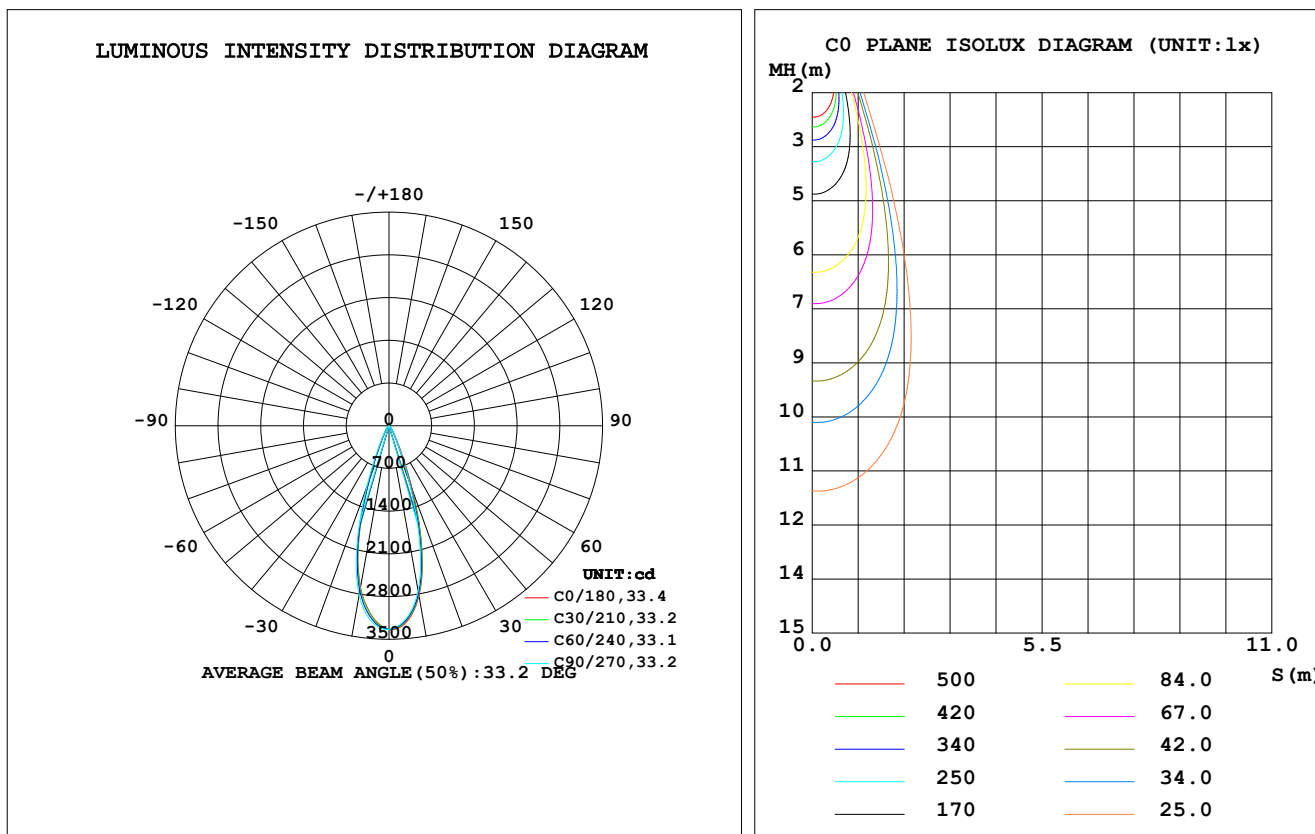


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.8V I:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: φ55mm*H150m	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 73.75 lm/W			
MODEL	CITIZEN-4000K	Imax (cd)	3346	S/MH (C0/180)	0.51
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.52
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1128.6	η UP, DN (C0-180)	0.0, 49.5
NOMINAL FLUX (lm)	1128.57	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.55



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:

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ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2830	2814	2750	2700	2690	2713	2818	2859	0- 10	291.6	291.6	25.8,25.8
20	1131	1029	965.1	1005	964.1	902.2	1060	1205	10- 20	528.4	820.1	72.7,72.7
30	200.8	174.8	181.5	200.4	185.3	161.7	187.3	219.4	20- 30	213.3	1033	91.6,91.6
40	55.94	54.02	53.02	54.49	51.65	49.85	54.21	58.63	30- 40	65.55	1099	97.4,97.4
50	12.40	11.63	11.19	11.48	11.10	10.66	11.45	12.75	40- 50	22.89	1122	99.4,99.4
60	3.168	2.730	2.728	2.824	2.629	2.508	2.579	3.069	50- 60	5.661	1127	99.9,99.9
70	0.1569	0.1134	0.1424	0.1379	0.1283	0.1377	0.1377	0.1732	60- 70	1.002	1128	100,100
80	0.0718	0.0415	0.0679	0.0547	0.0435	0.0612	0.0481	0.0701	70- 80	0.0958	1129	100,100
90	0.0435	0.0393	0.0438	0.0416	0.0283	0.0284	0.0285	0.0285	80- 90	0.0477	1129	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): 1113.9 lm

%lum = 98.7%

%lamp = 98.7%

Conical surface Flux(120deg): 1127.4 lm

%lum = 99.9%

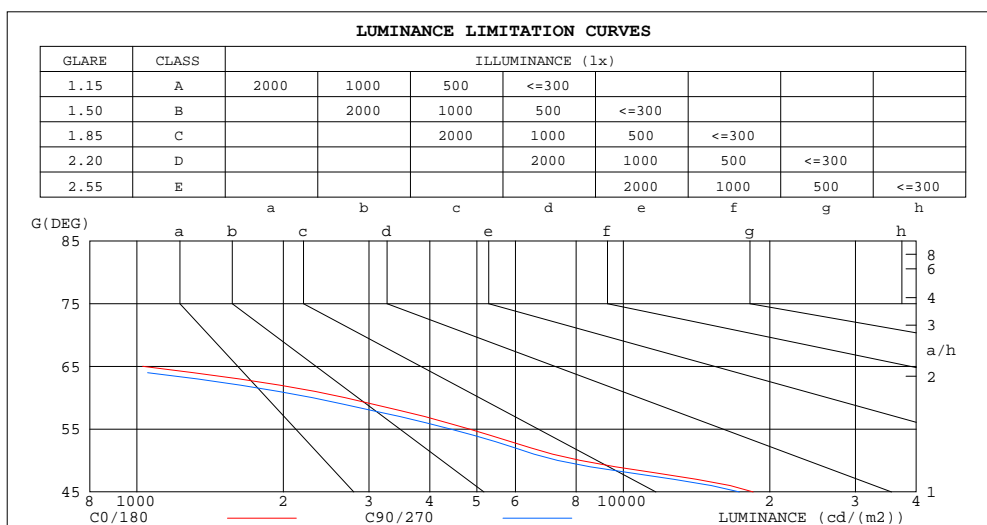
%lamp = 99.9%

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:220.8V I:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150m	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	254	264
80	175	164
75	160	150
70	194	175
65	1028	786
60	2680	2295
55	4823	4411
50	8159	7326
45	18488	17319

