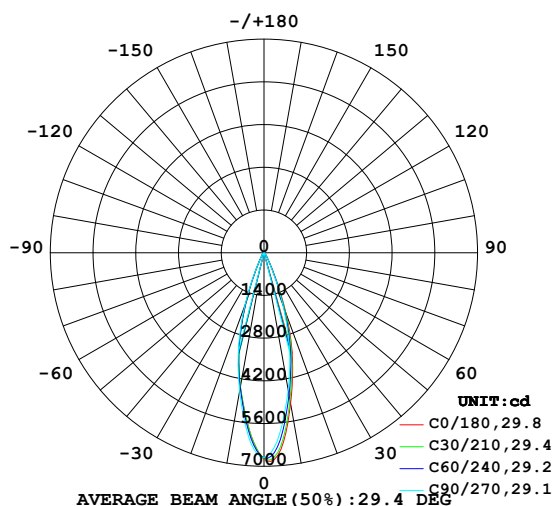


LUMINAIRE PHOTOMETRIC TEST REPORT

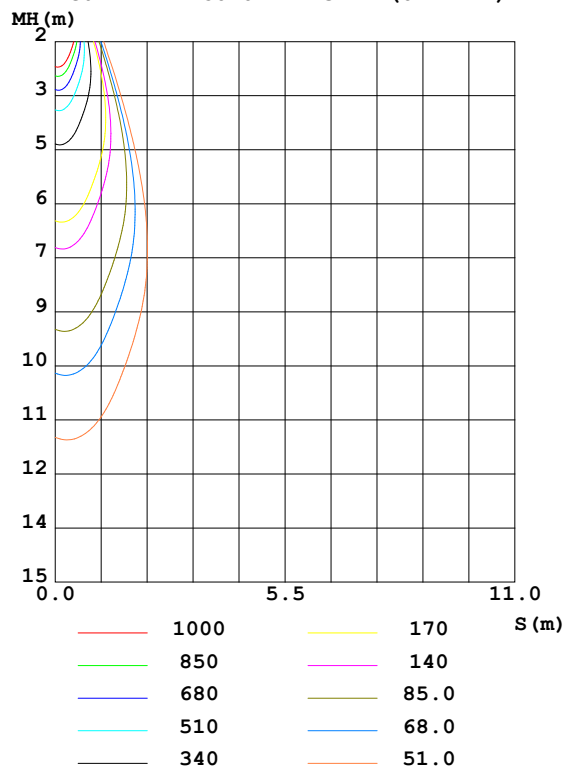
Test:U:220.7V I:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 96.87 lm/W			
MODEL	CITIZEN-4000K	I _{max} (cd)	6837	S/MH (C0/180)	0.47
NOMINAL POWER (W)	20	LOR (%)	100.0	S/MH (C90/270)	0.48
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1985.8	η UP, DN (C0-180)	0.0, 50.3
NOMINAL FLUX (lm)	1985.84	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.7
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.50

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	5019	4849	4569	4435	4475	4425	4608	4846	0- 10	529.1	529.1	26.6, 26.6
20	2114	1961	1810	1706	1742	1646	1814	1981	10- 20	885.0	1414	71.2, 71.2
30	322.5	311.0	295.0	281.0	281.6	266.2	287.3	310.4	20- 30	372.6	1787	90, 90
40	108.1	106.6	105.3	103.2	105.1	104.7	101.9	104.5	30- 40	106.3	1893	95.3, 95.3
50	57.56	55.55	51.78	47.81	47.34	49.49	52.02	54.77	40- 50	60.34	1953	98.4, 98.4
60	14.58	14.31	12.97	12.35	12.29	12.48	13.53	14.37	50- 60	24.59	1978	99.6, 99.6
70	2.838	2.729	1.875	1.269	1.191	1.375	2.153	2.778	60- 70	7.353	1985	100, 100
80	0.1773	0.1485	0.1598	0.1311	0.1266	0.1510	0.1463	0.1728	70- 80	0.4999	1986	100, 100
90	0.0809	0.0765	0.0809	0.0787	0.0656	0.0656	0.0612	0.0678	80- 90	0.1083	1986	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): 1926.5 lm

%lum = 97.0%

%lamp = 97.0%

Conical surface Flux(120deg): 1977.9 lm

%lum = 99.6%

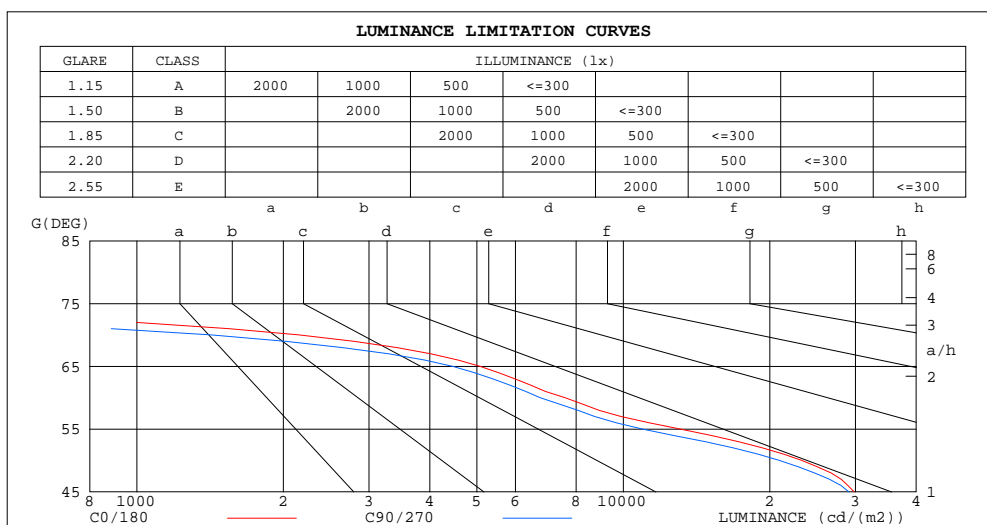
%lamp = 99.6%

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
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:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	339	307
80	265	239
75	293	255
70	2157	1425
65	5073	4454
60	7583	6746
55	13091	10946
50	23280	20941
45	29819	29076

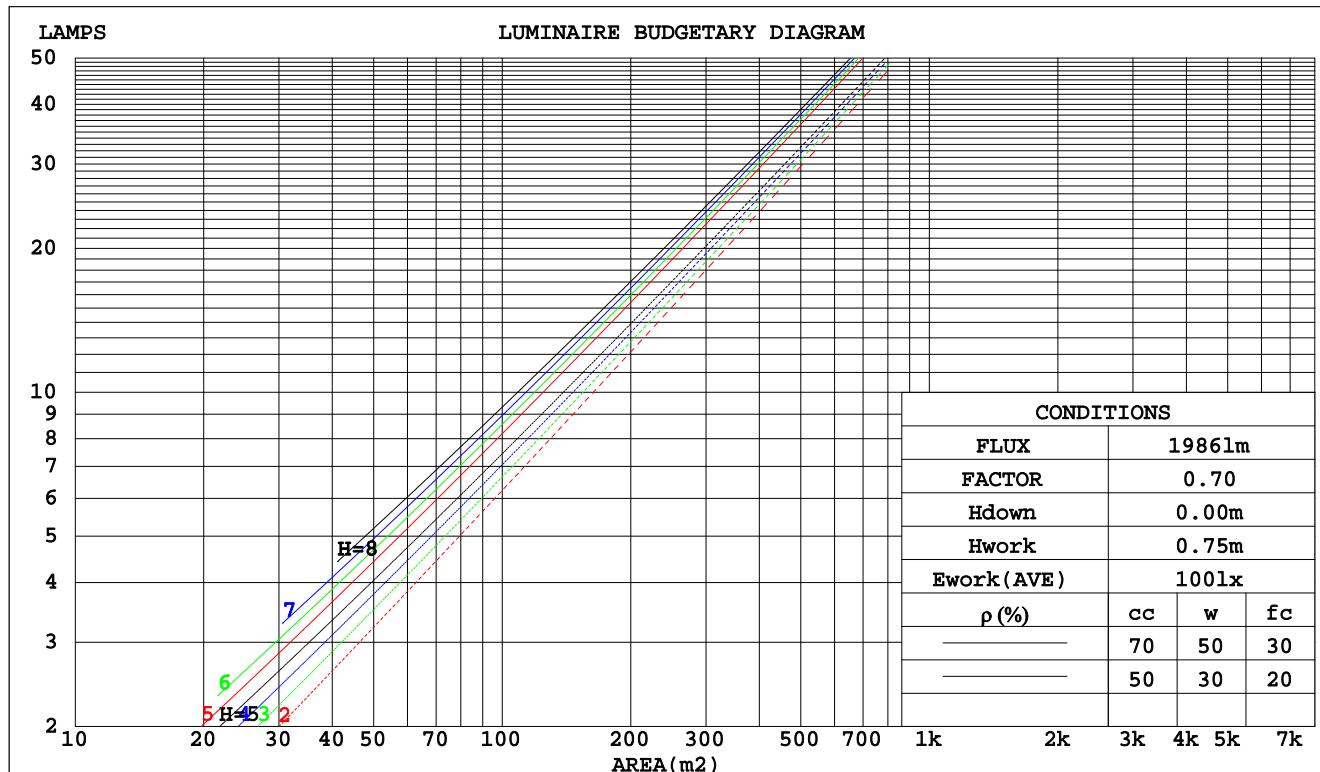
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-05-19

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:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	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	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	.99	.97	.95	.96	.94	.93	.91
3.0	1.01	.97	.94	.90	.96	.93	.97	.94	.92	.95	.92	.90	.93	.91	.89	.88
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	.88	.84	.80	.88	.83	.80	.86	.82	.80	.85	.82	.79	.84	.81	.79	.77
7.0	.85	.80	.77	.84	.80	.77	.83	.79	.76	.82	.79	.76	.81	.78	.76	.75
8.0	.82	.77	.74	.81	.77	.74	.80	.76	.74	.79	.76	.73	.79	.75	.73	.72
9.0	.79	.74	.71	.79	.74	.71	.78	.74	.71	.77	.73	.71	.76	.73	.71	.69
10.0	.76	.72	.69	.76	.72	.69	.75	.71	.69	.75	.71	.68	.74	.71	.68	.67



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:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	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	.142	.081	.026	.130	.074	.024	.118	.068	.022	.108	.062	.020		
2.0	.140	.076	.023	.134	.074	.023	.124	.069	.021	.114	.064	.020	.105	.060	.019		
3.0	.131	.070	.021	.126	.068	.020	.118	.064	.019	.110	.060	.018	.102	.057	.018		
4.0	.124	.064	.019	.120	.063	.018	.112	.060	.018	.105	.057	.017	.099	.054	.016		
5.0	.117	.060	.017	.113	.058	.017	.107	.056	.016	.101	.053	.016	.096	.051	.015		
6.0	.111	.056	.016	.108	.055	.016	.102	.053	.015	.097	.051	.015	.093	.049	.014		
7.0	.105	.052	.015	.103	.051	.015	.098	.050	.014	.094	.048	.014	.089	.046	.014		
8.0	.101	.049	.014	.098	.048	.014	.094	.047	.013	.090	.046	.013	.086	.044	.013		
9.0	.096	.047	.013	.094	.046	.013	.091	.045	.013	.087	.044	.012	.084	.042	.012		
10.0	.092	.044	.012	.090	.044	.012	.087	.043	.012	.084	.042	.012	.081	.041	.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	.116	.130	.114	.101	.089	.079	.070	.051	.046	.041	.016	.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	.100	.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	.060	.041	.028	.035	.024	.017	.011	.008	.006	
8.0	.094	.062	.040	.081	.053	.034	.056	.038	.024	.033	.022	.015	.011	.007	.005	
9.0	.088	.056	.034	.076	.049	.030	.053	.034	.021	.031	.020	.013	.010	.007	.004	
10.0	.084	.052	.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:2017-05-19

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:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm										
NAME: ROXY S-21W-940-30					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	13.5	14.2	13.7	14.4	14.5	13.2	13.9	13.4	14.0	14.2
3H	13.4	14.1	13.6	14.3	14.5	13.1	13.8	13.3	13.9	14.1
4H	13.3	14.0	13.6	14.2	14.4	13.0	13.6	13.3	13.8	14.1
6H	13.2	13.8	13.5	14.1	14.3	12.9	13.5	13.2	13.7	14.0
8H	13.2	13.8	13.5	14.0	14.3	12.9	13.4	13.2	13.7	13.9
12H	13.1	13.7	13.5	14.0	14.2	12.8	13.4	13.1	13.6	13.9
4H 2H	13.4	14.0	13.6	14.2	14.4	13.1	13.7	13.3	13.9	14.1
3H	13.3	13.9	13.6	14.1	14.4	13.0	13.5	13.3	13.8	14.1
4H	13.2	13.7	13.5	14.0	14.3	12.9	13.4	13.2	13.7	14.0
6H	13.1	13.5	13.5	13.9	14.2	12.8	13.2	13.1	13.6	13.9
8H	13.0	13.5	13.4	13.8	14.2	12.7	13.2	13.1	13.5	13.9
12H	13.0	13.4	13.4	13.7	14.1	12.7	13.1	13.1	13.4	13.8
8H 4H	13.0	13.5	13.4	13.8	14.2	12.7	13.2	13.1	13.5	13.9
6H	12.9	13.3	13.4	13.7	14.1	12.6	13.0	13.0	13.4	13.8
8H	12.9	13.2	13.3	13.6	14.0	12.6	12.9	13.0	13.3	13.7
12H	12.8	13.1	13.3	13.5	14.0	12.5	12.8	13.0	13.2	13.7
12H 4H	13.0	13.4	13.4	13.7	14.1	12.7	13.1	13.1	13.4	13.8
6H	12.9	13.2	13.3	13.6	14.0	12.6	12.9	13.0	13.3	13.7
8H	12.8	13.1	13.3	13.5	14.0	12.5	12.8	13.0	13.2	13.7
Variations with the observer position at spacings:										
S = 1.0H	+ 1.9 / - 4.2					+ 2.0 / - 4.6				
1.5H	+ 1.9 / - 3.4					+ 1.8 / - 3.6				
2.0H	+ 3.8 / - 5.2					+ 4.1 / - 5.1				

CIE Pub.117, 1986 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 2.4$)

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:

UTILIZATION FACTORS TABLE

Test:U:220.7V I:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 70\text{mm} \times H138\text{mm}$	
MFR.: NEKO LIGHTING AG		

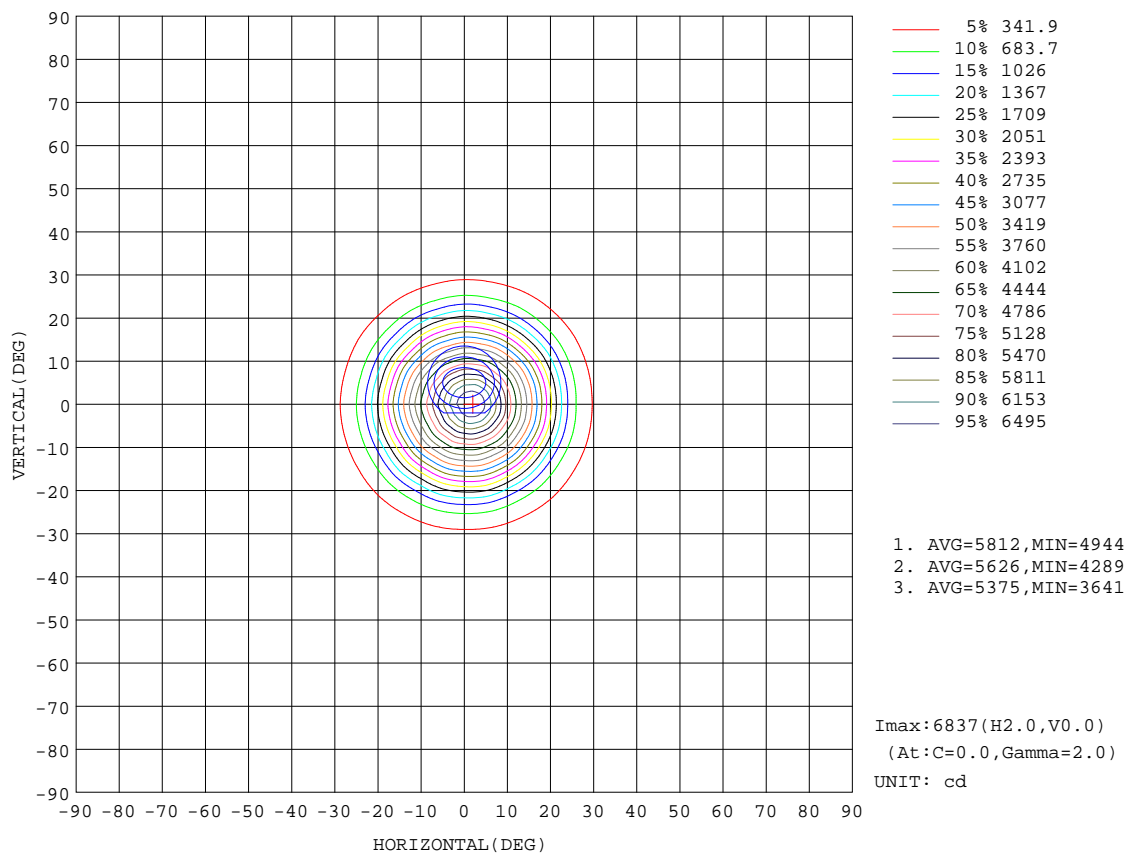
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	82	79	88	82	79	87	82	79	75
0.80	96	90	87	95	90	87	94	89	86	83
1.00	100	95	91	99	94	91	98	94	90	87
1.25	104	99	96	103	98	95	101	97	95	90
1.50	107	102	99	105	101	98	103	100	97	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	103	101	96
3.00	112	109	106	110	107	105	107	105	103	97
4.00	114	111	109	112	110	108	108	107	105	98
5.00	115	113	111	113	111	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
 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:220.7V I:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

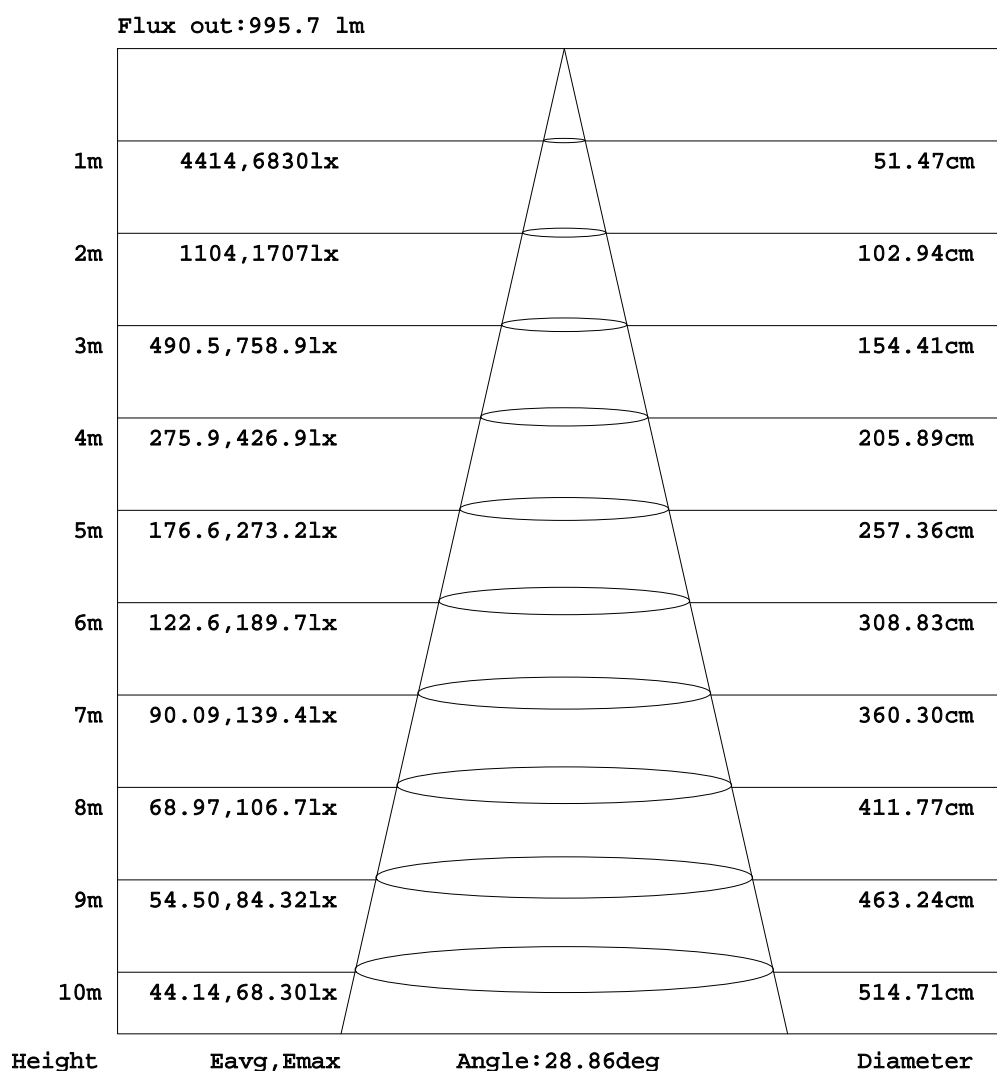


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Meng Yongjian
Test Date:2017-05-19

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:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



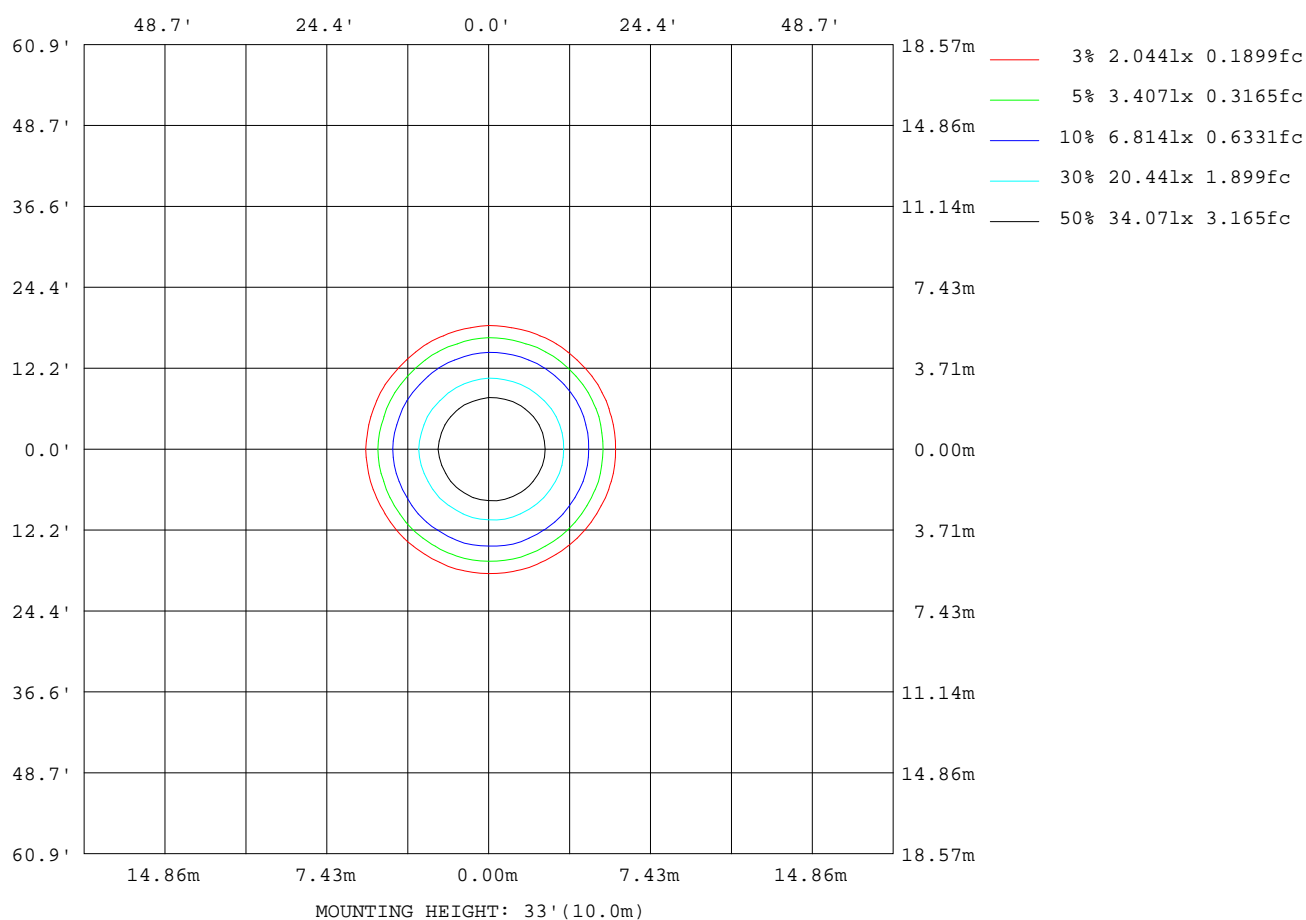
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	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:0.0989A P:20.50W PF:0.9390 Freq:50.00Hz Lamp Flux:1985.84x1 lm		
NAME: ROXY S-21W-940-30	TYPE:Tracklight	SERIAL No.:
SPEC.:4000K	DIM.: ϕ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

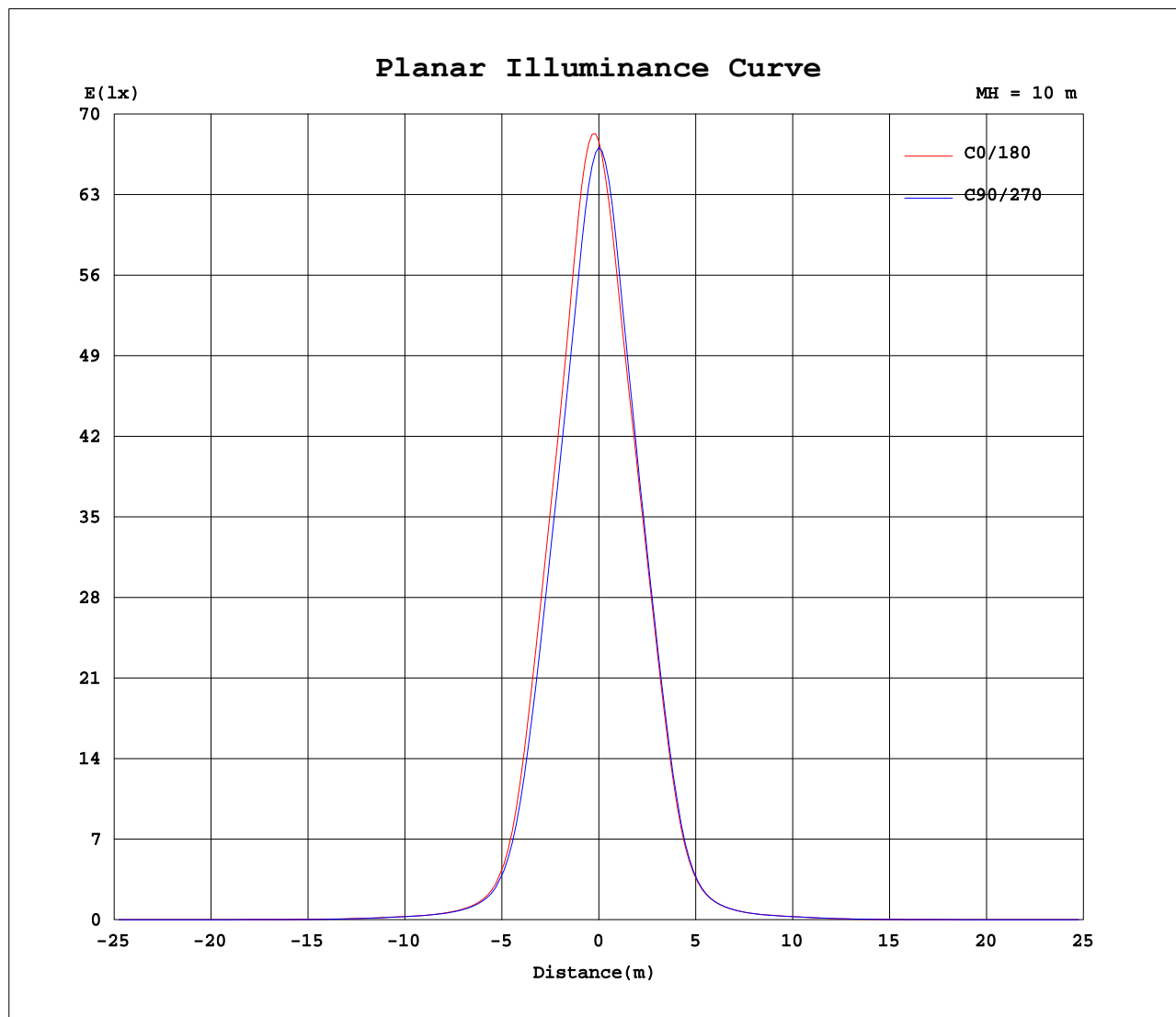
AvgL	cd/m2
L_0~180 (65) av	4525
L_0~180 (75) av	248
L_0~180 (85) av	274
L_90~270 (65) av	4606
L_90~270 (75) av	252
L_90~270 (85) av	280
L_45 (65) av	4611
L_45 (75) av	246
L_45 (85) av	276

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:

```