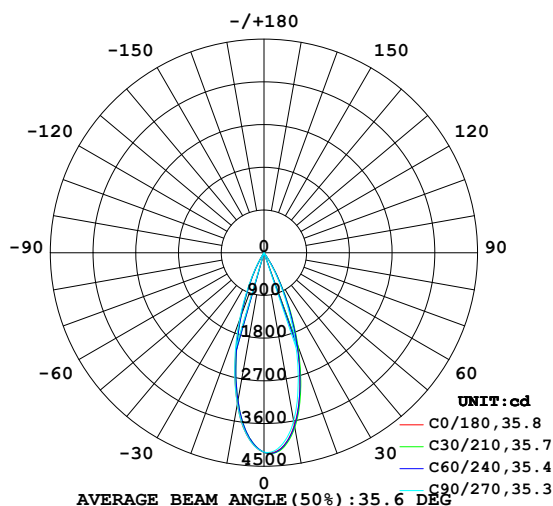


LUMINAIRE PHOTOMETRIC TEST REPORT

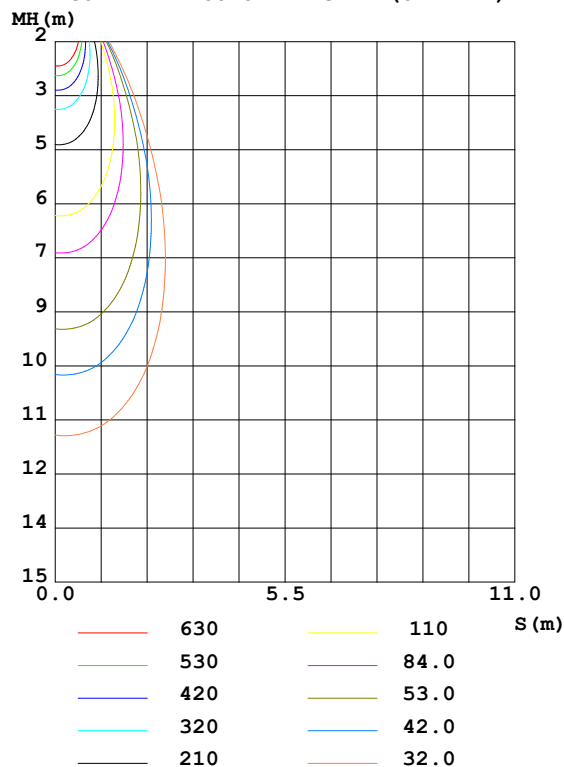
Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 79.05 lm/W			
MODEL	CITIZEN-3000K	I _{max} (cd)	4234	S/MH (C0/180)	0.54
NOMINAL POWER (W)	21	LOR (%)	100.0	S/MH (C90/270)	0.55
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1569.4	η UP, DN (C0-180)	0.0, 54.2
NOMINAL FLUX (lm)	1569.38	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 45.8
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	220	η down (%)	100.0	CIBSE SHR MAX	0.60

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: 2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 58%
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	3686	3749	3600	3449	3239	3118	3245	3383	0- 10	363.3	363.3	23.2,23.2
20	2024	2100	1889	1691	1462	1365	1513	1668	10- 20	708.2	1071	68.3,68.3
30	502.6	543.6	427.2	307.3	200.6	175.4	250.9	329.2	20- 30	422.9	1494	95.2,95.2
40	23.16	24.92	22.51	20.83	18.39	17.70	18.86	19.85	30- 40	58.41	1553	98.9,98.9
50	10.14	10.21	9.739	9.154	7.841	7.600	8.032	8.768	40- 50	10.80	1564	99.6,99.6
60	2.427	2.272	2.316	2.121	1.771	1.746	1.756	2.096	50- 60	4.276	1568	99.9,99.9
70	0.8627	0.6811	0.7774	0.5295	0.3374	0.5059	0.3637	0.6504	60- 70	1.259	1569	100,100
80	0.0766	0.0677	0.0744	0.0656	0.0481	0.0613	0.0437	0.0678	70- 80	0.1851	1569	100,100
90	0.0722	0.0656	0.0656	0.0678	0.0481	0.0481	0.0481	0.0481	80- 90	0.0652	1569	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): 1559.1 lm

%lum = 99.3%

%lamp = 99.3%

Conical surface Flux(120deg): 1567.9 lm

%lum = 99.9%

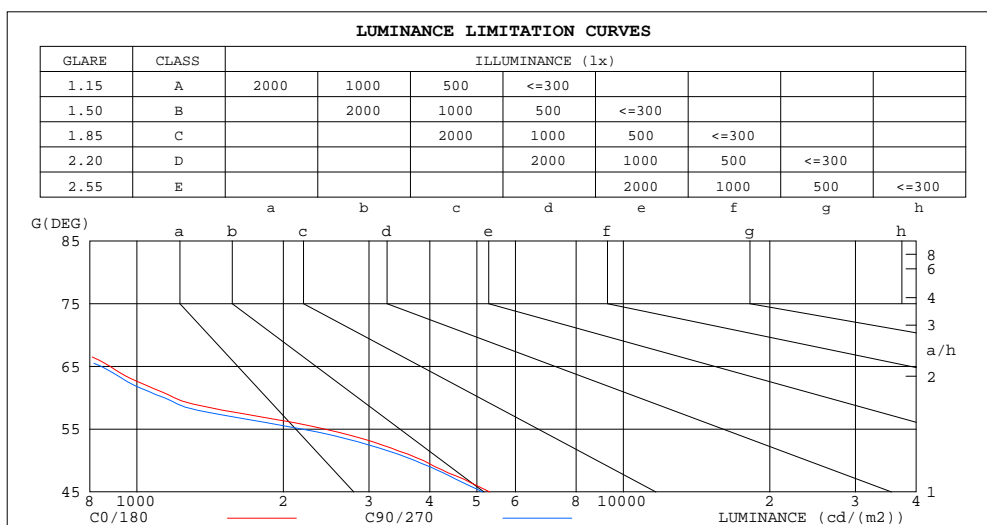
%lamp = 99.9%

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#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	191	185
80	108	105
75	119	108
70	620	559
65	881	844
60	1193	1138
55	2430	2184
50	3877	3723
45	5315	5134

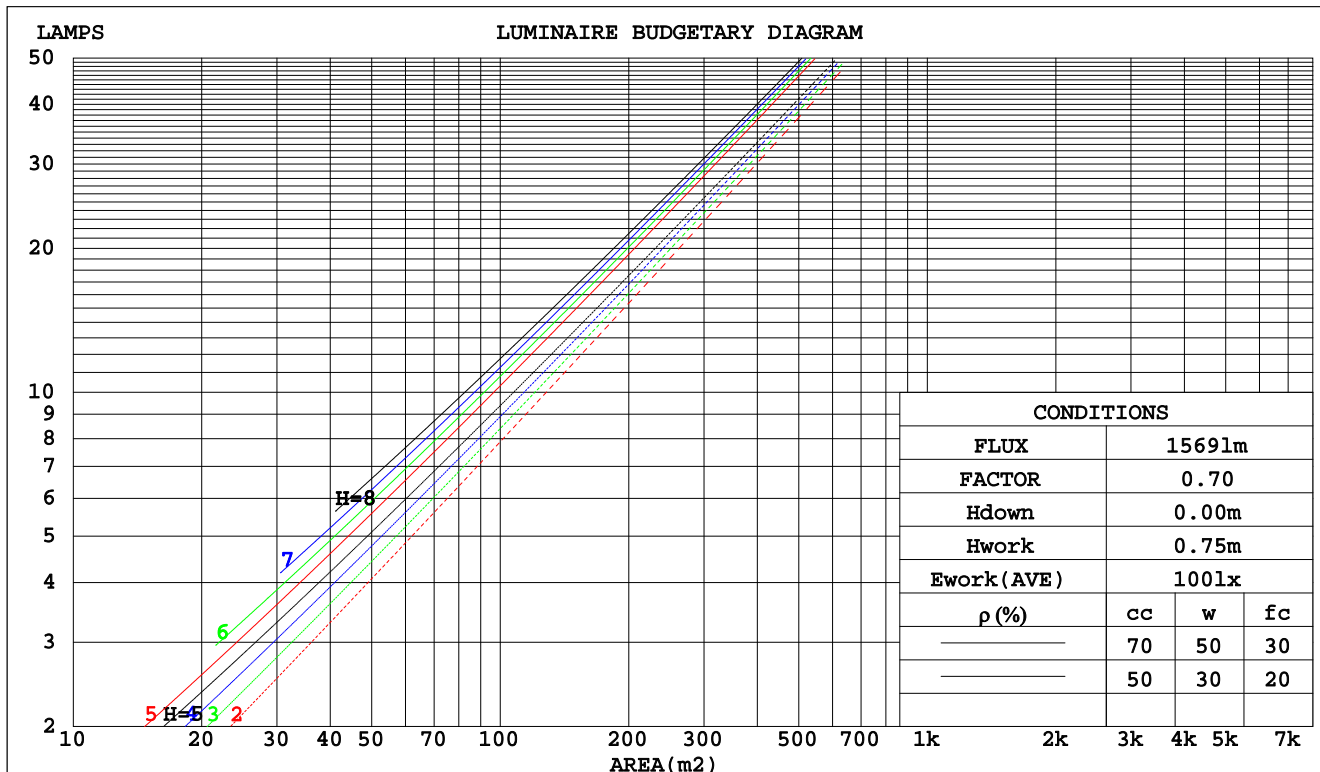
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi 72\text{mm} \times H150\text{mm}$	
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	1.12	1.10	1.08	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.01	1.00	.99	.98	.98	.96
2.0	1.07	1.03	1.01	1.05	1.02	.99	1.02	.99	.97	.99	.97	.95	.96	.95	.93	.92
3.0	1.01	.97	.94	1.00	.96	.94	.98	.95	.92	.95	.93	.91	.93	.91	.89	.88
4.0	.97	.92	.89	.96	.92	.89	.94	.90	.88	.92	.89	.87	.90	.88	.86	.84
5.0	.93	.88	.85	.92	.87	.84	.90	.86	.84	.88	.85	.83	.87	.84	.82	.81
6.0	.89	.84	.81	.88	.84	.80	.87	.83	.80	.85	.82	.79	.84	.81	.79	.78
7.0	.85	.81	.77	.85	.80	.77	.83	.80	.77	.82	.79	.76	.81	.78	.76	.75
8.0	.82	.77	.74	.81	.77	.74	.80	.77	.74	.80	.76	.73	.79	.76	.73	.72
9.0	.79	.74	.71	.78	.74	.71	.78	.74	.71	.77	.73	.71	.76	.73	.71	.69
10.0	.76	.72	.69	.76	.71	.69	.75	.71	.68	.74	.71	.68	.74	.70	.68	.67



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#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	.147	.084	.026	.140	.080	.025	.128	.073	.023	.116	.067	.022	.106	.061	.020		
2.0	.137	.075	.023	.132	.073	.022	.122	.068	.021	.112	.063	.020	.103	.058	.018		
3.0	.129	.069	.021	.124	.067	.020	.116	.063	.019	.108	.059	.018	.100	.056	.017		
4.0	.122	.063	.019	.118	.062	.018	.111	.059	.018	.104	.056	.017	.097	.053	.016		
5.0	.115	.059	.017	.112	.058	.017	.106	.055	.016	.100	.053	.016	.094	.050	.015		
6.0	.110	.055	.016	.107	.054	.016	.101	.052	.015	.096	.050	.015	.092	.048	.014		
7.0	.105	.052	.015	.102	.051	.015	.098	.049	.014	.093	.048	.014	.089	.046	.014		
8.0	.100	.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	.043	.012		
10.0	.093	.044	.012	.091	.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	.117	.130	.114	.101	.089	.079	.070	.051	.046	.041	.016	.015	.013		
3.0	.137	.113	.094	.118	.098	.082	.081	.068	.057	.047	.040	.034	.015	.013	.011		
4.0	.125	.098	.077	.108	.085	.067	.074	.059	.047	.043	.035	.028	.014	.011	.009		
5.0	.116	.086	.064	.099	.074	.056	.068	.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	.059	.041	.028	.035	.024	.017	.011	.008	.006		
8.0	.094	.062	.040	.081	.053	.035	.056	.038	.024	.032	.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:Jason Long
Test Date:2020-01-06

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm										
NAME: ROXY S-Z-21W-930-35-60#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	10.9	11.6	11.1	11.8	12.0	9.8	10.5	10.0	10.7	10.8
3H	10.8	11.5	11.0	11.6	11.8	9.6	10.3	9.9	10.5	10.7
4H	10.7	11.3	11.0	11.5	11.8	9.6	10.2	9.8	10.4	10.6
6H	10.6	11.2	10.9	11.5	11.7	9.5	10.1	9.8	10.3	10.5
8H	10.6	11.2	10.9	11.4	11.7	9.4	10.0	9.7	10.3	10.5
12H	10.5	11.1	10.8	11.3	11.6	9.4	9.9	9.7	10.2	10.5
4H 2H	10.7	11.3	11.0	11.5	11.8	9.6	10.2	9.8	10.4	10.6
3H	10.5	11.1	10.9	11.4	11.6	9.4	10.0	9.7	10.2	10.5
4H	10.4	11.0	10.8	11.2	11.5	9.3	9.8	9.6	10.1	10.4
6H	10.3	10.8	10.7	11.1	11.5	9.2	9.7	9.6	10.0	10.3
8H	10.3	10.7	10.7	11.1	11.4	9.2	9.6	9.5	9.9	10.3
12H	10.2	10.6	10.6	11.0	11.4	9.1	9.5	9.5	9.8	10.2
8H 4H	10.3	10.7	10.7	11.1	11.4	9.2	9.6	9.5	9.9	10.3
6H	10.2	10.5	10.6	10.9	11.3	9.0	9.4	9.5	9.8	10.2
8H	10.1	10.4	10.6	10.8	11.3	9.0	9.3	9.4	9.7	10.1
12H	10.1	10.3	10.5	10.8	11.2	8.9	9.2	9.4	9.6	10.1
12H 4H	10.2	10.6	10.6	11.0	11.4	9.1	9.5	9.5	9.8	10.2
6H	10.1	10.4	10.6	10.8	11.3	9.0	9.3	9.4	9.7	10.1
8H	10.1	10.3	10.5	10.8	11.2	8.9	9.2	9.4	9.6	10.1
Variations with the observer position at spacings:										
S = 1.0H	+ 3.4 / - 5.6					+ 2.5 / - 5.5				
1.5H	+ 4.4 / - 3.6					+ 3.2 / - 3.6				
2.0H	+ 4.0 / - 6.1					+ 4.1 / - 5.9				

CIE Pub.117, 1569 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = 1.6$)

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi 72\text{mm} \times H150\text{mm}$	
MFR.: NEKO LIGHTING AG		

