

LED Downlight SENSE Series S100R1-DW-13W-930-W



Light Output Ratio:	100.0%	
Luminaire Power:	13.7 W	
SHR Nominal:	0.75	Calculated using the TM5
SHR Maximum:	0.80	fine grid method.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Jason  
Test Date: 2020-12-16

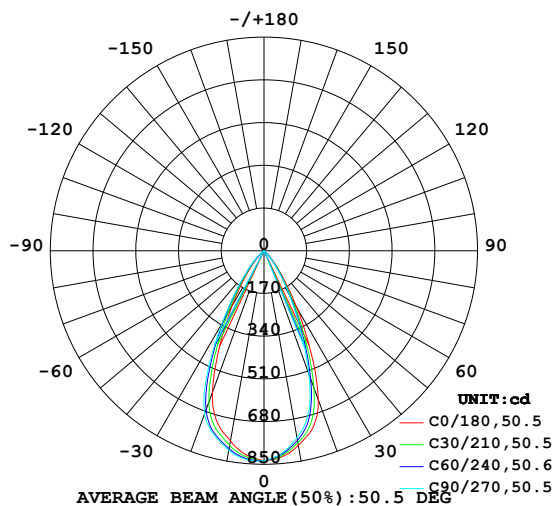
γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 58%  
Test Distance: 8.967m [K=1.0000]  
Remarks:

**LUMINAIRE PHOTOMETRIC TEST REPORT**

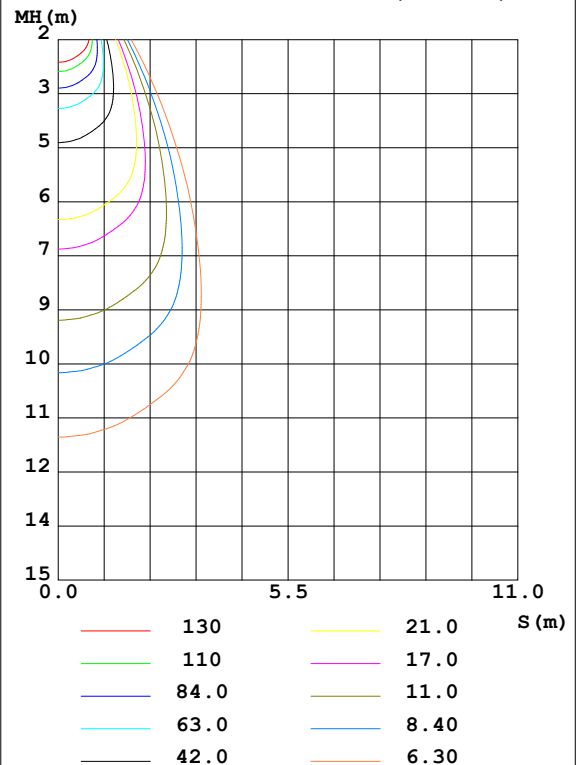
Test:U:220.7V I:0.0637A P:13.70W PF:0.9739 Freq:49.99Hz Lamp Flux:592.435x1 lm		
NAME: S100R1-DW-13W-930-W	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 108mm*H126mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 43.25 lm/W			
MODEL	CITIZEN-3000K	I <sub>max</sub> (cd)	838.1	S/MH (C0/180)	0.76
NOMINAL POWER (W)	15	LOR (%)	100.0	S/MH (C90/270)	0.83
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	592.43	$\eta$ UP, DN (C0-180)	0.0, 45.1
NOMINAL FLUX (lm)	592.435	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 54.9
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	220	$\eta$ down (%)	100.0	CIBSE SHR MAX	0.80

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
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Temperature:25.3DEG  
Operators:Jason  
Test Date:2020-12-16

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### ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	786.5	771.7	756.2	755.3	769.0	792.7	806.3	798.4	0- 10	76.98	76.98	13,13
20	631.5	563.2	523.1	540.3	600.3	655.9	690.8	682.7	10- 20	199.4	276.4	46.7,46.7
30	262.0	217.9	201.7	215.2	257.8	301.9	336.1	317.2	20- 30	196.1	472.5	79.8,79.8
40	68.83	58.16	51.03	56.31	69.96	88.64	98.30	86.26	30- 40	93.34	565.9	95.5,95.5
50	5.526	2.034	1.517	1.706	4.136	10.48	15.52	10.56	40- 50	24.86	590.7	99.7,99.7
60	0.3883	0.2145	0.1961	0.1906	0.2746	0.4514	0.5336	0.4962	50- 60	1.490	592.2	100,100
70	0.0970	0.0358	0.0721	0.0308	0.0508	0.1075	0.0669	0.0981	60- 70	0.1435	592.4	100,100
80	0.0408	0	0.0309	0.0103	0.0153	0.0410	0.0154	0.0464	70- 80	0.0425	592.4	100,100
90	0.0102	0	0.0103	0.0052	0.0102	0.0154	0.0154	0.0155	80- 90	0.0175	592.4	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): 584.09 lm

%lum = 98.6%

%lamp = 98.6%

Conical surface Flux(120deg): 592.23 lm

%lum = 100.0%

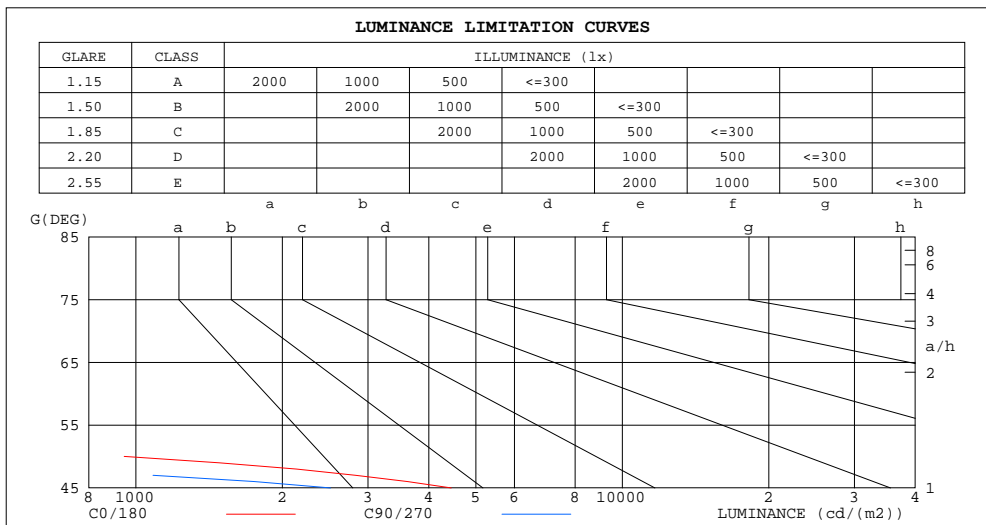
%lamp = 100.0%

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**LUMINANCE LIMITATION CURVES**

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SPEC.:3000K	DIM.: $\phi$ 108mm*H126mm	
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LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	26	19
80	26	19
75	26	22
70	31	23
65	31	31
60	85	43
55	204	114
50	946	257
45	4448	2512

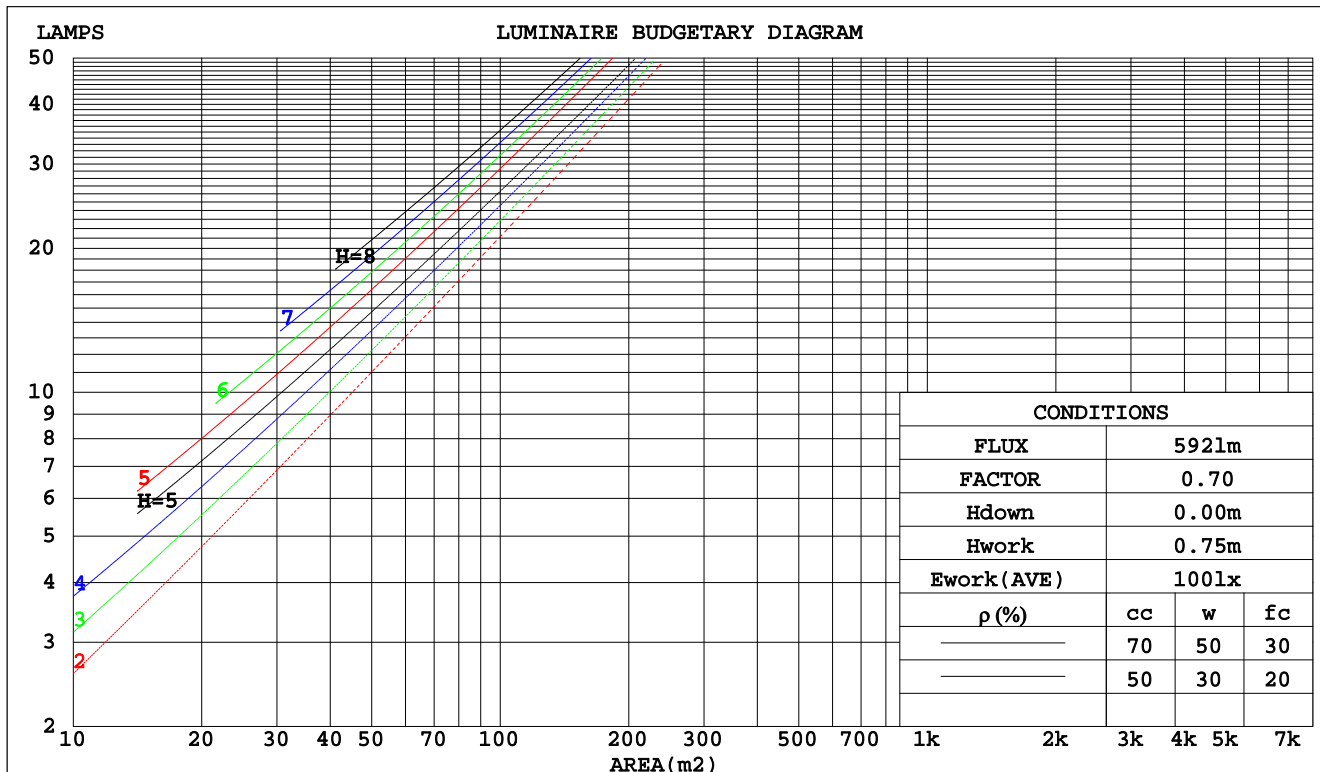
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**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

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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	1.11	1.09	1.07	1.09	1.07	1.05	1.05	1.03	1.02	1.01	1.00	.99	.98	.97	.96	.94
2.0	1.04	1.00	.97	1.03	.99	.96	.99	.97	.94	.96	.94	.92	.94	.92	.90	.89
3.0	.98	.93	.90	.96	.92	.89	.94	.90	.87	.92	.89	.86	.89	.87	.85	.83
4.0	.92	.87	.83	.91	.86	.83	.89	.85	.82	.87	.83	.81	.85	.82	.80	.78
5.0	.87	.81	.77	.86	.81	.77	.84	.80	.76	.82	.79	.76	.81	.78	.75	.74
6.0	.82	.76	.72	.81	.76	.72	.80	.75	.72	.78	.74	.71	.77	.74	.71	.69
7.0	.78	.72	.68	.77	.72	.68	.76	.71	.68	.75	.70	.67	.73	.70	.67	.66
8.0	.74	.68	.64	.73	.68	.64	.72	.67	.64	.71	.67	.63	.70	.66	.63	.62
9.0	.70	.64	.61	.69	.64	.61	.68	.64	.60	.68	.63	.60	.67	.63	.60	.59
10.0	.66	.61	.57	.66	.61	.57	.65	.60	.57	.64	.60	.57	.64	.60	.57	.56



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## WEC AND CCEC

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SPEC.:3000K	DIM.: $\phi$ 108mm*H126mm	
MFR.: NEKO LIGHTING AG		

