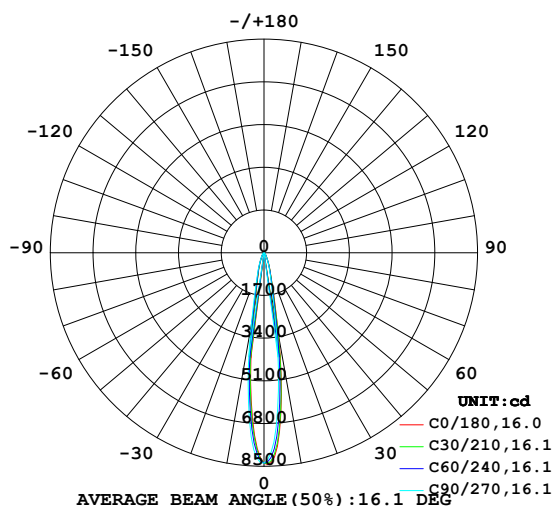


LUMINAIRE PHOTOMETRIC TEST REPORT

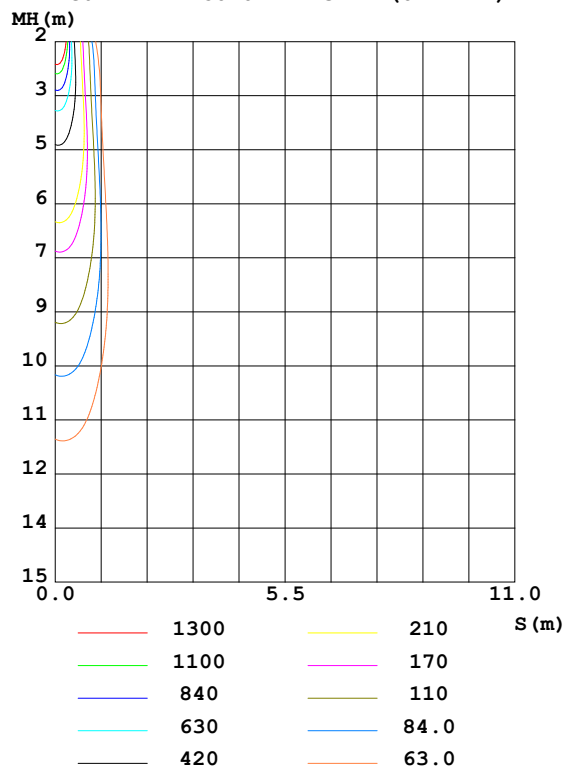
Test:U:220.7V I:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 82.57 lm/W			
MODEL	CITIZEN-4000K	I <sub>max</sub> (cd)	8469	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)	1173.1	$\eta$ UP, DN (C0-180)	0.0, 49.3
NOMINAL FLUX (lm)	1173.15	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 50.7
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: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  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:

## ZONAL FLUX DIAGRAM

### ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	3360	3169	2495	2115	2132	2364	2967	3343	0- 10	493.6	493.6	42.1,42.1
20	657.5	650.1	596.6	548.8	536.0	562.0	629.6	675.8	10- 20	333.1	826.6	70.5,70.5
30	220.3	218.4	198.4	183.9	183.9	191.9	211.3	221.7	20- 30	163.7	990.4	84.4,84.4
40	101.3	99.76	94.20	89.68	89.69	92.75	98.82	102.4	30- 40	86.53	1077	91.8,91.8
50	50.89	49.92	47.56	45.53	45.51	46.62	50.23	51.89	40- 50	54.49	1131	96.4,96.4
60	21.57	20.87	19.85	18.72	19.20	19.58	21.65	22.17	50- 60	29.75	1161	99,99
70	3.892	3.565	2.527	1.883	1.979	2.358	3.663	4.273	60- 70	11.24	1172	99.9,99.9
80	0.1936	0.1658	0.1601	0.1226	0.1063	0.1334	0.1356	0.1776	70- 80	0.6845	1173	100,100
90	0.0652	0.0524	0.0548	0.0526	0.0348	0.0349	0.0351	0.0460	80- 90	0.0909	1173	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): 1107.5 lm

%lum = 94.4%

%lamp = 94.4%

Conical surface Flux(120deg): 1161.1 lm

%lum = 99.0%

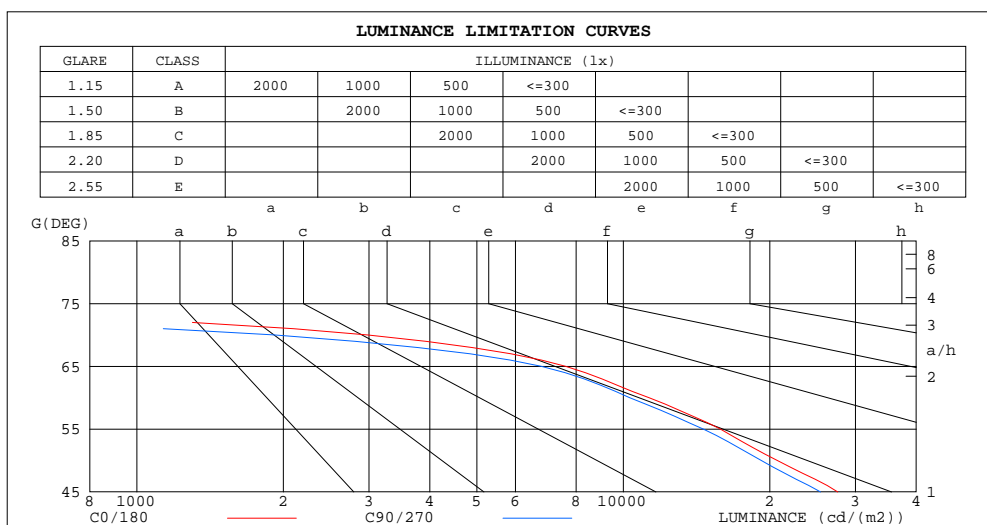
%lamp = 99.0%

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  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:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	346	261
80	292	239
75	357	273
70	2977	1917
65	7608	6778
60	11288	10301
55	15827	14596
50	20711	19198
45	27573	25430

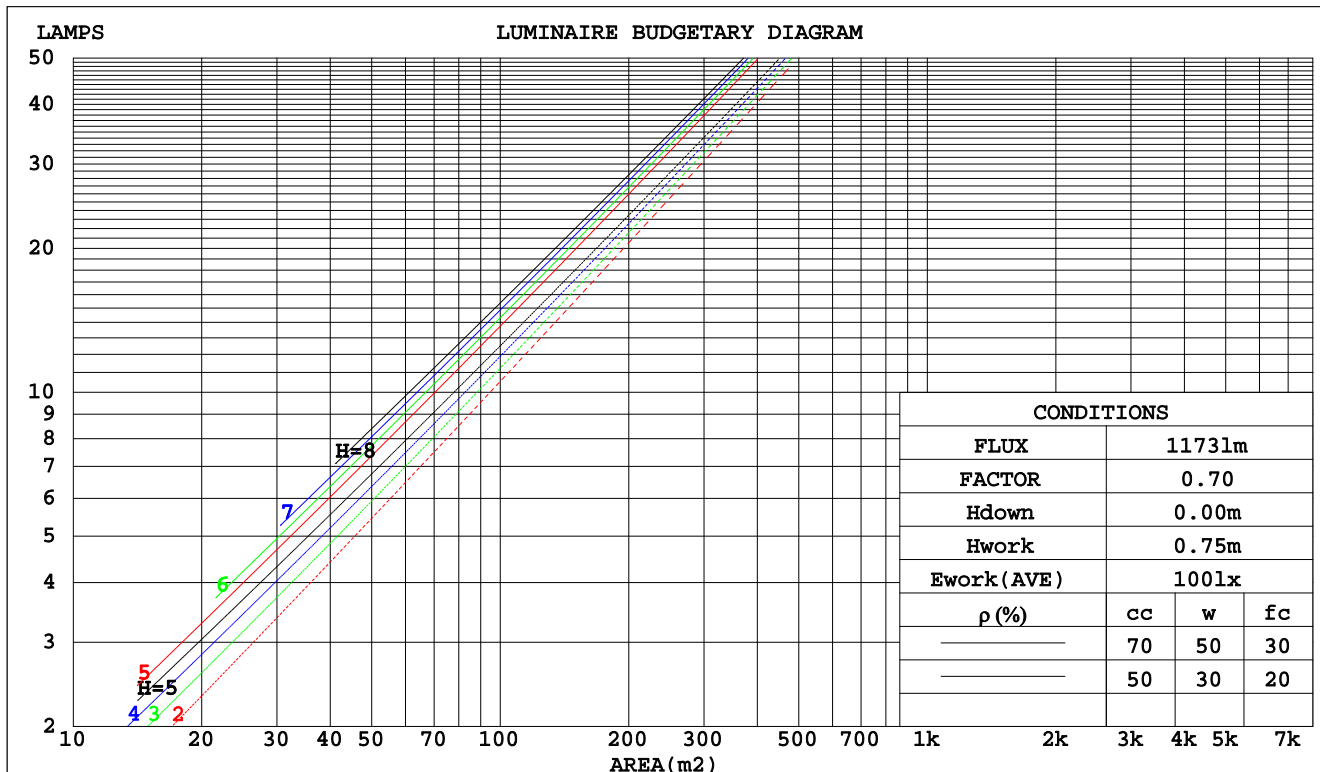
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.7V I:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 70\text{mm} \times H138\text{mm}$	
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	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	1.09	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.01	1.00	.99	.98	.98	.96
2.0	1.07	1.03	1.01	1.05	1.02	.99	1.02	.99	.97	.99	.97	.95	.96	.95	.93	.92
3.0	1.01	.97	.94	1.00	.96	.94	.98	.95	.92	.95	.93	.91	.93	.91	.89	.88
4.0	.97	.93	.89	.96	.92	.89	.94	.90	.88	.92	.89	.87	.90	.88	.86	.85
5.0	.93	.89	.85	.92	.88	.85	.90	.87	.84	.89	.86	.83	.88	.85	.83	.82
6.0	.90	.85	.82	.89	.85	.81	.87	.84	.81	.86	.83	.80	.85	.82	.80	.79
7.0	.86	.82	.79	.86	.82	.79	.85	.81	.78	.84	.80	.78	.83	.80	.77	.76
8.0	.84	.79	.76	.83	.79	.76	.82	.78	.76	.81	.78	.75	.80	.77	.75	.74
9.0	.81	.77	.74	.81	.77	.74	.80	.76	.74	.79	.76	.73	.78	.75	.73	.72
10.0	.79	.75	.72	.79	.75	.72	.78	.74	.72	.77	.74	.71	.77	.74	.71	.70



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  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:

WEC AND CCEC

Test:U:220.7V I:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

$\rho_{cc}$	80%			70%			50%			30%			10%			0	
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
$\rho_{fc}$	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.146	.083	.026	.140	.080	.025	.127	.073	.023	.116	.067	.021	.105	.061	.020		
2.0	.138	.075	.023	.132	.073	.022	.122	.068	.021	.112	.063	.020	.104	.059	.018		
3.0	.129	.069	.021	.124	.067	.020	.116	.063	.019	.108	.059	.018	.100	.056	.017		
4.0	.121	.063	.018	.117	.061	.018	.110	.058	.017	.103	.055	.017	.097	.052	.016		
5.0	.114	.058	.017	.110	.057	.017	.104	.054	.016	.098	.052	.015	.093	.050	.015		
6.0	.107	.054	.015	.104	.053	.015	.099	.051	.015	.094	.049	.014	.089	.047	.014		
7.0	.101	.050	.014	.099	.049	.014	.094	.048	.014	.090	.046	.013	.086	.044	.013		
8.0	.096	.047	.013	.094	.046	.013	.090	.045	.013	.086	.044	.013	.082	.042	.012		
9.0	.091	.044	.012	.089	.044	.012	.086	.042	.012	.082	.041	.012	.079	.040	.012		
10.0	.087	.042	.012	.085	.041	.012	.082	.040	.011	.079	.039	.011	.076	.038	.011		

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	.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	.137	.113	.094	.118	.098	.082	.081	.068	.057	.047	.040	.034	.015	.013	.011	
4.0	.125	.098	.077	.107	.085	.067	.074	.059	.047	.043	.035	.028	.014	.011	.009	
5.0	.115	.086	.065	.099	.074	.056	.068	.052	.040	.039	.031	.024	.013	.010	.008	
6.0	.106	.076	.054	.091	.066	.047	.063	.046	.034	.037	.027	.020	.012	.009	.007	
7.0	.099	.068	.047	.085	.059	.041	.059	.041	.029	.034	.024	.017	.011	.008	.006	
8.0	.092	.061	.040	.079	.053	.035	.055	.037	.025	.032	.022	.015	.010	.007	.005	
9.0	.086	.056	.035	.074	.048	.030	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.081	.051	.031	.070	.044	.027	.049	.031	.019	.028	.018	.011	.009	.006	.004	

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Meng Yongjian  
 Test Date:2017-05-19

$\gamma$  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:

UGR(Unified Glare Rating) Table

Test:U:220.7V I:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm										
NAME: ROXY S-15W-940-15					TYPE:Tracklight			SERIAL No.:		
SPEC.:4000K					DIM.: $\phi$ 70mm*H138mm					
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	16.9	17.6	17.1	17.8	17.9	16.6	17.3	16.8	17.4	17.6
3H	16.9	17.6	17.2	17.8	18.0	16.6	17.2	16.8	17.4	17.6
4H	16.9	17.5	17.1	17.7	17.9	16.5	17.1	16.8	17.3	17.5
6H	16.8	17.4	17.1	17.6	17.8	16.4	17.0	16.7	17.2	17.5
8H	16.7	17.3	17.0	17.6	17.8	16.4	16.9	16.7	17.2	17.4
12H	16.7	17.2	17.0	17.5	17.8	16.3	16.9	16.6	17.1	17.4
4H 2H	16.9	17.6	17.2	17.8	18.0	16.6	17.3	16.9	17.5	17.7
3H	17.0	17.5	17.3	17.8	18.0	16.6	17.2	16.9	17.4	17.7
4H	16.9	17.4	17.2	17.7	18.0	16.5	17.0	16.9	17.3	17.6
6H	16.8	17.2	17.1	17.5	17.9	16.4	16.9	16.8	17.2	17.5
8H	16.7	17.1	17.1	17.5	17.8	16.4	16.8	16.8	17.1	17.5
12H	16.7	17.0	17.1	17.4	17.8	16.3	16.7	16.7	17.1	17.5
8H 4H	16.7	17.1	17.1	17.5	17.8	16.4	16.8	16.8	17.1	17.5
6H	16.6	17.0	17.0	17.3	17.8	16.3	16.6	16.7	17.0	17.4
8H	16.6	16.9	17.0	17.3	17.7	16.2	16.5	16.7	16.9	17.4
12H	16.5	16.8	17.0	17.2	17.7	16.1	16.4	16.6	16.8	17.3
12H 4H	16.7	17.0	17.1	17.4	17.8	16.3	16.7	16.7	17.1	17.5
6H	16.6	16.9	17.0	17.3	17.7	16.2	16.5	16.6	16.9	17.4
8H	16.5	16.8	17.0	17.2	17.7	16.1	16.4	16.6	16.8	17.3
Variations with the observer position at spacings:										
S = 1.0H	+ 1.4 / - 2.3					+ 1.4 / - 2.5				
1.5H	+ 1.4 / - 1.4					+ 1.3 / - 1.3				
2.0H	+ 2.8 / - 3.0					+ 2.7 / - 3.0				

CIE Pub.117, 1173 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 0.6$ )

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  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:

UTILIZATION FACTORS TABLE

Test:U:220.7V I:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 70\text{mm} \times H138\text{mm}$	
MFR.: NEKO LIGHTING AG		

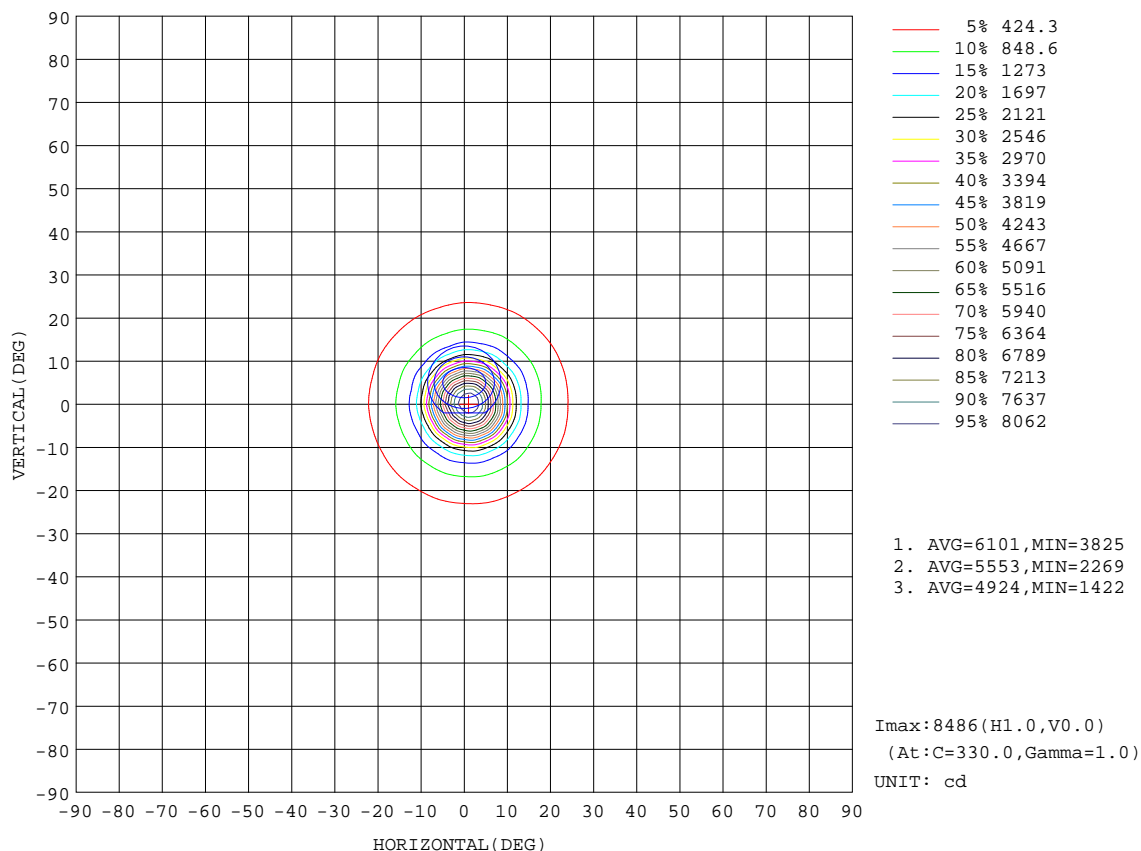
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	86	80	76	86	80	76	85	79	76	72
0.80	94	88	84	93	88	84	92	87	84	80
1.00	99	93	89	98	92	89	96	92	88	84
1.25	103	97	94	102	97	93	100	96	93	88
1.50	105	101	97	104	100	97	102	98	96	91
2.00	108	104	101	107	103	100	104	101	99	93
2.50	110	106	103	108	105	102	105	103	100	94
3.00	112	108	105	110	107	104	106	104	102	96
4.00	114	111	109	112	109	107	108	106	105	97
5.00	115	113	111	113	111	109	109	107	106	99
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:2017-05-19

$\gamma$  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:

ISOCANDELA DIAGRAM

Test:U:220.7V I:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



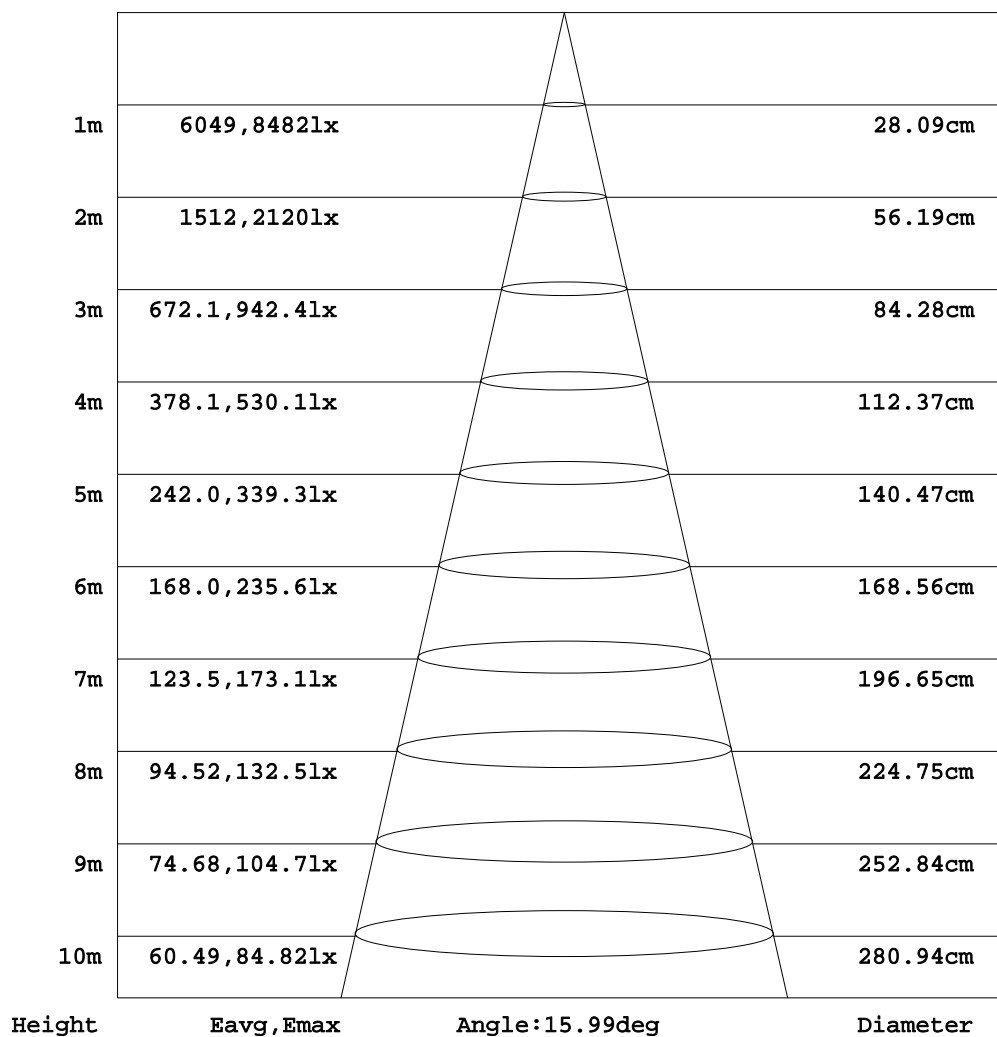
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  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:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

Flux out:375.4 lm



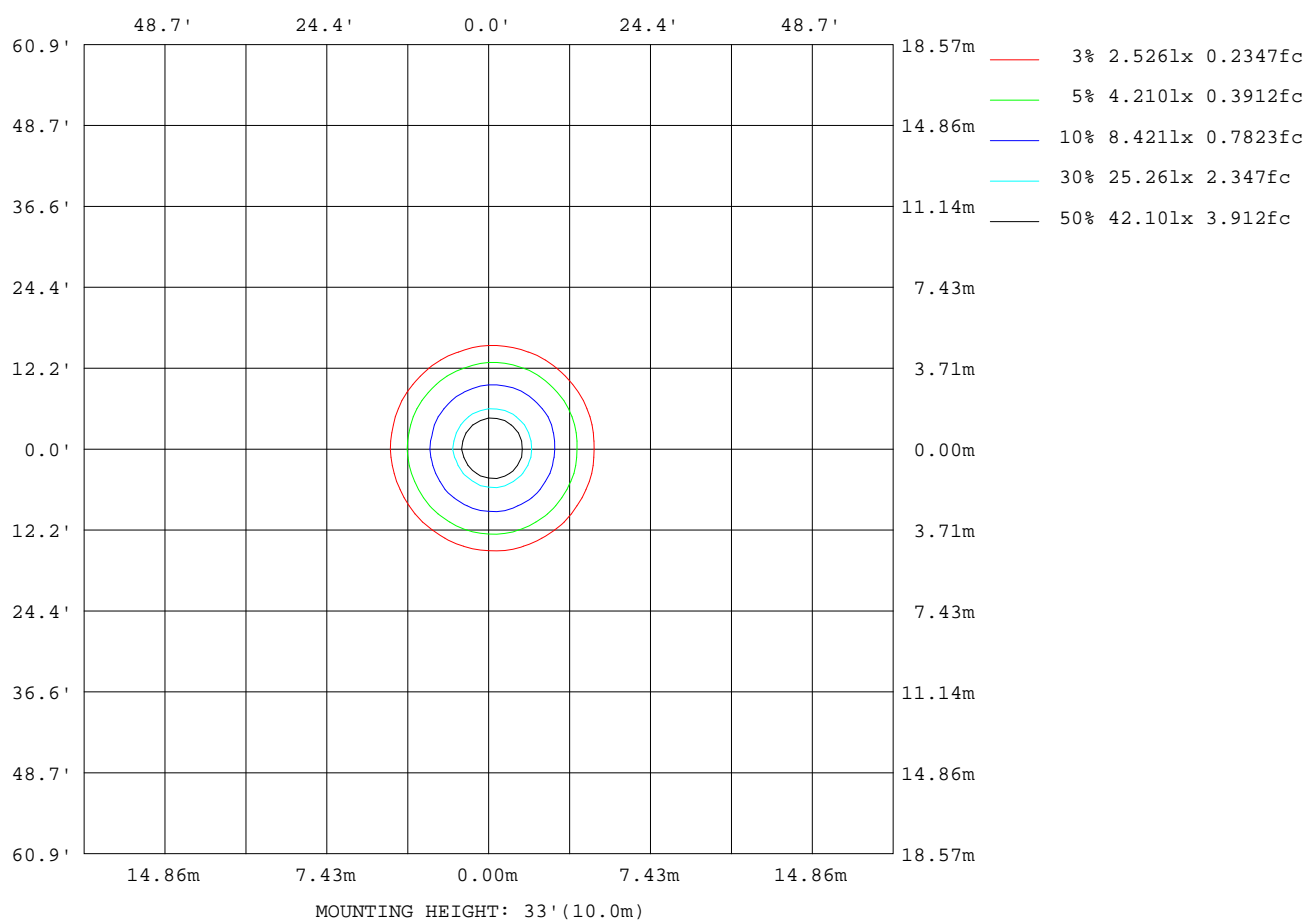
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  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:

**ISOLUX DIAGRAM**

Test:U:220.7V I:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  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:0.0676A P:14.21W PF:0.9524 Freq:50.00Hz Lamp Flux:1173.15x1 lm		
NAME: ROXY S-15W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

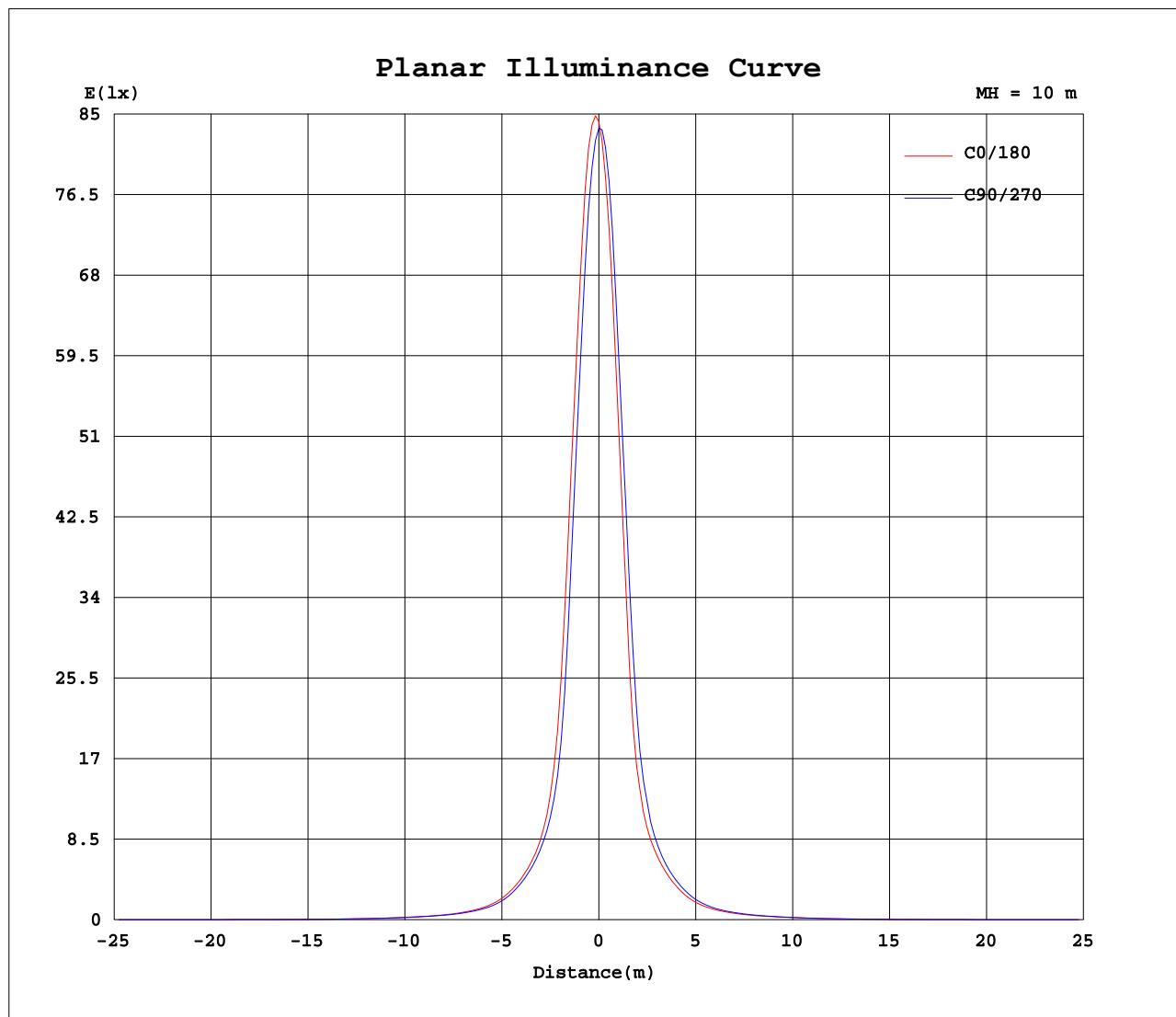
AvgL	cd/m2
L_0~180 (65) av	6964
L_0~180 (75) av	283
L_0~180 (85) av	237
L_90~270 (65) av	7237
L_90~270 (75) av	285
L_90~270 (85) av	219
L_45 (65) av	6983
L_45 (75) av	296
L_45 (85) av	224

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Meng Yongjian  
 Test Date:2017-05-19

$\gamma$  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: 2017-05-19

$\gamma$  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:

```