

GAME-350-12W-840



Light Output Ratio:	100.0%	
Luminaire Power:	13.31 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:2019-04-15

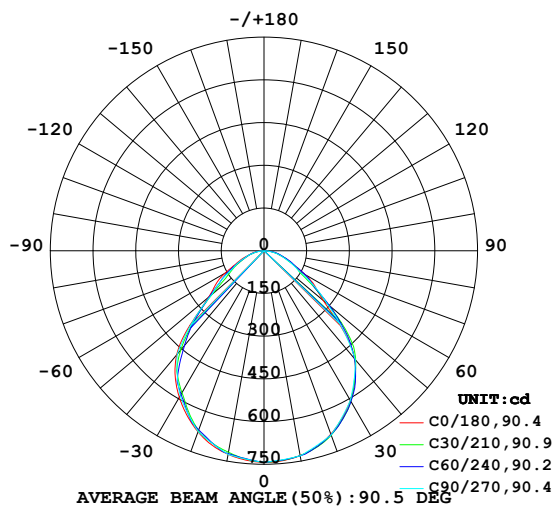
V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:56%  
Test Distance:5.850m [K=1.0000]  
Remarks:

**LUMINAIRE PHOTOMETRIC TEST REPORT**

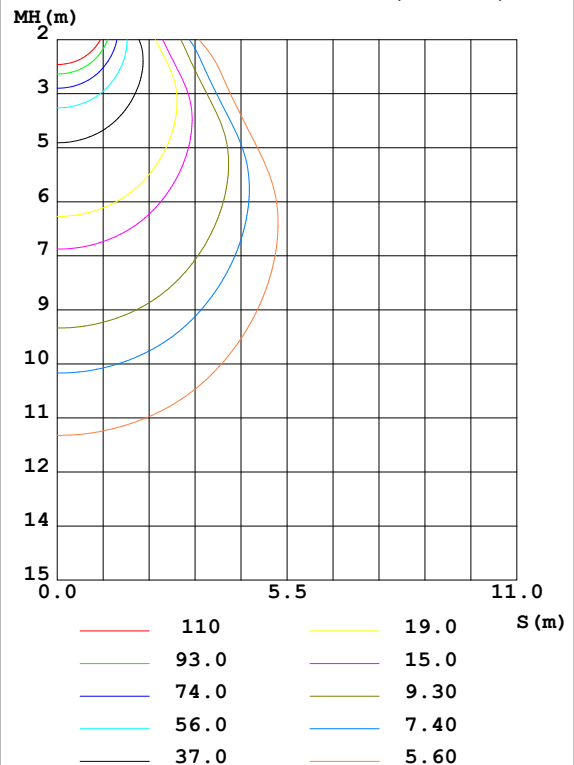
Test:U:220.9V I:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm		
NAME: GAME-350-12W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 350mm*H78mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 116.90 lm/W			
MODEL	OSRAM-4000K	I <sub>max</sub> (cd)	742.8	S/MH (C0/180)	1.20
NOMINAL POWER (W)	12	LOR (%)	100.0	S/MH (C90/270)	1.18
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1556.0	$\eta$ UP,DN (C0-180)	0.0,51.1
NOMINAL FLUX (lm)	1556	CIE CLASS	DIRECT	$\eta$ UP,DN (C180-360)	0.0,48.9
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:2019-04-15

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	730.3	730.3	731.3	723.9	725.9	720.8	726.2	726.3	0- 10	69.96	69.96	4.5,4.5
20	685.6	689.1	688.4	674.0	676.9	665.4	676.0	680.7	10- 20	199.2	269.2	17.3,17.3
30	606.4	608.8	606.1	595.4	594.6	581.3	588.6	598.7	20- 30	294.9	564.1	36.3,36.3
40	493.9	499.5	498.8	487.3	476.9	463.1	473.9	484.2	30- 40	339.2	903.3	58.1,58.1
50	272.6	296.5	288.7	289.0	254.6	251.9	238.9	275.6	40- 50	293.6	1197	76.9,76.9
60	163.9	149.2	141.7	152.3	157.9	130.3	129.0	150.2	50- 60	182.9	1380	88.7,88.7
70	82.93	80.96	76.09	74.94	78.60	68.63	69.44	77.22	60- 70	105.5	1485	95.5,95.5
80	39.26	37.95	34.47	35.16	35.00	27.23	29.17	34.63	70- 80	57.50	1543	99.2,99.2
90	0	0	0	0	0.3047	0	0	0	80- 90	13.19	1556	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): 1064.2 lm

%lum = 68.4%

%lamp = 68.4%

Conical surface Flux(120deg): 1379.8 lm

%lum = 88.7%

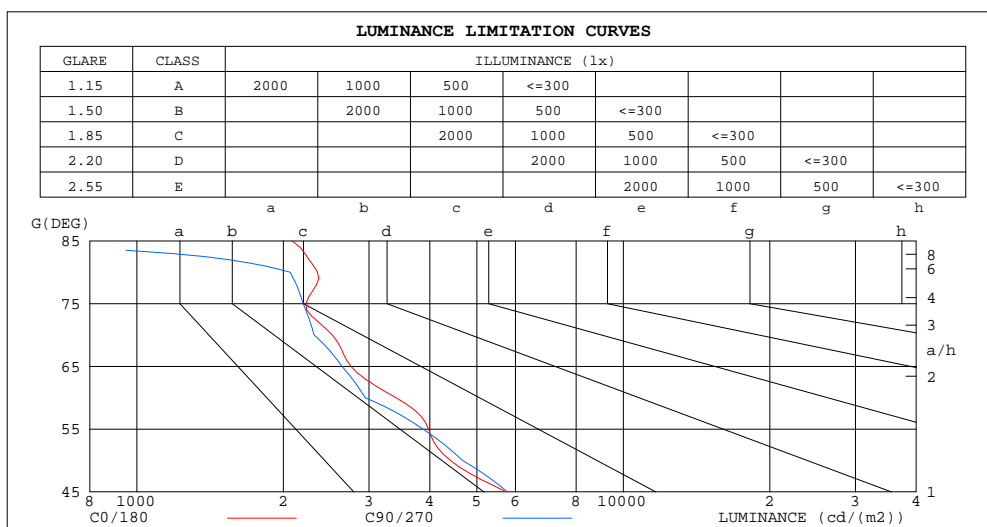
%lamp = 88.7%

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-04-15

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:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm		
NAME: GAME-350-12W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 350mm*H78mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	2081	0
80	2351	2064
75	2227	2196
70	2521	2314
65	2754	2640
60	3408	2947
55	3976	3872
50	4411	4670
45	5738	5779

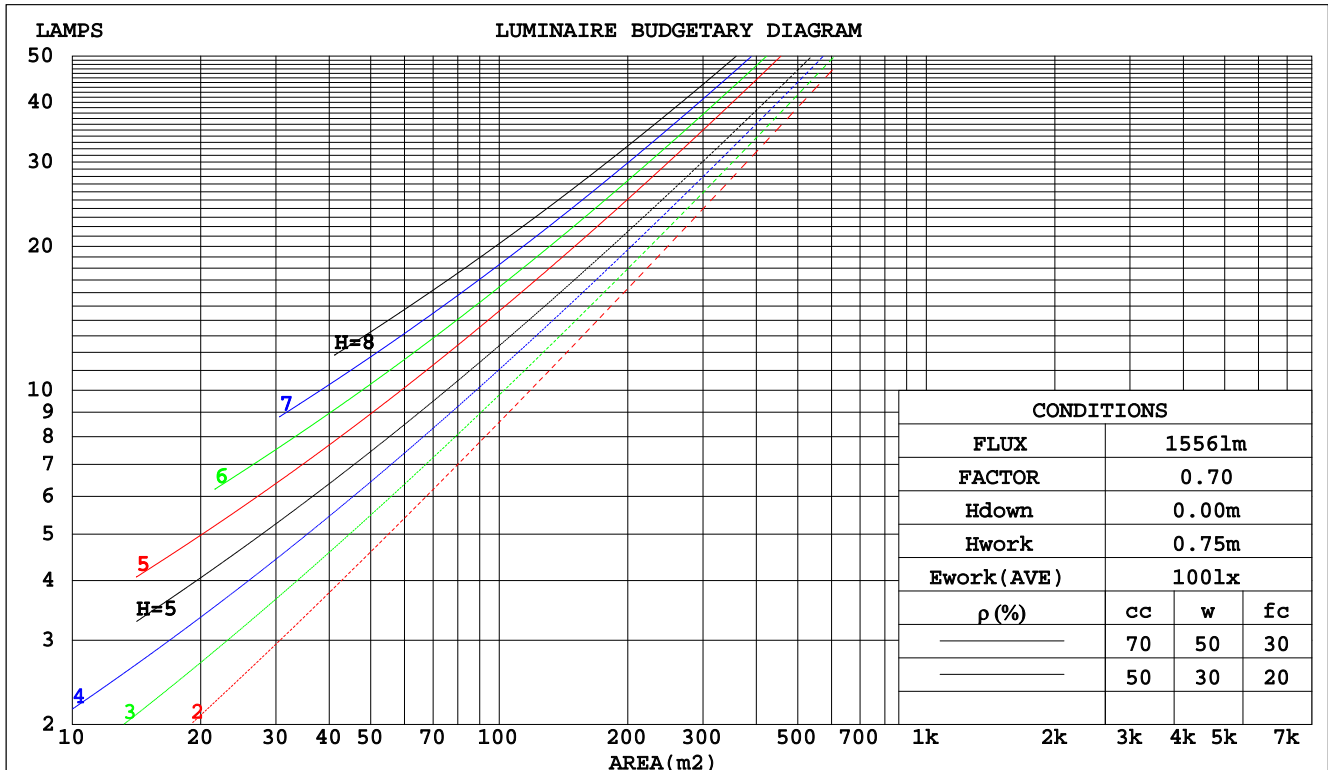
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Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-04-15

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:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm		
NAME: GAME-350-12W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 350mm*H78mm	
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	1.00
1.0	1.06	1.03	.00	1.04	1.01	.98	1.00	.97	.95	.96	.94	.92	.93	.91	.89	.87
2.0	.95	.89	.84	.93	.88	.83	.90	.85	.81	.86	.83	.79	.83	.80	.78	.76
3.0	.85	.78	.72	.83	.77	.71	.81	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.76	.69	.63	.75	.68	.62	.73	.66	.61	.70	.65	.61	.68	.64	.60	.58
5.0	.69	.61	.55	.68	.60	.55	.66	.59	.54	.64	.58	.54	.62	.57	.53	.51
6.0	.63	.55	.49	.62	.54	.49	.60	.53	.48	.59	.53	.48	.57	.52	.48	.46
7.0	.57	.49	.44	.57	.49	.44	.55	.48	.43	.54	.48	.43	.53	.47	.43	.41
8.0	.53	.45	.40	.52	.45	.39	.51	.44	.39	.50	.43	.39	.49	.43	.39	.37
9.0	.49	.41	.36	.48	.41	.36	.47	.40	.36	.46	.40	.35	.45	.39	.35	.34
10.0	.45	.38	.33	.45	.38	.33	.44	.37	.33	.43	.37	.32	.42	.36	.32	.31



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
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Temperature:25.3DEG  
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Test Date:2019-04-15

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:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm		
NAME: GAME-350-12W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 350mm*H78mm	
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	.260	.148	.047	.253	.144	.046	.240	.138	.044	.228	.131	.042	.217	.126	.041		
2.0	.249	.136	.042	.243	.134	.041	.232	.129	.040	.221	.124	.039	.212	.120	.038		
3.0	.234	.125	.037	.229	.123	.037	.219	.119	.036	.210	.115	.035	.201	.112	.035		
4.0	.220	.114	.034	.215	.113	.033	.206	.109	.033	.198	.106	.032	.191	.104	.032		
5.0	.206	.105	.030	.202	.104	.030	.194	.101	.030	.187	.098	.029	.180	.096	.029		
6.0	.193	.097	.028	.189	.096	.028	.182	.094	.027	.176	.091	.027	.170	.089	.027		
7.0	.181	.090	.025	.178	.089	.025	.172	.087	.025	.166	.085	.025	.161	.084	.025		
8.0	.171	.084	.023	.168	.083	.023	.162	.081	.023	.157	.080	.023	.152	.078	.023		
9.0	.161	.078	.022	.159	.077	.022	.154	.076	.022	.149	.075	.021	.145	.073	.021		
10.0	.153	.073	.020	.150	.073	.020	.146	.071	.020	.142	.070	.020	.138	.069	.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	.177	.157	.138	.151	.134	.119	.103	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.056	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.063	.128	.087	.054	.088	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.019	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.129	.074	.036	.111	.064	.031	.077	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.123	.068	.031	.106	.059	.027	.073	.042	.019	.043	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.039	.017	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.097	.051	.021	.067	.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:2019-04-15

$V(B)$  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:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm										
NAME: GAME-350-12W-840					TYPE:Ceiling light			SERIAL No.:		
SPEC.:4000K					DIM.: $\phi$ 350mm*H78mm					
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	15.7	17.1	16.0	17.3	17.5	15.7	17.1	16.0	17.3	17.5
3H	16.4	17.7	16.7	17.9	18.1	16.4	17.7	16.7	17.9	18.1
4H	16.7	17.9	17.0	18.2	18.4	16.8	18.0	17.1	18.2	18.4
6H	17.1	18.2	17.4	18.4	18.7	17.1	18.2	17.4	18.4	18.7
8H	17.2	18.2	17.5	18.5	18.8	17.1	18.2	17.4	18.4	18.7
12H	17.2	18.3	17.6	18.5	18.8	17.1	18.1	17.4	18.4	18.7
4H 2H	15.9	17.1	16.2	17.4	17.6	15.9	17.1	16.2	17.3	17.6
3H	16.8	17.9	17.2	18.2	18.4	16.9	17.9	17.2	18.2	18.5
4H	17.3	18.2	17.7	18.5	18.9	17.4	18.3	17.7	18.6	18.9
6H	17.8	18.6	18.1	18.9	19.3	17.8	18.7	18.2	19.0	19.4
8H	17.9	18.7	18.4	19.1	19.4	17.9	18.7	18.3	19.1	19.4
12H	18.0	18.7	18.5	19.1	19.5	17.9	18.6	18.3	19.0	19.4
8H 4H	17.5	18.2	17.9	18.6	19.0	17.5	18.3	17.9	18.7	19.0
6H	18.0	18.7	18.5	19.1	19.5	18.2	18.8	18.6	19.2	19.6
8H	18.3	18.9	18.8	19.3	19.7	18.3	18.9	18.8	19.3	19.8
12H	18.5	19.0	19.0	19.4	19.9	18.3	18.8	18.8	19.3	19.7
12H 4H	17.5	18.2	17.9	18.5	18.9	17.5	18.2	18.0	18.6	19.0
6H	18.1	18.7	18.6	19.1	19.5	18.2	18.8	18.7	19.2	19.6
8H	18.4	18.9	18.9	19.3	19.8	18.4	18.9	18.9	19.3	19.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.5 / - 0.6					+ 0.4 / - 0.5				
1.5H	+ 0.4 / - 0.5					+ 0.3 / - 0.4				
2.0H	+ 1.2 / - 0.7					+ 1.1 / - 1.0				

CIE Pub.117, 1556 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 1.5$ )

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Myles  
Test Date:2019-04-15

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:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm		
NAME: GAME-350-12W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\varnothing 350\text{mm} \times H78\text{mm}$	
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) $k(RI) \times RCR = 5$									
$k = 0.60$	65	55	49	65	55	49	64	54	49	43
0.80	75	65	59	74	65	59	73	64	58	52
1.00	83	74	68	82	73	67	80	74	67	61
1.25	90	81	75	88	80	75	86	79	74	67
1.50	94	86	80	93	85	80	90	83	79	72
2.00	100	93	87	98	92	87	95	89	85	78
2.50	103	96	92	101	95	91	97	93	89	81
3.00	106	100	95	104	98	94	100	96	92	84
4.00	109	104	100	107	102	99	103	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

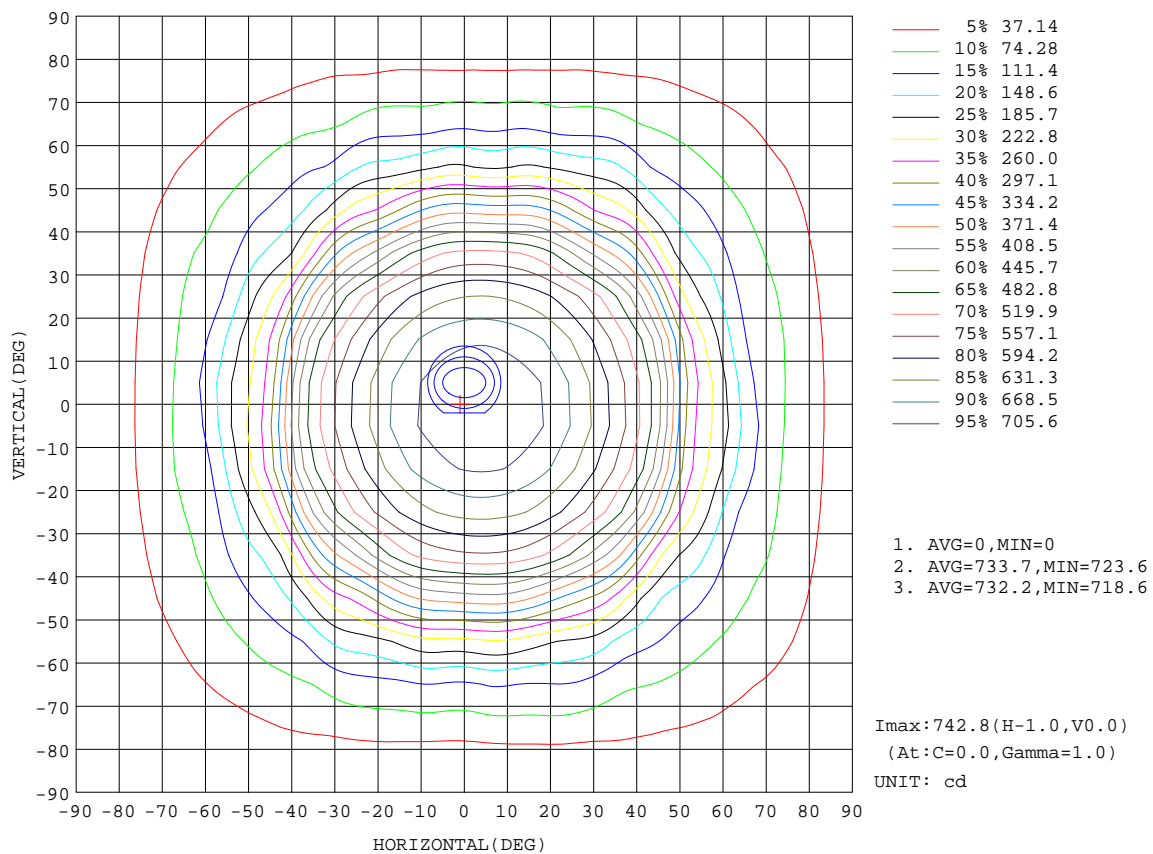
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Remarks:



ISOCANDELA DIAGRAM

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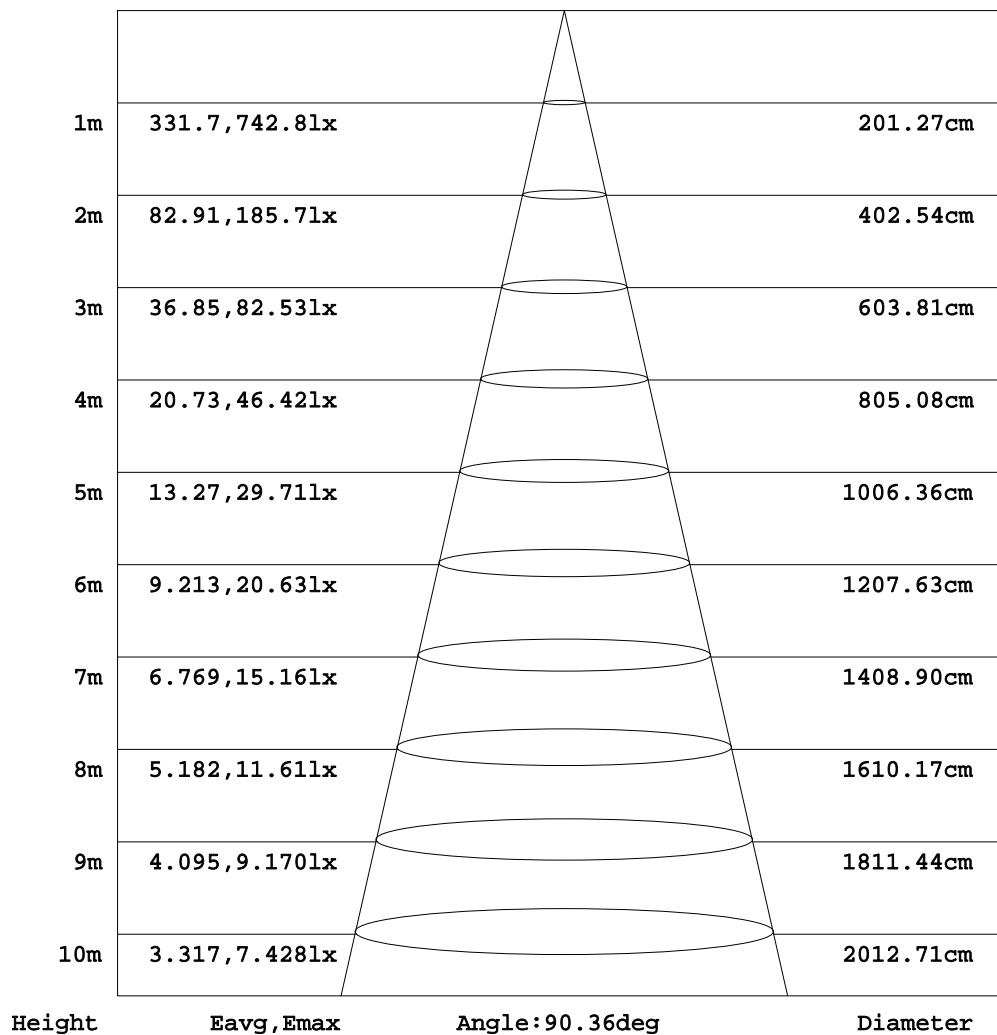
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**AAI Figure**

Test:U:220.9V I:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm		
NAME: GAME-350-12W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 350mm*H78mm	
MFR.: NEKO LIGHTING AG		

Flux out:1079 lm



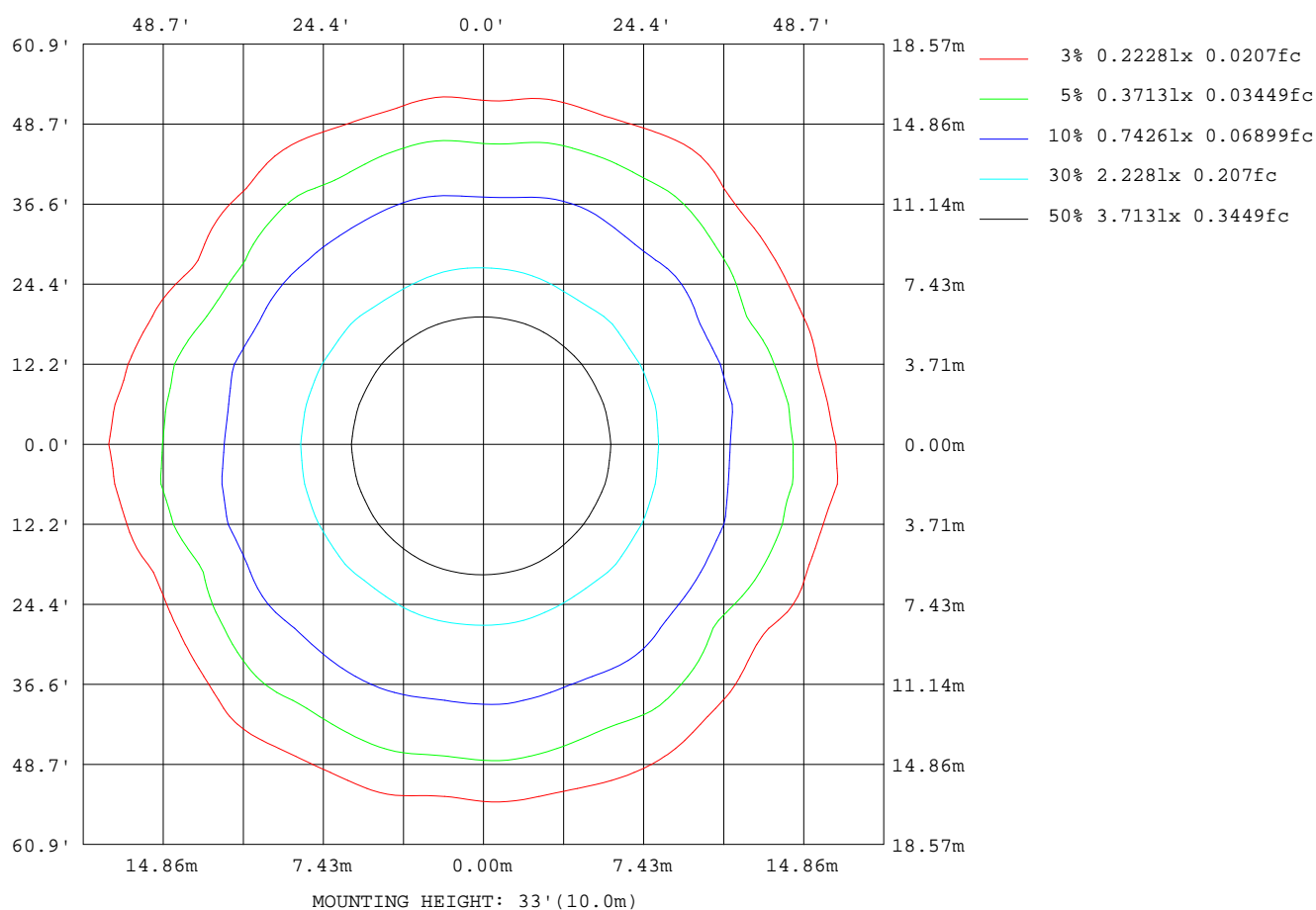
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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**ISOLUX DIAGRAM**

Test:U:220.9V I:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm		
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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:

### LED Avg.L Report

Test:U:220.9V I:0.0625A P:13.31W PF:0.9627 Freq:49.89Hz Lamp Flux:1556x1 lm		
NAME: GAME-350-12W-840	TYPE:Ceiling light	SERIAL No.:
SPEC.:4000K	DIM.: $\phi$ 350mm*H78mm	
MFR.: NEKO LIGHTING AG		

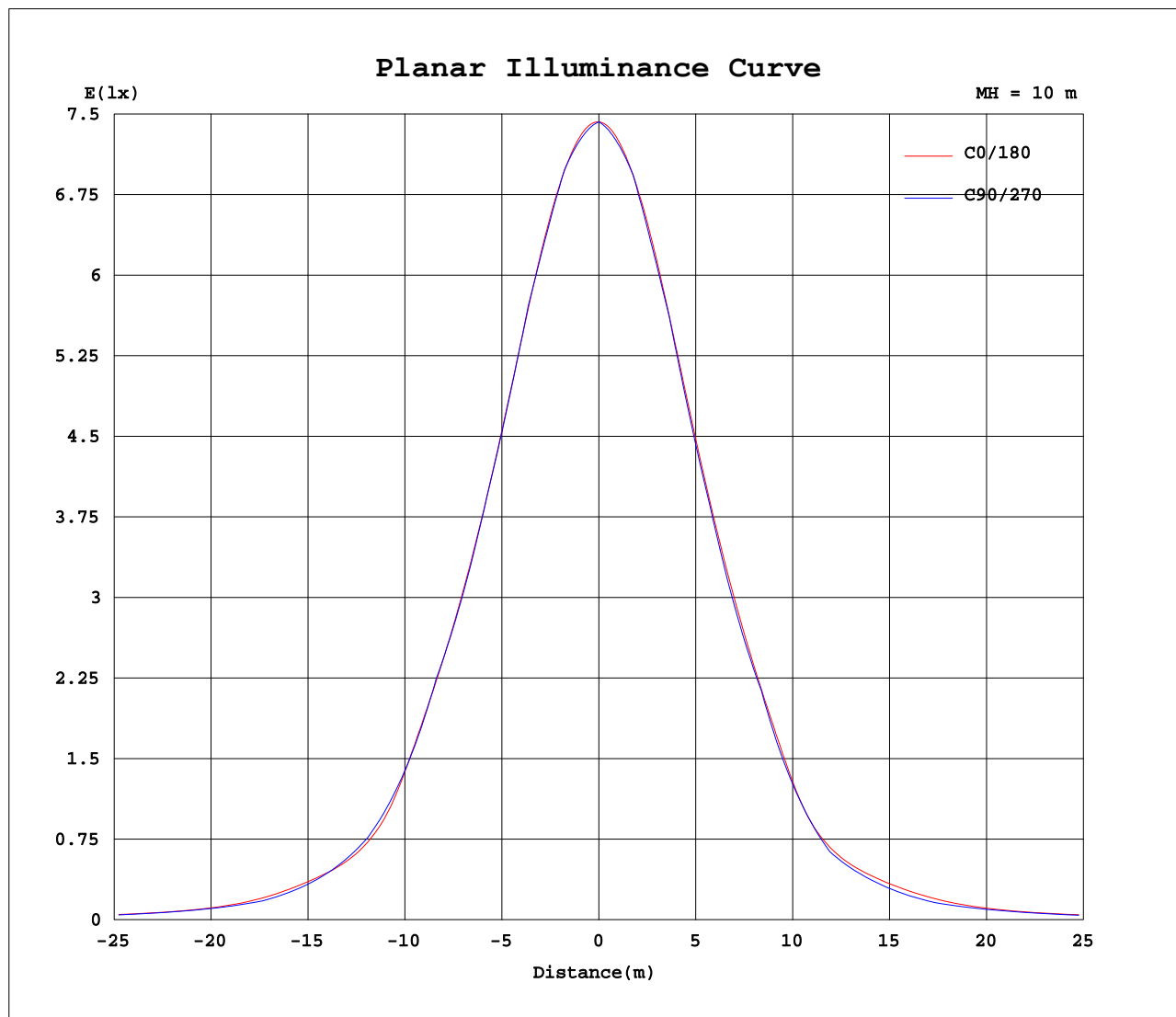
AvgL	cd/m2
L_0~180 (65) av	2711
L_0~180 (75) av	2153
L_0~180 (85) av	1880
L_90~270 (65) av	2556
L_90~270 (75) av	2094
L_90~270 (85) av	0
L_45 (65) av	2561
L_45 (75) av	2112
L_45 (85) av	1141

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:2019-04-15

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:2019-04-15

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: