

# Highgate Newton Community Centre

Exterior Lighting Plots

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Order No.: N/A  
Company: Harvey Group  
Customer No.: N/A

Date: 24.06.2022  
Operator: Keith Green



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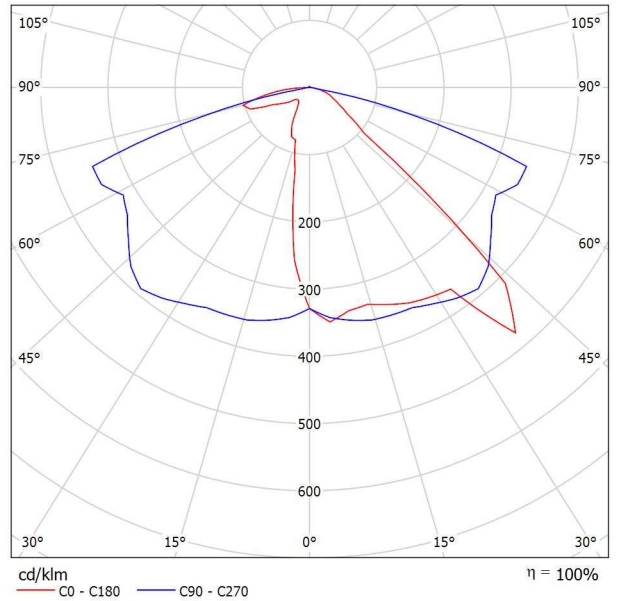
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## THORLUX SB19675 Starbeam ECO - Roadway Distribution - 31W - SMART - 4000K / Luminaire Data Sheet

Luminous emittance 1:



Luminaire classification according to CIE: 100  
CIE flux code: 40 73 96 100 101

Due to missing symmetry properties, no UGR table can be displayed for this luminaire.

Supremely efficient long life IP66 pole top and wall mounted LED luminaires with aluminium cast body and wiring box and polycarbonate cover.



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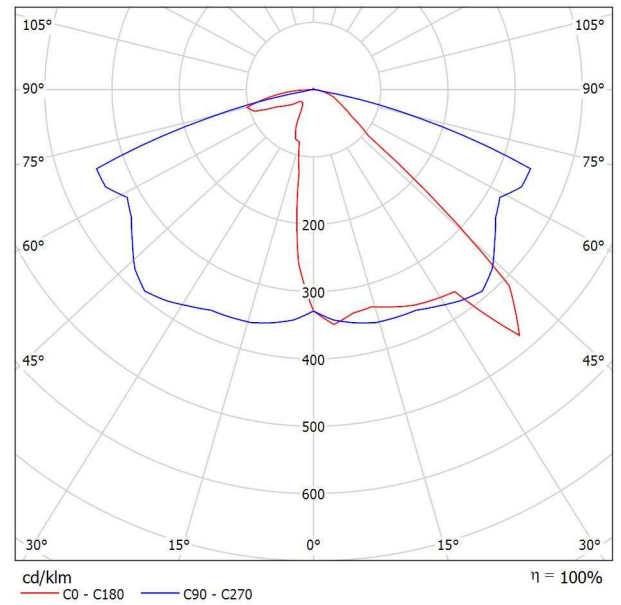
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## THORLUX SB19679 Starbeam ECO - Roadway Distribution - 31W - 4000K / Luminaire Data Sheet



Luminous emittance 1:



Luminaire classification according to CIE: 100  
CIE flux code: 40 73 96 100 101

Due to missing symmetry properties, no UGR table can be displayed for this luminaire.

Supremely efficient long life IP66 pole top and wall mounted LED luminaires with aluminium cast body and wiring box and polycarbonate cover.



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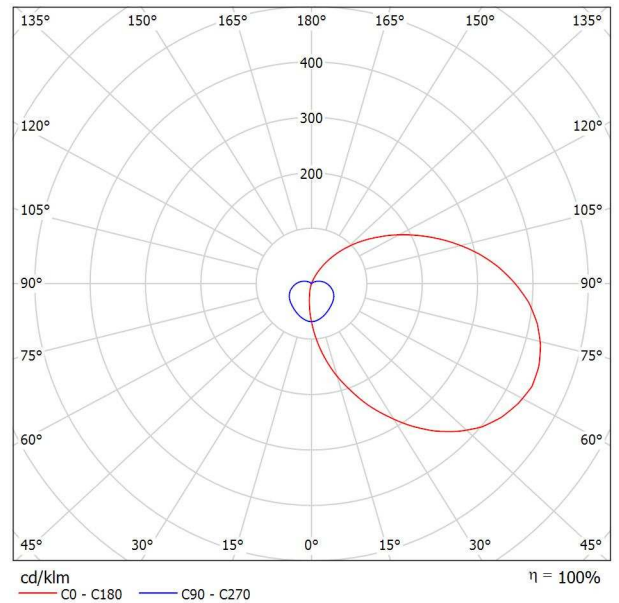
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## THORLUX CT19016 Cobalt LED - Satin Hood & Grill - 15W - 4000K / Luminaire Data Sheet



Luminous emittance 1:



Luminaire classification according to CIE: 71  
CIE flux code: 21 47 75 71 100

Circular wall mounted aluminium body luminaires with a choice of four cover frame styles. Opal or high efficiency satin polycarbonate cover. Excellent LED versions with optional microwave presence detector.

Applications: external pathway highlighting for schools, hospitals, retail, and other commercial environments. Anti ligature versions available.

Due to missing symmetry properties, no UGR table can be displayed for this luminaire.



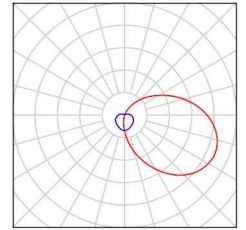
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### Exterior Scene 1 Cobalts on Blocks B & D Only / Luminaire parts list

15 Pieces THORLUX CT19016 Cobalt LED - Satin Hood &  
Grill - 15W - 4000K  
Article No.: CT19016  
Luminous flux (Luminaire): 856 lm  
Luminous flux (Lamps): 855 lm  
Luminaire Wattage: 18.0 W  
Luminaire classification according to CIE: 71  
CIE flux code: 21 47 75 71 100  
Fitting: 1 x Cobalt Hood & Grill LED 15W 4000K  
(Correction Factor 1.000).



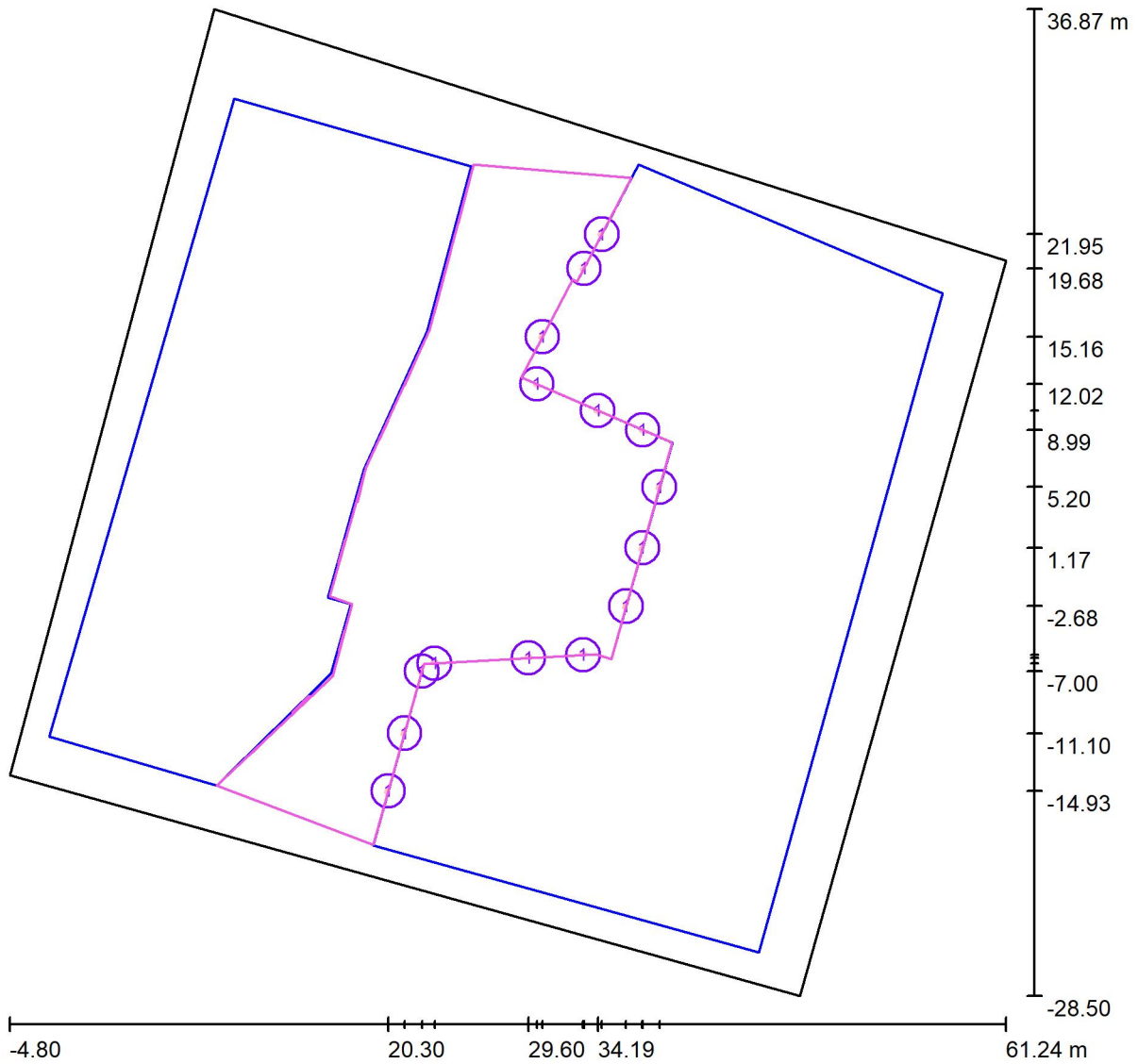


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**Exterior Scene 1 Cobalts on Blocks B & D Only / Luminaires (layout plan)**



Scale 1 : 473

**Luminaire Parts List**

No.	Pieces	Designation
1	15	THORLUX CT19016 Cobalt LED - Satin Hood & Grill - 15W - 4000K

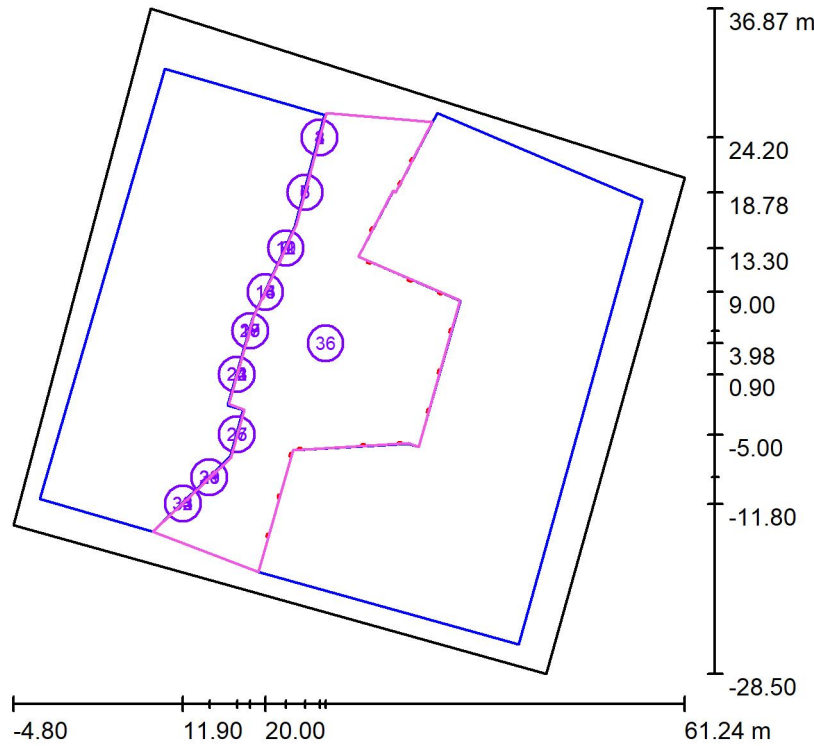


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### Exterior Scene 1 Cobalts on Blocks B & D Only / Calculation surfaces (results overview)



Scale 1 : 744

#### Calculation Surface List

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
1	Calculation Surface 1	perpendicular	16 x 16	7.58	6.14	8.66	0.809	0.709
2	Calculation Surface 1	perpendicular	16 x 16	4.80	3.45	6.44	0.719	0.535
3	Calculation Surface 1	perpendicular	8 x 8	2.34	1.71	3.15	0.730	0.543
4	Calculation Surface 1	perpendicular	8 x 8	1.09	0.88	1.41	0.806	0.624
5	Calculation Surface 2	perpendicular	8 x 32	8.84	8.04	9.51	0.909	0.845
6	Calculation Surface 2	perpendicular	4 x 16	5.29	4.72	5.92	0.892	0.797
7	Calculation Surface 2	perpendicular	4 x 16	2.61	2.37	2.85	0.911	0.834
8	Calculation Surface 2	perpendicular	2 x 8	1.28	1.15	1.42	0.897	0.810
9	Calculation Surface 3	perpendicular	16 x 16	6.97	6.18	7.97	0.885	0.775



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No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
10	Calculation Surface 3	perpendicular	16 x 16	5.19	4.33	6.33	0.834	0.683
11	Calculation Surface 3	perpendicular	8 x 8	3.37	2.81	4.01	0.835	0.702
12	Calculation Surface 3	perpendicular	8 x 8	2.16	1.87	2.52	0.864	0.740
13	Calculation Surface 4	perpendicular	8 x 8	6.62	6.28	6.93	0.949	0.906
14	Calculation Surface 4	perpendicular	8 x 8	5.43	4.95	5.91	0.912	0.837
15	Calculation Surface 4	perpendicular	4 x 4	3.85	3.45	4.27	0.895	0.808
16	Calculation Surface 4	perpendicular	4 x 4	2.49	2.27	2.77	0.910	0.820
17	Calculation Surface 5	perpendicular	8 x 8	6.71	6.30	7.14	0.939	0.882
18	Calculation Surface 5	perpendicular	8 x 8	5.53	5.04	6.09	0.911	0.827
19	Calculation Surface 5	perpendicular	4 x 4	3.95	3.55	4.38	0.898	0.810
20	Calculation Surface 5	perpendicular	4 x 4	2.58	2.32	2.85	0.901	0.814
21	Calculation Surface 6	perpendicular	8 x 8	7.75	7.07	8.41	0.912	0.840
22	Calculation Surface 6	perpendicular	8 x 8	5.82	5.06	6.66	0.869	0.760
23	Calculation Surface 6	perpendicular	8 x 8	3.78	3.26	4.31	0.863	0.758
24	Calculation Surface 6	perpendicular	4 x 4	2.37	2.11	2.67	0.889	0.788
25	Calculation Surface 7	perpendicular	16 x 16	7.41	5.36	10	0.723	0.522
26	Calculation Surface 7	perpendicular	8 x 8	3.12	2.57	3.87	0.824	0.665
27	Calculation Surface 7	perpendicular	4 x 4	1.63	1.47	1.82	0.901	0.804
28	Calculation Surface 8	perpendicular	16 x 16	9.63	7.62	11	0.792	0.666
29	Calculation Surface 8	perpendicular	8 x 8	5.00	3.47	7.04	0.695	0.493
30	Calculation Surface 8	perpendicular	8 x 8	1.92	1.44	2.61	0.753	0.552
31	Calculation Surface 8	perpendicular	4 x 4	0.77	0.64	0.94	0.829	0.681
32	Calculation Surface 9	perpendicular	8 x 8	5.32	4.27	6.33	0.803	0.675
33	Calculation Surface 9	perpendicular	8 x 8	3.27	2.43	4.38	0.743	0.554
34	Calculation Surface 9	perpendicular	8 x 8	1.52	1.19	1.99	0.778	0.596
35	Calculation Surface 9	perpendicular	4 x 4	0.69	0.58	0.83	0.831	0.693
36	ground	perpendicular	27 x 13	11	1.57	34	0.149	0.046

## Summary of Results

Type	Quantity	Average [lx]	Min [lx]	Max [lx]	u0	$E_{\min} / E_{\max}$
perpendicular	36	9.00	0.58	34	0.06	0.02

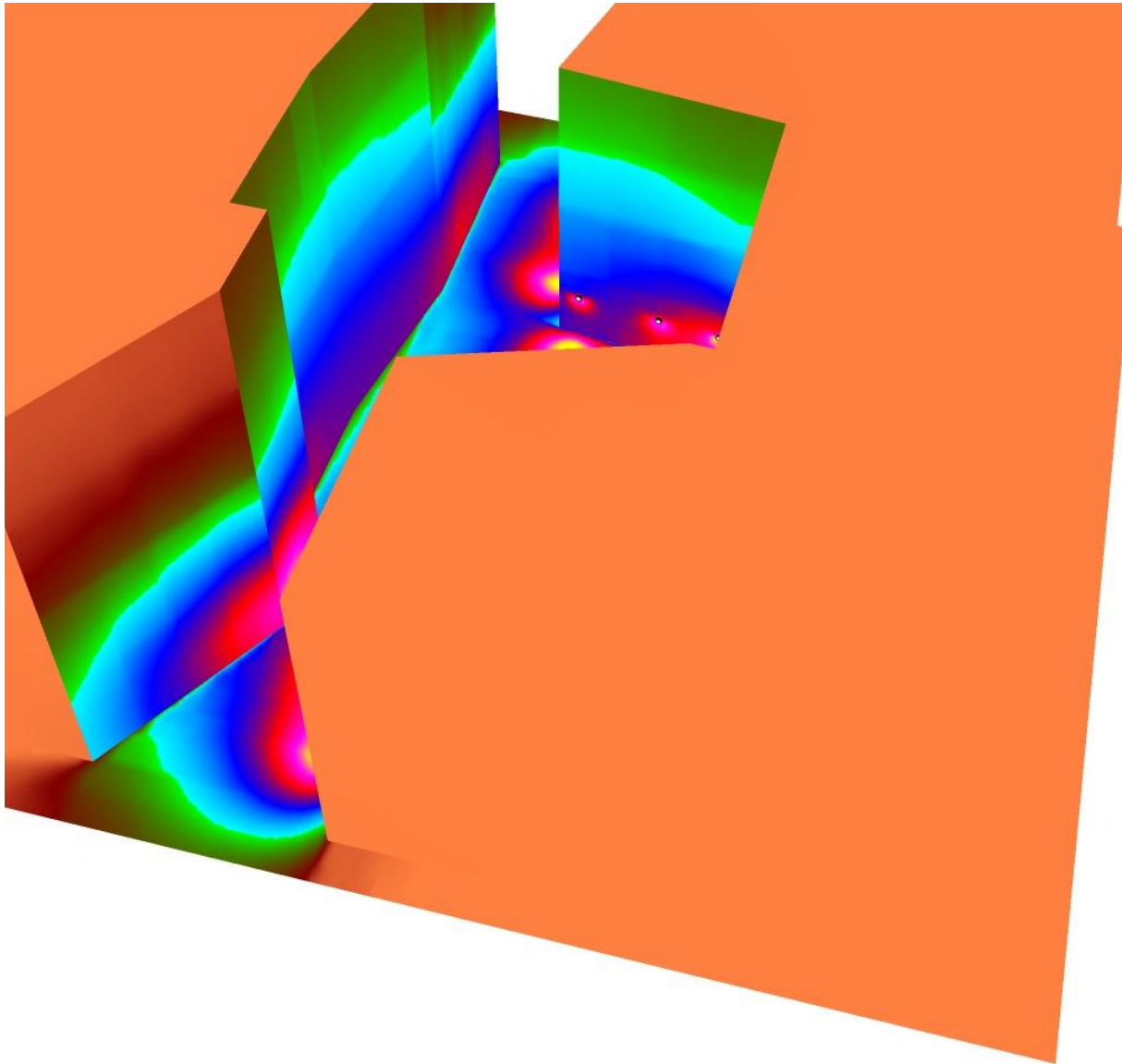


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### Exterior Scene 1 Cobalts on Blocks B & D Only / False Color Rendering



0      0      0.50      2      2      5      10      15      20      lx

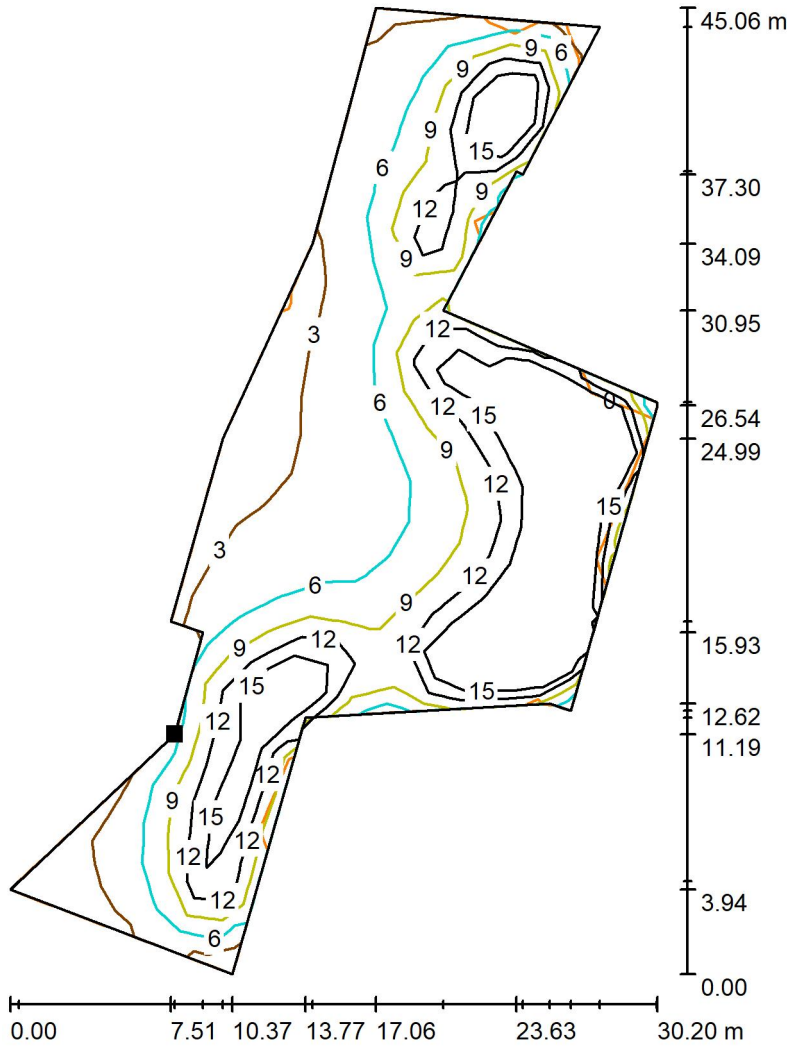


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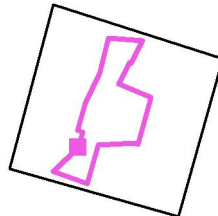
**Exterior Scene 1 Cobalts on Blocks B & D Only / ground / Isolines (E, Perpendicular)**



Values in Lux, Scale 1 : 353

Position of surface in external scene:

Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



Grid: 27 x 13 Points

$E_{av}$  [lx]  
11

$E_{min}$  [lx]  
1.57

$E_{max}$  [lx]  
34

$u_0$   
0.149

$E_{min} / E_{max}$   
0.046

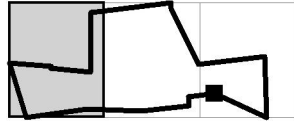


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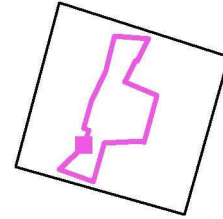
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**Exterior Scene 1 Cobalts on Blocks B & D Only / ground / Table (E, Perpendicular)**



Current Selection  
 Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	/	/	/	/	/	/	/
<b>18.548</b>	/	/	/	/	/	/	/	/	/	24
<b>16.935</b>	/	/	/	/	/	/	/	/	/	<u>34</u>
<b>15.322</b>	/	/	/	/	/	/	/	/	/	28
<b>13.709</b>	/	/	/	/	/	/	/	/	/	28
<b>12.096</b>	/	/	/	/	/	/	/	/	/	18
<b>10.483</b>	/	/	/	/	/	/	/	/	/	20
<b>8.871</b>	3.22	11	20	17	7.42	/	/	/	9.01	20
<b>7.258</b>	4.92	13	22	24	15	11	20	12	6.62	9.75
<b>5.645</b>	/	8.52	13	14	11	10	14	9.75	5.77	5.04
<b>4.032</b>	/	5.05	6.69	7.67	6.94	6.98	7.69	5.89	4.47	3.61
<b>2.419</b>	/	3.39	4.20	4.98	4.84	4.85	4.99	4.00	3.36	2.87
<b>0.806</b>	/	/	2.88	3.67	3.77	/	/	/	/	/
<b>m</b>	<b>0.883</b>	<b>2.650</b>	<b>4.417</b>	<b>6.183</b>	<b>7.950</b>	<b>9.717</b>	<b>11.483</b>	<b>13.250</b>	<b>15.017</b>	<b>16.783</b>

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

$E_{av}$  [lx]  
11

$E_{min}$  [lx]  
1.57

$E_{max}$  [lx]  
34

u0  
0.149

$E_{min} / E_{max}$   
0.046

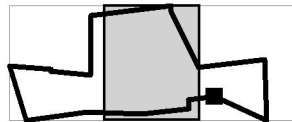


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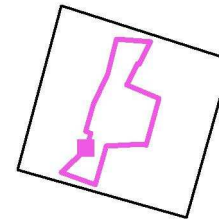
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**Exterior Scene 1 Cobalts on Blocks B & D Only / ground / Table (E, Perpendicular)**



■ Current Selection  
 □ Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	10	15	19	13	/	/	/
<b>18.548</b>	30	20	27	23	26	30	29	/	/	/
<b>16.935</b>	31	22	21	19	19	23	24	15	/	/
<b>15.322</b>	24	17	14	13	13	15	20	25	/	/
<b>13.709</b>	20	13	11	9.44	9.62	11	14	16	6.58	/
<b>12.096</b>	15	11	8.07	7.23	7.14	7.92	9.10	9.88	8.15	/
<b>10.483</b>	14	9.23	6.85	5.99	5.84	6.39	7.34	10	16	10
<b>8.871</b>	12	7.56	5.51	4.75	4.58	5.13	6.34	10	19	23
<b>7.258</b>	8.12	5.69	4.50	4.05	3.98	4.47	5.51	7.84	13	18
<b>5.645</b>	4.79	4.03	3.46	3.24	3.21	3.59	4.22	5.52	7.78	11
<b>4.032</b>	3.38	3.18	2.93	2.88	2.86	3.13	3.53	3.97	5.13	7.33
<b>2.419</b>	2.70	2.73	2.63	2.60	2.48	2.71	3.01	3.50	3.32	/
<b>0.806</b>	/	/	/	/	/	/	/	/	/	/
<b>m</b>	<b>18.550</b>	<b>20.317</b>	<b>22.084</b>	<b>23.850</b>	<b>25.617</b>	<b>27.384</b>	<b>29.150</b>	<b>30.917</b>	<b>32.684</b>	<b>34.450</b>

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
11	1.57	34	0.149	0.046

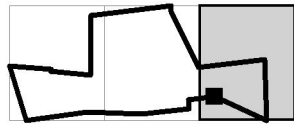


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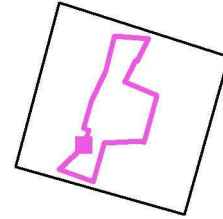
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**Exterior Scene 1 Cobalts on Blocks B & D Only / ground / Table (E, Perpendicular)**



■ Current Selection  
 □ Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	/	/	/	/
<b>18.548</b>	/	/	/	/	/	/	/
<b>16.935</b>	/	/	/	/	/	/	/
<b>15.322</b>	/	/	/	/	/	/	/
<b>13.709</b>	/	/	/	/	/	/	/
<b>12.096</b>	/	/	/	/	/	/	/
<b>10.483</b>	/	/	/	/	7.93	6.07	2.18
<b>8.871</b>	18	14	23	16	20	14	4.66
<b>7.258</b>	19	15	17	14	13	9.26	4.41
<b>5.645</b>	11	10	9.81	8.71	7.28	5.51	3.31
<b>4.032</b>	/	/	6.26	5.53	4.60	3.61	2.50
<b>2.419</b>	/	/	/	/	3.41	2.60	1.82
<b>0.806</b>	/	/	/	/	/	/	<u>1.57</u>
<b>m</b>	<b>36.217</b>	<b>37.984</b>	<b>39.750</b>	<b>41.517</b>	<b>43.284</b>	<b>45.050</b>	<b>46.817</b>

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
11	1.57	34	0.149	0.046



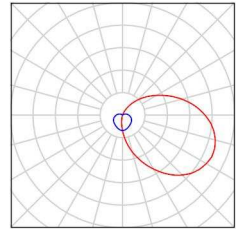
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### Exterior Scene Cobalts on Blocks A, B & D / Luminaire parts list

24 Pieces THORLUX CT19016 Cobalt LED - Satin Hood &  
Grill - 15W - 4000K  
Article No.: CT19016  
Luminous flux (Luminaire): 856 lm  
Luminous flux (Lamps): 855 lm  
Luminaire Wattage: 18.0 W  
Luminaire classification according to CIE: 71  
CIE flux code: 21 47 75 71 100  
Fitting: 1 x Cobalt Hood & Grill LED 15W 4000K  
(Correction Factor 1.000).





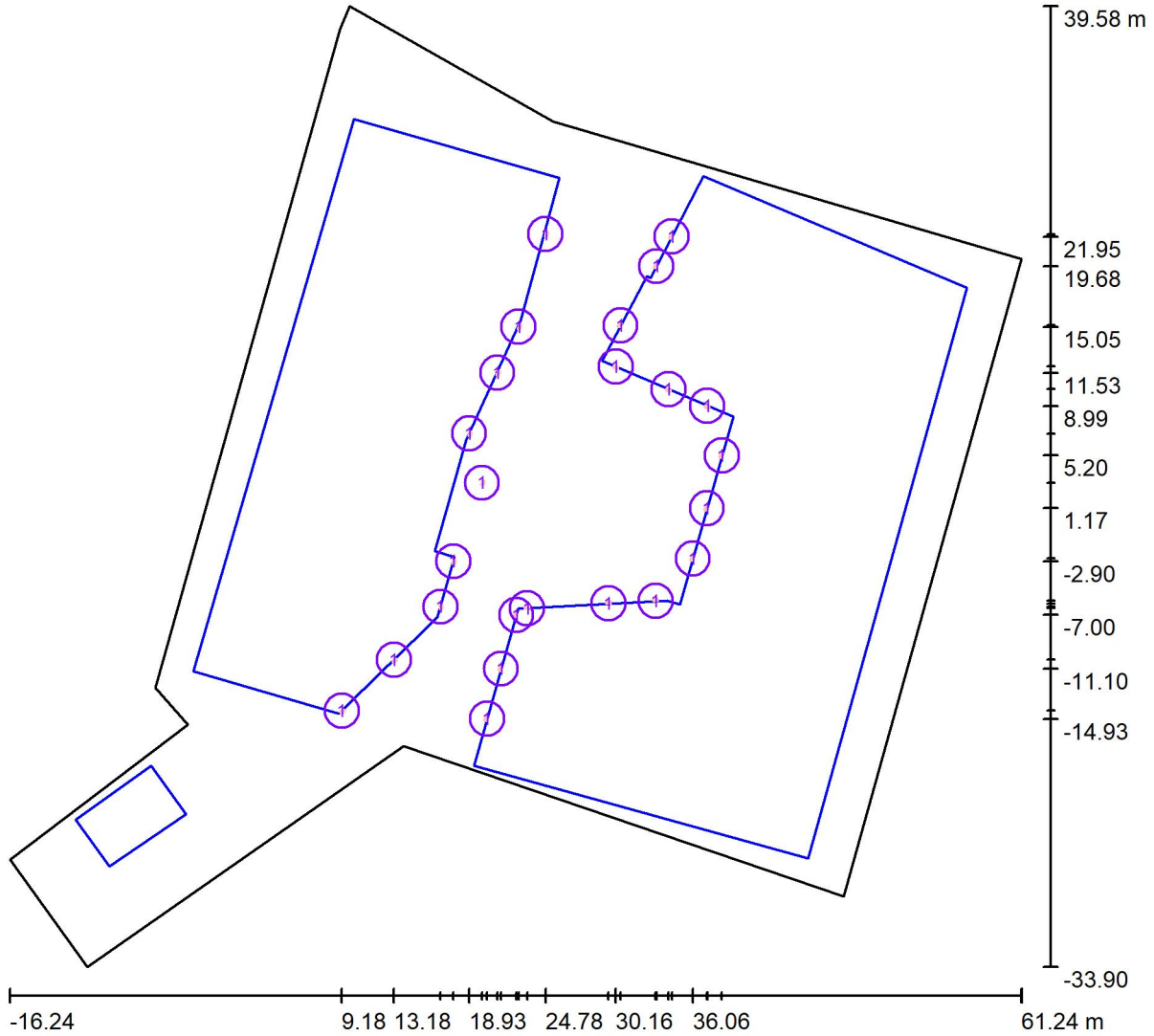


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**Exterior Scene Cobalts on Blocks A, B & D / Luminaires (layout plan)**



Scale 1 : 554

**Luminaire Parts List**

No.	Pieces	Designation
1	24	THORLUX CT19016 Cobalt LED - Satin Hood & Grill - 15W - 4000K

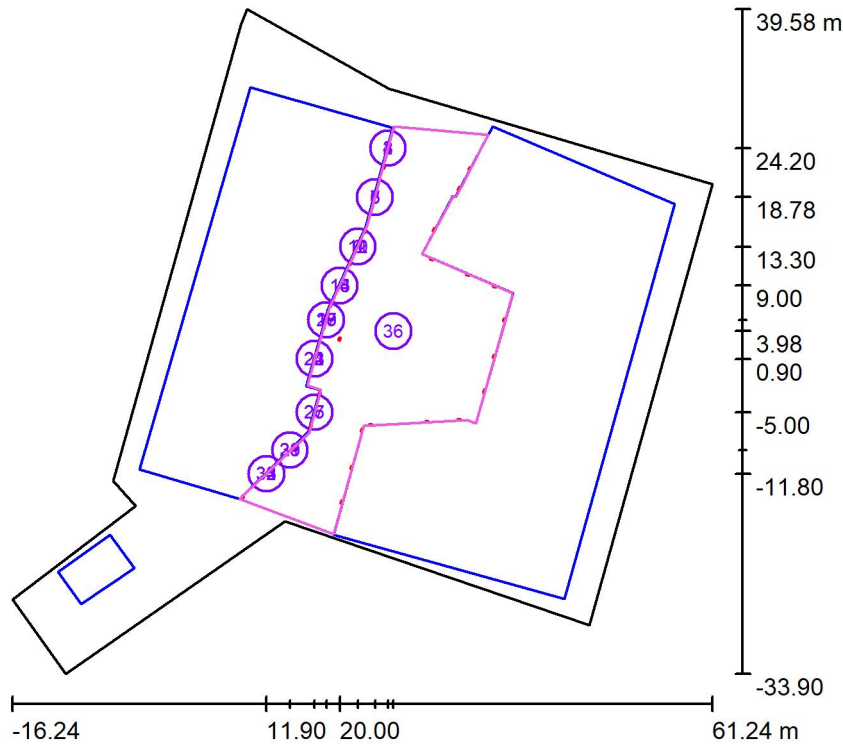


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### Exterior Scene Cobalts on Blocks A, B & D / Calculation surfaces (results overview)



Scale 1 : 837

#### Calculation Surface List

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
1	Calculation Surface 1	perpendicular	32 x 32	8.75	6.87	13	0.784	0.544
2	Calculation Surface 1	perpendicular	8 x 8	5.38	4.03	6.92	0.749	0.583
3	Calculation Surface 1	perpendicular	8 x 8	2.76	2.14	3.56	0.776	0.601
4	Calculation Surface 1	perpendicular	8 x 8	1.40	1.19	1.69	0.850	0.706
5	Calculation Surface 2	perpendicular	8 x 32	10	9.32	11	0.919	0.857
6	Calculation Surface 2	perpendicular	4 x 16	6.14	5.59	6.77	0.911	0.825
7	Calculation Surface 2	perpendicular	2 x 8	3.20	3.00	3.39	0.939	0.886
8	Calculation Surface 2	perpendicular	2 x 8	1.77	1.64	1.85	0.929	0.885
9	Calculation Surface 3	perpendicular	64 x 64	9.10	7.67	16	0.843	0.471

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Unit 4 Eastbank House, 3 Eastbank  
Road, Carryduff, Belfast BT8 8BDOperator Keith Green  
Telephone 028 9033 1700Fax  
e-Mail keithgreen@semplemckillop.com**Exterior Scene Cobalts on Blocks A, B & D / Calculation surfaces (results overview)****Calculation Surface List**

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
10	Calculation Surface 3	perpendicular	8 x 8	6.30	5.46	7.36	0.867	0.742
11	Calculation Surface 3	perpendicular	8 x 8	4.14	3.58	4.75	0.866	0.754
12	Calculation Surface 3	perpendicular	4 x 4	2.70	2.41	3.04	0.893	0.793
13	Calculation Surface 4	perpendicular	8 x 8	8.24	7.87	8.62	0.955	0.913
14	Calculation Surface 4	perpendicular	4 x 4	6.52	6.07	6.94	0.931	0.874
15	Calculation Surface 4	perpendicular	4 x 4	4.64	4.31	5.02	0.928	0.857
16	Calculation Surface 4	perpendicular	2 x 2	3.13	2.95	3.31	0.944	0.893
17	Calculation Surface 5	perpendicular	32 x 32	8.90	7.91	13	0.889	0.596
18	Calculation Surface 5	perpendicular	4 x 4	6.65	6.14	7.20	0.923	0.853
19	Calculation Surface 5	perpendicular	4 x 4	4.72	4.32	5.16	0.915	0.838
20	Calculation Surface 5	perpendicular	4 x 4	3.20	2.99	3.45	0.934	0.867
21	Calculation Surface 6	perpendicular	8 x 8	9.15	8.47	9.80	0.926	0.864
22	Calculation Surface 6	perpendicular	8 x 8	6.98	6.30	7.80	0.903	0.808
23	Calculation Surface 6	perpendicular	4 x 4	4.64	4.19	5.13	0.904	0.817
24	Calculation Surface 6	perpendicular	4 x 4	3.00	2.77	3.25	0.926	0.853
25	Calculation Surface 7	perpendicular	8 x 8	8.64	6.65	11	0.770	0.590
26	Calculation Surface 7	perpendicular	4 x 4	3.95	3.43	4.58	0.868	0.749
27	Calculation Surface 7	perpendicular	4 x 4	2.22	2.07	2.39	0.933	0.865
28	Calculation Surface 8	perpendicular	8 x 8	11	9.25	13	0.818	0.711
29	Calculation Surface 8	perpendicular	8 x 8	6.06	4.54	8.10	0.749	0.560
30	Calculation Surface 8	perpendicular	8 x 8	2.58	2.11	3.25	0.817	0.648
31	Calculation Surface 8	perpendicular	4 x 4	1.16	1.04	1.33	0.898	0.785
32	Calculation Surface 9	perpendicular	8 x 8	6.76	5.65	8.09	0.835	0.698
33	Calculation Surface 9	perpendicular	8 x 8	3.99	3.15	5.10	0.790	0.618
34	Calculation Surface 9	perpendicular	4 x 4	1.98	1.65	2.40	0.835	0.689
35	Calculation Surface 9	perpendicular	4 x 4	0.97	0.87	1.10	0.891	0.786
36	ground	perpendicular	27 x 13	17	4.05	36	0.244	0.114

## Summary of Results

Type	Quantity	Average [lx]	Min [lx]	Max [lx]	u0	$E_{\min} / E_{\max}$
perpendicular	36	14	0.87	36	0.06	0.02

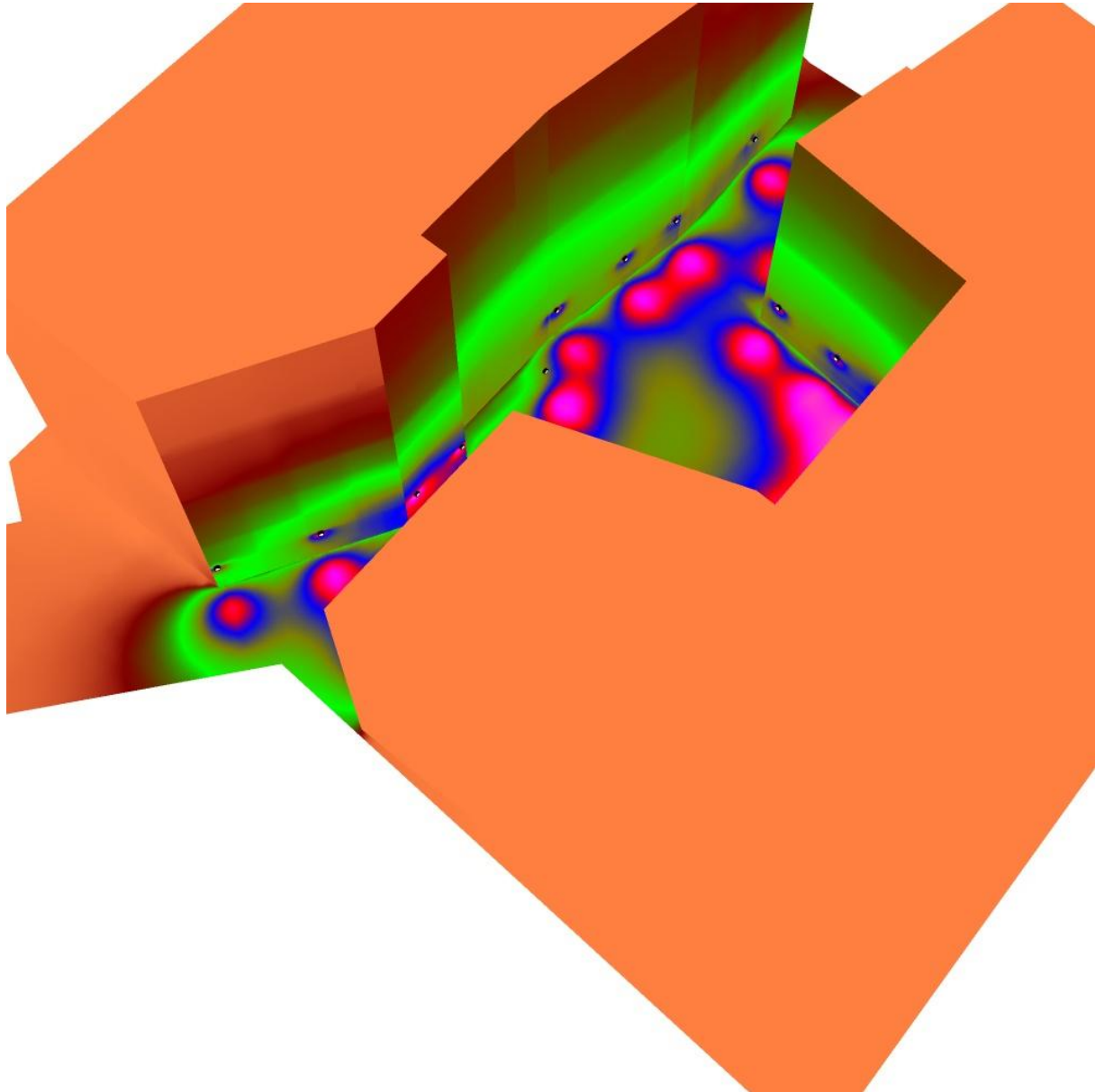


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### Exterior Scene Cobalts on Blocks A, B & D / False Color Rendering



0 0 1 5 10 15 20 25 50 lx

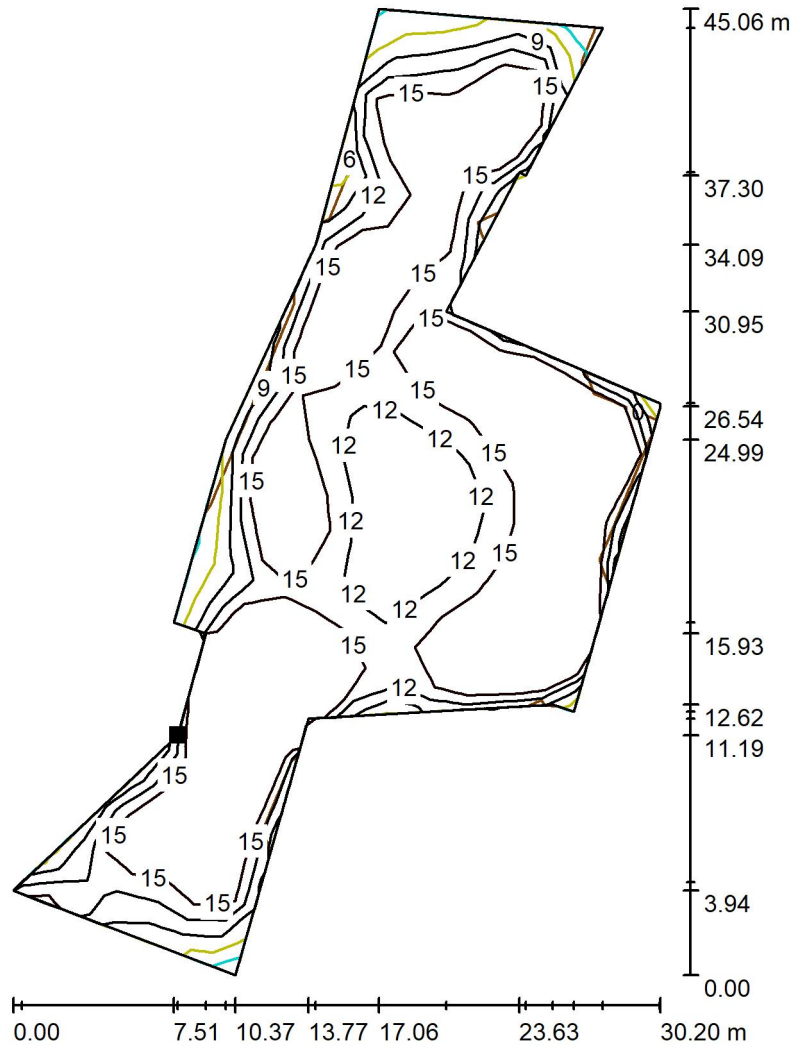


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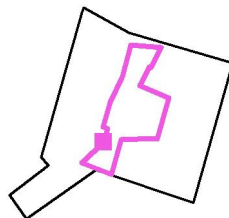
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**Exterior Scene Cobalts on Blocks A, B & D / ground / Isolines (E, Perpendicular)**



Values in Lux, Scale 1 : 353

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



Grid: 27 x 13 Points

$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
17	4.05	36	0.244	0.114

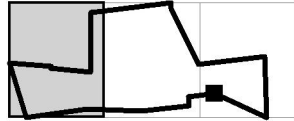


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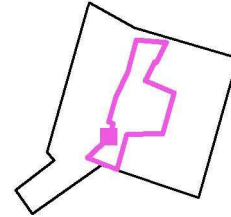
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**Exterior Scene Cobalts on Blocks A, B & D / ground / Table (E, Perpendicular)**



■ Current Selection  
 □ Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	/	/	/	/	/	/	/
<b>18.548</b>	/	/	/	/	/	/	/	/	/	25
<b>16.935</b>	/	/	/	/	/	/	/	/	/	<u>36</u>
<b>15.322</b>	/	/	/	/	/	/	/	/	/	29
<b>13.709</b>	/	/	/	/	/	/	/	/	/	30
<b>12.096</b>	/	/	/	/	/	/	/	/	/	20
<b>10.483</b>	/	/	/	/	/	/	/	/	/	22
<b>8.871</b>	<u>4.05</u>	12	21	19	9.76	/	/	/	13	24
<b>7.258</b>	5.77	14	24	26	18	15	24	16	12	15
<b>5.645</b>	/	10	15	18	16	15	19	17	15	14
<b>4.032</b>	/	6.96	10	16	17	14	13	16	22	19
<b>2.419</b>	/	4.91	7.89	17	23	13	9.29	13	24	17
<b>0.806</b>	/	/	4.88	9.34	12	/	/	/	/	/
<b>m</b>	<b>0.883</b>	<b>2.650</b>	<b>4.417</b>	<b>6.183</b>	<b>7.950</b>	<b>9.717</b>	<b>11.483</b>	<b>13.250</b>	<b>15.017</b>	<b>16.783</b>

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

$E_{av}$  [lx]  
17

$E_{min}$  [lx]  
4.05

$E_{max}$  [lx]  
36

u0  
0.244

$E_{min} / E_{max}$   
0.114

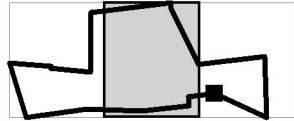


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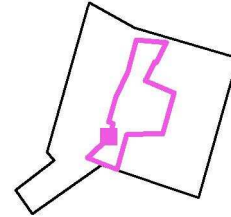
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**Exterior Scene Cobalts on Blocks A, B & D / ground / Table (E, Perpendicular)**



■ Current Selection  
 □ Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	12	16	20	15	/	/	/
<b>18.548</b>	31	21	28	24	27	31	31	/	/	/
<b>16.935</b>	33	23	22	20	21	24	25	17	/	/
<b>15.322</b>	25	18	15	15	15	17	22	27	/	/
<b>13.709</b>	22	15	12	11	12	13	16	18	9.15	/
<b>12.096</b>	17	13	10	9.68	9.68	11	12	13	12	/
<b>10.483</b>	17	12	9.70	9.18	9.26	10	11	14	20	15
<b>8.871</b>	16	11	9.42	9.47	9.89	11	12	16	26	31
<b>7.258</b>	14	11	10	11	13	15	13	16	24	32
<b>5.645</b>	14	12	12	14	19	23	14	14	26	30
<b>4.032</b>	20	16	14	19	20	22	10	9.13	16	17
<b>2.419</b>	23	16	14	23	14	6.26	4.73	4.52	4.06	/
<b>0.806</b>	/	/	/	/	/	/	/	/	/	/
<b>m</b>	<b>18.550</b>	<b>20.317</b>	<b>22.084</b>	<b>23.850</b>	<b>25.617</b>	<b>27.384</b>	<b>29.150</b>	<b>30.917</b>	<b>32.684</b>	<b>34.450</b>

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

$E_{av}$  [lx]  
17

$E_{min}$  [lx]  
4.05

$E_{max}$  [lx]  
36

u0  
0.244

$E_{min} / E_{max}$   
0.114



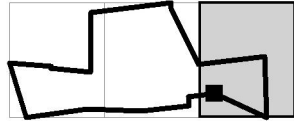


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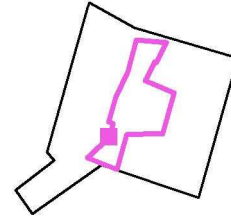
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**Exterior Scene Cobalts on Blocks A, B & D / ground / Table (E, Perpendicular)**



■ Current Selection  
 □ Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	/	/	/	/
<b>18.548</b>	/	/	/	/	/	/	/
<b>16.935</b>	/	/	/	/	/	/	/
<b>15.322</b>	/	/	/	/	/	/	/
<b>13.709</b>	/	/	/	/	/	/	/
<b>12.096</b>	/	/	/	/	/	/	/
<b>10.483</b>	/	/	/	/	10	8.51	4.39
<b>8.871</b>	26	21	28	21	24	17	7.11
<b>7.258</b>	33	27	24	20	19	14	8.06
<b>5.645</b>	32	27	17	18	18	13	8.92
<b>4.032</b>	/	/	9.21	17	23	14	11
<b>2.419</b>	/	/	/	/	14	10	15
<b>0.806</b>	/	/	/	/	/	/	11
<b>m</b>	<b>36.217</b>	<b>37.984</b>	<b>39.750</b>	<b>41.517</b>	<b>43.284</b>	<b>45.050</b>	<b>46.817</b>

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

$E_{av}$  [lx]  
17

$E_{min}$  [lx]  
4.05

$E_{max}$  [lx]  
36

u0  
0.244

$E_{min} / E_{max}$   
0.114



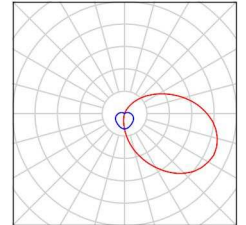
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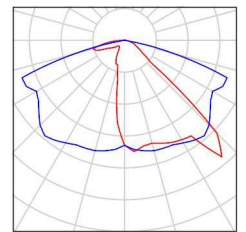
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## 10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / Luminaire parts list

24 Pieces THORLUX CT19016 Cobalt LED - Satin Hood & Grill - 15W - 4000K  
Article No.: CT19016  
Luminous flux (Luminaire): 856 lm  
Luminous flux (Lamps): 855 lm  
Luminaire Wattage: 18.0 W  
Luminaire classification according to CIE: 71  
CIE flux code: 21 47 75 71 100  
Fitting: 1 x Cobalt Hood & Grill LED 15W 4000K (Correction Factor 1.000).



4 Pieces THORLUX SB19675 Starbeam ECO - Roadway Distribution - 31W - SMART - 4000K (Type 1)  
Article No.: SB19675  
Luminous flux (Luminaire): 1520 lm  
Luminous flux (Lamps): 1520 lm  
Luminaire Wattage: 10.5 W  
Luminaire classification according to CIE: 100  
CIE flux code: 40 73 96 100 101  
Fitting: 1 x User defined (Correction Factor 1.000).



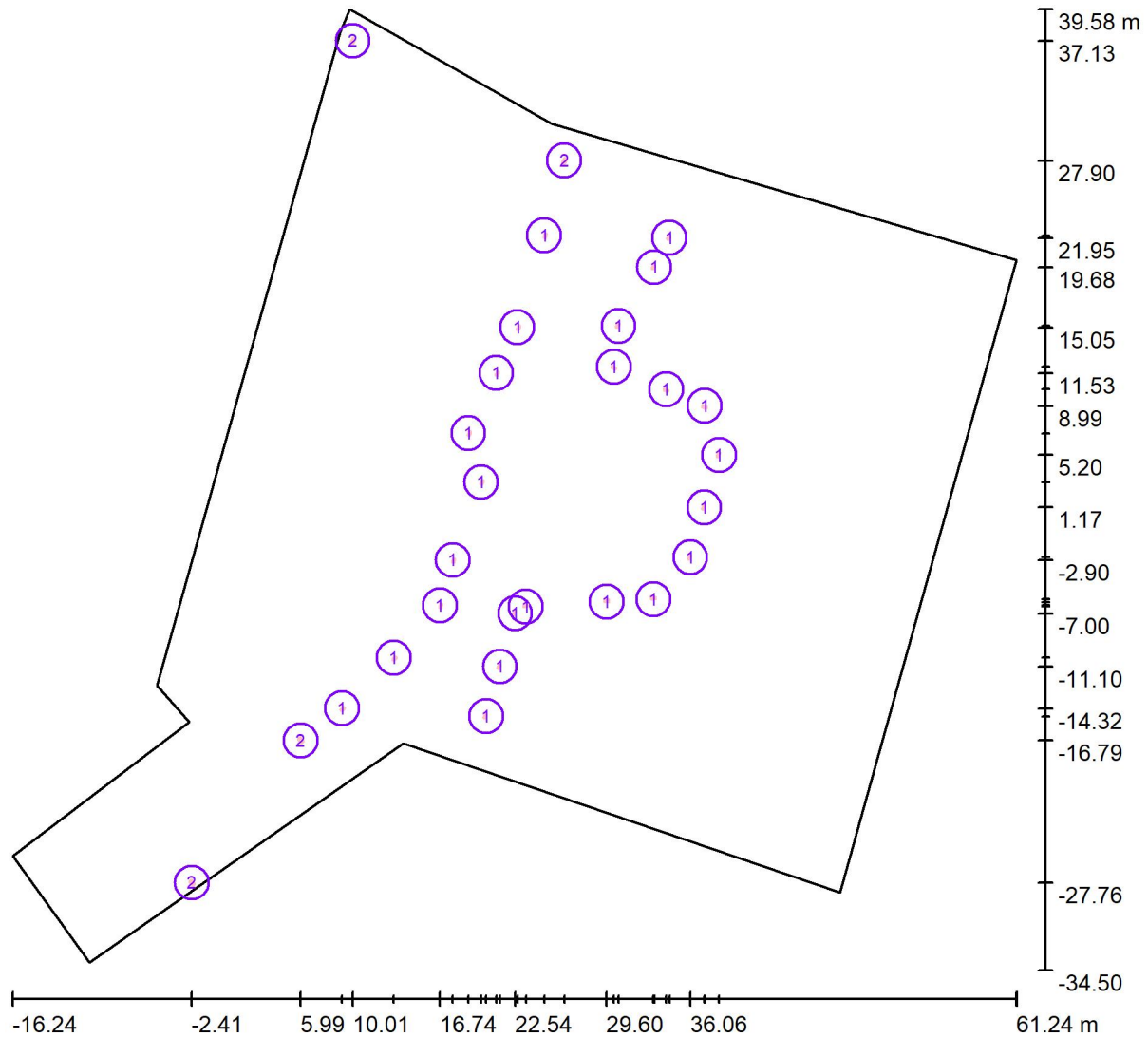


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### 10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / Luminaires (layout plan)



Scale 1 : 554

#### Luminaire Parts List

No.	Pieces	Designation
1	24	THORLUX CT19016 Cobalt LED - Satin Hood & Grill - 15W - 4000K
2	4	THORLUX SB19675 Starbeam ECO - Roadway Distribution - 31W - SMART - 4000K (Type 1)

\*Modified Technical Specifications

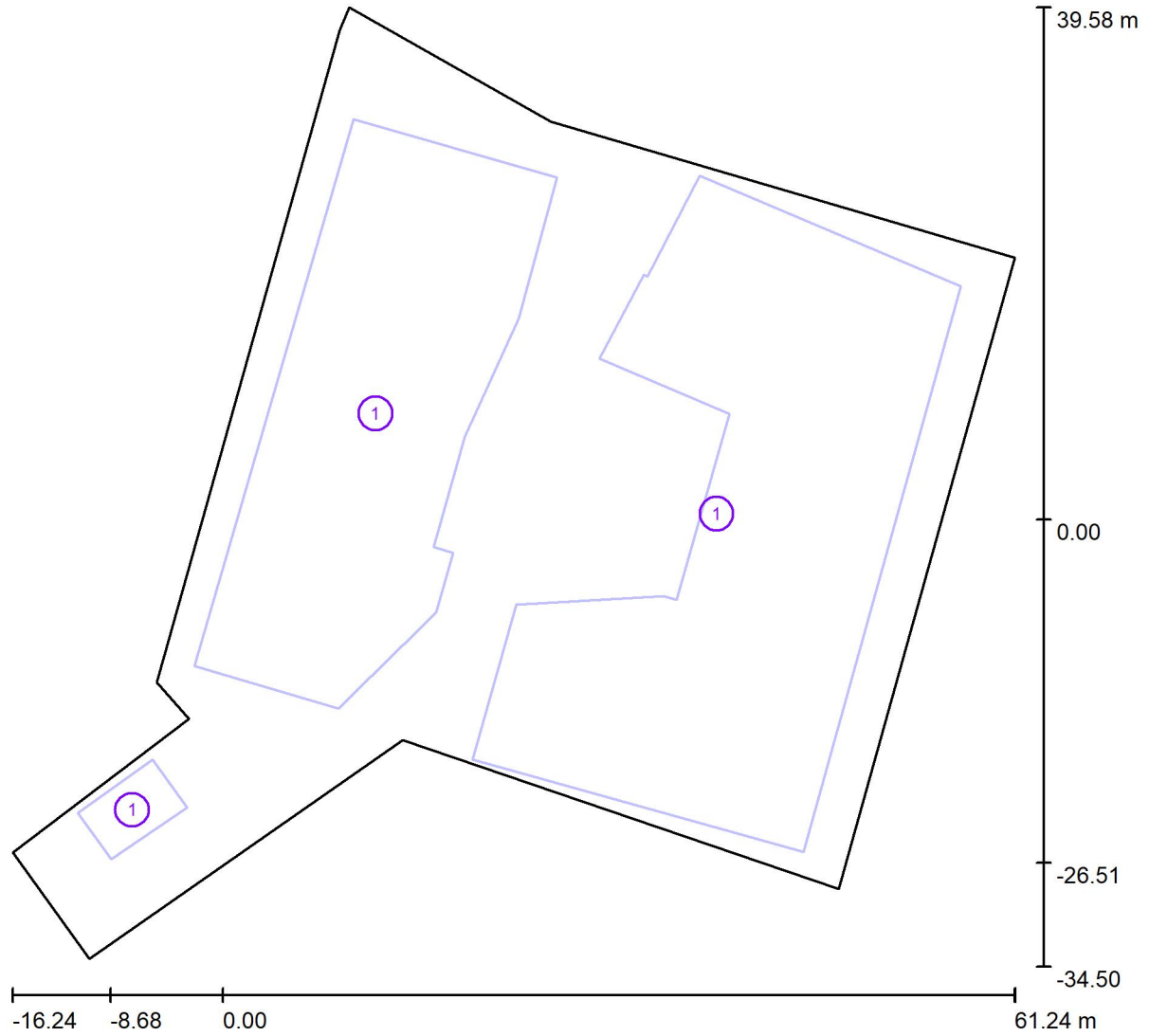


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### 10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / Objects (layout plan)



Scale 1 : 554

#### Object parts list

No.	Pieces	Designation
1	3	Extrusion Volume



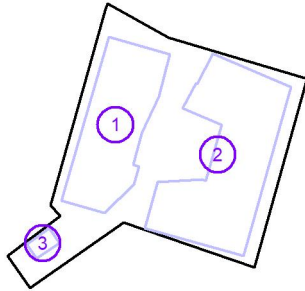
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## 10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / Objects (coordinates lists)

### Extrusion Volume



No.	Position [m]			L	Size [m]		H	Rotation [°]		
	X	Y	Z		W			X	Y	Z
1	0.000	0.000	0.000	27.980	45.503	20.000	0.0	0.0	0.0	
2	0.000	0.000	0.000	37.759	52.206	16.000	0.0	0.0	0.0	
3	-8.683	-26.508	0.000	7.142	4.600	4.000	0.0	0.0	35.0	

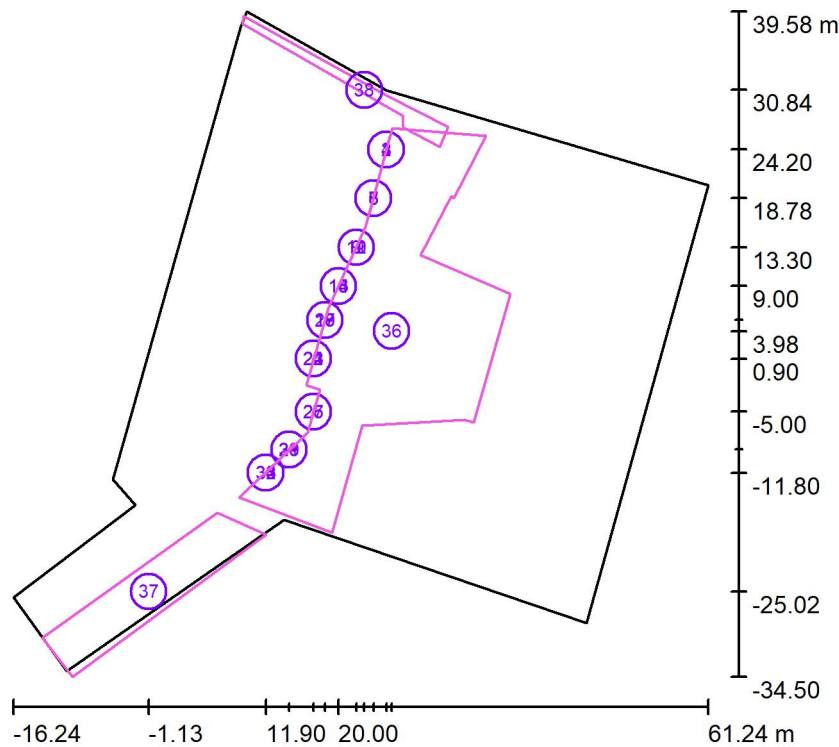


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### 10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / Calculation surfaces (results overview)



Scale 1 : 843

#### Calculation Surface List

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
1	Calculation Surface 1	perpendicular	32 x 32	9.06	7.27	13	0.802	0.565
2	Calculation Surface 1	perpendicular	8 x 8	5.58	4.25	7.12	0.762	0.597
3	Calculation Surface 1	perpendicular	8 x 8	2.87	2.31	3.68	0.804	0.628
4	Calculation Surface 1	perpendicular	4 x 4	1.47	1.26	1.73	0.857	0.728
5	Calculation Surface 2	perpendicular	8 x 32	10	9.38	11	0.919	0.860
6	Calculation Surface 2	perpendicular	4 x 16	6.22	5.59	6.77	0.899	0.825
7	Calculation Surface 2	perpendicular	2 x 8	3.26	3.07	3.46	0.941	0.887
8	Calculation Surface 2	perpendicular	2 x 8	1.81	1.71	1.88	0.945	0.913
9	Calculation Surface 3	perpendicular	64 x 64	9.07	7.69	16	0.848	0.482

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e-Mail keithgreen@semplemckillop.com**10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / Calculation surfaces (results overview)****Calculation Surface List**

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
10	Calculation Surface 3	perpendicular	8 x 8	6.32	5.48	7.34	0.868	0.747
11	Calculation Surface 3	perpendicular	8 x 8	4.15	3.63	4.76	0.874	0.763
12	Calculation Surface 3	perpendicular	4 x 4	2.73	2.45	3.07	0.899	0.799
13	Calculation Surface 4	perpendicular	8 x 8	8.23	7.89	8.59	0.959	0.919
14	Calculation Surface 4	perpendicular	4 x 4	6.50	6.10	6.91	0.939	0.883
15	Calculation Surface 4	perpendicular	4 x 4	4.65	4.37	4.97	0.940	0.880
16	Calculation Surface 4	perpendicular	2 x 2	3.15	2.98	3.33	0.945	0.895
17	Calculation Surface 5	perpendicular	32 x 32	8.85	7.89	13	0.892	0.600
18	Calculation Surface 5	perpendicular	4 x 4	6.64	6.13	7.19	0.923	0.853
19	Calculation Surface 5	perpendicular	4 x 4	4.76	4.39	5.17	0.923	0.850
20	Calculation Surface 5	perpendicular	4 x 4	3.21	3.03	3.41	0.944	0.889
21	Calculation Surface 6	perpendicular	8 x 8	9.10	8.53	9.74	0.938	0.876
22	Calculation Surface 6	perpendicular	4 x 4	7.00	6.34	7.72	0.907	0.822
23	Calculation Surface 6	perpendicular	4 x 4	4.65	4.23	5.11	0.909	0.828
24	Calculation Surface 6	perpendicular	4 x 4	3.00	2.79	3.23	0.930	0.863
25	Calculation Surface 7	perpendicular	8 x 8	8.65	6.68	11	0.772	0.591
26	Calculation Surface 7	perpendicular	4 x 4	3.96	3.44	4.59	0.869	0.750
27	Calculation Surface 7	perpendicular	4 x 4	2.24	2.09	2.40	0.937	0.871
28	Calculation Surface 8	perpendicular	8 x 8	11	9.40	13	0.820	0.714
29	Calculation Surface 8	perpendicular	8 x 8	6.17	4.80	8.22	0.777	0.584
30	Calculation Surface 8	perpendicular	4 x 4	2.66	2.19	3.24	0.823	0.675
31	Calculation Surface 8	perpendicular	4 x 4	1.21	1.11	1.37	0.917	0.812
32	Calculation Surface 9	perpendicular	8 x 8	7.08	5.97	8.33	0.843	0.716
33	Calculation Surface 9	perpendicular	8 x 8	4.16	3.40	5.20	0.816	0.654
34	Calculation Surface 9	perpendicular	4 x 4	2.07	1.75	2.47	0.844	0.708
35	Calculation Surface 9	perpendicular	4 x 4	1.05	0.95	1.16	0.906	0.816
36	ground	perpendicular	27 x 13	17	3.74	36	0.218	0.105

37	pathway lower	perpendicular	128 x 64	9.79	1.18	20	0.120	0.060
38	pathway upper	perpendicular	128 x 64	11	3.69	19	0.325	0.195

### Summary of Results

Type	Quantity	Average [lx]	Min [lx]	Max [lx]	u0	$E_{\min} / E_{\max}$
perpendicular	38	13	0.95	36	0.07	0.03



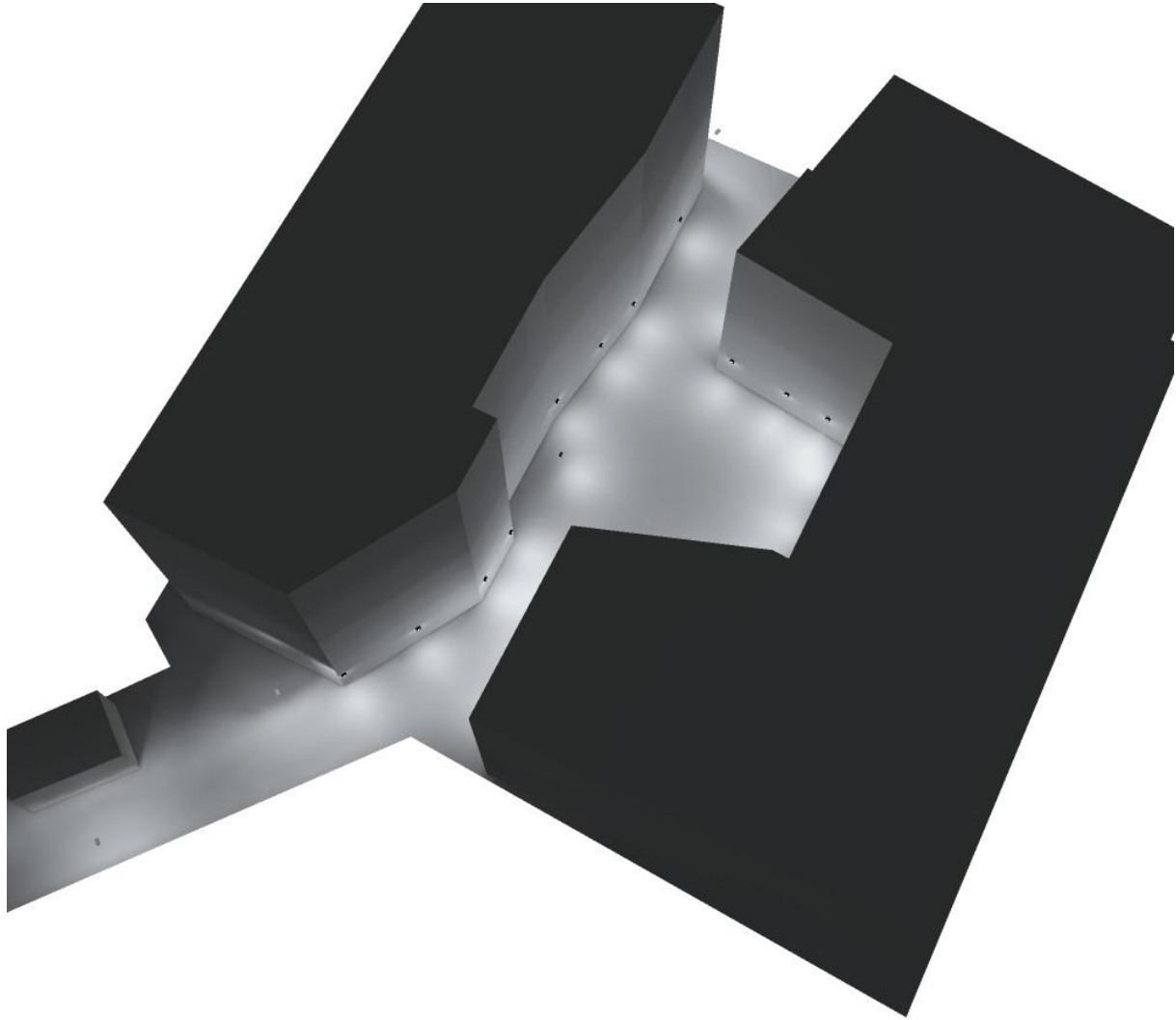


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## 10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / 3D Rendering



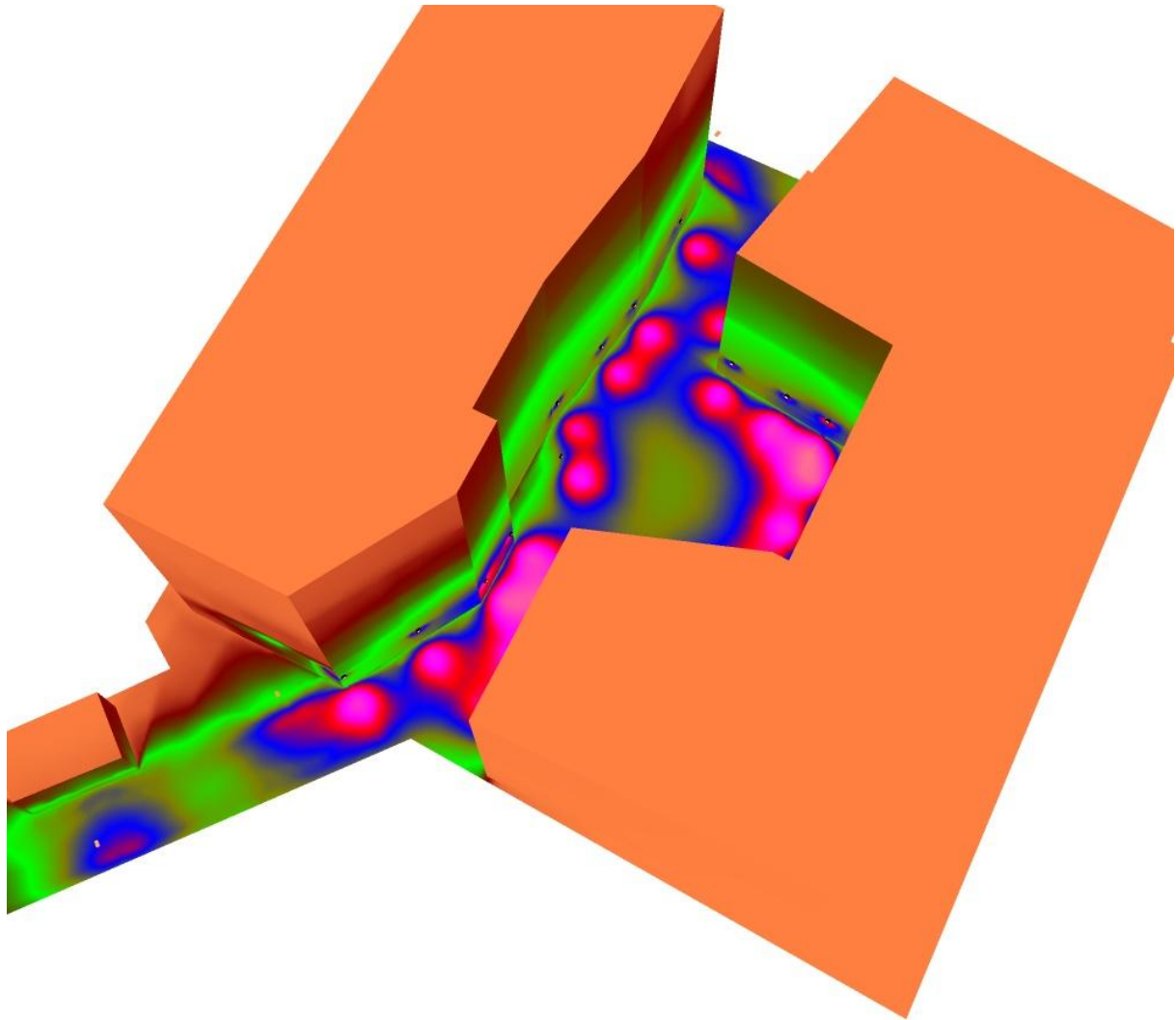


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### 10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / False Color Rendering



0      0      1      5      10      15      20      25      50      lx

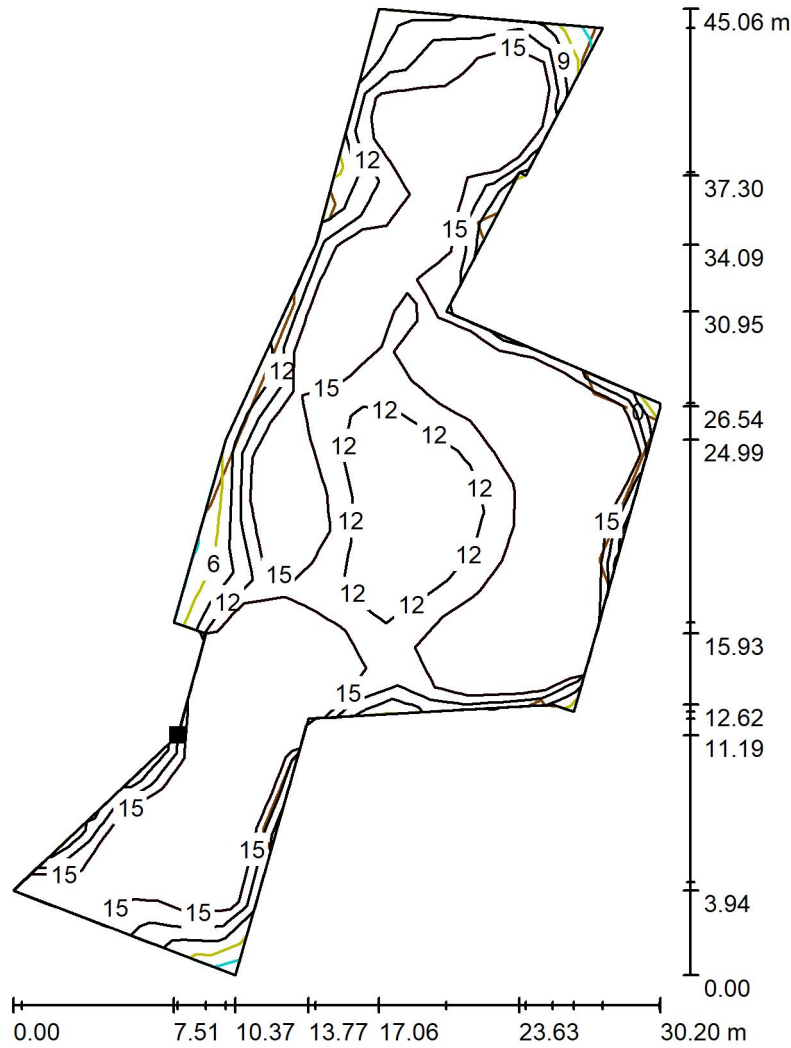


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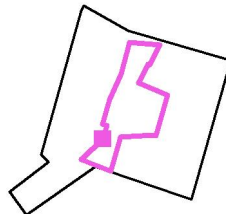
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**10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / ground / Isolines (E, Perpendicular)**



Values in Lux, Scale 1 : 353

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



Grid: 27 x 13 Points

$E_{av}$  [lx]  
17

$E_{min}$  [lx]  
3.74

$E_{max}$  [lx]  
36

$u_0$   
0.218

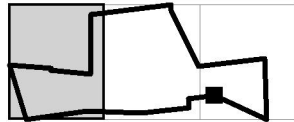
$E_{min} / E_{max}$   
0.105



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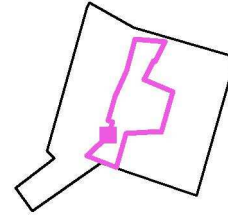
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**10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / ground / Table  
 (E, Perpendicular)**



- Current Selection
- Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	/	/	/	/	/	/	/	/
<b>18.548</b>	/	/	/	/	/	/	/	/	/	/	25
<b>16.935</b>	/	/	/	/	/	/	/	/	/	/	<u>36</u>
<b>15.322</b>	/	/	/	/	/	/	/	/	/	/	29
<b>13.709</b>	/	/	/	/	/	/	/	/	/	/	30
<b>12.096</b>	/	/	/	/	/	/	/	/	/	/	20
<b>10.483</b>	/	/	/	/	/	/	/	/	/	/	22
<b>8.871</b>	6.41	14	22	20	9.69	/	/	/	13	24	
<b>7.258</b>	8.81	17	25	27	18	15	24	16	12	15	
<b>5.645</b>	/	14	17	19	16	15	19	17	15	14	
<b>4.032</b>	/	14	12	16	17	14	13	16	22	19	
<b>2.419</b>	/	14	9.32	17	23	13	9.46	14	24	17	
<b>0.806</b>	/	/	6.84	9.89	12	/	/	/	/	/	
<b>m</b>	<b>0.883</b>	<b>2.650</b>	<b>4.417</b>	<b>6.183</b>	<b>7.950</b>	<b>9.717</b>	<b>11.483</b>	<b>13.250</b>	<b>15.017</b>	<b>16.783</b>	

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

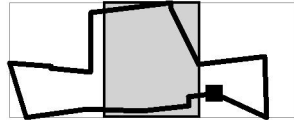
$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
17	3.74	36	0.218	0.105



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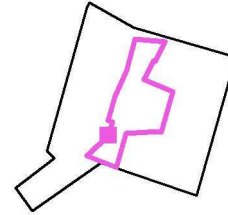
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**10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / ground / Table  
 (E, Perpendicular)**



■ Current Selection  
 □ Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	12	16	20	14	/	/	/
<b>18.548</b>	31	21	28	24	27	31	31	/	/	/
<b>16.935</b>	33	23	22	20	21	24	26	17	/	/
<b>15.322</b>	25	18	15	14	15	17	22	27	/	/
<b>13.709</b>	22	15	12	11	12	13	16	18	9.19	/
<b>12.096</b>	17	13	10	9.74	9.73	11	12	13	11	/
<b>10.483</b>	16	12	9.70	9.30	9.34	10	11	14	21	15
<b>8.871</b>	16	11	9.47	9.37	9.88	11	12	16	26	31
<b>7.258</b>	14	11	10	11	13	15	13	16	24	32
<b>5.645</b>	14	12	12	14	19	23	14	14	26	30
<b>4.032</b>	20	16	15	19	20	22	10	9.16	16	17
<b>2.419</b>	24	16	14	24	14	6.27	4.76	4.80	<u>3.74</u>	/
<b>0.806</b>	/	/	/	/	/	/	/	/	/	/
<b>m</b>	<b>18.550</b>	<b>20.317</b>	<b>22.084</b>	<b>23.850</b>	<b>25.617</b>	<b>27.384</b>	<b>29.150</b>	<b>30.917</b>	<b>32.684</b>	<b>34.450</b>

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
17	3.74	36	0.218	0.105

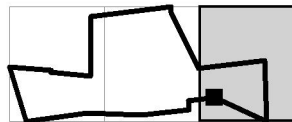


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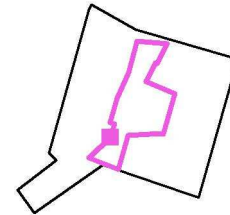
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**10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / ground / Table (E, Perpendicular)**



■ Current Selection  
 □ Further Selections

Position of surface in external scene:  
 Marked point:  
 (16.600 m, -7.300 m, 0.000 m)



<b>20.160</b>	/	/	/	/	/	/	/
<b>18.548</b>	/	/	/	/	/	/	/
<b>16.935</b>	/	/	/	/	/	/	/
<b>15.322</b>	/	/	/	/	/	/	/
<b>13.709</b>	/	/	/	/	/	/	/
<b>12.096</b>	/	/	/	/	/	/	/
<b>10.483</b>	/	/	/	/	11	9.06	4.64
<b>8.871</b>	26	21	29	22	25	19	7.85
<b>7.258</b>	34	27	25	21	21	17	9.90
<b>5.645</b>	32	28	18	19	20	16	13
<b>4.032</b>	/	/	9.35	18	25	17	16
<b>2.419</b>	/	/	/	/	14	13	20
<b>0.806</b>	/	/	/	/	/	/	18
<b>m</b>	<b>36.217</b>	<b>37.984</b>	<b>39.750</b>	<b>41.517</b>	<b>43.284</b>	<b>45.050</b>	<b>46.817</b>

Attention: The coordinates refer to the image above. Values in Lux.

Grid: 27 x 13 Points

$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
17	3.74	36	0.218	0.105

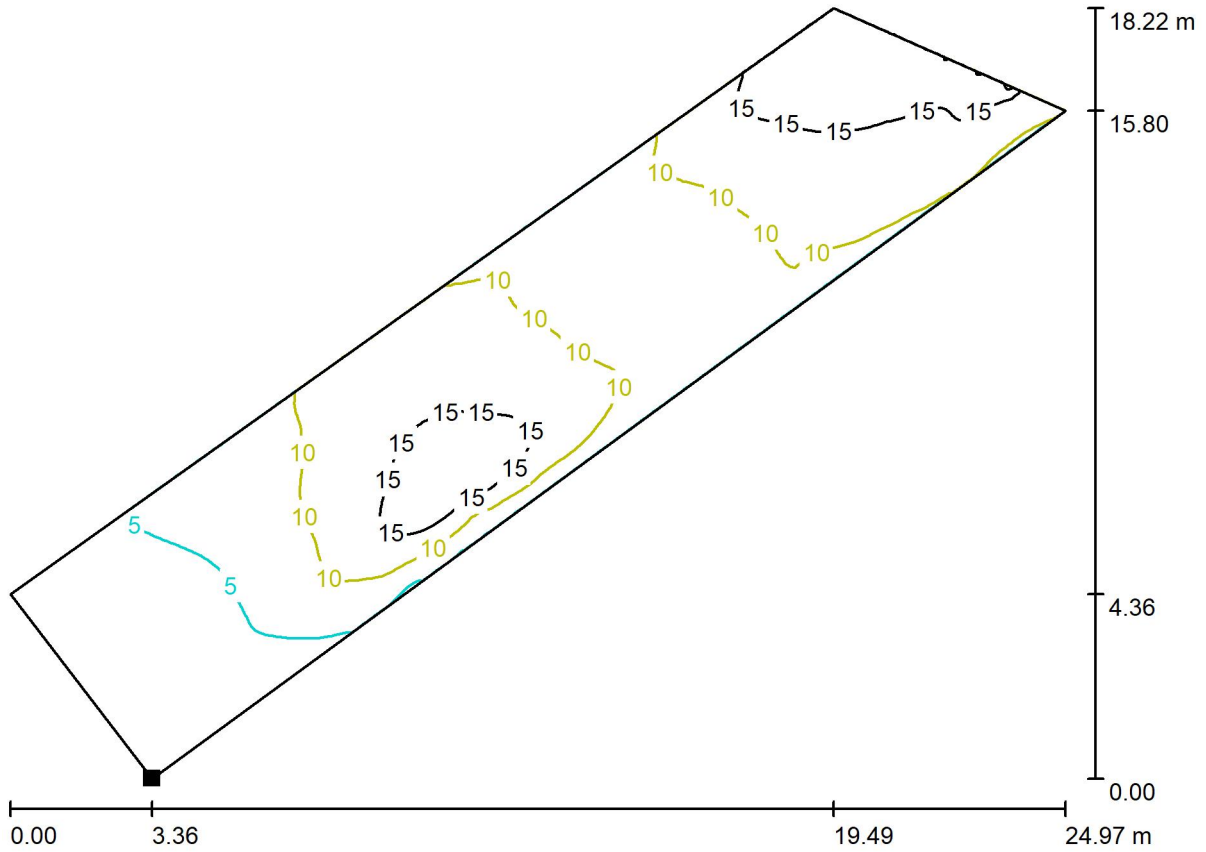


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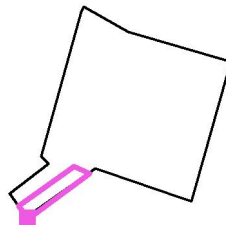
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**10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / pathway lower / Isolines (E, Perpendicular)**



Values in Lux, Scale 1 : 179

Position of surface in external scene:  
 Marked point:  
 (-9.660 m, -34.504 m, 0.000 m)



Grid: 128 x 64 Points

$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
9.79	1.18	20	0.120	0.060

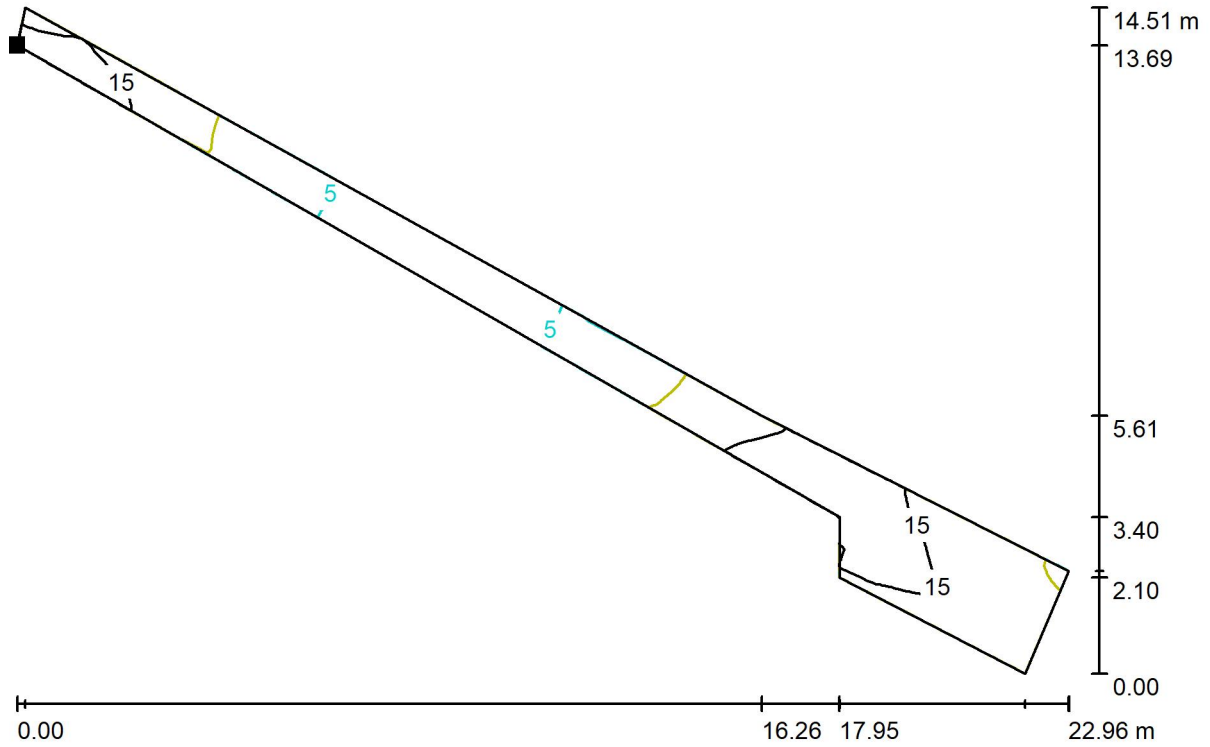


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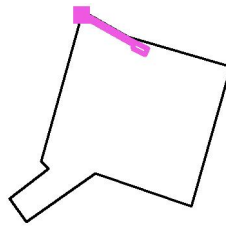
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**10.5w/1520 lumens Roadway optic Exterior Scene Columns & Cobalts / pathway upper / Isolines (E, Perpendicular)**



Values in Lux, Scale 1 : 165

Position of surface in external scene:  
 Marked point:  
 (9.268 m, 38.211 m, 0.000 m)



Grid: 128 x 64 Points

$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	u0	$E_{min} / E_{max}$
11	3.69	19	0.325	0.195