

DATE: 20/11/2023
DESIGNER: James Duffin BA (Hons) IEng MILP
PROJECT No: EVO20010723-AC-001-C
PROJECT NAME: Lower Acre Parcel 1.1, OHH

ENERVEO

Parcel 1.1 - Adoptable Roads
One Horton Heath

Road Lighting Class - P4
Footpath Lighting Class- P5

Lantern - Urbis Schreder Axia 3.1
Colour Temperature - 3000K
Maintenance Factor - 0.85

Outdoor Lighting Report

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Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1 - Road 1 - P4	448842.00	116129.50	120.00	39.00	1.50	1.50
2	Grid 2 - Road 1 - P4	448921.87	116143.10	36.00	150.00	1.50	1.50
3	Grid 3 - Road 1 - P4	448966.67	116240.46	30.00	81.00	1.50	1.50
4	Grid 4 - Road 2 - P4	448987.10	116261.41	30.00	159.00	1.50	1.50
5	Grid 5 - Road 2 Footpath -...	449026.36	116333.20	11.00	69.00	1.00	1.00
6	Grid 6 - Footpath 1 - P5	449051.38	116404.59	18.00	84.00	1.00	1.00
7	Grid 7 - Tie In to Segment...	448827.51	116124.02	15.00	27.00	1.50	1.50
8	Grid 8 - Vertical Block A	448934.22	116139.68	14.34	5.00	1.43	1.25
9	Grid 9 - Vertical Plot 89 ...	448949.23	116142.49	9.82	5.00	1.40	1.25
10	Grid 10 - Vertical Plot 59	449008.96	116251.36	5.98	5.00	1.49	1.25
11	Grid 11 - Vertical Plot 89...	448952.20	116147.69	5.88	5.00	1.47	1.25
12	Grid 12 - Vertical Plot 20...	448964.48	116263.27	8.77	5.00	1.46	1.25
13	Grid 13 - Vertical Plots 2...	449010.81	116299.75	11.61	5.00	1.45	1.25
14	Grid 14 - Vertical Plots 2...	449019.93	116316.95	11.49	5.00	1.44	1.25
15	Grid 15 - Vertical Plots 2...	449029.85	116340.89	11.61	5.00	1.29	1.25
16	Grid 16 - Vertical Plot 27...	449048.14	116382.83	11.04	5.00	1.38	1.25
17	Grid 17 - Vertical Block D	448951.88	116290.01	6.33	5.00	1.27	1.25
18	Grid 18 - Vertical Plot 39	449041.24	116321.63	5.80	5.00	1.45	1.25
19	Grid 19 - Vertical Plot 57	449014.42	116271.53	5.96	5.00	1.49	1.25
20	Grid 20 - Vertical Plot 20	449075.74	116395.75	10.97	5.00	1.10	1.25

Luminaires

Luminaire A Data

Supplier	Urbis Schreder
Type	AXIA 3.1 5295 Integrated lenses Rear louvers 8 OSLO SQUARE G
Lamp(s)	8 OSLO SQUARE GIANT@850mA WW 730 230V 00-53-394
LampFlux(klm)/Colour	1.94 WW 3000K/70
File Name	AXIA 3.1 5295 8 OSLO SQUARE GIANT 850mA WW 730 22.8W 457592 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	842.8, 11.9, 0.0
No. in Project	10

Luminaire B Data

Supplier	Urbis Schreder
Type	AXIA 3.1 5270 Integrated lenses Rear louvers 16 OSLO SQUARE
Lamp(s)	16 OSLO SQUARE GIANT@200mA WW 730 230V 01-37-041
LampFlux(klm)/Colour	1.16 WW 3000K/70
File Name	AXIA 3.1 5270 16 OSLO SQUARE GIANT 200mA WW 730 11.2W 457682 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1135.6, 52.1, 0.0
No. in Project	8

Luminaire C Data

Supplier	Urbis Schreder
Type	AXIA 3.1 5294 Integrated lenses - 16 OSLO SQUARE GIANT@480m
Lamp(s)	16 OSLO SQUARE GIANT@480mA WW 730 230V 00-56-615
LampFlux(klm)/Colour	3.25 WW 3000K/70
File Name	AXIA 3.1 5294 16 OSLO SQUARE GIANT 480mA WW 730 25.1W 435812 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	588.3, 39.6, 0.0
No. in Project	3

Luminaire D Data

Supplier	Urbis Schreder
Type	AXIA 3.1 5296 Integrated lenses Rear louvers 8 OSLO SQUARE G
Lamp(s)	8 OSLO SQUARE GIANT@300mA WW 730 230V 01-37-041
LampFlux(klm)/Colour	0.82 WW 3000K/70
File Name	AXIA 3.1 5296 8 OSLO SQUARE GIANT 300mA WW 730 8.4W 457602 Integrated ...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1285.9, 28.2, 0.0
No. in Project	5

Luminaires**Luminaire R Data**

Supplier	Philips
Type	BGP703 DX10
Lamp(s)	LED-HB 5.2S 730
Lamp Flux (klm)	9.50
File Name	Luma Gen2 Mini_BGP703_DX10_9500_40 LED_5.2S_CLO_L90_730.ies
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	522.9, 97.5, 0.0
No. in Project	1

**Luminaire S Data**

Supplier	Urbis Schreder
Type	AXIA 3.1 5267 Integrated lenses Rear louvers 16 OSLON SQUARE
Lamp(s)	16 OSLON SQUARE GIANT@700mA WW 730 230V 00-53-397
LampFlux(klm)/Colour	3.14 WW 3000K/70
File Name	AXIA 3.1 5267 16 OSLON SQUARE GIANT T 700mA WW 730 35.6W 457672 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1281.8, 174.5, 0.0
No. in Project	7

**Luminaire T Data**

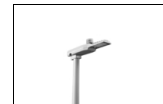
Supplier	Urbis Schreder
Type	AXIA 3.1 5270 Integrated lenses - 16 OSLON SQUARE GIANT@480m
Lamp(s)	16 OSLON SQUARE GIANT@480mA WW 730 230V 00-56-615
LampFlux(klm)/Colour	3.23 WW 3000K/70
File Name	AXIA 3.1 5270 16 OSLON SQUARE GIANT T 480mA WW 730 25.1W 429112 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1022.0, 99.2, 0.0
No. in Project	4

**Luminaire U Data**

Supplier	Urbis Schreder
Type	AXIA 3.1 5296 Integrated lenses Rear louvers 8 OSLON SQUARE G
Lamp(s)	8 OSLON SQUARE GIANT@300mA WW 730 230V 01-37-041
LampFlux(klm)/Colour	0.82 WW 3000K/70
File Name	AXIA 3.1 5296 8 OSLON SQUARE GIANT 300mA WW 730 8.4W 457602 Integrated ...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1285.9, 28.2, 0.0
No. in Project	5

**Luminaire V Data**

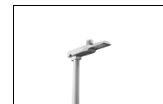
Supplier	Urbis Schreder
Type	AXIA 3.1 5295 Integrated lenses Rear louvers 8 OSLON SQUARE G
Lamp(s)	8 OSLON SQUARE GIANT@850mA WW 730 230V 00-53-394
LampFlux(klm)/Colour	1.94 WW 3000K/70
File Name	AXIA 3.1 5295 8 OSLON SQUARE GIANT 850mA WW 730 22.8W 457592 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	842.8, 11.9, 0.0
No. in Project	1

**Luminaire W Data**

Supplier	Urbis Schreder
Type	AXIA 3.2 5279 Integrated lenses - 24 OSLON SQUARE GIANT@1000
Lamp(s)	24 OSLON SQUARE GIANT@1000mA WW 730 230V 00-49-490
LampFlux(klm)/Colour	8.49 WW 3000K/70
File Name	AXIA 3.2 5279 24 OSLON SQUARE GIANT T 1000mA WW 730 76W 430122 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	758.9, 149.6, 0.0
No. in Project	1

**Luminaire X Data**

Supplier	Urbis Schreder
Type	AXIA 3.1 5266 Integrated lenses Rear louvers 8 OSLON SQUARE G
Lamp(s)	8 OSLON SQUARE GIANT@700mA WW 730 230V 01-37-041
LampFlux(klm)/Colour	1.74 WW 3000K/70
File Name	AXIA 3.1 5266 8 OSLON SQUARE GIANT 700mA WW 730 19.4W 457662 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1216.3, 169.4, 0.0
No. in Project	2

**Luminaire Y Data**

Supplier	Urbis Schreder
Type	AXIA 3.2 5267 Integrated lenses - 32 OSLON SQUARE GIANT@800m
Lamp(s)	32 OSLON SQUARE GIANT@800mA WW 730 230V 00-49-490
LampFlux(klm)/Colour	9.61 WW 3000K/70
File Name	AXIA 3.2 5267 32 OSLON SQUARE GIANT T 800mA WW 730 78W 430092 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	1001.2, 151.3, 0.0
No. in Project	3

Luminaires



Luminaire Z Data

Supplier	Urbis Schreder
Type	AXIA 3.2 5295 Integrated lenses Rear louvers 32 OSLOM SQUARE
Lamp(s)	32 OSLOM SQUARE GIANT@800mA WW 730 230V 01-50-748
LampFlux(klm)/Colour	7.96 WW 3000K/70
File Name	AXIA 3.2 5295 32 OSLOM SQUARE GIANT 800mA WW 730 78W 479062 Integrated...
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	723.7, 21.7, 0.0
No. in Project	2

Layout

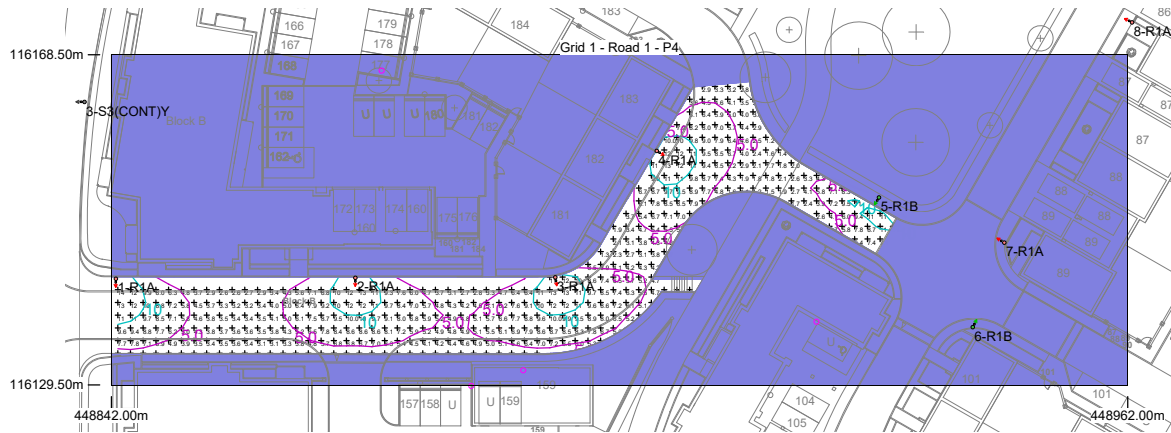
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
10_S3	Z	448847.56	116261.65	8.00	164.00	0.00	0.00	0.40			
11_S3	X	448825.24	116268.39	6.00	339.00	0.00	0.00	0.40			
12_S3	Z	448836.56	116288.36	8.00	13.00	0.00	0.00	0.40			
13_S3	X	448848.62	116317.82	6.00	204.00	0.00	0.00	0.40			
14_S3	W	448829.79	116309.23	8.00	14.00	0.00	0.00	0.40			
1-SR(CONT)	Y	448855.80	116295.81	8.00	279.00	0.00	0.00	0.40			
3-SR(CONT)	S	448878.64	116292.06	6.00	106.00	0.00	0.00	0.40			
4-SR(CONT)	T	448903.59	116309.03	6.00	287.00	0.00	0.00	0.40			
5-SR(CONT)	T	448924.82	116314.98	6.00	284.00	0.00	0.00	0.40			
6-SR(CONT)	T	448942.55	116321.25	6.00	310.00	0.00	0.00	0.40			
8-SR	S	448961.35	116331.62	6.00	150.00	0.00	0.00	0.40			
10-SR(CONT)	S	448971.99	116354.64	6.00	159.00	0.00	0.00	0.40			
12-SR(CONT)	T	448973.73	116383.68	6.00	344.00	0.00	0.00	0.40			
13-SR(CONT)	S	448988.00	116402.32	6.00	168.00	0.00	0.00	0.40			
15-SR(CONT)	S	448997.71	116428.32	6.00	158.00	0.00	0.00	0.40			
16-SR(CONT)	S	448996.17	116452.69	6.00	337.00	0.00	0.00	0.40			
17-SR(CONT)	S	449016.83	116471.05	6.00	156.00	0.00	0.00	0.40			
7-SR	U	448944.90	116337.59	6.00	341.00	0.00	0.00	0.40			
9-SR(CONT)	U	448951.34	116352.87	6.00	339.00	0.00	0.00	0.40			
11-SR(CONT)	U	448964.16	116382.96	6.00	336.00	0.00	0.00	0.40			
14-SR(CONT)	U	448978.53	116416.85	6.00	344.00	0.00	0.00	0.40			
2-SR(CONT)	U	448862.36	116308.51	6.00	246.00	0.00	0.00	0.40			
1-P1.2(CONT)	V	448942.04	116358.57	6.00	66.00	0.00	0.00	0.40			
2-S3(CONT)	Y	448824.48	116134.57	8.00	354.00	0.00	0.00	0.40			
3-S3(CONT)	Y	448838.83	116162.93	8.00	179.00	0.00	0.00	0.40			
1-S3(CONT)	R	448829.64	116091.74	8.00	25.00	0.00	0.00	0.40			
1-R1	A	448842.52	116142.05	6.00	269.00	0.00	0.00	0.40			
2-R1	A	448870.80	116142.16	6.00	269.00	0.00	0.00	0.40			
3-R1	A	448894.40	116142.22	6.00	280.00	0.00	0.00	0.40			
4-R1	A	448906.38	116157.14	6.00	329.00	0.00	0.00	0.40			
5-R1	B	448932.61	116151.65	6.00	239.00	0.00	0.00	0.40			
7-R1	A	448947.40	116146.32	6.00	148.00	0.00	0.00	0.40			
6-R1	B	448943.68	116136.34	6.00	62.00	0.00	0.00	0.40			
8-R1	A	448962.50	116172.32	6.00	153.00	0.00	0.00	0.40			
9-R1	A	448976.23	116196.52	6.00	151.00	0.00	0.00	0.40			
10-R1	A	448990.10	116220.47	6.00	148.00	0.00	0.00	0.40			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
11-R1	B	448992.61	116239.84	6.00	331.00	0.00	0.00	0.40			
12-R1	B	448988.03	116260.59	6.00	237.00	0.00	0.00	0.40			
13-R1	A	448971.98	116272.13	6.00	201.00	0.00	0.00	0.40			
14-R1	A	448952.30	116296.63	6.00	23.00	0.00	0.00	0.40			
1-R2	C	448998.09	116267.14	6.00	327.00	0.00	0.00	0.40			
2-R2	C	449014.09	116292.71	6.00	329.00	0.00	0.00	0.40			
3-R2	C	449027.62	116319.13	6.00	335.00	0.00	0.00	0.40			
5-R2	B	449040.08	116342.56	6.00	328.00	0.00	0.00	0.40			
6-R2	B	449050.71	116362.95	6.00	336.00	0.00	0.00	0.40			
8-R2	B	449056.19	116381.40	6.00	325.00	0.00	0.00	0.40			
9-R2	B	449057.78	116400.05	6.00	243.00	0.00	0.00	0.40			
4-R2	D	449034.56	116345.13	6.00	336.00	0.00	0.00	0.40			
7-R2	D	449049.59	116380.70	6.00	337.00	0.00	0.00	0.40			
1-FP1	D	449066.15	116419.05	6.00	333.00	0.00	0.00	0.40			
2-FP1	D	449084.03	116444.14	6.00	319.00	0.00	0.00	0.40			
3FP1	D	449102.63	116468.27	6.00	322.00	0.00	0.00	0.40			

Horizontal Illuminance (lux)

Grid 1 - Road 1 - P4

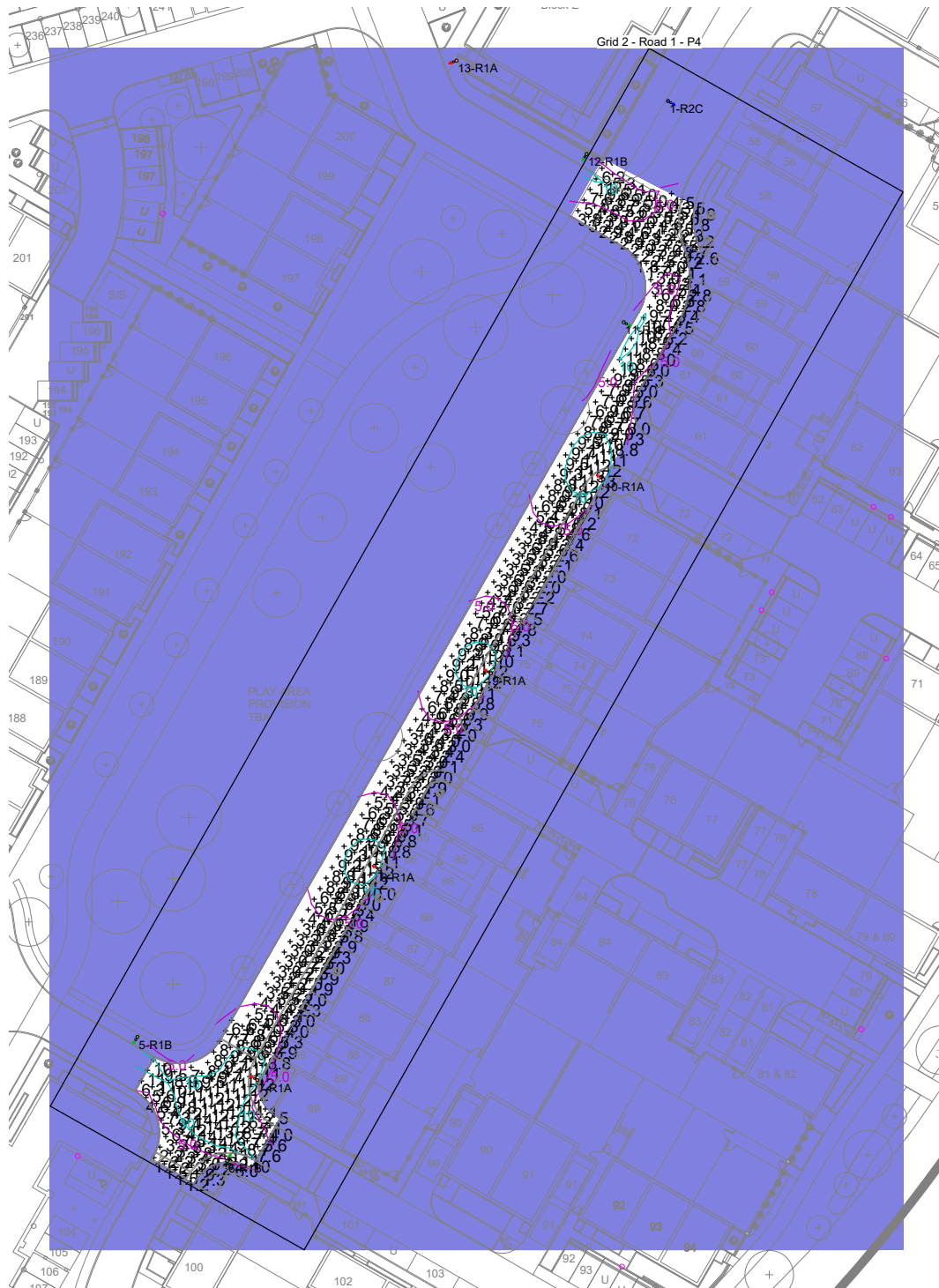


Results

Eav	5.96
Emin	1.09
Emax	13.77
Emin/Emax	0.08
Emin/Eav	0.18

Horizontal Illuminance (lux)

Grid 2 - Road 1 - P4



Results

Eav	6.66
Emin	1.23
Emax	14.23
Emin/Emax	0.09
Emin/Eav	0.18

Horizontal Illuminance (lux)

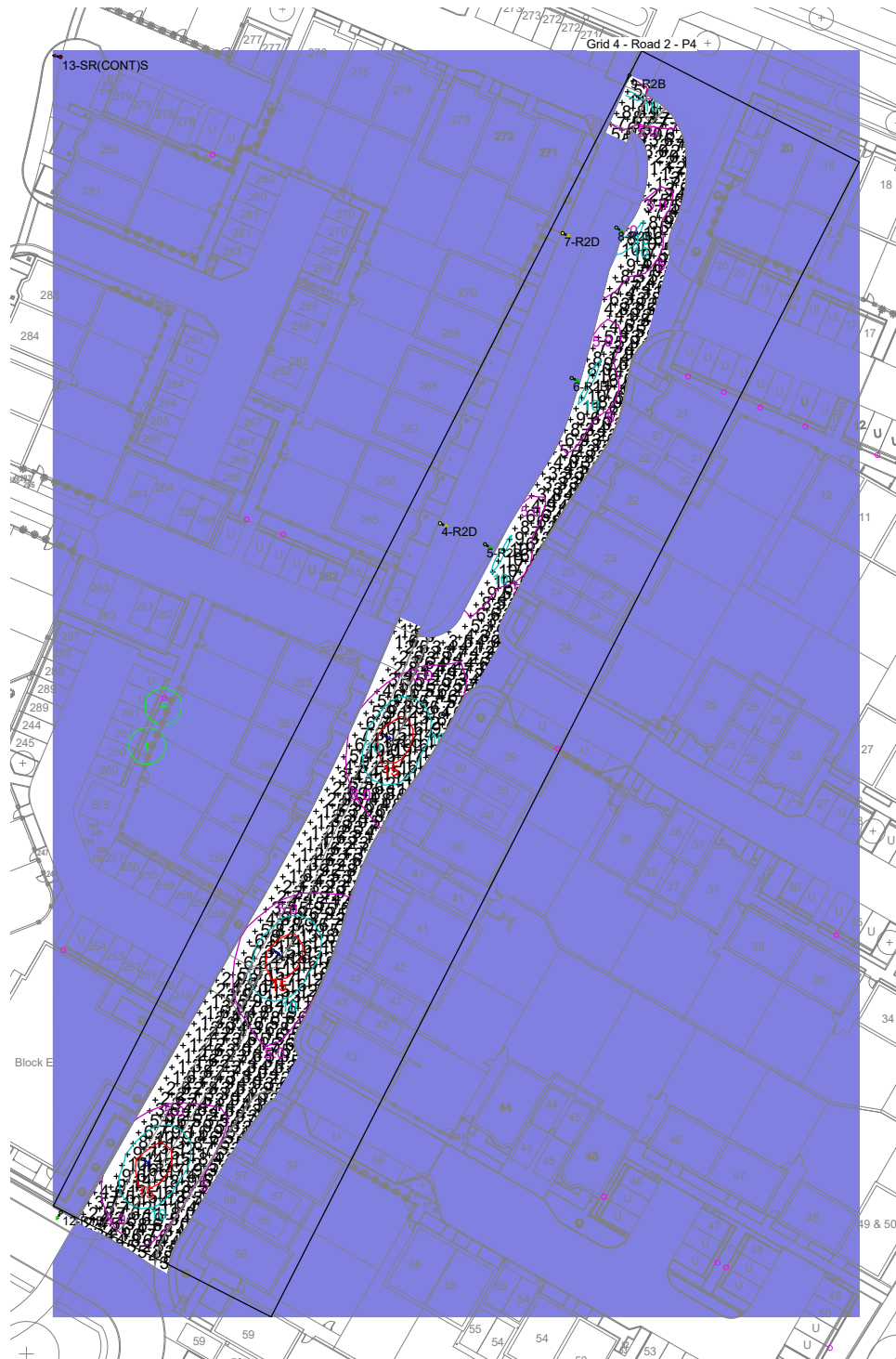
Grid 3 - Road 1 - P4

**Results**

Eav	5.39
Emin	1.08
Emax	12.45
Emin/Emax	0.09
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 4 - Road 2 - P4

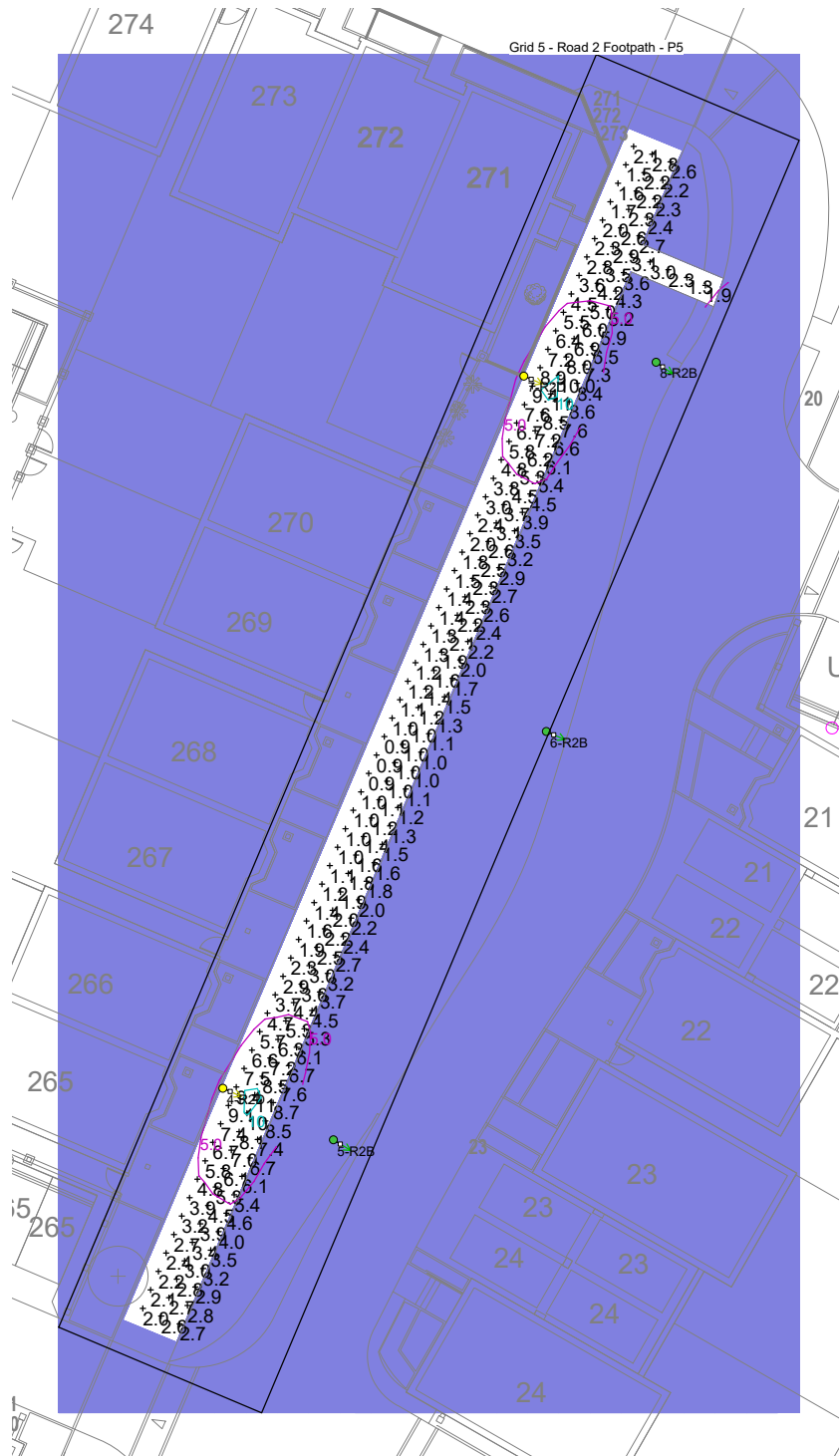


Results

Eav	6.34
Emin	1.12
Emax	19.28
Emin/Emax	0.06
Emin/Eav	0.18

Horizontal Illuminance (lux)

Grid 5 - Road 2 Footpath - P5

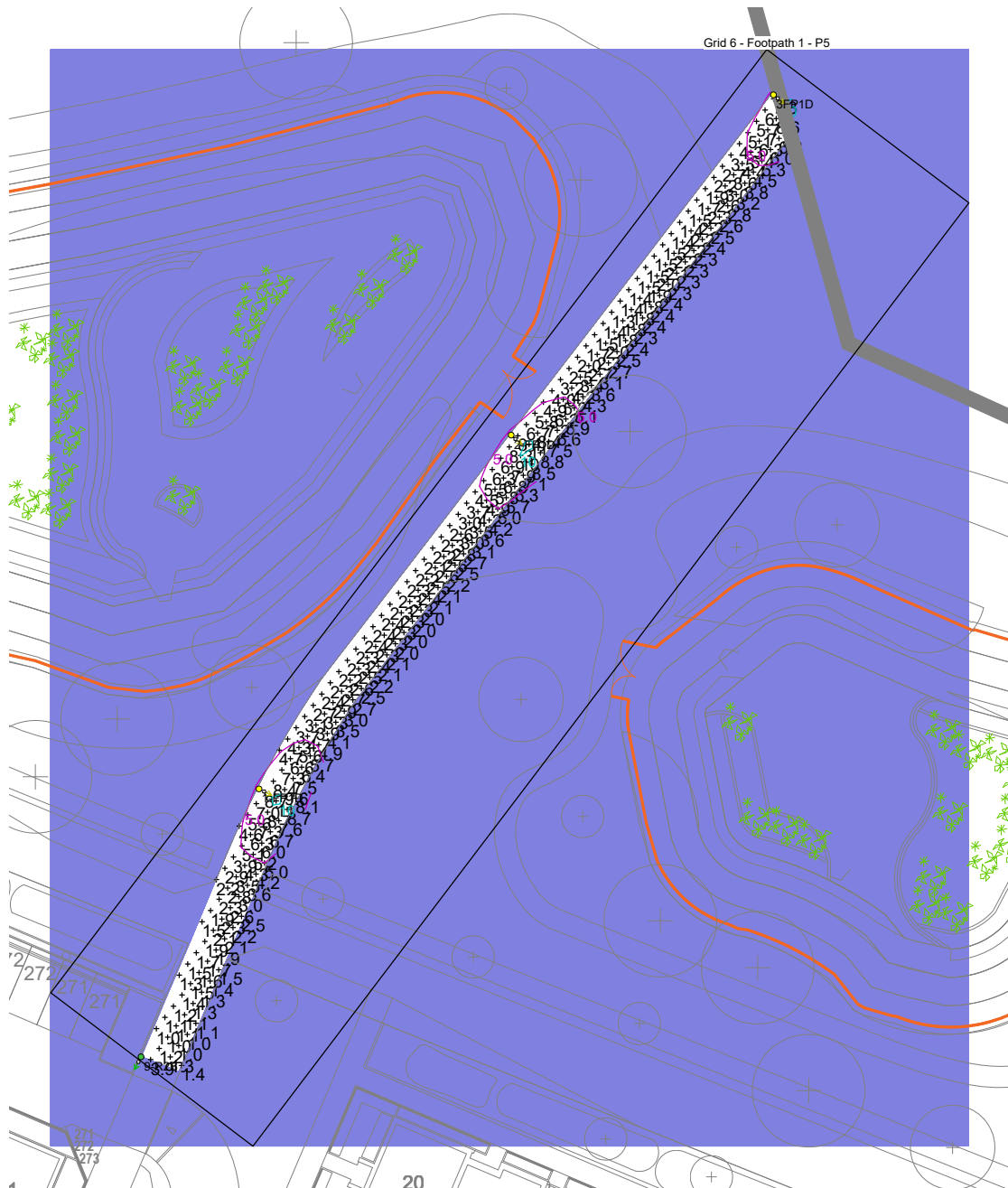


Results

Eav	3.74
Emin	0.90
Emax	10.75
Emin/Emax	0.08
Emin/Eav	0.24

Horizontal Illuminance (lux)

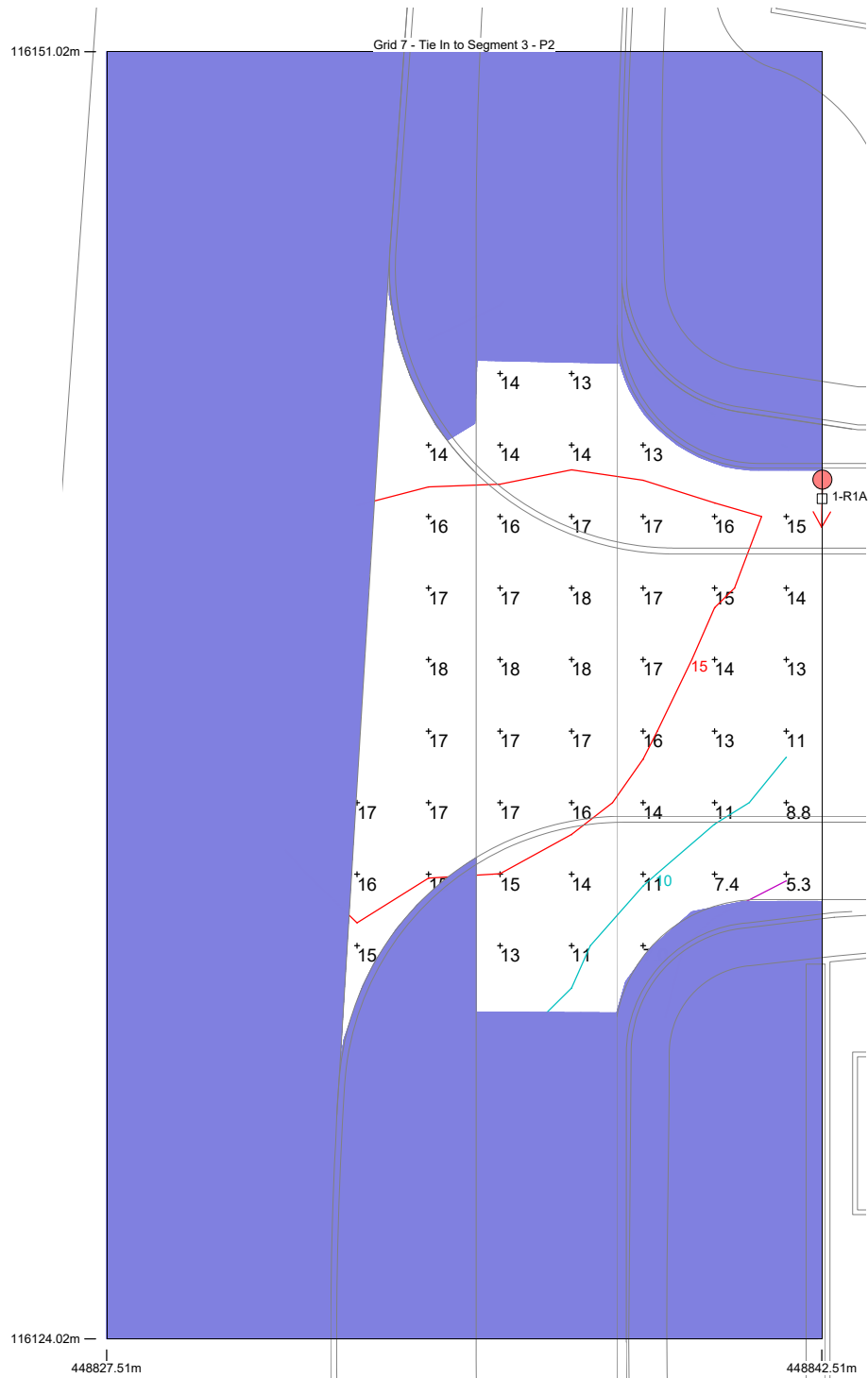
Grid 6 - Footpath 1 - P5

**Results**

Eav	3.62
Emin	1.02
Emax	10.75
Emin/Emax	0.09
Emin/Eav	0.28

Horizontal Illuminance (lux)

Grid 7 - Tie In to Segment 3 - P2

**Results**

Eav	14.46
Emin	5.35
Emax	18.25
Emin/Emax	0.29
Emin/Eav	0.37

Illuminance (lux)

Grid 8 - Vertical Block A

0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.6	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
3.1	1.0	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3

Results

Eav	0.29
Emin	0.04
Emax	3.09
Emin/Emax	0.01
Emin/Eav	0.13

Illuminance (lux)

Grid 9 - Vertical Plot 89 (South)

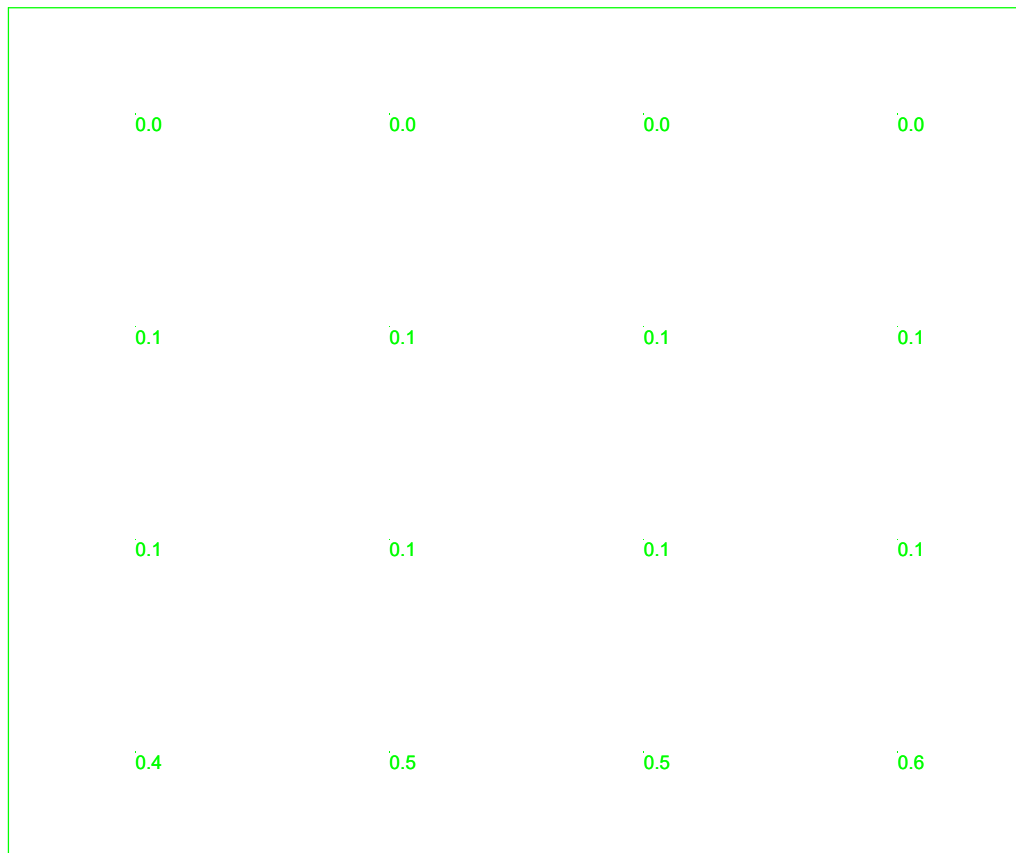
0.1	0.1	0.1	0.0	0.0	0.0	0.0
0.2	0.2	0.1	0.1	0.1	0.0	0.0
0.4	0.4	0.3	0.3	0.2	0.2	0.2
0.7	1.0	0.8	0.7	0.8	0.7	0.7

Results

Eav	0.30
Emin	0.01
E _{max}	1.01
Emin/E _{max}	0.01
Emin/Eav	0.04

Illuminance (lux)

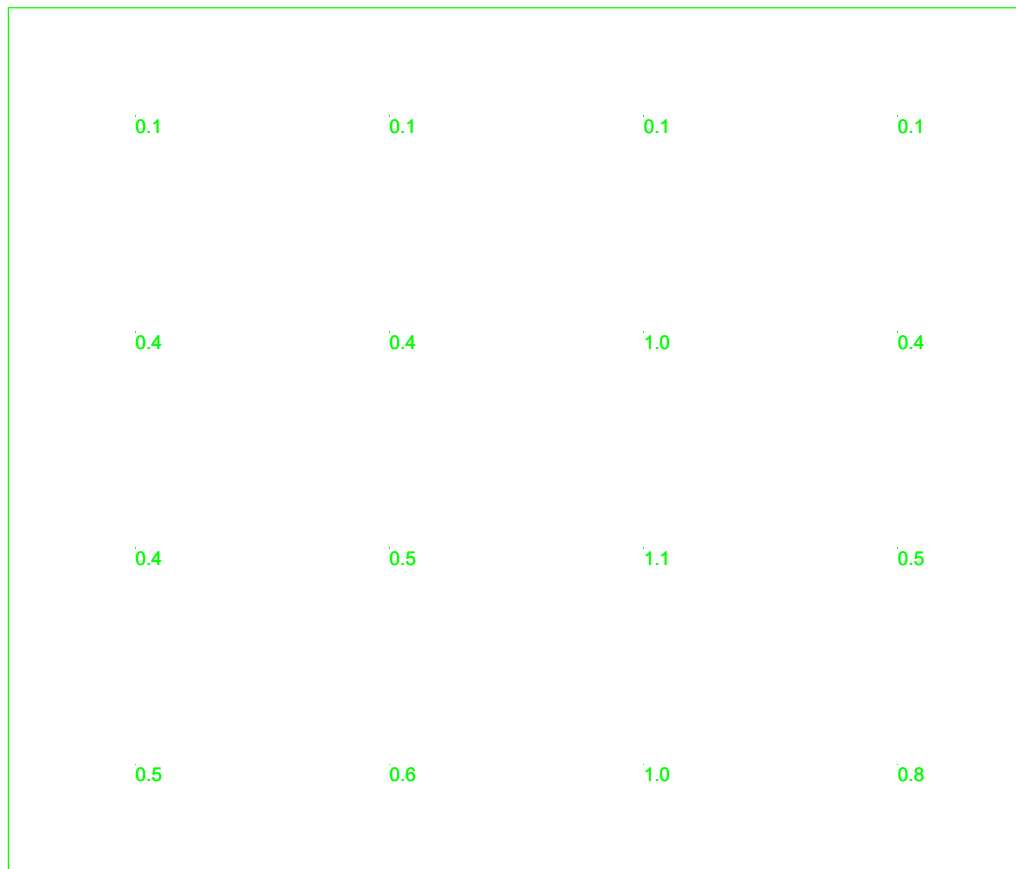
Grid 10 - Vertical Plot 59

**Results**

Eav	0.19
Emin	0.03
Emax	0.60
Emin/Emax	0.05
Emin/Eav	0.17

Illuminance (lux)

Grid 11 - Vertical Plot 89 (West)

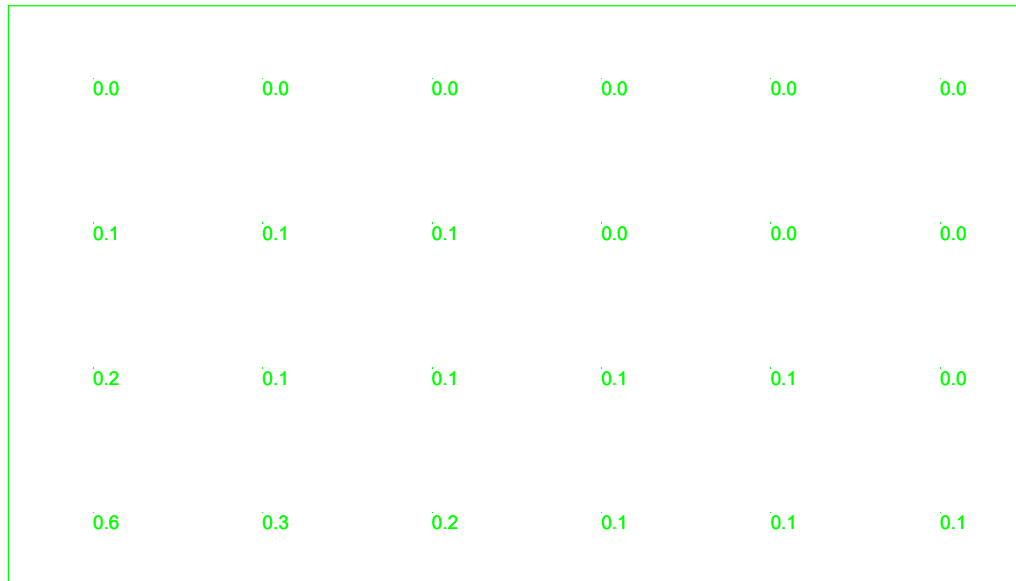


Results

Eav	0.51
Emin	0.11
Emax	1.08
Emin/Emax	0.10
Emin/Eav	0.21

Illuminance (lux)

Grid 12 - Vertical Plot 200



Results

Eav	0.10
Emin	0.02
Emax	0.57
Emin/Emax	0.04
Emin/Eav	0.21

Illuminance (lux)

Grid 13 - Vertical Plots 258-259

0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0
0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1
1.4	1.0	0.8	0.5	0.4	0.3	0.3	0.3
1.8	1.4	1.1	0.8	0.7	0.6	0.6	0.6

Results

Eav	0.45
Emin	0.05
E _{max}	1.79
Emin/E _{max}	0.03
Emin/Eav	0.10

Illuminance (lux)

Grid 14 - Vertical Plots 260-262

0.2	0.1	0.1	0.0	0.1	0.1	0.2	0.2
0.7	1.0	1.1	1.2	1.2	1.0	0.8	0.5
1.9	2.4	2.9	3.4	3.0	2.4	1.9	1.4
2.1	2.6	3.1	3.6	3.2	2.6	2.2	1.7

Results

Eav	1.52
Emin	0.03
E _{max}	3.55
Emin/E _{max}	0.01
Emin/Eav	0.02

Illuminance (lux)

Grid 15 - Vertical Plots 265-266

0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.0
0.1	0.2	0.3	0.4	0.5	0.4	0.2	0.1	0.1
0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.1
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1

Results

Eav	0.19
Emin	0.04
E _{max}	0.55
Emin/E _{max}	0.07
Emin/Eav	0.22

Illuminance (lux)

Grid 16 - Vertical Plot 271

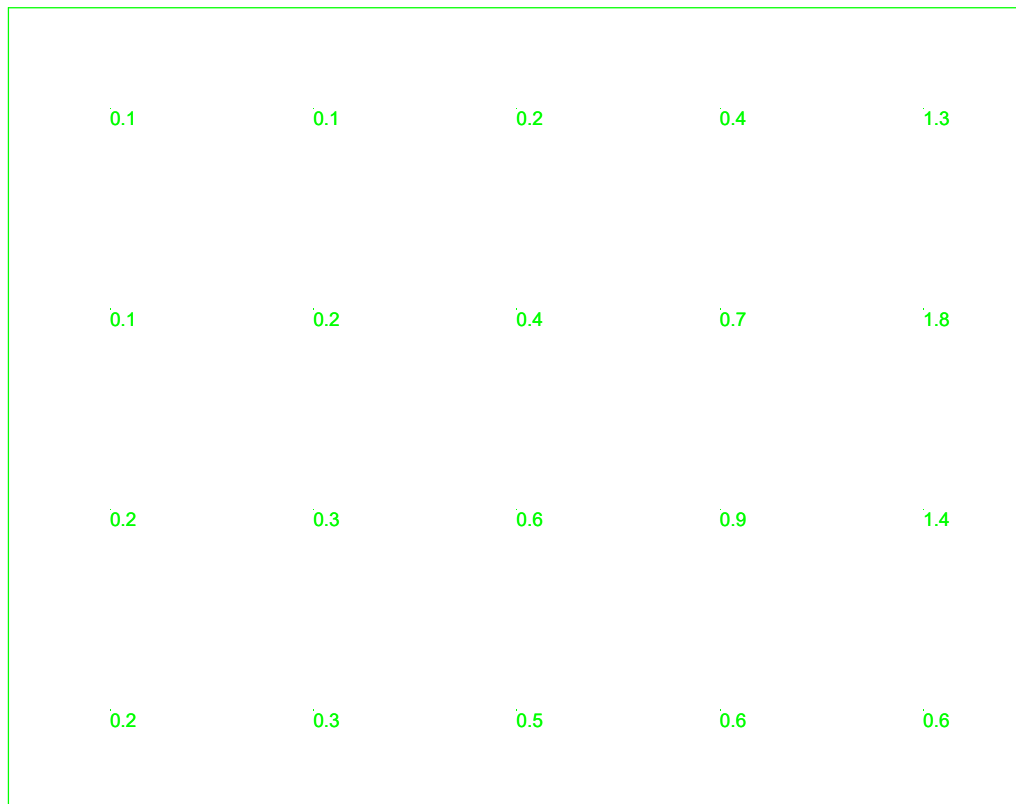
0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1
0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2
0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2

Results

Eav	0.14
Emin	0.02
E _{max}	0.33
Emin/E _{max}	0.05
Emin/Eav	0.13

Illuminance (lux)

Grid 17 - Vertical Block D

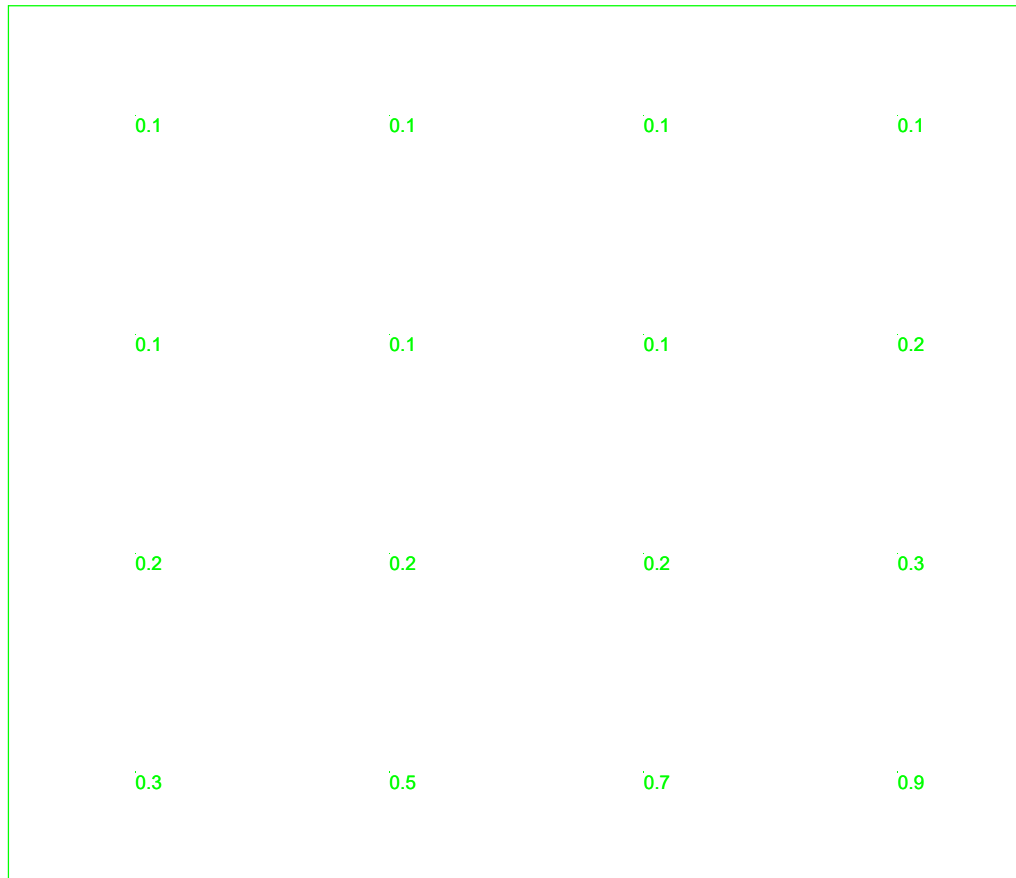


Results

Eav	0.54
Emin	0.06
Emax	1.83
Emin/Emax	0.03
Emin/Eav	0.11

Illuminance (lux)

Grid 18 - Vertical Plot 39

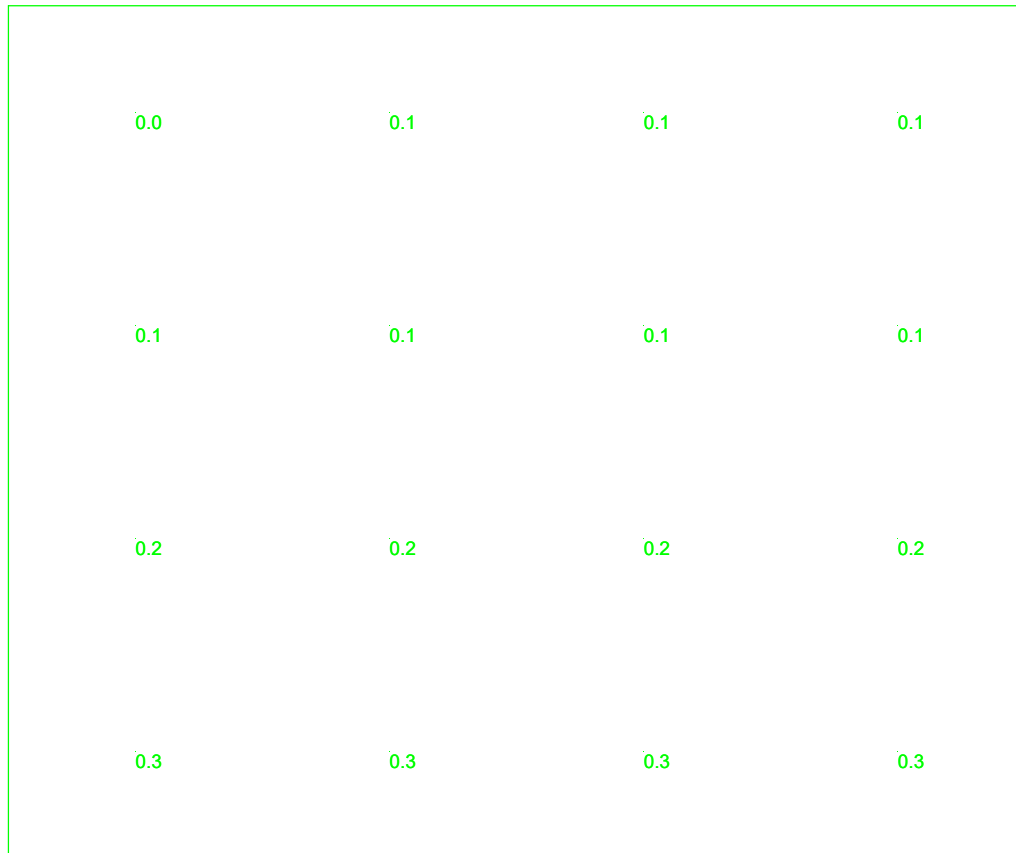


Results

Eav	0.25
Emin	0.06
Emax	0.89
Emin/Emax	0.07
Emin/Eav	0.24

Illuminance (lux)

Grid 19 - Vertical Plot 57



Results

Eav	0.16
Emin	0.05
Emax	0.33
Emin/Emax	0.14
Emin/Eav	0.28

Illuminance (lux)

Grid 20 - Vertical Plot 20

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3
0.2	0.3	0.6	0.9	1.2	1.3	1.4	1.4	1.5	1.4

Results

Eav	0.33
Emin	0.02
E _{max}	1.48
Emin/E _{max}	0.01
Emin/Eav	0.06