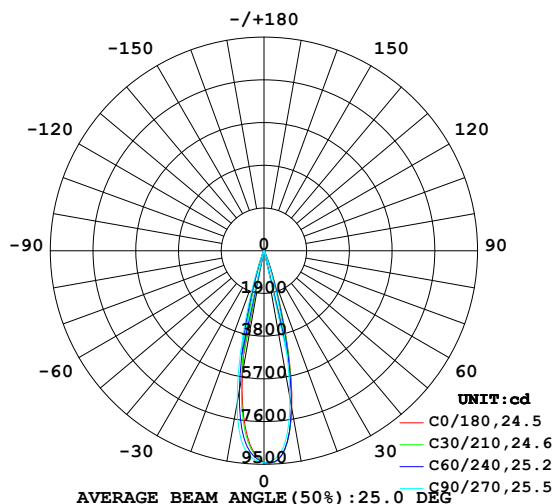


LUMINAIRE PHOTOMETRIC TEST REPORT

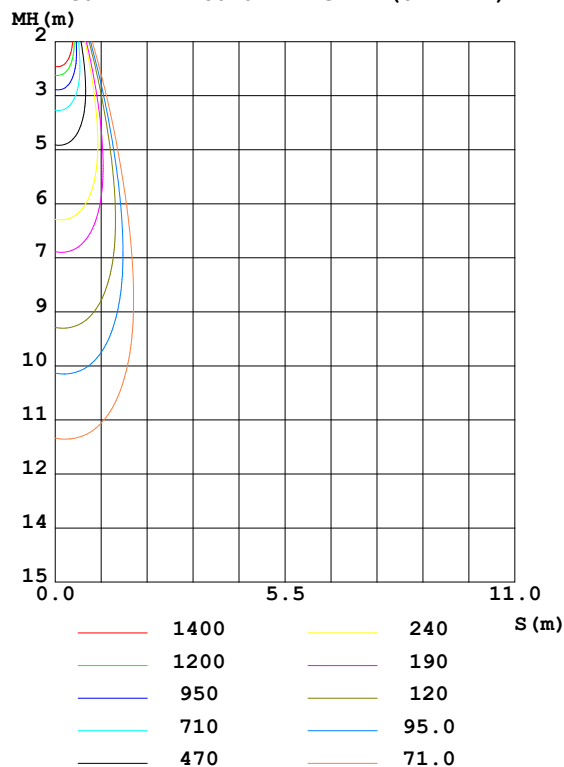
Test:U:220.7V I:0.0987A P:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 88.65 lm/W			
MODEL	CITIZEN-4000K	I _{max} (cd)	9469	S/MH (C0/180)	0.36
NOMINAL POWER (W)	20	LOR (%)	100.0	S/MH (C90/270)	0.40
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1812.4	η UP, DN (C0-180)	0.0, 49.8
NOMINAL FLUX (lm)	1812.38	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.2
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	7113	7152	6647	5863	5560	5911	6919	7232	0- 10	772.2	772.2	42.6,42.6
20	1033	937.7	651.3	485.8	538.1	555.7	783.6	966.6	10- 20	809.1	1581	87.3,87.3
30	119.4	114.3	103.8	100.4	109.6	94.08	112.6	116.3	20- 30	120.9	1702	93.9,93.9
40	52.47	49.84	48.93	47.27	49.60	46.04	52.17	52.69	30- 40	44.46	1747	96.4,96.4
50	34.90	32.48	31.71	31.85	33.53	30.47	34.15	34.87	40- 50	31.61	1778	98.1,98.1
60	19.49	18.38	16.75	17.24	18.26	17.74	19.08	20.17	50- 60	23.07	1801	99.4,99.4
70	3.841	3.378	2.621	2.418	2.652	2.970	3.841	4.338	60- 70	10.15	1812	100,100
80	0.1722	0.1463	0.1533	0.1159	0.1153	0.1356	0.1289	0.1622	70- 80	0.7716	1812	100,100
90	0.0762	0.0765	0.0678	0.0635	0.0697	0.0677	0.0635	0.0701	80- 90	0.1007	1812	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): 1763.3 lm

%lum = 97.3%

%lamp = 97.3%

Conical surface Flux(120deg): 1801.4 lm

%lum = 99.4%

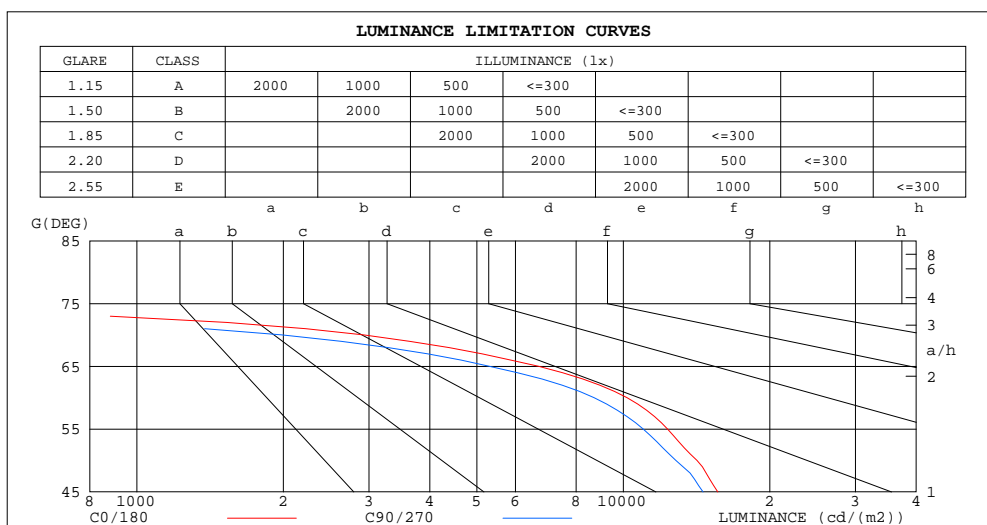
%lamp = 99.4%

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:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\phi 70\text{mm} \times H138\text{mm}$	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	326	294
80	259	229
75	318	238
70	2931	1991
65	6697	5304
60	10173	8703
55	12326	10987
50	14170	12817
45	15638	14582

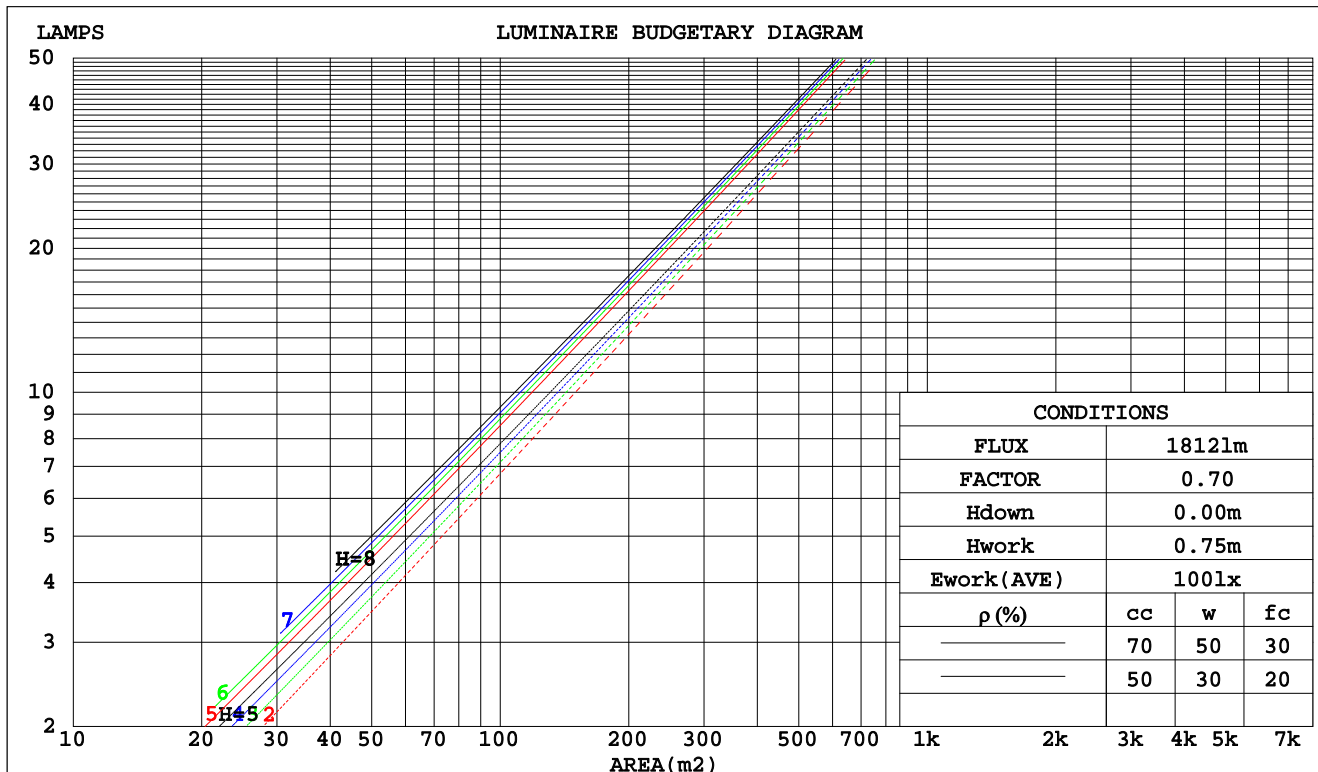
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-05-19

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:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 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			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	.00
1.0	1.13	1.11	1.10	1.11	1.09	1.08	1.07	1.06	1.05	1.03	1.02	1.01	.00	.99	.99	.97
2.0	1.08	1.05	1.03	1.06	1.04	1.02	1.03	1.01	.99	1.00	.99	.97	.98	.96	.95	.94
3.0	1.04	1.00	.97	1.02	.99	.97	.00	.97	.95	.98	.96	.94	.96	.94	.92	.91
4.0	.00	.96	.93	.99	.95	.93	.97	.94	.92	.95	.93	.91	.93	.91	.90	.89
5.0	.97	.93	.90	.96	.92	.89	.94	.91	.89	.93	.90	.88	.91	.89	.87	.86
6.0	.94	.90	.87	.93	.89	.87	.92	.88	.86	.90	.88	.86	.89	.87	.85	.84
7.0	.91	.87	.84	.90	.87	.84	.89	.86	.84	.88	.86	.83	.87	.85	.83	.82
8.0	.89	.85	.82	.88	.85	.82	.87	.84	.82	.86	.83	.81	.86	.83	.81	.80
9.0	.86	.83	.80	.86	.82	.80	.85	.82	.80	.85	.82	.80	.84	.81	.79	.78
10.0	.84	.81	.78	.84	.81	.78	.83	.80	.78	.83	.80	.78	.82	.80	.78	.77



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:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: \varnothing 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

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						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.133	.076	.024	.126	.072	.023	.114	.065	.021	.103	.059	.019	.092	.053	.017		
2.0	.123	.067	.021	.117	.065	.020	.107	.060	.019	.098	.055	.017	.089	.050	.016		
3.0	.114	.061	.018	.110	.059	.018	.101	.055	.017	.093	.051	.016	.086	.048	.015		
4.0	.106	.055	.016	.103	.054	.016	.095	.051	.015	.089	.048	.014	.083	.045	.014		
5.0	.100	.051	.015	.096	.050	.014	.090	.047	.014	.085	.045	.013	.080	.042	.013		
6.0	.094	.047	.013	.091	.046	.013	.086	.044	.013	.081	.042	.012	.076	.040	.012		
7.0	.089	.044	.012	.086	.043	.012	.082	.041	.012	.078	.040	.012	.074	.038	.011		
8.0	.084	.041	.012	.082	.040	.011	.078	.039	.011	.074	.038	.011	.071	.036	.011		
9.0	.080	.039	.011	.078	.038	.011	.075	.037	.010	.072	.036	.010	.069	.035	.010		
10.0	.076	.037	.010	.075	.036	.010	.072	.035	.010	.069	.034	.010	.066	.033	.010		

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	.168	.158	.148	.144	.135	.128	.098	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.150	.133	.118	.128	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014	
3.0	.134	.113	.096	.115	.098	.084	.079	.068	.059	.046	.040	.035	.015	.013	.011	
4.0	.122	.098	.080	.104	.085	.069	.072	.059	.049	.042	.034	.029	.013	.011	.009	
5.0	.111	.085	.067	.095	.074	.058	.066	.052	.041	.038	.030	.024	.012	.010	.008	
6.0	.102	.075	.056	.087	.065	.049	.060	.046	.035	.035	.027	.021	.011	.009	.007	
7.0	.094	.067	.048	.081	.058	.042	.056	.041	.030	.032	.024	.018	.010	.008	.006	
8.0	.087	.060	.042	.075	.052	.036	.052	.037	.026	.030	.022	.015	.010	.007	.005	
9.0	.081	.054	.036	.070	.047	.032	.048	.033	.022	.028	.020	.013	.009	.006	.004	
10.0	.076	.050	.032	.066	.043	.028	.046	.030	.020	.027	.018	.012	.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:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm										
NAME: ROXY S-21W-940-25					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	11.0	11.6	11.2	11.8	11.9	10.6	11.2	10.8	11.3	11.5
3H	11.2	11.8	11.5	12.0	12.2	10.7	11.2	10.9	11.4	11.6
4H	11.2	11.7	11.4	11.9	12.1	10.6	11.1	10.8	11.3	11.6
6H	11.1	11.6	11.3	11.8	12.1	10.5	11.0	10.8	11.3	11.5
8H	11.0	11.5	11.3	11.8	12.0	10.5	11.0	10.8	11.2	11.5
12H	11.0	11.5	11.3	11.7	12.0	10.4	10.9	10.7	11.2	11.4
4H 2H	11.2	11.8	11.5	12.0	12.2	10.8	11.4	11.1	11.6	11.8
3H	11.4	11.9	11.7	12.1	12.4	10.9	11.4	11.2	11.7	11.9
4H	11.3	11.8	11.6	12.0	12.3	10.8	11.3	11.1	11.5	11.8
6H	11.2	11.6	11.6	11.9	12.3	10.7	11.1	11.1	11.4	11.8
8H	11.2	11.5	11.5	11.9	12.2	10.7	11.0	11.0	11.4	11.7
12H	11.1	11.4	11.5	11.8	12.2	10.6	10.9	11.0	11.3	11.7
8H 4H	11.2	11.5	11.5	11.9	12.2	10.7	11.0	11.0	11.4	11.7
6H	11.0	11.4	11.5	11.7	12.2	10.6	10.9	11.0	11.3	11.7
8H	11.0	11.3	11.4	11.7	12.1	10.5	10.8	10.9	11.2	11.6
12H	10.9	11.2	11.4	11.6	12.1	10.4	10.7	10.9	11.1	11.6
12H 4H	11.1	11.4	11.5	11.8	12.2	10.6	11.0	11.0	11.3	11.7
6H	11.0	11.3	11.4	11.7	12.1	10.5	10.8	10.9	11.2	11.6
8H	10.9	11.2	11.4	11.6	12.1	10.4	10.7	10.9	11.1	11.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.7 / - 1.0					+ 0.8 / - 1.2				
1.5H	+ 0.3 / - 0.9					+ 0.3 / - 0.8				
2.0H	+ 1.2 / - 1.9					+ 1.2 / - 2.0				

CIE Pub.117, 1812 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 2.1$)

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:0.0987A P:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 70\text{mm} \times H138\text{mm}$	
MFR.: NEKO LIGHTING AG		

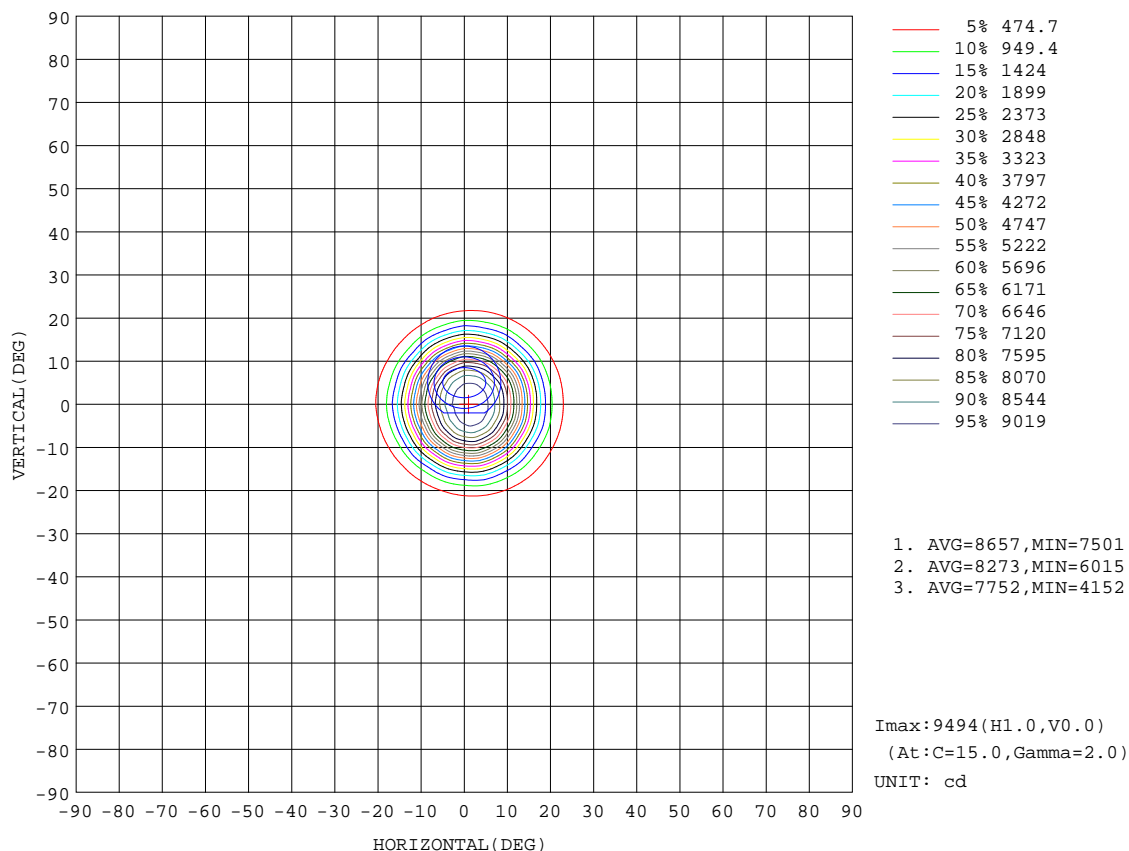
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	80	89	83	80	88	83	79	76
0.80	96	91	87	96	91	87	95	90	87	83
1.00	101	95	92	100	95	92	98	95	91	87
1.25	104	99	96	103	99	96	101	98	95	91
1.50	107	102	99	106	102	99	103	100	98	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	104	102	96
3.00	112	109	106	110	108	105	107	105	103	97
4.00	114	112	110	112	110	108	109	107	105	98
5.00	115	113	112	113	112	110	109	108	107	99
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:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

