

**SUGAR-450-18W-840**



Light Output Ratio:	100.0%	
Luminaire Power:	17.88 W	
SHR Nominal:	1.25	Calculated using the TM5
SHR Maximum:	1.30	fine grid method.

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-01-05

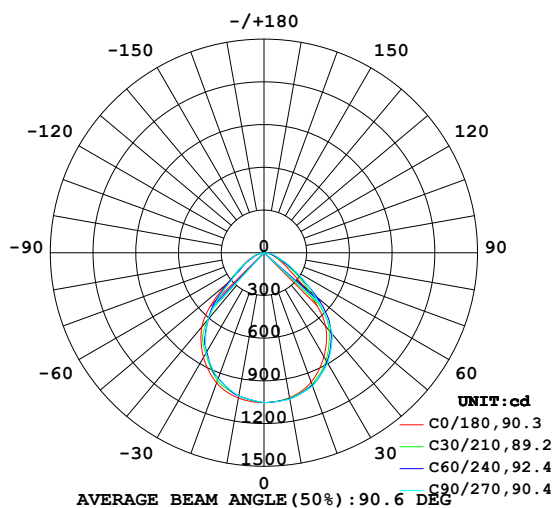
V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:

**LUMINAIRE PHOTOMETRIC TEST REPORT**

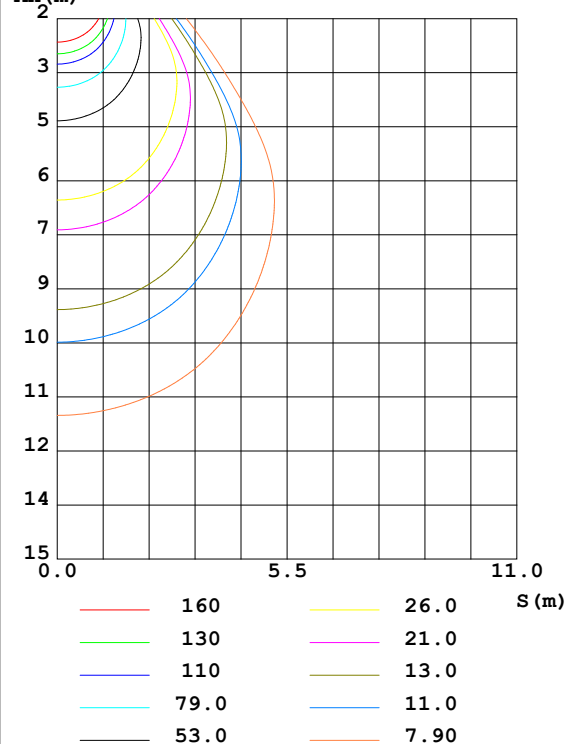
Test:U:220.9V I:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
NAME: SUGAR-450-18W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 118.01 lm/W			
MODEL	OSRAM-4000K	I <sub>max</sub> (cd)	1053	S/MH (C0/180)	1.20
NOMINAL POWER (W)	18	LOR (%)	100.0	S/MH (C90/270)	1.16
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	2110.0	$\eta$ UP, DN (C0-180)	0.0, 53.5
NOMINAL FLUX (lm)	2110.01	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 46.5
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	220	$\eta$ down (%)	100.0	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



H( $\beta$ ) Range:-90 - 90DEG  
 H( $\beta$ ) Interval: 1.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Myles  
 Test Date:2019-01-05

V(B) Range:-80 - 80DEG  
 V(B) Interval: 5.0DEG  
 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	1033	1038	1044	1038	1035	1020	1022	1023	0- 10	99.25	99.25	4.7,4.7
20	967.4	987.2	997.3	979.1	972.4	939.5	942.9	947.5	10- 20	283.2	382.4	18.1,18.1
30	842.2	879.5	894.8	872.1	849.6	817.8	813.5	813.7	20- 30	419.4	801.8	38,38
40	673.2	727.9	748.8	716.4	678.9	632.7	612.0	624.8	30- 40	477.9	1280	60.6,60.6
50	350.9	416.2	459.5	428.4	345.6	316.8	292.2	285.6	40- 50	402.2	1682	79.7,79.7
60	161.8	225.8	241.8	193.7	164.4	157.0	149.3	145.8	50- 60	232.4	1914	90.7,90.7
70	84.88	108.1	107.3	96.37	85.23	76.68	74.35	72.65	60- 70	124.6	2039	96.6,96.6
80	27.79	49.30	49.12	40.94	28.36	18.69	13.90	18.35	70- 80	61.25	2100	99.5,99.5
90	0.1833	0	0	0	0.2800	0	0	0	80- 90	9.857	2110	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): 1502.5 lm

%lum = 71.2%

%lamp = 71.2%

Conical surface Flux(120deg): 1914.3 lm

%lum = 90.7%

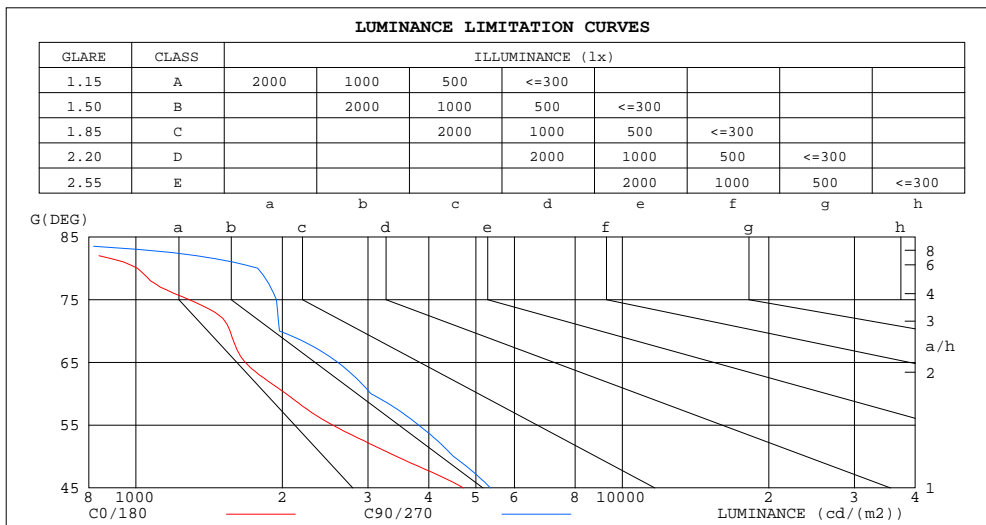
%lamp = 90.7%

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-01-05

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
NAME: SUGAR-450-18W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
MFR.: NEKO LIGHTING AG		



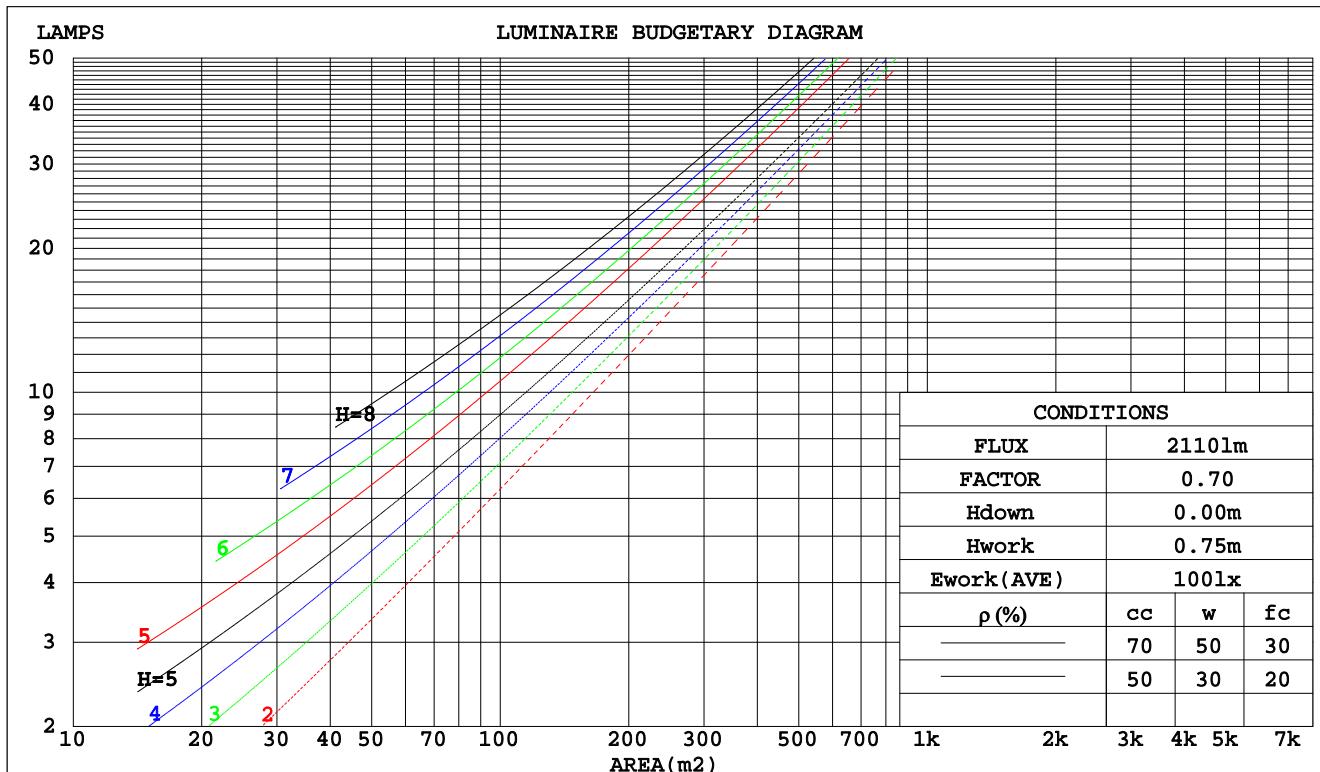
H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-01-05

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
NAME: SUGAR-450-18W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
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	1.07	1.04	1.01	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.96	.90	.85	.94	.89	.84	.91	.86	.83	.87	.84	.81	.85	.82	.79	.77
3.0	.86	.79	.74	.85	.78	.73	.82	.76	.72	.79	.74	.71	.77	.73	.69	.67
4.0	.78	.70	.64	.76	.69	.64	.74	.68	.63	.72	.66	.62	.70	.65	.61	.59
5.0	.70	.63	.57	.69	.62	.56	.67	.61	.56	.65	.60	.55	.64	.59	.55	.53
6.0	.64	.56	.50	.63	.56	.50	.62	.55	.50	.60	.54	.49	.58	.53	.49	.47
7.0	.59	.51	.45	.58	.50	.45	.56	.50	.45	.55	.49	.45	.54	.48	.44	.42
8.0	.54	.46	.41	.53	.46	.41	.52	.45	.41	.51	.45	.40	.50	.44	.40	.38
9.0	.50	.42	.37	.49	.42	.37	.48	.42	.37	.47	.41	.37	.46	.41	.37	.35
10.0	.46	.39	.34	.46	.39	.34	.45	.38	.34	.44	.38	.34	.43	.38	.34	.32



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Test Date:2019-01-05

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
NAME: SUGAR-450-18W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
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	.248	.141	.045	.241	.138	.044	.228	.131	.042	.216	.125	.040	.205	.119	.038		
2.0	.240	.131	.040	.234	.129	.040	.223	.124	.038	.212	.119	.037	.203	.115	.036		
3.0	.227	.121	.036	.222	.119	.036	.212	.115	.035	.203	.111	.034	.194	.108	.033		
4.0	.214	.111	.033	.209	.109	.032	.200	.106	.032	.192	.103	.031	.185	.100	.031		
5.0	.201	.102	.030	.197	.101	.029	.189	.098	.029	.182	.096	.029	.175	.094	.028		
6.0	.189	.095	.027	.185	.094	.027	.179	.091	.027	.172	.089	.026	.166	.087	.026		
7.0	.178	.088	.025	.175	.087	.025	.169	.085	.025	.163	.084	.024	.158	.082	.024		
8.0	.168	.082	.023	.165	.081	.023	.160	.080	.023	.155	.078	.023	.150	.077	.022		
9.0	.159	.077	.021	.156	.076	.021	.151	.075	.021	.147	.074	.021	.142	.072	.021		
10.0	.151	.072	.020	.148	.072	.020	.144	.070	.020	.140	.069	.020	.136	.068	.020		

$\rho_{cc}$	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	.176	.157	.139	.151	.134	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.165	.132	.104	.142	.114	.090	.097	.079	.063	.056	.046	.037	.018	.015	.012	
3.0	.156	.114	.080	.134	.098	.070	.092	.068	.049	.053	.040	.029	.017	.013	.009	
4.0	.148	.100	.064	.127	.087	.055	.087	.060	.039	.051	.035	.023	.016	.012	.008	
5.0	.141	.089	.052	.121	.077	.045	.083	.054	.032	.048	.032	.019	.016	.010	.006	
6.0	.134	.081	.043	.115	.070	.037	.079	.049	.026	.046	.029	.016	.015	.009	.005	
7.0	.128	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.072	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.116	.063	.027	.100	.055	.024	.069	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.111	.059	.024	.096	.051	.021	.066	.036	.015	.039	.021	.009	.013	.007	.003	

$H(\beta)$  Range:-90 - 90DEG  
 $H(\beta)$  Interval: 1.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:Myles  
 Test Date:2019-01-05

$V(B)$  Range:-80 - 80DEG  
 $V(B)$  Interval: 5.0DEG  
 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:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm										
NAME: SUGAR-450-18W-840					TYPE:Ceiling light			SERIAL No.:		
SPEC.:4000K					DIM.: $\phi$ 450mm*H105mm					
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	13.6	14.9	13.9	15.1	15.3	14.8	16.2	15.1	16.3	16.5
3H	14.1	15.3	14.3	15.5	15.7	15.4	16.6	15.6	16.8	17.0
4H	14.2	15.4	14.5	15.6	15.9	15.6	16.7	15.9	17.0	17.2
6H	14.3	15.4	14.7	15.7	15.9	15.7	16.8	16.1	17.1	17.3
8H	14.3	15.4	14.7	15.7	15.9	15.8	16.8	16.1	17.1	17.4
12H	14.3	15.3	14.7	15.6	15.9	15.7	16.7	16.1	17.0	17.3
4H 2H	14.0	15.1	14.3	15.4	15.6	15.0	16.1	15.3	16.4	16.6
3H	14.6	15.6	14.9	15.9	16.2	15.7	16.7	16.0	17.0	17.3
4H	14.9	15.8	15.3	16.1	16.4	16.0	16.9	16.4	17.2	17.5
6H	15.1	15.9	15.5	16.2	16.6	16.3	17.1	16.7	17.5	17.8
8H	15.1	15.9	15.5	16.2	16.6	16.4	17.1	16.8	17.5	17.9
12H	15.1	15.8	15.5	16.2	16.6	16.4	17.0	16.8	17.4	17.8
8H 4H	15.1	15.8	15.5	16.2	16.6	16.1	16.8	16.5	17.2	17.6
6H	15.4	16.0	15.8	16.4	16.8	16.5	17.1	17.0	17.5	18.0
8H	15.5	16.0	16.0	16.5	16.9	16.6	17.2	17.1	17.6	18.0
12H	15.5	16.0	16.0	16.4	16.9	16.6	17.1	17.1	17.5	18.0
12H 4H	15.1	15.8	15.5	16.1	16.5	16.1	16.8	16.5	17.1	17.5
6H	15.5	16.0	15.9	16.4	16.9	16.6	17.1	17.0	17.5	18.0
8H	15.6	16.0	16.1	16.5	17.0	16.7	17.1	17.2	17.6	18.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.8 / - 0.8					+ 0.4 / - 0.4				
1.5H	+ 0.5 / - 0.8					+ 0.4 / - 0.4				
2.0H	+ 1.8 / - 1.5					+ 1.2 / - 1.5				

CIE Pub.117, 2110 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 2.6$ )

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-01-05

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
NAME: SUGAR-450-18W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
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) $k(RI) \times RCR = 5$									
$k = 0.60$	67	57	51	66	57	51	65	56	51	45
0.80	77	67	61	76	67	61	74	66	60	55
1.00	85	76	70	84	75	69	82	76	69	63
1.25	91	83	77	90	82	76	87	81	76	70
1.50	95	87	82	94	87	81	91	85	80	74
2.00	101	94	89	99	93	88	96	91	87	80
2.50	104	98	93	102	96	92	98	94	90	83
3.00	106	101	97	104	99	96	101	97	93	86
4.00	109	105	101	107	103	100	103	100	97	89
5.00	111	107	104	109	106	103	105	102	100	91
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

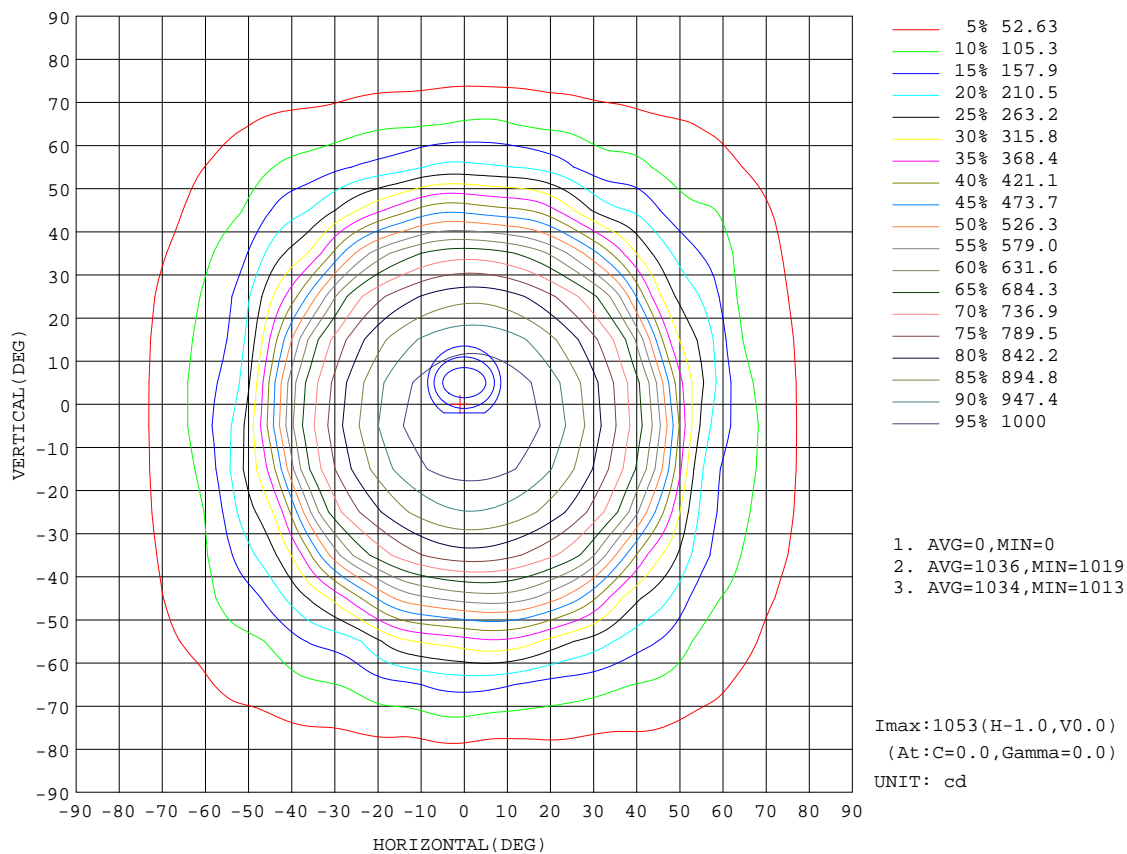
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 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
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 Test Distance:5.850m [K=1.0000]  
 Remarks:



# ISOCANDELA DIAGRAM

Test:U:220.9V I:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
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SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
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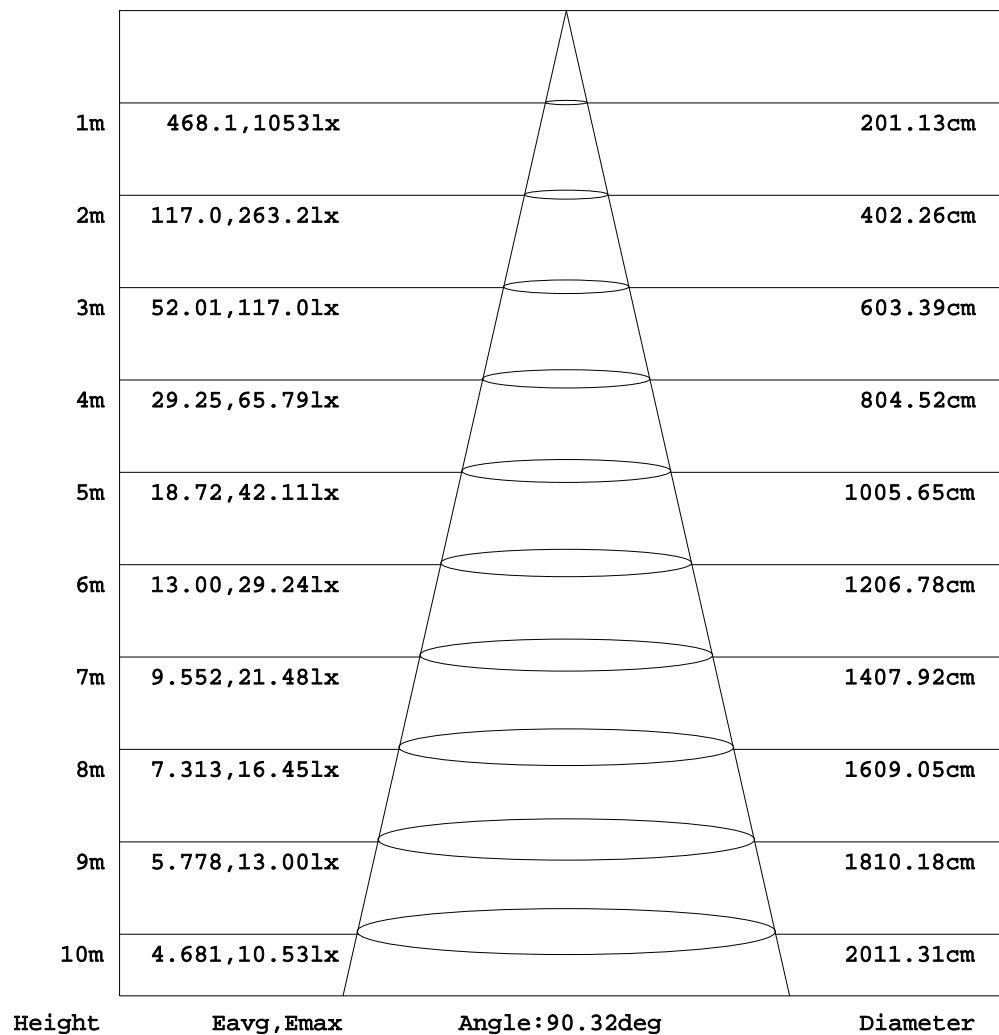
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**AAI Figure**

Test:U:220.9V I:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
NAME: SUGAR-450-18W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
MFR.: NEKO LIGHTING AG		

Flux out:1523 lm



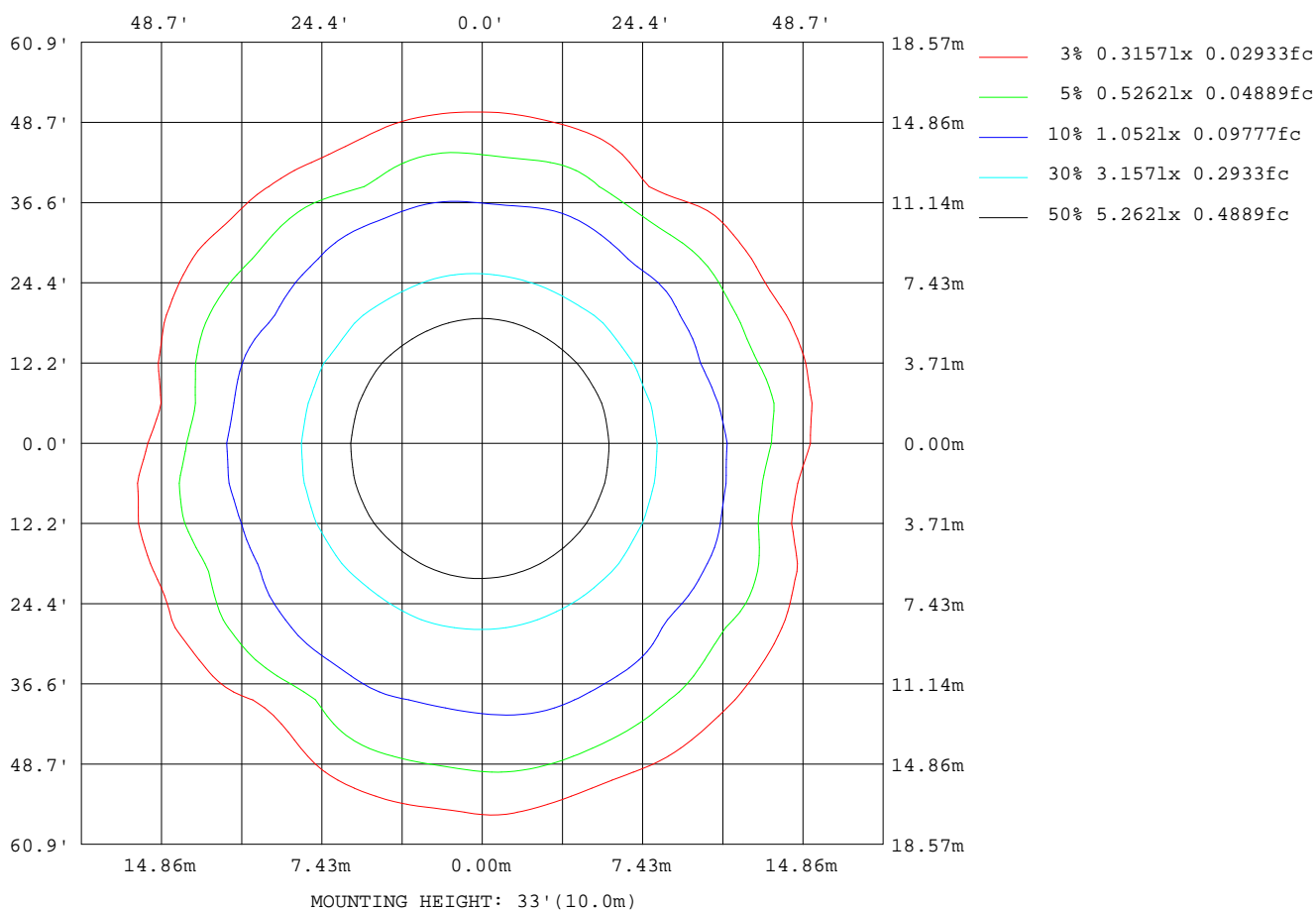
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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Operators:Myles  
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Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
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ISOLUX DIAGRAM

Test:U:220.9V I:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
NAME: SUGAR-450-18W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
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Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
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Remarks:

### LED Avg.L Report

Test:U:220.9V I:0.0887A P:17.88W PF:0.9131 Freq:49.98Hz Lamp Flux:2110.01x1 lm		
NAME: SUGAR-450-18W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 450mm*H105mm	
MFR.: NEKO LIGHTING AG		

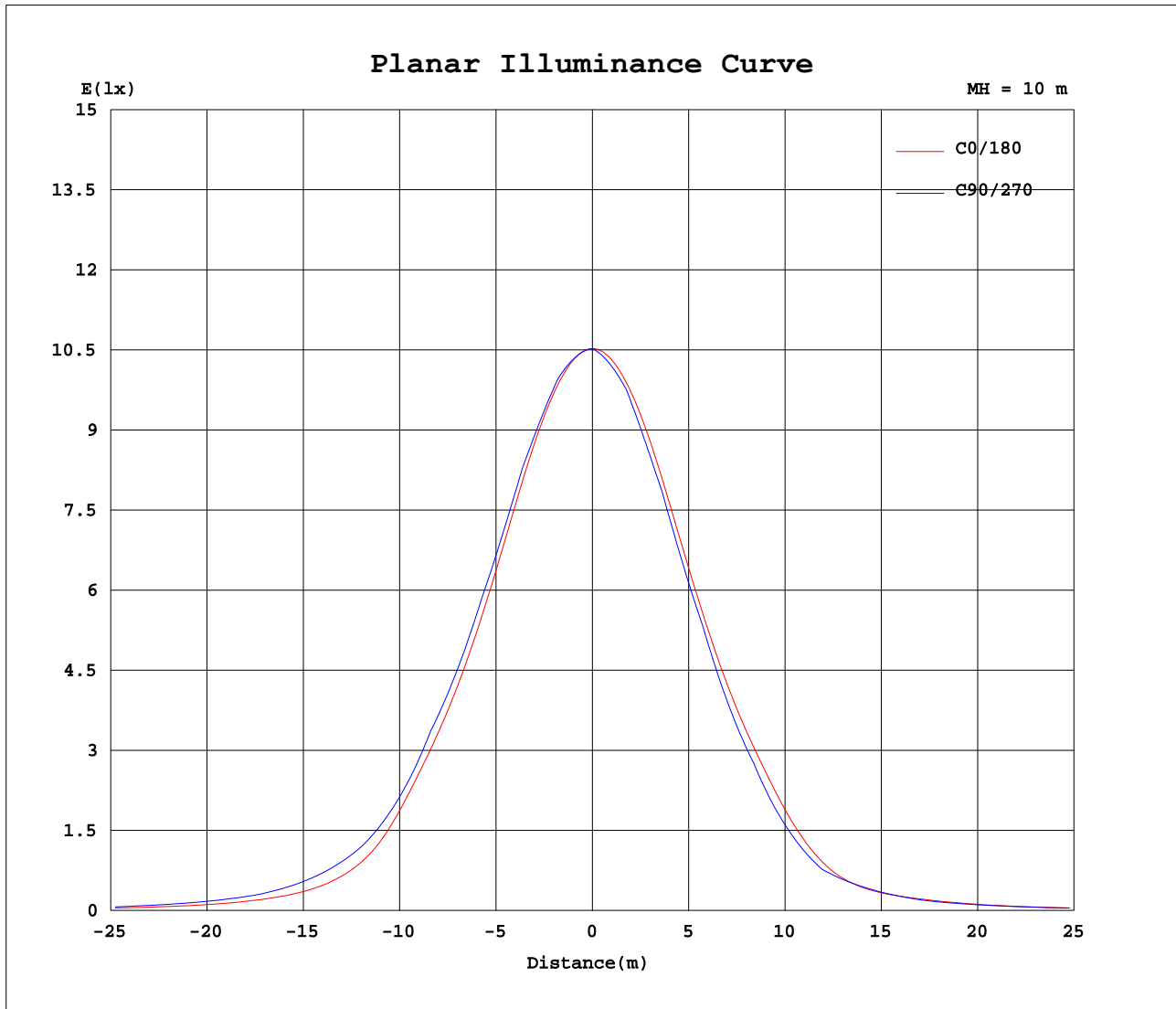
AvgL	cd/m2
L_0~180 (65) av	1714
L_0~180 (75) av	1302
L_0~180 (85) av	294
L_90~270 (65) av	2127
L_90~270 (75) av	1510
L_90~270 (85) av	0
L_45 (65) av	1902
L_45 (75) av	1433
L_45 (85) av	485

Standard: GB/T 29293-2012

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-01-05

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:

### Planar Illuminance Curve



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-01-05

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:



V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks: