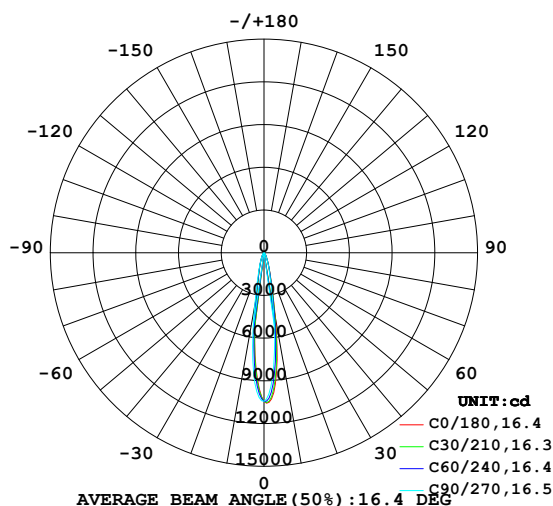


LUMINAIRE PHOTOMETRIC TEST REPORT

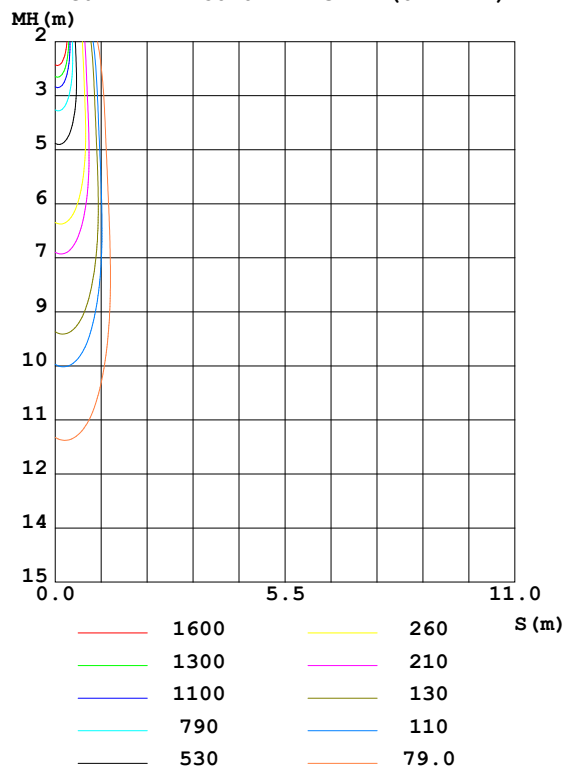
Test:U:220.7V I:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 78.31 lm/W
MODEL	CITIZEN-4000K	I _{max} (cd)	10602	S/MH (C0/180)	0.25	
NOMINAL POWER (W)	20	LOR (%)	100.0	S/MH (C90/270)	0.29	
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1601.3	η UP, DN (C0-180)	0.0, 50.6	
NOMINAL FLUX (lm)	1601.33	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.4	
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	462.9	440.9	366.6	311.7	298.4	302.9	378.4	453.1	0- 10	632.4	632.4	39.5,39.5
20	94.99	95.43	87.15	78.77	75.23	75.22	83.55	91.75	10- 20	474.4	1107	69.1,69.1
30	31.79	32.41	30.30	27.65	26.30	26.32	28.53	30.71	20- 30	231.5	1338	83.6,83.6
40	14.68	14.76	14.15	13.37	12.86	12.84	13.60	14.31	30- 40	124.3	1463	91.3,91.3
50	7.648	7.509	6.995	6.558	6.364	6.514	7.056	7.549	40- 50	78.48	1541	96.2,96.2
60	3.303	3.189	2.833	2.600	2.523	2.632	2.979	3.270	50- 60	42.81	1584	98.9,98.9
70	0.7154	0.6130	0.4115	0.2915	0.2752	0.3267	0.5116	0.6966	60- 70	16.18	1600	99.9,99.9
80	0.0246	0.0212	0.0208	0.0175	0.0165	0.0197	0.0203	0.0241	70- 80	1.117	1601	100,100
90	0.0074	0.0068	0.0070	0.0070	0.0067	0.0063	0.0061	0.0072	80- 90	0.1274	1601	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 1506.6 lm

%lum = 94.1%

%lamp = 94.1%

Conical surface Flux(120deg): 1583.9 lm

%lum = 98.9%

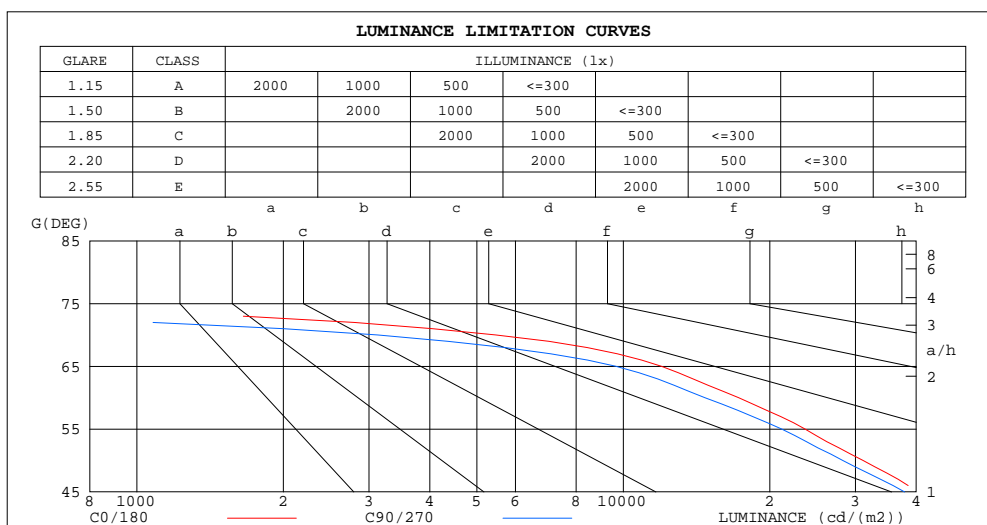
%lamp = 98.9%

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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi 70\text{mm} \times \text{H}138\text{mm}$	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	405	327
80	370	311
75	563	406
70	5464	3123
65	11981	9659
60	17259	14704
55	23628	21165
50	31084	28242
45	40164	37864

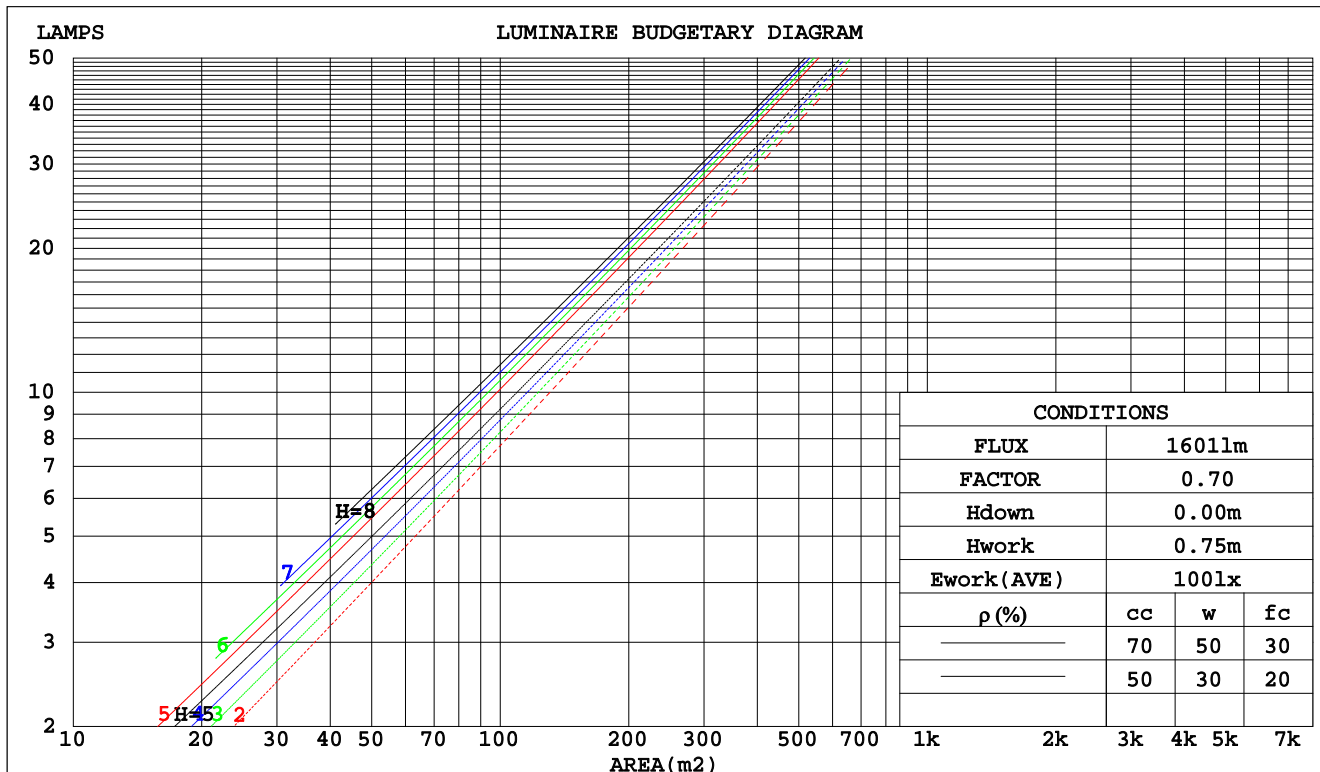
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-05-19

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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-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	1.08	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	.92	.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	.83	.87	.84	.82	.81
6.0	.89	.84	.81	.88	.84	.81	.87	.83	.80	.85	.82	.79	.84	.81	.79	.78
7.0	.86	.81	.78	.85	.81	.78	.84	.80	.77	.83	.79	.77	.82	.79	.76	.75
8.0	.83	.78	.75	.82	.78	.75	.81	.77	.75	.80	.77	.74	.79	.76	.74	.73
9.0	.80	.76	.73	.80	.75	.73	.79	.75	.72	.78	.75	.72	.77	.74	.72	.71
10.0	.78	.73	.71	.77	.73	.70	.77	.73	.70	.76	.73	.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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: \varnothing 70mm*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	.142	.081	.026	.130	.075	.024	.118	.068	.022	.108	.063	.020		
2.0	.140	.077	.024	.135	.074	.023	.124	.069	.021	.115	.064	.020	.106	.060	.019		
3.0	.132	.070	.021	.127	.068	.020	.118	.064	.019	.110	.060	.019	.103	.057	.018		
4.0	.124	.064	.019	.120	.063	.019	.112	.060	.018	.106	.057	.017	.099	.054	.016		
5.0	.116	.059	.017	.113	.058	.017	.107	.056	.016	.101	.053	.016	.095	.051	.015		
6.0	.110	.055	.016	.107	.054	.016	.101	.052	.015	.096	.050	.015	.092	.048	.014		
7.0	.104	.051	.015	.101	.051	.014	.097	.049	.014	.092	.047	.014	.088	.046	.013		
8.0	.099	.048	.014	.096	.047	.013	.092	.046	.013	.088	.045	.013	.085	.043	.013		
9.0	.094	.045	.013	.092	.045	.013	.088	.044	.012	.085	.042	.012	.081	.041	.012		
10.0	.089	.043	.012	.088	.042	.012	.084	.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	.068	.052	.039	.040	.031	.023	.013	.010	.008	
6.0	.107	.076	.054	.092	.066	.047	.063	.046	.033	.037	.027	.020	.012	.009	.007	
7.0	.100	.068	.046	.086	.059	.040	.059	.041	.029	.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	.048	.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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm										
NAME: ROXY S-21W-940-15					TYPE:Tracklight			SERIAL No.:		
SPEC.:4000K					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	17.5	18.2	17.7	18.4	18.5	17.1	17.9	17.4	18.0	18.2
3H	17.6	18.2	17.8	18.4	18.6	17.2	17.8	17.4	18.0	18.2
4H	17.5	18.1	17.8	18.3	18.6	17.1	17.7	17.3	17.9	18.1
6H	17.4	18.0	17.7	18.3	18.5	17.0	17.6	17.3	17.8	18.1
8H	17.4	18.0	17.7	18.2	18.5	16.9	17.5	17.2	17.8	18.0
12H	17.3	17.9	17.6	18.1	18.4	16.9	17.5	17.2	17.7	18.0
4H 2H	17.5	18.2	17.8	18.4	18.6	17.2	17.9	17.5	18.1	18.3
3H	17.6	18.2	17.9	18.4	18.7	17.2	17.8	17.5	18.1	18.3
4H	17.5	18.0	17.9	18.3	18.6	17.1	17.6	17.5	17.9	18.2
6H	17.4	17.9	17.8	18.2	18.5	17.0	17.5	17.4	17.8	18.2
8H	17.4	17.8	17.8	18.1	18.5	17.0	17.4	17.4	17.7	18.1
12H	17.3	17.7	17.7	18.1	18.5	16.9	17.3	17.3	17.7	18.1
8H 4H	17.4	17.8	17.8	18.1	18.5	17.0	17.4	17.4	17.8	18.1
6H	17.3	17.6	17.7	18.0	18.4	16.9	17.2	17.3	17.6	18.0
8H	17.2	17.5	17.6	17.9	18.4	16.8	17.1	17.3	17.5	18.0
12H	17.1	17.4	17.6	17.9	18.3	16.8	17.0	17.2	17.5	17.9
12H 4H	17.3	17.7	17.7	18.1	18.5	16.9	17.3	17.3	17.7	18.1
6H	17.2	17.5	17.6	17.9	18.4	16.8	17.1	17.3	17.5	18.0
8H	17.1	17.4	17.6	17.8	18.3	16.8	17.0	17.2	17.5	17.9
Variations with the observer position at spacings:										
S = 1.0H	+ 1.3 / - 2.1					+ 1.5 / - 2.5				
1.5H	+ 1.3 / - 1.2					+ 1.4 / - 1.3				
2.0H	+ 2.6 / - 2.9					+ 2.7 / - 2.9				

CIE Pub.117, 1601 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 1.6$)

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
 γ 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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 70\text{mm} \times H138\text{mm}$	
MFR.: NEKO LIGHTING AG		

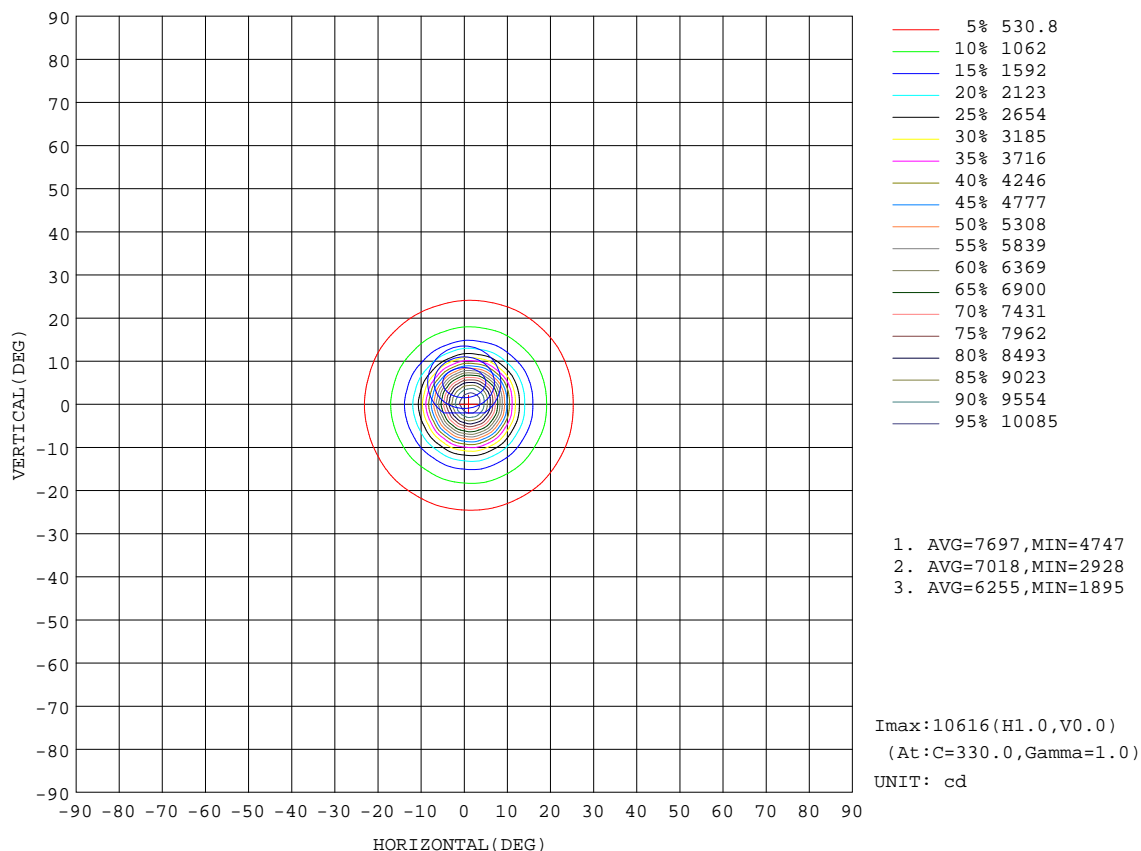
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	86	79	76	85	79	75	85	79	75	72
0.80	94	88	84	93	87	84	92	87	83	79
1.00	98	93	89	98	92	89	96	92	88	84
1.25	103	97	94	101	97	93	100	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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

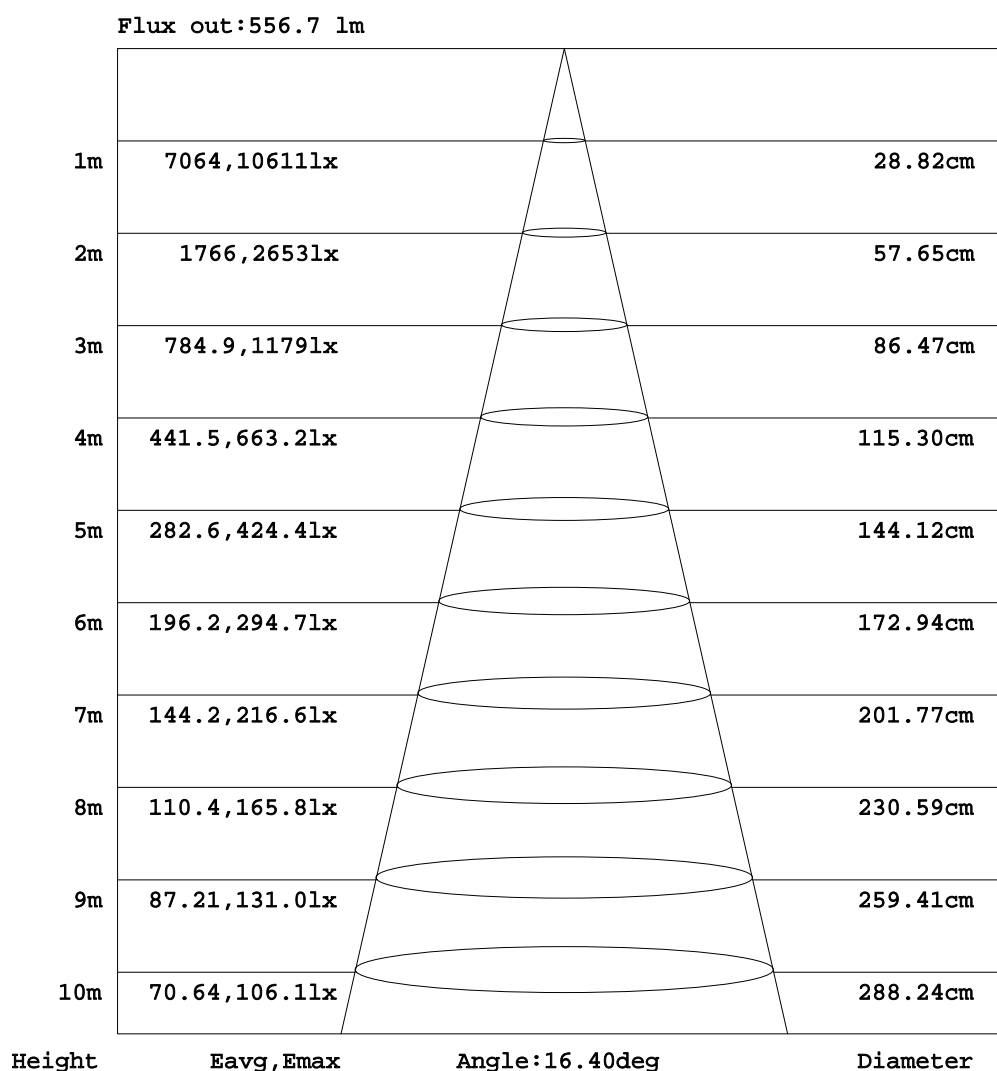


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-05-19

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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



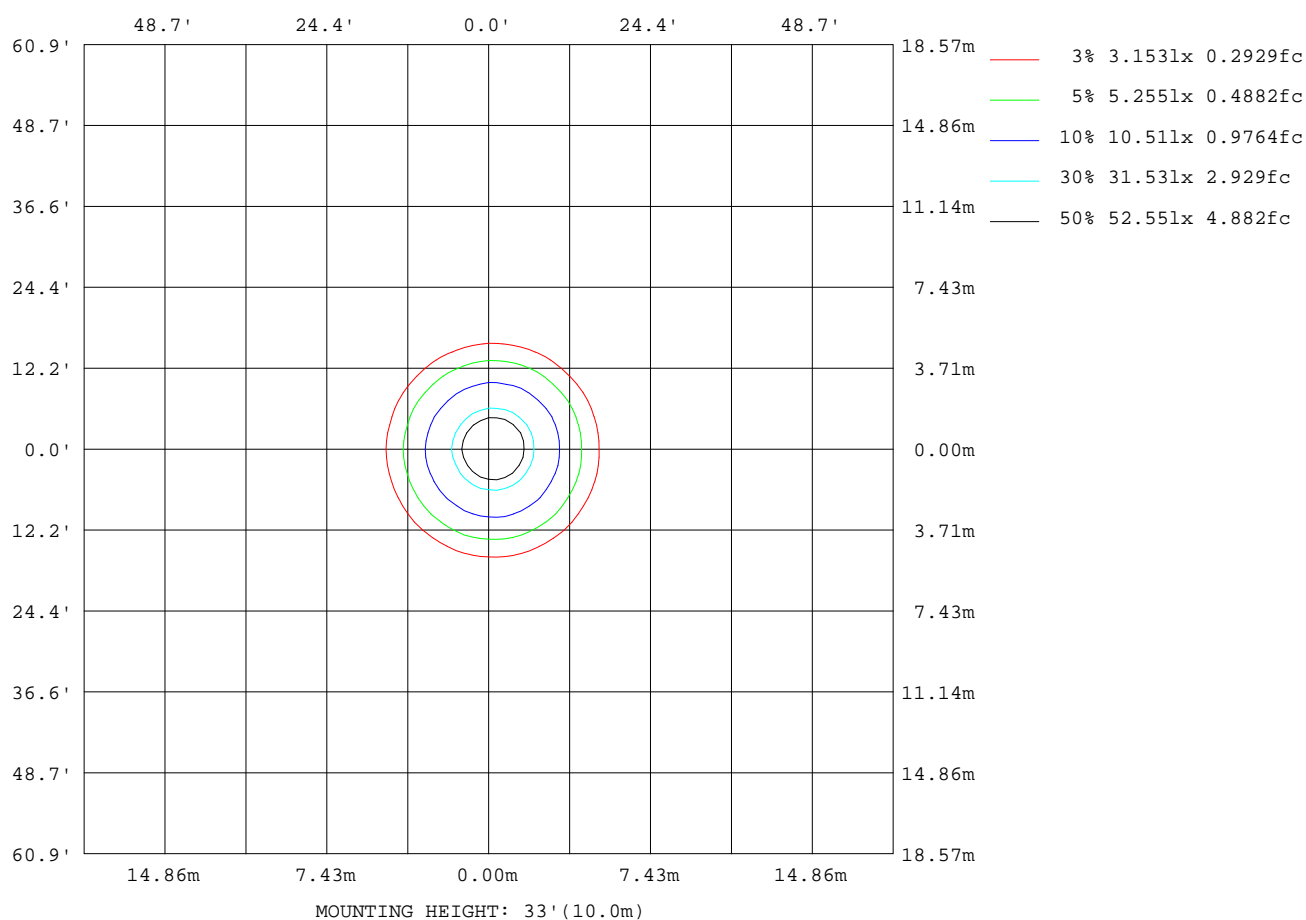
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	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:0.0987A P:20.45W PF:0.9386 Freq:50.00Hz Lamp Flux:1601.33x1 lm		
NAME: ROXY S-21W-940-15	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

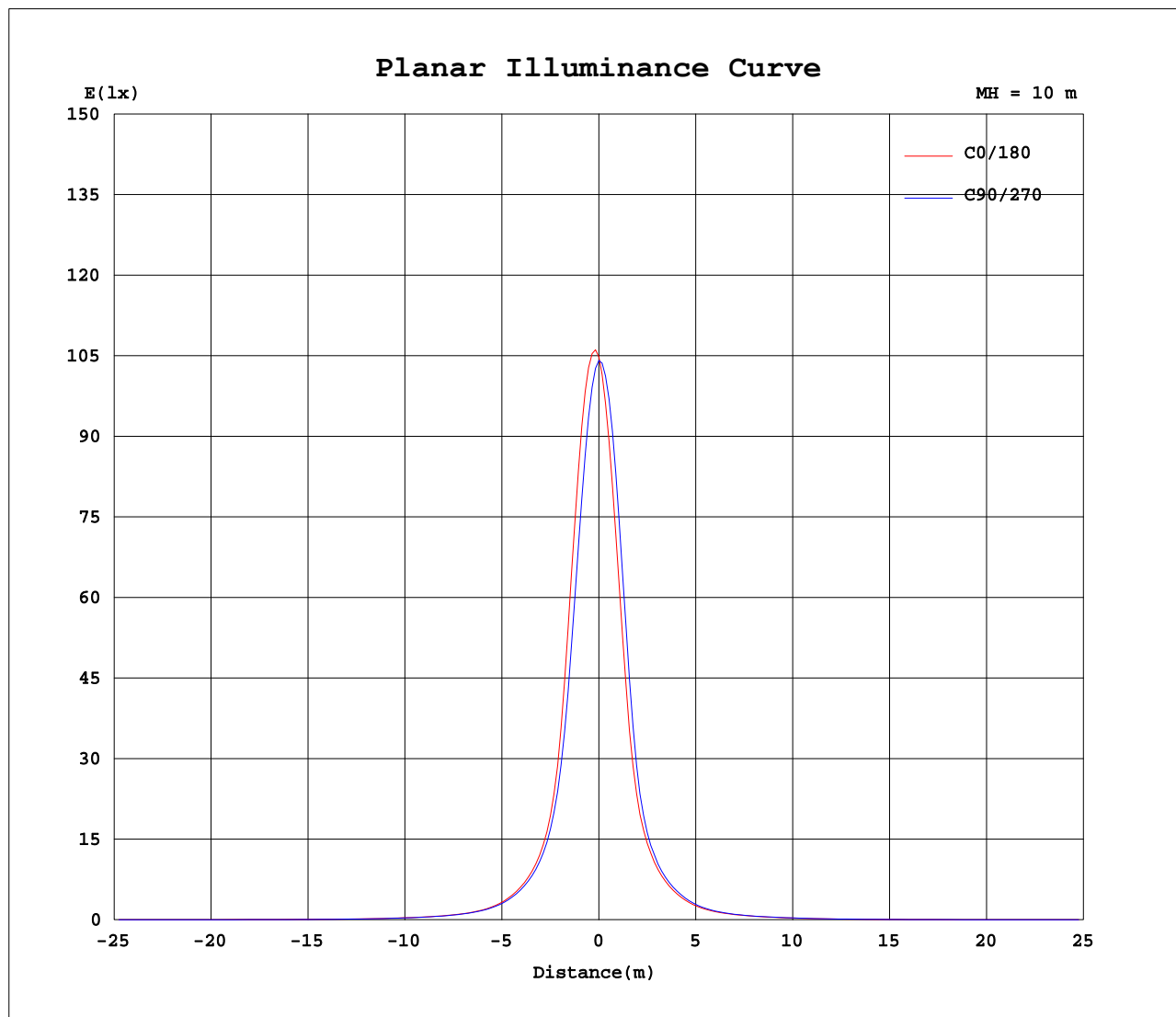
AvgL	cd/m2
L_0~180 (65) av	10047
L_0~180 (75) av	435
L_0~180 (85) av	328
L_90~270 (65) av	10057
L_90~270 (75) av	416
L_90~270 (85) av	317
L_45 (65) av	10078
L_45 (75) av	429
L_45 (85) av	318

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:

```