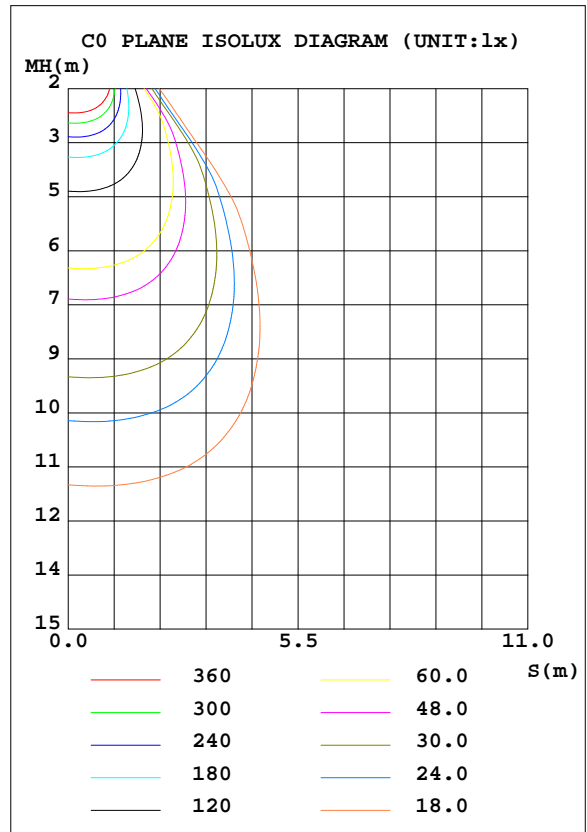
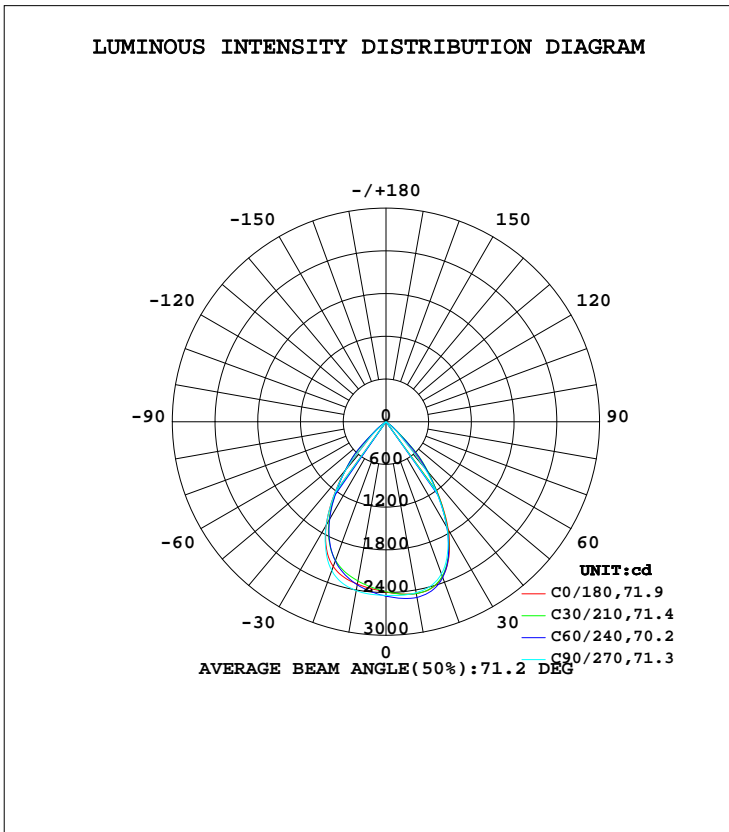


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 79.75 lm/W			
MODEL	CITIZEN-3000K	I <sub>max</sub> (cd)	2614	S/MH(C0/180)	1.05
NOMINAL POWER(W)	38	LOR(%)	100.0	S/MH(C90/270)	1.04
RATED VOLTAGE(V)	36.0	TOTAL FLUX(lm)	3014.4	η UP, DN(C0-180)	0.0,49.9
NOMINAL FLUX(lm)	3014.43	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,50.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	36	η down(%)	100.0	CIBSE SHR MAX	1.10



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Myles  
 Test Date:2018-11-03

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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	2450	2543	2438	2313	2316	2292	2409	2538	0- 10	230.7	230.7	7.65,7.65
20	2319	2368	2275	2107	2165	2029	2226	2384	10- 20	661.4	892.1	29.6,29.6
30	1749	1738	1713	1594	1681	1550	1685	1734	20- 30	911.0	1803	59.8,59.8
40	890.6	909.6	819.3	872.5	872.5	867.5	870.1	910.6	30- 40	794.0	2597	86.2,86.2
50	101.6	363.7	80.03	361.8	99.48	351.6	95.12	366.7	40- 50	366.3	2964	98.3,98.3
60	6.846	7.865	6.540	8.727	6.847	8.271	6.275	7.224	50- 60	44.84	3008	99.8,99.8
70	2.537	2.548	2.535	2.720	2.525	2.619	2.341	2.162	60- 70	3.936	3012	99.9,99.9
80	0.8409	0.9261	0.9369	1.035	0.7772	0.9390	0.7686	0.7398	70- 80	1.656	3014	100,100
90	0.1924	0.1837	0.2033	0.2143	0.1028	0.1181	0.1071	0.1006	80- 90	0.4936	3014	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): 2841.1 lm

%lum = 94.3%

%lamp = 94.3%

Conical surface Flux(120deg): 3008.3 lm

%lum = 99.8%

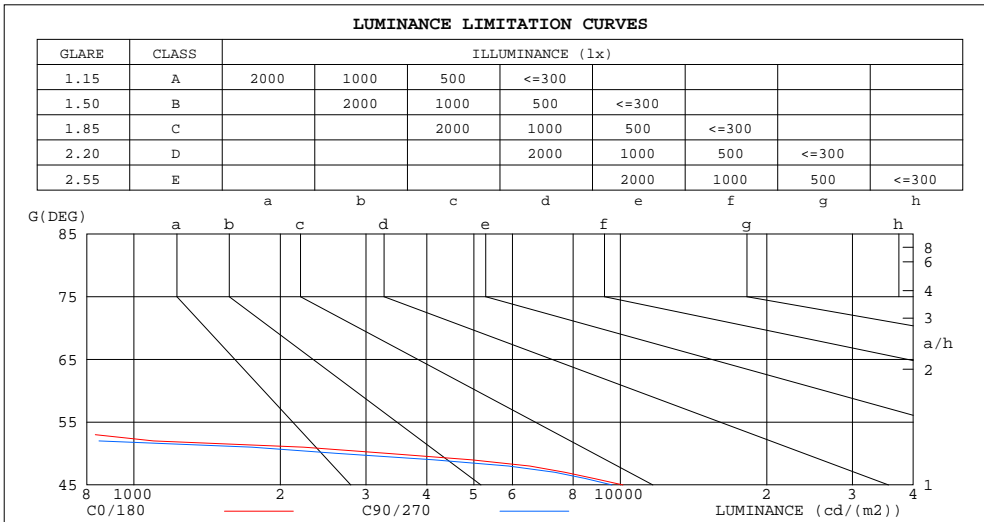
%lamp = 99.8%

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2018-11-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	98	116
80	102	114
75	124	128
70	156	156
65	208	203
60	288	275
55	625	558
50	3326	2620
45	10120	9611