$\rho_{cc}$	80%			70%			50%			30%			10%			0	
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
$\rho_{fc}$	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.167	.095	.030	.161	.092	.029	.148	.085	.027	.136	.079	.025	.126	.073	.024		
2.0	.159	.087	.027	.154	.085	.026	.143	.080	.025	.134	.075	.023	.125	.070	.022		
3.0	.152	.081	.024	.147	.079	.024	.138	.075	.023	.130	.071	.022	.122	.068	.021		
4.0	.144	.075	.022	.140	.073	.022	.133	.070	.021	.125	.067	.020	.119	.065	.020		
5.0	.138	.070	.020	.134	.069	.020	.128	.066	.020	.121	.064	.019	.116	.062	.019		
6.0	.132	.066	.019	.128	.065	.019	.123	.063	.018	.117	.061	.018	.112	.059	.018		
7.0	.126	.062	.018	.123	.061	.017	.118	.060	.017	.113	.058	.017	.109	.056	.017		
8.0	.121	.059	.017	.118	.058	.016	.114	.057	.016	.109	.055	.016	.105	.054	.016		
9.0	.116	.056	.016	.114	.055	.016	.110	.054	.015	.106	.053	.015	.102	.052	.015		
10.0	.111	.053	.015	.109	.053	.015	.106	.052	.015	.102	.051	.014	.099	.050	.014		

$\rho_{cc}$	80%			70%			50%			30%			10%			0	
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
$\rho_{fc}$	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	.170	.157	.146	.146	.135	.125	.100	.093	.087	.057	.054	.050	.018	.017	.016		
2.0	.155	.133	.114	.132	.114	.099	.091	.079	.069	.052	.046	.040	.017	.015	.013		
3.0	.142	.113	.091	.121	.098	.079	.083	.068	.055	.048	.040	.033	.015	.013	.011		
4.0	.131	.099	.074	.112	.085	.064	.077	.059	.045	.045	.035	.027	.014	.011	.009		
5.0	.122	.087	.061	.105	.075	.053	.072	.053	.037	.042	.031	.022	.013	.010	.007		
6.0	.114	.077	.051	.098	.067	.044	.068	.047	.031	.039	.028	.019	.013	.009	.006		
7.0	.108	.070	.043	.093	.061	.038	.064	.042	.027	.037	.025	.016	.012	.008	.005		
8.0	.102	.064	.037	.088	.055	.032	.061	.039	.023	.035	.023	.014	.011	.007	.005		
9.0	.097	.058	.032	.084	.051	.028	.058	.036	.020	.034	.021	.012	.011	.007	.004		
10.0	.093	.054	.028	.080	.047	.025	.055	.033	.017	.032	.019	.010	.010	.006	.003		

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$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:58%  
Test Distance:8.967m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

Test:U:220.7V I:0.0637A P:13.70W PF:0.9739 Freq:49.99Hz Lamp Flux:592.435x1 lm										
NAME: S100R1-DW-13W-930-W					TYPE:Downlight			SERIAL No.:		
SPEC.:3000K					DIM.: $\phi$ 108mm*H126mm					
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	14.9	14.2	15.0	15.2	12.8	13.6	13.0	13.8	14.0
3H	13.8	14.6	14.1	14.8	15.0	12.6	13.4	12.8	13.6	13.8
4H	13.7	14.5	14.0	14.7	14.9	12.5	13.3	12.8	13.5	13.7
6H	13.6	14.4	13.9	14.6	14.8	12.4	13.1	12.7	13.4	13.6
8H	13.6	14.3	13.9	14.5	14.8	12.4	13.1	12.7	13.3	13.6
12H	13.5	14.2	13.9	14.5	14.7	12.3	13.0	12.6	13.2	13.5
4H 2H	13.7	14.5	14.0	14.7	14.9	12.5	13.3	12.8	13.5	13.7
3H	13.5	14.2	13.9	14.5	14.7	12.3	13.0	12.6	13.2	13.5
4H	13.5	14.1	13.8	14.3	14.7	12.2	12.8	12.6	13.1	13.4
6H	13.4	13.9	13.7	14.2	14.6	12.1	12.7	12.5	13.0	13.3
8H	13.3	13.8	13.7	14.1	14.5	12.1	12.6	12.5	12.9	13.3
12H	13.3	13.7	13.7	14.1	14.5	12.0	12.5	12.4	12.8	13.2
8H 4H	13.3	13.8	13.7	14.1	14.5	12.1	12.6	12.5	12.9	13.3
6H	13.2	13.6	13.6	14.0	14.4	12.0	12.4	12.4	12.8	13.2
8H	13.1	13.5	13.6	13.9	14.4	11.9	12.3	12.4	12.7	13.1
12H	13.1	13.4	13.6	13.8	14.3	11.9	12.2	12.3	12.6	13.1
12H 4H	13.3	13.7	13.7	14.1	14.5	12.0	12.5	12.4	12.8	13.2
6H	13.1	13.5	13.6	13.9	14.4	11.9	12.3	12.4	12.7	13.1
8H	13.1	13.4	13.6	13.8	14.3	11.9	12.2	12.3	12.6	13.1
Variations with the observer position at spacings:										
S = 1.0H	+ 3.8 / -24.5					+ 3.2 / -25.7				
1.5H	+ 6.1 / -21.7					+ 5.8 / -21.5				
2.0H	+ 8.8 / -22.6					+ 8.6 / -20.0				

CIE Pub.117, 592.4 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = -1.8$ )

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### UTILIZATION FACTORS TABLE

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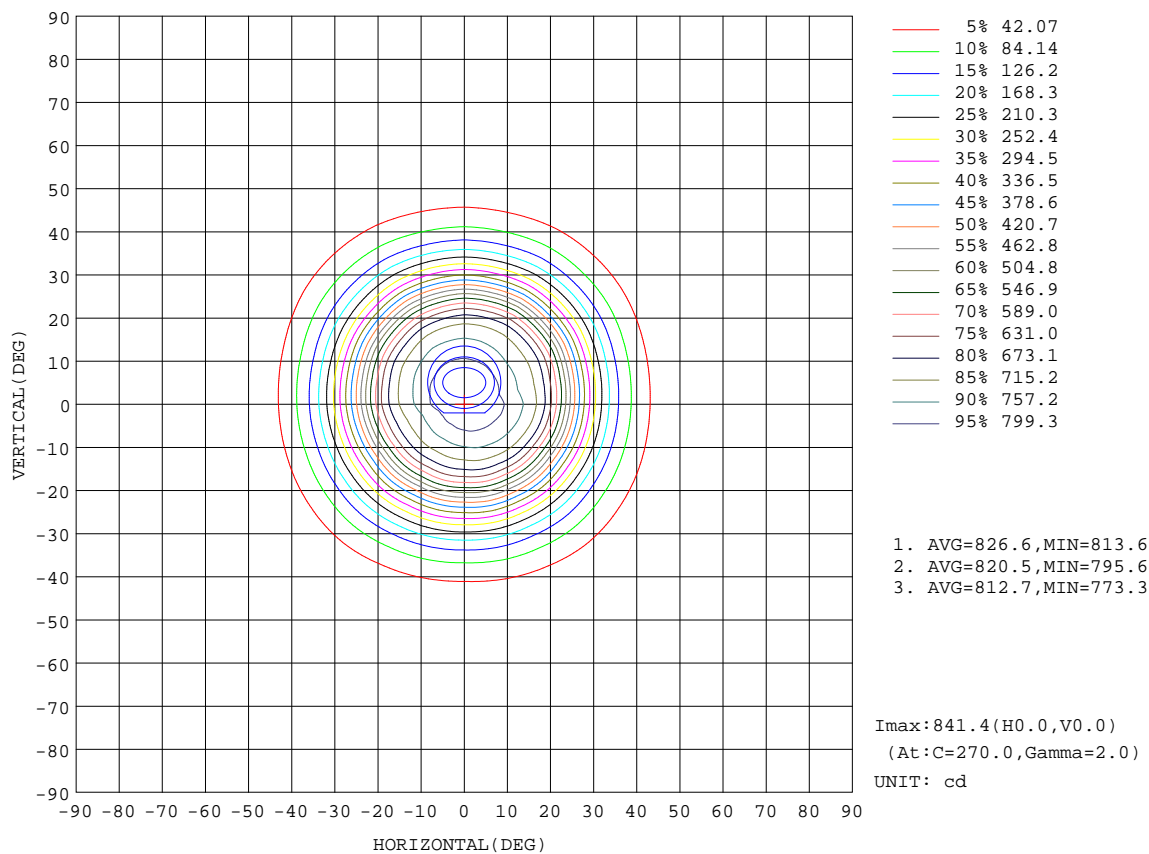
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	79	88	82	79	87	82	79	75
0.80	96	90	87	95	90	87	94	90	86	83
1.00	100	95	92	100	95	91	98	94	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	109	112	110	108	109	107	105	98
5.00	115	113	111	113	111	110	109	108	107	99
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

