

## **Ventspils, Promenādes apgaismojums ar NERI Chara**

Partner for Contact:

Order No.:

Company:

Customer No.:

Date: 09.03.2018

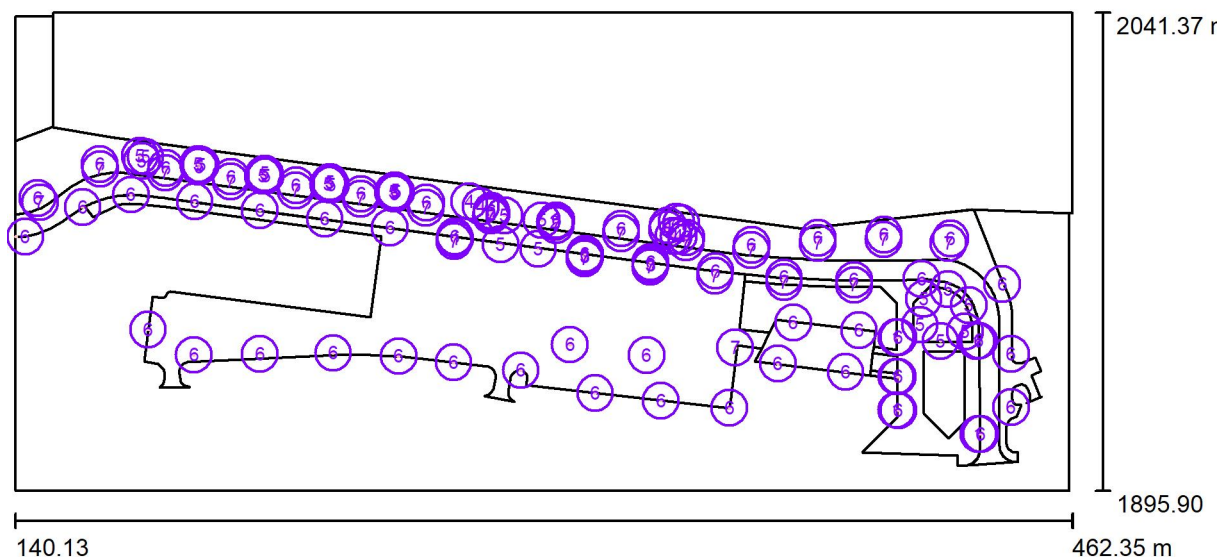
Operator: Jānis Škutāns

SIA "Gaismas Stils"

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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Planning data



Maintenance factor: 0.70, ULR (Upward Light Ratio): 6.0%

Scale 1:2304

### Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	7	IGUZZINI BU91 MAXIWOODY family 28,4W (1.000)	2646	3400	28.4
2	2	IGUZZINI BU93 MAXIWOODY family 28,4W (1.000)	2649	3400	28.4
3	6	IGUZZINI BU99_BZD8 MAXIWOODY family 42.7W (1.000)	3919	5300	42.7
4	8	IGUZZINI BV87_X203 Light Up Earth 16.5W (1.000)	247	1450	16.5
5	26	IGUZZINI E143_X203 Light Up Earth 12.1W (1.000)	1112	1450	12.1

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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Planning data

### Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
6	53	Neri Light 020 TRA TYPE 1 100W ST XX020A21133ST (1.000)	7430	10000	100.0
7	22	Neri Light 020 TRA TYPE 1 70W ST XX020A21132ST (1.000)	4732	6600	70.0
Total:			576118	Total: 786900	7798.4

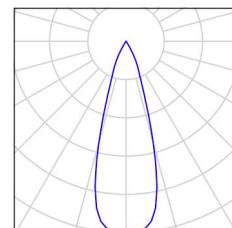
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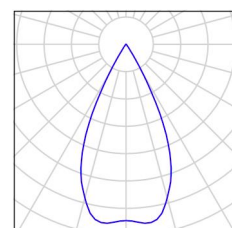
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaire parts list

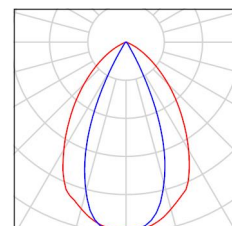
7 Pieces IGUZZINI BU91 MAXIWOODY family 28,4W  
Article No.: BU91  
Luminous flux (Luminaire): 2646 lm  
Luminous flux (Lamps): 3400 lm  
Luminaire Wattage: 28.4 W  
Luminaire classification according to CIE: 100  
CIE flux code: 100 100 100 100 78  
Fitting: 1 x LW64 (Correction Factor 1.000).



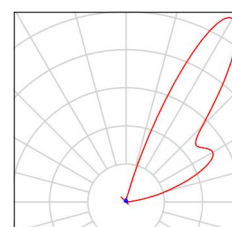
2 Pieces IGUZZINI BU93 MAXIWOODY family 28,4W  
Article No.: BU93  
Luminous flux (Luminaire): 2649 lm  
Luminous flux (Lamps): 3400 lm  
Luminaire Wattage: 28.4 W  
Luminaire classification according to CIE: 100  
CIE flux code: 99 100 100 100 78  
Fitting: 1 x LW64 (Correction Factor 1.000).



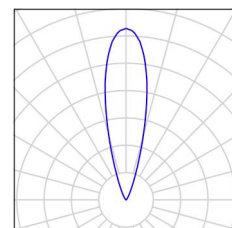
6 Pieces IGUZZINI BU99\_BZD8 MAXIWOODY family 42.7W  
Article No.: BU99\_BZD8  
Luminous flux (Luminaire): 3919 lm  
Luminous flux (Lamps): 5300 lm  
Luminaire Wattage: 42.7 W  
Luminaire classification according to CIE: 100  
CIE flux code: 84 98 100 100 74  
Fitting: 1 x LW66 (Correction Factor 1.000).



8 Pieces IGUZZINI BV87\_X203 Light Up Earth 16.5W  
Article No.: BV87\_X203  
Luminous flux (Luminaire): 247 lm  
Luminous flux (Lamps): 1450 lm  
Luminaire Wattage: 16.5 W  
Luminaire classification according to CIE: 0  
CIE flux code: 00 00 12 00 17  
Fitting: 1 x B37A (Correction Factor 1.000).



26 Pieces IGUZZINI E143\_X203 Light Up Earth 12.1W  
Article No.: E143\_X203  
Luminous flux (Luminaire): 1112 lm  
Luminous flux (Lamps): 1450 lm  
Luminaire Wattage: 12.1 W  
Luminaire classification according to CIE: 0  
CIE flux code: 00 00 12 00 77  
Fitting: 1 x A26K (Correction Factor 1.000).



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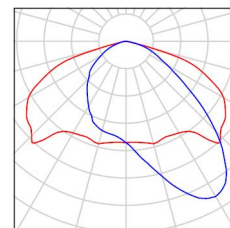
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaire parts list

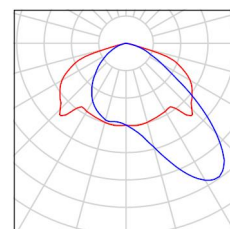
53 Pieces Neri Light 020 TRA TYPE 1 100W ST  
XX020A21133ST  
Article No.: Light 020 TRA TYPE 1 100W ST  
Luminous flux (Luminaire): 7430 lm  
Luminous flux (Lamps): 10000 lm  
Luminaire Wattage: 100.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 37 74 97 100 74  
Fitting: 1 x NAV-T 100 SUPER 4Y (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



22 Pieces Neri Light 020 TRA TYPE 1 70W ST  
XX020A21132ST  
Article No.: Light 020 TRA TYPE 1 70W ST  
Luminous flux (Luminaire): 4732 lm  
Luminous flux (Lamps): 6600 lm  
Luminaire Wattage: 70.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 38 75 97 100 72  
Fitting: 1 x NAV-T 70 SUPER 4Y (Correction Factor 1.000).

See our luminaire catalog for an image of the luminaire.



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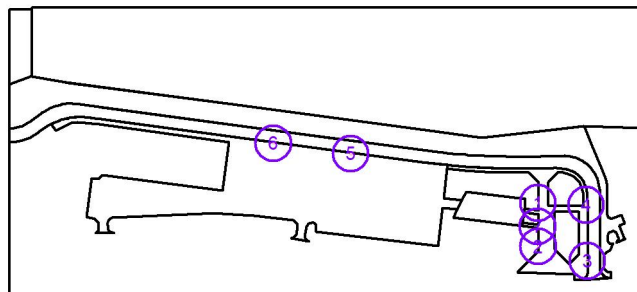
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaires (coordinates list)

### IGUZZINI BU91 MAXIWOODY family 28,4W

2646 lm, 28.4 W, 1 x 1 x LW64 (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	408.585	1942.569	6.000	-20.0	0.0	-130.0
2	408.645	1920.474	6.000	-20.0	0.0	-80.0
3	433.624	1913.151	6.800	-25.0	0.0	30.0
4	433.072	1941.505	6.800	-25.0	0.0	150.0
5	313.546	1967.360	6.800	30.0	0.0	75.0
6	274.221	1972.616	6.800	30.0	0.0	-75.0
7	408.559	1930.642	6.000	-20.0	0.0	-90.0

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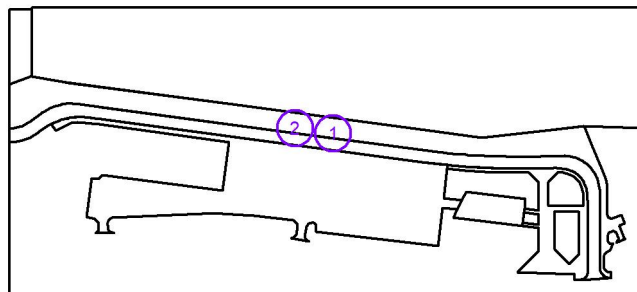
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaires (coordinates list)

### IGUZZINI BU93 MAXIWOODY family 28,4W

2649 lm, 28.4 W, 1 x 1 x LW64 (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	304.620	1977.642	4.800	75.0	0.0	100.0
2	285.339	1980.346	4.800	75.0	0.0	-115.0

SIA "Gaismas Stils"

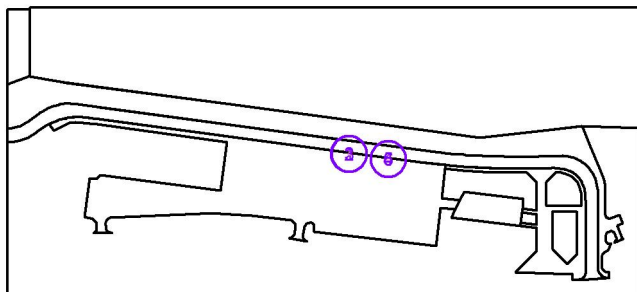
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaires (coordinates list)

### IGUZZINI BU99\_BZD8 MAXIWOODY family 42.7W

3919 lm, 42.7 W, 1 x 1 x LW66 (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	313.725	1967.279	6.800	0.0	90.0	115.0
2	313.832	1967.287	6.800	0.0	-90.0	-135.0
3	313.786	1967.247	7.300	-25.0	0.0	175.0
4	333.671	1964.630	6.800	0.0	90.0	120.0
5	333.778	1964.638	6.800	0.0	-90.0	-125.0
6	333.732	1964.598	7.300	-25.0	0.0	175.0



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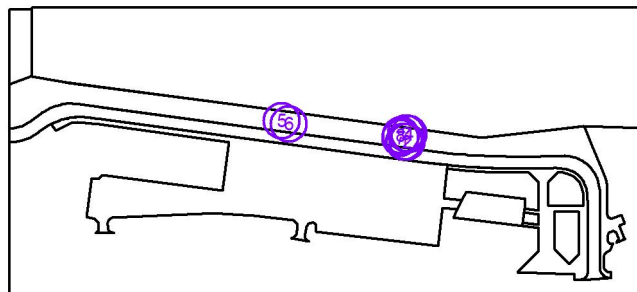
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaires (coordinates list)

### IGUZZINI BV87\_X203 Light Up Earth 16.5W

247 lm, 16.5 W, 1 x 1 x B37A (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	340.769	1973.518	0.000	0.0	0.0	84.9
2	342.269	1973.384	0.000	0.0	0.0	84.9
3	341.685	1977.773	0.000	0.0	0.0	-104.7
4	343.141	1977.391	0.000	0.0	0.0	-104.7
5	278.552	1984.049	0.000	0.0	0.0	-25.3
6	282.100	1982.434	0.000	0.0	0.0	154.7
7	338.809	1975.449	0.000	0.0	0.0	-10.0
8	339.026	1976.681	0.000	0.0	0.0	-10.0

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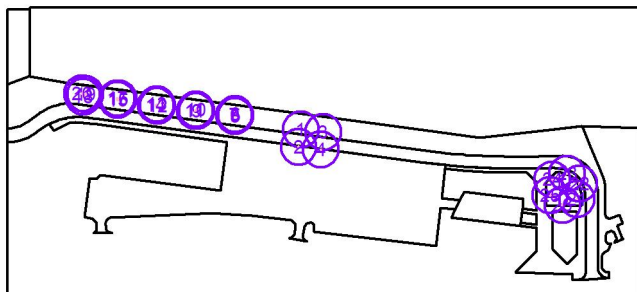
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaires (coordinates list)