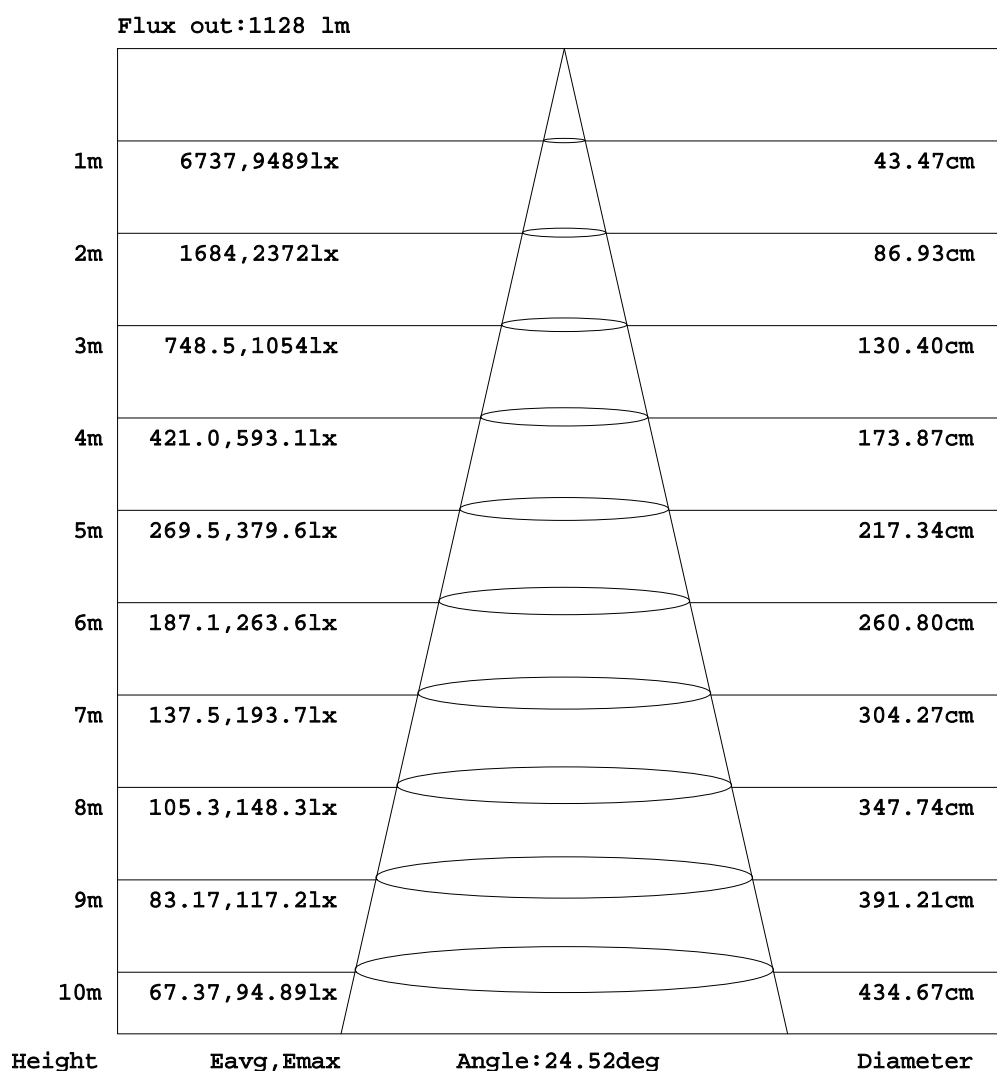


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-05-19

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:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



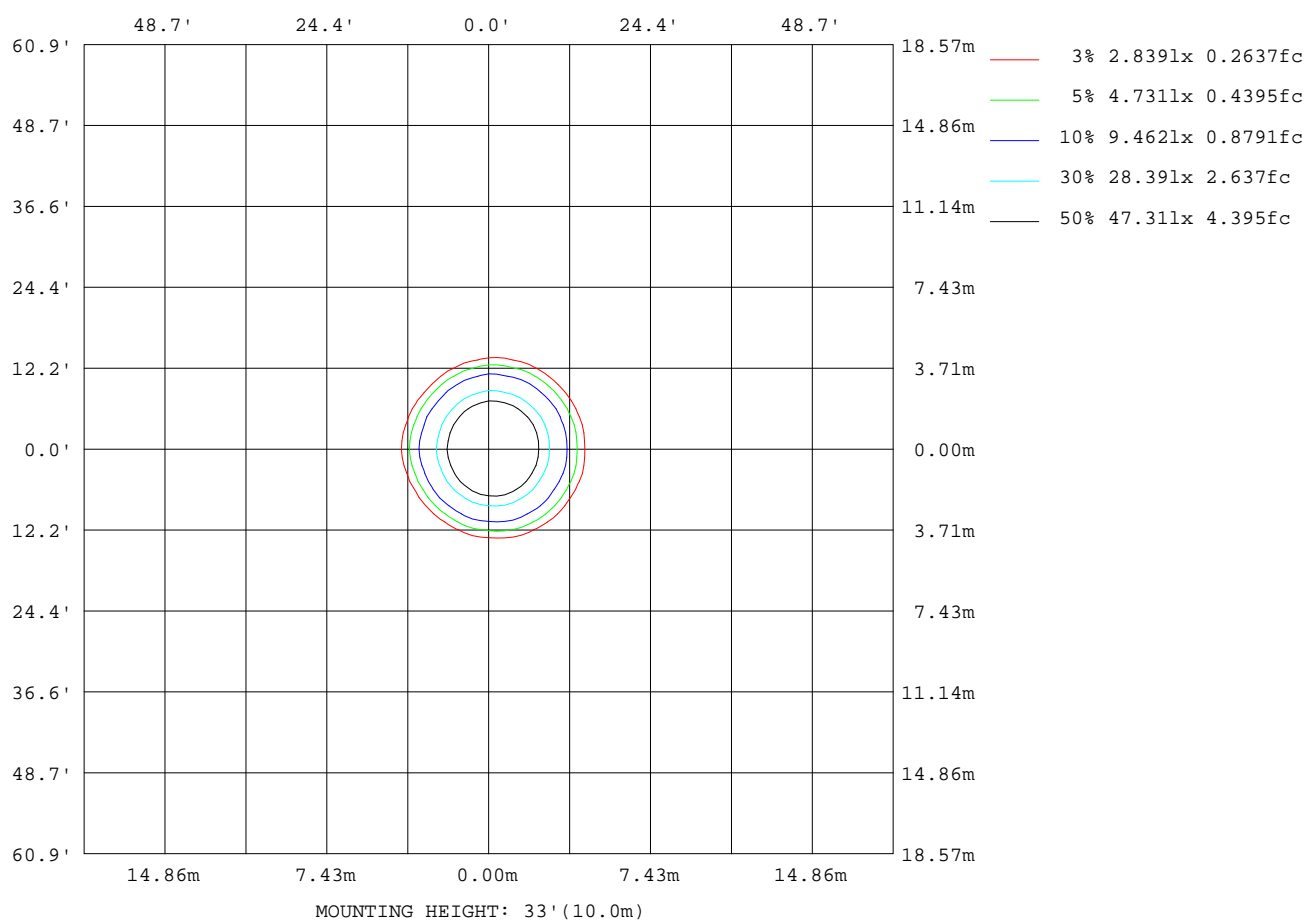
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	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:20.44W PF:0.9386 Freq:50.00Hz Lamp Flux:1812.38x1 lm		
NAME: ROXY S-21W-940-25	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

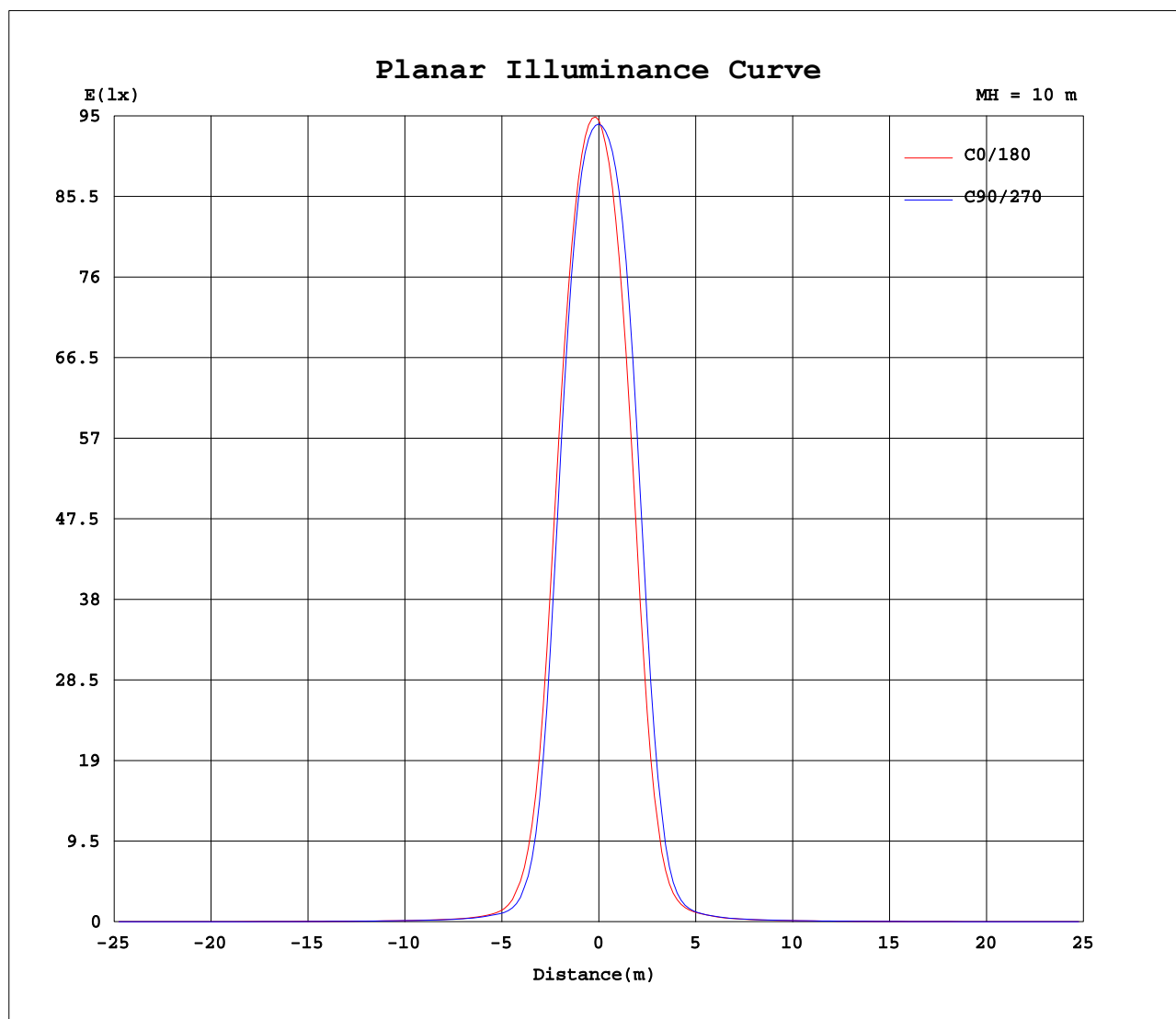
AvgL	cd/m2
L_0~180 (65) av	6220
L_0~180 (75) av	257
L_0~180 (85) av	267
L_90~270 (65) av	6031
L_90~270 (75) av	255
L_90~270 (85) av	255
L_45 (65) av	6185
L_45 (75) av	269
L_45 (85) av	253

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:

```