

DATE: 22 July 2025
DESIGNER: Kavanaghs Lighting
PROJECT No: 8642-W20088 Port of Waterford Wharf Extension
PROJECT NAME: Malone O'Regan

**LIGHTING
REALITY**

LR 8 (60 Degrees) Rev 007 22072025

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	665955.75	615344.46	746.48	435.94	2.99	1.74
2	Grid 2 (Wharf)	666245.37	615520.05	210.90	69.76	1.50	1.45
3	Grid 3 (Car Park)	666434.09	615649.43	96.07	52.93	1.48	1.47
4	Grid 4	666012.98	615593.81	387.64	43.96	1.55	1.47

Luminaires

Luminaire A Data

Supplier	
Type	TWEET NEO S1-X1 2BLSB12 ERL + coupe flux coupe flux 500mA 38W
Lamp(s)	OSLON ² GEN5
LampFlux(klm)/Colour	4.10 2700K/70
File Name	TWEET NEO S1-X1 2BLSB12 ERL + coupe flux coupe flux 500mA 38W 2700K IRC70....
Maintenance Factor	0.90
Imax70,80,90(cd/klm)	546.0, 102.0, 2.0
No. in Project	62

Luminaire C Data

Supplier	
Type	TREK (borne) 1BLSB8 EAH 700mA 19W 2 700K IRC70
Lamp(s)	OSLON ² GEN5
LampFlux(klm)/Colour	2.02 2700K/70
File Name	TREK (borne) 1BLSB8 EAH 700mA 19W 2 700K IRC70.Idt
Maintenance Factor	0.90
Imax70,80,90(cd/klm)	497.0, 446.0, 12.0
No. in Project	16

Luminaire D Data

Supplier	
Type	KERIS 3 10BLSB12 ERE 850mA 310W 27 00K IRC70
Lamp(s)	OSLON ² GEN5
LampFlux(klm)/Colour	37.16 2700K/70
File Name	KERIS 3 10BLSB12 ERE 850mA 310W 27 00K IRC70.Idt
Maintenance Factor	0.90
Imax70,80,90(cd/klm)	766.0, 52.0, 3.0
No. in Project	48

Luminaire E Data

Supplier	
Type	PIXOL200 PAR 34W XB UNID 2700K DALI
Lamp(s)	4462517.840
LampFlux(klm)/Colour	3.10 2700/80
File Name	Arcluce-0456022B-830-21 2700K.LDT
Maintenance Factor	0.90
Imax70,80,90(cd/klm)	18.0, 4.8, 0.3
No. in Project	17

Luminaire F Data

Supplier	
Type	STONE-S180 10W UNIDIR. ON/OFF-2700K
Lamp(s)	import
LampFlux(klm)/Colour	0.04 2700/80
File Name	0764009A-830-16-2700K.LDT
Maintenance Factor	0.90
Imax70,80,90(cd/klm)	0.0, 0.0, 443.1
No. in Project	40

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	666465.03	615680.89	6.00	82.00	0.00	0.00	1.00			
2	A	666480.14	615679.21	6.00	84.00	0.00	0.00	1.00			
3	A	666494.78	615677.61	6.00	84.00	0.00	0.00	1.00			
4	A	666509.79	615675.79	6.00	84.00	0.00	0.00	1.00			
5	A	666532.03	615681.92	6.00	178.00	0.00	0.00	1.00			
6	A	666444.22	615663.07	6.00	84.00	0.00	0.00	1.00			
7	A	666459.22	615661.05	6.00	84.00	0.00	0.00	1.00			
8	A	666479.83	615661.36	6.00	146.00	0.00	0.00	1.00			
9	A	666493.89	615659.60	6.00	84.00	0.00	0.00	1.00			
10	A	666505.24	615658.36	6.00	84.00	0.00	0.00	1.00			
11	A	666493.89	615659.12	6.00	264.00	0.00	0.00	1.00			
12	A	666505.15	615657.77	6.00	264.00	0.00	0.00	1.00			
13	A	666528.85	615663.98	6.00	175.00	0.00	0.00	1.00			
14	A	666518.40	615646.18	6.00	173.00	0.00	0.00	1.00			
15	A	666469.00	615653.01	6.00	349.00	0.00	0.00	1.00			
16	A	666446.82	615690.16	6.00	344.00	0.00	0.00	1.00			
17	D	666243.44	615588.83	20.00	170.00	60.00	0.00	1.00			
18	D	666244.06	615590.10	20.00	137.00	60.00	0.00	1.00			
20	D	666243.73	615589.44	20.00	152.00	60.00	0.00	1.00			
22	D	666284.20	615587.05	20.00	0.00	60.00	0.00	1.00			
23	D	666281.33	615586.92	20.00	180.00	20.00	0.00	1.00			
26	D	666385.28	615581.14	20.00	0.00	60.00	0.00	1.00			
27	D	666383.10	615581.24	20.00	180.00	60.00	0.00	1.00			
28	A	666243.21	615613.52	6.00	90.00	0.00	0.00	1.00			
29	A	666318.79	615610.21	6.00	92.00	0.00	0.00	1.00			
30	A	666374.53	615615.61	6.00	114.00	0.00	0.00	1.00			
31	D	666384.18	615582.42	10.00	90.00	20.00	0.00	1.00			
29	A	666522.66	615541.52	6.00	90.00	20.00	0.00	1.00			
38	A	666420.47	615682.04	6.00	264.00	0.00	0.00	1.00			
39	A	666403.13	615684.32	6.00	264.00	0.00	0.00	1.00			
40	A	666382.25	615686.72	6.00	264.00	0.00	0.00	1.00			
83	C	666250.56	615524.92	1.00	90.00	0.00	0.00	0.50			
84	C	666262.23	615524.76	1.00	90.00	0.00	0.00	0.50			
85	C	666274.05	615524.74	1.00	90.00	0.00	0.00	0.50			
86	C	666285.72	615524.70	1.00	90.00	0.00	0.00	0.50			
87	C	666297.76	615524.60	1.00	90.00	0.00	0.00	0.50			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
88	C	666309.40	615524.55	1.00	90.00	0.00	0.00	0.50			
89	C	666321.30	615524.48	1.00	90.00	0.00	0.00	0.50			
90	C	666334.96	615524.54	1.00	90.00	0.00	0.00	0.50			
91	C	666350.19	615524.42	1.00	90.00	0.00	0.00	0.50			
92	C	666365.07	615524.54	1.00	90.00	0.00	0.00	0.50			
93	C	666382.48	615524.91	1.00	90.00	0.00	0.00	0.50			
94	C	666401.54	615524.74	1.00	90.00	0.00	0.00	0.50			
95	C	666419.02	615525.27	1.00	90.00	0.00	0.00	0.50			
96	C	666437.55	615524.74	1.00	90.00	0.00	0.00	0.50			
97	C	666460.39	615525.01	1.00	90.00	0.00	0.00	0.50			
98	C	666480.73	615524.60	1.00	90.00	0.00	0.00	0.50			
99	A	666457.18	615562.39	6.00	178.00	0.00	0.00	1.00			
101	A	666466.02	615573.83	6.00	167.00	0.00	0.00	1.00			
102	A	666470.25	615589.99	6.00	164.00	0.00	0.00	1.00			
103	A	666472.69	615601.19	6.00	175.00	0.00	0.00	1.00			
104	A	666527.15	615601.41	6.00	256.00	0.00	0.00	1.00			
105	A	666509.03	615605.66	6.00	256.00	0.00	0.00	1.00			
106	A	666491.32	615610.19	6.00	256.00	0.00	0.00	1.00			
65	A	666466.55	615616.52	6.00	256.00	0.00	0.00	1.00			
109	A	666440.61	615605.85	6.00	33.00	0.00	0.00	1.00			
110	A	666170.55	615624.34	6.00	275.00	0.00	0.00	1.00			
111	A	666153.37	615622.66	6.00	275.00	0.00	0.00	1.00			
112	A	666138.38	615621.21	6.00	275.00	0.00	0.00	1.00			
113	A	666123.81	615619.72	6.00	275.00	0.00	0.00	1.00			
114	A	666107.75	615618.50	6.00	275.00	0.00	0.00	1.00			
115	A	666094.39	615617.18	6.00	275.00	0.00	0.00	1.00			
116	A	666077.49	615615.91	6.00	275.00	0.00	0.00	1.00			
117	A	666062.07	615614.54	6.00	275.00	0.00	0.00	1.00			
118	A	666045.71	615612.69	6.00	275.00	0.00	0.00	1.00			
119	A	666024.41	615603.02	6.00	94.00	0.00	0.00	1.00			
78	D	666436.28	615582.99	20.00	38.00	60.00	0.00	1.00			
79	D	666433.98	615582.04	20.00	225.00	60.00	0.00	1.00			
80	A	666455.20	615550.64	6.00	0.00	0.00	0.00	1.00			
125	F	666509.54	615516.92	0.10	90.00	0.00	0.00	0.00			
72	A	666596.18	615541.51	6.00	90.00	20.00	0.00	1.00			
73	A	666538.23	615541.81	6.00	90.00	20.00	0.00	1.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
74	A	666553.59	615541.81	6.00	90.00	20.00	0.00	1.00			
136	E	666489.87	615561.44	3.00	165.00	0.00	0.00	0.50			
137	E	666493.82	615577.38	3.00	165.00	0.00	0.00	0.50			
138	E	666497.85	615592.55	3.00	165.00	0.00	0.00	0.50			
139	E	666509.87	615591.06	3.00	72.00	0.00	0.00	0.50			
140	E	666520.71	615572.34	3.00	341.00	0.00	0.00	0.50			
141	E	666515.71	615553.17	3.00	341.00	0.00	0.00	0.50			
142	E	666490.77	615554.32	3.00	253.00	0.00	0.00	0.50			
143	E	666506.86	615549.96	3.00	253.00	0.00	0.00	0.50			
144	E	666542.79	615572.57	3.00	253.00	0.00	0.00	0.50			
145	E	666567.54	615557.64	3.00	253.00	0.00	0.00	0.50			
146	E	666594.39	615558.81	3.00	253.00	0.00	0.00	0.50			
147	E	666607.23	615565.39	3.00	342.00	0.00	0.00	0.50			
148	E	666597.47	615579.01	3.00	71.00	0.00	0.00	0.50			
149	E	666577.78	615584.15	3.00	71.00	0.00	0.00	0.50			
150	E	666560.91	615588.52	3.00	71.00	0.00	0.00	0.50			
151	E	666546.31	615592.63	3.00	71.00	0.00	0.00	0.50			
152	E	666534.73	615586.00	3.00	163.00	0.00	0.00	0.50			
153	F	666513.74	615516.91	0.10	90.00	0.00	0.00	0.00			
154	F	666517.88	615516.81	0.10	90.00	0.00	0.00	0.00			
155	F	666522.00	615516.68	0.10	90.00	0.00	0.00	0.00			
156	F	666526.05	615516.62	0.10	90.00	0.00	0.00	0.00			
157	F	666529.98	615516.65	0.10	90.00	0.00	0.00	0.00			
158	F	666534.22	615516.65	0.10	90.00	0.00	0.00	0.00			
159	F	666538.31	615516.62	0.10	90.00	0.00	0.00	0.00			
160	F	666542.27	615516.66	0.10	90.00	0.00	0.00	0.00			
161	F	666545.91	615516.58	0.10	90.00	0.00	0.00	0.00			
162	F	666549.59	615516.49	0.10	90.00	0.00	0.00	0.00			
163	F	666553.52	615516.52	0.10	90.00	0.00	0.00	0.00			
164	F	666558.94	615516.65	0.10	90.00	0.00	0.00	0.00			
165	F	666562.87	615516.62	0.10	90.00	0.00	0.00	0.00			
166	F	666567.38	615516.56	0.10	90.00	0.00	0.00	0.00			
167	F	666571.11	615516.50	0.10	90.00	0.00	0.00	0.00			
168	F	666575.41	615516.41	0.10	90.00	0.00	0.00	0.00			
169	F	666579.20	615516.47	0.10	90.00	0.00	0.00	0.00			
170	F	666582.87	615516.50	0.10	90.00	0.00	0.00	0.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
171	F	666586.61	615516.50	0.10	90.00	0.00	0.00	0.00			
172	F	666597.47	615514.50	0.10	83.00	0.00	0.00	0.00			
173	F	666605.68	615513.32	0.10	83.00	0.00	0.00	0.00			
174	F	666609.42	615512.67	0.10	83.00	0.00	0.00	0.00			
175	F	666601.56	615513.94	0.10	83.00	0.00	0.00	0.00			
176	F	666613.40	615512.09	0.10	83.00	0.00	0.00	0.00			
177	F	666617.97	615511.38	0.10	83.00	0.00	0.00	0.00			
178	F	666622.42	615510.77	0.10	83.00	0.00	0.00	0.00			
179	F	666626.42	615510.24	0.10	83.00	0.00	0.00	0.00			
180	F	666629.73	615509.83	0.10	83.00	0.00	0.00	0.00			
181	F	666634.03	615509.23	0.10	83.00	0.00	0.00	0.00			
182	F	666638.26	615508.66	0.10	83.00	0.00	0.00	0.00			
183	F	666642.29	615508.02	0.10	83.00	0.00	0.00	0.00			
184	F	666646.04	615507.60	0.10	83.00	0.00	0.00	0.00			
185	F	666650.41	615506.94	0.10	83.00	0.00	0.00	0.00			
186	F	666654.83	615506.27	0.10	83.00	0.00	0.00	0.00			
187	F	666658.78	615505.65	0.10	83.00	0.00	0.00	0.00			
188	F	666662.44	615505.23	0.10	83.00	0.00	0.00	0.00			
189	F	666666.76	615504.51	0.10	83.00	0.00	0.00	0.00			
190	F	666670.99	615503.90	0.10	83.00	0.00	0.00	0.00			
191	F	666674.89	615503.42	0.10	83.00	0.00	0.00	0.00			
199	D	666383.13	615579.71	20.00	270.00	60.00	0.00	1.00			
200	D	666384.18	615579.78	20.00	270.00	60.00	0.00	1.00			
201	D	666384.99	615579.85	20.00	270.00	60.00	0.00	1.00			
202	A	666449.01	615547.19	6.00	270.00	20.00	0.00	1.00			
203	A	666475.61	615547.13	6.00	270.00	20.00	0.00	1.00			
204	A	666493.50	615546.79	6.00	270.00	20.00	0.00	1.00			
205	A	666252.77	615631.91	6.00	275.00	0.00	0.00	1.00			
206	A	666278.12	615633.51	6.00	275.00	0.00	0.00	1.00			
207	A	666303.18	615634.26	6.00	275.00	0.00	0.00	1.00			
208	A	666329.27	615634.12	6.00	275.00	0.00	0.00	1.00			
209	A	666354.68	615632.89	6.00	275.00	0.00	0.00	1.00			
210	A	666374.36	615631.77	6.00	275.00	0.00	0.00	1.00			
211	A	666392.49	615629.93	6.00	275.00	0.00	0.00	1.00			
177	D	666328.95	615583.69	20.00	270.00	60.00	0.00	1.00			
178	D	666330.08	615583.69	22.00	270.00	60.00	0.00	1.00			

Layout Continued

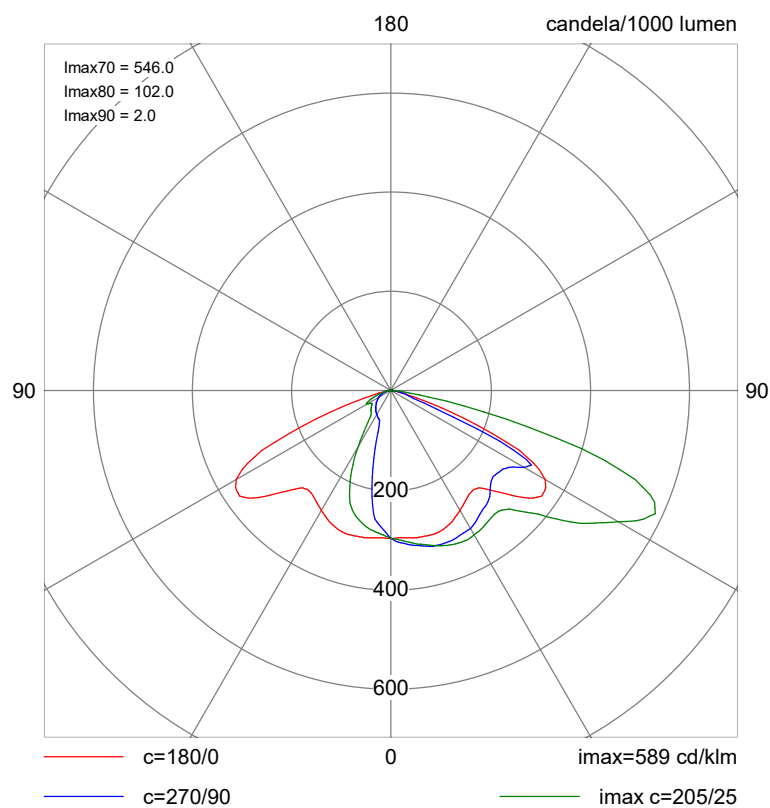
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
179	D	666331.08	615583.77	22.00	272.00	60.00	0.00	1.00			
180	D	666245.06	615588.94	20.00	332.00	60.00	0.00	1.00			
181	D	666245.19	615589.60	20.00	342.00	60.00	0.00	1.00			
182	D	666244.77	615588.38	20.00	299.00	60.00	0.00	1.00			
183	D	666436.31	615580.76	20.00	308.00	60.00	0.00	1.00			
184	D	666434.69	615580.72	20.00	227.00	60.00	0.00	1.00			
185	D	666436.83	615581.81	20.00	18.00	60.00	0.00	1.00			
186	A	666475.20	615610.43	6.00	176.00	0.00	0.00	1.00			
154	A	666569.14	615541.71	6.00	90.00	20.00	0.00	1.00			
187	A	666450.38	615620.46	6.00	256.00	0.00	0.00	1.00			
182	D	666281.58	615585.63	20.00	229.00	60.00	0.00	1.00			
180	D	666282.97	615585.50	19.50	270.00	60.00	0.00	1.00			
184	D	666284.39	615585.66	20.00	305.00	60.00	0.00	1.00			
185	D	666328.94	615583.85	19.50	270.00	60.00	0.00	1.00			
186	D	666330.01	615583.76	19.50	270.00	60.00	0.00	1.00			
187	D	666331.06	615583.72	19.50	270.00	60.00	0.00	1.00			
188	D	666244.80	615588.39	19.50	299.00	60.00	0.00	1.00			
189	D	666245.11	615589.05	19.50	332.00	60.00	0.00	1.00			
190	D	666245.40	615589.78	19.00	342.00	60.00	0.00	1.00			
191	D	666383.01	615581.24	19.50	180.00	60.00	0.00	1.00			
192	D	666383.11	615579.79	19.50	270.00	60.00	0.00	1.00			
193	D	666384.21	615579.75	19.50	270.00	60.00	0.00	1.00			
194	D	666385.08	615579.82	19.50	270.00	60.00	0.00	1.00			
195	D	666385.34	615581.21	19.50	0.00	60.00	0.00	1.00			
196	D	666433.95	615582.01	19.50	225.00	60.00	0.00	1.00			
197	D	666434.67	615580.79	19.50	227.00	60.00	0.00	1.00			
198	D	666436.34	615580.84	19.50	308.00	60.00	0.00	1.00			
199	D	666436.82	615581.76	19.50	18.00	60.00	0.00	1.00			
200	D	666436.26	615582.97	19.50	38.00	60.00	0.00	1.00			
201	D	666281.58	615585.66	19.50	241.00	60.00	0.00	1.00			
202	D	666282.94	615585.47	20.00	270.00	60.00	0.00	1.00			
203	D	666284.20	615585.63	19.50	305.00	60.00	0.00	1.00			
204	D	666328.92	615583.75	19.00	270.00	60.00	0.00	1.00			
205	D	666329.99	615583.77	19.00	270.00	60.00	0.00	1.00			
206	D	666331.06	615583.73	19.00	270.00	60.00	0.00	1.00			
204	D	666245.42	615589.54	19.50	342.00	60.00	0.00	1.00			

