

**DATE:** 18 April 2019  
**DESIGNER:** Declan Doyle  
**PROJECT No:** KE/RE/CRC/01 rev 2  
**PROJECT NAME:** Castletreasure residential Cork



Residential Lighting to class P3,  
main road to class P2, estate entrance to conflict class C3  
Dimming to 2A regime, S/P Ratio 1.47

- A) CREE XSPME B type 210 DY1 3.32klm, 21w CLO
- B) CREE XSPME B type 2SH DY1 3.32klm, 21w CLO
- C) CREE XSPME B type 210 DY6 5.81klm, 41w CLO

c/w nema 7 pin socket & field adjuster (DQ-N/Y-N)  
6m columns - estate, 8m columns - main road

Results: Estate:- Eav 8.01/8.69lux, Emin 1.57/1.72, Uo 0.20/0.20  
Road:- Eav 12.27/10.92/10.56lux, Emin 2.90/2.45/3.56, Uo0.22/.34  
Estate entrance:- Eav 16.19/17.76lux, Emin 6.41/8.18, UO 0.40/0.46

## Outdoor Lighting Report

**PREPARED BY:**

Astrotek lighting Ltd.,  
M50 Business park,  
Ballymount,  
Dublin 12.

Tel: 01 4568009  
Email: declan.doyle@rexel.ie  
Web: www.kellihers.com



## 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	Estate 1	1142.89	567.22	355.48	374.45	1.50	1.50
2	Estate 2	1498.37	616.28	317.73	392.73	1.50	1.57
3	Main road 1	1738.85	921.31	34.56	209.11	1.44	1.49
4	Main road 2	1847.63	800.44	39.04	162.97	1.45	1.50
5	Main road 3	1943.12	589.03	41.34	238.18	1.48	1.50
6	Conflict zone 1	1681.51	991.53	22.50	32.23	1.41	1.01
7	Conflict zone 2	1739.75	933.18	18.66	27.15	1.44	1.18

### Luminaires

#### Luminaire A Data

Supplier	
Type	XSPME - B - Type 210 - DY1 4K
Lamp(s)	3MD-SA1400 M DY1 4K
LampFlux(klm)/Colour	3.32 4000/70
File Name	XSPME02210B40K_24DY1-PL12371-001A. LDT
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	616.7, 15.1, 0.0
Lamp S/P Ratio	1.47
No. in Project	37

#### Luminaire B Data

Supplier	
Type	XSPME - B - Type 2SH - DY1 4K
Lamp(s)	3MD-SA1400 M DY1 4K
LampFlux(klm)/Colour	3.32 4000/70
File Name	XSPME022SHB40K_24DY1-PL12371-011A. LDT
Maintenance Factor	0.76
Imax70,80,90(cd/klm)	389.0, 13.6, 0.0
Lamp S/P Ratio	1.47
No. in Project	159

#### Luminaire C Data

Supplier	
Type	XSPME - B - Type 210 - DY6 4K
Lamp(s)	3MD-SA1400 M DY6 4K
LampFlux(klm)/Colour	5.81 4000/70
File Name	XSPME02210B40K_24DY6-PL12371-001A. LDT
Maintenance Factor	0.84
Lum. Int. Class	G3
Lamp S/P Ratio	1.47
No. in Project	22

### Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	B	1325.63	708.53	6.00	33.00	5.00	0.00	0.00			
2	B	1344.32	693.98	6.00	204.00	0.00	0.00	0.00			
3	A	1361.94	661.30	6.00	200.00	5.00	0.00	0.00			
4	B	1356.99	634.25	6.00	19.00	5.00	0.00	0.00			



### Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
5	B	1363.52	615.39	6.00	26.00	5.00	0.00	0.00			
6	B	1377.46	623.21	6.00	288.00	5.00	0.00	0.00			
7	B	1424.74	712.91	8.00	281.00	5.00	0.00	0.00			
8	B	1445.68	640.36	6.00	265.00	0.00	0.00	0.00			
9	B	1469.33	639.29	6.00	259.00	5.00	0.00	0.00			
10	B	1492.59	636.11	6.00	261.00	5.00	0.00	0.00			
11	B	1516.63	632.64	6.00	265.00	5.00	0.00	0.00			
12	B	1539.92	635.32	6.00	292.00	5.00	0.00	1.00			
13	B	1574.78	647.76	6.00	286.00	0.00	0.00	0.00			
14	A	1592.29	655.97	6.00	283.00	0.00	0.00	0.00			
15	A	1616.65	661.30	6.00	281.00	0.00	0.00	0.00			
16	A	1639.13	665.60	6.00	282.00	0.00	0.00	0.00			
17	B	1656.42	678.28	6.00	189.00	0.00	0.00	0.00			
18	B	1642.96	688.87	6.00	10.00	0.00	0.00	0.00			
19	B	1625.97	718.95	6.00	50.00	0.00	0.00	0.00			
20	B	1611.35	730.48	6.00	48.00	5.00	0.00	0.00			
21	B	1591.61	742.52	6.00	72.00	0.00	0.00	0.00			
22	B	1571.90	757.40	6.00	256.00	5.00	0.00	1.00			
23	B	1540.10	764.47	6.00	263.00	0.00	0.00	0.00			
24	B	1523.32	755.26	6.00	87.00	0.00	0.00	0.00			
25	B	1482.91	770.20	6.00	285.00	5.00	0.00	0.00			
26	B	1444.69	744.08	6.00	157.00	0.00	0.00	0.00			
27	B	1448.01	725.52	6.00	175.00	5.00	0.00	0.00			
28	B	1444.78	707.12	6.00	219.00	5.00	0.00	0.00			
29	A	1473.14	705.73	6.00	266.00	0.00	0.00	0.00			
30	A	1496.72	703.22	6.00	258.00	0.00	0.00	0.00			
31	A	1520.95	700.04	6.00	260.00	0.00	0.00	0.00			
32	A	1546.36	698.56	6.00	260.00	0.00	0.00	0.00			
33	B	1568.83	707.96	6.00	162.00	5.00	0.00	0.50			
34	B	1639.80	704.43	6.00	27.00	5.00	0.00	0.00			
35	B	1564.43	740.91	6.00	357.00	5.00	0.00	0.50			
36	B	1553.23	675.62	6.00	12.00	0.00	0.00	0.00			
37	B	1558.13	649.68	6.00	16.00	5.00	0.00	0.00			
38	A	1423.54	655.68	6.00	17.00	0.00	0.00	0.00			
39	A	1417.18	675.71	6.00	20.00	0.00	0.00	0.00			
40	B	1414.34	695.66	6.00	51.00	0.00	0.00	0.00			



### Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
41	B	1375.65	708.39	6.00	102.00	0.00	0.00	0.00			
42	B	1391.32	719.24	8.00	257.00	5.00	0.00	0.00			
43	A	1361.71	703.02	6.00	110.00	5.00	0.00	0.00			
44	B	1312.03	697.29	6.00	121.00	5.00	0.00	0.00			
45	B	1298.63	693.21	6.00	155.00	0.00	0.00	0.00			
46	B	1295.49	672.74	6.00	180.00	0.00	0.00	0.00			
47	B	1309.66	624.56	6.00	163.00	0.00	0.00	0.00			
48	B	1301.70	650.88	6.00	200.00	0.00	0.00	0.00			
49	B	1291.64	611.41	6.00	78.00	5.00	0.00	0.00			
50	B	1289.16	635.85	6.00	202.00	5.00	0.00	1.00			
51	B	1269.43	663.24	6.00	0.00	0.00	0.00	0.00			
52	B	1267.87	708.52	6.00	0.00	0.00	0.00	0.00			
53	B	1268.27	680.78	8.00	2.00	5.00	0.00	0.00			
54	A	1229.26	719.28	6.00	271.00	0.00	0.00	0.00			
55	B	1214.39	706.06	6.00	181.00	0.00	0.00	0.00			
56	B	1215.77	681.31	6.00	174.00	5.00	0.00	0.00			
57	B	1215.37	660.76	6.00	191.00	0.00	0.00	0.00			
58	B	1225.22	639.12	6.00	116.00	5.00	0.00	0.50			
59	B	1233.18	606.78	6.00	198.00	0.00	0.00	0.00			
60	B	1322.30	735.22	6.00	347.00	5.00	0.00	0.00			
61	B	1341.08	757.08	6.00	300.00	5.00	0.00	0.00			
62	B	1367.65	770.04	6.00	299.00	5.00	0.00	0.00			
63	B	1407.64	772.96	6.00	93.00	5.00	0.00	0.00			
64	B	1406.47	787.21	6.00	275.00	5.00	0.00	0.00			
65	B	1435.06	788.57	6.00	274.00	0.00	0.00	0.00			
66	B	1464.05	792.11	6.00	285.00	5.00	0.00	0.00			
67	B	1491.20	801.82	6.00	294.00	5.00	0.00	0.00			
68	B	1515.33	807.12	6.00	269.00	5.00	0.00	0.00			
69	B	1532.41	808.98	6.00	349.00	0.00	0.00	0.00			
70	B	1513.15	826.12	6.00	59.00	0.00	0.00	0.00			
71	B	1495.78	836.92	6.00	61.00	0.00	0.00	0.00			
72	B	1470.04	841.75	6.00	75.00	5.00	0.00	1.00			
73	B	1427.57	840.19	6.00	95.00	0.00	0.00	0.00			
74	B	1407.56	839.26	6.00	91.00	0.00	0.00	0.00			
75	B	1387.50	838.08	6.00	96.00	0.00	0.00	0.00			
76	B	1367.90	839.84	6.00	95.00	0.00	0.00	0.00			



### Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
77	B	1350.74	834.38	6.00	184.00	0.00	0.00	0.00			
78	B	1354.62	814.22	6.00	190.00	0.00	0.00	0.00			
79	B	1350.37	787.14	6.00	99.00	5.00	0.00	0.00			
80	B	1324.76	785.68	6.00	288.00	0.00	0.00	0.00			
81	B	1296.51	781.72	6.00	270.00	0.00	0.00	0.00			
82	B	1285.11	794.84	6.00	190.00	5.00	0.00	0.00			
83	A	1282.99	807.66	6.00	187.00	0.00	0.00	0.00			
84	B	1275.32	832.96	6.00	224.00	5.00	0.00	0.00			
85	B	1336.84	805.42	6.00	8.00	5.00	0.00	0.00			
86	B	1250.56	844.06	6.00	217.00	0.00	0.00	0.00			
87	B	1243.58	871.42	6.00	200.00	0.00	0.00	0.00			
88	B	1225.84	895.42	6.00	246.00	0.00	0.00	0.00			
89	B	1185.89	909.29	6.00	213.00	0.00	0.00	0.00			
90	B	1233.66	802.97	6.00	287.00	5.00	0.00	0.00			
91	B	1254.95	806.51	6.00	240.00	0.00	0.00	0.00			
92	B	1214.13	783.35	6.00	18.00	5.00	0.00	0.00			
93	B	1223.73	755.68	6.00	19.00	5.00	0.00	0.00			
94	B	1553.21	803.95	6.00	267.00	5.00	0.00	0.00			
95	B	1616.26	819.84	6.00	270.00	5.00	0.00	0.00			
96	B	1594.93	818.17	6.00	345.00	5.00	0.00	0.00			
97	B	1587.51	839.68	6.00	38.00	5.00	0.00	0.00			
98	B	1575.79	863.37	6.00	358.00	0.00	0.00	1.00			
99	B	1583.79	886.52	6.00	335.00	5.00	0.00	1.00			
100	B	1594.32	909.41	6.00	337.00	5.00	0.00	1.00			
101	B	1606.49	935.11	6.00	331.00	5.00	0.00	1.00			
102	B	1634.79	972.64	6.00	319.00	5.00	0.00	0.00			
103	B	1655.21	995.12	6.00	315.00	5.00	0.00	0.00			
104	B	1668.31	1009.54	6.00	356.00	5.00	0.00	1.00			
105	B	1640.15	810.17	6.00	237.00	5.00	0.00	0.00			
106	B	1659.83	793.28	6.00	215.00	5.00	0.00	0.00			
107	B	1672.73	778.07	6.00	221.00	5.00	0.00	0.00			
108	B	1684.56	764.14	6.00	216.00	0.00	0.00	0.00			
109	B	1699.50	746.42	6.00	222.00	0.00	0.00	0.00			
110	B	1718.69	723.76	6.00	215.00	0.00	0.00	0.00			
112	B	1666.50	656.36	6.00	58.00	0.00	0.00	0.00			
113	B	1676.88	638.37	6.00	14.00	0.00	0.00	0.00			

**Layout Continued**

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
114	B	1237.73	743.56	6.00	112.00	5.00	0.00	0.00			
115	A	1727.28	932.37	6.00	135.00	5.00	0.00	0.00			
116	B	1587.98	807.77	6.00	328.00	5.00	0.00	0.00			
117	A	1712.44	897.18	6.00	33.00	5.00	0.00	0.00			
118	A	1735.85	899.09	6.00	242.00	0.00	0.00	0.00			
119	A	1758.41	866.78	6.00	43.00	5.00	0.00	0.00			
119	B	1784.96	833.23	6.00	331.00	5.00	0.00	0.00			
120	B	1800.83	834.43	6.00	219.00	5.00	0.00	0.00			
122	B	1229.24	620.46	8.00	193.00	5.00	0.00	0.00			
123	A	1256.66	720.81	8.00	274.00	0.00	0.00	0.00			
124	B	1268.17	695.83	8.00	0.00	5.00	0.00	0.00			
125	B	1284.22	652.81	8.00	197.00	5.00	0.00	0.00			
126	A	1354.62	716.45	8.00	291.00	5.00	0.00	0.00			
127	B	1402.59	704.71	8.00	55.00	5.00	0.00	0.00			
128	B	1340.54	676.86	8.00	20.00	5.00	0.00	0.00			
129	A	1347.35	656.74	8.00	18.00	5.00	0.00	0.00			
130	B	1389.50	628.52	8.00	288.00	5.00	0.00	0.00			
131	B	1412.64	637.30	8.00	288.00	5.00	0.00	0.00			
132	B	1434.71	695.13	8.00	103.00	5.00	0.00	0.00			
133	A	1433.31	682.25	8.00	186.00	5.00	0.00	0.00			
134	A	1441.55	656.85	8.00	174.00	5.00	0.00	0.00			
135	A	1459.99	693.48	8.00	86.00	5.00	0.00	0.00			
136	A	1486.66	690.35	8.00	83.00	5.00	0.00	0.00			
137	A	1463.49	747.14	8.00	117.00	5.00	0.00	0.00			
138	A	1458.31	760.58	8.00	299.00	5.00	0.00	0.00			
145	B	1230.10	875.37	6.00	195.00	0.00	0.00	0.00			
146	B	1205.28	851.71	6.00	350.00	0.00	0.00	0.00			
147	B	1232.79	857.33	6.00	169.00	5.00	0.00	0.00			
148	B	1484.63	863.74	6.00	160.00	0.00	0.00	0.00			
149	B	1477.42	887.72	6.00	348.00	5.00	0.00	0.00			
150	B	1512.98	866.29	6.00	52.00	0.00	0.00	0.00			
151	B	1560.45	841.59	6.00	106.00	5.00	0.00	1.00			
152	B	1562.01	865.34	6.00	238.00	5.00	0.00	1.00			
148	B	1507.14	771.02	8.00	267.00	5.00	0.00	0.00			
149	B	1385.27	778.99	6.00	350.00	5.00	0.00	0.00			
150	B	1436.25	774.56	6.00	92.00	5.00	0.00	0.00			



### Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
151	B	1467.43	779.17	6.00	105.00	5.00	0.00	0.00			
152	B	1497.23	789.27	6.00	118.00	5.00	0.00	0.00			
153	B	1250.04	788.08	6.00	187.00	5.00	0.00	0.00			
154	B	1233.70	783.44	6.00	199.00	5.00	0.00	0.00			
155	B	1253.96	763.22	6.00	187.00	5.00	0.00	0.00			
156	B	1239.82	764.92	6.00	199.00	5.00	0.00	0.00			
157	B	1267.99	812.70	6.00	347.00	5.00	0.00	0.00			
158	B	1206.93	900.80	6.00	262.00	5.00	0.00	0.00			
159	B	1209.12	874.90	6.00	347.00	5.00	0.00	0.00			
160	B	1218.70	838.96	6.00	108.00	5.00	0.00	0.00			
161	B	1220.18	857.33	6.00	173.00	5.00	0.00	0.00			
162	B	1334.61	829.15	6.00	7.00	5.00	0.00	0.00			
163	B	1447.31	841.97	6.00	97.00	5.00	0.00	0.00			
164	B	1500.18	895.06	6.00	240.00	5.00	0.00	0.00			
165	B	1496.45	876.29	6.00	58.00	5.00	0.00	0.00			
166	B	1523.09	881.01	6.00	238.00	5.00	0.00	0.00			
167	A	1651.71	656.84	6.00	105.00	5.00	0.00	0.00			
168	A	1526.77	616.74	6.00	87.00	5.00	0.00	0.00			
169	A	1562.60	626.37	6.00	127.00	5.00	0.00	0.50			
170	A	1510.85	687.21	6.00	85.00	5.00	0.00	0.00			
171	A	1537.37	685.39	6.00	103.00	5.00	0.00	0.00			
172	A	1596.92	644.89	6.00	102.00	5.00	0.00	0.00			
173	A	1618.62	648.87	6.00	107.00	5.00	0.00	0.00			
174	A	1641.40	653.82	6.00	104.00	5.00	0.00	0.00			
175	B	1548.67	751.65	6.00	87.00	5.00	0.00	0.00			
176	B	1570.43	725.68	6.00	174.00	5.00	0.00	0.50			
177	B	1520.55	816.11	6.00	57.00	5.00	0.00	0.00			
178	B	1574.23	802.10	6.00	265.00	5.00	0.00	0.00			
179	B	1646.18	782.97	6.00	37.00	5.00	0.00	0.00			
180	B	1659.11	766.22	6.00	43.00	5.00	0.00	0.00			
181	B	1678.91	742.81	6.00	37.00	5.00	0.00	0.00			
182	B	1690.51	728.99	6.00	41.00	5.00	0.00	0.00			
183	B	1705.01	712.33	6.00	41.00	5.00	0.00	0.00			
184	B	1715.53	700.24	6.00	43.00	5.00	0.00	0.00			
185	B	1729.34	711.37	6.00	217.00	5.00	0.00	0.00			
186	B	1734.33	691.01	6.00	136.00	5.00	0.00	0.00			

**Layout Continued**

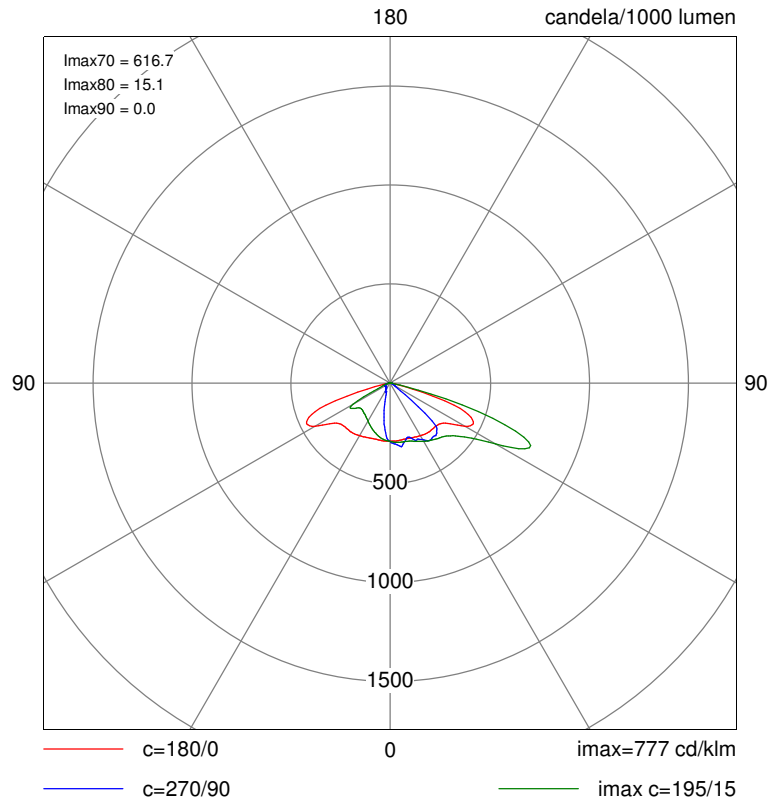
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
187	B	1543.08	857.18	6.00	334.00	5.00	0.00	1.00			
188	B	1619.39	955.11	6.00	313.00	5.00	0.00	1.00			
189	B	1634.05	949.25	6.00	137.00	5.00	0.00	0.00			
190	B	1655.11	973.68	6.00	139.00	5.00	0.00	0.00			
190	B	1666.05	986.54	6.00	146.00	5.00	0.00	0.00			
192	B	1805.00	819.41	6.00	138.00	5.00	0.00	0.00			
193	B	1787.26	815.37	6.00	63.00	5.00	0.00	0.00			
194	A	1774.00	848.68	6.00	42.00	5.00	0.00	0.00			
196	A	1719.41	917.42	6.00	180.00	5.00	0.00	0.00			
197	A	1739.27	879.24	6.00	62.00	5.00	0.00	0.00			
198	C	1681.94	1015.27	8.00	218.00	5.00	0.00	1.00			
199	C	1667.24	1037.44	8.00	211.00	5.00	0.00	1.00			
200	C	1650.88	1067.73	8.00	207.00	5.00	0.00	1.00			
201	C	1634.75	1096.44	8.00	204.00	5.00	0.00	1.00			
202	C	1701.52	989.78	8.00	218.00	5.00	0.00	1.00			
203	C	1738.67	949.49	8.00	226.00	5.00	0.00	1.00			
204	C	1721.65	966.96	8.00	218.00	5.00	0.00	1.00			
205	C	1757.13	932.72	8.00	229.00	5.00	0.00	1.00			
206	C	1777.43	916.12	8.00	224.00	5.00	0.00	1.00			
207	C	1818.03	875.89	8.00	218.00	5.00	0.00	1.00			
208	C	1835.10	853.09	8.00	210.00	5.00	0.00	1.00			
209	C	1857.44	810.57	8.00	200.00	5.00	0.00	1.00			
210	C	1867.22	787.36	8.00	194.00	5.00	0.00	1.00			
211	C	1876.87	756.68	8.00	199.00	5.00	0.00	1.00			
212	C	1887.29	725.60	8.00	205.00	5.00	0.00	1.00			
213	C	1899.38	697.89	8.00	207.00	5.00	0.00	1.00			
214	C	1916.92	671.34	8.00	218.00	5.00	0.00	1.00			
215	C	1937.82	649.17	8.00	218.00	5.00	0.00	1.00			
216	C	1972.57	607.28	8.00	218.00	5.00	0.00	1.00			
217	C	1798.59	896.86	8.00	218.00	5.00	0.00	1.00			
218	B	1677.44	998.40	6.00	90.00	5.00	0.00	1.00			
219	C	1957.02	628.66	8.00	218.00	5.00	0.00	1.00			
220	B	1727.54	945.06	6.00	358.00	5.00	0.00	1.00			
221	C	1847.49	831.88	8.00	198.00	5.00	0.00	1.00			



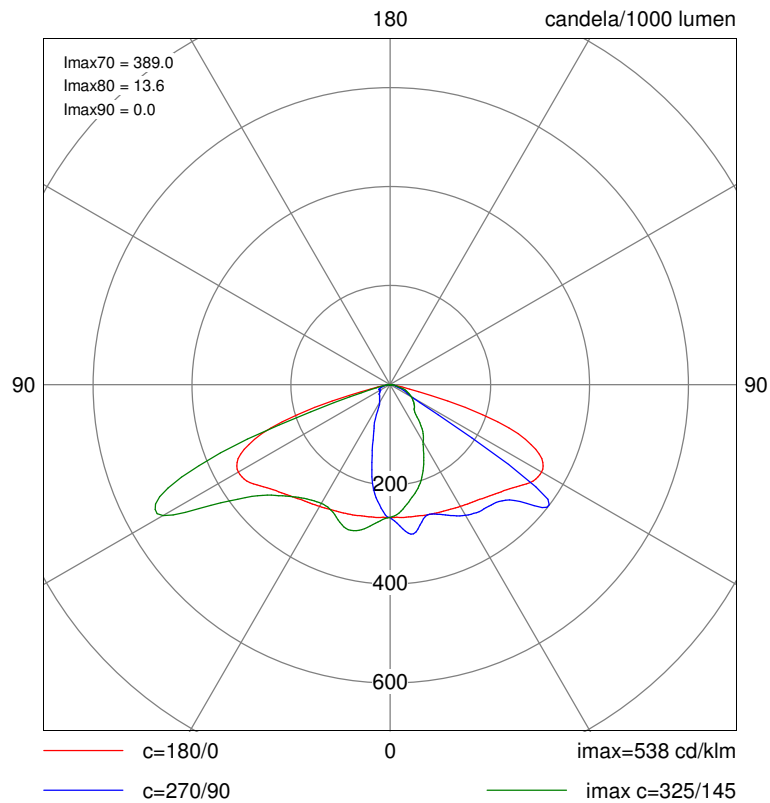


# Polar Diagrams

## Luminaire A XSPME - B - Type 210 - DY1 4K



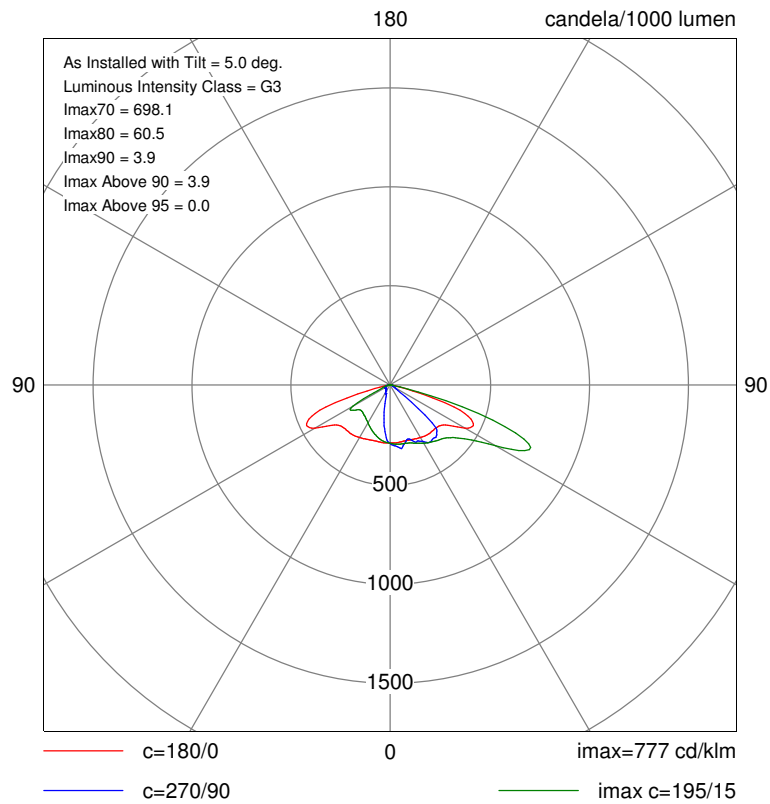
## Luminaire B XSPME - B - Type 2SH - DY1 4K





**Polar Diagrams Continued**

**Luminaire C XSPME - B - Type 210 - DY6 4K**





# Horizontal Illuminance (lux)

Estate 1



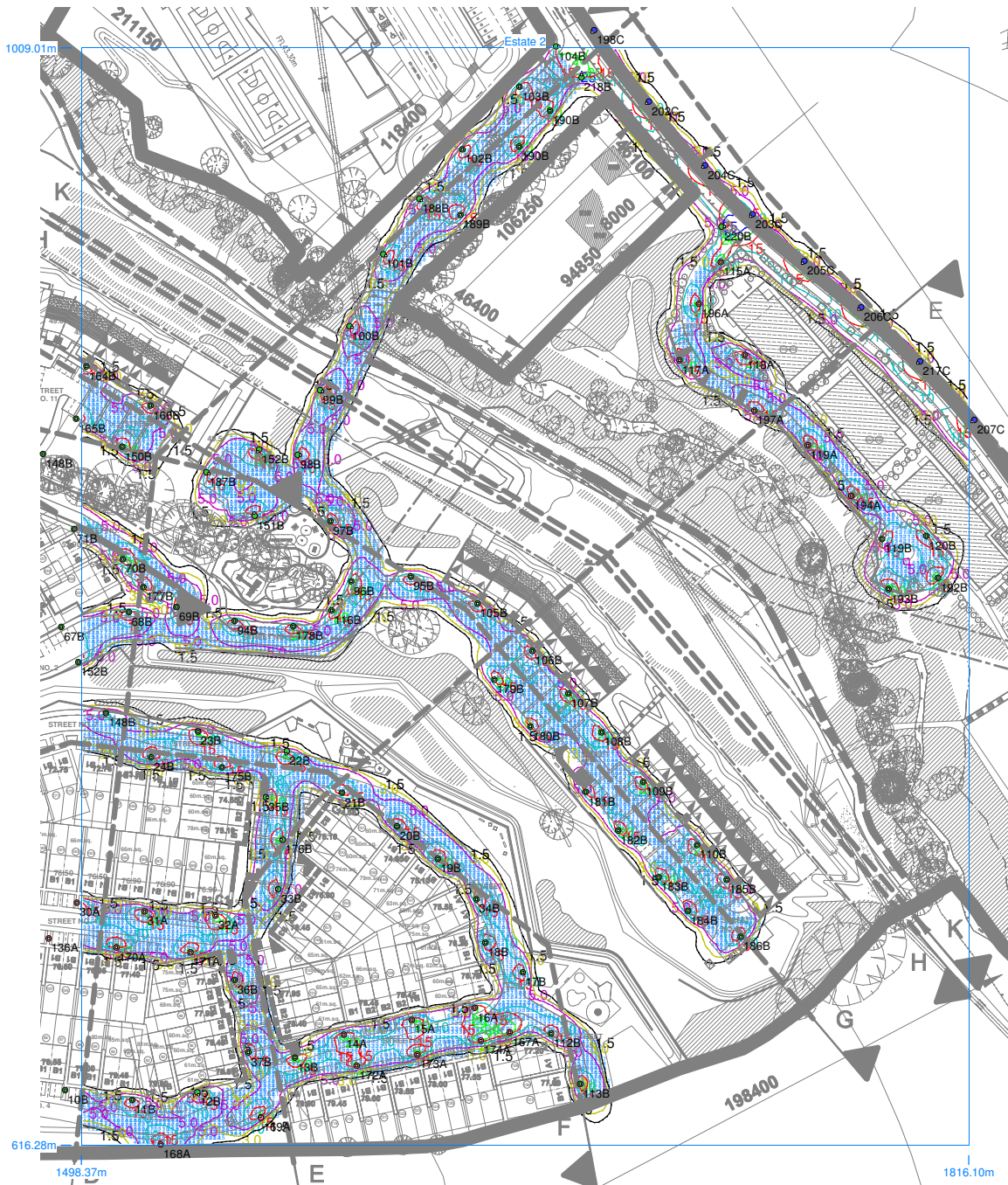
## Results

Eav	8.01
Emin	1.57
Emax	22.78
Emin/Emax	0.07
Emin/Eav	0.20



# Horizontal Illuminance (lux)

Estate 2



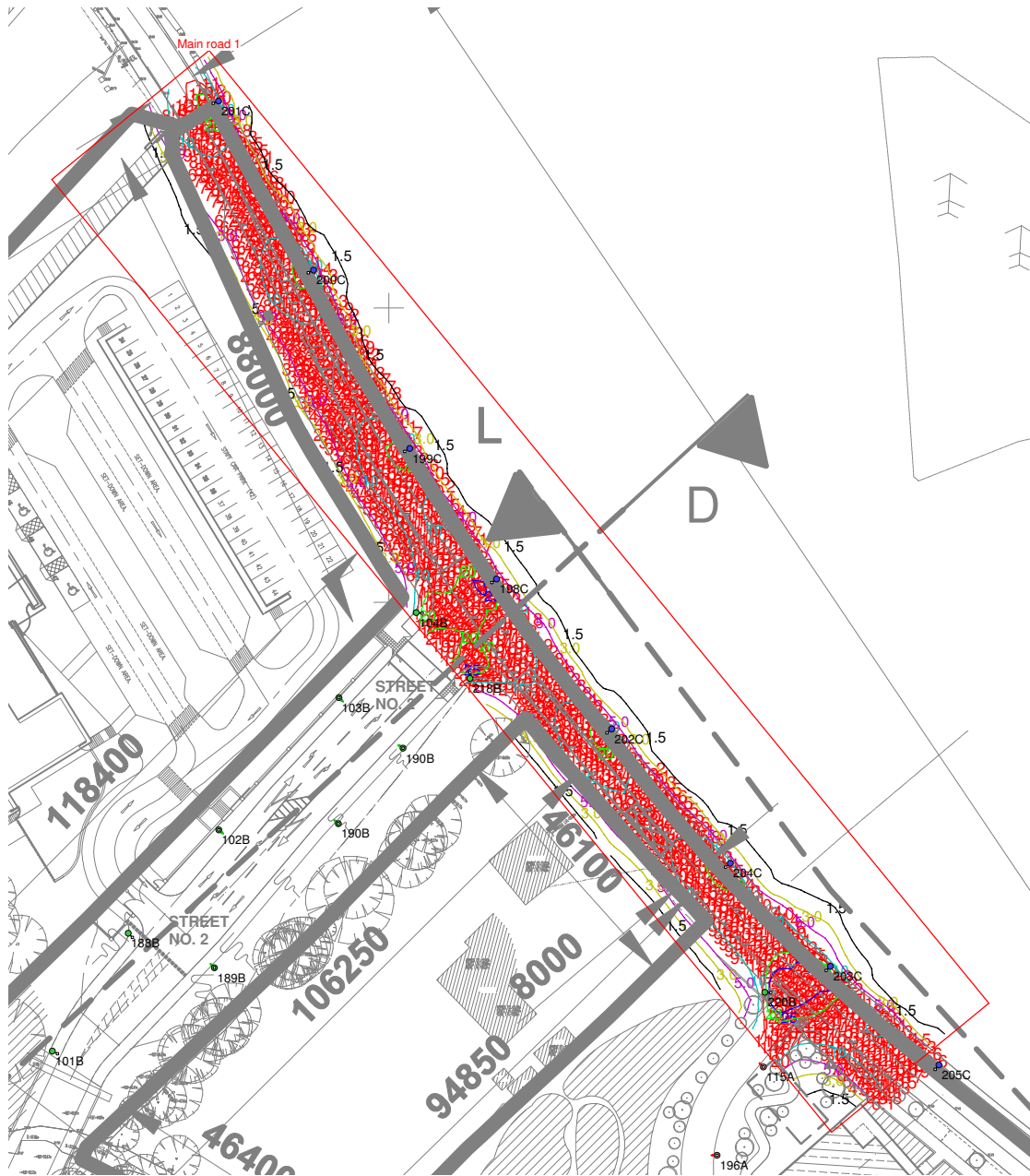
## Results

Eav	8.69
Emin	1.72
Emax	22.21
Emin/Emax	0.08
Emin/Eav	0.20



# Horizontal Illuminance (lux)

Main road 1



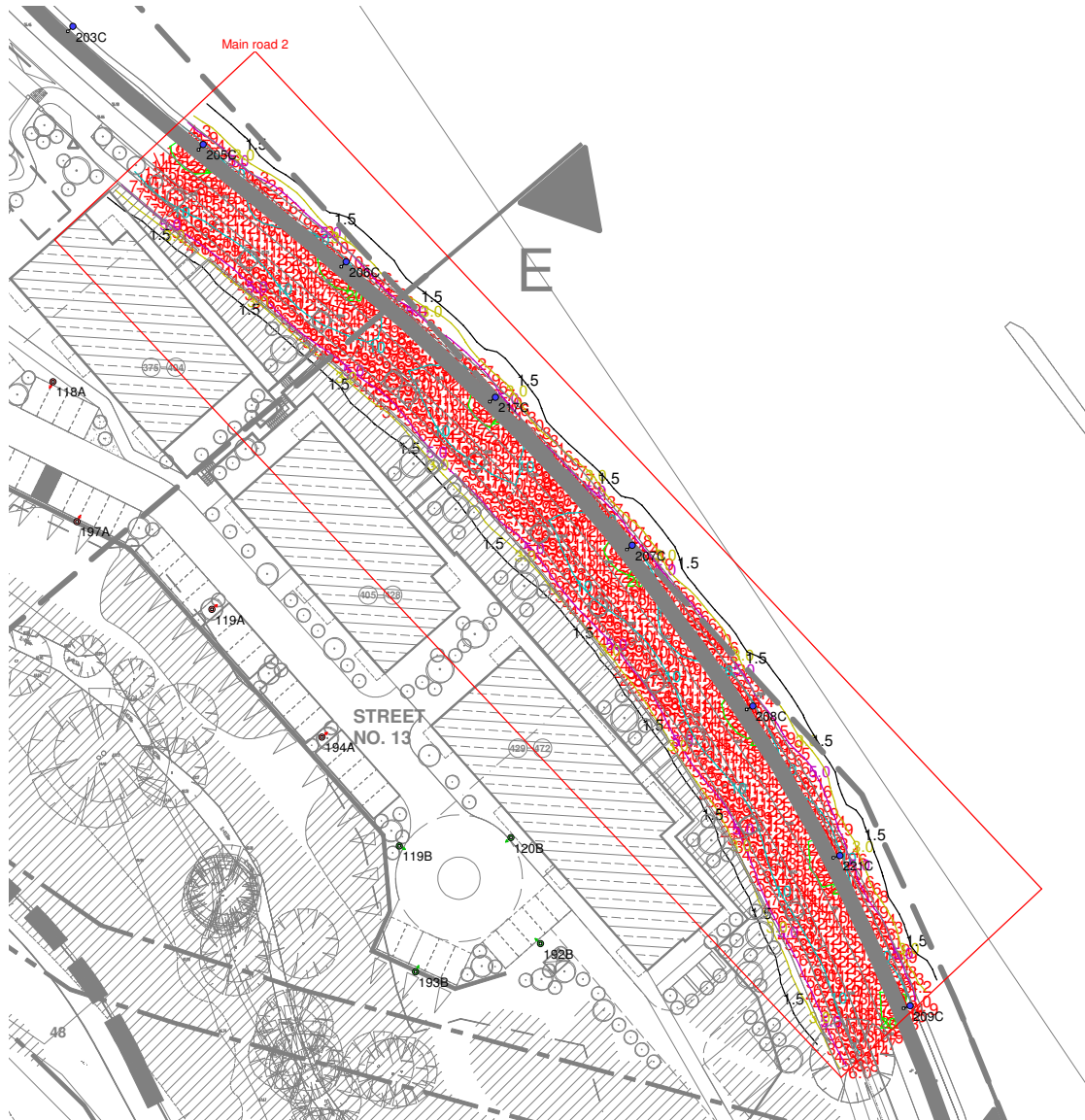
## Results

Eav	12.27
Emin	2.90
Emax	31.27
Emin/Emax	0.09
Emin/Eav	0.24



# Horizontal Illuminance (lux)

Main road 2



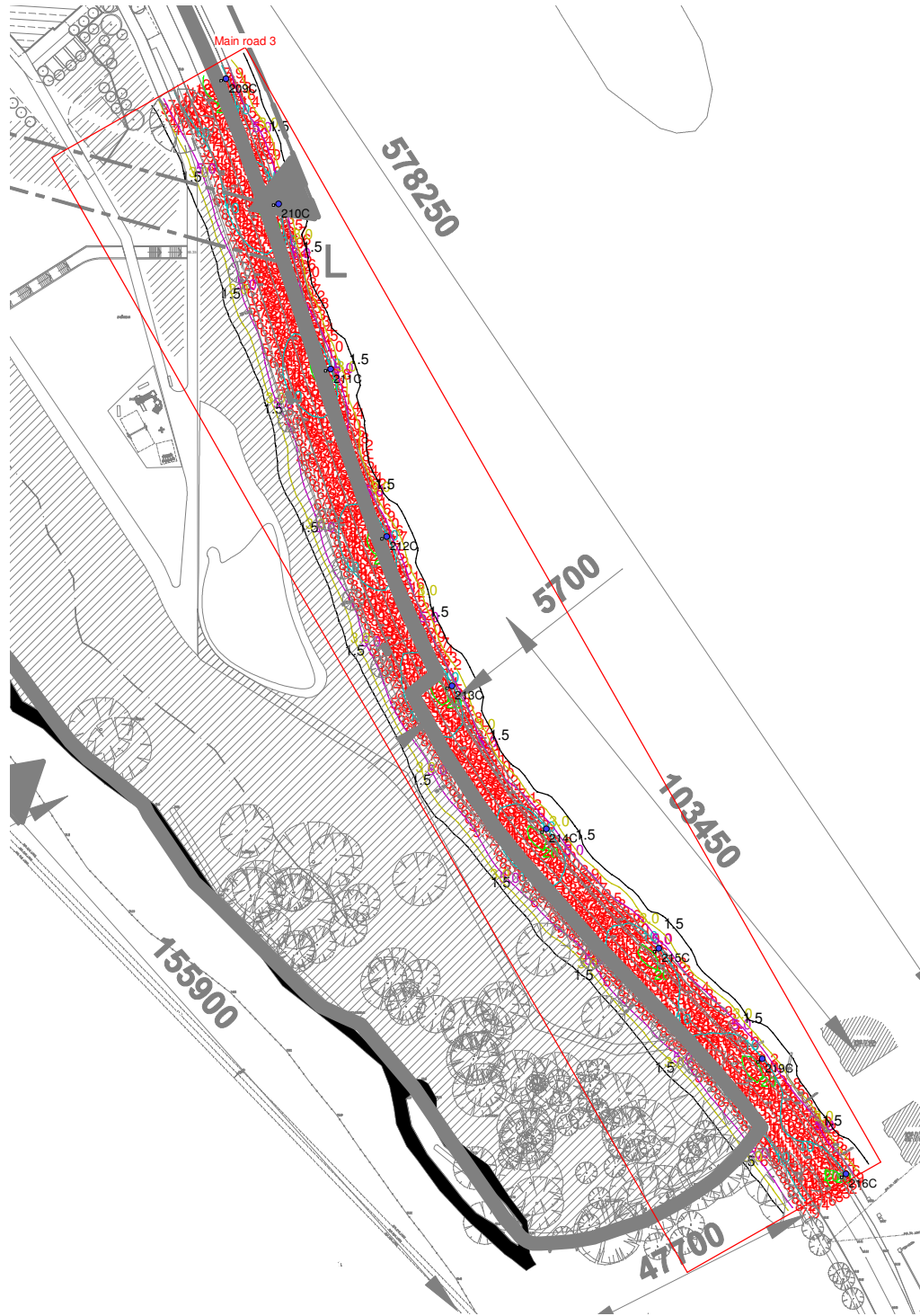
## Results

Eav	10.92
Emin	2.45
Emax	24.27
Emin/Emax	0.10
Emin/Eav	0.22



# Horizontal Illuminance (lux)

Main road 3



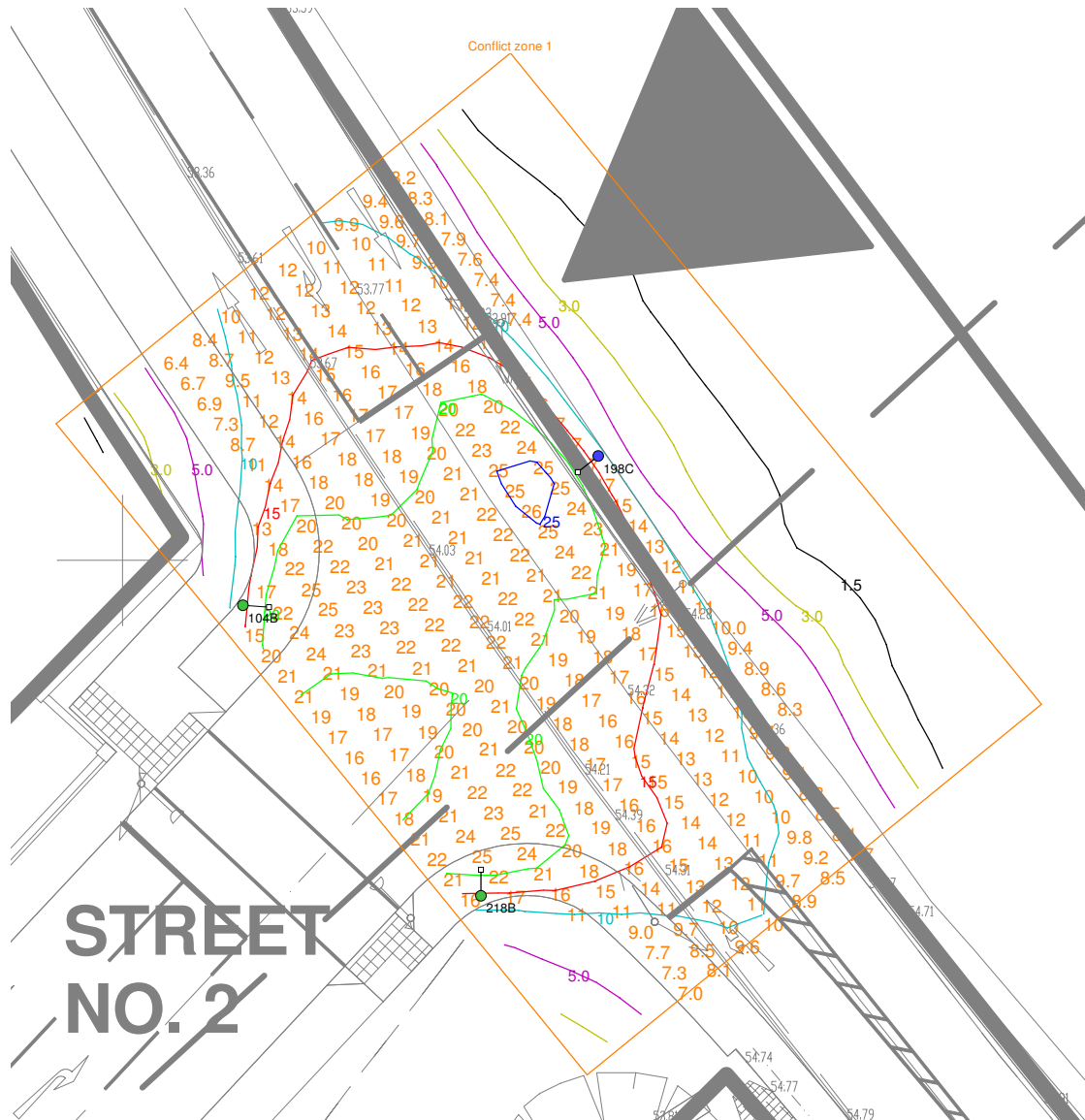
## Results

Eav	10.56
Emin	3.56
E <sub>max</sub>	23.68
E <sub>min</sub> /E <sub>max</sub>	0.15
E <sub>min</sub> /E <sub>av</sub>	0.34



# Horizontal Illuminance (lux)

Conflict zone 1



## Results

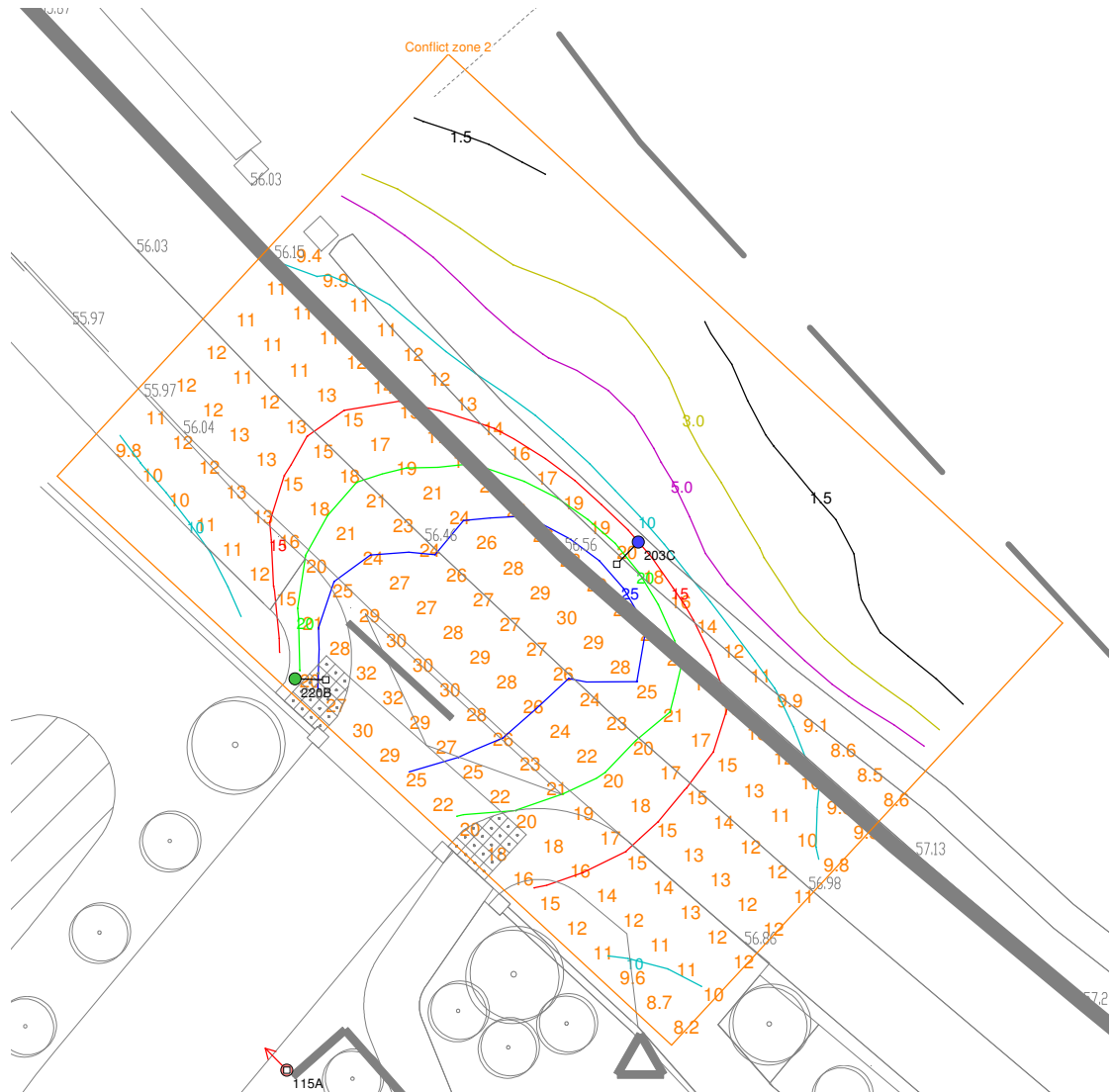
Eav	16.19
Emin	6.41
Emax	25.71
Emin/Emax	0.25
Emin/Eav	0.40





# Horizontal Illuminance (lux)

Conflict zone 2



## Results

Eav	17.76
Emin	8.18
Emax	31.63
Emin/Emax	0.26
Emin/Eav	0.46