

CALIFORNIA 16-830



Light Output Ratio:	100.0%	
Luminaire Power:	19.04 W	
SHR Nominal:	0.50	Calculated using the TM5
SHR Maximum:	0.70	fine grid method.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: Jason  
Test Date: 2020-09-09

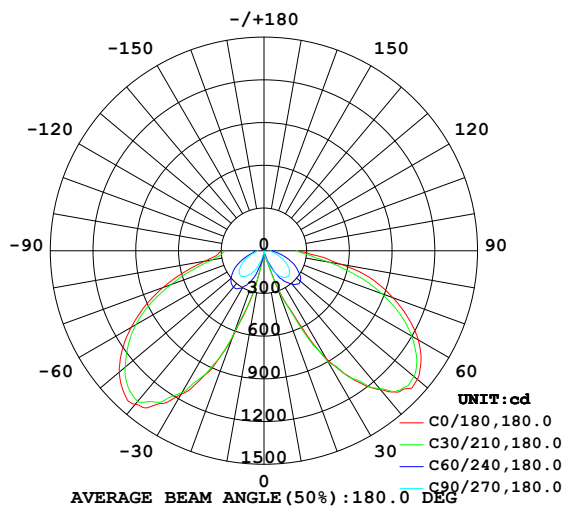
γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 58%  
Test Distance: 5.850m [K=1.0000]  
Remarks:

**LUMINAIRE PHOTOMETRIC TEST REPORT**

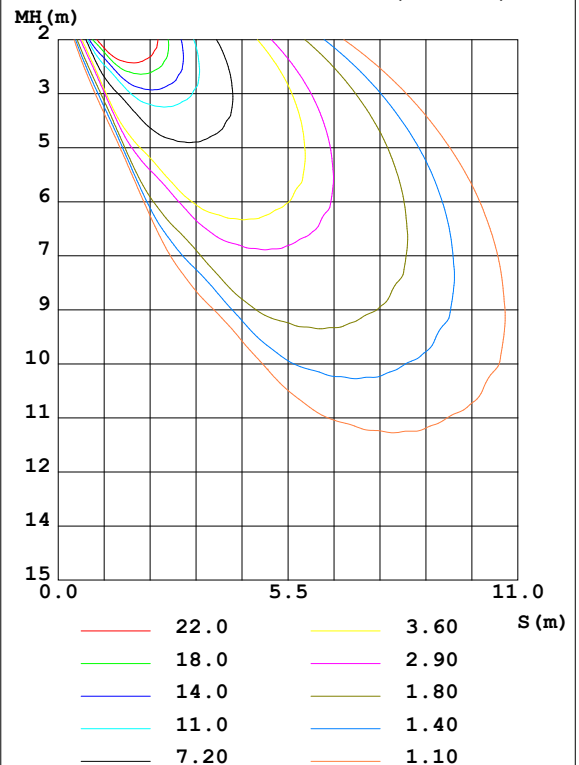
Test:U:221.1V I:0.0909A P:19.04W PF:0.9474 Freq:49.99Hz Lamp Flux:1222.6x1 lm		
NAME: CALIFORNIA 16-830	TYPE:Garden Lamp	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 160mm*H1000mm	
MFR.: NEKO LIGHTING AG		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 64.23 lm/W			
MODEL	3000K	I <sub>max</sub> (cd)	1428	S/MH (C0/180)	9.35
NOMINAL POWER (W)	20	LOR (%)	100.0	S/MH (C90/270)	5.43
RATED VOLTAGE (V)	220	TOTAL FLUX (lm)	1222.6	$\eta$ UP,DN (C0-180)	0.0,50.3
NOMINAL FLUX (lm)	1222.6	CIE CLASS	DIRECT	$\eta$ UP,DN (C180-360)	0.0,49.7
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	220	$\eta$ down (%)	100.0	CIBSE SHR MAX	0.70

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
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Temperature:25.3DEG  
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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	15.38	5.026	16.44	55.51	72.40	74.67	17.38	3.405	0- 10	1.461	1.461	0.12,0.12
20	263.6	67.38	103.0	146.3	645.2	281.2	96.92	20.97	10- 20	20.97	22.44	1.84,1.84
30	877.0	272.5	194.7	210.2	1162	427.5	188.2	108.1	20- 30	86.64	109.1	8.92,8.92
40	1273	424.4	245.1	222.4	1408	469.5	237.7	182.0	30- 40	177.2	286.3	23.4,23.4
50	1406	478.4	234.5	195.0	1327	419.2	228.8	216.9	40- 50	243.7	530.1	43.4,43.4
60	1251	413.6	182.2	149.0	1077	328.2	177.1	193.1	50- 60	255.2	785.2	64.2,64.2
70	962.6	295.7	116.0	92.62	754.5	203.4	113.0	140.8	60- 70	213.8	999.0	81.7,81.7
80	547.9	159.3	63.45	51.67	421.6	112.5	60.33	77.89	70- 80	142.1	1141	93.3,93.3
90	245.2	82.44	45.63	47.02	297.9	95.06	42.92	37.92	80- 90	81.54	1223	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): 402.92 lm

%lum = 33.0%

%lamp = 33.0%

Conical surface Flux(120deg): 785.21 lm

%lum = 64.2%

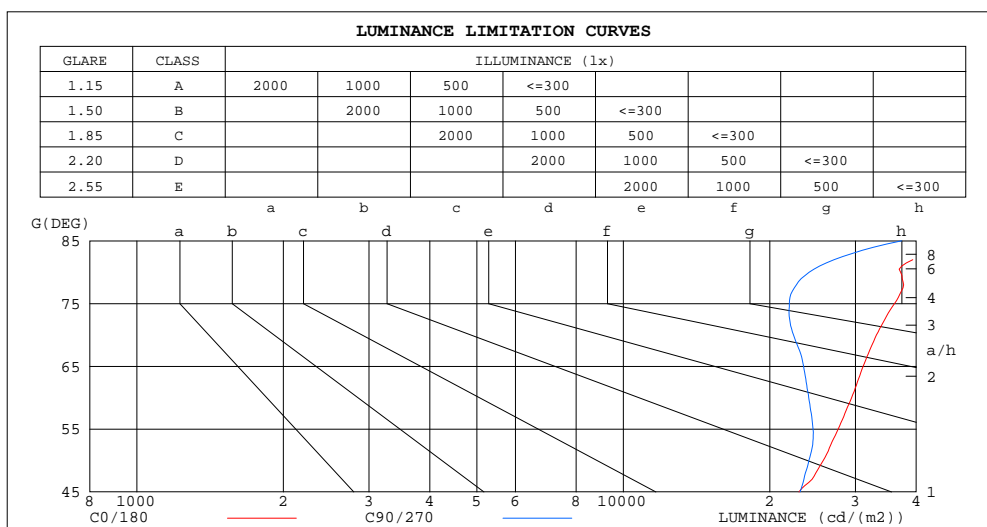
%lamp = 64.2%

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Temperature:25.3DEG  
Operators:Jason  
Test Date:2020-09-09

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:58%  
Test Distance:5.850m [K=1.0000]  
Remarks:

**LUMINANCE LIMITATION CURVES**

Test:U:221.1V I:0.0909A P:19.04W PF:0.9474 Freq:49.99Hz Lamp Flux:1222.6x1 lm		
NAME: CALIFORNIA 16-830	TYPE:Garden Lamp	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 160mm*H1000mm	
MFR.: NEKO LIGHTING AG		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	48058	37314
80	37159	24110
75	36098	21944
70	33145	22379
65	31114	23469
60	29461	24050
55	27652	24547
50	25756	24075
45	22959	23082

