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LAMPIRAN

Lampiran 1

Dokumentasi Pengambilan Data

Di Lapangan

Lampiran 1 Dokumentasi Pengambilan Data di Lapangan



Kondisi Jalan Gajah Mada



Kondisi Jalan Gajah Mada



Kondisi tiang lampu PJU di Jalan Gajah Mada



Pengukuran jarak antar tiang PJU di Jalan Gajah Mada menggunakan Walking Measure



Pengukuran jarak antar tiang PJU di Jalan Gajah Mada menggunakan Walking Measure



Pengukuran jarak antar tiang PJU di Jalan Gajah Mada menggunakan Walking Measure



Pengukuran lux pada lampu PJU di Jalan Gajah Mada menggunakan lux meter



Pengukuran lux pada lampu PJU di Jalan Gajah Mada menggunakan lux meter



Pengukuran lux pada lampu PJU di Jalan Gajah Mada menggunakan lux meter



Pencatatan data Pengukuran lux pada lampu PJU di Jalan Gajah Mada



Pencatatan data Pengukuran lux pada lampu PJU di Jalan Gajah Mada



Pencatatan data Pengukuran lux pada lampu PJU di Jalan Gajah Mada

Lampiran 2

Datasheet / spesifikasi lampu yang
digunakan pada simulasi

Lampiran 2 Datasheet / spesifikasi lampu yang digunakan pada simulasi

120W LED Street Lantern (4000K) (Type 2)

NIKKON®

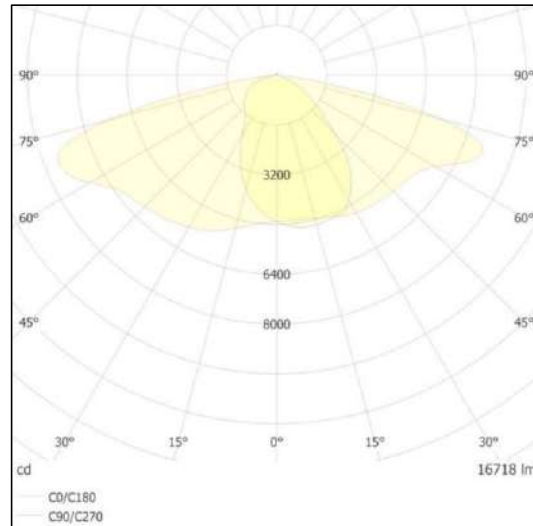
LED Industrial

Street Lantern



MURA L
Pole-Integrated
Dimensions: 100x100x100 mm

MURA L 120W LED Street Lantern (4000K) (Type 2)



I

Equipment

1x MURA L 120W LEDs (4000K)
120.16W
16718lm
3953K

NIKKON
No. 3, 5 & 7, Jalan TSB 8,
Taman Industri Sungai Buloh,
47000 Sungai Buloh,
Selangor, Malaysia.

+603 6279 2800

ses@success.com.my
<http://www.nikkonlighting.com/>

Technical and design specifications subject to change without notice.

Created by
DIALux catalogue

100W LED Street Lantern (4000K) (Type 2)

NIKKON®

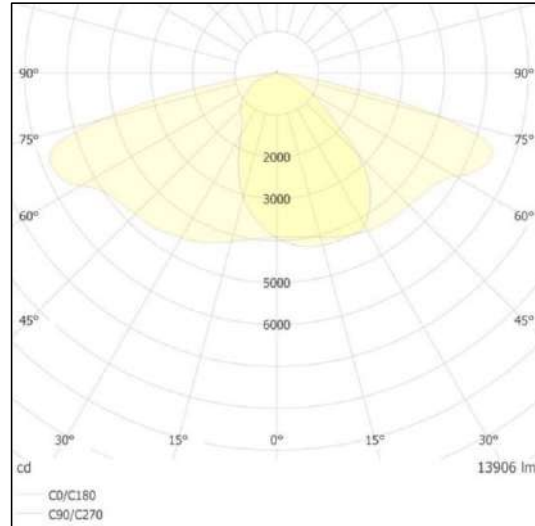
LED Industrial

Street Lantern



MURA M
Pole-Integrated
Dimensions: 100x100x100 mm

MURA M 100W LED Street Lantern (4000K) (Type 2)



I

Equipment

1x MURA M 100W LEDs (4000K)
102.22W
13906lm
3953K

NIKKON
No. 3, 5 & 7, Jalan TSB 8,
Taman Industri Sungai Buloh,
47000 Sungai Buloh,
Selangor, Malaysia.

+603 6279 2800

ses@success.com.my
<http://www.nikkonlighting.com/>

Technical and design specifications subject to change without notice.

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DIALux catalogue

80W LED Street Lantern (4000K) (Type 2)

NIKKON®

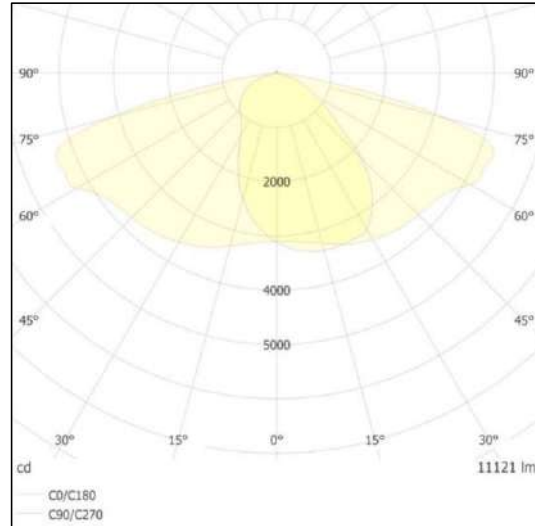
LED Industrial

Street Lantern



MURA M
Pole-Integrated
Dimensions: 100x100x100 mm

MURA M 80W LED Street Lantern (4000K) (Type 2)



I

Equipment

1x MURA M 80W LEDs (4000K)
82.72W
11121lm
3953K

NIKKON
No. 3, 5 & 7, Jalan TSB 8,
Taman Industri Sungai Buloh,
47000 Sungai Buloh,
Selangor, Malaysia.

+603 6279 2800

ses@success.com.my
<http://www.nikkonlighting.com/>

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DIALux catalogue

60W LED Street Lantern (4000K) (Type 2)

NIKKON®

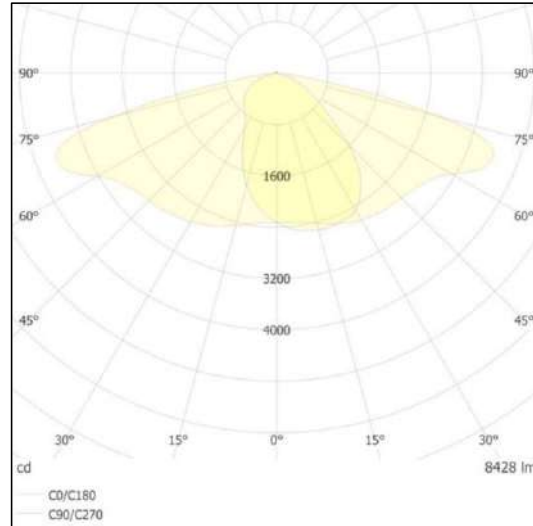
LED Industrial

Street Lantern



MURA M
Pole-Integrated
Dimensions: 100x100x100 mm

MURA M 60W LED Street Lantern (4000K) (Type 2)



I

Equipment

1x MURA M 60W LEDs (4000K)
60.77W
8428lm
3953K

NIKKON
No. 3, 5 & 7, Jalan TSB 8,
Taman Industri Sungai Buloh,
47000 Sungai Buloh,
Selangor, Malaysia.

+603 6279 2800

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<http://www.nikkonlighting.com/>

Technical and design specifications subject to change without notice.

Created by
DIALux catalogue

60W LED Street Lantern (4000K) (Type 2)

NIKKON®

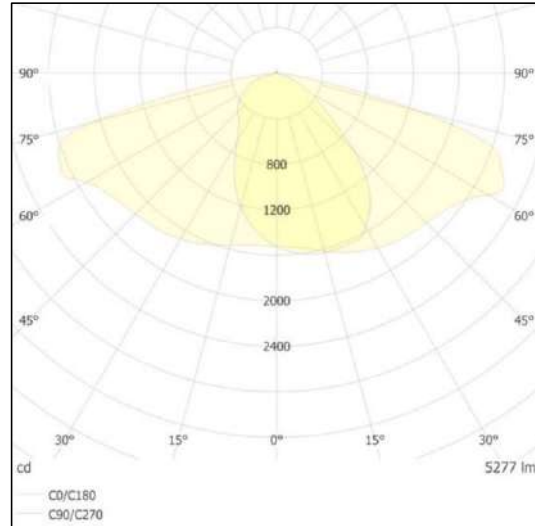
LED Industrial

Street Lantern



MURA S
Pole-Integrated
Dimensions: 100x100x100 mm

MURA S 40W LED Street Lantern (4000K) (Type 2)



I

Equipment

1x MURA S 40W LEDs (4000K)
41.2W
5277lm
3953K

NIKKON
No. 3, 5 & 7, Jalan TSB 8,
Taman Industri Sungai Buloh,
47000 Sungai Buloh,
Selangor, Malaysia.

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ses@success.com.my
<http://www.nikkonlighting.com/>

Technical and design specifications subject to change without notice.

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Lampiran 3

Hasil Simulasi 1 menggunakan
software Dialux Evo

Lampiran 3 Hasil Simulasi 1 menggunakan software Dialux Evo

Project

DIALux

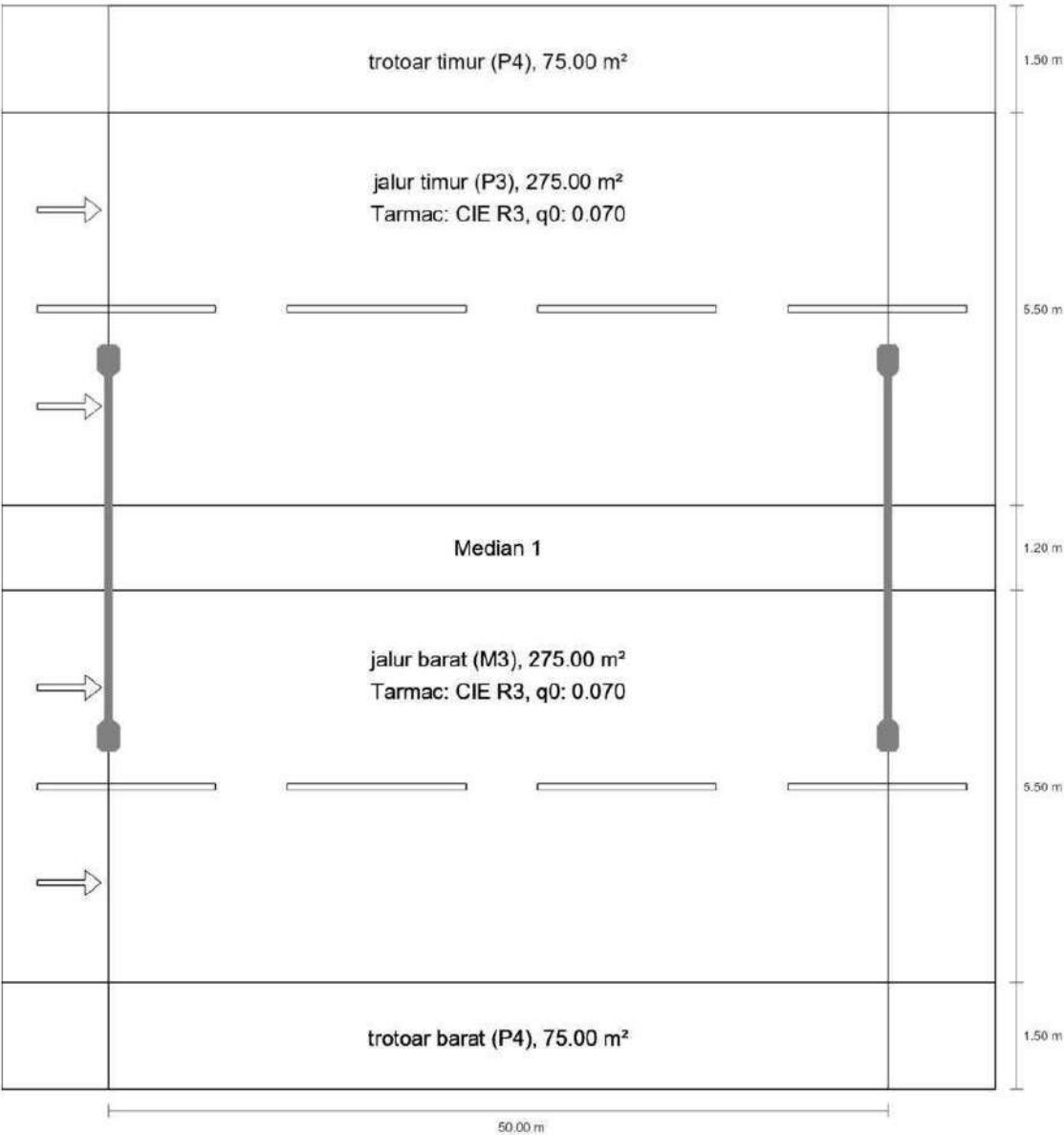


Simulasi 1 120 Watt - 50m

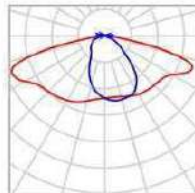
Description

Simulasi 1 120 Watt - 50m

Summary (according to EN 13201:2015)



Simulasi 1 120 Watt - 50m

Summary (according to EN 13201:2015)

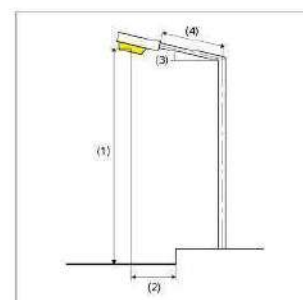
Manufacturer	NIKKON	P	120.2 W
Article No.	MURA L	Φ_{Lamp}	-
Article name	120W LED Street Lantern (4000K) (Type 2)	$\Phi_{Luminaire}$	16718 lm
Fitting	1x MURA L 120W LEDs (4000K)	η	-

Simulasi 1 120 Watt - 50m

Summary (according to EN 13201:2015)

120W LED Street Lantern (4000K) (Type 2) (Median, 2 per pole)

Pole distance	50.000 m
(1) Light spot height	8.000 m
(2) Light point overhang	2.000 m
(3) Boom inclination	2.0°
(4) Boom length	2.552 m
Annual operating hours	4000 h: 100.0 %, 240.3 W
Wattage / route	4806.4 W/km
ULR / ULOR	0.01 / 0.01
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$: 444 cd/klm $\geq 80^\circ$: 107 cd/klm $\geq 90^\circ$: 3.76 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*2
Glare index class	D.5
MF	0.75



Simulasi 1 120 Watt - 50m

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.75 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
trotoar timur (P4)	$E_{av}^{(1)(2)}$	18.13 lx	–	
	$E_{min}^{(1)(2)}$	4.13 lx	–	
jalur timur (P3)	$E_{av}^{(2)}$	25.04 lx	[6.00 - 9.00] lx	✗
	$E_{min}^{(2)}$	5.38 lx	≥ 2.25 lx	✓
jalur barat (M3)	$L_{av}^{(2)}$	1.82 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.36	≥ 0.42	✗
	$U_l^{(2)}$	0.44	≥ 0.17	✓
	$TI^{(2)}$	19 %	≤ 40 %	✓
	R_E	0.71	≥ 0.30	✓
trotoar barat (P4)	$E_{av}^{(1)(2)}$	18.08 lx	–	
	$E_{min}^{(1)(2)}$	4.24 lx	–	

(1) Informative, not part of the valuation

(2) Setpoint changed by the planner, deviant to the norm

Results for energy efficiency indicators

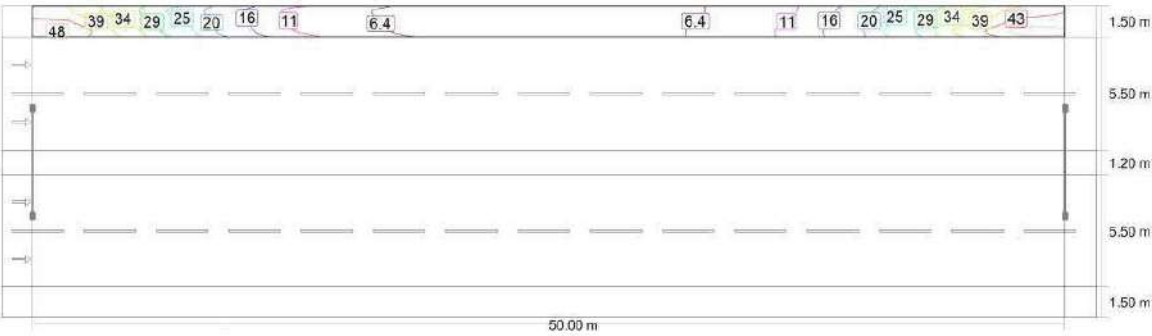
	Symbol	Calculated	Energy Consumption
Simulasi 1 120 Watt - 50m	D_p	0.015 W/lx·m ²	–
120W LED Street Lantern (4000K) (Type 2) (Median)	D_e	1.4 kWh/m ² ·yr	961.3 kWh/yr

Simulasi 1 120 Watt - 50m
trotoar timur (P4)

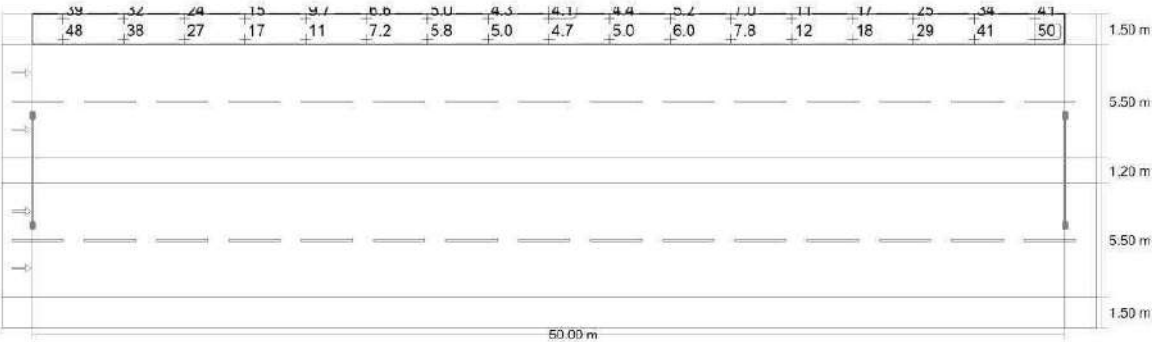
Results for valuation field

	Symbol	Calculated	Target	Check
trotoar timur (P4)	$E_{av}^{(1) (2)}$	18.13 lx	-	
	$E_{min}^{(1) (2)}$	4.13 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 1 120 Watt - 50m
trotoar timur (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
14.950	39.40	31.87	23.50	15.34	9.74	6.59	5.03	4.35	4.13	4.39	5.19	7.04	10.56	16.51	25.49	34.48	41.08
14.450	43.72	34.87	25.31	16.12	10.22	6.90	5.39	4.65	4.42	4.70	5.57	7.39	11.10	17.35	27.40	37.85	45.63
13.950	47.75	37.88	26.69	16.90	10.71	7.25	5.77	4.96	4.71	5.02	5.95	7.78	11.63	18.18	28.85	41.14	49.98

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

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	18.1 lx	4.13 lx	50.0 lx	0.23	0.08

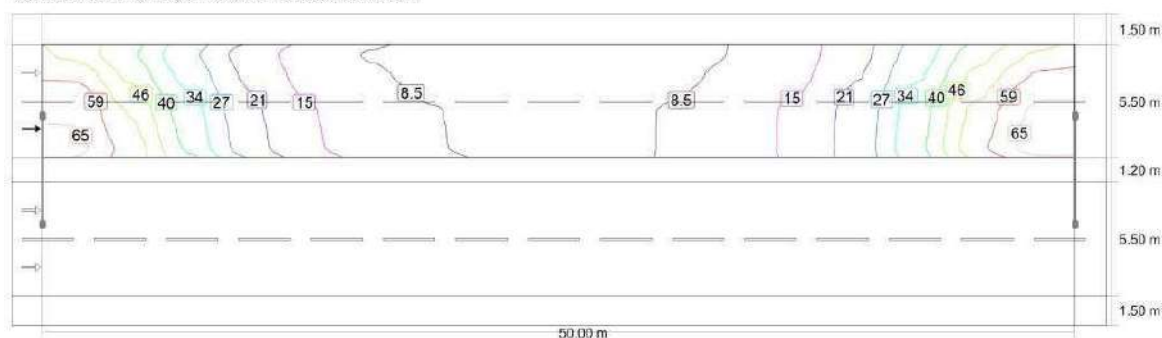
Simulasi 1 120 Watt - 50m

jalur timur (P3)

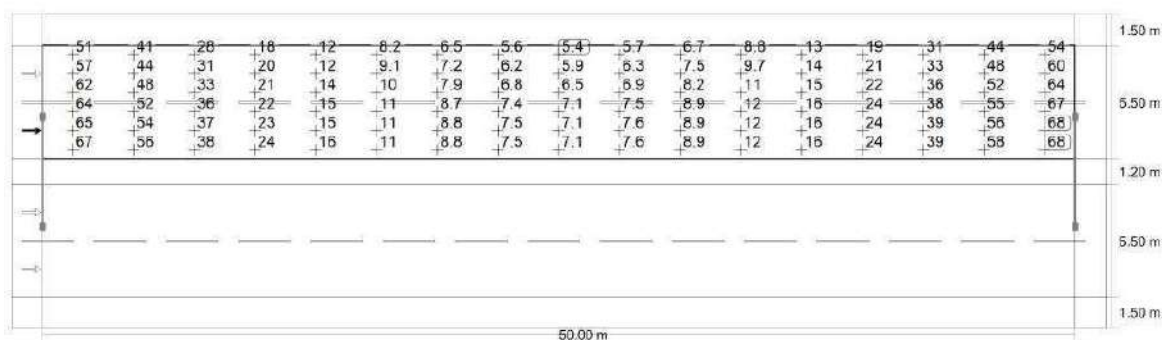
Results for valuation field

	Symbol	Calculated	Target	Check
jalur timur (P3)	$E_{av}^{(2)}$	25.04 lx	[5.00 - 9.00] lx	✗
	$E_{min}^{(2)}$	5.38 lx	≥ 2.25 lx	✓

(2) Setpoint changed by the planner, deviant to the norm



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



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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
13.242	51.35	40.89	28.45	18.13	11.60	8.17	6.51	5.63	5.38	5.72	6.73	8.76	12.57	19.46	30.64	44.49	53.72
12.325	57.31	44.30	30.92	19.55	12.46	9.12	7.22	6.23	5.95	6.32	7.46	9.73	13.50	20.89	33.12	48.14	59.63
11.408	61.75	48.02	33.42	20.95	13.71	10.08	7.95	6.84	6.52	6.93	8.19	10.70	14.74	22.27	35.51	51.79	64.14
10.492	64.50	51.83	35.93	22.37	14.93	11.03	8.67	7.44	7.08	7.53	8.92	11.64	15.92	23.62	37.74	55.26	66.77
9.575	65.19	53.73	37.31	23.11	15.34	11.26	8.77	7.49	7.12	7.56	8.95	11.69	16.03	23.97	38.55	56.44	67.83
8.658	66.63	56.09	38.49	23.64	15.66	11.44	8.85	7.52	7.13	7.56	8.94	11.68	16.04	24.11	39.06	57.80	68.13

Simulasi 1 120 Watt - 50m
jalur timur (P3)

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

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	25.0 lx	5.38 lx	68.1 lx	0.21	0.08

Simulasi 1 120 Watt - 50m

jalur barat (M3)

Results for valuation field

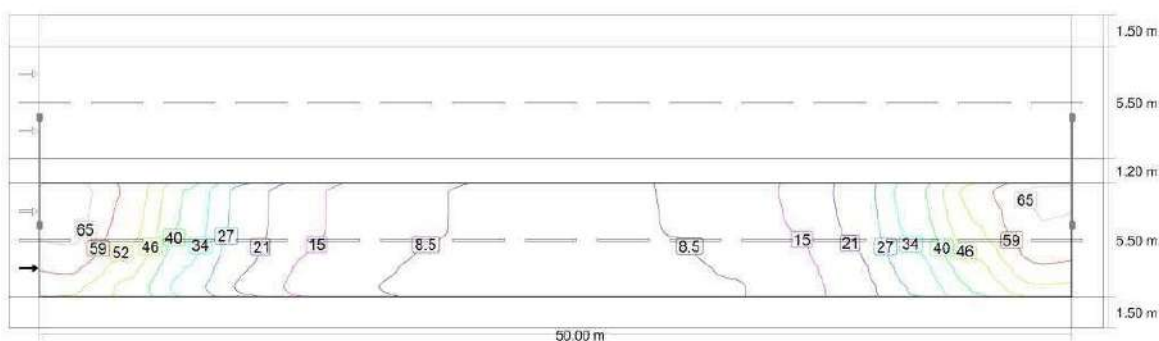
	Symbol	Calculated	Target	Check
jalur barat (M3)	$L_{av}^{(2)}$	1.82 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.36	≥ 0.42	✗
	$U_j^{(2)}$	0.44	≥ 0.17	✓
	$\tau I^{(2)}$	19 %	≤ 40 %	✓
	R_{EI}	0.71	≥ 0.30	✓

Results for observer

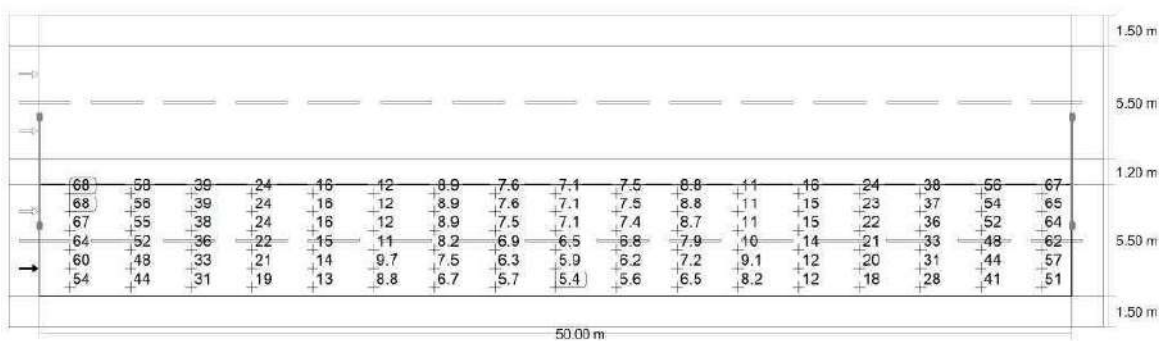
	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 2.875 m, 1.500 m	$L_{av}^{(2)}$	1.88 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.39	≥ 0.42	✗
	$U_j^{(2)}$	0.45	≥ 0.17	✓
	$\tau I^{(2)}$	13 %	≤ 40 %	✓
Observer 2 Position: -60.000 m, 5.625 m, 1.500 m	$L_{av}^{(2)}$	1.82 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.36	≥ 0.42	✗
	$U_j^{(2)}$	0.44	≥ 0.17	✓
	$\tau I^{(2)}$	19 %	≤ 40 %	✓

(2) Setpoint changed by the planner, deviant to the norm

Simulasi 1 120 Watt - 50m

jalur barat (M3)

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



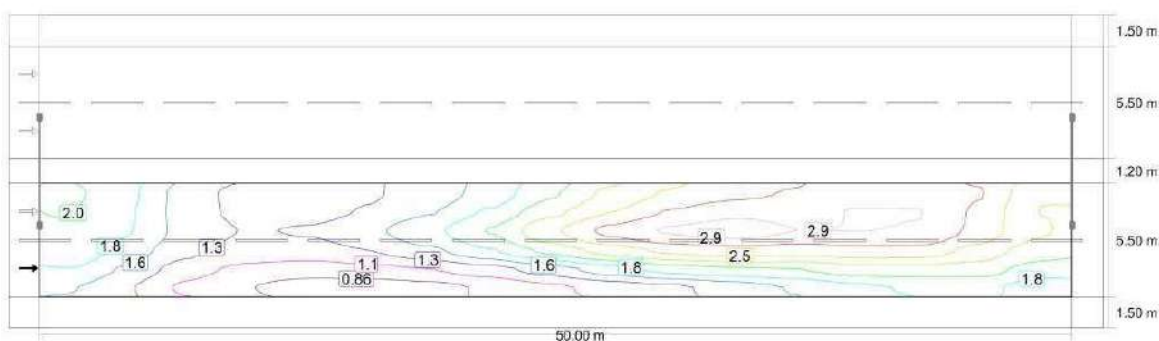
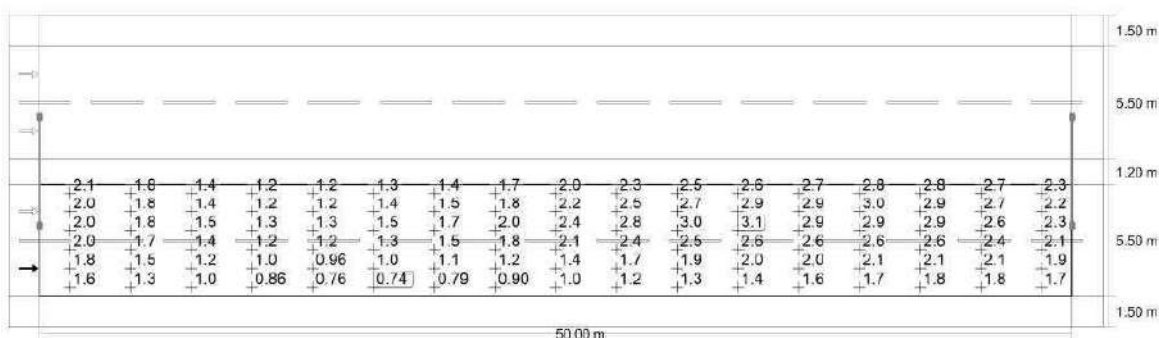
Maintenance value, horizontal illuminance [lx] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	68.13	57.80	39.06	24.11	16.04	11.68	8.94	7.56	7.13	7.52	8.85	11.44	15.66	23.64	38.49	56.09	66.63
5.625	67.83	56.44	38.55	23.97	16.03	11.69	8.95	7.56	7.12	7.49	8.77	11.26	15.34	23.11	37.31	53.73	65.19
4.708	66.77	55.26	37.74	23.62	15.92	11.64	8.92	7.53	7.08	7.44	8.67	11.03	14.93	22.37	35.93	51.83	64.50
3.792	64.14	51.79	35.51	22.27	14.74	10.70	8.19	6.93	6.52	6.84	7.95	10.08	13.71	20.95	33.42	48.02	61.75
2.875	59.63	48.14	33.12	20.89	13.50	9.73	7.46	6.32	5.95	6.23	7.22	9.12	12.46	19.55	30.92	44.30	57.31
1.958	53.72	44.49	30.64	19.46	12.57	8.76	6.73	5.72	5.38	5.63	6.51	8.17	11.60	18.13	28.45	40.89	51.35

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

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	25.0 lx	5.38 lx	68.1 lx	0.21	0.08

Simulasi 1 120 Watt - 50m

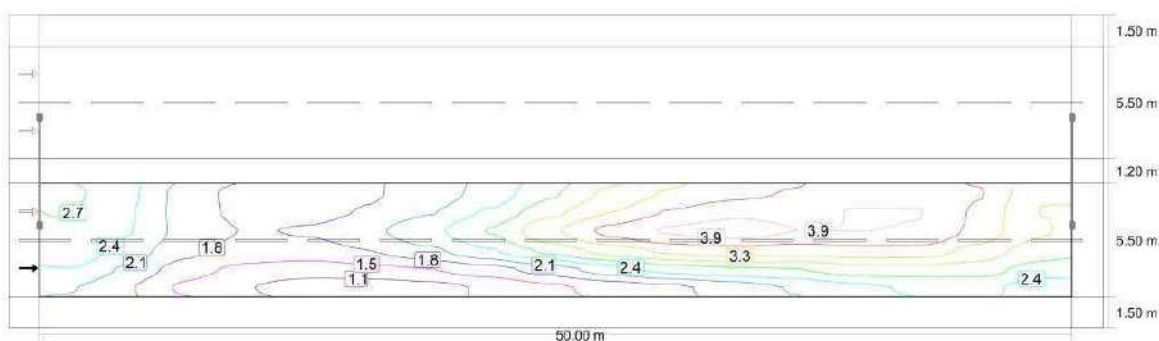
jalur barat (M3)Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Iso-illuminance curves)Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	2.05	1.84	1.44	1.24	1.21	1.30	1.42	1.65	1.99	2.31	2.51	2.64	2.73	2.80	2.85	2.72	2.27
5.625	2.02	1.81	1.44	1.25	1.23	1.35	1.54	1.83	2.19	2.48	2.74	2.89	2.85	2.96	2.95	2.67	2.24
4.708	2.01	1.79	1.46	1.31	1.34	1.50	1.73	2.03	2.45	2.78	2.98	3.06	2.94	2.95	2.93	2.64	2.27
3.792	1.96	1.69	1.38	1.22	1.22	1.33	1.51	1.77	2.10	2.36	2.54	2.62	2.57	2.64	2.62	2.39	2.14
2.875	1.78	1.51	1.20	1.03	0.96	1.01	1.09	1.24	1.45	1.69	1.88	1.97	2.02	2.14	2.14	2.12	1.90
1.958	1.57	1.34	1.04	0.86	0.76	0.74	0.79	0.90	1.04	1.17	1.28	1.42	1.57	1.72	1.81	1.84	1.66

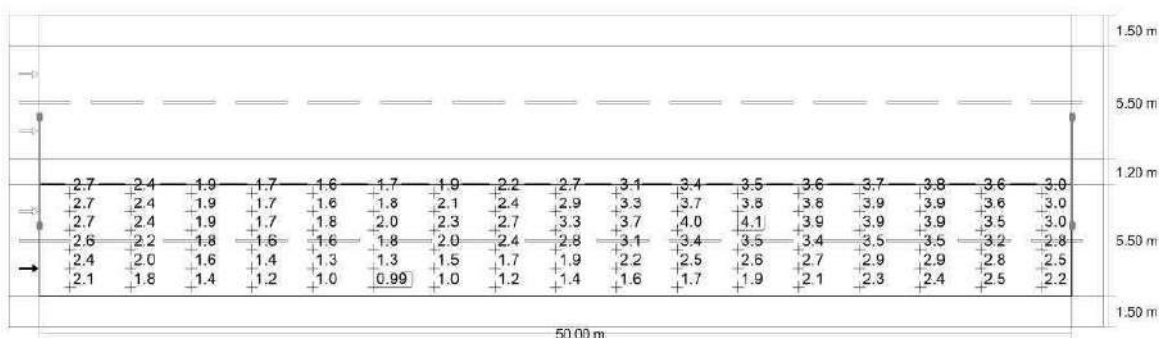
Observer 1: Maintenance value, luminance with dry roadway [cd/m^2] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_0 (g_1)$	g_2
Observer 1: Maintenance value, luminance with dry roadway	1.88 cd/m^2	0.74 cd/m^2	3.06 cd/m^2	0.39	0.24

Simulasi 1 120 Watt - 50m

jalur barat (M3)

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



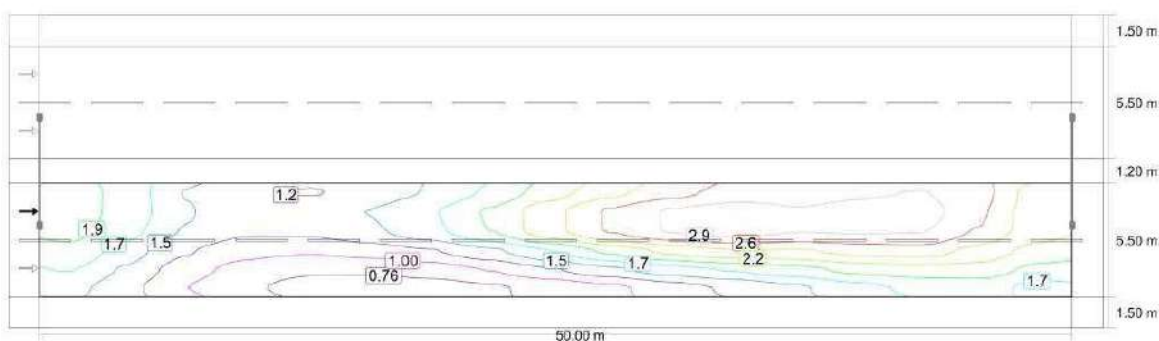
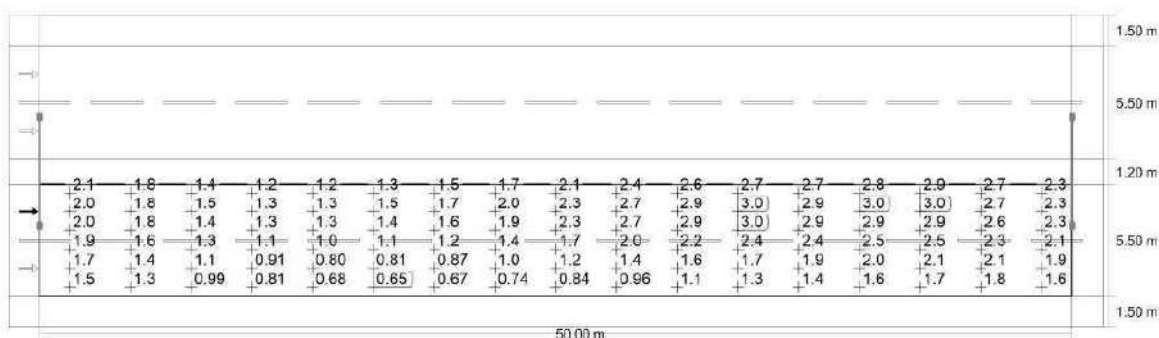
Observer 1: Luminance with new installation [cd/m²] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	2.74	2.45	1.92	1.65	1.62	1.73	1.90	2.20	2.65	3.08	3.35	3.52	3.64	3.73	3.79	3.63	3.02
5.625	2.69	2.41	1.92	1.67	1.64	1.80	2.05	2.44	2.91	3.31	3.66	3.85	3.81	3.95	3.93	3.57	2.99
4.708	2.67	2.39	1.95	1.74	1.79	2.00	2.30	2.71	3.26	3.71	3.97	4.08	3.92	3.93	3.91	3.52	3.03
3.792	2.61	2.25	1.84	1.63	1.62	1.77	2.01	2.37	2.80	3.14	3.39	3.49	3.42	3.52	3.50	3.19	2.85
2.875	2.37	2.01	1.60	1.37	1.29	1.34	1.46	1.65	1.93	2.25	2.51	2.63	2.69	2.85	2.86	2.82	2.54
1.958	2.09	1.79	1.38	1.15	1.01	0.99	1.05	1.19	1.39	1.56	1.71	1.89	2.09	2.29	2.42	2.46	2.22

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

	L_{av}	L_{min}	L_{max}	$U_0 (g_1)$	g_2
Observer 1: Luminance with new installation	2.51 cd/m²	0.99 cd/m²	4.08 cd/m²	0.39	0.24

Simulasi 1 120 Watt - 50m

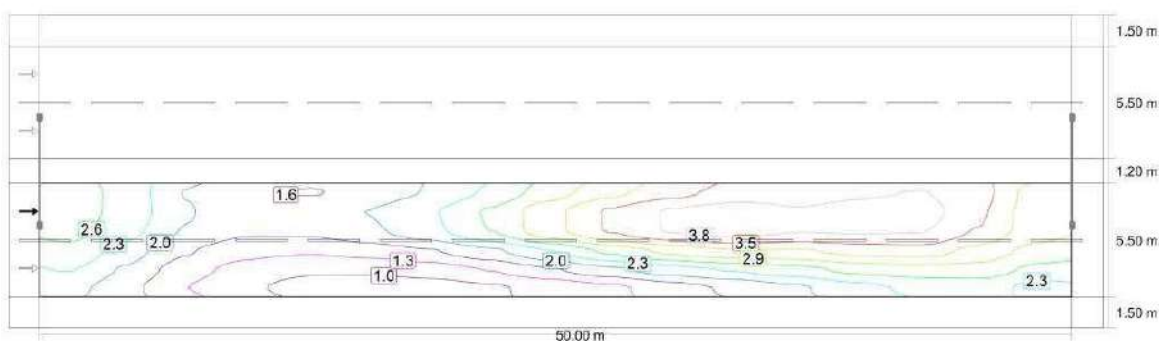
jalur barat (M3)Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Iso-illuminance curves)Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	2.05	1.84	1.44	1.25	1.22	1.33	1.49	1.75	2.07	2.35	2.55	2.73	2.75	2.82	2.88	2.72	2.27
5.625	2.05	1.84	1.48	1.31	1.33	1.47	1.68	1.97	2.33	2.67	2.90	2.99	2.89	2.96	2.97	2.68	2.26
4.708	1.99	1.78	1.43	1.27	1.28	1.42	1.63	1.94	2.33	2.66	2.89	2.97	2.88	2.90	2.88	2.61	2.26
3.792	1.87	1.58	1.25	1.07	1.03	1.10	1.22	1.43	1.71	2.01	2.25	2.39	2.39	2.49	2.52	2.33	2.09
2.875	1.71	1.42	1.10	0.91	0.80	0.81	0.87	1.02	1.22	1.43	1.61	1.73	1.85	2.00	2.07	2.06	1.86
1.958	1.54	1.30	0.99	0.81	0.68	0.65	0.67	0.74	0.84	0.96	1.12	1.27	1.43	1.61	1.74	1.78	1.63

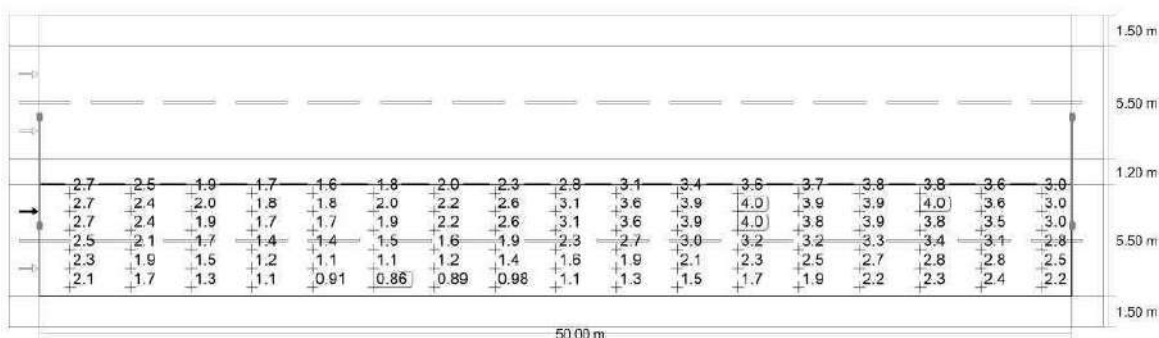
Observer 2: Maintenance value, luminance with dry roadway [cd/m^2] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_0 (g_1)$	g_2
Observer 2: Maintenance value, luminance with dry roadway	1.82 cd/m^2	0.65 cd/m^2	2.99 cd/m^2	0.36	0.22

Simulasi 1 120 Watt - 50m

jalur barat (M3)

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



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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	2.73	2.45	1.92	1.66	1.63	1.77	1.98	2.33	2.76	3.14	3.41	3.64	3.65	3.77	3.84	3.62	3.03
5.625	2.73	2.45	1.98	1.75	1.77	1.96	2.24	2.62	3.11	3.56	3.86	3.98	3.85	3.95	3.95	3.57	3.01
4.708	2.66	2.37	1.91	1.69	1.71	1.89	2.18	2.59	3.11	3.55	3.86	3.97	3.84	3.85	3.84	3.48	3.01
3.792	2.50	2.11	1.67	1.42	1.37	1.46	1.63	1.91	2.28	2.68	3.00	3.19	3.18	3.32	3.37	3.10	2.78
2.875	2.28	1.90	1.47	1.21	1.07	1.08	1.16	1.36	1.62	1.90	2.15	2.31	2.47	2.67	2.76	2.75	2.48
1.958	2.05	1.73	1.33	1.08	0.91	0.86	0.89	0.98	1.12	1.27	1.50	1.70	1.90	2.15	2.33	2.38	2.17

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

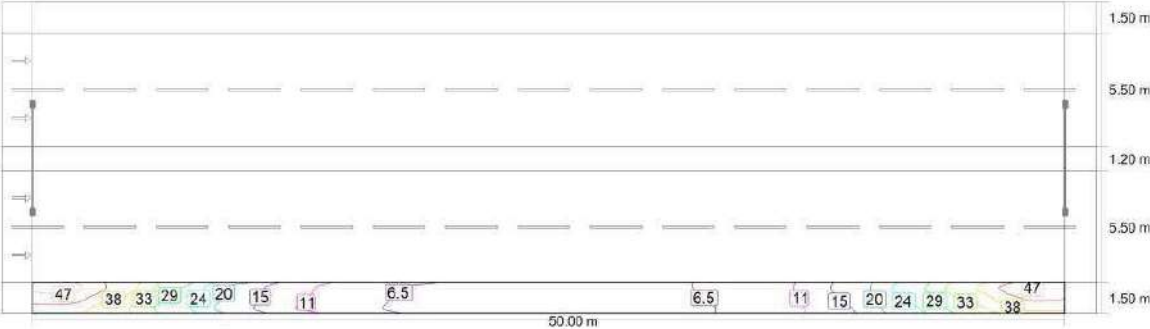
	L_{av}	L_{min}	L_{max}	$U_0 (g_1)$	g_2
Observer 2: Luminance with new installation	2.42 cd/m²	0.86 cd/m²	3.98 cd/m²	0.36	0.22

Simulasi 1 120 Watt - 50m
trotoar barat (P4)

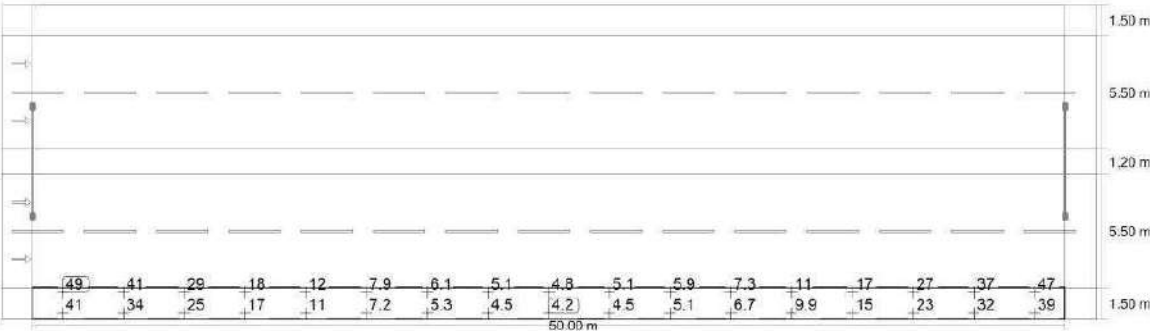
Results for valuation field

	Symbol	Calculated	Target	Check
trotoar barat (P4)	$E_{av}^{(1) (2)}$	18.08 lx	-	
	$E_{min}^{(1) (2)}$	4.24 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 1 120 Watt - 50m
trotoar barat (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
1.250	49.21	40.70	28.75	18.25	11.74	7.90	6.06	5.14	4.83	5.07	5.87	7.35	10.82	16.97	26.60	37.49	47.04
0.750	45.03	37.52	27.31	17.43	11.21	7.51	5.68	4.82	4.53	4.76	5.49	6.99	10.34	16.20	25.24	34.59	43.18
0.250	40.66	34.25	25.44	16.59	10.68	7.16	5.30	4.50	4.24	4.45	5.13	6.69	9.86	15.43	23.48	31.65	39.01

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

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	18.1 lx	4.24 lx	49.2 lx	0.23	0.09

Lampiran 4

Hasil Simulasi 2 menggunakan
software Dialux Evo

Lampiran 4 Hasil Simulasi 2 menggunakan software Dialux Evo

Project

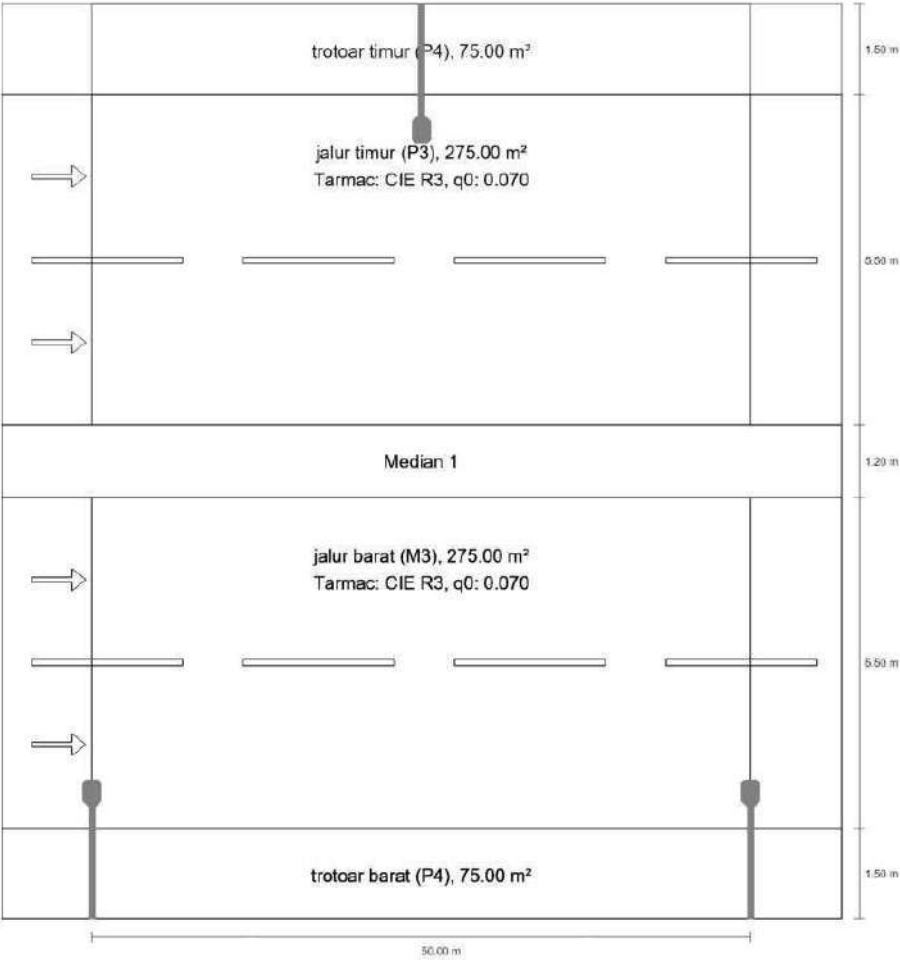
DIALux



Simulasi 2 100 Watt - 50m

Description

Simulasi 2 100 Watt - 50m
Summary (according to EN 13201:2015)



Simulasi 2 100 Watt - 50m

Summary (according to EN 13201:2015)

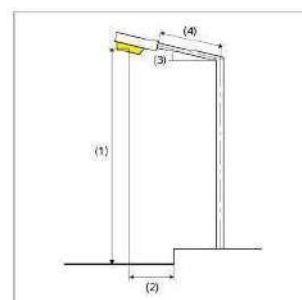
Manufacturer	NIKKON	P	102.2 W
Article No.	MURA M	Φ_{Lamp}	-
Article name	100W LED Street Lantern (4000K) (Type 2)	$\Phi_{Luminaire}$	13906 lm
Fitting	1x MURA M 100W LEDs (4000K)	η	-

Simulasi 2 100 Watt - 50m

Summary (according to EN 13201:2015)

100W LED Street Lantern (4000K) (Type 2) (both sides offset)

Pole distance	50.000 m
(1) Light spot height	7.000 m
(2) Light point overhang	0.549 m
(3) Boom inclination	2.0°
(4) Boom length	2.000 m
Annual operating hours	4000 h: 100.0 %, 102.2 W
Wattage / route	4088.8 W/km
ULR / ULOR	0.01 / 0.01
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$: 412 cd/klm $\geq 80^\circ$: 100 cd/klm $\geq 90^\circ$: 3.91 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*2
Glare index class	D:6
MF	0.75



Simulasi 2 100 Watt - 50m

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.75 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
trotoar timur (P4)	$E_{av}^{(1)(2)}$	16.96 lx	–	
	$E_{min}^{(1)(2)}$	3.83 lx	–	
jalur timur (P3)	$E_{av}^{(2)}$	21.81 lx	[6.00 - 9.00] lx	✗
	$E_{min}^{(2)}$	5.71 lx	≥ 2.25 lx	✓
jalur barat (M3)	$L_{av}^{(2)}$	1.44 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_0^{(2)}$	0.48	≥ 0.42	✓
	$U_l^{(2)}$	0.31	≥ 0.17	✓
	$TI^{(2)}$	18 %	≤ 40 %	✓
	R_E	0.69	≥ 0.30	✓
trotoar barat (P4)	$E_{av}^{(1)(2)}$	16.82 lx	–	
	$E_{min}^{(1)(2)}$	3.88 lx	–	

(1) Informative, not part of the valuation

(2) Setpoint changed by the planner, deviant to the norm

Results for energy efficiency indicators

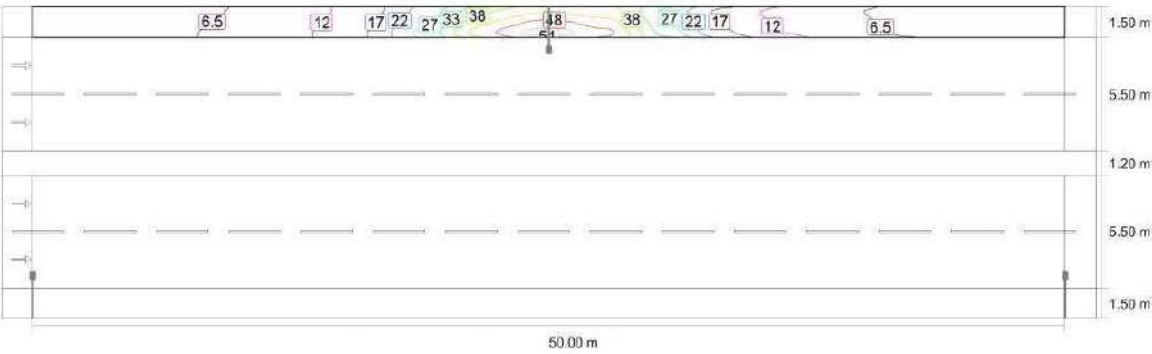
	Symbol	Calculated	Energy Consumption
Simulasi 2 100 Watt - 50m	D_p	0.014 W/lx·m ²	–
100W LED Street Lantern (4000K) (Type 2) (both sides offset)	D_e	1.2 kWh/m ² ·yr	817.8 kWh/yr

Simulasi 2 100 Watt - 50m
trottoar timur (P4)

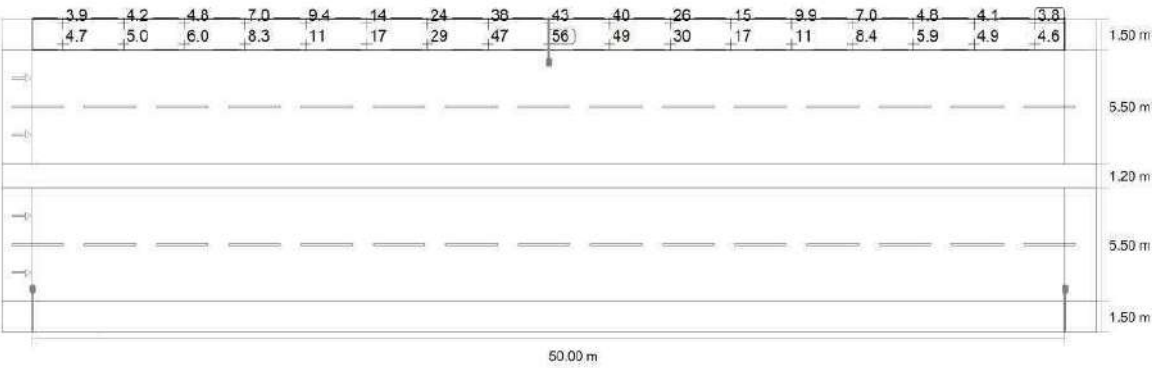
Results for valuation field

	Symbol	Calculated	Target	Check
trottoar timur (P4)	$E_{av}^{(1) (2)}$	16.96 lx	-	
	$E_{min}^{(1) (2)}$	3.83 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 2 100 Watt - 50m
trotoar timur (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
14.950	3.87	4.20	4.80	6.95	9.45	14.15	24.07	37.55	43.28	40.48	25.04	15.01	9.86	6.97	4.77	4.12	3.83
14.450	4.26	4.60	5.35	7.63	10.31	15.45	26.48	42.52	50.23	45.49	28.30	16.23	10.67	7.65	5.30	4.50	4.21
13.950	4.72	5.04	5.95	8.33	11.18	16.72	28.77	46.84	56.27	49.45	30.41	17.38	11.49	8.35	5.87	4.91	4.65

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

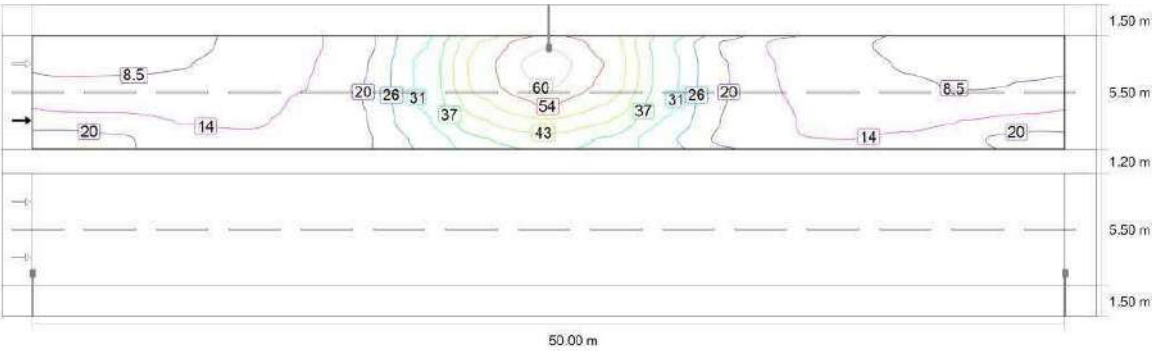
	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	17.0 lx	3.83 lx	56.3 lx	0.23	0.07

Simulasi 2 100 Watt - 50m
jalur timur (P3)

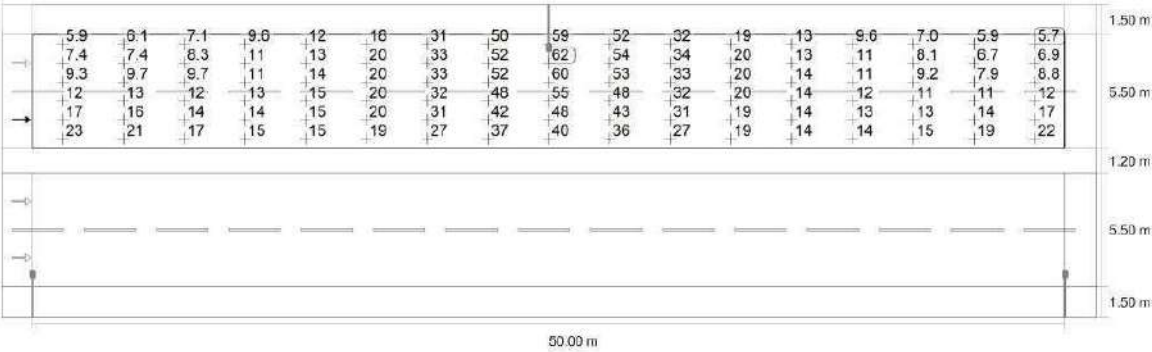
Results for valuation field

	Symbol	Calculated	Target	Check
jalur timur (P3)	$E_{av}^{(2)}$	21.81 lx	[5.00 - 9.00] lx	✗
	$E_{min}^{(2)}$	5.71 lx	≥ 2.25 lx	✓

(2) Setpoint changed by the planner, deviant to the norm



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



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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
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Simulasi 2 100 Watt - 50m
jalur timur (P3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
13.242	5.91	6.10	7.15	9.56	12.46	18.41	31.15	49.81	59.34	51.77	32.45	18.88	12.75	9.63	7.02	5.86	5.71
12.325	7.40	7.43	8.34	10.57	13.43	19.56	32.72	52.31	62.44	53.63	33.74	19.73	13.50	10.51	8.06	6.69	6.87
11.408	9.35	9.67	9.69	11.46	14.04	19.97	32.70	51.78	60.41	52.52	33.41	19.84	13.83	11.18	9.18	7.94	8.79
10.492	12.39	12.50	11.54	12.51	14.64	19.99	31.91	47.81	54.71	48.30	32.29	19.67	14.16	12.00	10.71	10.67	11.81
9.575	17.06	16.25	14.03	13.75	15.05	19.73	30.50	42.49	47.59	42.65	30.53	19.24	14.37	13.03	12.76	14.45	16.53
8.658	22.85	20.59	16.68	15.16	15.14	19.22	27.00	36.59	39.65	36.27	26.59	18.56	14.37	14.25	15.47	19.19	22.43

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	21.8 lx	5.71 lx	62.4 lx	0.26	0.09

Simulasi 2 100 Watt - 50m

jalur barat (M3)

Results for valuation field

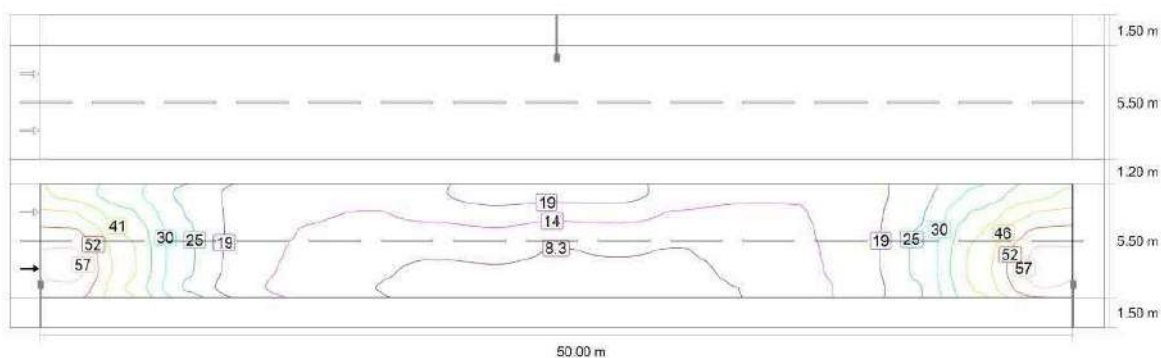
	Symbol	Calculated	Target	Check
jalur barat (M3)	$L_{av}^{(2)}$	1.44 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.48	≥ 0.42	✓
	$U_f^{(2)}$	0.31	≥ 0.17	✓
	$\Gamma I^{(2)}$	18 %	≤ 40 %	✓
	R_{EI}	0.69	≥ 0.30	✓

Results for observer

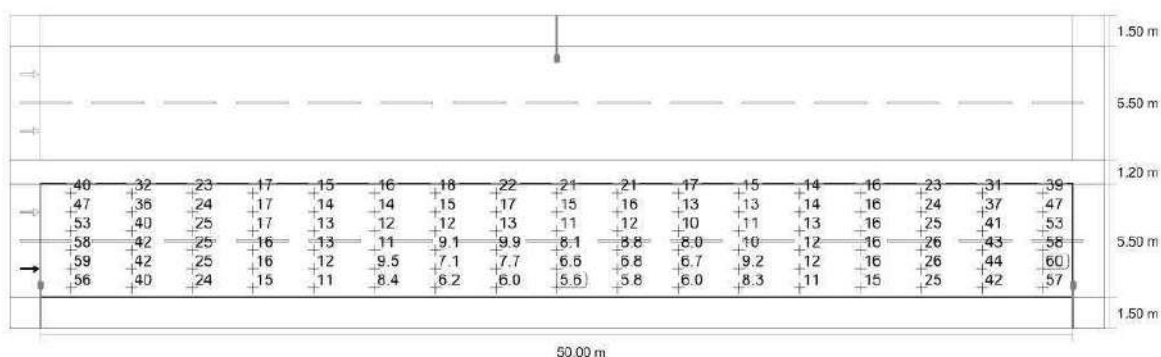
	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 2.875 m, 1.500 m	$L_{av}^{(2)}$	1.44 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.55	≥ 0.42	✓
	$U_f^{(2)}$	0.31	≥ 0.17	✓
	$\Gamma I^{(2)}$	18 %	≤ 40 %	✓
Observer 2 Position: -60.000 m, 5.625 m, 1.500 m	$L_{av}^{(2)}$	1.49 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.48	≥ 0.42	✓
	$U_f^{(2)}$	0.50	≥ 0.17	✓
	$\Gamma I^{(2)}$	11 %	≤ 40 %	✓

(2) Setpoint changed by the planner, deviant to the norm

Simulasi 2 100 Watt - 50m

jalur barat (M3)

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



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

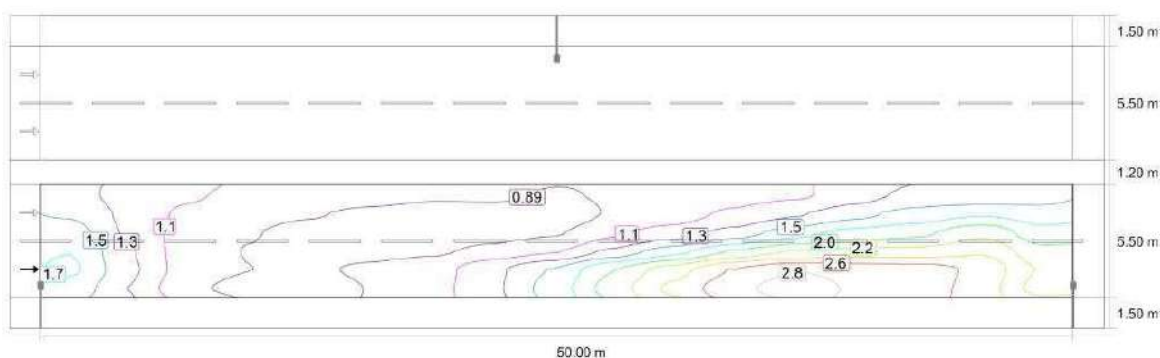
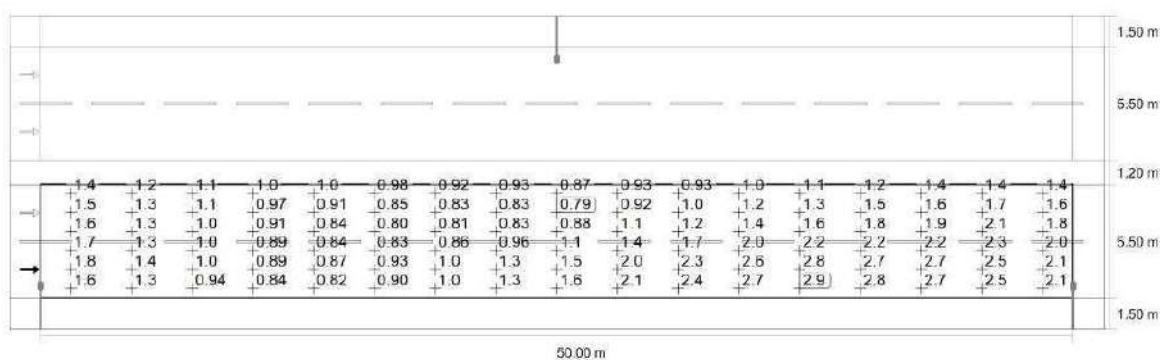
m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	39.55	31.66	23.21	16.56	14.83	15.55	18.43	22.39	21.36	21.36	17.13	14.66	14.00	15.78	22.76	31.43	39.47
5.625	46.82	36.40	24.24	16.72	14.21	13.59	15.00	17.19	15.43	16.01	13.42	12.82	13.53	16.07	24.03	36.61	46.94
4.708	53.03	40.33	24.95	16.71	13.37	11.93	11.93	12.96	10.80	11.76	10.13	11.32	12.94	16.19	24.98	40.90	53.31
3.792	57.90	41.90	25.24	16.38	12.59	10.56	9.10	9.91	8.07	8.78	8.05	10.15	12.41	16.11	25.51	42.78	58.34
2.875	59.47	42.30	25.01	15.84	11.89	9.45	7.15	7.73	6.63	6.85	6.72	9.25	11.93	15.87	25.54	43.53	60.11
1.958	56.09	40.38	23.67	14.81	10.93	8.35	6.19	6.04	5.57	5.79	6.01	8.30	11.13	15.10	24.54	42.02	57.48

Simulasi 2 100 Watt - 50m

jalur barat (M3)

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	21.7 lx	5.57 lx	60.1 lx	0.26	0.09

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

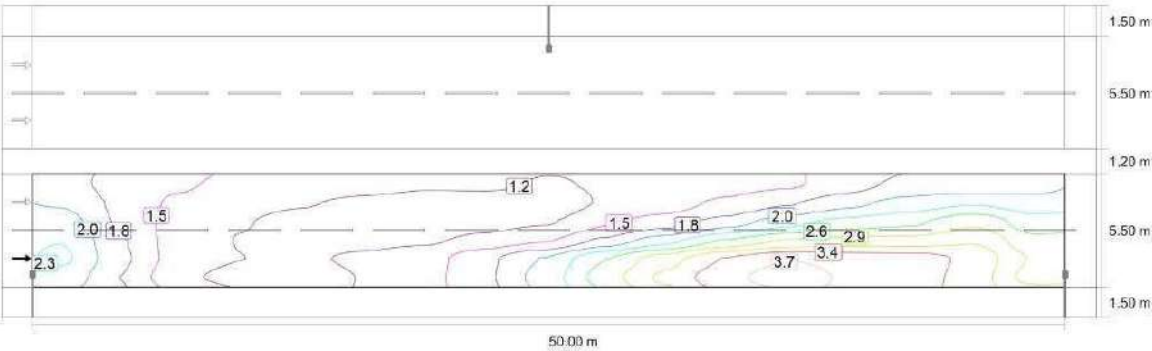
m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.42	1.23	1.14	1.04	1.01	0.98	0.92	0.93	0.87	0.93	0.93	1.02	1.07	1.23	1.38	1.38	1.43
5.625	1.51	1.26	1.06	0.97	0.91	0.85	0.83	0.83	0.79	0.92	1.01	1.15	1.29	1.46	1.61	1.70	1.63
4.708	1.62	1.28	1.02	0.91	0.84	0.80	0.81	0.83	0.88	1.07	1.21	1.41	1.65	1.82	1.90	2.11	1.82

Simulasi 2 100 Watt - 50m
jalur barat (M3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
3.792	1.74	1.34	1.01	0.89	0.84	0.83	0.85	0.95	1.08	1.37	1.66	1.97	2.18	2.23	2.25	2.35	2.01
2.875	1.77	1.37	1.01	0.89	0.87	0.93	1.02	1.26	1.55	1.96	2.29	2.61	2.79	2.71	2.68	2.54	2.15
1.958	1.65	1.31	0.94	0.84	0.82	0.90	1.02	1.28	1.62	2.06	2.43	2.73	2.90	2.76	2.69	2.50	2.08

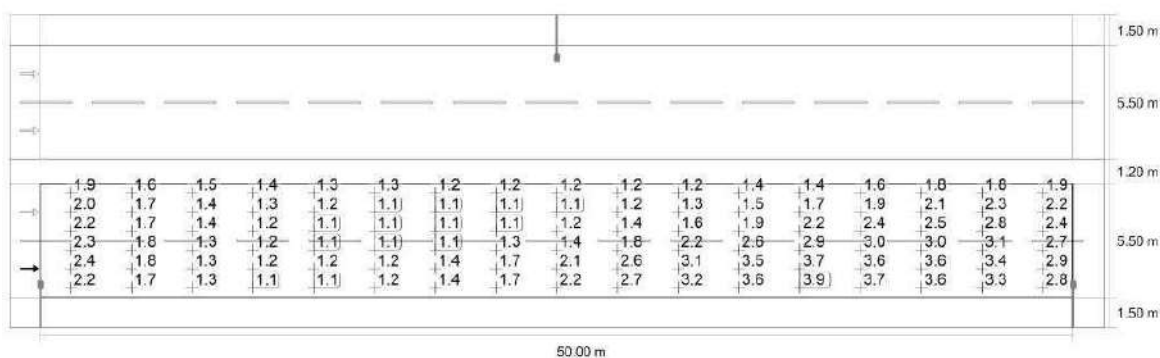
Observer 1: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Maintenance value, luminance with dry roadway	1.44 cd/m²	0.79 cd/m²	2.90 cd/m²	0.55	0.27



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

Simulasi 2 100 Watt - 50m

jalur barat (M3)

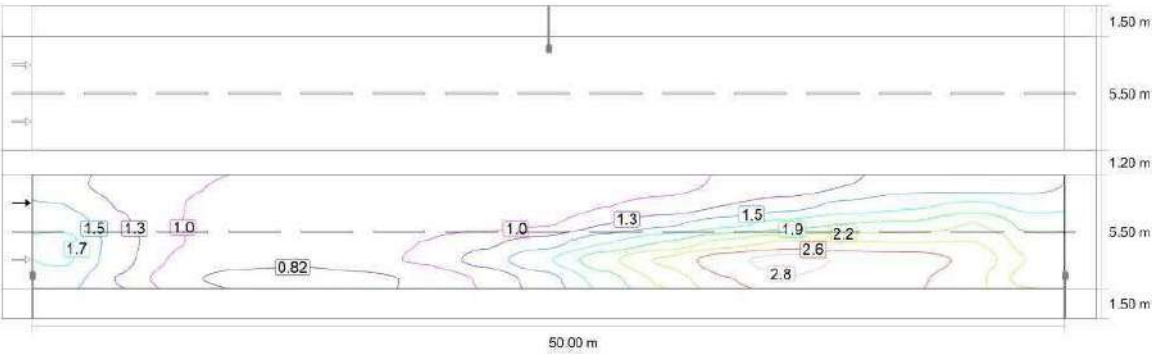
Observer 1: Luminance with new installation [cd/m²] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.89	1.64	1.52	1.39	1.35	1.30	1.23	1.25	1.17	1.24	1.24	1.36	1.43	1.64	1.84	1.84	1.90
5.625	2.01	1.68	1.42	1.29	1.22	1.14	1.11	1.11	1.05	1.23	1.35	1.54	1.72	1.95	2.15	2.27	2.17
4.708	2.16	1.71	1.36	1.21	1.12	1.06	1.08	1.10	1.17	1.43	1.61	1.88	2.20	2.42	2.53	2.82	2.43
3.792	2.32	1.78	1.34	1.18	1.12	1.11	1.15	1.28	1.44	1.83	2.21	2.63	2.90	2.98	3.00	3.13	2.68
2.875	2.35	1.83	1.34	1.19	1.16	1.24	1.35	1.68	2.06	2.61	3.05	3.48	3.72	3.61	3.57	3.39	2.86
1.958	2.20	1.75	1.26	1.12	1.09	1.20	1.36	1.70	2.16	2.74	3.23	3.66	3.87	3.67	3.59	3.34	2.77

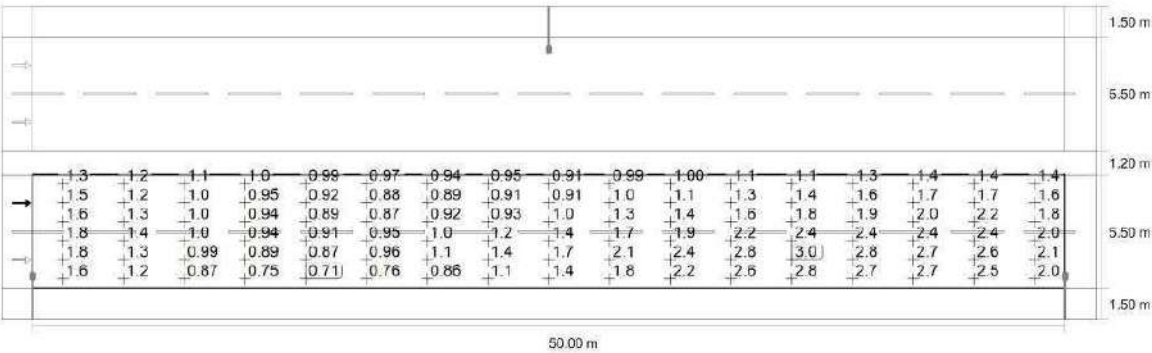
Observer 1: Luminance with new installation [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Luminance with new installation	1.92 cd/m²	1.05 cd/m²	3.87 cd/m²	0.55	0.27

Simulasi 2 100 Watt - 50m
jalur barat (M3)



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)

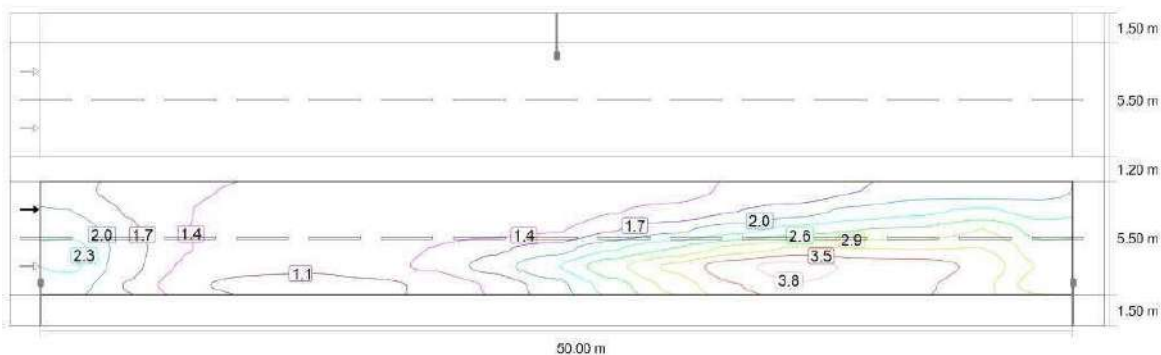
Simulasi 2 100 Watt - 50m

jalur barat (M3)

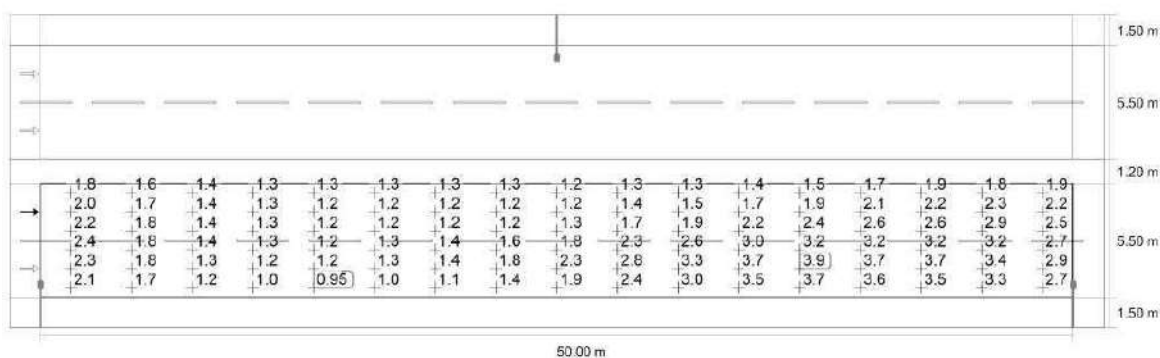
m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.35	1.19	1.08	1.01	0.99	0.97	0.94	0.95	0.91	0.99	1.00	1.07	1.12	1.27	1.41	1.38	1.41
5.625	1.50	1.25	1.05	0.95	0.92	0.88	0.89	0.91	0.91	1.03	1.10	1.26	1.39	1.55	1.66	1.75	1.64
4.708	1.64	1.31	1.04	0.94	0.89	0.87	0.92	0.93	1.01	1.26	1.44	1.63	1.80	1.94	1.97	2.17	1.84
3.792	1.78	1.38	1.05	0.94	0.91	0.95	1.05	1.22	1.38	1.70	1.95	2.24	2.41	2.39	2.38	2.39	2.04
2.875	1.75	1.35	0.99	0.89	0.87	0.96	1.08	1.37	1.70	2.11	2.44	2.77	2.96	2.79	2.75	2.57	2.15
1.958	1.60	1.25	0.87	0.75	0.71	0.76	0.86	1.07	1.40	1.84	2.24	2.60	2.81	2.69	2.66	2.47	2.04

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

	L _{av}	L _{min}	L _{max}	U ₀ (g ₁)	g ₂
Observer 2: Maintenance value, luminance with dry roadway	1.49 cd/m ²	0.71 cd/m ²	2.96 cd/m ²	0.48	0.24

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

Simulasi 2 100 Watt - 50m

jalur barat (M3)

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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.80	1.58	1.45	1.35	1.33	1.30	1.26	1.27	1.22	1.31	1.33	1.43	1.50	1.69	1.88	1.84	1.89
5.625	1.99	1.66	1.40	1.27	1.22	1.17	1.19	1.21	1.21	1.38	1.46	1.68	1.85	2.07	2.22	2.33	2.18
4.708	2.19	1.75	1.39	1.25	1.19	1.17	1.22	1.24	1.35	1.68	1.91	2.17	2.40	2.58	2.63	2.89	2.45
3.792	2.37	1.84	1.40	1.25	1.22	1.27	1.40	1.62	1.84	2.26	2.59	2.99	3.22	3.18	3.18	3.19	2.72
2.875	2.33	1.80	1.33	1.18	1.17	1.28	1.44	1.83	2.26	2.81	3.26	3.69	3.94	3.72	3.67	3.42	2.86
1.958	2.13	1.67	1.16	1.00	0.95	1.02	1.14	1.43	1.87	2.45	2.99	3.47	3.75	3.59	3.54	3.29	2.72

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

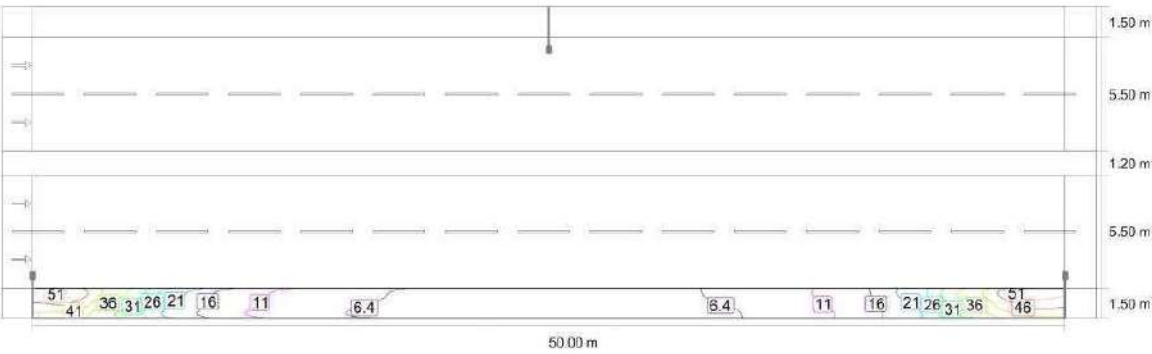
	L _{av}	L _{min}	L _{max}	U _o (g ₁)	g ₂
Observer 2: Luminance with new installation	1.98 cd/m²	0.95 cd/m²	3.94 cd/m²	0.48	0.24

Simulasi 2 100 Watt - 50m
trotoar barat (P4)

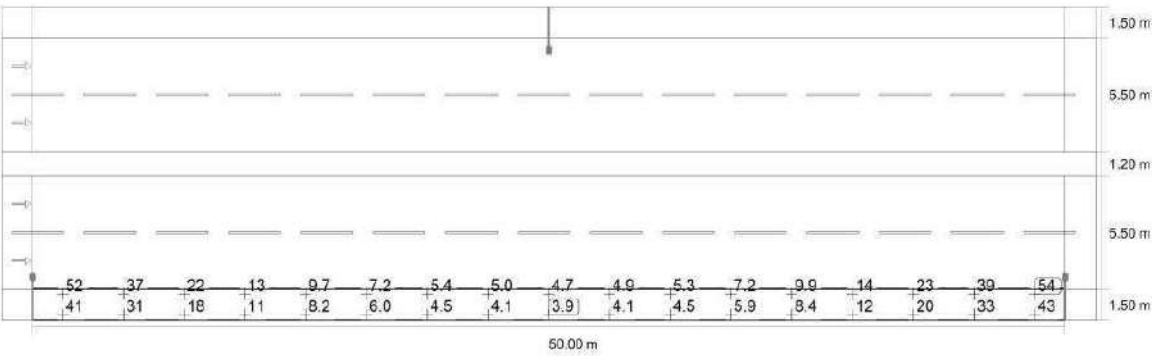
Results for valuation field

	Symbol	Calculated	Target	Check
trotoar barat (P4)	$E_{av}^{(1) (2)}$	16.82 lx	-	
	$E_{min}^{(1) (2)}$	3.88 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 2 100 Watt - 50m
trotoar barat (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
1.250	51.70	37.17	21.67	13.41	9.73	7.24	5.37	5.02	4.70	4.90	5.25	7.21	9.93	13.81	22.75	39.22	53.84
0.750	46.63	34.08	20.04	12.41	8.94	6.59	4.94	4.54	4.26	4.46	4.85	6.56	9.16	12.89	21.26	36.40	48.80
0.250	40.53	30.74	18.33	11.38	8.17	5.97	4.55	4.13	3.88	4.07	4.47	5.95	8.41	11.94	19.55	33.32	42.63

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	16.8 lx	3.88 lx	53.8 lx	0.23	0.07

Lampiran 5

Hasil Simulasi 3 menggunakan
software Dialux Evo

Lampiran 5 Hasil Simulasi 3 menggunakan software Dialux Evo

Project

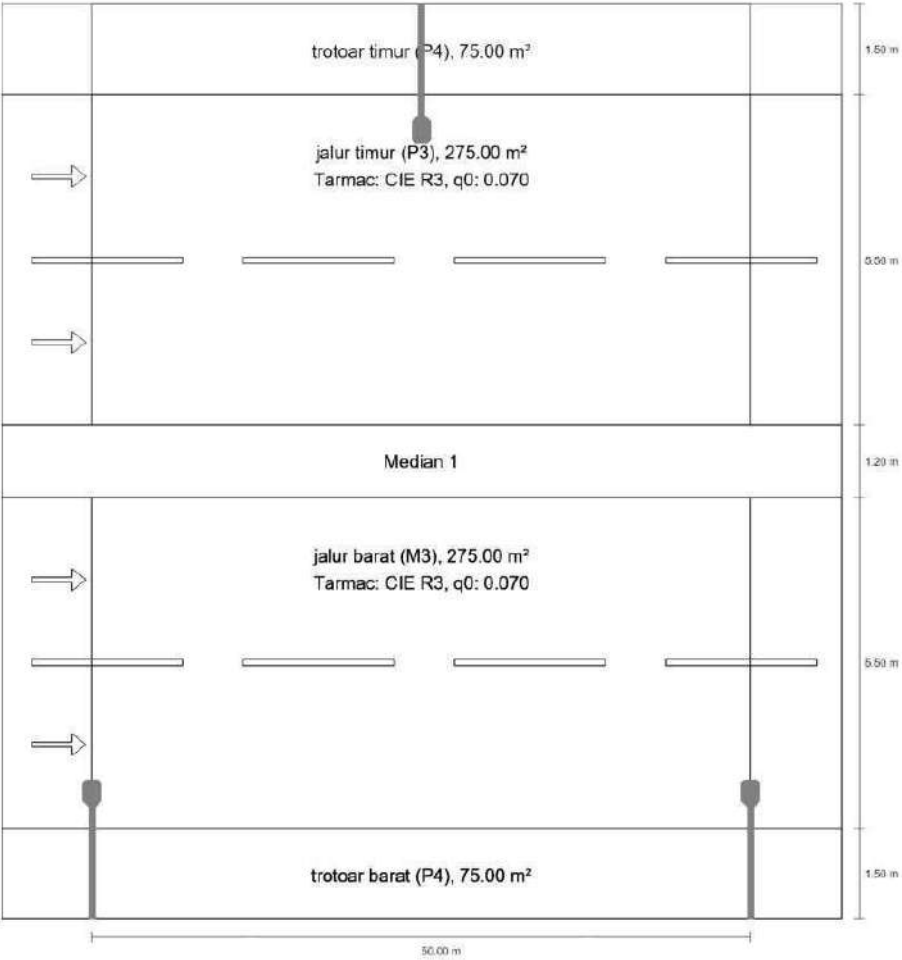
DIALux



Simulasi 3 80 Watt - 50m

Description

Simulasi 3 80 Watt - 50m
Summary (according to EN 13201:2015)



Simulasi 3 80 Watt - 50m

Summary (according to EN 13201:2015)

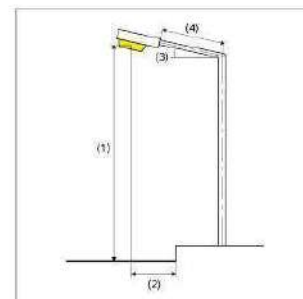
Manufacturer	NIKKON	P	82.7 W
Article No.	MURA M	Φ_{Lamp}	-
Article name	80W LED Street Lantern (4000K) (Type 2)	$\Phi_{Luminaire}$	11121 lm
Fitting	1x MURA M 80W LEDs (4000K)	η	-

Simulasi 3 80 Watt - 50m

Summary (according to EN 13201:2015)

80W LED Street Lantern (4000K) (Type 2) (both sides offset)

Pole distance	50.000 m
(1) Light spot height	7.000 m
(2) Light point overhang	0.549 m
(3) Boom inclination	2.0°
(4) Boom length	2.000 m
Annual operating hours	4000 h: 100.0 %, 82.7 W
Wattage / route	3308.8 W/km
ULR / ULOR	0.01 / 0.01
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$: 386 cd/klm $\geq 80^\circ$: 89.7 cd/klm $\geq 90^\circ$: 3.90 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	0.75



Simulasi 3 80 Watt - 50m

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.75 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
trotoar timur (P4)	$E_{av}^{(1)(2)}$	13,54 lx	–	
	$E_{min}^{(1)(2)}$	3,02 lx	–	
jalur timur (P3)	$E_{av}^{(2)}$	17,39 lx	[6,00 - 9,00] lx	✗
	$E_{min}^{(2)}$	4,53 lx	$\geq 2,25$ lx	✓
jalur barat (M3)	$L_{av}^{(2)}$	1,12 cd/m ²	$\geq 0,60$ cd/m ²	✓
	$U_o^{(2)}$	0,47	$\geq 0,42$	✓
	$U_l^{(2)}$	0,31	$\geq 0,17$	✓
	$TI^{(2)}$	17 %	≤ 40 %	✓
	R_E	0,69	$\geq 0,30$	✓
trotoar barat (P4)	$E_{av}^{(1)(2)}$	13,43 lx	–	
	$E_{min}^{(1)(2)}$	3,08 lx	–	

(1) Informative, not part of the valuation

(2) Setpoint changed by the planner, deviant to the norm

Results for energy efficiency indicators

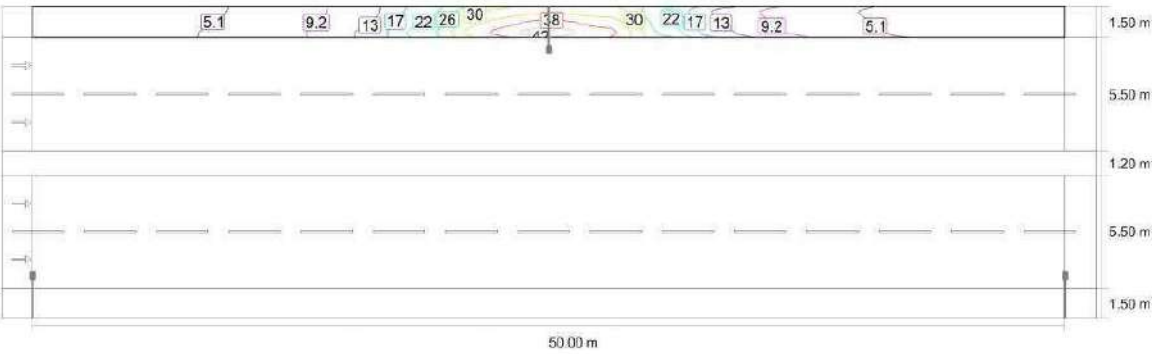
	Symbol	Calculated	Energy Consumption
Simulasi 3 80 Watt - 50m	D_p	0,014 W/lx·m ²	–
80W LED Street Lantern (4000K) (Type 2) (both sides offset)	D_e	0,9 kWh/m ² ·yr	661,8 kWh/yr

Simulasi 3 80 Watt - 50m
trotoar timur (P4)

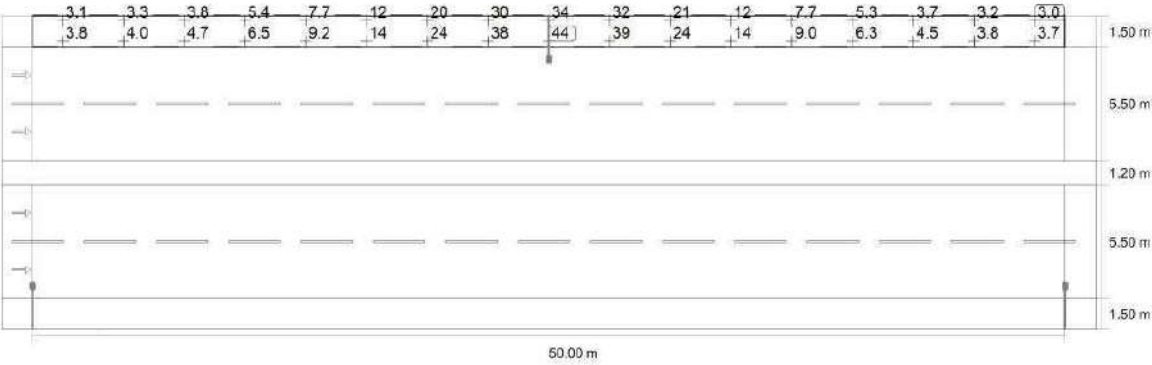
Results for valuation field

	Symbol	Calculated	Target	Check
trotoar timur (P4)	$E_{av}^{(1) (2)}$	13.54 lx	-	
	$E_{min}^{(1) (2)}$	3.02 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 3 80 Watt - 50m
trotoar timur (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
14.950	3.08	3.34	3.76	5.43	7.75	11.65	19.84	30.38	33.80	32.36	20.83	11.91	7.74	5.28	3.68	3.23	3.02
14.450	3.40	3.66	4.20	5.97	8.47	12.70	21.80	34.42	39.38	36.38	22.56	12.85	8.38	5.79	4.08	3.53	3.33
13.950	3.77	4.01	4.68	6.53	9.18	13.71	23.65	37.85	44.29	39.36	24.16	13.73	9.02	6.34	4.54	3.85	3.68

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

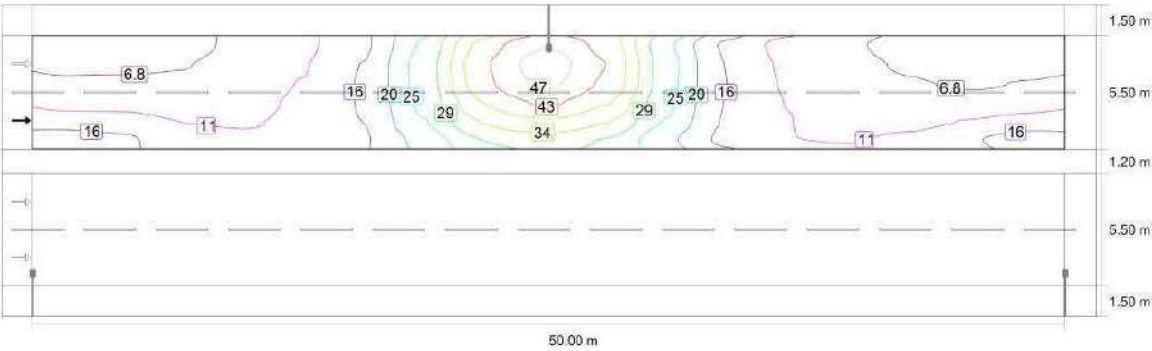
	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	13.5 lx	3.02 lx	44.3 lx	0.22	0.07

Simulasi 3 80 Watt - 50m
jalur timur (P3)

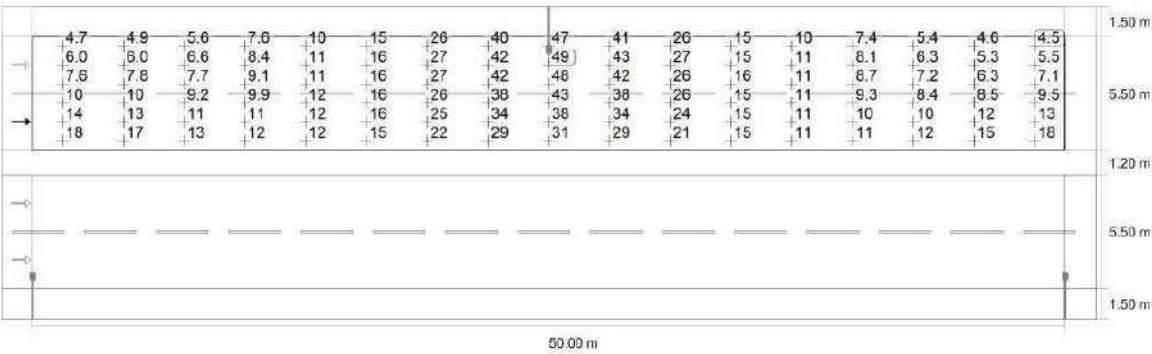
Results for valuation field

	Symbol	Calculated	Target	Check
jalur timur (P3)	$E_{av}^{(2)}$	17.39 lx	[5.00 - 9.00] lx	✗
	$E_{min}^{(2)}$	4.53 lx	≥ 2.25 lx	✓

(2) Setpoint changed by the planner, deviant to the norm



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



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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
---	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

Simulasi 3 80 Watt - 50m
jalur timur (P3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
13.242	4.74	4.87	5.63	7.55	10.26	15.03	25.55	40.28	46.89	41.00	25.62	14.84	10.01	7.35	5.45	4.60	4.53
12.325	5.97	5.97	6.59	8.38	11.00	15.89	26.75	42.22	49.38	42.51	26.62	15.48	10.59	8.08	6.27	5.29	5.51
11.408	7.57	7.77	7.68	9.11	11.44	16.16	26.62	41.70	47.86	41.81	26.44	15.58	10.86	8.66	7.17	6.31	7.08
10.492	10.05	10.08	9.19	9.95	11.88	16.11	25.87	38.49	43.45	38.41	25.63	15.47	11.14	9.35	8.41	8.47	9.53
9.575	13.67	13.09	11.19	10.93	12.16	15.83	24.62	34.14	37.56	33.94	24.28	15.14	11.32	10.16	10.05	11.51	13.18
8.658	18.20	16.61	13.31	12.05	12.19	15.37	21.77	29.40	31.33	28.93	21.19	14.61	11.33	11.15	12.20	15.31	17.77

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	17.4 lx	4.53 lx	49.4 lx	0.26	0.09

Simulasi 3 80 Watt - 50m

jalur barat (M3)

Results for valuation field

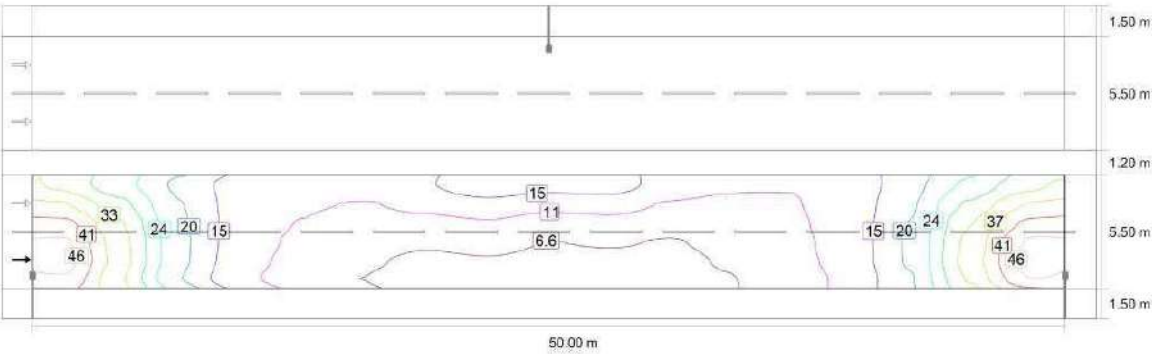
	Symbol	Calculated	Target	Check
jalur barat (M3)	$L_{av}^{(2)}$	1.12 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.47	≥ 0.42	✓
	$U_j^{(2)}$	0.31	≥ 0.17	✓
	$\Gamma I^{(2)}$	17 %	≤ 40 %	✓
	R_{EI}	0.69	≥ 0.30	✓

Results for observer

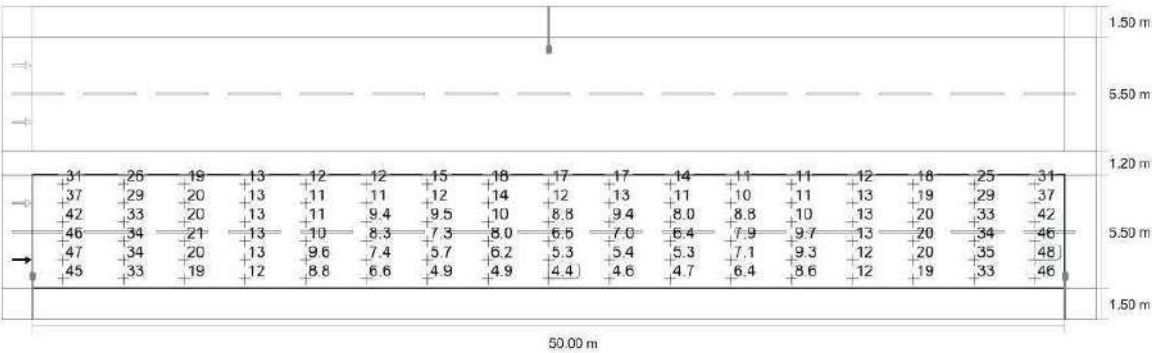
	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 2.875 m, 1.500 m	$L_{av}^{(2)}$	1.12 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.54	≥ 0.42	✓
	$U_j^{(2)}$	0.31	≥ 0.17	✓
	$\Gamma I^{(2)}$	17 %	≤ 40 %	✓
Observer 2 Position: -60.000 m, 5.625 m, 1.500 m	$L_{av}^{(2)}$	1.16 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.47	≥ 0.42	✓
	$U_j^{(2)}$	0.49	≥ 0.17	✓
	$\Gamma I^{(2)}$	10 %	≤ 40 %	✓

(2) Setpoint changed by the planner, deviant to the norm

Simulasi 3 80 Watt - 50m
jalur barat (M3)



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



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

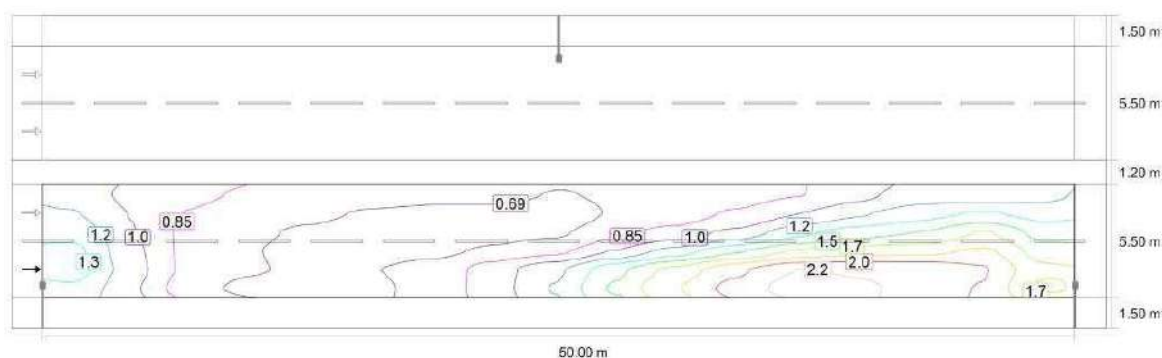
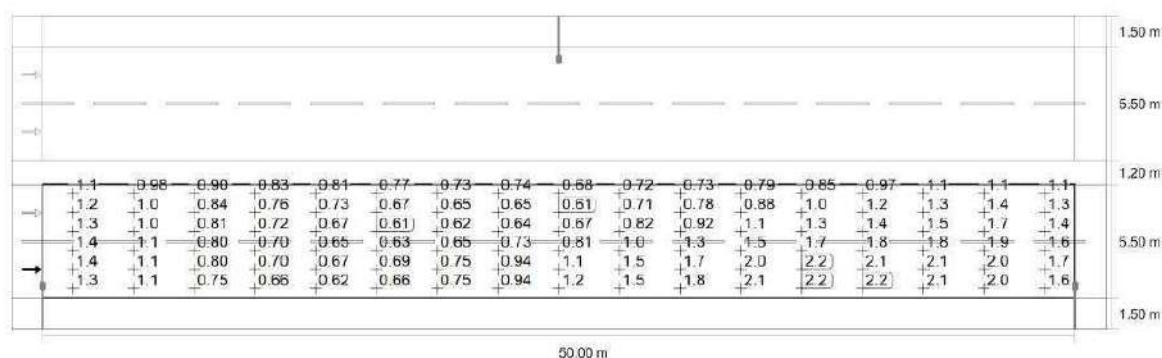
m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	31.48	25.57	18.63	13.25	11.91	12.36	14.80	18.01	16.82	17.04	13.60	11.49	11.06	12.38	18.03	25.01	31.33
5.625	37.21	29.43	19.56	13.44	11.43	10.77	12.03	13.88	12.24	12.81	10.62	10.01	10.66	12.61	19.04	29.12	37.21
4.708	42.40	32.69	20.24	13.48	10.77	9.43	9.54	10.48	8.76	9.42	8.03	8.81	10.15	12.69	19.78	32.58	42.38
3.792	46.20	34.04	20.56	13.27	10.16	8.33	7.30	8.00	6.56	7.00	6.35	7.87	9.68	12.63	20.17	33.98	46.35
2.875	47.39	34.45	20.46	12.90	9.61	7.43	5.70	6.24	5.34	5.45	5.26	7.15	9.26	12.46	20.15	34.51	47.71
1.958	44.71	32.95	19.46	12.13	8.82	6.55	4.91	4.85	4.45	4.58	4.68	6.38	8.61	11.88	19.35	33.31	45.56

Simulasi 3 80 Watt - 50m

jalur barat (M3)

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	17.3 lx	4.45 lx	47.7 lx	0.26	0.09

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

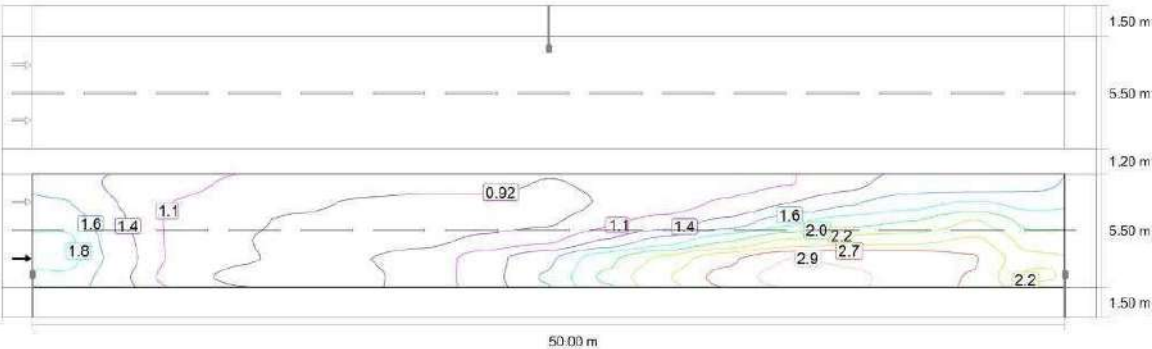
m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.12	0.98	0.90	0.83	0.81	0.77	0.73	0.74	0.68	0.72	0.73	0.79	0.85	0.97	1.10	1.09	1.13
5.625	1.19	1.01	0.84	0.75	0.73	0.67	0.65	0.65	0.61	0.71	0.78	0.88	1.01	1.15	1.28	1.35	1.29
4.708	1.29	1.03	0.81	0.72	0.67	0.61	0.62	0.64	0.67	0.82	0.92	1.07	1.29	1.44	1.51	1.68	1.44

Simulasi 3 80 Watt - 50m
jalur barat (M3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
3.792	1.38	1.07	0.80	0.70	0.65	0.63	0.65	0.73	0.81	1.03	1.26	1.49	1.69	1.76	1.78	1.86	1.59
2.875	1.40	1.10	0.80	0.70	0.67	0.69	0.75	0.94	1.15	1.46	1.73	1.96	2.16	2.14	2.12	2.01	1.70
1.958	1.31	1.05	0.75	0.66	0.62	0.66	0.75	0.94	1.19	1.54	1.83	2.06	2.24	2.18	2.13	1.98	1.64

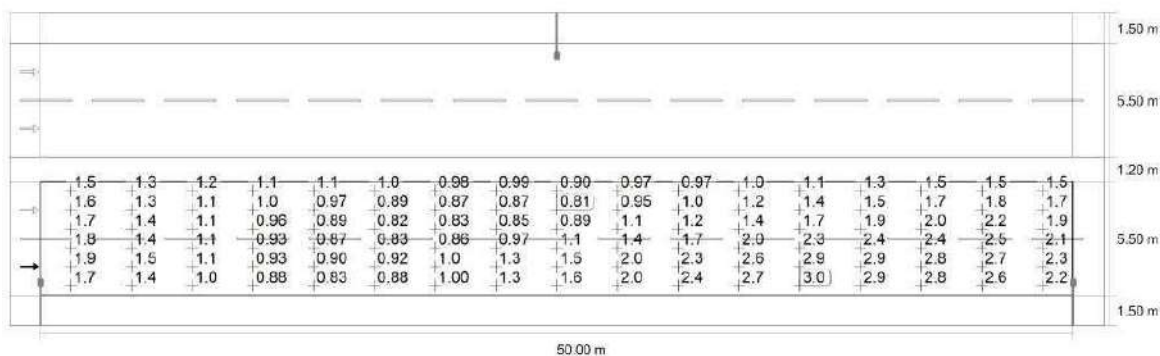
Observer 1: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Maintenance value, luminance with dry roadway	1.12 cd/m²	0.61 cd/m²	2.24 cd/m²	0.54	0.27



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

Simulasi 3 80 Watt - 50m

jalur barat (M3)

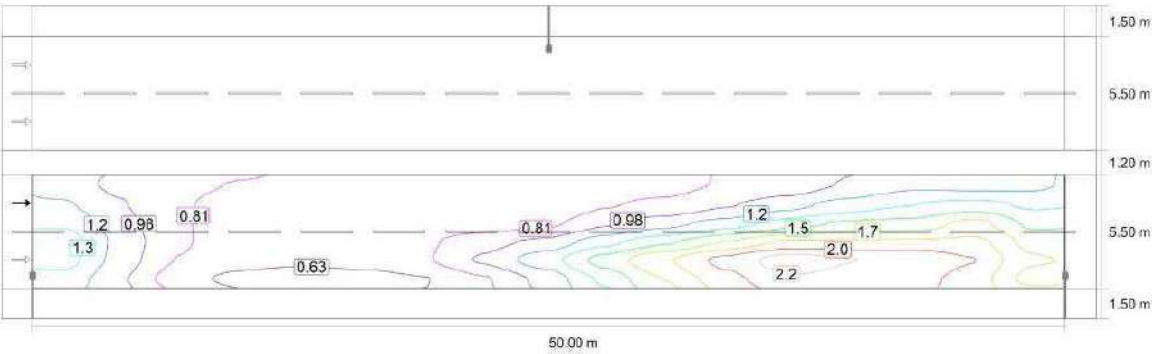
Observer 1: Luminance with new installation [cd/m²] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.50	1.31	1.19	1.10	1.08	1.03	0.98	0.99	0.90	0.97	0.97	1.05	1.13	1.29	1.46	1.46	1.50
5.625	1.59	1.35	1.12	1.02	0.97	0.89	0.87	0.87	0.81	0.95	1.04	1.17	1.35	1.54	1.71	1.81	1.72
4.708	1.72	1.37	1.08	0.96	0.89	0.82	0.83	0.85	0.89	1.09	1.22	1.42	1.72	1.91	2.01	2.24	1.93
3.792	1.84	1.43	1.07	0.93	0.87	0.83	0.86	0.97	1.08	1.38	1.68	1.98	2.26	2.35	2.37	2.48	2.13
2.875	1.86	1.47	1.07	0.93	0.90	0.92	1.00	1.25	1.53	1.95	2.30	2.62	2.88	2.86	2.82	2.69	2.26
1.958	1.74	1.40	1.00	0.88	0.83	0.88	1.00	1.26	1.59	2.05	2.44	2.74	2.99	2.91	2.84	2.64	2.19

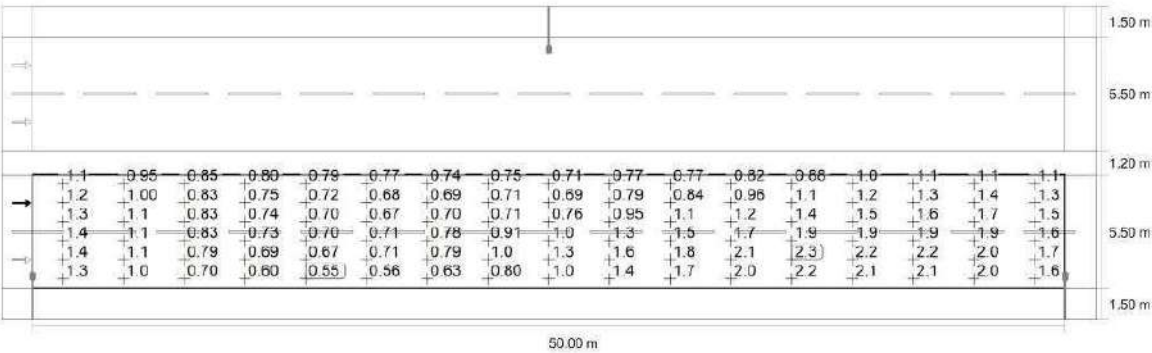
Observer 1: Luminance with new installation [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Luminance with new installation	1.50 cd/m²	0.81 cd/m²	2.99 cd/m²	0.54	0.27

Simulasi 3 80 Watt - 50m
jalur barat (M3)



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



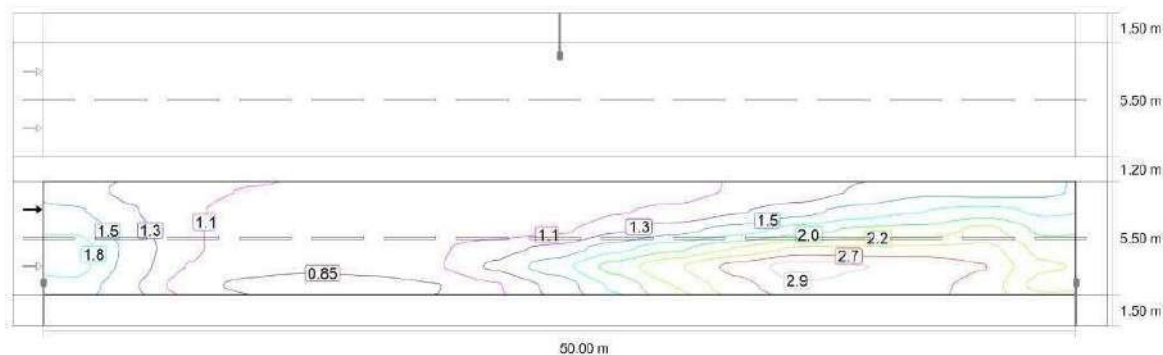
Observer 2: Maintenance value, luminance with dry roadway [cd/m²] (Value grid)

Simulasi 3 80 Watt - 50m
jalur barat (M3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.07	0.95	0.85	0.80	0.79	0.77	0.74	0.75	0.71	0.77	0.77	0.82	0.88	1.00	1.12	1.10	1.12
5.625	1.18	1.00	0.83	0.75	0.72	0.68	0.69	0.71	0.69	0.79	0.84	0.96	1.09	1.23	1.32	1.39	1.29
4.708	1.30	1.05	0.83	0.74	0.70	0.67	0.70	0.71	0.76	0.95	1.09	1.23	1.41	1.53	1.56	1.73	1.46
3.792	1.41	1.10	0.83	0.73	0.70	0.71	0.78	0.91	1.03	1.27	1.47	1.69	1.88	1.89	1.89	1.90	1.62
2.875	1.39	1.08	0.79	0.69	0.67	0.71	0.79	1.01	1.25	1.58	1.84	2.08	2.29	2.21	2.17	2.03	1.70
1.958	1.27	1.01	0.70	0.60	0.55	0.56	0.63	0.80	1.03	1.37	1.69	1.96	2.17	2.13	2.10	1.96	1.61

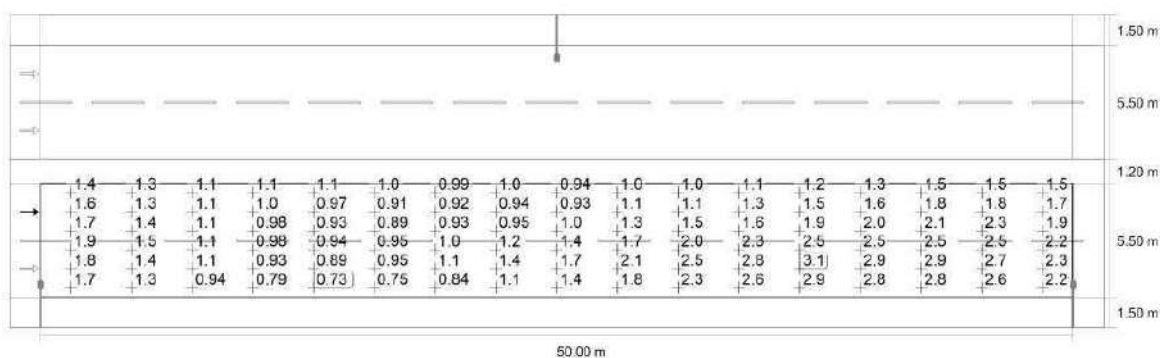
Observer 2: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L _{av}	L _{min}	L _{max}	U ₀ (g ₁)	g ₂
Observer 2: Maintenance value, luminance with dry roadway	1.16 cd/m ²	0.55 cd/m ²	2.29 cd/m ²	0.47	0.24



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

Simulasi 3 80 Watt - 50m

jalur barat (M3)

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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.43	1.26	1.14	1.06	1.06	1.02	0.99	1.00	0.94	1.02	1.03	1.10	1.18	1.34	1.49	1.46	1.49
5.625	1.58	1.33	1.11	1.00	0.97	0.91	0.92	0.94	0.93	1.06	1.12	1.28	1.45	1.64	1.75	1.85	1.73
4.708	1.74	1.40	1.10	0.98	0.93	0.89	0.93	0.95	1.02	1.27	1.45	1.64	1.87	2.04	2.08	2.30	1.94
3.792	1.88	1.47	1.11	0.98	0.94	0.95	1.04	1.21	1.37	1.70	1.96	2.25	2.50	2.52	2.52	2.53	2.15
2.875	1.85	1.44	1.05	0.93	0.89	0.95	1.06	1.35	1.67	2.10	2.45	2.78	3.05	2.94	2.89	2.71	2.27
1.958	1.69	1.34	0.94	0.79	0.73	0.75	0.84	1.06	1.38	1.83	2.25	2.61	2.89	2.84	2.80	2.61	2.15

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

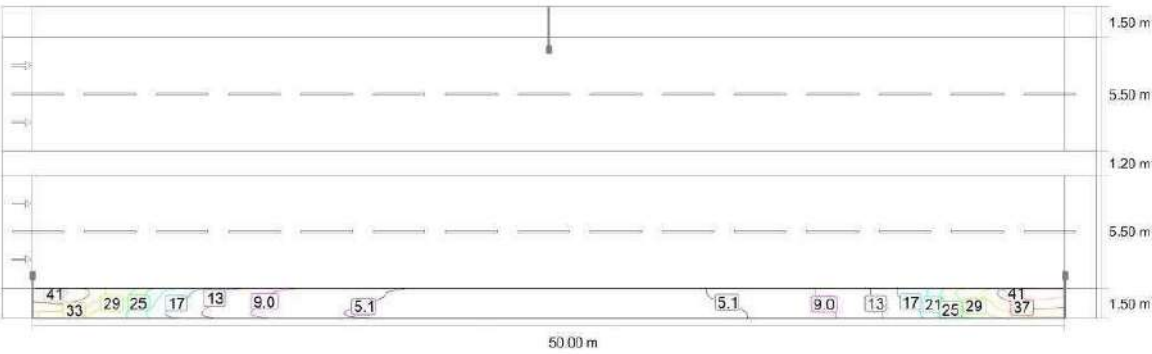
	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 2: Luminance with new installation	1.54 cd/m²	0.73 cd/m²	3.05 cd/m²	0.47	0.24

Simulasi 3 80 Watt - 50m
trotoar barat (P4)

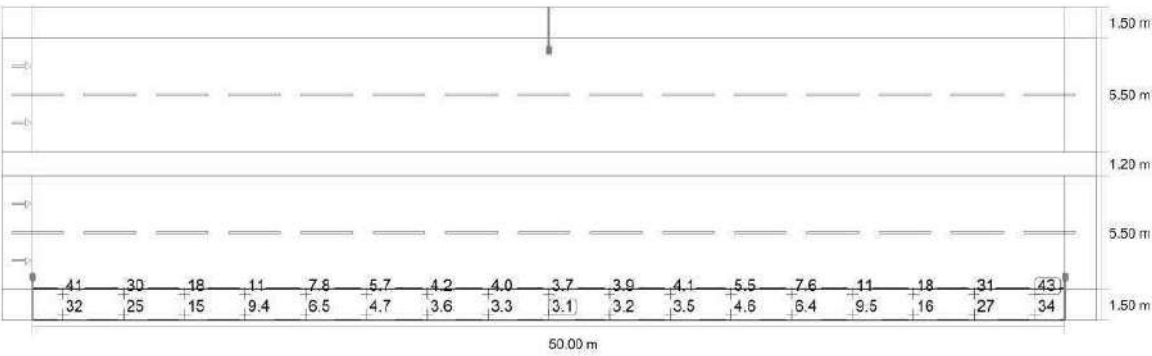
Results for valuation field

	Symbol	Calculated	Target	Check
trotoar barat (P4)	$E_{av}^{(1) (2)}$	13.43 lx	-	
	$E_{min}^{(1) (2)}$	3.08 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 3 80 Watt - 50m
trotoar barat (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
1.250	41.07	30.38	17.87	11.01	7.81	5.67	4.24	4.02	3.74	3.86	4.09	5.53	7.63	10.90	18.01	31.24	42.74
0.750	36.92	27.88	16.56	10.20	7.17	5.15	3.90	3.63	3.38	3.51	3.77	5.03	7.03	10.18	16.87	29.07	38.65
0.250	32.05	25.22	15.18	9.38	6.55	4.66	3.59	3.30	3.08	3.20	3.48	4.56	6.45	9.45	15.65	26.70	33.75

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

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	13.4 lx	3.08 lx	42.7 lx	0.23	0.07

Lampiran 6

Hasil Simulasi 4 menggunakan
software Dialux Evo

Lampiran 6 Hasil Simulasi 4 menggunakan software Dialux Evo

Project

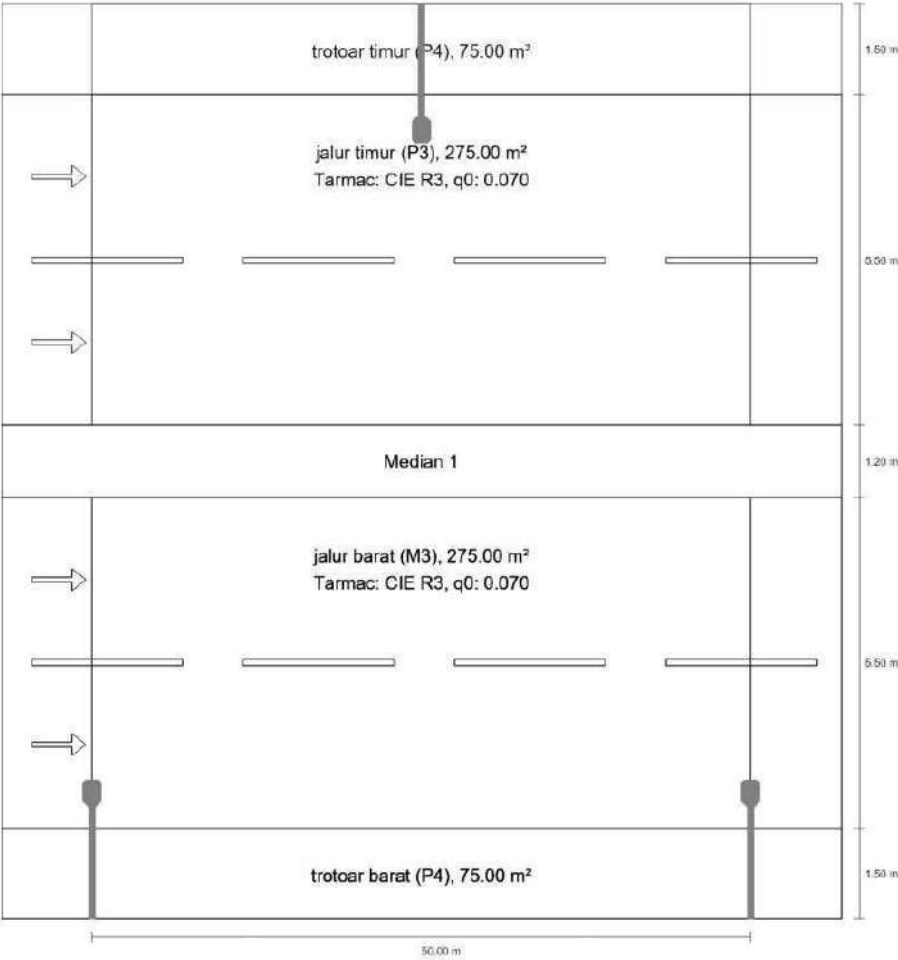
DIALux



Simulasi 4 60 Watt - 50m

Description

Simulasi 4 60 Watt - 50m
Summary (according to EN 13201:2015)



Simulasi 4 60 Watt - 50m

Summary (according to EN 13201:2015)

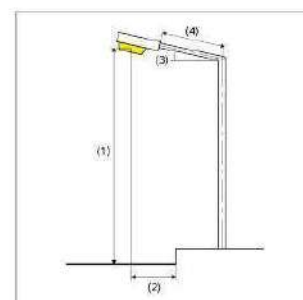
Manufacturer	NIKKON	P	60.8 W
Article No.	MURA M	Φ_{Lamp}	-
Article name	60W LED Street Lantern (4000K) (Type 2)	$\Phi_{Luminaire}$	8428 lm
Fitting	1x MURA M 60W LEDs (4000K)	η	-

Simulasi 4 60 Watt - 50m

Summary (according to EN 13201:2015)

60W LED Street Lantern (4000K) (Type 2) (both sides offset)

Pole distance	50.000 m
(1) Light spot height	7.000 m
(2) Light point overhang	0.549 m
(3) Boom inclination	2.0°
(4) Boom length	2.000 m
Annual operating hours	4000 h: 100.0 %, 60.8 W
Wattage / route	2430.8 W/km
ULR / ULOR	0.01 / 0.01
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 $\geq 80^\circ$: 92.2 cd/klm $\geq 90^\circ$: 3.74 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	0.75



Simulasi 4 60 Watt - 50m

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.75 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
trotoar timur (P4)	$E_{av}^{(1)(2)}$	10.29 lx	–	
	$E_{min}^{(1)(2)}$	2.39 lx	–	
jalur timur (P3)	$E_{av}^{(2)}$	13.11 lx	[6.00 - 9.00] lx	✗
	$E_{min}^{(2)}$	3.56 lx	≥ 2.25 lx	✓
jalur barat (M3)	$L_{av}^{(2)}$	0.87 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_0^{(2)}$	0.48	≥ 0.42	✓
	$U_l^{(2)}$	0.31	≥ 0.17	✓
	$TI^{(2)}$	17 %	≤ 40 %	✓
	R_E	0.69	≥ 0.30	✓
trotoar barat (P4)	$E_{av}^{(1)(2)}$	10.20 lx	–	
	$E_{min}^{(1)(2)}$	2.43 lx	–	

(1) Informative, not part of the valuation

(2) Setpoint changed by the planner, deviant to the norm

Results for energy efficiency indicators

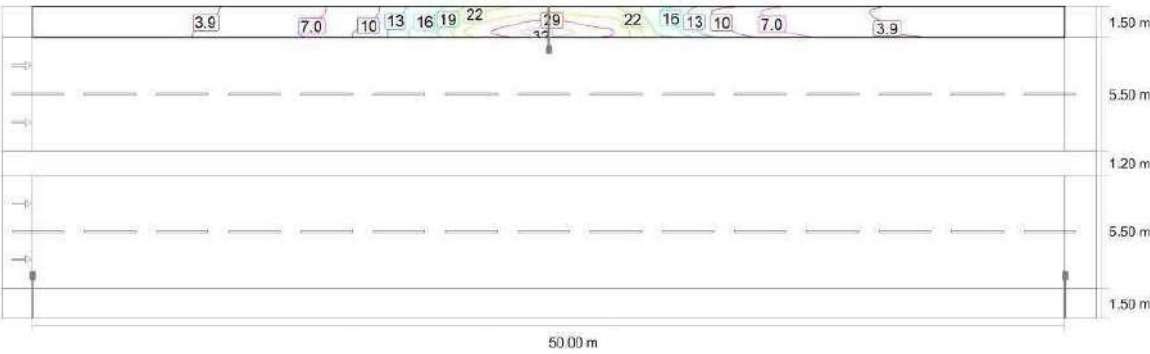
	Symbol	Calculated	Energy Consumption
Simulasi 4 60 Watt - 50m	D_p	0.014 W/lx·m ²	–
60W LED Street Lantern (4000K) (Type 2) (both sides offset)	D_e	0.7 kWh/m ² ·yr	486.2 kWh/yr

Simulasi 4 60 Watt - 50m
trottoar timur (P4)

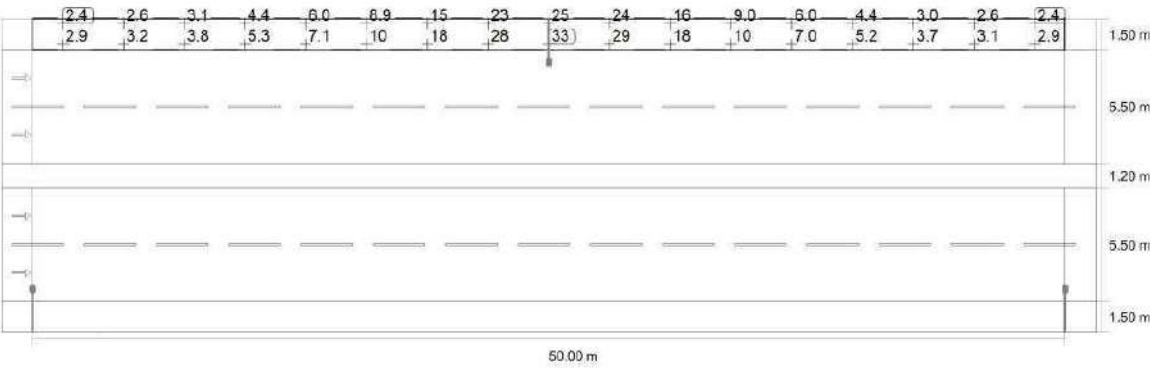
Results for valuation field

	Symbol	Calculated	Target	Check
trottoar timur (P4)	$E_{av}^{(1) (2)}$	10.29 lx	-	
	$E_{min}^{(1) (2)}$	2.39 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 4 60 Watt - 50m
trotoar timur (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
14.950	2.42	2.65	3.05	4.44	5.01	8.90	14.92	22.83	25.44	24.07	15.54	9.03	5.98	4.39	3.01	2.59	2.39
14.450	2.67	2.89	3.39	4.86	6.55	9.69	16.35	25.88	29.57	27.05	16.84	9.75	6.47	4.81	3.33	2.82	2.63
13.950	2.95	3.16	3.76	5.30	7.08	10.44	17.68	28.35	33.21	29.28	18.03	10.42	6.96	5.23	3.69	3.07	2.90

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

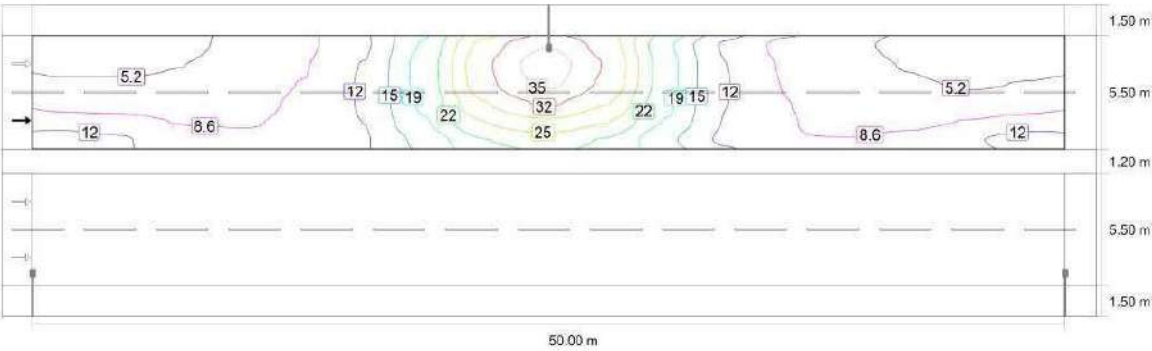
	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	10.3 lx	2.39 lx	33.2 lx	0.23	0.07

Simulasi 4 60 Watt - 50m
jalur timur (P3)

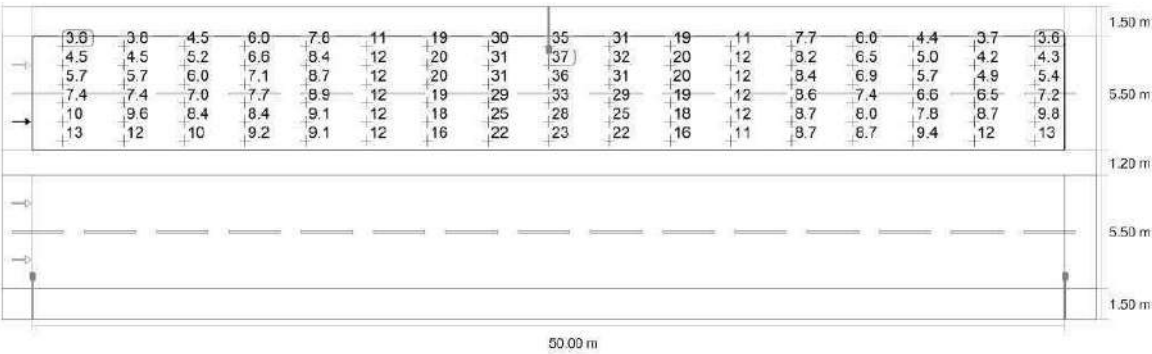
Results for valuation field

	Symbol	Calculated	Target	Check
jalur timur (P3)	$E_{av}^{(2)}$	13.11 lx	[5.00 - 9.00] lx	✗
	$E_{min}^{(2)}$	3.56 lx	≥ 2.25 lx	✓

(2) Setpoint changed by the planner, deviant to the norm



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



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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
---	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

Simulasi 4 60 Watt - 50m
jalur timur (P3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
13.242	3.65	3.79	4.49	6.04	7.84	11.41	19.05	30.02	35.13	30.53	19.12	11.29	7.70	5.97	4.39	3.65	3.56
12.325	4.52	4.47	5.20	6.62	8.36	12.05	19.92	31.39	36.95	31.69	19.90	11.79	8.16	6.49	5.02	4.17	4.27
11.408	5.68	5.71	5.96	7.10	8.66	12.23	19.81	30.95	35.92	31.20	19.81	11.89	8.36	6.88	5.68	4.91	5.41
10.492	7.44	7.38	6.99	7.67	8.94	12.19	19.27	28.61	32.52	28.75	19.22	11.83	8.56	7.36	6.59	6.50	7.16
9.575	10.11	9.60	8.38	8.36	9.12	11.98	18.36	25.40	28.09	25.41	18.26	11.60	8.69	7.97	7.80	8.74	9.84
8.658	13.48	12.24	10.01	9.16	9.15	11.62	16.22	21.85	23.37	21.64	15.92	11.21	8.70	8.68	9.39	11.55	13.27

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	13.1 lx	3.56 lx	37.0 lx	0.27	0.10

Simulasi 4 60 Watt - 50m

jalur barat (M3)

Results for valuation field

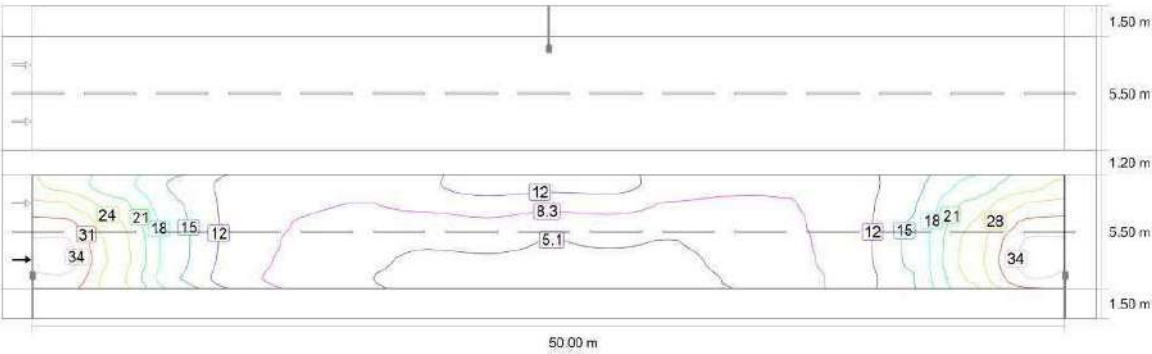
	Symbol	Calculated	Target	Check
jalur barat (M3)	$L_{av}^{(2)}$	0.87 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.48	≥ 0.42	✓
	$U_j^{(2)}$	0.31	≥ 0.17	✓
	$\text{TI}^{(2)}$	17 %	≤ 40 %	✓
	R_{E1}	0.69	≥ 0.30	✓

Results for observer

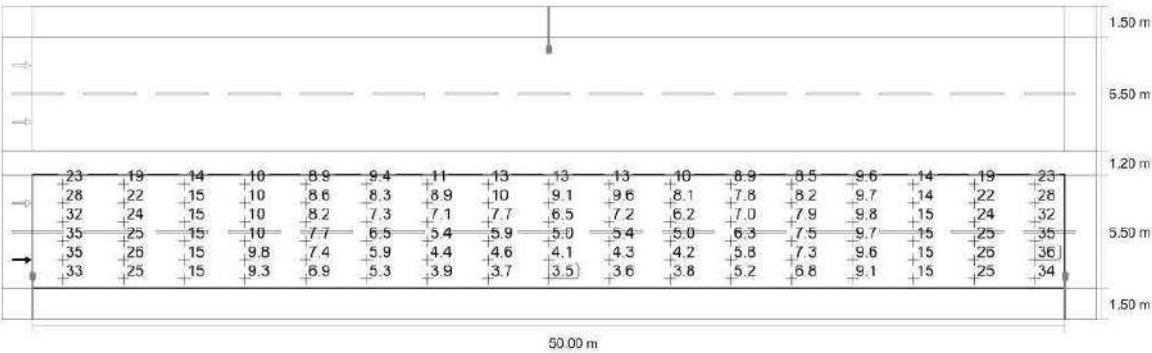
	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 2.875 m, 1.500 m	$L_{av}^{(2)}$	0.87 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.55	≥ 0.42	✓
	$U_j^{(2)}$	0.31	≥ 0.17	✓
	$\text{TI}^{(2)}$	17 %	≤ 40 %	✓
Observer 2 Position: -60.000 m, 5.625 m, 1.500 m	$L_{av}^{(2)}$	0.90 cd/m ²	≥ 0.60 cd/m ²	✓
	$U_o^{(2)}$	0.48	≥ 0.42	✓
	$U_j^{(2)}$	0.50	≥ 0.17	✓
	$\text{TI}^{(2)}$	10 %	≤ 40 %	✓

(2) Setpoint changed by the planner, deviant to the norm

Simulasi 4 60 Watt - 50m
jalur barat (M3)



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



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

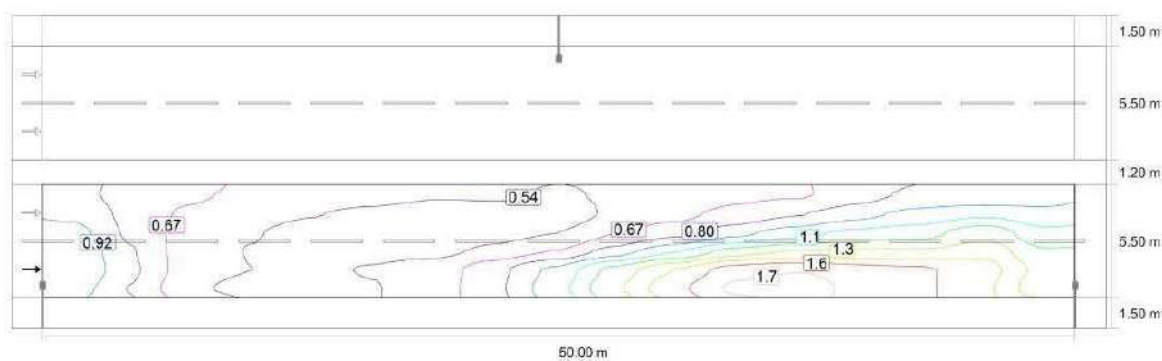
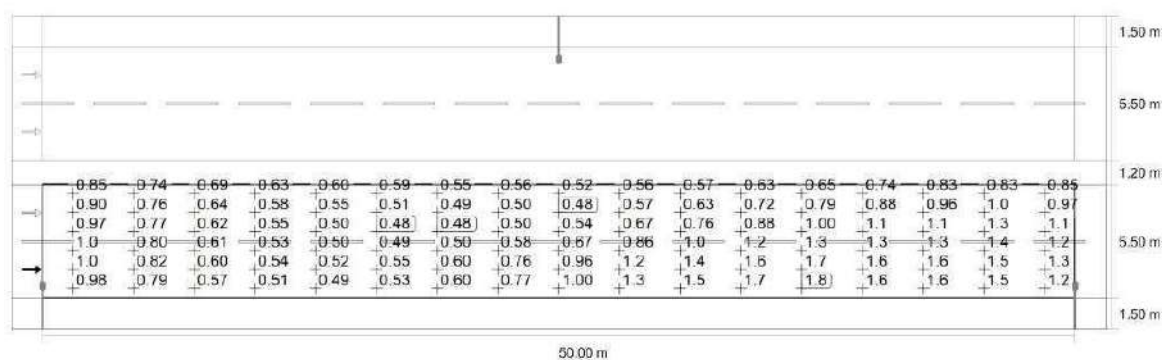
m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	23.46	18.96	14.00	10.02	8.94	9.39	11.00	13.27	12.51	12.78	10.33	8.93	8.50	9.56	13.65	18.77	23.42
5.625	27.81	21.85	14.68	10.16	8.60	8.26	8.92	10.20	9.10	9.63	8.15	7.85	8.22	9.72	14.36	21.86	27.86
4.708	31.63	24.30	15.15	10.19	8.15	7.31	7.07	7.73	6.53	7.16	6.23	6.97	7.85	9.77	14.89	24.46	31.73
3.792	34.51	25.32	15.37	10.06	7.75	6.53	5.42	5.94	5.01	5.39	4.99	6.28	7.53	9.70	15.16	25.43	34.66
2.875	35.36	25.68	15.28	9.82	7.39	5.91	4.42	4.63	4.14	4.25	4.19	5.76	7.26	9.55	15.13	25.76	35.60
1.958	33.46	24.60	14.55	9.25	6.85	5.27	3.88	3.74	3.48	3.51	3.76	5.19	6.79	9.08	14.54	24.81	34.01

Simulasi 4 60 Watt - 50m

jalur barat (M3)

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	13.1 lx	3.48 lx	35.6 lx	0.27	0.10

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

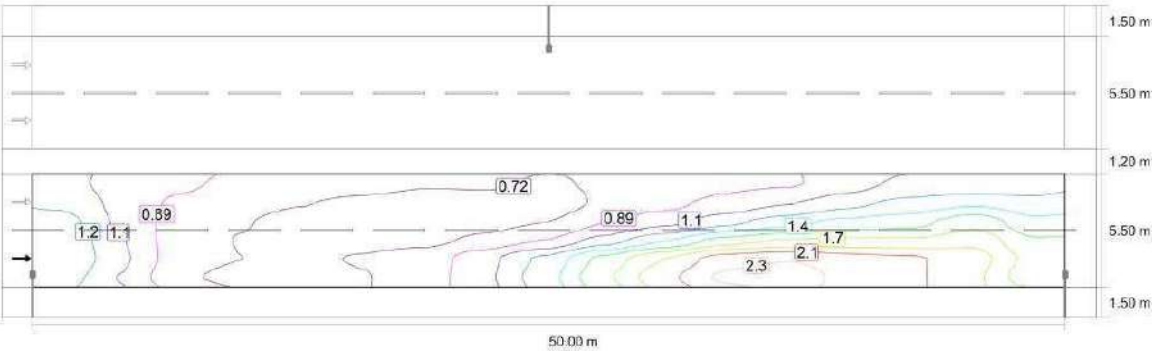
m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	0.85	0.74	0.69	0.63	0.60	0.59	0.55	0.56	0.52	0.56	0.57	0.63	0.65	0.74	0.83	0.83	0.85
5.625	0.90	0.76	0.64	0.58	0.55	0.51	0.49	0.50	0.48	0.57	0.63	0.72	0.79	0.88	0.96	1.02	0.97
4.708	0.97	0.77	0.62	0.55	0.50	0.48	0.48	0.50	0.54	0.67	0.76	0.88	1.00	1.09	1.13	1.26	1.08

Simulasi 4 60 Watt - 50m
jalur barat (M3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
3.792	1.03	0.80	0.61	0.53	0.50	0.49	0.50	0.58	0.67	0.86	1.05	1.24	1.32	1.34	1.33	1.39	1.19
2.875	1.05	0.82	0.60	0.54	0.52	0.55	0.60	0.76	0.96	1.23	1.44	1.64	1.69	1.62	1.58	1.50	1.27
1.958	0.98	0.79	0.57	0.51	0.49	0.53	0.60	0.77	1.00	1.29	1.53	1.72	1.75	1.64	1.59	1.47	1.23

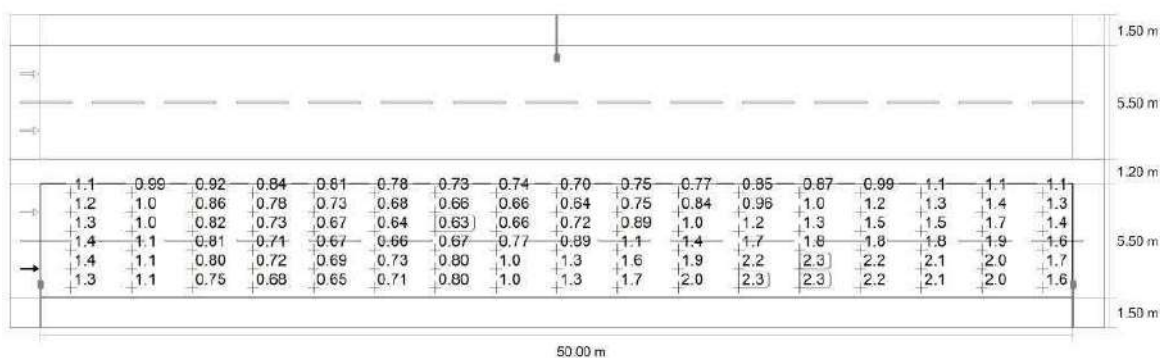
Observer 1: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Maintenance value, luminance with dry roadway	0.87 cd/m²	0.48 cd/m²	1.76 cd/m²	0.55	0.27



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

Simulasi 4 60 Watt - 50m

jalur barat (M3)

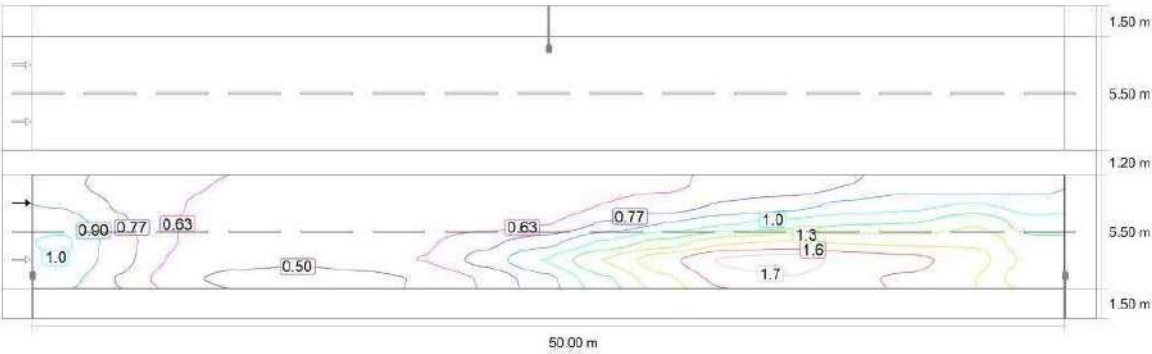
Observer 1: Luminance with new installation [cd/m²] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.13	0.99	0.92	0.84	0.81	0.78	0.73	0.74	0.70	0.75	0.77	0.85	0.87	0.99	1.11	1.10	1.13
5.625	1.20	1.01	0.86	0.78	0.73	0.68	0.66	0.66	0.64	0.75	0.84	0.96	1.05	1.17	1.28	1.35	1.29
4.708	1.29	1.03	0.82	0.73	0.67	0.64	0.63	0.66	0.72	0.89	1.01	1.17	1.33	1.45	1.51	1.68	1.45
3.792	1.38	1.07	0.81	0.71	0.67	0.66	0.67	0.77	0.89	1.14	1.40	1.65	1.76	1.78	1.78	1.85	1.59
2.875	1.39	1.10	0.80	0.72	0.69	0.73	0.80	1.01	1.27	1.64	1.92	2.19	2.25	2.16	2.11	2.00	1.69
1.958	1.30	1.05	0.75	0.68	0.65	0.71	0.80	1.02	1.33	1.72	2.04	2.30	2.34	2.19	2.12	1.97	1.63

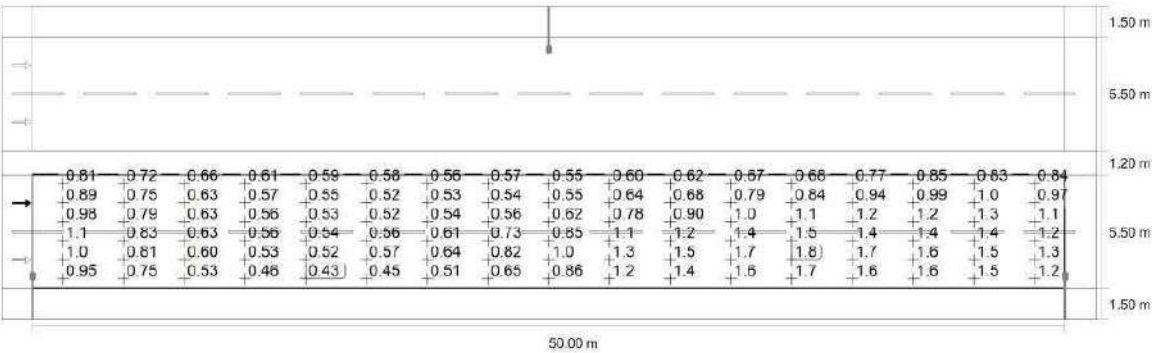
Observer 1: Luminance with new installation [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Luminance with new installation	1.16 cd/m²	0.63 cd/m²	2.34 cd/m²	0.55	0.27

Simulasi 4 60 Watt - 50m
jalur barat (M3)



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



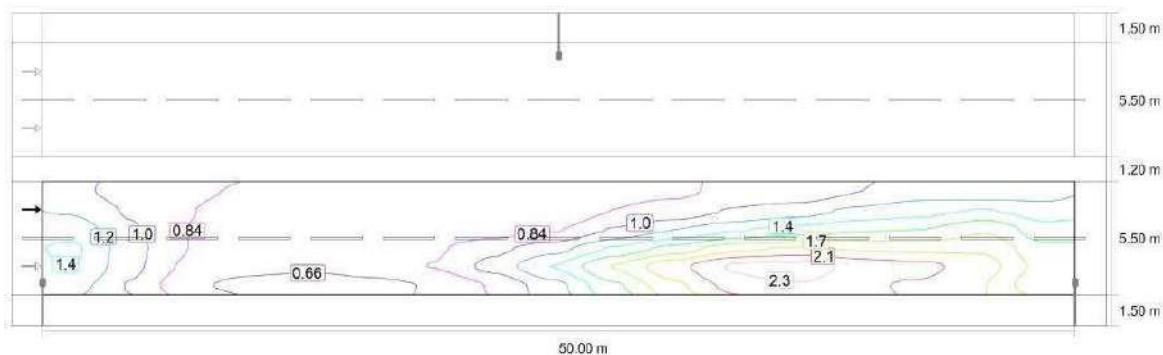
Observer 2: Maintenance value, luminance with dry roadway [cd/m²] (Value grid)

Simulasi 4 60 Watt - 50m
jalur barat (M3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	0.81	0.72	0.66	0.61	0.59	0.58	0.56	0.57	0.55	0.50	0.62	0.67	0.68	0.77	0.85	0.83	0.84
5.625	0.89	0.75	0.63	0.57	0.55	0.52	0.53	0.54	0.55	0.64	0.68	0.79	0.84	0.94	0.99	1.04	0.97
4.708	0.98	0.79	0.63	0.56	0.53	0.52	0.54	0.56	0.62	0.78	0.90	1.02	1.09	1.16	1.17	1.30	1.09
3.792	1.06	0.83	0.63	0.56	0.54	0.56	0.61	0.73	0.85	1.06	1.22	1.41	1.46	1.43	1.41	1.42	1.21
2.875	1.04	0.81	0.60	0.53	0.52	0.57	0.64	0.82	1.05	1.32	1.54	1.74	1.79	1.67	1.62	1.52	1.27
1.958	0.95	0.75	0.53	0.46	0.43	0.45	0.51	0.65	0.86	1.15	1.42	1.64	1.70	1.61	1.57	1.46	1.20

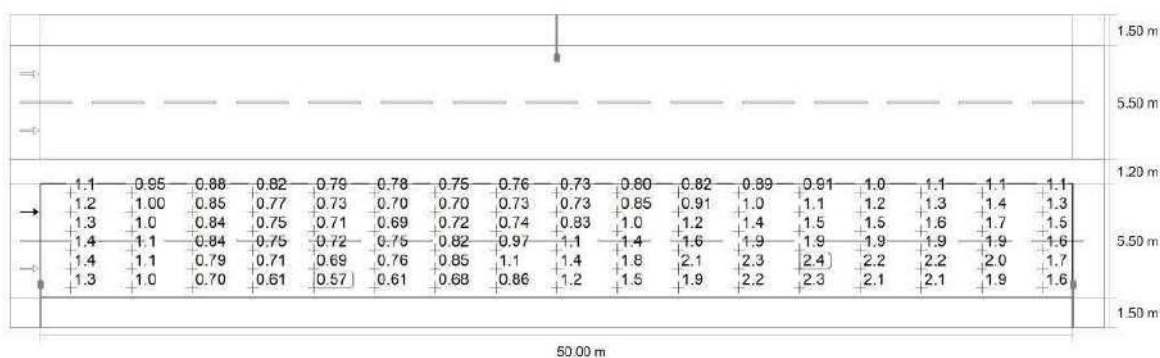
Observer 2: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_0 (g_1)$	g_2
Observer 2: Maintenance value, luminance with dry roadway	0.90 cd/m ²	0.43 cd/m ²	1.79 cd/m ²	0.48	0.24



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

Simulasi 4 60 Watt - 50m

jalur barat (M3)

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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	1.08	0.95	0.88	0.82	0.79	0.78	0.75	0.76	0.73	0.80	0.82	0.89	0.91	1.02	1.13	1.10	1.12
5.625	1.19	1.00	0.85	0.77	0.73	0.70	0.70	0.73	0.73	0.85	0.91	1.05	1.12	1.25	1.33	1.39	1.30
4.708	1.30	1.05	0.84	0.75	0.71	0.69	0.72	0.74	0.83	1.04	1.20	1.36	1.45	1.55	1.56	1.73	1.46
3.792	1.41	1.10	0.84	0.75	0.72	0.75	0.82	0.97	1.14	1.41	1.63	1.88	1.94	1.90	1.88	1.89	1.61
2.875	1.38	1.08	0.79	0.71	0.69	0.76	0.85	1.09	1.40	1.76	2.06	2.32	2.38	2.22	2.16	2.02	1.69
1.958	1.27	1.01	0.70	0.61	0.57	0.61	0.68	0.85	1.15	1.54	1.89	2.19	2.27	2.14	2.09	1.94	1.61

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

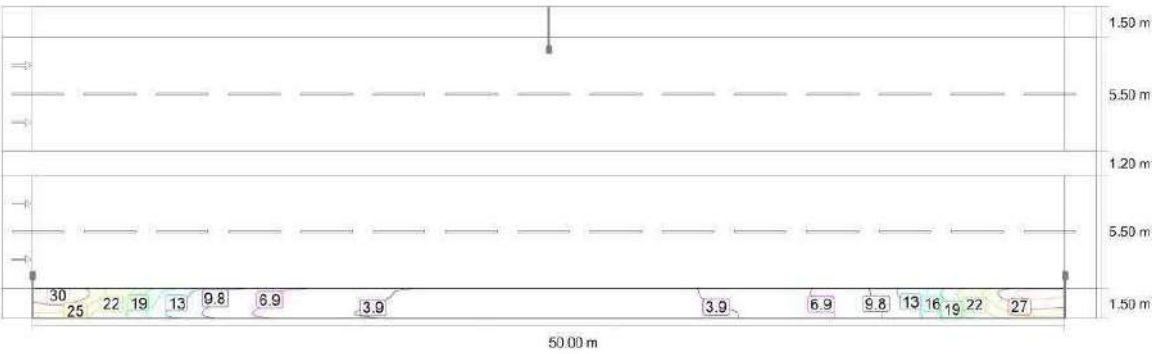
	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 2: Luminance with new installation	1.20 cd/m²	0.57 cd/m²	2.38 cd/m²	0.48	0.24

Simulasi 4 60 Watt - 50m
trotoar barat (P4)

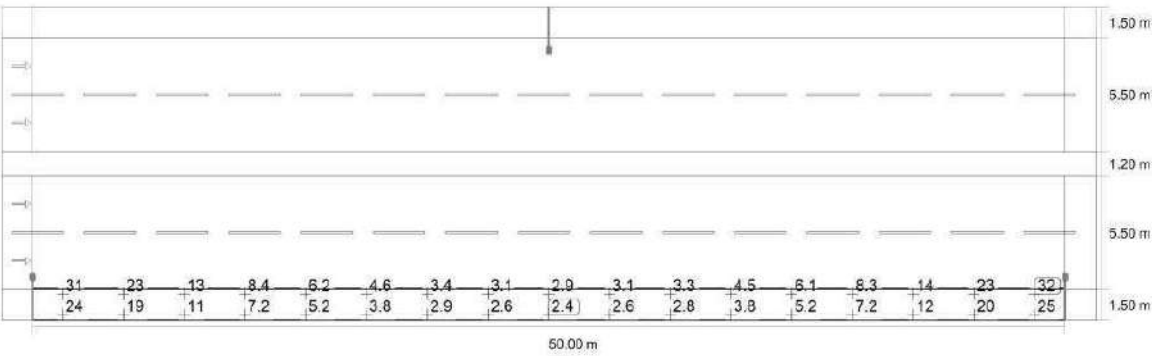
Results for valuation field

	Symbol	Calculated	Target	Check
trotoar barat (P4)	$E_{av}^{(1) (2)}$	10.20 lx	-	
	$E_{min}^{(1) (2)}$	2.43 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 4 60 Watt - 50m
trotoar barat (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
1.250	30.82	22.70	13.39	8.42	6.15	4.58	3.37	3.14	2.93	3.06	3.29	4.52	6.10	8.31	13.53	23.21	31.91
0.750	27.75	20.86	12.45	7.81	5.67	4.18	3.11	2.85	2.67	2.79	3.04	4.13	5.64	7.76	12.68	21.58	28.81
0.250	24.15	18.91	11.44	7.19	5.20	3.80	2.87	2.60	2.43	2.55	2.81	3.75	5.19	7.20	11.77	19.81	25.16

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	10.2 lx	2.43 lx	31.9 lx	0.24	0.08

Lampiran 7

Hasil Simulasi 5 menggunakan
software Dialux Evo

Lampiran 7 Hasil Simulasi 5 menggunakan software Dialux Evo

Project

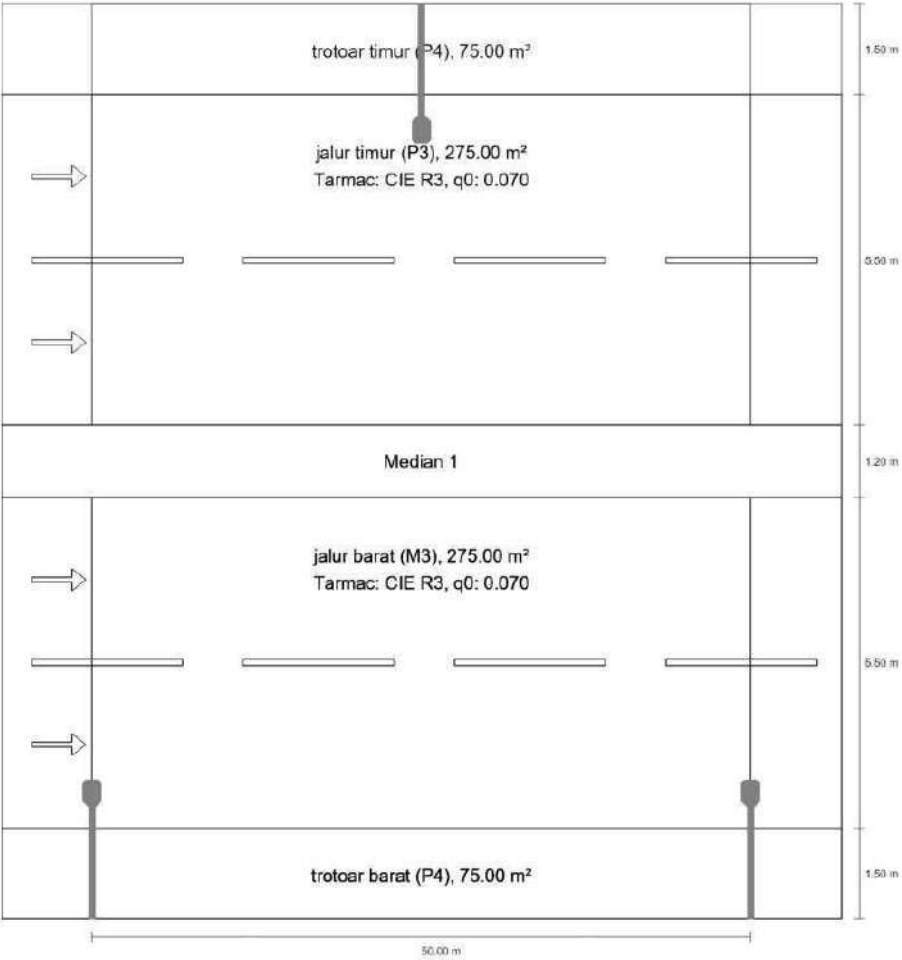
DIALux



Simulasi 5 40 Watt - 50m

Description

Simulasi 5 40 Watt - 50m
Summary (according to EN 13201:2015)



Simulasi 5 40 Watt - 50m

Summary (according to EN 13201:2015)

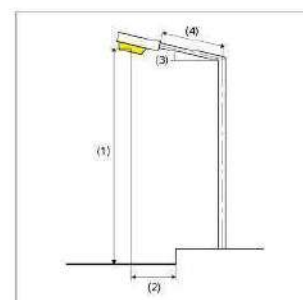
Manufacturer	NIKKON	P	41.2 W
Article No.	MURA S	Φ_{Lamp}	-
Article name	40W LED Street Lantern (4000K) (Type 2)	$\Phi_{Luminaire}$	5277 lm
Fitting	1x MURA S 40W LEDs (4000K)	η	-

Simulasi 5 40 Watt - 50m

Summary (according to EN 13201:2015)

40W LED Street Lantern (4000K) (Type 2) (both sides offset)

Pole distance	50.000 m
(1) Light spot height	7.000 m
(2) Light point overhang	0.549 m
(3) Boom inclination	2.0°
(4) Boom length	2.000 m
Annual operating hours	4000 h: 100.0 %, 41.2 W
Wattage / route	1648.0 W/km
ULR / ULOR	0.01 / 0.01
Max. luminous intensities Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.	$\geq 70^\circ$: 389 cd/klm $\geq 80^\circ$: 101 cd/klm $\geq 90^\circ$: 418 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*2
Glare index class	D:6
MF	0.75



Simulasi 5 40 Watt - 50m

Summary (according to EN 13201:2015)

Results for valuation fields

A maintenance factor of 0.75 was used for calculating for the installation.

	Symbol	Calculated	Target	Check
trotoar timur (P4)	$E_{av}^{(1)(2)}$	6.54 lx	–	
	$E_{min}^{(1)(2)}$	1.34 lx	–	
jalur timur (P3)	$E_{av}^{(2)}$	8.18 lx	[6.00 - 9.00] lx	✓
	$E_{min}^{(2)}$	2.02 lx	≥ 2.25 lx	✗
jalur barat (M3)	$L_{av}^{(2)}$	0.53 cd/m ²	≥ 0.60 cd/m ²	✗
	$U_0^{(2)}$	0.51	≥ 0.42	✓
	$U_l^{(2)}$	0.34	≥ 0.17	✓
	$TI^{(2)}$	14 %	≤ 40 %	✓
	R_E	0.70	≥ 0.30	✓
trotoar barat (P4)	$E_{av}^{(1)(2)}$	6.49 lx	–	
	$E_{min}^{(1)(2)}$	1.37 lx	–	

(1) Informative, not part of the valuation

(2) Setpoint changed by the planner, deviant to the norm

Results for energy efficiency indicators

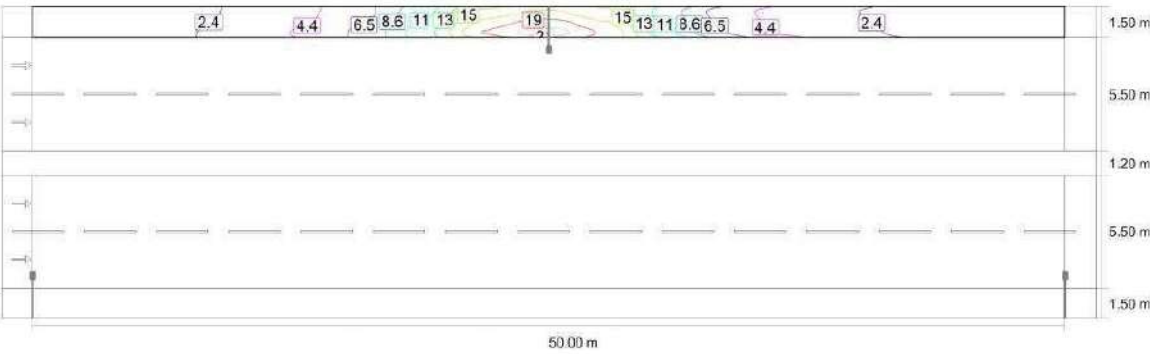
	Symbol	Calculated	Energy Consumption
Simulasi 5 40 Watt - 50m	D_p	0.015 W/lx·m ²	–
40W LED Street Lantern (4000K) (Type 2) (both sides offset)	D_e	0.5 kWh/m ² ·yr	329.6 kWh/yr

Simulasi 5 40 Watt - 50m
trottoar timur (P4)

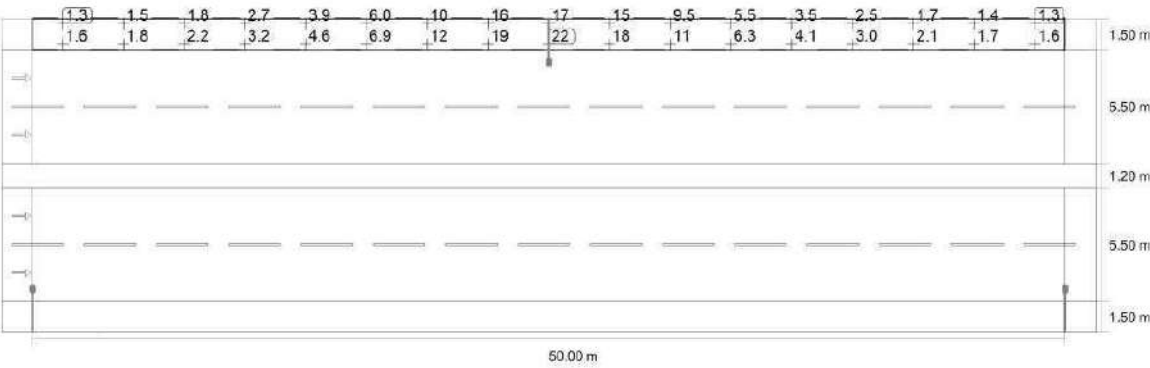
Results for valuation field

	Symbol	Calculated	Target	Check
trottoar timur (P4)	$E_{av}^{(1) (2)}$	6.54 lx	-	
	$E_{min}^{(1) (2)}$	1.34 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 5 40 Watt - 50m
trotoar timur (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
14.950	1.34	1.48	1.75	2.66	3.95	5.96	10.10	15.59	17.19	15.14	9.52	5.46	3.49	2.47	1.66	1.43	1.35
14.450	1.48	1.62	1.95	2.93	4.28	6.44	11.01	17.51	19.73	16.95	10.36	5.91	3.80	2.72	1.85	1.57	1.49
13.950	1.64	1.77	2.17	3.21	4.61	6.90	11.85	19.11	21.98	18.41	11.13	6.34	4.10	2.97	2.05	1.72	1.65

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	1.34 lx	22.0 lx	0.20	0.06

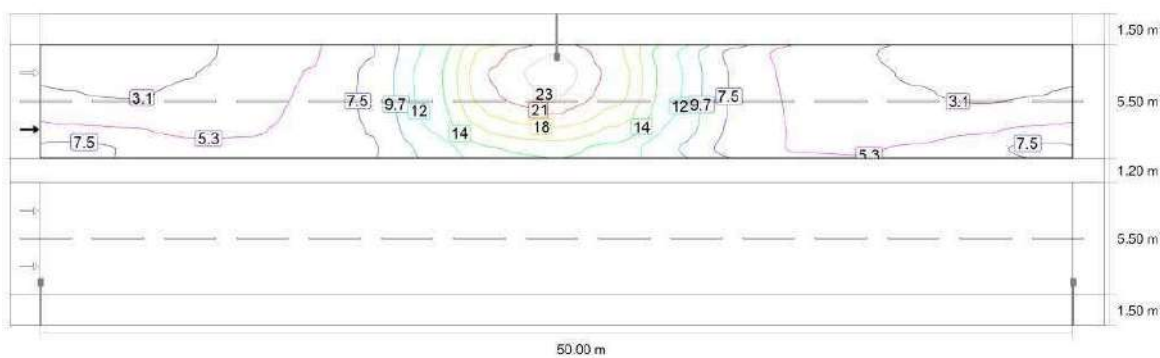
Simulasi 5 40 Watt - 50m

jalur timur (P3)

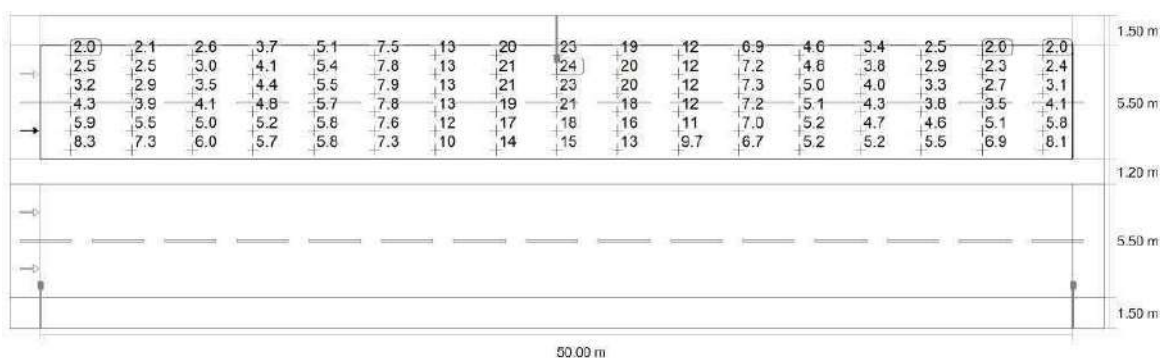
Results for valuation field

	Symbol	Calculated	Target	Check
jalur timur (P3)	$E_{av}^{(2)}$	8.18 lx	[5.00 - 9.00] lx	✓
	$E_{min}^{(2)}$	2.02 lx	≥ 2.25 lx	✗

(2) Setpoint changed by the planner, deviant to the norm



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



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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
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Simulasi 5 40 Watt - 50m
jalur timur (P3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
13.242	2.04	2.13	2.63	3.74	5.10	7.50	12.65	20.06	22.93	19.19	11.85	6.92	4.56	3.45	2.46	2.05	2.02
12.325	2.46	2.46	3.05	4.10	5.41	7.85	13.19	20.92	23.98	19.92	12.34	7.23	4.84	3.77	2.85	2.34	2.41
11.408	3.17	2.90	3.52	4.40	5.55	7.89	13.11	20.59	23.10	19.57	12.26	7.26	4.97	4.02	3.27	2.73	3.05
10.492	4.25	3.94	4.14	4.75	5.68	7.81	12.70	18.91	20.86	18.04	11.89	7.18	5.10	4.34	3.84	3.55	4.11
9.575	5.93	5.49	4.95	5.19	5.77	7.62	12.04	16.58	18.11	15.85	11.26	7.00	5.18	4.73	4.57	5.05	5.76
8.658	8.26	7.35	6.00	5.70	5.77	7.34	10.42	13.98	14.65	13.38	9.73	6.74	5.19	5.20	5.52	6.85	8.05

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	8.18 lx	2.02 lx	24.0 lx	0.25	0.08

Simulasi 5 40 Watt - 50m

jalur barat (M3)

Results for valuation field

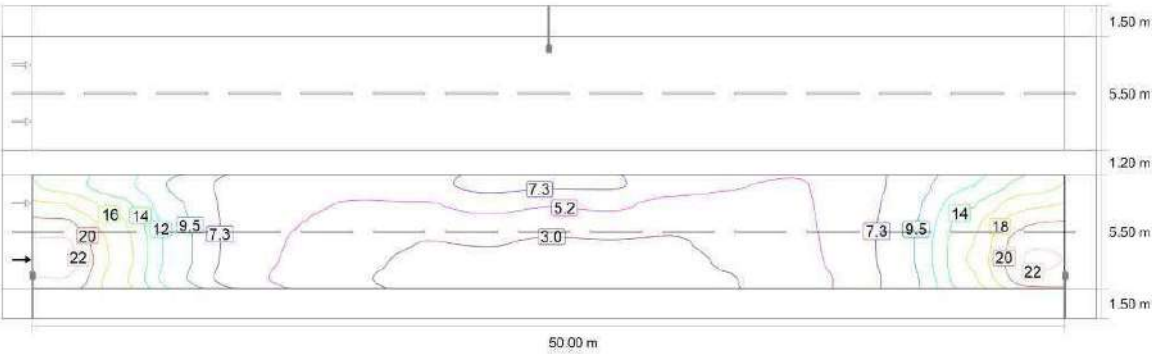
	Symbol	Calculated	Target	Check
jalur barat (M3)	$L_{av}^{(2)}$	0.53 cd/m ²	≥ 0.60 cd/m ²	✗
	$U_o^{(2)}$	0.51	≥ 0.42	✓
	$U_j^{(2)}$	0.34	≥ 0.17	✓
	$\text{TI}^{(2)}$	14 %	≤ 40 %	✓
	R_{EI}	0.70	≥ 0.30	✓

Results for observer

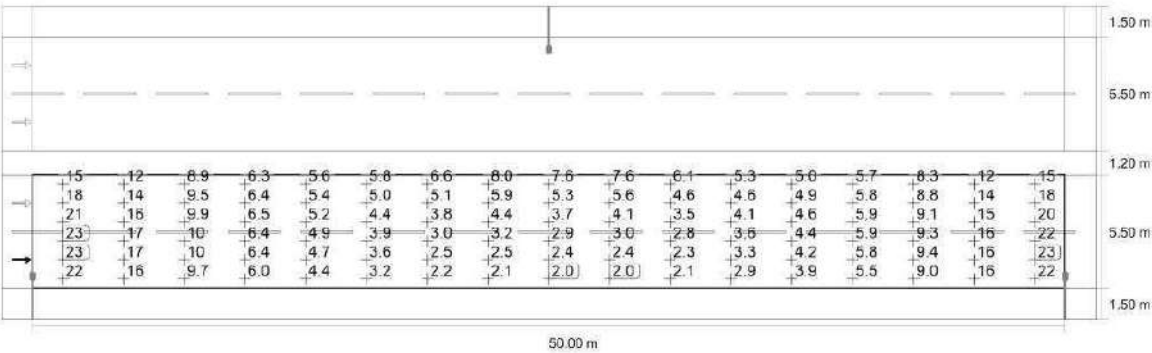
	Symbol	Calculated	Target	Check
Observer 1 Position: -60.000 m, 2.875 m, 1.500 m	$L_{av}^{(2)}$	0.53 cd/m ²	≥ 0.60 cd/m ²	✗
	$U_o^{(2)}$	0.51	≥ 0.42	✓
	$U_j^{(2)}$	0.34	≥ 0.17	✓
	$\text{TI}^{(2)}$	14 %	≤ 40 %	✓
Observer 2 Position: -60.000 m, 5.625 m, 1.500 m	$L_{av}^{(2)}$	0.54 cd/m ²	≥ 0.60 cd/m ²	✗
	$U_o^{(2)}$	0.51	≥ 0.42	✓
	$U_j^{(2)}$	0.48	≥ 0.17	✓
	$\text{TI}^{(2)}$	8 %	≤ 40 %	✓

(2) Setpoint changed by the planner, deviant to the norm

Simulasi 5 40 Watt - 50m
jalur barat (M3)



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



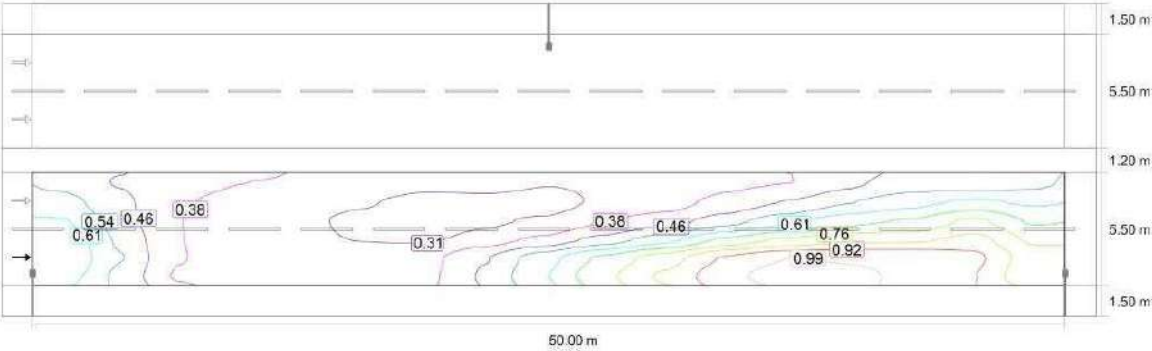
Maintenance value, horizontal illuminance [lx] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	15.01	12.24	8.94	6.31	5.63	5.79	6.61	8.04	7.61	7.64	6.09	5.32	5.05	5.74	8.29	11.53	14.63
5.625	18.09	14.34	9.46	6.43	5.43	5.05	5.09	5.95	5.33	5.62	4.63	4.64	4.85	5.84	8.78	13.52	17.65
4.708	20.64	16.11	9.85	6.48	5.17	4.44	3.82	4.37	3.70	4.10	3.54	4.09	4.61	5.88	9.15	15.20	20.08
3.792	22.64	16.83	10.07	6.45	4.94	3.94	3.02	3.17	2.86	2.97	2.84	3.65	4.41	5.85	9.35	15.88	21.99
2.875	23.34	17.07	10.07	6.35	4.74	3.55	2.48	2.48	2.35	2.40	2.35	3.30	4.23	5.78	9.35	16.11	22.71
1.958	22.22	16.42	9.66	6.04	4.42	3.15	2.20	2.09	1.98	2.04	2.09	2.94	3.94	5.50	8.97	15.51	21.80

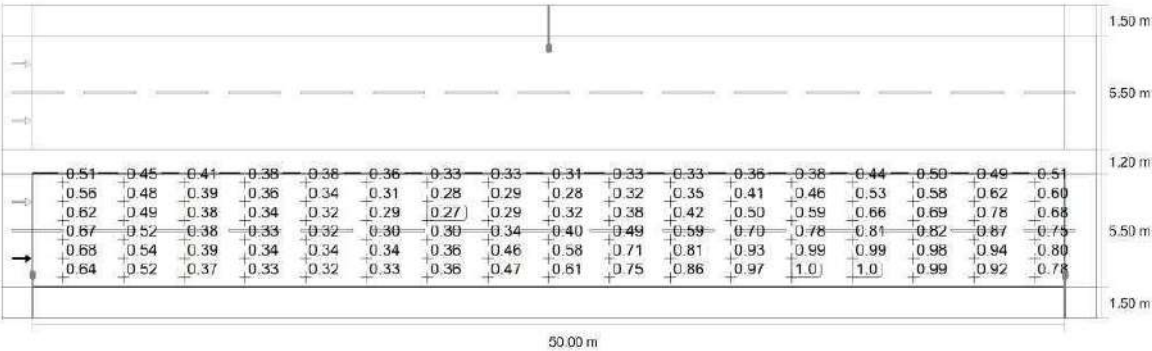
Simulasi 5 40 Watt - 50m
jalur barat (M3)

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

	E_{av}	E_{min}	E_{max}	$U_o (g_1)$	g_2
Maintenance value, horizontal illuminance	8.17 lx	1.98 lx	23.3 lx	0.24	0.08



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



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

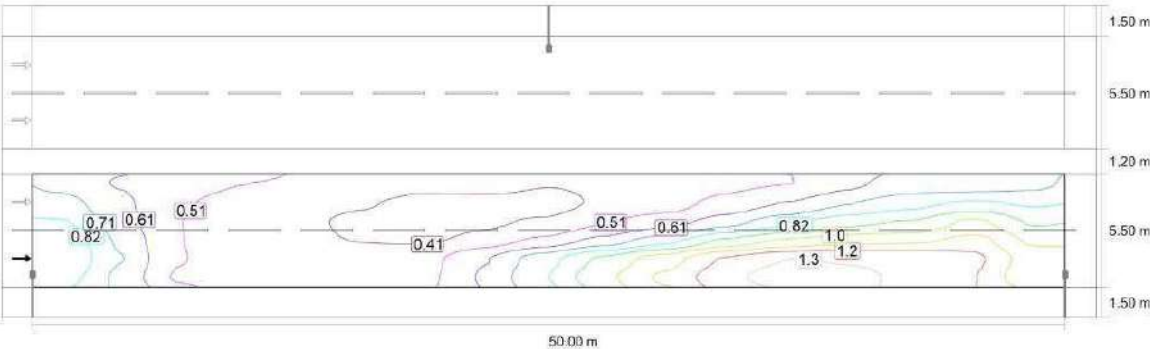
m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	0.51	0.45	0.41	0.38	0.38	0.36	0.33	0.33	0.31	0.33	0.33	0.36	0.38	0.44	0.50	0.49	0.51
5.625	0.56	0.48	0.39	0.35	0.34	0.31	0.28	0.29	0.28	0.32	0.35	0.41	0.46	0.53	0.58	0.62	0.60
4.708	0.62	0.49	0.38	0.34	0.32	0.29	0.27	0.29	0.32	0.38	0.42	0.50	0.59	0.66	0.69	0.78	0.68

Simulasi 5 40 Watt - 50m
jalur barat (M3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
3.792	0.67	0.52	0.38	0.33	0.32	0.30	0.30	0.34	0.40	0.49	0.59	0.70	0.78	0.81	0.82	0.87	0.75
2.875	0.68	0.54	0.39	0.34	0.34	0.34	0.36	0.46	0.58	0.71	0.81	0.93	0.99	0.99	0.98	0.94	0.80
1.958	0.64	0.52	0.37	0.33	0.32	0.33	0.36	0.47	0.61	0.75	0.86	0.97	1.03	1.01	0.99	0.92	0.78

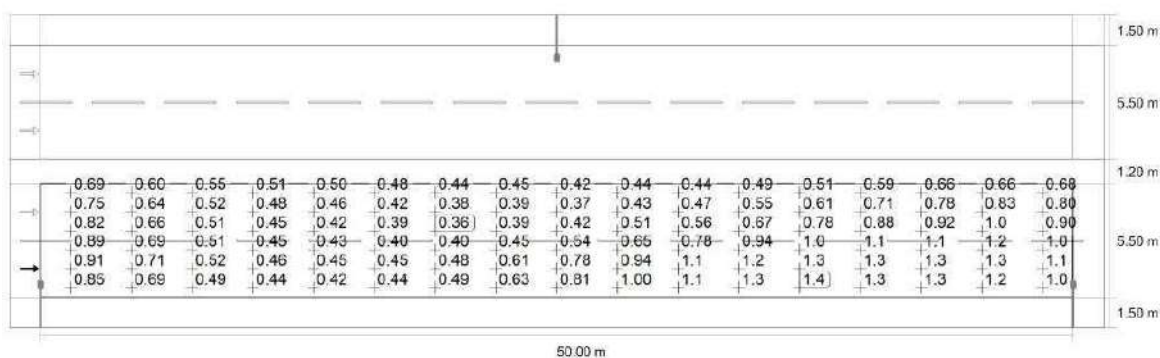
Observer 1: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Maintenance value, luminance with dry roadway	0.53 cd/m²	0.27 cd/m²	1.03 cd/m²	0.51	0.26



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

Simulasi 5 40 Watt - 50m

jalur barat (M3)

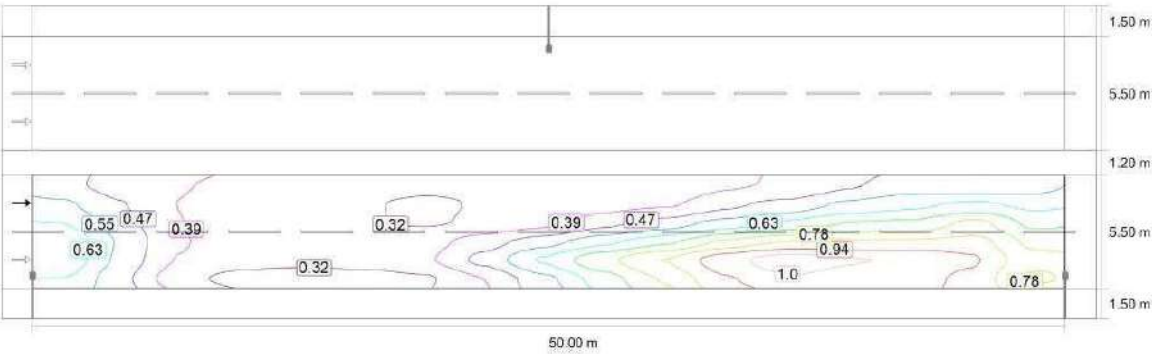
Observer 1: Luminance with new installation [cd/m²] (Value grid)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	0.69	0.60	0.55	0.51	0.50	0.48	0.44	0.45	0.42	0.44	0.44	0.49	0.51	0.59	0.66	0.66	0.68
5.625	0.75	0.64	0.52	0.48	0.46	0.42	0.38	0.39	0.37	0.43	0.47	0.55	0.61	0.71	0.78	0.83	0.80
4.708	0.82	0.66	0.51	0.45	0.42	0.39	0.36	0.39	0.42	0.51	0.56	0.67	0.78	0.88	0.92	1.04	0.90
3.792	0.89	0.69	0.51	0.45	0.43	0.40	0.40	0.45	0.54	0.65	0.78	0.94	1.03	1.08	1.10	1.15	1.00
2.875	0.91	0.71	0.52	0.46	0.45	0.45	0.48	0.61	0.78	0.94	1.08	1.24	1.33	1.32	1.31	1.25	1.07
1.958	0.85	0.69	0.49	0.44	0.42	0.44	0.49	0.63	0.81	1.00	1.14	1.30	1.38	1.34	1.32	1.23	1.04

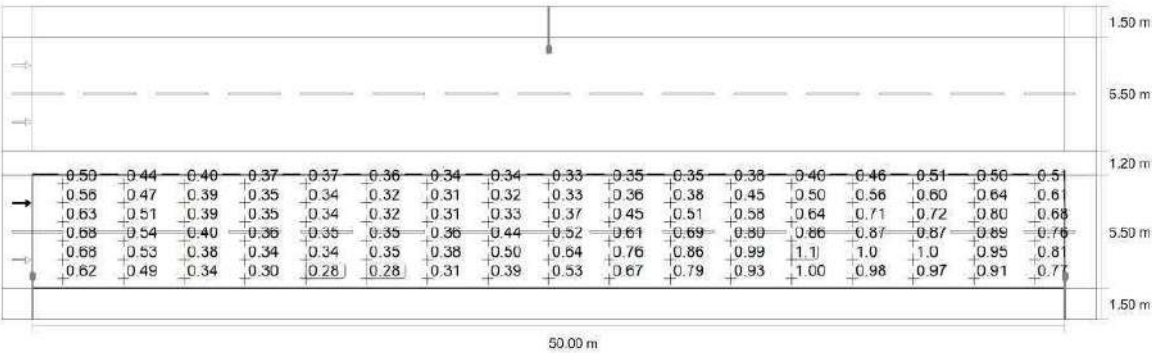
Observer 1: Luminance with new installation [cd/m²] (Value chart)

	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 1: Luminance with new installation	0.70 cd/m²	0.36 cd/m²	1.38 cd/m²	0.51	0.26

Simulasi 5 40 Watt - 50m
jalur barat (M3)



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



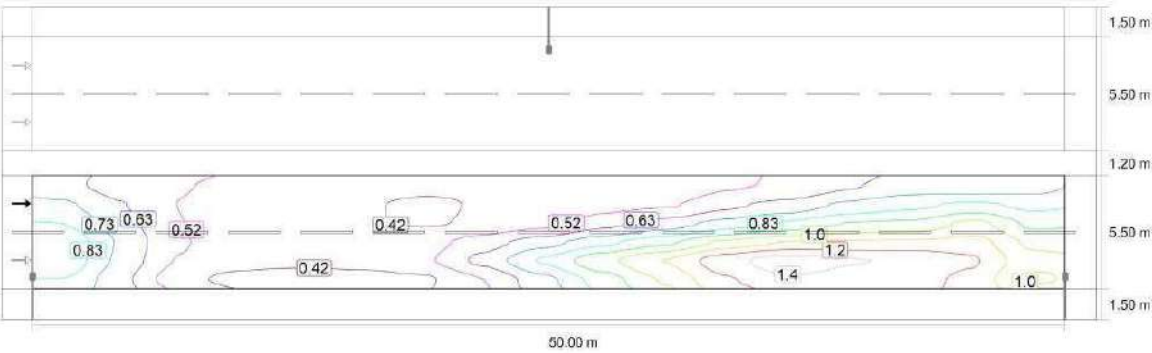
Observer 2: Maintenance value, luminance with dry roadway [cd/m²] (Value grid)

Simulasi 5 40 Watt - 50m
jalur barat (M3)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	0.50	0.44	0.40	0.37	0.37	0.36	0.34	0.34	0.33	0.35	0.35	0.38	0.40	0.46	0.51	0.50	0.51
5.625	0.56	0.47	0.39	0.35	0.34	0.32	0.31	0.32	0.33	0.36	0.38	0.45	0.50	0.56	0.60	0.64	0.61
4.708	0.63	0.51	0.39	0.35	0.34	0.32	0.31	0.33	0.37	0.45	0.51	0.58	0.64	0.71	0.72	0.80	0.68
3.792	0.68	0.54	0.40	0.36	0.35	0.35	0.36	0.44	0.52	0.61	0.69	0.80	0.86	0.87	0.87	0.89	0.76
2.875	0.68	0.53	0.38	0.34	0.34	0.35	0.38	0.50	0.64	0.76	0.86	0.99	1.05	1.02	1.01	0.95	0.81
1.958	0.62	0.49	0.34	0.30	0.28	0.28	0.31	0.39	0.53	0.67	0.79	0.93	1.00	0.98	0.97	0.91	0.77

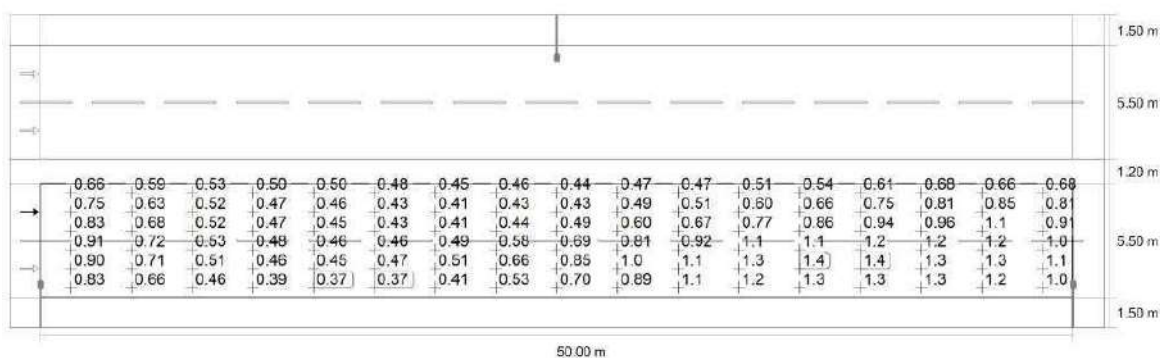
Observer 2: Maintenance value, luminance with dry roadway [cd/m²] (Value chart)

	L _{av}	L _{min}	L _{max}	U ₀ (g ₁)	g ₂
Observer 2: Maintenance value, luminance with dry roadway	0.54 cd/m²	0.28 cd/m²	1.05 cd/m²	0.51	0.26



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

Simulasi 5 40 Watt - 50m

jalur barat (M3)

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

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
6.542	0.66	0.59	0.53	0.50	0.50	0.48	0.45	0.46	0.44	0.47	0.47	0.51	0.54	0.61	0.68	0.66	0.68
5.625	0.75	0.63	0.52	0.47	0.46	0.43	0.41	0.43	0.43	0.49	0.51	0.60	0.66	0.75	0.81	0.85	0.81
4.708	0.83	0.68	0.52	0.47	0.45	0.43	0.41	0.44	0.49	0.60	0.67	0.77	0.86	0.94	0.96	1.07	0.91
3.792	0.91	0.72	0.53	0.48	0.46	0.46	0.49	0.58	0.69	0.81	0.92	1.07	1.15	1.16	1.16	1.18	1.02
2.875	0.90	0.71	0.51	0.46	0.45	0.47	0.51	0.66	0.85	1.02	1.15	1.32	1.40	1.36	1.34	1.26	1.07
1.958	0.83	0.66	0.46	0.39	0.37	0.37	0.41	0.53	0.70	0.89	1.06	1.23	1.33	1.31	1.30	1.21	1.02

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

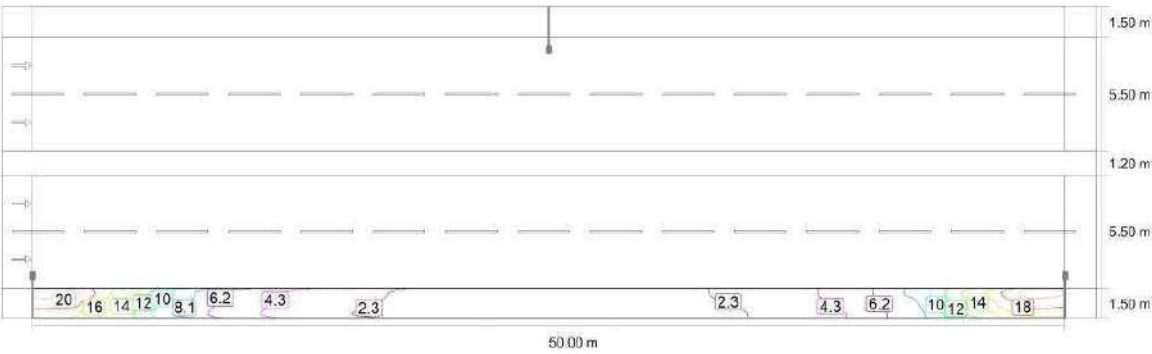
	L_{av}	L_{min}	L_{max}	$U_o (g_1)$	g_2
Observer 2: Luminance with new installation	0.73 cd/m²	0.37 cd/m²	1.40 cd/m²	0.51	0.26

Simulasi 5 40 Watt - 50m
trotoar barat (P4)

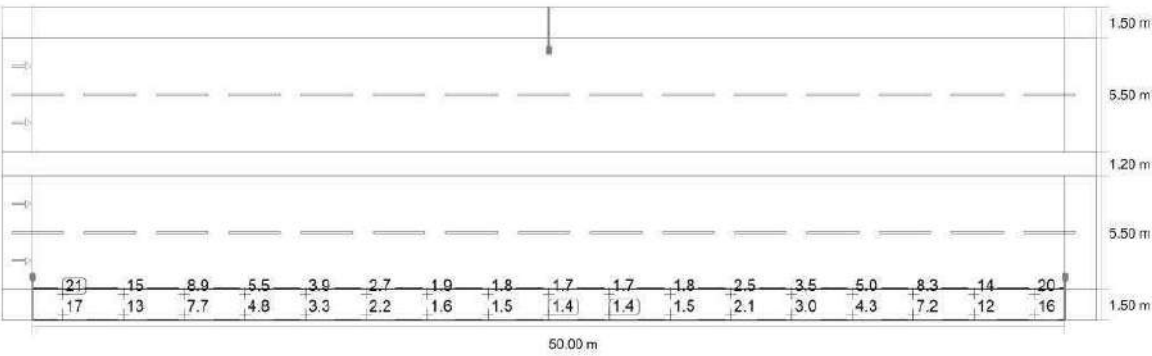
Results for valuation field

	Symbol	Calculated	Target	Check
trotoar barat (P4)	$E_{av}^{(1) (2)}$	6.49 lx	-	
	$E_{min}^{(1) (2)}$	1.37 lx	-	

(1) Informative, not part of the valuation
(2) Setpoint changed by the planner, deviant to the norm



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



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

Simulasi 5 40 Watt - 50m
trotoar barat (P4)

m	1.471	4.412	7.353	10.294	13.235	16.176	19.118	22.059	25.000	27.941	30.882	33.824	36.765	39.706	42.647	45.588	48.529
1.250	20.71	15.27	8.95	5.53	3.93	2.71	1.92	1.75	1.66	1.73	1.83	2.54	3.52	5.01	8.31	14.49	20.46
0.750	18.80	14.12	8.35	5.16	3.62	2.47	1.77	1.60	1.50	1.57	1.68	2.31	3.25	4.66	7.76	13.44	18.60
0.250	16.54	12.88	7.72	4.77	3.32	2.23	1.62	1.45	1.37	1.43	1.55	2.08	2.98	4.30	7.17	12.29	16.40

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

	E_{av}	E_{min}	E_{max}	$U_0 (g_1)$	g_2
Maintenance value, horizontal illuminance	6.49 lx	1.37 lx	20.7 lx	0.21	0.07

Lampiran 8

Keputusan Bupati Tegal Tentang
Penetapan Jalan Kab. Tegal

Lampiran 8 Keputusan Bupati Tegal Tentang Penetapan Jalan Kab. Tegal



BUPATI TEGAL

KEPUTUSAN BUPATI TEGAL
NOMOR : 050/ 503 / 2014

TENTANG

PENETAPAN JALAN KABUPATEN TEGAL

BUPATI TEGAL,

- Menimbang : a. bahwa dalam rangka penertiban jalan kabupaten, setelah tahapan inventarisasi dan pendataan jalan-jalan di wilayah Kabupaten Tegal yang menyangkut nama ruas jalan, pangkal ruas dan ujung ruas, titik pengenalan pangkal dan pengenalan ujung, panjang ruas, klasifikasi ruas dan lokasi, sebagaimana yang diatur dalam Surat Keputusan Gubernur Jawa Tengah nomor 620/08/2000 tentang Penetapan Jalan-Jalan di Provinsi Jawa Tengah sebagai Jalan-Jalan Kabupaten/ Kota sudah tidak sesuai lagi dengan perkembangan saat ini, maka perlu ditinjau kembali
- b. untuk menjamin tertib administrasi, kejelasan aset daerah dan kewajiban penanganan jalan berdasarkan kewenangannya, dipandang perlu penetapan jalan yang menjadi kewenangan kabupaten;
- c. bahwa berdasarkan pertimbangan sebagaimana dimaksud dalam huruf a dan b di atas perlu ditetapkan kembali jalan-jalan dimaksud huruf a sebagai Jalan Kabupaten Tegal dengan Surat Keputusan Bupati Tegal.

- Mengingat : 1. Undang - Undang Nomor 13 tahun 1950 tentang Provinsi Jawa Tengah;
2. Undang - Undang Nomor 10 Tahun 2004 tentang Pembentukan Peraturan Perundang - Undangan;

3. Undang - Undang Nomor 32 tahun 2004 tentang Pemerintahan Daerah sebagaimana telah diubah dengan Undang-Undang Nomor 8 Tahun 2005 tentang Penetapan Peraturan Pemerintah Pengganti Undang-Undang Nomor 3 Tahun 2005 tentang Perubahan Atas Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah;
4. Undang - Undang Nomor 33 tahun 2004 tentang Perimbangan Keuangan antara Pemerintah Pusat dan Pemerintah Daerah;
5. Undang-Undang, Nomor 38 tahun 2004 tentang Jalan (Lembaran Negara Republik Indonesia Tahun 2004 Nomor 132, Tambahan Lembaran Negara Republik Indonesia Nomor 4444);
6. Peraturan Pemerintah Nomor 7 tahun 1986 tentang Perubahan Batas Wilayah Kotamadya Daerah Tingkat II Tegal dan Kabupaten Daerah Tingkat II Tegal;
7. Peraturan Pemerintah Nomor: 58 tahun 2005 tentang Pengelolaan Keuangan Daerah;
8. Peraturan Pemerintah Nomor 38 Tahun 2007 tentang Pembagian Urusan Pemerintahan Antara Pemerintah, Pemerintah Daerah Provinsi, dan Pemerintah Daerah Kabupaten/Kota (Lembaran Negara Republik Indonesia Tahun 2007 Nomor 87, Tambahan Lembaran Negara Republik Indonesia Nomor 4737);
9. Peraturan Pemerintah Nomor : 41 Tahun 2007 tentang Organisasi Perangkat Daerah;
10. Peraturan Menteri Dalam Negeri Nomor 13 Tahun 2006 tentang Pedoman Pengelolaan Keuangan Daerah;
11. Peraturan Menteri Dalam Negeri Nomor 59 tahun 2007 tentang Perubahan Atas Peraturan Menteri Dalam Negeri Nomor 13 Tahun 2006 tentang Pedoman Pengelolaan Keuangan Daerah; dan Peraturan Menteri Dalam Negeri Nomor 13 Tahun 2006 tentang Urusan Pemerintahan yang menjadi Kewenangan Pemerintah Kabupaten Tegal;
13. Peraturan Daerah Kabupaten Tegal Nomor 6 Tahun 2008 tentang Pola Organisasi Pemerintah Kabupaten Tegal;

MEMUTUSKAN:

Menetapkan :

- KESATU : Penetapan ruas-ruas jalan Kabupaten Tegal yang menjadi kewenangan Pemerintah Kabupaten Tegal yang datanya sebagaimana tersebut dalam Lampiran Keputusan ini.
- KEDUA : Rincian lebih lanjut mengenai ruas jalan Kabupaten dan Peta Ruas Jalan dimaksud Diktum KESATU Keputusan ini ditetapkan lebih lanjut oleh Kepala Dinas Pekerjaan Umum.
- KETIGA : Keputusan Bupati ini mulai berlaku pada tanggal ditetapkan.

Ditetapkan di : Slawi
pada tanggal : 26 Mei 2014

BUPATI TEGAL

ENTHUS SUSMONO

LAMPIRAN

: KEPUTUSAN BUPATI TEGAL

: 050/583/2014

NOMOR

TANGGAL : 26 Mei 2014

No Ruas	Nama Ruas	Nama Pangkal Ruas	Nama Ujung Ruas	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Ruas (Km)	Klasifikasi Ruas	Terminas Kecamatan
1	Margasari - Jedug	Margasari	Jedug	Jl. BM. Km. 101,8	Jbt. K. Gondang/2	5,64	JJS	Margasari
2	Jedug - Pagerbarang	Jedug	Pagerbarang	1/218/Jbt. K. Gondang	3 / 45	5,88	JJS	Pagerbarang
3	Randusari - Pagerbarang	Randusari	Pagerbarang	5 / 4	45 / 2	1,60	JJS	Pagerbarang
4	Randusari - Jatib	Randusari	Jatibarang	5 / 3/149	Bts Tgl-Brebes	3,70	JJS	Pagerbarang
5	Sembaja - Randu	Sembaja	Randusari	217/ Bts. Kec.	3 / 4	4,08	JJS	Pagerbarang
6	Danawarh - Harjagun	Danawarh	Harjatinangun	8/Opr	69/KD	3,32	LU	Balapulang
7	Yamansari - Timbaja	Yamansari	Timbangreja	Jl. BM. Km. 85,9	8/18/273/U	1,97	JJS	Lebakstu
8	Timbangreja - Kalang	Timbangreja	Kalisakung	Jbt. K. Buangan/U	9/69	4,25	JJS	Balapulang
9	Kalibakung - Seng	Kalibakung	Senggang	8/69	39/271	1,47	JJS	Balapulang
10	Karangjambu - Bk	Karangjambu	Bojong	91/271	83/11	1,93	JJS	Bojong
11	Bojong - Tuwel	Bojong	Tuwel	10/83	Jl. BM. Km ...	3,70	JJS	Bojong
12	Balapulang - Bala	Balapulang	Balaradin	5/Sal. Pengairan	270/Urung2	0,56	LU	Balapulang
13	Bumijawa - Jegeg	Bumijawa	Jegeg	Jl. BM/147	82/43	5,18	JJS	Bumijawa
14	Kalisoka - Penaru	Kalisoka	Penarukan	105/	54/SD	1,35	LU	Dukuhwaru
15	Tamansari - Wotg	Tamansari	Wotgatih	79/Tg. Bts. Ds. Ta	Ricemili/Sungai	4,04	LU	Jatinegara
16	Kaligayen - Dukozah	Kaligayen	Dukuh Tengah	Jl. BM Km ... /SPBU	141/ Bt. Da. /SD	3,95	LU	Margasari
17	Blubuk - Dukuhd	Blubuk	Dukuhdamu	Jl. BM. Km. /K. Kec.	63/	2,37	LU	Dukuhwaru
18	Balapulang Wetanawarh	Balapulang Wetan	Danawarh	Jl. BM. Km. 90,05	7/8	4,42	LU	Balapulang
19	Sital - Mokaha	Sital	Mokaha	21/SD	93/92	2,02	LU	Jatinegara
20	Bumijawa - Gupa	Bumijawa	Gupakan	Jl. BM Km. /Cotel	Dkh. gupakan	2,36	LU	Bumijawa
21	Penyalahan - Cik	Penyalahan	Cikura	93/22	228/	2,80	JJS	Jatinegara
22	Jatinegara - Penyn	Jatinegara	Penyalahan	Jl. BM Km. ... /Majd	93/21	5,81	JJS	Jatinegara
23	Betunyana - Diwa	Betunyana	Diwang	94/83	112/21	1,82	JJS	Bojong
24	Banjaran - Balam	Banjaran	Balamoa	Jl. BM. Km.	35/26/27	5,36	JJS	Pangkah
25	Larangan - Kemar	Larangan	Kemantiran	Jl. BM. Km. 57,0	26/ Jbt. Pengairan	4,00	JJS	Kramat
26	Balamoa - Keman	Balamoa	Kemantiran	35/24/27	25/ Jbt. Pengairan	5,25	JJS	Tarub
27	Balamoa - Pangka	Balamoa	Pangkah	24/26/35	28/30	3,35	JJS	Pangkah

No Ruas	Nama Ruas	Nama Pangkal Ruas	Nama Ujung Ruas	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Ruas (km)	Klasifikasi Ruas	Terdapat Kecamatan
28	Bogares - Pangk	Bogares	Pangk	Jl.Bm./Jbt.	27/30	1.93	JJS	Pangk
29	Kabangkung - kh	Kabangkung	Pangk	24/Km	30/PO/SMP	3.78	JJS	Pangk
30	Curug - Pangka	Curug	Pangk	Jl.Bm./Km./SPBU	27/28/Jbt.	2.50	JJS	Pangk
31	Tembokluwang - og kulon	Tembokluwang	Grobog kulon	Jl. BM Km..	174/	0.80	LU	Adiwerna
32	Tembok Luwangbok Luwang	Tembok Luwang	Tembok Luwang	Jl. BM Km.../Pb. Teh	50	0.86	LU	Adiwerna
33	Sudikampir - Bqah	Sudikampir	Batunirah	103/Jbt. Kaliputih/B	Jl. BM KM.	3.93	JJS	Bumijawa
34	Balaradin - Lebah	Balaradin	Lebakgowah	75/270	115/Par. Dg	2.45	JJS	Lebakulu
35	Balamoa - Bader	Balamoa	Bader	26/24/27	36/37	11.40	JJS	Suradadi
36	Suradadi - Bader	Suradadi	Bader	Jl.Bm.Km	35/37	7.53	JJS	Suradadi
37	Bader - Kedung	Bader	Kedunglaji	36/35	38/161	5.20	JJS	Warureja
38	Babaden - Kedui	Babaden	Kedunglaji	Jl.Bm.Km.42.6	37/161	10.40	JJS	Warureja
39	Senggang - Sumi	Senggang	Sumbaga	9/271	121/042	5.02	LU	Bumijawa
40	Kedunglaji - Duhandang	Kedunglaji	Dukah Bandung	38/Km	Bis Tegal-Pml	1.10	LU	Warureja
41	Tuwel - Gucl	Tuwel	Guci	Jl. BM Km....	111/114	4.81	JJS	Bojong
42	Cawitali - Sumbi	Cawitali	Sumbaga	272/Km..	34/BPT. PDAB	3.67	LU	Bumijawa
43	Batuagung - Cen	Batuagung	Cenggini	69/70	222/272	2.84	JJS	Belapulang
44	Belapulang - Cib	Belapulang	Srengseng	Jl.BM.Km.90.35	218/204	5.00	LU	Belapulang
45	Pagerbarang - Jang	Pagerbarang	Jatibarang	3/2	BisTegal-Brebes	3.11	JJS	Pagerbarang
46	Pagedangan - Kas	Pagedangan	Kaliwadas	54/Orbg Desa	56/Orbg Desa/SD	1.70	LU	Adiwerna
47	Lawatan - Pecan	Lawatan	Pecangakan	56	279	1.84	LU	Dukuhuri
48	Pedeslohor - Kalig	Pedeslohor	Kalipucang	99/Rice mill	56/	3.20	LU	Adiwerna
49	Penusupan - Per	Penusupan	Peter	304/Km..	203/Sal. Irigasi	2.80	LU	Pangk
50	Semboja - Kambi	Semboja	Kembang	Jl.BM.Km./Orbg	24/Jbtm.K.Gung	0.82	LU	Adiwerna
51	Trayeman - Ujun	Trayeman	Ujungrusi	455 / 435 / 454	53/52	2.26	JJS	Adiwerna
52	Ujungrusi - Banj	Ujungrusi	Banjaran	53/51	Jl.BM./Sentral	1.03	JJS	Adiwerna
53	Ujungrusi - Sing	Ujungrusi	Singdi	52/51	57/56/58	2.13	JJS	Adiwerna
54	Pagedangan - Keulun	Pagedangan	Kedungsukan	53/	74/99/	3.10	LU	Adiwerna
55	Gumayun - Pagl	Gumayun	Pagiyanten	Jl.BM.Km./Blubuk	54/	3.72	JJS	Dukuhwaru
56	Singkil - Kalipuc	Singkil	Kalipucang	53/57/58	BisTegal-Brebes	5.08	JJS	Adiwerna
57	Adiwerna - Singl	Adiwerna	Singkil	Jl.BM.Km.	58/53/56	1.04	JJS	Adiwerna
58	Singdi - Tegalwe	Singdi	Tegalwangi	57/56/53	60/64/59	2.37	JJS	Talang
59	Pagongan - Tegal	Pagongan	Tegalwangi	Jl.BM.Km./Butak	64/58/60	0.77	LU	Talang

No Rusa	Nama	Nama Pangkal Rusa	Nama Ujung Rusa	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Rusa (Km)	Klasifikasi Rusa	Terminasi Kecamatan
60	Tegalwangi - Duki	Tegalwangi	Dukuhturi	64/58/59	62/73/116	2,90	JJS	Dukuhturi
61	Pagungan - Kepar	Pagungan	Kepandean	64/SD	60/KD	1,27	LU	Dukuhturi
62	Dukuhturi - Sumgung	Dukuhturi	Sumurpanggung	116/60/73	Biskod/Kab Tegal/SD	1,06	JJS	Dukuhturi
63	Sarang Lor SMP Iwang	Sarang Lor SMP	Kedawung	123/150/SMP	127/457	3,78	JJS	Dukuhturi
64	Tegalwangi - Debdul	Tegalwangi	Debangdudul	59/60/58	Bts. Kota Tegal	1,26	JJS	Dukuhturi
65	Pagungan - Wangra	Pagungan	Wangandawa	Jl.BM.Km.68,10	126/66	4,67	JJS	Talang
66	Wangandawa - Kran	Wangandawa	Kemantiran	126/65	26/Lapangan	2,35	JJS	Kramat
67	Talang - Tarub	Talang	Tarub	Jl.BM.Km.70,0	26/Mfa	6,06	JJS	Talang
68	Peleman - Jatibog	Peleman	Jatibogor	Jl.Neg.Km.	72/84/71	4,28	JJS	Suradadi
69	Batuagung - Kalig	Batuagung	Kalibakung	43/70	8/9	4,12	JJS	Balapulang
70	Banjarnyar - Batg	Banjarnyar	Batuagung	Jl.BM.Km.94,2	69/43	1,30	JJS	Balapulang
71	Jatibogor - Lodadi	Jatibogor	Lodadi	72/84/68	35/	5,80	LU	Suradadi
72	Babakan - Jatibog	Babakan	Jatibogor	26/25	68/71/84	5,18	JJS	Kramat
73	Gumalar - Dukuht	Gumalar	Dukuhturi	56/Km..	62/60/116/Jbt.	3,44	JJS	Dukuhturi
74	Gumalar - Kedun	Gumalar	Kedungsukan	56/	54/138/99	1,45	LU	Adiwerna
75	Durenawit - Tegeng	Durenawit	Tegandong	Jl.BM.Km.87,15	413/Km..	7,70	JJS	Lebakelu
76	Margasari - Margz	Margasari	Bedor	1/Km.1,3	Jl.BM.Km.123,8	6,20	JJS	Margasari
77	Simpur - Kajen	Simpur	Kajenngan	Jl.BM/Tugu/ Pasar	136/Jbt.K.Sangka/S	11,30	JJS	Bojong
78	Babakan - Karang	Babakan	Karangmulya	11/	Jl.BM.	3,34	LU	Bojong
79	Jatinegara - Tama	Jatinegara	Temansari	33/SD	Bis Hutun	6,04	LU	Jatinegara
80	SMIK Adiwerna - Iluwang	SMIK Adiwerna	Pasar bawah	53/SMIK	52/Par Bawang	0,92	LU	Adiwerna
81	Jembayat - Danar	Jembayat	Danareja	Jl.BM.Km.98,15	222/ Jbt. Kmsk I	4,05	LU	Margasari
82	Jejeg - Kridil	Jejeg	Kridil	13/43	Tg.Bis. Kab.Brbs/Jl.Bm	7,21	JJS	Bumijawa
83	Bojong - Batunyar	Bojong	Batunyana	10/11	23/94	4,37	JJS	Bojong
84	Jatibogor - Kertis	Jatibogor	Kertasari	68/71/72	36 Km.../85	4,96	LU	Suradadi
85	Sukareja - Kesem	Sukareja	Kesemen	38/Kantor kec.	264/Jbt. Kijungun	4,00	LU	Warureja
86	Tonggara - Kebunn	Tonggara	Kebandingan	87/	35/Masjid	5,84	JJS	Kedungbanteng
87	Pungkah - Cacaba	Pungkah	Cacaban	20/Rel PG	Waduk Cacaban	4,54	PAR	Kedungbanteng
88	Kramat - Kertay	Kramat	Kertayasa	Jl.BM.Km.	72/Gpr	3,21	LU	Kramat
89	Sidakaton - Kran	Sidakaton	Krandon	116/117	Bts. Kod. Tgl	1,32	JJS	Dukuhturi
90	Dampyak - Mejase	Dampyak	Mejase	Jl.BM.Km.	126/	2,93	LU	Kramat
91	Karangjambu - Cic	Karangjambu	Cilangok	10/271	146/112	3,48	JJS	Balapulang

No Ruas	Kecua	Nama Pangkal Ruas	Nama Ujung Ruas	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Ruas (Km)	Klasifikasi Ruas	Terminasi Kecamatan
92	Danaraja - Mokul	Danaraja	Mokul	146/Pertigaan	93/Gring Da	4,90	JJS	Jatinegara
93	Penyalahan - Mol	Penyalahan	Mokul	21/22	19/92	3,30	JJS	Jatinegara
94	Batunyana - Gunti	Batunyana	Gunti	83/23	77/Pukemana	0,84	JJS	Bojong
95	Dukuhlo - Jatim	Dukuhlo	Jatimulya	Jl.BM.Km.	194/Pasar DS	1,70	LU	Lebakstu
96	Grogol - Debong	Grogol	Debongwetan	195/	Balai Da. Bingwin	0,47	LU	Dukuhturi
97	Bojong - Sokasari	Bojong	Sokasari	10/K. Kecamatan	101/Jbt. G. Sokasari	1,05	LU	Bojong
98	Pekaman kulon - Pher	Pekaman kulon	Pekaman kulon	Jl.Bm/RS. Kardinah	195/Km.	1,90	LU	Dukuhturi
99	Kedungsukun - Pher	Kedungsukun	Pedesohor	138/54/74	48/182/Ricemil	1,85	LU	Adiwerna
100	Kaladawa - Mejat	Kaladawa	Mejaseam	65/SMP N 3 Talang	126/ Km ..	1,40	JJS	Talang
101	Sumbaga - Sokasari	Sumbaga	Sokasari	97/	121/Jbt. G. Sokasari	3,72	LU	Bumijawa
102	Kesaminan - Kesa	Kesaminan	Kesadikan	177/157/	125/TK.BTS DS	2,90	JJS	Tarub
103	Guci - Sudikampir	Guci	Sudikampir	114/SDN 01 Guci	33/Jbt. K. Putih/13	1,62	JJS	Bumijawa
104	Kertahaja - Karwar	Kertahaja	Karanganyar	168/Gring desa	210/K. Pagerwaripi	1,85	LU	Pagerbarang
105	Ujungrusi - Sindi	Ujungrusi	Sindang	53/Yonif	55/SD	3,63	LU	Adiwerna
106	Kambungan - Slaidul	Kambungan	Siarangkidul	75/Lapangan bola	156/pasar	2,53	LU	Lebakstu
107	Lemahduwur - Pen	Lemahduwur	Pesarean	Jl.BM.Km	58/BTM/SD	1,15	LU	Adiwerna
108	Lingkar Balapulan	Balapulan Kulon	Balapulan Kulon	Jl.BM.Km./Jbt.	44/Km.	1,33	LU	Balapulan
109	Margasan - Marg	Margasari	Margasari	Jl.BM.Km.101,8	Jl.BM.Km.101,3/1	0,41	JJS	Margasari
110	Mulyoharjo - Belag Kulon	Mulyoharjo	Balapulan kulon	160/K. Pengairan	9MA	1,90	LU	Pagerbarang
111	Guci - Guci	Guci	Guci	41/	41/	0,90	PAR	Bumijawa
112	Cilongok - Diwung	Cilongok	Diwung	91/146	21/23	3,09	LU	Bojong
113	Banjeran - Banja	Banjeran	Banjeran	Jl.BM.Km	120/BMP	0,40	LU	Adiwerna
114	Kemaron - Guci	Kemaron	Guci	41/	41/103	2,06	PAR	Bumijawa
115	Yamansari - Bab	Yamansari	Babakan	Jl.BM.Km.	95/194 /W	3,02	JJS	Lebakstu
116	Dukuhturi - Sida	Dukuhturi	Sidakaton	73/62/60	117/89	1,66	JJS	Dukuhturi
117	Sidakaton - Samj	Sidakaton	Sampang	116/89	114/Regal Bichen	2,11	JJS	Dukuhturi
118	Purbasana - Jatur	Purbasana	Jaturawa	67/Grb. Ds	24/	2,80	LU	Tarub
119	Kodim - Pagongu	Kodim	Pagongan	Jl.BM.Km.	64/	1,07	LU	Dukuhturi
120	Tembok Banjaranngusi	Tembok Banjaran	Ujungruai	Jl.BM.Km./	61/	0,97	LU	Adiwerna
121	Bumijawa - Sumi	Bumijawa	Sumbaga	147/SD	34/Bendang	1,78	LU	Bumijawa
122	Dukuhturi - tan	Dukuhturi	Babakan	512	95/M	0,57	LU	Lebakstu
123	Siarang SMP - ngkidul	Siarang SMP	Siarangkidul	150/196	156/	2,70	LU	Dukuhturi

No Rusa	Nanas	Nama Pangkal Rusa	Nama Ujung Rusa	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Rusa (Km)	Klasifikasi Rusa	Terminasi Kecamatan
124	Batunirah - Duku	Batunirah	Dukuhbenda	Jl.Bm/33	295/Km..	2.46	LU	Bumijawa
125	Kepel - Kesadikan	Kepel	Kesadikan	72/Par	102/	1.28	JJS	Kramat
126	Langon - Wangan	Langon	Wangandawa	Blakali/KodyaTgl	65/66	3.20	JJS	Kramat
127	Kabunan - Kedaw	Kabunan	Kedawung	Jl.BM.Km/Grng	63/457	2.21	LU	Dukuhwaru
128	Gumayun - Duku	Gumayun	Dukuhdamu	Jl.BM.Km.	63/	1.95	LU	Dukuhwaru
129	Kalisoka - Sindan	Kalisoka	Sindang	135/SD	105/	0.83	LU	Dukuhwaru
130	Sindang - Dukuh	Sindang	Dukuhwaru	55/Jbtin plat beton	138/Sal. Dikru	1.57	LU	Dukuhwaru
131	Pedagungan - Renumayun	Pedagungan	Rengas Gumayun	193/	135/	0.80	LU	Dukuhwaru
132	Dermasandi - Leb	Dermasandi	Lebeteng	24/Grng Desa	164/SD	1.82	LU	Turub
133	Capar - Padasari	Capar	Padasari	Jl. Prov/Jbt Cucaban II	Majd	4.53	LU	Jatinegara
134	Karanganyar - Cau	Karanganyar	Cacaban	Jl. BM Km....	87/	0.80	LU	Kedungbanten
135	Gumayun - Kalisc	Gumayun	Kalisoka	Jl. BM.Km/embung	105/Mkm	2.57	LU	Dukuhwaru
136	Cerih - Kajenenga	Cerih	Kajenengan	22/	Jbt.K.Sangka/B	2.45	JJS	Jatinegara
137	Randusari - Rajeg	Randusari	Rajegwesi	5/	2/221/TgBlad	1.90	LU	Pagerbarang
138	Blubuk - Kedung	Blubuk	Kedungsukan	Jl.BM.Km.	54/74/99/P.Kd.aikun	4.10	LU	Dukuhwaru
139	Jembayat - Karahi	Jembayat	Karangdawa	Jl.BM.Km.98,05	1/Km..	3.00	LU	Margasari
140	Karanganyar - Peran	Karanganyar	Penusupan	Jl. BM/ SD	49/ Bl.Ds	2.65	LU	Pangkajene
141	Pakulaut - Wanas	Pakulaut	Wanasari		Bendung	3.38	LU	Margasari
142	Pasar Pangkah - Boan	Pasar Pangkah	Paketiban	29/Pasar Pangkah	27/SDN 3 Pangkah	0.50	LU	Pangkajene
143	Dukuharen - Dukil	Dukuharen	Dukuhbujil	13/Makam	209/295	2.77	LU	Bumijawa
144	Mejasem - Slerok	Mejasem	Slerok	90/	Jbt.K.Gung/T	0.79	JJS	Kramat
145	Dukuhjati kidul - iganyar	Dukuhjati kidul	Karanganyar	Jl.Bm.Km...	140/Km..	0.68	LU	Pangkajene
146	Cilongok - Danare	Cilongok	Danareja	91/112	92/Perigean	4.27	JJS	Balapulang
147	Bumijawa Kota - Jawa	Bumijawa Kota	Bumijawa	Jl.BM/13	Jl.BM.Km..	1.54	JJS	Bumijawa
148	Trayeman - Harja:	Trayeman	Harjasari	434/435	51/Yon 407	1.87	LU	Adiwerna
149	Randusari - Jaldi	Randusari	Jatipelag	5/3	52/73	3.25	JJS	Pagerbarang
150	Blubuk - Slarang MP	Blubuk	Slarang Lor SMP	Jl.BM.Km.	123/63	2.23	LU	Dukuhwaru
151	TPA Penujah - Deici	TPA Penujah	Dermasuci	Jl. BM, Km.../TPA	203	2.38	LU	Jatinegara
152	Pala 27 - Padahar	Pala 27	Padaharja	90/	153/	1.55	LU	Kramat
153	Padaharja - Jadia	Padaharja	Jatiluwang	Jl.Neg.Km.	66/igbng	5.02	LU	Kramat
154	Kendalserut - Pan	Kendalserut	Pangkajene	174/SD Kendalserut	30/Old. Kopernasi	1.88	LU	Pangkajene
155	Sigentong - Semet	Sigentong	Semet	37/	Bin. Da/ Ilutan	2.19	JJS	Kedungbanten

No Rusa	Kerusas	Nama Pangkal Rusa	Nama Ujung Rusa	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Rusa (Km)	Klasifikasi Rusa	To Kec
156	Senboja - Jatipel	Senboja	Jatipel	5/	219/149	1.76	JJS	Pagerb
157	Kesaminan - Dukarangsari	Kesaminan	Dukuhkarangsari	102/177/	251/km	0.72	LU	Tarub
158	Langon - Sutapra	Langon	Sutapranan	Bisakah/kodTegal	65/Majid	1.91	LU	Dukuh
159	Pelaringan - Lang	Pelaringan	Langgen	24/Jbt.K.Qung	67/	3.48	LU	Talang
160	Mulyoharjo - Ciba	Mulyoharjo	Cibunar	005/KM	44/	4.70	LU	Pagerb
161	Kedungjati - Cipe	Kedungjati	Cipero	37/38	Bendung cipero	3.38	LU	Warur
162	Banjarturi - Banjang	Banjarturi	Banjar Agung	38/grng	260/201/BL.DS	1.62	LU	Warur
163	Sesapan - Wringgot	Sesapan	Wringin jenggot	6/mushola	18/mushola	1.80	LU	Balapu
164	Lebeteng - Karangu	Lebeteng	Karangmangu	24/	252/km..	2.02	LU	Tarub
165	Margasari - Paku	Margasari	Pakulaut	109/K.Kec./Prpt	JL. BM. KM	2.21	JJS	Marga
166	Kaligimber - Sese	Kaligimber	Sesapan	JL. BM. KM. / ...	6/...	3.00	LU	Balapt
167	Surokidul - Pageang	Surokidul	Pagerbarang	4/Gorong-gorong	45/168	1.20	LU	Pagerb
168	Pagerbarang - Jah	Pagerbarang	Jatirokeh	45/167	Bta. Kab. Brebes	2.95	LU	Pagerb
169	Sigentong - Krem	Sigentong	Kreman	37/SD	85/Jbt. plat beton	3.45	LU	Warur
170	Purwahamba - Bl	Purwahamba	Blubuk	JL.BM.Km	84/	3.04	LU	Suradi
171	Harjasari - Jatim	Harjasari	Jatimulya	35/	84/	4.85	LU	Suradi
172	Kedunggaugih - Duaja	Kedunggaugih	Dukuhmeja	168/	bis Kab. Brebes	0.88	LU	Pagerb
173	Kemantren - Kephian	Kemantren	Kesadikan	26/Par Kemantren	125/215	3.72	LU	Krama
174	Dukuhsembung ig	Dukuhsembung	Bedug	JL. BM Km./SD dksmbg	247/BL.DS	5.46	JJS	Pangk
175	Maribaya - Kepel	Maribaya	Kepel	JL.Neg.Km.10.4	72/125	3.34	LU	Krama
176	Tarub - Kedokang	Tarub	Kedokangayang	67/Jbt.K.Pah II	66/	2.65	LU	Tarub
177	Kalijambe - Kesa	Kalijambe	Kesaminan	26/	102/209/puskemas	2.85	JJS	Tarub
178	Kebandingan - Gagdadi	Kebandingan	Gembongdadi	35/Grbg Da Ketendign	Grbg DaGembongdadi	2.53	LU	Surad
179	Gumalar - Kupu	Gumalar	Kupu	56/jbt	73/km..	2.28	LU	Dukul
180	Bumiharja - Kesa	Bumiharja	Kesadikan	26/	106/Jbt	2.73	LU	Tarub
181	Kalibekung - Hawangun	Kalibekung	Harjawanangun	63/Majid	9/Ricemil/km..	2.80	LU	Balap
182	Candrageni - Pedir	Candrageni	Pedesiohor	JL. BM/ Km...	48/99	3.16	LU	Dukul
183	Maribaya - Guci	Maribaya	Guci	JL. Bm / Km	41/Grbg masuk guci	3.30	PAR	Bojoni
184	Grobog kulon - Q wetan	Grobog kulon	Grobog wetan	174/SD.Grobogkln 01	29/Grbg Ds.	1.90	LU	Pangk
185	Margapadang - Insaren	Margapadang	Mangunsaren	177/216	180/201	0.93	LU	Tarub
186	Kaligayam - Pesan	Kaligayam	Pesayangan	65/alm	JL BM/ Km ...	2.57	LU	Talanj
187	Gantungan - Arang	Gantungan	Arangawang	22/Orlong Da. Gantungan	Majid	4.48	LU	Jatine

No Ruas	Nitua	Nama Pangkal Ruas	Nama Ujung Ruas	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Ruas (Km)	Klasifikasi Ruas	Term Kecan
188	Cangkring - Setu	Cangkring	Setu	65/grbng ds	67/slm	2.55 LU	LU	Talang
189	Kepandean - Kaliat	Kepandean	Kaliyamat	60/	Bta.Kod.Tegal	0.30 LU	LU	Dukuhtu
190	Kramat - Plumbu	Kramat	Plumbungan	88/	175/	2.27 LU	LU	Kramat
191	Kaladawa - Beng	Kaladawa	Bengle	65/Gerbng. Da	67/Majid	2.30 LU	LU	Talang
192	Dukuhtu Kidul - aban	Dukuhtu Kidul	Cacaban	Jl. Bm Km./Grbng Parw.	87/Jbt.W. Cacaban	1.50 LU	LU	Kedungba
193	Pedagangan - Trun	Pedagangan	Trayaman	Jl.BM/SD	434/...	1.70 LU	LU	Dukuhtu
194	Jatimulya - Jatin	Jatimulya	Jatimulya	95/115/PSK	75/	1.70 LU	LU	Lebakasi
195	Pepedan - Grogol	Pepedan	Grogol	Jl.BM/Suat Abadi	64/	0.99 LU	LU	Dukuhtu
196	Balapulang Kulolepulang Wetan	Balapulang Kulon	Balapulang Wetan	Jl. Bm Km...	18/KM. 04	0.80 LU	LU	Balapular
197	Procot - Tembokig	Procot	Tembokluwang	474/SD	31/	0.66 LU	LU	Adiwarna
198	Bulakpacing - Penor	Bulakpacing	Pedeslor	138/Makam	182/Ricemill	0.64 LU	LU	Dukuhtu
199	Warureja - Sumbjo	Warureja	Sumberharjo	38/	Bta Kab.Tegal-Pml	0.50 JJS	JJS	Warureja
200	Karangcegak - Madang	Karangcegak	Margapadeng	35/Jbt k.Karangcegak	2 7/85	3.25 LU	LU	Tarub
201	Mangunsaren - Karja	Mangunsaren	Kertaharja	180/	173	1.43 LU	LU	Tarub
202	Dukuhtu - Uih	Dukuhtu	Wolgalih	Jl. BM Km.	Jbt. K. Logeni	6.42 LU	LU	Jatinegar
203	Pener - Dermasu	Pener	Dermasuci	49/saluran	151/225	3.57 LU	LU	Pangkab
204	Karangdawa - Cil	Karangdawa	Cibunar	1/Km...	44/218	3.21 LU	LU	Margasari
205	Pasar hewan - C	Pasar hewan	Cutug	Jl. BM /par hewan	154/5km..	1.33 LU	LU	Pangkab
206	Grobog wetan - C	Grobog wetan	Cutug	184/	154/	1.34 LU	LU	Pangkab
207	SMP 2 Margasari	SMP 2 Margasari	Pakulaut	Jl. BM/SMP 2 Mrgsari	165/	1.87 LU	LU	Margasari
208	Muncanglarung - hampel	Muncanglarung	Dukuhtu	13/	209	3.83 LU	LU	Bumijawa
209	Cintamanik - Duunda	Cintamanik	Dukuhtu	82/Km...	143/295	5.11 LU	LU	Bumijawa
210	Rajegwesi - Karuar	Rajegwesi	Karaganyar	2/	104/jbt.	1.66 LU	LU	Pagerbata
211	Danasari - Kajen	Danasari	Kajenengan	21/hutan pinus	77/Majid	4.20 LU	LU	Bojong
212	Lebakasi Kidul - ungreja	Lebakasi Kidul	Timbangreja	229/Jembatan	7/Km..	1.16 JJS	JJS	Lebakasi
213	Bumijawa - Pager	Bumijawa	Pageriasih	121/Jl. telkom	272/Gerbng Ds	4.37 LU	LU	Bumijawa
214	Mindaka-Bulakw	Mindaka	Bulakwaru	26/Puskesmas	200/Km..	1.21 LU	LU	Tarub
215	Kepunduhan - Tegharja	Kesaditan	Tanjungharja	125/ 173	72/ Jbt. Cacaban	2.00 LU	LU	Kramat
216	Kesamiran - Kara	Kesamiran	Karungjati	102/157/177	35/km..	2.14 LU	LU	Tarub
217	Balapulang - Sen	Balapulang	Sembaja	Jl.BM.Km.89,1	5/Brs. DS	2.14 JJS	JJS	Balapular
218	Cibunar - Srengs	Sembaja	Pandusari	44/204/ Bta. Kec.	2/ km ...	3.02 LU	LU	Pagerbata
219	Dukuhtu Krasak - Jag	Dukuhtu Krasak	Jantilepag	308/63/Pustu	149/156	2.93 JJS	JJS	Dukuhtu

No Ruas	Muas	Nama Pangkal Ruas	Nama Ujung Ruas	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Ruas (Km)	Klasifikasi Ruas	Terminasi Rekameter
220	Jatwangi - Pagerbarang	Jatwangi	Pagerbarang	137/ km	3/ km ...	0.80	LU	Pagerbarang
221	Rajegwesi - Jatiwangi	Rajegwesi	Jatiwangi	2 / 137\	160 / km ...	4.00	LU	Pagerbarang
222	Danaraja - Cengki	Danaraja	Cengki	81/ Jbt. Kumisik I	82/13	4.20	LU	Balapulang
223	Margasari - Kalisalak	Margasari	Kalisalak	Jl. BM Km...	76 / MI	2.20	LU	Margasari
224	Pupuk Utara - C Bojong	Pupuk Utara	Dukuh Bojong	Jl. BM Km/ Gereja	Pondok Mujahadah	0.80	LU	Margasari
225	Dermasuci - Cindea	Dermasuci	Cindea	203/151/Balai Desa	151/ km ...	1.46	LU	Pangkajene
226	Senedo - Senedo	Senedo	Senedo	155/ Pos Kundling	151/ Balai Desa	0.67	LU	Kedungbanten
227	Karangmalang - Karangmalang	Karangmalang	Karangmalang	35/ Grng Da.	Saluran air	1.19	LU	Kedungbanten
228	Diwang - Cikura	Diwang	Cikura	112/ 23	21/Perempatan	2.13	JJS	Bojong
229	Lebakasi Kota - Kiu Kidul	Lebakasi Kota	Lebakasi Kidul	Jl.BM./SDN 1	212/ Jembatan	1.17	JJS	Lebakasi
230	Mokaha - Telaga	Mokaha	Telaga	93/ 92	Musola	2.30	LU	Jatinegara
231	Bangun Galih - Fungan	Bangun Galih	Plumbungan	190 / Balai Desa	72/ Grng Da. Bangun	1.90	LU	Kramat
232	Bongkok - Jatiwangi	Bongkok	Jatiwangi	25/ Mejd	153/ Bl. Da. Jatlawang	0.86	LU	Kramat
233	Dampyak - Mejasem	Dampyak	Mejasem Timur	90/ Lap. Tende	152/ SD	1.40	LU	Kramat
234	Bongkok - Kertayasa	Bongkok	Kertayasa	25/ SMAN 1 Kramat	Bl. Da. Kertayasa	2.22	LU	Kramat
235	Kepunduhan - Kihun	Kepunduhan	Kepunduhan	72/ Grng Da/ SD	173/ 236	0.78	LU	Kramat
236	Kepunduhan - Kij	Kepunduhan	Keleng	173/ 235	180 / perempatan Bts. Da.	1.56	LU	Kramat
237	Tanjungharja - Fingan	Tanjungharja	Plumbungan	72/ Perigaan	190/175	2.90	LU	Kramat
238	Pala 6 - Mejasem	Pala 6	Mejasem Timur	90/	239/ Perempatan	0.97	LU	Kramat
239	Sulang - Mejasem	Sulang	Mejasem Timur	126/ Grng Da Mijam	152/ Mejd	1.75	LU	Kramat
240	Langgen - Ekopri	Langgen	Ekopri	159/ MTs	67/ Jbt. K. Gung	0.74	LU	Talang
241	Getaskerep - Sul	Getaskerep	Sulang	65/ Bl. Da	126/ Panti air. Srm	1.65	LU	Talang
242	Pacul - Kademun	Pacul	Kademangan	65/ Grng. Da	100/ km ...	1.41	LU	Talang
243	Tegalwangi - Amirat	Tegalwangi	Amangkurut	59/ SD	107/ SD/ Bl. Da. Pesarean	1.74	LU	Talang
244	Kajen - Kebasen	Kajen	Kebasen	Jl.Bm / Km../Psr.	243/ Mejd	0.49	LU	Talang
245	Kebasen - Kebasen	Kebasen	Kebasen	243/ Km	58/ PLN.	0.47	LU	Talang
246	Pesayangan - Dualang	Pesayangan	Dukuhmaleng	67/159	191/Srm	1.56	LU	Talang
247	Bedug - Pegrikan	Bedug	Pegrikan	174/Bl.DS	24/SD	0.80	JJS	Talang
248	Getaskerep - Kenangan	Getaskerep	Kemanggungan	65/241/Bl.DS	67/SD	2.41	LU	Talang
249	Getaskerep - Wawa	Getaskerep	Wangandawa	65/Km..	66/SMP N 2	1.27	LU	Talang
250	Gembongkulon - Gen	Gembongkulon	Lungen	159/Km..	240/Km..	1.22	LU	Talang
251	Dukuhkarangsari	Dukuhkarangsari	Lodadi	157/Jembatan	71/Km..	1.52	LU	Suradadi

No Rusa	Nama Rusa	Nama F. Rusa	Nama Ujung Rusa	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Rusa (Km)	Klasifikasi Rusa	Ternasuk Kecamatan
252	Brekat - Purbasa	Brekat	Basana	26/SD N 1	118/Km..	2.47	LU	Tarub
253	Setu - Jalirawa	Setu	Tawa	67/Grbang	24/Km..	2.50	LU	Tarub
254	Bumiharja - Kedeyang	Bumiharja	Bokansaya	26/Km..	176/Km..	1.10	LU	Tarub
255	Brekat - Bulakwe	Brekat	Bakwaru	26/SD N 1	200/Makam	1.33	LU	Tarub
256	Kalijambe - Bumi	Kalijambe	Biharja	177/Jembatan	180/SDN 1/Jembatan	0.96	LU	Tarub
257	Bumiharja - Pasantanran	Bumiharja	Ar Kemari	180/256/SD	26/PSR Kemantiran	1.50	LU	Tarub
258	Sigintong - Went	Sigintong	Agopa	37/Ricemill	Lumbung/	1.16	LU	Warureja
259	Wanagopa - Kren	Wanago	man	258/Lumbung	169/Ricemill	1.36	LU	Warureja
260	Banjar Agung - Kjeklor	Banjara	ungkelor	162/261/Bl.DS	Jl.Bm/Km..	3.77	LU	Warureja
261	Banjar Agung - Vja	Banjara	ureja	162/260/Bl.DS	38/Pintuar	1.97	LU	Warureja
262	Demangharjo - Rulya	Demangharjo	gunulya	Jl.Bm/Km..	263/Saluran	3.15	LU	Warureja
263	Warureja - Rangi	Warureja	gunulya	38/261/Pintuar	262/Saluran	2.94	LU	Warureja
264	Kertasari - Kesen	Kertasari	men	84/36/Saluran	85/Jembatan	2.33	LU	Suradadi
265	Karangmalang - h Lodadi	Karangmalang	h Lodadi	35/JBT. K.Wuri	71/SD	0.93	LU	Suradadi
266	Karangnulya - Sdot	Karangnulya	ndot	71/Grbang Da	Muhola/	1.62	LU	Suradadi
267	Jatimulya - Sura	Jatimulya	dadi	84/Bl.DS	36/Ricemill	1.69	LU	Suradadi
268	Jatimulya - Duklakbanteng	Jatimulya	uhbulak	84/Km..	267/Km..	0.84	LU	Suradadi
269	Kertasari - Dukuh	Kertasari	uhswen	36/Tower	Dk. Siwen	1.34	LU	Suradadi
270	Balaradin - Balar	Balaradin	adin	75	12	1.52	LU	Lebakatu
271	Senggang - Karabu	Senggang	ngambe	9/39	10/91	2.20	JJS	Balapulang
272	Jejeg - Cenggini	Jejeg	gini	13/82	43/222	7.60	JJS	Bumijawa
273	Timbangreja - Sejaya	Timbangreja	kanjaya	07/18/8	Jbt. Sangkanjaya	2.90	JJS	Balapulang
274	Tegalwangi - Pag	Tegalwangi	agan	59/Km..	119/275	0.60	LU	Dukuhturi
275	Pagongan - Grog	Pagongan	gan	119/274	96/195	0.53	LU	Dukuhturi
276	Karanganyar - Karang	Karanganyar	emangara	Jl.Bm/Mekam	158	0.84	LU	Dukuhturi
277	Sutapranan - Kaogaran	Sutapranan	emangara	65/Jbt. K.Gung Lama	158	2.36	LU	Dukuhturi
278	Kupu - Sidapurni	Kupu	spurna	60/Grbang /Saluran	73/Par	1.22	LU	Dukuhturi
279	Lawatan - Kupu	Lawatan	u	60	279	2.37	LU	Dukuhturi
280	Kepandean - Kupu	Kepandean	ung	61/Grbang	Bta. Kota/Ds.Bandung	0.66	LU	Dukuhturi
281	Kepandean - Ban	Kepandean	ang	64/Polek	281/Jbt. Inigasi	0.84	LU	Dukuhturi
282	Gondangdla	Gondangdla	angdla		Bta. Kota/Ds. Kulijangpana	1.35	LU	Dukuhturi
283	Sidakaton - Kaligi	Sidakaton	angpana	117				

No Rusa	Nama	Nama Pangkal Rusa	Nama Ujung Rusa	Titik Penges. / J. wpt	Titik Pengenal Akhir	Panjang Rusa (Km)	Klasifikasi Rusa	Tersebut Kecamatan
284	Pagongan - Band	Pagongan	Bandung	61/Bi.Ds	Bis.Kota/Ds.Bandung	0.50 LU	LU	Dukuhturi
285	Kepandean - Dukmbang	Kepandean	Duku Jombang	61/Mi	Bis.Kota/Ds.Kalinyamat	0.79 LU	LU	Dukuhturi
286	Pengerasan - Ketangan	Pengerasan	Kelanggungan	73/Bi.Ds	179/Bi.Ds/Pasar Ds	0.70 LU	LU	Dukuhturi
287	Penarikan - Kali	Penarikan	Kaliwadas	54/Km..	56/Km..	1.30 LU	LU	Adiwerna
288	Grobogkulon - Gulon	Grobogkulon	Grobogkulon	174/Km..	31/Jembatan	0.38 JJS	JJS	Pangkah
289	Kedungsukan - Igar	Kedungsukan	Lumingsar	99/Saluran	56/Km..	1.35 LU	LU	Adiwerna
290	Pagayanten - Bulang	Pagayanten	Bulakpating	55/Km..	138/Km..	0.89 LU	LU	Adiwerna
291	Harjosarihidul - ka	Harjosarihidul	Kalitoka	148/Km..	Pompa	1.37 LU	LU	Adiwerna
292	Tembokluwang - sarisidul	Tembokluwang	Harjosarihidul	Jl.Bm/31/Polser	51/Km..	0.90 LU	LU	Adiwerna
293	Kenari	Kenari	Kenari	Jl.Bm./	120/133/SMP	0.53 LU	LU	Adiwerna
294	Tembok Kidul - Tk Kidul	Tembok Kidul	Tembok Kidul	120/Masjid	293/Km..	0.56 LU	LU	Adiwerna
295	Dukuhbujil - Dulinda	Dukuhbujil	Dukuhbenda	209/295	Jbl. K.Pedes/Bis. Kab.	5.24 LU	LU	Bumijawa
296	Moh. Abuseri	Moh. Abuseri	Moh. Abuseri	Jl.Bm/PMI	67/Saluran	1.58 LU	LU	Adiwerna
297	Yamansari - Lebah	Yamansari	Lebakgowah	Jl.Bm/K. Ds	115/Reservoir	1.05 JJS	JJS	Lebakitu
298	Selapura - Blubu	Selapura	Blubu	Jl.Bm/Grng	150/Ricemill	2.40 LU	LU	Dukuhwaru
299	Blubuk - Blubuk	Blubuk	Blubuk	150/298/Ricem.	308/Msld	0.58 LU	LU	Dukuhwaru
300	Kabunan - Duku	Kabunan	Dukuhdamu	Jl.Bm/ Embung	63/	1.94 LU	LU	Dukuhwaru
301	Dukuhwaru Kotakuhwaru	Dukuhwaru kota	Dukuhwaru	Jl.Bm/ SDN 1	130/Jembatan	1.32 LU	LU	Dukuhwaru
302	Dukuhdamu - Si Kidul	Dukuhdamu	Sarang Kidul	63/SD	106/Embung/Jmbt	2.62 JJS	JJS	Lebakitu
303	Jalingkos Kendal - Curug	Kendalserit	Curug	454/Jl.Bm/Pilik	304/Jl.Bm/Par. Hewan	4.01 JJS	JJS	Pangkah
304	Jalingkos Curuguh salam	Curug	Dukuhalem	303/Jl.Bm/Per.	Jl.Bm/Km..	3.51 JJS	JJS	Pangkah
305	Grobog Wetan - wa	Grobog Wetan	Jatirawa	184/206/Lapan	24/P. Air	1.92 LU	LU	Pangkah
306	Rancawiru - Puri	Rancawiru	Purbayasa	27/Grng	24/Km..	1.40 LU	LU	Pangkah
307	Grobog Kulon - E	Grobog Kulon	Bedug	174/SD	24/253	1.05 LU	LU	Pangkah
308	Blubuk - Dukuhuk	Blubuk	Dukuh Krasak	Jl.Bm/Grng	63/219/Pustu	2.36 JJS	JJS	Dukuhwaru
401	HOS Cokroaminoto	HOS Cokroaminoto	HOS Cokroaminoto	BM/404	BM/KM. Q.5	0.56 KOTA	KOTA	Slawi
402	KH Agus Salim	KH Agus Salim	KH Agus Salim	BM/KORAMIL	411/455	0.57 KOTA	KOTA	Slawi
403	Imam Bonjol	Imam Bonjol	Imam Bonjol	402/KM.	417/Ruko	1.21 KOTA	KOTA	Slawi
404	Kapt. Piere Tendean	Kapt. Piere Tendean	Kapt. Piere Tendean	401/BM	403/	0.28 KOTA	KOTA	Slawi
405	Brigjen - Katams	Brigjen	Kalimaso	Bm/KM 0,6	406/427	1.11 KOTA	KOTA	Slawi
406	Kol. Sugiyono	Kol. Sugiyono	Kol. Sugiyono	405/427	407/BM	0.28 KOTA	KOTA	Slawi
407	dr. Sutomo	dr. Sutomo	dr. Sutomo	406/BM	414	2.34 KOTA	KOTA	Slawi

No ura	Nama	Nama Pangkal Rusa	Nama Ujung Rusa	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Rusa (Km)	Klasifikasi Rusa	Termasuk Kecamatan
408	KH Wahid hasyim	KH Wahid hasyim	KH Wahid hasyim	BM/SMA1	407/413	1.26	KOTA	Slawi
409	Gajah Mada	Gajah Mada	Gajah Mada	BM/410	407/Pemda	1.79	KOTA	Slawi
410	Ir. H. Juanda	Ir. H. Juanda	Ir. H. Juanda	BM/409	412/434	1.24	KOTA	Slawi
411	Prof. M Yamin	Prof. M Yamin	Prof. M Yamin	BM/Bundaran	402/455	1.39	KOTA	Slawi
412	Supriadi	Supriadi	Supriadi	455/Km.0,05	410/434	0.89	KOTA	Slawi
413	RA Kartini	RA Kartini	RA Kartini	407/408	414/457	2.05	KOTA	Slawi
414	Cut Nyai Dien	Cut Nyai Dien	Cut Nyai Dien	BM/Jbr.K.Kembang	457/	2.03	KOTA	Slawi
415	KH A Dahlan	KH A Dahlan	KH A Dahlan	BM/Ruko. Slawi	419/416	0.43	KOTA	Slawi
416	KH Mas Mansyur	KH Mas Mansyur	KH Mas Mansyur	415/419	407/456/RSU	0.72	KOTA	Slawi
417	Kemiri	Kemiri	Kemiri	403/	BM/Telkom	0.22	KOTA	Slawi
418	Perkutut	Perkutut	Perkutut	419/420	Rel.KA	0.33	KOTA	Slawi
419	Cendrawasih	Cendrawasih	Cendrawasih	408/SD	415/416	0.33	KOTA	Slawi
420	Merak	Merak	Merak	418/419	416/Km.	0.37	KOTA	Slawi
421	dr. Setyabudi	dr. Setyabudi	dr. Setyabudi	430/KM.	422/426	0.22	KOTA	Slawi
422	dr. Cipto Mangunno	dr. Cipto	dr. Cipto	BM/Lap. SMP 2	423/PBR.Da	0.76	KOTA	Slawi
423	WR Supratman	WR Supratman	WR Supratman	413/SMA2	422/424	0.86	KOTA	Slawi
424	Merapi	Merapi	Merapi	422/423	512/425	0.64	KOTA	Slawi
425	Sumbing	Sumbing	Sumbing	BM/Km/Grbg	512	0.88	KOTA	Slawi
426	Semeru	Semeru	Semeru	421/422	425	0.67	KOTA	Slawi
427	Serayu	Serayu	Serayu	405/406	440/442	0.76	KOTA	Slawi
428	dr. Suharsa	dr. Suharsa	dr. Suharsa	456	423	0.74	KOTA	Slawi
429	dr. Karyadi	dr. Karyadi	dr. Karyadi	422/ b.Desa	428	0.52	KOTA	Slawi
430	dr. Muwardi	dr. Muwardi	dr. Muwardi	456	429/Masjid	0.20	KOTA	Slawi
431	Wader	Wader	Wader	409/436	414/508/SD	0.37	KOTA	Slawi
432	Sembaja	Sembaja	Sembaja	BM/Polres	412/433/KD. Trayeman	1.50	KOTA	Slawi
433	Menjangan	Menjangan	Menjangan	412/432/ KD. Trayeman	435	0.69	KOTA	Slawi
434	Kancil	Kancil	Kancil	410/412	435	0.65	KOTA	Slawi
435	Anoa	Anoa	Anoa	455/454 / 051	434	0.81	KOTA	Slawi
436	Cucut	Cucut	Cucut	BM/Polres	409/431	0.68	KOTA	Slawi
437	Slamet	Slamet	Slamet	422/ SD	425	0.69	KOTA	Slawi
438	Merpati	Merpati	Merpati	408/RD.Bpt.	420	0.51	KOTA	Slawi
439	Patimura	Patimura	Patimura	Jl. BM/ 422	440	0.16	KOTA	Slawi

No Ruas	Nama Ruas	Nama Pangkal Ruas	Nama Ujung Ruas	Titik Pengenal Awal	Titik Pengenal Akhir	Penjang Ruas (Km)	Klasifikasi Ruas	Termasuk Kecamatan
440	Pemali	Pemali	Pemali	427/442		0.69	KOTA	Slawi
441	Teuku Umar	Teuku Umar	Teuku Umar	Jl. BM/ Masjid	Jembatan	0.33	KOTA	Slawi
442	Cik Ditiro	Cik Ditiro	Cik Ditiro	BM		0.15	KOTA	Slawi
443	Mahakam	Mahakam	Mahakam		405	0.33	KOTA	Slawi
444	Citarum	Citarum	Citarum	BM/Sipbon		1.28	KOTA	Slawi
445	Brantas	Brantas	Brantas		405	0.28	KOTA	Slawi
446	Musi	Musi	Musi	405/SD		0.28	KOTA	Slawi
447	Sindoro	Sindoro	Sindoro		511	0.37	KOTA	Slawi
448	Yos Sudarso	Yos Sudarso	Yos Sudarso	Jl. BM/Aeroma	408/Beng.lap	0.31	KOTA	Slawi
449	Nangka	Nangka	Nangka	Jl. BM/SD	450/476	0.28	KOTA	Slawi
450	Durian	Durian	Durian	449/476	451/ S.Gung	0.36	KOTA	Slawi
451	Delima	Delima	Delima	BM/Lap.GBN		0.37	KOTA	Slawi
452	Rambutun	Rambutun	Rambutun	Jl. BM/Bulog	476/S.Gung	0.31	KOTA	Slawi
453	Salak	Salak	Salak		474/Jalingkos	0.82	KOTA	Slawi
454	Florea Baru	Florea Baru	Florea Baru	455/435/51	BM/KM.0.05/Jalingkos	0.56	KOTA	Slawi
455	H. Samanhuji	H. Samanhuji	H. Samanhuji	402/411	454/435/51	0.92	KOTA	Slawi
456	dr. Wahidin	dr. Wahidin	dr. Wahidin	407/RSU		1.12	KOTA	Slawi
457	Dewi Sartika	Dewi Sartika	Dewi Sartika	413/414	Jemb	0.51	KOTA	Slawi
458	Ten II	Ten II	Ten II	431/507	Makam	0.20	KOTA	Slawi
459	Cut Meutia	Cut Meutia	Cut Meutia	413/	504/	0.41	KOTA	Slawi
460	Menteri Supeno	Menteri Supeno	Menteri Supeno	407/Pemda	413/Pemda	0.40	KOTA	Slawi
461	Sumbawa	Sumbawa	Sumbawa	BM/Km.		0.36	KOTA	Slawi
462	Beringin	Beringin	Beringin	BM/Km.		0.30	KOTA	Slawi
463	Sumatera	Sumatera	Sumatera		462/ SD IV Kudaila	0.44	KOTA	Slawi
464	Java I	Java I	Java I		454	0.94	KOTA	Slawi
465	Halmahera	Halmahera	Halmahera		51	0.12	KOTA	Slawi
466	Nuri II	Nuri II	Nuri II		408	0.29	KOTA	Slawi
467	Nuri III	Nuri III	Nuri III		408	0.24	KOTA	Slawi
468	Cempaka	Cempaka	Cempaka	411/Km.	Jbl.	0.19	KOTA	Slawi
469	Melati	Melati	Melati	411/MTS	432/Km.	0.51	KOTA	Slawi
470	Mawar	Mawar	Mawar	BM/U.Ibt.Kembang	Hts.Desa	1.37	KOTA	Slawi
471	Merica	Merica	Merica	Jl. BM/ Km ...		0.34	KOTA	Slawi

No Rusa	Nama	Nama Pangkal Rusa	Nama Ujung Rusa	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Rusa (Km)	Klasifikasi Rusa	Termasuk Kecamatan
472	Wijayakusuma	Wijayakusuma	Wijayakusuma	411/Km.	473	0.36	KOTA	Slawi
473	Anggrek	Anggrek	Anggrek	432/Makam	472	0.61	KOTA	Slawi
474	Mangga	Mangga	Mangga	453/Jalingkos	197/SD	0.70	KOTA	Slawi
475	Jeruk	Jeruk	Jeruk	Jl. BM/ Km ...	482/STMBN	0.22	KOTA	Slawi
476	Manggis	Manggis	Manggis	449	452	0.17	KOTA	Slawi
477	Dukuh -	Dukuh	Dukuh	450/Km.	Sungai Gung	0.26	KOTA	Slawi
478	Cempedak	Cempedak	Cempedak	Jl. BM/ Km ...	450	0.27	KOTA	Slawi
479	Blimbing	Blimbing	Blimbing	Jl. BM/ Km ...	482	0.18	KOTA	Slawi
480	Sawo	Sawo	Sawo	Jl. BM/ Km ...	482	0.22	KOTA	Slawi
481	Nanas	Nanas	Nanas	Jl. BM/ Km ...	482	0.22	KOTA	Slawi
482	Apel	Apel	Apel	475	479	0.32	KOTA	Slawi
483	Pepaya	Pepaya	Pepaya	475	479	0.35	KOTA	Slawi
484	Anggur	Anggur	Anggur	475/ SMP	479	0.36	KOTA	Slawi
485	Jambu	Jambu	Jambu	475/ SMP	479	0.35	KOTA	Slawi
486	Jati	Jati	Jati	BM.Km.0,8	487	0.18	KOTA	Slawi
487	Waru	Waru	Waru	489	Bte.De Dk. Sembung	0.20	KOTA	Slawi
488	Johar	Johar	Johar	490	486	0.20	KOTA	Slawi
489	Randu	Randu	Randu	Jl. BM Km.../	490	0.51	KOTA	Slawi
490	Cemara	Cemara	Cemara	BM.Km.0,7	489	0.21	KOTA	Slawi
491	Ciliwung	Ciliwung	Ciliwung	Jl. BM Km.../	Mushola	0.21	KOTA	Slawi
492	Citanduy	Citanduy	Citanduy	Jl. BM Km.../Orj	Jl.Bm/Km..	0.26	KOTA	Slawi
493	Kelinci	Kelinci	Kelinci	455/	Majid	0.20	KOTA	Slawi
494	Kanguru	Kanguru	Kanguru	455/	Batas Pr.Trayeman	0.20	KOTA	Slawi
495	Kijang	Kijang	Kijang	412/	412/ SD	0.65	KOTA	Slawi
496	Badak	Badak	Badak	433/435	148	0.26	KOTA	Slawi
497	Komodo	Komodo	Komodo	412/Gd.Yaumi	Lap.	0.26	KOTA	Slawi
498	Prenjak	Prenjak	Prenjak	408/Perum Polisi	501/	0.09	KOTA	Slawi
499	Glatik	Glatik	Glatik	408/Lap.	498/501	0.16	KOTA	Slawi
500	Ketiliang	Ketiliang	Ketiliang	408/K.Depag	501/502	0.16	KOTA	Slawi
501	Sri Gunting	Sri Gunting	Sri Gunting	498/	500/502	0.21	KOTA	Slawi
502	Kepodang	Kepodang	Kepodang	500/	420/Km.	0.24	KOTA	Slawi
503	Kakatua	Kakatua	Kakatua	408/498	Jl.KA	0.19	KOTA	Slawi

No Ruas	Nama Ruas	Nama Pangkal Ruas	Nama Ujung Ruas	Titik Pengenal Awal	Titik Pengenal Akhir	Panjang Ruas (Km)	Klasifikasi Ruas	Termasuk Kecamatan
504	Koperal Harun	Koperal Harun	Koperal Harun	413/	459/	0.16	KOTA	Slawi
505	Nuri	Nuri	Nuri	408/Depag	Jl.KA	0.24	KOTA	Slawi
506	Lele	Lele	Lele	409/ km..	436/ km..	0.84	KOTA	Slawi
507	Teri	Teri	Teri	431/	509/	0.71	KOTA	Slawi
508	Blanuk	Blanuk	Blanuk	414/	127/	0.56	KOTA	Slawi
509	Bawal	Bawal	Bawal	507/	409/	0.12	KOTA	Slawi
510	RP Suroso	RP Suroso	RP Suroso	413/460	195/ Km.../Bis.kota	2.34	KOTA	Slawi
511	Merbabu	Merbabu	Merbabu	447	424	0.61	KOTA	Slawi
512	Krakatau	Krakatau	Krakatau	424/425	122	0.58	KOTA	Slawi
513	Tangkuban Perah	Tangkuban Perah	Tangkuban Perah	Jl. BM Km...	422/SMP	0.50	KOTA	Slawi
514	Serdan Usman	Serdan Usman	Serdan Usman	413/	459/	0.20	KOTA	Slawi
515	Ade Irma Suryani	Ade Irma Suryani N	Ade Irma Suryani N	409/Km.1.4	Saluran	0.29	KOTA	Slawi
516	Trisanja	Trisanja	Trisanja	407	513	0.40	KOTA	Slawi
517	Rajawali	Rajawali	Rajawali	Jl. Bm/ Km.../dlm	471	0.44	KOTA	Slawi
518	Lawu	Lawu	Lawu	511	447/522	0.45	KOTA	Slawi
519	Jawa II	Jawa II	Jawa II	454/464	BTS.DS Tmb Idul	0.56	KOTA	Slawi
520	Wijayakusuma II	Wijayakusuma	Wijayakusuma	411/SLH	Mushola	0.25	KOTA	Slawi
521	Wijayakusuma II	Wijayakusuma	Wijayakusuma	411/Km.	/Km..	0.22	KOTA	Slawi
522	Muria	Muria	Muria	424	447	0.24	KOTA	Slawi
523	Sumatra II	Sumatra II	Sumatra II	463/454	461	0.12	KOTA	Slawi
524	Kambing	Kambing	Kambing	434/435	Balel Da	0.74	KOTA	Slawi
525	Naga	Naga	Naga	435	428	0.28	KOTA	Slawi
526	Kuda	Kuda	Kuda	412	435	0.67	KOTA	Slawi
527	Bali Raya	Bali Raya	Bali Raya	454	463	0.42	KOTA	Slawi
528	Bali I	Bali I	Bali I	Jl.Bm/SPBU. Procot	527	0.15	KOTA	Slawi
529	Bali II	Bali II	Bali II	527	530	0.11	KOTA	Slawi
530	Bali III	Bali III	Bali III	527	531	0.10	KOTA	Slawi
531	Bali IV	Bali IV	Bali IV	527	532	0.10	KOTA	Slawi
532	Bali V	Bali V	Bali V	527	528	0.30	KOTA	Slawi
533	Flores	Flores	Flores	463	464	0.12	KOTA	Slawi
534	Budimulya	Budimulya	Budimulya	404	Jl.Bm	0.30	KOTA	Slawi
535	Panda	Panda	Panda	412/SMK.PGRI	536	0.18	KOTA	Slawi