

Kõrgemäe tee valgustus

Table of Contents

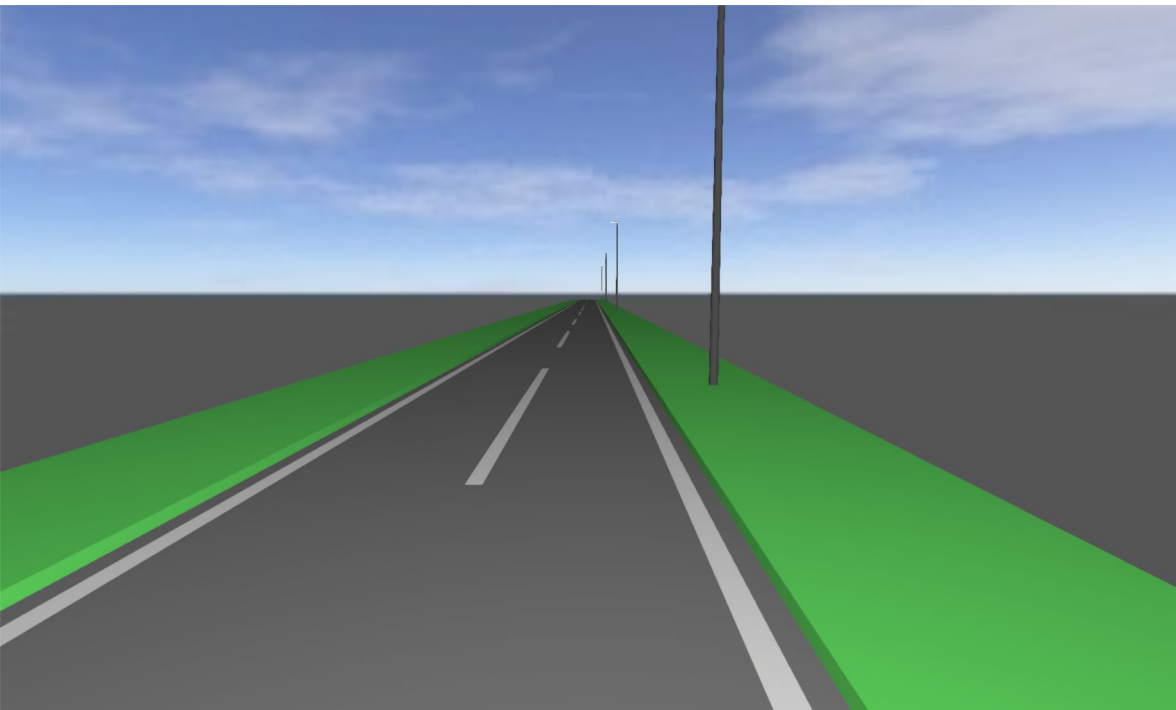
Cover	1
Table of Contents	2
Description	3
Luminaire list	4

Product data sheets

Vizulo - Micro Martin 35 W 16 LED (1x 16 LED MOD AA)	5
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Ajataguse tee · Alternative 1

Summary (according to EN 13201:2015)	6
Kõrgemäe tee (M5)	10



Description

Projekteerija

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Luminaire list

 Φ_{total}

18792 lm

 P_{total}

140.0 W

Luminous efficacy

134.2 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
4	Vizulo	55303160 MRUE 035 730 L22 AA016 CJN ZG1	Micro Martin 35 W 16 LED	35.0 W	4698 lm	134.2 lm/W

