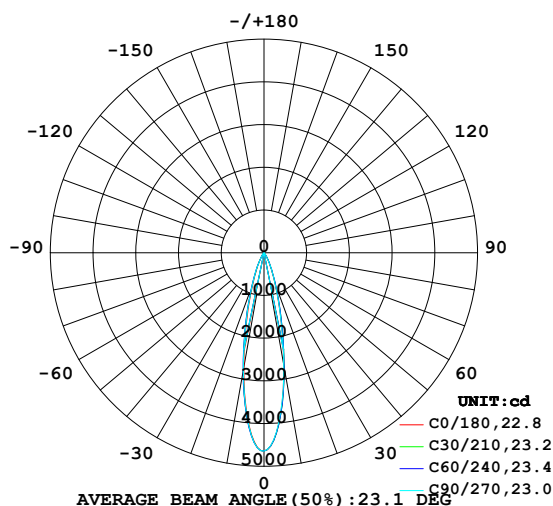


LUMINAIRE PHOTOMETRIC TEST REPORT

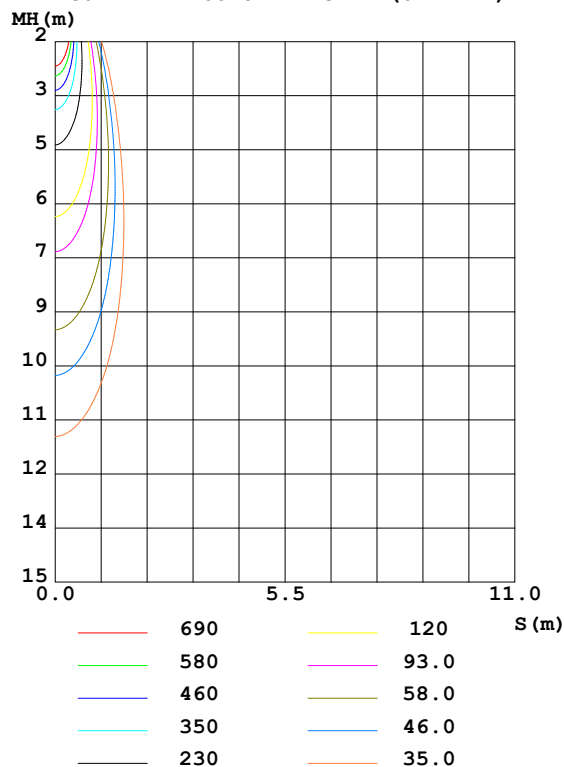
Test:U:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: \varnothing 55mm*H150mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 67.31 lm/W			
MODEL	CITIZEN-4000K	I _{max} (cd)	4644	S/MH (C0/180)	0.39
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.40
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1027.0	η UP, DN (C0-180)	0.0, 49.4
NOMINAL FLUX (lm)	1026.98	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.6
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	2669	2767	2673	2638	2738	2780	2787	2678	0- 10	341.3	341.3	33.2,33.2
20	733.7	803.2	754.6	703.2	755.2	812.2	808.0	725.4	10- 20	420.3	761.6	74.2,74.2
30	181.6	191.8	171.5	165.4	179.2	178.5	173.6	170.7	20- 30	183.2	944.8	92,92
40	46.07	46.95	43.71	42.67	43.91	43.59	43.55	42.79	30- 40	55.63	1000	97.4,97.4
50	12.81	12.37	11.90	11.81	11.72	12.20	12.25	11.45	40- 50	19.14	1020	99.3,99.3
60	3.302	3.437	3.197	3.027	2.789	3.100	2.974	2.877	50- 60	6.017	1026	99.9,99.9
70	0.2504	0.2623	0.2712	0.2160	0.1841	0.2124	0.2204	0.2426	60- 70	1.192	1027	100,100
80	0.1033	0.0939	0.1072	0.0698	0.0591	0.0810	0.0742	0.0962	70- 80	0.1560	1027	100,100
90	0.0395	0.0372	0.0393	0.0371	0.0263	0.0263	0.0262	0.0262	80- 90	0.0580	1027	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): 1012.6 lm

%lum = 98.6%

%lamp = 98.6%

Conical surface Flux(120deg): 1025.6 lm

%lum = 99.9%

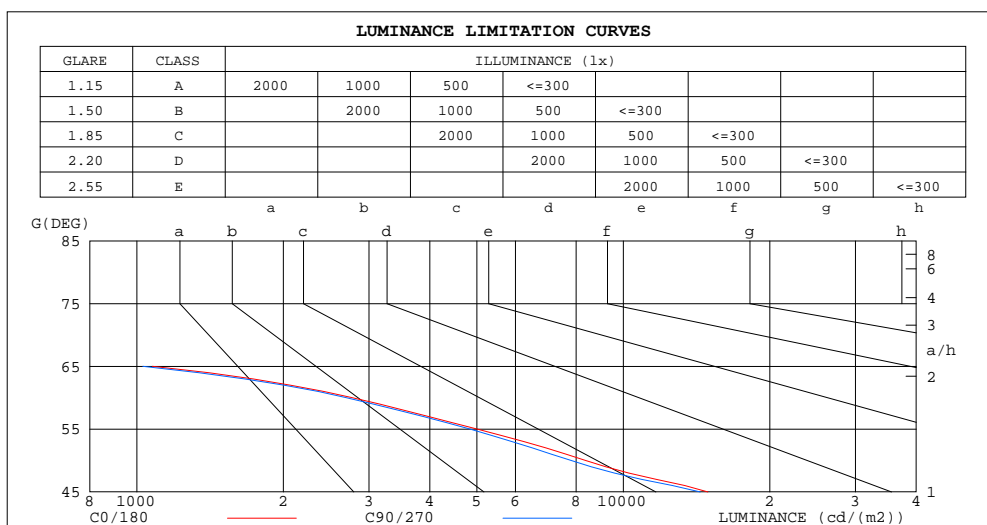
%lamp = 99.9%

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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	317	328
80	249	260
75	264	288
70	307	334
65	1076	1028
60	2771	2695
55	5004	4839
50	8360	7803
45	14922	14385

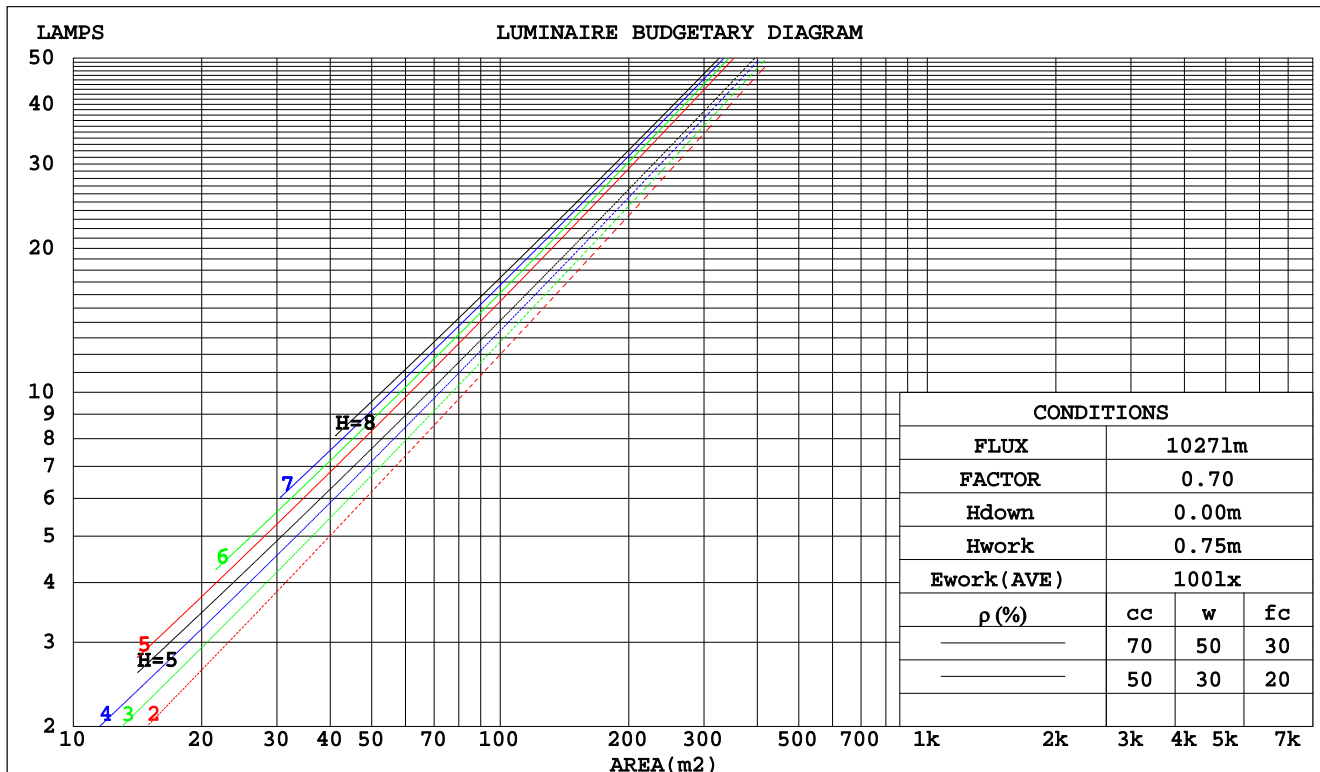
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi 55\text{mm} \times \text{H}150\text{mm}$	
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	1.13	1.11	1.09	1.11	1.09	1.07	1.07	1.05	1.04	1.03	1.02	1.01	.99	.99	.98	.96
2.0	1.07	1.04	1.01	1.05	1.03	1.00	1.02	1.00	.98	.99	.98	.96	.97	.95	.94	.93
3.0	1.02	.98	.95	1.01	.97	.95	.98	.96	.93	.96	.94	.92	.94	.92	.90	.89
4.0	.98	.94	.91	.97	.93	.90	.95	.92	.89	.93	.90	.88	.91	.89	.87	.86
5.0	.94	.90	.87	.93	.89	.86	.92	.88	.85	.90	.87	.85	.89	.86	.84	.83
6.0	.91	.86	.83	.90	.86	.83	.88	.85	.82	.87	.84	.82	.86	.83	.81	.80
7.0	.87	.83	.80	.87	.83	.80	.86	.82	.79	.85	.81	.79	.84	.81	.79	.77
8.0	.84	.80	.77	.84	.80	.77	.83	.79	.77	.82	.79	.76	.81	.78	.76	.75
9.0	.82	.77	.75	.81	.77	.74	.81	.77	.74	.80	.76	.74	.79	.76	.74	.73
10.0	.79	.75	.72	.79	.75	.72	.78	.75	.72	.78	.74	.72	.77	.74	.72	.71



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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: \varnothing 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	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.142	.080	.026	.135	.077	.024	.123	.070	.022	.111	.064	.021	.101	.058	.019		
2.0	.132	.072	.022	.127	.070	.021	.116	.065	.020	.107	.060	.019	.098	.055	.017		
3.0	.124	.066	.020	.119	.064	.019	.110	.060	.018	.103	.056	.017	.095	.053	.016		
4.0	.116	.060	.018	.112	.059	.017	.105	.056	.017	.098	.053	.016	.092	.050	.015		
5.0	.110	.056	.016	.106	.055	.016	.100	.052	.015	.094	.050	.015	.089	.048	.014		
6.0	.104	.052	.015	.101	.051	.015	.096	.049	.014	.091	.047	.014	.086	.045	.013		
7.0	.099	.049	.014	.096	.048	.014	.092	.046	.013	.087	.045	.013	.083	.043	.013		
8.0	.094	.046	.013	.092	.045	.013	.088	.044	.013	.084	.043	.012	.081	.041	.012		
9.0	.090	.044	.012	.088	.043	.012	.085	.042	.012	.081	.041	.012	.078	.040	.011		
10.0	.086	.041	.011	.085	.041	.011	.081	.040	.011	.078	.039	.011	.076	.038	.011		

pcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.117	.129	.114	.101	.089	.079	.071	.051	.046	.041	.016	.015	.014	
3.0	.136	.113	.095	.117	.098	.082	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.124	.098	.078	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.114	.086	.065	.098	.074	.057	.067	.052	.040	.039	.030	.024	.013	.010	.008	
6.0	.105	.076	.055	.090	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.098	.068	.047	.084	.059	.041	.058	.041	.029	.034	.024	.017	.011	.008	.006	
8.0	.091	.061	.040	.079	.053	.035	.054	.037	.025	.032	.022	.015	.010	.007	.005	
9.0	.086	.055	.035	.074	.048	.031	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.081	.051	.031	.070	.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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm										
NAME: ROXY Art-15W-940-24					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	13.1	13.8	13.3	13.9	14.1	12.7	13.4	12.9	13.6	13.7
3H	13.0	13.6	13.2	13.8	14.0	12.6	13.2	12.8	13.4	13.6
4H	12.9	13.5	13.1	13.7	13.9	12.5	13.1	12.8	13.3	13.5
6H	12.8	13.4	13.1	13.6	13.8	12.4	13.0	12.7	13.2	13.5
8H	12.7	13.3	13.0	13.5	13.8	12.4	12.9	12.7	13.2	13.4
12H	12.7	13.2	13.0	13.5	13.8	12.3	12.9	12.7	13.1	13.4
4H 2H	12.9	13.5	13.2	13.7	13.9	12.6	13.2	12.8	13.4	13.6
3H	12.7	13.3	13.0	13.5	13.8	12.4	12.9	12.7	13.2	13.5
4H	12.6	13.1	13.0	13.4	13.7	12.3	12.8	12.6	13.1	13.4
6H	12.5	13.0	12.9	13.3	13.6	12.2	12.6	12.6	13.0	13.3
8H	12.5	12.9	12.9	13.2	13.6	12.1	12.5	12.5	12.9	13.3
12H	12.4	12.8	12.8	13.2	13.6	12.1	12.5	12.5	12.8	13.2
8H 4H	12.5	12.9	12.9	13.2	13.6	12.1	12.5	12.5	12.9	13.3
6H	12.4	12.7	12.8	13.1	13.5	12.0	12.4	12.5	12.8	13.2
8H	12.3	12.6	12.8	13.0	13.5	12.0	12.3	12.4	12.7	13.1
12H	12.3	12.5	12.7	13.0	13.4	11.9	12.2	12.4	12.6	13.1
12H 4H	12.4	12.8	12.8	13.2	13.6	12.1	12.5	12.5	12.8	13.2
6H	12.3	12.6	12.8	13.0	13.5	12.0	12.3	12.4	12.7	13.1
8H	12.3	12.5	12.7	13.0	13.4	11.9	12.2	12.4	12.6	13.1
Variations with the observer position at spacings:										
S = 1.0H	+ 2.8 / - 7.7					+ 2.7 / - 7.6				
1.5H	+ 4.3 / - 5.4					+ 4.2 / - 5.4				
2.0H	+ 5.1 / - 7.6					+ 5.3 / - 7.9				

CIE Pub.117, 1027 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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 55\text{mm} \times \text{H}150\text{mm}$	
MFR.: NEKO LIGHTING AG		

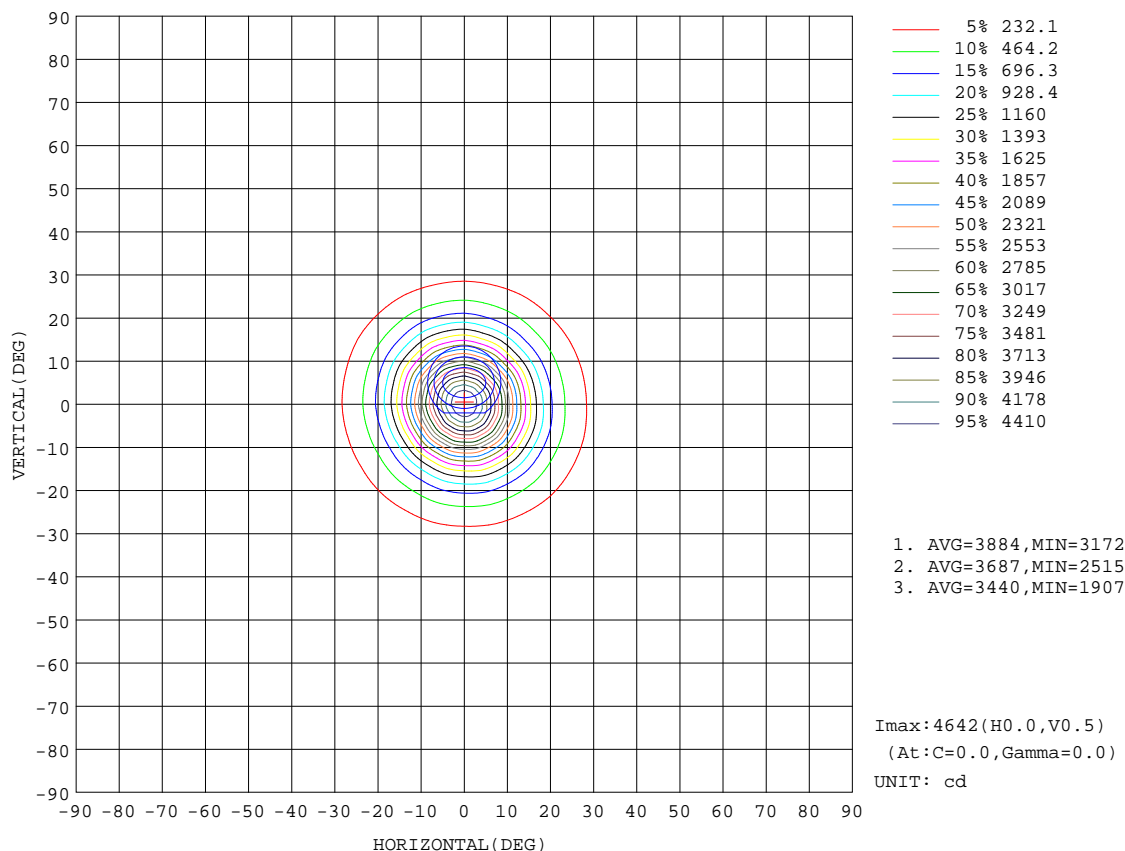
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	81	89	84	80	89	84	80	77
0.80	97	92	88	96	91	88	95	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	110	106	103	108	105	102	105	103	100	95
2.50	111	108	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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		



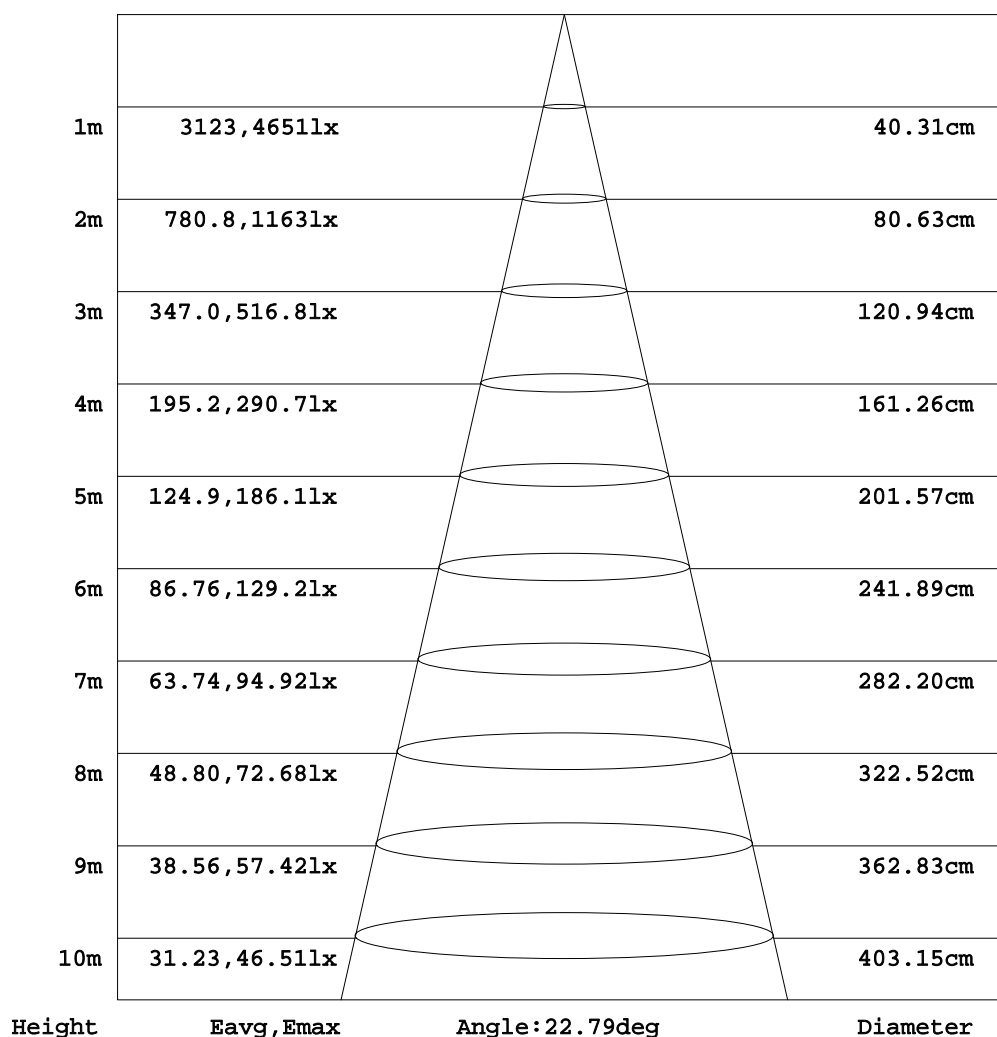
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		

Flux out:443.3 lm



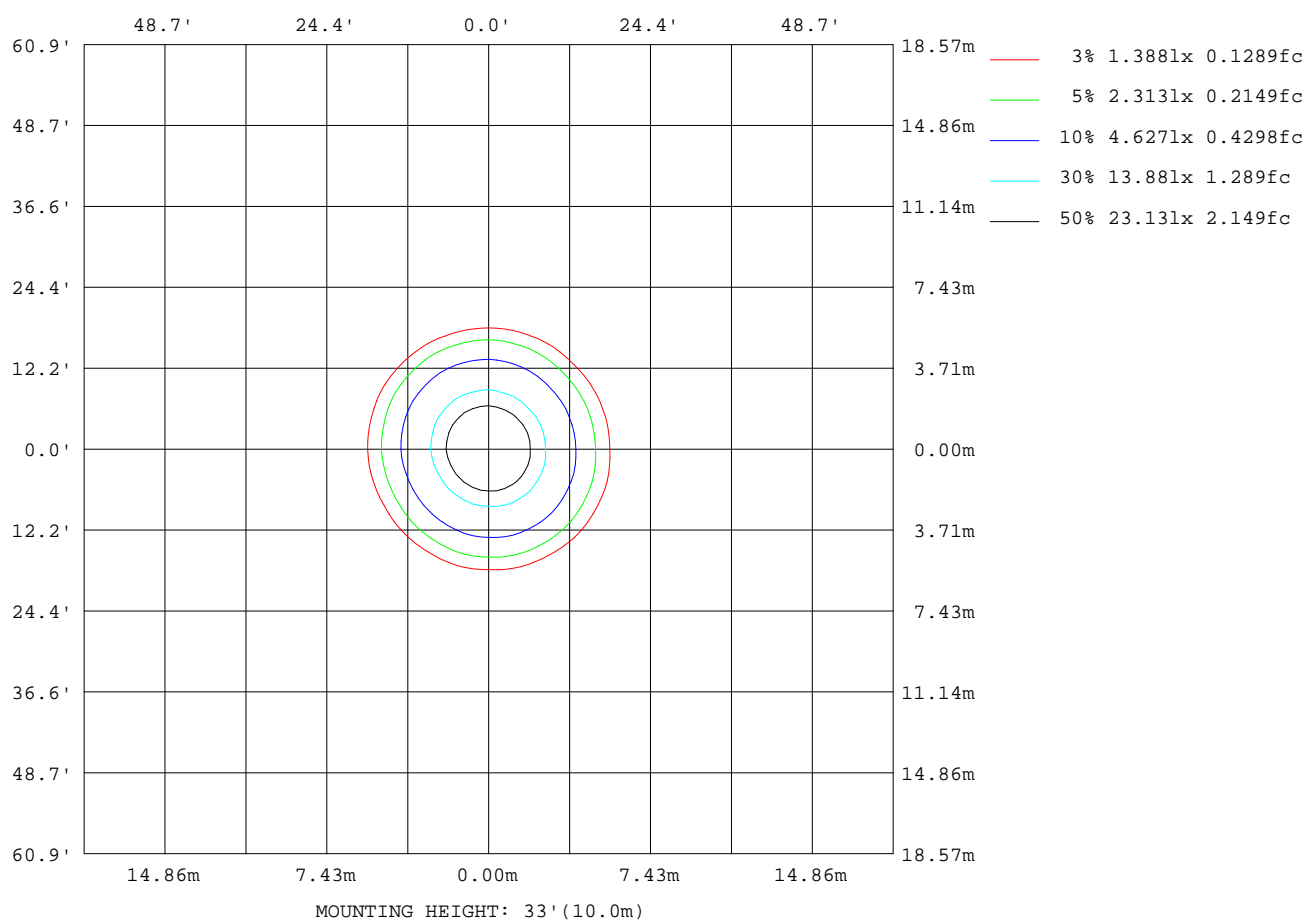
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	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:220.7V I:0.0722A P:15.26W PF:0.9574 Freq:50.00Hz Lamp Flux:1026.98x1 lm		
NAME: ROXY Art-15W-940-24	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150mm	
MFR.: NEKO LIGHTING AG		

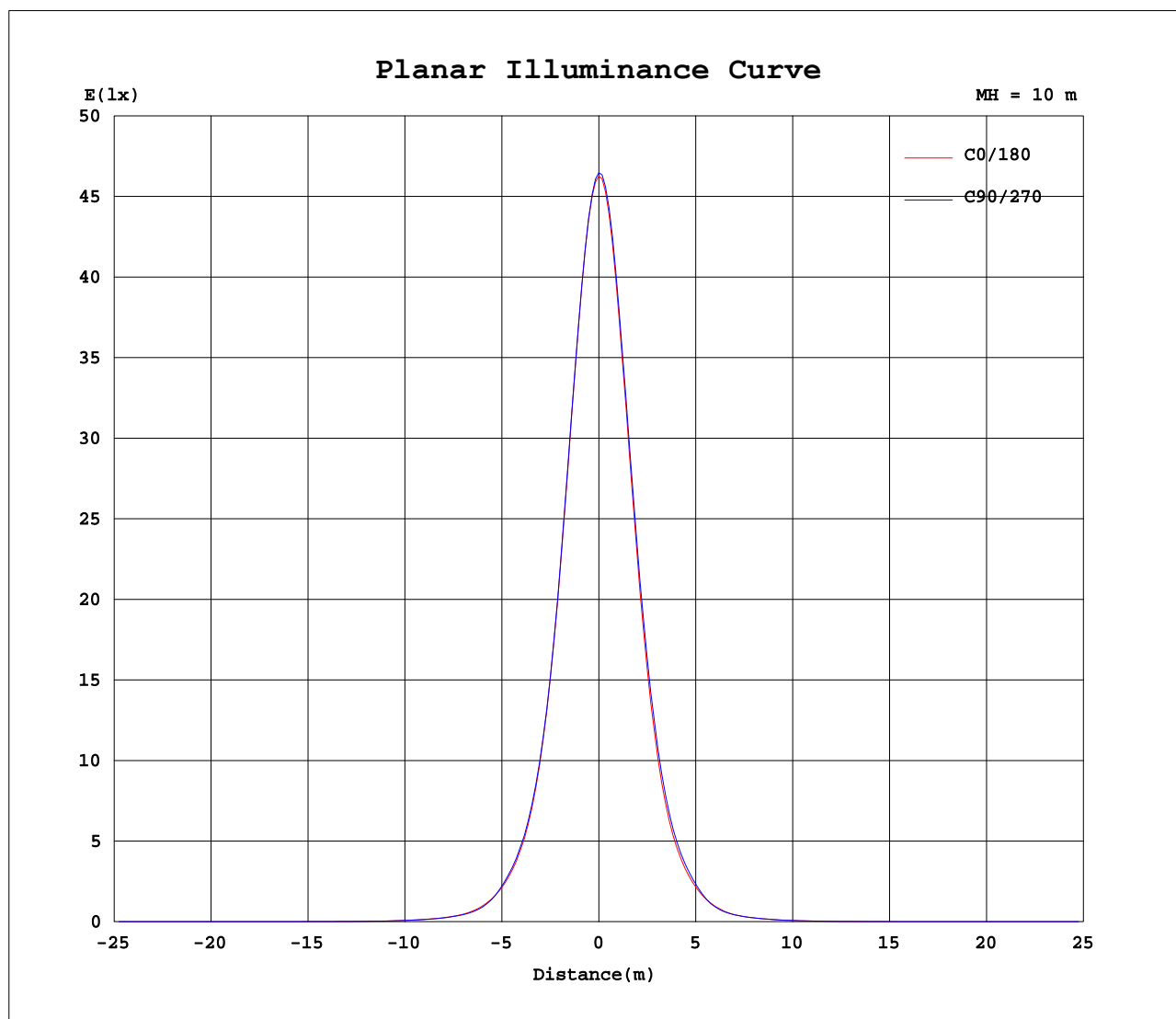
AvgL	cd/m2
L_0~180 (65) av	994
L_0~180 (75) av	214
L_0~180 (85) av	244
L_90~270 (65) av	1006
L_90~270 (75) av	252
L_90~270 (85) av	264
L_45 (65) av	1011
L_45 (75) av	234
L_45 (85) av	240

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:

```