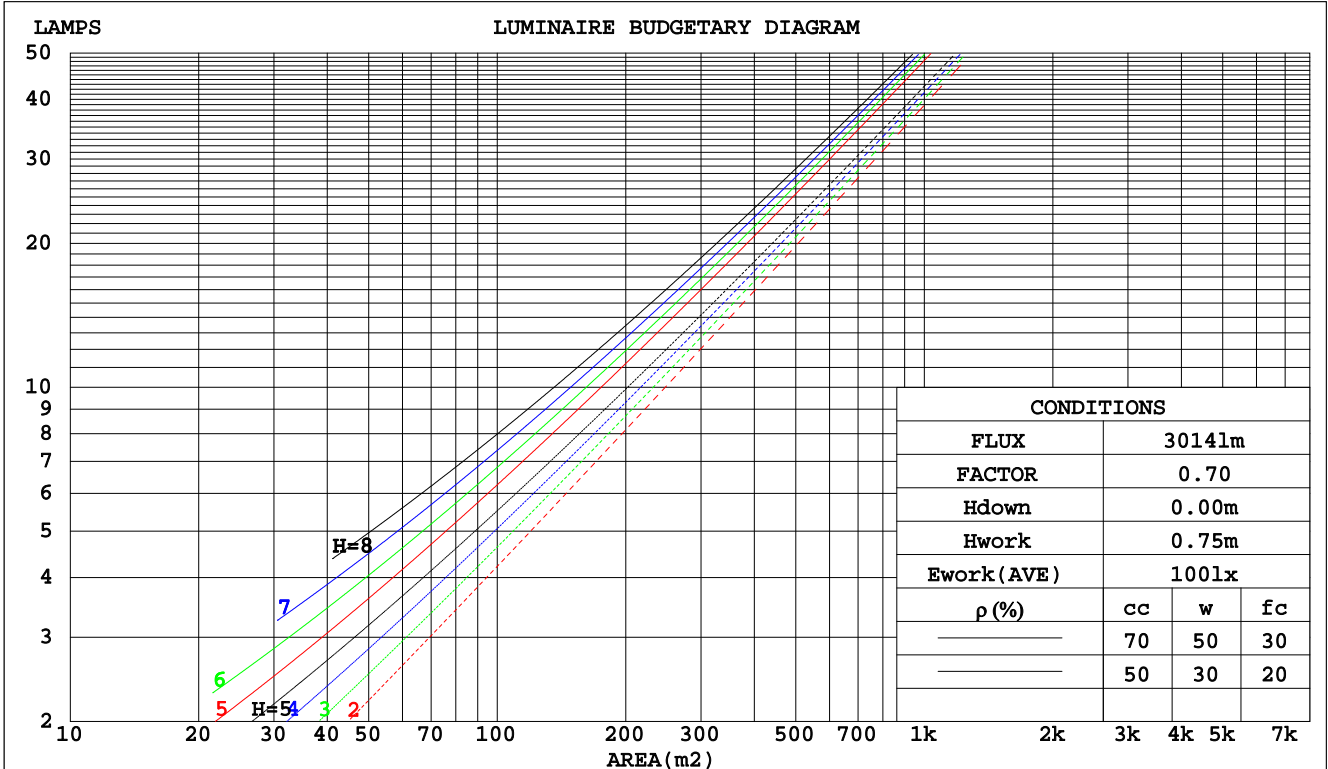
C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Myles  
 Test Date: 2018-11-03

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:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc																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	1.10	1.08	1.05	1.08	1.06	1.04	1.04	1.02	1.00	1.00	.99	.97	.97	.96	.94	.93
2.0	1.02	.97	.94	1.00	.96	.93	.97	.94	.91	.94	.91	.89	.91	.89	.87	.85
3.0	.94	.89	.84	.93	.88	.84	.90	.86	.82	.88	.84	.81	.85	.82	.80	.78
4.0	.87	.81	.77	.86	.80	.76	.84	.79	.75	.82	.78	.74	.80	.76	.73	.72
5.0	.81	.75	.70	.80	.74	.70	.78	.73	.69	.76	.72	.68	.75	.71	.68	.66
6.0	.75	.69	.64	.74	.68	.64	.73	.67	.63	.71	.67	.63	.70	.66	.62	.61
7.0	.70	.64	.59	.69	.63	.59	.68	.62	.58	.67	.62	.58	.66	.61	.58	.56
8.0	.65	.59	.54	.65	.59	.54	.64	.58	.54	.63	.58	.54	.62	.57	.54	.52
9.0	.61	.55	.50	.61	.55	.50	.60	.54	.50	.59	.54	.50	.58	.53	.50	.48
10.0	.57	.51	.47	.57	.51	.47	.56	.51	.47	.55	.50	.47	.54	.50	.46	.45



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: Myles  
 Test Date: 2018-11-03

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:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		

ρcc	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						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.189	.107	.034	.182	.104	.033	.170	.097	.031	.158	.091	.029	.147	.085	.028	
2.0	.183	.100	.031	.177	.098	.030	.167	.093	.029	.157	.088	.028	.148	.083	.026	
3.0	.176	.093	.028	.171	.091	.028	.161	.087	.027	.153	.084	.026	.145	.080	.025	
4.0	.168	.087	.026	.164	.086	.025	.156	.083	.025	.148	.080	.024	.141	.077	.023	
5.0	.161	.082	.024	.157	.081	.023	.150	.078	.023	.143	.076	.022	.137	.073	.022	
6.0	.153	.077	.022	.150	.076	.022	.144	.074	.021	.138	.072	.021	.133	.070	.021	
7.0	.147	.073	.021	.144	.072	.020	.138	.070	.020	.133	.068	.020	.128	.067	.020	
8.0	.140	.069	.019	.138	.068	.019	.133	.066	.019	.128	.065	.019	.124	.064	.019	
9.0	.135	.065	.018	.132	.064	.018	.128	.063	.018	.123	.062	.018	.120	.061	.018	
10.0	.129	.062	.017	.127	.061	.017	.123	.060	.017	.119	.059	.017	.115	.058	.017	

ρcc	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	.172	.157	.144	.147	.135	.124	.101	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.158	.132	.111	.135	.114	.096	.093	.079	.067	.053	.046	.039	.017	.015	.013	
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010	
4.0	.137	.099	.070	.117	.086	.061	.081	.060	.043	.047	.035	.025	.015	.011	.008	
5.0	.129	.088	.058	.111	.076	.050	.076	.053	.035	.044	.031	.021	.014	.010	.007	
6.0	.122	.079	.048	.105	.068	.042	.072	.048	.029	.042	.028	.018	.014	.009	.006	
7.0	.116	.071	.040	.100	.062	.035	.069	.043	.025	.040	.026	.015	.013	.008	.005	
8.0	.110	.065	.034	.095	.057	.030	.066	.040	.021	.038	.023	.013	.012	.008	.004	
9.0	.105	.060	.030	.091	.052	.026	.063	.037	.018	.037	.022	.011	.012	.007	.004	
10.0	.101	.056	.026	.087	.049	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Myles  
 Test Date:2018-11-03

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:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
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	14.0	15.0	14.2	15.2	15.4	13.7	14.7	13.9	14.9	15.1
3H	13.8	14.8	14.1	15.0	15.2	13.5	14.5	13.8	14.7	14.9
4H	13.7	14.6	14.0	14.8	15.1	13.4	14.3	13.7	14.5	14.8
6H	13.6	14.5	13.9	14.7	15.0	13.3	14.2	13.6	14.4	14.7
8H	13.6	14.4	13.9	14.7	14.9	13.3	14.1	13.6	14.4	14.6
12H	13.5	14.3	13.9	14.6	14.9	13.2	14.0	13.6	14.3	14.6
4H 2H	13.7	14.6	14.0	14.9	15.1	13.4	14.3	13.7	14.6	14.8
3H	13.5	14.3	13.9	14.6	14.9	13.2	14.0	13.6	14.3	14.6
4H	13.5	14.2	13.8	14.5	14.8	13.2	13.8	13.5	14.1	14.5
6H	13.4	14.0	13.7	14.3	14.7	13.1	13.7	13.4	14.0	14.4
8H	13.3	13.9	13.7	14.2	14.6	13.0	13.6	13.4	13.9	14.3
12H	13.3	13.8	13.7	14.2	14.5	13.0	13.5	13.4	13.8	14.2
8H 4H	13.3	13.9	13.7	14.2	14.6	13.0	13.6	13.4	13.9	14.3
6H	13.2	13.7	13.6	14.1	14.5	12.9	13.4	13.3	13.8	14.2
8H	13.2	13.6	13.6	14.0	14.4	12.9	13.3	13.3	13.7	14.1
12H	13.1	13.5	13.6	13.9	14.4	12.8	13.2	13.3	13.6	14.1
12H 4H	13.3	13.8	13.7	14.2	14.5	13.0	13.5	13.4	13.8	14.2
6H	13.2	13.6	13.6	14.0	14.4	12.9	13.3	13.3	13.7	14.1
8H	13.1	13.5	13.6	13.9	14.4	12.8	13.2	13.3	13.6	14.1
Variations with the observer position at spacings:										
S = 1.0H	+ 2.6 / -20.5					+ 2.6 / -20.8				
1.5H	+ 4.2 / -16.2					+ 4.2 / -16.8				
2.0H	+ 6.5 / -16.5					+ 6.6 / -16.1				

CIE Pub.117, 3014 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 3.8)

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Myles  
 Test Date:2018-11-03

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:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		

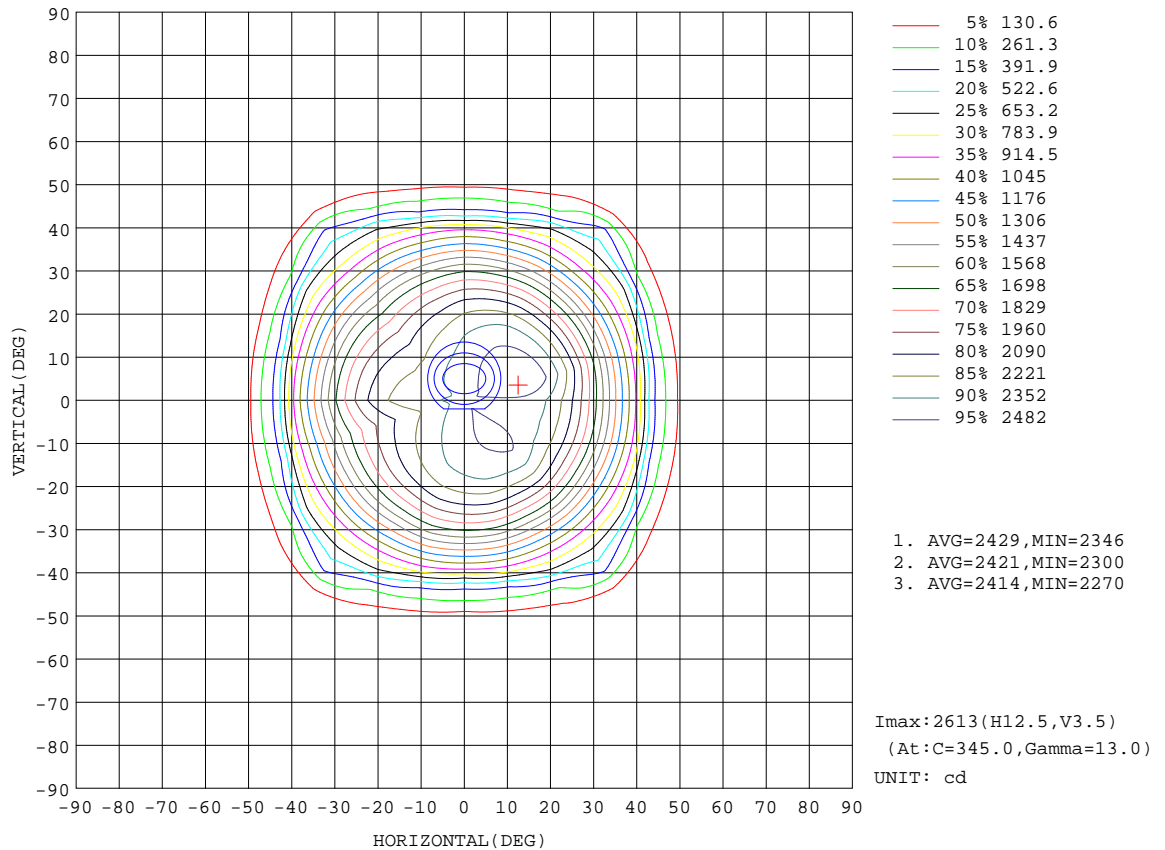
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	83	76	71	82	75	71	81	75	71	67
0.80	91	84	80	90	84	80	89	83	80	76
1.00	97	90	86	96	90	86	94	90	86	81
1.25	101	96	92	100	95	91	98	94	91	86
1.50	104	99	95	103	98	95	101	97	94	89
2.00	108	103	100	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	105	102	99	93
3.00	111	107	104	109	106	103	106	103	101	95
4.00	113	110	108	111	108	106	107	105	104	96
5.00	114	112	110	112	110	108	108	107	105	97
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:Myles  
 Test Date:2018-11-03

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
 Humidity:56%  
 Test Distance:5.850m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

Test:U:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Myles  
Test Date: 2018-11-03

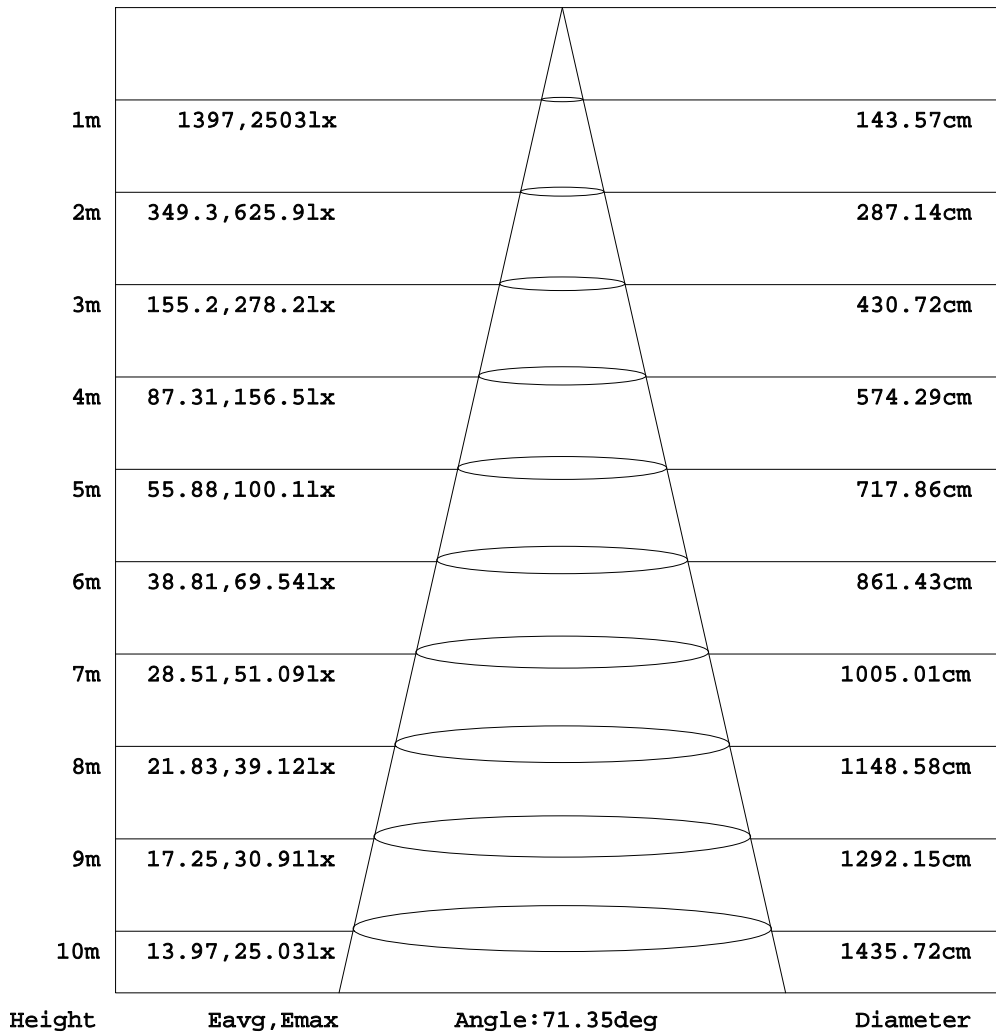
γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 56%  
Test Distance: 5.850m [K=1.0000]  
Remarks:



**AAI Figure**

Test:U:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		

Flux out:2317 lm



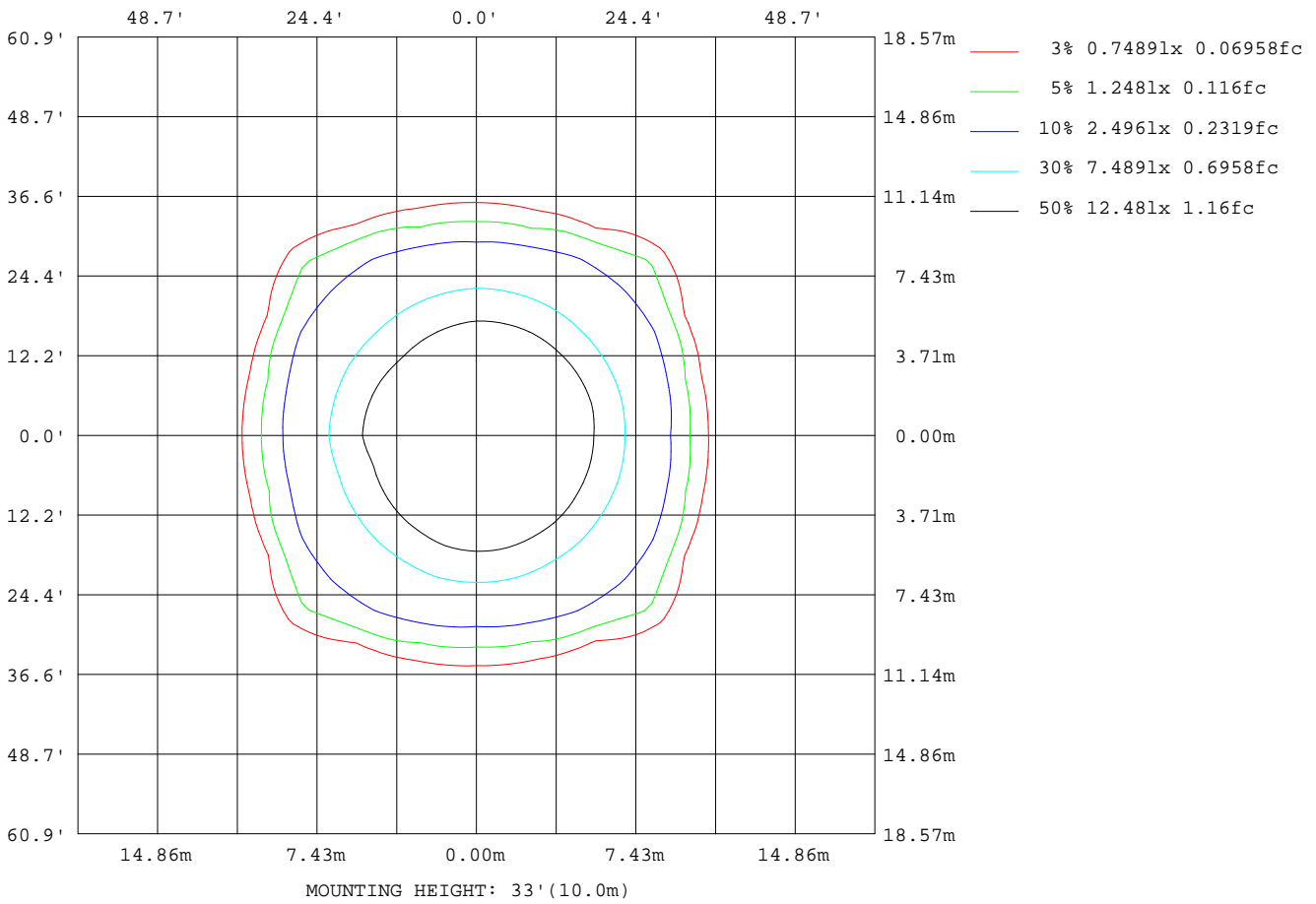
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2018-11-03

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:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Myles  
 Test Date:2018-11-03

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:36.00V I:1.050A P:37.80W PF:1.000 Freq:0Hz Lamp Flux:3014.43x1 lm		
NAME: TS200-38W-930	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: L218mm*W218mm*H80mm	
MFR.: NEKO LIGHTING AG		

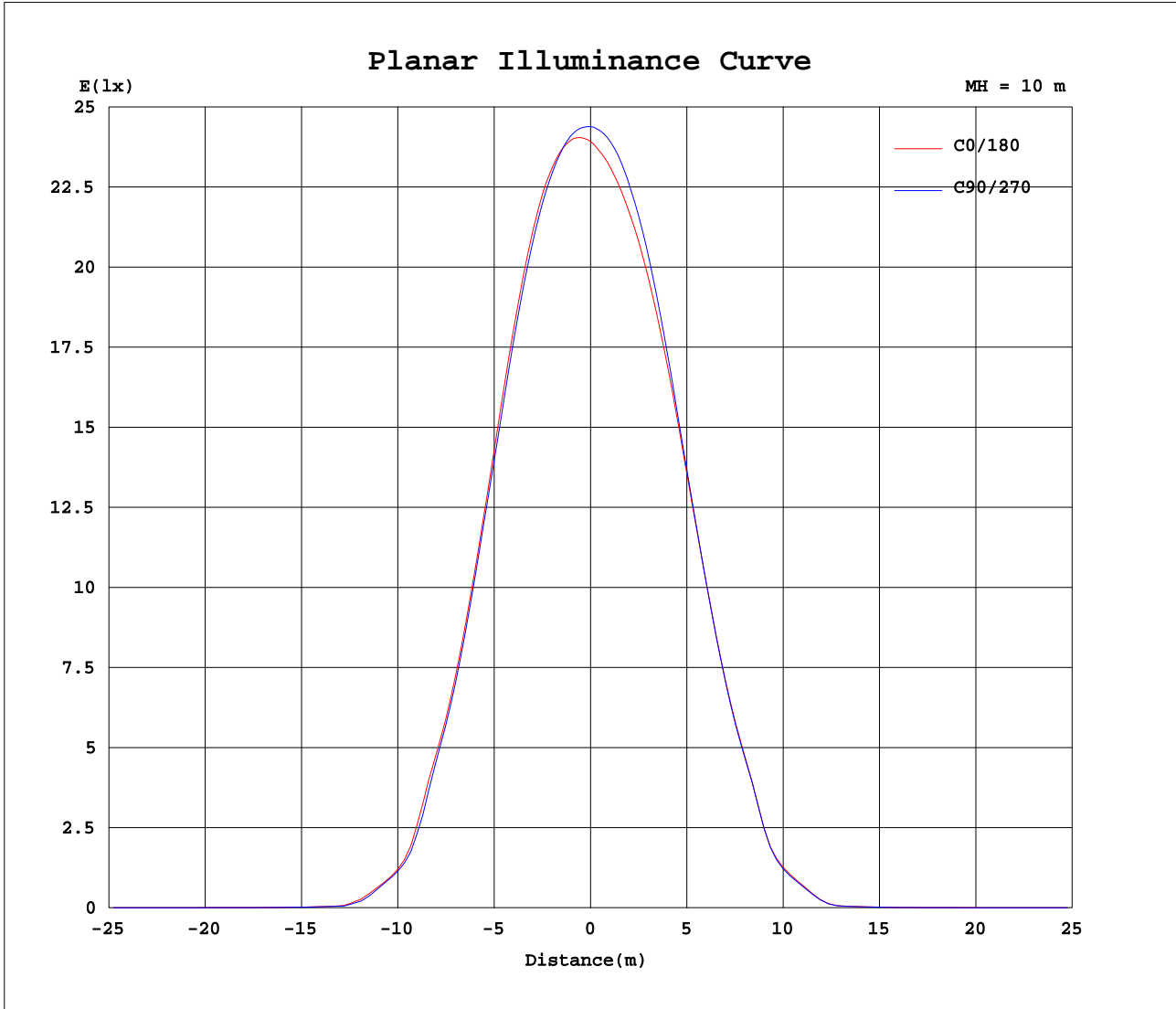
AvgL	cd/m2
L_0~180(65)av	208
L_0~180(75)av	122
L_0~180(85)av	88
L_90~270(65)av	197
L_90~270(75)av	120
L_90~270(85)av	99
L_45(65)av	190
L_45(75)av	129
L_45(85)av	105

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Myles  
 Test Date:2018-11-03

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: Myles  
 Test Date: 2018-11-03

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:



