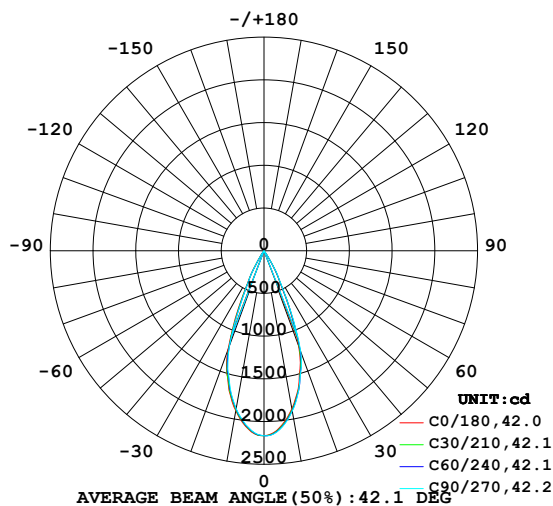


LUMINAIRE PHOTOMETRIC TEST REPORT

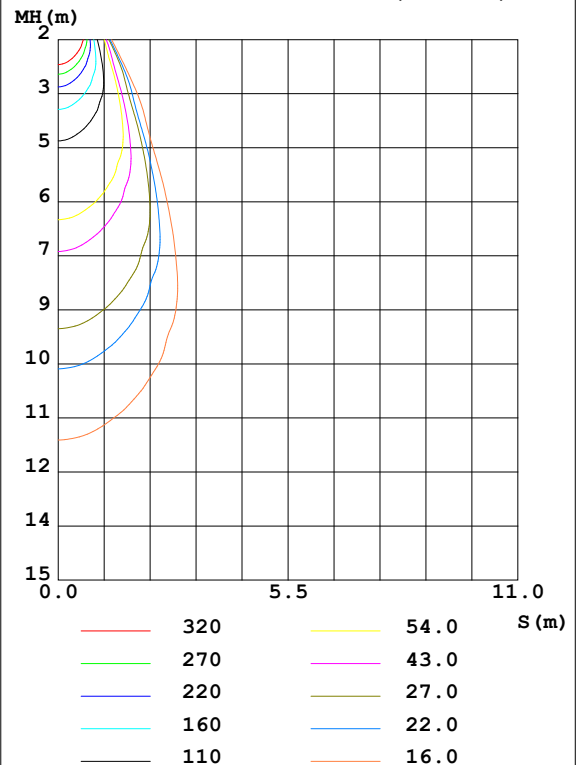
Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 66.66 lm/W			
MODEL	CITIZEN-2700K	I <sub>max</sub> (cd)	2167	S/MH (C0/180)	0.64
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.62
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	965.92	η UP, DN (C0-180)	0.0, 51.0
NOMINAL FLUX (lm)	965.916	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.0
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: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.2DEG  
Operators: Cao Chengpei  
Test Date: 2020-12-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity: 52%  
Test Distance: 5.850m [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	1877	1900	1905	1908	1901	1882	1877	1871	0- 10	193.1	193.1	20,20
20	1190	1241	1260	1263	1235	1169	1187	1182	10- 20	440.5	633.5	65.6,65.6
30	257.6	280.8	288.7	279.1	252.1	211.1	224.4	240.6	20- 30	288.9	922.4	95.5,95.5
40	7.098	8.030	7.684	7.344	6.287	5.453	5.491	6.418	30- 40	41.84	964.3	99.8,99.8
50	0.3754	0.3510	0.3649	0.4084	0.3722	0.3541	0.3231	0.3201	40- 50	1.328	965.6	100,100
60	0.1152	0.1000	0.1151	0.1107	0.1064	0.1109	0.0957	0.0959	50- 60	0.1774	965.8	100,100
70	0.0405	0.0341	0.0511	0.0320	0.0320	0.0448	0.0320	0.0341	60- 70	0.0623	965.9	100,100
80	0.0277	0.0320	0.0405	0.0320	0.0128	0.0320	0.0149	0.0256	70- 80	0.0348	965.9	100,100
90	0.0341	0.0362	0.0341	0.0341	0.0149	0.0192	0.0192	0.0213	80- 90	0.0291	965.9	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): 965.39 lm

%lum = 99.9%

%lamp = 99.9%

Conical surface Flux(120deg): 965.79 lm

%lum = 100.0%

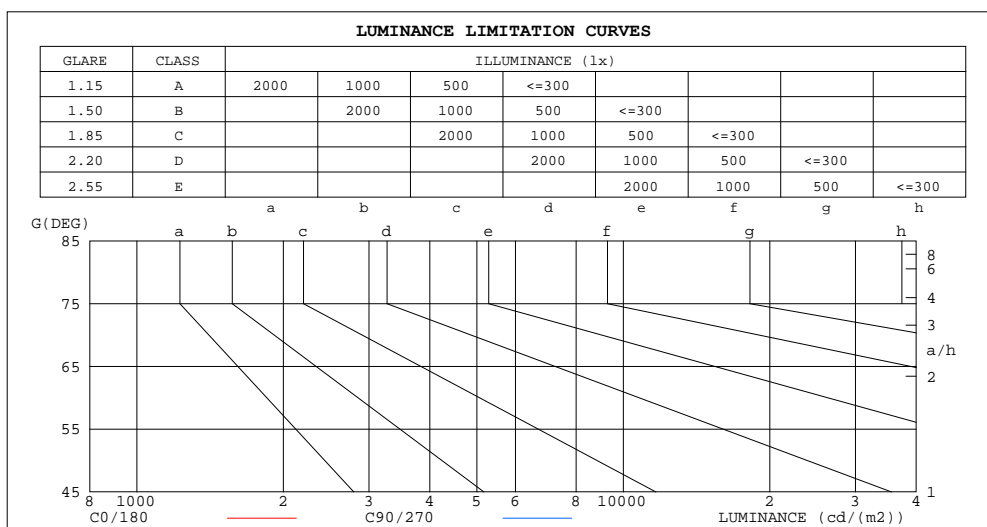
%lamp = 100.0%

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

**LUMINANCE LIMITATION CURVES**

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	63	89
80	34	50
75	27	37
70	25	32
65	37	34
60	50	49
55	74	73
50	125	122
45	292	285

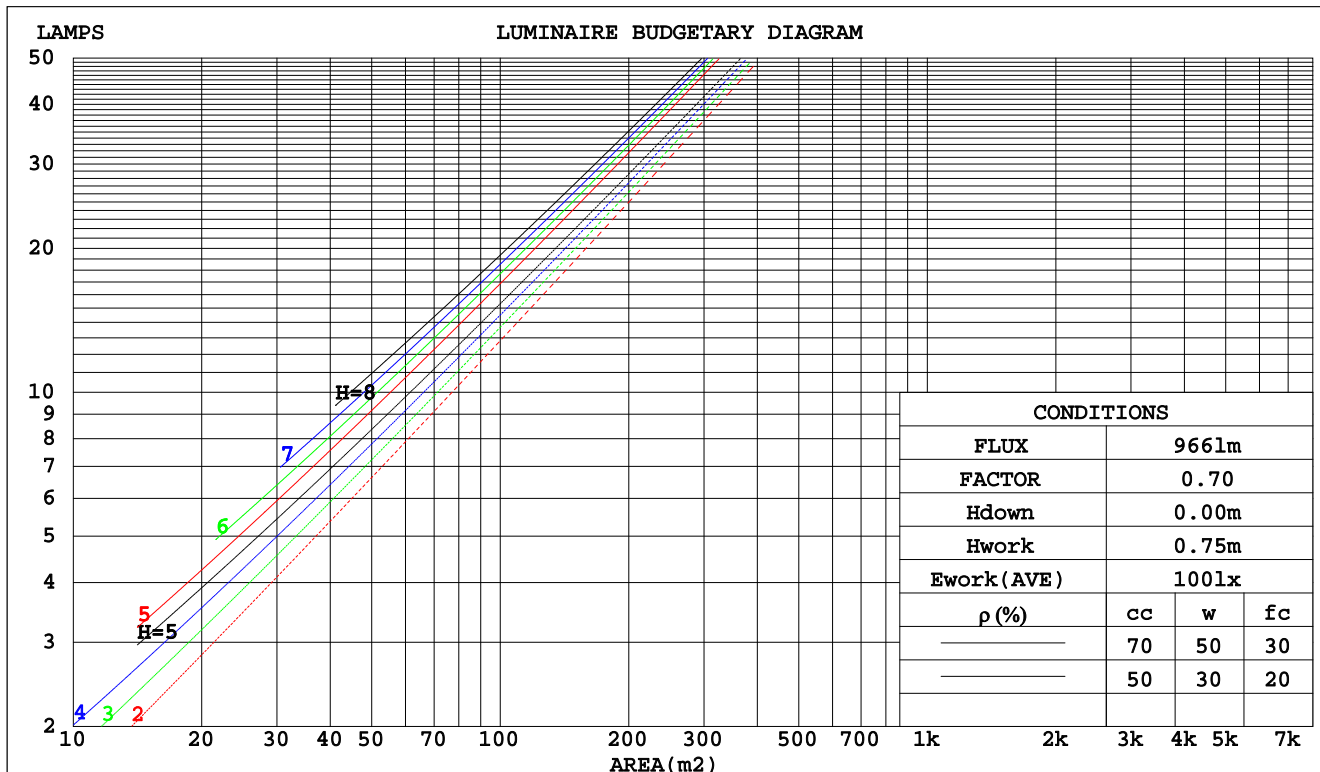
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-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	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	1.02	1.01	1.00	.99	.98	.97	.96
2.0	1.06	1.03	1.00	1.05	1.02	.99	1.02	.99	.97	.99	.97	.95	.96	.94	.93	.92
3.0	1.01	.97	.94	.90	.96	.93	.97	.94	.92	.95	.92	.90	.93	.91	.89	.88
4.0	.96	.92	.89	.95	.91	.88	.93	.90	.87	.91	.88	.86	.90	.87	.85	.84
5.0	.92	.87	.84	.91	.87	.84	.89	.86	.83	.88	.85	.82	.86	.84	.81	.80
6.0	.88	.83	.80	.87	.83	.80	.86	.82	.79	.85	.81	.79	.83	.80	.78	.77
7.0	.84	.80	.76	.84	.79	.76	.83	.79	.76	.82	.78	.75	.81	.77	.75	.74
8.0	.81	.76	.73	.80	.76	.73	.79	.75	.73	.79	.75	.72	.78	.74	.72	.71
9.0	.78	.73	.70	.77	.73	.70	.77	.73	.70	.76	.72	.69	.75	.72	.69	.68
10.0	.75	.70	.67	.75	.70	.67	.74	.70	.67	.73	.69	.67	.72	.69	.67	.66



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

## WEC AND CCEC

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-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	.149	.085	.027	.142	.081	.026	.130	.074	.024	.118	.068	.022	.108	.062	.020	
2.0	.139	.076	.023	.134	.074	.023	.123	.069	.021	.114	.064	.020	.105	.059	.019	
3.0	.131	.070	.021	.126	.068	.020	.118	.064	.019	.110	.060	.018	.102	.057	.018	
4.0	.124	.064	.019	.120	.063	.019	.113	.060	.018	.106	.057	.017	.099	.054	.016	
5.0	.118	.060	.017	.114	.059	.017	.108	.056	.017	.102	.054	.016	.097	.052	.015	
6.0	.112	.056	.016	.109	.055	.016	.104	.053	.015	.099	.051	.015	.094	.049	.015	
7.0	.107	.053	.015	.105	.052	.015	.100	.050	.015	.095	.049	.014	.091	.047	.014	
8.0	.103	.050	.014	.100	.049	.014	.096	.048	.014	.092	.047	.013	.088	.045	.013	
9.0	.099	.048	.013	.097	.047	.013	.093	.046	.013	.089	.045	.013	.086	.044	.013	
10.0	.095	.045	.013	.093	.045	.013	.090	.044	.012	.086	.043	.012	.083	.042	.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	.116	.130	.114	.101	.089	.079	.070	.051	.046	.041	.016	.015	.013		
3.0	.138	.113	.094	.118	.098	.081	.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	.100	.074	.056	.069	.052	.039	.040	.031	.023	.013	.010	.008		
6.0	.108	.076	.054	.093	.066	.047	.064	.046	.033	.037	.027	.020	.012	.009	.007		
7.0	.101	.068	.046	.087	.059	.040	.060	.042	.028	.035	.024	.017	.011	.008	.006		
8.0	.095	.062	.039	.082	.054	.034	.056	.038	.024	.033	.022	.014	.011	.007	.005		
9.0	.089	.056	.034	.077	.049	.030	.053	.034	.021	.031	.020	.013	.010	.007	.004		
10.0	.085	.052	.030	.073	.045	.026	.051	.032	.019	.030	.019	.011	.010	.006	.004		

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm										
NAME: VF68-13W-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	7.7	8.5	7.9	8.6	8.8	8.2	9.0	8.4	9.1	9.3
3H	7.6	8.3	7.8	8.4	8.6	8.1	8.7	8.3	8.9	9.1
4H	7.5	8.1	7.7	8.3	8.6	8.0	8.6	8.2	8.8	9.0
6H	7.4	8.0	7.7	8.2	8.5	7.9	8.5	8.2	8.7	9.0
8H	7.4	7.9	7.7	8.2	8.4	7.8	8.4	8.1	8.7	8.9
12H	7.3	7.9	7.6	8.1	8.4	7.8	8.4	8.1	8.6	8.9
4H 2H	7.5	8.1	7.7	8.3	8.6	8.0	8.6	8.2	8.8	9.0
3H	7.3	7.9	7.6	8.1	8.4	7.8	8.4	8.1	8.6	8.9
4H	7.2	7.7	7.6	8.0	8.3	7.7	8.2	8.0	8.5	8.8
6H	7.1	7.6	7.5	7.9	8.2	7.6	8.1	8.0	8.4	8.7
8H	7.1	7.5	7.4	7.8	8.2	7.6	8.0	7.9	8.3	8.7
12H	7.0	7.4	7.4	7.8	8.2	7.5	7.9	7.9	8.3	8.6
8H 4H	7.1	7.5	7.4	7.8	8.2	7.5	8.0	7.9	8.3	8.7
6H	7.0	7.3	7.4	7.7	8.1	7.4	7.8	7.9	8.2	8.6
8H	6.9	7.2	7.3	7.6	8.1	7.4	7.7	7.8	8.1	8.5
12H	6.8	7.1	7.3	7.5	8.0	7.3	7.6	7.8	8.0	8.5
12H 4H	7.0	7.4	7.4	7.8	8.2	7.5	7.9	7.9	8.3	8.6
6H	6.9	7.2	7.3	7.6	8.1	7.4	7.7	7.8	8.1	8.5
8H	6.8	7.1	7.3	7.5	8.0	7.3	7.6	7.8	8.0	8.5
Variations with the observer position at spacings:										
S = 1.0H	+ 5.4 / -17.8					+ 5.4 / -17.7				
1.5H	+ 8.1 / -16.6					+ 8.2 / -16.6				
2.0H	+ 5.5 / - 2.8					+ 5.2 / - 2.5				

CIE Pub.117, 965.9 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = -0.1$ )

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

## UTILIZATION FACTORS TABLE

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

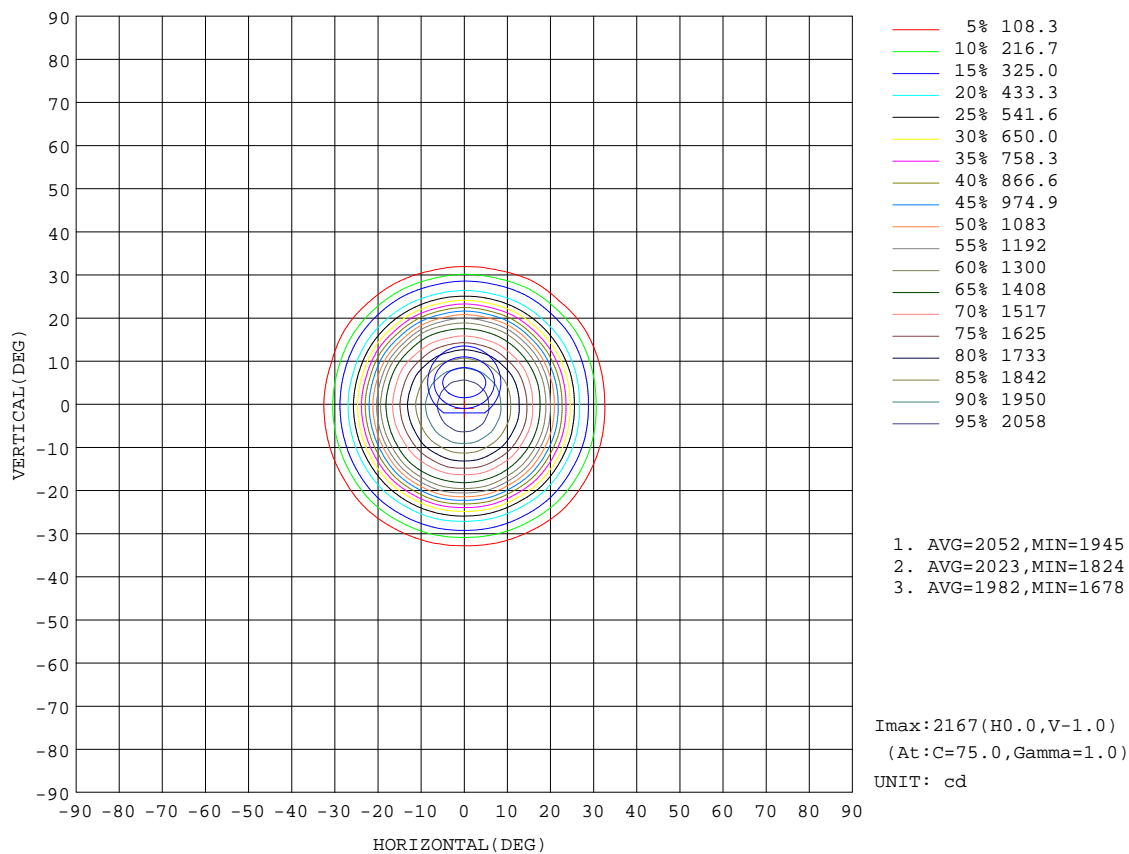
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	92	86	83	91	86	82	90	85	82	79
0.80	98	93	90	98	93	90	97	92	89	86
1.00	102	97	94	101	97	94	100	96	93	90
1.25	105	101	98	104	100	98	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: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: $\phi$ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

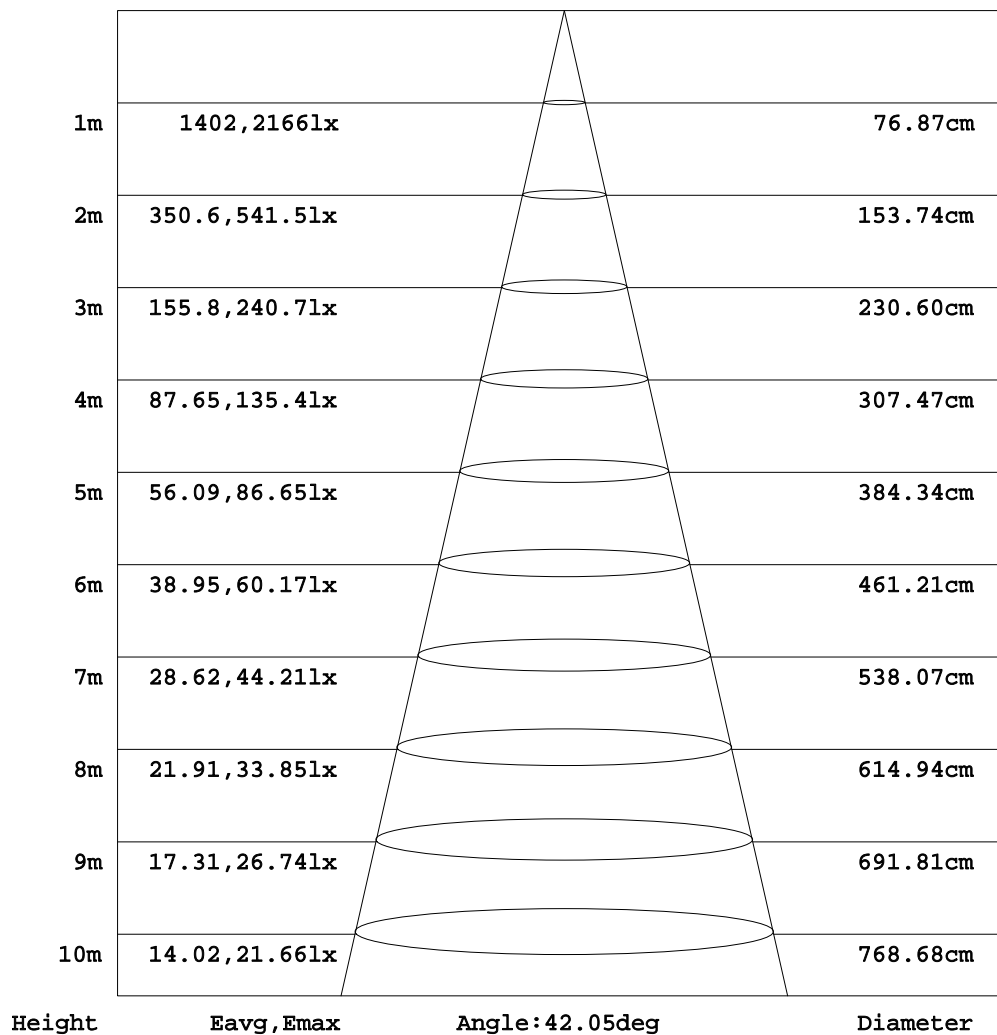
$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:



**AAI Figure**

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

Flux out:719.2 lm



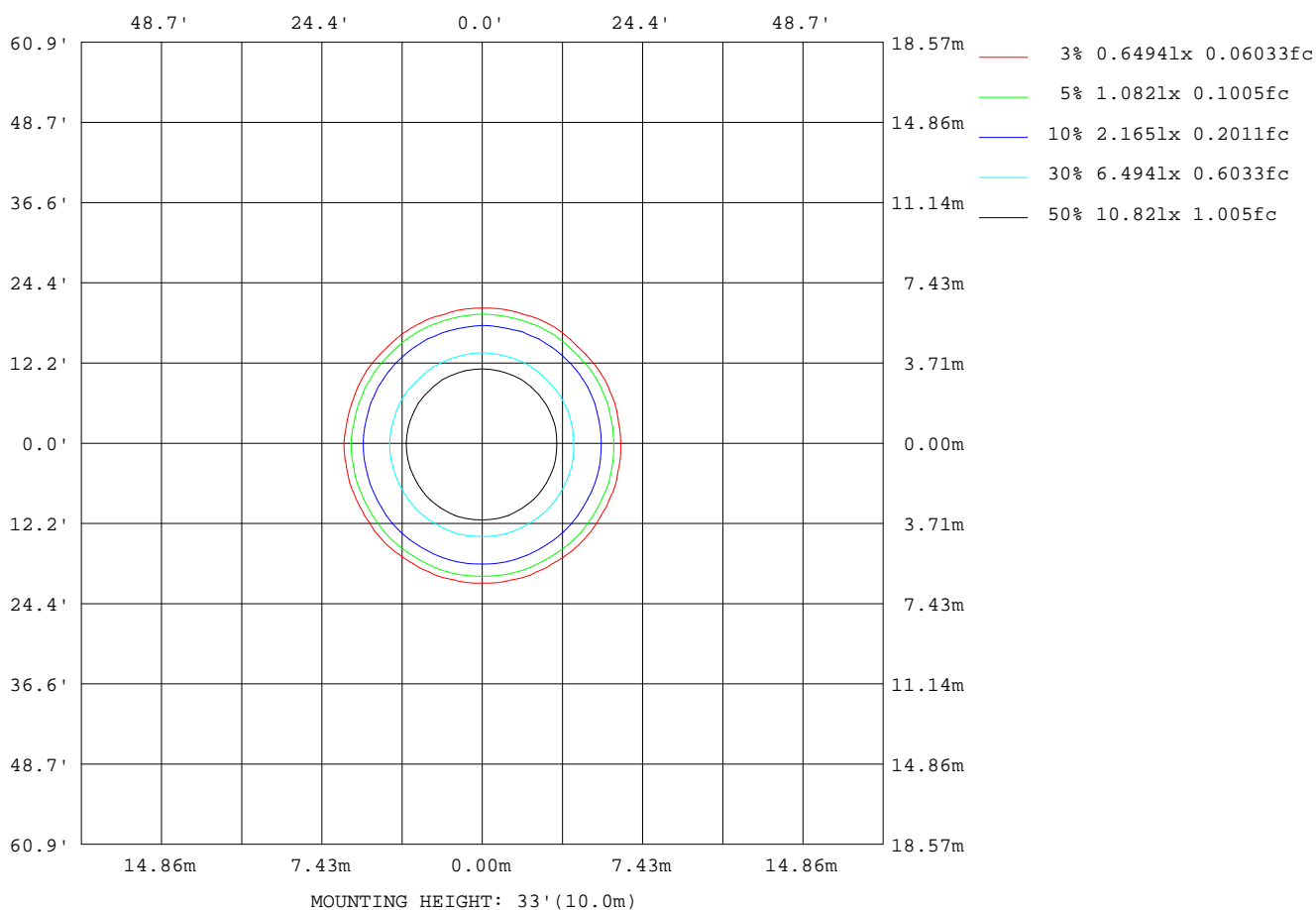
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

**ISOLUX DIAGRAM**

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: $\phi 77\text{mm} \times \text{H}100\text{mm}$	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

### LED Avg.L Report

Test:U:220.7V I:0.0713A P:14.49W PF:0.9185 Freq:0Hz Lamp Flux:965.916x1 lm		
NAME: VF68-13W-927-40°	TYPE:Downlight	SERIAL No.:
SPEC.:2700K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

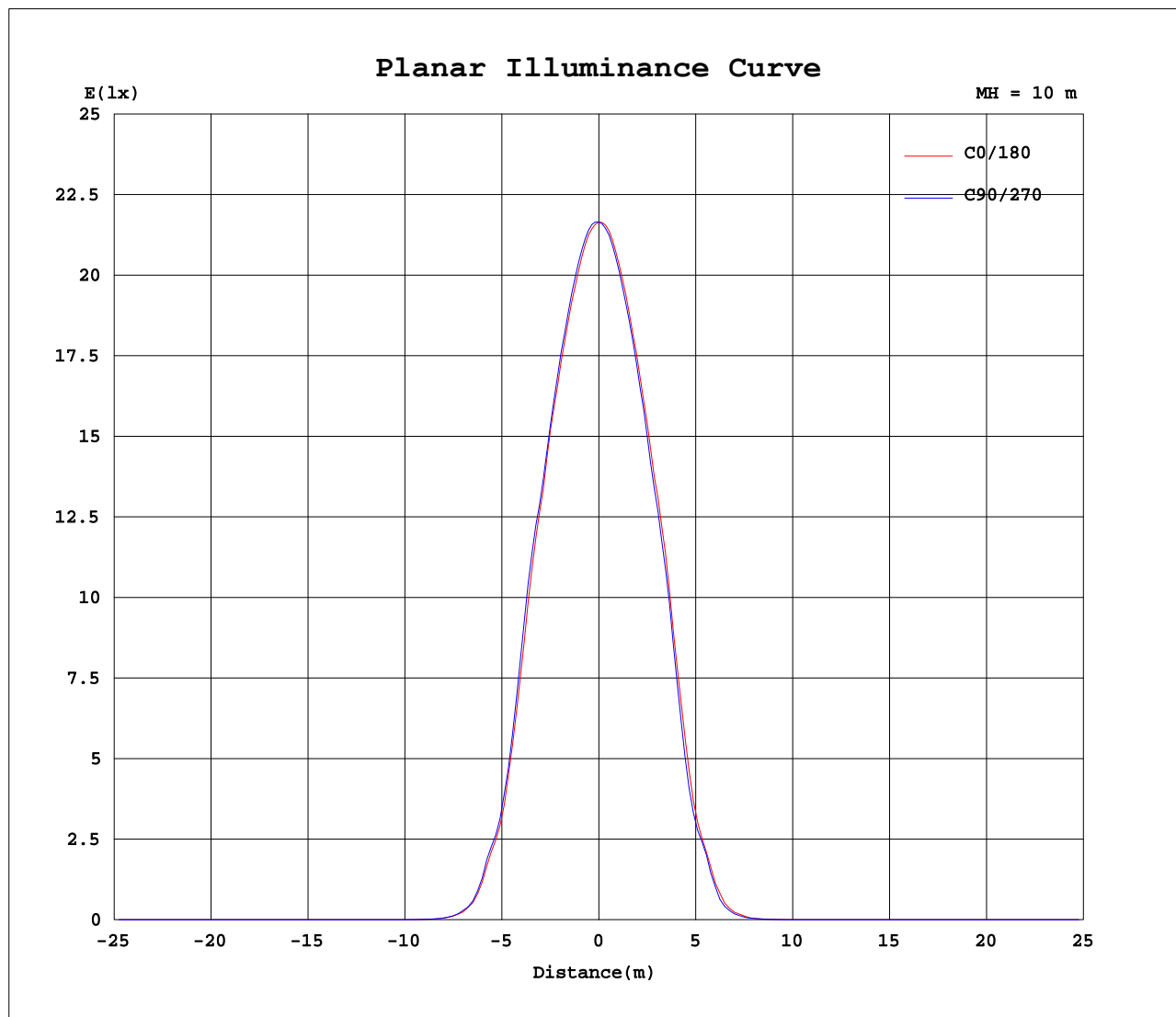
AvgL	cd/m2
L_0~180 (65) av	30
L_0~180 (75) av	22
L_0~180 (85) av	47
L_90~270 (65) av	28
L_90~270 (75) av	29
L_90~270 (85) av	63
L_45 (65) av	29
L_45 (75) av	29
L_45 (85) av	70

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.2DEG  
Operators:Cao Chengpei  
Test Date:2020-12-16

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:

### Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.2DEG  
Operators: Cao Chengpei  
Test Date: 2020-12-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity: 52%  
Test Distance: 5.850m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.288
Humidity:52%
Test Distance:5.850m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.288
Humidity:52%
Test Distance:5.850m [K=1.0000]
Remarks:

```