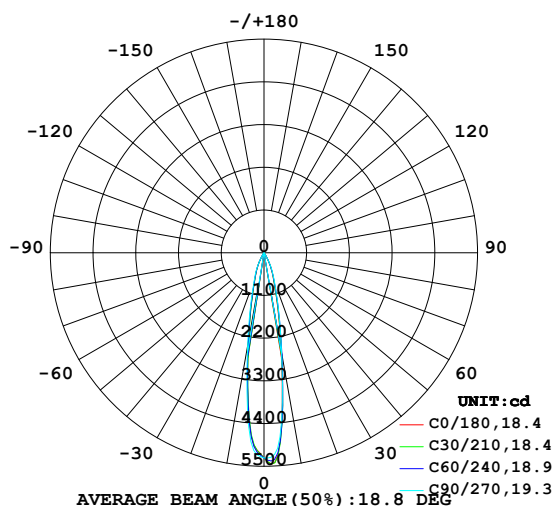


LUMINAIRE PHOTOMETRIC TEST REPORT

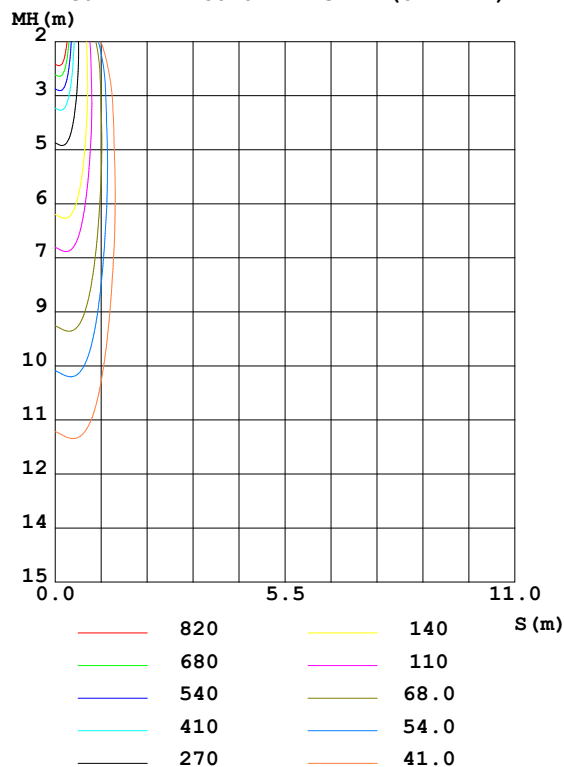
Test:U:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: \varnothing 55mm*H150mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 64.48 lm/W			
MODEL	CITIZEN-4000K	I _{max} (cd)	5466	S/MH (C0/180)	0.31
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.32
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	983.46	η UP, DN (C0-180)	0.0, 51.4
NOMINAL FLUX (lm)	983.457	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 48.6
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: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2561	2700	2628	2493	2331	2275	2441	2555	0- 10	363.9	363.9	37,37
20	718.1	752.3	784.4	711.6	668.8	656.2	720.7	727.0	10- 20	368.9	732.9	74.5,74.5
30	172.4	178.4	158.6	142.1	151.4	133.0	146.0	138.2	20- 30	187.7	920.6	93.6,93.6
40	32.63	33.29	30.45	28.72	29.41	29.18	30.12	30.13	30- 40	37.63	958.2	97.4,97.4
50	14.46	13.73	12.80	12.44	11.59	11.12	12.79	12.80	40- 50	15.95	974.1	99.1,99.1
60	4.669	4.786	4.538	4.228	3.752	3.905	4.045	4.673	50- 60	6.878	981.0	99.8,99.8
70	0.4529	0.4152	0.4140	0.3852	0.3825	0.4246	0.4808	0.5217	60- 70	2.060	983.1	100,100
80	0.1677	0.1311	0.1468	0.1291	0.1282	0.1555	0.1572	0.1820	70- 80	0.2880	983.4	100,100
90	0.0370	0.0350	0.0372	0.0372	0.0239	0.0241	0.0263	0.0241	80- 90	0.0848	983.5	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): 967.57 lm

%lum = 98.4%

%lamp = 98.4%

Conical surface Flux(120deg): 981.02 lm

%lum = 99.8%

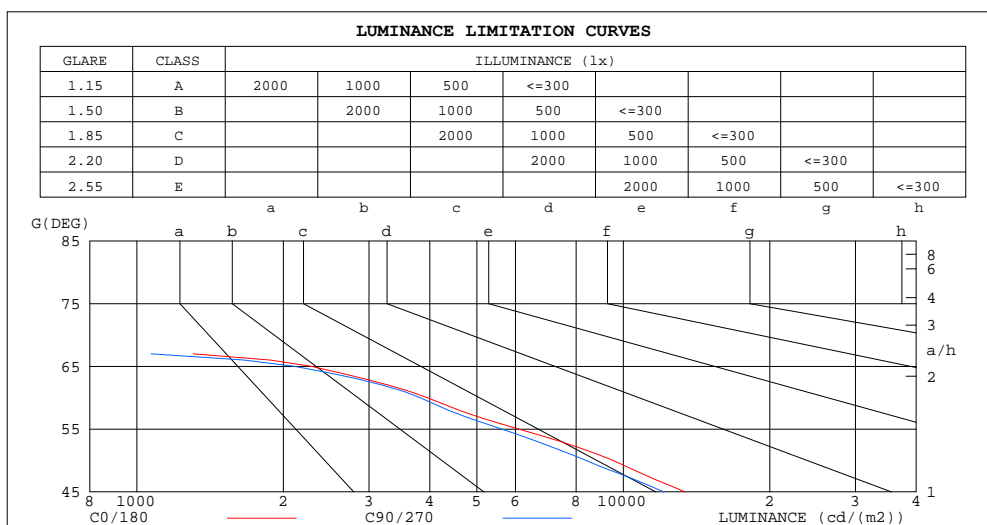
%lamp = 99.8%

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:

LUMINANCE LIMITATION CURVES

Test:U:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	434	392
80	409	356
75	463	403
70	561	509
65	2282	2108
60	3953	3820
55	6092	5623
50	9525	8384
45	13405	12104

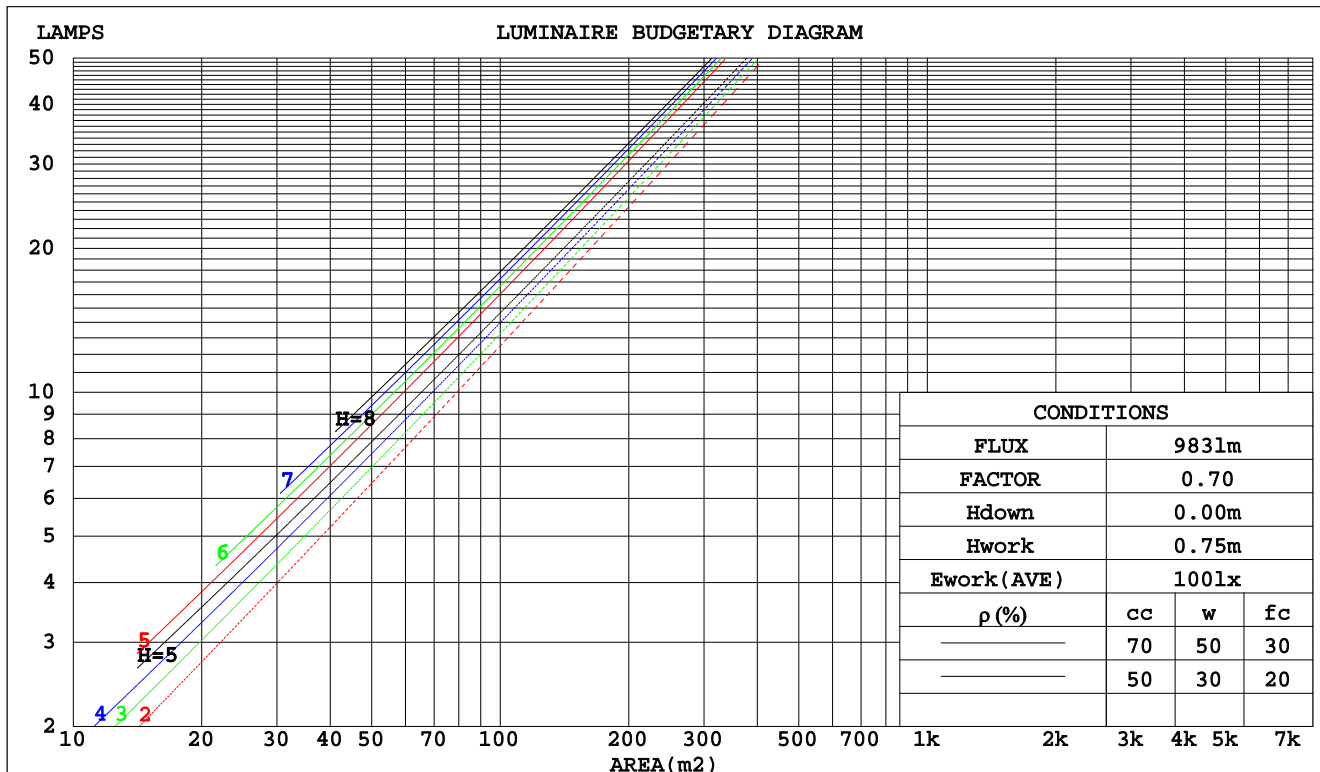
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
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	1.13	1.11	1.09	1.11	1.09	1.07	1.07	1.05	1.04	1.03	1.02	1.01	.00	.99	.98	.96
2.0	1.07	1.04	1.02	1.06	1.03	1.01	1.03	1.00	.98	.00	.98	.96	.97	.96	.94	.93
3.0	1.03	.99	.96	1.01	.98	.95	.99	.96	.94	.97	.94	.92	.94	.93	.91	.90
4.0	.98	.94	.91	.97	.94	.91	.95	.92	.90	.94	.91	.89	.92	.90	.88	.87
5.0	.95	.91	.87	.94	.90	.87	.92	.89	.86	.91	.88	.86	.89	.87	.85	.84
6.0	.91	.87	.84	.91	.87	.84	.89	.86	.83	.88	.85	.83	.87	.84	.82	.81
7.0	.88	.84	.81	.88	.84	.81	.87	.83	.80	.86	.82	.80	.85	.82	.80	.79
8.0	.86	.81	.78	.85	.81	.78	.84	.81	.78	.83	.80	.78	.82	.80	.77	.76
9.0	.83	.79	.76	.83	.79	.76	.82	.78	.76	.81	.78	.75	.80	.77	.75	.74
10.0	.81	.77	.74	.80	.76	.74	.80	.76	.74	.79	.76	.73	.78	.75	.73	.72



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: \varnothing 55mm*H150mm	
MFR.: NEKO LIGHTING AG		

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.139	.079	.025	.133	.076	.024	.120	.069	.022	.109	.063	.020	.098	.057	.018		
2.0	.129	.071	.022	.124	.068	.021	.114	.063	.020	.104	.059	.018	.096	.054	.017		
3.0	.121	.064	.019	.116	.062	.019	.108	.058	.018	.100	.055	.017	.093	.051	.016		
4.0	.114	.059	.017	.110	.057	.017	.102	.054	.016	.096	.051	.016	.090	.049	.015		
5.0	.107	.055	.016	.104	.053	.016	.098	.051	.015	.092	.048	.014	.086	.046	.014		
6.0	.101	.051	.015	.098	.050	.014	.093	.048	.014	.088	.046	.013	.084	.044	.013		
7.0	.096	.048	.013	.094	.047	.013	.089	.045	.013	.085	.043	.013	.081	.042	.012		
8.0	.092	.045	.013	.089	.044	.012	.085	.043	.012	.082	.041	.012	.078	.040	.012		
9.0	.087	.042	.012	.086	.042	.012	.082	.041	.011	.079	.039	.011	.075	.038	.011		
10.0	.084	.040	.011	.082	.040	.011	.079	.039	.011	.076	.038	.011	.073	.037	.011		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{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	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.151	.133	.118	.129	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014	
3.0	.136	.113	.095	.116	.098	.083	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.123	.098	.079	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.113	.086	.066	.097	.074	.057	.067	.052	.040	.039	.030	.024	.012	.010	.008	
6.0	.104	.076	.055	.090	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.097	.068	.047	.083	.059	.041	.057	.041	.029	.033	.024	.017	.011	.008	.006	
8.0	.090	.061	.041	.078	.053	.035	.054	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.085	.055	.035	.073	.048	.031	.050	.034	.022	.029	.020	.013	.010	.007	.004	
10.0	.080	.050	.031	.069	.044	.027	.048	.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:2017-08-30

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:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm										
NAME: ROXY Art-15W-940-18					TYPE:Tracklight			SERIAL No.:		
SPEC.:4000K					DIM.: ϕ 55mm*H150mm					
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	11.8	12.5	12.0	12.6	12.8	11.4	12.1	11.6	12.2	12.4
3H	11.7	12.3	11.9	12.5	12.7	11.3	11.9	11.6	12.1	12.3
4H	11.6	12.2	11.9	12.4	12.6	11.2	11.8	11.5	12.0	12.3
6H	11.5	12.1	11.8	12.3	12.6	11.2	11.7	11.4	12.0	12.2
8H	11.5	12.0	11.8	12.3	12.5	11.1	11.7	11.4	11.9	12.2
12H	11.5	12.0	11.8	12.2	12.5	11.1	11.6	11.4	11.9	12.1
4H 2H	11.7	12.3	12.0	12.5	12.7	11.3	11.9	11.6	12.1	12.3
3H	11.6	12.1	11.9	12.4	12.6	11.2	11.7	11.5	12.0	12.3
4H	11.5	12.0	11.8	12.3	12.6	11.1	11.6	11.5	11.9	12.2
6H	11.4	11.8	11.8	12.1	12.5	11.0	11.4	11.4	11.8	12.1
8H	11.3	11.7	11.7	12.1	12.4	11.0	11.4	11.4	11.7	12.1
12H	11.3	11.6	11.7	12.0	12.4	10.9	11.3	11.3	11.7	12.0
8H 4H	11.3	11.7	11.7	12.1	12.4	11.0	11.4	11.4	11.7	12.1
6H	11.2	11.6	11.7	11.9	12.4	10.9	11.2	11.3	11.6	12.0
8H	11.2	11.5	11.6	11.9	12.3	10.8	11.1	11.3	11.5	11.9
12H	11.1	11.4	11.6	11.8	12.3	10.7	11.0	11.2	11.4	11.9
12H 4H	11.3	11.6	11.7	12.0	12.4	10.9	11.3	11.3	11.6	12.0
6H	11.2	11.5	11.6	11.9	12.3	10.8	11.1	11.2	11.5	11.9
8H	11.1	11.4	11.6	11.8	12.3	10.7	11.0	11.2	11.4	11.9
Variations with the observer position at spacings:										
S = 1.0H	+ 1.9 / - 4.0					+ 1.8 / - 4.0				
1.5H	+ 2.4 / - 2.9					+ 2.3 / - 2.6				
2.0H	+ 3.8 / - 4.7					+ 3.5 / - 4.1				

CIE Pub.117, 983.5 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:25.3DEG
 Operators:Meng Yongjian
 Test Date:2017-08-30

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:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 55\text{mm} \times H150\text{mm}$	
MFR.: NEKO LIGHTING AG		

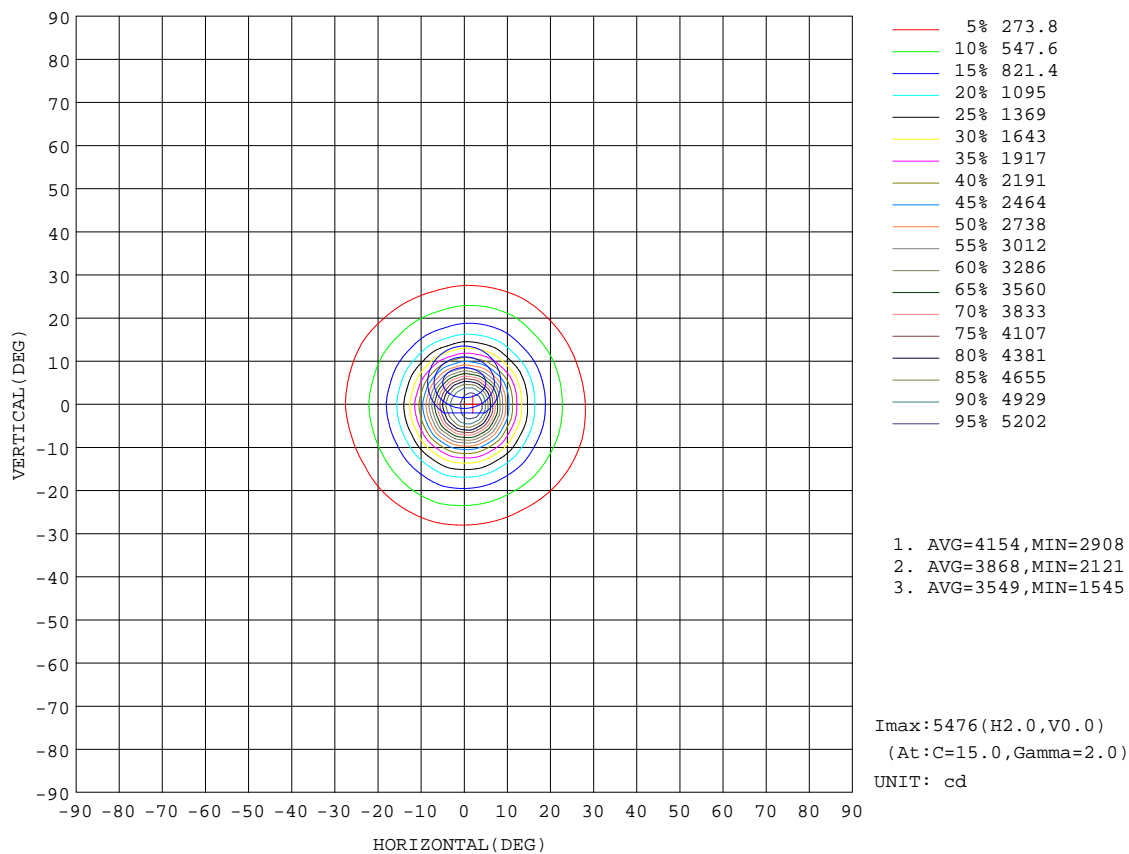
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	81	89	84	80	89	84	80	77
0.80	97	92	88	96	91	88	95	91	88	84
1.00	101	96	93	100	95	92	99	95	92	88
1.25	105	100	97	104	99	96	102	98	96	92
1.50	107	103	100	106	102	99	104	101	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	116	113	112	113	112	110	110	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: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Meng Yongjian
 Test Date:2017-08-30

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:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		



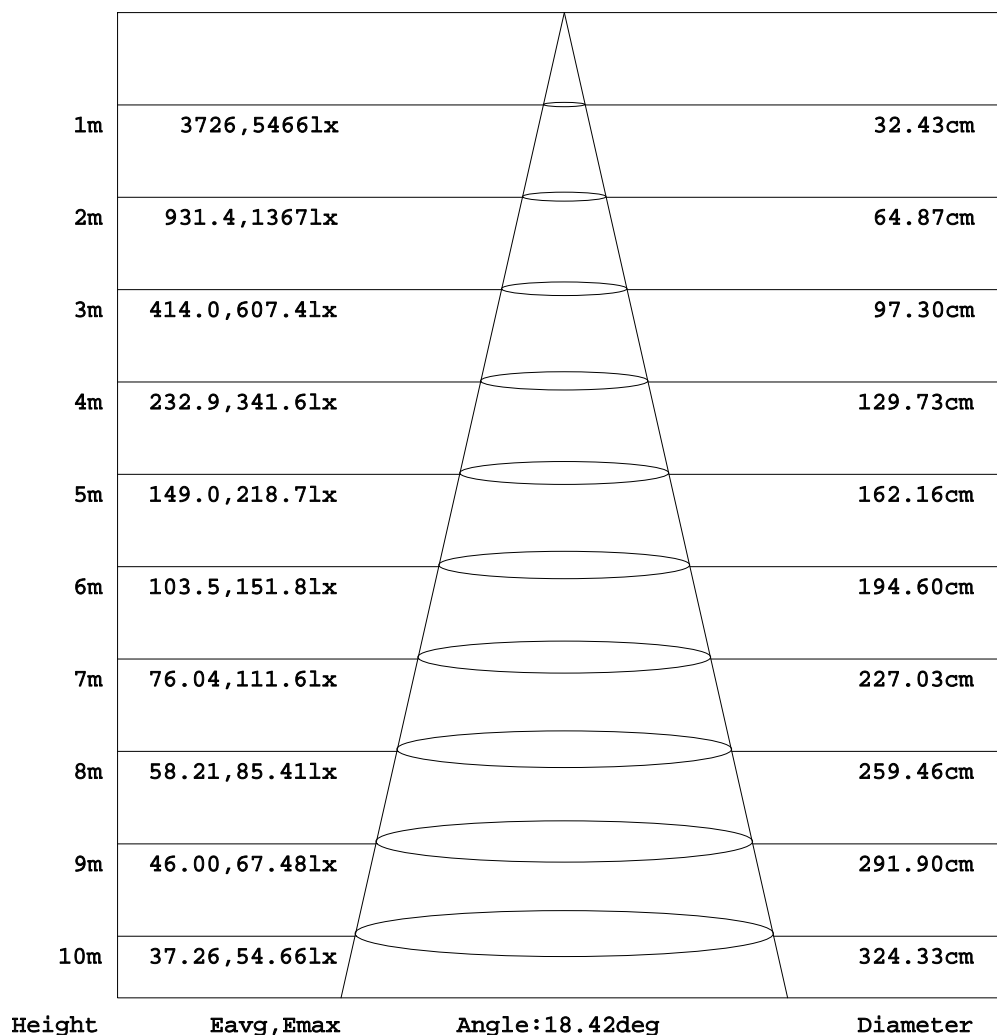
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		

Flux out:363.9 lm



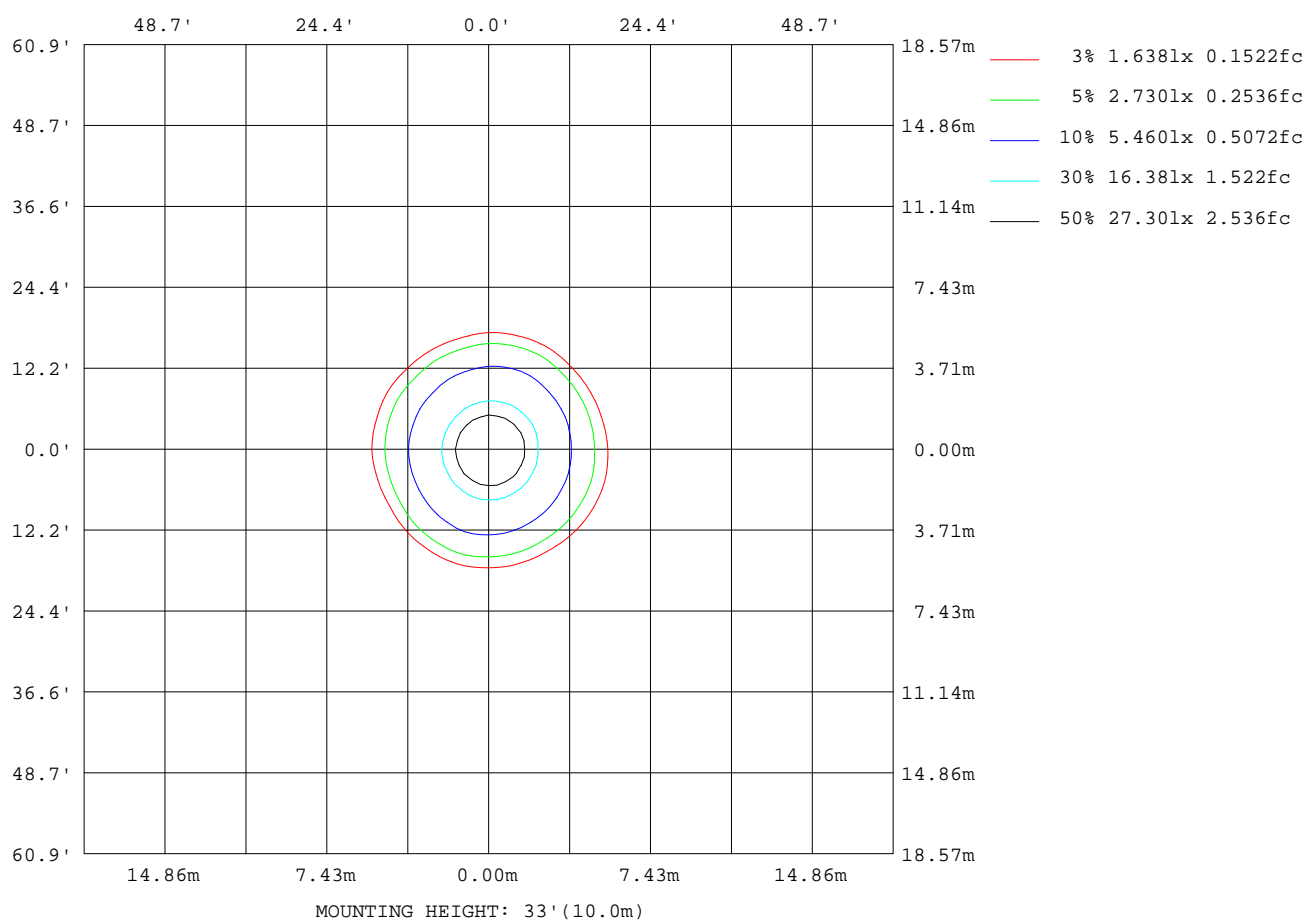
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:

LED Avg.L Report

Test:U:220.8V I:0.0722A P:15.25W PF:0.9572 Freq:50.00Hz Lamp Flux:983.457x1 lm		
NAME: ROXY Art-15W-940-18	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		

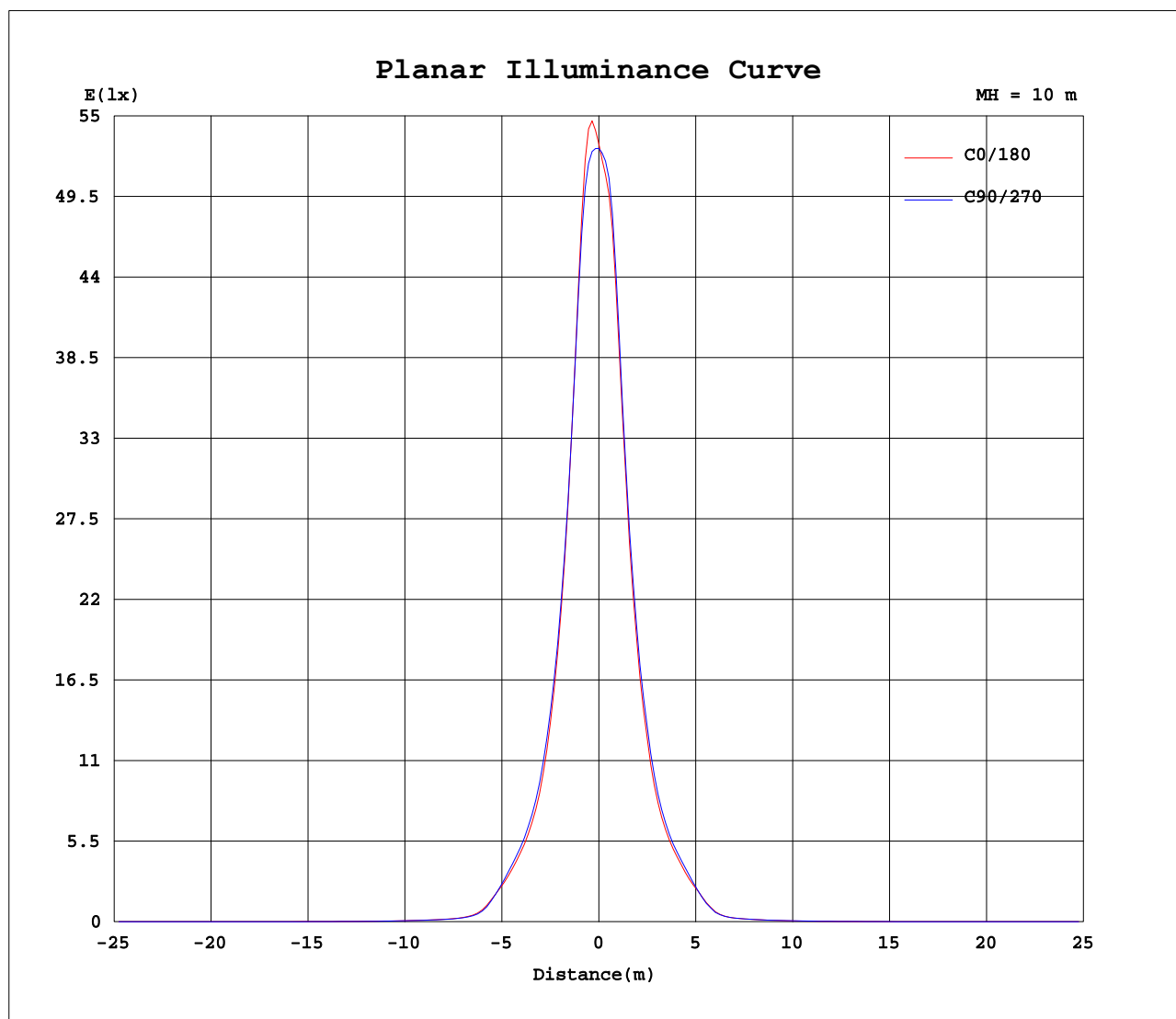
AvgL	cd/m2
L_0~180 (65) av	2004
L_0~180 (75) av	416
L_0~180 (85) av	362
L_90~270 (65) av	2134
L_90~270 (75) av	438
L_90~270 (85) av	354
L_45 (65) av	2119
L_45 (75) av	431
L_45 (85) av	344

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Meng Yongjian
 Test Date:2017-08-30

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: 25.3DEG
Operators: Meng Yongjian
Test Date: 2017-08-30

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:

```

```

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:

```