### IGUZZINI E143\_X203 Light Up Earth 12.1W

1112 lm, 12.1 W, 1 x 1 x A26K (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	289.206	1979.722	0.050	10.0	0.0	20.0
2	288.044	1970.939	0.050	10.0	0.0	150.0
3	300.620	1978.227	0.050	10.0	0.0	-30.0
4	299.472	1969.488	0.050	10.0	0.0	-140.0
5	256.306	1986.790	0.000	0.0	0.0	-8.9
6	255.890	1987.362	0.000	0.0	0.0	81.1
7	255.318	1986.946	0.000	0.0	0.0	171.1
8	255.734	1986.374	0.000	0.0	0.0	-98.9
9	236.351	1989.047	0.000	0.0	0.0	-38.4
10	236.032	1989.852	0.000	0.0	0.0	81.6
11	235.494	1989.173	0.000	0.0	0.0	-158.4
12	216.503	1991.698	0.000	0.0	0.0	-38.4
13	216.184	1992.503	0.000	0.0	0.0	81.6
14	215.646	1991.824	0.000	0.0	0.0	-158.4
15	196.216	1994.532	0.000	0.0	0.0	-100.7
16	196.781	1995.189	0.000	0.0	0.0	19.3
17	195.930	1995.349	0.000	0.0	0.0	139.3
18	178.753	1996.273	0.000	0.0	0.0	-100.7
19	179.882	1997.587	0.000	0.0	0.0	19.3
20	178.180	1997.908	0.000	0.0	0.0	139.3
21	429.507	1944.433	0.000	0.0	-5.0	-38.4
22	430.670	1952.348	0.000	0.0	-5.0	21.6
23	424.397	1957.313	0.000	0.0	-5.0	81.6
24	416.961	1954.363	0.000	0.0	-5.0	141.6
25	415.798	1946.448	0.000	0.0	-5.0	-158.4
26	422.071	1941.483	0.000	0.0	-5.0	-98.4

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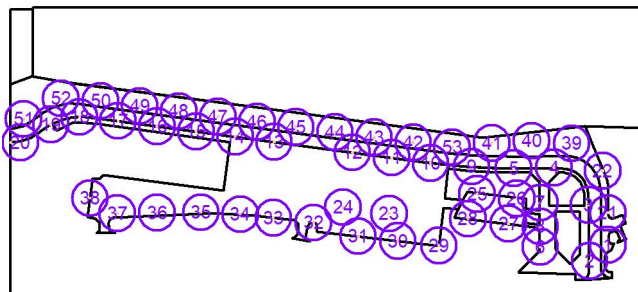
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaires (coordinates list)

### Neri Light 020 TRA TYPE 1 100W ST XX020A21133ST

7430 lm, 100.0 W, 1 x 1 x NAV-T 100 SUPER 4Y (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	443.588	1921.380	5.450	0.0	0.0	90.0
2	434.357	1913.141	7.455	0.0	0.0	-90.0
3	433.818	1941.525	7.455	0.0	0.0	-90.0
4	416.319	1960.374	7.455	0.0	0.0	0.0
5	395.761	1960.056	7.455	0.0	0.0	0.0
6	409.271	1920.409	6.876	0.0	0.0	-90.0
7	409.206	1942.625	6.876	0.0	0.0	-90.0
8	409.184	1930.577	6.876	0.0	0.0	-90.0
9	374.424	1960.860	7.455	0.0	0.0	0.0
10	353.536	1962.805	7.455	0.0	0.0	-5.7
11	333.805	1965.427	7.455	0.0	0.0	-5.7
12	313.836	1968.047	7.455	0.0	0.0	-5.7
13	274.119	1973.327	7.455	0.0	0.0	-5.7
14	254.362	1976.046	7.455	0.0	0.0	-7.2
15	234.545	1978.654	7.455	0.0	0.0	-7.2
16	214.718	1981.337	7.455	0.0	0.0	-7.2
17	194.888	1983.978	7.455	0.0	0.0	-7.2
18	175.446	1986.025	7.455	0.0	0.0	0.5
19	160.749	1982.256	7.455	0.0	0.0	31.3
20	140.417	1973.232	7.455	0.0	0.0	1.0
21	443.551	1937.507	5.450	0.0	0.0	90.0
22	440.913	1958.826	5.450	0.0	0.0	116.7
23	332.552	1937.178	5.450	0.0	0.0	176.5
24	309.159	1940.397	5.450	0.0	0.0	176.5
25	377.239	1947.088	5.450	0.0	0.0	176.5
26	397.264	1944.784	5.450	0.0	0.0	176.5
27	393.167	1932.069	5.450	0.0	0.0	-4.5
28	372.572	1934.571	5.450	0.0	0.0	-4.5

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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaires (coordinates list)

No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
29	357.807	1921.069	7.455	0.0	0.0	39.0
30	336.917	1923.327	7.455	0.0	0.0	-4.1
31	316.829	1925.682	7.455	0.0	0.0	-4.1
32	294.228	1932.549	7.455	0.0	0.0	-4.1
33	273.753	1934.953	7.455	0.0	0.0	-4.1
34	256.994	1936.838	7.455	0.0	0.0	-4.1
35	237.013	1937.816	7.455	0.0	0.0	0.1
36	214.750	1937.568	7.455	0.0	0.0	0.1
37	194.603	1937.253	7.455	0.0	0.0	0.1
38	180.616	1944.967	7.455	0.0	0.0	-99.6
39	425.151	1972.631	4.425	0.0	0.0	-27.3
40	404.867	1973.875	4.425	0.0	0.0	0.2
41	384.762	1972.836	4.425	0.0	0.0	0.2
42	344.721	1973.006	4.425	0.0	0.0	-4.6
43	324.877	1975.670	4.425	0.0	0.0	-4.6
44	305.075	1978.272	4.425	0.0	0.0	-4.6
45	285.225	1981.040	4.425	0.0	0.0	-4.6
46	265.474	1983.552	4.425	0.0	0.0	-4.6
47	245.602	1986.240	4.425	0.0	0.0	-4.6
48	225.775	1988.857	4.425	0.0	0.0	-4.6
49	205.975	1991.488	4.425	0.0	0.0	-4.6
50	186.098	1994.116	4.425	0.0	0.0	-4.6
51	147.038	1984.989	4.425	0.0	0.0	28.8
52	165.940	1995.346	4.425	0.0	0.0	7.4
53	364.551	1970.663	4.425	0.0	0.0	-4.6

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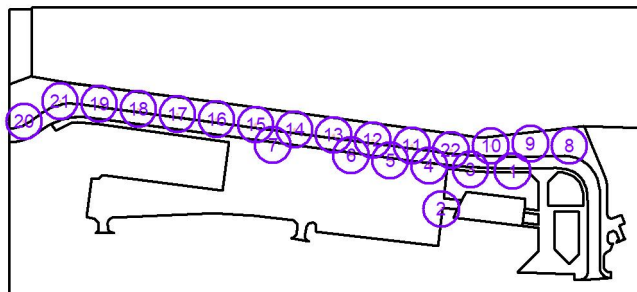
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## Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / Luminaires (coordinates list)

### Neri Light 020 TRA TYPE 1 70W ST XX020A21132ST

4732 lm, 70.0 W, 1 x 1 x NAV-T 70 SUPER 4Y (Correction Factor 1.000).



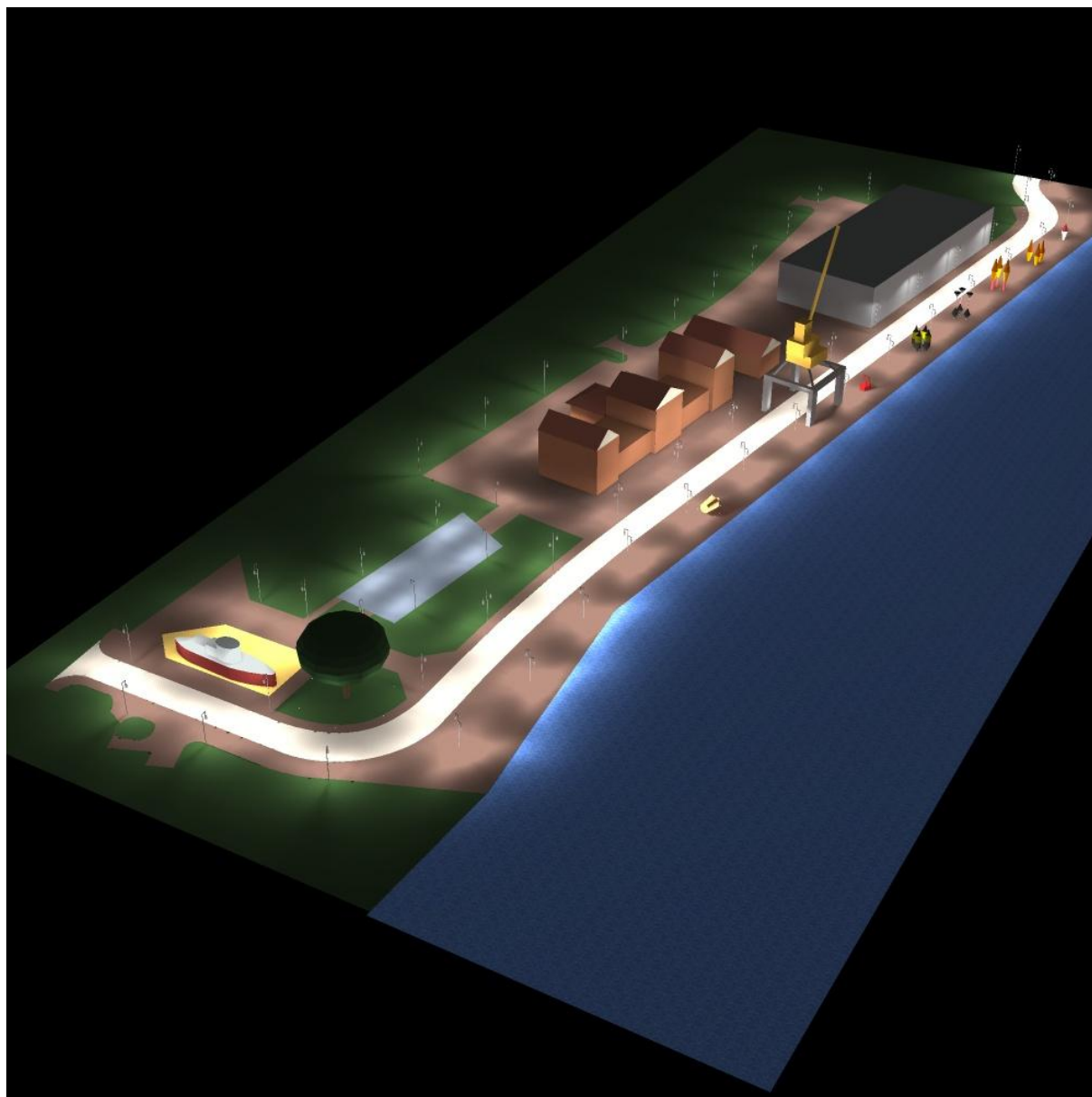
No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	395.768	1958.562	5.570	0.0	0.0	-180.0
2	359.544	1939.441	4.876	0.0	0.0	82.2
3	374.430	1959.367	5.570	0.0	0.0	-180.0
4	353.379	1961.331	5.570	0.0	0.0	173.5
5	333.648	1963.953	5.570	0.0	0.0	173.5
6	313.679	1966.573	5.570	0.0	0.0	173.5
7	273.962	1971.853	5.570	0.0	0.0	173.5
8	424.520	1971.292	5.570	0.0	0.0	154.7
9	404.817	1972.385	5.570	0.0	0.0	179.9
10	384.712	1971.346	5.570	0.0	0.0	179.9
11	344.560	1971.537	5.570	0.0	0.0	175.8
12	324.715	1974.202	5.570	0.0	0.0	175.8
13	304.913	1976.804	5.570	0.0	0.0	175.8
14	285.064	1979.571	5.570	0.0	0.0	175.8
15	265.312	1982.084	5.570	0.0	0.0	175.8
16	245.440	1984.772	5.570	0.0	0.0	175.8
17	225.614	1987.388	5.570	0.0	0.0	175.8
18	205.814	1990.019	5.570	0.0	0.0	175.8
19	185.937	1992.648	5.570	0.0	0.0	175.8
20	147.743	1983.687	5.570	0.0	0.0	-150.1
21	166.048	1993.863	5.570	0.0	0.0	-173.9
22	364.390	1969.195	5.570	0.0	0.0	175.8

SIA "Gaismas Stils"

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**Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / 3D  
Rendering**