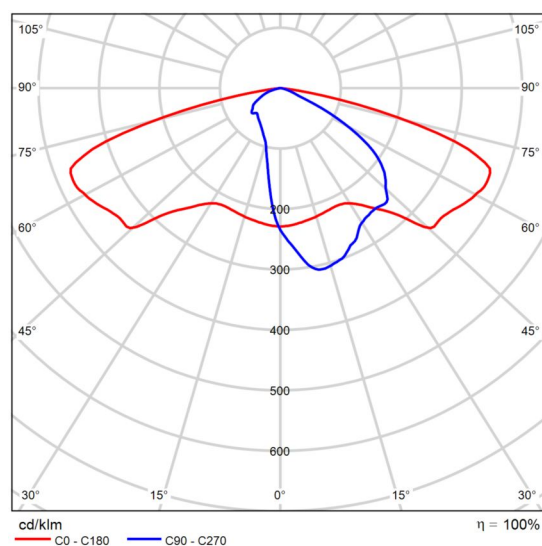
Product data sheet

Vizulo - Micro Martin 35 W 16 LED



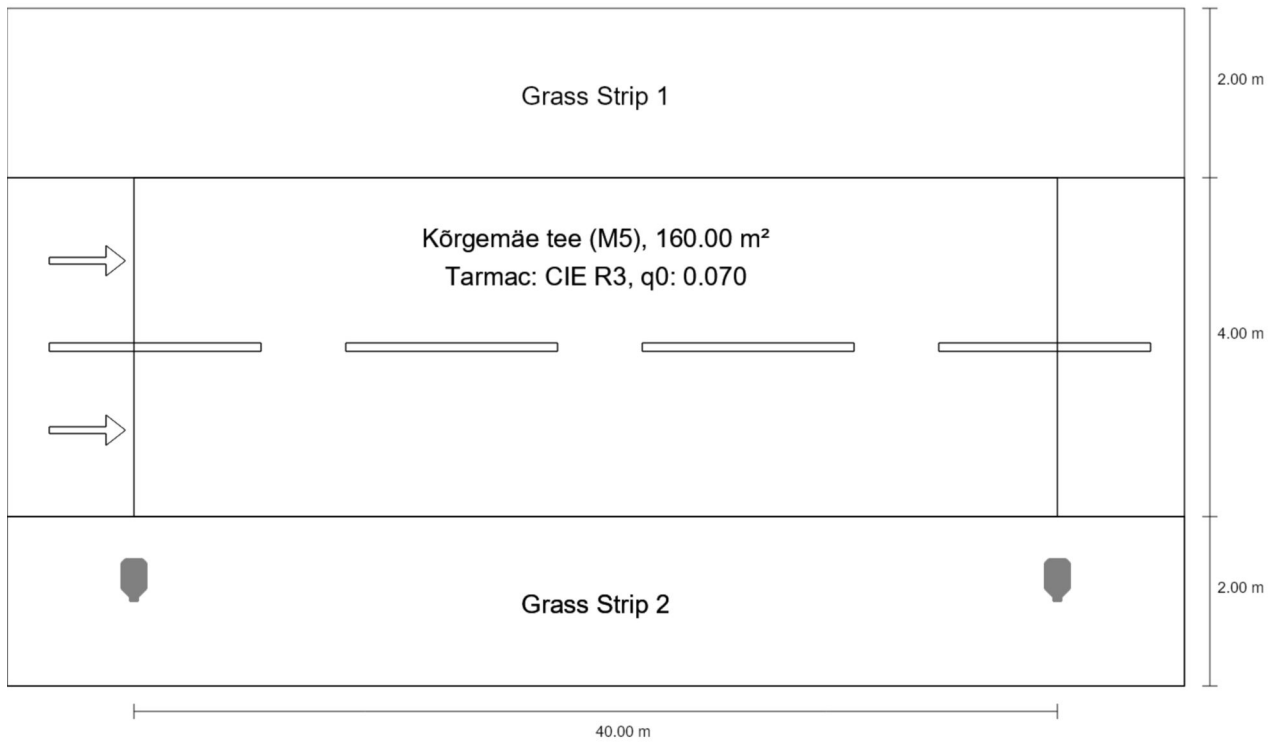
Article No. 55303160 MRUE 035
730 L22 AA016 CJN
ZG1

P	35.0 W
Φ_{Lamp}	4698 lm
$\Phi_{\text{Luminaire}}$	4698 lm
η	100.00 %
Luminous efficacy	134.2 lm/W
CCT	3000 K
CRI	70

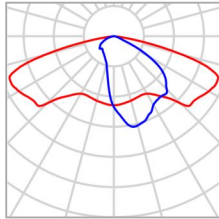


Polar LDC

Summary (according to EN 13201:2015)



Summary (according to EN 13201:2015)

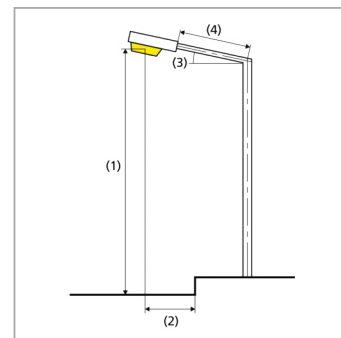


Manufacturer	Vizulo	P	35.0 W
Article No.	55303160 MRUE 035 730 L22 AA016 CJN ZG1	Φ_{Lamp}	4698 lm
Article name	Micro Martin 35 W 16 LED	$\Phi_{\text{Luminaire}}$	4698 lm
Fitting	1x 16 LED MOD AA	η	100.00 %

Summary (according to EN 13201:2015)

Micro Martin 35 W 16 LED (single side bottom)

Pole distance	40.000 m
(1) Light spot height	7.200 m
(2) Light point overhang	-0.750 m
(3) Boom inclination	0.0°
(4) Boom length	0.250 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	≥ 70°: 602 cd/klm
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	≥ 80°: 159 cd/klm ≥ 90°: 0.00 cd/klm
Luminous intensity class	G*1
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	0.80



Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.80 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
Kõrgemäe tee (M5)	L_{av}	0.57 cd/m ²	≥ 0.50 cd/m ²	✓
	U_o	0.51	≥ 0.35	✓
	U_l	0.43	≥ 0.40	✓
	TI	14 %	≤ 15 %	✓
	R_{EI}	0.72	≥ 0.30	✓

Results for energy efficiency indicators

	Symbol	Calculated	Energy Consumption
Ajataguse tee	D_p	0.026 W/lx*m ²	–
Micro Martin 35 W 16 LED (single side bottom)	D_e	0.9 kWh/m ² yr	140.0 kWh/yr

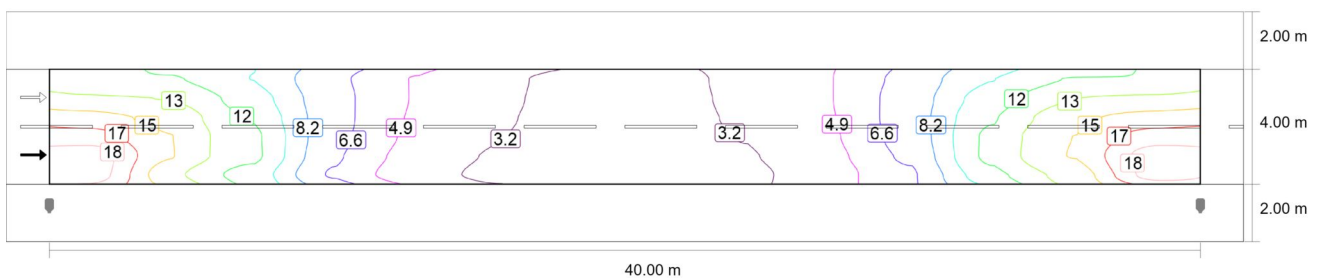
Kõrgemäe tee (M5)

Results for valuation field

	Symbol	Calculated	Target	Check
Kõrgemäe tee (M5)	L_{av}	0.57 cd/m ²	≥ 0.50 cd/m ²	✓
	U_o	0.51	≥ 0.35	✓
	U_l	0.43	≥ 0.40	✓
	TI	14 %	≤ 15 %	✓
	R_{EI}	0.72	≥ 0.30	✓

