NATA LIGHTING CO.,LTD.
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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: LN01D04536DA-N
Luminaire: 97.70.234.00
Report No: 200709-B003
Test No: 200709-C003
LampCAT: CITIZEN CLU700
Lamp flux(lm): 534.4
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 11.0200
Current(A): 0.6000
Power (W): 6.6120
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 482.52
Efficiency(%): 90.29%
Lumens(lm)/Power(W): 72.98
Central intensity(cd): 1078.903
Maximum intensity(cd): 1078.903
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=38.0
[C90/270]Total=38.0
Field angle(10%Imax): [C0/180]Total=59.5
[C90/270]Total=59.5
Maximum s/h(1/2): C0_180=0.63 C90_270=0.63
Maximum s/h(1/4): C0_180=0.59 C90_270=0.59
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.29%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.487%

Nata LM01D04536DA

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1078.903	0.000	0	.000%	.000%
1.0	1077.820	1.032	1.032	.193%	.214%
2.0	1076.224	3.092	4.124	.579%	.855%
3.0	1072.434	5.139	9.263	.962%	1.920%
4.0	1067.695	7.164	16.426	1.340%	3.404%
5.0	1058.688	9.148	25.574	1.712%	5.300%
6.0	1048.887	11.076	36.65	2.072%	7.595%
7.0	1036.132	12.942	49.591	2.422%	10.278%
8.0	1018.969	14.708	64.299	2.752%	13.326%
9.0	997.847	16.345	80.645	3.058%	16.713%
10.0	973.132	17.837	98.481	3.338%	20.410%
11.0	944.107	19.157	117.638	3.585%	24.380%
12.0	909.640	20.264	137.902	3.792%	28.579%
13.0	869.386	21.113	159.015	3.950%	32.955%
14.0	824.224	21.678	180.693	4.056%	37.448%
15.0	775.582	21.963	202.656	4.110%	41.999%
16.0	722.250	21.947	224.603	4.107%	46.548%
17.0	660.846	21.539	246.142	4.030%	51.011%
18.0	598.774	20.768	266.91	3.886%	55.316%
19.0	540.098	19.814	286.724	3.708%	59.422%
20.0	481.184	18.692	305.417	3.498%	63.296%
21.0	421.734	17.338	322.754	3.244%	66.889%
22.0	371.791	15.946	338.701	2.984%	70.194%
23.0	326.067	14.643	353.344	2.740%	73.228%
24.0	277.116	13.188	366.531	2.468%	75.961%
25.0	237.938	11.711	378.243	2.191%	78.388%
26.0	204.736	10.449	388.692	1.955%	80.554%
27.0	173.475	9.253	397.945	1.731%	82.472%
28.0	144.626	8.054	405.999	1.507%	84.141%
29.0	122.562	6.990	412.989	1.308%	85.589%
30.0	102.417	6.074	419.063	1.137%	86.848%
31.0	85.015	5.216	424.279	.976%	87.929%
32.0	70.664	4.460	428.739	.835%	88.854%
33.0	59.520	3.835	432.575	.718%	89.648%
34.0	50.463	3.328	435.903	.623%	90.338%
35.0	42.553	2.889	438.792	.541%	90.937%
36.0	36.584	2.520	441.311	.471%	91.459%
37.0	31.943	2.235	443.546	.418%	91.922%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	28.209	2.008	445.554	.376%	92.338%
39.0	24.666	1.805	447.359	.338%	92.712%
40.0	22.099	1.631	448.99	.305%	93.050%
41.0	19.976	1.498	450.488	.280%	93.361%
42.0	17.937	1.377	451.866	.258%	93.646%
43.0	16.221	1.265	453.131	.237%	93.909%
44.0	14.829	1.172	454.303	.219%	94.151%
45.0	13.549	1.091	455.394	.204%	94.378%
46.0	12.305	1.011	456.405	.189%	94.587%
47.0	11.327	0.940	457.344	.176%	94.782%
48.0	10.406	0.879	458.223	.164%	94.964%
49.0	9.598	0.821	459.045	.154%	95.134%
50.0	8.838	0.769	459.813	.144%	95.293%
51.0	8.198	0.721	460.534	.135%	95.443%
52.0	7.622	0.679	461.213	.127%	95.584%
53.0	7.080	0.640	461.852	.120%	95.716%
54.0	6.638	0.605	462.457	.113%	95.841%
55.0	6.244	0.575	463.032	.108%	95.961%
56.0	5.892	0.548	463.58	.103%	96.074%
57.0	5.590	0.525	464.105	.098%	96.183%
58.0	5.330	0.505	464.61	.094%	96.288%
59.0	5.112	0.488	465.099	.091%	96.389%
60.0	4.915	0.474	465.572	.089%	96.487%
61.0	4.711	0.459	466.032	.086%	96.582%
62.0	4.570	0.447	466.479	.084%	96.675%
63.0	4.423	0.437	466.916	.082%	96.766%
64.0	4.296	0.428	467.344	.080%	96.854%
65.0	4.198	0.420	467.764	.079%	96.941%
66.0	4.106	0.414	468.179	.078%	97.027%
67.0	4.036	0.409	468.588	.077%	97.112%
68.0	4.177	0.416	469.004	.078%	97.198%
69.0	4.451	0.440	469.444	.082%	97.289%
70.0	4.992	0.485	469.929	.091%	97.390%
71.0	5.808	0.558	470.487	.104%	97.506%
72.0	6.680	0.649	471.137	.121%	97.640%
73.0	7.523	0.743	471.879	.139%	97.794%
74.0	8.241	0.829	472.708	.155%	97.966%
75.0	8.880	0.905	473.613	.169%	98.153%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.204	0.960	474.573	.180%	98.352%
77.0	9.190	0.981	475.553	.183%	98.556%
78.0	8.951	0.971	476.525	.182%	98.757%
79.0	8.304	0.927	477.452	.173%	98.949%
80.0	7.636	0.859	478.311	.161%	99.127%
81.0	7.024	0.793	479.104	.148%	99.291%
82.0	6.075	0.710	479.814	.133%	99.439%
83.0	4.866	0.595	480.409	.111%	99.562%
84.0	3.670	0.465	480.874	.087%	99.658%
85.0	2.763	0.351	481.225	.066%	99.731%
86.0	2.489	0.287	481.512	.054%	99.790%
87.0	2.391	0.267	481.779	.050%	99.846%
88.0	2.320	0.258	482.037	.048%	99.899%
89.0	2.201	0.248	482.285	.046%	99.951%
90.0	2.145	0.238	482.523	.045%	100.000%

Zonal flux distribution table

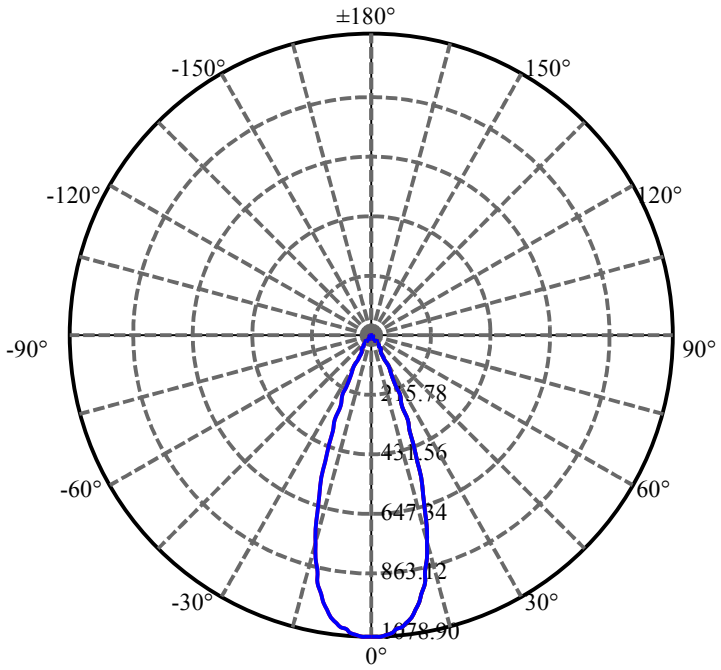
ZONAL LUMEN SUMMARY

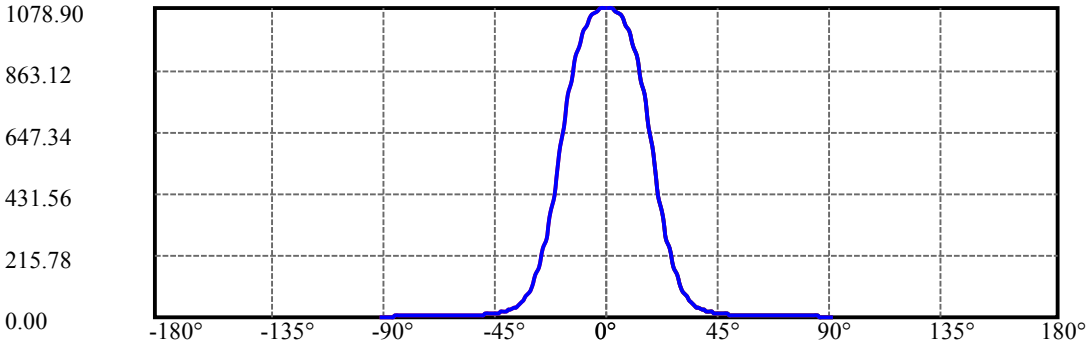
Zone	Lumens	%Lamp	%Fixt
0-30	419.06	78.41%	86.85%
0-40	448.99	84.01%	93.05%
0-60	465.57	87.12%	96.49%
0-90	482.29	90.24%	99.95%
0-120	482.29	90.24%	99.95%
0-180	482.52	90.29%	100.00%
60-90	17.19	3.22%	3.56%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.74	386.02	72.23%	80.00%

ZONAL LUMEN SUMMARY

0-10	98.48
10-20	206.94
20-30	113.65
30-40	29.93
40-50	10.82
50-60	5.76
60-70	4.36
70-80	8.38
80-90	3.97
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):

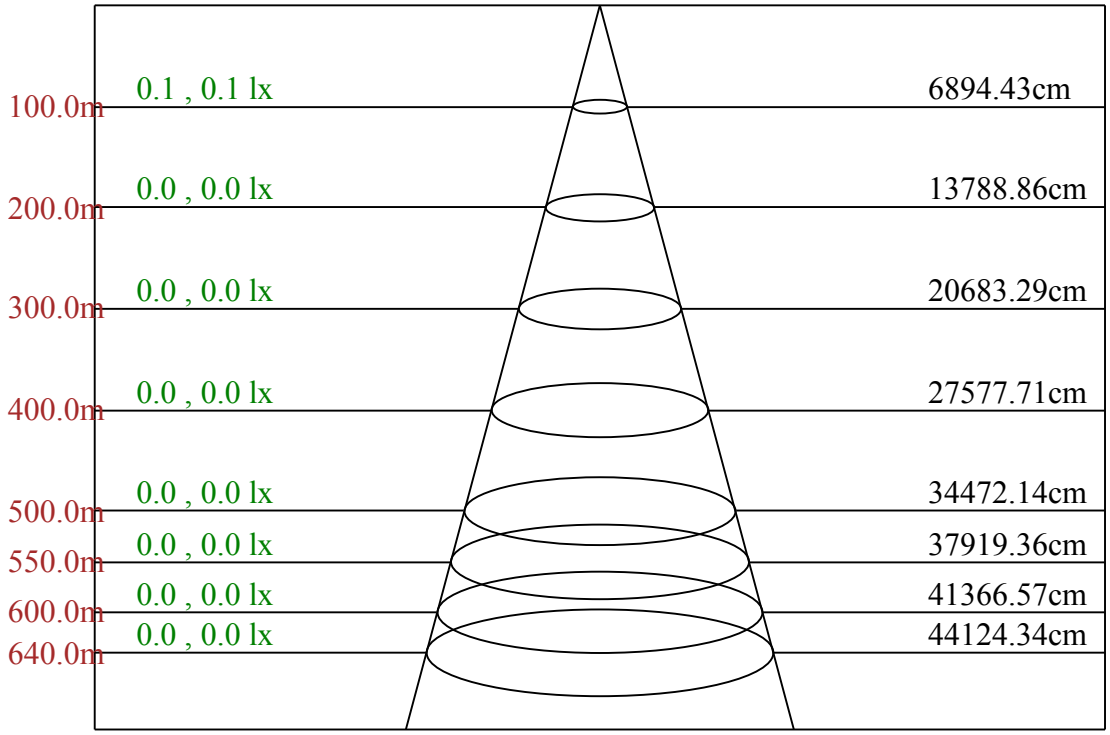
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:29.7 Right:29.7
:C90/270Left:29.7 Right:29.7

Beam Angle(50%Imax):C0/180Left:19.0 Right:19.0
:C90/270Left:19.0 Right:19.0

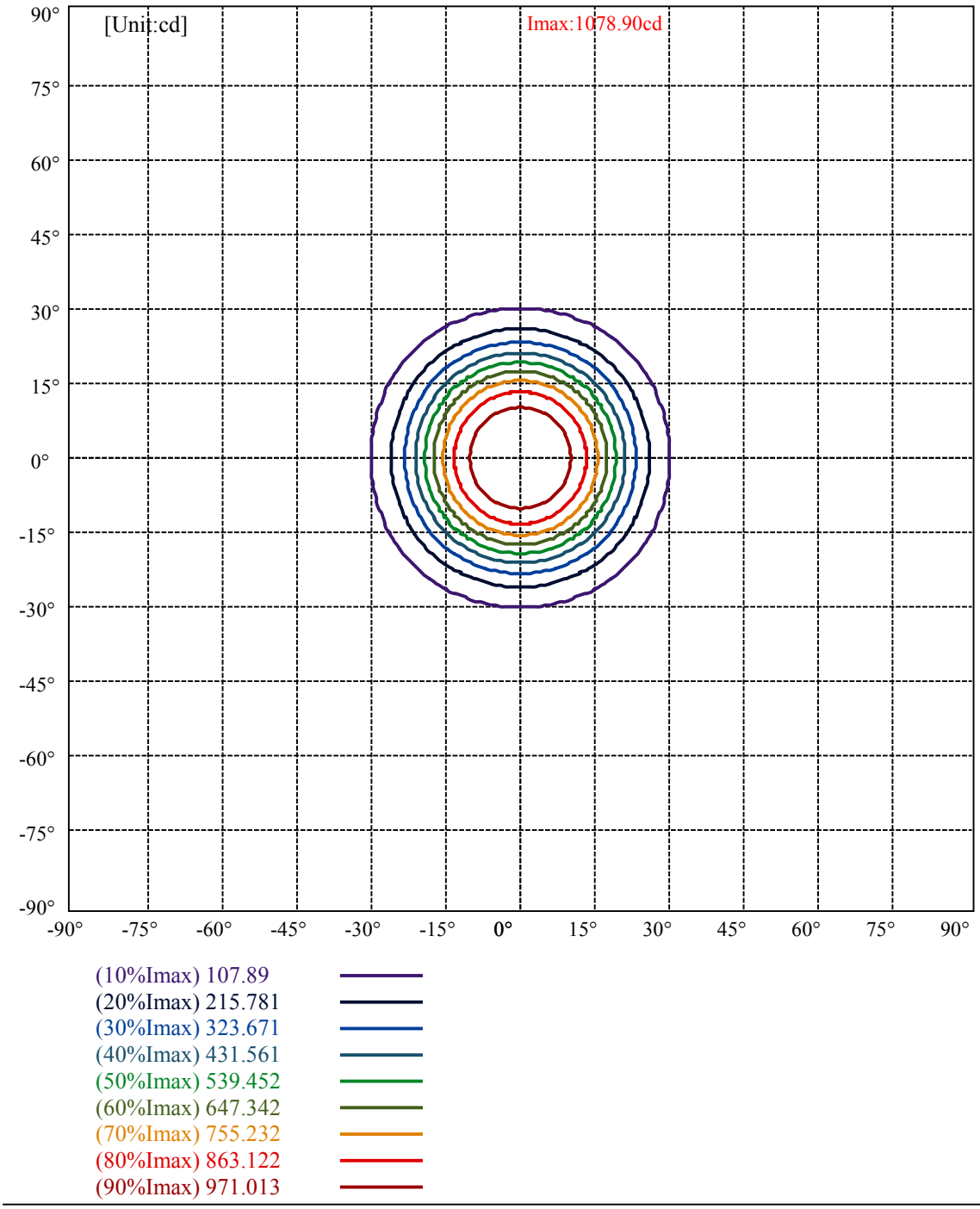
Lux distance Curve



Max , Ave

Beam angle of C0 plane 38.04

ISO-Intensity(V-H)

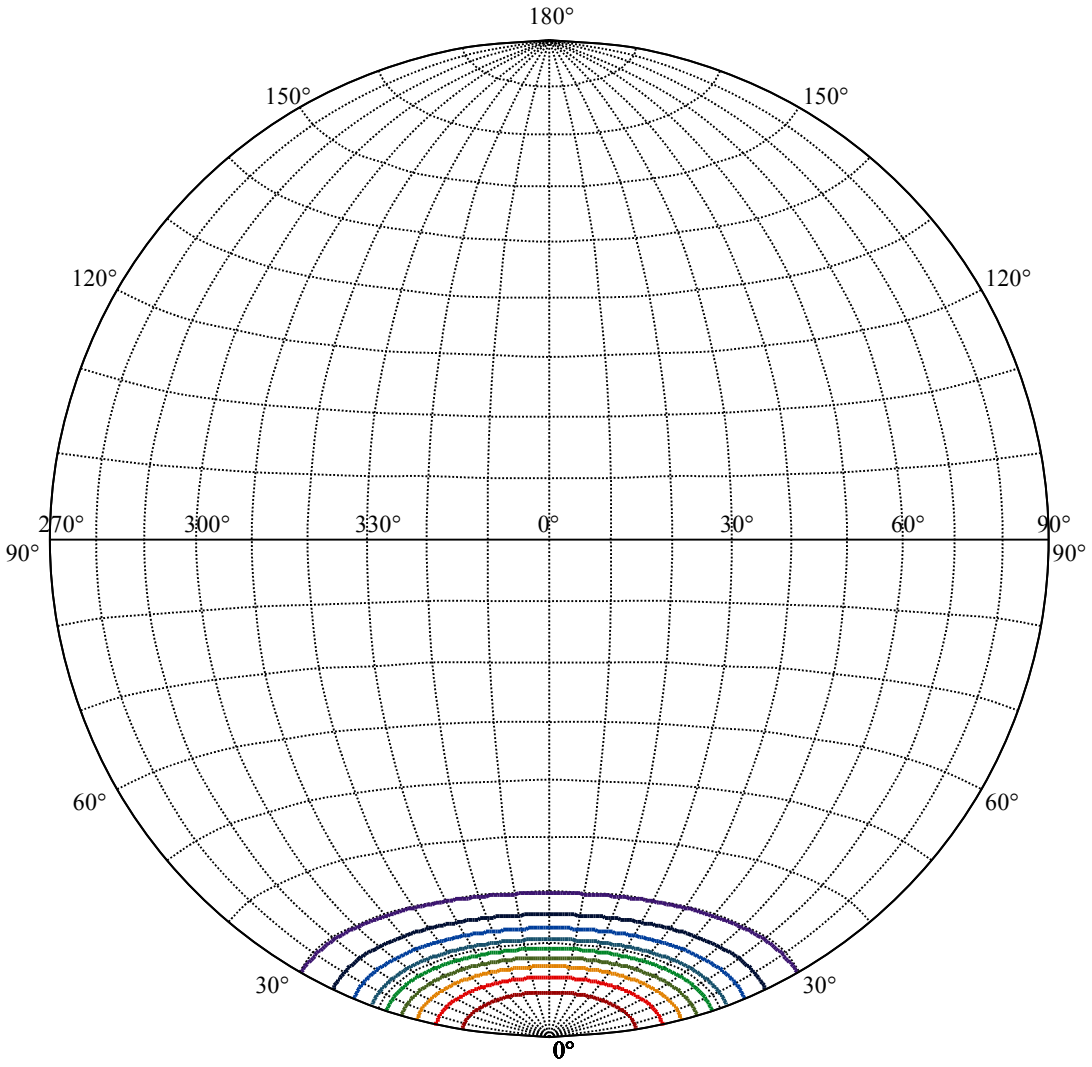


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/7/9
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1078.90

(10%Imax) 107.89
(20%Imax) 215.781
(30%Imax) 323.671
(40%Imax) 431.561
(50%Imax) 539.452
(60%Imax) 647.342
(70%Imax) 755.232
(80%Imax) 863.122
(90%Imax) 971.013

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/7/9
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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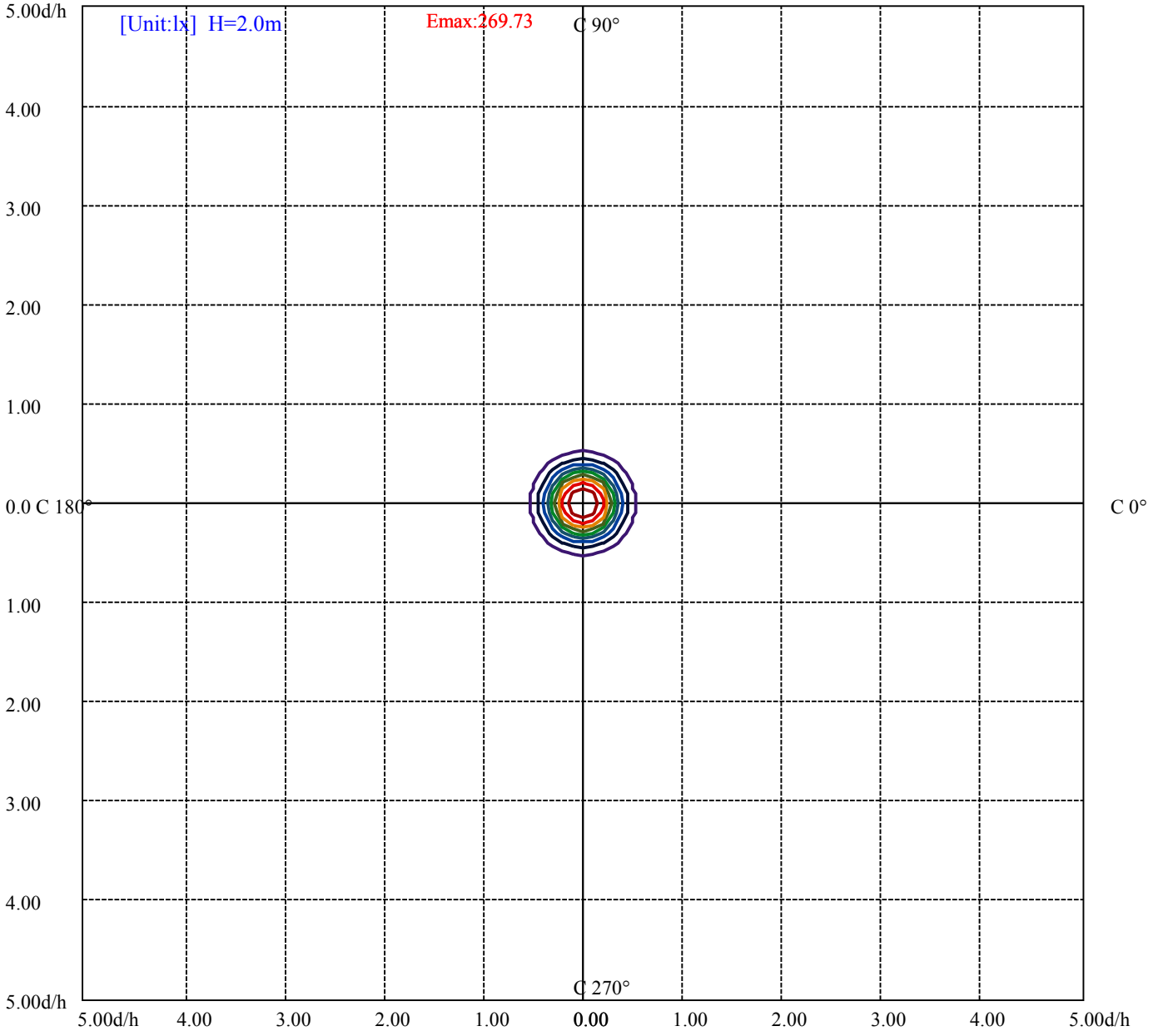
ISO illuminance diagram

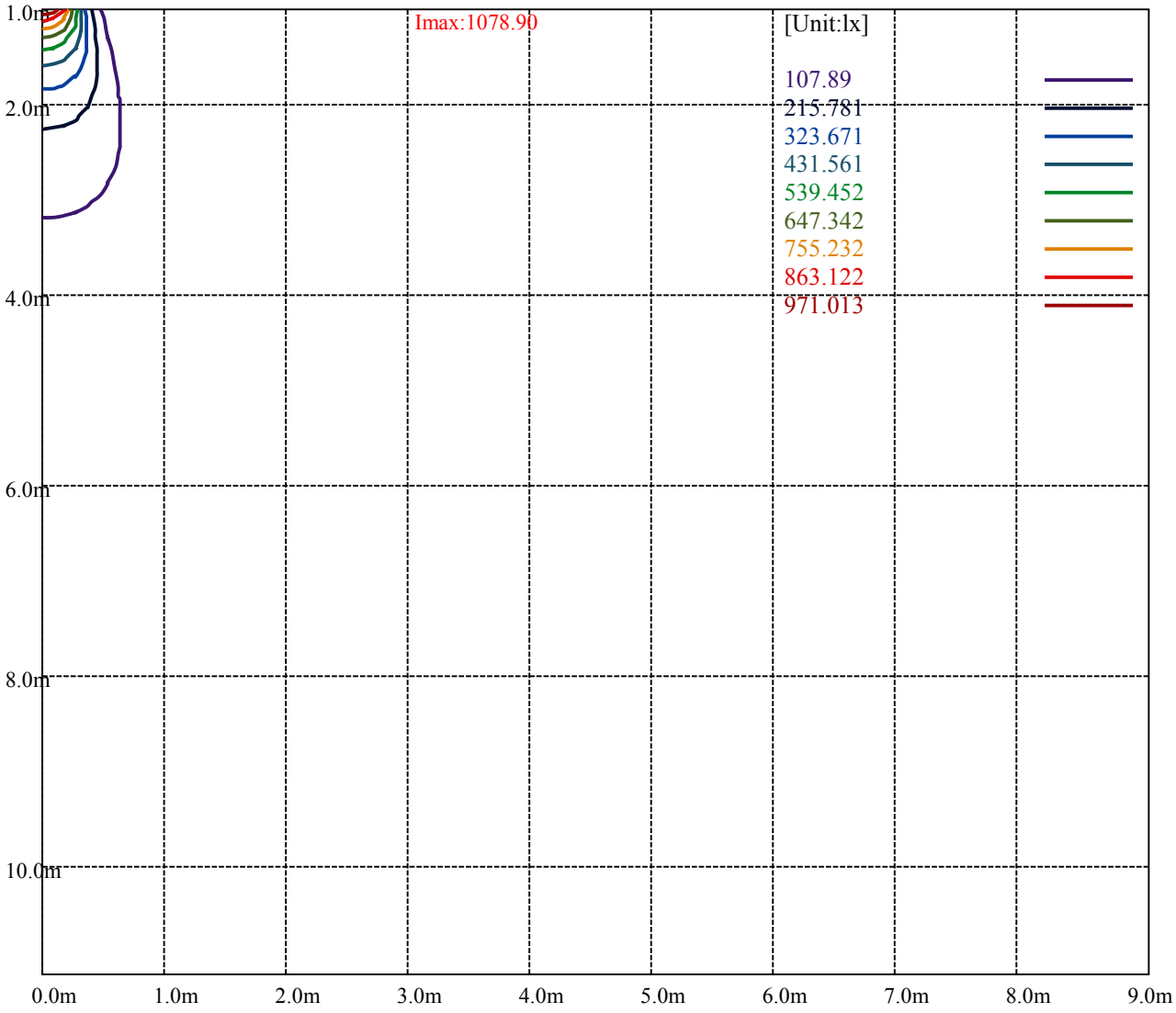


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/7/9
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/7/9
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

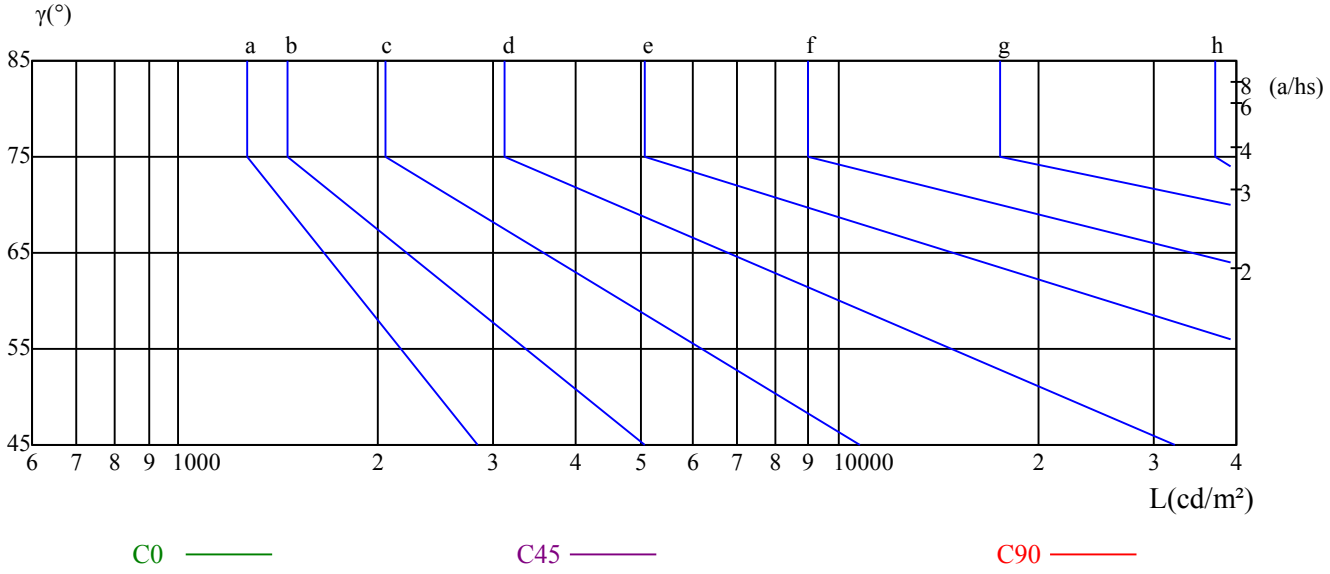
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