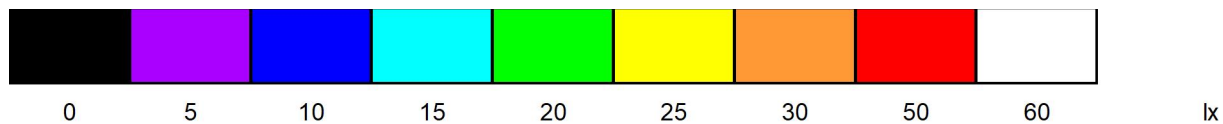
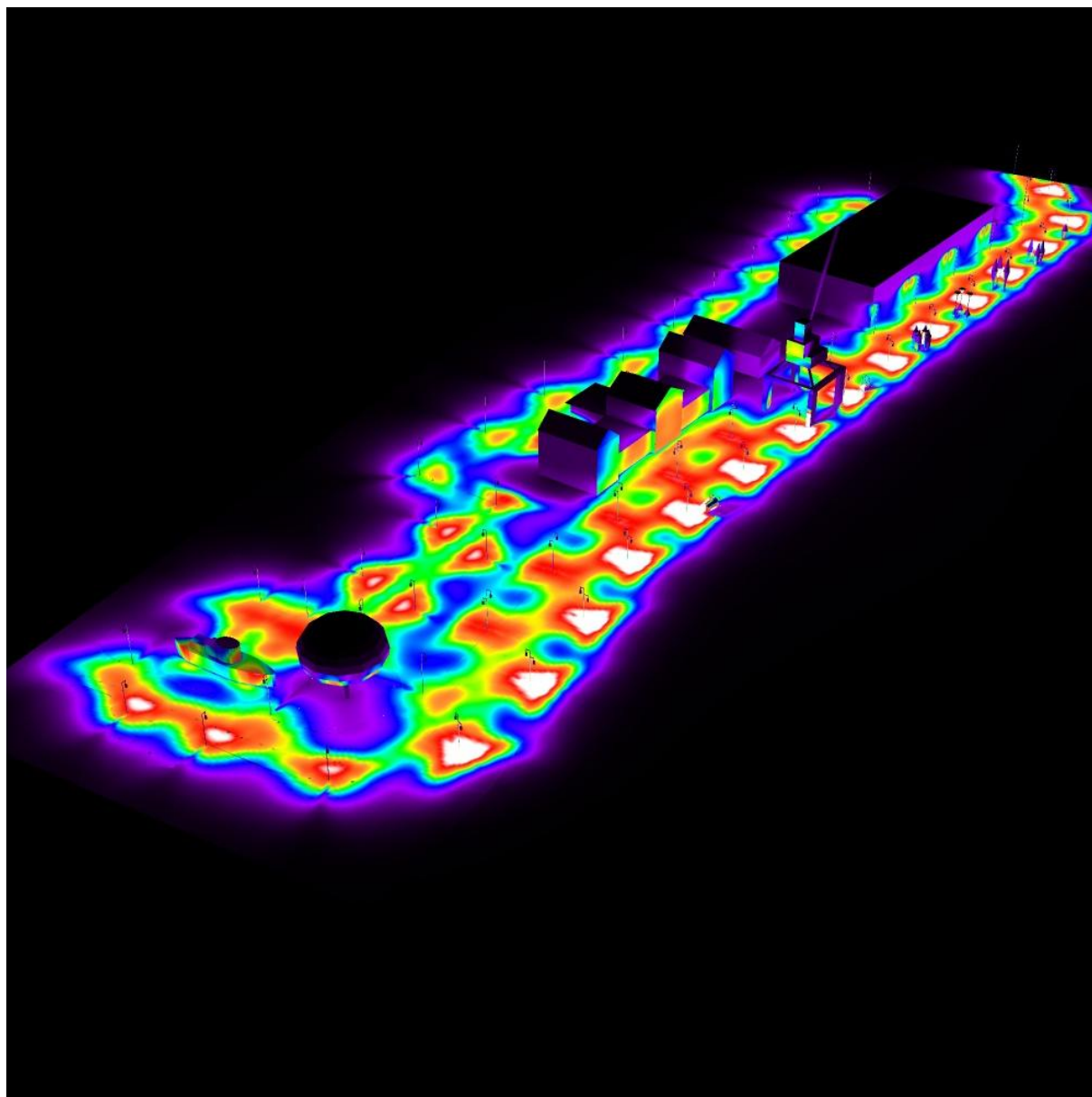


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**Ventspils, Promenādes apgaismojums NERI Chara - kopējais 07.03.2018 / False  
Colour Rendering**



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 e-Mail janis.skutans@gaismasstils.lv

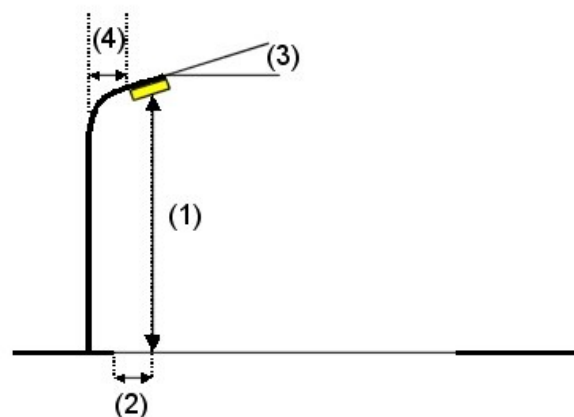
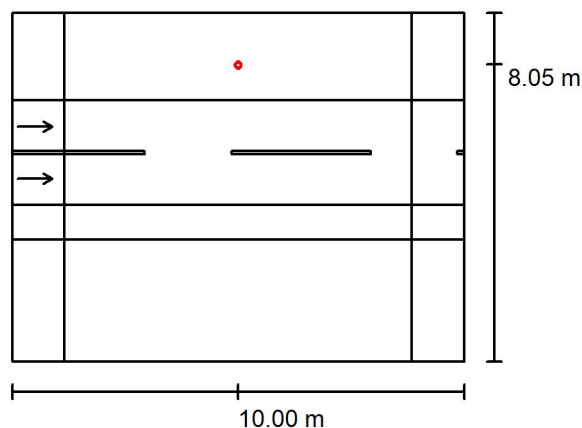
## Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / Planning data

### Street Profile

Sidewalk 1	(Width: 5.000 m)
Roadway 1	(Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)
Bicycle Lane 1	(Width: 2.000 m)
Sidewalk 2	(Width: 7.000 m)

Maintenance factor: 0.70

### Luminaire Arrangements



Luminaire:	Neri Light 020 TRA TYPE 1 100W ST XX020A21133ST
Luminous flux (Luminaire):	7430 lm
Luminous flux (Lamps):	10000 lm
Luminaire Wattage:	100.0 W
Arrangement:	Single row, top
Pole Distance:	20.000 m
Mounting Height (1):	7.455 m
Height:	6.877 m
Overhang (2):	-2.000 m
Boom Angle (3):	5.0 °
Boom Length (4):	0.000 m

#### Maximum luminous intensities

at 70°:	363 cd/klm
at 80°:	65 cd/klm
at 90°:	0.93 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



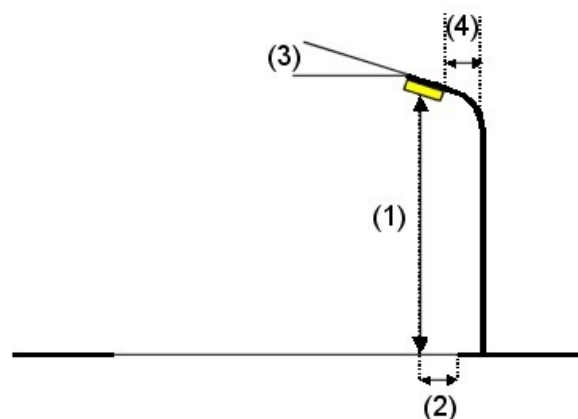
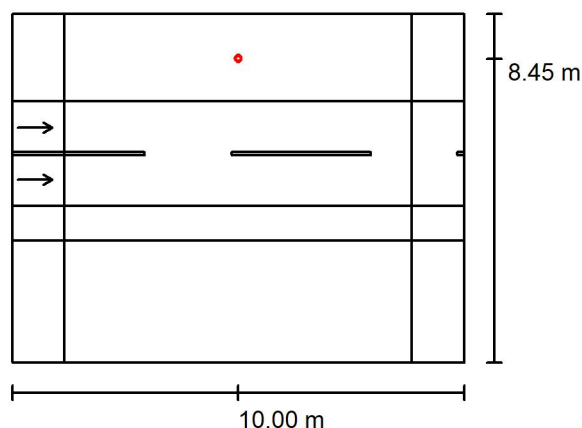
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## Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / Planning data

### Luminaire Arrangements



Luminaire: Neri Light 020 TRA TYPE 1 70W ST XX020A21132ST  
Luminous flux (Luminaire): 4732 lm  
Luminous flux (Lamps): 6600 lm  
Luminaire Wattage: 70.0 W  
Arrangement: Single row, bottom  
Pole Distance: 20.000 m  
Mounting Height (1): 5.570 m  
Height: 4.992 m  
Overhang (2): 8.500 m  
Boom Angle (3): 5.0 °  
Boom Length (4): 0.000 m

Maximum luminous intensities

at 70°: 398 cd/klm

at 80°: 92 cd/klm

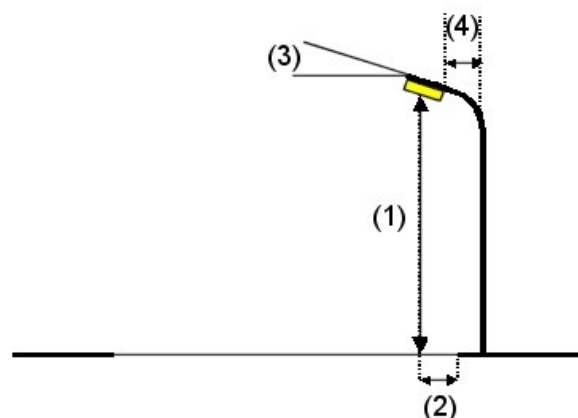
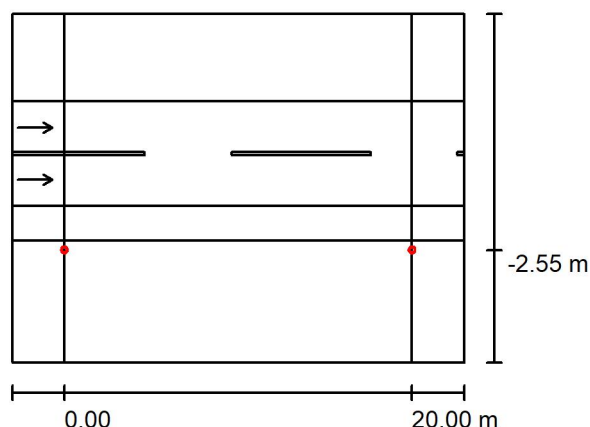
at 90°: 0.81 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.5.



Luminaire: Neri Light 020 TRA TYPE 1 100W ST XX020A21133ST  
Luminous flux (Luminaire): 7430 lm  
Luminous flux (Lamps): 10000 lm  
Luminaire Wattage: 100.0 W  
Arrangement: Single row, bottom  
Pole Distance: 20.000 m  
Mounting Height (1): 5.570 m  
Height: 4.992 m  
Overhang (2): -2.500 m  
Boom Angle (3): 5.0 °  
Boom Length (4): 0.000 m

Maximum luminous intensities

at 70°: 363 cd/klm

at 80°: 65 cd/klm

at 90°: 0.93 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.

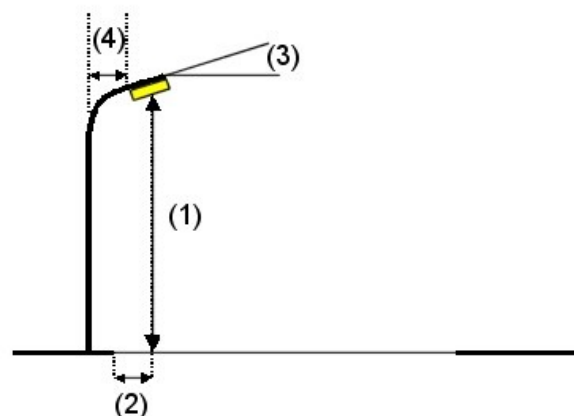
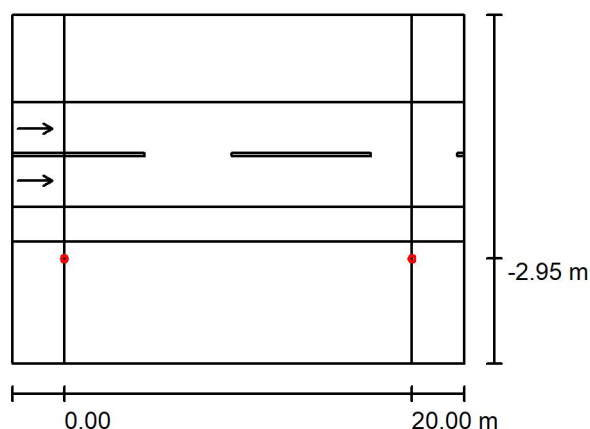
SIA "Gaismas Stils"

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e-Mail janis.skutans@gaismasstils.lv

## Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / Planning data

### Luminaire Arrangements



Luminaire:	Neri Light 020 TRA TYPE 1 70W ST XX020A21132ST
Luminous flux (Luminaire):	4732 lm
Luminous flux (Lamps):	6600 lm
Luminaire Wattage:	70.0 W
Arrangement:	Single row, top
Pole Distance:	20.000 m
Mounting Height (1):	4.425 m
Height:	3.847 m
Overhang (2):	9.000 m
Boom Angle (3):	5.0 °
Boom Length (4):	0.000 m

#### Maximum luminous intensities

at 70°:	398 cd/klm
at 80°:	92 cd/klm
at 90°:	0.81 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.5.

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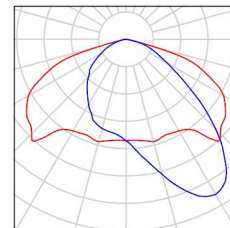
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## Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / Luminaire parts list

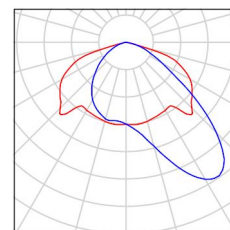
Neri Light 020 TRA TYPE 1 100W ST  
XX020A21133ST  
Article No.: Light 020 TRA TYPE 1 100W ST  
Luminous flux (Luminaire): 7430 lm  
Luminous flux (Lamps): 10000 lm  
Luminaire Wattage: 100.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 37 74 97 100 74  
Fitting: 1 x NAV-T 100 SUPER 4Y (Correction  
Factor 1.000).

See our luminaire  
catalog for an image of  
the luminaire.



Neri Light 020 TRA TYPE 1 70W ST  
XX020A21132ST  
Article No.: Light 020 TRA TYPE 1 70W ST  
Luminous flux (Luminaire): 4732 lm  
Luminous flux (Lamps): 6600 lm  
Luminaire Wattage: 70.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 38 75 97 100 72  
Fitting: 1 x NAV-T 70 SUPER 4Y (Correction  
Factor 1.000).

See our luminaire  
catalog for an image of  
the luminaire.

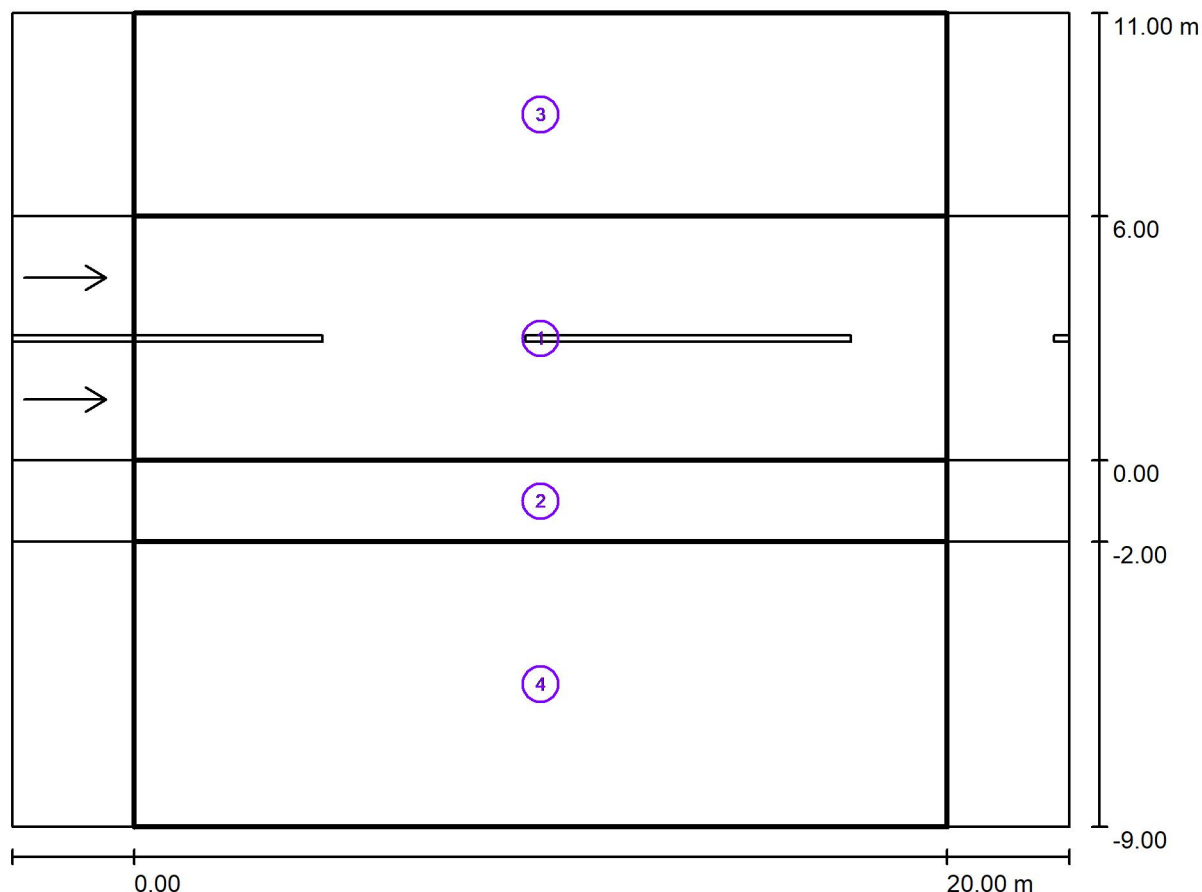


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## Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / Photometric Results



Maintenance factor: 0.70

Scale 1:186

### Calculation Field List

- Valuation Field Roadway 1  
Length: 20.000 m, Width: 6.000 m  
Grid: 10 x 6 Points  
Accompanying Street Elements: Roadway 1.  
Tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.93	0.80	0.77	7	0.91
Required values according to class:	$\geq 0.50$	$\geq 0.35$	$\geq 0.40$	$\leq 15$	$\geq 0.50$
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓

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## Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / Photometric Results

### Calculation Field List

#### 2 Valuation Field Bicycle Lane 1

Length: 20.000 m, Width: 2.000 m

Grid: 10 x 3 Points

Accompanying Street Elements: Bicycle Lane 1.

Selected Lighting Class: S1

(Not all lighting performance requirements are met.)

	$E_{av}$ [lx]	$E_{min}$ [lx]
Calculated values:	44.02	17.92
Required values according to class:	$\geq 15.00$	$\geq 5.00$
Fulfilled/Not fulfilled:	 1	

<sup>1</sup> Notice: To provide for uniformity, the actual value of the maintained average illuminance may not exceed 1.5 times the minimum value indicated for the class.

#### 3 Valuation Field Sidewalk 1

Length: 20.000 m, Width: 5.000 m

Grid: 10 x 4 Points

Accompanying Street Elements: Sidewalk 1.

Selected Lighting Class: CE5

(All lighting performance requirements are met.)

	$E_{av}$ [lx]	U0
Calculated values:	29.29	0.47
Required values according to class:	$\geq 7.50$	$\geq 0.40$
Fulfilled/Not fulfilled:		

#### 4 Valuation Field Sidewalk 2

Length: 20.000 m, Width: 7.000 m

Grid: 10 x 5 Points

Accompanying Street Elements: Sidewalk 2.

Selected Lighting Class: CE5

(Not all lighting performance requirements are met.)

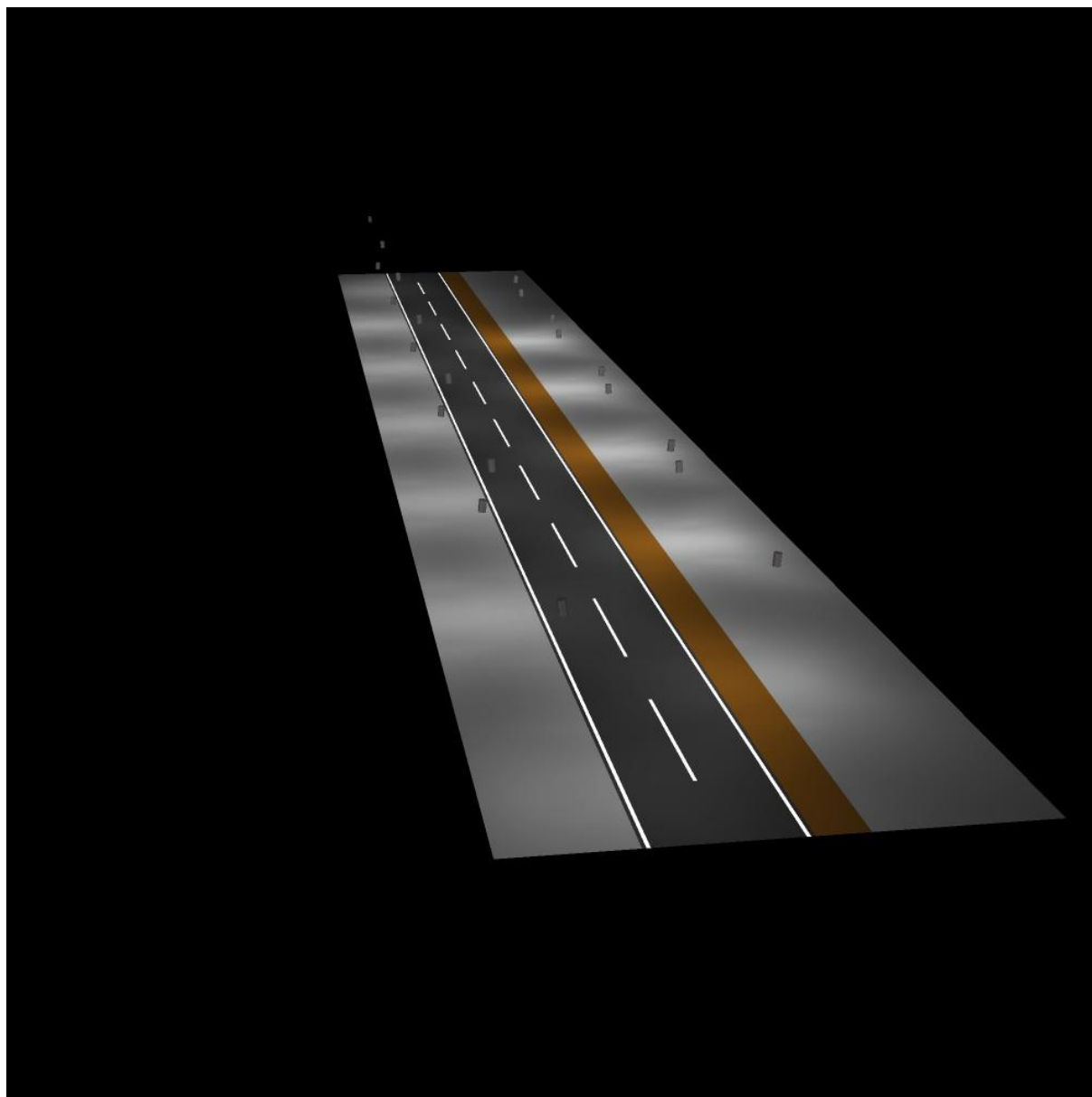
	$E_{av}$ [lx]	U0
Calculated values:	30.61	0.39
Required values according to class:	$\geq 7.50$	$\geq 0.40$
Fulfilled/Not fulfilled:		

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**Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / 3D  
Rendering**

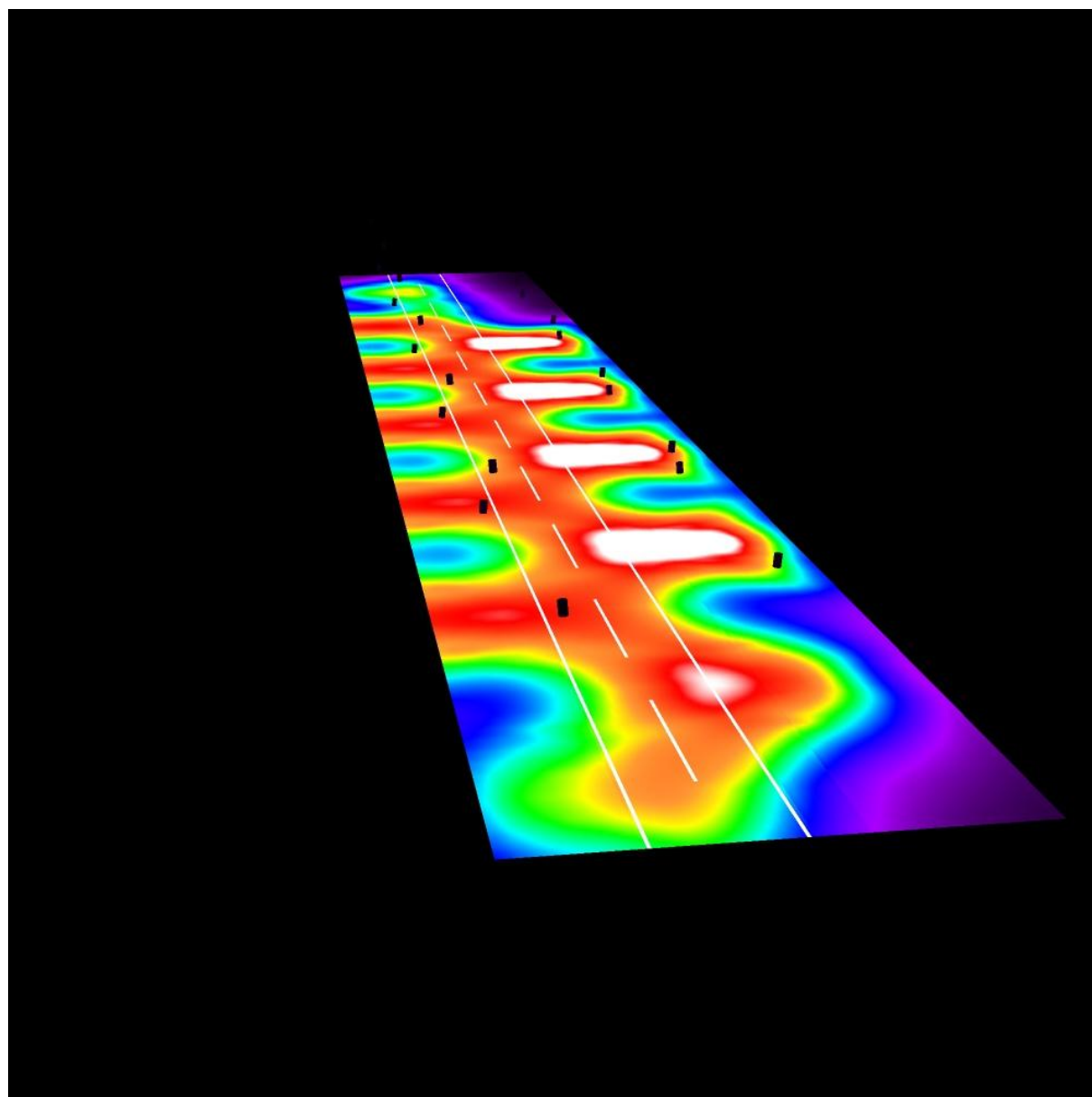


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**Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / False  
Colour Rendering**



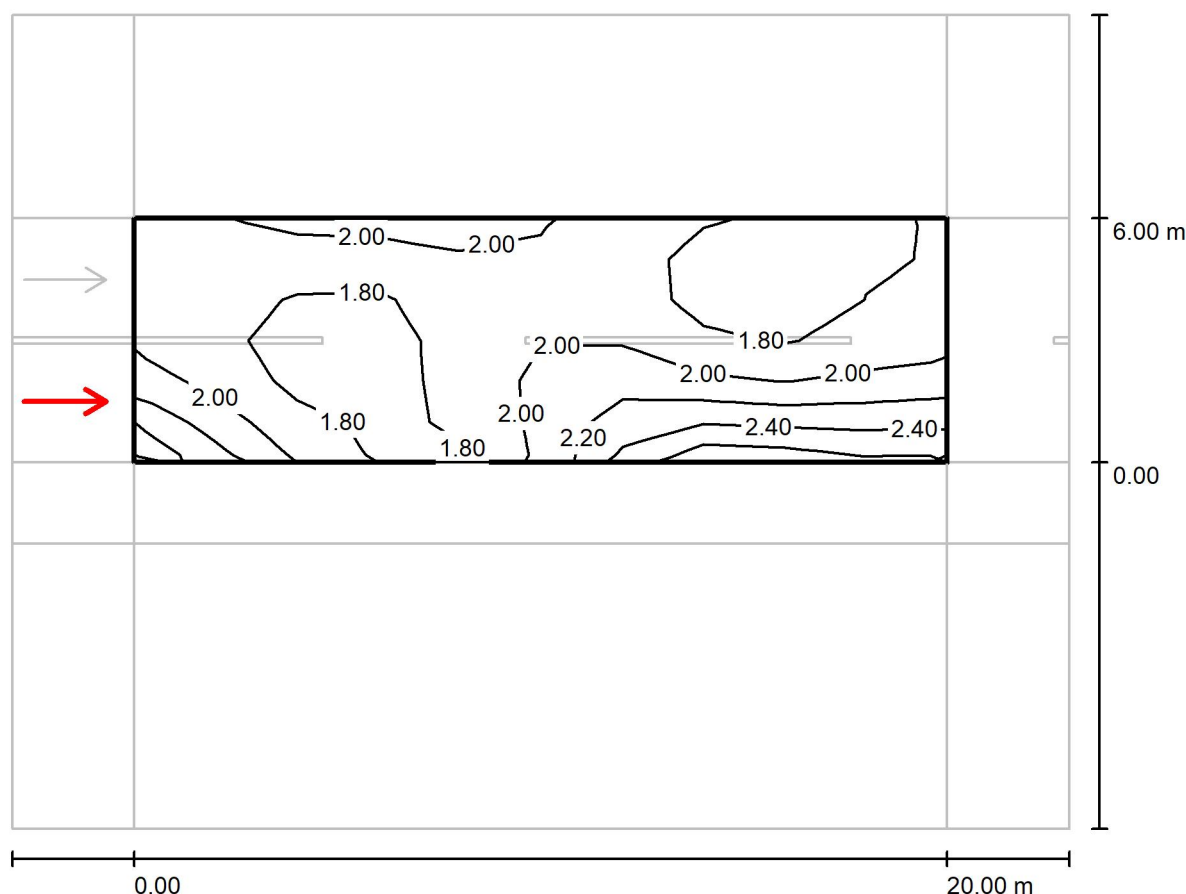
0 5 10 15 20 25 30 50 60 lx

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# Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / Valuation Field Roadway 1 / Observer 1 / Isolines (L)


Values in Candela/m<sup>2</sup>, Scale 1 : 186

Grid: 10 x 6 Points

Observer Position: (-60.000 m, 1.500 m, 1.500 m)

tarmac: R3, q0: 0.070

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]
Calculated values:	1.95	0.83	0.77	7
Required values according to class ME5:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15
Fulfilled/Not fulfilled:	✓	✓	✓	✓

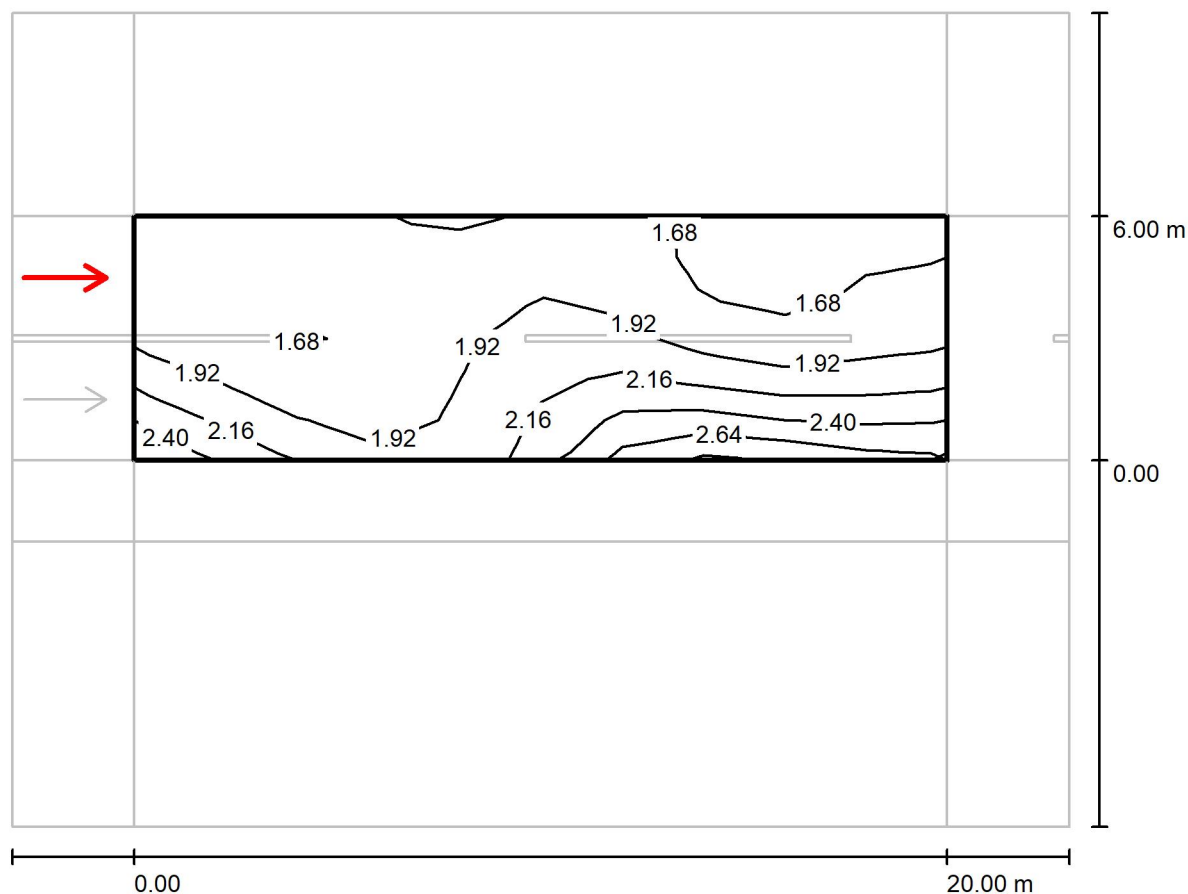


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# Ventspils, Promenādes apgaismojums - ielas aprēķins 1. posms - 09.03.2018 / Valuation Field Roadway 1 / Observer 2 / Isolines (L)


Values in Candela/m<sup>2</sup>, Scale 1 : 186

Grid: 10 x 6 Points

Observer Position: (-60.000 m, 4.500 m, 1.500 m)

tarmac: R3, q0: 0.070

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]
Calculated values:	1.93	0.80	0.81	4
Required values according to class ME5:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15
Fulfilled/Not fulfilled:	✓	✓	✓	✓

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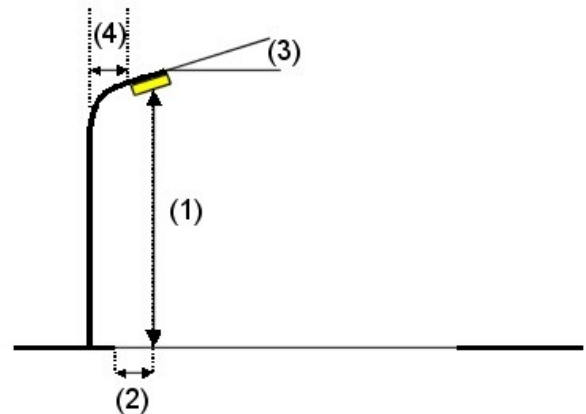
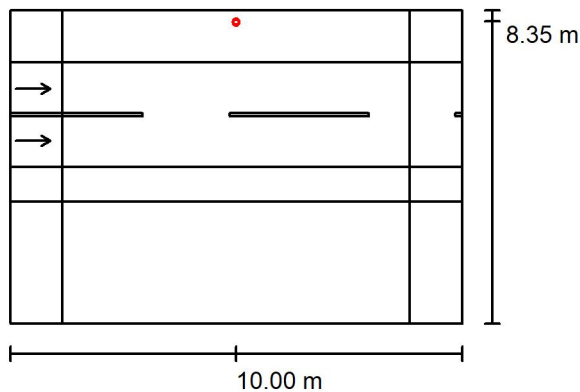
## Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / Planning data

### Street Profile

Sidewalk 1	(Width: 3.000 m)
Roadway 1	(Width: 6.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)
Bicycle Lane 1	(Width: 2.000 m)
Sidewalk 2	(Width: 7.000 m)

Maintenance factor: 0.90

### Luminaire Arrangements



Luminaire:	Neri Light 020 TRA TYPE 1 100W ST XX020A21133ST
Luminous flux (Luminaire):	7430 lm
Luminous flux (Lamps):	10000 lm
Luminaire Wattage:	100.0 W
Arrangement:	Single row, top
Pole Distance:	20.000 m
Mounting Height (1):	7.455 m
Height:	6.877 m
Overhang (2):	-2.300 m
Boom Angle (3):	5.0 °
Boom Length (4):	0.000 m

#### Maximum luminous intensities

at 70°:	363 cd/klm
at 80°:	65 cd/klm
at 90°:	0.93 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.

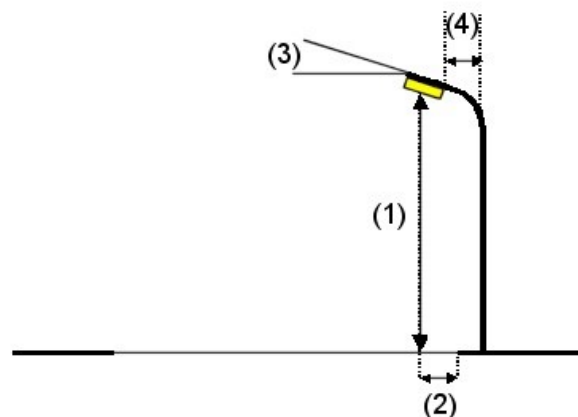
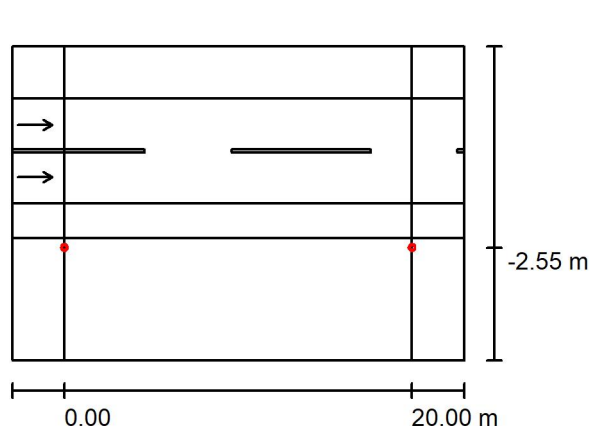
SIA "Gaismas Stils"

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## Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / Planning data

### Luminaire Arrangements



Luminaire: Neri Light 020 TRA TYPE 1 100W ST XX020A21133ST  
Luminous flux (Luminaire): 7430 lm  
Luminous flux (Lamps): 10000 lm  
Luminaire Wattage: 100.0 W  
Arrangement: Single row, bottom  
Pole Distance: 20.000 m  
Mounting Height (1): 5.570 m  
Height: 4.992 m  
Overhang (2): -2.500 m  
Boom Angle (3): 5.0 °  
Boom Length (4): 0.000 m

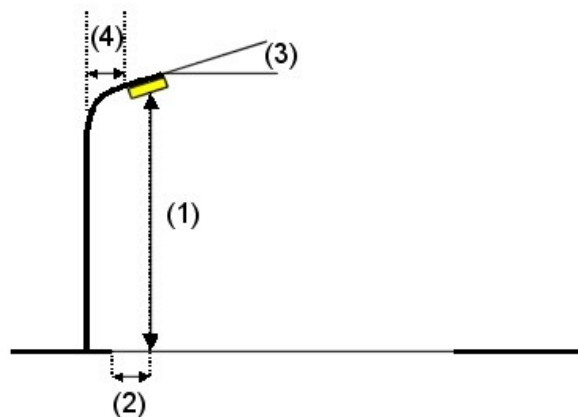
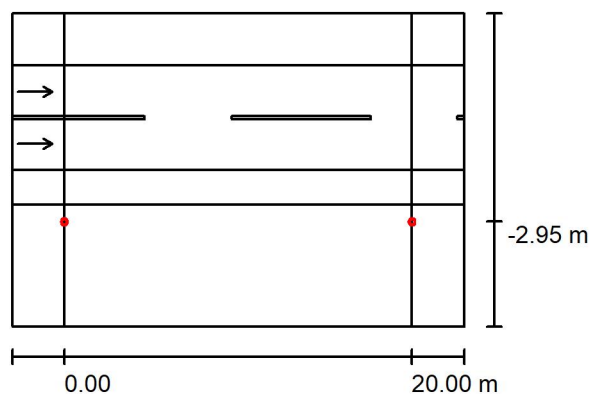
Maximum luminous intensities  
at 70°: 363 cd/klm  
at 80°: 65 cd/klm  
at 90°: 0.93 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.6.



Luminaire: Neri Light 020 TRA TYPE 1 70W ST XX020A21132ST  
Luminous flux (Luminaire): 4732 lm  
Luminous flux (Lamps): 6600 lm  
Luminaire Wattage: 70.0 W  
Arrangement: Single row, top  
Pole Distance: 20.000 m  
Mounting Height (1): 4.425 m  
Height: 3.847 m  
Overhang (2): 9.000 m  
Boom Angle (3): 5.0 °  
Boom Length (4): 0.000 m

Maximum luminous intensities  
at 70°: 398 cd/klm  
at 80°: 92 cd/klm  
at 90°: 0.81 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

No luminous intensities above 95°.

Arrangement complies with luminous intensity class G4.

Arrangement complies with glare index class D.5.

SIA "Gaismas Stils"

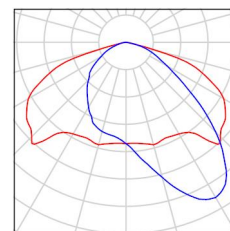
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e-Mail janis.skutans@gaismasstils.lv

## Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / Luminaire parts list

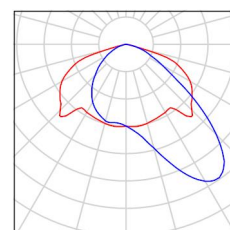
Neri Light 020 TRA TYPE 1 100W ST  
XX020A21133ST  
Article No.: Light 020 TRA TYPE 1 100W ST  
Luminous flux (Luminaire): 7430 lm  
Luminous flux (Lamps): 10000 lm  
Luminaire Wattage: 100.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 37 74 97 100 74  
Fitting: 1 x NAV-T 100 SUPER 4Y (Correction  
Factor 1.000).

See our luminaire  
catalog for an image of  
the luminaire.



Neri Light 020 TRA TYPE 1 70W ST  
XX020A21132ST  
Article No.: Light 020 TRA TYPE 1 70W ST  
Luminous flux (Luminaire): 4732 lm  
Luminous flux (Lamps): 6600 lm  
Luminaire Wattage: 70.0 W  
Luminaire classification according to CIE: 100  
CIE flux code: 38 75 97 100 72  
Fitting: 1 x NAV-T 70 SUPER 4Y (Correction  
Factor 1.000).

See our luminaire  
catalog for an image of  
the luminaire.

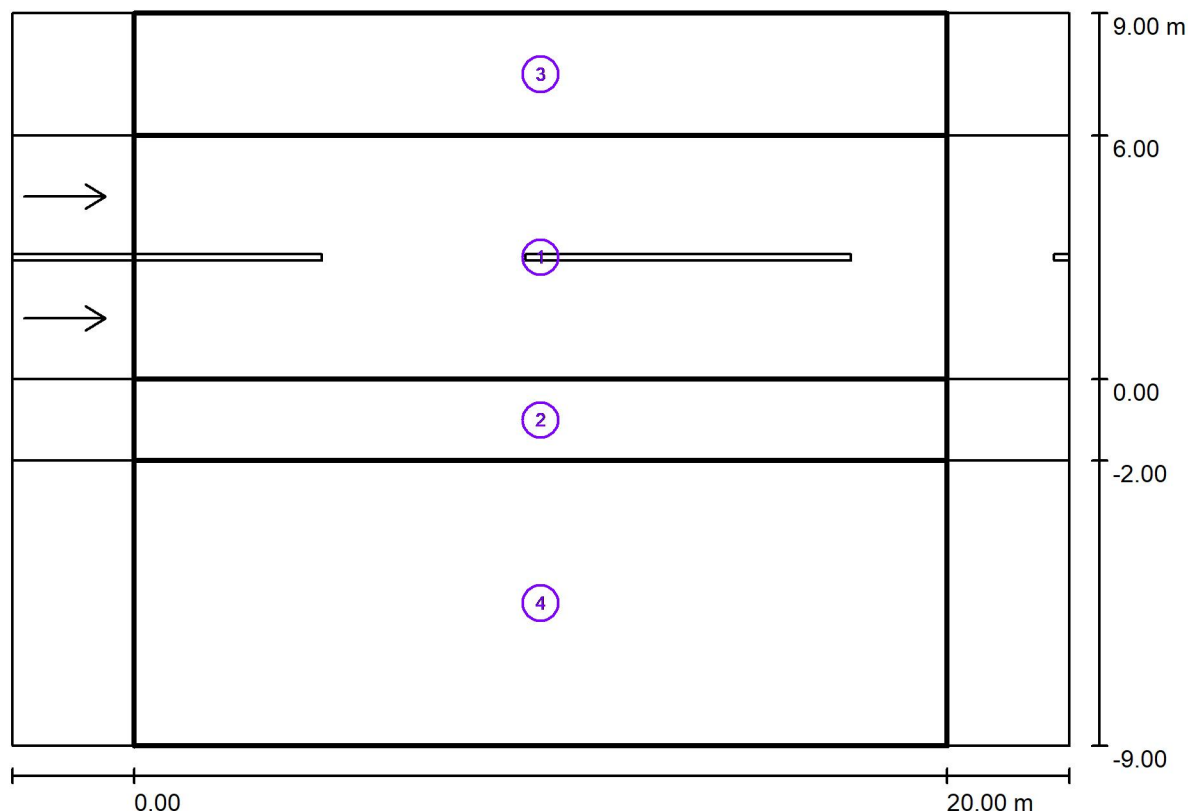


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## Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / Photometric Results



Maintenance factor: 0.90

Scale 1:186

### Calculation Field List

- Valuation Field Roadway 1  
Length: 20.000 m, Width: 6.000 m  
Grid: 10 x 6 Points  
Accompanying Street Elements: Roadway 1.  
tarmac: R3, q0: 0.070  
Selected Lighting Class: ME5

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	2.26	0.72	0.75	7	0.85
Required values according to class:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓

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## Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / Photometric Results

### Calculation Field List

#### 2 Valuation Field Bicycle Lane 1

Length: 20.000 m, Width: 2.000 m

Grid: 10 x 3 Points

Accompanying Street Elements: Bicycle Lane 1.

Selected Lighting Class: S1 (Not all lighting performance requirements are met.)

	$E_{av}$ [lx]	$E_{min}$ [lx]
Calculated values:	55.05	21.87
Required values according to class:	$\geq 15.00$	$\geq 5.00$
Fulfilled/Not fulfilled:		

<sup>1</sup> Notice: To provide for uniformity, the actual value of the maintained average illuminance may not exceed 1.5 times the minimum value indicated for the class.

#### 3 Valuation Field Sidewalk 1

Length: 20.000 m, Width: 3.000 m

Grid: 10 x 3 Points

Accompanying Street Elements: Sidewalk 1.

Selected Lighting Class: CE5 (All lighting performance requirements are met.)

	$E_{av}$ [lx]	U0
Calculated values:	25.30	0.54
Required values according to class:	$\geq 7.50$	$\geq 0.40$
Fulfilled/Not fulfilled:		

#### 4 Valuation Field Sidewalk 2

Length: 20.000 m, Width: 7.000 m

Grid: 10 x 5 Points

Accompanying Street Elements: Sidewalk 2.

Selected Lighting Class: CE5 (Not all lighting performance requirements are met.)

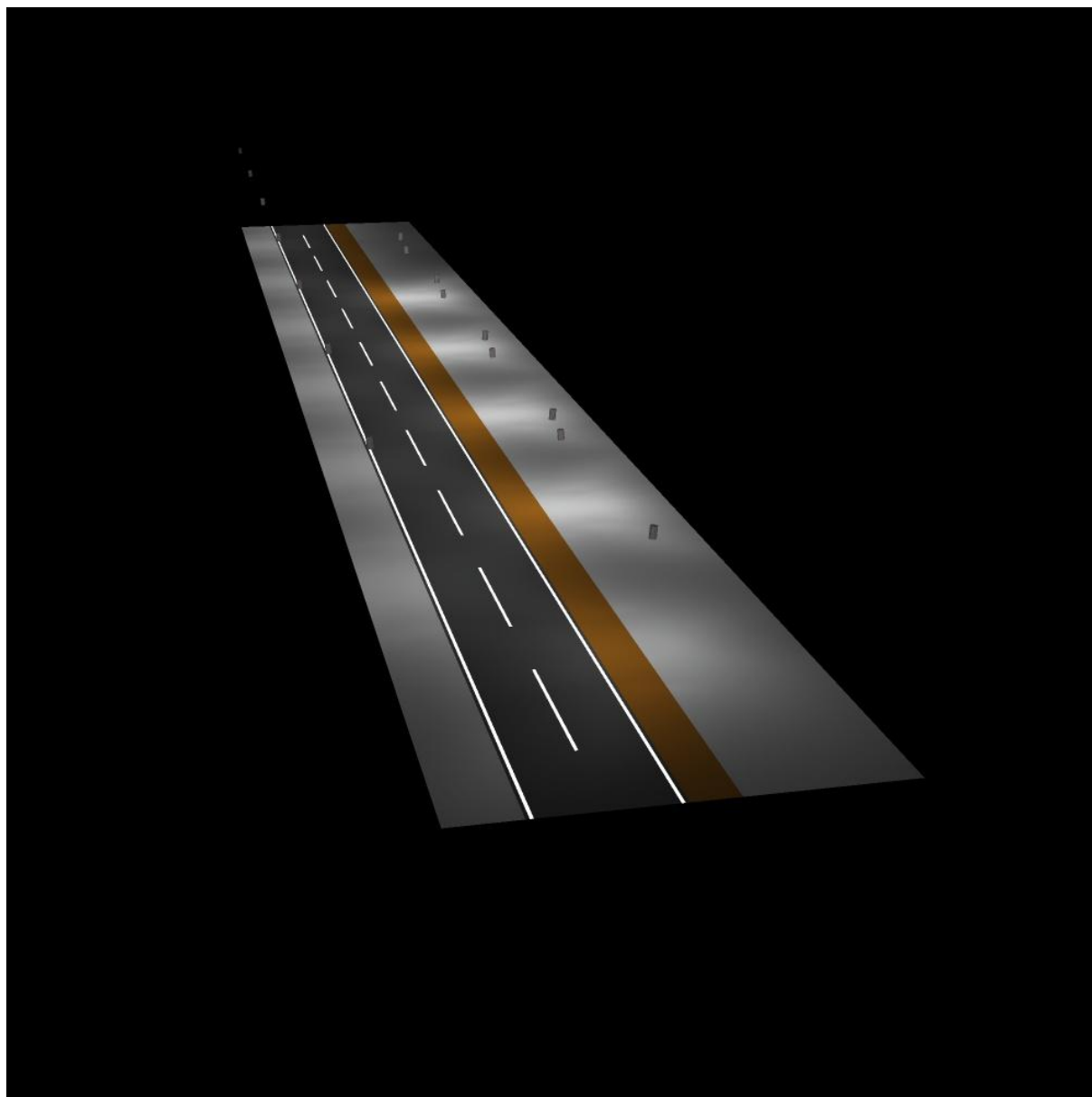
	$E_{av}$ [lx]	U0
Calculated values:	38.93	0.39
Required values according to class:	$\geq 7.50$	$\geq 0.40$
Fulfilled/Not fulfilled:		

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**Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / 3D  
Rendering**

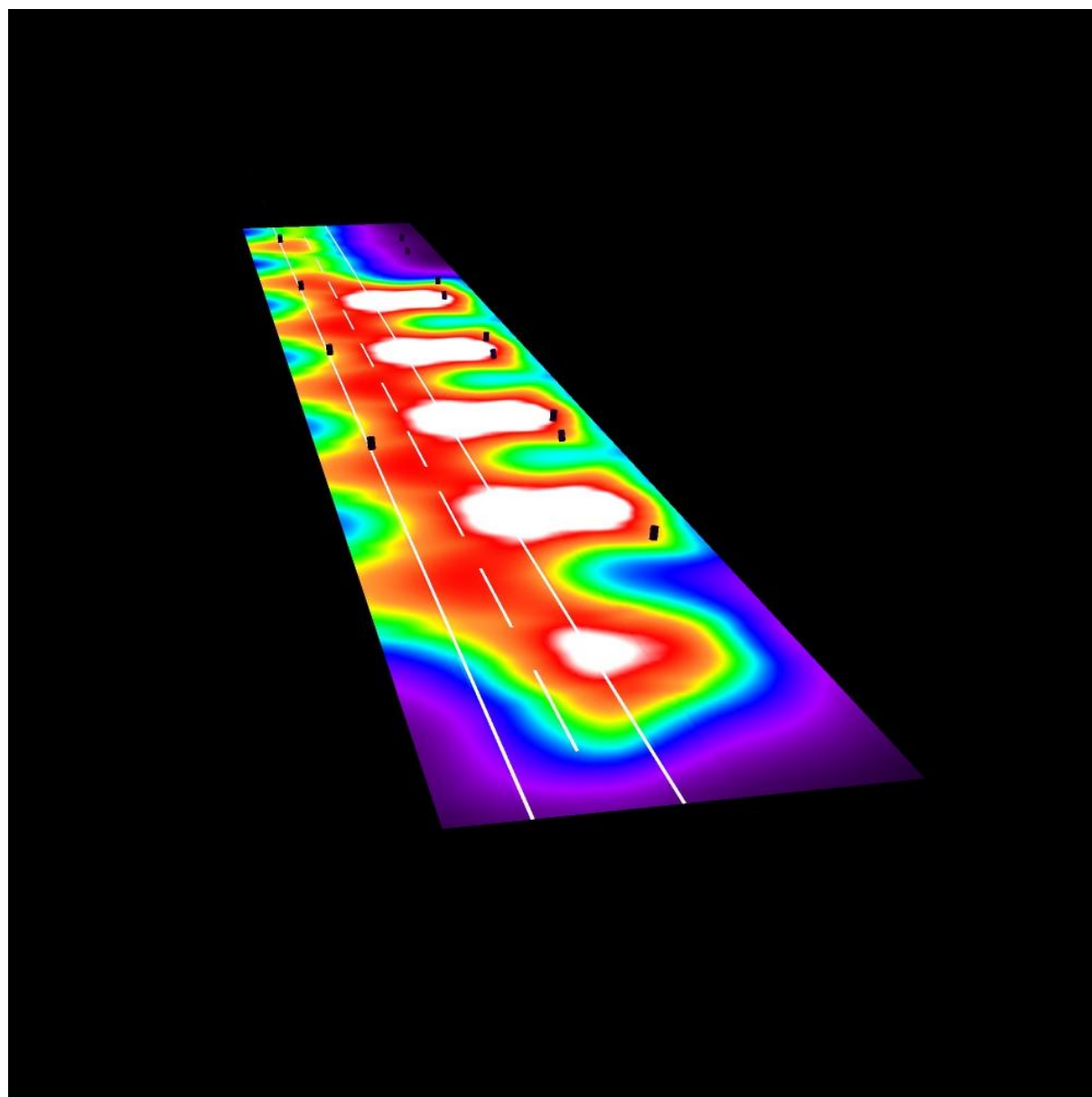


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**Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / False  
Colour Rendering**



0 5 10 15 20 25 30 50 60 lx

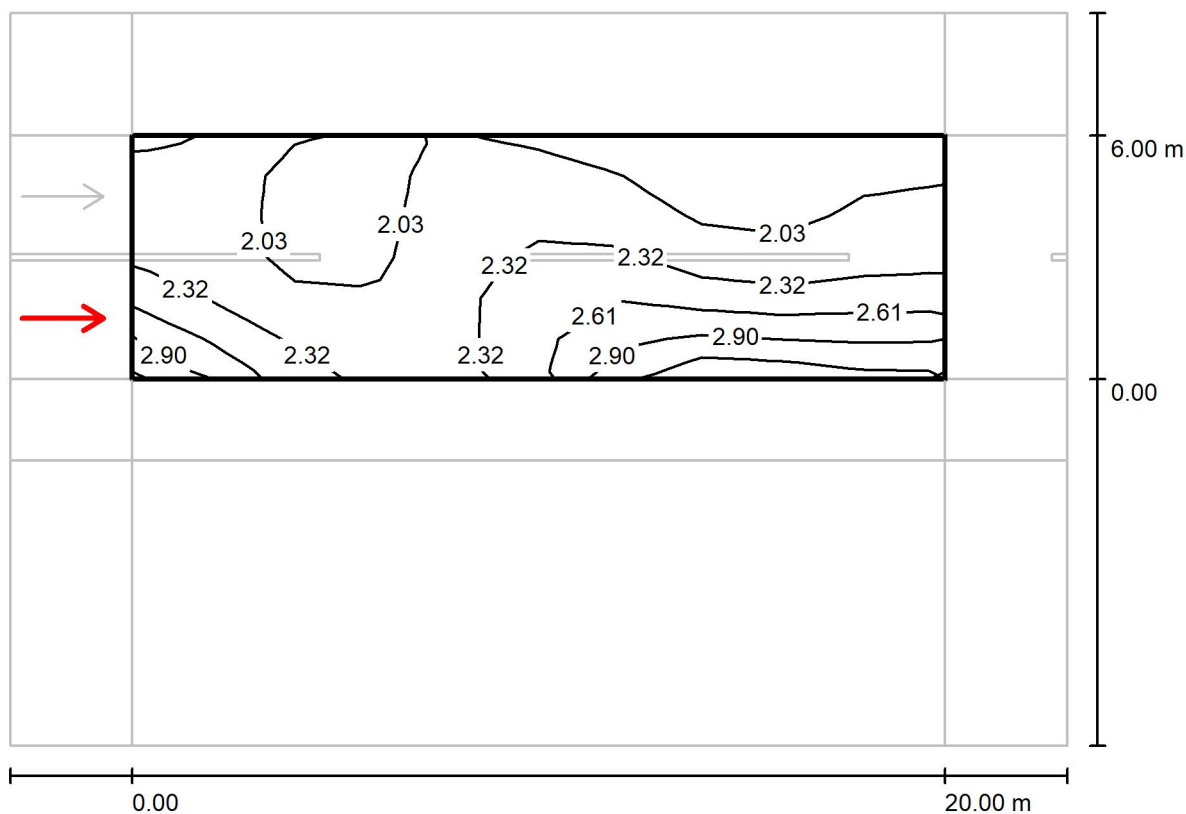


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## Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / Valuation Field Roadway 1 / Observer 1 / Isolines (L)


Values in Candela/m<sup>2</sup>, Scale 1 : 186

Grid: 10 x 6 Points

Observer Position: (-60.000 m, 1.500 m, 1.500 m)

tarmac: R3, q0: 0.070

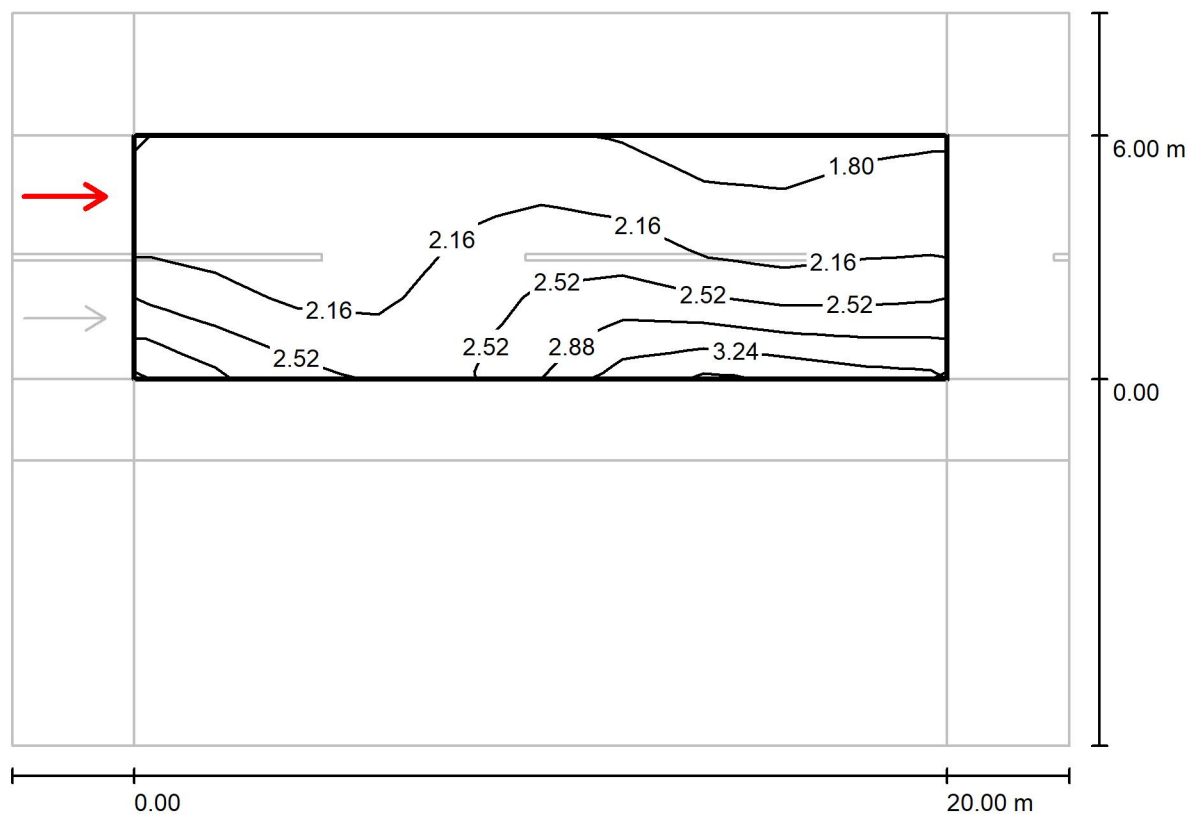
	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]
Calculated values:	2.27	0.79	0.75	7
Required values according to class ME5:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15
Fulfilled/Not fulfilled:	✓	✓	✓	✓

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## Ventspils, Promenādes apgaismojums - ielas aprēķins 2. posms - 09.03.2018 / Valuation Field Roadway 1 / Observer 2 / Isolines (L)


Values in Candela/m<sup>2</sup>, Scale 1 : 186

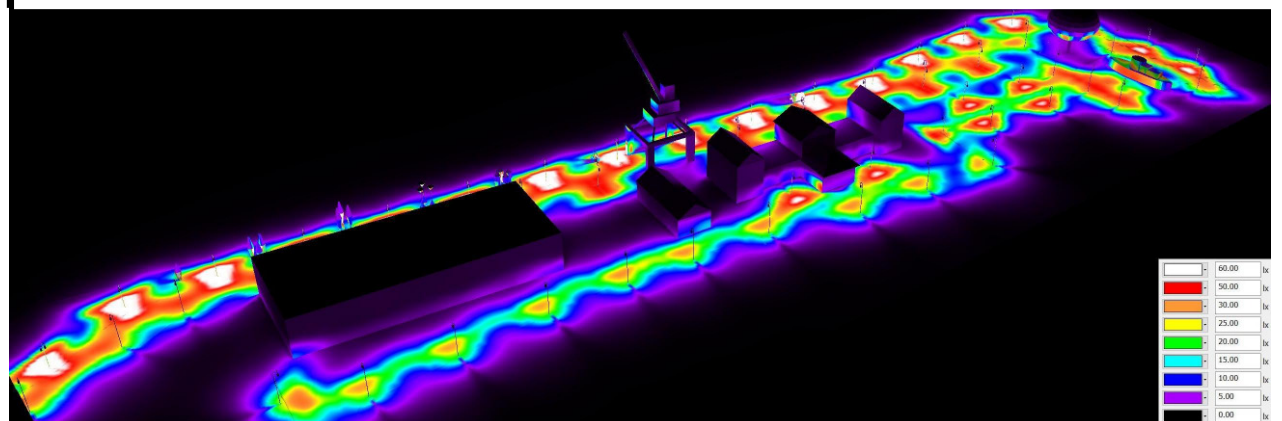
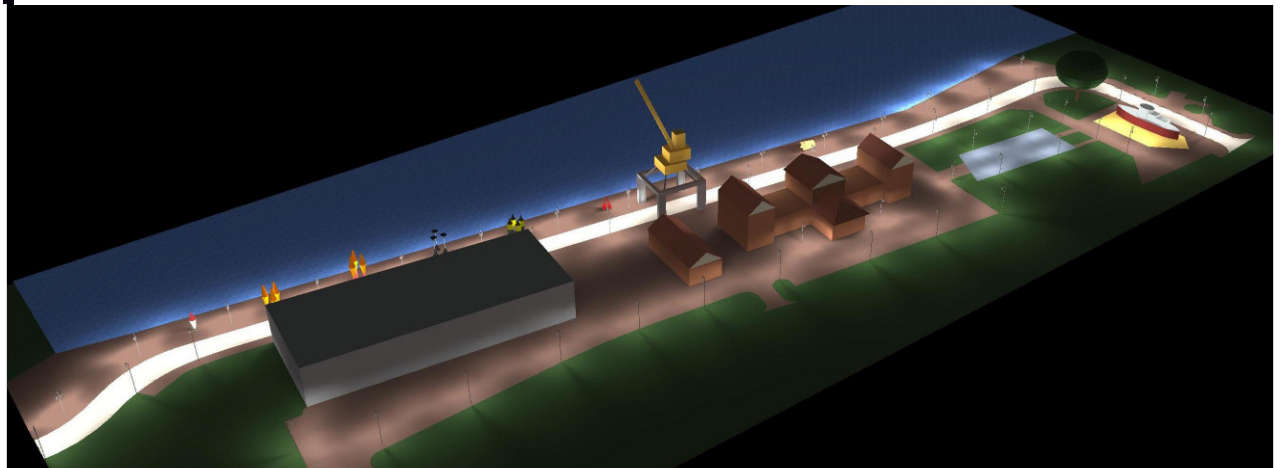
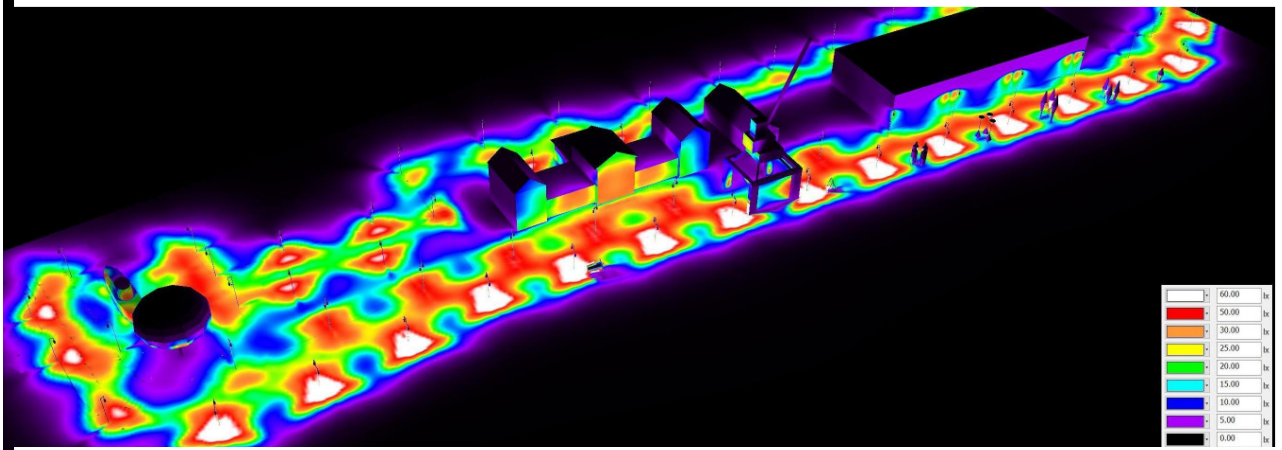
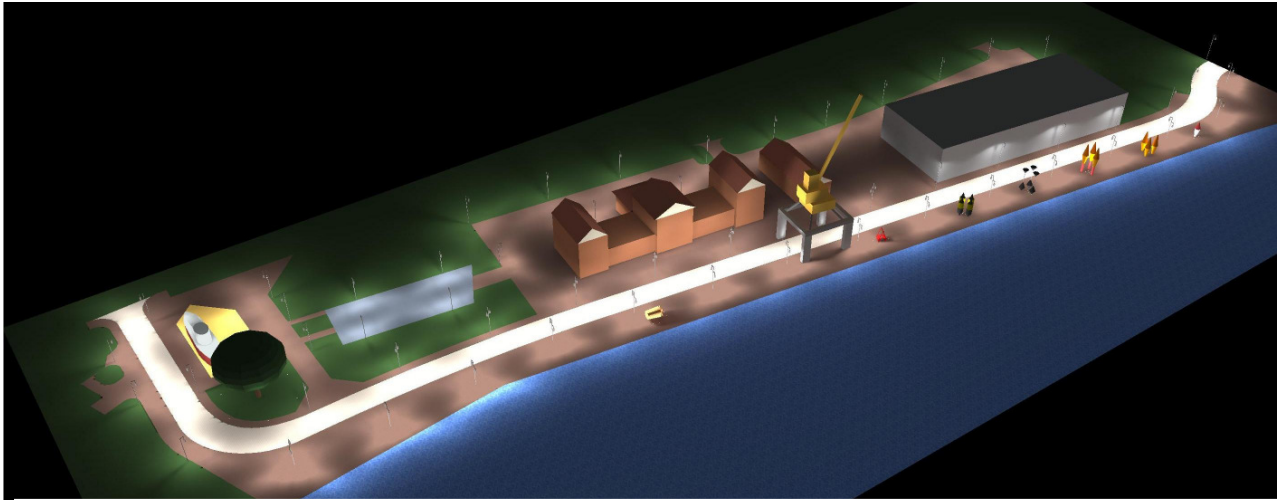
Grid: 10 x 6 Points

Observer Position: (-60.000 m, 4.500 m, 1.500 m)

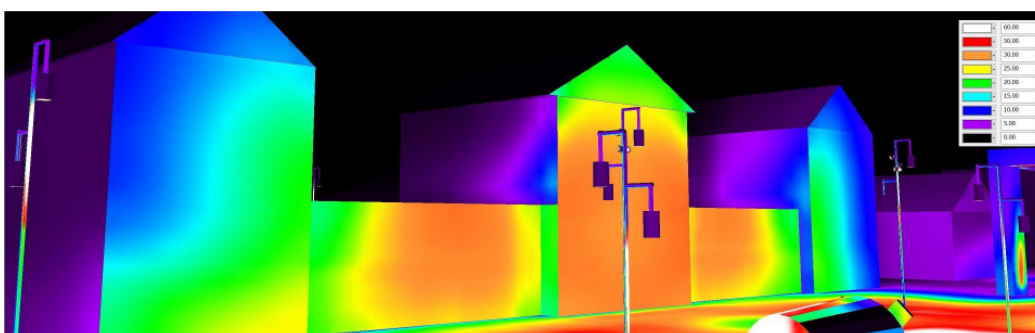
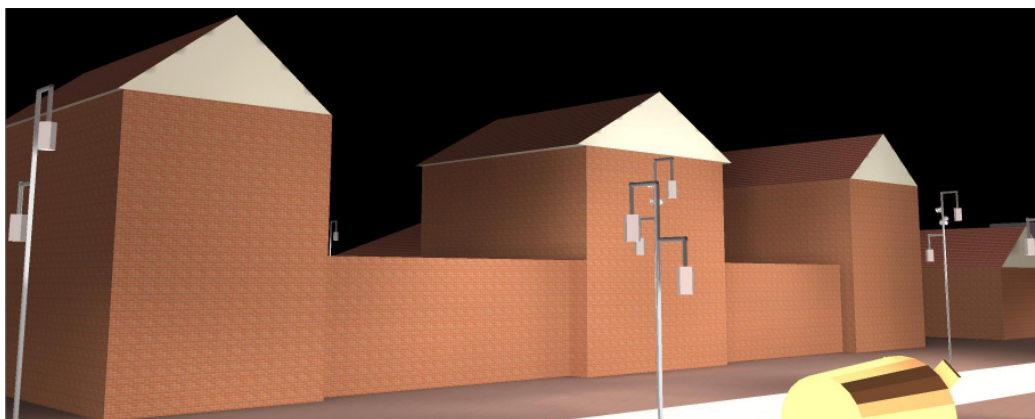
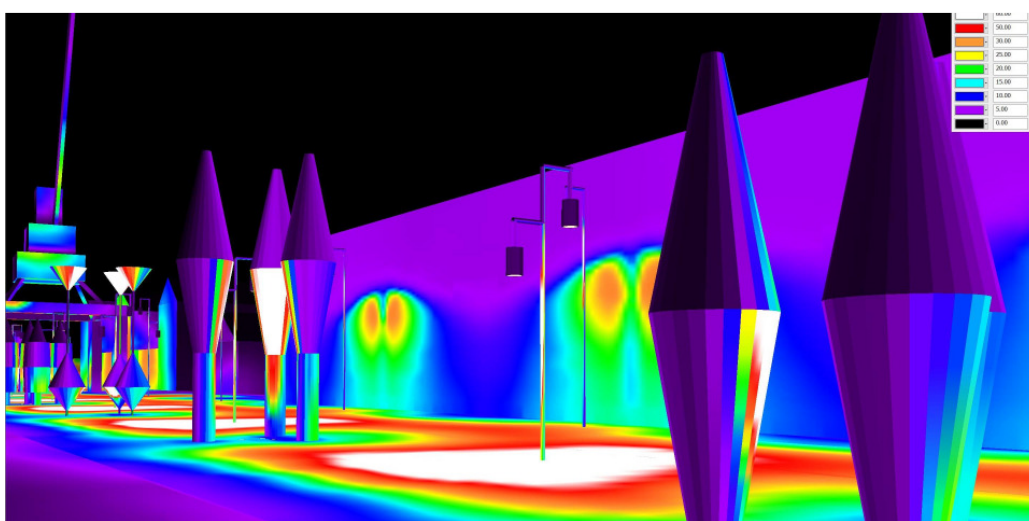
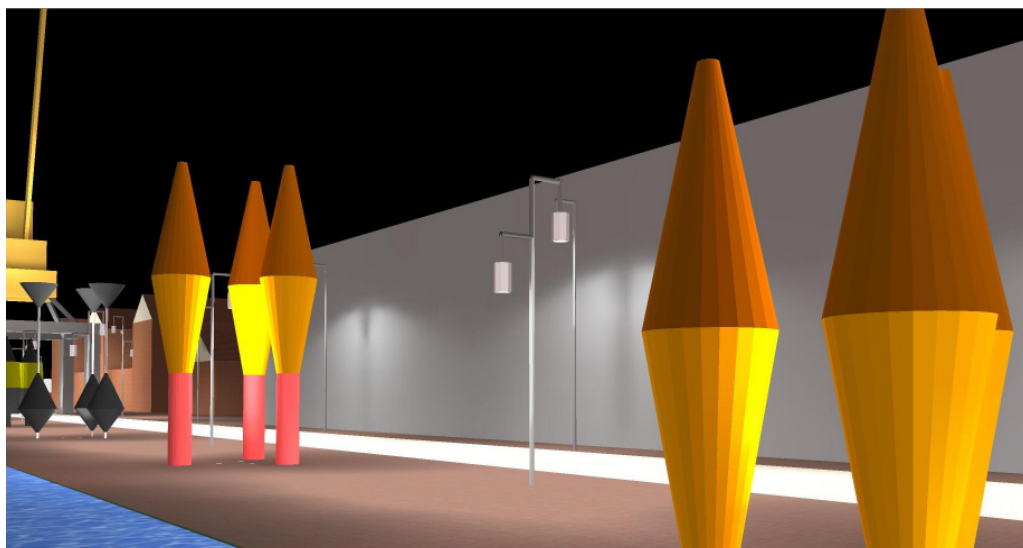
tarmac: R3, q0: 0.070

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]
Calculated values:	2.26	0.72	0.82	4
Required values according to class ME5:	≥ 0.50	≥ 0.35	≥ 0.40	≤ 15
Fulfilled/Not fulfilled:	✓	✓	✓	✓

## Ventspils, Promenādes apgaismojums

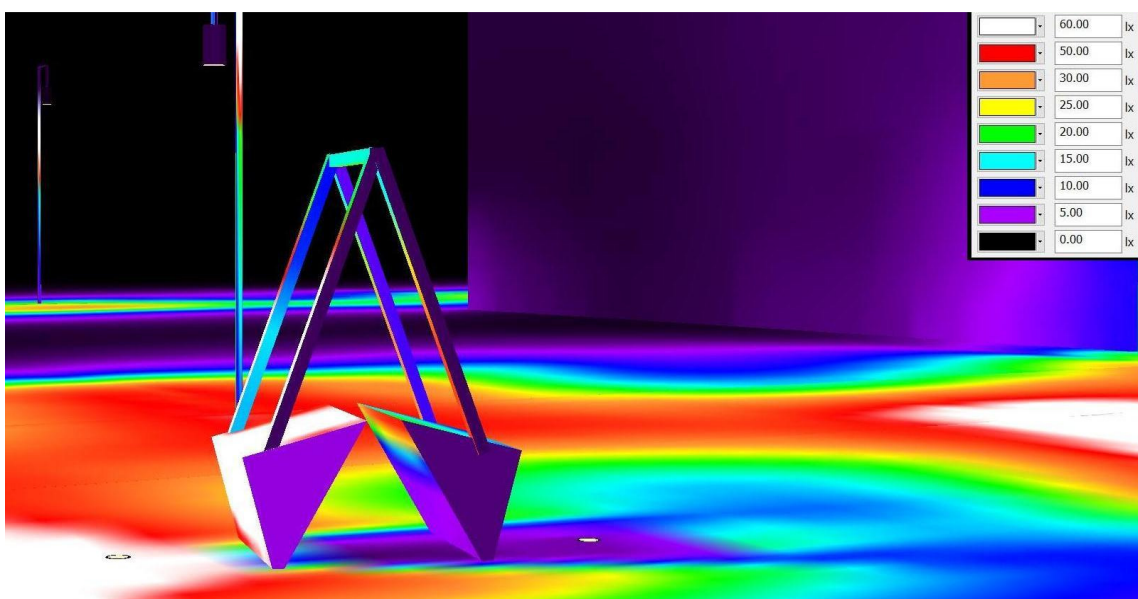
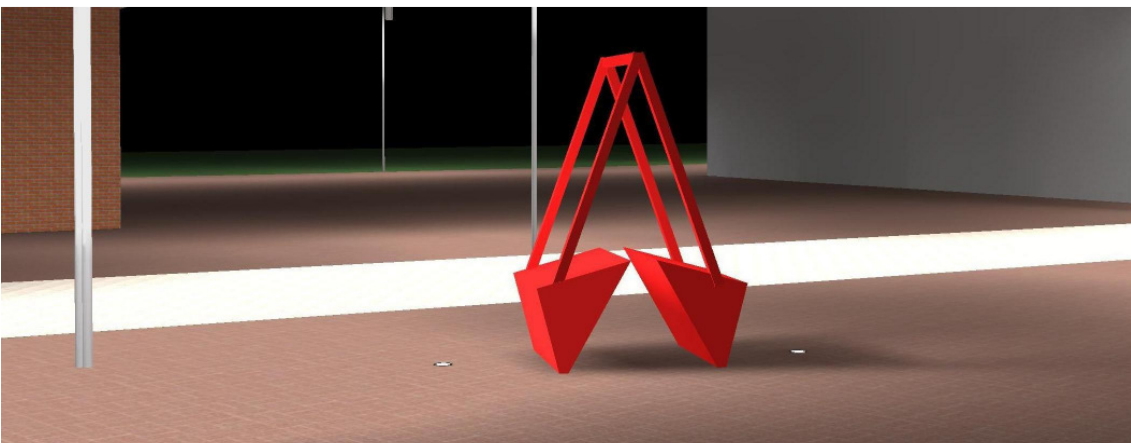
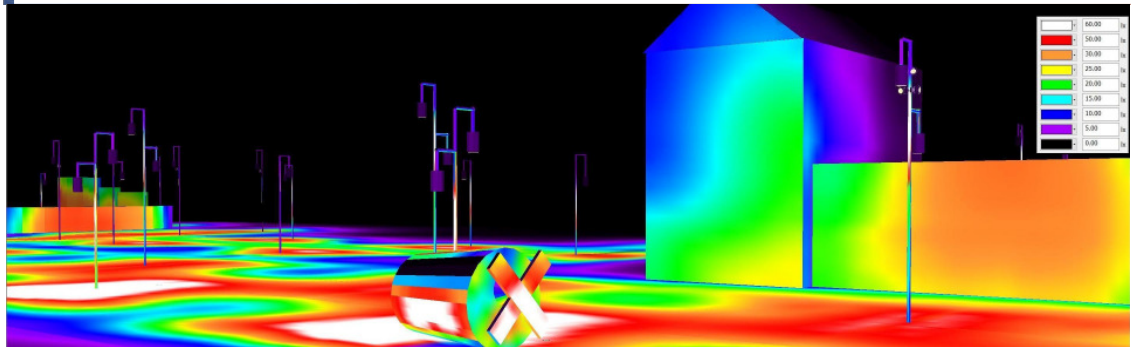
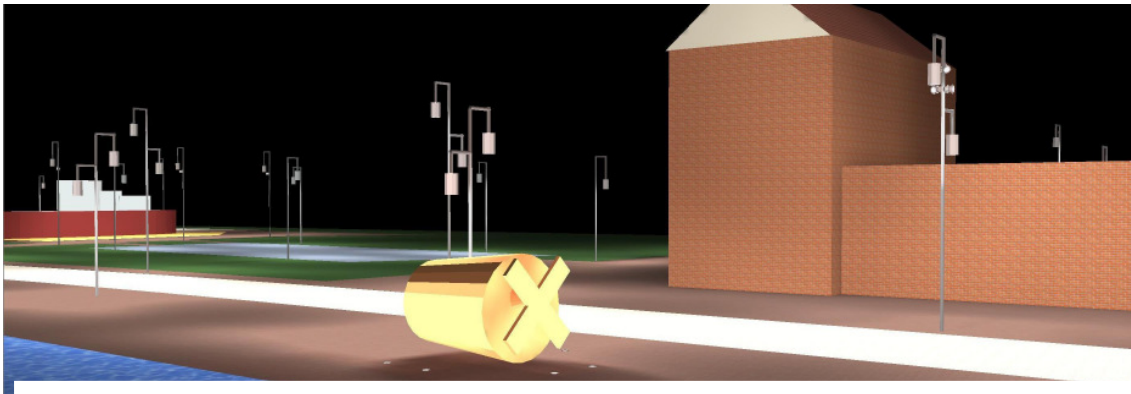


# Ventspils, Promenādes apgaismojums





## Ventspils, Promenādes apgaismojums



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