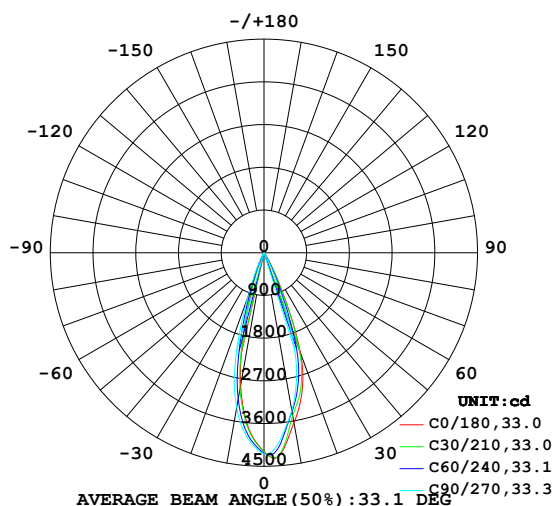


LUMINAIRE PHOTOMETRIC TEST REPORT

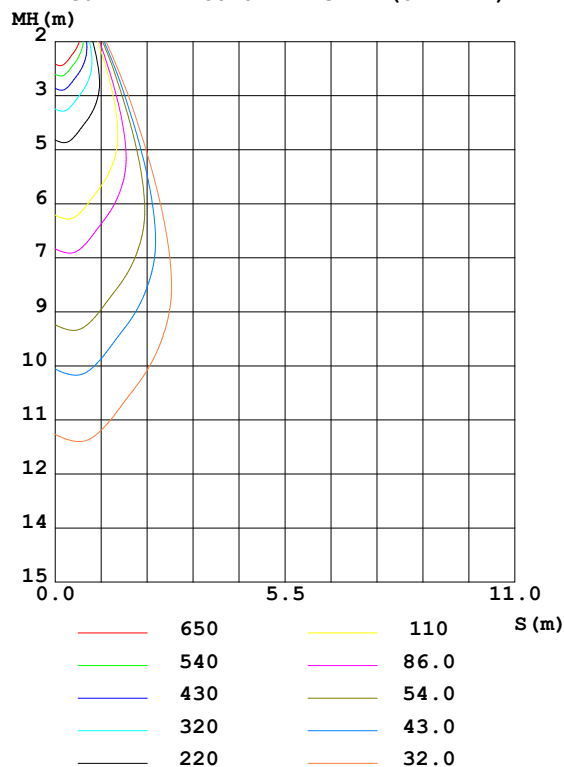
Test:U:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 89.20 lm/W			
MODEL	CITIZEN-3000K	I _{max} (cd)	4346	S/MH (C0/180)	0.42
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.49
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1273.4	η UP,DN (C0-180)	0.0,56.9
NOMINAL FLUX (lm)	1273.35	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,43.1
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	3638	3467	3375	3427	2845	2973	3316	3315	0- 10	354.7	354.7	27.9, 27.9
20	2247	2073	1503	1179	593.0	662.3	1024	1270	10- 20	640.5	995.2	78.2, 78.2
30	292.9	233.5	132.2	105.2	40.49	45.26	76.22	104.3	20- 30	243.9	1239	97.3, 97.3
40	23.50	20.33	15.91	12.92	7.296	8.166	11.53	13.54	30- 40	27.09	1266	99.4, 99.4
50	5.212	4.690	3.372	2.574	1.285	1.700	2.313	2.981	40- 50	5.475	1272	99.9, 99.9
60	0.9815	1.054	0.6892	0.5463	0.2878	0.3244	0.5196	0.6082	50- 60	1.304	1273	100, 100
70	0.2066	0.1266	0.0986	0.0611	0.0350	0.0547	0.0481	0.0853	60- 70	0.3116	1273	100, 100
80	0.0591	0.0503	0.0547	0.0415	0.0350	0.0394	0.0328	0.0481	70- 80	0.0578	1273	100, 100
90	0.0503	0.0503	0.0459	0.0415	0.0306	0.0284	0.0262	0.0284	80- 90	0.0443	1273	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): 1269.8 lm

%lum = 99.7%

%lamp = 99.7%

Conical surface Flux(120deg): 1272.9 lm

%lum = 100.0%

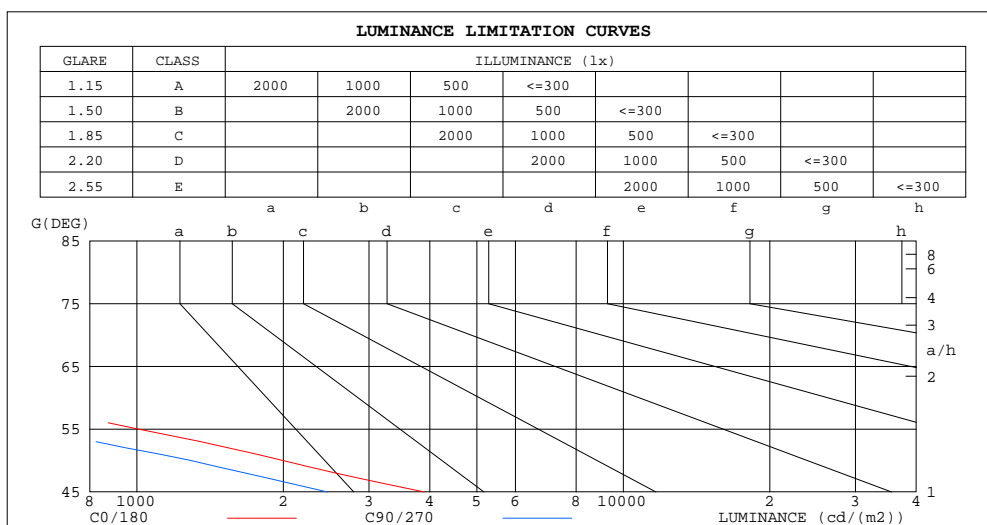
%lamp = 100.0%

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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-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	148	136
80	84	77
75	75	60
70	148	71
65	321	245
60	482	339
55	1006	612
50	1992	1289
45	3900	2464

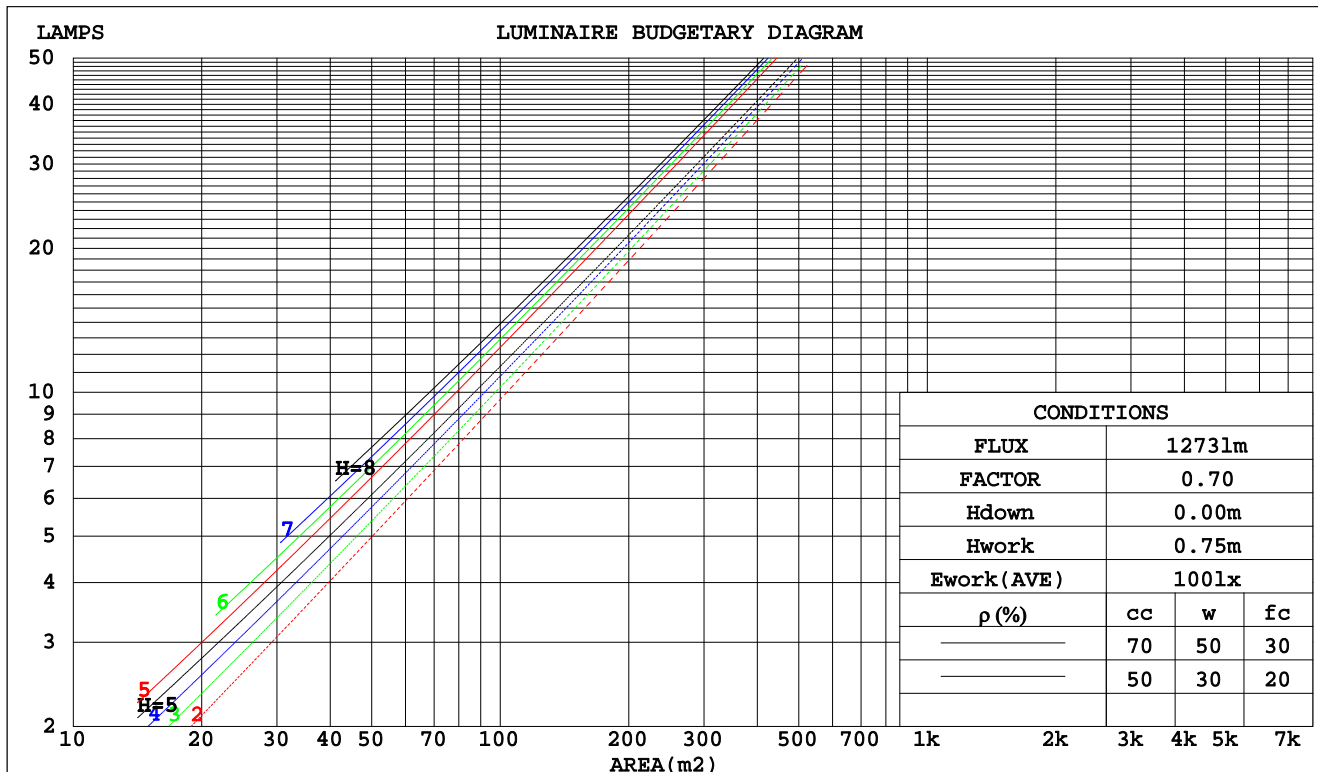
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2019-12-05

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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-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						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	1.09	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	.93	.91	.89	.92	.90	.88	.87
5.0	.95	.90	.87	.94	.90	.87	.92	.89	.86	.91	.88	.85	.89	.87	.85	.84
6.0	.91	.87	.84	.90	.86	.83	.89	.86	.83	.88	.85	.82	.87	.84	.82	.81
7.0	.88	.84	.81	.87	.83	.80	.86	.83	.80	.85	.82	.80	.84	.81	.79	.78
8.0	.85	.81	.78	.84	.80	.78	.84	.80	.77	.83	.79	.77	.82	.79	.77	.76
9.0	.82	.78	.75	.82	.78	.75	.81	.77	.75	.80	.77	.75	.80	.77	.74	.73
10.0	.80	.76	.73	.79	.75	.73	.79	.75	.73	.78	.75	.72	.77	.74	.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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: φ72mm*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	.140	.079	.025	.133	.076	.024	.121	.069	.022	.109	.063	.020	.099	.057	.018		
2.0	.130	.071	.022	.124	.068	.021	.114	.063	.020	.105	.059	.018	.096	.054	.017		
3.0	.121	.064	.019	.117	.062	.019	.108	.059	.018	.100	.055	.017	.093	.051	.016		
4.0	.114	.059	.017	.110	.058	.017	.103	.055	.016	.096	.052	.016	.090	.049	.015		
5.0	.108	.055	.016	.104	.054	.016	.098	.051	.015	.092	.049	.015	.087	.047	.014		
6.0	.102	.051	.015	.099	.050	.014	.094	.048	.014	.089	.046	.014	.084	.044	.013		
7.0	.097	.048	.014	.095	.047	.013	.090	.046	.013	.086	.044	.013	.082	.042	.012		
8.0	.093	.045	.013	.091	.045	.013	.087	.043	.012	.083	.042	.012	.079	.041	.012		
9.0	.089	.043	.012	.087	.043	.012	.084	.041	.012	.080	.040	.012	.077	.039	.011		
10.0	.086	.041	.011	.084	.041	.011	.081	.040	.011	.078	.039	.011	.075	.038	.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	.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	.078	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.113	.086	.065	.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	.084	.059	.041	.058	.041	.029	.034	.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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm										
NAME: ROXY S-Z-15W-930-18-35#35					TYPE:Tracklight			SERIAL No.:		
SPEC.:3000K					DIM.: ϕ 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	9.0	9.6	9.2	9.8	9.9	4.2	4.9	4.4	5.1	5.2
3H	8.8	9.5	9.1	9.6	9.8	4.1	4.7	4.3	4.9	5.1
4H	8.7	9.3	9.0	9.6	9.8	4.0	4.6	4.3	4.8	5.0
6H	8.7	9.2	8.9	9.5	9.7	3.9	4.5	4.2	4.7	5.0
8H	8.6	9.2	8.9	9.4	9.7	3.9	4.4	4.2	4.7	4.9
12H	8.6	9.1	8.9	9.4	9.6	3.8	4.4	4.1	4.6	4.9
4H 2H	8.8	9.3	9.0	9.6	9.8	4.0	4.6	4.3	4.8	5.0
3H	8.6	9.1	8.9	9.4	9.6	3.9	4.4	4.2	4.6	4.9
4H	8.5	9.0	8.8	9.3	9.6	3.8	4.2	4.1	4.5	4.8
6H	8.4	8.8	8.8	9.1	9.5	3.7	4.1	4.0	4.4	4.8
8H	8.3	8.7	8.7	9.1	9.4	3.6	4.0	4.0	4.4	4.7
12H	8.3	8.6	8.7	9.0	9.4	3.6	3.9	4.0	4.3	4.7
8H 4H	8.3	8.7	8.7	9.1	9.4	3.6	4.0	4.0	4.4	4.7
6H	8.2	8.5	8.6	8.9	9.3	3.5	3.8	3.9	4.2	4.6
8H	8.2	8.4	8.6	8.9	9.3	3.4	3.7	3.9	4.1	4.6
12H	8.1	8.3	8.6	8.8	9.3	3.4	3.6	3.9	4.1	4.5
12H 4H	8.3	8.6	8.7	9.0	9.4	3.6	3.9	4.0	4.3	4.7
6H	8.2	8.4	8.6	8.9	9.3	3.4	3.7	3.9	4.1	4.6
8H	8.1	8.3	8.6	8.8	9.3	3.4	3.6	3.8	4.1	4.5
Variations with the observer position at spacings:										
S = 1.0H	+ 3.8 / -10.5					+ 2.5 / -10.4				
1.5H	+ 5.7 / - 7.9					+ 4.4 / - 6.8				
2.0H	+ 5.9 / - 7.4					+ 5.2 / - 7.0				

CIE Pub.117, 1273 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 0.8$)

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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\varnothing 72\text{mm} \times H150\text{mm}$	
MFR.: NEKO LIGHTING AG		

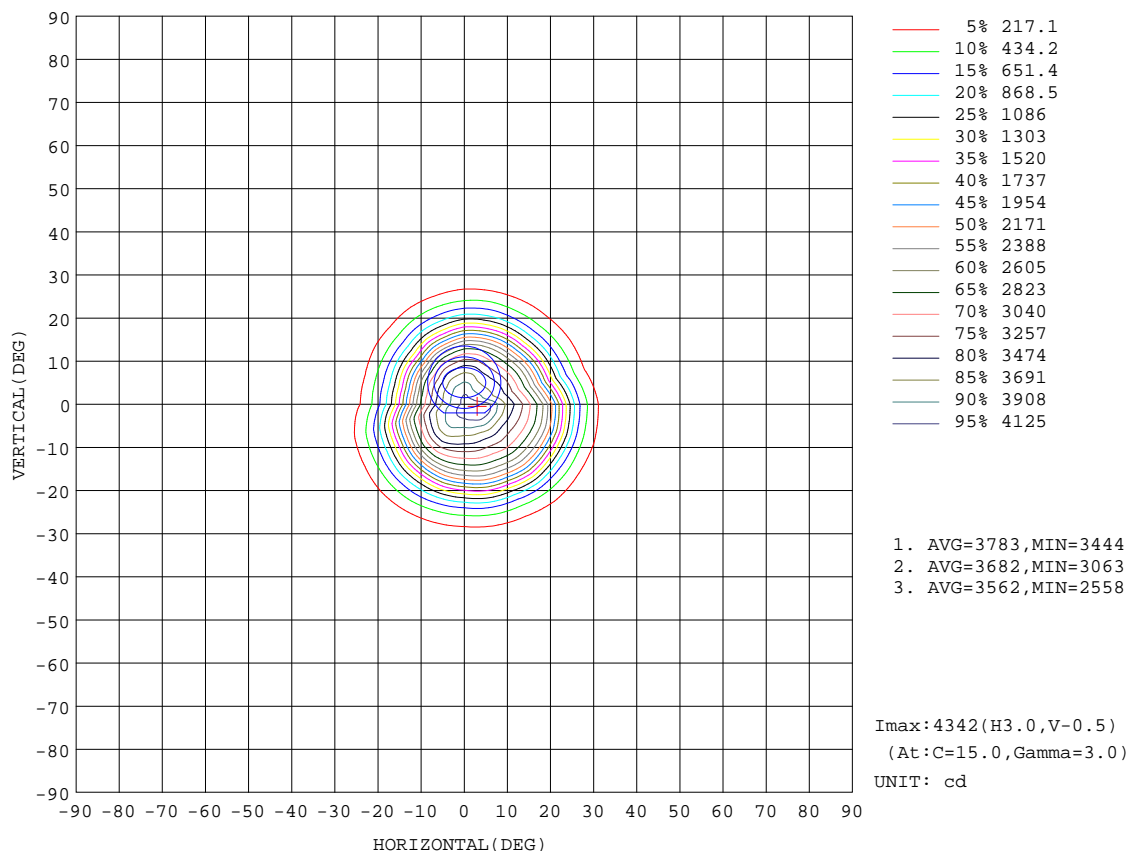
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	86	82	91	85	82	90	85	82	79
0.80	98	93	90	98	93	90	96	92	89	86
1.00	102	97	94	101	96	93	100	96	93	89
1.25	105	101	98	104	100	97	102	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	102	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					SHRNM = 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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

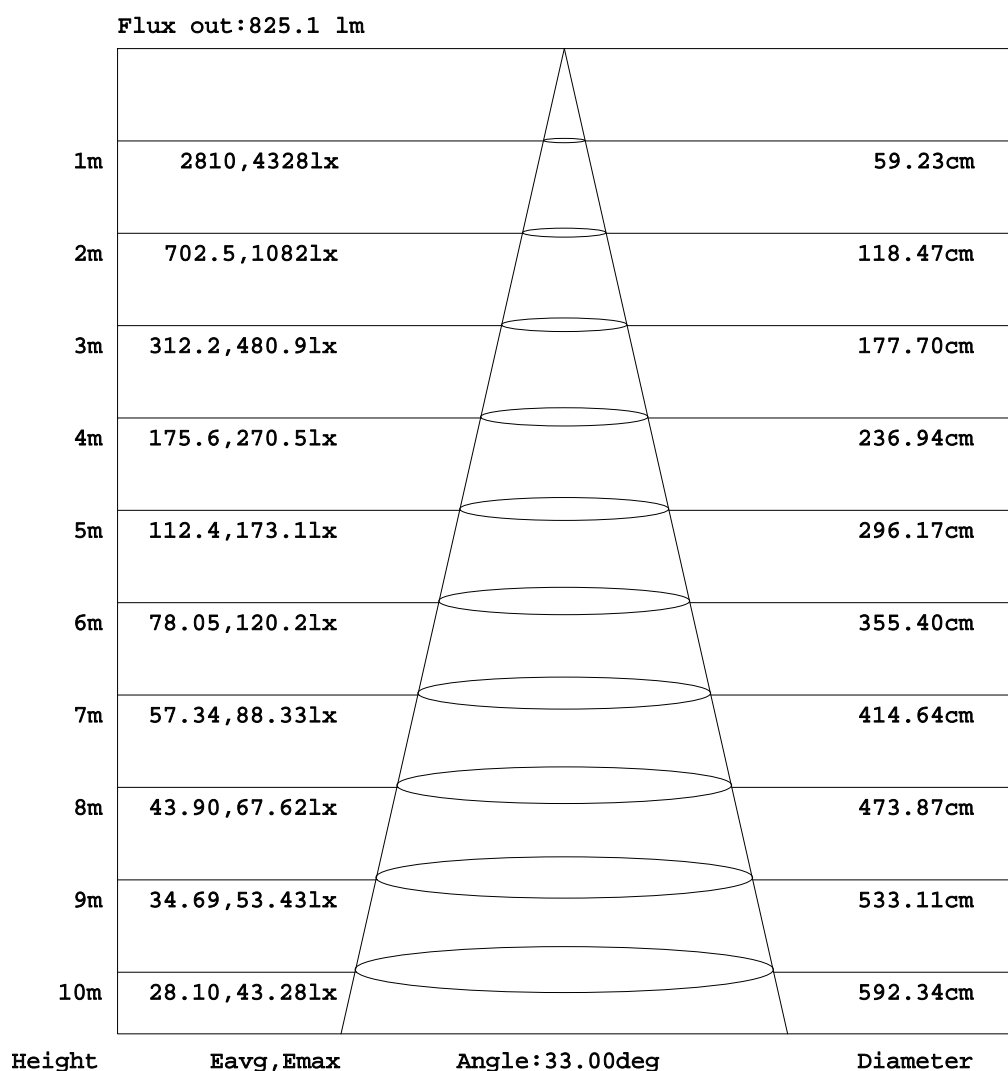


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2019-12-05

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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		



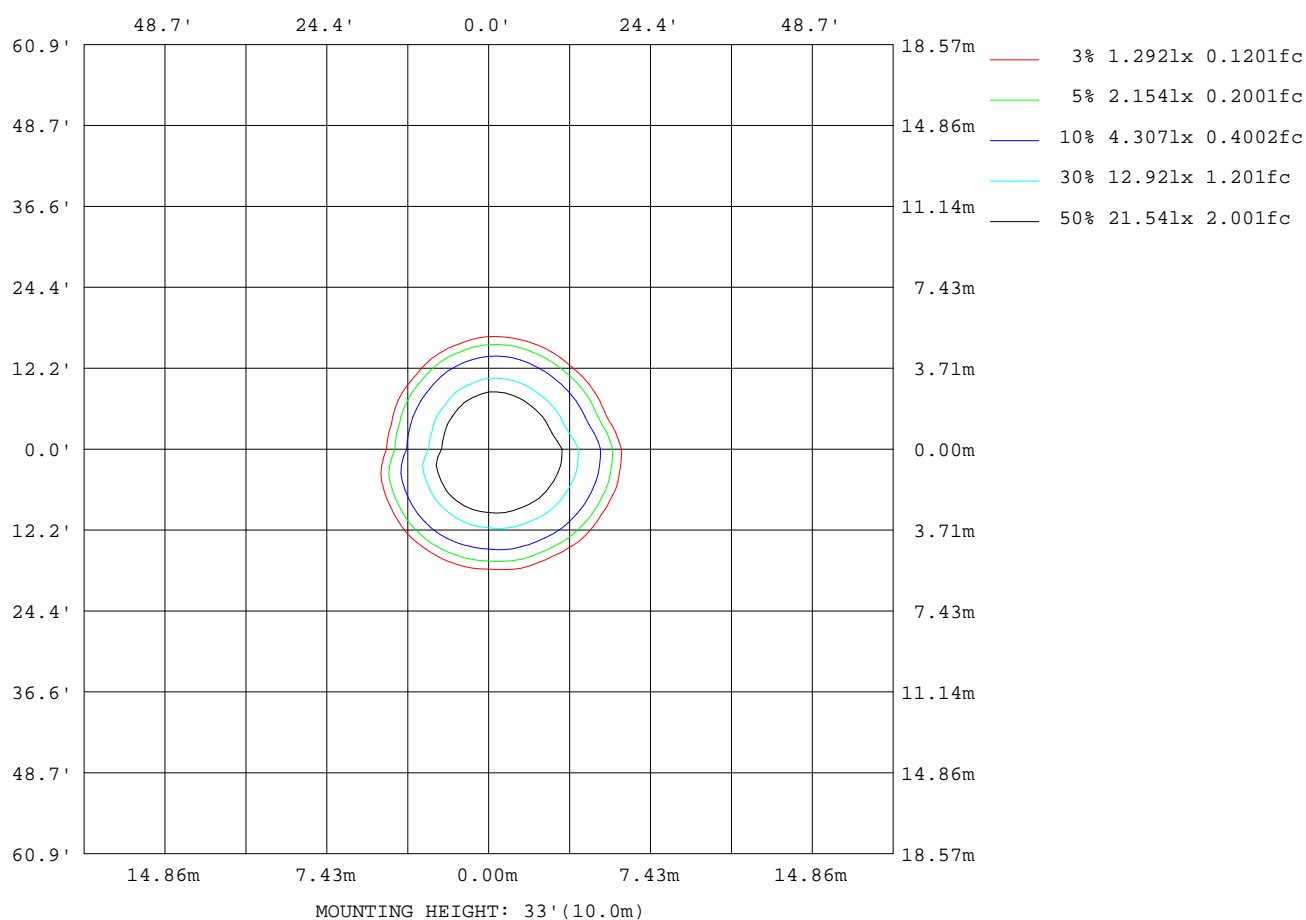
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-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:220.9V I:0.0706A P:14.28W PF:0.9538 Freq:59.98Hz Lamp Flux:1273.35x1 lm		
NAME: ROXY S-Z-15W-930-18-35#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

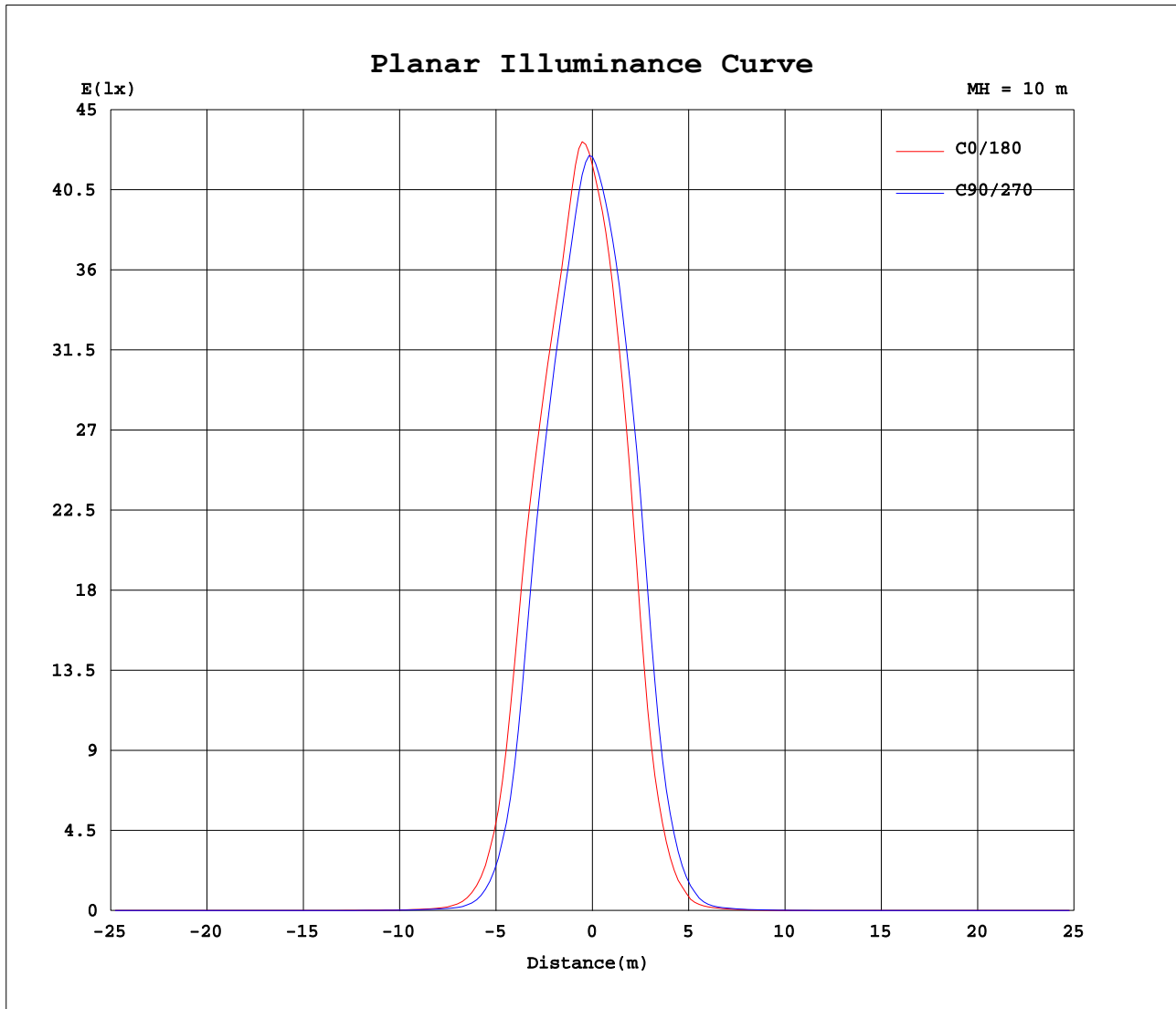
AvgL	cd/m2
L_0~180 (65) av	180
L_0~180 (75) av	54
L_0~180 (85) av	114
L_90~270 (65) av	165
L_90~270 (75) av	46
L_90~270 (85) av	117
L_45 (65) av	192
L_45 (75) av	47
L_45 (85) av	117

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:

```