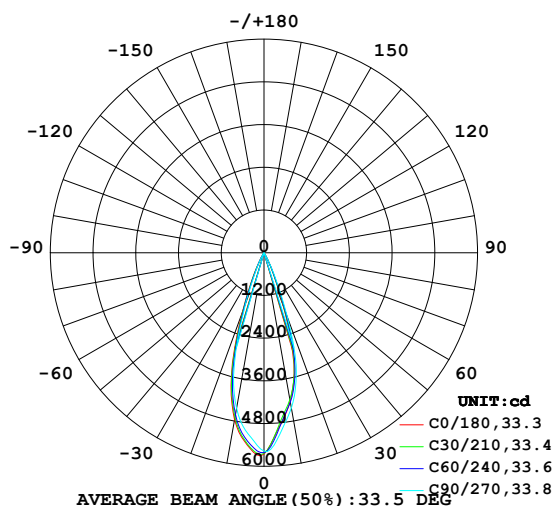


LUMINAIRE PHOTOMETRIC TEST REPORT

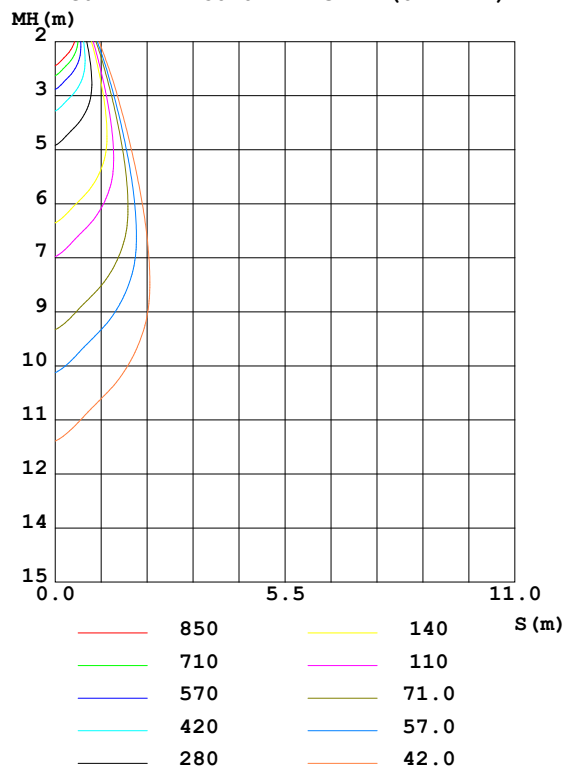
Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 82.72 lm/W			
MODEL	CITIZEN-3000K	I _{max} (cd)	5707	S/MH (C0/180)	0.52
NOMINAL POWER (W)	21	LOR (%)	100.0	S/MH (C90/270)	0.50
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1700.5	η UP, DN (C0-180)	0.0, 53.2
NOMINAL FLUX (lm)	1700.5	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 46.8
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:Jason Long
 Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:56%
 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	4231	4243	4428	4945	4764	4633	4437	4095	0- 10	470.1	470.1	27.6, 27.6
20	1568	1757	1941	2291	1782	1588	1500	1188	10- 20	881.6	1352	79.5, 79.5
30	121.5	145.0	167.9	270.5	190.0	142.9	125.2	79.04	20- 30	306.4	1658	97.5, 97.5
40	17.26	18.23	20.22	23.87	19.26	17.42	16.04	13.25	30- 40	33.17	1691	99.5, 99.5
50	3.638	4.072	4.268	4.934	3.550	3.619	3.280	2.911	40- 50	7.027	1698	99.9, 99.9
60	0.7921	0.9788	0.9168	0.8260	0.6640	0.8207	0.7381	0.6957	50- 60	1.628	1700	100, 100
70	0.1160	0.1004	0.1270	0.1114	0.0786	0.0898	0.0677	0.0875	60- 70	0.3902	1700	100, 100
80	0.0765	0.0656	0.0722	0.0568	0.0372	0.0547	0.0394	0.0612	70- 80	0.0758	1700	100, 100
90	0.0612	0.0590	0.0612	0.0568	0.0394	0.0372	0.0350	0.0394	80- 90	0.0586	1701	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): 1696 lm

%lum = 99.7%

%lamp = 99.7%

Conical surface Flux(120deg): 1700 lm

%lum = 100.0%

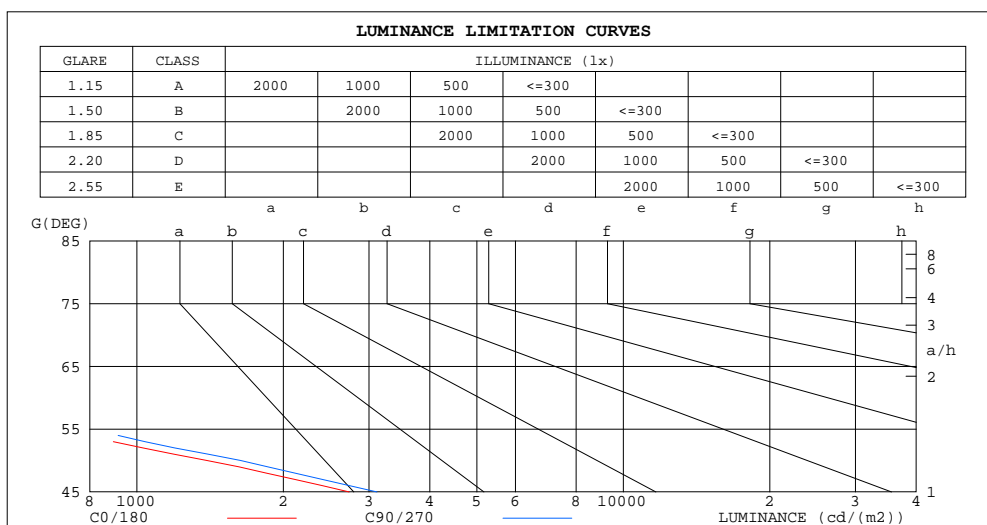
%lamp = 100.0%

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Jason Long
Test Date: 2019-12-05

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 56%
Test Distance: 5.850m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	197	191
80	108	102
75	81	83
70	83	91
65	246	298
60	389	451
55	657	794
50	1391	1632
45	2730	3117

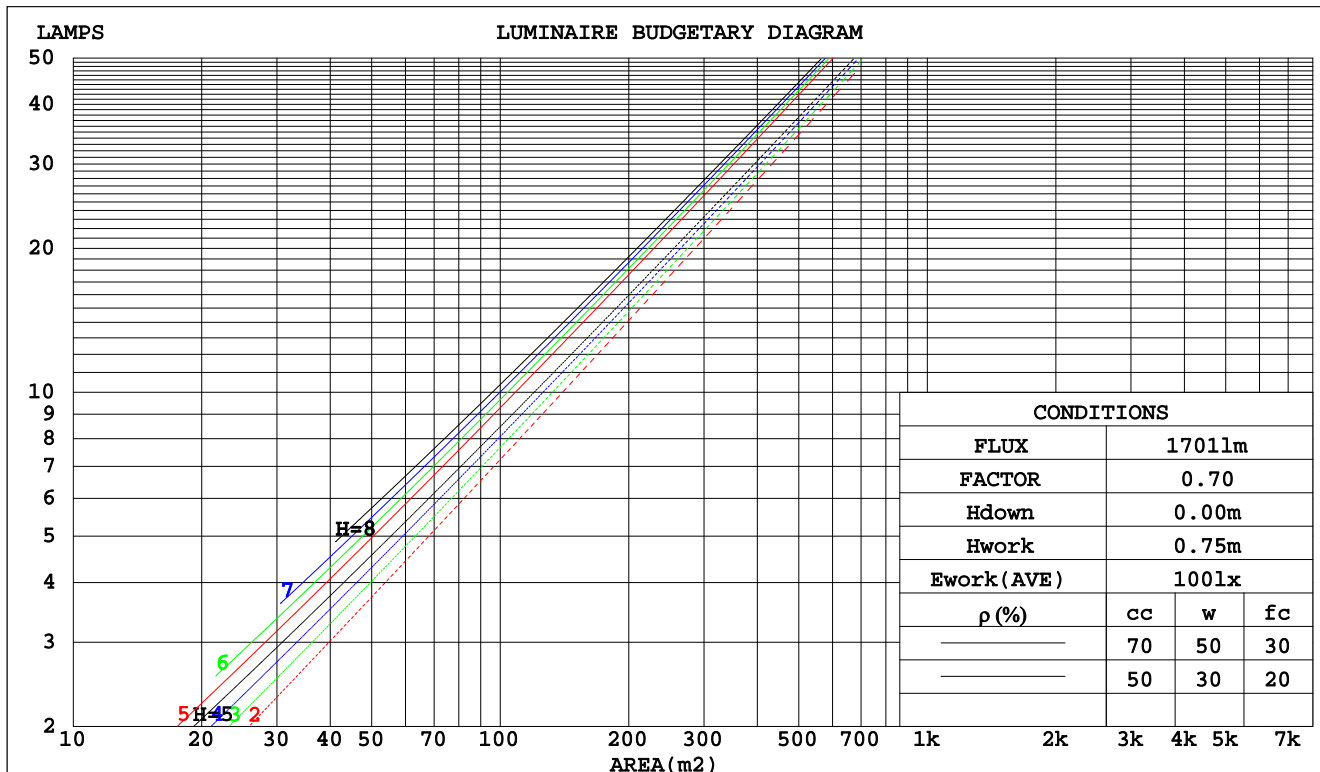
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi 72\text{mm} \times \text{H}150\text{mm}$	
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	1.13	1.11	1.09	1.11	1.09	1.07	1.07	1.05	1.04	1.03	1.02	1.01	.00	.99	.98	.96
2.0	1.07	1.04	1.02	1.06	1.03	1.01	1.03	1.00	.98	.00	.98	.96	.97	.96	.94	.93
3.0	1.03	.99	.96	1.01	.98	.95	.99	.96	.94	.97	.94	.92	.94	.93	.91	.90
4.0	.98	.94	.91	.97	.94	.91	.95	.92	.90	.94	.91	.89	.92	.90	.88	.87
5.0	.95	.90	.87	.94	.90	.87	.92	.89	.86	.91	.88	.86	.89	.87	.85	.84
6.0	.91	.87	.84	.91	.87	.84	.89	.86	.83	.88	.85	.83	.87	.84	.82	.81
7.0	.88	.84	.81	.88	.83	.81	.86	.83	.80	.85	.82	.80	.84	.82	.79	.78
8.0	.85	.81	.78	.85	.81	.78	.84	.80	.78	.83	.80	.77	.82	.79	.77	.76
9.0	.82	.78	.75	.82	.78	.75	.81	.78	.75	.80	.77	.75	.80	.77	.75	.74
10.0	.80	.76	.73	.80	.76	.73	.79	.75	.73	.78	.75	.73	.78	.75	.72	.71



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: Jason Long
Test Date: 2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 56%
Test Distance: 5.850m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
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	.139	.079	.025	.133	.076	.024	.120	.069	.022	.109	.063	.020	.098	.057	.018		
2.0	.129	.071	.022	.124	.068	.021	.113	.063	.020	.104	.058	.018	.095	.054	.017		
3.0	.121	.064	.019	.116	.062	.019	.108	.058	.018	.100	.055	.017	.092	.051	.016		
4.0	.113	.059	.017	.110	.057	.017	.102	.054	.016	.096	.051	.015	.089	.049	.015		
5.0	.107	.055	.016	.104	.053	.016	.098	.051	.015	.092	.048	.014	.087	.046	.014		
6.0	.102	.051	.015	.099	.050	.014	.093	.048	.014	.089	.046	.014	.084	.044	.013		
7.0	.097	.048	.014	.094	.047	.013	.090	.045	.013	.085	.044	.013	.081	.042	.012		
8.0	.093	.045	.013	.090	.044	.013	.086	.043	.012	.082	.042	.012	.079	.040	.012		
9.0	.089	.043	.012	.087	.042	.012	.083	.041	.012	.080	.040	.011	.077	.039	.011		
10.0	.085	.041	.011	.083	.040	.011	.080	.039	.011	.077	.038	.011	.074	.037	.011		

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						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	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.151	.133	.118	.129	.114	.102	.088	.079	.071	.051	.046	.042	.016	.015	.014	
3.0	.136	.113	.095	.116	.098	.083	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.123	.098	.079	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.113	.086	.066	.097	.074	.057	.067	.052	.040	.039	.030	.024	.012	.010	.008	
6.0	.104	.076	.055	.090	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.097	.068	.047	.083	.059	.041	.058	.041	.029	.033	.024	.017	.011	.008	.006	
8.0	.091	.061	.041	.078	.053	.035	.054	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.085	.055	.035	.073	.048	.031	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.080	.051	.031	.069	.044	.027	.048	.031	.019	.028	.018	.011	.009	.006	.004	

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Jason Long
 Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:56%
 Test Distance:5.850m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm											
NAME: ROXY S-Z-21W-930-18-35#35						TYPE:Tracklight			SERIAL No.:		
SPEC.:3000K						DIM.: \varnothing 72mm*H150mm					
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		1.7	2.4	1.9	2.5	2.7	2.5	3.2	2.7	3.3	3.5
	3H	1.5	2.2	1.8	2.4	2.5	2.4	3.0	2.6	3.2	3.4
	4H	1.5	2.1	1.7	2.3	2.5	2.3	2.9	2.6	3.1	3.3
	6H	1.4	1.9	1.7	2.2	2.4	2.2	2.8	2.5	3.0	3.2
	8H	1.3	1.9	1.6	2.1	2.4	2.2	2.7	2.5	3.0	3.2
	12H	1.3	1.8	1.6	2.1	2.3	2.1	2.6	2.4	2.9	3.2
4H	2H	1.5	2.1	1.7	2.3	2.5	2.3	2.9	2.6	3.1	3.3
	3H	1.3	1.8	1.6	2.1	2.4	2.1	2.7	2.4	2.9	3.2
	4H	1.2	1.7	1.6	2.0	2.3	2.0	2.5	2.4	2.8	3.1
	6H	1.1	1.5	1.5	1.9	2.2	1.9	2.4	2.3	2.7	3.0
	8H	1.1	1.5	1.5	1.8	2.2	1.9	2.3	2.3	2.6	3.0
	12H	1.0	1.4	1.4	1.7	2.1	1.8	2.2	2.2	2.6	3.0
8H	4H	1.1	1.5	1.5	1.8	2.2	1.9	2.3	2.3	2.6	3.0
	6H	1.0	1.3	1.4	1.7	2.1	1.8	2.1	2.2	2.5	2.9
	8H	0.9	1.2	1.3	1.6	2.0	1.7	2.0	2.2	2.4	2.9
	12H	0.8	1.1	1.3	1.5	2.0	1.7	1.9	2.1	2.4	2.8
12H	4H	1.0	1.4	1.4	1.7	2.1	1.8	2.2	2.2	2.6	2.9
	6H	0.9	1.2	1.3	1.6	2.0	1.7	2.0	2.2	2.4	2.9
	8H	0.8	1.1	1.3	1.5	2.0	1.7	1.9	2.1	2.3	2.8
Variations with the observer position at spacings:											
S = 1.0H		+ 3.1 / -10.3					+ 3.3 / -10.0				
1.5H		+ 5.0 / - 7.5					+ 5.3 / - 7.5				
2.0H		+ 5.5 / - 6.2					+ 5.8 / - 5.9				

CIE Pub.117, 1701 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 1.8$)

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Jason Long
 Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:56%
 Test Distance:5.850m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing 72\text{mm} \times H150\text{mm}$	
MFR.: NEKO LIGHTING AG		

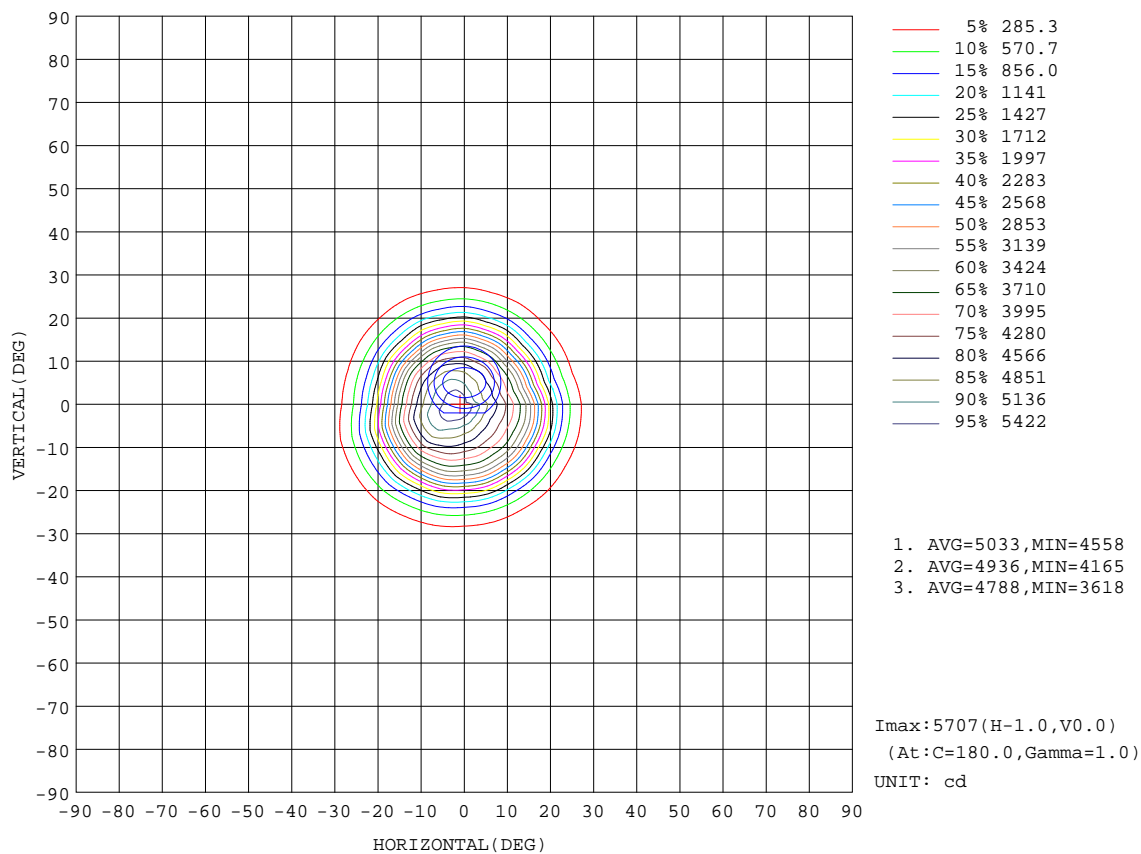
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	86	82	91	85	82	90	85	82	79
0.80	98	93	90	98	93	90	96	92	89	86
1.00	102	97	94	101	96	93	100	96	93	89
1.25	105	101	98	104	100	97	103	99	97	93
1.50	108	104	101	107	103	100	104	101	99	95
2.00	110	106	103	109	105	103	106	103	101	96
2.50	111	108	105	110	107	104	107	104	103	97
3.00	113	110	107	111	108	106	108	106	104	98
4.00	115	112	110	113	111	109	109	107	106	99
5.00	116	114	112	114	112	111	110	109	107	100
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:Jason Long
Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

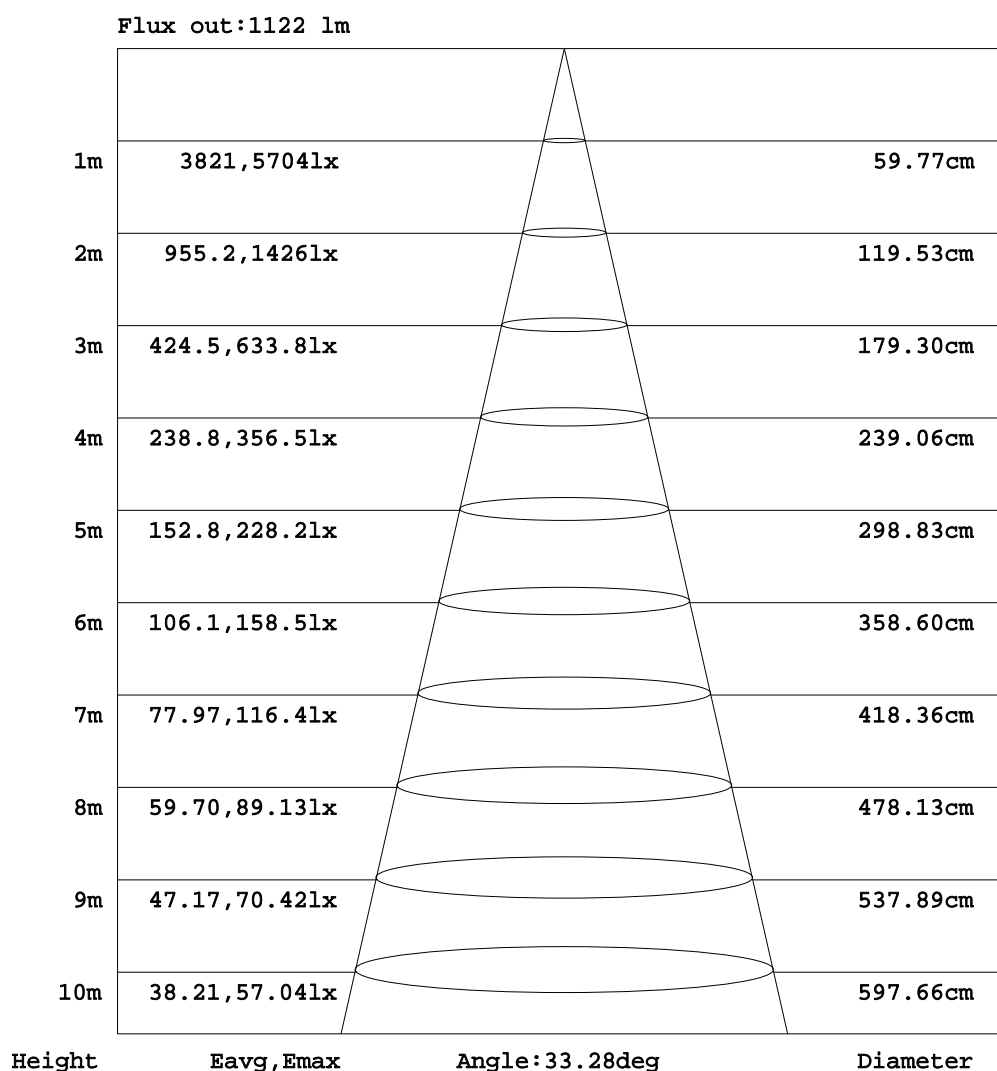


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

AAI Figure

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		



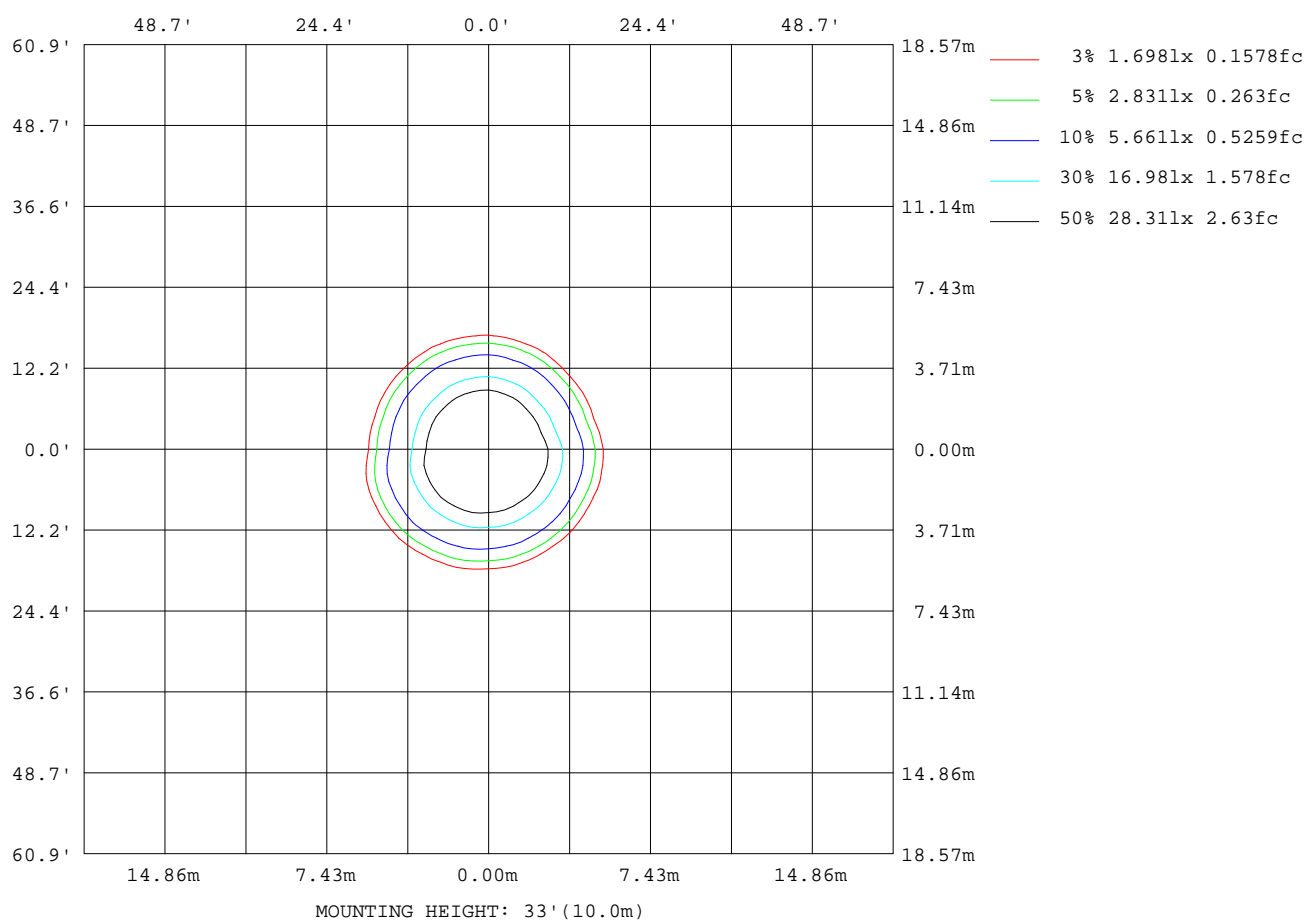
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:220.1V I:0.0934A P:20.56W PF:0.9557 Freq:59.98Hz Lamp Flux:1700.5x1 lm		
NAME: ROXY S-Z-21W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

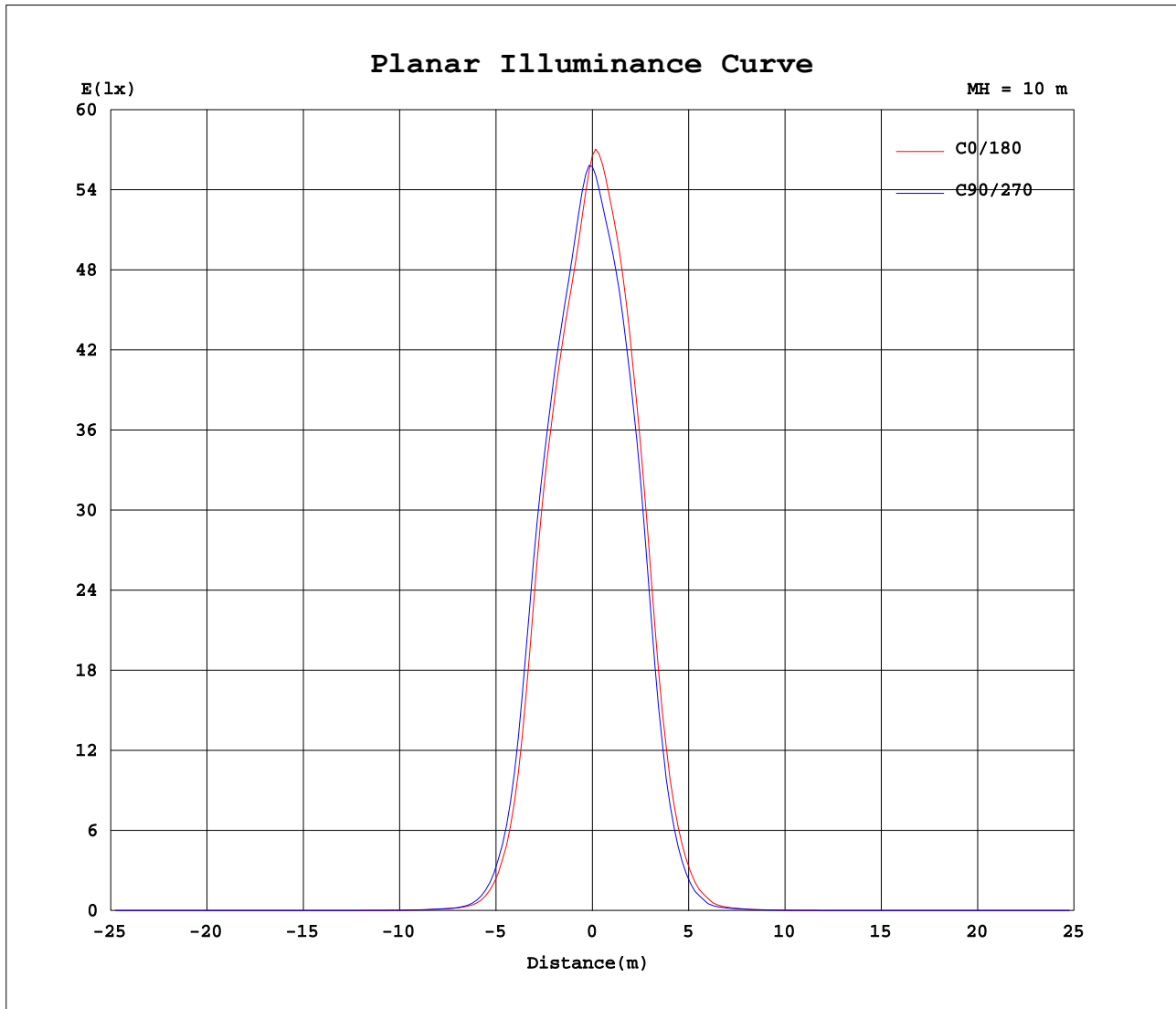
AvgL	cd/m2
L_0~180 (65) av	217
L_0~180 (75) av	65
L_0~180 (85) av	151
L_90~270 (65) av	220
L_90~270 (75) av	66
L_90~270 (85) av	145
L_45 (65) av	203
L_45 (75) av	65
L_45 (85) av	159

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
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: Jason Long
Test Date: 2019-12-05

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 56%
Test Distance: 5.850m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:56%
Test Distance:5.850m [K=1.0000]
Remarks:

```