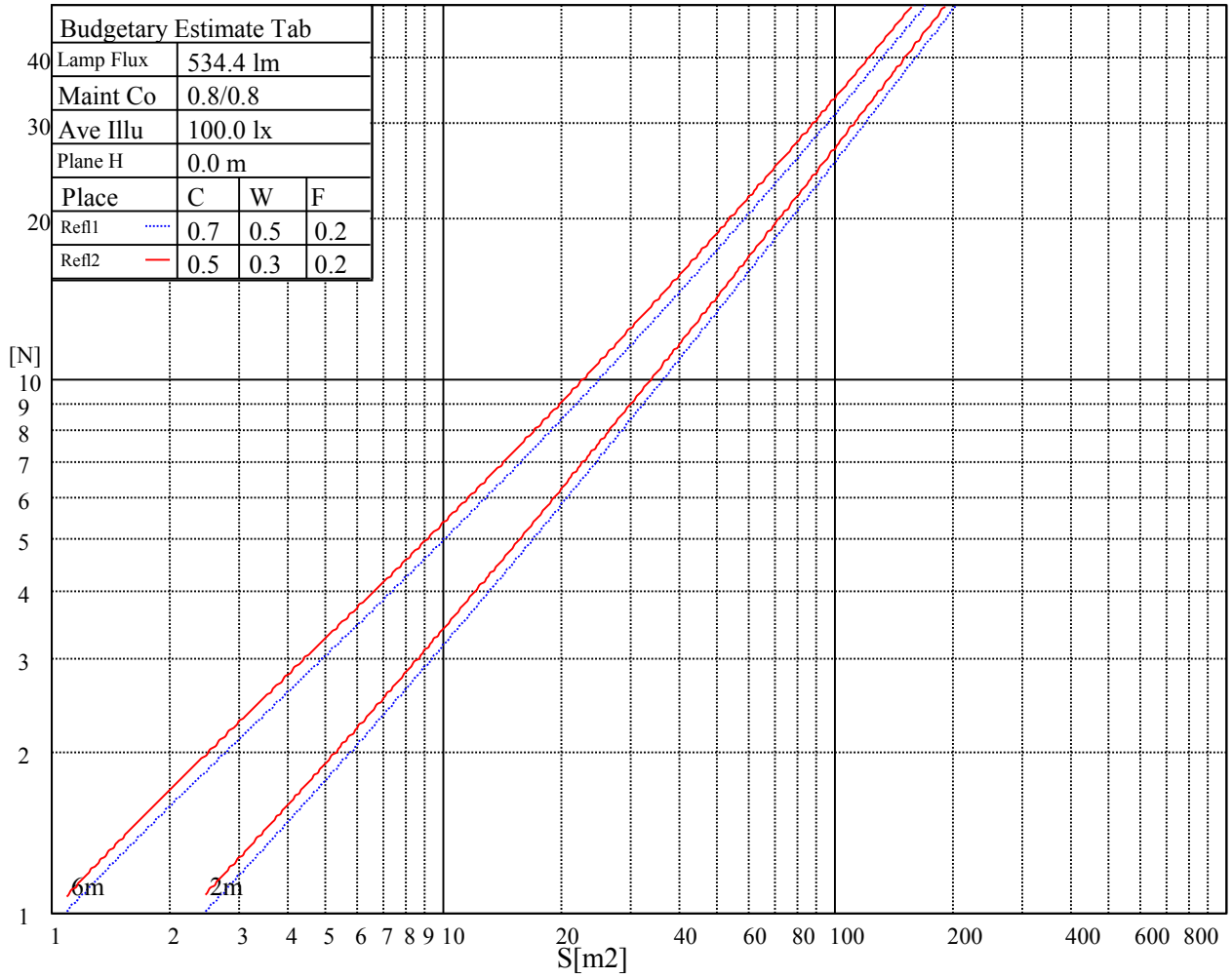
Glare Table

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



Budgetary Estimate Table

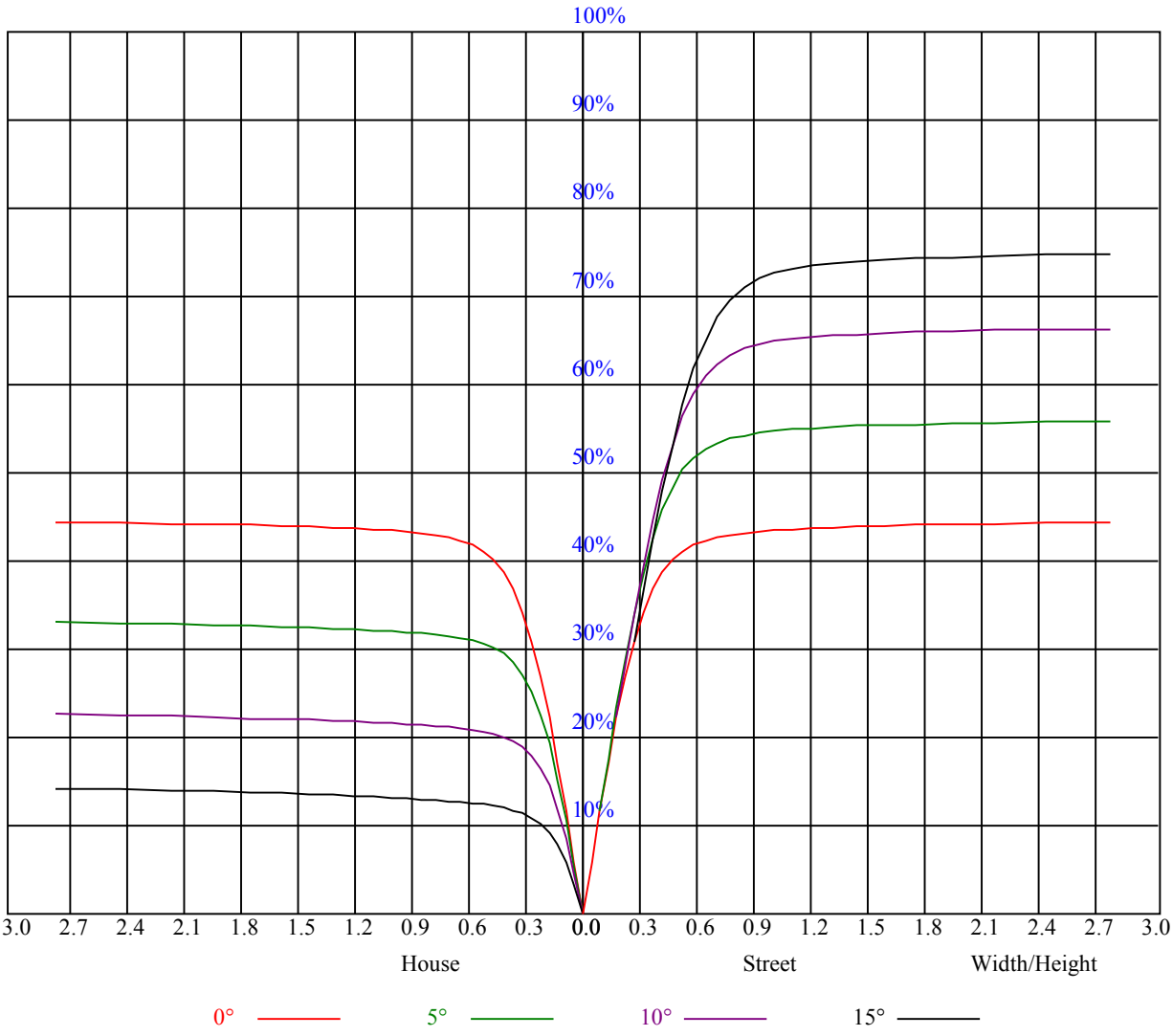


Equipment: GMS1980 Date: 2020/7/9 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.98	0.96	0.98	0.96	0.94	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.91	0.88	0.93	0.89	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.81	0.80
3	0.89	0.85	0.82	0.88	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.76
4	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.72
5	0.80	0.76	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
6	0.77	0.72	0.69	0.76	0.72	0.68	0.75	0.71	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
7	0.73	0.69	0.65	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.63
8	0.70	0.66	0.63	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.61
9	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.58
10	0.65	0.61	0.58	0.65	0.60	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.56

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/7/9	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

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	1078.76	1078.48	1079.72	1081.29	1079.94	1075.22	1071.34	1061.10	1051.48
45.0	1078.76	1077.58	1074.15	1071.06	1068.75	1062.28	1052.55	1042.31	1029.43
90.0	1077.75	1075.73	1072.86	1067.68	1060.59	1051.26	1039.50	1027.63	1011.09
135.0	1080.34	1078.88	1076.68	1072.29	1068.64	1058.96	1050.69	1041.75	1022.34
180.0	1078.76	1077.02	1073.64	1069.99	1066.16	1056.77	1047.15	1034.21	1015.54
225.0	1078.76	1076.12	1076.06	1069.93	1061.61	1050.98	1036.97	1020.04	1000.29
270.0	1077.75	1077.24	1075.78	1070.66	1063.63	1052.66	1040.12	1026.39	1004.74
315.0	1080.34	1081.52	1080.90	1076.57	1072.24	1061.38	1052.78	1035.62	1016.83
360.0	1078.76	1078.48	1079.72	1081.29	1079.94	1075.22	1071.34	1061.10	1051.48

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1036.80	1019.19	997.43	967.56	927.62	890.78	849.71	796.33	736.65
45.0	1013.06	993.88	974.08	940.95	905.23	869.46	823.78	778.11	718.93
90.0	990.84	964.63	933.41	900.00	857.70	811.07	764.94	713.48	643.61
135.0	1001.53	980.94	947.36	913.16	872.83	826.37	778.05	720.84	656.49
180.0	984.71	956.70	924.64	880.54	845.04	791.27	726.24	678.26	612.79
225.0	977.57	943.43	911.08	875.36	825.86	779.63	727.99	659.14	601.54
270.0	981.45	956.64	925.09	891.56	848.42	801.68	755.16	703.52	641.81
315.0	996.81	969.64	939.77	907.99	872.38	823.56	778.78	728.33	674.94
360.0	1036.80	1019.19	997.43	967.56	927.62	890.78	849.71	796.33	736.65

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	679.33	614.03	547.82	490.44	430.65	380.25	328.16	281.03	242.55
45.0	655.71	597.66	541.24	470.53	417.83	368.44	312.19	269.27	235.07
90.0	585.73	529.20	469.01	411.86	365.40	316.52	270.11	233.44	196.54
135.0	598.33	539.83	470.48	418.39	369.06	317.93	271.07	231.19	195.58
180.0	539.44	489.66	435.15	365.18	325.01	283.61	232.82	203.91	174.94
225.0	544.67	475.26	428.96	373.61	317.48	281.76	240.41	200.36	175.73
270.0	581.18	526.22	462.09	413.72	367.43	324.39	274.84	238.28	204.86
315.0	605.81	548.94	494.72	430.14	381.49	335.64	287.33	246.04	212.63
360.0	679.33	614.03	547.82	490.44	430.65	380.25	328.16	281.03	242.55

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	208.58	171.73	146.59	124.59	101.31	86.06	73.18	60.98	50.85
45.0	199.24	165.99	143.10	117.28	96.53	81.51	67.05	57.26	47.64
90.0	167.79	139.78	115.48	97.37	81.90	66.49	56.70	48.77	41.01
135.0	164.08	139.33	115.65	96.64	78.98	64.97	55.07	46.24	39.26
180.0	146.42	121.56	102.60	83.98	70.43	57.60	47.59	40.44	34.37
225.0	150.41	120.71	104.68	88.37	73.13	60.41	51.30	42.86	36.17
270.0	172.01	144.23	123.30	103.22	86.12	73.58	61.76	53.10	45.06
315.0	179.27	153.68	129.09	107.89	91.74	74.70	63.51	54.06	46.07
360.0	208.58	171.73	146.59	124.59	101.31	86.06	73.18	60.98	50.85

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	43.48	36.62	32.01	27.79	24.41	21.99	19.74	17.72	16.14
45.0	40.95	35.27	31.16	27.34	24.41	22.05	19.46	17.83	16.31
90.0	35.94	31.78	27.90	24.69	22.33	19.91	18.17	16.43	14.91
135.0	34.26	30.43	26.38	23.85	21.43	19.24	17.33	15.81	14.40
180.0	29.70	26.38	23.63	20.64	18.73	16.99	15.53	13.89	12.77
225.0	31.67	27.90	24.98	22.05	19.69	18.00	16.43	14.74	13.50
270.0	38.42	33.75	30.09	25.65	22.95	21.04	18.39	16.76	15.53
315.0	38.25	33.41	29.53	25.31	22.84	20.59	18.45	16.59	15.08
360.0	43.48	36.62	32.01	27.79	24.41	21.99	19.74	17.72	16.14

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	14.79	13.22	12.21	11.25	10.29	9.39	8.78	8.10	7.48
45.0	14.85	13.44	12.38	11.31	10.52	9.73	9.00	8.33	7.71
90.0	13.73	12.54	11.36	10.52	9.73	8.89	8.27	7.71	7.14
135.0	13.16	12.15	11.19	10.35	9.39	8.66	8.10	7.59	6.92
180.0	11.59	10.58	9.84	9.17	8.44	7.82	7.31	6.81	6.30
225.0	12.43	11.25	10.35	9.62	8.89	8.21	7.71	7.14	6.69
270.0	14.06	12.66	11.76	10.52	9.73	9.00	8.21	7.65	7.14
315.0	13.78	12.60	11.53	10.52	9.79	9.00	8.21	7.65	7.26
360.0	14.79	13.22	12.21	11.25	10.29	9.39	8.78	8.10	7.48

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.03	6.58	6.19	5.85	5.51	5.29	5.06	4.84	4.73
45.0	7.20	6.75	6.36	5.96	5.68	5.40	5.12	4.95	4.78
90.0	6.75	6.30	5.91	5.63	5.40	5.12	4.95	4.78	4.56
135.0	6.58	6.19	5.79	5.57	5.34	5.12	4.95	4.73	4.56
180.0	6.02	5.68	5.40	5.12	4.95	4.78	4.61	4.44	4.39
225.0	6.24	5.91	5.63	5.29	5.06	4.89	4.73	4.50	4.39
270.0	6.64	6.24	5.91	5.63	5.34	5.12	4.95	4.73	4.56
315.0	6.64	6.30	5.96	5.68	5.34	5.18	4.95	4.73	4.61
360.0	7.03	6.58	6.19	5.85	5.51	5.29	5.06	4.84	4.73

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.56	4.44	4.33	4.22	4.16	4.16	4.16	5.01	8.33
45.0	4.61	4.44	4.28	4.22	4.05	3.99	3.88	3.71	3.60
90.0	4.44	4.28	4.16	4.05	3.94	3.83	3.77	3.66	3.60
135.0	4.39	4.28	4.22	4.11	3.99	3.88	3.83	3.71	3.60
180.0	4.28	4.22	4.16	4.16	4.33	6.02	8.78	12.83	16.65
225.0	4.28	4.16	4.05	3.99	3.83	3.77	3.66	3.60	3.49
270.0	4.44	4.28	4.22	4.05	3.99	3.88	3.77	3.71	3.60
315.0	4.39	4.28	4.16	4.05	3.99	3.88	3.77	3.71	3.60
360.0	4.56	4.44	4.33	4.22	4.16	4.16	4.16	5.01	8.33

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	12.26	16.26	19.80	22.95	25.37	27.68	28.52	26.61	24.08
45.0	3.54	3.43	3.38	3.32	3.26	3.26	3.21	3.09	3.04
90.0	3.54	3.49	3.43	3.43	3.43	3.38	3.32	3.21	3.09
135.0	3.60	3.54	3.49	3.49	3.43	3.38	3.26	3.21	3.04
180.0	20.03	23.12	25.54	27.79	28.13	26.04	23.68	20.93	18.79
225.0	3.43	3.43	3.38	3.32	3.26	3.15	3.09	2.98	2.87
270.0	3.54	3.49	3.49	3.43	3.43	3.38	3.32	3.26	3.15
315.0	3.49	3.43	3.43	3.32	3.32	3.26	3.21	3.15	3.04
360.0	12.26	16.26	19.80	22.95	25.37	27.68	28.52	26.61	24.08

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	21.77	19.41	16.54	10.41	4.11	2.87	2.59	2.64	2.31
45.0	2.93	2.81	2.76	2.64	2.59	2.48	2.31	2.19	2.14
90.0	3.04	2.98	2.93	2.81	2.64	2.42	2.36	2.31	2.25
135.0	2.98	2.87	2.76	2.64	2.48	2.36	2.31	2.25	2.14
180.0	16.71	11.98	5.68	2.87	2.70	2.64	2.59	2.36	2.19
225.0	2.76	2.70	2.59	2.48	2.42	2.25	2.25	2.19	2.08
270.0	3.09	2.98	2.93	2.81	2.70	2.48	2.42	2.36	2.36
315.0	2.93	2.87	2.76	2.70	2.48	2.42	2.31	2.25	2.14
360.0	21.77	19.41	16.54	10.41	4.11	2.87	2.59	2.64	2.31

Intensity data(cd)

C/γ(°)	90.0
0.0	2.19
45.0	2.14
90.0	2.19
135.0	2.14
180.0	2.08
225.0	2.08
270.0	2.25
315.0	2.08
360.0	2.19