

**Mihkli ja Paunamäe detailplaneeringu ala
tänavavalgustus ja sidevarustus; Köide I -
Tänavavalgustus**

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Mihkli ja Paunamäe DP · Alternative 1

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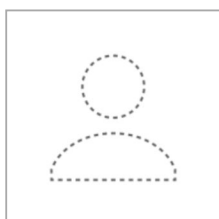
Luminaire list

Φ_{total} 19132 lm	P_{total} 156.0 W	Luminous efficacy 122.6 lm/W
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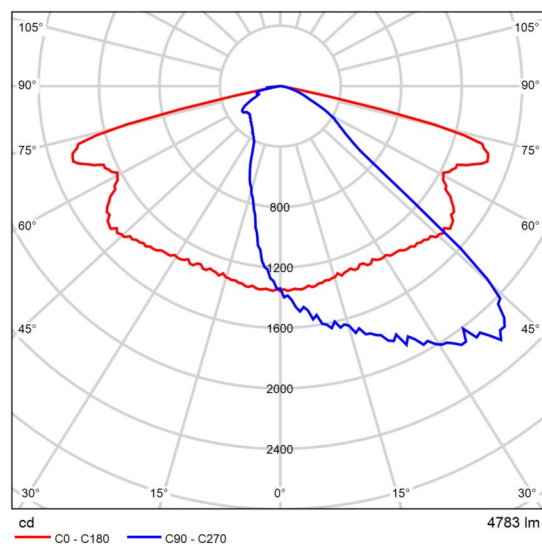
pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy
4	Not yet a DIALux member	Mini Martin 39 W 16 LEDs	MRS 039 730 L01 A016_Bin-N4_TH	39.0 W	4783 lm	122.6 lm/W

Product data sheet

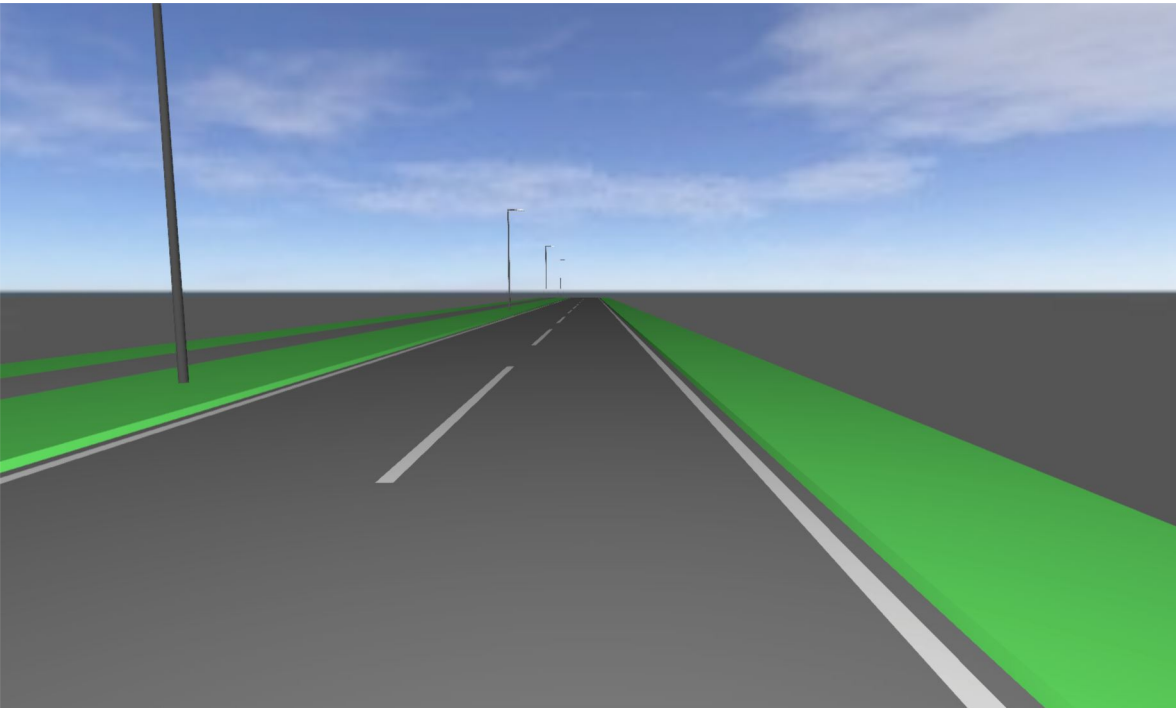
Not yet a DIALux member - MRS 039 730 L01 A016_Bin-N4_TH



Article No.	Mini Martin 39 W 16 LEDs
P	39.0 W
$\Phi_{\text{Luminaire}}$	4783 lm
Luminous efficacy	122.6 lm/W
CCT	3000 K
CRI	70



Polar LDC

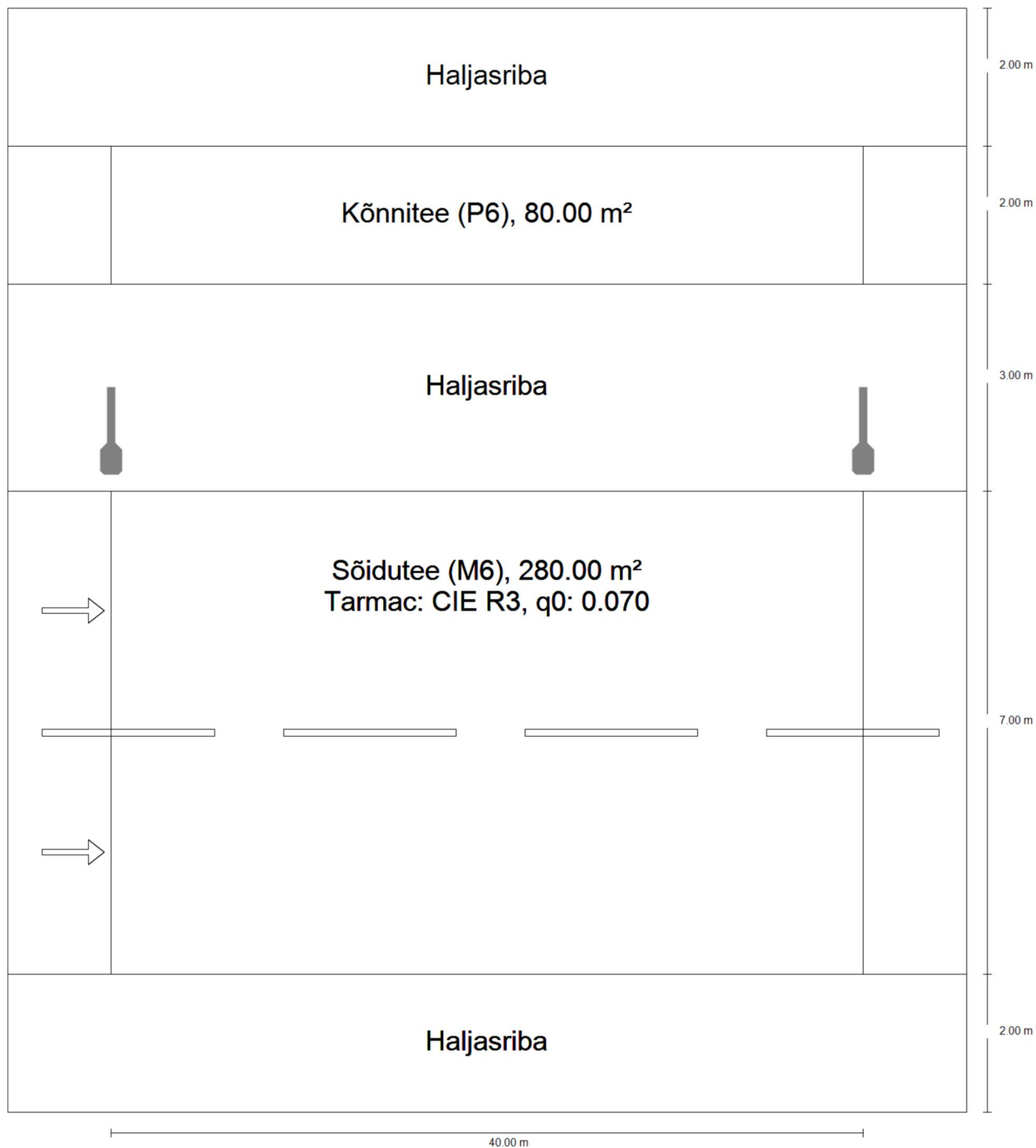


Mihkli ja Paunamäe DP

Description

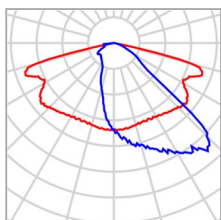
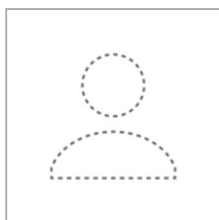
Mihkli ja Paunamäe DP

Summary (according to EN 13201:2015)



Mihkli ja Paunamäe DP

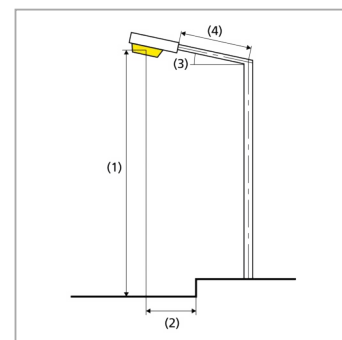
Summary (according to EN 13201:2015)



Manufacturer	Not yet a DIALux member	P	39.0 W
Article No.	Mini Martin 39 W 16 LEDs	$\Phi_{\text{Luminaire}}$	4783 lm
Article name	MRS 039 730 L01 A016_Bin-N4_TH		
Fitting	1x 16 LEDs bin N4		

MRS 039 730 L01 A016_Bin-N4_TH (single side top)

Pole distance	40.000 m
(1) Light spot height	8.000 m
(2) Light point overhang	-0.500 m
(3) Boom inclination	0.0°
(4) Boom length	1.000 m
Annual operating hours	4000 h: 100.0 %, 39.0 W
Consumption	975.0 W/km
ULR / ULOR	0.00 / 0.00
Max. luminous intensities	≥ 70°: 843 cd/klm
Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	≥ 80°: 33.1 cd/klm ≥ 90°: 1.65 cd/klm
Luminous intensity class	G*3
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



Mihkli ja Paunamäe DP

Summary (according to EN 13201:2015)

Results for valuation fields

	Symbol	Calculated	Target	Check
Kõnnitee (P6)	E_{av}	2.28 lx	[2.00 - 3.00] lx	✓
	E_{min}	1.06 lx	≥ 0.40 lx	✓
Sõidutee (M6)	L_{av}	0.39 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.60	≥ 0.35	✓
	U_l	0.61	≥ 0.40	✓
	TI	11 %	≤ 20 %	✓
	R_{Et}	0.56	≥ 0.30	✓

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

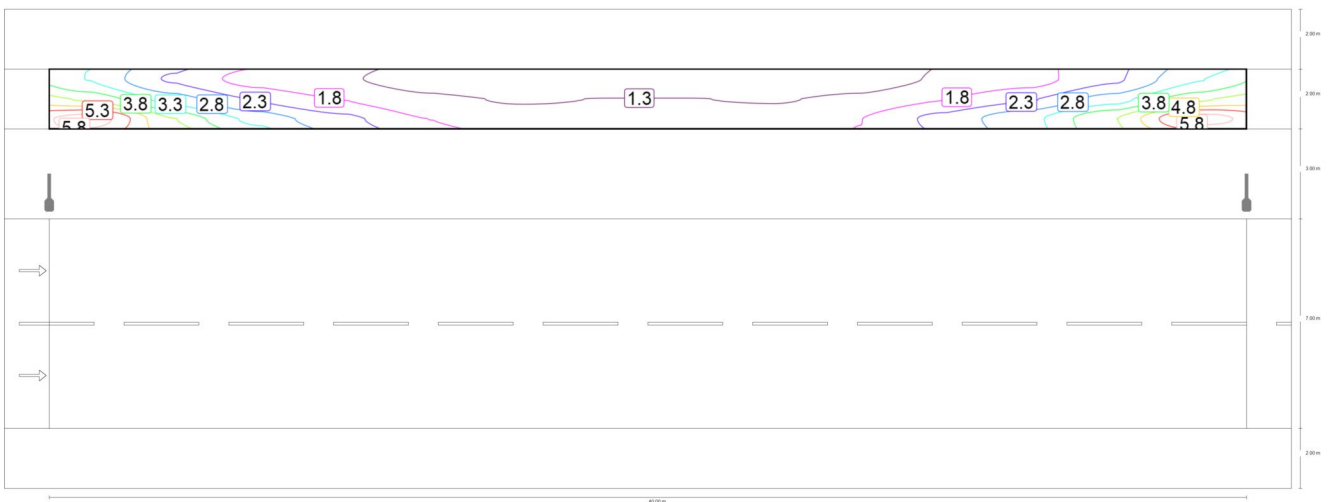
Results for energy efficiency indicators

	Symbol	Calculated	Consumption
Mihkli ja Paunamäe DP	D_p	0.018 W/lx*m ²	-
MRS 039 730 L01 A016_Bin-N4_TH (single side top)	D_e	0.4 kWh/m ² yr,	156.0 kWh/yr

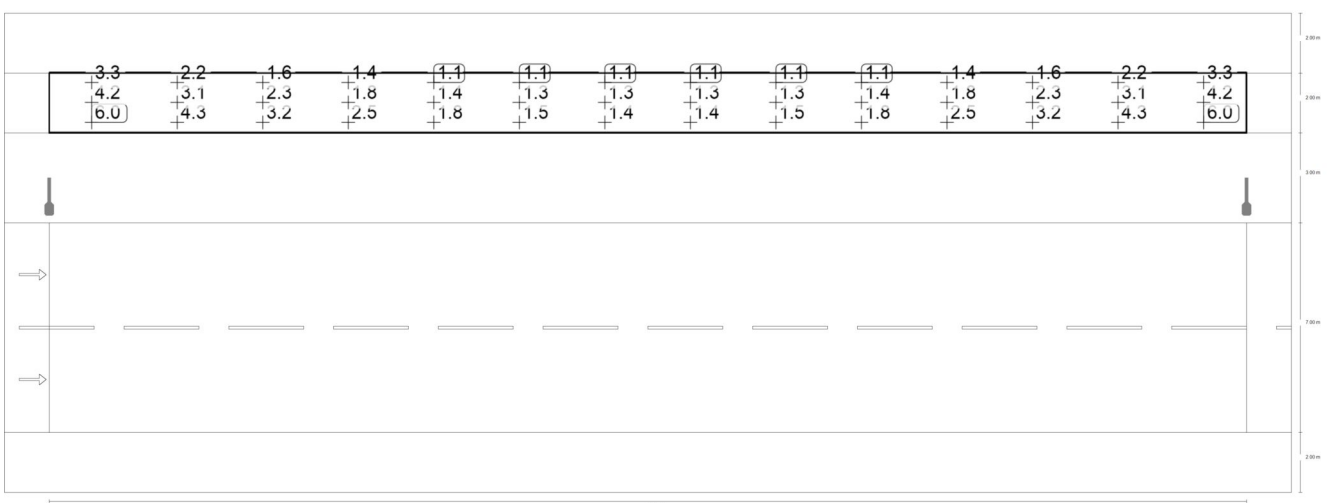
Mihkli ja Paunamäe DP
Kõnnitee (P6)

Results for valuation field

	Symbol	Calculated	Target	Check
Kõnnitee (P6)	E_{av}	2.28 lx	[2.00 - 3.00] lx	✓
	E_{min}	1.06 lx	≥ 0.40 lx	✓



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



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

Mihkli ja Paunamäe DP

Kõnnitee (P6)

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
13.667	3.29	2.24	1.62	1.36	1.10	1.06	1.13	1.13	1.06	1.10	1.36	1.62	2.24	3.29
13.000	4.22	3.09	2.26	1.79	1.42	1.28	1.32	1.32	1.28	1.42	1.79	2.26	3.09	4.22
12.333	6.05	4.31	3.16	2.46	1.80	1.51	1.45	1.45	1.51	1.80	2.46	3.16	4.31	6.05

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

	E_{av}	E_{min}	E_{max}	g_1	g_2
Maintenance value, horizontal illuminance	2.28 lx	1.06 lx	6.05 lx	0.47	0.18

Mihkli ja Paunamäe DP

Sõidutee (M6)

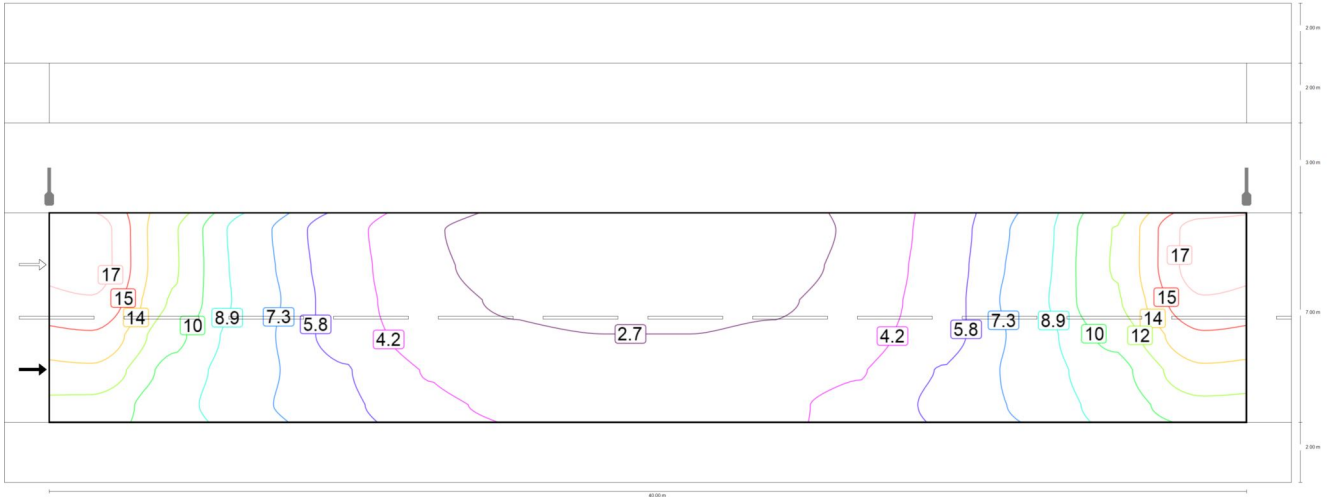
Results for valuation field

	Symbol	Calculated	Target	Check
Sõidutee (M6)	L_{av}	0.39 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.60	≥ 0.35	✓
	U_l	0.61	≥ 0.40	✓
	TI	11 %	≤ 20 %	✓
	R_{EI}	0.56	≥ 0.30	✓

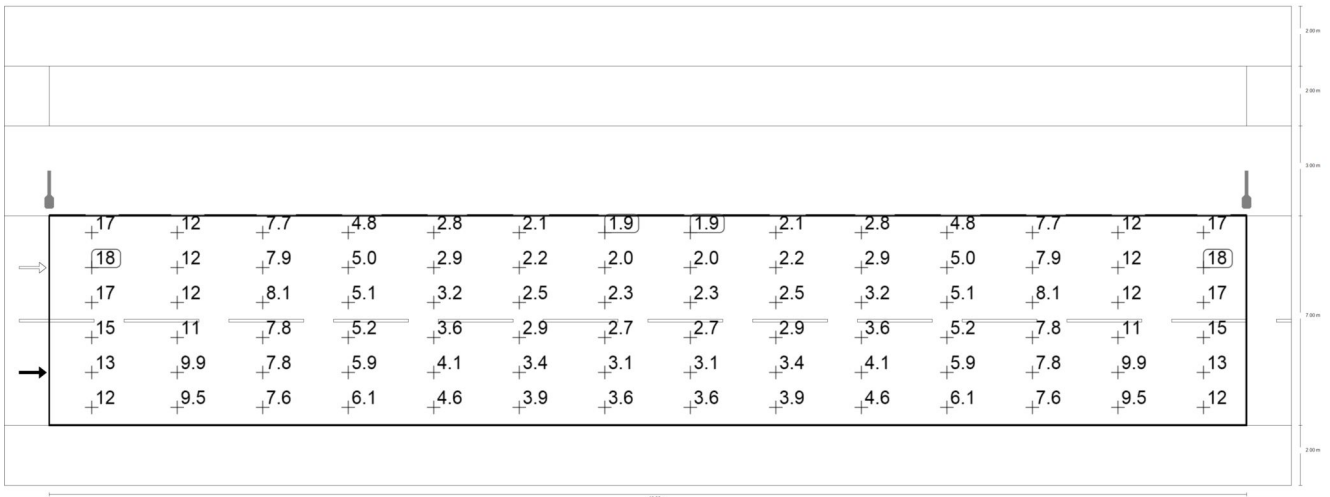
Results for observer

	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 3.750 m, 1.500 m	L_{av}	0.42 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.60	≥ 0.35	✓
	U_l	0.65	≥ 0.40	✓
	TI	11 %	≤ 20 %	✓
Observer 2 Position: -60.000 m, 7.250 m, 1.500 m	L_{av}	0.39 cd/m ²	≥ 0.30 cd/m ²	✓
	U_o	0.60	≥ 0.35	✓
	U_l	0.61	≥ 0.40	✓
	TI	11 %	≤ 20 %	✓

Mihkli ja Paunamäe DP
Sõidutee (M6)



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



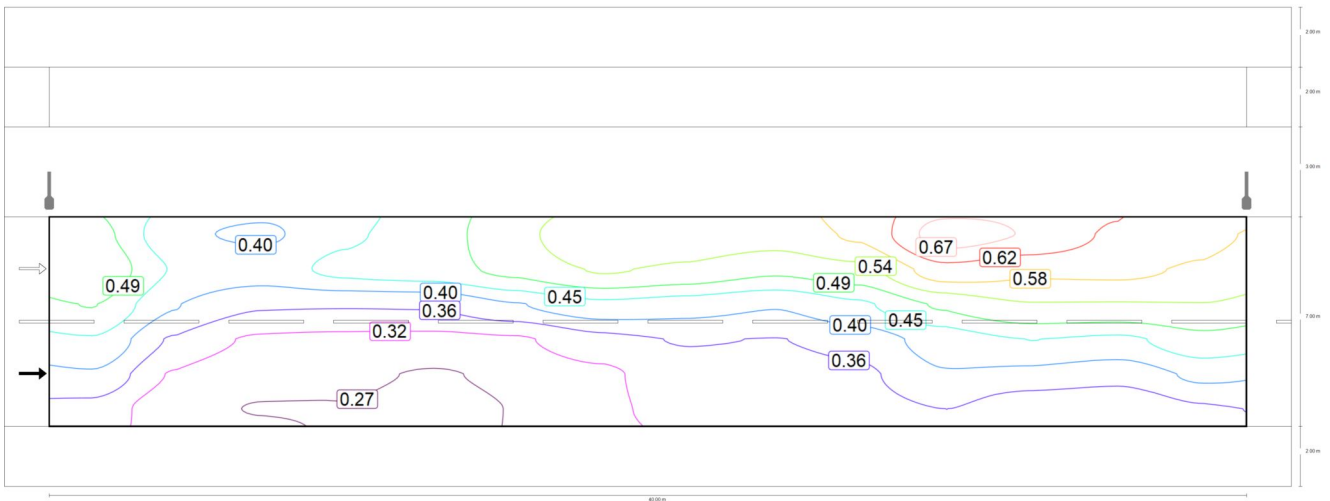
Maintenance value, horizontal illuminance [lx] (Value grid)

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
8.417	17.49	12.09	7.73	4.83	2.79	2.06	1.87	1.87	2.06	2.79	4.83	7.73	12.09	17.49
7.250	17.52	12.13	7.88	4.97	2.92	2.19	2.04	2.04	2.19	2.92	4.97	7.88	12.13	17.52
6.083	16.57	11.86	8.14	5.08	3.18	2.48	2.31	2.31	2.48	3.18	5.08	8.14	11.86	16.57
4.917	14.95	10.89	7.82	5.18	3.59	2.87	2.66	2.66	2.87	3.59	5.18	7.82	10.89	14.95
3.750	13.25	9.92	7.82	5.87	4.13	3.36	3.12	3.12	3.36	4.13	5.87	7.82	9.92	13.25
2.583	11.56	9.51	7.57	6.13	4.59	3.92	3.61	3.61	3.92	4.59	6.13	7.57	9.51	11.56

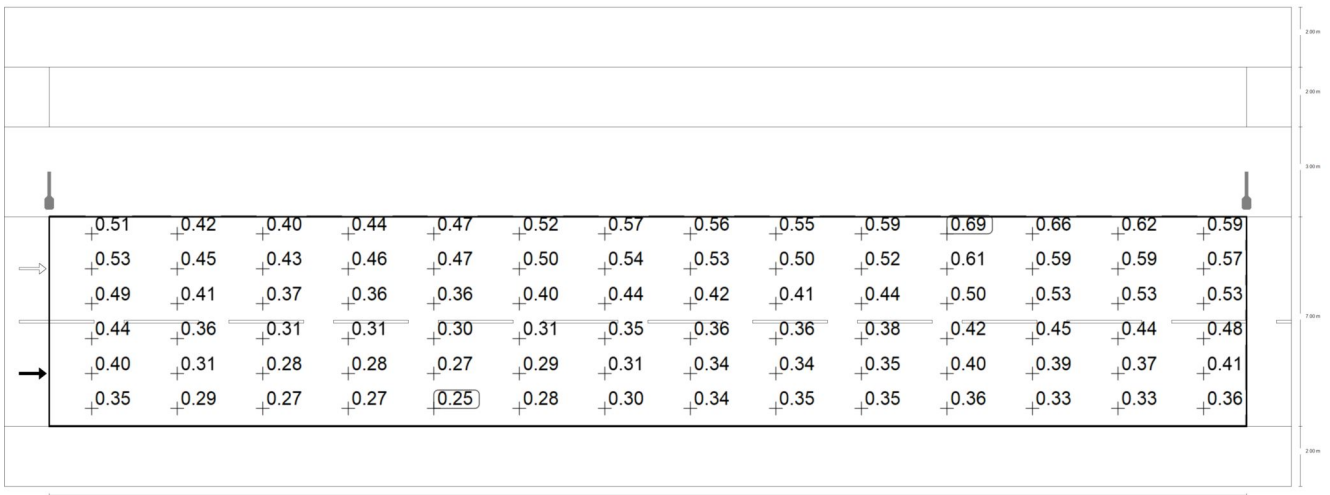
Mihkli ja Paunamäe DP
Sõidutee (M6)

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

	E_{av}	E_{min}	E_{max}	g_1	g_2
Maintenance value, horizontal illuminance	6.92 lx	1.87 lx	17.5 lx	0.27	0.11



Observer 1: Maintenance value, luminance with dry roadway [cd/m²] (Iso-illuminance curves)



Observer 1: Maintenance value, luminance with dry roadway [cd/m²] (Value grid)

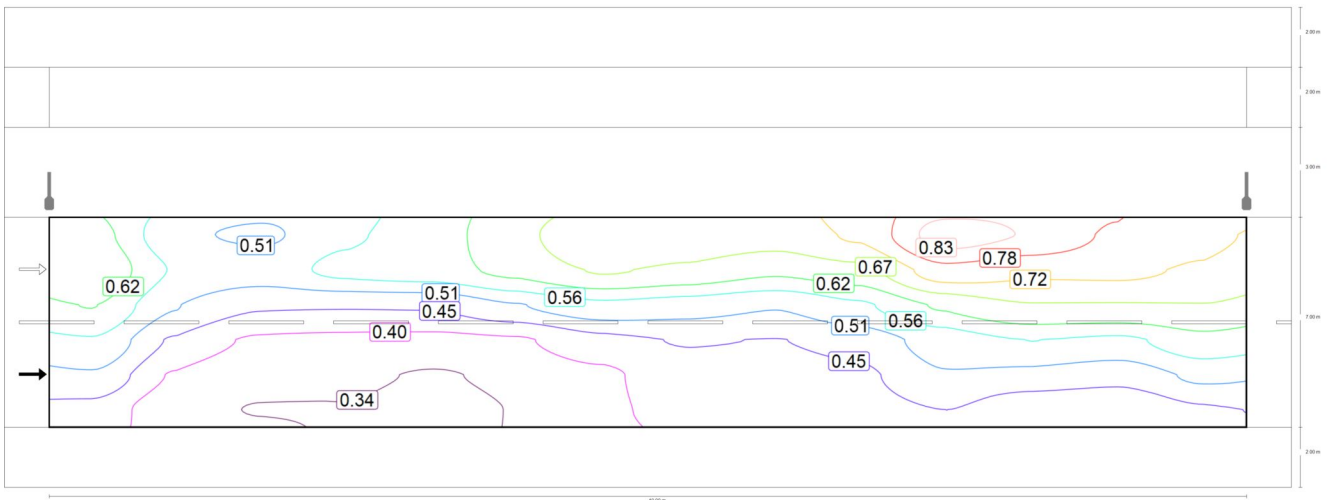
m	1.429	4.286	7.143	10.000	12.857	15.714	18.571	21.429	24.286	27.143	30.000	32.857	35.714	38.571
8.417	0.51	0.42	0.40	0.44	0.47	0.52	0.57	0.56	0.55	0.59	0.69	0.66	0.62	0.59
7.250	0.53	0.45	0.43	0.46	0.47	0.50	0.54	0.53	0.50	0.52	0.61	0.59	0.59	0.57

Mihkli ja Paunamäe DP
Sõidutee (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
6.083	0.49	0.41	0.37	0.36	0.36	0.40	0.44	0.42	0.41	0.44	0.50	0.53	0.53	0.53
4.917	0.44	0.36	0.31	0.31	0.30	0.31	0.35	0.36	0.36	0.38	0.42	0.45	0.44	0.48
3.750	0.40	0.31	0.28	0.28	0.27	0.29	0.31	0.34	0.34	0.35	0.40	0.39	0.37	0.41
2.583	0.35	0.29	0.27	0.27	0.25	0.28	0.30	0.34	0.35	0.35	0.36	0.33	0.33	0.36

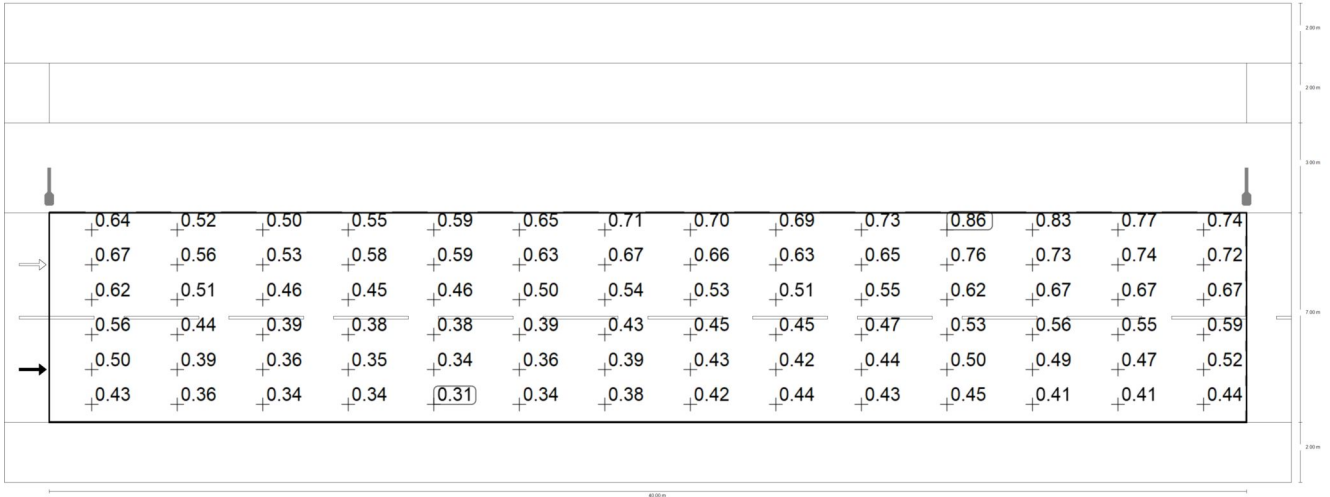
Observer 1: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L _{av}	L _{min}	L _{max}	g ₁	g ₂
Observer 1: Maintenance value, luminance with dry roadway	0.42 cd/m ²	0.25 cd/m ²	0.69 cd/m ²	0.60	0.37



Observer 1: Luminance with new installation [cd/m²] (Iso-illuminance curves)

Mihkli ja Paunamäe DP
Sõidutee (M6)



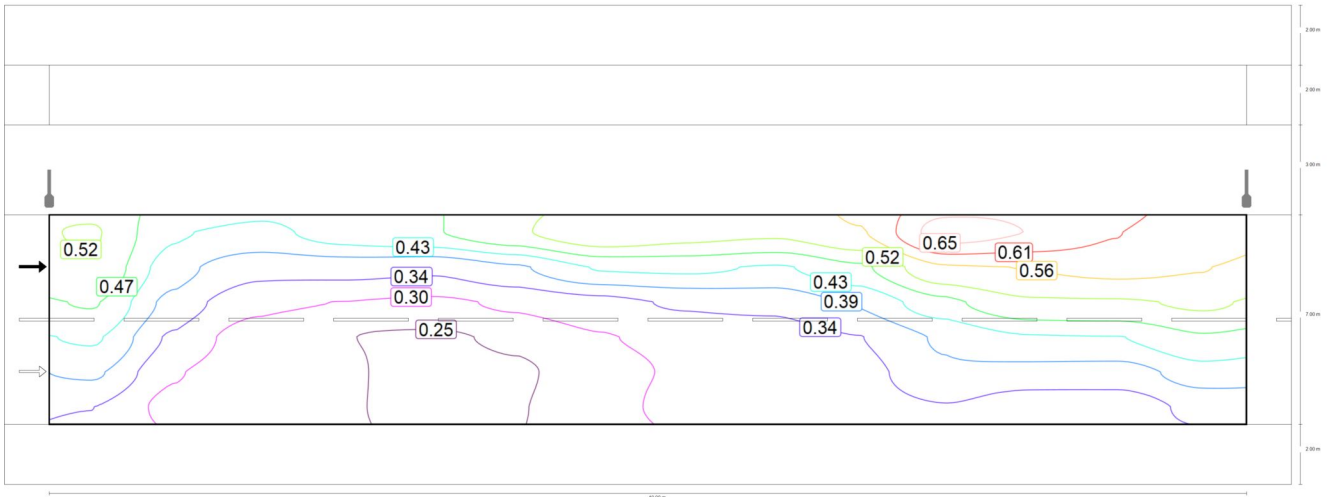
Observer 1: Luminance with new installation [cd/m²] (Value grid)

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
8.417	0.64	0.52	0.50	0.55	0.59	0.65	0.71	0.70	0.69	0.73	0.86	0.83	0.77	0.74
7.250	0.67	0.56	0.53	0.58	0.59	0.63	0.67	0.66	0.63	0.65	0.76	0.73	0.74	0.72
6.083	0.62	0.51	0.46	0.45	0.46	0.50	0.54	0.53	0.51	0.55	0.62	0.67	0.67	0.67
4.917	0.56	0.44	0.39	0.38	0.38	0.39	0.43	0.45	0.45	0.47	0.53	0.56	0.55	0.59
3.750	0.50	0.39	0.36	0.35	0.34	0.36	0.39	0.43	0.42	0.44	0.50	0.49	0.47	0.52
2.583	0.43	0.36	0.34	0.34	0.31	0.34	0.38	0.42	0.44	0.43	0.45	0.41	0.41	0.44

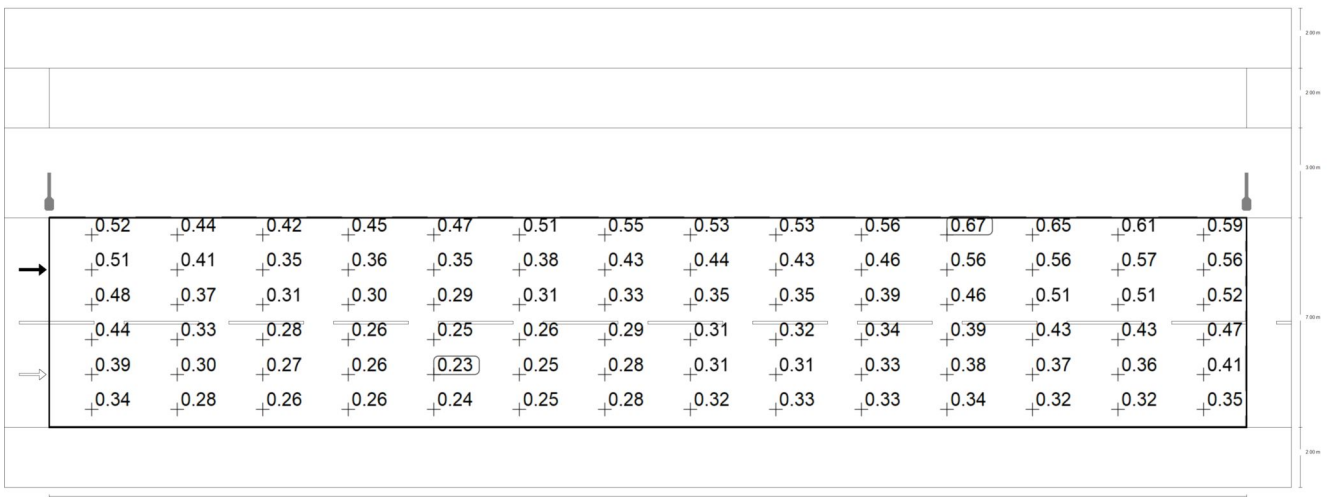
Observer 1: Luminance with new installation [cd/m²] (Value chart)

	L _{av}	L _{min}	L _{max}	g ₁	g ₂
Observer 1: Luminance with new installation	0.53 cd/m ²	0.31 cd/m ²	0.86 cd/m ²	0.60	0.37

Mihkli ja Paunamäe DP
Sõidutee (M6)



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



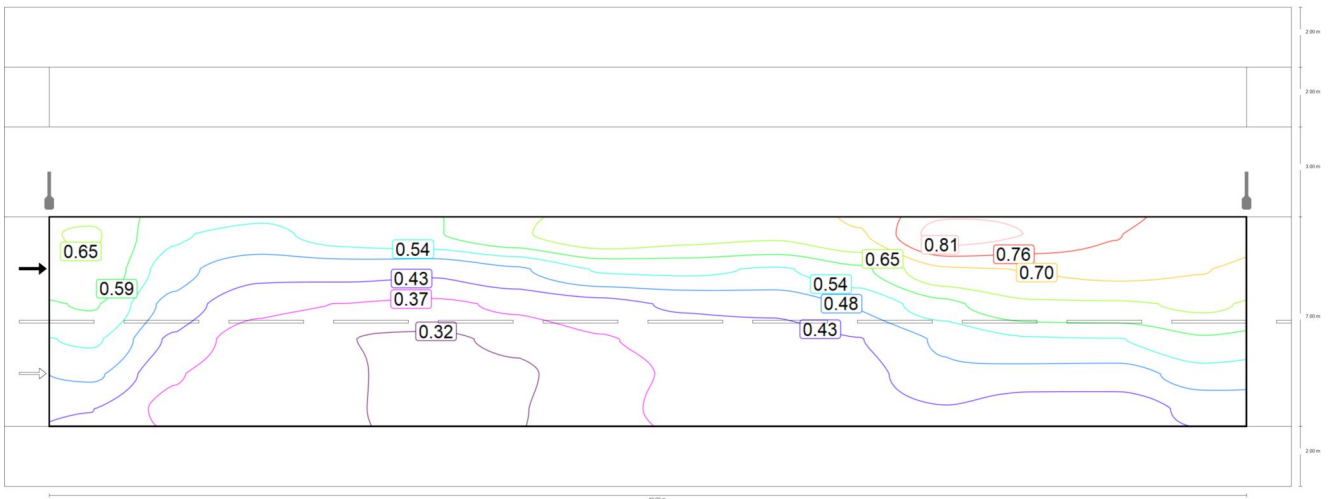
Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

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
8.417	0.52	0.44	0.42	0.45	0.47	0.51	0.55	0.53	0.53	0.56	0.67	0.65	0.61	0.59
7.250	0.51	0.41	0.35	0.36	0.35	0.38	0.43	0.44	0.43	0.46	0.56	0.56	0.57	0.56
6.083	0.48	0.37	0.31	0.30	0.29	0.31	0.33	0.35	0.35	0.39	0.46	0.51	0.51	0.52
4.917	0.44	0.33	0.28	0.26	0.25	0.26	0.29	0.31	0.32	0.34	0.39	0.43	0.43	0.47
3.750	0.39	0.30	0.27	0.26	0.23	0.25	0.28	0.31	0.31	0.33	0.38	0.37	0.36	0.41
2.583	0.34	0.28	0.26	0.26	0.24	0.25	0.28	0.32	0.33	0.33	0.34	0.32	0.32	0.35

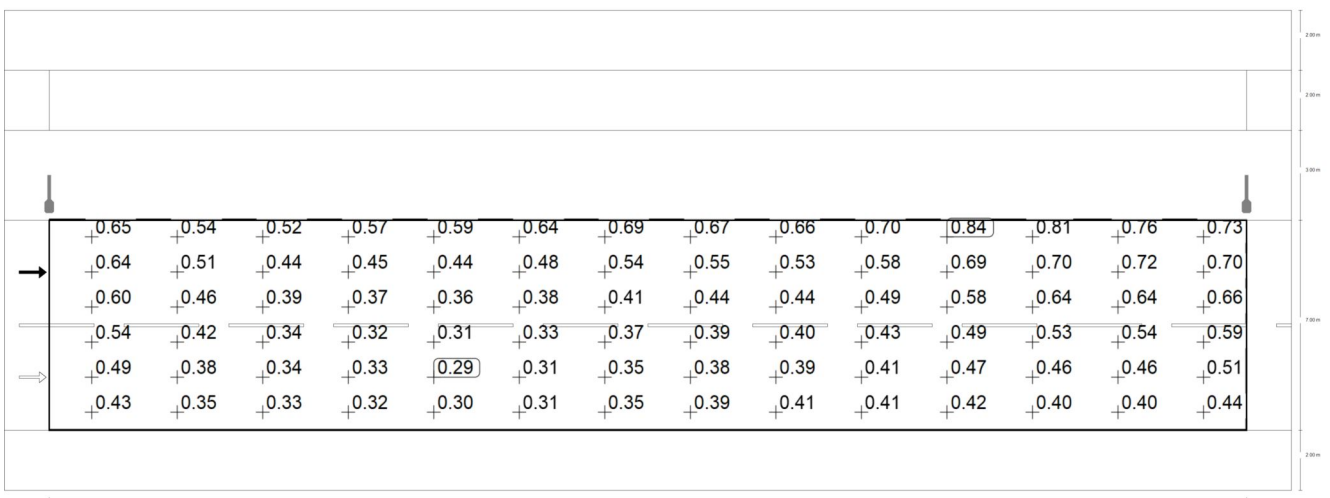
Mihkli ja Paunamäe DP
Sõidutee (M6)

Observer 2: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L _{av}	L _{min}	L _{max}	g ₁	g ₂
Observer 2: Maintenance value, luminance with dry roadway	0.39 cd/m ²	0.23 cd/m ²	0.67 cd/m ²	0.60	0.35



Observer 2: Luminance with new installation [cd/m²] (Iso-illuminance curves)



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

Mihkli ja Paunamäe DP
Sõidutee (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
8.417	0.65	0.54	0.52	0.57	0.59	0.64	0.69	0.67	0.66	0.70	0.84	0.81	0.76	0.73
7.250	0.64	0.51	0.44	0.45	0.44	0.48	0.54	0.55	0.53	0.58	0.69	0.70	0.72	0.70
6.083	0.60	0.46	0.39	0.37	0.36	0.38	0.41	0.44	0.44	0.49	0.58	0.64	0.64	0.66
4.917	0.54	0.42	0.34	0.32	0.31	0.33	0.37	0.39	0.40	0.43	0.49	0.53	0.54	0.59
3.750	0.49	0.38	0.34	0.33	0.29	0.31	0.35	0.38	0.39	0.41	0.47	0.46	0.46	0.51
2.583	0.43	0.35	0.33	0.32	0.30	0.31	0.35	0.39	0.41	0.41	0.42	0.40	0.40	0.44

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

	L _{av}	L _{min}	L _{max}	g ₁	g ₂
Observer 2: Luminance with new installation	0.49 cd/m ²	0.29 cd/m ²	0.84 cd/m ²	0.60	0.35