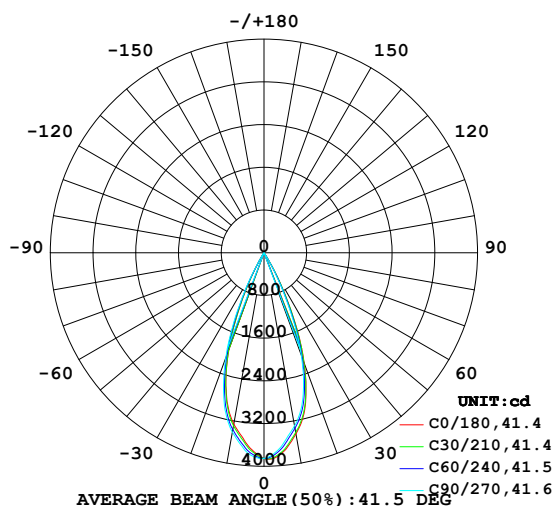


LUMINAIRE PHOTOMETRIC TEST REPORT

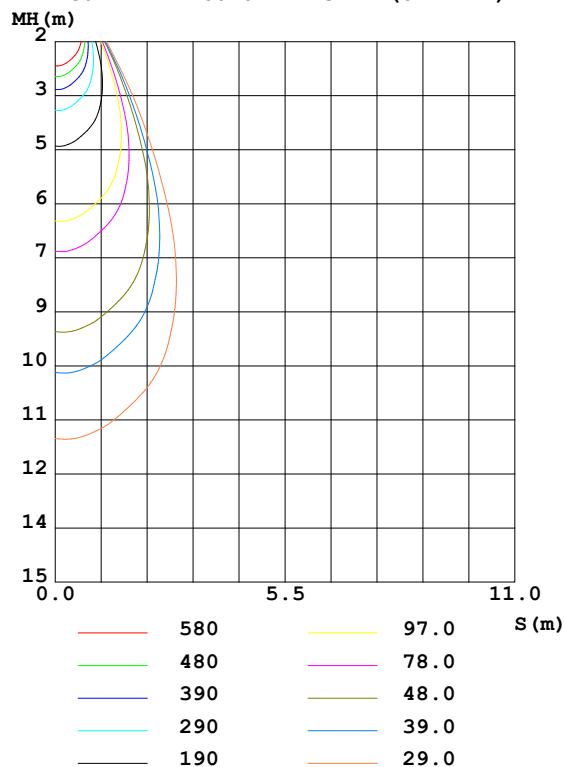
Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 82.09 lm/W			
MODEL	CITIZEN-2700K	I _{max} (cd)	3870	S/MH (C0/180)	0.61
NOMINAL POWER (W)	21	LOR (%)	100.0	S/MH (C90/270)	0.64
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1659.4	η UP, DN (C0-180)	0.0, 50.2
NOMINAL FLUX (lm)	1659.36	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.8
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.65

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Jasoan
Test Date: 2023-02-14

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 58%
Test Distance: 8.967m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3446	3378	3293	3239	3256	3328	3413	3468	0- 10	341.0	341.0	20.5,20.5
20	2207	2142	2046	1954	1927	1988	2099	2211	10- 20	775.9	1117	67.3,67.3
30	377.5	363.7	315.3	266.4	224.4	219.2	256.0	329.5	20- 30	494.5	1611	97.1,97.1
40	11.48	13.01	11.79	10.95	11.12	10.36	8.990	9.750	30- 40	41.63	1653	99.6,99.6
50	3.185	3.359	2.907	2.778	2.835	2.852	2.537	2.559	40- 50	4.221	1657	99.9,99.9
60	0.9242	1.015	0.9582	0.8515	0.7422	0.7099	0.7148	0.7774	50- 60	1.514	1659	100,100
70	0.2063	0.2422	0.2560	0.2374	0.1466	0.1252	0.1364	0.1283	60- 70	0.3933	1659	100,100
80	0.1141	0.1252	0.1034	0.1173	0.0760	0.0761	0.0818	0.0764	70- 80	0.1470	1659	100,100
90	0.0543	0.0517	0.0490	0.0464	0.0380	0.0408	0.0436	0.0327	80- 90	0.0738	1659	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1655.7 lm

%lum = 99.8%

%lamp = 99.8%

Conical surface Flux(120deg): 1658.7 lm

%lum = 100.0%

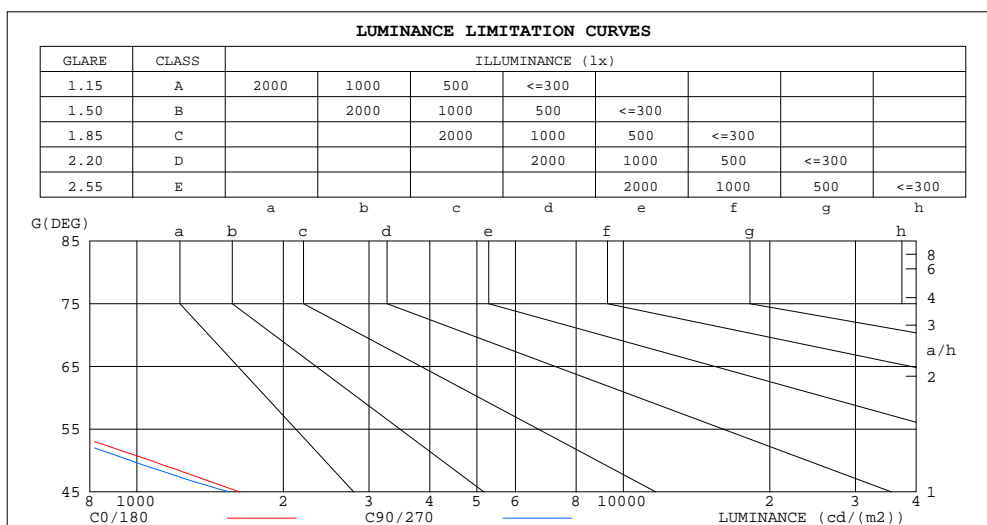
%lamp = 100.0%

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	202	175
80	142	128
75	131	140
70	130	161
65	197	238
60	398	412
55	678	638
50	1068	971
45	1627	1554

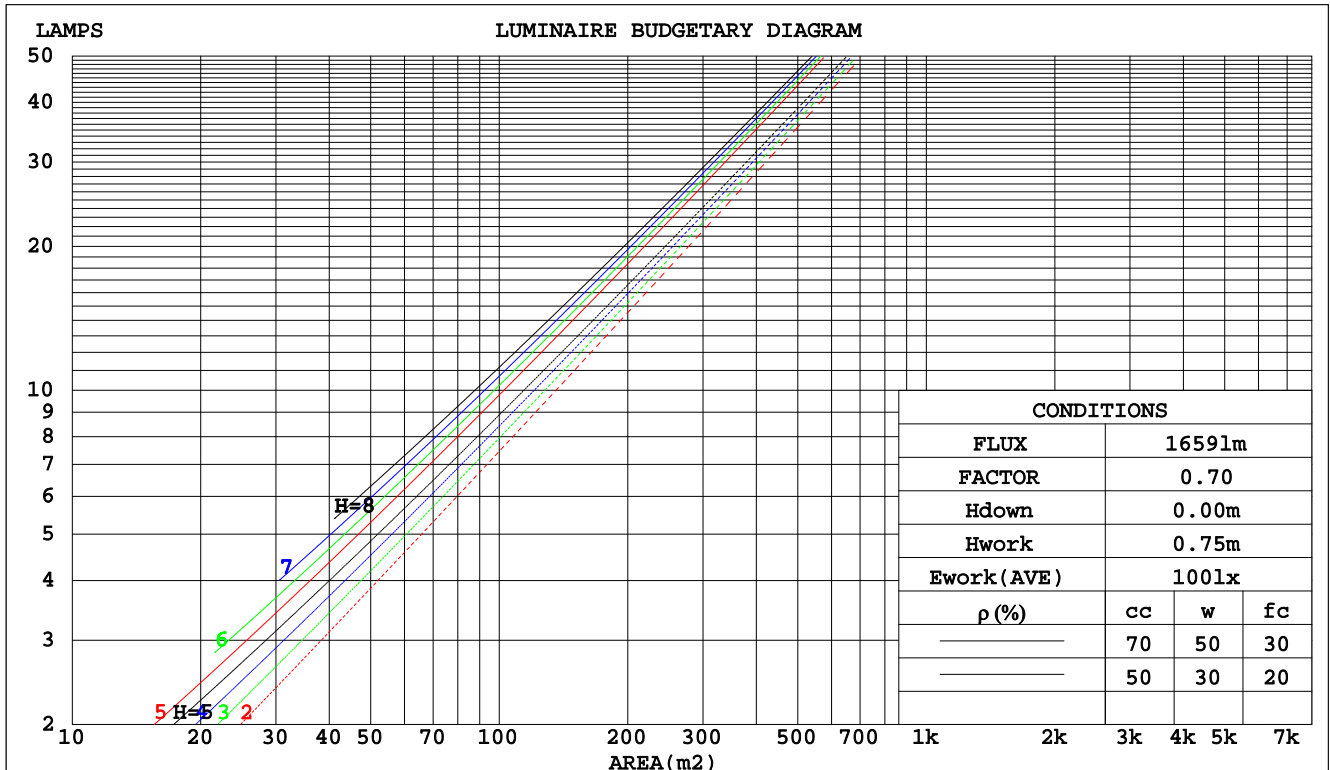
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

pcc	80%			70%			50%			30%			10%			0														
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0														
pfc	20%			20%			20%			20%			20%			0														
RCR	RCR:Room Cavity Ratio															Coefficients of Utilization(CU)														
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00														
1.0	1.12	1.10	1.08	1.10	1.08	1.07	1.06	1.05	1.03	1.03	1.01	1.00	.99	.98	.98	.96														
2.0	1.06	1.03	1.00	1.05	1.02	.99	1.02	.99	.97	.99	.97	.95	.96	.95	.93	.92														
3.0	1.01	.97	.94	.90	.96	.93	.97	.94	.92	.95	.93	.91	.93	.91	.89	.88														
4.0	.97	.92	.89	.96	.92	.88	.94	.90	.87	.92	.89	.86	.90	.87	.85	.84														
5.0	.92	.88	.84	.91	.87	.84	.90	.86	.83	.88	.85	.83	.87	.84	.82	.81														
6.0	.88	.84	.80	.88	.83	.80	.86	.83	.80	.85	.82	.79	.84	.81	.79	.78														
7.0	.85	.80	.77	.84	.80	.77	.83	.79	.76	.82	.79	.76	.81	.78	.76	.75														
8.0	.82	.77	.74	.81	.77	.74	.80	.76	.73	.79	.76	.73	.78	.75	.73	.72														
9.0	.78	.74	.71	.78	.74	.71	.77	.73	.70	.76	.73	.70	.76	.72	.70	.69														
10.0	.76	.71	.68	.75	.71	.68	.75	.71	.68	.74	.70	.68	.73	.70	.67	.66														



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.148	.084	.027	.141	.080	.026	.128	.074	.024	.117	.067	.022	.106	.062	.020		
2.0	.138	.076	.023	.132	.073	.022	.122	.068	.021	.113	.063	.020	.104	.059	.019		
3.0	.130	.069	.021	.125	.067	.020	.116	.063	.019	.108	.059	.018	.101	.056	.017		
4.0	.122	.064	.019	.118	.062	.018	.111	.059	.018	.104	.056	.017	.098	.053	.016		
5.0	.116	.059	.017	.113	.058	.017	.106	.055	.016	.101	.053	.016	.095	.051	.015		
6.0	.111	.055	.016	.108	.054	.016	.102	.052	.015	.097	.050	.015	.092	.049	.014		
7.0	.106	.052	.015	.103	.051	.015	.098	.050	.014	.094	.048	.014	.090	.047	.014		
8.0	.101	.049	.014	.099	.049	.014	.095	.047	.014	.091	.046	.013	.087	.045	.013		
9.0	.097	.047	.013	.095	.046	.013	.091	.045	.013	.088	.044	.013	.085	.043	.012		
10.0	.094	.045	.012	.092	.044	.012	.088	.043	.012	.085	.042	.012	.082	.041	.012		

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)										
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020		
1.0	.169	.158	.147	.145	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.016		
2.0	.152	.133	.117	.130	.114	.101	.089	.079	.070	.051	.046	.041	.016	.015	.013		
3.0	.137	.113	.094	.118	.098	.082	.081	.068	.057	.047	.040	.034	.015	.013	.011		
4.0	.126	.098	.077	.108	.085	.067	.074	.059	.047	.043	.035	.028	.014	.011	.009		
5.0	.116	.086	.064	.099	.074	.056	.068	.052	.039	.040	.031	.023	.013	.010	.008		
6.0	.107	.076	.054	.092	.066	.047	.064	.046	.033	.037	.027	.020	.012	.009	.007		
7.0	.100	.068	.046	.086	.059	.040	.060	.042	.028	.035	.024	.017	.011	.008	.006		
8.0	.094	.062	.039	.081	.054	.034	.056	.038	.024	.033	.022	.015	.011	.007	.005		
9.0	.089	.056	.034	.077	.049	.030	.053	.034	.021	.031	.020	.013	.010	.007	.004		
10.0	.084	.052	.030	.073	.045	.026	.050	.032	.019	.029	.019	.011	.010	.006	.004		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm										
NAME: VF68-18W-927-40°					TYPE:Downlight			SERIAL No.:		
SPEC.:2700K					DIM.: φ77mm*H100mm					
MFR.: NEKO LIGHTING AG										
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	4.1	4.8	4.3	5.0	5.1	3.6	4.3	3.8	4.5	4.6
3H	3.9	4.6	4.2	4.8	5.0	3.5	4.1	3.7	4.3	4.5
4H	3.9	4.5	4.1	4.7	4.9	3.4	4.0	3.6	4.2	4.4
6H	3.8	4.4	4.1	4.6	4.8	3.3	3.9	3.6	4.1	4.4
8H	3.7	4.3	4.0	4.6	4.8	3.3	3.8	3.6	4.1	4.3
12H	3.7	4.2	4.0	4.5	4.8	3.2	3.8	3.5	4.0	4.3
4H 2H	3.9	4.5	4.1	4.7	4.9	3.4	4.0	3.6	4.2	4.5
3H	3.7	4.3	4.0	4.5	4.8	3.2	3.8	3.5	4.0	4.3
4H	3.6	4.1	3.9	4.4	4.7	3.1	3.6	3.5	3.9	4.2
6H	3.5	4.0	3.9	4.3	4.6	3.0	3.5	3.4	3.8	4.2
8H	3.5	3.9	3.8	4.2	4.6	3.0	3.4	3.4	3.8	4.1
12H	3.4	3.8	3.8	4.2	4.5	2.9	3.3	3.3	3.7	4.1
8H 4H	3.4	3.9	3.8	4.2	4.6	3.0	3.4	3.4	3.7	4.1
6H	3.3	3.7	3.8	4.1	4.5	2.9	3.2	3.3	3.6	4.0
8H	3.3	3.6	3.7	4.0	4.4	2.8	3.1	3.3	3.5	4.0
12H	3.2	3.5	3.7	3.9	4.4	2.8	3.0	3.2	3.5	3.9
12H 4H	3.4	3.8	3.8	4.1	4.5	2.9	3.3	3.3	3.7	4.1
6H	3.3	3.6	3.7	4.0	4.4	2.8	3.1	3.3	3.5	4.0
8H	3.2	3.5	3.7	3.9	4.4	2.8	3.0	3.2	3.5	3.9
Variations with the observer position at spacings:										
S = 1.0H	+ 3.7 / - 7.6					+ 3.6 / - 7.2				
1.5H	+ 5.7 / - 5.4					+ 5.7 / - 5.1				
2.0H	+ 4.0 / - 5.1					+ 3.7 / - 4.0				

CIE Pub.117, 1659 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 1.8$)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: $\varnothing 77\text{mm} \times \text{H}100\text{mm}$	
MFR.: NEKO LIGHTING AG		

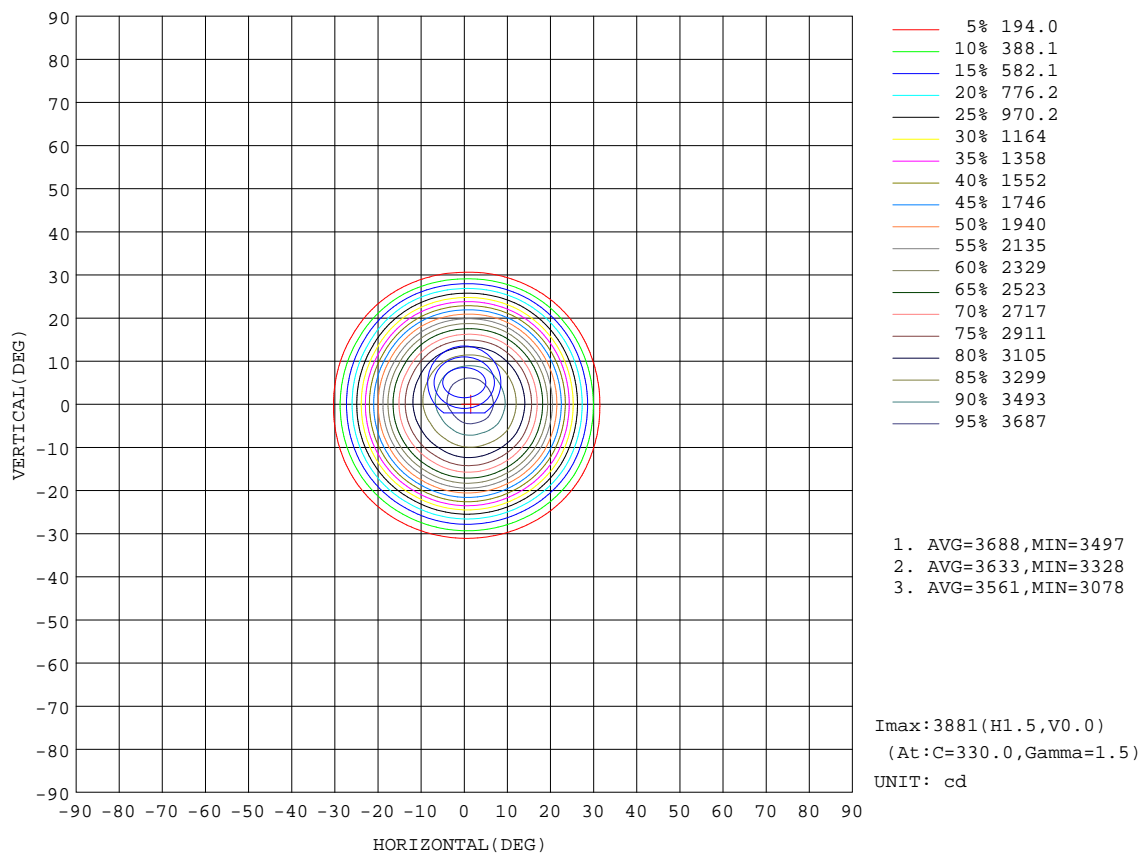
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	86	82	91	86	82	90	85	82	79
0.80	98	93	90	98	93	90	96	92	89	86
1.00	102	97	94	101	97	94	100	96	93	89
1.25	105	101	98	104	100	97	103	99	97	93
1.50	108	104	101	107	103	100	105	101	99	95
2.00	110	106	103	109	105	103	106	103	101	96
2.50	111	108	105	110	107	104	107	104	103	97
3.00	113	110	107	111	108	106	108	106	104	98
4.00	115	112	110	113	111	109	109	107	106	99
5.00	116	114	112	114	112	111	110	109	108	100
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

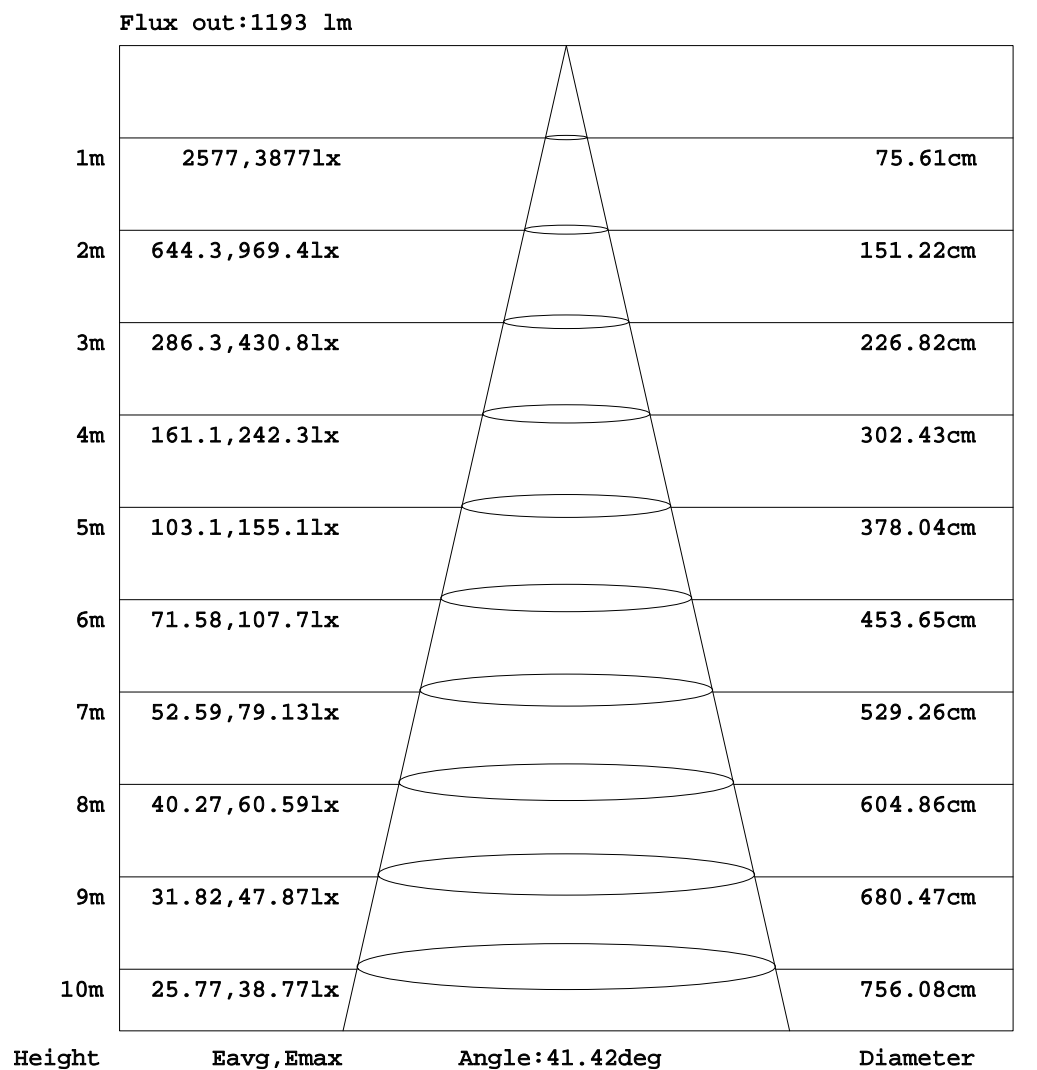


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

AAI Figure

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		



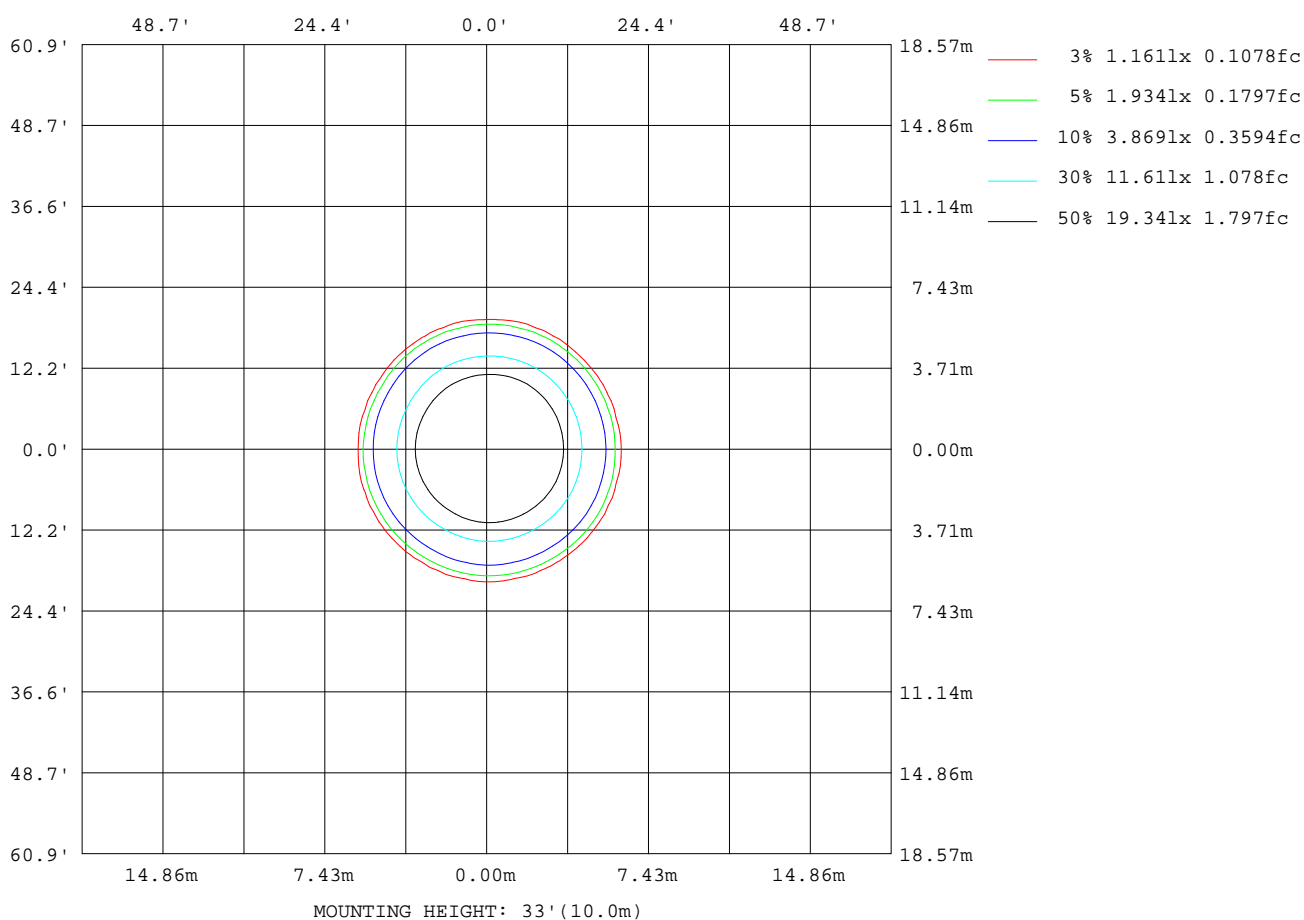
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:220.6V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1659.36x1 lm		
NAME: VF68-18W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: \varnothing 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

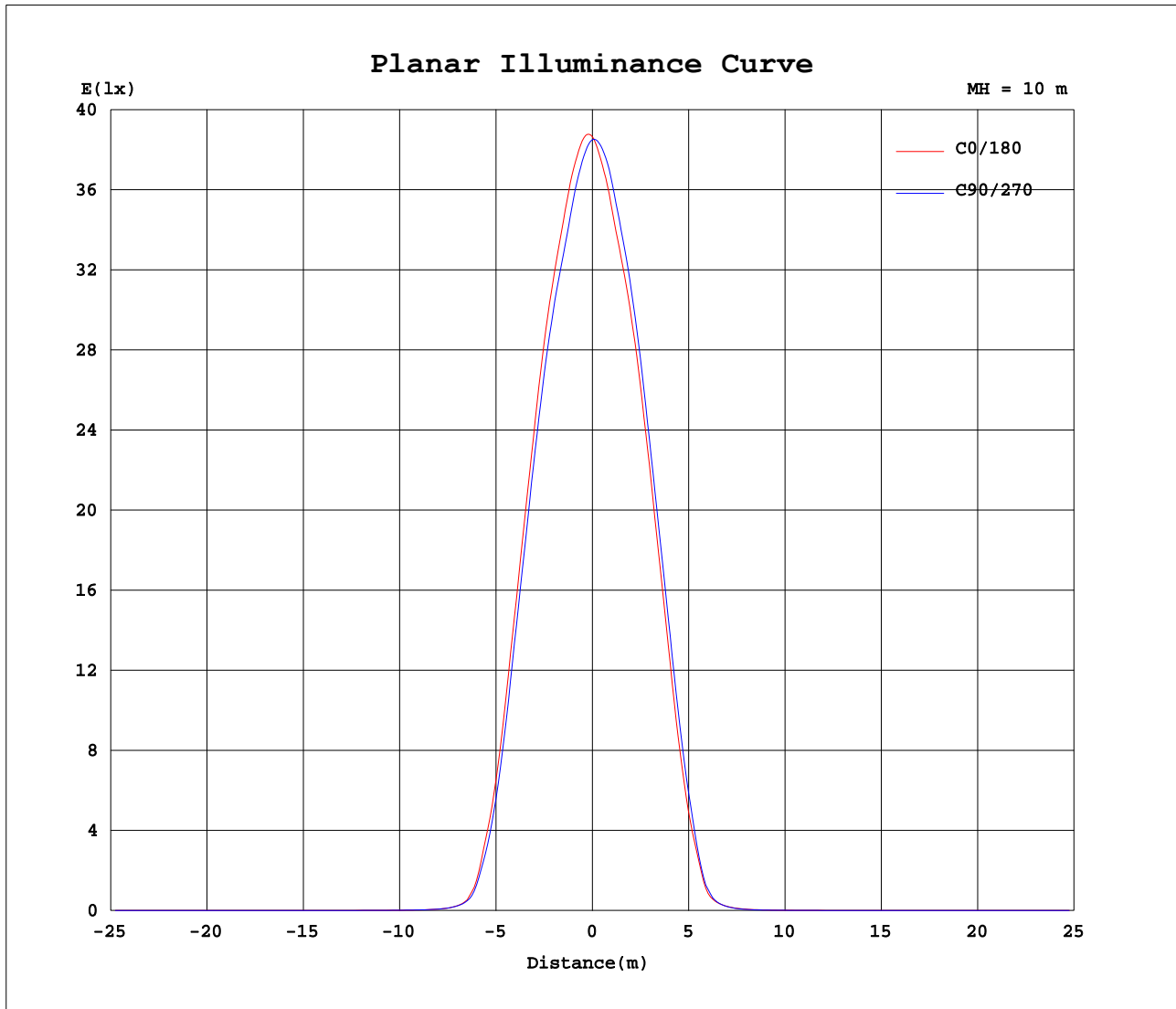
AvgL	cd/m2
L_0~180 (65) av	167
L_0~180 (75) av	106
L_0~180 (85) av	154
L_90~270 (65) av	181
L_90~270 (75) av	115
L_90~270 (85) av	168
L_45 (65) av	172
L_45 (75) av	118
L_45 (85) av	161

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Jasoan
Test Date: 2023-02-14

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 58%
Test Distance: 8.967m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

```