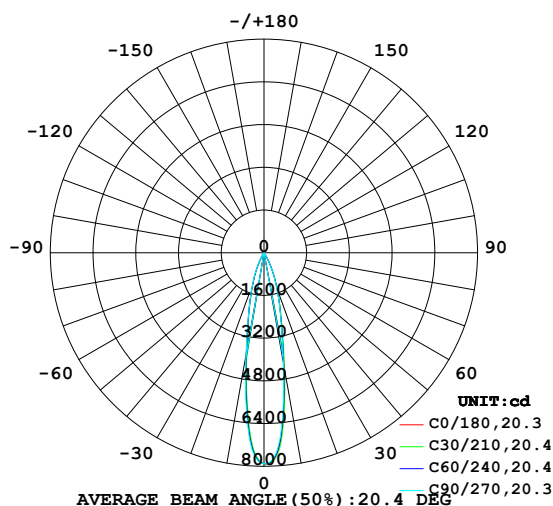


LUMINAIRE PHOTOMETRIC TEST REPORT

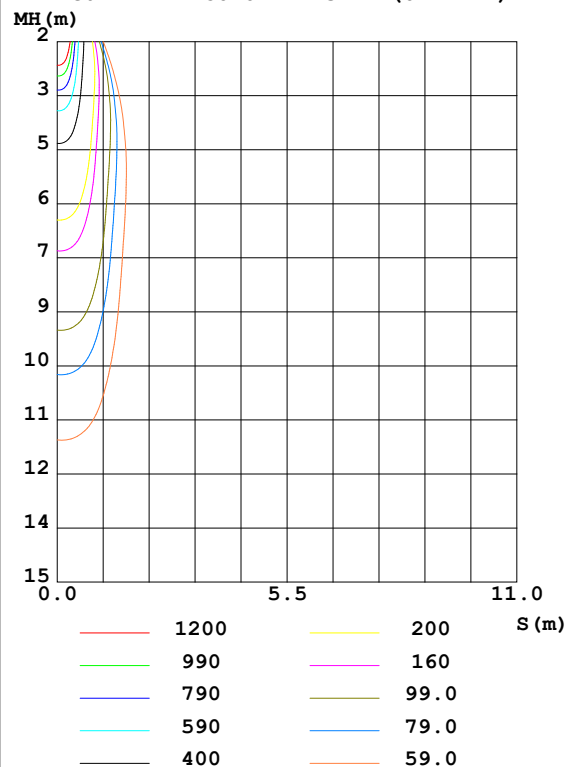
Test:U:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 75.86 lm/W			
MODEL	CITIZEN-2700K	I _{max} (cd)	7914	S/MH (C0/180)	0.33
NOMINAL POWER (W)	21	LOR (%)	100.0	S/MH (C90/270)	0.34
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1533.4	η UP, DN (C0-180)	0.0, 51.8
NOMINAL FLUX (lm)	1533.38	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 48.2
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	1.00

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	4307	4351	4188	3929	3803	3764	3884	4140	0- 10	555.2	555.2	36.2,36.2
20	1435	1448	1386	1287	1222	1199	1242	1350	10- 20	644.4	1200	78.2,78.2
30	246.9	249.0	211.4	157.6	129.3	133.8	162.4	209.4	20- 30	309.0	1509	98.4,98.4
40	6.914	6.983	6.649	6.333	6.327	6.594	6.736	6.410	30- 40	20.49	1529	99.7,99.7
50	1.967	1.939	1.839	1.797	1.733	1.785	1.800	1.777	40- 50	2.844	1532	99.9,99.9
60	0.5391	0.4898	0.4080	0.4607	0.4779	0.4761	0.4908	0.4741	50- 60	0.8812	1533	100,100
70	0.2013	0.1633	0.1469	0.1745	0.1684	0.1797	0.2017	0.1745	60- 70	0.2726	1533	100,100
80	0.1252	0.0899	0.0708	0.0981	0.0815	0.1007	0.1199	0.0954	70- 80	0.1402	1533	100,100
90	0.0435	0.0381	0.0327	0.0300	0.0490	0.0381	0.0436	0.0463	80- 90	0.0729	1533	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): 1531 lm

%lum = 99.8%

%lamp = 99.8%

Conical surface Flux(120deg): 1532.9 lm

%lum = 100.0%

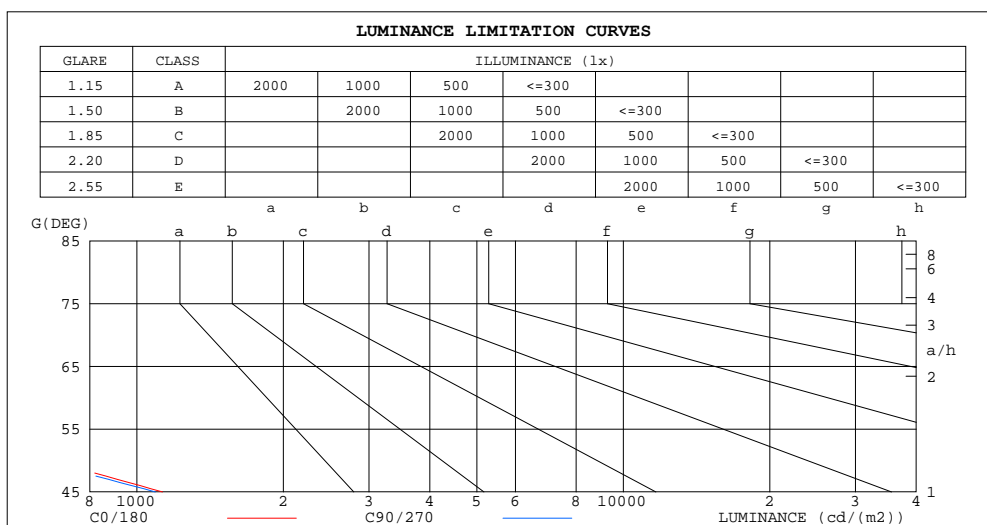
%lamp = 100.0%

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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	215	107
80	155	88
75	127	86
70	127	92
65	144	113
60	232	175
55	388	316
50	658	615
45	1129	1091

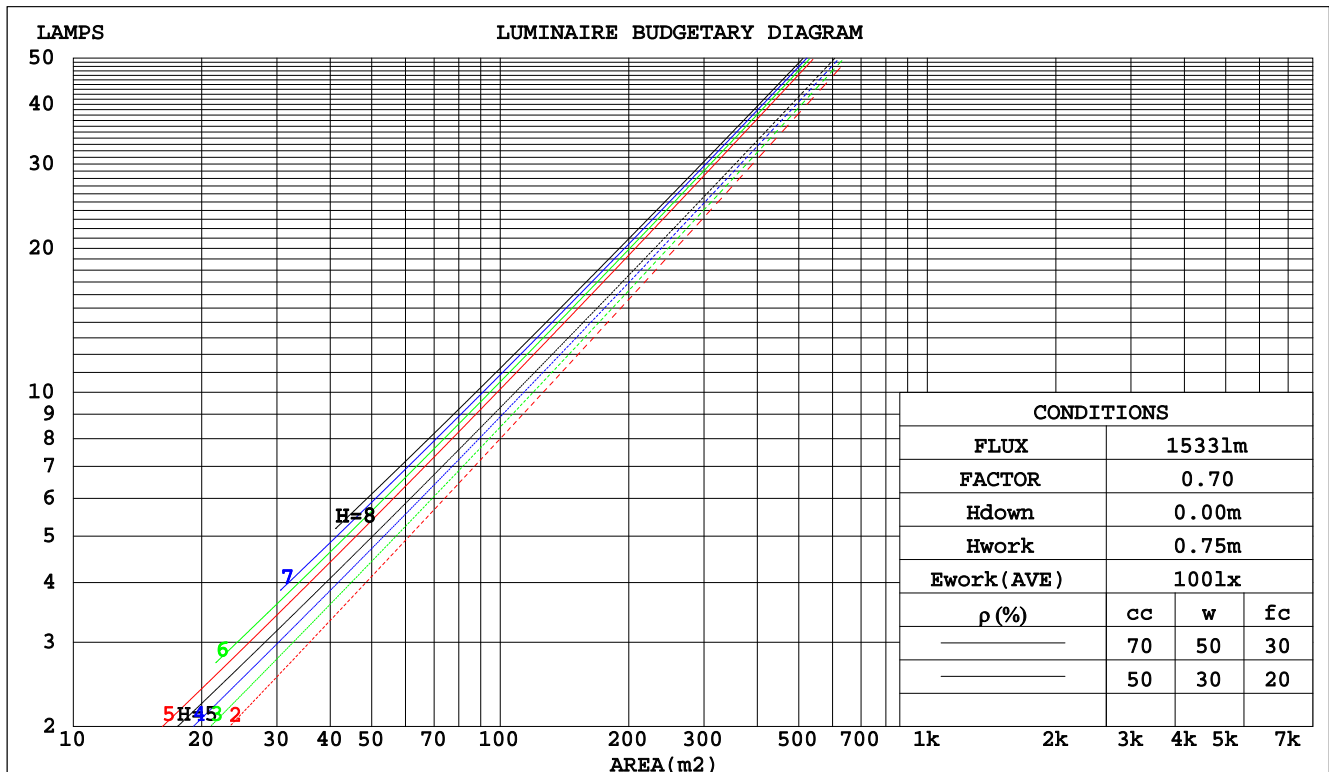
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	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	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	.00
1.0	1.13	1.11	1.09	1.11	1.09	1.08	1.07	1.06	1.04	1.03	1.02	1.01	.00	.99	.98	.97
2.0	1.08	1.05	1.02	1.06	1.04	1.01	1.03	1.01	.99	1.00	.99	.97	.98	.96	.95	.94
3.0	1.03	.00	.97	1.02	.99	.96	.00	.97	.95	.97	.95	.93	.95	.94	.92	.91
4.0	.99	.96	.93	.98	.95	.92	.96	.93	.91	.95	.92	.90	.93	.91	.89	.88
5.0	.96	.92	.89	.95	.91	.89	.93	.90	.88	.92	.89	.87	.91	.88	.86	.85
6.0	.93	.89	.86	.92	.88	.85	.91	.87	.85	.89	.87	.84	.88	.86	.84	.83
7.0	.90	.86	.83	.89	.85	.83	.88	.85	.82	.87	.84	.82	.86	.83	.81	.80
8.0	.87	.83	.80	.87	.83	.80	.86	.82	.80	.85	.82	.79	.84	.81	.79	.78
9.0	.85	.81	.78	.84	.80	.78	.83	.80	.78	.83	.80	.77	.82	.79	.77	.76
10.0	.82	.78	.76	.82	.78	.76	.81	.78	.75	.81	.77	.75	.80	.77	.75	.74



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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	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	.135	.077	.024	.128	.073	.023	.116	.066	.021	.104	.060	.019	.094	.054	.018	
2.0	.124	.068	.021	.119	.066	.020	.109	.061	.019	.099	.056	.017	.091	.051	.016	
3.0	.116	.062	.018	.111	.060	.018	.103	.056	.017	.095	.052	.016	.088	.049	.015	
4.0	.109	.056	.017	.105	.055	.016	.098	.052	.015	.091	.049	.015	.085	.046	.014	
5.0	.102	.052	.015	.099	.051	.015	.093	.048	.014	.087	.046	.014	.082	.044	.013	
6.0	.097	.049	.014	.094	.048	.014	.089	.046	.013	.084	.044	.013	.079	.042	.012	
7.0	.092	.046	.013	.090	.045	.013	.085	.043	.012	.081	.042	.012	.077	.040	.012	
8.0	.088	.043	.012	.086	.042	.012	.082	.041	.012	.078	.040	.011	.075	.038	.011	
9.0	.084	.041	.011	.082	.040	.011	.079	.039	.011	.075	.038	.011	.072	.037	.011	
10.0	.081	.039	.011	.079	.038	.011	.076	.037	.010	.073	.036	.010	.070	.035	.010	

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	.168	.158	.148	.144	.135	.128	.098	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.150	.133	.118	.128	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014	
3.0	.135	.113	.096	.116	.098	.083	.079	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.122	.098	.079	.105	.085	.069	.072	.059	.048	.042	.035	.029	.013	.011	.009	
5.0	.112	.086	.066	.096	.074	.058	.066	.052	.041	.038	.030	.024	.012	.010	.008	
6.0	.103	.075	.056	.088	.065	.049	.061	.046	.034	.035	.027	.020	.011	.009	.007	
7.0	.095	.067	.048	.082	.058	.042	.057	.041	.029	.033	.024	.018	.011	.008	.006	
8.0	.089	.061	.041	.076	.052	.036	.053	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.083	.055	.036	.072	.048	.031	.050	.033	.022	.029	.020	.013	.009	.006	.004	
10.0	.078	.050	.031	.067	.043	.027	.047	.031	.019	.027	.018	.012	.009	.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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm											
NAME: VF68-18W-927-18°					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	2H	0.1	0.8	0.3	0.9	1.0	-1.1	-0.5	-0.9	-0.3	-0.2
	3H	-0.0	0.6	0.2	0.8	0.9	-1.2	-0.6	-1.0	-0.5	-0.3
	4H	-0.1	0.5	0.2	0.7	0.9	-1.3	-0.7	-1.1	-0.5	-0.3
	6H	-0.2	0.4	0.1	0.6	0.8	-1.4	-0.9	-1.1	-0.6	-0.4
	8H	-0.2	0.3	0.1	0.6	0.8	-1.4	-0.9	-1.1	-0.7	-0.4
	12H	-0.2	0.3	0.1	0.5	0.8	-1.5	-1.0	-1.2	-0.7	-0.4
4H	2H	-0.1	0.5	0.2	0.7	0.9	-1.3	-0.7	-1.1	-0.5	-0.3
	3H	-0.3	0.2	0.0	0.5	0.8	-1.5	-1.0	-1.2	-0.7	-0.4
	4H	-0.3	0.1	-0.0	0.4	0.7	-1.5	-1.1	-1.2	-0.8	-0.5
	6H	-0.4	-0.0	-0.1	0.3	0.6	-1.6	-1.2	-1.3	-0.9	-0.6
	8H	-0.5	-0.1	-0.1	0.2	0.6	-1.7	-1.3	-1.3	-1.0	-0.6
	12H	-0.5	-0.2	-0.1	0.2	0.6	-1.7	-1.4	-1.3	-1.0	-0.6
8H	4H	-0.5	-0.1	-0.1	0.2	0.6	-1.7	-1.3	-1.3	-1.0	-0.6
	6H	-0.6	-0.3	-0.2	0.1	0.5	-1.8	-1.5	-1.4	-1.1	-0.7
	8H	-0.6	-0.4	-0.2	0.0	0.5	-1.8	-1.6	-1.4	-1.1	-0.7
	12H	-0.7	-0.4	-0.2	-0.0	0.5	-1.9	-1.6	-1.4	-1.2	-0.7
12H	4H	-0.6	-0.2	-0.2	0.2	0.5	-1.8	-1.4	-1.4	-1.0	-0.7
	6H	-0.7	-0.4	-0.2	0.0	0.5	-1.8	-1.6	-1.4	-1.2	-0.7
	8H	-0.7	-0.5	-0.2	-0.0	0.4	-1.9	-1.7	-1.4	-1.2	-0.7
Variations with the observer position at spacings:											
S = 1.0H		+ 2.6 / - 5.7				+ 2.5 / - 6.1					
1.5H		+ 4.1 / - 4.8				+ 4.0 / - 4.8					
2.0H		+ 4.6 / - 4.7				+ 4.7 / - 4.3					

CIE Pub.117, 1533 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 1.5$)

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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

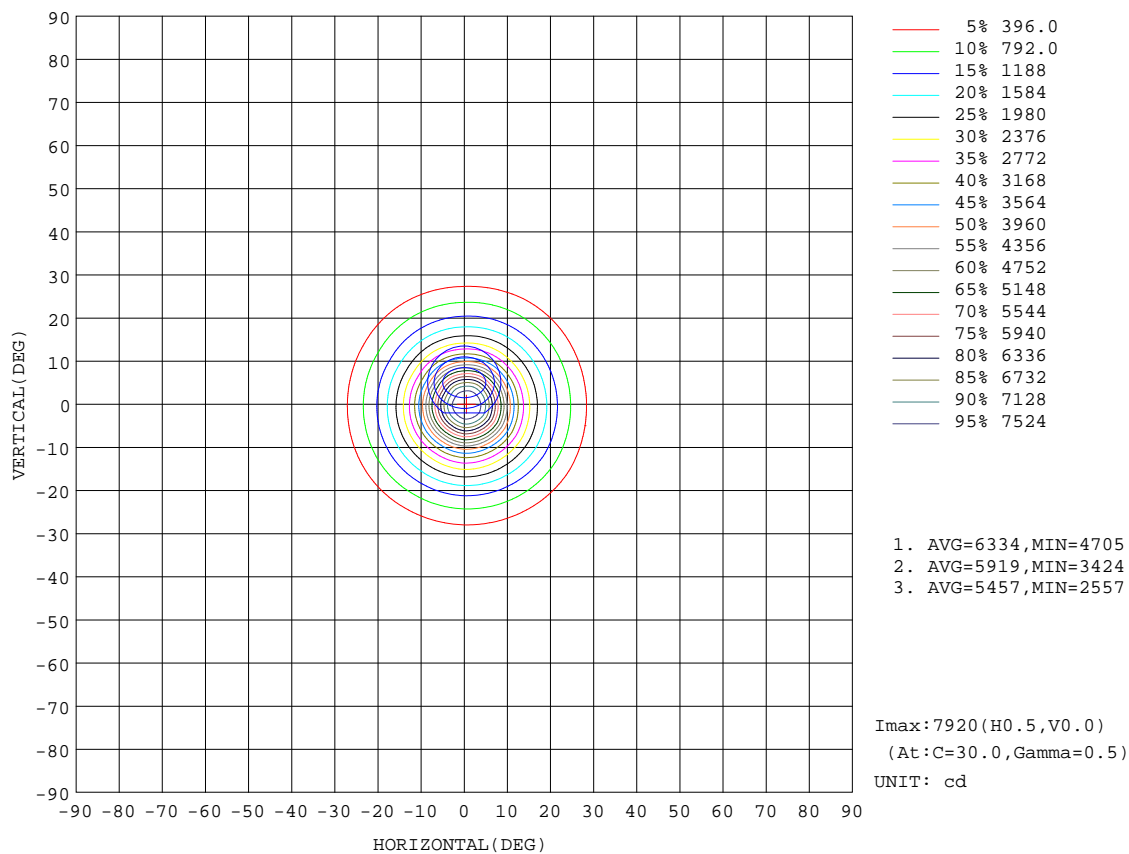
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	86	82	91	86	82	90	85	82	79
0.80	98	93	90	98	93	90	97	92	89	86
1.00	102	97	94	101	97	94	100	96	93	90
1.25	105	101	98	104	100	97	103	99	97	93
1.50	108	104	101	107	103	100	105	102	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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		



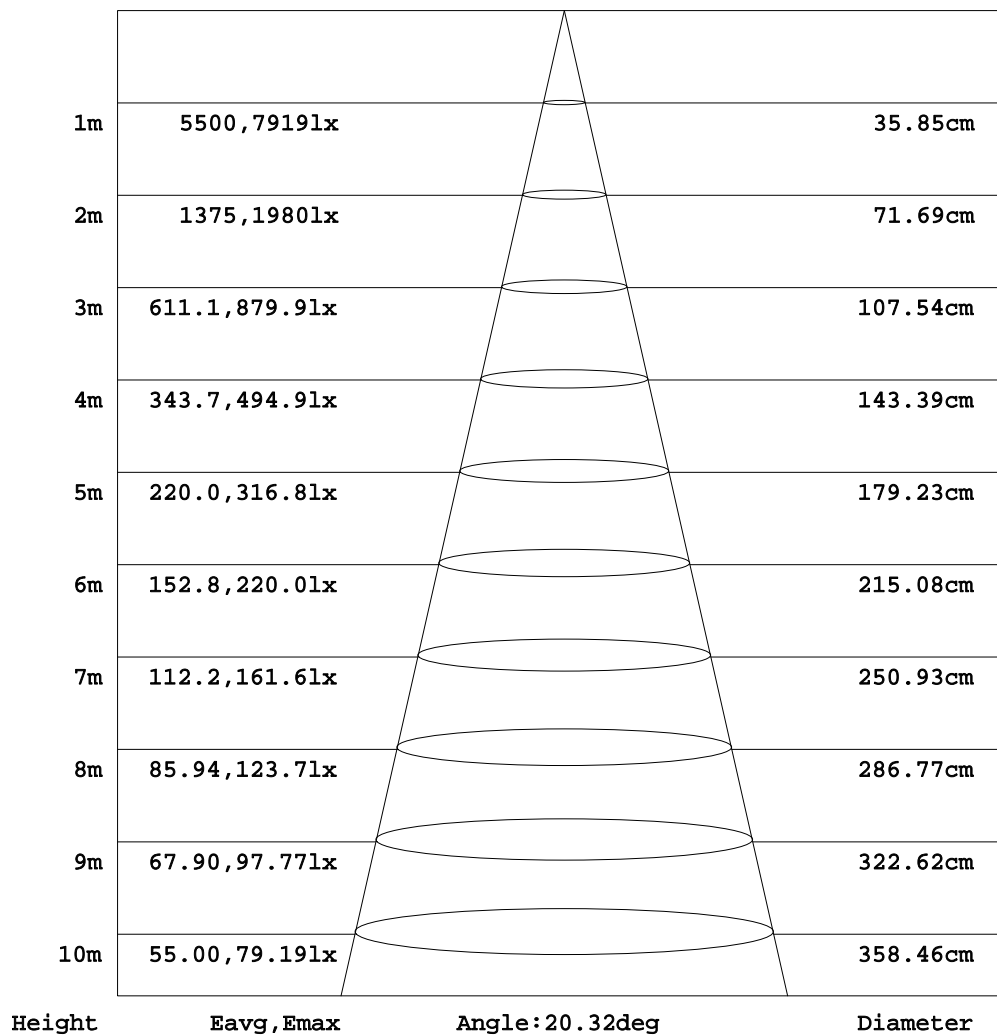
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jasoan
Test Date:2023-02-14

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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

Flux out:593.5 lm



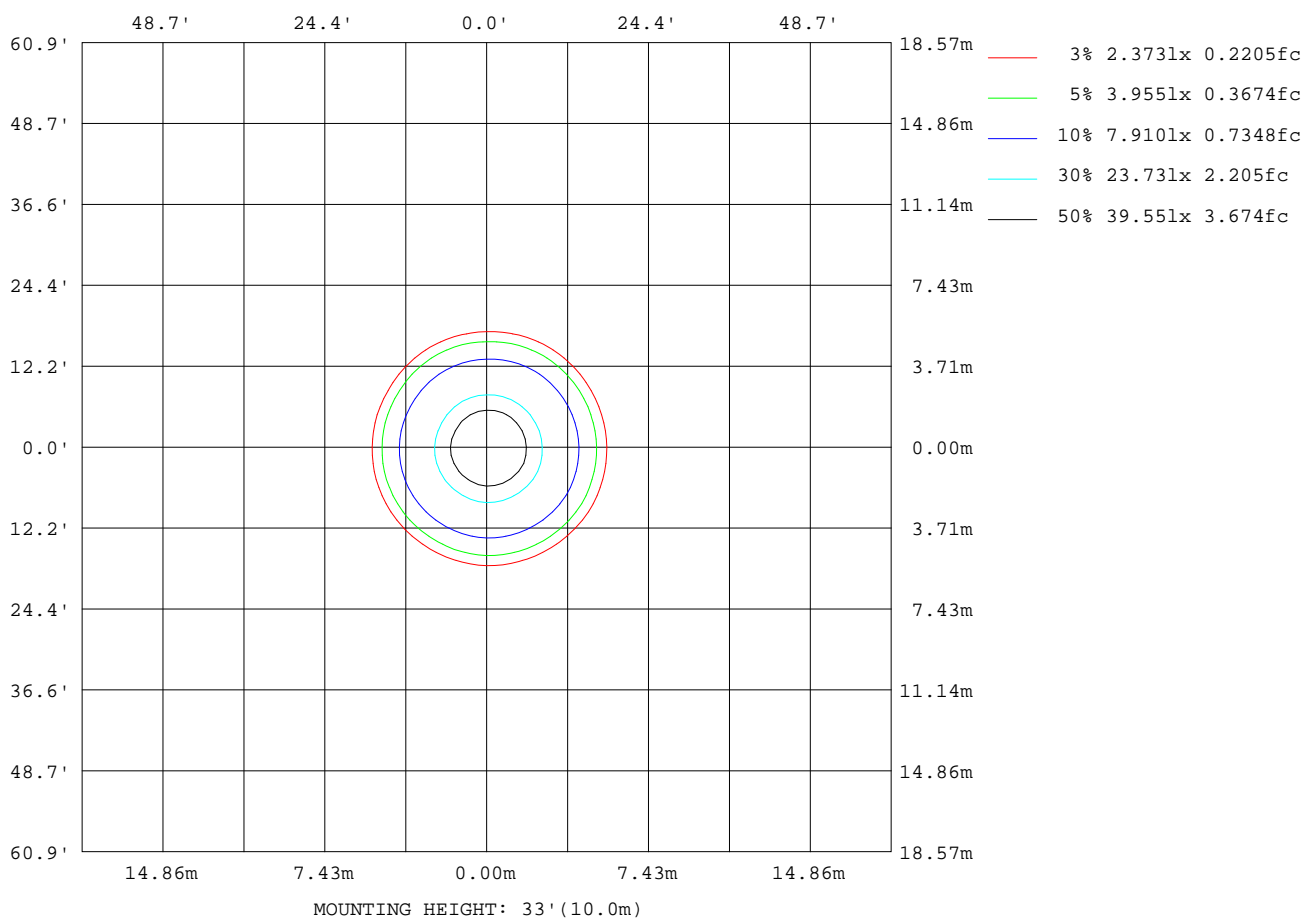
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	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:220.3V I:0.0968A P:20.21W PF:0.9461 Freq:49.90Hz Lamp Flux:1533.38x1 lm		
NAME: VF68-18W-927-18°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: ϕ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

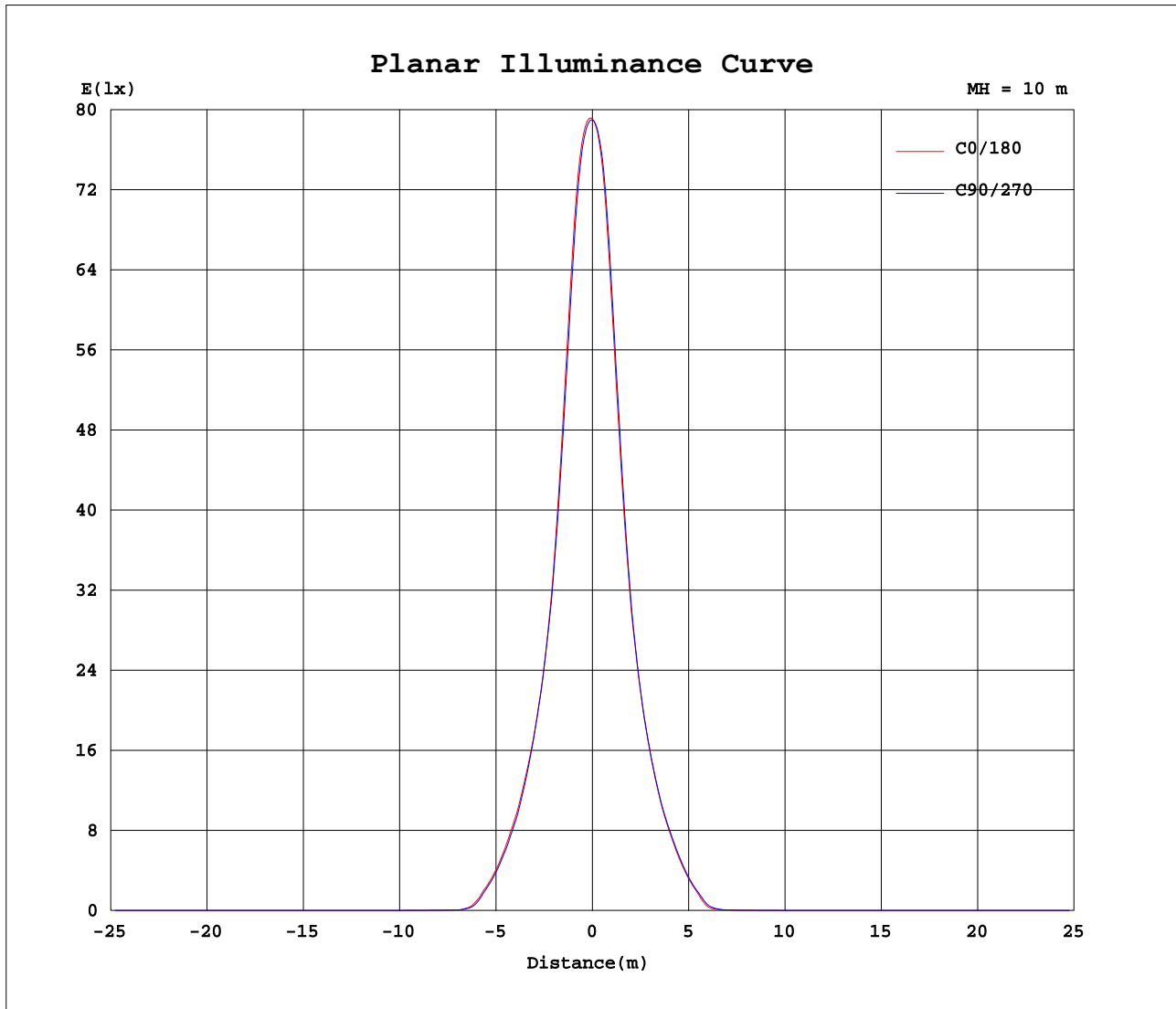
AvgL	cd/m2
L_0~180 (65) av	134
L_0~180 (75) av	113
L_0~180 (85) av	188
L_90~270 (65) av	126
L_90~270 (75) av	106
L_90~270 (85) av	154
L_45 (65) av	128
L_45 (75) av	107
L_45 (85) av	147

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:

```