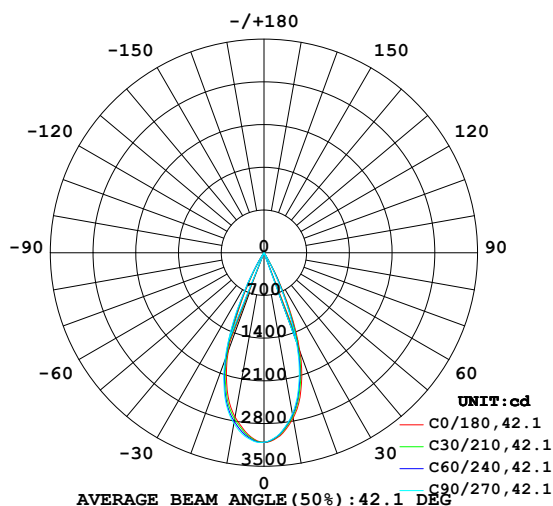


LUMINAIRE PHOTOMETRIC TEST REPORT

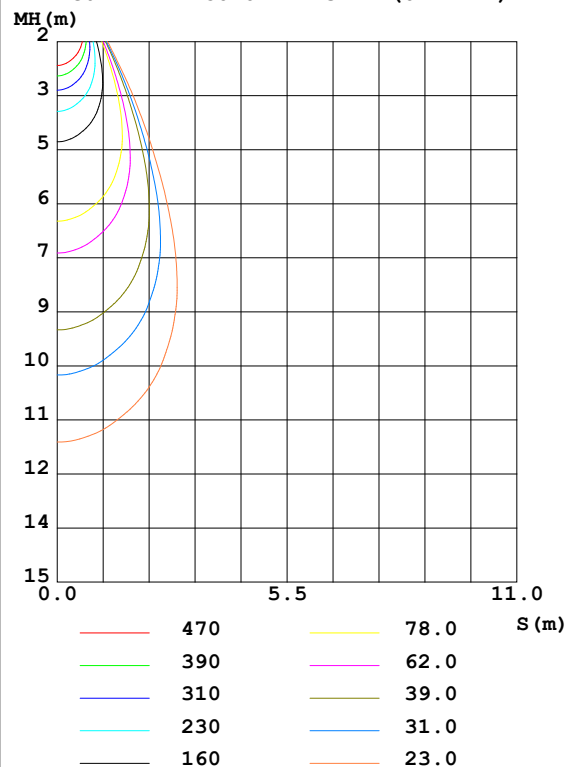
Test:U:220.7V I:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 92.60 lm/W			
MODEL	CITIZEN-4000K	I <sub>max</sub> (cd)	3110	S/MH (C0/180)	0.64
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.66
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1373.9	η UP, DN (C0-180)	0.0, 47.4
NOMINAL FLUX (lm)	1373.88	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 52.6
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: 25.3DEG  
Operators: Meng Yongjian  
Test Date: 2019-05-24

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	2753	2715	2682	2703	2733	2782	2840	2820	0- 10	278.8	278.8	20.3,20.3
20	1724	1640	1556	1600	1713	1787	1865	1829	10- 20	637.9	916.6	66.7,66.7
30	240.7	186.2	145.9	187.1	241.3	297.0	338.9	318.3	20- 30	406.5	1323	96.3,96.3
40	16.96	15.86	13.85	14.93	17.37	18.64	17.99	16.78	30- 40	40.72	1364	99.3,99.3
50	4.964	4.490	4.114	4.440	5.355	5.666	5.402	5.109	40- 50	7.103	1371	99.8,99.8
60	1.046	0.9119	0.7698	0.8185	1.133	1.261	1.323	1.209	50- 60	2.411	1373	100,100
70	0.0743	0.0525	0.0678	0.0459	0.0698	0.0918	0.0831	0.0853	60- 70	0.3446	1374	100,100
80	0.0612	0.0481	0.0547	0.0459	0.0480	0.0612	0.0656	0.0634	70- 80	0.0662	1374	100,100
90	0.0502	0.0481	0.0503	0.0481	0.0349	0.0350	0.0394	0.0372	80- 90	0.0535	1374	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): 1368.3 lm

%lum = 99.6%

%lamp = 99.6%

Conical surface Flux(120deg): 1373.4 lm

%lum = 100.0%

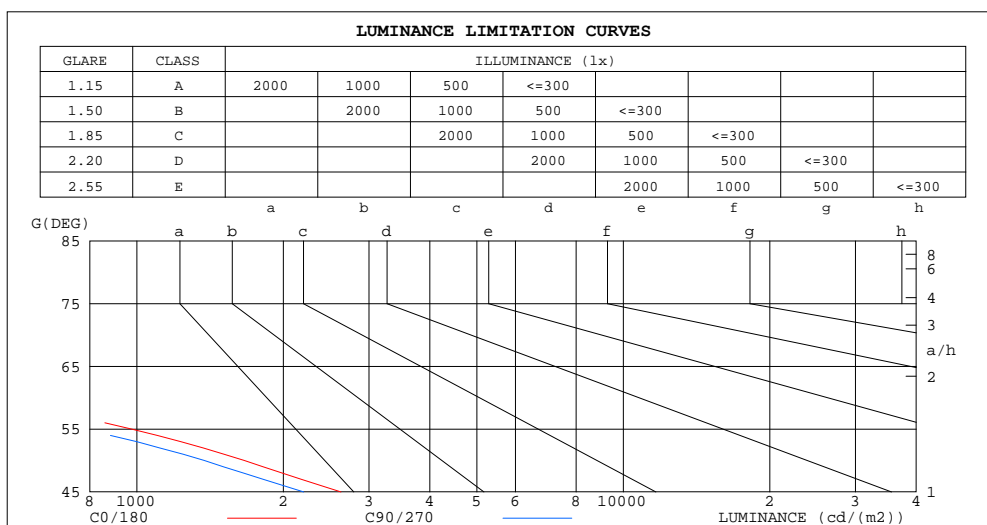
%lamp = 100.0%

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2019-05-24

$\gamma$  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:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	129	124
80	76	68
75	54	51
70	47	43
65	114	64
60	450	331
55	975	779
50	1661	1375
45	2627	2203

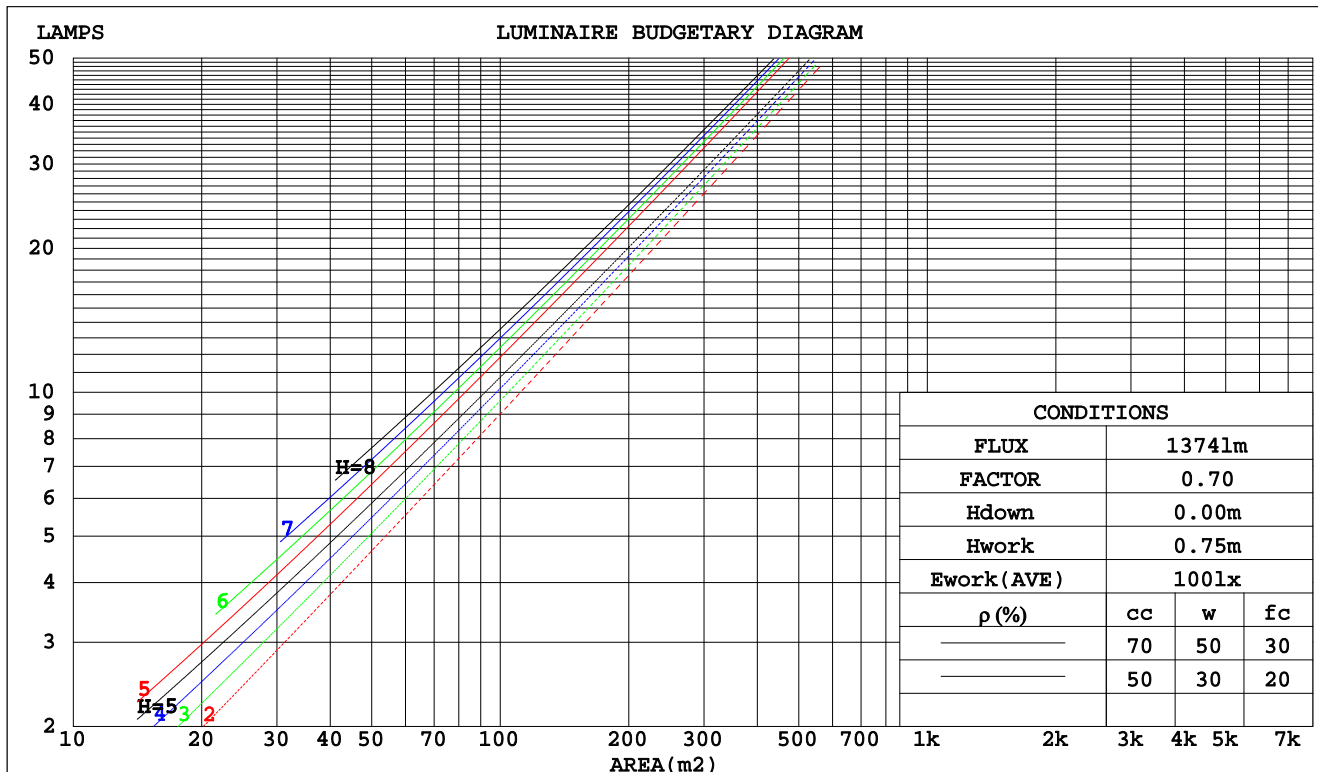
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2019-05-24

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:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	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	.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	.89	.86	.90	.87	.85	.84
5.0	.92	.88	.84	.91	.87	.84	.90	.86	.83	.88	.85	.82	.87	.84	.82	.80
6.0	.88	.84	.80	.87	.83	.80	.86	.82	.79	.85	.81	.79	.84	.81	.78	.77
7.0	.85	.80	.77	.84	.80	.76	.83	.79	.76	.82	.78	.76	.81	.78	.75	.74
8.0	.81	.77	.73	.81	.76	.73	.80	.76	.73	.79	.75	.73	.78	.75	.72	.71
9.0	.78	.74	.70	.78	.73	.70	.77	.73	.70	.76	.72	.70	.75	.72	.70	.69
10.0	.75	.71	.68	.75	.71	.68	.74	.70	.67	.73	.70	.67	.73	.69	.67	.66



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2019-05-24

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:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	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	.142	.081	.026	.129	.074	.024	.118	.068	.022	.107	.062	.020	
2.0	.139	.076	.023	.133	.073	.023	.123	.068	.021	.113	.064	.020	.105	.059	.019	
3.0	.130	.069	.021	.126	.067	.020	.117	.064	.019	.109	.060	.018	.102	.056	.017	
4.0	.123	.064	.019	.119	.062	.018	.112	.059	.018	.105	.056	.017	.099	.054	.016	
5.0	.117	.060	.017	.114	.058	.017	.107	.056	.016	.101	.054	.016	.096	.051	.015	
6.0	.111	.056	.016	.108	.055	.016	.103	.053	.015	.098	.051	.015	.093	.049	.015	
7.0	.106	.053	.015	.104	.052	.015	.099	.050	.014	.095	.048	.014	.090	.047	.014	
8.0	.102	.050	.014	.100	.049	.014	.095	.048	.014	.091	.046	.013	.088	.045	.013	
9.0	.098	.047	.013	.096	.047	.013	.092	.046	.013	.089	.044	.013	.085	.043	.013	
10.0	.094	.045	.013	.092	.045	.012	.089	.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	.117	.130	.114	.101	.089	.079	.070	.051	.046	.041	.016	.015	.013		
3.0	.138	.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	.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	.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	.051	.032	.019	.029	.019	.011	.010	.006	.004		

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2019-05-24

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:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm										
NAME: VF68-13W-940-40°					TYPE:Downlight			SERIAL No.:		
SPEC.:4000K					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	4.2	4.9	4.4	5.1	5.2	3.0	3.8	3.3	3.9	4.1
3H	4.0	4.7	4.3	4.9	5.1	2.9	3.6	3.1	3.8	3.9
4H	4.0	4.6	4.2	4.8	5.0	2.8	3.5	3.1	3.7	3.9
6H	3.9	4.5	4.2	4.7	5.0	2.7	3.3	3.0	3.6	3.8
8H	3.8	4.4	4.1	4.7	4.9	2.7	3.3	3.0	3.5	3.8
12H	3.8	4.3	4.1	4.6	4.9	2.6	3.2	2.9	3.5	3.7
4H 2H	4.0	4.6	4.2	4.8	5.0	2.8	3.5	3.1	3.7	3.9
3H	3.8	4.4	4.1	4.6	4.9	2.7	3.2	3.0	3.5	3.7
4H	3.7	4.2	4.0	4.5	4.8	2.6	3.1	2.9	3.4	3.7
6H	3.6	4.1	4.0	4.4	4.7	2.5	2.9	2.8	3.2	3.6
8H	3.5	4.0	3.9	4.3	4.7	2.4	2.8	2.8	3.2	3.5
12H	3.5	3.9	3.9	4.3	4.6	2.4	2.7	2.8	3.1	3.5
8H 4H	3.5	4.0	3.9	4.3	4.7	2.4	2.8	2.8	3.2	3.5
6H	3.4	3.8	3.9	4.2	4.6	2.3	2.6	2.7	3.0	3.4
8H	3.4	3.7	3.8	4.1	4.5	2.2	2.5	2.7	3.0	3.4
12H	3.3	3.6	3.8	4.0	4.5	2.2	2.4	2.6	2.9	3.4
12H 4H	3.5	3.9	3.9	4.2	4.6	2.3	2.7	2.8	3.1	3.5
6H	3.4	3.7	3.8	4.1	4.5	2.2	2.5	2.7	3.0	3.4
8H	3.3	3.6	3.8	4.0	4.5	2.2	2.4	2.6	2.9	3.4
Variations with the observer position at spacings:										
S = 1.0H	+ 3.6 / - 8.5					+ 3.1 / - 8.8				
1.5H	+ 5.4 / - 6.0					+ 4.7 / - 5.5				
2.0H	+ 5.0 / -11.4					+ 4.8 / -11.0				

CIE Pub.117, 1374 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 1.1$ )

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2019-05-24

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:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		

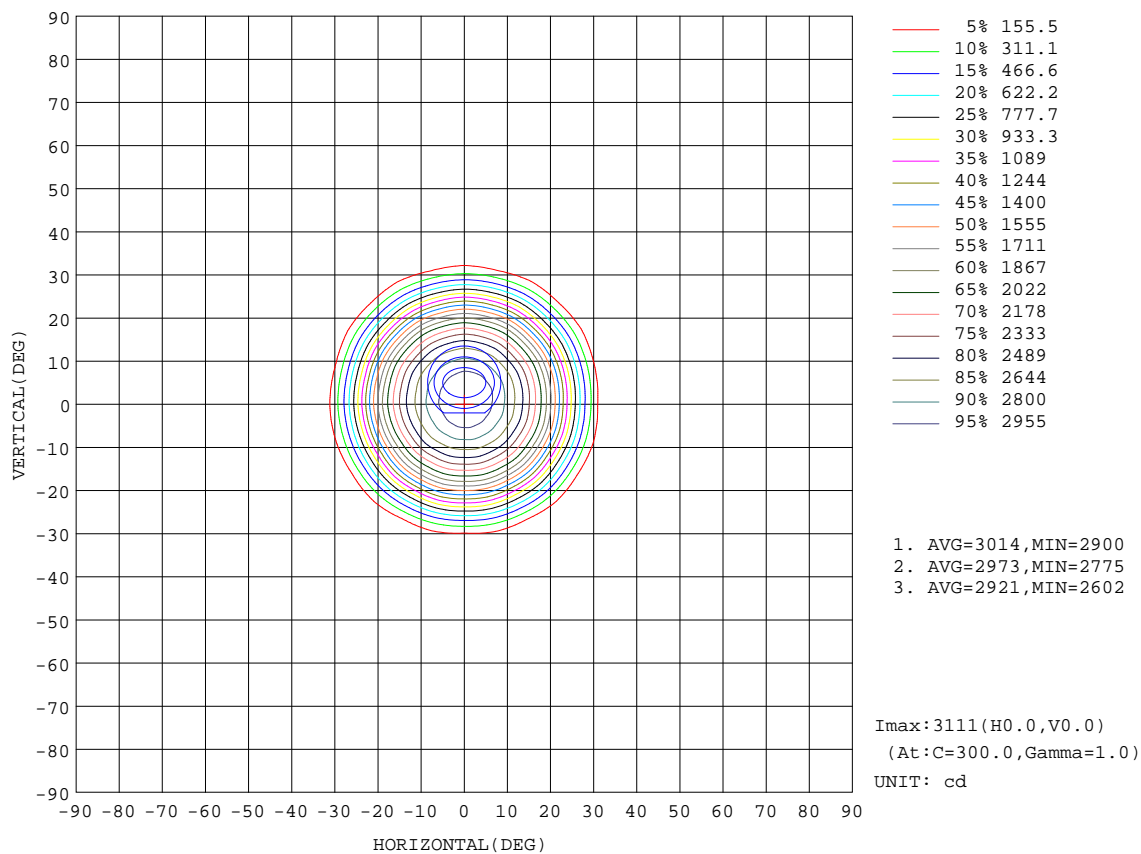
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	91	85	82	91	85	82	90	85	82	79
0.80	98	93	90	97	93	89	96	92	89	86
1.00	102	97	94	101	96	93	99	96	93	89
1.25	105	101	98	104	100	97	102	99	96	93
1.50	108	104	101	107	103	100	104	101	99	95
2.00	110	106	103	108	105	102	106	103	101	96
2.50	111	108	105	110	107	104	107	104	102	97
3.00	113	110	107	111	108	106	108	106	104	98
4.00	115	112	110	113	110	109	109	107	106	99
5.00	116	114	112	114	112	111	110	109	107	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:25.3DEG  
 Operators:Meng Yongjian  
 Test Date:2019-05-24

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:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		



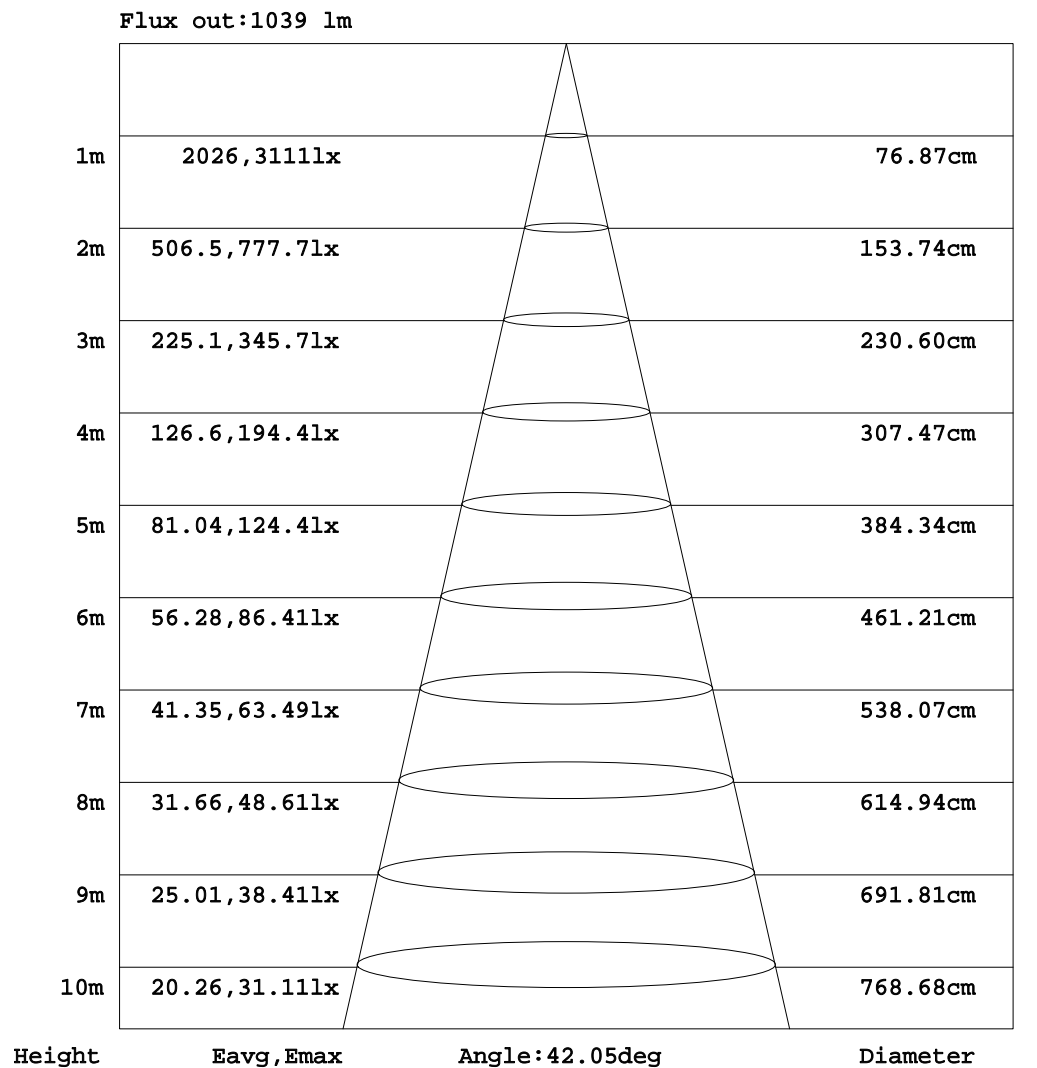
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2019-05-24

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:



**AAI Figure**

Test:U:220.7V I:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	DIM.: φ77mm*H100mm	
MFR.: NEKO LIGHTING AG		



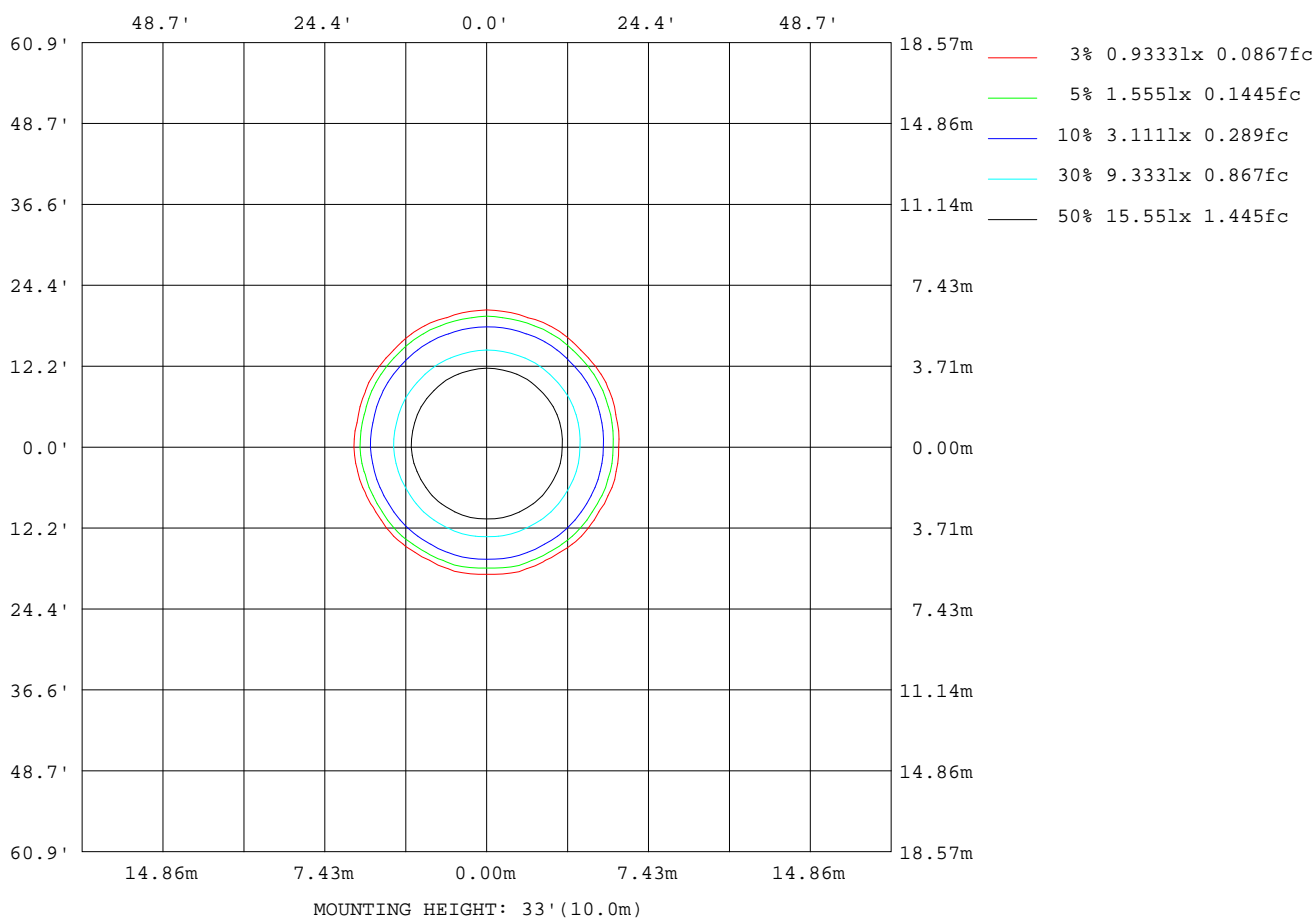
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2019-05-24

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:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	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: 25.3DEG  
Operators: Meng Yongjian  
Test Date: 2019-05-24

$\gamma$  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:0.0672A P:14.84W PF:0.9412 Freq:50.00Hz Lamp Flux:1373.88x1 lm		
NAME: VF68-13W-940-40°	TYPE:Downlight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 77mm*H100mm	
MFR.: NEKO LIGHTING AG		

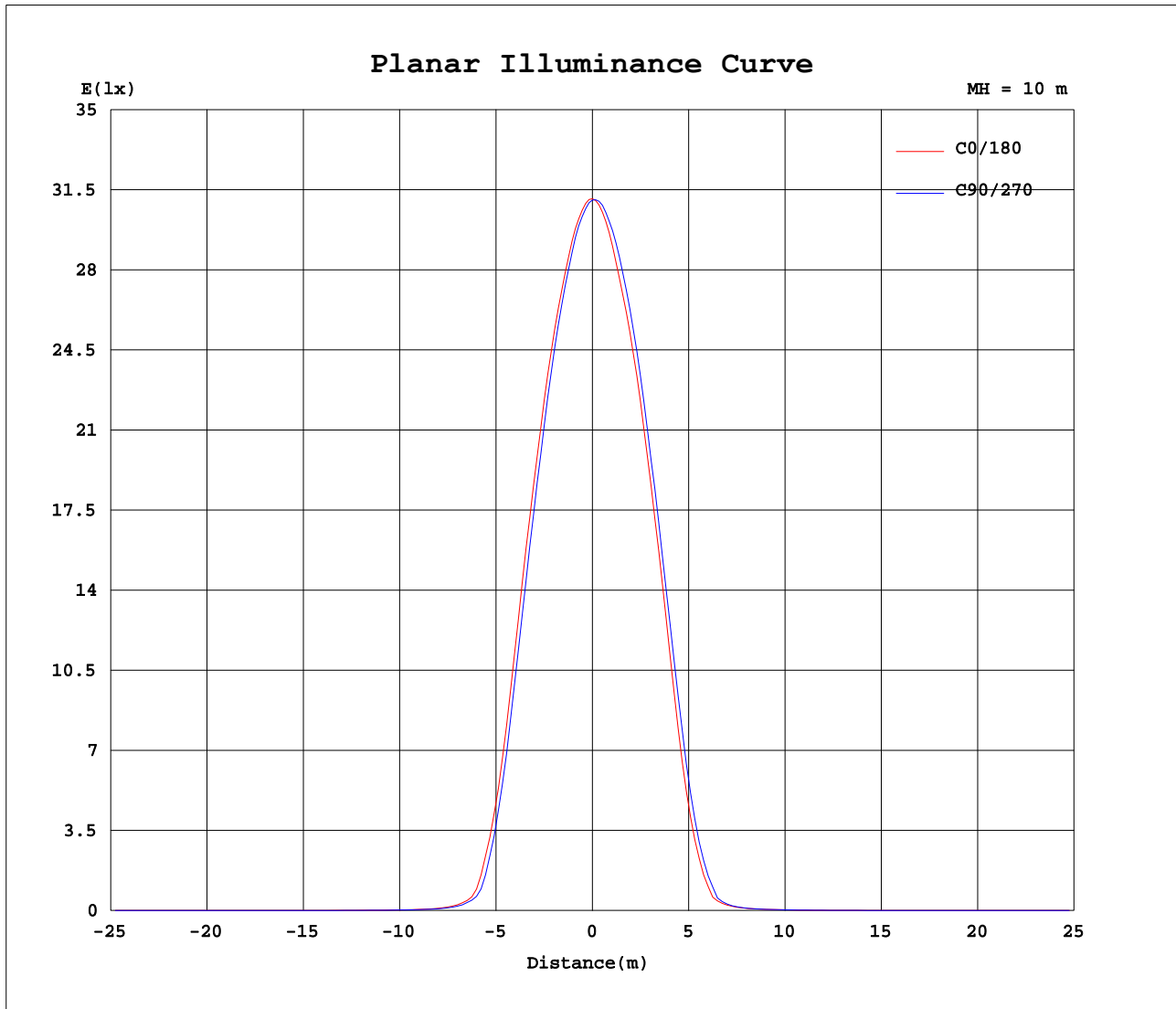
AvgL	cd/m2
L_0~180 (65) av	119
L_0~180 (75) av	53
L_0~180 (85) av	110
L_90~270 (65) av	127
L_90~270 (75) av	54
L_90~270 (85) av	119
L_45 (65) av	115
L_45 (75) av	50
L_45 (85) av	125

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2019-05-24

$\gamma$  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:

### Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Meng Yongjian  
Test Date: 2019-05-24

$\gamma$  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:

```