Layout Continued

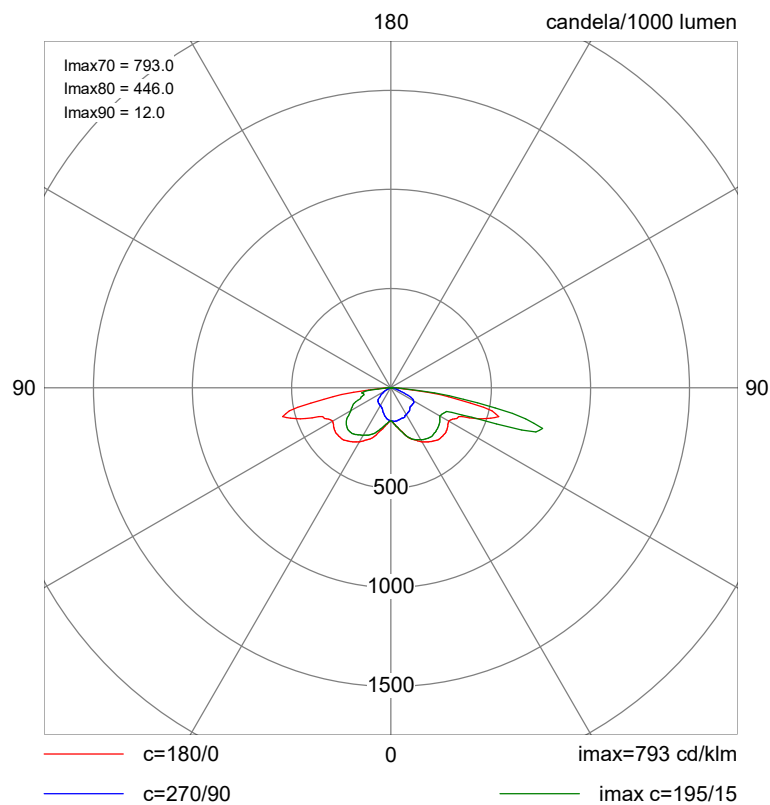
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out- reach	Target X	Target Y	Target Z
182	A	666585.29	615541.51	6.00	90.00	20.00	0.00	1.00			
183	A	666225.26	615629.31	6.00	275.00	0.00	0.00	1.00			
184	A	666197.44	615626.80	6.00	275.00	0.00	0.00	1.00			

Polar Diagrams

Luminaire A TWEET NEO S1-X1 2BLSB12 ERL + coupe flux coupe flux 500mA 38W

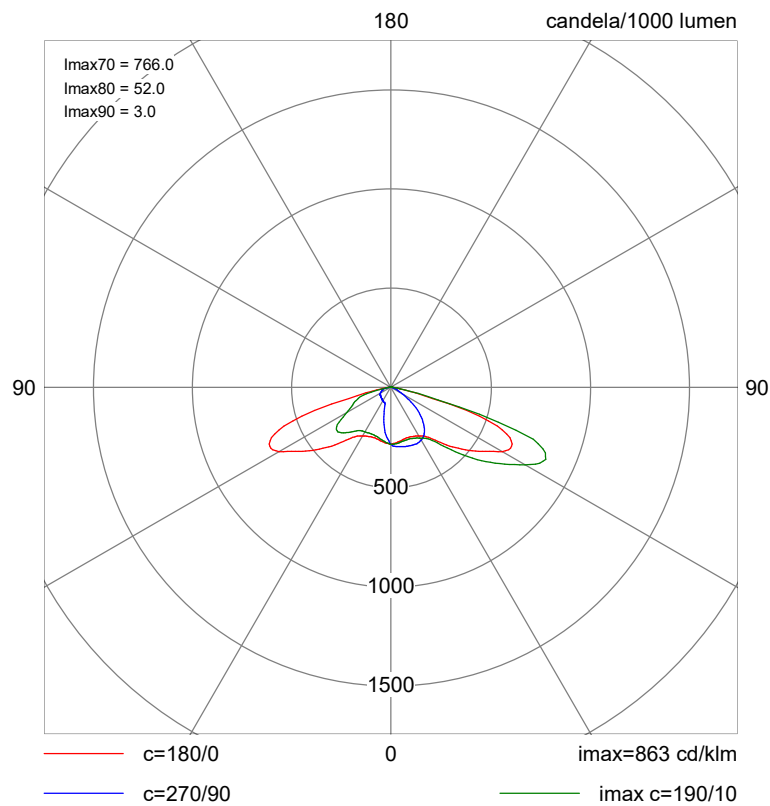


Luminaire C TREK (borne) 1BLSB8 EAH 700mA 19W 2700K IRC70

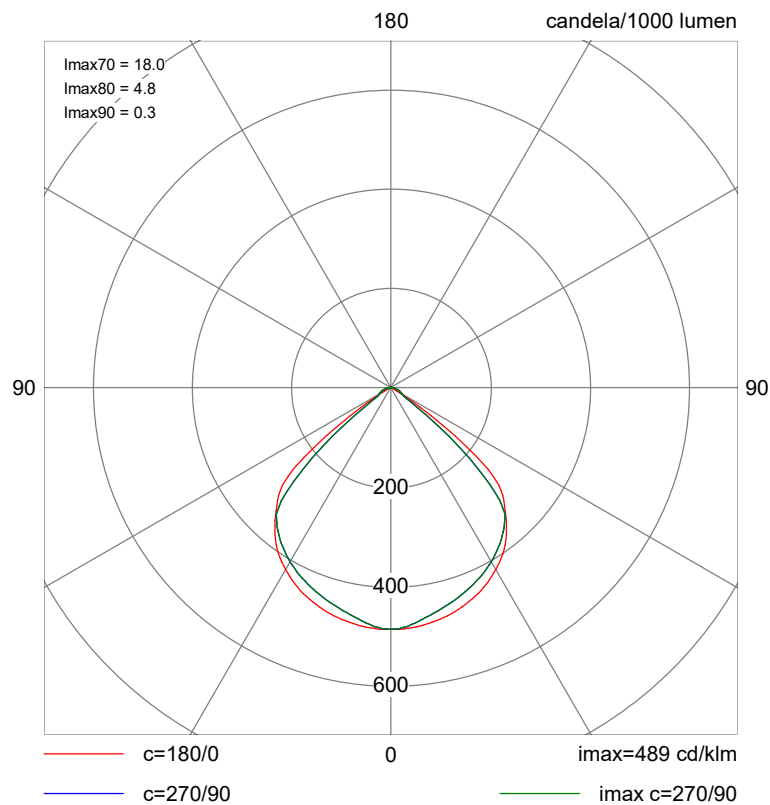


Polar Diagrams Continued

Luminaire D KERIS 3 10BLSB12 ERE 850mA 310W 2700K IRC70

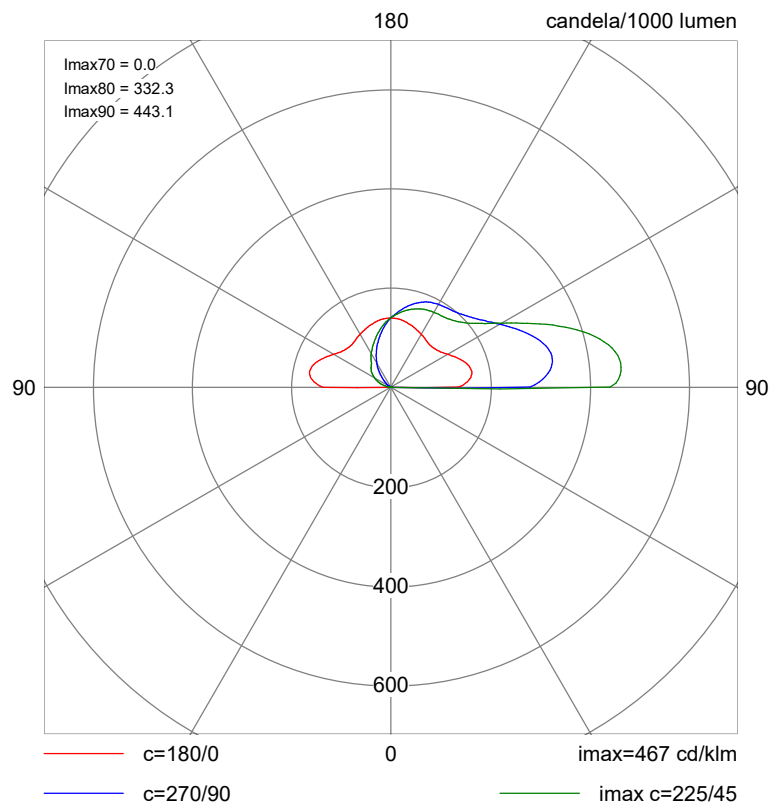


Luminaire E PIXOL200 PAR 34W XB UNID 2700K. DALI



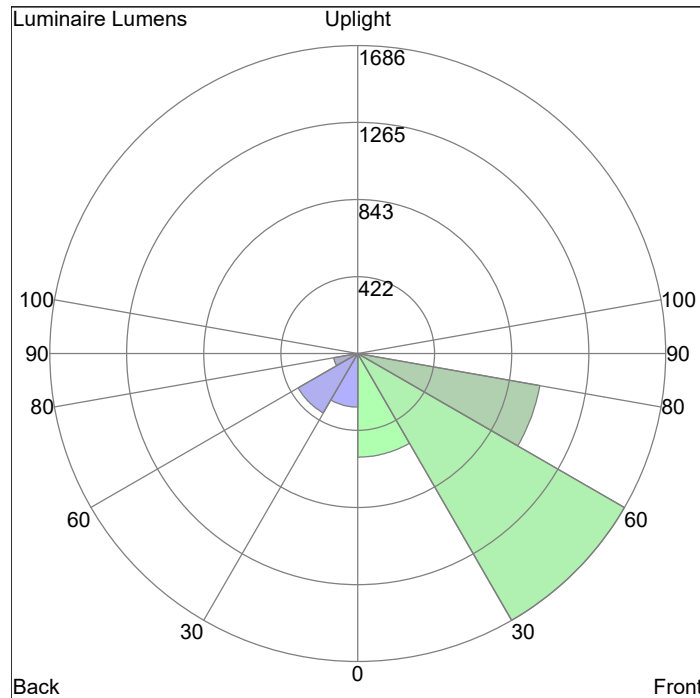
Polar Diagrams Continued

Luminaire F STONE-S180 10W UNIDIR. ON/OFF-2700K



Luminaire Classification System (LCS) Graphs

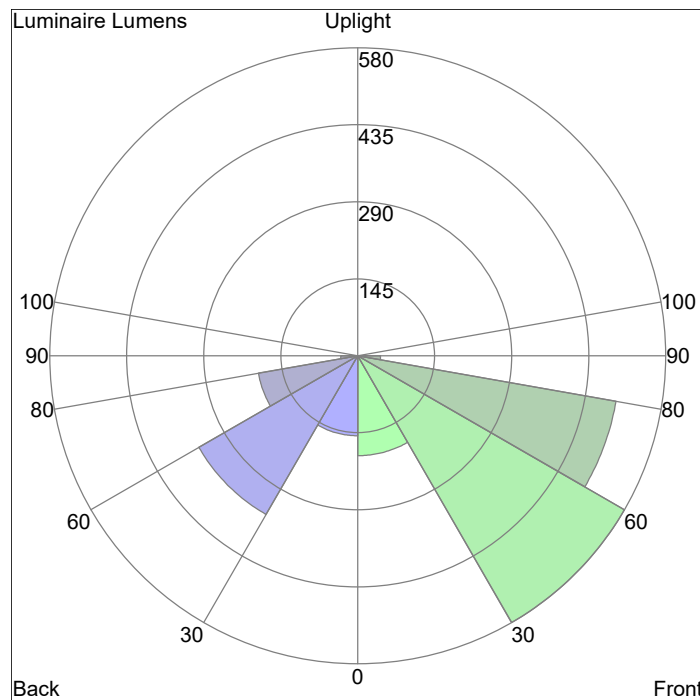
Luminaire A TWEET NEO S1-X1 2BLSB12 ERL + coupe flux coupe flux 500mA 38W



LCS	Lumens	%Lamp	%Lum
