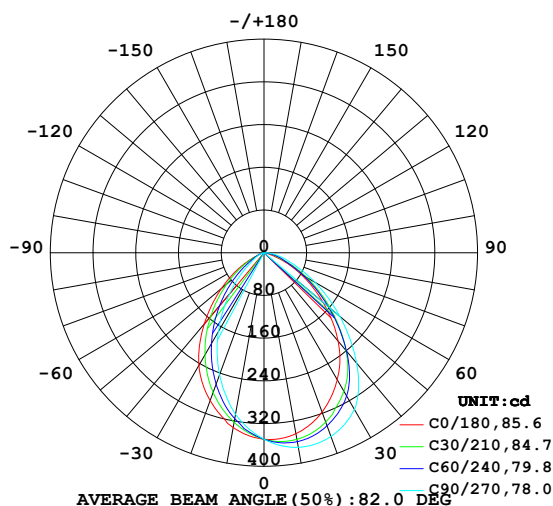


LUMINAIRE PHOTOMETRIC TEST REPORT

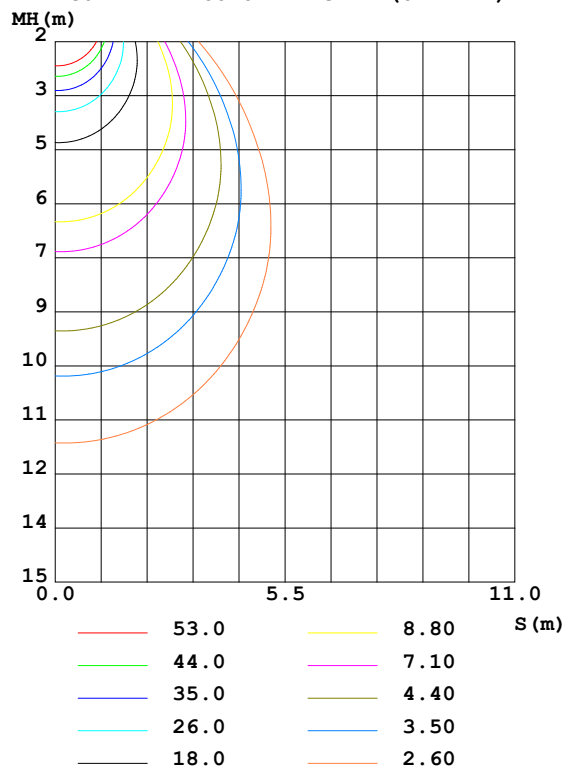
Test:U:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 41.88 lm/W			
MODEL	CITIZEN-2700K	I _{max} (cd)	373.9	S/MH (C0/180)	1.07
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.84
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	662.88	η UP,DN (C0-180)	0.0,65.1
NOMINAL FLUX (lm)	662.878	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,34.9
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	1.15

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:2023-02-11

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	344.0	356.9	369.9	368.2	332.4	319.0	307.3	308.6	0- 10	32.81	32.81	4.95,4.95
20	317.7	341.3	366.2	363.2	294.7	270.3	243.2	251.0	10- 20	91.27	124.1	18.7,18.7
30	274.4	304.4	338.6	334.3	243.8	209.0	170.9	184.0	20- 30	130.3	254.4	38.4,38.4
40	216.1	239.7	269.9	280.4	173.9	142.2	100.6	115.5	30- 40	141.6	396.0	59.7,59.7
50	144.3	159.8	185.4	198.1	104.1	79.51	43.83	56.10	40- 50	120.9	516.9	78,78
60	78.85	89.14	109.8	119.0	45.07	31.77	18.45	18.95	50- 60	81.62	598.5	90.3,90.3
70	25.13	36.42	52.13	55.11	9.366	9.701	7.302	6.142	60- 70	42.49	641.0	96.7,96.7
80	4.665	12.71	22.63	22.46	1.861	2.870	2.394	1.625	70- 80	17.09	658.1	99.3,99.3
90	0.6576	0.4286	0.3394	3.415	0.1294	0.4042	0.2792	0.2741	80- 90	4.822	662.9	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): 460.66 lm

%lum = 69.5%

%lamp = 69.5%

Conical surface Flux(120deg): 598.47 lm

%lum = 90.3%

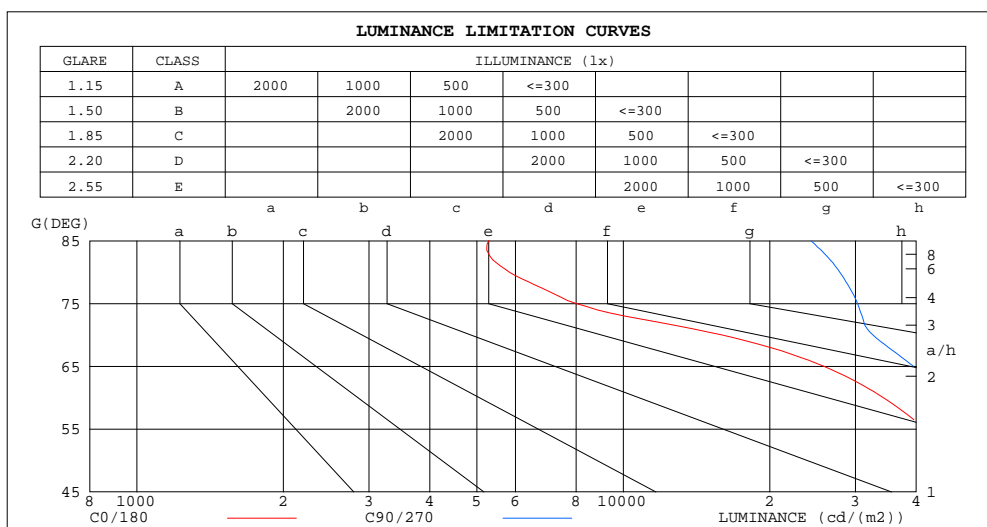
%lamp = 90.3%

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	5288	24316
80	5832	27864
75	8006	30312
70	15954	32587
65	25844	39512
60	34236	46937
55	41771	54314
50	48750	61674
45	55488	68833

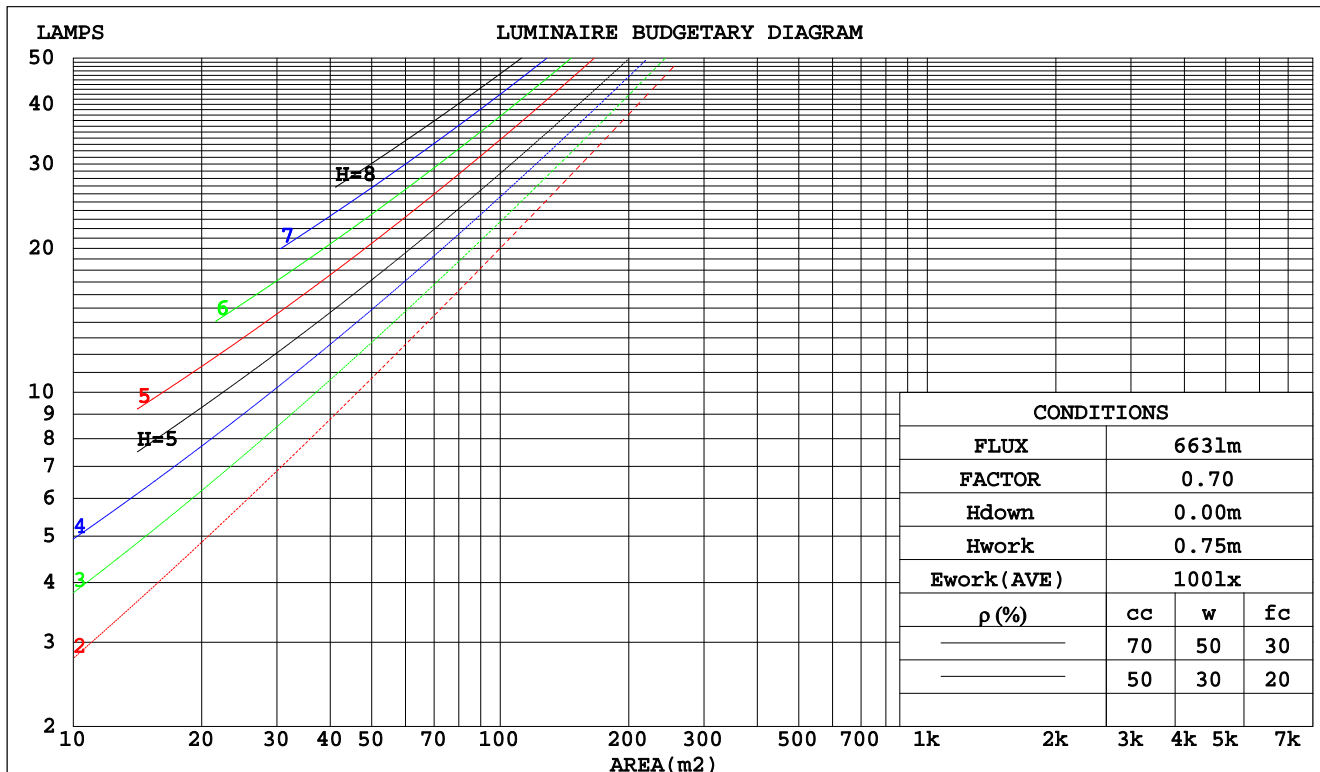
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*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	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	1.07	1.03	1.00	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.90	.85	.94	.89	.84	.90	.86	.82	.87	.84	.80	.84	.81	.79	.77
3.0	.86	.79	.73	.84	.78	.73	.81	.76	.71	.79	.74	.70	.76	.72	.69	.67
4.0	.77	.70	.64	.76	.69	.64	.74	.68	.63	.72	.66	.62	.69	.65	.61	.59
5.0	.70	.62	.56	.69	.62	.56	.67	.61	.56	.65	.59	.55	.63	.58	.54	.53
6.0	.64	.56	.50	.63	.55	.50	.61	.55	.50	.60	.54	.49	.58	.53	.49	.47
7.0	.59	.51	.45	.58	.50	.45	.56	.50	.45	.55	.49	.44	.54	.48	.44	.42
8.0	.54	.46	.41	.53	.46	.41	.52	.45	.40	.51	.45	.40	.50	.44	.40	.38
9.0	.50	.42	.37	.49	.42	.37	.48	.42	.37	.47	.41	.37	.46	.41	.37	.35
10.0	.46	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.34	.43	.38	.34	.32



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: \varnothing 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.251	.143	.045	.244	.139	.044	.231	.132	.042	.219	.126	.041	.208	.121	.039		
2.0	.242	.132	.041	.236	.130	.040	.224	.125	.039	.214	.120	.038	.204	.116	.036		
3.0	.228	.122	.036	.223	.120	.036	.213	.116	.035	.204	.112	.034	.196	.108	.034		
4.0	.215	.112	.033	.210	.110	.033	.202	.107	.032	.193	.104	.031	.186	.101	.031		
5.0	.202	.103	.030	.198	.101	.030	.190	.099	.029	.183	.096	.029	.176	.094	.028		
6.0	.190	.095	.027	.186	.094	.027	.179	.092	.027	.173	.090	.026	.167	.088	.026		
7.0	.178	.088	.025	.175	.087	.025	.169	.086	.025	.163	.084	.024	.158	.082	.024		
8.0	.168	.082	.023	.165	.081	.023	.160	.080	.023	.155	.078	.023	.150	.077	.022		
9.0	.159	.077	.021	.157	.076	.021	.152	.075	.021	.147	.074	.021	.143	.072	.021		
10.0	.151	.072	.020	.148	.072	.020	.144	.070	.020	.140	.069	.020	.136	.068	.020		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	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	.176	.157	.139	.151	.134	.120	.103	.092	.083	.059	.054	.048	.019	.017	.016	
2.0	.166	.132	.104	.142	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.156	.114	.080	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.148	.100	.063	.127	.087	.055	.088	.060	.039	.051	.035	.023	.016	.012	.008	
5.0	.141	.089	.051	.121	.077	.045	.083	.054	.032	.048	.032	.019	.016	.010	.006	
6.0	.134	.081	.043	.115	.070	.037	.080	.049	.026	.046	.029	.016	.015	.009	.005	
7.0	.128	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.116	.063	.027	.100	.055	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.111	.059	.024	.096	.051	.021	.066	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm										
NAME: VW68-13W-927-WW					TYPE:Downlight			SERIAL No.:		
SPEC.:2700K					DIM.: $\varnothing 77\text{mm} \times \text{H}100\text{mm}$					
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	27.7	29.0	27.9	29.2	29.4	28.2	29.6	28.5	29.8	30.0
3H	28.0	29.3	28.3	29.5	29.7	29.0	30.2	29.3	30.5	30.7
4H	28.0	29.2	28.3	29.4	29.7	29.3	30.5	29.6	30.7	31.0
6H	28.0	29.1	28.3	29.3	29.6	29.6	30.7	29.9	31.0	31.2
8H	28.0	29.0	28.3	29.3	29.6	29.7	30.7	30.0	31.0	31.3
12H	27.9	28.9	28.3	29.2	29.5	29.8	30.8	30.1	31.0	31.3
4H 2H	28.0	29.1	28.3	29.3	29.6	28.4	29.6	28.7	29.8	30.1
3H	28.5	29.5	28.8	29.8	30.1	29.3	30.3	29.7	30.6	30.9
4H	28.6	29.5	28.9	29.8	30.1	29.7	30.6	30.1	31.0	31.3
6H	28.6	29.4	29.0	29.7	30.1	30.1	30.9	30.5	31.2	31.6
8H	28.6	29.3	29.0	29.7	30.0	30.2	31.0	30.6	31.3	31.7
12H	28.5	29.2	29.0	29.6	30.0	30.3	31.0	30.8	31.4	31.8
8H 4H	28.6	29.4	29.0	29.7	30.1	29.8	30.5	30.2	30.9	31.2
6H	28.7	29.4	29.2	29.8	30.2	30.2	30.8	30.6	31.2	31.6
8H	28.8	29.3	29.2	29.7	30.2	30.4	30.9	30.8	31.3	31.8
12H	28.8	29.2	29.3	29.7	30.2	30.5	31.0	31.0	31.4	31.9
12H 4H	28.6	29.3	29.0	29.7	30.1	29.7	30.4	30.1	30.8	31.2
6H	28.8	29.3	29.2	29.7	30.2	30.2	30.7	30.6	31.1	31.6
8H	28.8	29.3	29.3	29.7	30.2	30.4	30.8	30.8	31.3	31.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.7					+ 0.3 / - 0.4				
1.5H	+ 0.2 / - 0.5					+ 0.3 / - 0.4				
2.0H	+ 0.8 / - 1.2					+ 0.9 / - 1.3				

CIE Pub.117, 662.9 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = -1.4$)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: $\varnothing 77\text{mm} \times H100\text{mm}$	
MFR.: NEKO LIGHTING AG		

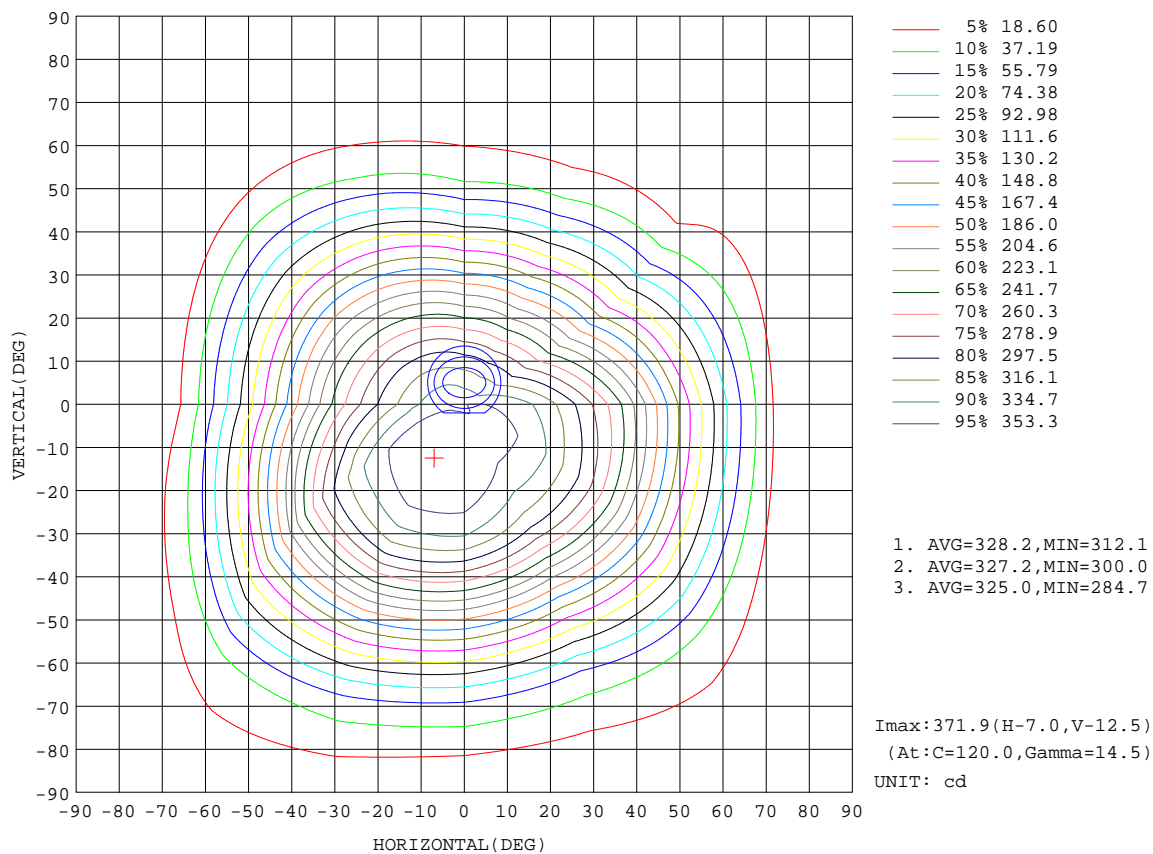
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	65	56	50	64	55	50	44
0.80	76	66	60	75	66	60	74	65	60	54
1.00	84	75	69	83	74	69	81	75	68	62
1.25	91	82	76	89	81	76	87	80	75	69
1.50	95	87	81	93	86	81	91	84	80	73
2.00	100	94	89	99	93	88	96	90	86	80
2.50	103	97	92	102	96	92	98	93	90	82
3.00	106	101	96	104	99	95	100	96	93	85
4.00	109	105	101	107	103	100	103	100	97	89
5.00	111	107	104	109	105	102	104	102	99	91
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:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		



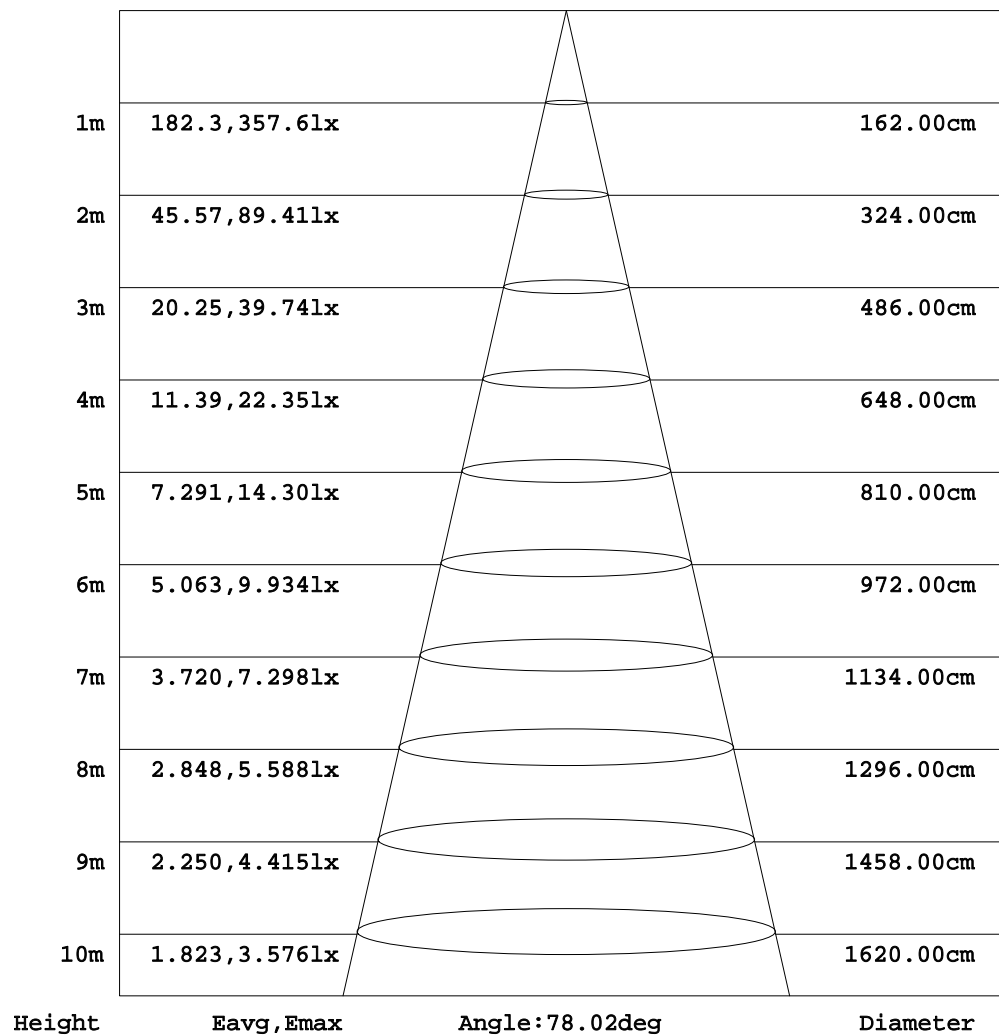
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: $\phi 77\text{mm} \times H100\text{mm}$	
MFR.: NEKO LIGHTING AG		

Flux out:389.1 lm



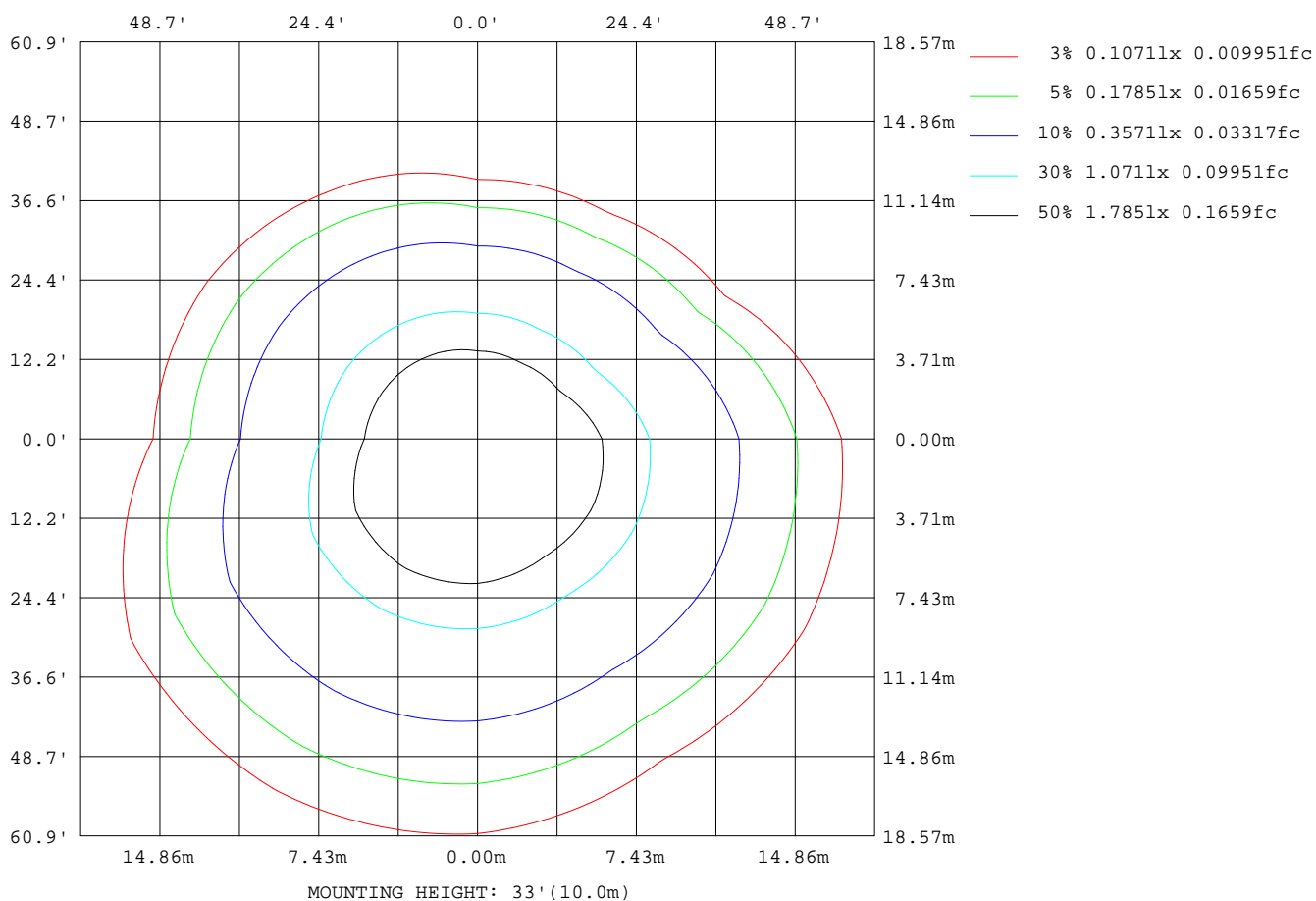
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	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:2023-02-11

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:220.9V I:0.1292A P:15.83W PF:0.5542 Freq:59.98Hz Lamp Flux:662.878x1 lm		
NAME: VW68-13W-927-WW	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

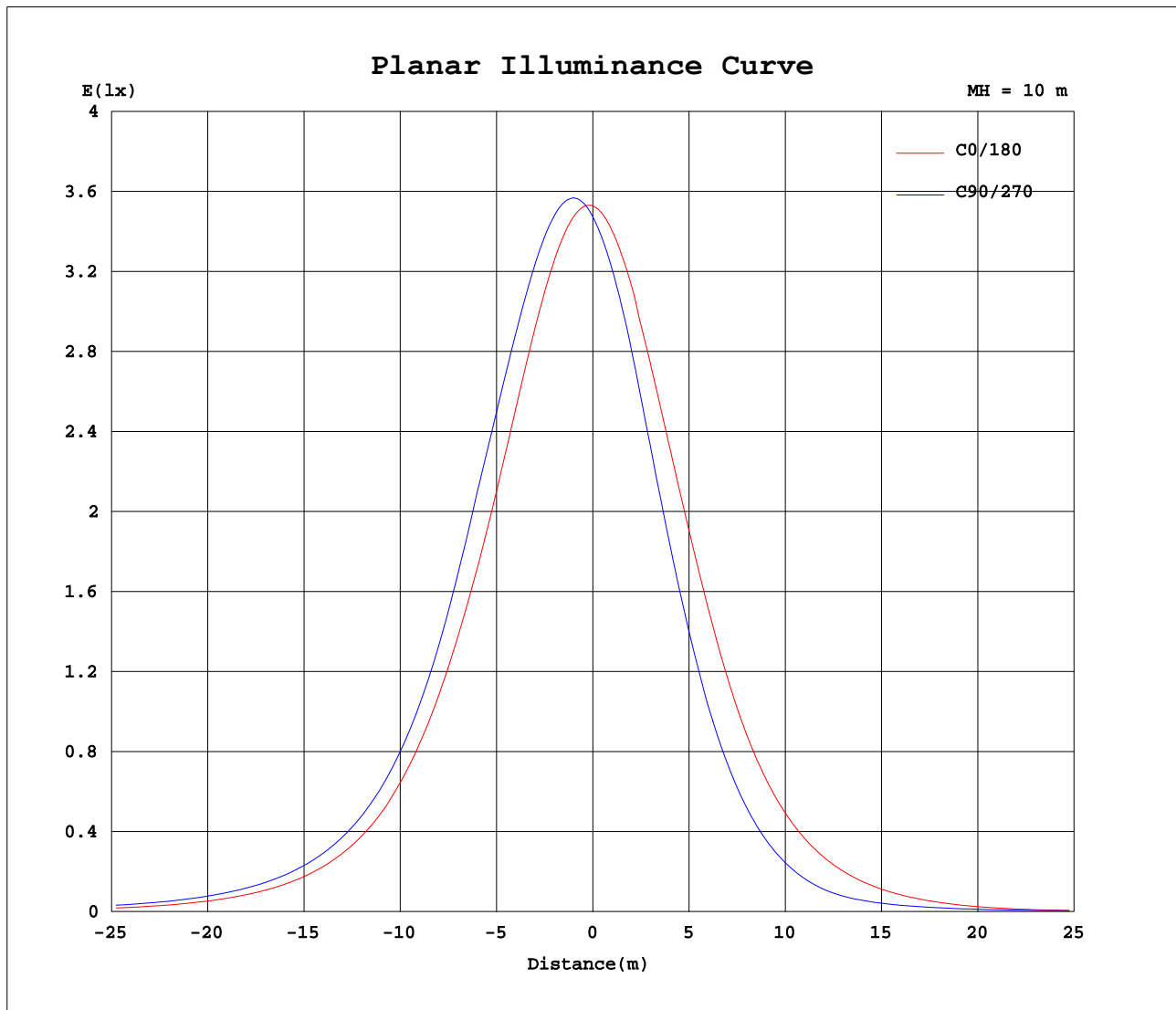
AvgL	cd/m2
L_0~180 (65) av	18180
L_0~180 (75) av	5856
L_0~180 (85) av	3212
L_90~270 (65) av	22872
L_90~270 (75) av	17035
L_90~270 (85) av	13631
L_45 (65) av	22088
L_45 (75) av	14059
L_45 (85) av	11447

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-11

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: 2023-02-11

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:

```