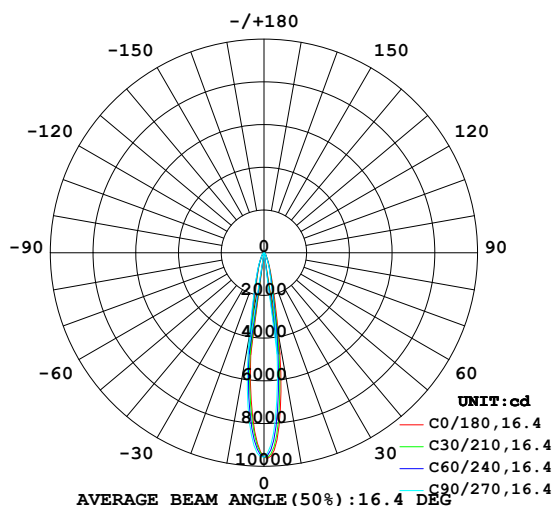


LUMINAIRE PHOTOMETRIC TEST REPORT

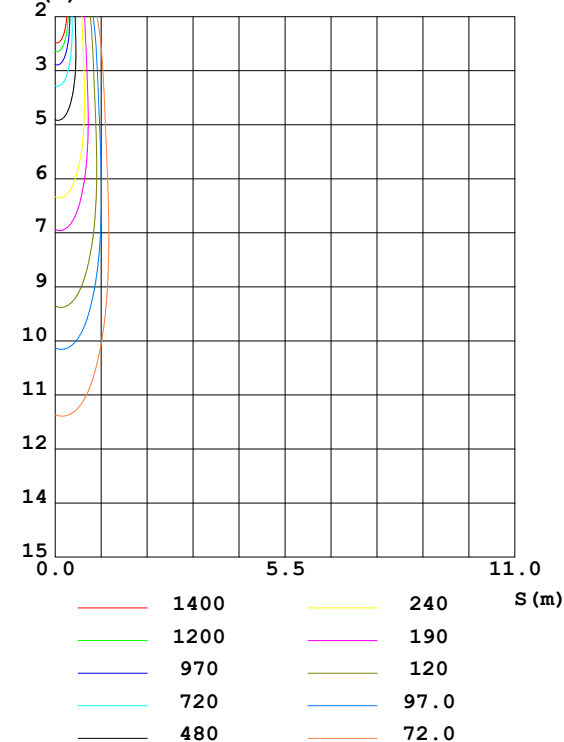
Test:U:220.7V I:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 71.87 lm/W
MODEL	CITIZEN-3000K	I _{max} (cd)	9671	S/MH (C0/180)	0.26	
NOMINAL POWER (W)	20	LOR (%)	100.0	S/MH (C90/270)	0.31	
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1456.9	η UP, DN (C0-180)	0.0, 46.7	
NOMINAL FLUX (lm)	1456.95	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 53.3	
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:2017-05-19

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	3962	3387	2732	2656	2913	3294	3959	4215	0- 10	575.0	575.0	39.5,39.5
20	830.3	743.2	664.6	658.8	723.1	799.1	885.3	902.1	10- 20	428.4	1003	68.9,68.9
30	283.8	254.2	232.6	234.3	253.4	278.0	305.0	308.0	20- 30	211.4	1215	83.4,83.4
40	132.5	123.2	116.2	115.6	122.3	130.6	139.0	139.6	30- 40	114.5	1329	91.2,91.2
50	68.41	64.71	60.31	58.67	61.19	64.18	68.72	70.54	40- 50	72.40	1402	96.2,96.2
60	29.27	27.84	25.11	23.60	24.45	25.61	28.44	29.80	50- 60	39.31	1441	98.9,98.9
70	5.910	4.930	3.156	2.427	2.778	3.655	5.230	6.230	60- 70	14.78	1456	99.9,99.9
80	0.2475	0.2072	0.1975	0.1598	0.1668	0.1945	0.2057	0.2370	70- 80	1.001	1457	100,100
90	0.0802	0.0677	0.0679	0.0701	0.0759	0.0611	0.0723	0.0723	80- 90	0.1281	1457	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): 1370 lm

%lum = 94.0%

%lamp = 94.0%

Conical surface Flux(120deg): 1441 lm

%lum = 98.9%

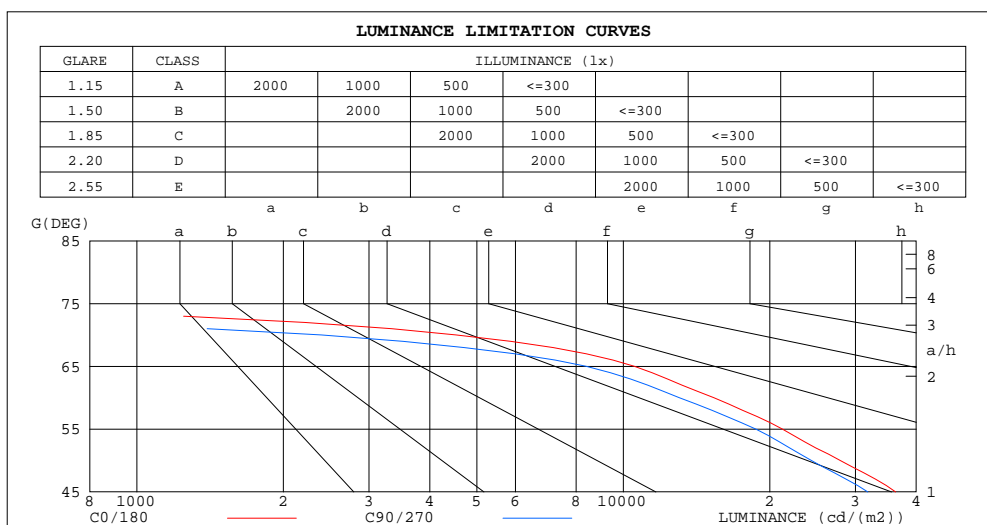
%lamp = 98.9%

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

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	438	320
80	374	295
75	536	335
70	4529	2393
65	10536	8390
60	15342	13023
55	21221	18719
50	27895	24335
45	36277	31802

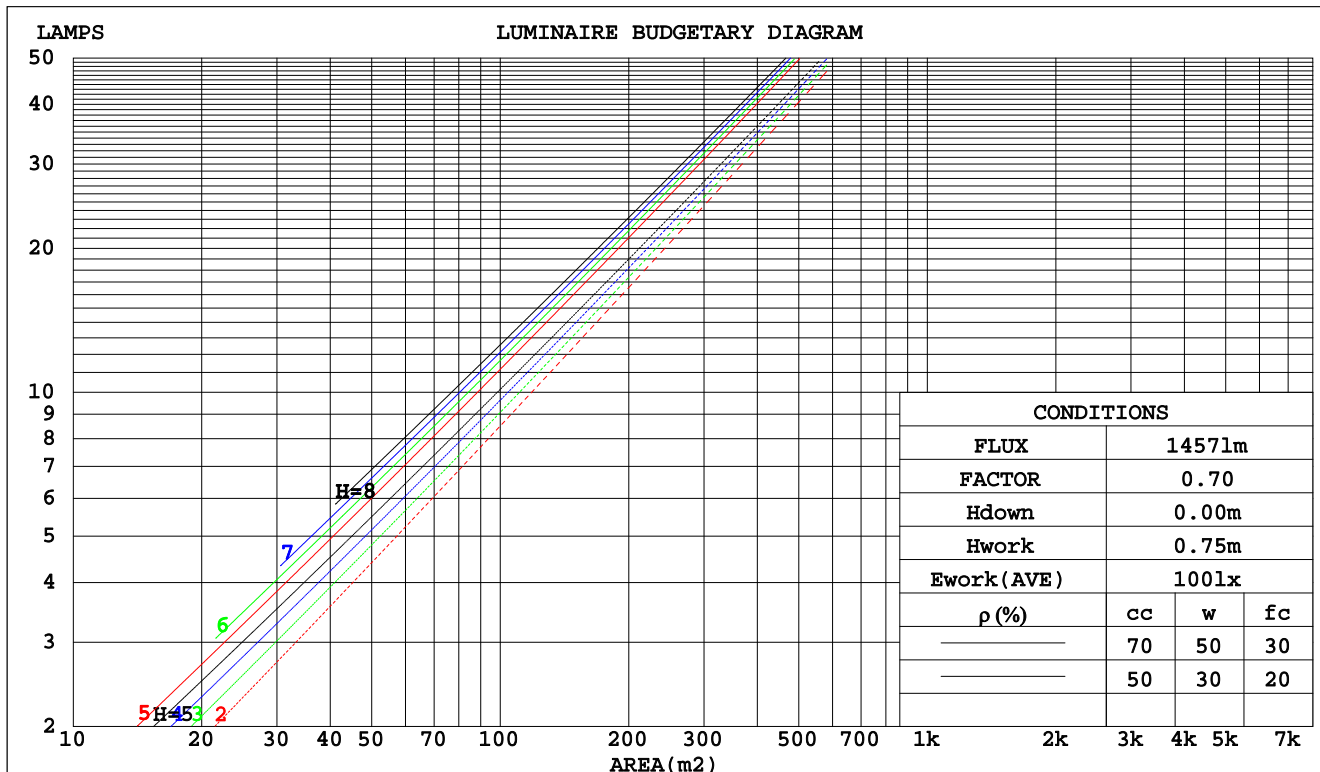
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-05-19

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	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	1.08	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	1.01	.99	.97	.98	.97	.95	.96	.94	.93	.91
3.0	1.01	.97	.94	.90	.96	.93	.97	.94	.91	.95	.92	.90	.93	.91	.89	.87
4.0	.96	.92	.89	.95	.91	.88	.93	.90	.87	.91	.88	.86	.90	.87	.85	.84
5.0	.92	.88	.84	.91	.87	.84	.90	.86	.83	.88	.85	.82	.87	.84	.82	.81
6.0	.89	.84	.81	.88	.84	.80	.87	.83	.80	.85	.82	.79	.84	.81	.79	.78
7.0	.85	.81	.78	.85	.80	.77	.84	.80	.77	.83	.79	.77	.82	.79	.76	.75
8.0	.83	.78	.75	.82	.78	.75	.81	.77	.74	.80	.77	.74	.79	.76	.74	.73
9.0	.80	.76	.73	.80	.75	.72	.79	.75	.72	.78	.74	.72	.77	.74	.72	.71
10.0	.78	.73	.70	.77	.73	.70	.77	.73	.70	.76	.72	.70	.75	.72	.70	.69



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

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: φ70mm*H138mm	
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	.149	.085	.027	.143	.081	.026	.130	.075	.024	.119	.068	.022	.108	.063	.020		
2.0	.141	.077	.024	.135	.074	.023	.125	.069	.022	.115	.065	.020	.106	.060	.019		
3.0	.132	.070	.021	.127	.068	.021	.119	.064	.020	.111	.061	.019	.103	.057	.018		
4.0	.124	.064	.019	.120	.063	.019	.113	.060	.018	.106	.057	.017	.099	.054	.016		
5.0	.117	.059	.017	.113	.058	.017	.107	.056	.016	.101	.053	.016	.096	.051	.015		
6.0	.110	.055	.016	.107	.054	.016	.102	.052	.015	.097	.050	.015	.092	.048	.014		
7.0	.104	.051	.015	.102	.051	.014	.097	.049	.014	.092	.047	.014	.088	.046	.013		
8.0	.099	.048	.014	.097	.048	.013	.092	.046	.013	.088	.045	.013	.085	.044	.013		
9.0	.094	.045	.013	.092	.045	.013	.088	.044	.012	.085	.043	.012	.082	.041	.012		
10.0	.090	.043	.012	.088	.042	.012	.085	.041	.012	.081	.040	.011	.078	.039	.011		

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	.116	.130	.114	.101	.089	.079	.070	.051	.046	.041	.017	.015	.013		
3.0	.138	.113	.094	.118	.098	.081	.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	.099	.074	.056	.069	.052	.039	.040	.031	.023	.013	.010	.008		
6.0	.107	.076	.054	.092	.066	.047	.064	.046	.033	.037	.027	.020	.012	.009	.007		
7.0	.100	.068	.046	.086	.059	.040	.059	.041	.028	.034	.024	.017	.011	.008	.006		
8.0	.093	.061	.040	.080	.053	.035	.055	.037	.025	.032	.022	.015	.010	.007	.005		
9.0	.087	.056	.035	.075	.049	.030	.052	.034	.021	.030	.020	.013	.010	.007	.004		
10.0	.082	.051	.030	.071	.044	.027	.049	.031	.019	.029	.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

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 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	17.3	18.0	17.5	18.1	18.3	16.6	17.3	16.8	17.5	17.7
3H	17.3	18.0	17.6	18.2	18.4	16.6	17.3	16.9	17.5	17.7
4H	17.2	17.9	17.5	18.1	18.3	16.5	17.2	16.8	17.4	17.6
6H	17.2	17.8	17.4	18.0	18.2	16.5	17.1	16.7	17.3	17.5
8H	17.1	17.7	17.4	18.0	18.2	16.4	17.0	16.7	17.3	17.5
12H	17.1	17.6	17.4	17.9	18.2	16.4	16.9	16.7	17.2	17.5
4H 2H	17.3	17.9	17.6	18.1	18.4	16.7	17.4	17.0	17.6	17.8
3H	17.4	17.9	17.7	18.2	18.5	16.7	17.3	17.0	17.5	17.8
4H	17.3	17.8	17.6	18.1	18.4	16.6	17.1	17.0	17.4	17.7
6H	17.2	17.6	17.5	18.0	18.3	16.5	17.0	16.9	17.3	17.6
8H	17.1	17.5	17.5	17.9	18.3	16.5	16.9	16.8	17.2	17.6
12H	17.1	17.4	17.5	17.8	18.2	16.4	16.8	16.8	17.2	17.6
8H 4H	17.1	17.5	17.5	17.9	18.3	16.5	16.9	16.9	17.2	17.6
6H	17.0	17.4	17.4	17.8	18.2	16.4	16.7	16.8	17.1	17.5
8H	16.9	17.3	17.4	17.7	18.1	16.3	16.6	16.7	17.0	17.5
12H	16.9	17.2	17.4	17.6	18.1	16.2	16.5	16.7	16.9	17.4
12H 4H	17.1	17.5	17.5	17.8	18.2	16.4	16.8	16.8	17.2	17.6
6H	16.9	17.3	17.4	17.7	18.1	16.3	16.6	16.7	17.0	17.5
8H	16.9	17.2	17.4	17.6	18.1	16.2	16.5	16.7	16.9	17.4
Variations with the observer position at spacings:										
S = 1.0H	+ 1.3 / - 2.1					+ 1.4 / - 2.3				
1.5H	+ 1.4 / - 1.2					+ 1.1 / - 1.0				
2.0H	+ 2.6 / - 3.0					+ 2.5 / - 2.9				

CIE Pub.117, 1457 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 1.3$)

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

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi 70\text{mm} \times H138\text{mm}$	
MFR.: NEKO LIGHTING AG		

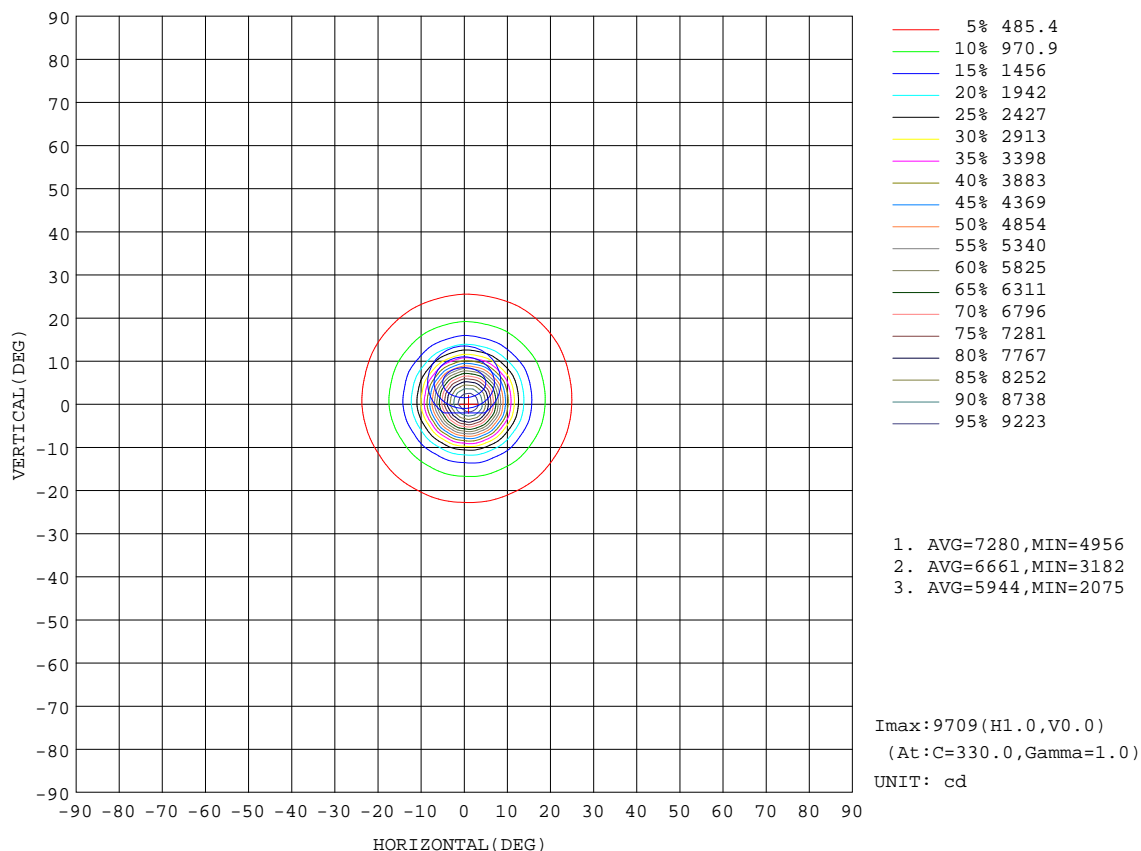
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	86	79	75	85	79	75	85	79	75	71
0.80	94	88	84	93	87	84	92	87	83	79
1.00	98	93	89	97	92	89	96	92	88	84
1.25	103	97	94	101	97	93	99	95	92	88
1.50	105	100	97	104	100	97	102	98	95	91
2.00	108	104	101	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	112	108	105	110	107	104	106	104	102	96
4.00	114	111	109	112	109	107	108	106	104	97
5.00	115	113	111	113	111	109	109	107	106	98
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

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



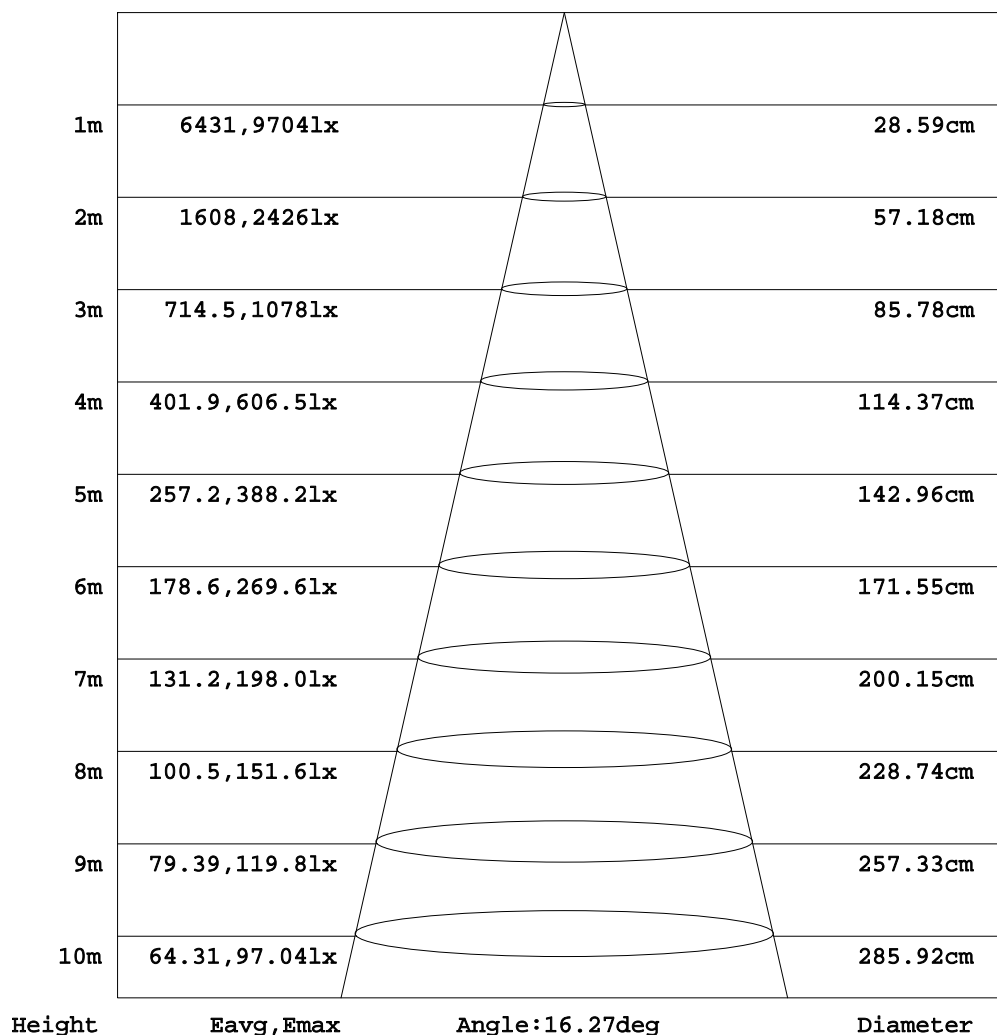
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-05-19

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

Flux out:506.8 lm



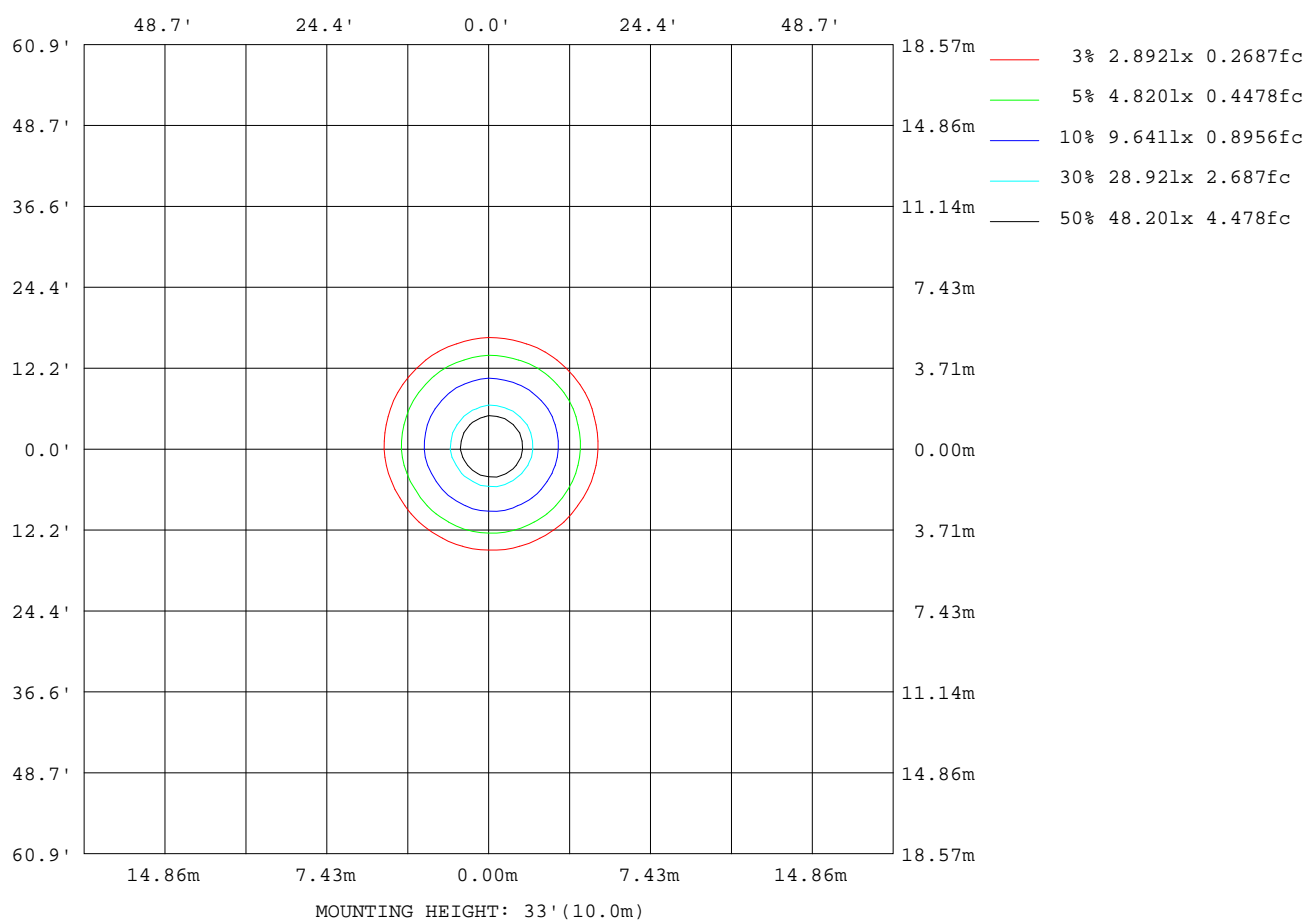
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 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

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:0.0979A P:20.27W PF:0.9380 Freq:50.00Hz Lamp Flux:1456.95x1 lm		
NAME: ROXY S-21W-930-15	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

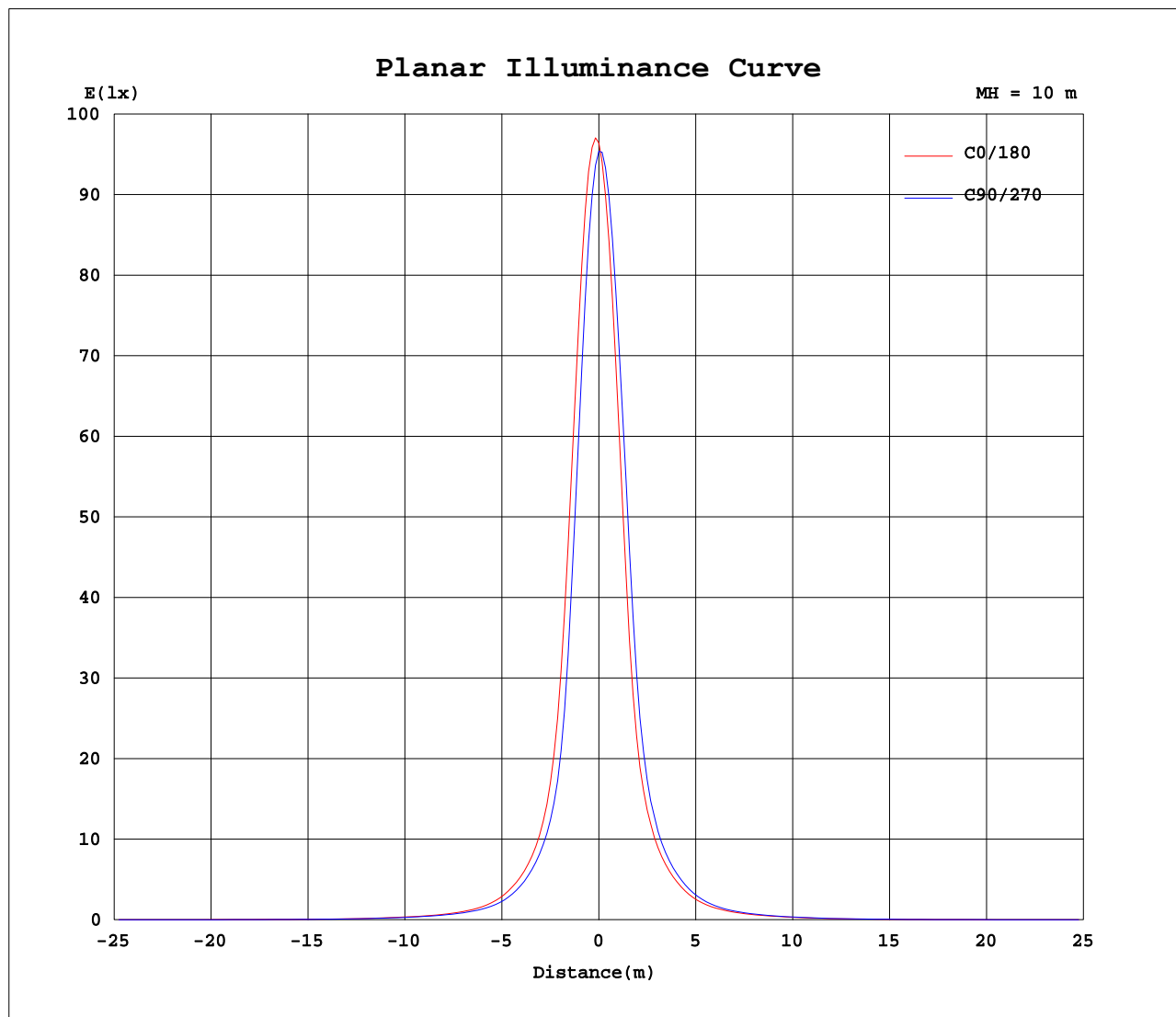
AvgL	cd/m2
L_0~180 (65) av	9263
L_0~180 (75) av	416
L_0~180 (85) av	353
L_90~270 (65) av	9197
L_90~270 (75) av	406
L_90~270 (85) av	320
L_45 (65) av	9160
L_45 (75) av	398
L_45 (85) av	317

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

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: 2017-05-19

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:

```