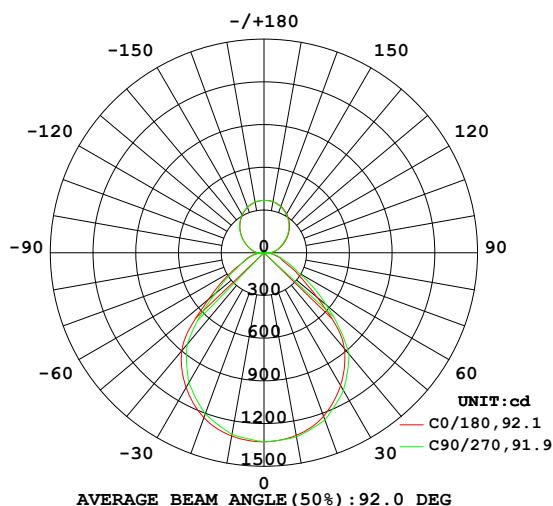


LUMINAIRE PHOTOMETRIC TEST REPORT

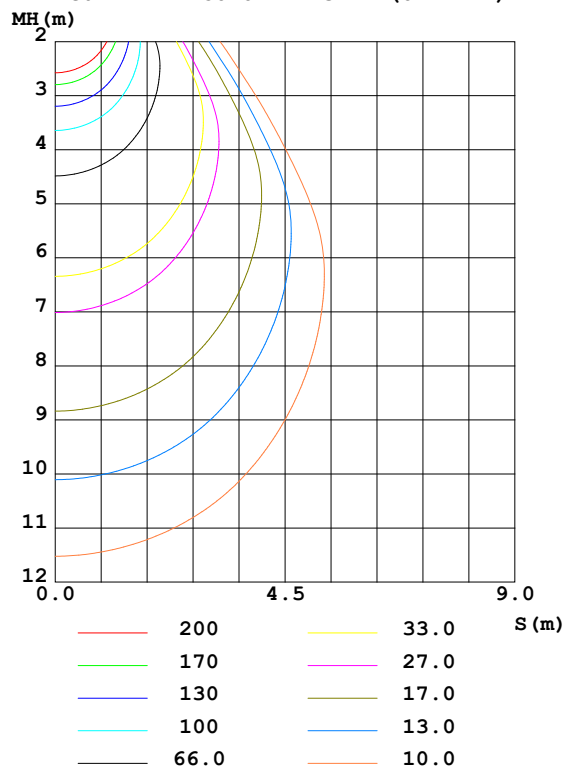
Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi$ 450mm*H78mm	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi$ 450mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 101.09 lm/W			
MODEL	OSRAM-3000K	I <sub>max</sub> (cd)	1328	S/MH (C0/180)	1.23
NOMINAL POWER (W)	39	LOR (%)	100.0	S/MH (C90/270)	1.18
RATED VOLTAGE (V)	220.0	TOTAL FLUX (lm)	3930.9	$\eta$ UP, DN (C0-180)	14.5, 36.8
NOMINAL FLUX (lm)	3930.86	CIE CLASS	SEMI-D.	$\eta$ UP, DN (C180-360)	14.5, 34.2
LAMPS INSIDE	1	$\eta$ up (%)	29.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	220.0	$\eta$ down (%)	71.0	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3DEG  
Operators: Jason Long  
Test Date: 2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 5.850m [K=1.7094]  
Remarks:

# ZONAL FLUX DIAGRAM

## ZONAL FLUX DIAGRAM:

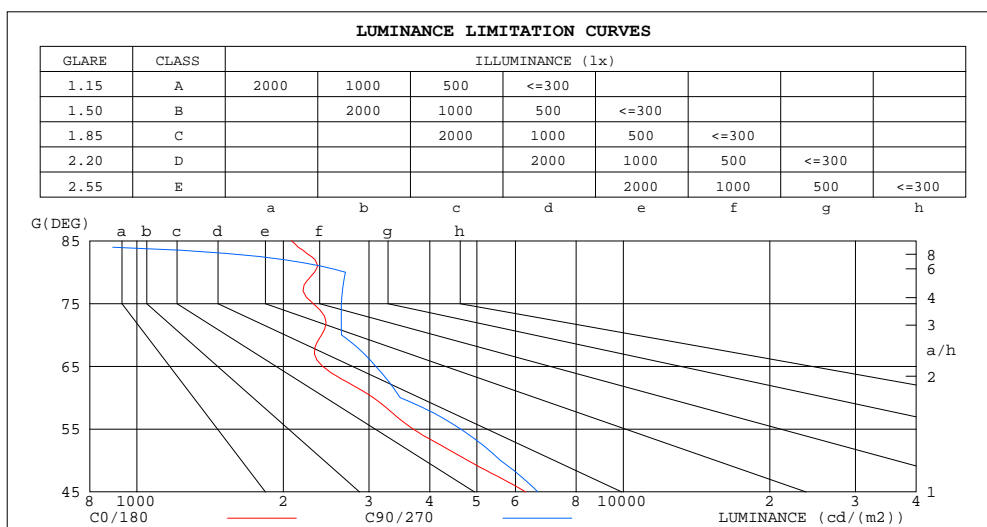
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	1302	1306	1314	1307	1307	1292	1295	1294	0- 10	125.2	125.2	3.19,3.19
20	1222	1238	1250	1232	1233	1201	1205	1209	10- 20	357.9	483.1	12.3,12.3
30	1076	1103	1116	1104	1094	1059	1054	1060	20- 30	533.2	1016	25.9,25.9
40	877.5	910.8	929.5	907.8	897.9	854.4	839.9	832.9	30- 40	616.5	1633	41.5,41.5
50	489.1	587.0	571.0	464.7	507.1	487.1	443.9	377.5	40- 50	530.5	2163	55,55
60	243.3	236.3	276.2	271.0	253.2	214.0	218.1	232.6	50- 60	313.6	2477	63,63
70	130.3	154.0	143.2	152.4	134.8	127.0	121.3	134.7	60- 70	179.8	2657	67.6,67.6
80	63.99	72.22	74.06	75.17	69.82	57.70	54.45	60.22	70- 80	106.1	2763	70.3,70.3
90	47.53	32.57	45.01	43.20	43.14	42.08	44.05	46.57	80- 90	28.25	2791	71,71
100	83.19	67.60	78.82	77.24	76.38	76.31	77.33	81.34	90-100	64.20	2855	72.6,72.6
110	127.3	117.6	119.7	116.2	115.2	115.5	116.6	122.5	100-110	102.6	2958	75.2,75.2
120	176.4	173.5	169.4	163.9	162.5	162.9	165.1	172.6	110-120	141.2	3099	78.8,78.8
130	228.5	226.2	221.7	215.8	214.0	214.6	217.5	224.9	120-130	174.0	3273	83.3,83.3
140	276.9	274.7	270.5	264.9	263.2	263.8	266.8	273.7	130-140	189.4	3462	88.1,88.1
150	317.5	315.6	312.2	307.2	305.8	306.3	309.2	314.9	140-150	182.2	3645	92.7,92.7
160	347.4	346.1	343.7	340.1	339.1	339.4	341.6	345.5	150-160	151.3	3796	96.6,96.6
170	364.7	364.1	362.9	360.8	360.5	360.6	361.9	364.0	160-170	99.98	3896	99.1,99.1
180	368.3	368.3	368.3	368.3	368.3	368.3	368.3	368.3	170-180	34.89	3931	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
 $\gamma$  Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

**LUMINANCE LIMITATION CURVES**

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi 450\text{mm} \times \text{H}78\text{mm}$	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi 450\text{mm}$	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	2078	0
80	2319	2684
75	2302	2632
70	2397	2634
65	2408	3097
60	3063	3477
55	3697	4629
50	4789	5590
45	6293	6671

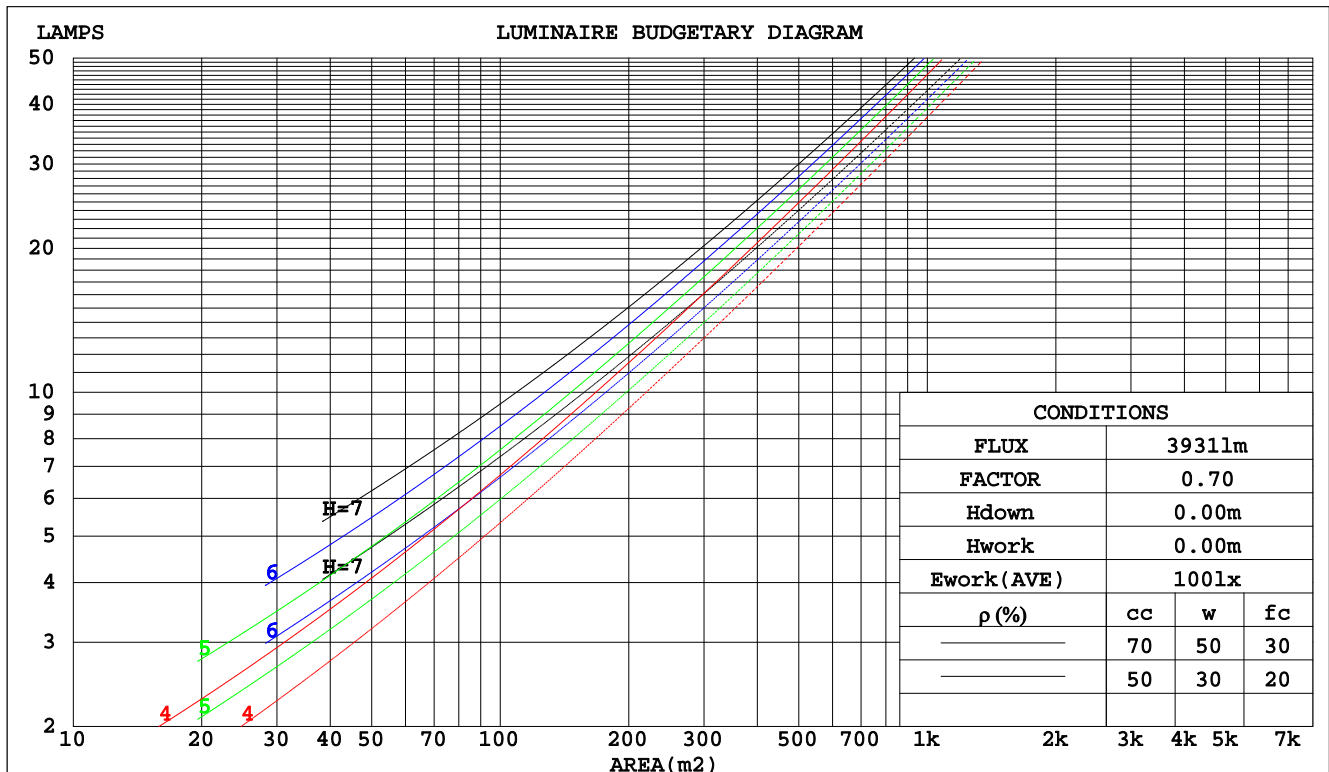
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi$ 450mm*H78mm	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi$ 450mm	Shielding Angle:

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	1.12	1.12	1.12	1.06	1.06	1.06	.95	.95	.95	.85	.85	.85	.75	.75	.75	.71
1.0	.00	.96	.93	.94	.91	.88	.85	.83	.80	.76	.75	.73	.68	.67	.66	.62
2.0	.88	.82	.78	.84	.79	.75	.76	.72	.68	.68	.65	.63	.62	.59	.57	.54
3.0	.79	.72	.66	.75	.69	.64	.68	.63	.59	.62	.58	.54	.56	.53	.50	.47
4.0	.70	.63	.57	.67	.60	.55	.61	.56	.51	.56	.51	.48	.50	.47	.44	.41
5.0	.63	.56	.50	.61	.54	.48	.55	.50	.45	.51	.46	.42	.46	.42	.39	.36
6.0	.57	.50	.44	.55	.48	.43	.50	.44	.40	.46	.41	.37	.42	.38	.35	.33
7.0	.52	.44	.39	.50	.43	.38	.46	.40	.36	.42	.37	.34	.39	.35	.31	.29
8.0	.48	.40	.35	.46	.39	.34	.42	.36	.32	.39	.34	.30	.36	.32	.28	.26
9.0	.44	.37	.32	.42	.35	.31	.39	.33	.29	.36	.31	.27	.33	.29	.26	.24
10.0	.41	.33	.29	.39	.32	.28	.36	.30	.26	.33	.29	.25	.31	.27	.24	.22



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

## WEC AND CCEC

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi$ 450mm*H78mm	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi$ 450mm	Shielding Angle:

$\rho_{cc}$	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	.244	.139	.044	.215	.123	.039	.187	.108	.035	.163	.094	.030		
2.0	.245	.134	.041	.231	.127	.039	.205	.114	.035	.180	.101	.032	.158	.089	.028		
3.0	.229	.122	.037	.217	.116	.035	.193	.104	.032	.170	.093	.029	.150	.083	.026		
4.0	.214	.111	.033	.203	.106	.031	.181	.096	.029	.160	.086	.026	.141	.077	.023		
5.0	.200	.102	.030	.190	.097	.028	.170	.088	.026	.151	.080	.024	.133	.071	.021		
6.0	.188	.094	.027	.178	.090	.026	.159	.082	.024	.142	.074	.022	.126	.066	.020		
7.0	.176	.087	.025	.167	.083	.024	.150	.076	.022	.134	.069	.020	.119	.062	.018		
8.0	.166	.081	.023	.157	.077	.022	.142	.071	.020	.127	.064	.019	.113	.058	.017		
9.0	.156	.076	.021	.149	.072	.020	.134	.066	.019	.120	.060	.017	.107	.054	.016		
10.0	.148	.071	.020	.141	.068	.019	.127	.062	.018	.114	.057	.016	.102	.051	.015		

$\rho_{cc}$	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	.411	.411	.411	.352	.352	.352	.240	.240	.240	.138	.138	.138	.044	.044	.044	
1.0	.400	.379	.361	.342	.326	.311	.234	.224	.215	.135	.130	.125	.043	.042	.040	
2.0	.390	.356	.328	.334	.307	.283	.229	.212	.198	.132	.123	.116	.042	.040	.038	
3.0	.382	.339	.305	.328	.293	.265	.225	.203	.186	.130	.119	.110	.042	.039	.036	
4.0	.375	.327	.290	.322	.282	.252	.221	.197	.177	.128	.115	.105	.041	.038	.035	
5.0	.368	.317	.279	.316	.274	.243	.218	.191	.171	.126	.112	.102	.041	.037	.034	
6.0	.361	.309	.271	.311	.267	.236	.214	.187	.167	.124	.110	.099	.040	.036	.033	
7.0	.355	.302	.265	.306	.262	.231	.211	.184	.164	.123	.108	.097	.040	.035	.032	
8.0	.350	.297	.260	.301	.257	.227	.208	.181	.161	.121	.107	.096	.039	.035	.032	
9.0	.344	.292	.257	.297	.253	.224	.206	.178	.159	.120	.105	.095	.039	.035	.031	
10.0	.339	.288	.254	.293	.250	.221	.203	.176	.157	.118	.104	.094	.038	.034	.031	

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

## UGR(Unified Glare Rating) Table

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm										
NAME: GAME 450-U-36W-830					TYPE:Ceiling light			WEIGHT:		
SPEC.:3000K					DIM.: $\phi$ 450mm*H78mm			SERIAL No.:		
MFR.: NEKO LIGHTING AG					SUR.: $\phi$ 450mm			Shielding Angle:		
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	12.0	11.6	12.6	13.3	11.4	12.5	12.0	13.1	13.8
3H	11.4	12.4	12.1	13.0	13.8	12.1	13.0	12.7	13.7	14.4
4H	11.8	12.7	12.5	13.3	14.1	12.3	13.2	13.0	13.9	14.7
6H	12.0	12.8	12.7	13.5	14.3	12.6	13.4	13.3	14.1	14.9
8H	12.1	12.9	12.8	13.6	14.4	12.6	13.4	13.3	14.1	14.9
12H	12.1	12.9	12.9	13.6	14.4	12.6	13.3	13.3	14.0	14.9
4H 2H	11.1	11.9	11.7	12.6	13.4	11.5	12.4	12.2	13.0	13.8
3H	11.8	12.5	12.5	13.2	14.1	12.3	13.1	13.0	13.8	14.6
4H	12.2	12.9	13.0	13.7	14.5	12.8	13.4	13.5	14.2	15.0
6H	12.6	13.2	13.4	14.0	14.9	13.2	13.8	14.0	14.6	15.5
8H	12.8	13.4	13.6	14.2	15.1	13.3	13.8	14.1	14.6	15.5
12H	12.9	13.4	13.7	14.2	15.2	13.2	13.7	14.0	14.5	15.5
8H 4H	12.4	12.9	13.1	13.7	14.6	12.8	13.4	13.6	14.1	15.1
6H	12.9	13.4	13.7	14.2	15.1	13.4	13.9	14.2	14.7	15.6
8H	13.2	13.6	14.0	14.4	15.4	13.6	14.0	14.4	14.8	15.8
12H	13.4	13.7	14.3	14.6	15.6	13.5	13.9	14.4	14.7	15.7
12H 4H	12.3	12.8	13.1	13.6	14.6	12.8	13.3	13.6	14.1	15.0
6H	12.9	13.3	13.8	14.2	15.2	13.4	13.8	14.3	14.6	15.6
8H	13.3	13.6	14.1	14.5	15.5	13.6	13.9	14.5	14.8	15.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.7					+ 0.5 / - 0.4				
1.5H	+ 0.3 / - 0.5					+ 0.3 / - 0.4				
2.0H	+ 1.0 / - 1.0					+ 0.9 / - 0.9				

CIE Pub.117, 3931 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 4.8$ )

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi$ 450mm*H78mm	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi$ 450mm	Shielding Angle:

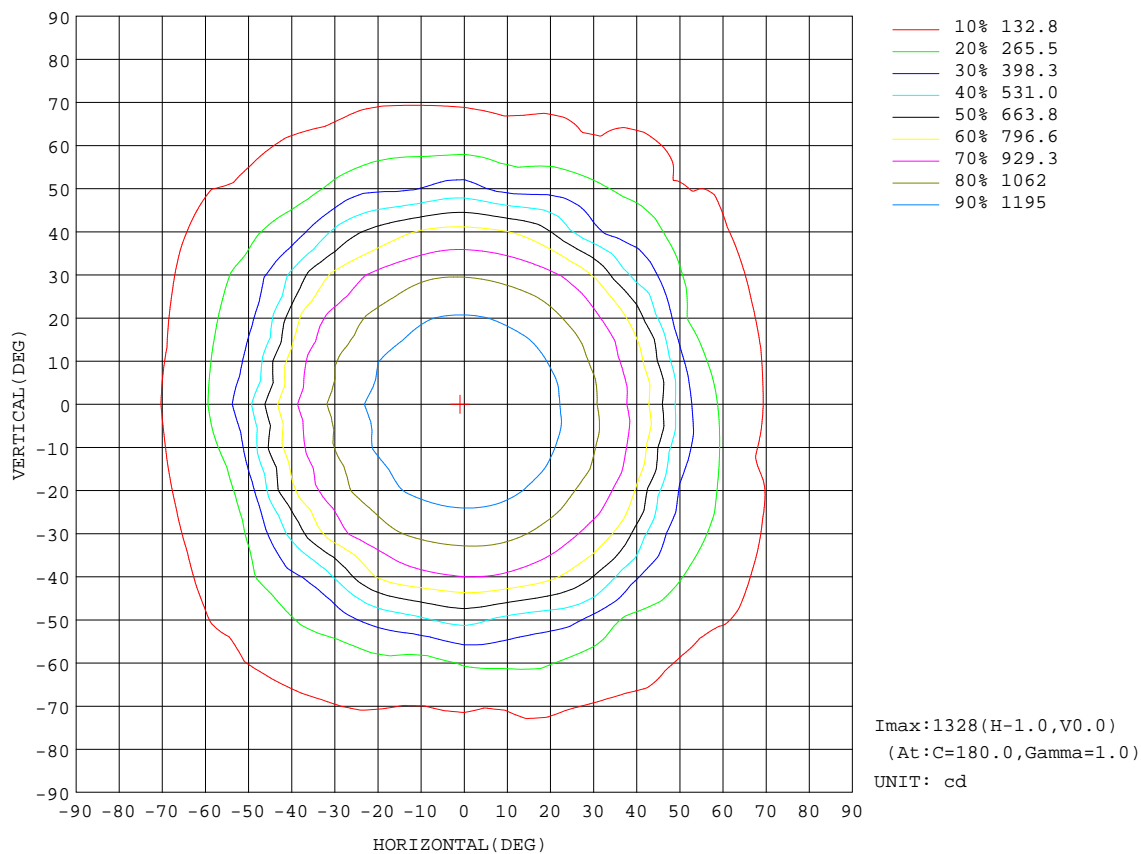
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	55	45	39	54	44	38	51	42	37	31
0.80	65	54	48	63	53	47	59	51	45	37
1.00	72	62	56	70	61	55	65	59	52	43
1.25	79	69	63	76	67	61	70	63	58	48
1.50	84	74	68	80	72	66	74	67	63	51
2.00	90	82	76	86	79	73	79	73	69	56
2.50	93	86	80	89	83	78	81	76	72	58
3.00	96	90	85	92	86	82	83	79	76	60
4.00	100	95	90	95	90	86	86	83	80	62
5.00	102	98	94	97	93	90	88	85	82	64
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

**ISOCANDELA DIAGRAM**

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi$ 450mm*H78mm	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi$ 450mm	Shielding Angle:



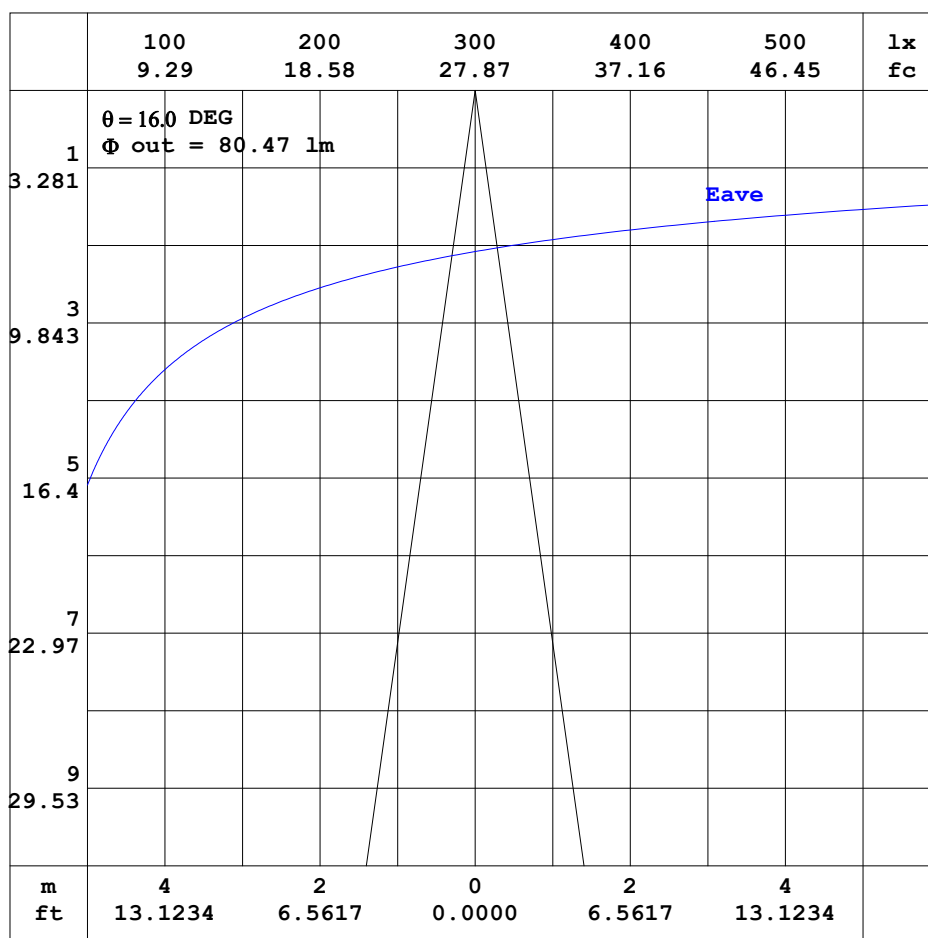
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:



AAI CURVES

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi$ 450mm*H78mm	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi$ 450mm	Shielding Angle:



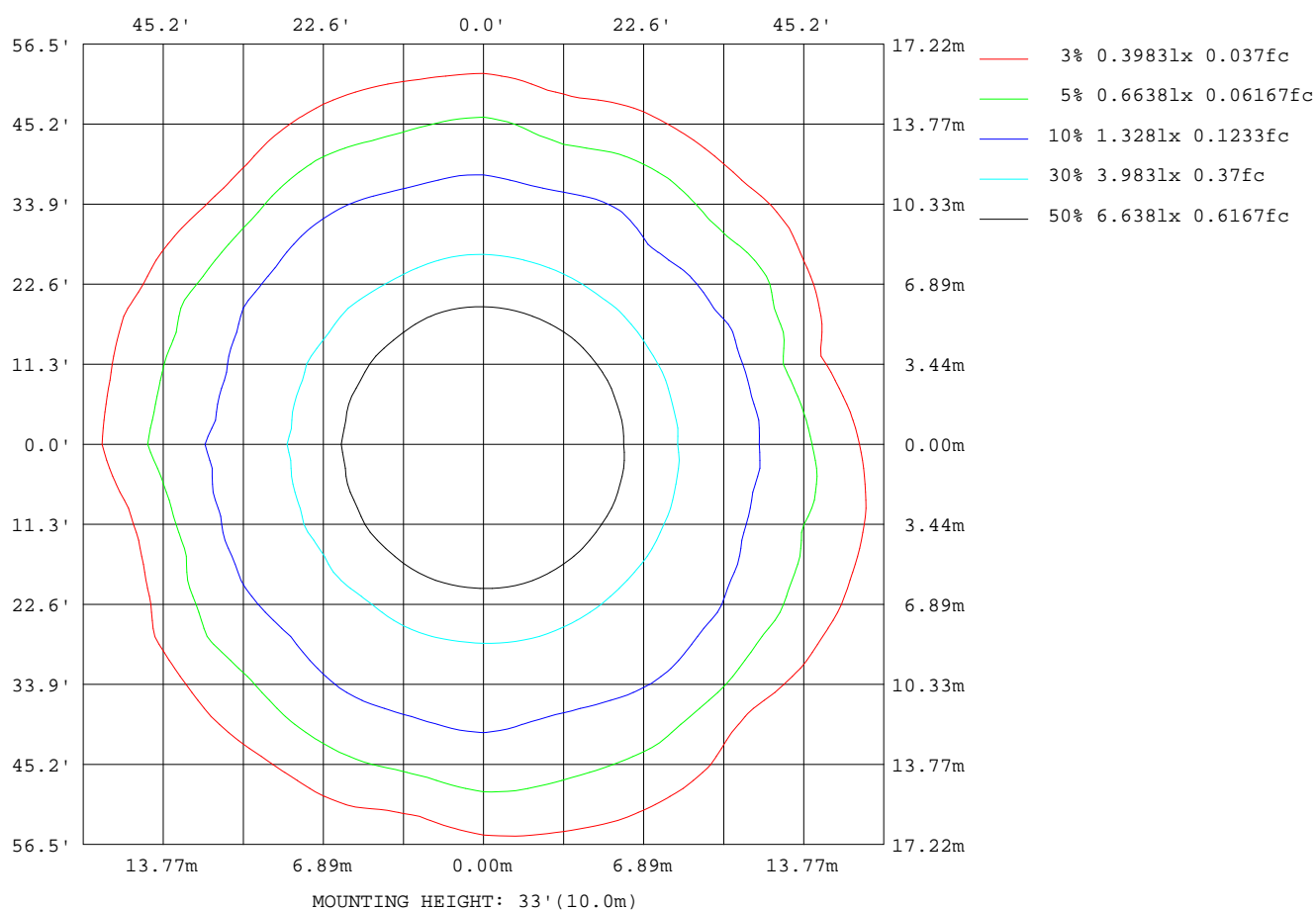
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

**ISOLUX DIAGRAM**

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi$ 450mm*H78mm	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi$ 450mm	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

### LED Avg.L Report

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm		
NAME: GAME 450-U-36W-830	TYPE:Ceiling light	WEIGHT:
SPEC.:3000K	DIM.: $\phi$ 450mm*H78mm	SERIAL No.:
MFR.: NEKO LIGHTING AG	SUR.: $\phi$ 450mm	Shielding Angle:

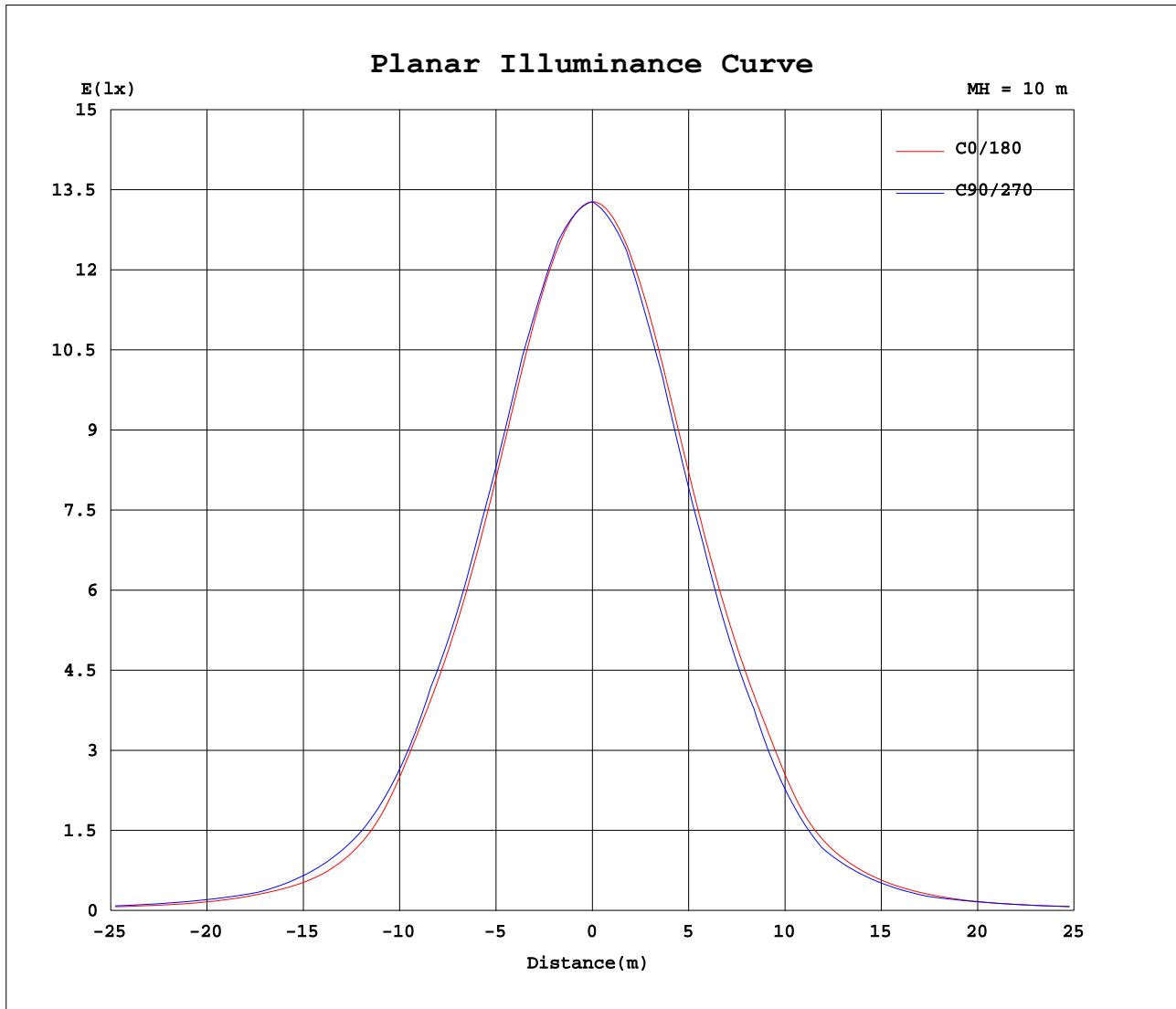
AvgL	cd/m2
L_0~180 (65) av	2455
L_0~180 (75) av	2377
L_0~180 (85) av	2252
L_90~270 (65) av	2814
L_90~270 (75) av	2394
L_90~270 (85) av	0
L_45 (65) av	2799
L_45 (75) av	2427
L_45 (85) av	1393

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

### Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3DEG  
Operators: Jason Long  
Test Date: 2019-11-15

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity: 65.0%  
Test Distance: 5.850m [K=1.7094]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm																	
NAME: GAME 450-U-36W-830									TYPE:Ceiling light						WEIGHT:		
SPEC.:3000K									DIM.: φ450mm*H78mm						SERIAL No.:		
MFR.: NEKO LIGHTING AG									SUR.:φ450mm						Shielding Angle:		

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328
5	1320	1320	1320	1319	1319	1319	1319	1319	1320	1320	1320	1320	1320	1320	1321	1321	1321	1321	1321
10	1302	1302	1302	1302	1303	1304	1305	1305	1305	1306	1307	1307	1308	1309	1310	1311	1312	1313	1314
15	1271	1271	1273	1275	1277	1276	1277	1279	1281	1281	1280	1280	1280	1281	1281	1281	1282	1282	1282
20	1222	1224	1228	1232	1232	1233	1235	1235	1237	1238	1239	1239	1240	1242	1244	1246	1247	1249	1250
25	1155	1160	1169	1169	1169	1171	1174	1179	1177	1177	1180	1182	1184	1185	1185	1185	1185	1183	1183
30	1076	1085	1094	1093	1095	1100	1101	1098	1099	1103	1107	1111	1112	1114	1116	1117	1117	1117	1116
35	984	999	1005	1006	1014	1015	1010	1012	1017	1018	1019	1022	1025	1027	1029	1030	1028	1025	1022
40	878	899	897	903	912	906	912	916	911	911	913	919	923	925	928	931	933	933	929
45	707	741	706	739	719	753	771	776	777	781	780	787	785	769	752	742	743	749	750
50	489	501	474	480	485	529	538	582	579	587	606	608	588	557	532	520	527	552	571
55	337	363	364	342	367	371	391	379	382	403	403	403	409	402	398	399	408	421	422
60	243	256	274	287	286	287	282	280	257	236	262	292	303	308	310	302	293	287	276
65	162	157	169	194	200	189	191	188	197	197	196	191	205	225	236	228	215	212	208
70	130	131	138	150	149	137	134	137	140	154	151	150	156	161	166	162	143	136	143
75	94.7	106	110	111	110	113	112	105	108	108	105	109	113	117	123	121	108	106	108
80	64.0	68.5	75.4	78.3	75.3	73.4	69.0	71.6	73.6	72.2	72.8	74.9	76.6	80.2	86.0	86.1	79.4	74.8	74.1
85	28.8	30.0	34.4	35.3	41.7	40.0	39.0	32.5	25.4	20.8	17.1	13.6	10.2	7.50	5.19	2.94	1.21	0.28	0.00
90	47.5	40.4	35.1	31.7	31.1	31.6	32.7	32.7	32.6	32.6	32.6	33.0	33.9	35.8	0.00	0.00	42.3	43.9	45.0
95	62.9	58.7	55.4	52.9	51.9	51.4	51.2	50.3	49.5	48.7	48.1	47.8	48.1	49.6	51.6	54.0	56.5	58.9	60.8
100	83.2	79.0	75.7	73.1	71.7	70.8	70.3	69.3	68.4	67.6	66.5	65.8	65.8	68.0	70.7	73.6	75.8	77.6	78.8
105	105	103	100	98.1	96.5	95.1	93.9	92.5	91.2	90.2	89.5	89.4	89.9	92.3	95.1	97.6	98.4	98.6	98.4
110	127	125	124	122	121	120	119	119	118	118	117	116	116	117	119	121	121	120	120
115	151	151	150	149	147	145	143	141	141	140	142	144	145	146	145	145	144	144	144
120	176	177	177	176	176	176	175	175	174	173	173	173	173	172	171	170	170	170	169
125	203	203	203	203	203	203	202	202	201	200	200	200	200	199	198	197	196	196	196
130	228	229	229	229	229	229	228	228	227	226	226	226	226	225	224	223	222	222	222
135	253	254	254	254	254	254	253	253	252	251	251	251	251	250	249	248	247	247	247
140	277	277	277	277	277	277	277	276	275	275	275	274	274	273	272	272	271	271	270
145	298	299	299	299	299	299	298	298	297	296	296	296	296	295	294	293	293	293	292
150	317	318	318	318	318	318	317	317	316	316	315	315	315	314	314	313	313	312	312
155	334	334	334	334	334	334	334	333	333	332	332	332	332	331	331	330	330	329	329
160	347	347	348	348	348	348	347	347	347	346	346	346	346	345	345	344	344	344	344
165	358	358	358	358	358	358	358	357	357	357	357	357	357	356	356	355	355	355	355
170	365	365	365	365	365	365	365	364	364	364	364	364	364	364	364	363	363	363	363
175	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	367	367	367
180	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm																		
NAME: GAME 450-U-36W-830									TYPE:Ceiling light					WEIGHT:				
SPEC.:3000K									DIM.: φ450mm*H78mm					SERIAL No.:				
MFR.: NEKO LIGHTING AG									SUR.:φ450mm					Shielding Angle:				

Table--2

UNIT: cd

C (DEG) γ (DEG)	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328
5	1321	1321	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1321	1321	1321	1322	1323	1321
10	1314	1314	1314	1313	1312	1311	1310	1309	1307	1305	1304	1302	1302	1302	1302	1303	1305	1307	1303
15	1281	1281	1281	1281	1281	1281	1282	1283	1286	1287	1283	1278	1274	1270	1270	1272	1274	1278	1272
20	1250	1249	1248	1246	1243	1240	1237	1234	1232	1233	1236	1240	1235	1227	1220	1221	1226	1233	1223
25	1181	1181	1180	1180	1180	1182	1185	1187	1179	1172	1164	1167	1171	1170	1159	1152	1160	1170	1156
30	1115	1114	1112	1109	1106	1103	1100	1101	1104	1109	1100	1087	1084	1092	1088	1075	1079	1094	1077
35	1018	1016	1015	1016	1018	1021	1028	1020	1010	1003	1008	1012	994	989	1002	986	984	1004	983
40	925	922	919	918	913	901	886	886	908	904	880	882	905	877	880	883	868	898	860
45	741	733	734	745	758	762	735	692	676	705	733	697	711	730	687	727	670	722	638
50	563	544	532	536	546	543	522	493	465	479	496	508	487	488	462	480	466	507	451
55	400	377	373	382	385	381	374	358	347	355	370	342	325	287	287	295	323	367	348
60	253	227	236	264	268	260	257	267	271	261	246	254	228	219	208	218	237	253	251
65	190	174	182	197	192	177	172	194	204	183	160	165	180	171	172	176	176	168	163
70	141	134	137	148	151	146	145	150	152	145	136	133	138	131	122	122	128	135	131
75	105	102	103	109	116	116	115	107	104	109	108	109	99.5	100	94.5	90.7	92.9	101	99.5
80	71.7	71.7	70.5	71.4	80.2	84.2	86.5	77.5	75.2	79.1	76.8	76.0	66.9	64.4	63.5	57.6	60.3	69.8	66.5
85	0.27	1.09	2.39	4.27	7.61	11.7	17.0	19.9	24.5	32.6	36.2	40.8	38.3	33.4	31.4	26.0	20.9	33.6	27.7
90	45.3	45.2	0.00	0.00	44.1	43.7	43.5	43.3	43.2	43.2	43.2	43.2	43.3	43.4	43.5	43.4	43.3	43.1	42.8
95	61.1	60.9	60.5	60.4	60.3	60.2	60.0	59.8	59.6	59.6	59.7	59.8	59.6	59.5	59.3	59.3	59.4	59.3	59.1
100	78.9	78.6	78.1	78.0	77.9	77.7	77.6	77.4	77.2	77.2	77.1	77.1	76.9	76.7	76.5	76.4	76.4	76.4	76.2
105	98.2	97.8	97.3	97.0	96.8	96.6	96.4	96.2	96.1	95.9	95.8	95.6	95.4	95.2	95.1	95.0	95.0	95.0	94.8
110	119	119	118	118	117	117	117	116	116	116	116	116	116	115	115	115	115	115	115
115	143	142	141	141	141	141	140	139	138	138	139	139	138	138	137	137	138	138	138
120	169	168	167	167	166	166	165	165	164	164	164	164	163	162	162	162	162	162	162
125	195	194	193	193	193	192	191	191	190	190	190	190	189	188	188	188	188	188	188
130	221	220	219	219	218	218	217	217	216	216	216	216	215	214	214	214	214	214	214
135	246	245	244	244	244	243	243	242	241	241	241	241	240	239	239	239	239	239	239
140	270	269	268	268	268	267	266	266	265	265	265	265	264	263	263	263	263	263	263
145	292	291	290	290	290	289	289	288	287	287	287	287	286	286	285	285	285	286	286
150	311	311	310	310	310	309	309	308	307	307	307	307	306	306	305	305	306	306	306
155	329	328	327	327	327	327	326	326	325	325	325	325	324	324	323	323	324	324	324
160	343	343	342	342	342	342	341	341	340	340	340	340	339	339	339	339	339	339	339
165	355	354	354	353	353	353	353	352	352	352	352	352	352	351	351	351	351	351	351
170	363	362	362	362	362	362	361	361	361	361	361	361	361	360	360	360	360	361	361
175	367	367	367	367	367	367	367	366	366	366	366	366	366	366	366	366	366	366	366
180	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm																		
NAME: GAME 450-U-36W-830									TYPE:Ceiling light					WEIGHT:				
SPEC.:3000K									DIM.: φ450mm*H78mm					SERIAL No.:				
MFR.: NEKO LIGHTING AG									SUR.:φ450mm					Shielding Angle:				