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ISOCANDELA DIAGRAM

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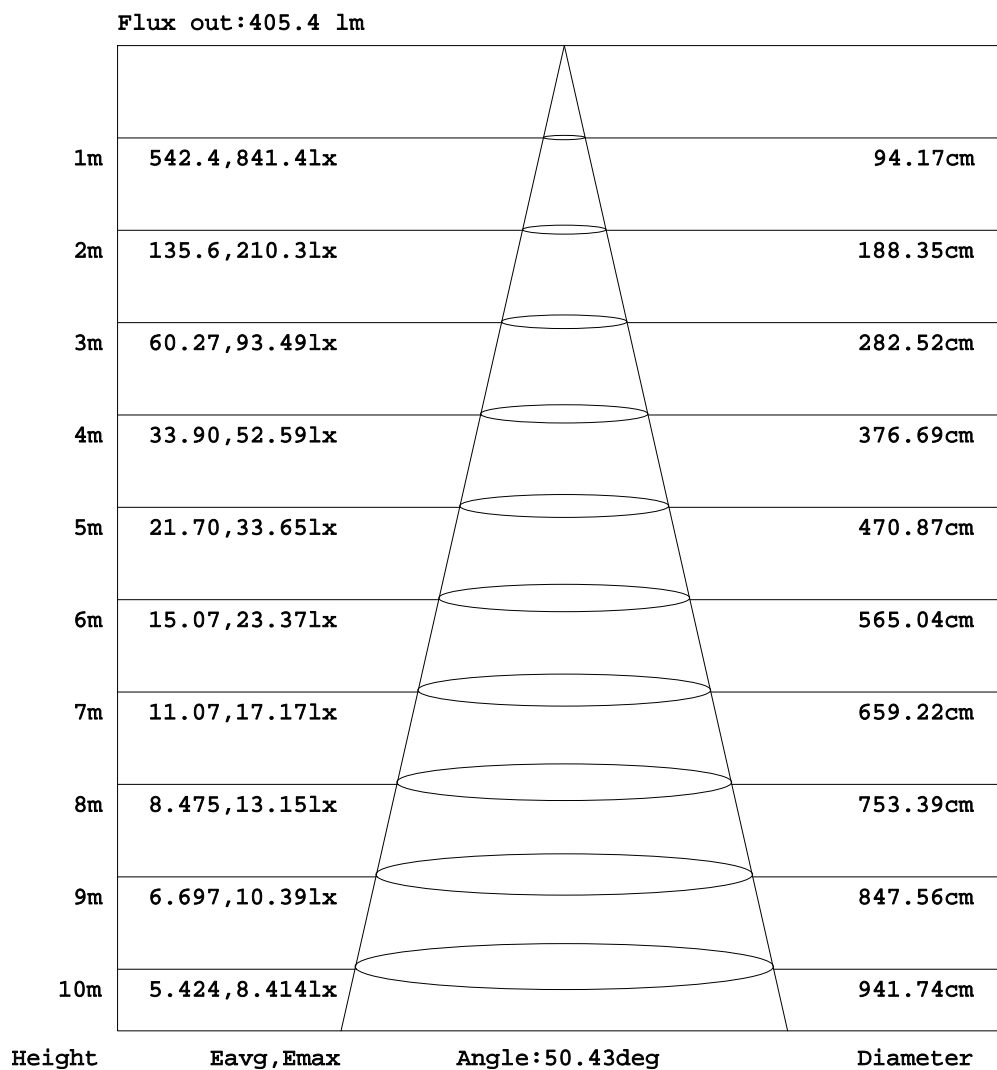


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**AAI Figure**

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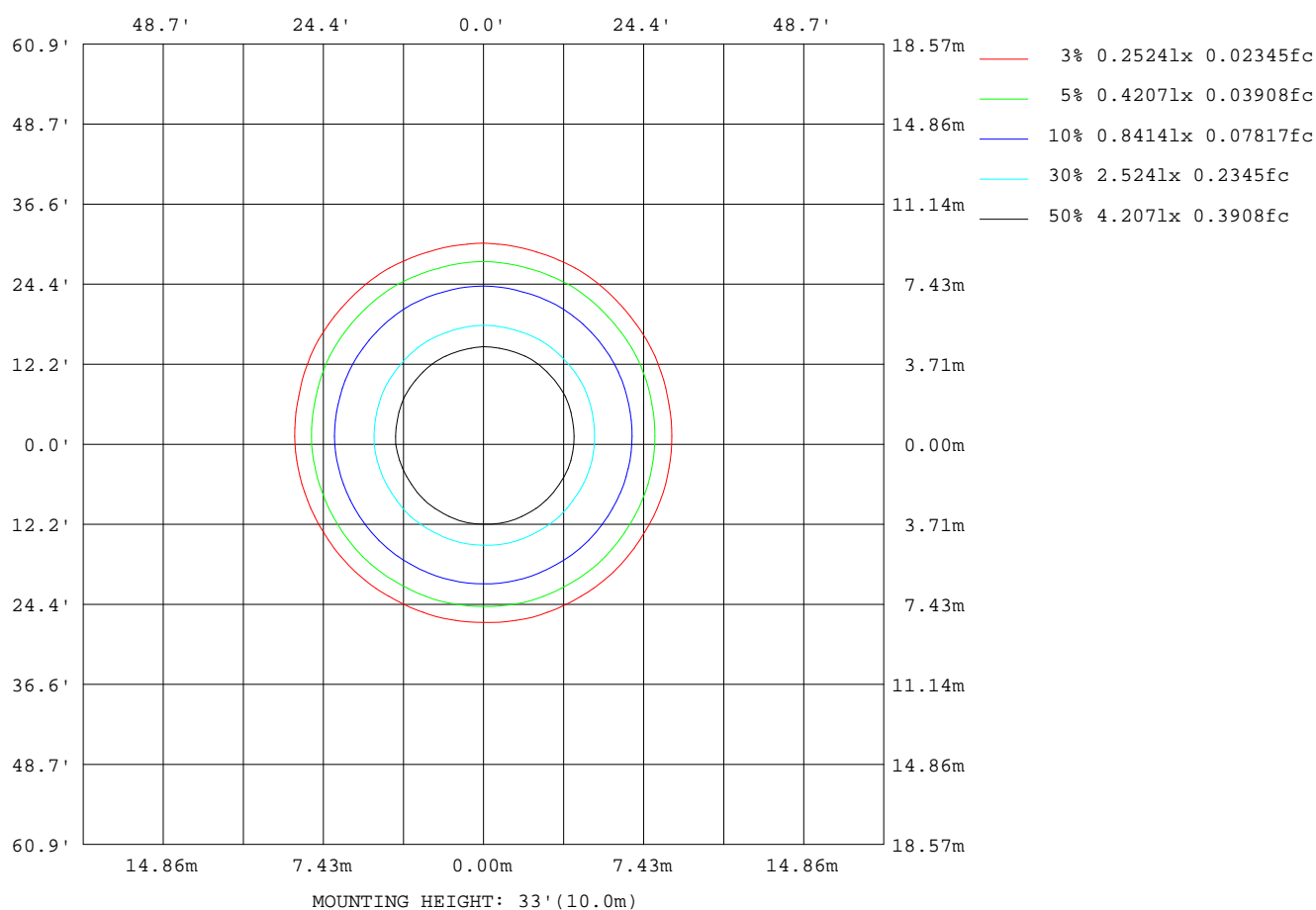
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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**ISOLUX DIAGRAM**

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Remarks:

### LED Avg.L Report

Test:U:220.7V I:0.0637A P:13.70W PF:0.9739 Freq:49.99Hz Lamp Flux:592.435x1 lm		
NAME: S100R1-DW-13W-930-W	TYPE:Downlight	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 108mm*H126mm	
MFR.: NEKO LIGHTING AG		

