



Δήμος Ζίτσας

Ε.Ο. Κοζάνης - Ιωαννίνων

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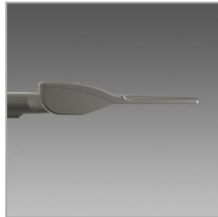
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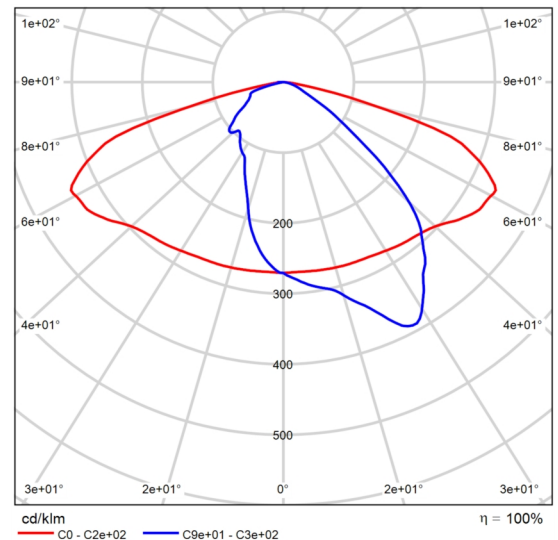
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Product data sheet

Disano Disano 3481 128 LED 4K CLD GRAFITE



Article No.	3481 Mini Giovi - high performance - residential amenities ME
P	68.0 W
Φ_{Lamp}	9926 lm
$\Phi_{\text{Luminaire}}$	9926 lm
η	100.00 %
Luminous efficacy	146.0 lm/W
CCT	4000 K
CRI	70



Polar LDC

Mini Giovi represents the latest generation of LED street lamps designed to fit the new light sources and the most advanced lighting control and management systems. Its aerodynamic housing in die-cast aluminium offers very little resistance to wind with its cooling fins specifically studied to allow optimal heat dissipation and efficient LED operation. Heat sink: the heat dissipation system is specially designed and made to allow the operation of the LED lights with temperatures ensuring excellent performance/efficiency and durability. Photometric performance: designed with an optical system capable of controlling the potential glare created by the growing light intensity of LEDs while achieving high photometric performance. Optical system: the modularity of the optical system, the solutions used for the electronic circuit design and the optimal control of operating temperatures, make the Giovi line a highly professional, flexible and reliable product, capable of guaranteeing huge application advantages in several situations. Housing and cover: in die-cast aluminium, EN-AB 47100 alloy and designed with a very small surface exposed to wind. Cooling fins integrated in the cover. Once removed, the cover allows accessing the electric gear compartment and power terminal board. Pole connection: in die-cast aluminium suited for poles with a diameter of min. 46 mm to max. 76 mm, adjustable from -20° to $+10^{\circ}$ for side-mount applications; and from 0° to $+20^{\circ}$ for top-mount applications. Tilting angle of 5° . Optics: in PMMA, highly resistant to temperature and UV radiation. Diffuser: extra-clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts (UNI-EN12150-1: 2001). Coating: the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating. Standard supply: complete with insulation

Product data sheet

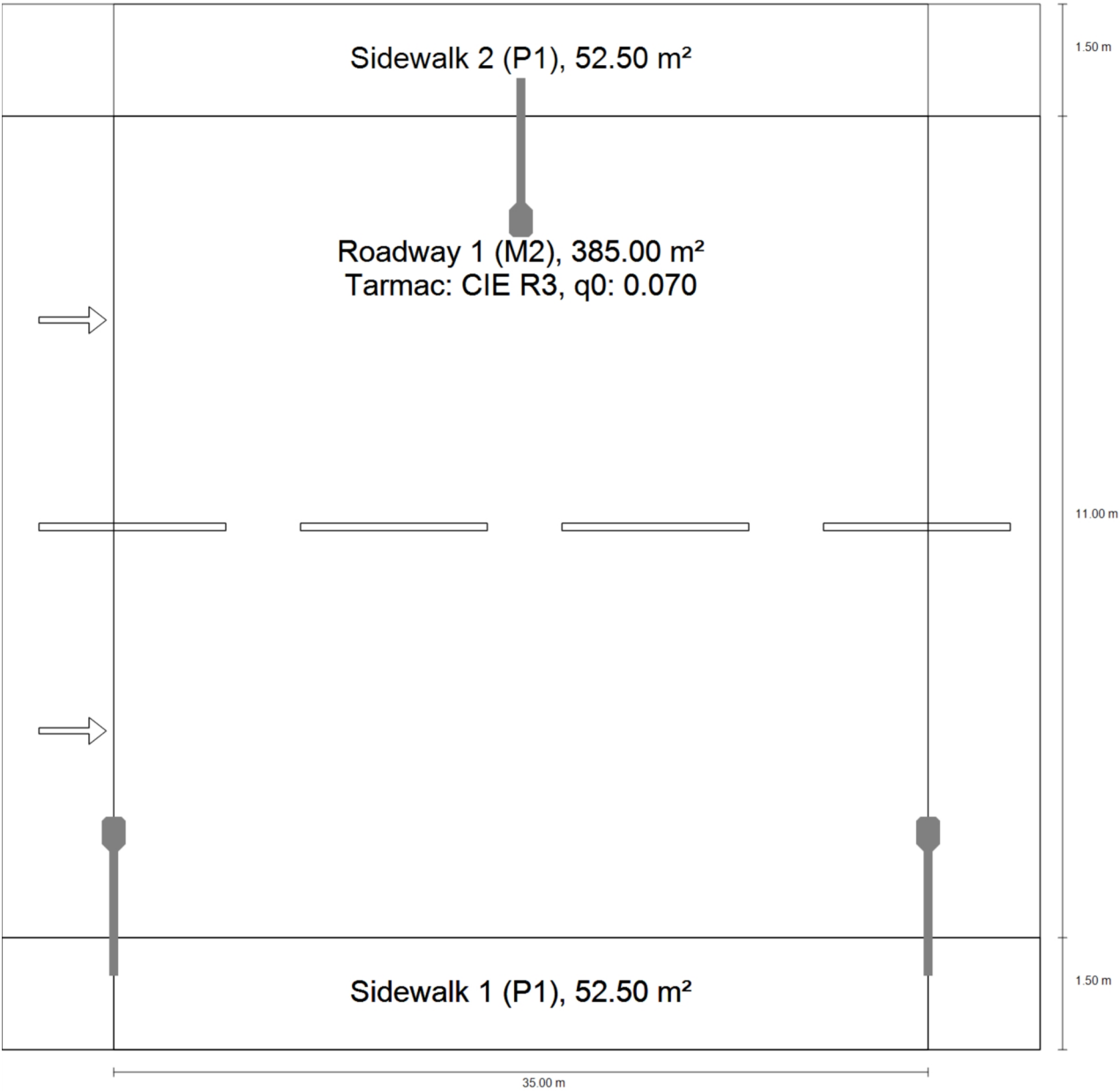
Disano Disano 3481 128 LED 4K CLD GRAFITE

connector for quick installation. Electronic safety device to protect the LED module and the related ballast compliant with EN 61547. Upon request: constant light output (CLO) option; suited to work in the emergency mode. LED: Power factor ≥ 0.9 . Luminous flux maintenance 90%: 100.000h (L90B10). Regulations: Produced according to applicable EN60598-1 CEI 34-21 standards, degree of protection according to EN 60529 standards. Upon request: - Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments. - Nema Socket, subcode 40 (sealing cap to be ordered separately) - Zhaga Socket, subcode 0054 (complete with sealing cap) Advanced Prog (PROG CLD wiring): luminaires made to meet specific technological needs and designed, as standard, to integrate special functions to ensure high energy-savings, customization options and versatility of use in many applications (e.g. installation with dimmers or emergency supply). These functions are already available on standard products and must be enabled on request. These products do not require any modification to the entire system because the lamp only needs to be connected to mains power supply (no pilot cable and/or control bus required). operating mode Luminous flux setup: This can be done by programming the drive current values requested when ordering/purchasing the fixture. Virtual Midnight, order with subcode -30: Stand-alone system with automatic luminous flux reduction in 4 steps (up to max 8 steps available upon request). Broadcast Prog: This allows the reconfiguration of the Virtual Midnight profile, including the enabling/disabling of all the fixtures installed on the same power line (broadcast function) via a sequence of electrical impulses. Mains voltage regulation: This allows varying the luminous flux by adjusting the mains voltage between 170 and 250 V AC. CLO (Constant Light Output): The lighting fixture maintains a constant light output throughout its entire service life. DC power in EM: In centralized emergency systems, the LED Driver automatically detects when the power changes from AC to DC and adjusts the lights to a pre-set value (DC level). Monitoring (default): The driver is equipped with a micro-processor that records the operating conditions from the moment it is turned on. Setup via APP: The NFC technology allows users to set the different operating modes via an APP.

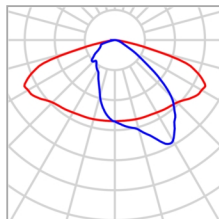
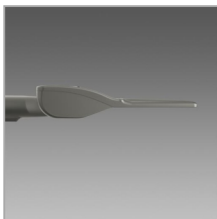


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Description



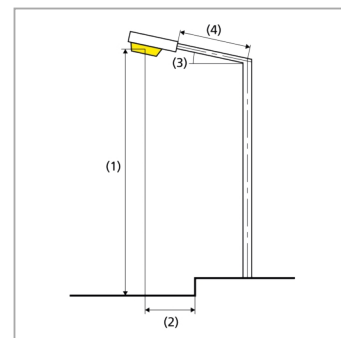
Summary (according to EN 13201:2015)



Manufacturer	Disano	P	68.0 W
Article No.	3481 Mini Giovi - high performance - residential amenities ME	Φ_{Lamp}	9926 lm
		$\Phi_{\text{Luminaire}}$	9926 lm
Article name	Disano 3481 128 LED 4K CLD GRAFITE	η	100.00 %
Fitting	1x led_3481_128_4k		

Disano 3481 128 LED 4K CLD GRAFITE (both sides offset)

Pole distance	35.000 m
(1) Light spot height	9.000 m
(2) Light point overhang	1.356 m
(3) Boom inclination	0.0°
(4) Boom length	1.500 m
Annual operating hours	4000 h: 100.0 %, 68.0 W
Consumption	3944.0 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.	$\geq 70^\circ$: 430 cd/klm $\geq 80^\circ$: 55.0 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*4
Glare index class	D.3



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Summary (according to EN 13201:2015)

Results for valuation fields

	Symbol	Calculated	Target	Check
Sidewalk 2 (P1)	E _{av}	16.00 lx	[15.00 - 22.50] lx	✓
	E _{min}	9.94 lx	≥ 3.00 lx	✓
Roadway 1 (M2)	L _{av}	1.59 cd/m ²	≥ 1.50 cd/m ²	✓
	U _o	0.64	≥ 0.40	✓
	U _l	0.84	≥ 0.70	✓
	TI	7 %	≤ 10 %	✓
	R _{EI} ⁽¹⁾	0.40	-	-
Sidewalk 1 (P1)	E _{av}	16.00 lx	[15.00 - 22.50] lx	✓
	E _{min}	9.94 lx	≥ 3.00 lx	✓

(1) Informative, not part of the valuation

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

Results for energy efficiency indicators

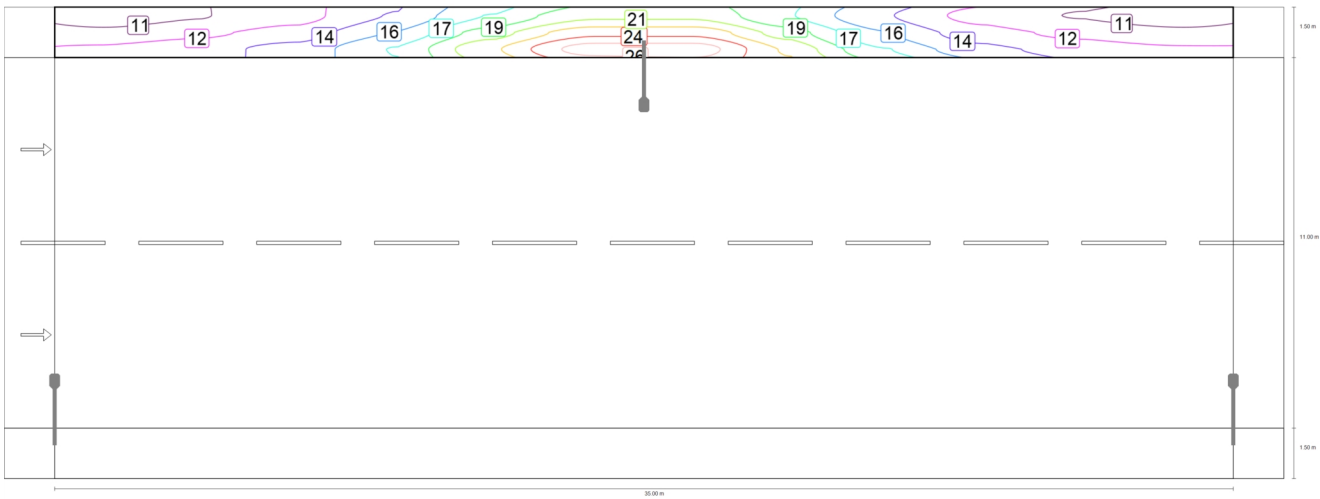
	Symbol	Calculated	Consumption
E.O. Κοζάνης - Ιωαννίνων	D _p	0.012 W/lx*m ²	-
Disano 3481 128 LED 4K CLD GRAFITE (both sides offset)	D _e	1.1 kWh/m ² yr,	544.0 kWh/yr

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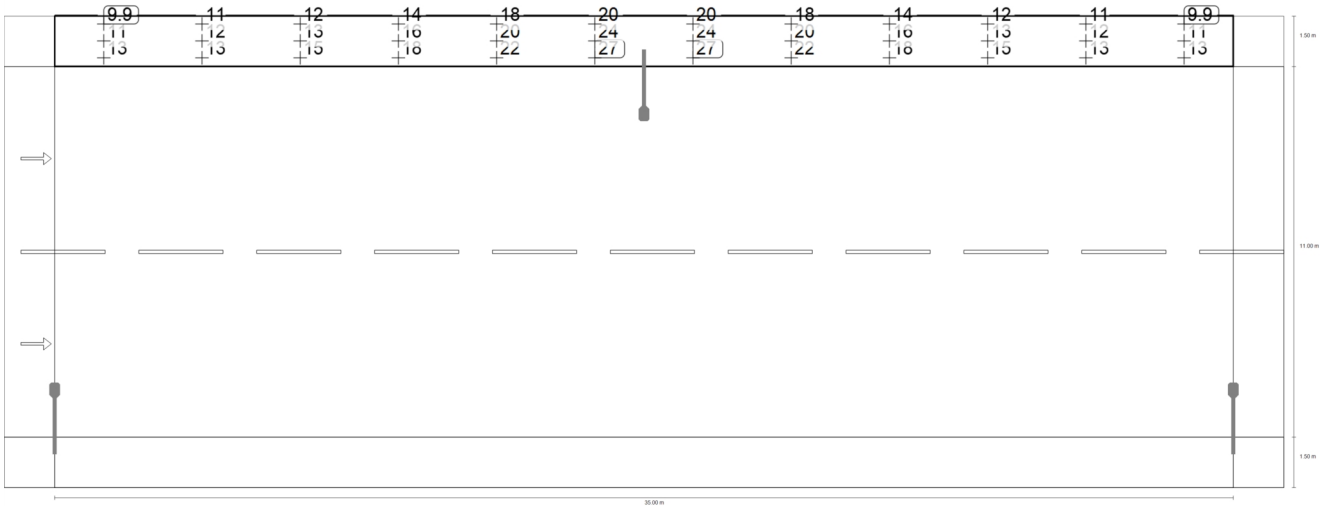
Sidewalk 2 (P1)

Results for valuation field

	Symbol	Calculated	Target	Check
Sidewalk 2 (P1)	E_{av}	16.00 lx	[15.00 - 22.50] lx	✓
	E_{min}	9.94 lx	≥ 3.00 lx	✓



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



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

m	1.458	4.375	7.292	10.208	13.125	16.042	18.958	21.875	24.792	27.708	30.625	33.542
13.750	9.94	10.67	11.82	14.25	17.58	20.46	20.46	17.58	14.25	11.82	10.67	9.94
13.250	11.25	12.01	13.20	15.89	20.00	23.67	23.67	20.00	15.89	13.20	12.01	11.25
12.750	12.73	13.46	14.71	17.55	22.23	26.64	26.64	22.23	17.55	14.71	13.46	12.73

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

	E_{av}	E_{min}	E_{max}	g_1	g_2
Maintenance value, horizontal illuminance	16.0 lx	9.94 lx	26.6 lx	0.621	0.373

Roadway 1 (M2)

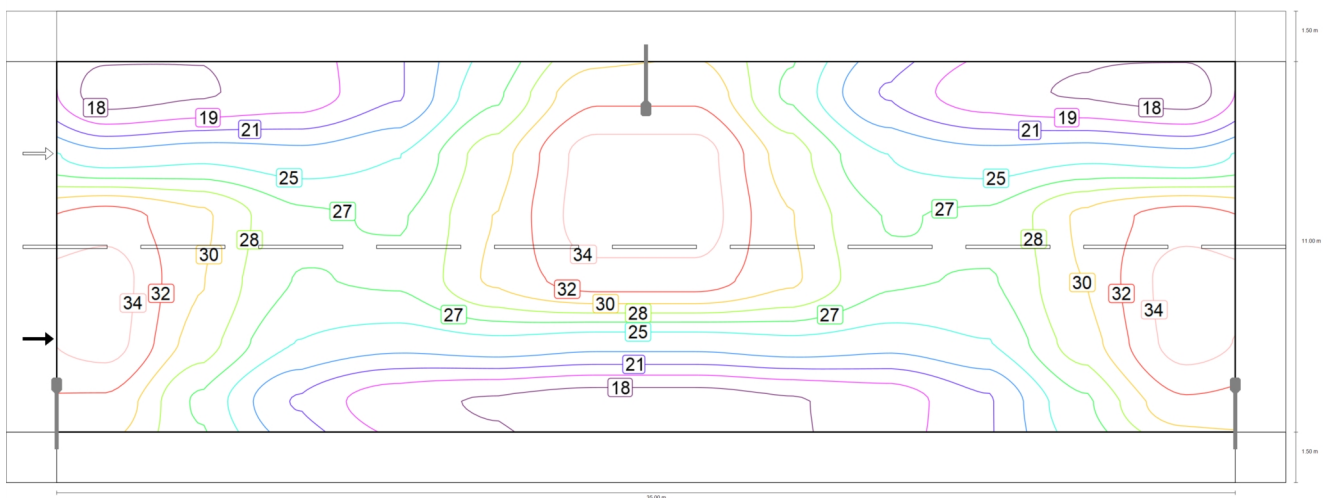
Results for valuation field

	Symbol	Calculated	Target	Check
Roadway 1 (M2)	L_{av}	1.59 cd/m ²	≥ 1.50 cd/m ²	✓
	U_o	0.64	≥ 0.40	✓
	U_l	0.84	≥ 0.70	✓
	TI	7 %	≤ 10 %	✓
	$R_{EI}^{(1)}$	0.40	-	-

Results for observer

	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 4.250 m, 1.500 m	L_{av}	1.59 cd/m ²	≥ 1.50 cd/m ²	✓
	U_o	0.67	≥ 0.40	✓
	U_l	0.84	≥ 0.70	✓
	TI	7 %	≤ 10 %	✓
Observer 2 Position: -60.000 m, 9.750 m, 1.500 m	L_{av}	1.59 cd/m ²	≥ 1.50 cd/m ²	✓
	U_o	0.64	≥ 0.40	✓
	U_l	0.84	≥ 0.70	✓
	TI	7 %	≤ 10 %	✓

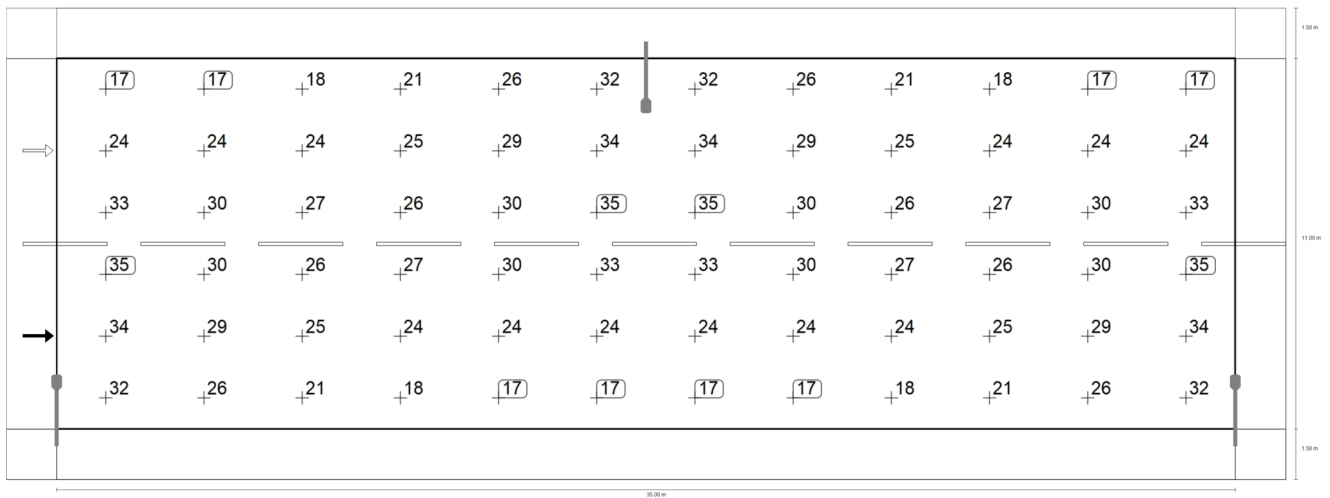
(1) Informative, not part of the valuation



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

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Roadway 1 (M2)

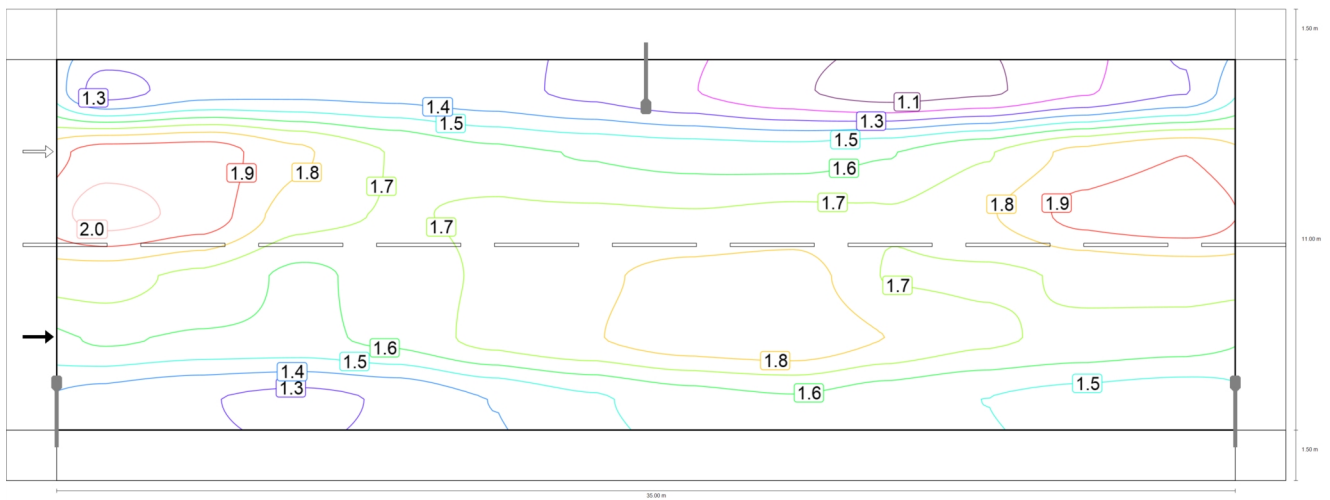


Maintenance value, horizontal illuminance [lx] (Value grid)

m	1.458	4.375	7.292	10.208	13.125	16.042	18.958	21.875	24.792	27.708	30.625	33.542
11.583	16.74	17.47	18.34	21.04	26.27	31.56	31.56	26.27	21.04	18.34	17.47	16.74
9.750	23.71	24.36	23.67	24.76	29.33	34.46	34.46	29.33	24.76	23.67	24.36	23.71
7.917	32.86	30.46	26.81	26.50	30.19	34.62	34.62	30.19	26.50	26.81	30.46	32.86
6.083	34.62	30.19	26.50	26.81	30.46	32.86	32.86	30.46	26.81	26.50	30.19	34.62
4.250	34.46	29.33	24.76	23.67	24.36	23.71	23.71	24.36	23.67	24.76	29.33	34.46
2.417	31.56	26.27	21.04	18.34	17.47	16.74	16.74	17.47	18.34	21.04	26.27	31.56

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

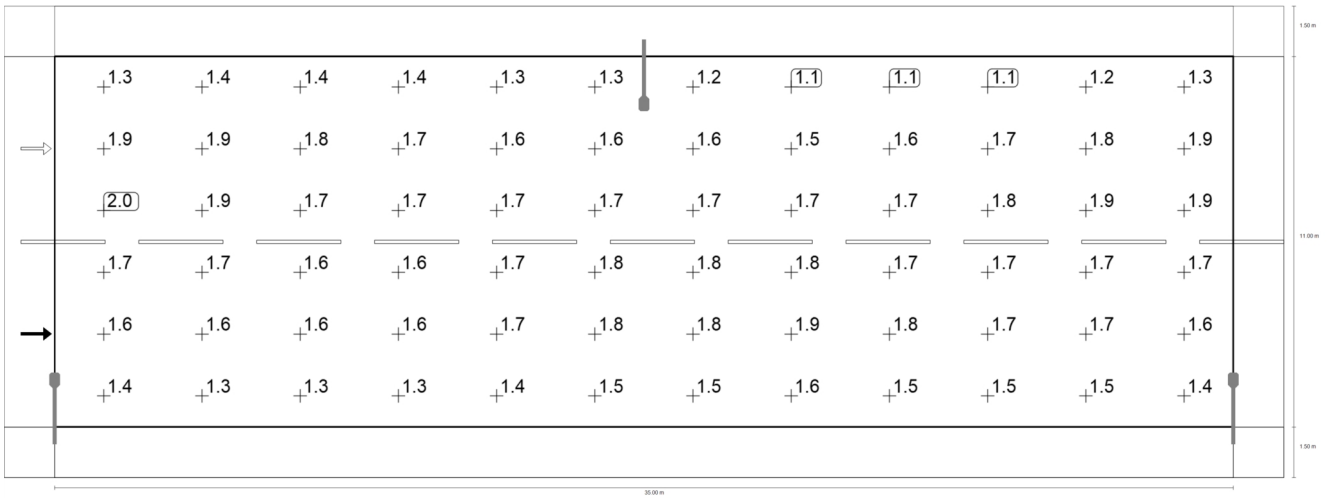
	E _{av}	E _{min}	E _{max}	g ₁	g ₂
Maintenance value, horizontal illuminance	26.3 lx	16.7 lx	34.6 lx	0.637	0.483



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

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Roadway 1 (M2)

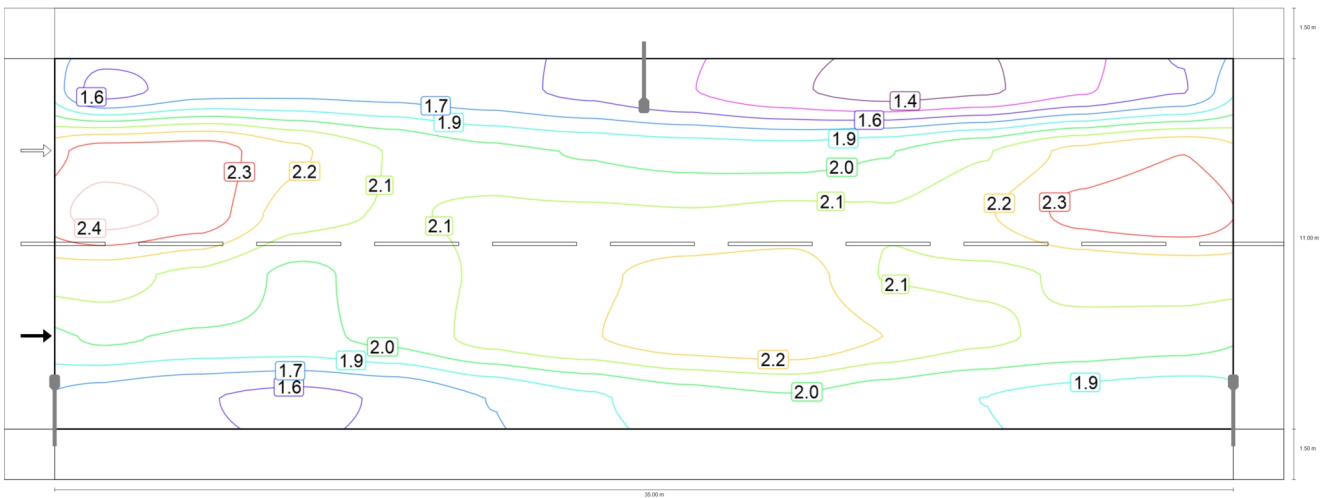


Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

m	1.458	4.375	7.292	10.208	13.125	16.042	18.958	21.875	24.792	27.708	30.625	33.542
11.583	1.26	1.36	1.37	1.36	1.33	1.28	1.21	1.13	1.07	1.10	1.20	1.30
9.750	1.91	1.91	1.79	1.67	1.61	1.58	1.55	1.55	1.58	1.67	1.80	1.86
7.917	2.00	1.92	1.71	1.67	1.69	1.69	1.69	1.71	1.68	1.76	1.90	1.93
6.083	1.70	1.65	1.56	1.63	1.69	1.75	1.80	1.82	1.67	1.66	1.69	1.70
4.250	1.60	1.56	1.56	1.61	1.71	1.76	1.83	1.85	1.77	1.69	1.65	1.63
2.417	1.35	1.31	1.28	1.31	1.40	1.48	1.54	1.57	1.53	1.49	1.46	1.43

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

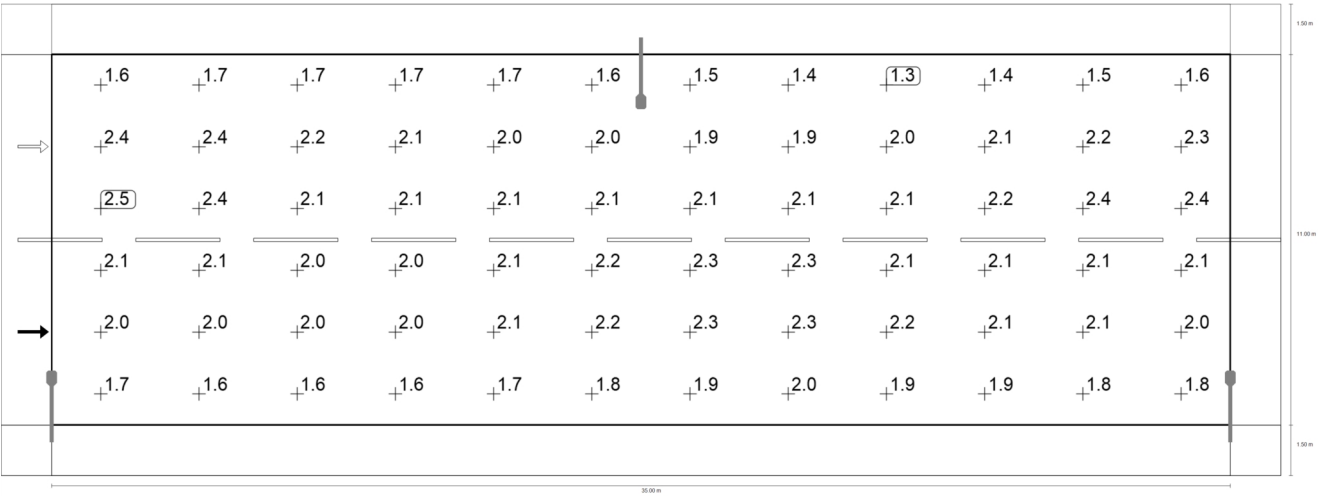
	L_{av}	L_{min}	L_{max}	g_1	g_2
Observer 1: Maintenance value, luminance with dry roadway	1.59 cd/m^2	1.07 cd/m^2	2.00 cd/m^2	0.673	0.535



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

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Roadway 1 (M2)

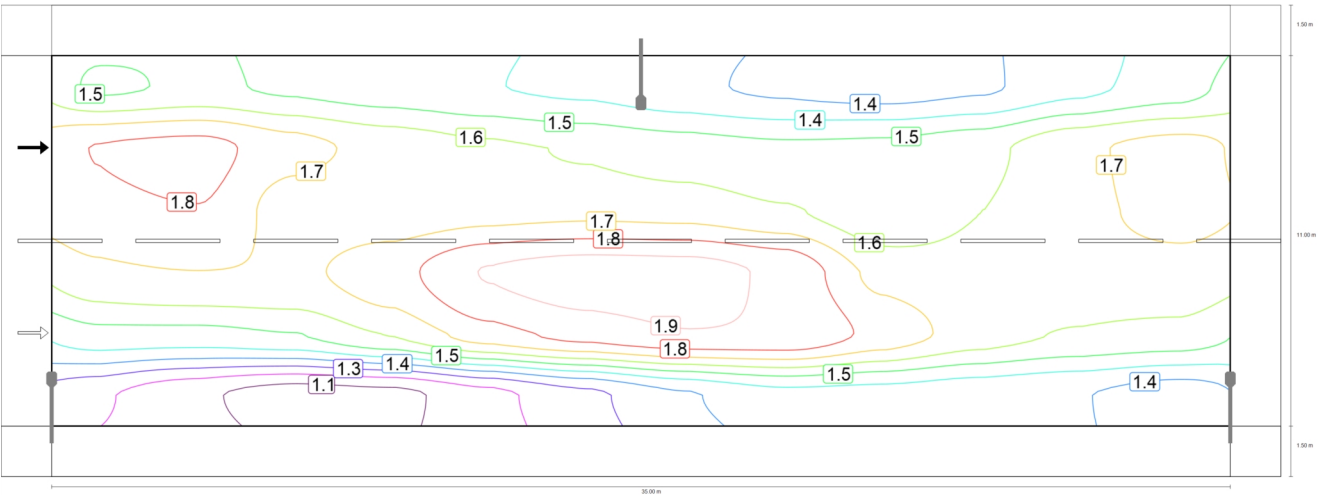


Observer 1: Luminance with new installation [cd/m²] (Value grid)

m	1.458	4.375	7.292	10.208	13.125	16.042	18.958	21.875	24.792	27.708	30.625	33.542
11.583	1.58	1.70	1.71	1.70	1.66	1.60	1.52	1.42	1.34	1.38	1.50	1.62
9.750	2.38	2.38	2.23	2.09	2.01	1.97	1.94	1.93	1.97	2.09	2.25	2.33
7.917	2.50	2.40	2.14	2.09	2.11	2.12	2.11	2.14	2.10	2.20	2.37	2.41
6.083	2.13	2.07	1.96	2.03	2.11	2.19	2.25	2.27	2.09	2.08	2.11	2.12
4.250	2.00	1.96	1.95	2.01	2.14	2.20	2.29	2.32	2.21	2.12	2.07	2.03
2.417	1.69	1.64	1.60	1.64	1.75	1.84	1.92	1.97	1.91	1.86	1.82	1.79

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

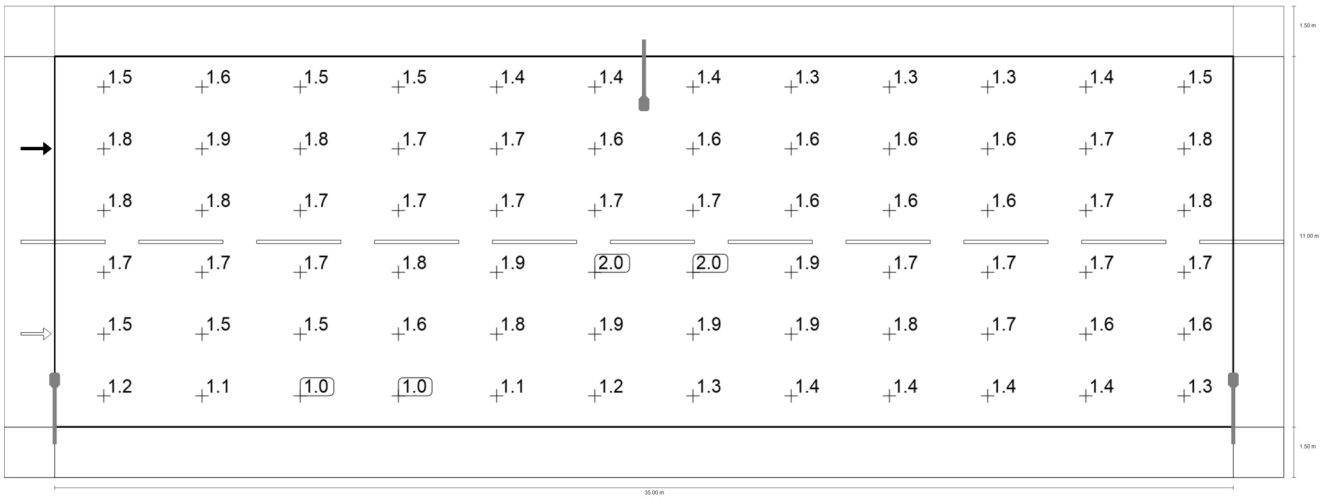
	L _{av}	L _{min}	L _{max}	g ₁	g ₂
Observer 1: Luminance with new installation	1.99 cd/m ²	1.34 cd/m ²	2.50 cd/m ²	0.673	0.535



Observer 2: Maintenance value, luminance with dry roadway [cd/m²] (Iso-illuminance curves)

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Roadway 1 (M2)

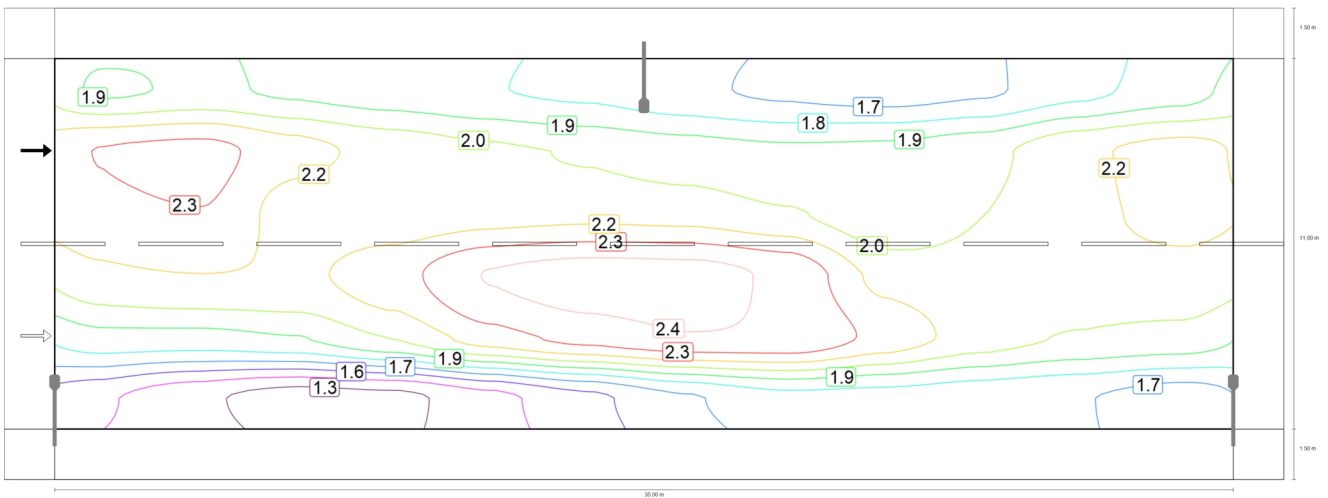


Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

m	1.458	4.375	7.292	10.208	13.125	16.042	18.958	21.875	24.792	27.708	30.625	33.542
11.583	1.52	1.56	1.52	1.48	1.45	1.42	1.37	1.33	1.30	1.34	1.42	1.49
9.750	1.83	1.85	1.77	1.69	1.65	1.63	1.60	1.56	1.56	1.61	1.71	1.76
7.917	1.79	1.82	1.68	1.67	1.69	1.71	1.70	1.65	1.57	1.64	1.70	1.76
6.083	1.70	1.73	1.71	1.79	1.93	1.97	1.96	1.90	1.70	1.67	1.69	1.69
4.250	1.50	1.50	1.54	1.64	1.78	1.86	1.91	1.91	1.80	1.69	1.62	1.60
2.417	1.18	1.09	1.02	1.04	1.13	1.23	1.34	1.41	1.41	1.38	1.36	1.30

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

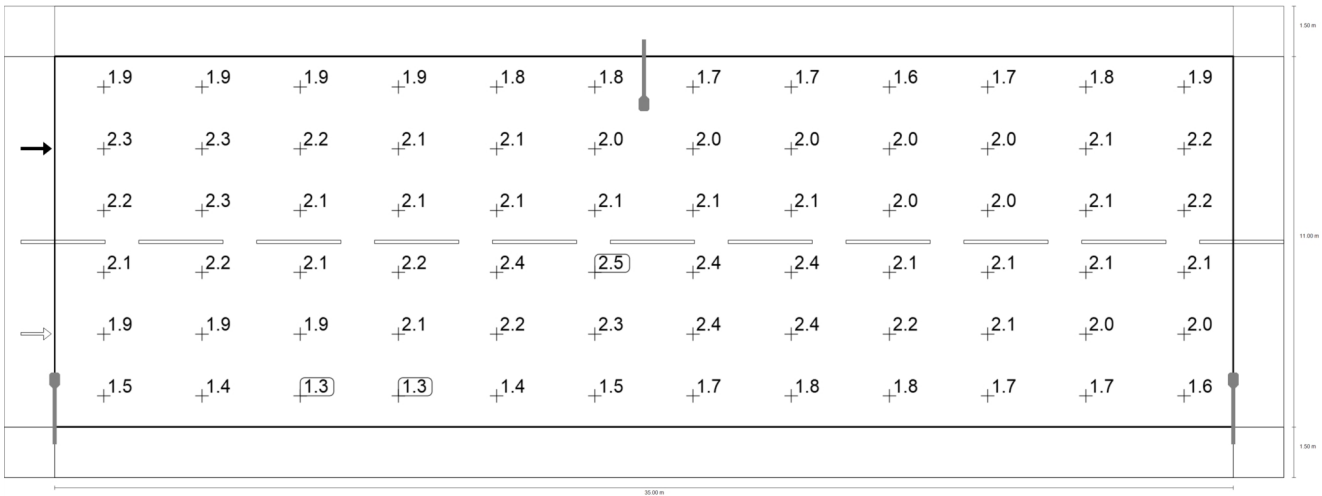
	L_{av}	L_{min}	L_{max}	g_1	g_2
Observer 2: Maintenance value, luminance with dry roadway	1.59 cd/m^2	1.02 cd/m^2	1.97 cd/m^2	0.642	0.519



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

Ε.Ο. Κοζάνης - Ιωαννίνων

Roadway 1 (M2)



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

m	1.458	4.375	7.292	10.208	13.125	16.042	18.958	21.875	24.792	27.708	30.625	33.542
11.583	1.90	1.95	1.90	1.85	1.81	1.78	1.72	1.66	1.62	1.67	1.77	1.86
9.750	2.29	2.32	2.21	2.12	2.07	2.03	2.00	1.96	1.95	2.01	2.14	2.20
7.917	2.24	2.27	2.10	2.08	2.11	2.13	2.12	2.06	1.96	2.04	2.13	2.20
6.083	2.13	2.16	2.14	2.24	2.41	2.46	2.45	2.38	2.12	2.09	2.11	2.11
4.250	1.88	1.88	1.92	2.05	2.23	2.32	2.39	2.39	2.24	2.11	2.03	2.00
2.417	1.47	1.36	1.28	1.30	1.41	1.54	1.67	1.77	1.76	1.73	1.69	1.63

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

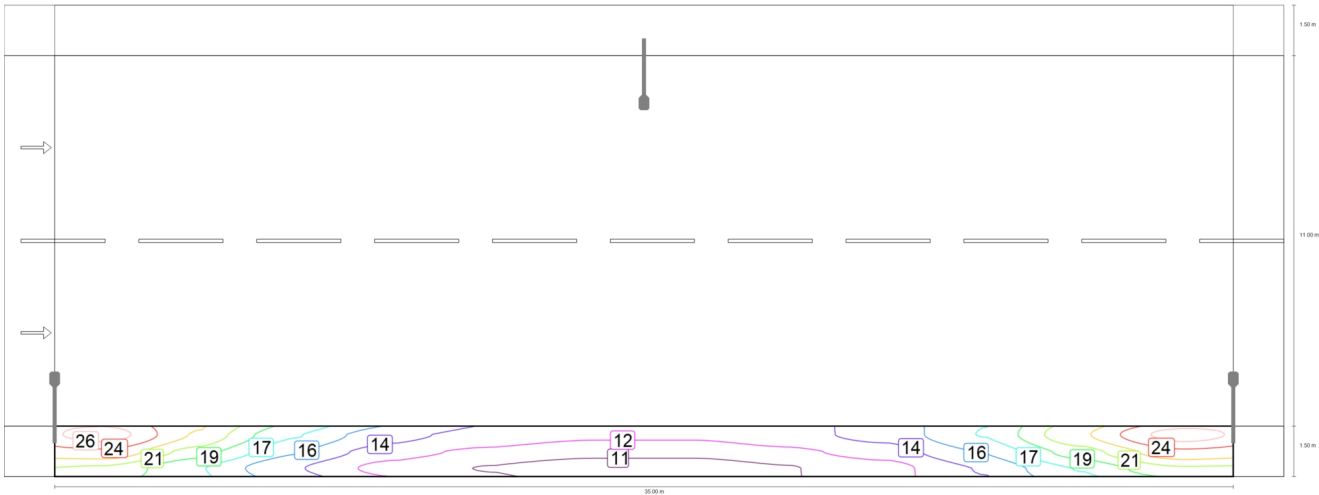
	L _{av}	L _{min}	L _{max}	g ₁	g ₂
Observer 2: Luminance with new installation	1.99 cd/m²	1.28 cd/m²	2.46 cd/m²	0.642	0.519

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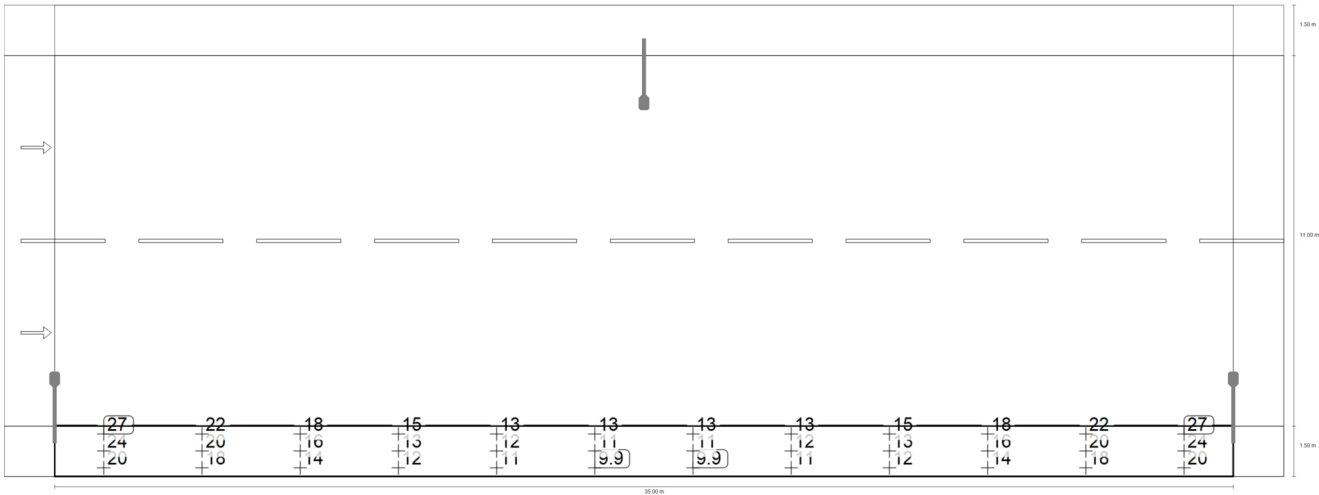
Sidewalk 1 (P1)

Results for valuation field

	Symbol	Calculated	Target	Check
Sidewalk 1 (P1)	E_{av}	16.00 lx	[15.00 - 22.50] lx	✓
	E_{min}	9.94 lx	≥ 3.00 lx	✓



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



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

m	1.458	4.375	7.292	10.208	13.125	16.042	18.958	21.875	24.792	27.708	30.625	33.542
1.250	26.64	22.23	17.55	14.71	13.46	12.73	12.73	13.46	14.71	17.55	22.23	26.64
0.750	23.67	20.00	15.89	13.20	12.01	11.25	11.25	12.01	13.20	15.89	20.00	23.67
0.250	20.46	17.58	14.25	11.82	10.67	9.94	9.94	10.67	11.82	14.25	17.58	20.46

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

	E_{av}	E_{min}	E_{max}	g_1	g_2
Maintenance value, horizontal illuminance	16.0 lx	9.94 lx	26.6 lx	0.621	0.373