Table--3

UNIT: cd

C (DEG) γ (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328
5	1320	1318	1317	1316	1315	1314	1313	1312	1312	1312	1311	1311	1311	1311	1311	1311	1311	1311	1312
10	1300	1297	1294	1292	1291	1291	1291	1292	1292	1293	1293	1294	1294	1295	1295	1295	1295	1295	1295
15	1266	1261	1259	1260	1262	1264	1266	1263	1258	1255	1253	1252	1251	1250	1250	1250	1250	1251	1251
20	1214	1210	1212	1217	1219	1211	1205	1201	1200	1202	1203	1204	1205	1206	1206	1206	1205	1205	1203
25	1146	1148	1155	1151	1141	1134	1137	1141	1145	1142	1138	1136	1134	1133	1132	1131	1130	1130	1130
30	1069	1079	1077	1063	1059	1065	1068	1059	1053	1051	1055	1058	1060	1060	1058	1056	1054	1051	1050
35	983	997	977	974	982	970	958	958	965	972	961	953	950	949	949	949	948	946	944
40	874	864	855	881	857	845	854	854	833	819	816	819	826	835	841	843	840	835	830
45	678	628	672	674	678	711	682	666	674	678	671	657	643	635	636	643	644	634	621
50	445	435	451	464	495	473	471	487	499	497	490	468	440	427	433	447	444	414	387
55	342	342	334	354	333	323	316	311	326	336	342	334	322	318	320	328	332	317	289
60	252	253	259	240	242	231	224	214	220	228	236	242	244	239	226	218	218	209	196
65	182	189	175	166	161	165	166	166	163	158	162	174	183	184	177	172	170	164	151
70	133	137	138	134	123	123	124	127	125	124	129	134	135	132	129	126	121	114	108
75	100	101	101	95.5	96.1	90.8	92.1	96.2	92.4	91.0	96.3	98.9	97.9	96.6	95.8	92.2	88.7	83.8	79.9
80	71.0	69.1	69.6	65.7	62.0	58.5	57.7	57.7	57.6	58.2	62.0	64.3	62.8	64.0	63.1	57.8	54.4	51.4	52.1
85	32.7	32.8	29.7	29.2	27.5	23.6	18.9	14.9	12.5	10.3	8.20	5.94	3.75	2.16	0.96	0.22	0.00	0.19	0.79
90	42.5	42.1	42.0	42.0	42.0	42.0	42.0	42.1	42.1	42.1	42.2	42.6	43.0	43.5	43.7	43.9	44.1	44.3	44.6
95	58.9	58.7	58.6	58.5	58.5	58.7	58.8	59.0	59.0	58.9	58.9	59.1	59.3	59.6	59.7	59.8	59.9	60.2	60.5
100	76.0	75.9	75.9	76.0	76.1	76.2	76.2	76.3	76.4	76.4	76.5	76.7	76.8	77.0	77.0	77.2	77.3	77.6	77.9
105	94.7	94.6	94.7	94.8	95.0	95.1	95.1	95.1	95.1	95.2	95.3	95.4	95.6	95.7	95.8	95.9	96.1	96.4	96.8
110	115	115	115	115	115	115	115	115	116	116	116	116	116	116	116	116	117	117	118
115	138	137	137	137	137	137	138	138	138	138	138	138	138	139	139	139	139	140	141
120	162	162	162	162	162	162	163	163	163	163	163	163	164	164	165	165	165	166	167
125	188	187	187	187	187	188	188	189	189	189	189	189	190	191	191	191	191	192	193
130	214	213	213	213	213	214	214	215	215	215	215	215	216	217	217	217	217	218	219
135	239	238	238	238	238	239	239	240	240	240	240	240	241	242	242	242	243	244	245
140	263	263	262	262	263	263	263	264	264	264	264	265	265	266	266	267	267	268	269
145	285	285	285	285	285	285	286	286	286	286	286	287	288	288	289	289	289	290	291
150	306	306	305	305	305	306	306	306	306	307	307	307	308	308	309	309	309	310	311
155	324	323	323	323	323	324	324	324	324	324	324	325	325	326	326	327	327	327	328
160	339	339	339	339	339	339	339	339	339	339	340	340	341	341	341	341	342	342	343
165	351	351	351	351	351	351	351	352	352	352	352	352	353	353	353	353	353	354	354
170	360	360	360	360	360	360	361	361	361	361	361	361	361	361	362	362	362	362	362
175	366	366	366	366	366	366	366	366	366	366	366	367	367	367	367	367	367	367	367
180	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.5V I:0.1764A P:38.89W PF:0 Freq:0Hz Lamp Flux:3930.86x1 lm																	
NAME: GAME 450-U-36W-830									TYPE:Ceiling light						WEIGHT:		
SPEC.:3000K									DIM.: φ450mm*H78mm						SERIAL No.:		
MFR.: NEKO LIGHTING AG									SUR.:φ450mm						Shielding Angle:		

Table--4

UNIT: cd

C (DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328	1328				
5	1312	1312	1312	1313	1313	1313	1314	1314	1315	1315	1316	1317	1317	1318	1319				
10	1295	1295	1295	1294	1294	1294	1294	1295	1296	1297	1297	1297	1298	1299	1300				
15	1252	1253	1254	1255	1257	1259	1262	1264	1263	1263	1265	1267	1267	1268	1269				
20	1202	1202	1201	1202	1203	1206	1209	1210	1211	1213	1214	1216	1221	1221	1220				
25	1130	1131	1132	1133	1136	1138	1140	1143	1148	1146	1146	1147	1152	1157	1155				
30	1048	1048	1049	1052	1056	1059	1060	1060	1062	1067	1069	1067	1069	1078	1077				
35	944	944	947	953	963	965	967	969	966	968	976	978	973	983	988				
40	825	822	819	814	812	813	833	836	840	842	856	867	865	869	885				
45	621	633	643	623	581	582	614	627	609	640	671	678	708	692	732				
50	388	416	449	459	436	403	378	421	444	444	476	454	453	460	494				
55	279	293	311	317	320	312	308	316	333	340	307	297	250	284	312				
60	203	218	220	218	224	230	233	235	236	214	217	212	203	211	234				
65	155	164	154	137	138	170	185	170	134	147	160	168	166	170	173				
70	114	122	123	118	118	130	135	130	125	123	129	125	121	120	128				
75	82.4	86.1	90.6	91.8	92.0	86.6	91.9	98.7	102	91.7	89.6	91.8	93.9	92.9	93.6				
80	52.2	52.5	57.1	59.1	62.8	60.5	60.2	65.3	66.1	65.7	60.5	56.0	60.2	61.3	62.3				
85	1.76	3.10	5.24	7.76	11.5	14.1	17.0	21.7	24.5	27.5	28.3	27.8	27.3	29.1	33.2				
90	44.9	45.0	45.2	45.4	45.7	46.1	46.6	47.0	47.4	47.9	48.6	49.2	49.6	49.3	48.6				
95	60.8	61.0	61.2	61.5	62.0	62.5	63.1	63.5	63.9	64.4	65.2	65.9	66.2	65.7	64.6				
100	78.3	78.7	79.1	79.6	80.1	80.7	81.3	81.9	82.5	83.1	83.7	84.3	84.6	84.5	84.0				
105	97.3	97.9	98.4	99.0	99.7	100	101	102	102	103	104	104	105	105	105				
110	118	119	119	120	121	122	122	123	124	125	125	126	127	127	127				
115	142	142	143	143	144	146	147	147	148	148	149	150	151	151	151				
120	168	168	169	169	170	172	173	173	174	174	175	176	177	177	177				
125	194	195	195	196	197	198	199	199	200	200	201	202	203	203	203				
130	220	221	221	222	223	224	225	225	226	226	227	228	229	229	229				
135	246	246	247	247	248	249	250	251	251	252	252	253	254	254	254				
140	270	270	270	271	272	273	274	274	274	275	276	276	277	277	277				
145	292	292	292	293	294	295	295	296	296	297	297	298	298	298	299				
150	312	312	312	313	313	314	315	315	316	316	316	317	317	318	318				
155	329	329	329	330	330	331	332	332	332	332	333	333	334	334	334				
160	343	344	344	344	345	345	346	346	346	346	347	347	347	347	347				
165	355	355	355	356	356	356	356	356	357	357	357	357	358	358	358				
170	363	363	363	363	364	364	364	364	364	364	364	364	365	365	365				
175	367	367	368	368	368	368	368	368	368	368	368	368	368	368	368				
180	368	368	368	368	368	368	368	368	368	368	368	368	368	368	368				

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:Jason Long  
Test Date:2019-11-15

γ Range: 0 - 180DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000\_V1 SYSTEM V2.0.362  
Humidity:65.0%  
Test Distance:5.850m [K=1.7094]  
Remarks: