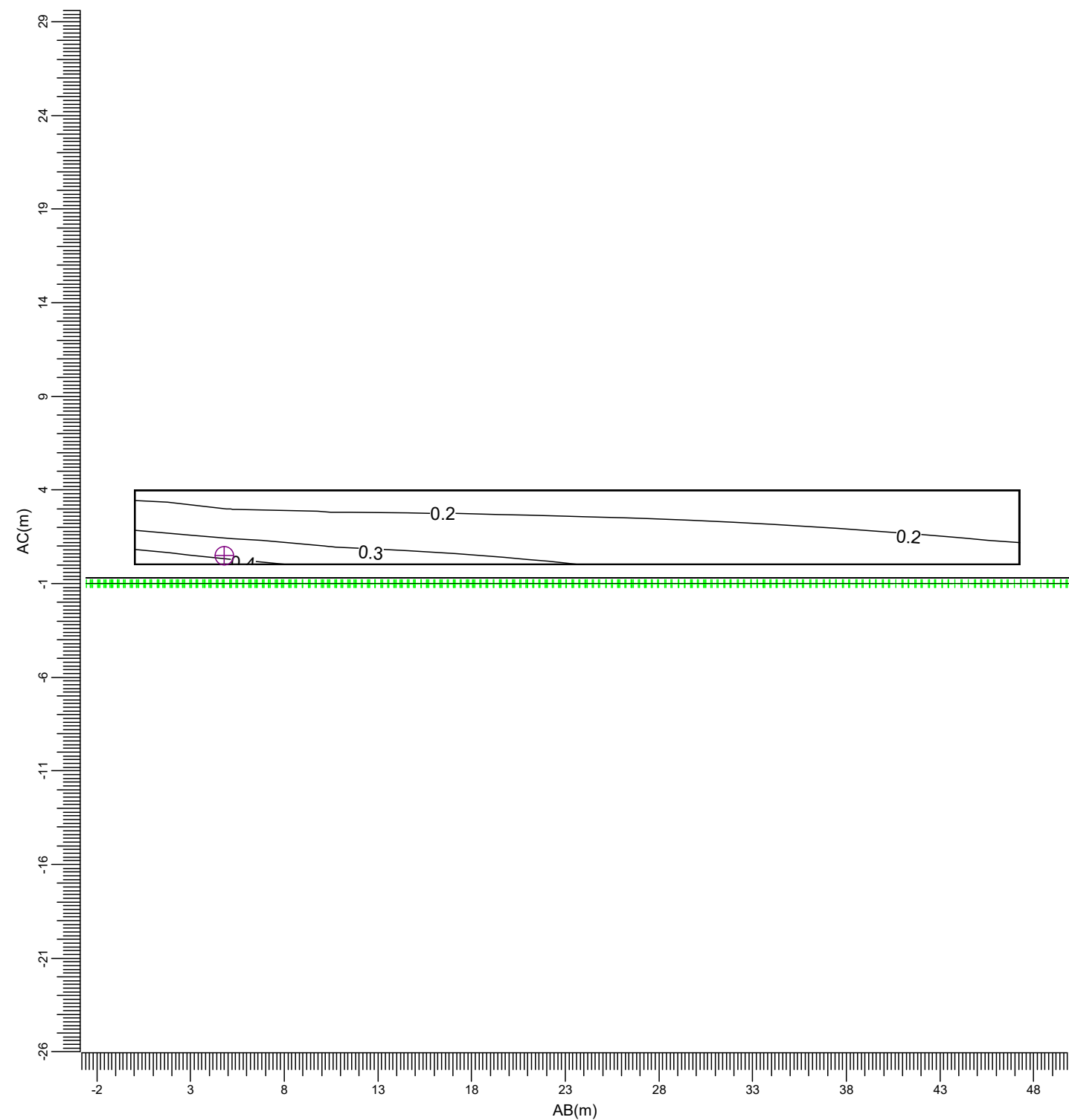
0.74 1.00 1:500

3.19 Ev Riverdale: Iso Contour

All ON

Grid : Ev Riverdale

Calculation : Surface Illuminance (lux)



(188.70, 31.00, 5.00)

C-----D (225.30, 1.10, 5.00)

(188.70, 31.00, 1.00)

A-----B (225.30, 1.10, 1.00)