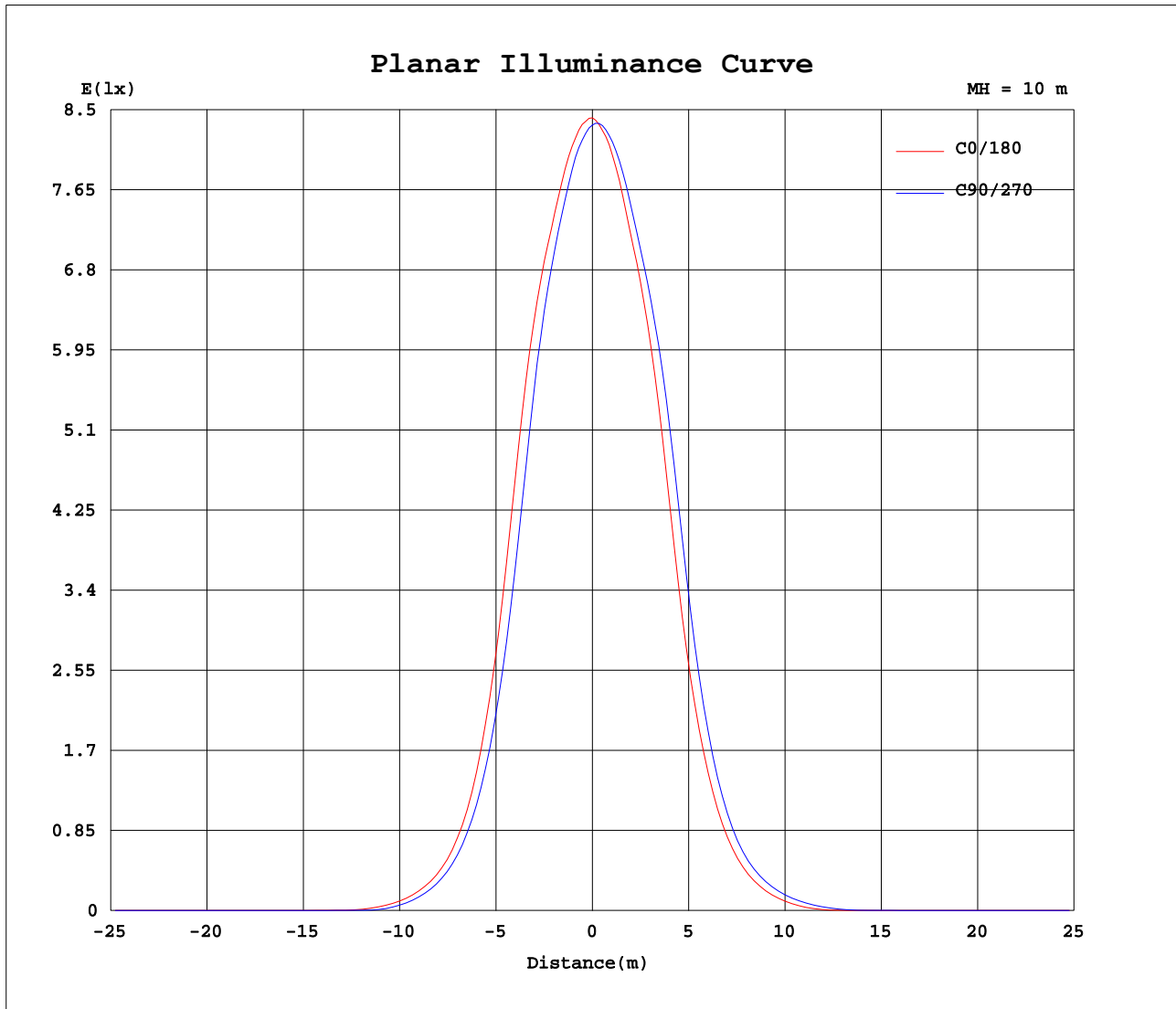
AvgL	cd/m2
L_0~180 (65) av	24
L_0~180 (75) av	16
L_0~180 (85) av	19
L_90~270 (65) av	34
L_90~270 (75) av	18
L_90~270 (85) av	19
L_45 (65) av	29
L_45 (75) av	16
L_45 (85) av	19

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jason  
Test Date:2020-12-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:58%  
Test Distance:8.967m [K=1.0000]  
Remarks:

### Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Jason  
Test Date: 2020-12-16

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 58%  
Test Distance: 8.967m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:8.967m [K=1.0000]
Remarks:

```