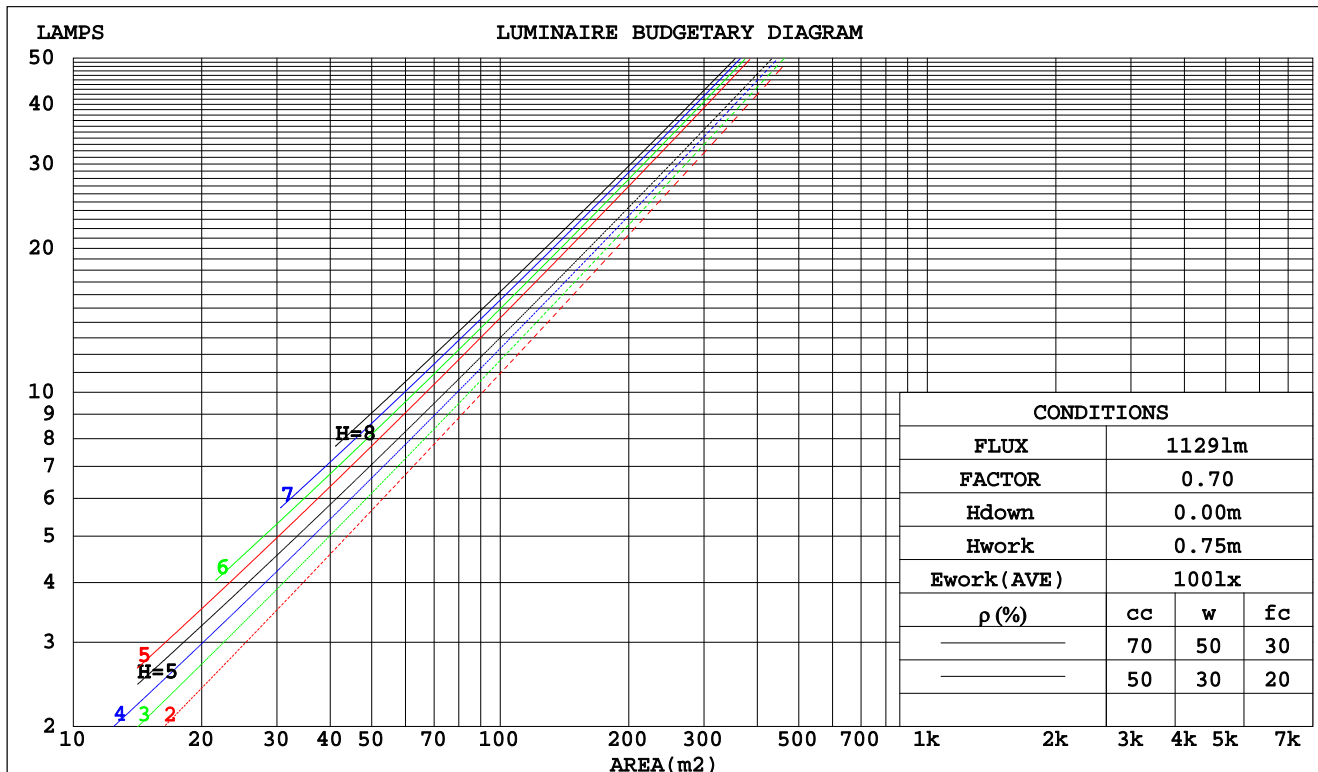
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150m	
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	1.02	1.01	.99	.98	.98	.96
2.0	1.07	1.03	1.01	1.05	1.02	.00	1.02	.99	.97	.99	.97	.95	.96	.95	.93	.92
3.0	1.01	.98	.94	1.00	.97	.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	.88	.85	.92	.88	.85	.90	.87	.84	.89	.86	.83	.87	.85	.83	.81
6.0	.89	.84	.81	.88	.84	.81	.87	.83	.80	.86	.82	.80	.84	.82	.79	.78
7.0	.86	.81	.78	.85	.81	.78	.84	.80	.77	.83	.79	.77	.82	.79	.76	.75
8.0	.82	.78	.75	.82	.78	.75	.81	.77	.74	.80	.77	.74	.79	.76	.74	.73
9.0	.80	.75	.72	.79	.75	.72	.78	.74	.72	.78	.74	.72	.77	.74	.71	.70
10.0	.77	.72	.70	.77	.72	.69	.76	.72	.69	.75	.72	.69	.75	.71	.69	.68



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:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: \varnothing 55mm*H150m	
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	.146	.083	.026	.139	.080	.025	.127	.073	.023	.116	.067	.021	.105	.061	.020		
2.0	.137	.075	.023	.131	.072	.022	.121	.067	.021	.111	.062	.020	.103	.058	.018		
3.0	.128	.068	.020	.124	.066	.020	.115	.062	.019	.107	.059	.018	.100	.055	.017		
4.0	.121	.063	.018	.117	.061	.018	.110	.058	.017	.103	.055	.017	.097	.052	.016		
5.0	.114	.058	.017	.111	.057	.017	.105	.055	.016	.099	.052	.016	.094	.050	.015		
6.0	.109	.055	.016	.106	.053	.015	.100	.051	.015	.095	.050	.015	.091	.048	.014		
7.0	.104	.051	.015	.101	.050	.014	.096	.049	.014	.092	.047	.014	.088	.046	.013		
8.0	.099	.048	.014	.097	.048	.013	.093	.046	.013	.089	.045	.013	.085	.044	.013		
9.0	.095	.046	.013	.093	.045	.013	.089	.044	.012	.086	.043	.012	.082	.042	.012		
10.0	.091	.044	.012	.089	.043	.012	.086	.042	.012	.083	.041	.012	.080	.040	.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	.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	.064	.099	.074	.056	.068	.052	.040	.039	.031	.023	.013	.010	.008		
6.0	.107	.076	.054	.092	.066	.047	.063	.046	.033	.037	.027	.020	.012	.009	.007		
7.0	.099	.068	.046	.086	.059	.040	.059	.041	.029	.034	.024	.017	.011	.008	.006		
8.0	.093	.062	.040	.080	.053	.035	.056	.037	.025	.032	.022	.015	.010	.007	.005		
9.0	.088	.056	.035	.076	.049	.030	.052	.034	.021	.031	.020	.013	.010	.007	.004		
10.0	.083	.051	.030	.072	.045	.026	.050	.031	.019	.029	.019	.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:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm										
NAME: ROXY Art-15W-940-36					TYPE:Tracklight			SERIAL No.:		
SPEC.:4000K					DIM.: ϕ 55mm*H150m					
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	13.3	14.0	13.5	14.2	14.3	13.0	13.7	13.2	13.8	14.0
3H	13.1	13.8	13.4	14.0	14.2	12.8	13.5	13.1	13.7	13.9
4H	13.0	13.7	13.3	13.9	14.1	12.7	13.4	13.0	13.6	13.8
6H	13.0	13.6	13.2	13.8	14.0	12.6	13.2	12.9	13.5	13.7
8H	12.9	13.5	13.2	13.7	14.0	12.6	13.2	12.9	13.4	13.7
12H	12.9	13.4	13.2	13.7	14.0	12.6	13.1	12.9	13.4	13.6
4H 2H	13.1	13.7	13.3	13.9	14.1	12.8	13.4	13.0	13.6	13.8
3H	12.9	13.4	13.2	13.7	14.0	12.6	13.1	12.9	13.4	13.7
4H	12.8	13.3	13.1	13.6	13.9	12.5	13.0	12.8	13.3	13.6
6H	12.7	13.1	13.1	13.5	13.8	12.4	12.8	12.8	13.2	13.5
8H	12.6	13.1	13.0	13.4	13.8	12.3	12.7	12.7	13.1	13.5
12H	12.6	13.0	13.0	13.3	13.7	12.3	12.7	12.7	13.0	13.4
8H 4H	12.6	13.1	13.0	13.4	13.8	12.3	12.7	12.7	13.1	13.5
6H	12.5	12.9	13.0	13.3	13.7	12.2	12.6	12.6	13.0	13.4
8H	12.5	12.8	12.9	13.2	13.6	12.2	12.5	12.6	12.9	13.3
12H	12.4	12.7	12.9	13.1	13.6	12.1	12.4	12.6	12.8	13.3
12H 4H	12.6	13.0	13.0	13.3	13.7	12.3	12.7	12.7	13.0	13.4
6H	12.5	12.8	12.9	13.2	13.6	12.2	12.5	12.6	12.9	13.3
8H	12.4	12.7	12.9	13.1	13.6	12.1	12.4	12.6	12.8	13.3
Variations with the observer position at spacings:										
S = 1.0H	+ 3.0 / - 9.4					+ 2.9 / - 9.5				
1.5H	+ 4.7 / - 7.5					+ 4.6 / - 6.9				
2.0H	+ 6.3 / -10.1					+ 6.2 / - 9.5				

