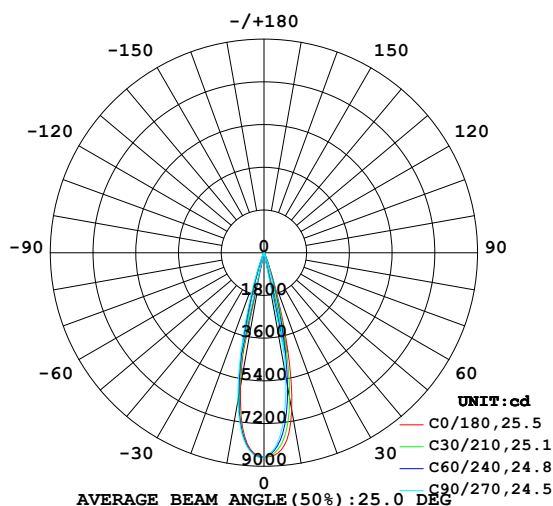


LUMINAIRE PHOTOMETRIC TEST REPORT

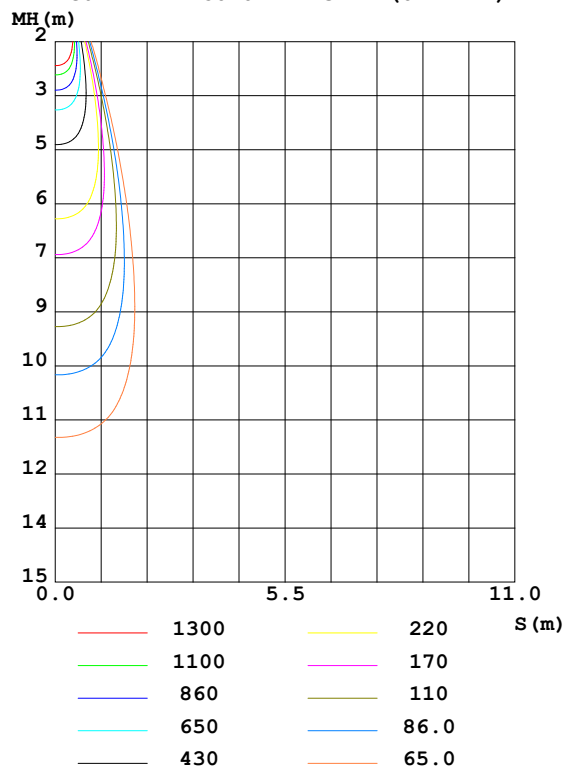
Test:U:220.7V I:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 81.12 lm/W
MODEL	CITIZEN-3000K	I <sub>max</sub> (cd)	8626	S/MH (C0/180)	0.37	
NOMINAL POWER (W)	20	LOR (%)	100.0	S/MH (C90/270)	0.41	
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1643.5	$\eta$ UP, DN (C0-180)	0.0, 47.1	
NOMINAL FLUX (lm)	1643.47	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 52.9	
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE (V)	220	$\eta$ 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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	6732	6047	5279	5182	5723	5995	6335	6738	0- 10	707.6	707.6	43.1,43.1
20	872.3	669.7	520.1	438.3	470.6	540.0	790.5	884.4	10- 20	731.6	1439	87.6,87.6
30	109.9	97.37	86.19	81.05	86.12	94.89	115.7	102.9	20- 30	104.0	1543	93.9,93.9
40	50.04	46.17	43.85	39.83	43.07	44.26	49.26	47.04	30- 40	40.30	1583	96.3,96.3
50	32.72	31.07	29.00	26.24	28.01	29.69	32.69	30.99	40- 50	28.81	1612	98.1,98.1
60	18.42	17.73	15.34	14.13	14.38	16.50	18.96	18.68	50- 60	21.02	1633	99.4,99.4
70	4.228	3.488	2.130	1.569	1.872	2.685	4.016	4.726	60- 70	9.323	1643	99.9,99.9
80	0.1485	0.1179	0.1336	0.1027	0.1025	0.1290	0.1158	0.1467	70- 80	0.7573	1643	100,100
90	0.0589	0.0590	0.0613	0.0613	0.0633	0.0590	0.0613	0.0634	80- 90	0.0888	1643	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): 1598.7 lm

%lum = 97.3%

%lamp = 97.3%

Conical surface Flux(120deg): 1633.3 lm

%lum = 99.4%

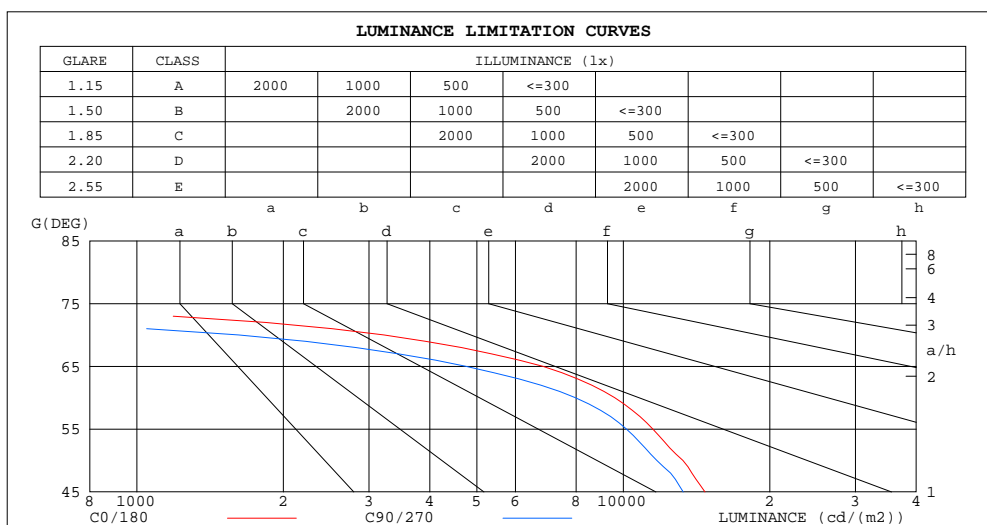
%lamp = 99.4%

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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G( DEG)	C0/180	C90/270
85	268	248
80	223	200
75	381	214
70	3220	1618
65	6831	4743
60	9598	7968
55	11496	10148
50	13260	11720
45	14721	13273

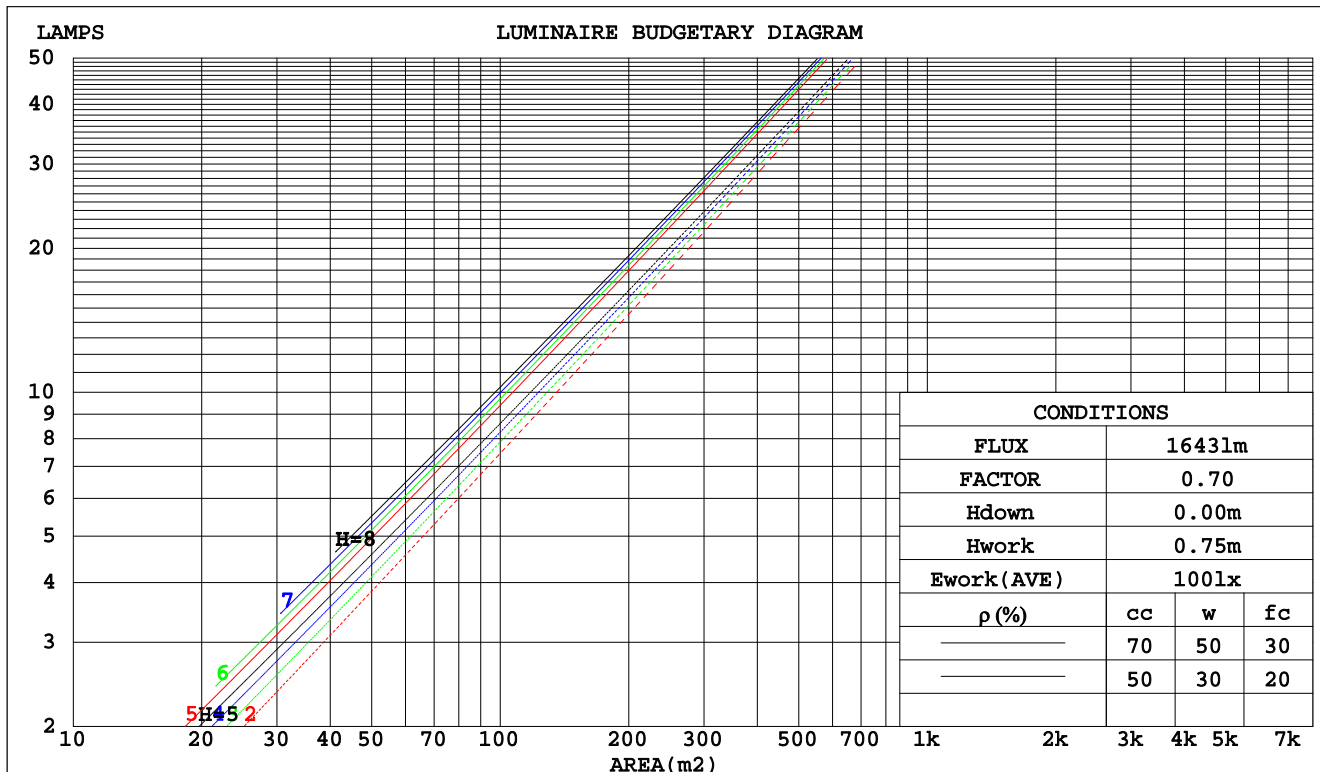
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Meng Yongjian  
Test Date:2017-05-19

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi 70\text{mm} \times H138\text{mm}$	
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	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	1.13	1.11	1.10	1.11	1.09	1.08	1.07	1.06	1.05	1.03	1.02	1.02	1.00	.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	.97	.95	.94
3.0	1.04	1.00	.98	1.02	.99	.97	1.00	.97	.95	.98	.96	.94	.96	.94	.92	.91
4.0	1.00	.96	.93	.99	.96	.93	.97	.94	.92	.95	.93	.91	.94	.91	.90	.89
5.0	.97	.93	.90	.96	.92	.90	.94	.91	.89	.93	.90	.88	.91	.89	.87	.86
6.0	.94	.90	.87	.93	.89	.87	.92	.89	.86	.91	.88	.86	.89	.87	.85	.84
7.0	.91	.87	.85	.91	.87	.84	.90	.86	.84	.89	.86	.84	.88	.85	.83	.82
8.0	.89	.85	.82	.88	.85	.82	.87	.84	.82	.87	.84	.82	.86	.83	.81	.80
9.0	.87	.83	.80	.86	.83	.80	.85	.82	.80	.85	.82	.80	.84	.81	.79	.79
10.0	.85	.81	.78	.84	.81	.78	.84	.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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	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	.133	.075	.024	.126	.072	.023	.114	.065	.021	.102	.059	.019	.092	.053	.017		
2.0	.123	.067	.021	.117	.065	.020	.107	.059	.018	.098	.055	.017	.089	.050	.016		
3.0	.114	.061	.018	.109	.058	.018	.101	.055	.017	.093	.051	.016	.086	.047	.015		
4.0	.106	.055	.016	.102	.053	.016	.095	.050	.015	.089	.048	.014	.082	.045	.014		
5.0	.099	.051	.015	.096	.049	.014	.090	.047	.014	.084	.045	.013	.079	.042	.013		
6.0	.093	.047	.013	.091	.046	.013	.086	.044	.013	.081	.042	.012	.076	.040	.012		
7.0	.088	.044	.012	.086	.043	.012	.081	.041	.012	.077	.040	.012	.073	.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	.074	.037	.010	.071	.036	.010	.068	.035	.010		
10.0	.076	.036	.010	.074	.036	.010	.071	.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	.041	.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	.065	.043	.028	.045	.030	.020	.026	.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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm										
NAME: ROXY S-21W-930-25					TYPE:Tracklight			SERIAL No.:		
SPEC.:3000K					DIM.: $\phi$ 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	11.3	11.9	11.5	12.1	12.2	10.6	11.2	10.8	11.4	11.5
3H	11.6	12.2	11.8	12.4	12.6	10.7	11.3	11.0	11.5	11.7
4H	11.5	12.1	11.8	12.3	12.5	10.6	11.2	10.9	11.4	11.6
6H	11.5	12.0	11.7	12.2	12.4	10.6	11.1	10.8	11.3	11.5
8H	11.4	11.9	11.7	12.2	12.4	10.5	11.0	10.8	11.3	11.5
12H	11.4	11.9	11.7	12.1	12.4	10.5	11.0	10.8	11.2	11.5
4H 2H	11.6	12.1	11.8	12.3	12.5	10.9	11.5	11.2	11.7	11.9
3H	11.8	12.3	12.1	12.5	12.8	11.0	11.5	11.3	11.8	12.0
4H	11.7	12.2	12.0	12.5	12.8	10.9	11.4	11.3	11.7	12.0
6H	11.6	12.0	12.0	12.3	12.7	10.8	11.2	11.2	11.5	11.9
8H	11.6	11.9	11.9	12.3	12.6	10.8	11.1	11.1	11.5	11.8
12H	11.5	11.8	11.9	12.2	12.6	10.7	11.0	11.1	11.4	11.8
8H 4H	11.6	11.9	12.0	12.3	12.6	10.8	11.2	11.2	11.5	11.9
6H	11.5	11.8	11.9	12.2	12.6	10.7	11.0	11.1	11.4	11.8
8H	11.4	11.7	11.8	12.1	12.5	10.6	10.9	11.0	11.3	11.7
12H	11.3	11.6	11.8	12.0	12.5	10.5	10.8	11.0	11.2	11.7
12H 4H	11.5	11.9	11.9	12.2	12.6	10.7	11.1	11.1	11.4	11.8
6H	11.4	11.7	11.8	12.1	12.5	10.6	10.9	11.0	11.3	11.7
8H	11.3	11.6	11.8	12.0	12.5	10.5	10.8	11.0	11.2	11.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 1.0					+ 0.7 / - 1.1				
1.5H	+ 0.3 / - 0.9					+ 0.3 / - 0.8				
2.0H	+ 1.1 / - 1.7					+ 1.1 / - 2.0				

CIE Pub.117, 1643 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 1.7$ )

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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing 70\text{mm} \times H138\text{mm}$	
MFR.: NEKO LIGHTING AG		

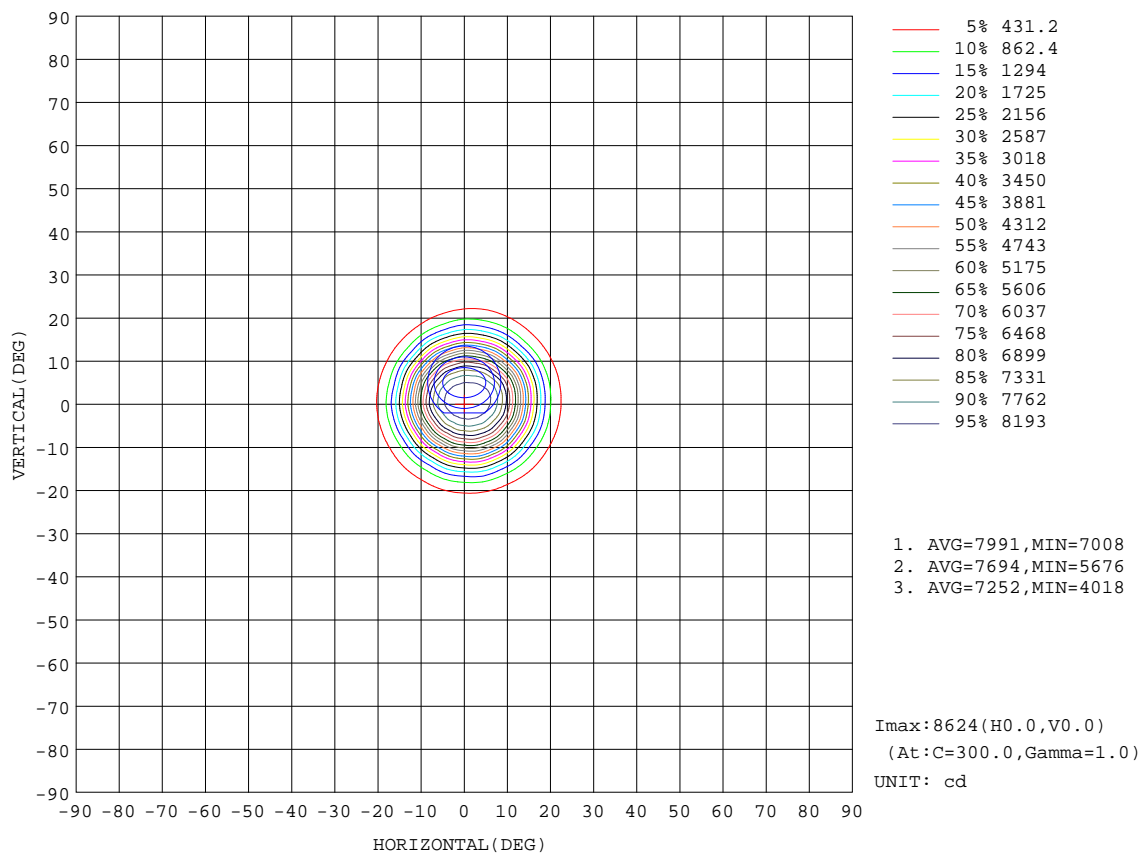
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	80	89	83	80	88	83	79	76
0.80	96	91	87	96	91	87	95	90	87	83
1.00	100	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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 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

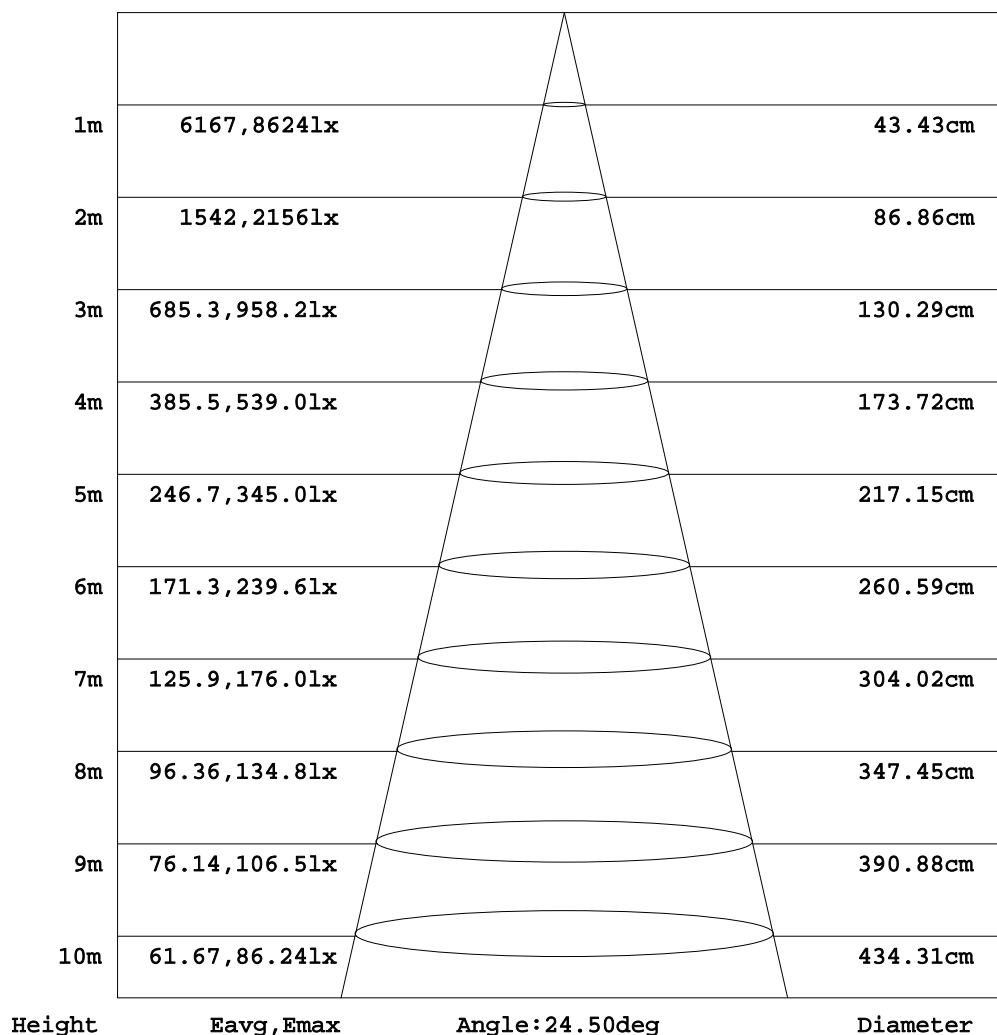
$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.288  
Humidity:52%  
Test Distance:5.850m [K=1.0000]  
Remarks:



**AAI Figure**

Test:U:220.7V I:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

Flux out:1033 lm



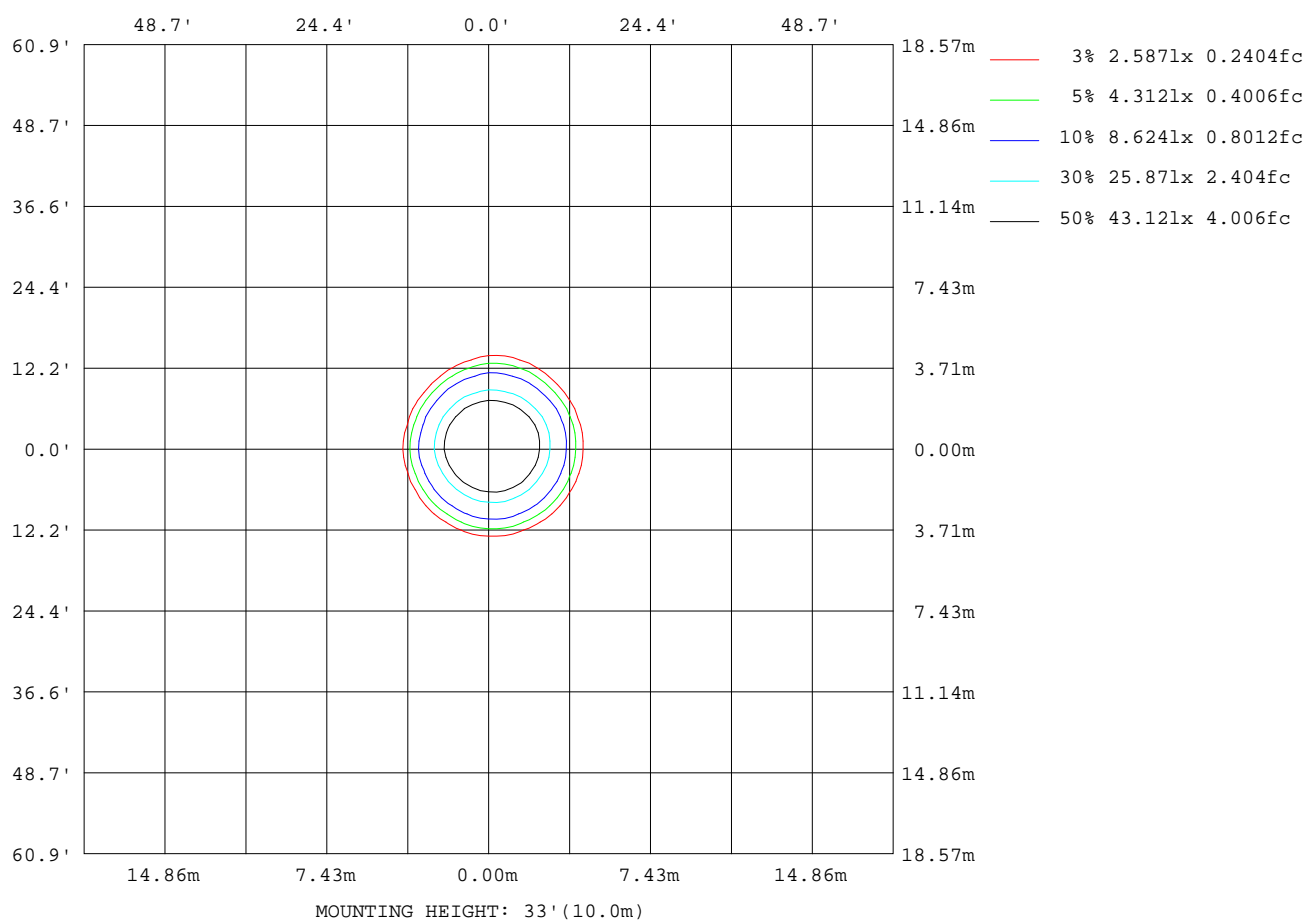
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:0.0978A P:20.26W PF:0.9380 Freq:50.00Hz Lamp Flux:1643.47x1 lm		
NAME: ROXY S-21W-930-25	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 70mm*H138mm	
MFR.: NEKO LIGHTING AG		

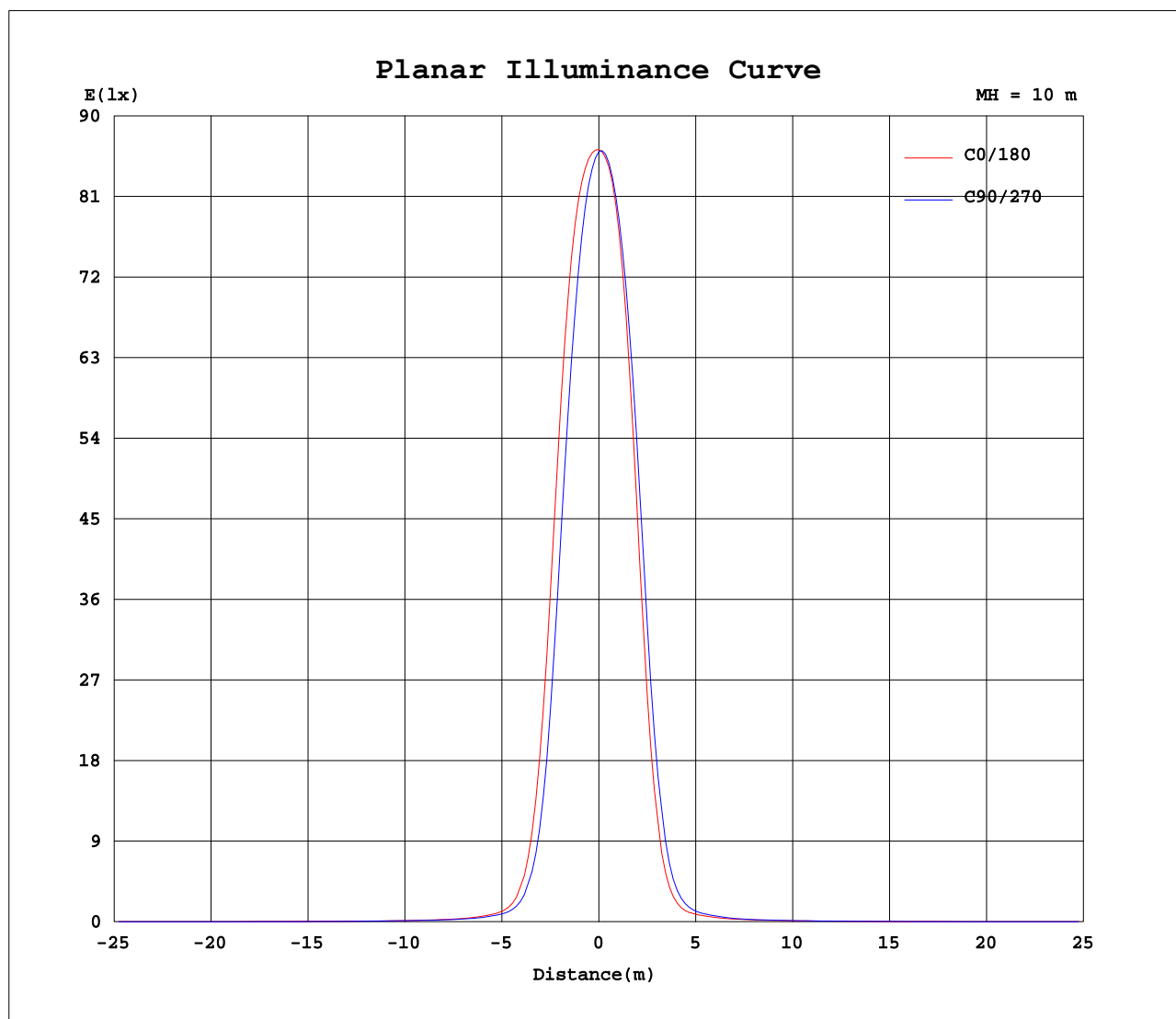
AvgL	cd/m2
L_0~180 (65) av	5594
L_0~180 (75) av	279
L_0~180 (85) av	228
L_90~270 (65) av	5739
L_90~270 (75) av	264
L_90~270 (85) av	222
L_45 (65) av	5712
L_45 (75) av	261
L_45 (85) av	227

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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

```