E : BVP528 OUT T35 A55-NMB LO

K : BVP518 OUT T35 A55-NMB LO

N : BVP518 OUT T35 A55-MNB LT

T : BVP518 OUT T40 A55-NMB LT

Maximum0.48

Project maintenance factor1.00

Scale1:300

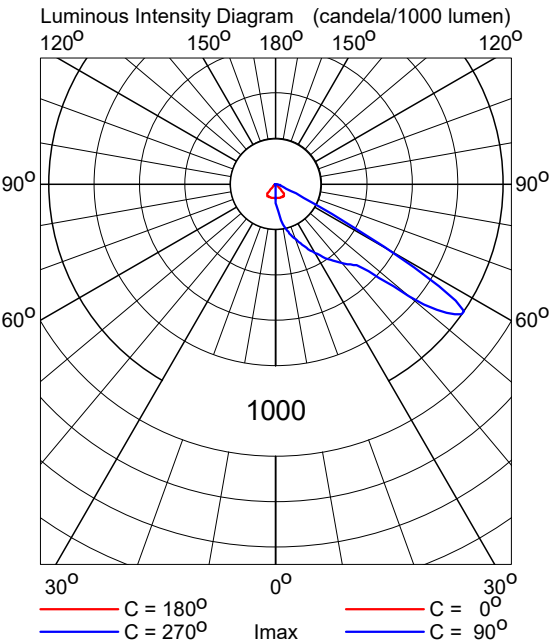
4. Luminaire Details

4.1 Project Luminaires

OptiVision LED gen3.5 2022
BVP528 OUT T35 1xLED2590-4S/757/757 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

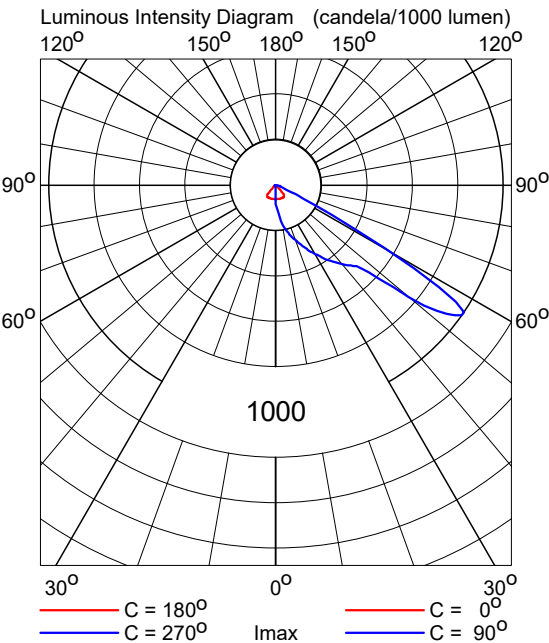
Note: Luminaire data not from database.



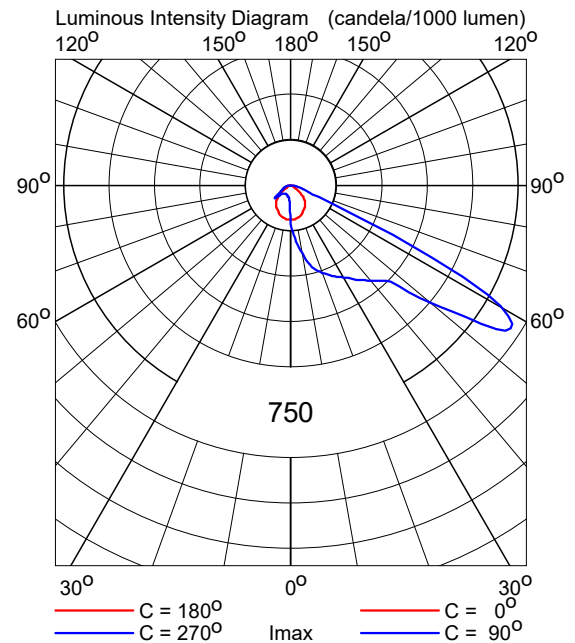
OptiVision LED gen3.5 2022
BVP518 OUT T35 1xLED1720-4S/757/757 E3/D4I A55-NMB LO

Light output ratios	
DLOR	: 0.58
ULOR	: 0.00
TLOR	: 0.58
Ballast	: E3/D4I
Lamp flux	: 172000 lm
Luminaire wattage	: 1006.0 W
Measurement code	: LVM2I482U1

Note: Luminaire data not from database.



Note: Luminaire data not from database.



Note: Luminaire data not from database.