CIE Pub.117, 1129 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 0.4$)

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:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 55\text{mm} \times H150\text{m}$	
MFR.: NEKO LIGHTING AG		

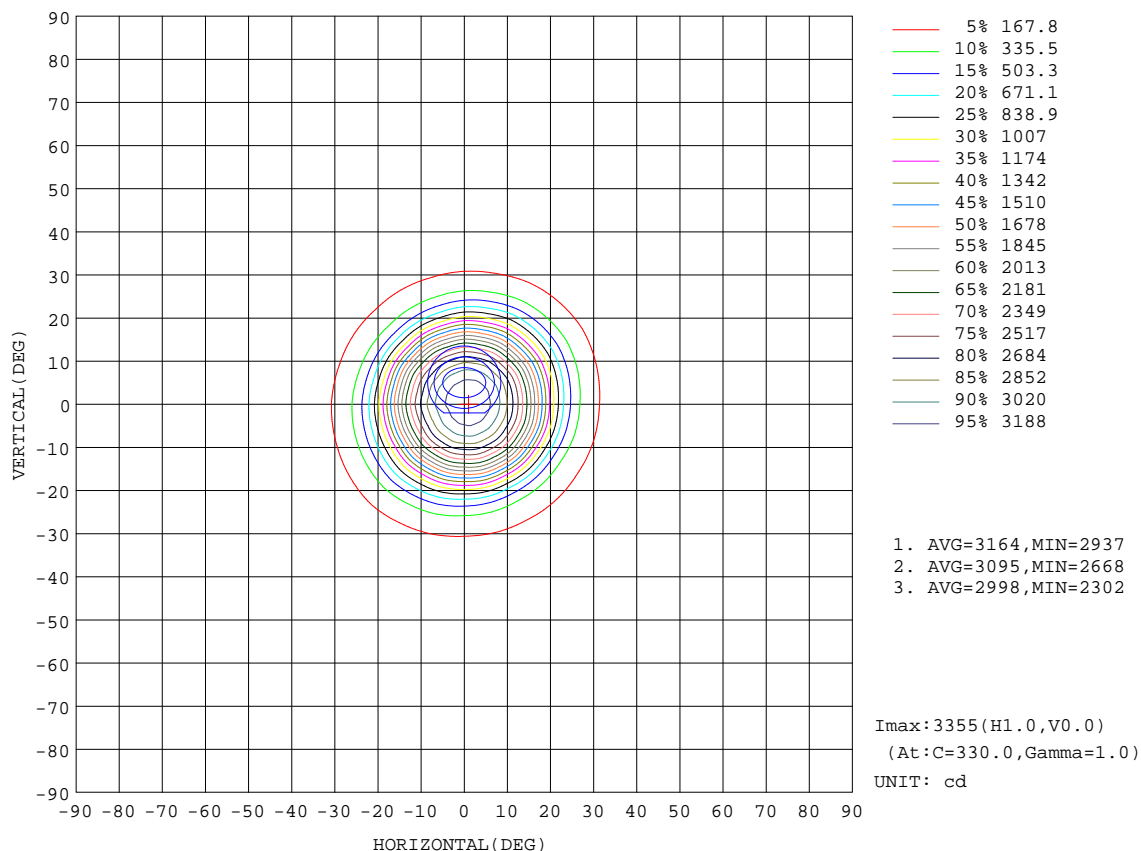
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	80	89	84	80	89	83	80	77
0.80	97	92	88	96	91	88	95	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
 γ 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:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150m	
MFR.: NEKO LIGHTING AG		



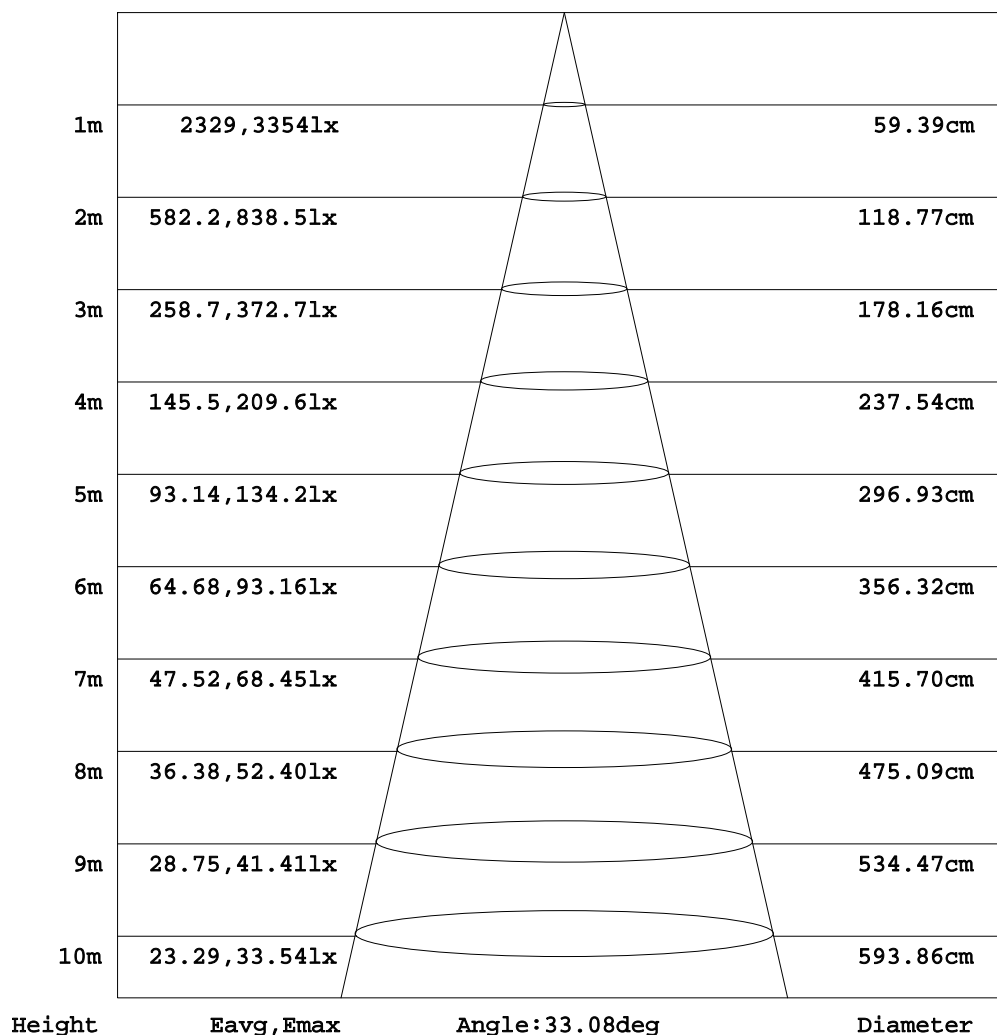
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-08-30

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:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150m	
MFR.: NEKO LIGHTING AG		

Flux out:683.8 lm



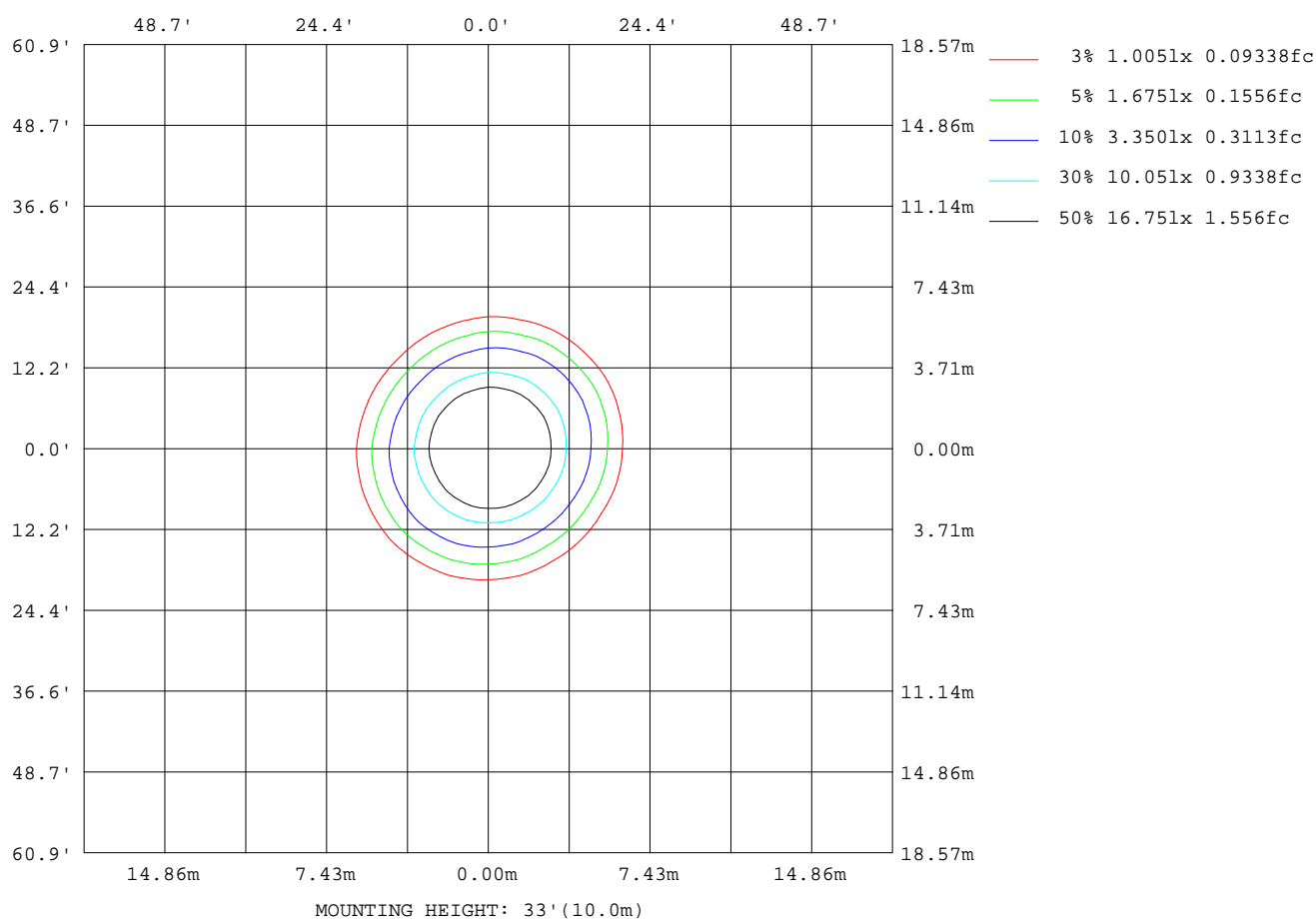
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150m	
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:0.0724A P:15.30W PF:0.9579 Freq:50.00Hz Lamp Flux:1128.57x1 lm		
NAME: ROXY Art-15W-940-36	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 55mm*H150m	
MFR.: NEKO LIGHTING AG		

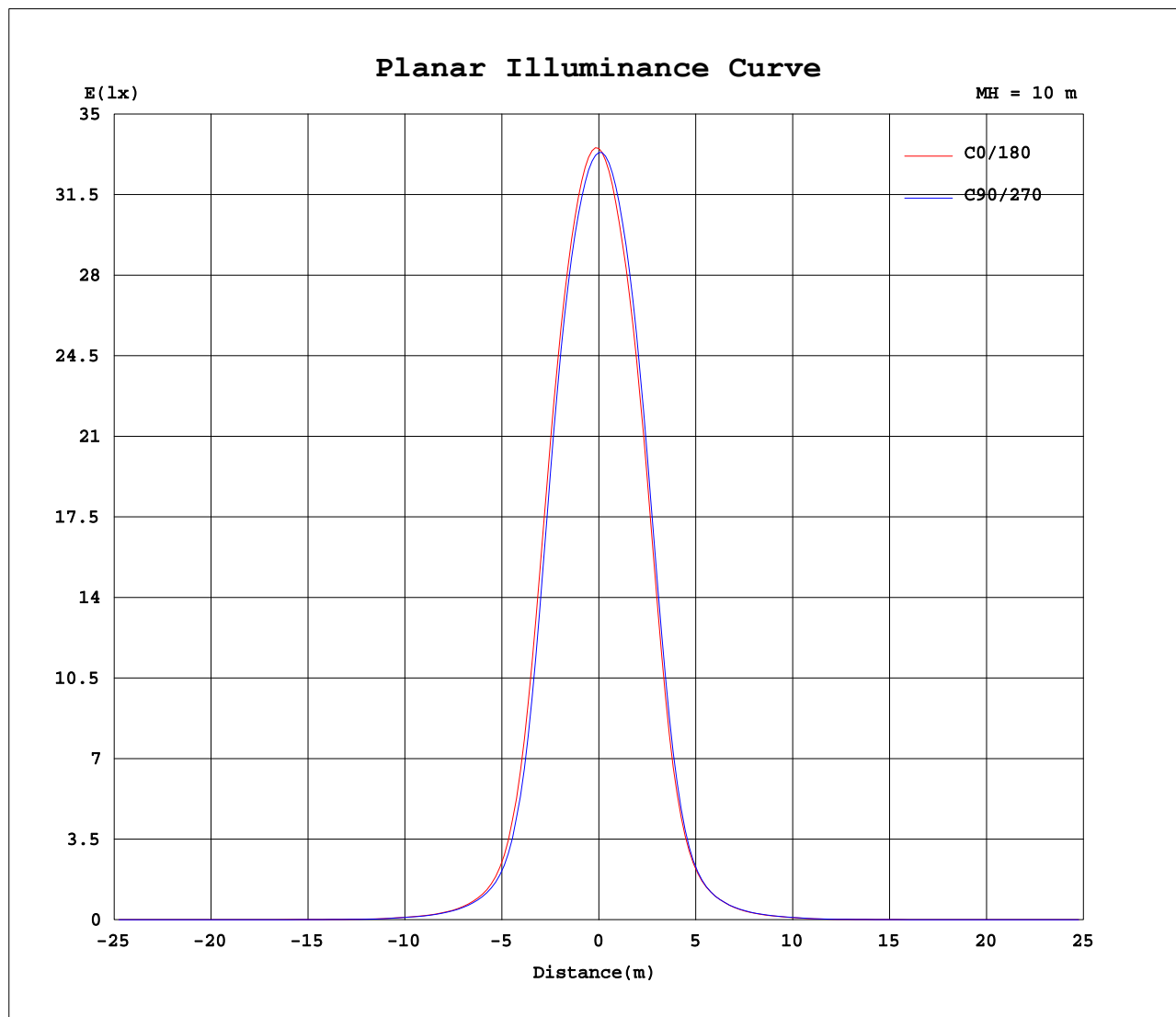
AvgL	cd/m2
L_0~180 (65) av	905
L_0~180 (75) av	140
L_0~180 (85) av	205
L_90~270 (65) av	755
L_90~270 (75) av	141
L_90~270 (85) av	217
L_45 (65) av	848
L_45 (75) av	142
L_45 (85) av	204

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
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Test Speed: HIGH
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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:

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