



Puhtaleiva-Voldi

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Luminaire list

Φ_{total} 69451 lm	P_{total} 510.0 W	Luminous efficacy 136.2 lm/W
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pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
7	Vizulo	60000703 26 MRS 010 727 L01 AA008	Mini Martin 10 W 8 LED	10.0 W	1227 lm	122.7 lm/W
4	Vizulo	60000769 58 MRSE 010 740 L22 AA008	Mini Martin 10 W 8 LED	10.0 W	1509 lm	150.9 lm/W
8	Vizulo	60000769 63 MRSE 035 740 L22 AA008	Mini Martin 35 W 8 LED	35.0 W	4561 lm	130.3 lm/W
2	Vizulo	60000925 41 MRSE 060 750 L36 AA024	Mini Martin 60 W 24 LED	60.0 W	9169 lm	152.8 lm/W

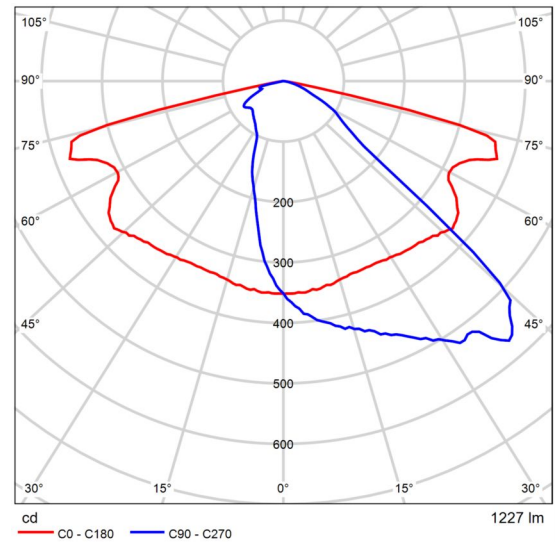
Product data sheet

Vizulo - Mini Martin 10 W 8 LED



Article No. 6000070326 MRS
010 727 L01 AA008

P	10.0 W
Φ_{Lamp}	–
$\Phi_{\text{Luminaire}}$	1227 lm
η	–
Luminous efficacy	122.7 lm/W
CCT	2700 K
CRI	70



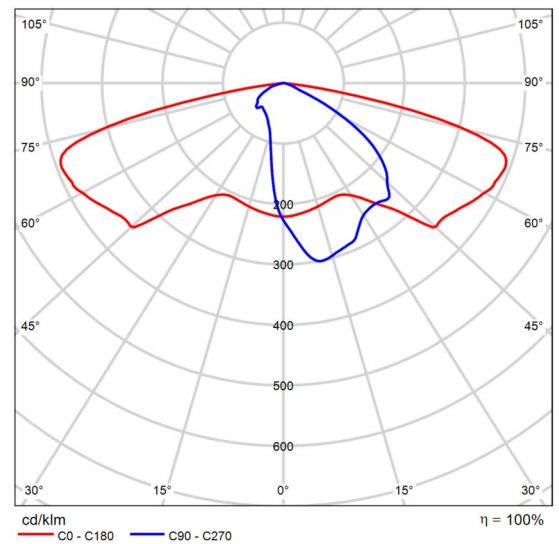
Polar LDC

Product data sheet

Vizulo - Mini Martin 10 W 8 LED



Article No.	6000076958 MRSE 010 740 L22 AA008
P	10.0 W
Φ_{Lamp}	1509 lm
$\Phi_{\text{Luminaire}}$	1509 lm
η	100.00 %
Luminous efficacy	150.9 lm/W
CCT	4000 K
CRI	70



Polar LDC

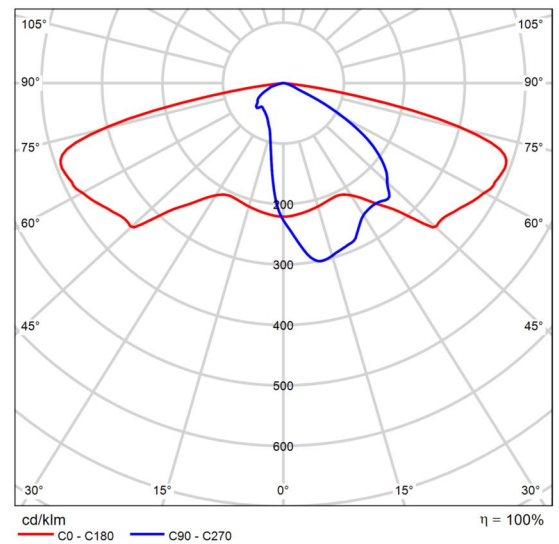
Product data sheet

Vizulo - Mini Martin 35 W 8 LED



Article No. 6000076963 MRSE
035 740 L22 AA008

P	35.0 W
Φ_{Lamp}	4561 lm
$\Phi_{\text{Luminaire}}$	4561 lm
η	100.00 %
Luminous efficacy	130.3 lm/W
CCT	4000 K
CRI	70



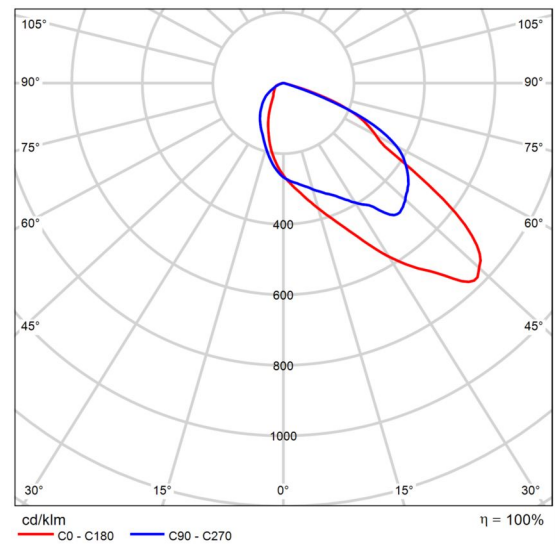
Polar LDC

Product data sheet

Vizulo - Mini Martin 60 W 24 LED



Article No.	6000092541 MRSE 060 750 L36 AA024
P	60.0 W
Φ_{Lamp}	9169 lm
$\Phi_{\text{Luminaire}}$	9169 lm
η	100.00 %
Luminous efficacy	152.8 lm/W
CCT	5000 K
CRI	70



Polar LDC

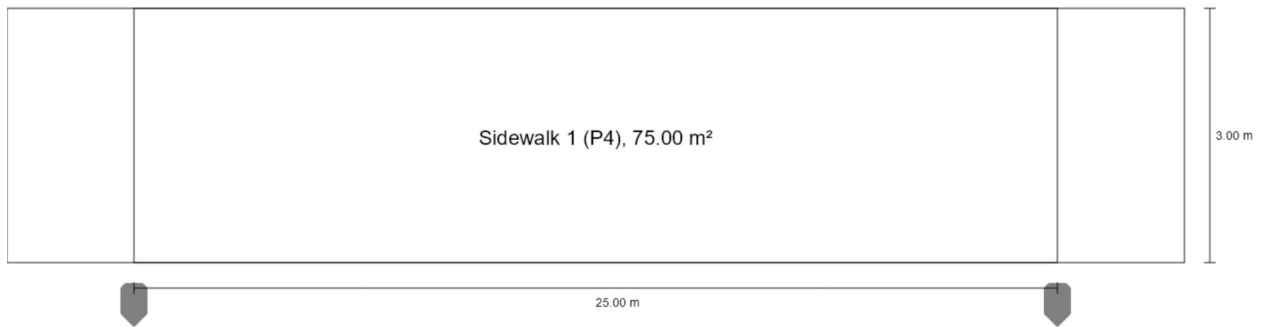


Kõnnitee 4m mastidel

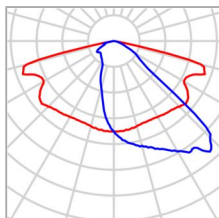
Description

Könnitee 4m mastidel

Summary (according to EN 13201:2015)



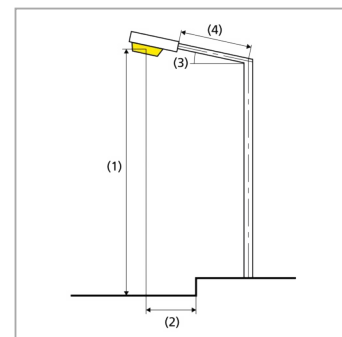
Könnitee 4m mastidel

Summary (according to EN 13201:2015)

Manufacturer	Vizulo	P	10.0 W
Article No.	6000070326 MRS 010 727 L01 AA008	Φ_{Lamp}	–
Article name	Mini Martin 10 W 8 LED	$\Phi_{\text{Luminaire}}$	1227 lm
Fitting	1x 8 LED MOD AA	η	–

Mini Martin 10 W 8 LED (single side bottom)

Pole distance	25.000 m
(1) Light spot height	4.000 m
(2) Light point overhang	-0.500 m
(3) Boom inclination	0.0°
(4) Boom length	0.000 m
Annual operating hours	4000 h: 100.0 %, 10.0 W
Wattage / route	400.0 W/km
ULR / ULOR	0.00 / 0.00
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$: 854 cd/klm $\geq 80^\circ$: 42.9 cd/klm $\geq 90^\circ$: 0.00 cd/klm
Luminous intensity class The luminous intensity values in [cd/klm] for calculation of the luminous intensity class refer to the luminaire luminous flux according to EN 13201:2015.	G*3
Glare index class	D.6
MF	0.90



Könnitee 4m mastidel

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.90 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
Sidewalk 1 (P4)	E_{av}	6.54 lx	[5.00 - 7.50] lx	✓
	E_{min}	1.31 lx	≥ 1.00 lx	✓

Results for energy efficiency indicators

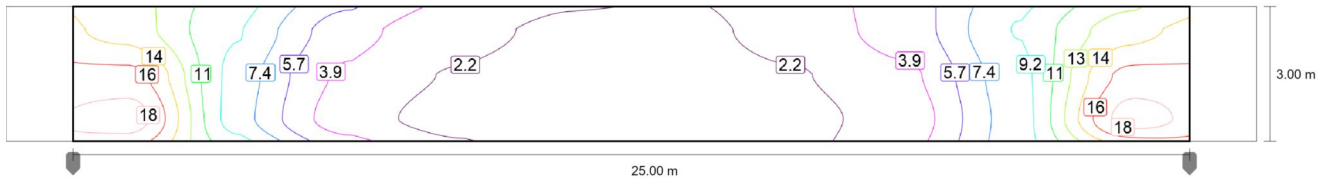
	Symbol	Calculated	Energy Consumption
Könnitee 4m mastidel	D_p	0.020 W/lx*m ²	–
Mini Martin 10 W 8 LED (single side bottom)	D_e	0.5 kWh/m ² yr	40.0 kWh/yr

Könnitee 4m mastidel

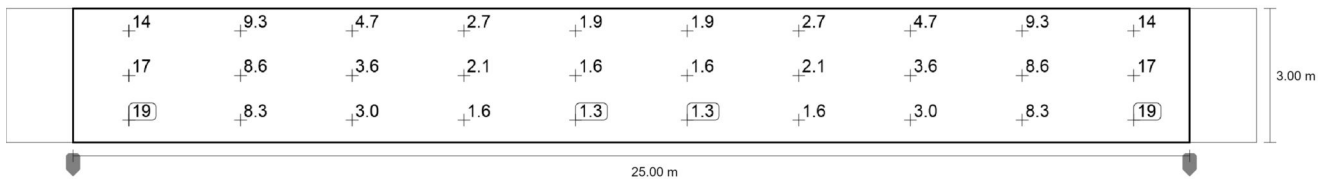
Sidewalk 1 (P4)

Results for valuation field

	Symbol	Calculated	Target	Check
Sidewalk 1 (P4)	E_{av}	6.54 lx	[5.00 - 7.50] lx	✓
	E_{min}	1.31 lx	≥ 1.00 lx	✓



Maintenance value, horizontal illuminance [lx] (Iso-illuminance curves)



Maintenance value, horizontal illuminance [lx] (Value grid)

m	1.250	3.750	6.250	8.750	11.250	13.750	16.250	18.750	21.250	23.750
2.500	13.78	9.31	4.70	2.74	1.87	1.87	2.74	4.70	9.31	13.78
1.500	16.80	8.56	3.60	2.06	1.58	1.58	2.06	3.60	8.56	16.80
0.500	18.84	8.33	3.00	1.64	1.31	1.31	1.64	3.00	8.33	18.84

Maintenance value, horizontal illuminance [lx] (Value chart)

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	6.54 lx	1.31 lx	18.8 lx	0.20	0.07

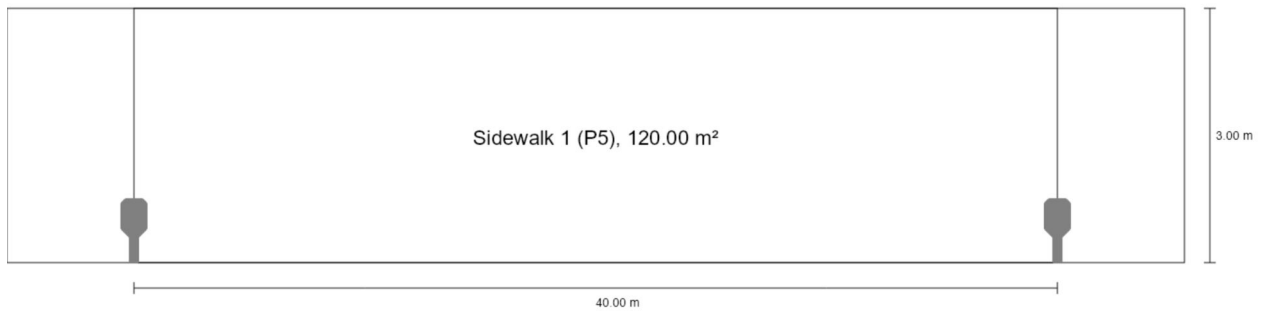


Kõnnitee 6m mastidel

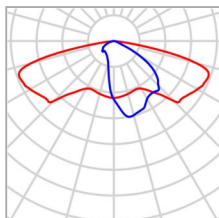
Description

Könnitee 6m mastidel

Summary (according to EN 13201:2015)



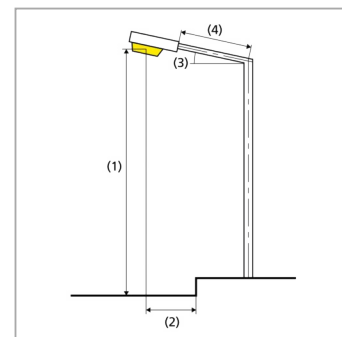
Könnitee 6m mastidel

Summary (according to EN 13201:2015)

Manufacturer	Vizulo	P	10.0 W
Article No.	6000076958 MRSE 010 740 L22 AA008	Φ_{Lamp}	1509 lm
Article name	Mini Martin 10 W 8 LED	$\Phi_{\text{Luminaire}}$	1509 lm
Fitting	1x 8 LED MOD AA	η	100.00 %

Mini Martin 10 W 8 LED (single side bottom)

Pole distance	40.000 m
(1) Light spot height	6.000 m
(2) Light point overhang	0.500 m
(3) Boom inclination	0.0°
(4) Boom length	0.500 m
Annual operating hours	4000 h: 100.0 %, 10.0 W
Wattage / route	250.0 W/km
ULR / ULOR	0.00 / 0.00
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$: 593 cd/klm $\geq 80^\circ$: 227 cd/klm $\geq 90^\circ$: 0.00 cd/klm
Luminous intensity class The luminous intensity values in [cd/klm] for calculation of the luminous intensity class refer to the luminaire luminous flux according to EN 13201:2015.	–
Glare index class	D.6
MF	0.90



Könnitee 6m mastidel

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.90 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
Sidewalk 1 (P5)	E_{av}	3.58 lx	[3.00 - 4.50] lx	✓
	E_{min}	0.66 lx	≥ 0.60 lx	✓

Results for energy efficiency indicators

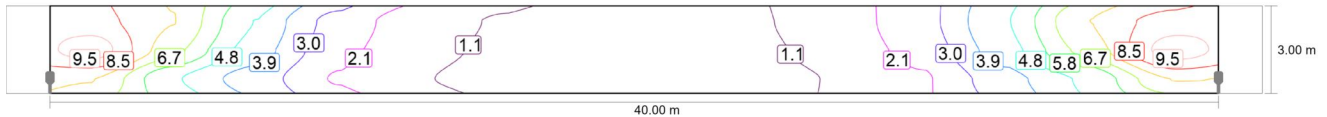
	Symbol	Calculated	Energy Consumption
Könnitee 6m mastidel	D_p	0.023 W/lx*m ²	–
Mini Martin 10 W 8 LED (single side bottom)	D_e	0.3 kWh/m ² yr	40.0 kWh/yr

Könnitee 6m mastidel

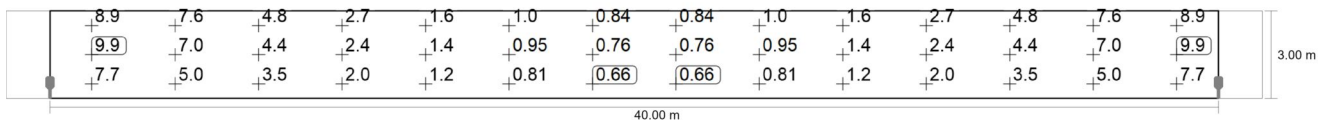
Sidewalk 1 (P5)

Results for valuation field

	Symbol	Calculated	Target	Check
Sidewalk 1 (P5)	E_{av}	3.58 lx	[3.00 - 4.50] lx	✓
	E_{min}	0.66 lx	≥ 0.60 lx	✓



Maintenance value, horizontal illuminance [lx] (Iso-illuminance curves)



Maintenance value, horizontal illuminance [lx] (Value grid)

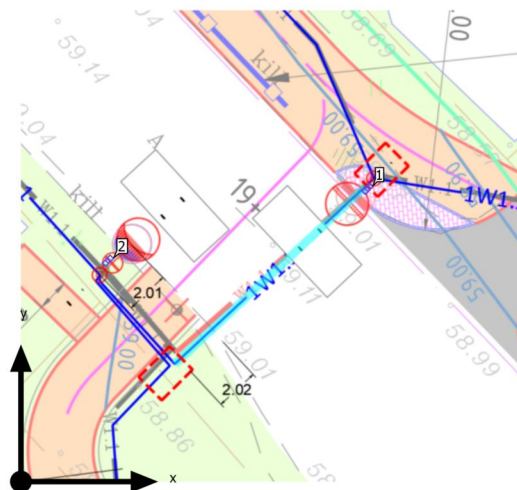
m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
2.500	8.95	7.63	4.81	2.66	1.56	1.05	0.84	0.84	1.05	1.56	2.66	4.81	7.63	8.95
1.500	9.94	7.04	4.42	2.40	1.42	0.95	0.76	0.76	0.95	1.42	2.40	4.42	7.04	9.94
0.500	7.66	5.00	3.53	1.96	1.18	0.81	0.66	0.66	0.81	1.18	1.96	3.53	5.00	7.66

Maintenance value, horizontal illuminance [lx] (Value chart)

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	3.58 lx	0.66 lx	9.94 lx	0.18	0.07

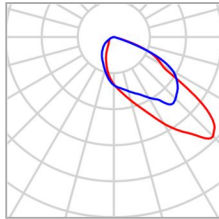
Site 1

Luminaire layout plan



Site 1

Luminaire layout plan



Manufacturer	Vizulo	P	60.0 W
Article No.	6000092541 MRSE 060 750 L36 AA024	$\Phi_{\text{Luminaire}}$	9169 lm
Article name	Mini Martin 60 W 24 LED		
Fitting	1x 24 LED MOD AA		

Individual luminaires

X	Y	Mounting height	Luminaire
16.108 m	13.605 m	6.090 m	1
4.040 m	10.263 m	6.090 m	2

Site 1

Luminaire list Φ_{total}

18338 lm

 P_{total}

120.0 W

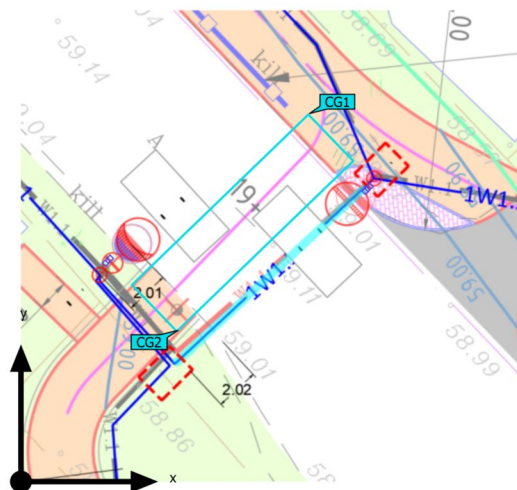
Luminous efficacy

152.8 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
2	Vizulo	60000925 41 MRSE 060 750 L36 AA024	Mini Martin 60 W 24 LED	60.0 W	9169 lm	152.8 lm/W

Site 1 (Light scene 1)

Calculation objects



Site 1 (Light scene 1)

Calculation objects

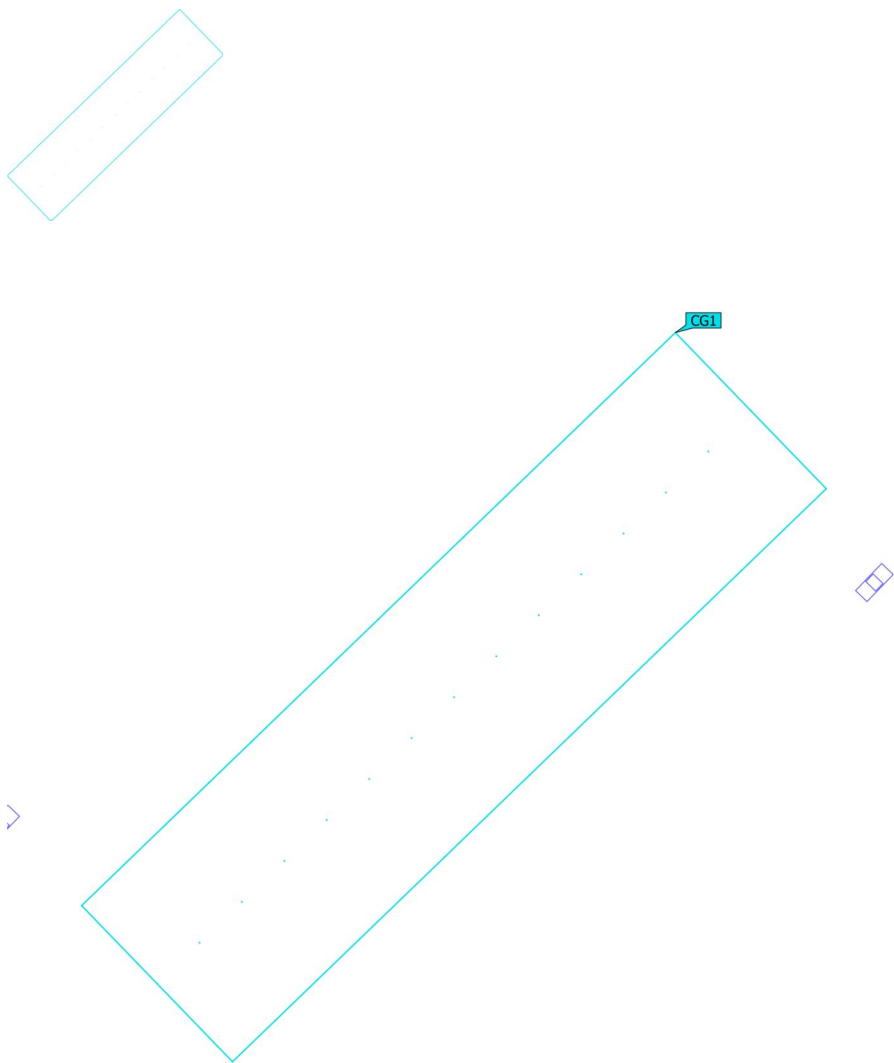
Calculation surfaces

Properties	\bar{E}	E_{\min}	E_{\max}	$U_o (g_1)$	g_2	Index
Lähte suunas Vertical illuminance Rotation: 135.0°, Height: 1.000 m	34.1 lx	4.46 lx	99.3 lx	0.13	0.045	CG1
Tabivere suunas Vertical illuminance Rotation: 315.0°, Height: 1.000 m	34.9 lx	4.65 lx	99.4 lx	0.13	0.047	CG2

Utilisation profile: DIALux presetting (5.1.4 Standard (outdoor transportation area))

Site 1 (Light scene 1)

Lähte suunas

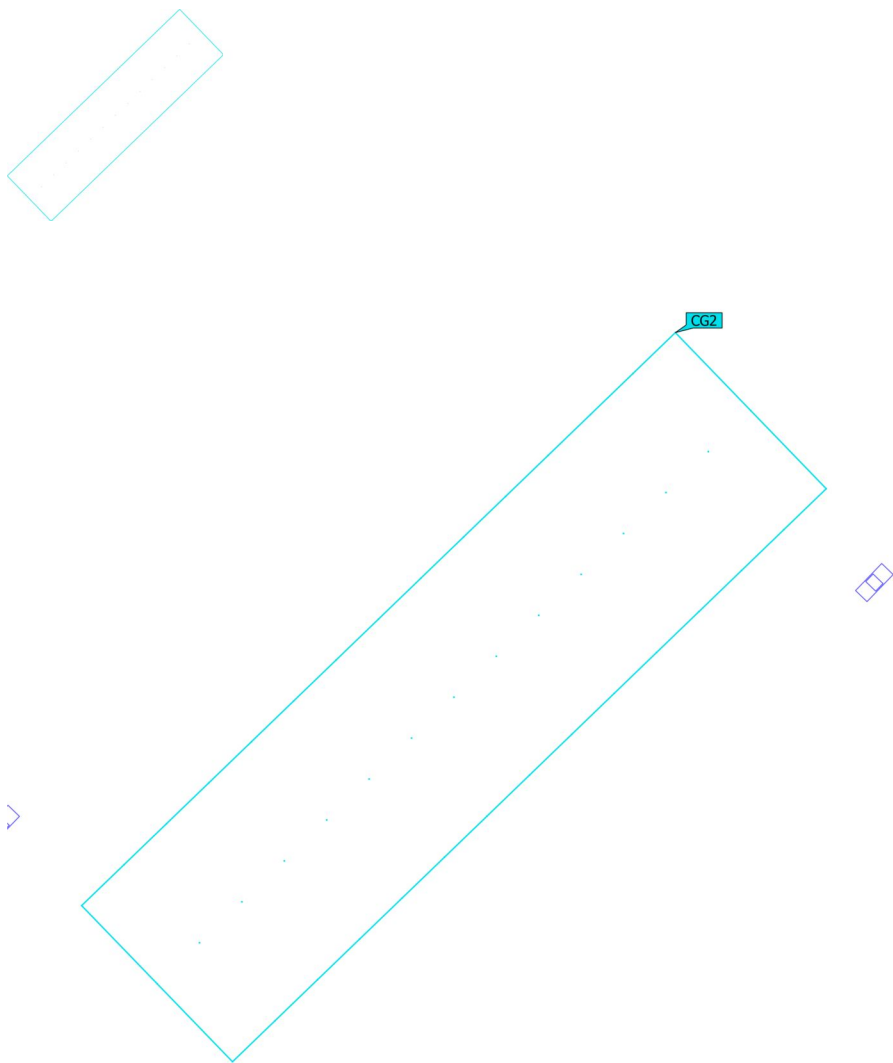


Properties	\bar{E}	E_{min}	E_{max}	$U_o (g_1)$	g_2	Index
Lähte suunas Vertical illuminance Rotation: 135.0°, Height: 1.000 m	34.1 lx	4.46 lx	99.3 lx	0.13	0.045	CG1

Utilisation profile: DIALux presetting (5.1.4 Standard (outdoor transportation area))

Site 1 (Light scene 1)

Tabivere suunas



Properties	\bar{E}	E_{min}	E_{max}	$U_o (g_1)$	g_2	Index
Tabivere suunas Vertical illuminance Rotation: 315.0°, Height: 1.000 m	34.9 lx	4.65 lx	99.4 lx	0.13	0.047	CG2

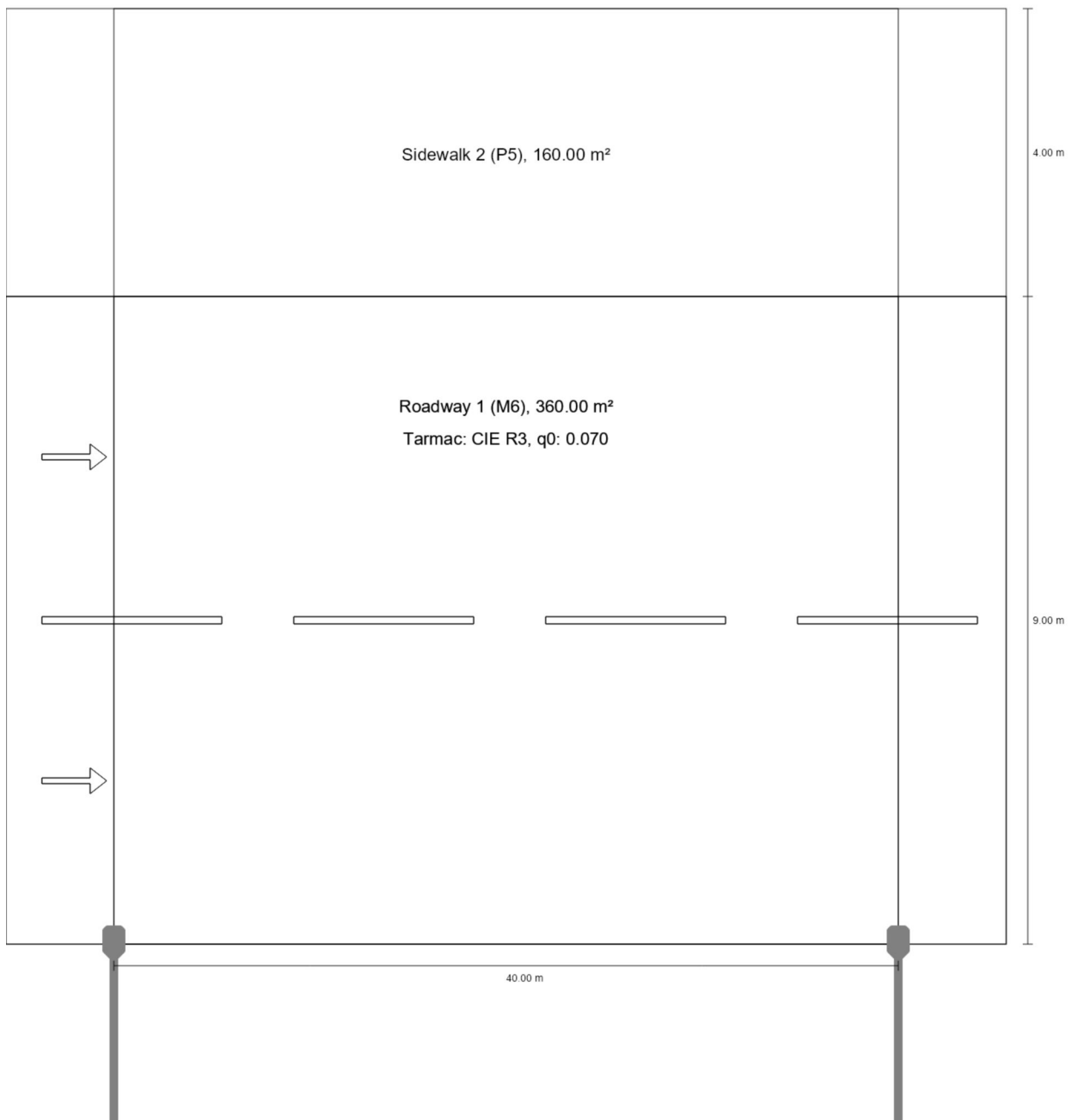
Utilisation profile: DIALux presetting (5.1.4 Standard (outdoor transportation area))



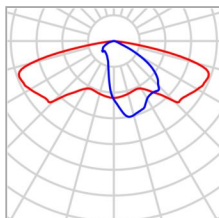
Sõidutee M6

Description

Sõidutee M6

Summary (according to EN 13201:2015)

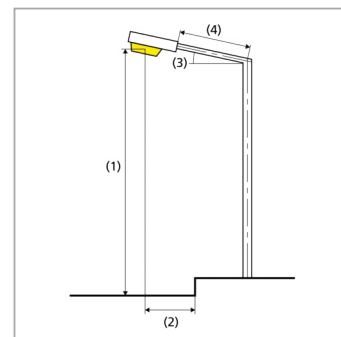
Sõidutee M6

Summary (according to EN 13201:2015)

Manufacturer	Vizulo	P	35.0 W
Article No.	6000076963 MRSE 035 740 L22 AA008	Φ_{Lamp}	4561 lm
Article name	Mini Martin 35 W 8 LED	$\Phi_{\text{Luminaire}}$	4561 lm
Fitting	1x 8 LED MOD AA	η	100.00 %

Mini Martin 35 W 8 LED (single side bottom)

Pole distance	40.000 m
(1) Light spot height	10.000 m
(2) Light point overhang	0.000 m
(3) Boom inclination	5.0°
(4) Boom length	2.500 m
Annual operating hours	4000 h: 100.0 %, 35.0 W
Wattage / route	875.0 W/km
ULR / ULOR	0.00 / 0.00
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$: 601 cd/klm $\geq 80^\circ$: 337 cd/klm $\geq 90^\circ$: 1.83 cd/klm
Luminous intensity class The luminous intensity values in [cd/klm] for calculation of the luminous intensity class refer to the luminaire luminous flux according to EN 13201:2015.	–
Glare index class	D.5
MF	0.90



Sõidutee M6

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.90 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
Sidewalk 2 (P5)	E_{av}	3.35 lx	[3.00 - 4.50] lx	✓
	E_{min}	2.51 lx	≥ 0.60 lx	✓
Roadway 1 (M6)	L_{av}	0.41 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.50	≥ 0.35	✓
	U_l	0.75	≥ 0.40	✓
	TI	10 %	≤ 20 %	✓
	R_{EI}	0.44	≥ 0.30	✓

Results for energy efficiency indicators

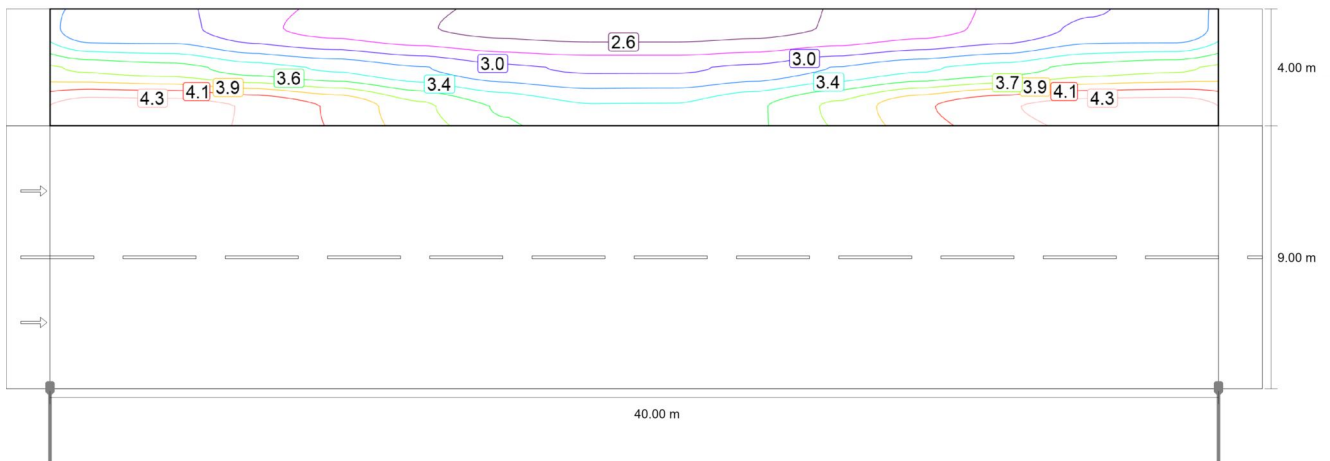
	Symbol	Calculated	Energy Consumption
Sõidutee M6	D_p	0.013 W/lx*m ²	–
Mini Martin 35 W 8 LED (single side bottom)	D_e	0.3 kWh/m ² yr	140.0 kWh/yr

Sõidutee M6

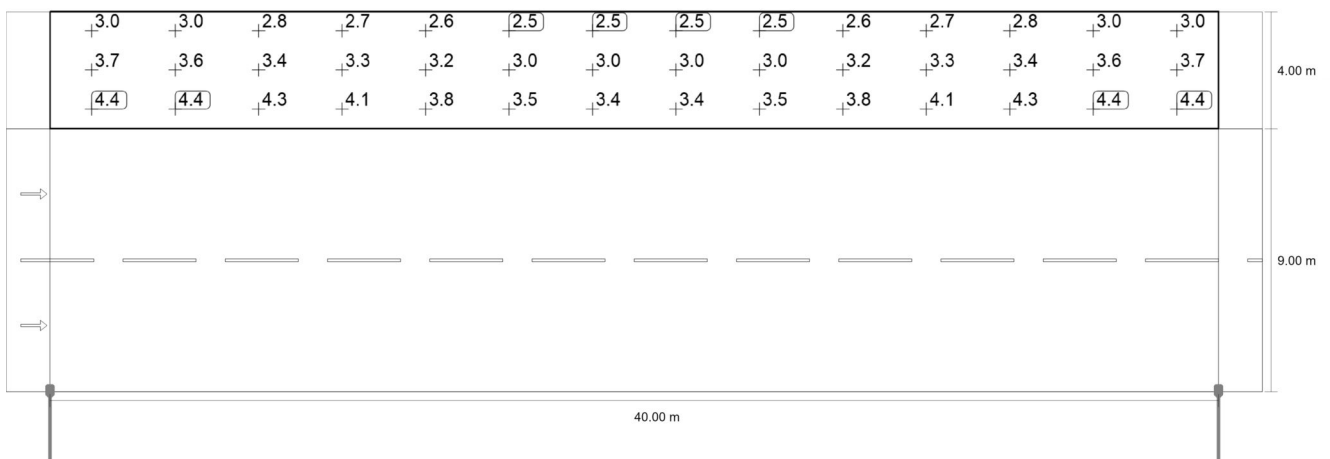
Sidewalk 2 (P5)

Results for valuation field

	Symbol	Calculated	Target	Check
Sidewalk 2 (P5)	E_{av}	3.35 lx	[3.00 - 4.50] lx	✓
	E_{min}	2.51 lx	≥ 0.60 lx	✓



Maintenance value, horizontal illuminance [lx] (Iso-illuminance curves)



Maintenance value, horizontal illuminance [lx] (Value grid)

Sõidutee M6

Sidewalk 2 (P5)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
12.333	3.01	3.03	2.84	2.72	2.62	2.54	2.51	2.51	2.54	2.62	2.72	2.84	3.03	3.01
11.000	3.70	3.63	3.45	3.33	3.18	3.02	2.96	2.96	3.02	3.18	3.33	3.45	3.63	3.70
9.667	4.40	4.39	4.29	4.09	3.78	3.53	3.38	3.38	3.53	3.78	4.09	4.29	4.39	4.40

Maintenance value, horizontal illuminance [lx] (Value chart)

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	3.35 lx	2.51 lx	4.40 lx	0.75	0.57

Sõidutee M6

Roadway 1 (M6)

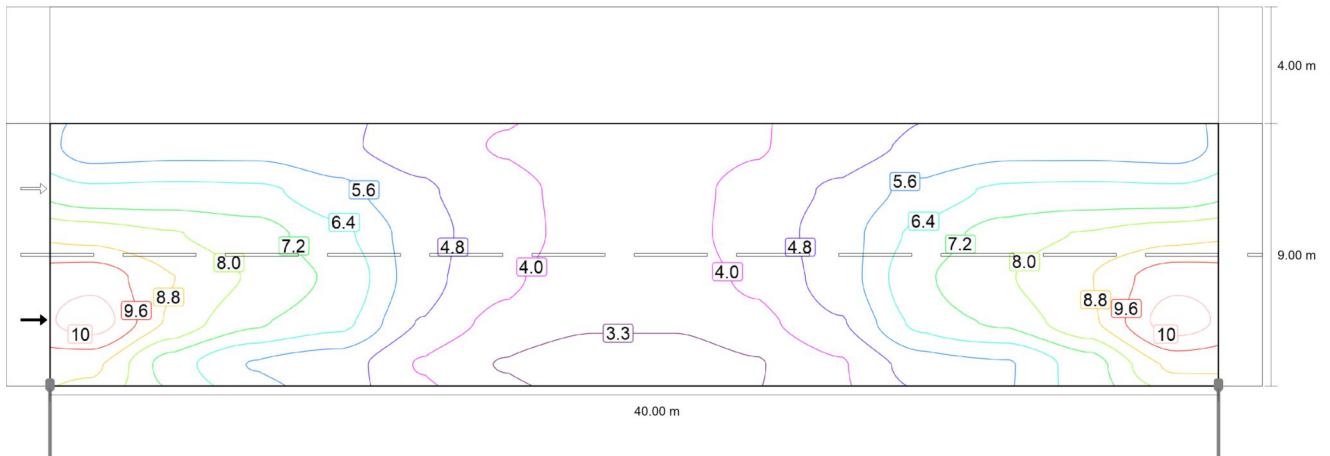
Results for valuation field

	Symbol	Calculated	Target	Check
Roadway 1 (M6)	L_{av}	0.41 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.50	≥ 0.35	✓
	U_l	0.75	≥ 0.40	✓
	TI	10 %	≤ 20 %	✓
	R_{EI}	0.44	≥ 0.30	✓

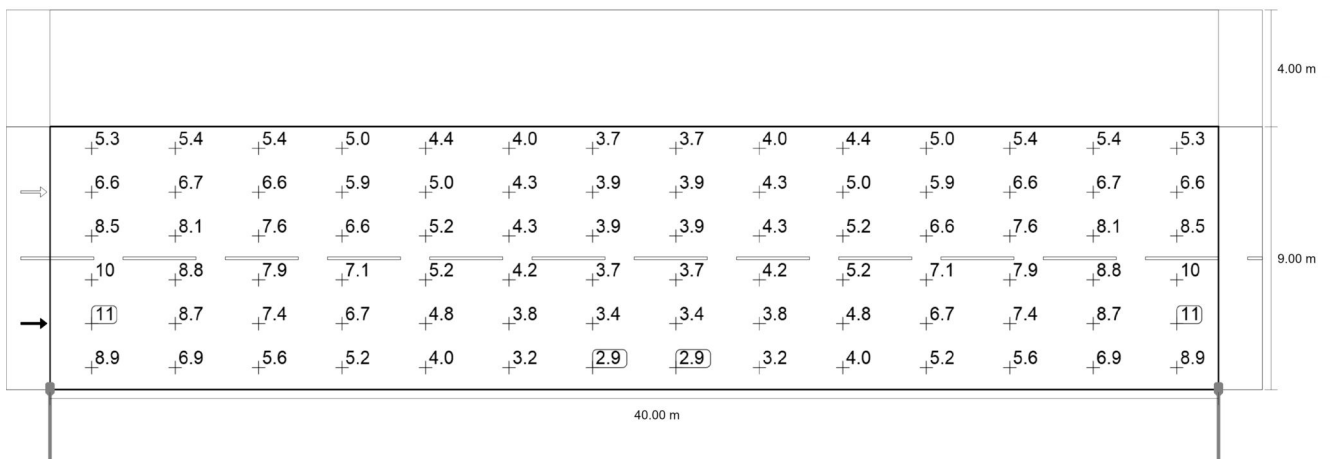
Results for observer

	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 2.250 m, 1.500 m	L_{av}	0.41 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.50	≥ 0.35	✓
	U_l	0.76	≥ 0.40	✓
	TI	10 %	≤ 20 %	✓
Observer 2 Position: -60.000 m, 6.750 m, 1.500 m	L_{av}	0.46 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.50	≥ 0.35	✓
	U_l	0.75	≥ 0.40	✓
	TI	7 %	≤ 20 %	✓

Sõidutee M6

Roadway 1 (M6)

Maintenance value, horizontal illuminance [lx] (Iso-illuminance curves)



Maintenance value, horizontal illuminance [lx] (Value grid)

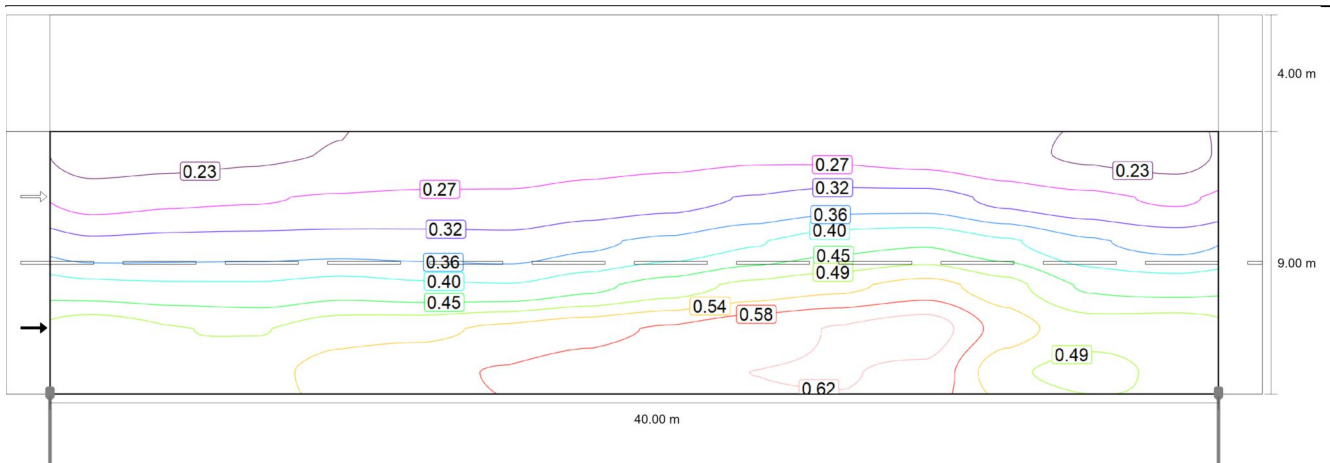
m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
8.250	5.28	5.36	5.36	4.99	4.44	3.99	3.72	3.72	3.99	4.44	4.99	5.36	5.36	5.28
6.750	6.62	6.68	6.58	5.90	4.98	4.25	3.87	3.87	4.25	4.98	5.90	6.58	6.68	6.62
5.250	8.53	8.05	7.59	6.63	5.24	4.33	3.86	3.86	4.33	5.24	6.63	7.59	8.05	8.53
3.750	10.12	8.79	7.93	7.07	5.20	4.18	3.70	3.70	4.18	5.20	7.07	7.93	8.79	10.12
2.250	10.76	8.66	7.36	6.67	4.78	3.82	3.36	3.36	3.82	4.78	6.67	7.36	8.66	10.76
0.750	8.95	6.86	5.58	5.21	3.98	3.21	2.86	2.86	3.21	3.98	5.21	5.58	6.86	8.95

Sõidutee M6

Roadway 1 (M6)

Maintenance value, horizontal illuminance [lx] (Value chart)

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	5.84 lx	2.86 lx	10.8 lx	0.49	0.27

Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Iso-illuminance curves)

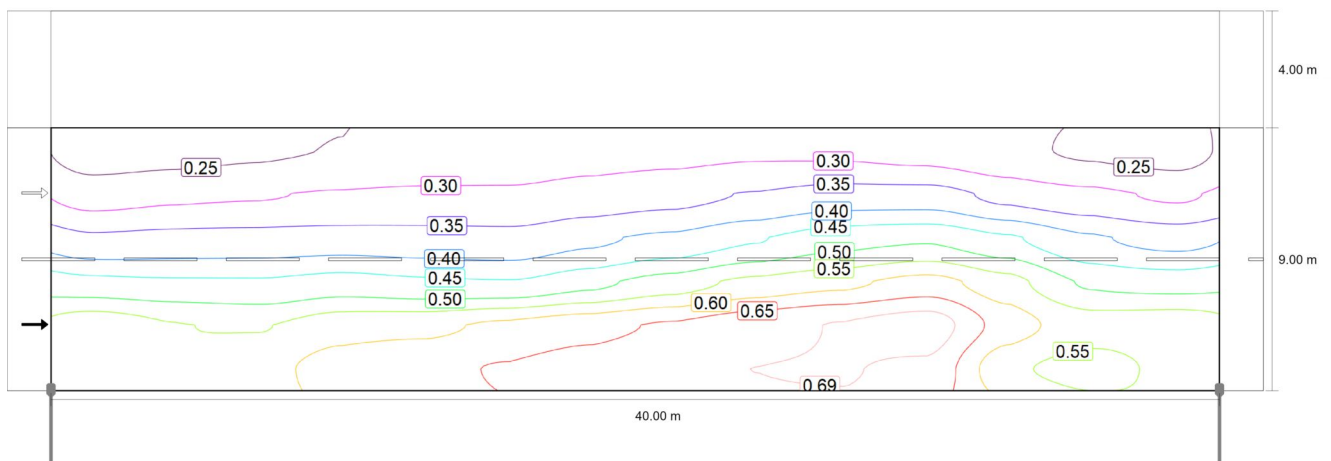
Sõidutee M6

Roadway 1 (M6)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
5.250	0.33	0.33	0.33	0.34	0.34	0.33	0.35	0.37	0.40	0.43	0.44	0.41	0.37	0.35
3.750	0.42	0.41	0.41	0.42	0.41	0.41	0.44	0.47	0.51	0.53	0.55	0.51	0.44	0.43
2.250	0.52	0.49	0.49	0.52	0.53	0.55	0.57	0.59	0.61	0.63	0.65	0.56	0.51	0.52
0.750	0.51	0.50	0.52	0.56	0.57	0.58	0.60	0.62	0.62	0.63	0.61	0.50	0.48	0.50

Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_0 (g_1)$	g_2
Observer 1: Maintenance value, luminance with dry roadway	0.41 cd/m^2	0.21 cd/m^2	0.65 cd/m^2	0.50	0.32

Observer 1: Luminance with new installation [cd/m^2] (Iso-illuminance curves)

Sõidutee M6

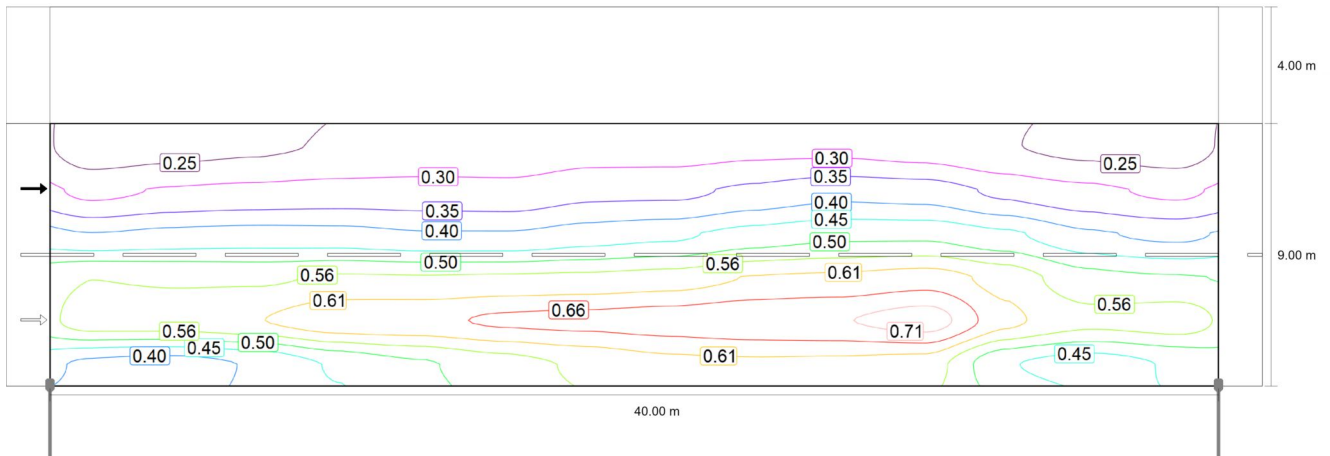
Roadway 1 (M6)Observer 1: Luminance with new installation [cd/m²] (Value grid)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
8.250	0.23	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.29	0.28	0.27	0.25	0.23
6.750	0.28	0.29	0.30	0.31	0.31	0.31	0.33	0.34	0.36	0.37	0.37	0.34	0.32	0.30
5.250	0.36	0.37	0.37	0.38	0.37	0.37	0.39	0.41	0.45	0.48	0.49	0.46	0.41	0.38
3.750	0.46	0.46	0.46	0.47	0.46	0.45	0.48	0.52	0.56	0.58	0.61	0.56	0.49	0.48
2.250	0.57	0.55	0.55	0.58	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.62	0.57	0.58
0.750	0.56	0.55	0.58	0.62	0.63	0.65	0.67	0.69	0.69	0.70	0.68	0.56	0.53	0.56

Observer 1: Luminance with new installation [cd/m²] (Value chart)

	L _{av}	L _{min}	L _{max}	U _o (g ₁)	g ₂
Observer 1: Luminance with new installation	0.46 cd/m ²	0.23 cd/m ²	0.72 cd/m ²	0.50	0.32

Sõidutee M6

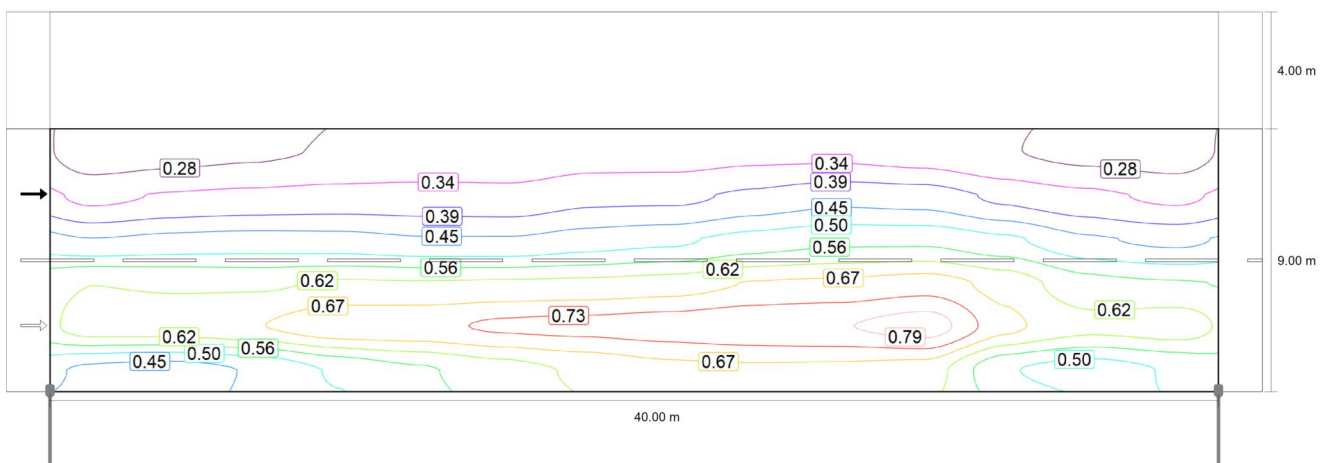
Roadway 1 (M6)Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Iso-illuminance curves)Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
8.250	0.23	0.23	0.24	0.26	0.26	0.26	0.28	0.28	0.29	0.29	0.28	0.26	0.24	0.23
6.750	0.29	0.31	0.32	0.32	0.32	0.32	0.34	0.34	0.37	0.39	0.38	0.34	0.31	0.29
5.250	0.40	0.42	0.43	0.42	0.41	0.41	0.43	0.44	0.48	0.50	0.49	0.46	0.41	0.39
3.750	0.55	0.55	0.55	0.56	0.56	0.56	0.57	0.58	0.61	0.62	0.63	0.58	0.52	0.51
2.250	0.58	0.59	0.60	0.64	0.65	0.66	0.67	0.68	0.70	0.70	0.73	0.62	0.57	0.58
0.750	0.39	0.38	0.41	0.46	0.50	0.53	0.56	0.59	0.60	0.59	0.58	0.46	0.43	0.46

Sõidutee M6

Roadway 1 (M6)Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 2: Maintenance value, luminance with dry roadway	0.46 cd/m^2	0.23 cd/m^2	0.73 cd/m^2	0.50	0.31

Observer 2: Luminance with new installation [cd/m^2] (Iso-illuminance curves)Observer 2: Luminance with new installation [cd/m^2] (Value grid)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
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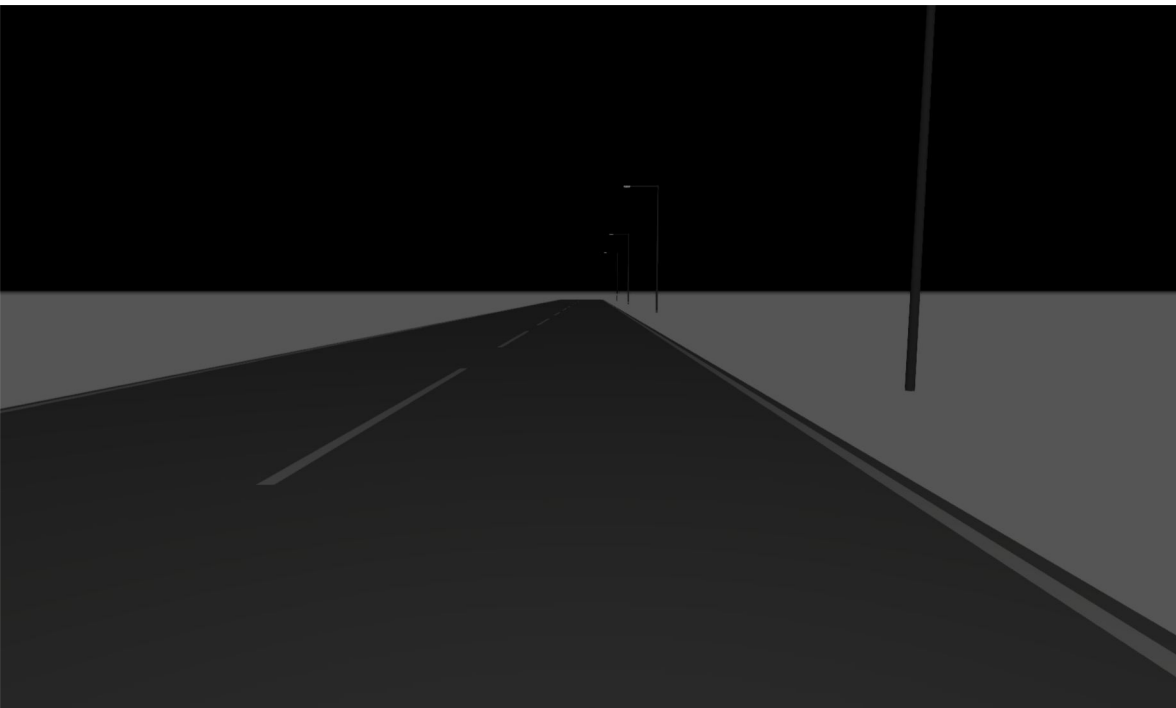
Sõidutee M6

Roadway 1 (M6)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
8.250	0.25	0.26	0.27	0.28	0.29	0.29	0.31	0.31	0.32	0.32	0.31	0.28	0.26	0.25
6.750	0.32	0.34	0.35	0.36	0.36	0.36	0.38	0.38	0.41	0.43	0.42	0.38	0.35	0.32
5.250	0.45	0.47	0.47	0.47	0.45	0.45	0.48	0.49	0.53	0.55	0.55	0.51	0.46	0.44
3.750	0.62	0.61	0.61	0.62	0.62	0.63	0.63	0.64	0.68	0.69	0.70	0.65	0.58	0.57
2.250	0.65	0.65	0.67	0.71	0.72	0.74	0.75	0.76	0.77	0.78	0.81	0.69	0.63	0.65
0.750	0.44	0.43	0.45	0.51	0.55	0.59	0.63	0.66	0.66	0.66	0.64	0.51	0.48	0.51

Observer 2: Luminance with new installation [cd/m²] (Value chart)

	L _{av}	L _{min}	L _{max}	U _o (g ₁)	g ₂
Observer 2: Luminance with new installation	0.51 cd/m ²	0.25 cd/m ²	0.81 cd/m ²	0.50	0.31

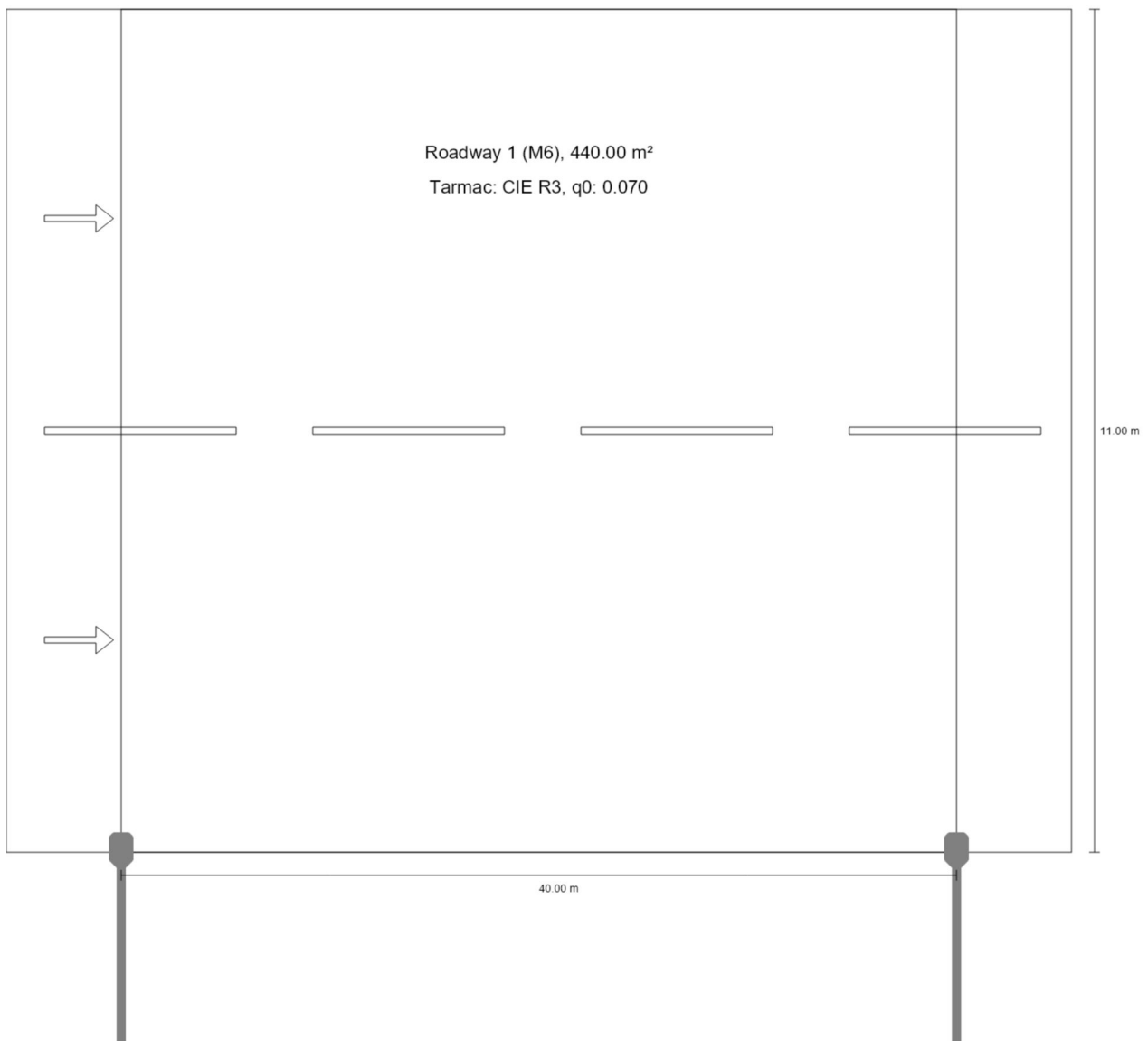


Sõidutee M6 bussitaskuga

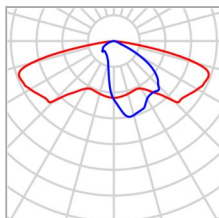
Description

Sõidutee M6 bussitaskuga

Summary (according to EN 13201:2015)



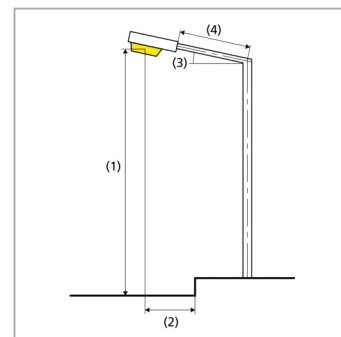
Sõidutee M6 bussitaskuga

Summary (according to EN 13201:2015)

Manufacturer	Vizulo	P	35.0 W
Article No.	6000076963 MRSE 035 740 L22 AA008	Φ_{Lamp}	4561 lm
Article name	Mini Martin 35 W 8 LED	$\Phi_{\text{Luminaire}}$	4561 lm
Fitting	1x 8 LED MOD AA	η	100.00 %

Mini Martin 35 W 8 LED (single side bottom)

Pole distance	40.000 m
(1) Light spot height	10.000 m
(2) Light point overhang	0.000 m
(3) Boom inclination	0.0°
(4) Boom length	2.500 m
Annual operating hours	4000 h: 100.0 %, 35.0 W
Wattage / route	875.0 W/km
ULR / ULOR	0.00 / 0.00
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$: 593 cd/klm $\geq 80^\circ$: 227 cd/klm $\geq 90^\circ$: 0.00 cd/klm
Luminous intensity class The luminous intensity values in [cd/klm] for calculation of the luminous intensity class refer to the luminaire luminous flux according to EN 13201:2015.	–
Glare index class	D.5
MF	0.90



Sõidutee M6 bussitaskuga

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.90 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
Roadway 1 (M6)	L_{av}	0.39 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.38	≥ 0.35	✓
	U_l	0.77	≥ 0.40	✓
	TI	11 %	≤ 20 %	✓
	R_{EI}	0.41	≥ 0.30	✓

Results for energy efficiency indicators

	Symbol	Calculated	Energy Consumption
Sõidutee M6 bussitaskuga	D_p	0.014 W/lx*m ²	–
Mini Martin 35 W 8 LED (single side bottom)	D_e	0.3 kWh/m ² yr	140.0 kWh/yr

Sõidutee M6 bussitaskuga

Roadway 1 (M6)

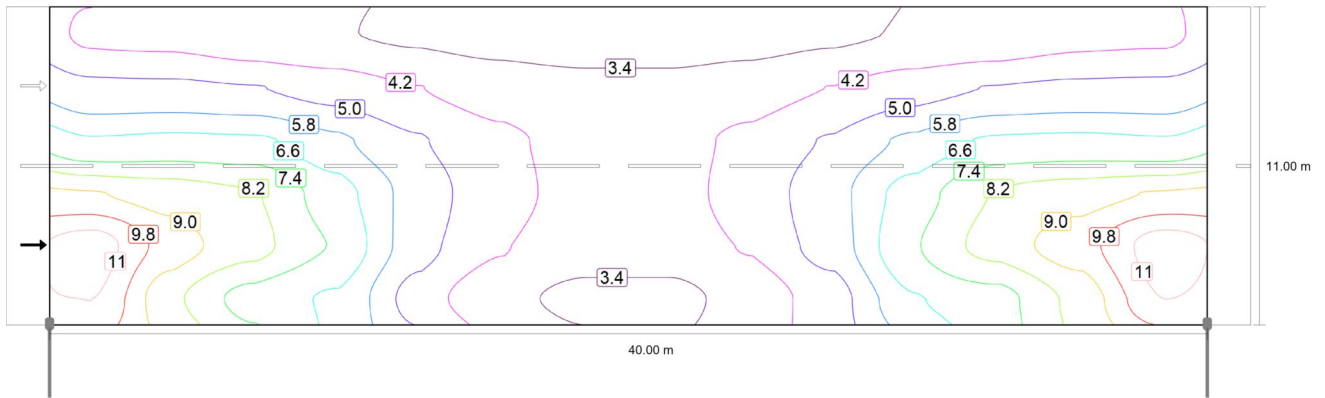
Results for valuation field

	Symbol	Calculated	Target	Check
Roadway 1 (M6)	L_{av}	0.39 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.38	≥ 0.35	✓
	U_l	0.77	≥ 0.40	✓
	TI	11 %	≤ 20 %	✓
	R_{EI}	0.41	≥ 0.30	✓

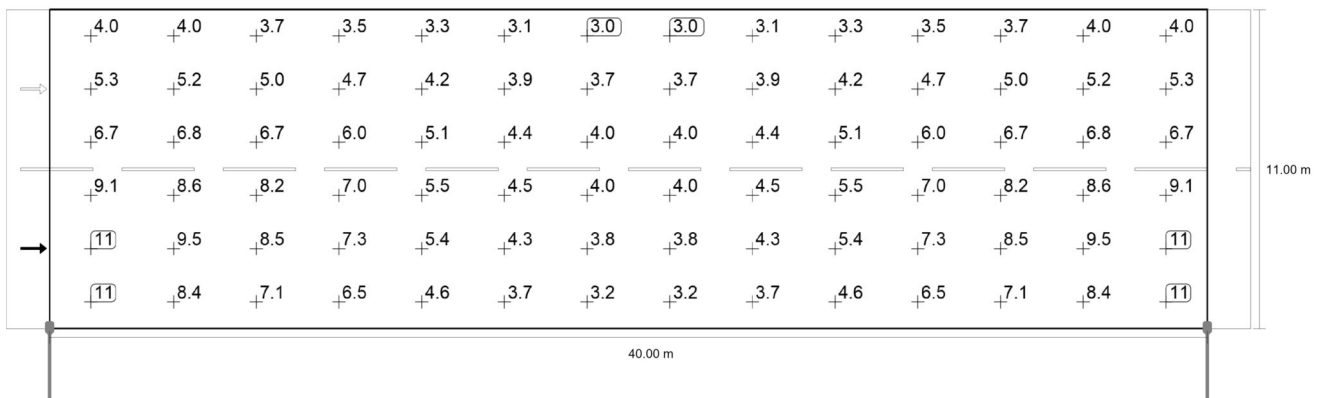
Results for observer

	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 2.750 m, 1.500 m	L_{av}	0.39 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.40	≥ 0.35	✓
	U_l	0.77	≥ 0.40	✓
	TI	11 %	≤ 20 %	✓
Observer 2 Position: -60.000 m, 8.250 m, 1.500 m	L_{av}	0.43 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.38	≥ 0.35	✓
	U_l	0.79	≥ 0.40	✓
	TI	6 %	≤ 20 %	✓

Sõidutee M6 bussitaskuga

Roadway 1 (M6)

Maintenance value, horizontal illuminance [lx] (Iso-illuminance curves)



Maintenance value, horizontal illuminance [lx] (Value grid)

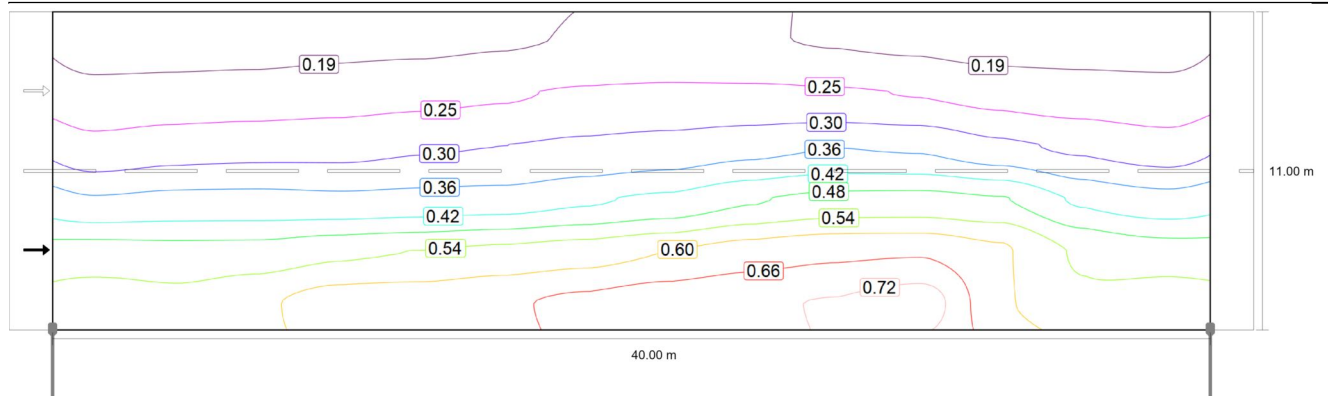
Sõidutee M6 bussitaskuga

Roadway 1 (M6)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
10.083	4.05	3.97	3.67	3.47	3.29	3.11	3.02	3.02	3.11	3.29	3.47	3.67	3.97	4.05
8.250	5.26	5.22	5.04	4.71	4.23	3.86	3.66	3.66	3.86	4.23	4.71	5.04	5.22	5.26
6.417	6.70	6.83	6.74	5.98	5.09	4.37	4.00	4.00	4.37	5.09	5.98	6.74	6.83	6.70
4.583	9.06	8.65	8.24	6.98	5.51	4.49	3.99	3.99	4.49	5.51	6.98	8.24	8.65	9.06
2.750	10.98	9.46	8.49	7.35	5.36	4.28	3.76	3.76	4.28	5.36	7.35	8.49	9.46	10.98
0.917	10.59	8.41	7.11	6.52	4.64	3.68	3.24	3.24	3.68	4.64	6.52	7.11	8.41	10.59

Maintenance value, horizontal illuminance [lx] (Value chart)

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	5.64 lx	3.02 lx	11.0 lx	0.54	0.28

Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Iso-illuminance curves)

Sõidutee M6 bussitaskuga

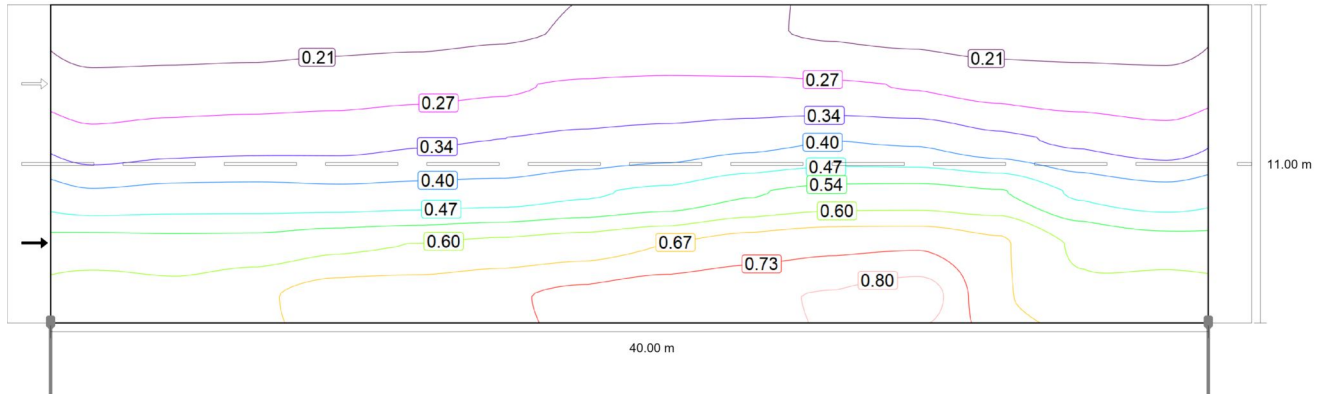
Roadway 1 (M6)

Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
10.083	0.16	0.16	0.16	0.17	0.17	0.18	0.19	0.19	0.19	0.18	0.17	0.16	0.16	0.16
8.250	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.26	0.26	0.25	0.24	0.23	0.22	0.21
6.417	0.26	0.28	0.29	0.29	0.30	0.30	0.32	0.33	0.34	0.36	0.35	0.32	0.29	0.27
4.583	0.37	0.38	0.38	0.38	0.38	0.39	0.41	0.44	0.48	0.50	0.50	0.48	0.41	0.38
2.750	0.51	0.50	0.51	0.53	0.54	0.56	0.57	0.60	0.63	0.65	0.65	0.61	0.53	0.51
0.917	0.57	0.56	0.59	0.63	0.63	0.65	0.67	0.70	0.71	0.72	0.75	0.61	0.56	0.57

Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Maintenance value, luminance with dry roadway	0.39 cd/m^2	0.16 cd/m^2	0.75 cd/m^2	0.40	0.21

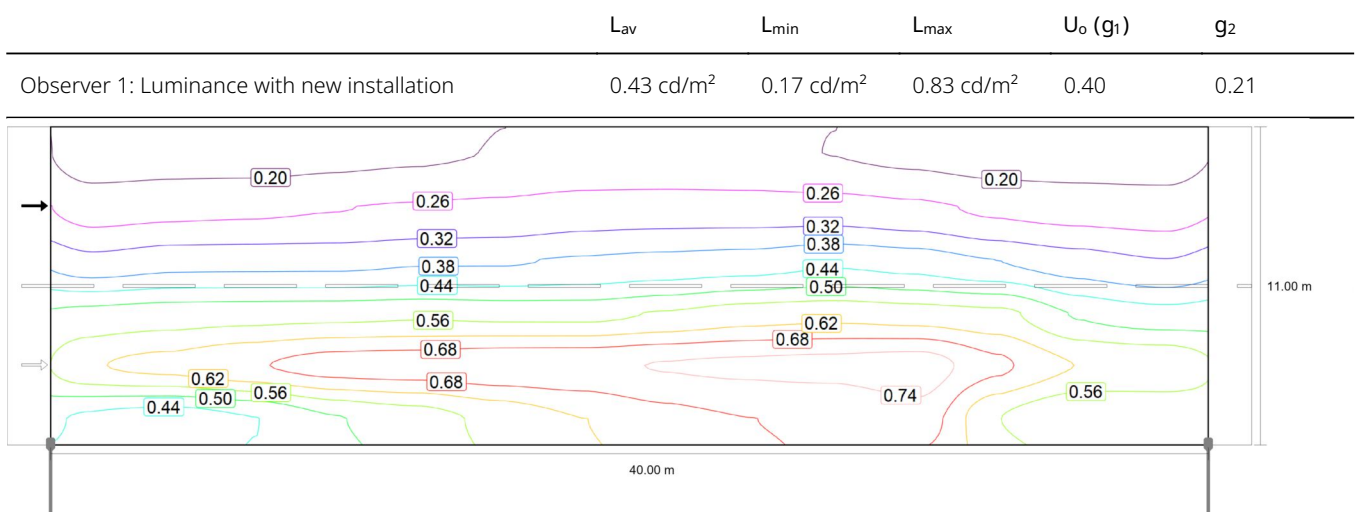


Observer 1: Luminance with new installation [cd/m^2] (Iso-illuminance curves)

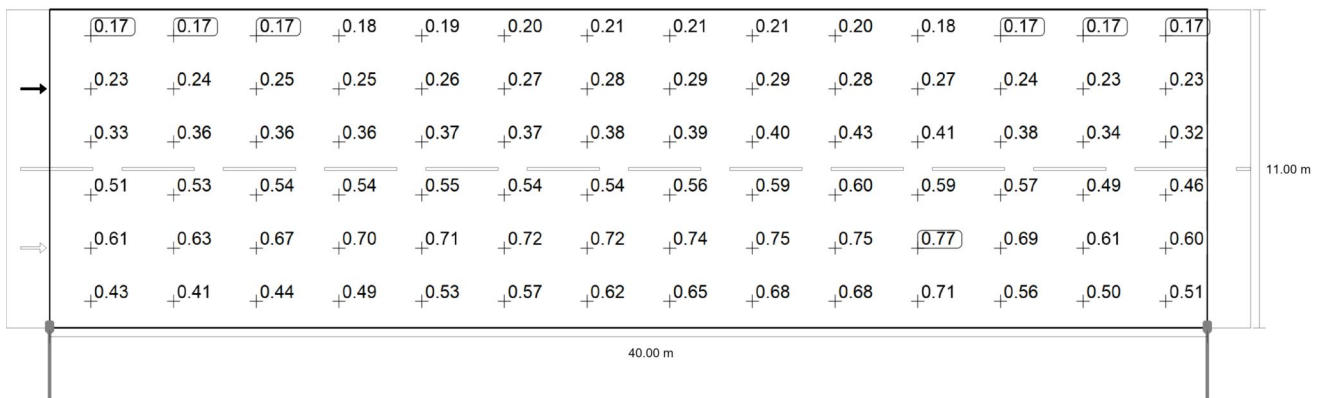
Sõidutee M6 bussitaskuga

Roadway 1 (M6)Observer 1: Luminance with new installation [cd/m²] (Value grid)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
10.083	0.17	0.18	0.18	0.19	0.19	0.20	0.21	0.22	0.21	0.20	0.19	0.18	0.18	0.18
8.250	0.23	0.23	0.24	0.25	0.25	0.27	0.28	0.29	0.29	0.28	0.27	0.25	0.24	0.23
6.417	0.29	0.31	0.32	0.32	0.33	0.34	0.35	0.36	0.38	0.40	0.39	0.35	0.33	0.30
4.583	0.41	0.42	0.42	0.42	0.43	0.43	0.46	0.48	0.53	0.55	0.56	0.54	0.46	0.43
2.750	0.56	0.56	0.56	0.59	0.60	0.62	0.64	0.67	0.70	0.72	0.73	0.68	0.59	0.57
0.917	0.64	0.63	0.65	0.70	0.70	0.72	0.75	0.77	0.79	0.80	0.83	0.68	0.62	0.64

Observer 1: Luminance with new installation [cd/m²] (Value chart)

Sõidutee M6 bussitaskuga

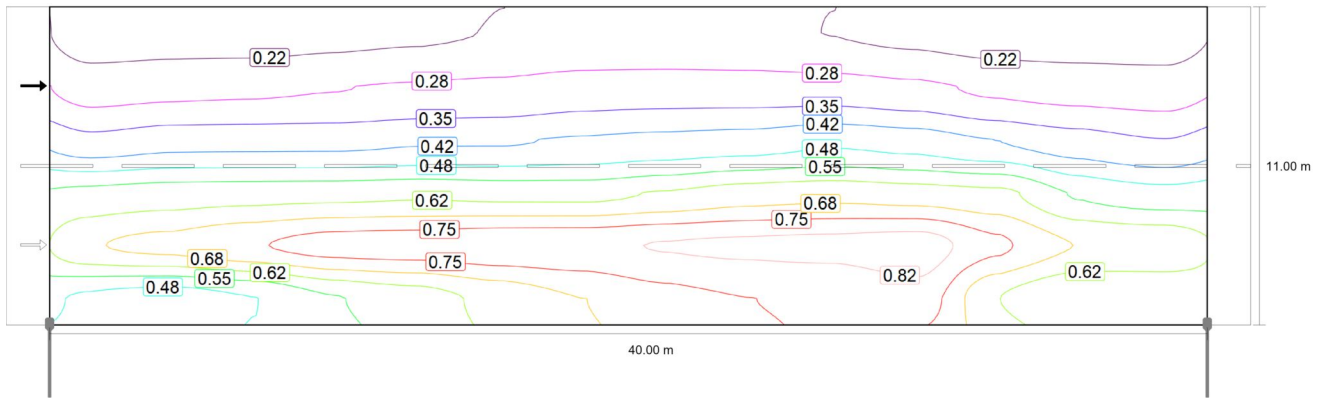
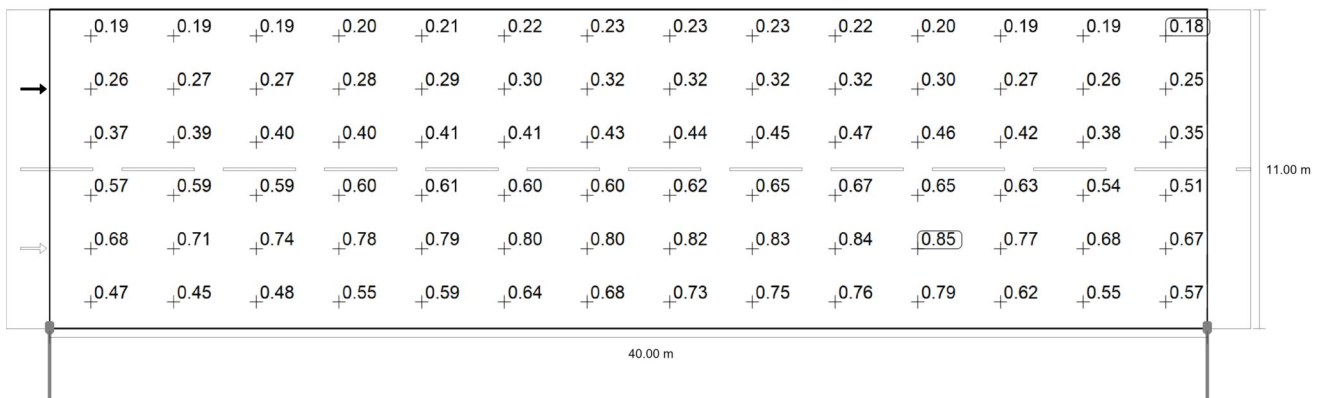
Roadway 1 (M6)Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Iso-illuminance curves)Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
10.083	0.17	0.17	0.17	0.18	0.19	0.20	0.21	0.21	0.21	0.20	0.18	0.17	0.17	0.17
8.250	0.23	0.24	0.25	0.25	0.26	0.27	0.28	0.29	0.29	0.28	0.27	0.24	0.23	0.23
6.417	0.33	0.36	0.36	0.36	0.37	0.37	0.38	0.39	0.40	0.43	0.41	0.38	0.34	0.32
4.583	0.51	0.53	0.54	0.54	0.55	0.54	0.54	0.56	0.59	0.60	0.59	0.57	0.49	0.46
2.750	0.61	0.63	0.67	0.70	0.71	0.72	0.72	0.74	0.75	0.75	0.77	0.69	0.61	0.60
0.917	0.43	0.41	0.44	0.49	0.53	0.57	0.62	0.65	0.68	0.68	0.71	0.56	0.50	0.51

Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 2: Maintenance value, luminance with dry roadway	0.43 cd/m^2	0.17 cd/m^2	0.77 cd/m^2	0.38	0.22

Sõidutee M6 bussitaskuga

Roadway 1 (M6)Observer 2: Luminance with new installation [cd/m^2] (Iso-illuminance curves)Observer 2: Luminance with new installation [cd/m^2] (Value grid)

Sõidutee M6 bussitaskuga

Roadway 1 (M6)

m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
10.083	0.19	0.19	0.19	0.20	0.21	0.22	0.23	0.23	0.23	0.22	0.20	0.19	0.19	0.18
8.250	0.26	0.27	0.27	0.28	0.29	0.30	0.32	0.32	0.32	0.32	0.30	0.27	0.26	0.25
6.417	0.37	0.39	0.40	0.40	0.41	0.41	0.43	0.44	0.45	0.47	0.46	0.42	0.38	0.35
4.583	0.57	0.59	0.59	0.60	0.61	0.60	0.60	0.62	0.65	0.67	0.65	0.63	0.54	0.51
2.750	0.68	0.71	0.74	0.78	0.79	0.80	0.80	0.82	0.83	0.84	0.85	0.77	0.68	0.67
0.917	0.47	0.45	0.48	0.55	0.59	0.64	0.68	0.73	0.75	0.76	0.79	0.62	0.55	0.57

Observer 2: Luminance with new installation [cd/m²] (Value chart)

	L _{av}	L _{min}	L _{max}	U _o (g ₁)	g ₂
Observer 2: Luminance with new installation	0.48 cd/m ²	0.18 cd/m ²	0.85 cd/m ²	0.38	0.22