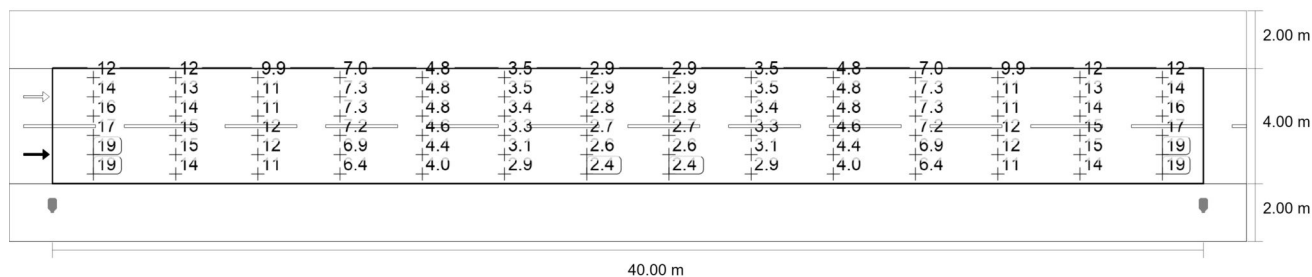
Results for observer

	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 3.000 m, 1.500 m	L_{av}	0.57 cd/m ²	≥ 0.50 cd/m ²	✓
	U_o	0.51	≥ 0.35	✓
	U_l	0.43	≥ 0.40	✓
	TI	14 %	≤ 15 %	✓
Observer 2 Position: -60.000 m, 5.000 m, 1.500 m	L_{av}	0.61 cd/m ²	≥ 0.50 cd/m ²	✓
	U_o	0.51	≥ 0.35	✓
	U_l	0.49	≥ 0.40	✓
	TI	11 %	≤ 15 %	✓



Kõrgemäe tee (M5)

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

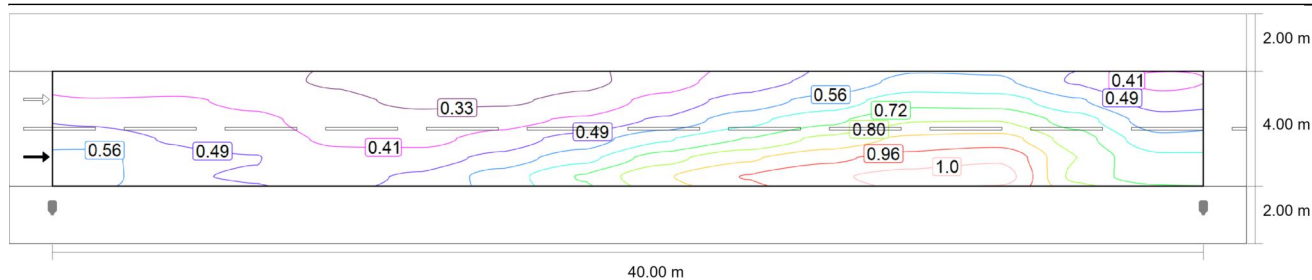
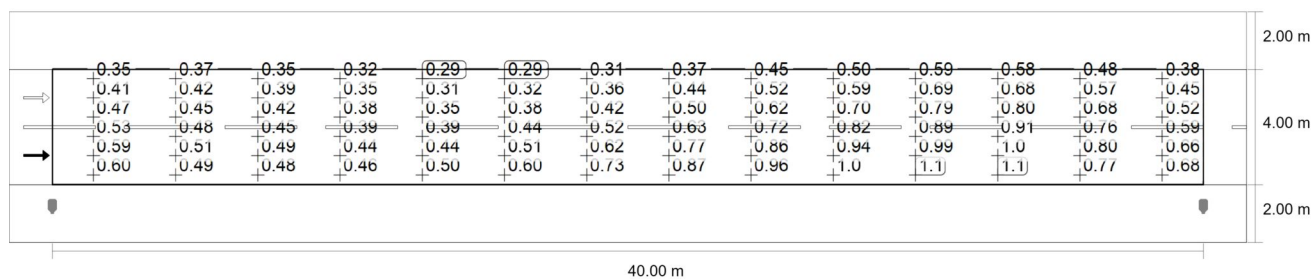


Maintenance value, horizontal illuminance [lx] (Value grid)

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
5.667	11.59	11.67	9.88	7.04	4.85	3.52	2.93	2.93	3.52	4.85	7.04	9.88	11.67	11.59
5.000	13.60	13.20	10.74	7.26	4.84	3.49	2.88	2.88	3.49	4.84	7.26	10.74	13.20	13.60
4.333	15.65	14.37	11.43	7.30	4.77	3.42	2.81	2.81	3.42	4.77	7.30	11.43	14.37	15.65
3.667	17.49	14.92	11.93	7.18	4.63	3.29	2.72	2.72	3.29	4.63	7.18	11.93	14.92	17.49
3.000	19.07	14.99	11.98	6.85	4.37	3.10	2.60	2.60	3.10	4.37	6.85	11.98	14.99	19.07
2.333	19.02	13.82	10.98	6.37	4.05	2.88	2.41	2.41	2.88	4.05	6.37	10.98	13.82	19.02

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

	E _{av}	E _{min}	E _{max}	U _o (g ₁)	g ₂
Maintenance value, horizontal illuminance	8.38 lx	2.41 lx	19.1 lx	0.29	0.13

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

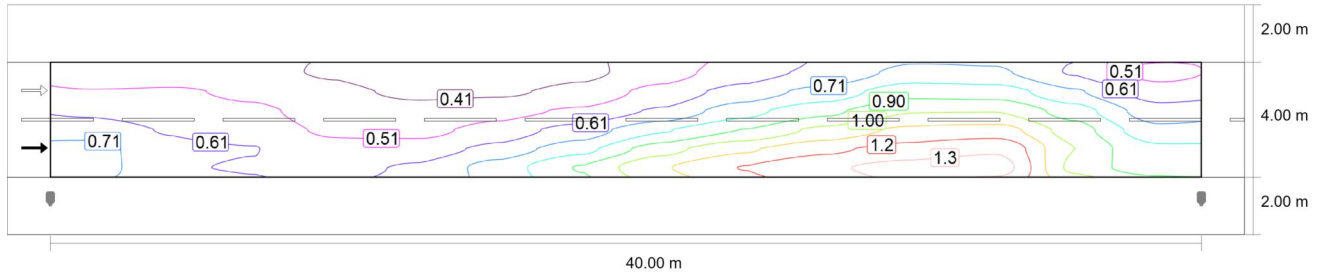
Kõrgemäe tee (M5)

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

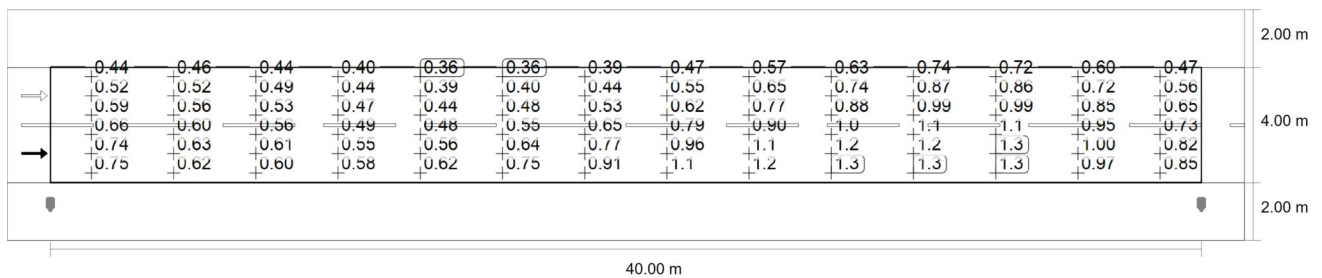
m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
5.667	0.35	0.37	0.35	0.32	0.29	0.29	0.31	0.37	0.45	0.50	0.59	0.58	0.48	0.38
5.000	0.41	0.42	0.39	0.35	0.31	0.32	0.36	0.44	0.52	0.59	0.69	0.68	0.57	0.45
4.333	0.47	0.45	0.42	0.38	0.35	0.38	0.42	0.50	0.62	0.70	0.79	0.80	0.68	0.52
3.667	0.53	0.48	0.45	0.39	0.39	0.44	0.52	0.63	0.72	0.82	0.89	0.91	0.76	0.59
3.000	0.59	0.51	0.49	0.44	0.44	0.51	0.62	0.77	0.86	0.94	0.99	1.02	0.80	0.66
2.333	0.60	0.49	0.48	0.46	0.50	0.60	0.73	0.87	0.96	1.02	1.06	1.07	0.77	0.68

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	0.57 cd/m^2	0.29 cd/m^2	1.07 cd/m^2	0.51	0.27



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



Observer 1: Luminance with new installation [cd/m^2] (Value grid)

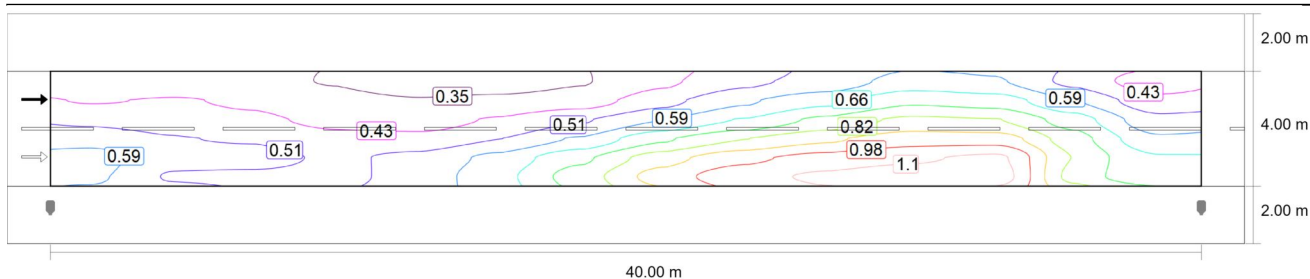
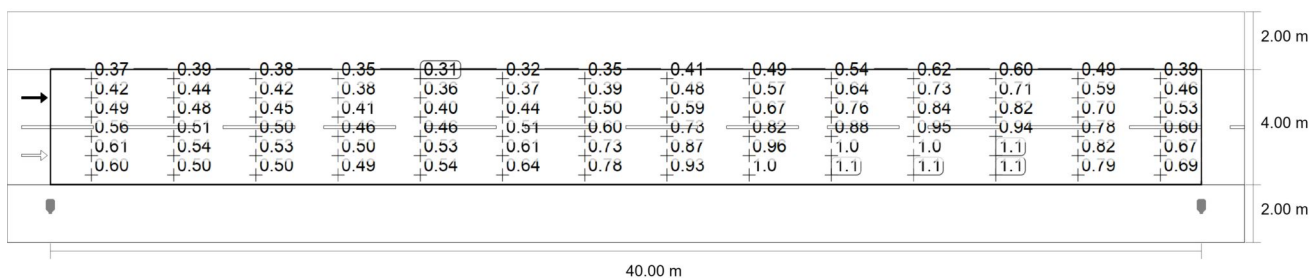
m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
5.667	0.44	0.46	0.44	0.40	0.36	0.36	0.39	0.47	0.57	0.63	0.74	0.72	0.60	0.47
5.000	0.52	0.52	0.49	0.44	0.39	0.40	0.44	0.55	0.65	0.74	0.87	0.86	0.72	0.56
4.333	0.59	0.56	0.53	0.47	0.44	0.48	0.53	0.62	0.77	0.88	0.99	0.99	0.85	0.65

Kõrgemäe tee (M5)

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
3.667	0.66	0.60	0.56	0.49	0.48	0.55	0.65	0.79	0.90	1.03	1.12	1.14	0.95	0.73
3.000	0.74	0.63	0.61	0.55	0.56	0.64	0.77	0.96	1.08	1.17	1.23	1.28	1.00	0.82
2.333	0.75	0.62	0.60	0.58	0.62	0.75	0.91	1.09	1.20	1.28	1.32	1.34	0.97	0.85

Observer 1: Luminance with new installation [cd/m^2] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Luminance with new installation	0.72 cd/m^2	0.36 cd/m^2	1.34 cd/m^2	0.51	0.27

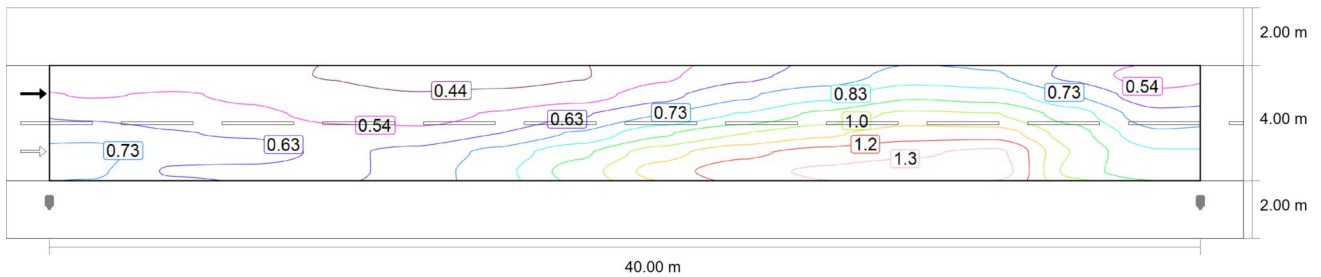
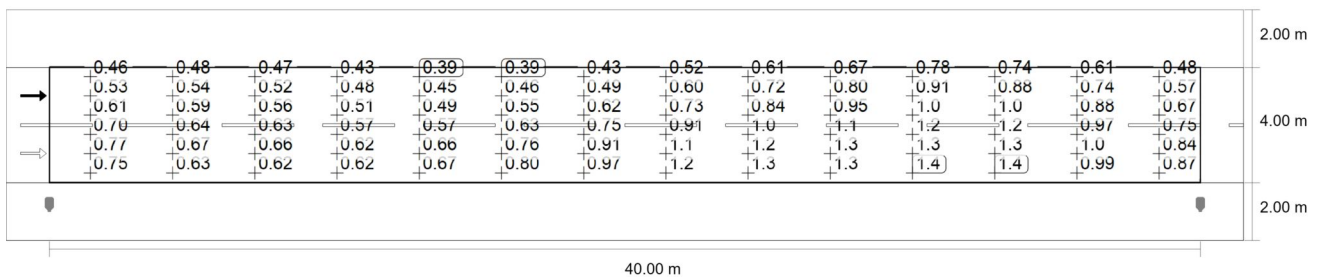
Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Iso-illuminance curves)Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

Kõrgemäe tee (M5)

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
5.667	0.37	0.39	0.38	0.35	0.31	0.32	0.35	0.41	0.49	0.54	0.62	0.60	0.49	0.39
5.000	0.42	0.44	0.42	0.38	0.36	0.37	0.39	0.48	0.57	0.64	0.73	0.71	0.59	0.46
4.333	0.49	0.48	0.45	0.41	0.40	0.44	0.50	0.59	0.67	0.76	0.84	0.82	0.70	0.53
3.667	0.56	0.51	0.50	0.46	0.46	0.51	0.60	0.73	0.82	0.88	0.95	0.94	0.78	0.60
3.000	0.61	0.54	0.53	0.50	0.53	0.61	0.73	0.87	0.96	1.01	1.04	1.07	0.82	0.67
2.333	0.60	0.50	0.50	0.49	0.54	0.64	0.78	0.93	1.03	1.07	1.09	1.10	0.79	0.69

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	0.61 cd/m^2	0.31 cd/m^2	1.10 cd/m^2	0.51	0.28

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
5.667	0.46	0.48	0.47	0.43	0.39	0.39	0.43	0.52	0.61	0.67	0.78	0.74	0.61	0.48
5.000	0.53	0.54	0.52	0.48	0.45	0.46	0.49	0.60	0.72	0.80	0.91	0.88	0.74	0.57
4.333	0.61	0.59	0.56	0.51	0.49	0.55	0.62	0.73	0.84	0.95	1.05	1.03	0.88	0.67
3.667	0.70	0.64	0.63	0.57	0.57	0.63	0.75	0.91	1.03	1.11	1.18	1.18	0.97	0.75

Kõrgemäe tee (M5)

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
3.000	0.77	0.67	0.66	0.62	0.66	0.76	0.91	1.08	1.20	1.26	1.30	1.34	1.02	0.84
2.333	0.75	0.63	0.62	0.62	0.67	0.80	0.97	1.17	1.28	1.34	1.37	1.37	0.99	0.87

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	0.77 cd/m ²	0.39 cd/m ²	1.37 cd/m ²	0.51	0.28