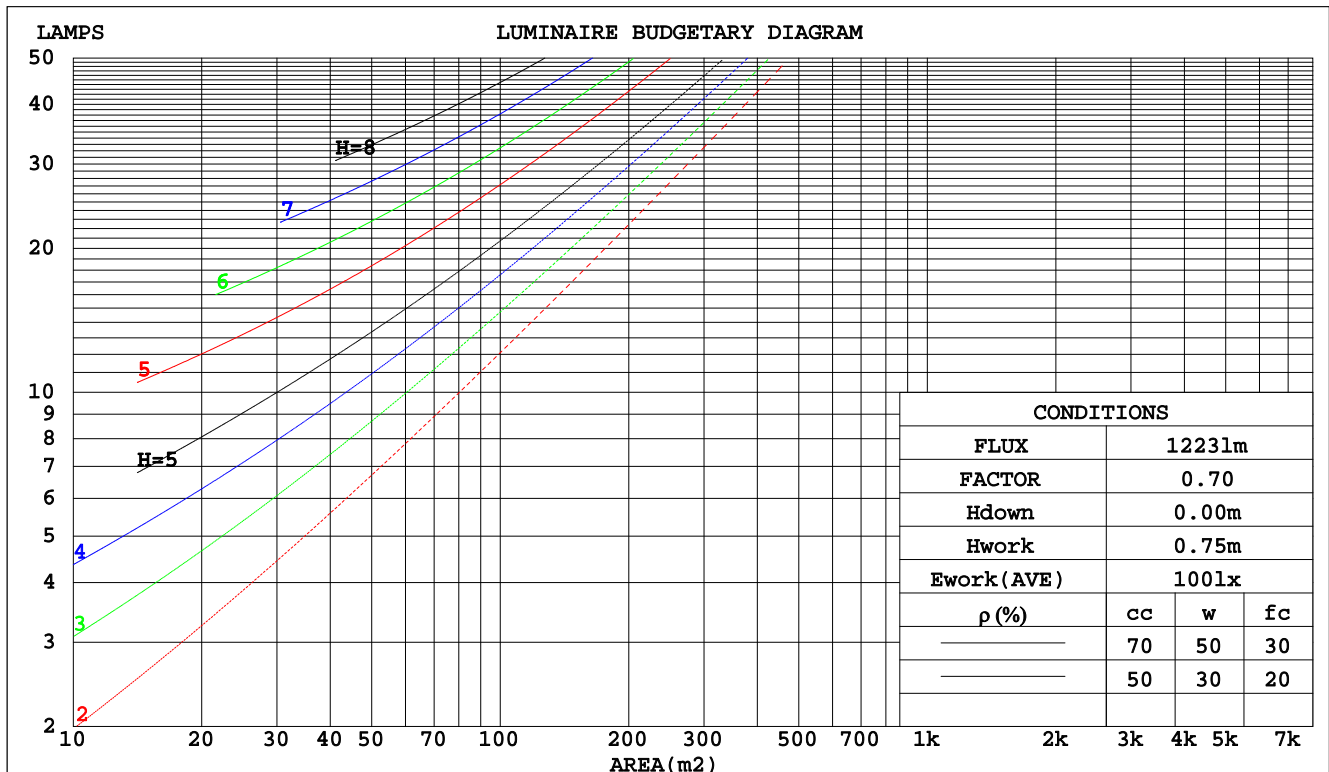
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CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

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NAME: CALIFORNIA 16-830	TYPE:Garden Lamp	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 160mm*H1000mm	
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	.00
1.0	.98	.93	.88	.96	.91	.86	.92	.87	.83	.88	.84	.81	.84	.81	.78	.76
2.0	.82	.74	.67	.80	.72	.66	.77	.70	.64	.73	.67	.62	.70	.65	.61	.58
3.0	.70	.60	.52	.68	.59	.51	.65	.57	.50	.62	.55	.49	.59	.53	.48	.46
4.0	.60	.49	.41	.58	.49	.41	.56	.47	.40	.53	.46	.40	.51	.44	.39	.36
5.0	.52	.41	.33	.51	.41	.33	.48	.40	.33	.46	.38	.32	.44	.37	.32	.29
6.0	.46	.35	.28	.44	.35	.27	.43	.34	.27	.41	.33	.27	.39	.32	.26	.24
7.0	.40	.30	.23	.39	.30	.23	.38	.29	.23	.36	.28	.22	.35	.28	.22	.20
8.0	.36	.26	.19	.35	.26	.19	.34	.25	.19	.32	.25	.19	.31	.24	.19	.17
9.0	.32	.23	.17	.32	.23	.17	.30	.22	.16	.29	.22	.16	.28	.21	.16	.14
10.0	.29	.20	.14	.29	.20	.14	.28	.20	.14	.27	.19	.14	.26	.19	.14	.12



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Remarks:

## WEC AND CCEC

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NAME: CALIFORNIA 16-830	TYPE:Garden Lamp	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 160mm*H1000mm	
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	.413	.235	.074	.406	.231	.073	.392	.225	.072	.379	.219	.070	.367	.213	.069		
2.0	.368	.202	.062	.362	.199	.061	.349	.194	.060	.338	.190	.059	.327	.185	.058		
3.0	.331	.176	.053	.325	.174	.052	.314	.170	.052	.304	.166	.051	.294	.163	.050		
4.0	.299	.155	.046	.294	.154	.045	.284	.151	.045	.275	.147	.044	.266	.145	.044		
5.0	.272	.139	.040	.267	.137	.040	.258	.135	.040	.250	.132	.039	.243	.130	.039		
6.0	.249	.125	.036	.245	.124	.036	.237	.121	.035	.230	.119	.035	.223	.117	.035		
7.0	.229	.113	.032	.225	.112	.032	.218	.110	.032	.212	.109	.032	.206	.107	.031		
8.0	.212	.104	.029	.209	.103	.029	.202	.101	.029	.196	.099	.029	.191	.098	.029		
9.0	.197	.095	.027	.194	.095	.027	.188	.093	.026	.183	.092	.026	.178	.090	.026		
10.0	.184	.088	.024	.181	.087	.024	.176	.086	.024	.171	.085	.024	.167	.084	.024		

$\rho_{cc}$	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	.187	.155	.126	.160	.133	.109	.110	.092	.075	.063	.053	.044	.020	.017	.014	
2.0	.182	.132	.089	.156	.113	.077	.107	.078	.054	.062	.046	.031	.020	.015	.010	
3.0	.176	.115	.066	.151	.099	.057	.104	.069	.040	.060	.040	.024	.019	.013	.008	
4.0	.169	.102	.051	.145	.088	.044	.100	.061	.031	.058	.036	.018	.019	.012	.006	
5.0	.162	.092	.041	.139	.080	.036	.096	.056	.025	.055	.033	.015	.018	.011	.005	
6.0	.154	.084	.034	.133	.073	.030	.091	.051	.021	.053	.030	.012	.017	.010	.004	
7.0	.147	.078	.029	.126	.067	.025	.087	.047	.018	.051	.028	.011	.016	.009	.004	
8.0	.140	.072	.025	.120	.062	.022	.083	.044	.016	.048	.026	.009	.016	.008	.003	
9.0	.133	.067	.022	.115	.058	.020	.079	.041	.014	.046	.024	.008	.015	.008	.003	
10.0	.127	.063	.020	.109	.054	.018	.076	.038	.013	.044	.023	.007	.014	.007	.002	

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 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:58%  
Test Distance:5.850m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

Test:U:221.1V I:0.0909A P:19.04W PF:0.9474 Freq:49.99Hz Lamp Flux:1222.6x1 lm											
NAME: CALIFORNIA 16-830					TYPE:Garden Lamp			SERIAL No.:			
SPEC.:3000K					DIM.: φ160mm*H1000mm						
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		24.9	26.7	25.2	27.0	27.2	24.2	26.1	24.5	26.3	26.5
3H		27.2	28.9	27.5	29.2	29.4	25.9	27.6	26.3	27.9	28.1
4H		28.3	29.9	28.6	30.2	30.5	26.6	28.2	27.0	28.5	28.8
6H		29.2	30.7	29.6	31.0	31.3	27.2	28.8	27.6	29.1	29.4
8H		29.6	31.1	29.9	31.4	31.7	27.6	29.0	27.9	29.3	29.7
12H		30.0	31.4	30.3	31.7	32.0	27.9	29.4	28.3	29.7	30.0
4H	2H	25.7	27.3	26.0	27.5	27.8	25.2	26.8	25.5	27.1	27.3
	3H	28.1	29.5	28.5	29.9	30.2	27.1	28.5	27.4	28.8	29.1
	4H	29.3	30.6	29.7	31.0	31.3	27.9	29.2	28.3	29.5	29.9
	6H	30.4	31.6	30.8	31.9	32.3	28.7	29.8	29.1	30.2	30.6
	8H	30.8	31.9	31.3	32.3	32.7	29.0	30.2	29.5	30.5	30.9
	12H	31.3	32.3	31.8	32.7	33.2	29.5	30.5	29.9	30.9	31.3
8H	4H	29.6	30.8	30.1	31.1	31.5	28.4	29.6	28.9	29.9	30.3
	6H	30.9	31.8	31.3	32.2	32.7	29.5	30.4	29.9	30.8	31.2
	8H	31.5	32.3	31.9	32.7	33.2	30.0	30.8	30.4	31.2	31.7
	12H	32.1	32.9	32.6	33.3	33.8	30.6	31.3	31.1	31.8	32.3
12H	4H	29.7	30.7	30.1	31.1	31.5	28.5	29.6	29.0	29.9	30.4
	6H	31.0	31.8	31.5	32.3	32.7	29.6	30.5	30.1	30.9	31.4
	8H	31.6	32.4	32.1	32.8	33.3	30.2	31.0	30.7	31.4	31.9
Variations with the observer position at spacings:											
S = 1.0H		+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.4				
2.0H		+ 0.2 / - 0.4					+ 0.2 / - 0.5				

CIE Pub.117, 1223 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 0.7$ )

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### UTILIZATION FACTORS TABLE

Test:U:221.1V I:0.0909A P:19.04W PF:0.9474 Freq:49.99Hz Lamp Flux:1222.6x1 lm		
NAME: CALIFORNIA 16-830	TYPE:Garden Lamp	SERIAL No.:
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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) $k(RI) \times RCR = 5$									
$k = 0.60$	45	31	23	44	31	23	43	30	23	15
0.80	55	41	32	54	41	32	52	40	32	23
1.00	65	51	42	63	50	42	61	53	41	32
1.25	73	60	51	71	59	50	68	57	49	40
1.50	79	66	57	77	65	57	73	63	55	46
2.00	87	76	68	85	75	67	81	72	65	56
2.50	92	82	74	90	80	73	85	78	71	61
3.00	96	87	80	94	85	79	89	82	77	67
4.00	101	94	87	99	92	86	94	88	83	73
5.00	104	98	92	102	96	91	97	92	87	77
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

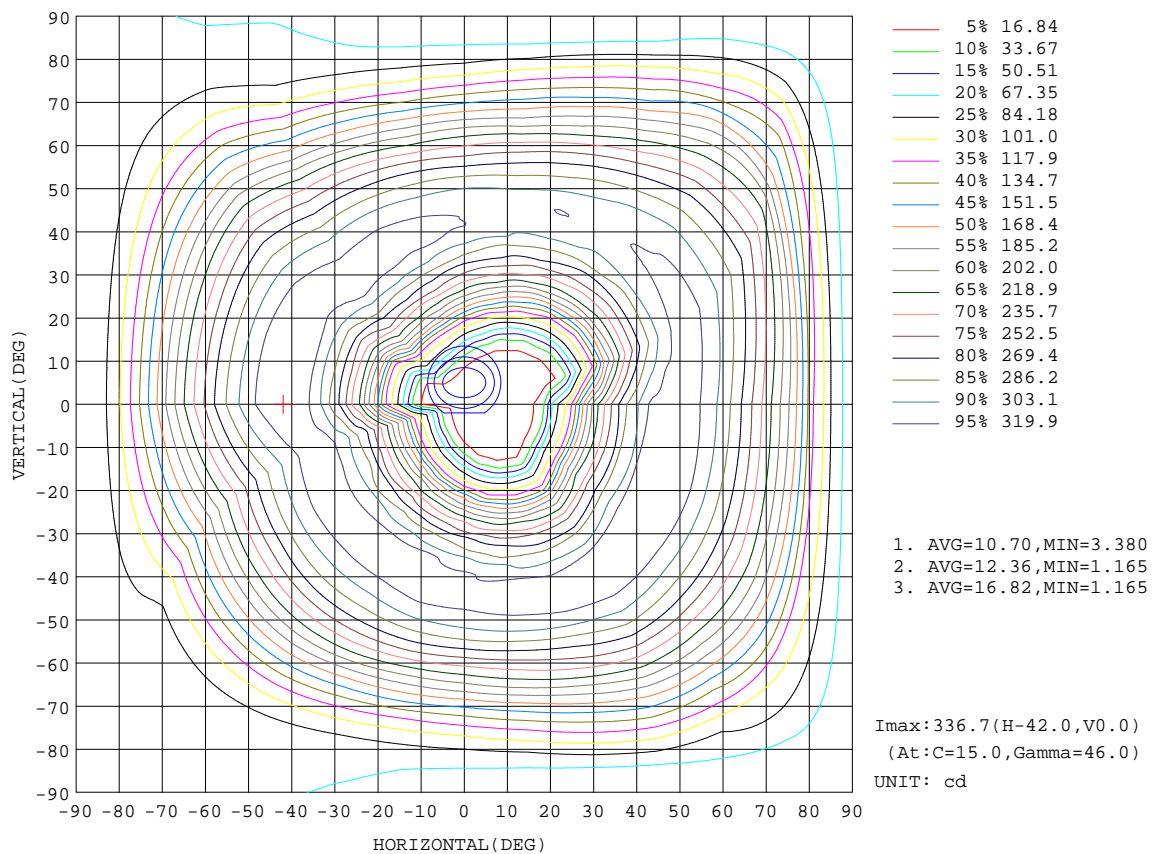
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ISOCANDELA DIAGRAM

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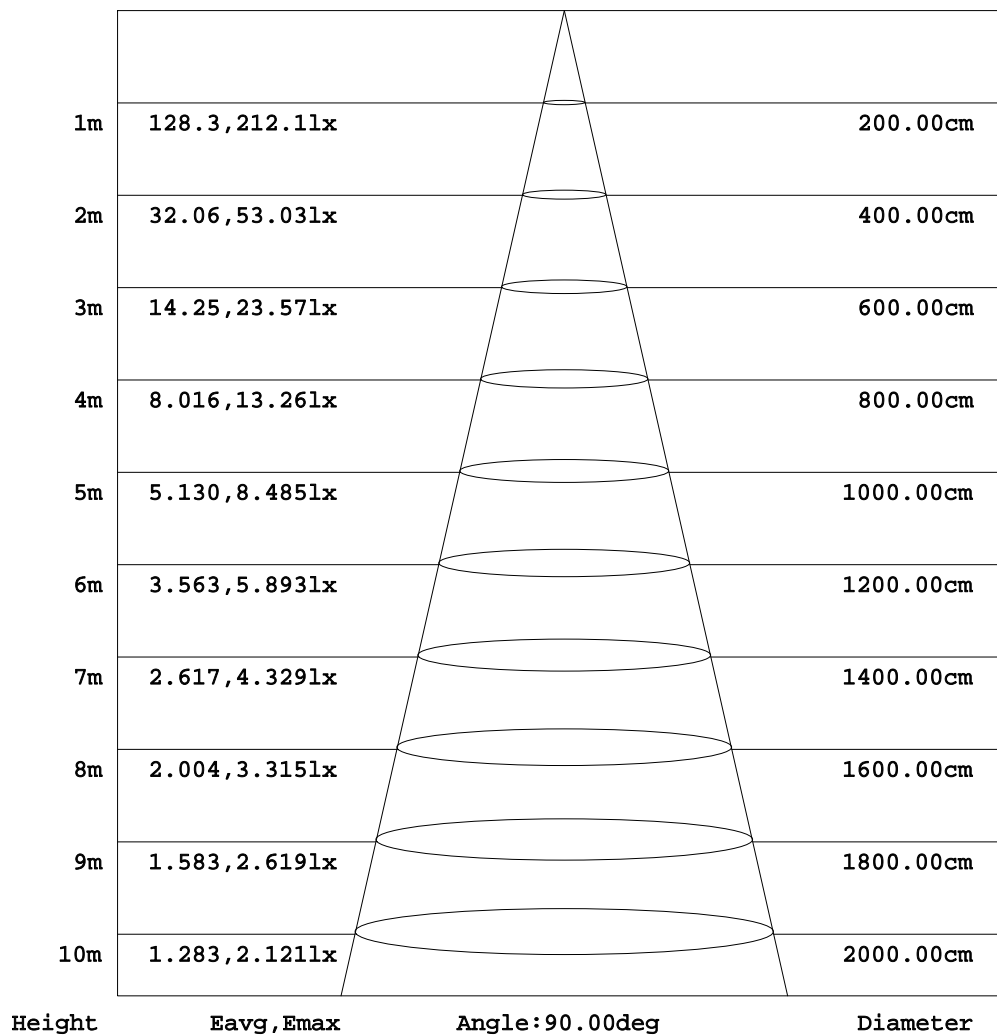
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**AAI Figure**

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NAME: CALIFORNIA 16-830	TYPE:Garden Lamp	SERIAL No.:
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MFR.: NEKO LIGHTING AG		

Flux out:402.9 lm



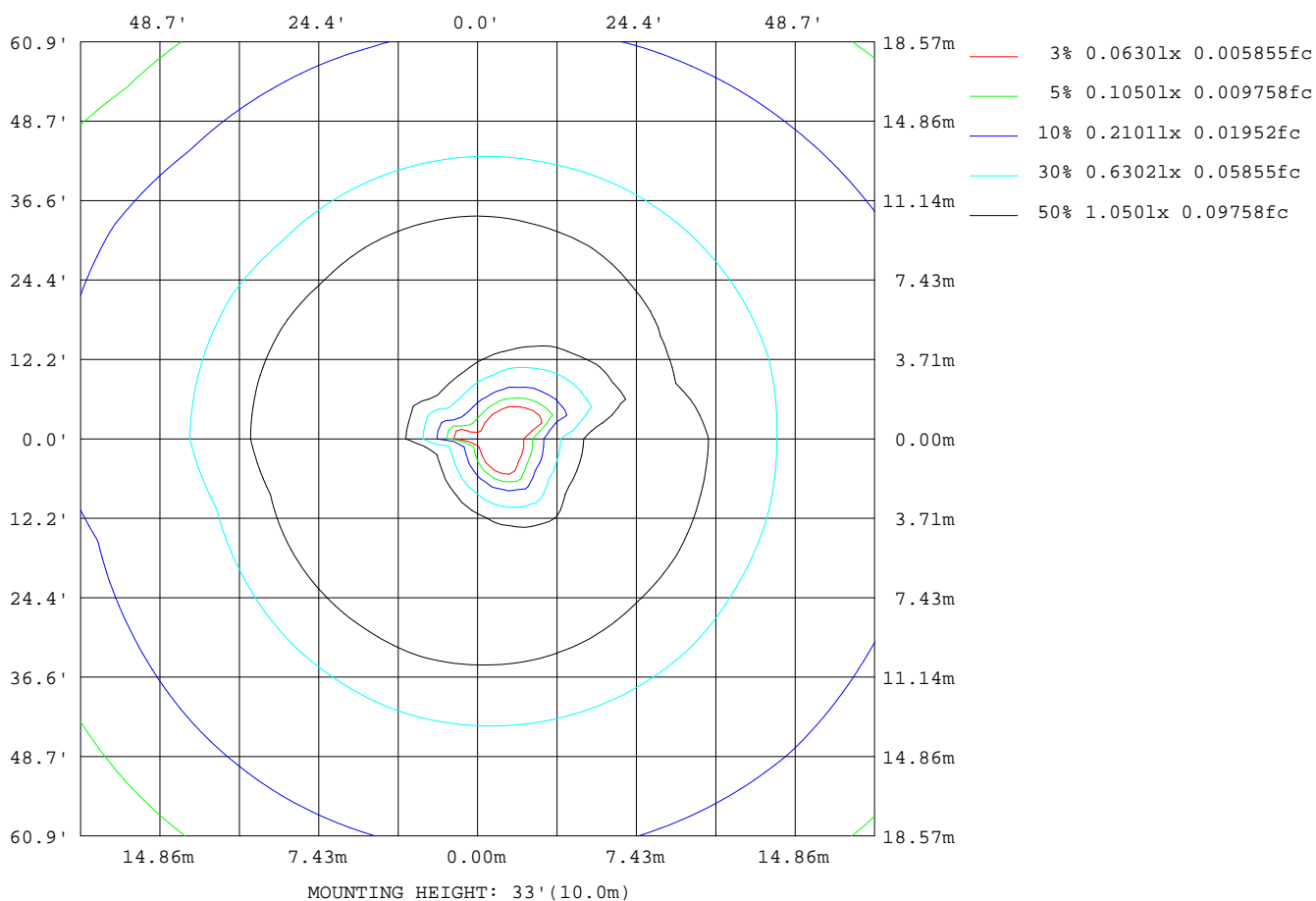
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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**ISOLUX DIAGRAM**

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### LED Avg.L Report

Test:U:221.1V I:0.0909A P:19.04W PF:0.9474 Freq:49.99Hz Lamp Flux:1222.6x1 lm		
NAME: CALIFORNIA 16-830	TYPE:Garden Lamp	SERIAL No.:
SPEC.:3000K	DIM.: $\phi$ 160mm*H1000mm	
MFR.: NEKO LIGHTING AG		

