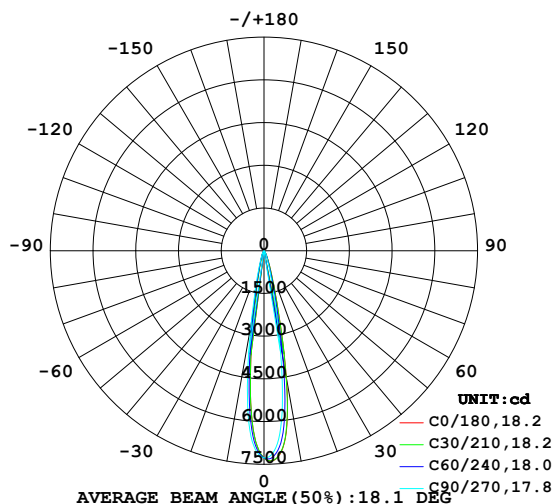


**LUMINAIRE PHOTOMETRIC TEST REPORT**

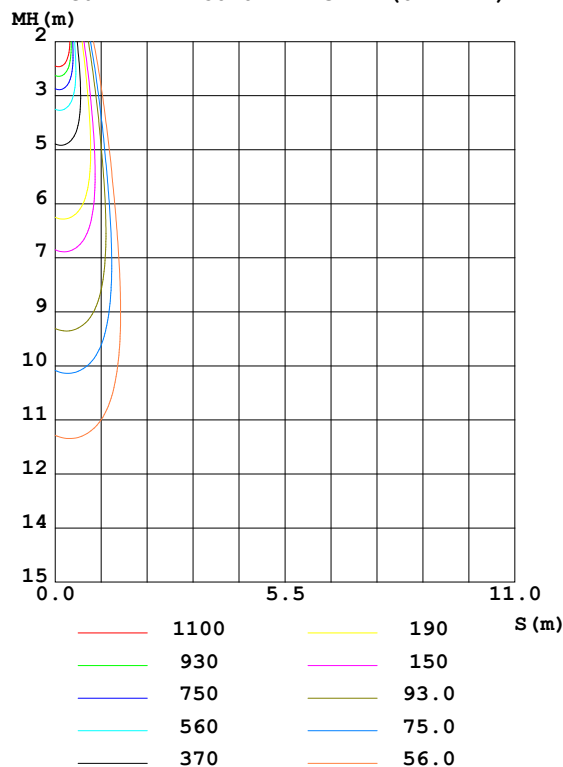
Test:U:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing$ 57mm*H92mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 66.61 lm/W
MODEL	CITIZEN-3000K	I <sub>max</sub> (cd)	7383	S/MH (C0/180)	0.25	
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.28	
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	974.98	$\eta$ UP, DN (C0-180)	0.0, 54.0	
NOMINAL FLUX (lm)	974.984	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 46.0	
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE (V)	220	$\eta$ 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:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	4546	4153	3128	2134	1849	2029	2608	3825	0- 10	486.2	486.2	49.9,49.9
20	593.4	534.8	402.5	301.5	266.9	285.1	348.1	482.2	10- 20	310.0	796.2	81.7,81.7
30	157.7	148.4	125.1	100.9	91.52	95.45	112.6	138.3	20- 30	100.8	896.9	92,92
40	56.22	53.87	46.73	38.64	36.36	38.03	43.09	50.85	30- 40	47.42	944.4	96.9,96.9
50	20.07	18.90	15.94	12.36	11.76	12.88	15.09	18.45	40- 50	22.06	966.4	99.1,99.1
60	4.838	4.336	2.963	2.172	1.866	2.081	2.990	4.277	50- 60	7.439	973.9	99.9,99.9
70	0.0594	0.0488	0.0383	0.0467	0.0323	0.0407	0.0547	0.0440	60- 70	1.031	974.9	100,100
80	0.0484	0.0434	0.0383	0.0412	0.0323	0.0352	0.0383	0.0357	70- 80	0.0438	974.9	100,100
90	0.0376	0.0380	0.0383	0.0385	0.0323	0.0325	0.0328	0.0330	80- 90	0.0403	975.0	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): 957.74 lm

%lum = 98.2%

%lamp = 98.2%

Conical surface Flux(120deg): 973.87 lm

%lum = 99.9%

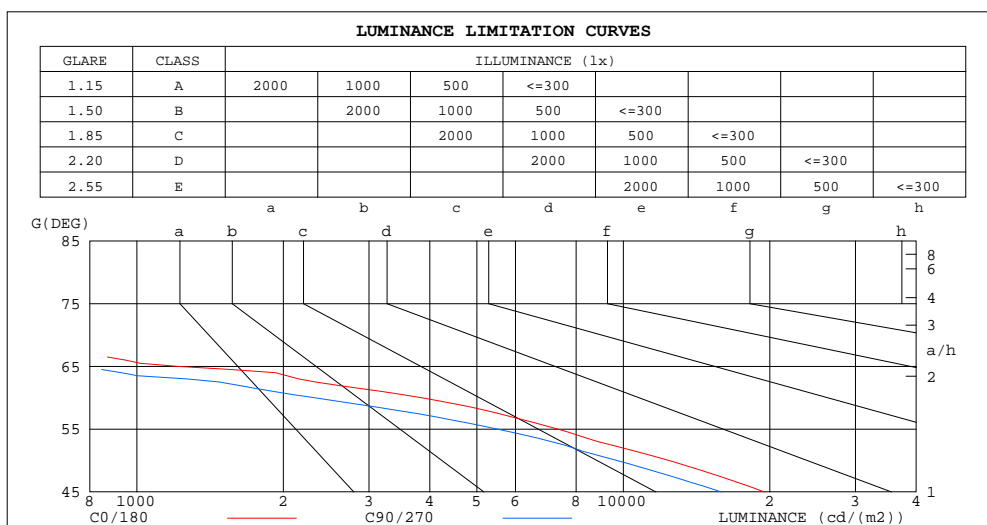
%lamp = 99.9%

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing 57\text{mm} \times H92\text{mm}$	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	196	172
80	111	86
75	83	58
70	69	44
65	1207	740
60	3844	2315
55	7328	5501
50	12403	9688
45	19477	15883

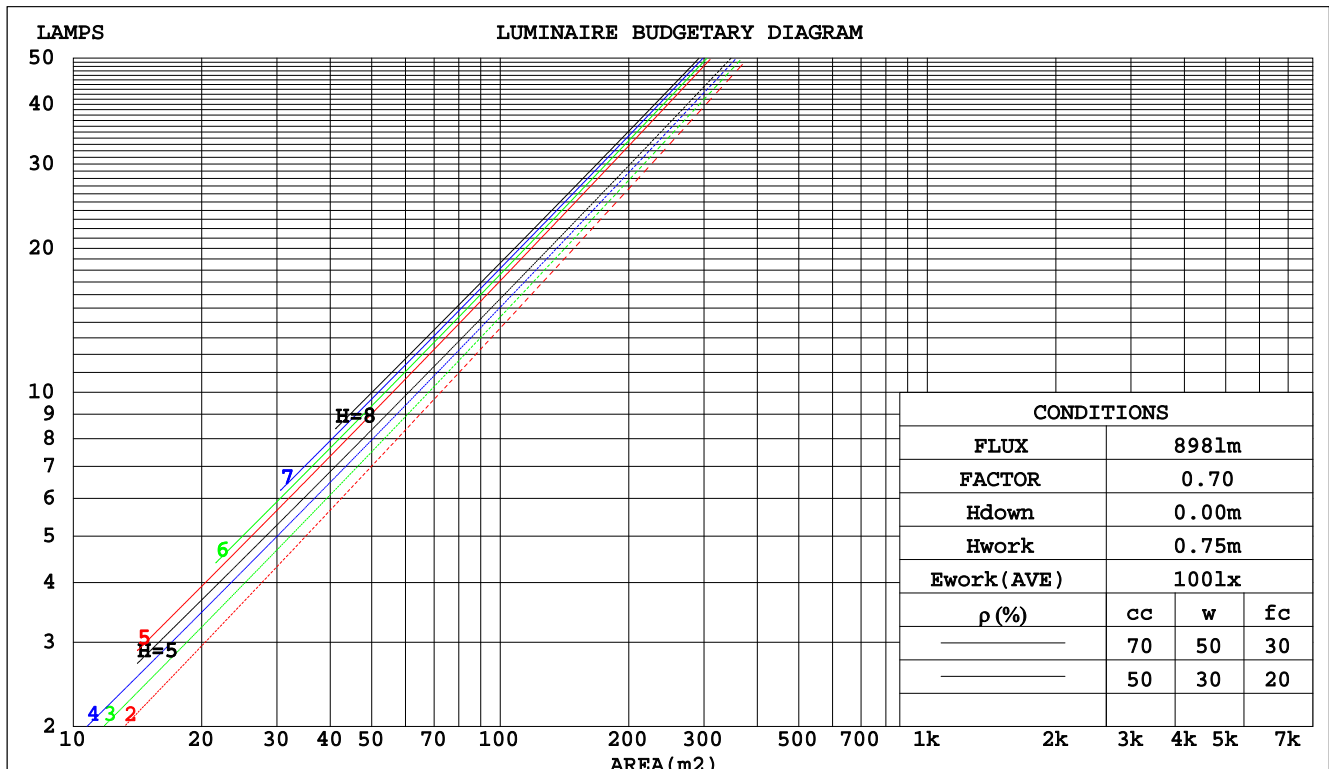
C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing 57\text{mm} \times \text{H}92\text{mm}$	
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	1.13	1.11	1.10	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.00	.99	.99	.97
2.0	1.08	1.05	1.03	1.07	1.04	1.02	1.04	1.02	.00	1.01	.99	.98	.98	.97	.96	.94
3.0	1.04	1.01	.98	1.03	.00	.97	1.00	.98	.96	.98	.96	.94	.96	.94	.93	.92
4.0	1.00	.97	.94	.99	.96	.93	.97	.94	.92	.96	.93	.91	.94	.92	.90	.89
5.0	.97	.93	.90	.96	.93	.90	.95	.92	.89	.93	.91	.89	.92	.90	.88	.87
6.0	.94	.90	.88	.94	.90	.87	.92	.89	.87	.91	.88	.86	.90	.88	.86	.85
7.0	.92	.88	.85	.91	.87	.85	.90	.87	.84	.89	.86	.84	.88	.86	.84	.83
8.0	.89	.85	.83	.89	.85	.83	.88	.85	.82	.87	.84	.82	.86	.84	.82	.81
9.0	.87	.83	.81	.87	.83	.81	.86	.83	.81	.85	.82	.80	.85	.82	.80	.79
10.0	.85	.82	.79	.85	.81	.79	.84	.81	.79	.84	.81	.79	.83	.80	.79	.78



C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing$ 57mm*H92mm	
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	.130	.074	.023	.124	.070	.022	.111	.064	.020	.100	.058	.018	.089	.052	.017	
2.0	.120	.066	.020	.115	.063	.020	.105	.058	.018	.096	.054	.017	.087	.049	.015	
3.0	.112	.060	.018	.107	.057	.017	.099	.054	.016	.091	.050	.015	.084	.046	.014	
4.0	.104	.054	.016	.101	.053	.016	.094	.050	.015	.087	.047	.014	.081	.044	.013	
5.0	.098	.050	.014	.095	.049	.014	.089	.046	.014	.083	.044	.013	.078	.042	.012	
6.0	.092	.046	.013	.089	.045	.013	.084	.043	.013	.079	.041	.012	.075	.039	.012	
7.0	.087	.043	.012	.085	.042	.012	.080	.041	.012	.076	.039	.011	.072	.037	.011	
8.0	.083	.040	.011	.080	.040	.011	.077	.038	.011	.073	.037	.011	.070	.036	.010	
9.0	.078	.038	.011	.077	.037	.010	.073	.036	.010	.070	.035	.010	.067	.034	.010	
10.0	.075	.036	.010	.073	.035	.010	.070	.034	.010	.067	.033	.010	.065	.033	.009	

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	.149	.144	.135	.128	.098	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.149	.133	.119	.128	.114	.103	.088	.079	.072	.051	.046	.042	.016	.015	.014	
3.0	.134	.113	.097	.115	.098	.084	.079	.068	.059	.046	.040	.035	.015	.013	.011	
4.0	.121	.098	.080	.104	.084	.069	.071	.059	.049	.041	.034	.029	.013	.011	.010	
5.0	.110	.085	.067	.095	.074	.058	.065	.052	.041	.038	.030	.024	.012	.010	.008	
6.0	.101	.075	.057	.087	.065	.049	.060	.046	.035	.035	.027	.021	.011	.009	.007	
7.0	.093	.067	.048	.080	.058	.042	.055	.041	.030	.032	.024	.018	.010	.008	.006	
8.0	.086	.060	.042	.074	.052	.036	.051	.037	.026	.030	.022	.015	.010	.007	.005	
9.0	.081	.054	.036	.069	.047	.032	.048	.033	.023	.028	.020	.013	.009	.006	.004	
10.0	.075	.049	.032	.065	.043	.028	.045	.030	.020	.026	.018	.012	.009	.006	.004	

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm										
NAME: MINUX 57-13W-930-18D					TYPE:Downlight			SERIAL No.:		
SPEC.:3000K					DIM.: $\varnothing 57\text{mm} \times \text{H}92\text{mm}$					
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	14.3	14.9	14.5	15.1	15.2	13.5	14.1	13.6	14.2	14.3
3H	14.2	14.8	14.4	14.9	15.1	13.3	13.9	13.5	14.1	14.2
4H	14.1	14.7	14.4	14.9	15.1	13.2	13.8	13.5	14.0	14.2
6H	14.0	14.5	14.3	14.8	15.0	13.1	13.7	13.4	13.9	14.1
8H	14.0	14.5	14.3	14.7	15.0	13.1	13.6	13.4	13.8	14.1
12H	13.9	14.4	14.2	14.7	14.9	13.1	13.5	13.4	13.8	14.1
4H 2H	14.2	14.7	14.4	14.9	15.1	13.3	13.8	13.6	14.0	14.3
3H	14.0	14.5	14.3	14.7	15.0	13.1	13.6	13.4	13.9	14.1
4H	13.9	14.3	14.2	14.6	14.9	13.0	13.5	13.4	13.8	14.1
6H	13.8	14.2	14.2	14.5	14.9	12.9	13.3	13.3	13.6	14.0
8H	13.7	14.1	14.1	14.5	14.8	12.9	13.2	13.3	13.6	13.9
12H	13.7	14.0	14.1	14.4	14.8	12.8	13.2	13.2	13.5	13.9
8H 4H	13.7	14.1	14.1	14.5	14.8	12.9	13.2	13.3	13.6	13.9
6H	13.6	13.9	14.0	14.3	14.7	12.8	13.1	13.2	13.5	13.9
8H	13.6	13.8	14.0	14.2	14.7	12.7	13.0	13.1	13.4	13.8
12H	13.5	13.7	14.0	14.2	14.6	12.6	12.9	13.1	13.3	13.8
12H 4H	13.7	14.0	14.1	14.4	14.8	12.8	13.2	13.2	13.5	13.9
6H	13.6	13.8	14.0	14.2	14.7	12.7	13.0	13.1	13.4	13.8
8H	13.5	13.7	14.0	14.2	14.6	12.6	12.9	13.1	13.3	13.8
Variations with the observer position at spacings:										
S = 1.0H	+ 2.5 / - 6.2					+ 2.4 / - 7.3				
1.5H	+ 3.5 / - 4.3					+ 3.0 / - 4.3				
2.0H	+ 4.8 / - 8.7					+ 4.8 / -10.3				

CIE Pub.117, 975.0 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = -0.1$ )

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing 57\text{mm} \times H92\text{mm}$	
MFR.: NEKO LIGHTING AG		

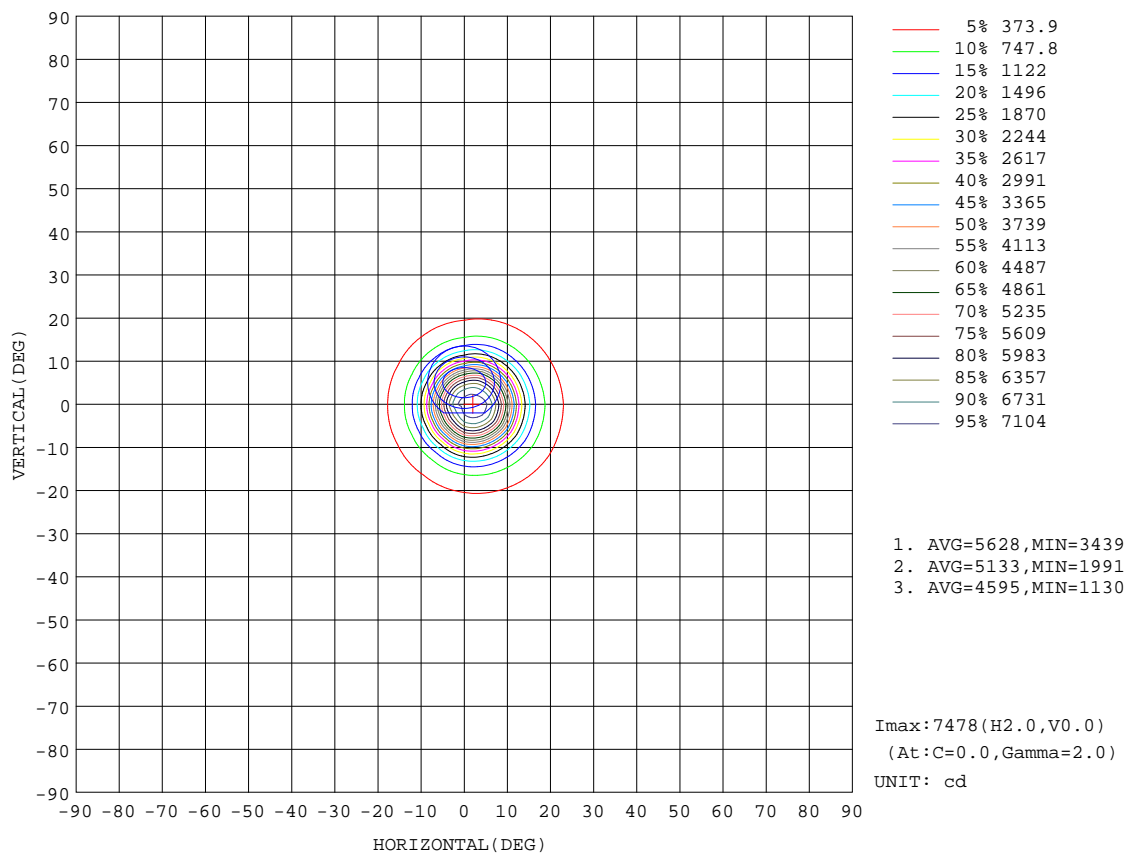
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	80	89	83	80	88	83	80	76
0.80	97	91	88	96	91	88	95	90	87	84
1.00	101	96	92	100	95	92	98	95	91	88
1.25	105	100	97	104	99	96	102	98	95	91
1.50	107	103	100	106	102	99	104	100	98	94
2.00	109	106	103	108	105	102	105	103	100	95
2.50	111	107	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	106	107	105	103	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	115	113	112	113	112	110	109	108	107	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:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 57mm*H92mm	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

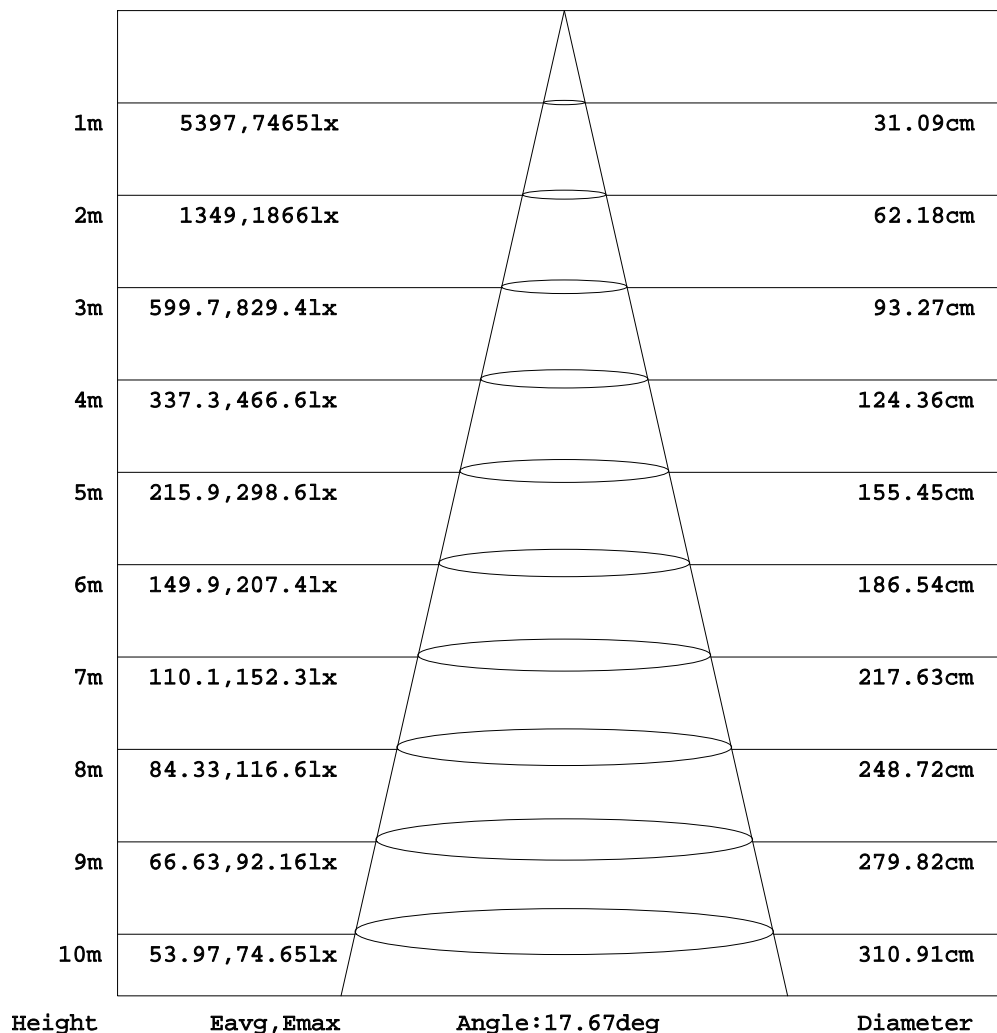
$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:58%  
Test Distance:8.967m [K=1.0000]  
Remarks:



**AAI Figure**

Test:U:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing 57\text{mm} \times \text{H}92\text{mm}$	
MFR.: NEKO LIGHTING AG		

Flux out:425.3 lm



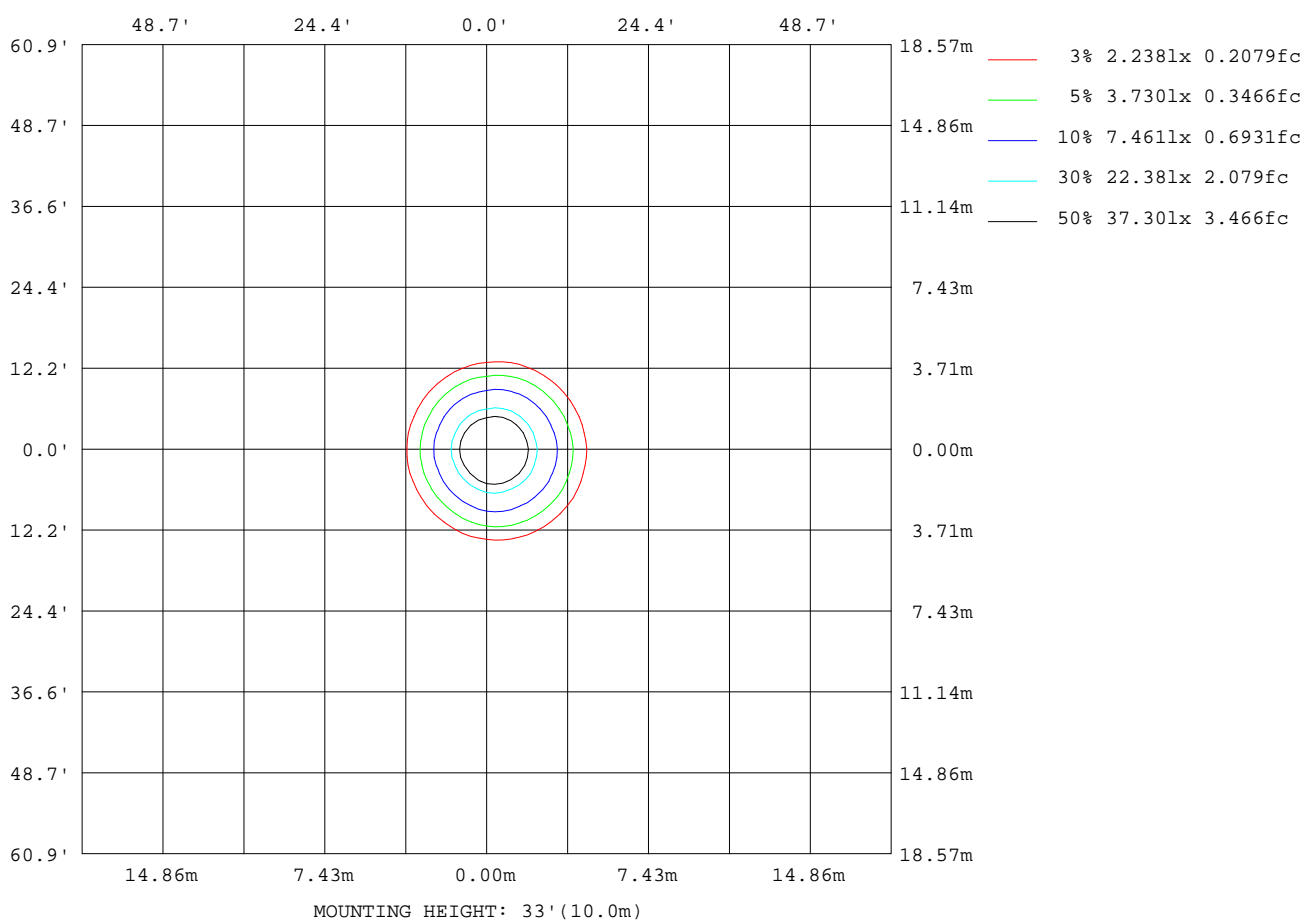
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing 57\text{mm} \times H92\text{mm}$	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:222.1V I:0.0684A P:14.64W PF:0.9631 Freq:50.08Hz Lamp Flux:974.984x1 lm		
NAME: MINUX 57-13W-930-18D	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 57mm*H92mm	
MFR.: NEKO LIGHTING AG		

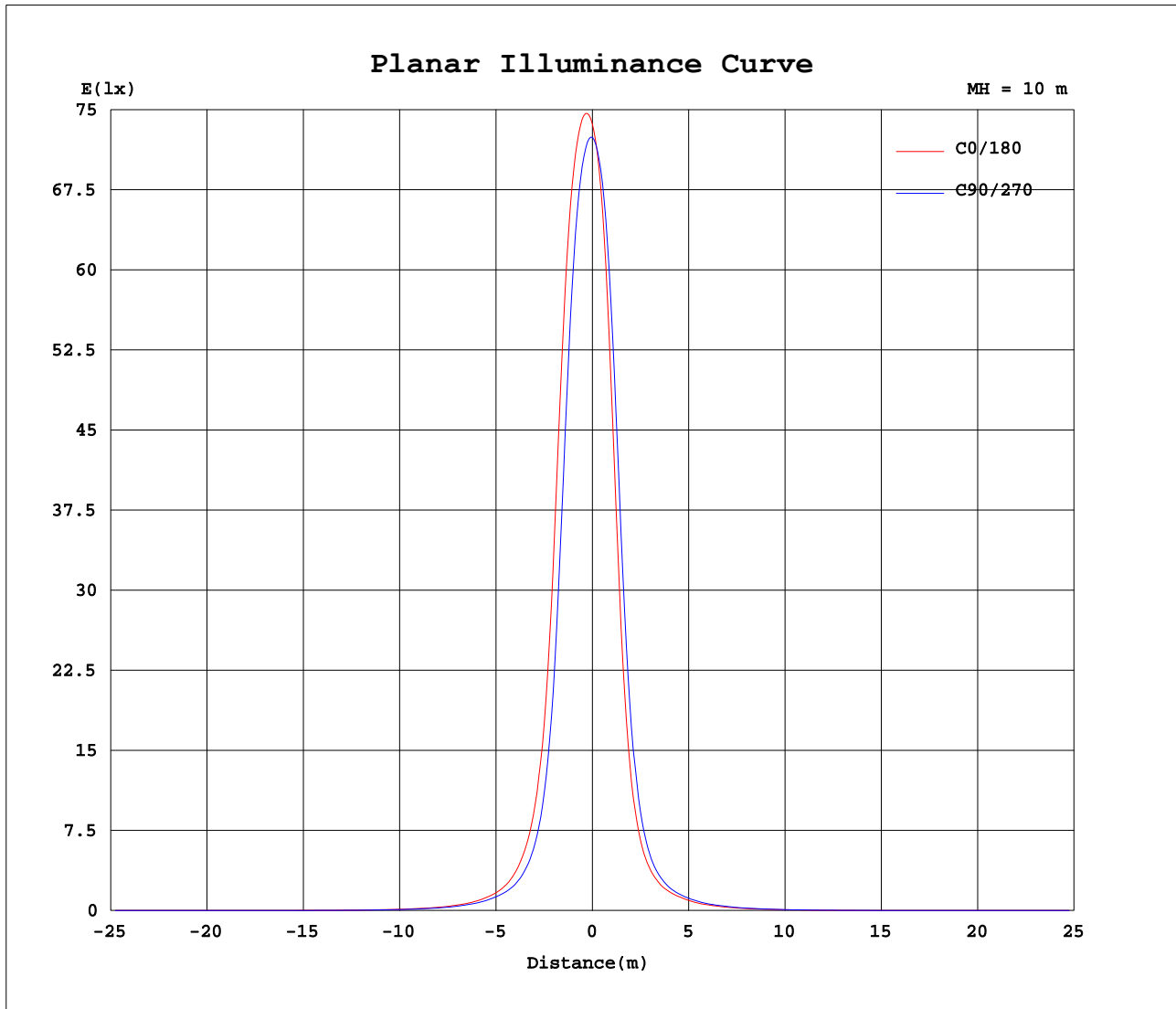
AvgL	cd/m2
L_0~180 (65) av	655
L_0~180 (75) av	65
L_0~180 (85) av	169
L_90~270 (65) av	773
L_90~270 (75) av	58
L_90~270 (85) av	160
L_45 (65) av	663
L_45 (75) av	63
L_45 (85) av	166

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jasoan  
Test Date:2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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: 2023-07-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

```