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Nata

LumCAT:2-1606-A
Luminaire: 92.70.046.00+92.70.147.00

Report No: NT2016062901	Voltage(V): 0.3200
Test No: GC201709011-X	Current(A): 37.8000
LampCAT: CREE CXA 1507	Power (W): 12.0000
Lamp flux(lm): 954.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 58	Width(mm): 58
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 875.15
Efficiency(%): 91.73%
Lumens(lm)/Power(W): 72.93
Central intensity(cd): 8381.235
Maximum intensity(cd): 8381.235
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=12.2
[C90/270]Total=12.2
Field angle(10%Imax): [C0/180]Total=23.1
[C90/270]Total=23.1
Maximum s/h(1/2): C0_180=0.21 C90_270=0.21
Maximum s/h(1/4): C0_180=0.21 C90_270=0.21
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.73%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.633%

Equipment: GMS1980	Date: 2017/9/11	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8381.236	0.000	0	.000%	.000%
1.0	8298.101	7.981	7.981	.837%	.912%
2.0	7942.780	23.310	31.291	2.443%	3.576%
3.0	7305.434	36.469	67.76	3.823%	7.743%
4.0	6482.547	46.153	113.913	4.838%	13.016%
5.0	5344.875	50.881	164.794	5.333%	18.830%
6.0	4299.836	50.686	215.479	5.313%	24.622%
7.0	3288.519	47.101	262.58	4.937%	30.004%
8.0	2422.757	40.875	303.454	4.285%	34.675%
9.0	1691.099	33.341	336.795	3.495%	38.484%
10.0	1278.437	26.873	363.668	2.817%	41.555%
11.0	936.447	22.131	385.8	2.320%	44.084%
12.0	750.054	18.436	404.235	1.932%	46.190%
13.0	609.123	16.130	420.365	1.691%	48.033%
14.0	511.316	14.342	434.707	1.503%	49.672%
15.0	450.843	13.209	447.916	1.385%	51.182%
16.0	407.651	12.579	460.495	1.319%	52.619%
17.0	378.582	12.244	472.739	1.283%	54.018%
18.0	357.763	12.141	484.88	1.273%	55.405%
19.0	345.328	12.232	497.112	1.282%	56.803%
20.0	335.293	12.457	509.569	1.306%	58.226%
21.0	329.210	12.760	522.329	1.338%	59.684%
22.0	324.186	13.130	535.459	1.376%	61.185%
23.0	319.286	13.502	548.961	1.415%	62.728%
24.0	314.971	13.867	562.828	1.454%	64.312%
25.0	310.924	14.231	577.06	1.492%	65.938%
26.0	307.022	14.587	591.646	1.529%	67.605%
27.0	303.698	14.941	606.588	1.566%	69.312%
28.0	300.229	15.290	621.878	1.603%	71.060%
29.0	296.857	15.621	637.499	1.637%	72.845%
30.0	293.705	15.945	653.445	1.671%	74.666%
31.0	290.567	16.259	669.704	1.704%	76.524%
32.0	287.050	16.548	686.252	1.735%	78.415%
33.0	283.644	16.813	703.065	1.762%	80.336%
34.0	280.189	17.063	720.128	1.789%	82.286%
35.0	276.535	17.290	737.418	1.812%	84.262%
36.0	272.082	17.468	754.886	1.831%	86.258%
37.0	259.639	17.342	772.228	1.818%	88.239%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	241.553	16.729	788.957	1.754%	90.151%
39.0	213.020	15.516	804.473	1.626%	91.924%
40.0	182.202	13.784	818.257	1.445%	93.499%
41.0	147.792	11.751	830.008	1.232%	94.842%
42.0	108.702	9.319	839.326	.977%	95.906%
43.0	74.815	6.798	846.124	.713%	96.683%
44.0	47.397	4.613	850.737	.484%	97.210%
45.0	25.236	2.791	853.528	.293%	97.529%
46.0	14.666	1.560	855.089	.164%	97.708%
47.0	10.000	0.981	856.07	.103%	97.820%
48.0	8.733	0.757	856.827	.079%	97.906%
49.0	7.839	0.681	857.508	.071%	97.984%
50.0	7.618	0.644	858.152	.068%	98.058%
51.0	7.426	0.636	858.789	.067%	98.130%
52.0	7.027	0.620	859.409	.065%	98.201%
53.0	6.393	0.584	859.993	.061%	98.268%
54.0	5.781	0.537	860.529	.056%	98.329%
55.0	5.320	0.496	861.025	.052%	98.386%
56.0	4.948	0.464	861.489	.049%	98.439%
57.0	4.687	0.441	861.929	.046%	98.489%
58.0	4.528	0.426	862.355	.045%	98.538%
59.0	4.425	0.419	862.774	.044%	98.586%
60.0	4.370	0.416	863.189	.044%	98.633%
61.0	4.301	0.414	863.603	.043%	98.680%
62.0	4.253	0.412	864.015	.043%	98.728%
63.0	4.191	0.411	864.426	.043%	98.775%
64.0	4.143	0.409	864.835	.043%	98.821%
65.0	4.129	0.409	865.245	.043%	98.868%
66.0	4.095	0.410	865.655	.043%	98.915%
67.0	4.060	0.410	866.065	.043%	98.962%
68.0	4.019	0.409	866.474	.043%	99.009%
69.0	3.971	0.408	866.882	.043%	99.055%
70.0	3.943	0.406	867.288	.043%	99.102%
71.0	3.895	0.405	867.693	.042%	99.148%
72.0	3.875	0.404	868.097	.042%	99.194%
73.0	3.847	0.404	868.501	.042%	99.240%
74.0	3.833	0.404	868.905	.042%	99.286%
75.0	3.778	0.402	869.307	.042%	99.332%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.764	0.400	869.708	.042%	99.378%
77.0	3.723	0.399	870.107	.042%	99.424%
78.0	3.744	0.400	870.506	.042%	99.469%
79.0	3.709	0.400	870.907	.042%	99.515%
80.0	3.675	0.398	871.305	.042%	99.561%
81.0	3.620	0.395	871.7	.041%	99.606%
82.0	3.613	0.392	872.092	.041%	99.650%
83.0	3.572	0.391	872.482	.041%	99.695%
84.0	3.572	0.389	872.872	.041%	99.740%
85.0	3.524	0.387	873.259	.041%	99.784%
86.0	3.503	0.384	873.643	.040%	99.828%
87.0	3.469	0.382	874.024	.040%	99.871%
88.0	3.455	0.379	874.404	.040%	99.915%
89.0	3.407	0.376	874.78	.039%	99.958%
90.0	3.365	0.371	875.151	.039%	100.000%

Zonal flux distribution table

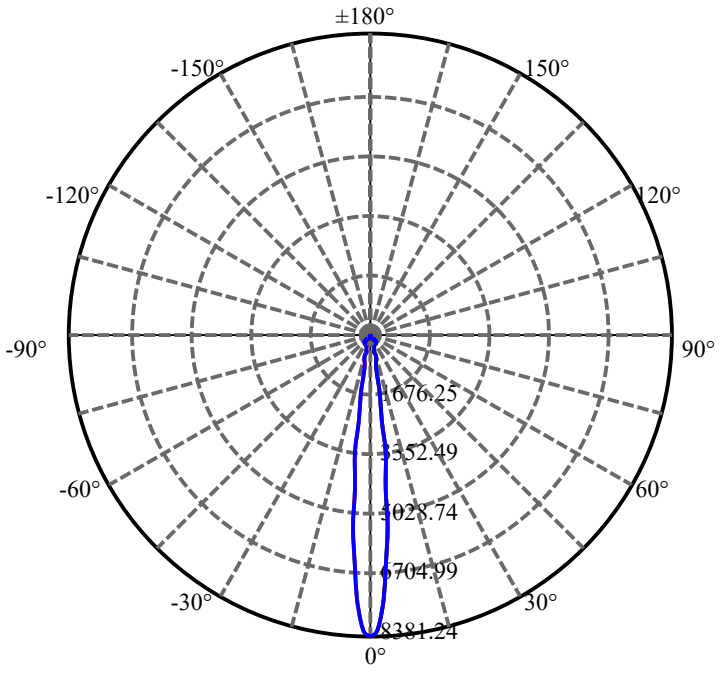
ZONAL LUMEN SUMMARY

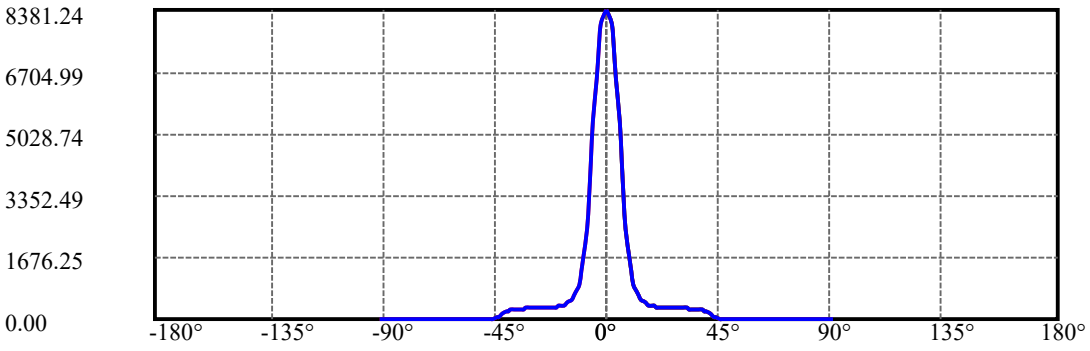
Zone	Lumens	%Lamp	%Fixt
0-30	653.44	68.50%	74.67%
0-40	818.26	85.77%	93.50%
0-60	863.19	90.48%	98.63%
0-90	874.78	91.70%	99.96%
0-120	874.78	91.70%	99.96%
0-180	875.15	91.73%	100.00%
60-90	12.01	1.26%	1.37%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-32.82	700.12	73.39%	80.00%

ZONAL LUMEN SUMMARY

0-10	363.67
10-20	145.90
20-30	143.88
30-40	164.81
40-50	39.90
50-60	5.04
60-70	4.10
70-80	4.02
80-90	3.47
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

Light Distribution Curve [Unit:cd]





C0(Max):

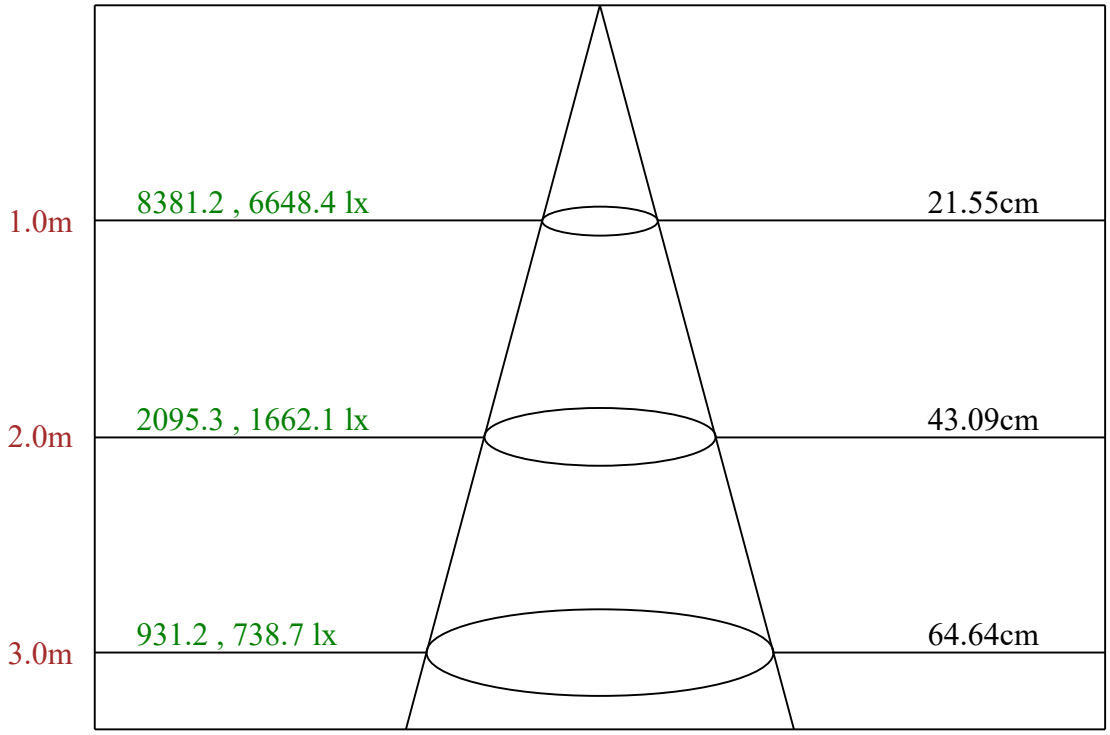
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:11.5 Right:11.5
:C90/270Left:11.5 Right:11.5

Beam Angle(50%Imax):C0/180Left:6.1 Right:6.1
:C90/270Left:6.1 Right:6.1

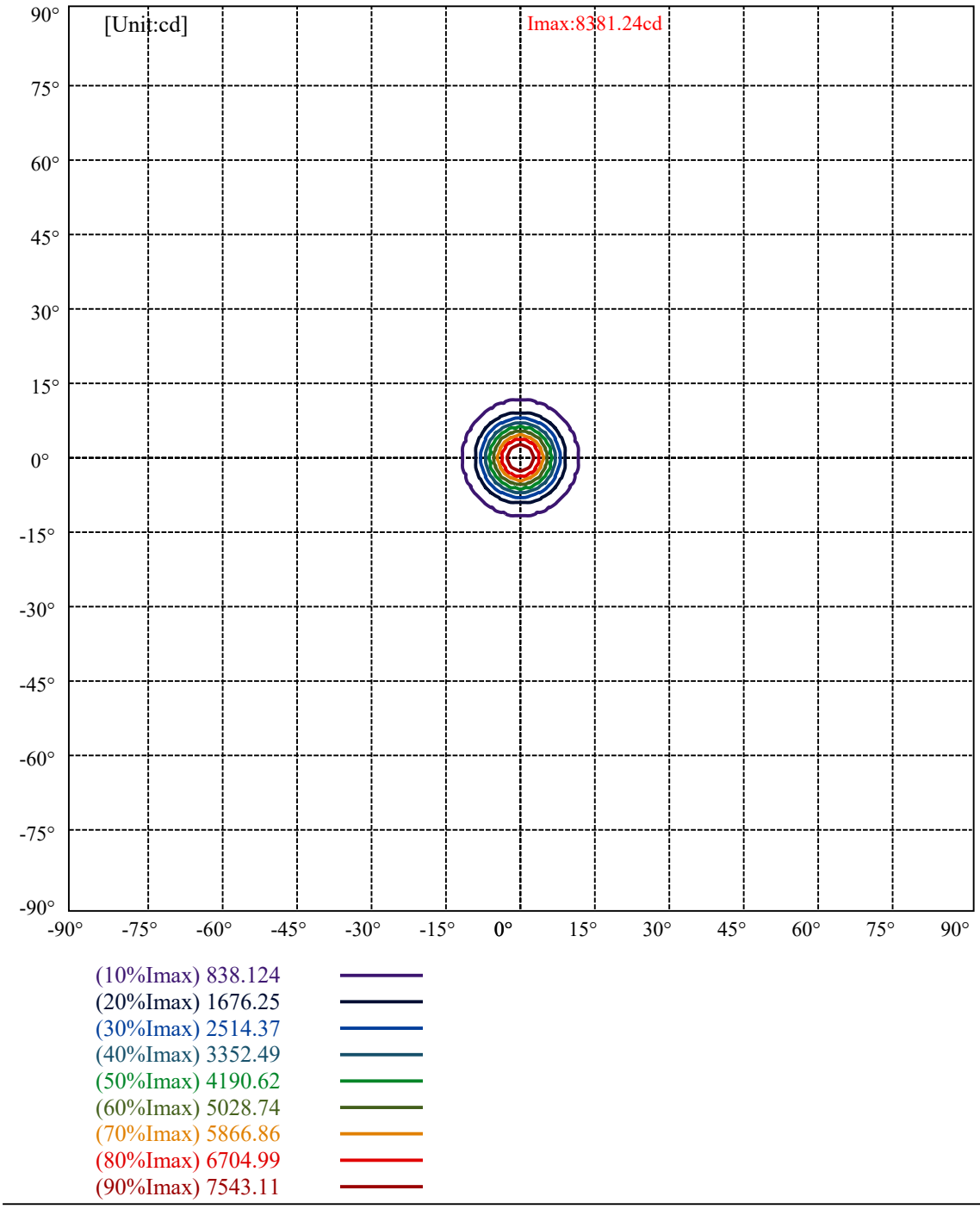
Lux distance Curve



Max , Ave

Beam angle of C0 plane 12.30

ISO-Intensity(V-H)

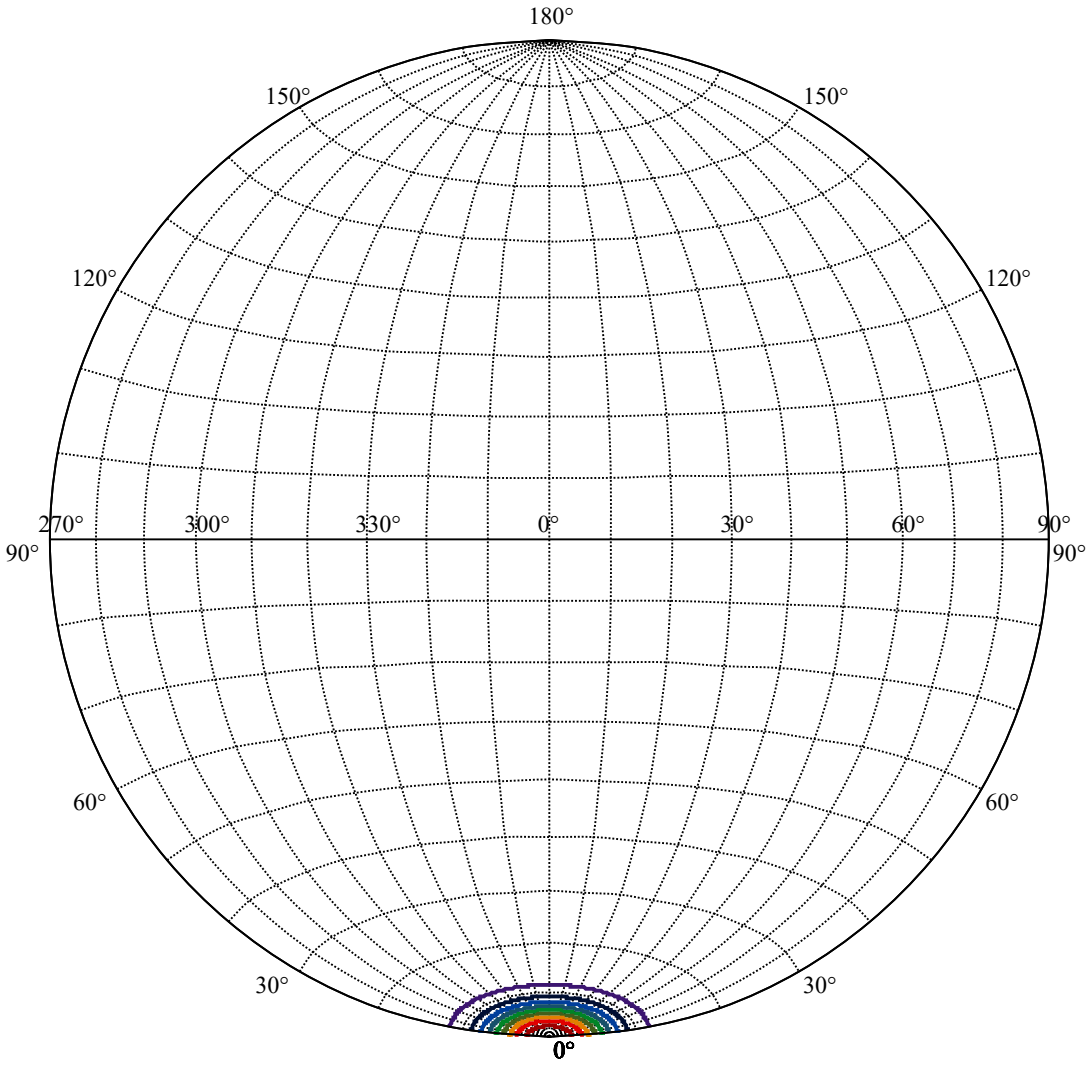


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/9/11
Humidity(%): 60.0%

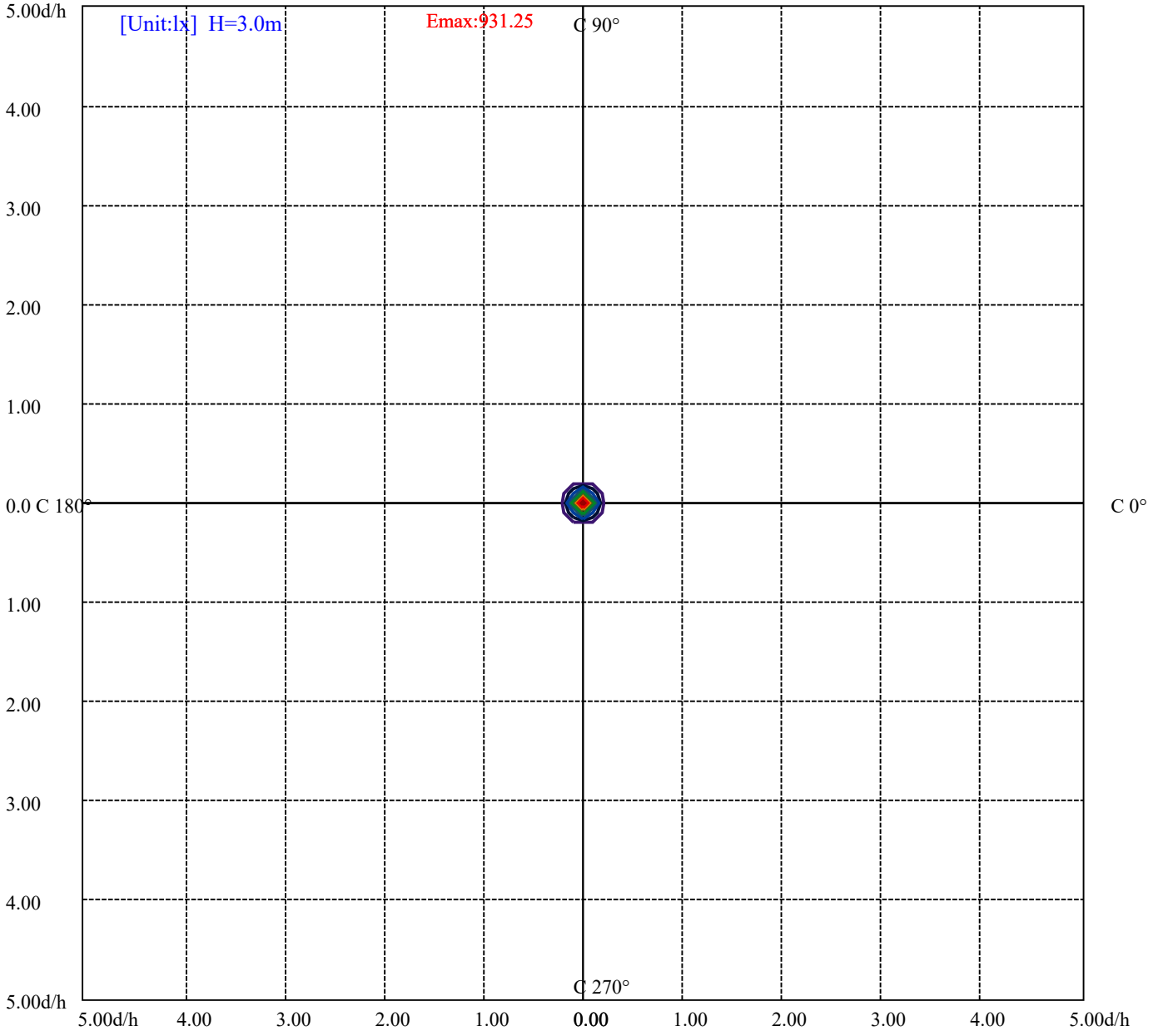
Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



Equipment: GMS1980	Date: 2017/9/11	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

ISO illuminance diagram

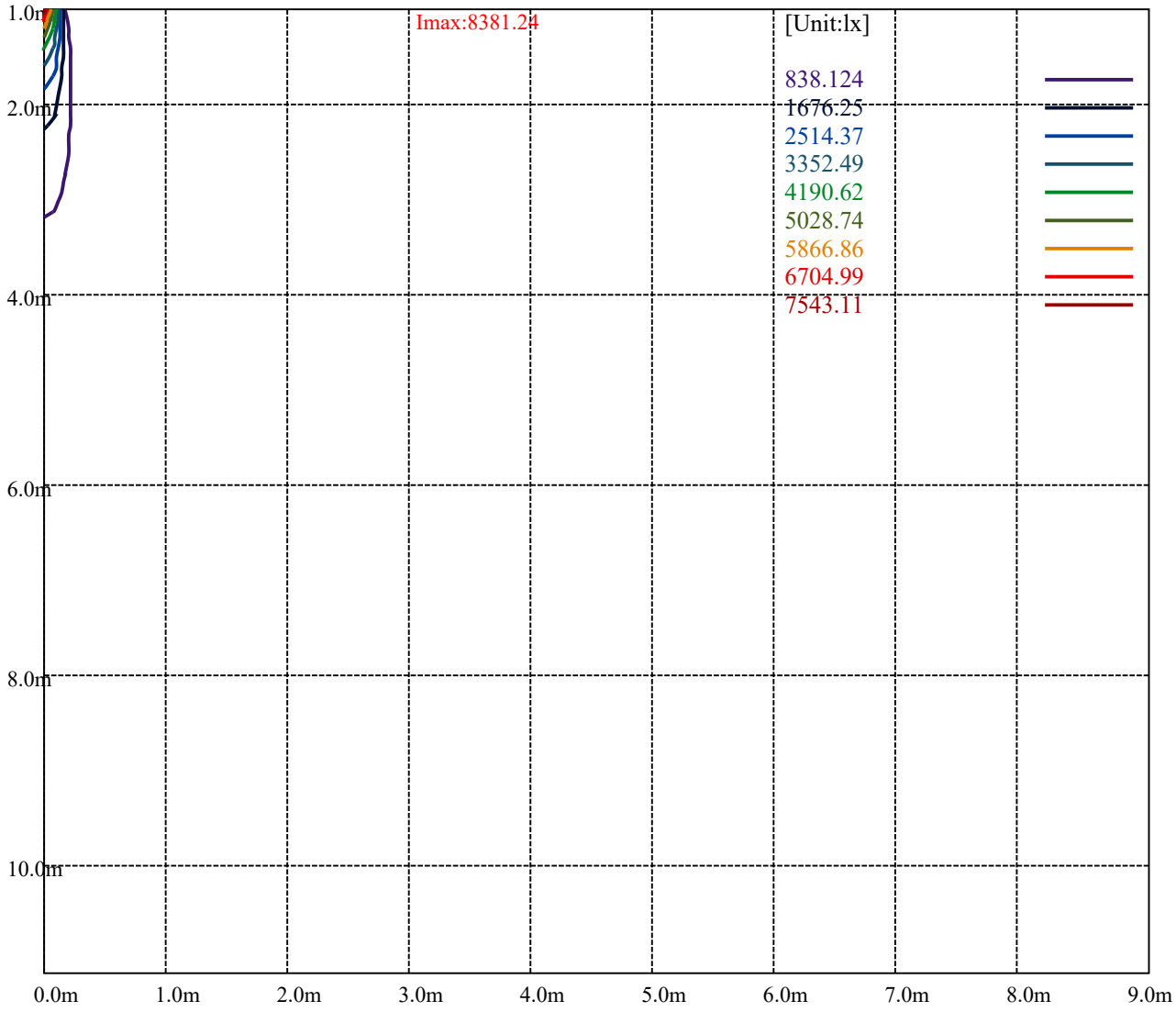


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/9/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/9/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

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Luminance Limitting Curve(no luminous side)

Luminance Table

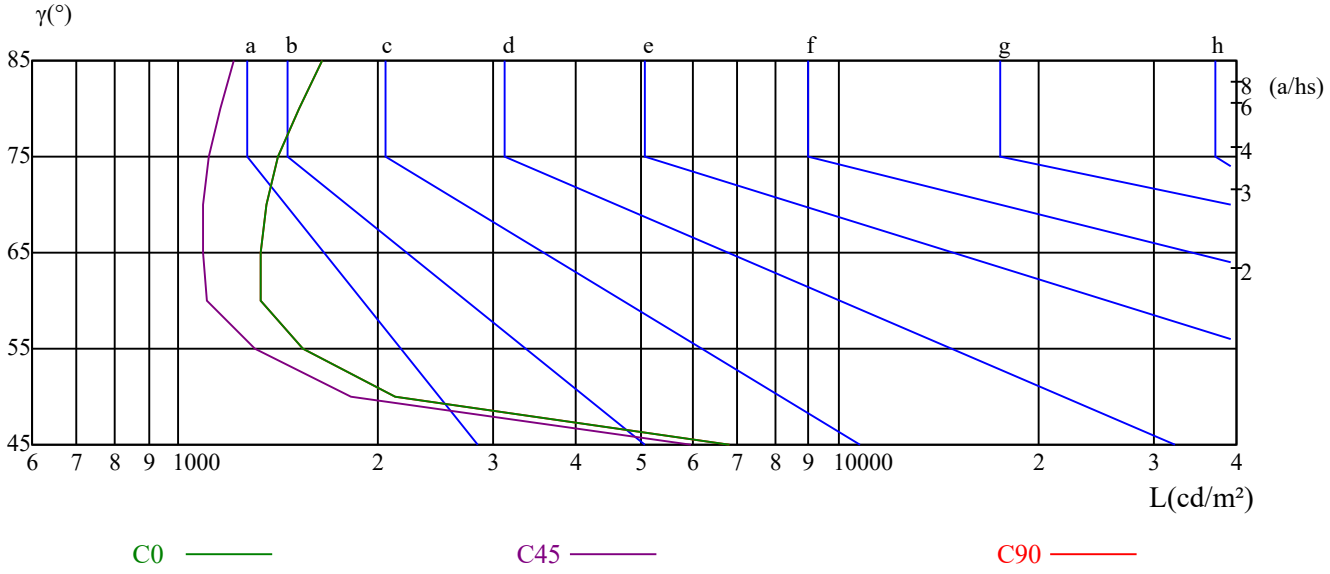
γ	45	50	55	60	65	70	75	80	85
C0	6837	2126	1542	1329	1330	1362	1419	1524	1645
C45	5959	1826	1304	1105	1086	1090	1109	1160	1212
C90	6837	2126	1542	1329	1330	1362	1419	1524	1645

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2904	2904	2904	4339	4339	4339	12018	12018	12018

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limitting Curve

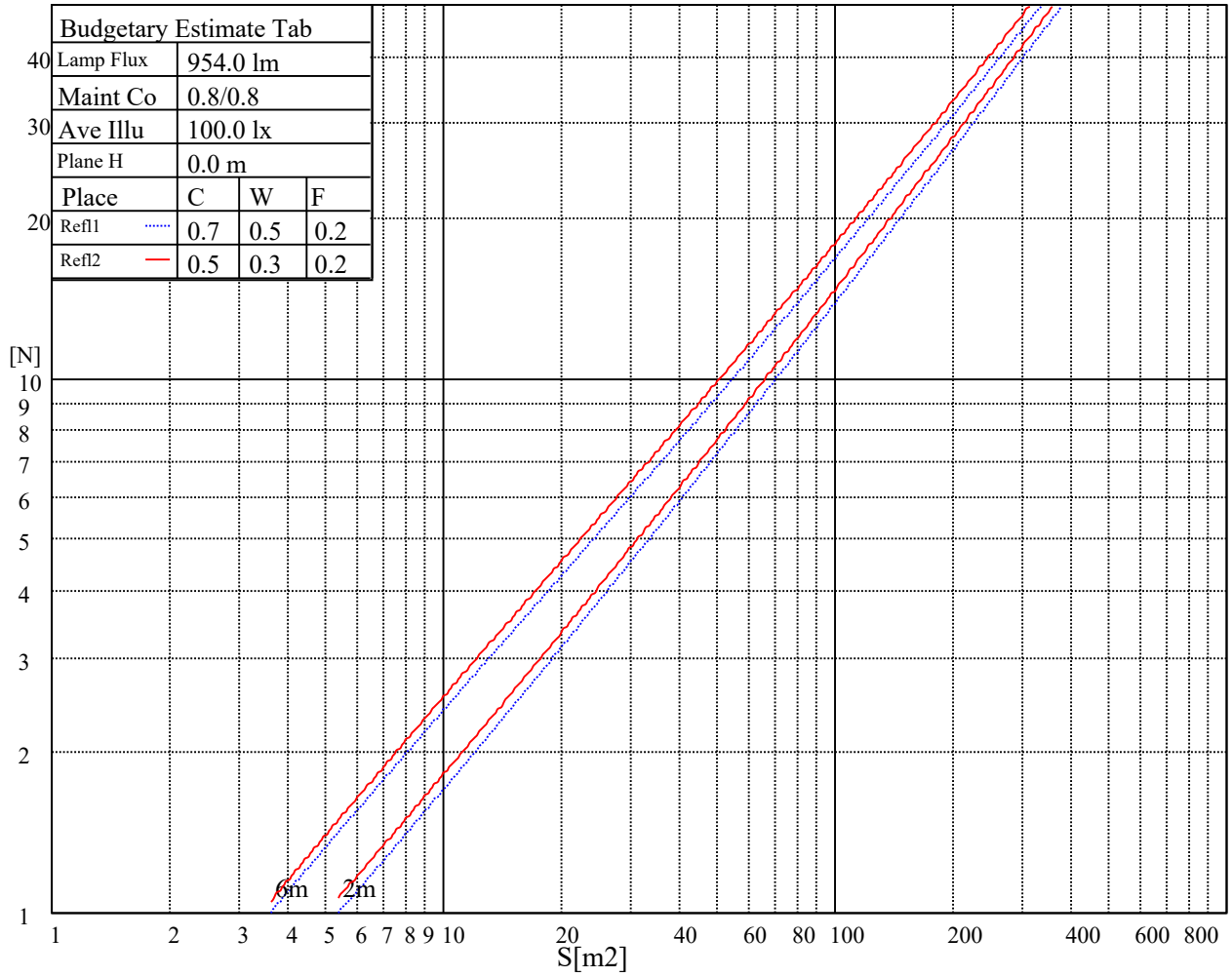


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/9/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Budgetary Estimate Table



Equipment: GMS1980 Date: 2017/9/11 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Utilization factor table for indoor luminaire

RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.03	1.01	0.99	1.01	0.99	0.97	0.97	0.95	0.94	0.94	0.92	0.91	0.90	0.90	0.89	0.87
2	0.97	0.94	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.83
3	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.83	0.80	0.78	0.81	0.79	0.77	0.75
5	0.83	0.79	0.76	0.83	0.78	0.75	0.81	0.77	0.75	0.80	0.76	0.74	0.78	0.76	0.73	0.72
6	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.69
7	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
8	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.65
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.63	0.62
10	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	8370.78	8324.53	7973.27	7471.70	6652.46	5403.79	4378.08	3445.43	2544.71
45.0	8349.85	8356.46	8137.89	7648.99	6955.28	5936.18	4786.05	3795.59	3049.02
90.0	8441.25	8471.53	8333.89	7947.39	7329.11	6368.37	5347.08	4166.67	3129.96
135.0	8363.07	8469.33	8383.99	8125.77	7652.29	6747.71	5739.63	4672.09	3558.85
180.0	8370.78	8279.93	7905.00	7188.71	6284.14	5127.95	4062.61	2971.39	2072.32
225.0	8349.85	8165.97	7738.18	6866.08	5880.57	4654.47	3579.77	2544.16	1749.69
270.0	8441.25	8255.16	7682.02	6846.26	5788.08	4388.55	3345.23	2454.41	1689.13
315.0	8363.07	8061.91	7388.02	6348.55	5318.45	4131.98	3160.24	2258.41	1588.38
360.0	8370.78	8324.53	7973.27	7471.70	6652.46	5403.79	4378.08	3445.43	2544.71

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1831.73	1372.56	1019.64	807.13	638.10	529.64	464.13	414.57	382.09
45.0	2072.87	1547.08	1213.99	893.57	709.68	610.58	514.78	455.87	423.93
90.0	2358.07	1688.58	1081.25	960.35	774.15	614.92	528.10	467.92	421.18
135.0	2601.41	1890.64	1318.60	994.87	759.23	608.37	519.18	451.46	408.52
180.0	1311.44	1057.19	816.16	641.68	537.19	459.34	409.07	377.63	352.91
225.0	1073.99	901.77	691.40	567.19	486.53	421.29	391.73	368.11	350.65
270.0	1181.51	895.22	689.31	571.49	483.40	426.14	394.20	367.78	351.81
315.0	1097.77	874.46	661.23	564.16	484.72	420.25	385.56	357.87	337.55
360.0	1831.73	1372.56	1019.64	807.13	638.10	529.64	464.13	414.57	382.09

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	360.07	347.41	336.39	329.79	324.83	318.78	315.47	312.17	308.32
45.0	389.25	371.63	357.87	346.86	340.80	334.19	328.14	323.73	319.88
90.0	388.37	370.53	354.73	345.86	338.43	331.33	326.48	321.31	315.75
135.0	382.64	363.92	347.96	340.25	332.54	325.93	322.63	317.68	313.27
180.0	333.75	322.80	315.58	307.55	302.04	297.52	294.11	289.82	287.01
225.0	340.58	335.02	331.82	329.84	328.19	325.16	321.03	316.19	312.39
270.0	344.10	337.50	334.19	331.99	331.44	328.14	323.18	319.33	315.47
315.0	323.35	313.82	303.80	301.54	295.21	293.23	288.72	287.17	284.09
360.0	360.07	347.41	336.39	329.79	324.83	318.78	315.47	312.17	308.32

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	306.11	303.36	299.51	297.86	295.10	292.90	290.70	287.39	284.09
45.0	315.47	311.07	306.66	303.36	298.96	294.55	290.15	285.19	281.34
90.0	312.00	306.28	302.53	298.68	295.21	289.54	285.96	282.27	277.81
135.0	310.52	308.32	304.46	301.16	297.30	294.55	290.15	286.29	281.89
180.0	283.38	280.73	277.32	274.46	271.43	268.12	265.21	262.45	259.32
225.0	308.59	304.35	300.39	296.86	292.96	288.61	284.86	281.34	277.04
270.0	311.07	307.77	304.46	300.06	296.20	292.35	288.50	284.09	281.34
315.0	282.44	279.96	279.52	277.21	277.37	275.78	273.63	272.47	269.45
360.0	306.11	303.36	299.51	297.86	295.10	292.90	290.70	287.39	284.09

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	281.89	278.03	259.37	231.90	199.91	160.98	123.27	89.58	55.06
45.0	278.03	270.27	263.28	242.19	214.94	184.49	138.36	100.04	70.14
90.0	272.97	268.95	262.89	246.87	220.01	183.78	148.82	109.73	72.07
135.0	278.59	271.59	264.60	247.70	222.10	190.50	145.13	111.05	83.41
180.0	255.52	246.65	227.38	192.75	160.71	129.82	94.86	61.17	35.95
225.0	271.32	254.20	226.06	191.10	155.59	115.62	80.71	47.46	22.41
270.0	278.59	249.68	218.24	180.86	146.67	112.04	69.59	40.47	19.49
315.0	259.76	237.73	210.59	170.78	137.70	105.10	68.88	39.03	20.65
360.0	281.89	278.03	259.37	231.90	199.91	160.98	123.27	89.58	55.06

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	27.14	15.75	12.94	11.45	10.79	11.01	10.74	9.97	8.42
45.0	35.51	16.35	9.58	7.71	5.84	5.56	5.40	5.40	5.12
90.0	43.11	21.09	9.97	8.42	6.33	5.51	5.34	5.18	4.79
135.0	43.16	22.08	13.82	11.78	9.80	9.80	9.97	9.41	8.48
180.0	18.72	13.82	11.51	9.63	9.30	8.92	8.48	7.60	6.66
225.0	11.67	9.03	6.50	6.11	6.33	6.50	6.61	6.50	6.22
270.0	9.52	7.93	6.44	6.06	6.00	5.78	5.67	5.51	5.40
315.0	13.05	11.29	9.25	8.70	8.31	7.87	7.21	6.66	6.06
360.0	27.14	15.75	12.94	11.45	10.79	11.01	10.74	9.97	8.42

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.27	6.28	5.45	5.12	4.96	4.84	4.68	4.68	4.62
45.0	5.12	5.01	4.96	4.73	4.51	4.35	4.18	4.13	4.07
90.0	4.73	4.73	4.62	4.51	4.35	4.29	4.24	4.18	4.13
135.0	7.10	6.22	5.51	4.96	4.68	4.57	4.57	4.46	4.40
180.0	5.78	5.18	4.84	4.62	4.51	4.40	4.40	4.35	4.29
225.0	5.67	5.23	4.73	4.51	4.40	4.35	4.29	4.18	4.13
270.0	5.29	5.07	4.84	4.57	4.40	4.29	4.29	4.24	4.18
315.0	5.29	4.84	4.62	4.46	4.40	4.29	4.29	4.18	4.18
360.0	7.27	6.28	5.45	5.12	4.96	4.84	4.68	4.68	4.62

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.57	4.57	4.57	4.51	4.46	4.40	4.40	4.40	4.40
45.0	4.07	4.07	4.02	3.96	3.91	3.91	3.91	3.85	3.85
90.0	4.02	3.96	3.96	3.96	3.96	3.96	3.85	3.80	3.80
135.0	4.40	4.35	4.35	4.29	4.29	4.29	4.29	4.24	4.07
180.0	4.24	4.18	4.13	4.13	4.02	3.96	3.91	3.85	3.80
225.0	4.07	4.02	4.02	3.96	3.96	3.85	3.80	3.80	3.74
270.0	4.07	3.96	3.96	3.91	3.91	3.85	3.74	3.74	3.69
315.0	4.07	4.02	4.02	4.02	3.96	3.91	3.85	3.85	3.80
360.0	4.57	4.57	4.57	4.51	4.46	4.40	4.40	4.40	4.40

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.40	4.35	4.29	4.18	4.18	4.13	4.13	4.13	4.07
45.0	3.80	3.80	3.80	3.69	3.69	3.63	3.69	3.63	3.58
90.0	3.80	3.74	3.74	3.69	3.69	3.63	3.63	3.58	3.52
135.0	4.02	3.96	3.96	3.96	3.91	3.91	3.96	3.91	3.85
180.0	3.80	3.80	3.80	3.80	3.74	3.69	3.69	3.63	3.69
225.0	3.69	3.69	3.69	3.63	3.63	3.58	3.63	3.63	3.58
270.0	3.74	3.74	3.69	3.58	3.58	3.58	3.63	3.63	3.58
315.0	3.74	3.69	3.69	3.69	3.69	3.63	3.58	3.52	3.52
360.0	4.40	4.35	4.29	4.18	4.18	4.13	4.13	4.13	4.07

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.96	3.91	3.91	3.85	3.80	3.74	3.74	3.69	3.63
45.0	3.52	3.47	3.52	3.52	3.47	3.47	3.41	3.41	3.36
90.0	3.47	3.52	3.47	3.47	3.47	3.41	3.41	3.41	3.41
135.0	3.74	3.74	3.69	3.69	3.63	3.63	3.58	3.52	3.52
180.0	3.63	3.58	3.58	3.52	3.52	3.52	3.47	3.47	3.41
225.0	3.52	3.58	3.47	3.52	3.41	3.41	3.41	3.41	3.36
270.0	3.58	3.58	3.47	3.52	3.52	3.47	3.41	3.41	3.30
315.0	3.52	3.52	3.47	3.47	3.36	3.36	3.30	3.30	3.25
360.0	3.96	3.91	3.91	3.85	3.80	3.74	3.74	3.69	3.63

Intensity data(cd)

C/γ(°)	90.0
0.0	3.52
45.0	3.30
90.0	3.30
135.0	3.41
180.0	3.41
225.0	3.36
270.0	3.30
315.0	3.30
360.0	3.52