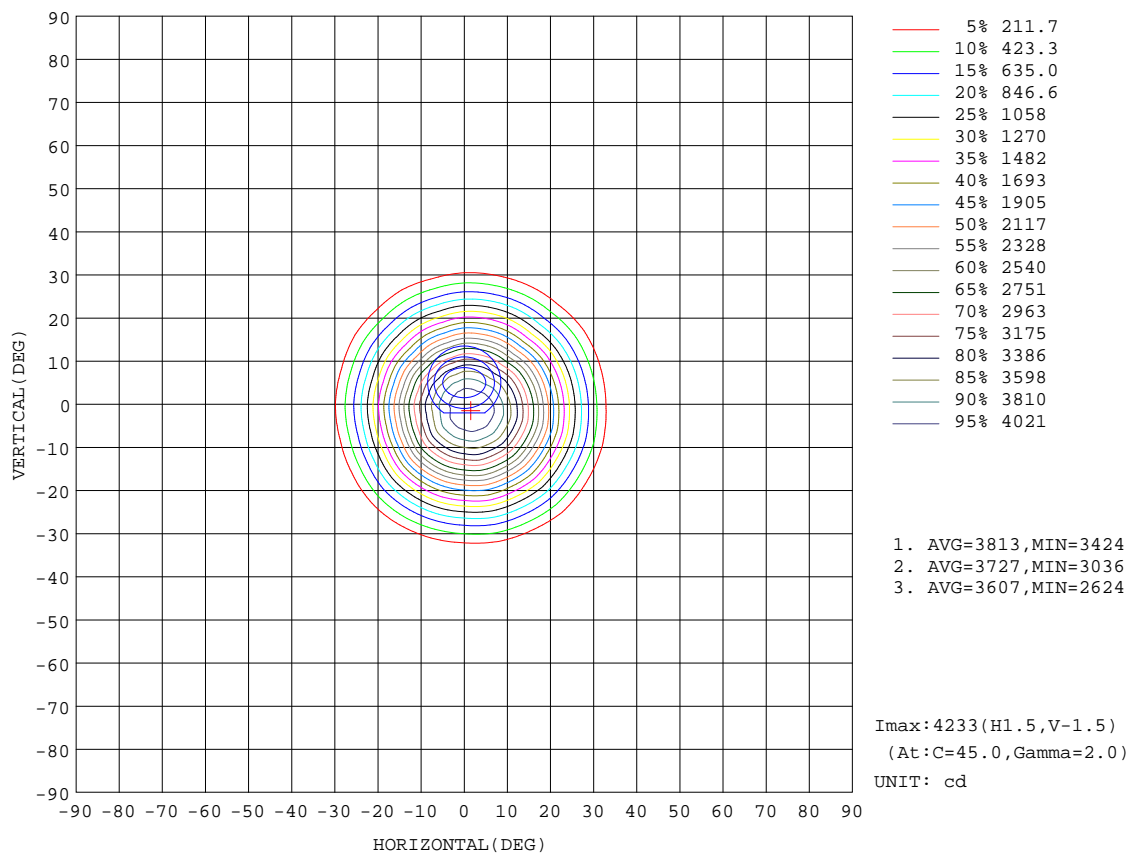
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	82	90	85	82	90	85	82	78
0.80	98	93	89	97	92	89	96	92	89	86
1.00	102	97	93	101	96	93	99	96	93	89
1.25	105	101	97	104	100	97	102	99	96	92
1.50	108	103	100	106	103	100	104	101	99	95
2.00	110	106	103	108	105	102	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	112	110	109	109	107	106	99
5.00	116	114	112	114	112	110	110	108	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:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 γ Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:58%
 Test Distance:5.850m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

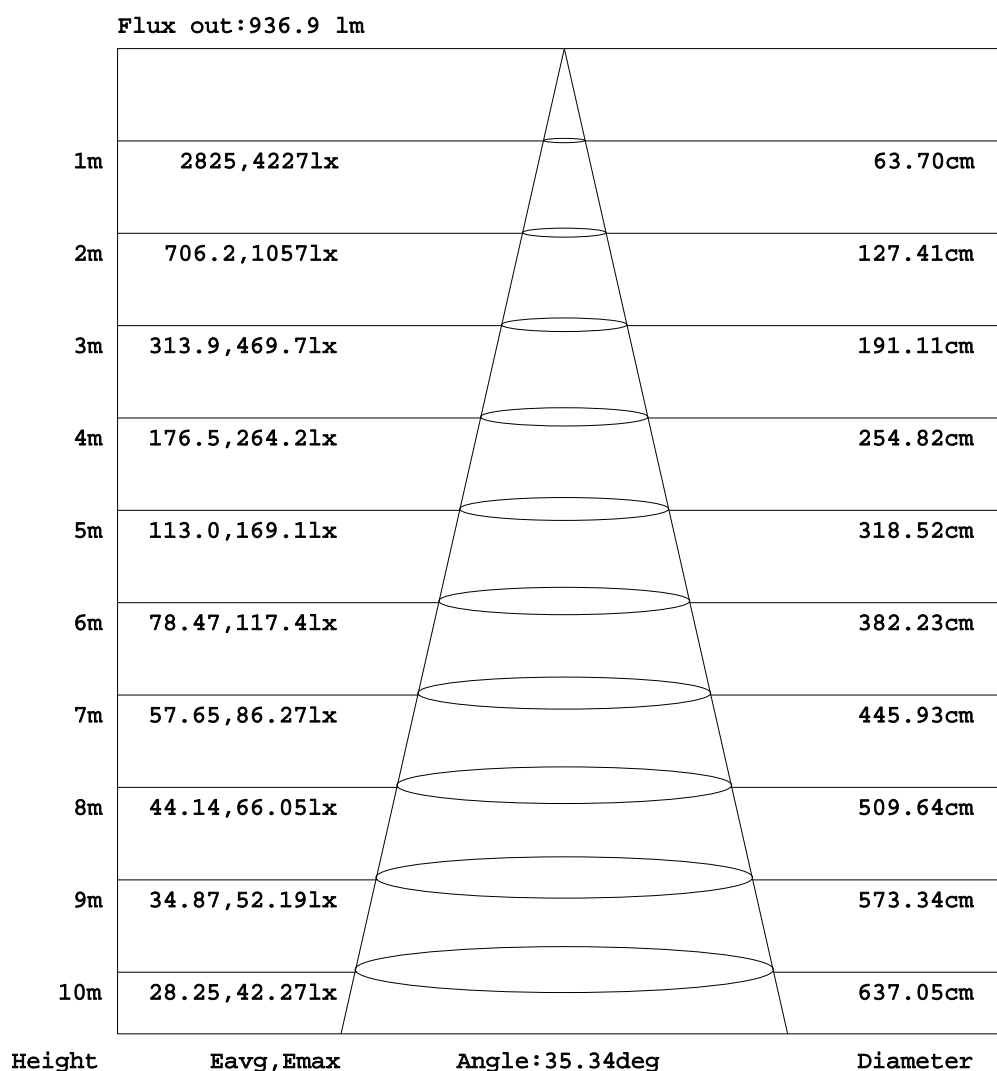


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

AAI Figure

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		



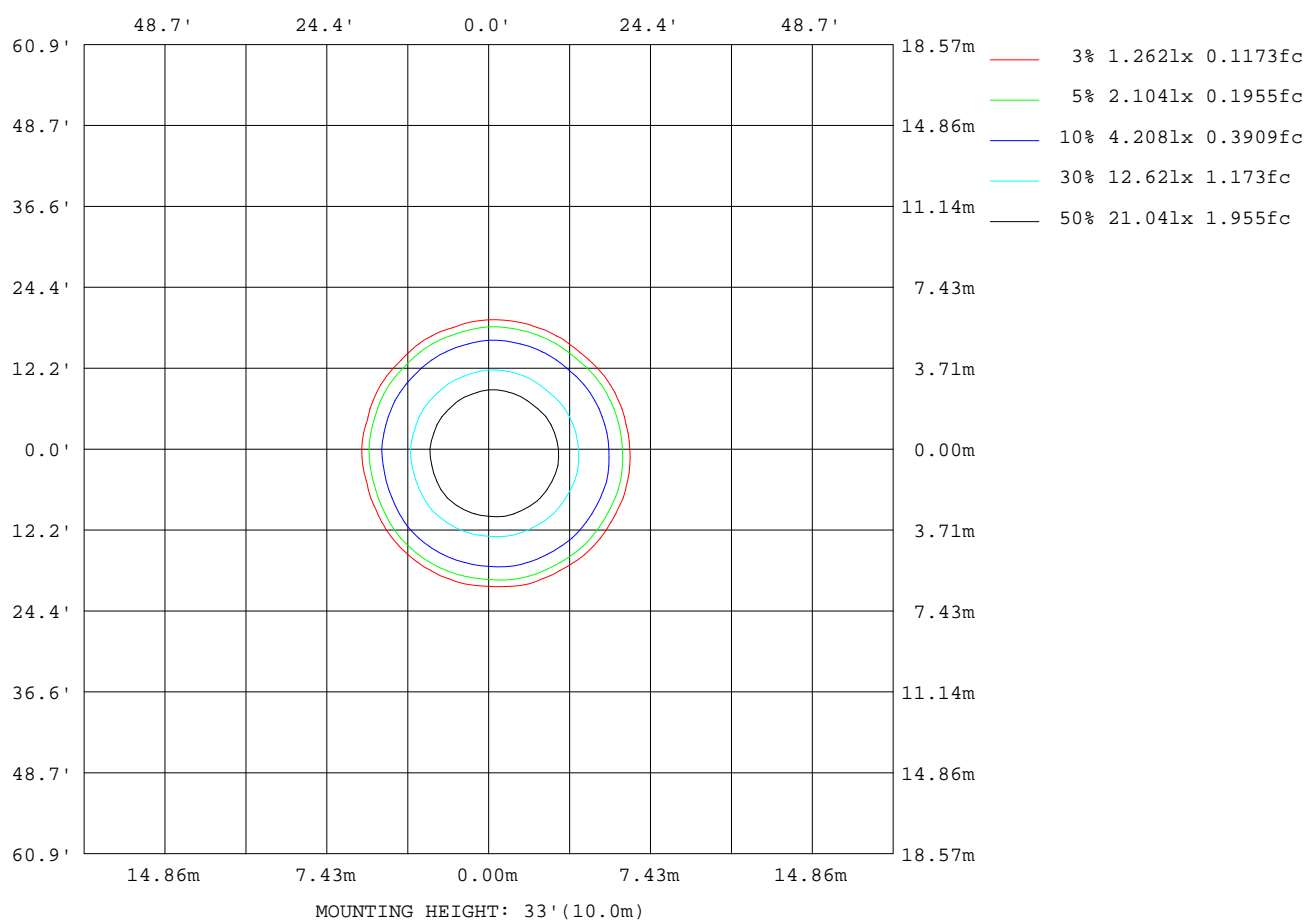
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Jason Long
Test Date:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#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:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:220.9V I:0.0970A P:19.85W PF:0.9263 Freq:49.99Hz Lamp Flux:1569.38x1 lm		
NAME: ROXY S-Z-21W-930-35-60#35	TYPE:Tracklight	SERIAL No.:
SPEC.:3000K	DIM.: ϕ 72mm*H150mm	
MFR.: NEKO LIGHTING AG		

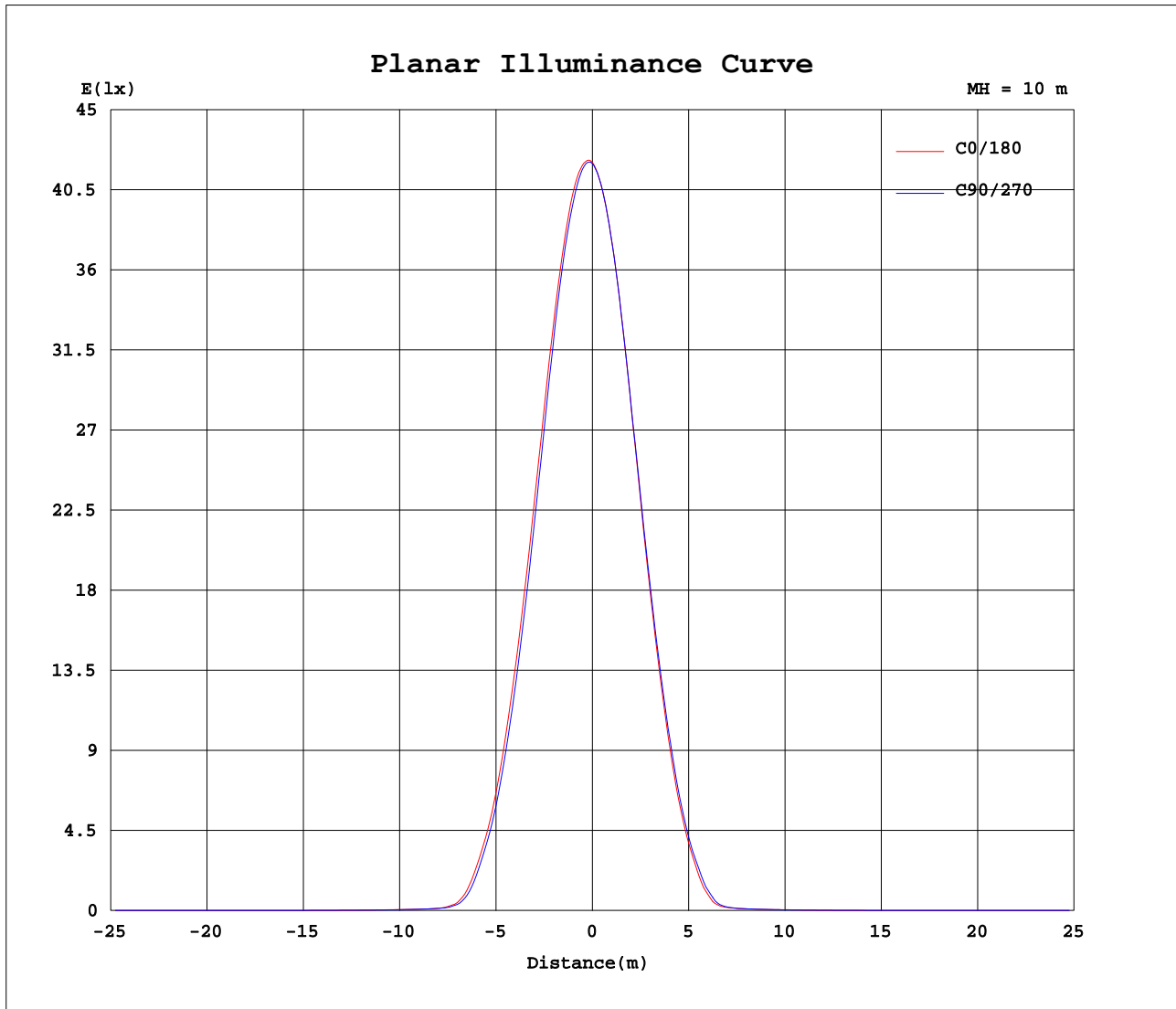
AvgL	cd/m2
L_0~180 (65) av	756
L_0~180 (75) av	86
L_0~180 (85) av	163
L_90~270 (65) av	717
L_90~270 (75) av	84
L_90~270 (85) av	154
L_45 (65) av	734
L_45 (75) av	83
L_45 (85) av	167

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Jason Long
 Test Date:2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
 Humidity:58%
 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: 2020-01-06

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity: 58%
Test Distance: 5.850m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

```