FL	567.8	13.8	13.8
FM	1686.1	41.1	41.1
FH	1012.1	24.7	24.7
FVH	22.4	0.5	0.5
BL	294.3	7.2	7.2
BM	376.1	9.2	9.2
BH	132.7	3.2	3.2
BVH	9.9	0.2	0.2
UL	0.0	0.0	0.0
UH	0.0	0.0	0.0
Total	4101.1	100.0	100.0

BUG rating=B1-U0-G1

Luminaire C TREK (borne) 1BLSB8 EAH 700mA 19W 2700K IRC70

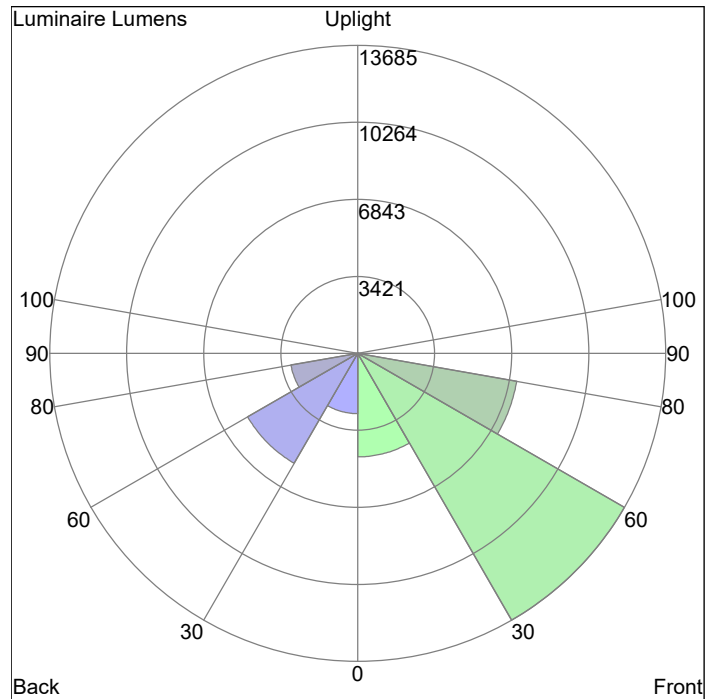


LCS	Lumens	%Lamp	%Lum
FL	188.4	9.3	9.3
FM	580.0	28.7	28.7
FH	494.0	24.4	24.4
FVH	43.4	2.1	2.1
BL	150.8	7.5	7.5
BM	345.1	17.1	17.1
BH	189.6	9.4	9.4
BVH	31.7	1.6	1.6
UL	0.0	0.0	0.0
UH	0.0	0.0	0.0
Total	2022.5	100.0	100.0

BUG rating=B1-U0-G1

Luminaire Classification System (LCS) Graphs Continued

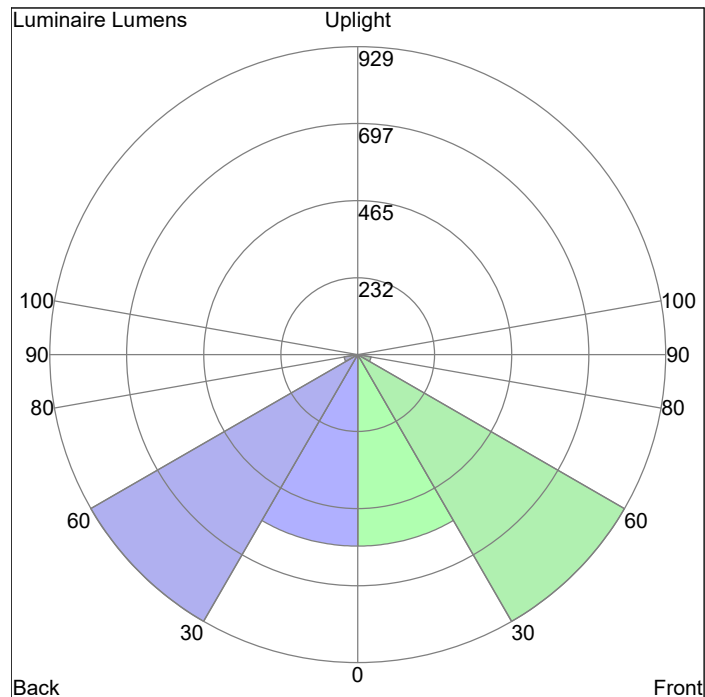
Luminaire D KERIS 3 10BLSB12 ERE 850mA 310W 2700K IRC70



LCS	Lumens	%Lamp	%Lum
FL	4604.3	12.4	12.4
FM	13685.0	36.8	36.8
FH	7178.5	19.3	19.3
FVH	178.0	0.5	0.5
BL	2683.9	7.2	7.2
BM	5640.3	15.2	15.2
BH	3003.7	8.1	8.1
BVH	184.7	0.5	0.5
UL	0.0	0.0	0.0
UH	0.0	0.0	0.0
Total	37156.3	100.0	100.0

BUG rating=B5-U0-G4

Luminaire E PIXOL200 PAR 34W XB UNID 2700K. DALI

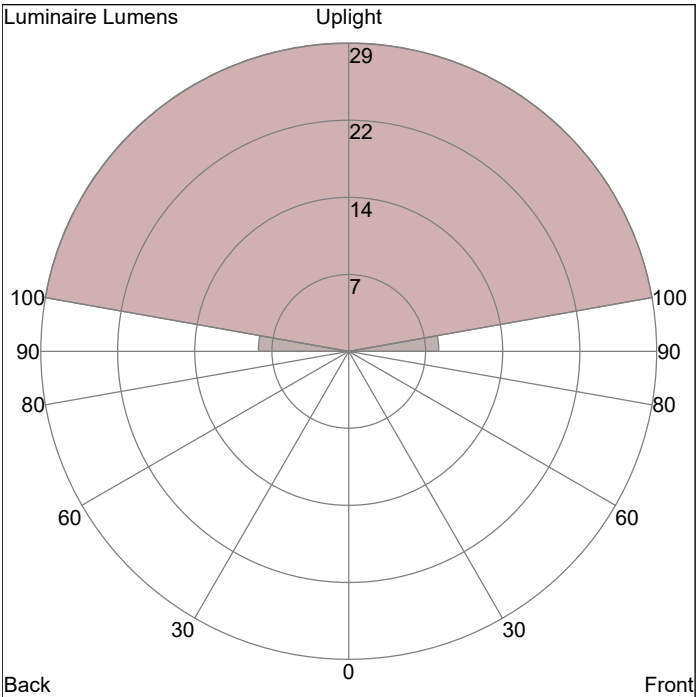


LCS	Lumens	%Lamp	%Lum
FL	578.1	18.6	18.6
FM	929.3	30.0	30.0
FH	41.3	1.3	1.3
FVH	2.0	0.1	0.1
BL	578.1	18.6	18.6
BM	929.3	30.0	30.0
BH	41.3	1.3	1.3
BVH	2.0	0.1	0.1
UL	0.1	0.0	0.0
UH	0.0	0.0	0.0
Total	3101.0	100.0	100.0

BUG rating=B2-U1-G0

Luminaire Classification System (LCS) Graphs Continued

Luminaire F STONE-S180 10W UNIDIR. ON/OFF-2700K

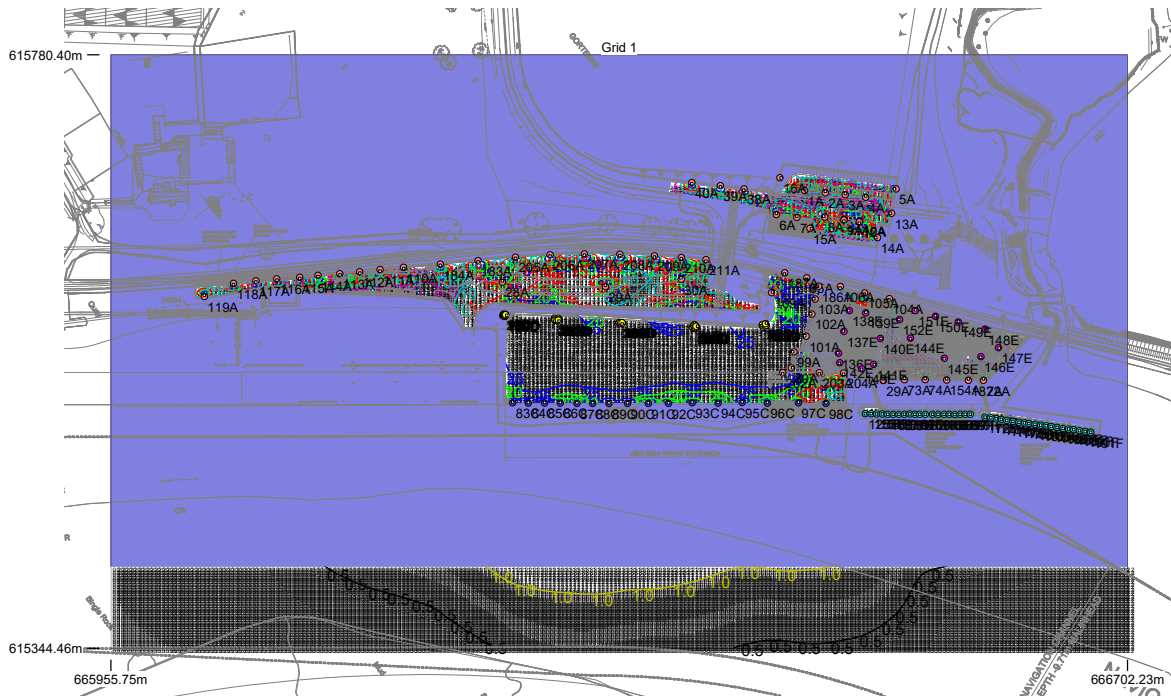


LCS	Lumens	%Lamp	%Lum
FL	0.0	0.0	0.0
FM	0.0	0.0	0.0
FH	0.0	0.0	0.0
FVH	0.7	2.0	2.0
BL	0.0	0.0	0.0
BM	0.0	0.0	0.0
BH	0.0	0.0	0.0
BVH	0.0	0.1	0.1
UL	8.4	22.2	22.2
UH	28.8	75.8	75.8
Total	38.0	100.0	100.0

BUG rating=B0-U2-G0

Horizontal Illuminance (lux)

Grid 1

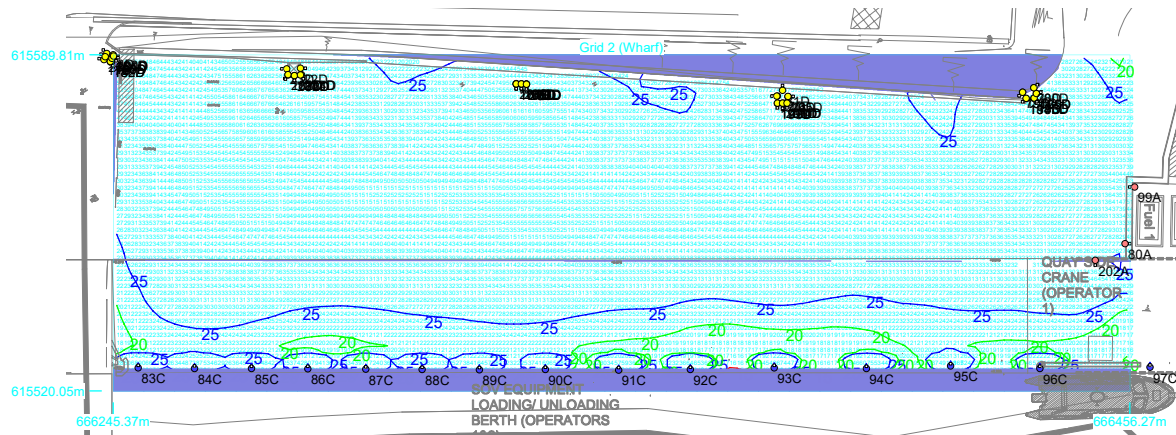


Results

Eav	10.63
Emin	0.13
Emax	381.70
Emin/Emax	0.00
Emin/Eav	0.01

Horizontal Illuminance (lux)

Grid 2 (Wharf)

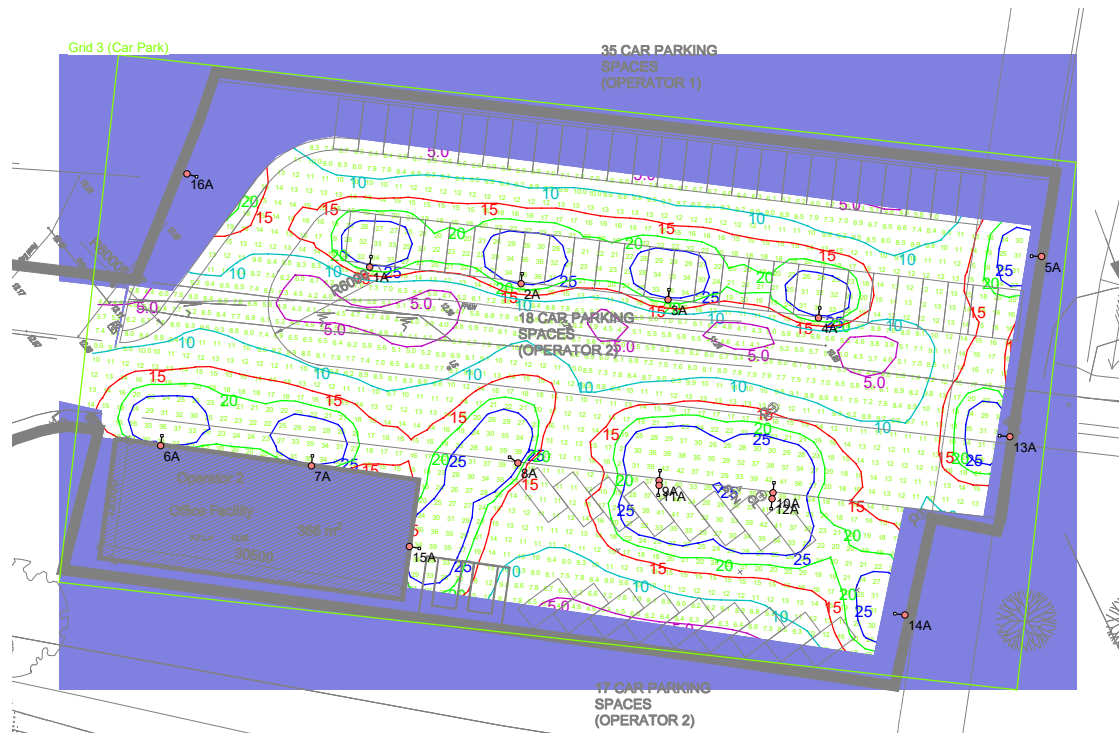


Results

Eav	37.70
Emin	15.12
E _{max}	415.66
Emin/E _{max}	0.04
Emin/Eav	0.40

Horizontal Illuminance (lux)

Grid 3 (Car Park)

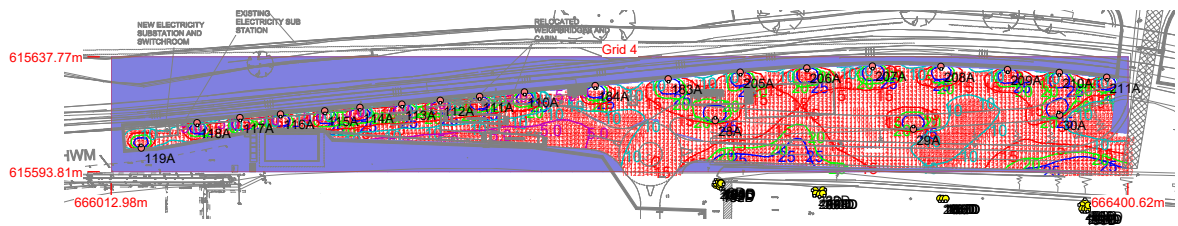


Results

Eav	15.80
Emin	3.74
Emax	42.21
Emin/Emax	0.09
Emin/Eav	0.24

Horizontal Illuminance (lux)

Grid 4



Results

Eav	15.30
Emin	1.66
Emax	47.95
Emin/Emax	0.03
Emin/Eav	0.11