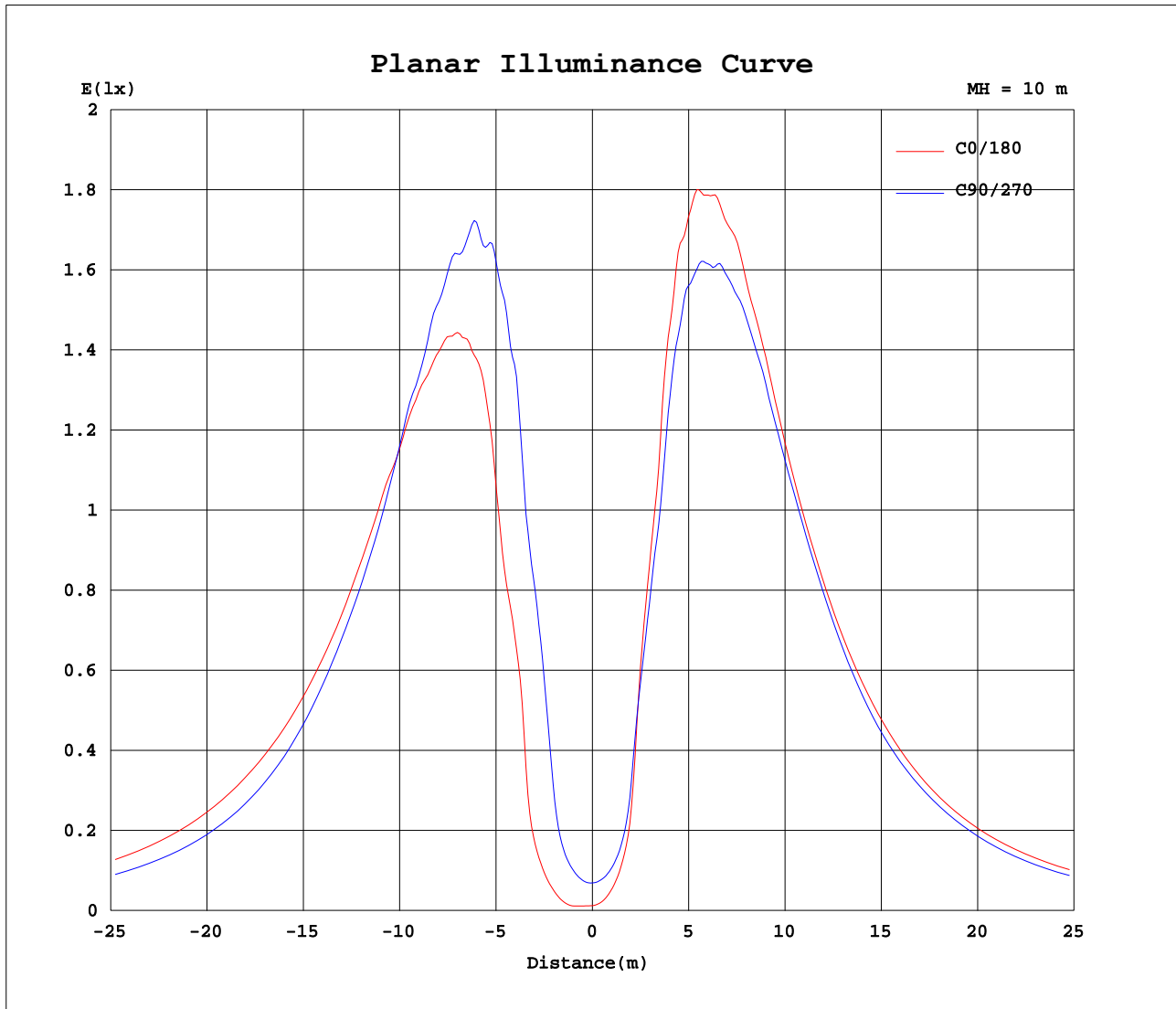
AvgL	cd/m2
L_0~180 (65) av	120062
L_0~180 (75) av	131909
L_0~180 (85) av	195560
L_90~270 (65) av	17483
L_90~270 (75) av	16284
L_90~270 (85) av	27313
L_45 (65) av	26971
L_45 (75) av	26426
L_45 (85) av	42991

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:Jason  
Test Date:2020-09-09

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity:58%  
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: Jason  
Test Date: 2020-09-09

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.362  
Humidity: 58%  
Test Distance: 5.850m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.362
Humidity:58%
Test Distance:5.850m [K=1.0000]
Remarks:

```