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Nata

LumCAT: 2-2188-M
Luminaire: 92.70.131.00
Report No: NATA0100
Test No: GC20200211719
LampCAT: BRIDGELUX V13B
Lamp flux(lm): 2987.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.5000
Current(A): 0.6000
Power (W): 20.7000
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 2392.17
Efficiency(%): 80.09%
Lumens(lm)/Power(W): 115.56
Central intensity(cd): 7020.703
Maximum intensity(cd): 7020.703
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=35.7
[C90/270]Total=35.7
Field angle(10%Imax): [C0/180]Total=53.4
[C90/270]Total=53.4
Maximum s/h(1/2): C0_180=0.59 C90_270=0.59
Maximum s/h(1/4): C0_180=0.56 C90_270=0.56
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 80.09%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.701%

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2020/2/17
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7020.703	0.000	0	.000%	.000%
1.0	7007.695	6.712	6.712	.225%	.281%
2.0	6964.805	20.055	26.767	.671%	1.119%
3.0	6890.063	33.136	59.903	1.109%	2.504%
4.0	6793.453	45.803	105.706	1.533%	4.419%
5.0	6678.070	57.954	163.66	1.940%	6.841%
6.0	6516.141	69.339	232.999	2.321%	9.740%
7.0	6337.688	79.783	312.783	2.671%	13.075%
8.0	6154.172	89.402	402.185	2.993%	16.813%
9.0	5930.648	97.941	500.126	3.279%	20.907%
10.0	5688.281	105.147	605.273	3.520%	25.302%
11.0	5461.313	111.407	716.68	3.730%	29.959%
12.0	5215.852	116.717	833.397	3.907%	34.838%
13.0	4931.508	120.424	953.82	4.032%	39.873%
14.0	4675.219	122.965	1076.785	4.117%	45.013%
15.0	4407.891	124.697	1201.482	4.175%	50.226%
16.0	4109.133	124.798	1326.281	4.178%	55.442%
17.0	3784.711	122.928	1449.209	4.115%	60.581%
18.0	3453.961	119.350	1568.559	3.996%	65.570%
19.0	3109.148	114.185	1682.744	3.823%	70.344%
20.0	2769.609	107.598	1790.341	3.602%	74.842%
21.0	2418.609	99.624	1889.966	3.335%	79.006%
22.0	2096.648	90.736	1980.702	3.038%	82.799%
23.0	1785.656	81.461	2062.163	2.727%	86.205%
24.0	1395.113	69.543	2131.706	2.328%	89.112%
25.0	1097.234	56.670	2188.376	1.897%	91.481%
26.0	870.202	46.442	2234.818	1.555%	93.422%
27.0	622.153	36.511	2271.329	1.222%	94.948%
28.0	382.493	25.436	2296.764	.852%	96.012%
29.0	253.758	16.646	2313.41	.557%	96.707%
30.0	131.351	10.398	2323.808	.348%	97.142%
31.0	61.207	5.359	2329.167	.179%	97.366%
32.0	41.407	2.940	2332.107	.098%	97.489%
33.0	30.354	2.114	2334.221	.071%	97.577%
34.0	23.034	1.616	2335.836	.054%	97.645%
35.0	19.209	1.312	2337.148	.044%	97.700%
36.0	17.156	1.158	2338.306	.039%	97.748%
37.0	15.743	1.073	2339.379	.036%	97.793%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	14.843	1.021	2340.4	.034%	97.836%
39.0	14.119	0.989	2341.389	.033%	97.877%
40.0	13.521	0.964	2342.353	.032%	97.917%
41.0	13.099	0.948	2343.301	.032%	97.957%
42.0	12.720	0.938	2344.239	.031%	97.996%
43.0	12.368	0.929	2345.168	.031%	98.035%
44.0	12.087	0.923	2346.091	.031%	98.074%
45.0	11.890	0.921	2347.012	.031%	98.112%
46.0	11.658	0.921	2347.933	.031%	98.151%
47.0	11.489	0.921	2348.854	.031%	98.189%
48.0	11.341	0.923	2349.777	.031%	98.228%
49.0	11.180	0.925	2350.702	.031%	98.266%
50.0	11.025	0.926	2351.627	.031%	98.305%
51.0	10.941	0.929	2352.557	.031%	98.344%
52.0	10.821	0.934	2353.491	.031%	98.383%
53.0	10.716	0.937	2354.427	.031%	98.422%
54.0	10.638	0.941	2355.369	.032%	98.461%
55.0	10.547	0.946	2356.314	.032%	98.501%
56.0	10.455	0.949	2357.263	.032%	98.541%
57.0	10.399	0.954	2358.217	.032%	98.580%
58.0	10.336	0.959	2359.176	.032%	98.621%
59.0	10.301	0.965	2360.14	.032%	98.661%
60.0	10.245	0.971	2361.111	.032%	98.701%
61.0	10.188	0.975	2362.086	.033%	98.742%
62.0	10.160	0.981	2363.067	.033%	98.783%
63.0	10.125	0.987	2364.053	.033%	98.824%
64.0	10.048	0.990	2365.043	.033%	98.866%
65.0	10.041	0.994	2366.037	.033%	98.907%
66.0	10.005	1.000	2367.037	.033%	98.949%
67.0	9.991	1.005	2368.043	.034%	98.991%
68.0	9.949	1.010	2369.053	.034%	99.033%
69.0	9.935	1.014	2370.067	.034%	99.076%
70.0	9.921	1.020	2371.087	.034%	99.118%
71.0	9.900	1.024	2372.112	.034%	99.161%
72.0	9.893	1.029	2373.141	.034%	99.204%
73.0	9.879	1.034	2374.175	.035%	99.248%
74.0	9.872	1.038	2375.213	.035%	99.291%
75.0	9.865	1.043	2376.256	.035%	99.335%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.858	1.047	2377.303	.035%	99.378%
77.0	9.858	1.051	2378.354	.035%	99.422%
78.0	9.837	1.054	2379.408	.035%	99.466%
79.0	9.830	1.057	2380.465	.035%	99.511%
80.0	9.830	1.060	2381.525	.035%	99.555%
81.0	9.823	1.063	2382.588	.036%	99.599%
82.0	9.830	1.066	2383.653	.036%	99.644%
83.0	9.844	1.069	2384.723	.036%	99.688%
84.0	9.844	1.073	2385.795	.036%	99.733%
85.0	9.865	1.076	2386.871	.036%	99.778%
86.0	9.717	1.070	2387.941	.036%	99.823%
87.0	9.675	1.061	2389.003	.036%	99.867%
88.0	9.647	1.058	2390.061	.035%	99.912%
89.0	9.626	1.056	2391.118	.035%	99.956%
90.0	9.654	1.057	2392.175	.035%	100.000%

Zonal flux distribution table

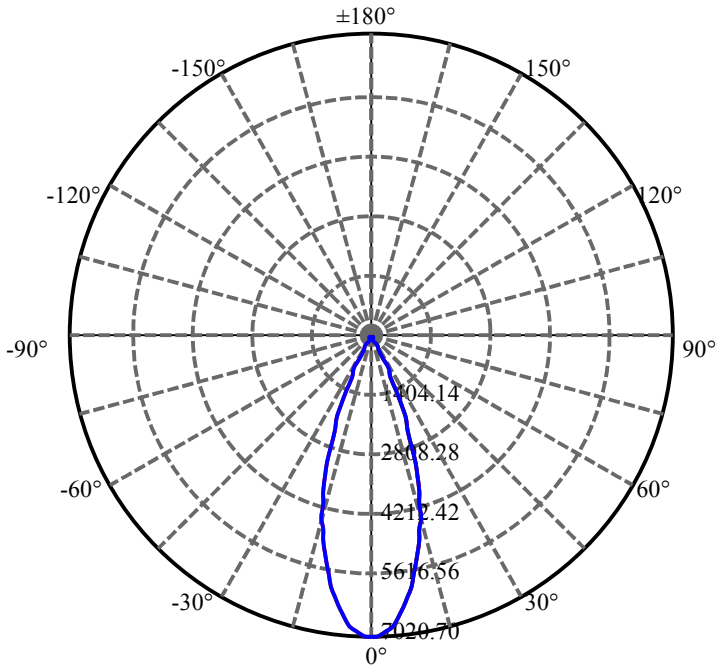
ZONAL LUMEN SUMMARY

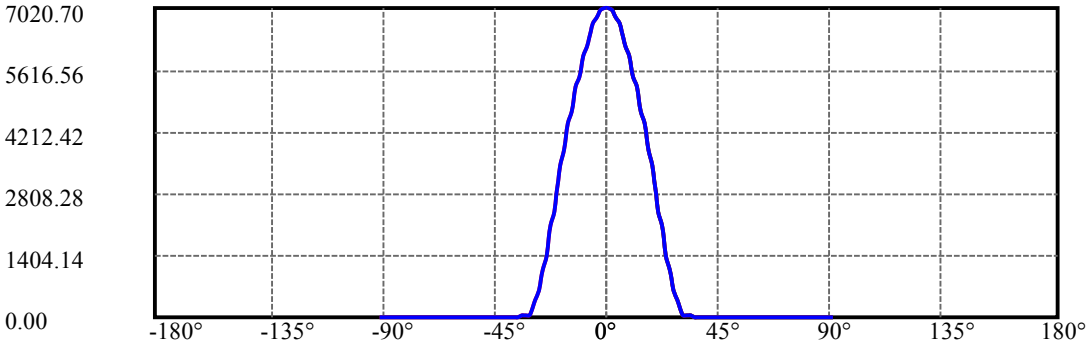
Zone	Lumens	%Lamp	%Fixt
0-30	2323.81	77.80%	97.14%
0-40	2342.35	78.42%	97.92%
0-60	2361.11	79.05%	98.70%
0-90	2391.12	80.05%	99.96%
0-120	2391.12	80.05%	99.96%
0-180	2392.17	80.09%	100.00%
60-90	30.98	1.04%	1.29%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-21.26	1913.74	64.07%	80.00%

ZONAL LUMEN SUMMARY

0-10	605.27
10-20	1185.07
20-30	533.47
30-40	18.54
40-50	9.27
50-60	9.48
60-70	9.98
70-80	10.44
80-90	9.59
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:26.7 Right:26.7
:C90/270Left:26.7 Right:26.7

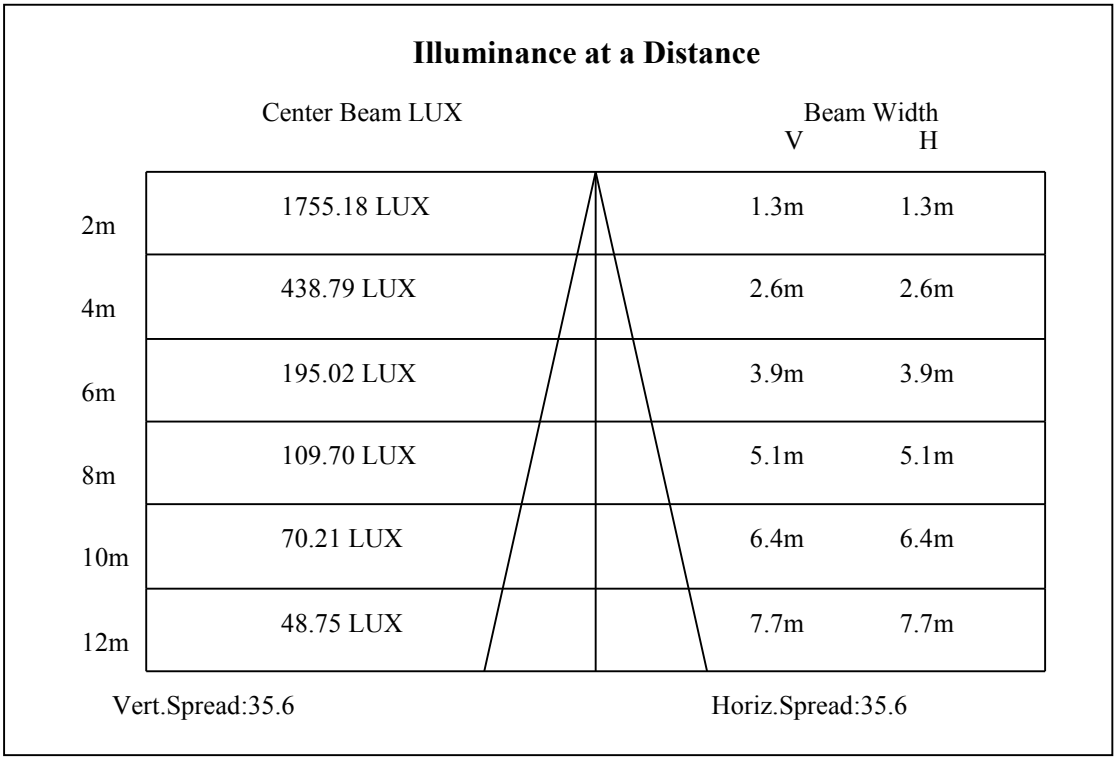
Beam Angle(50%Imax):C0/180Left:17.8 Right:17.8
:C90/270Left:17.8 Right:17.8

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/2/17
Humidity(%): 65.0%

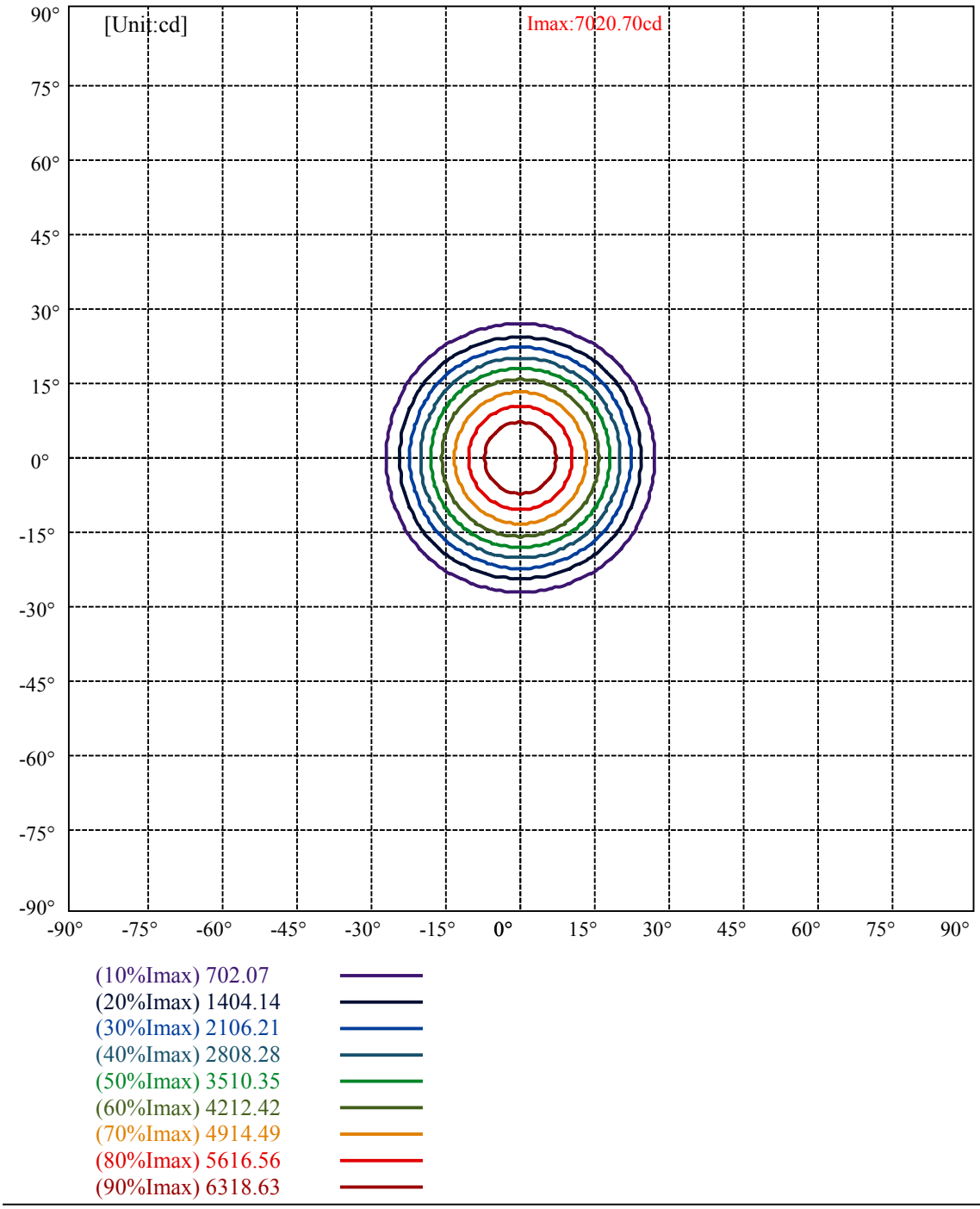
Operator: NT07
Distance(m): 7.50

Lux distance Curve



Equipment: GMS1980 Date: 2020/2/17 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)

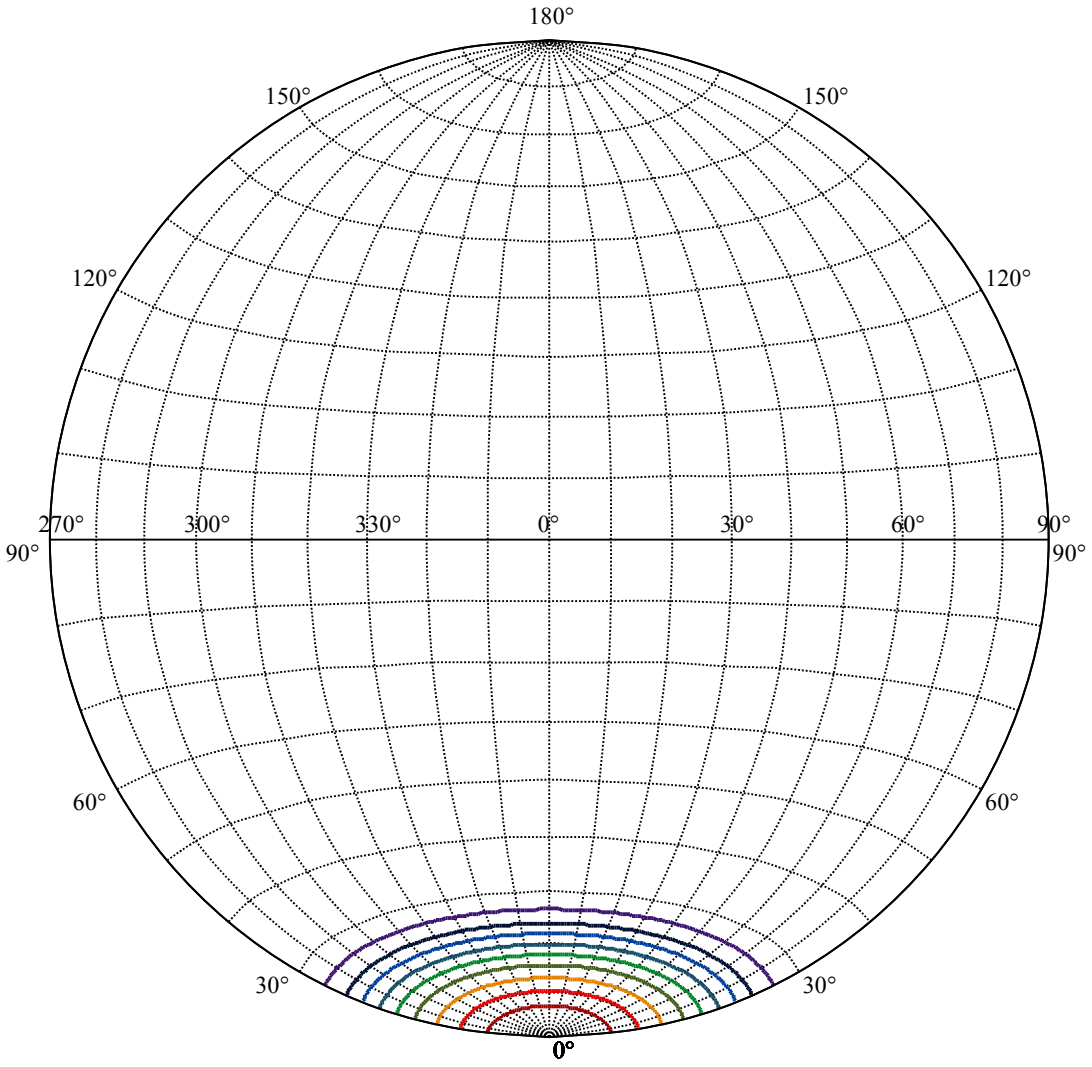


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/2/17
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



Equipment: GMS1980	Date: 2020/2/17	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

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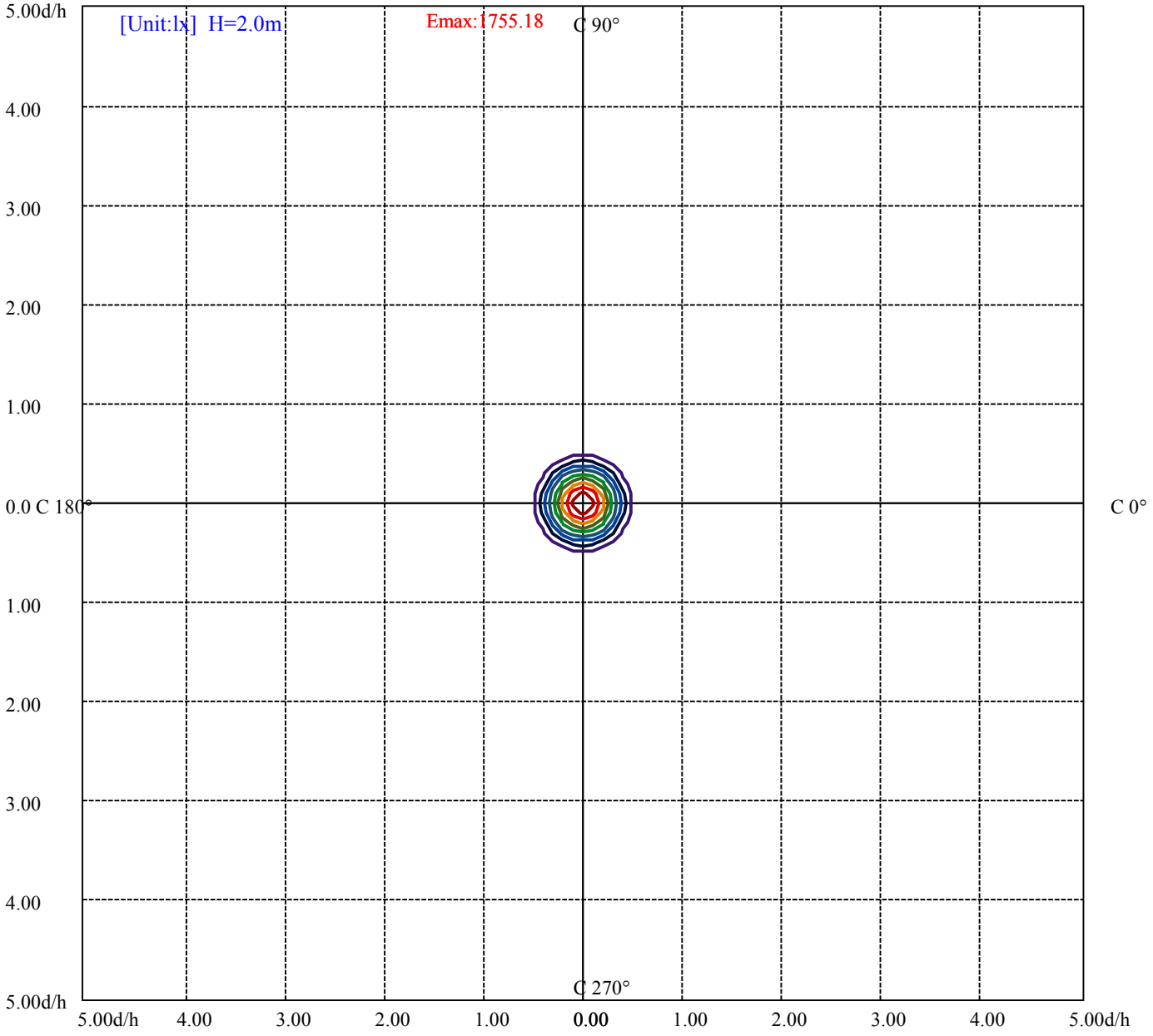
ISO illuminance diagram

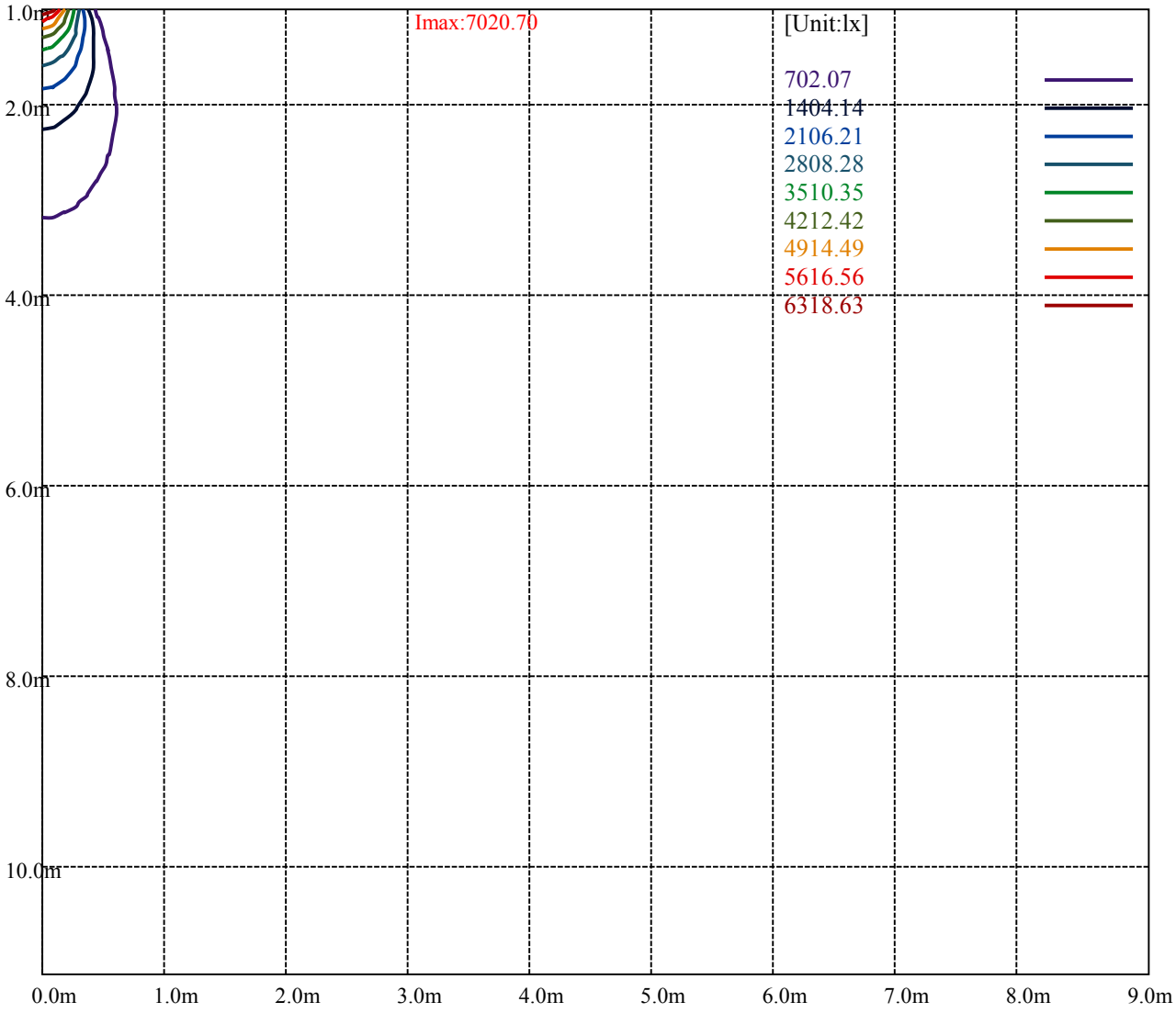


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/2/17
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/2/17
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

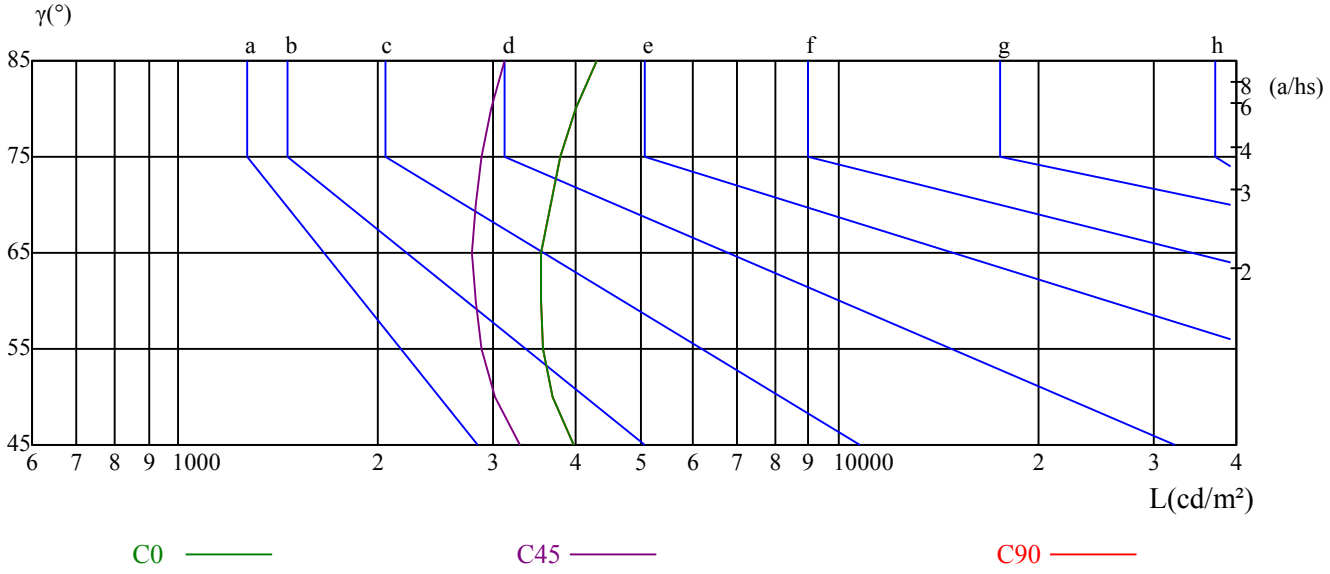
γ	45	50	55	60	65	70	75	80	85
C0	3955	3683	3556	3535	3547	3659	3797	4003	4302
C45	3296	3023	2875	2815	2780	2819	2873	2969	3120
C90	3955	3683	3556	3535	3547	3659	3797	4003	4302

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10648	10648	10648	17024	17024	17024	50197	50197	50197

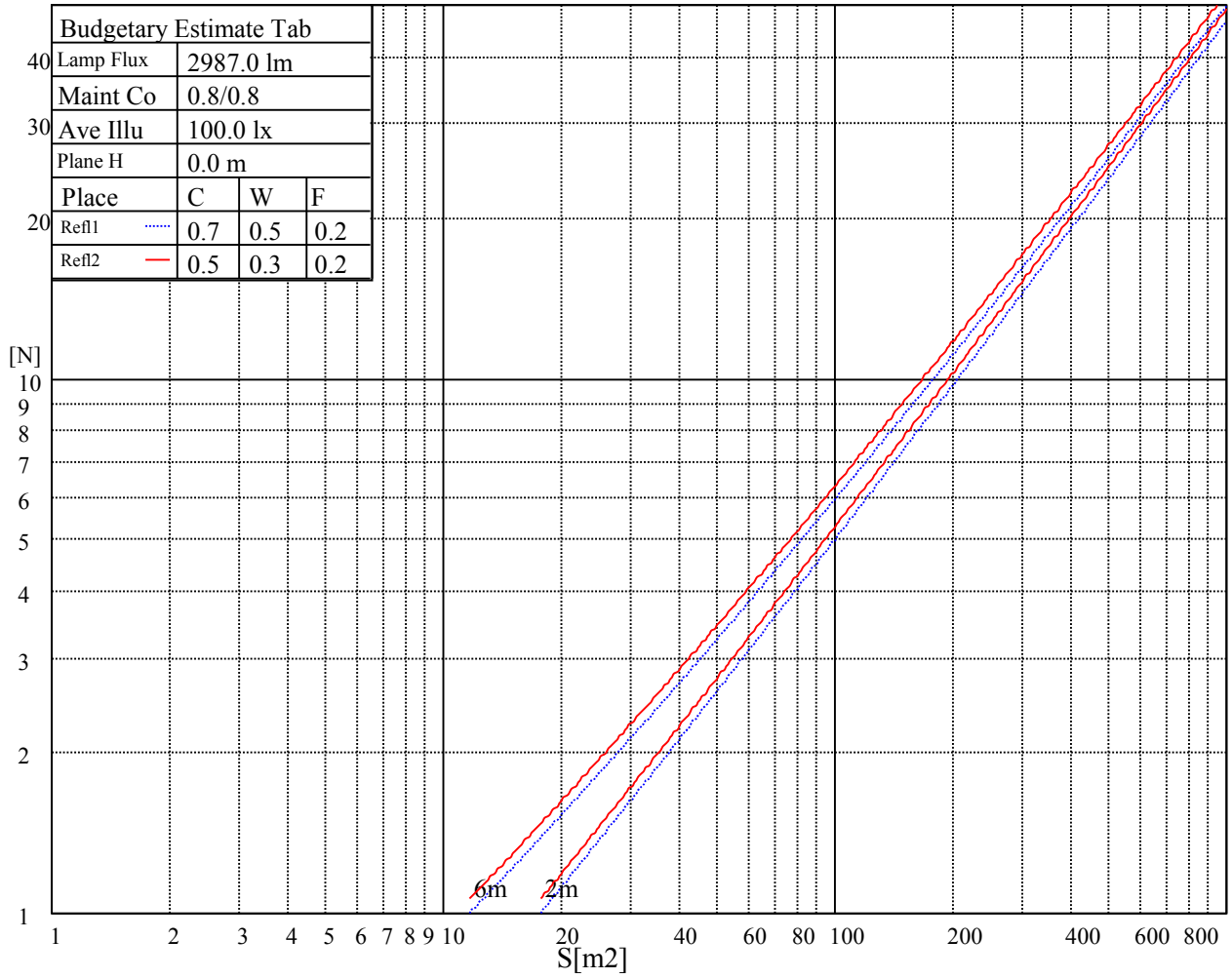
Glare Table

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

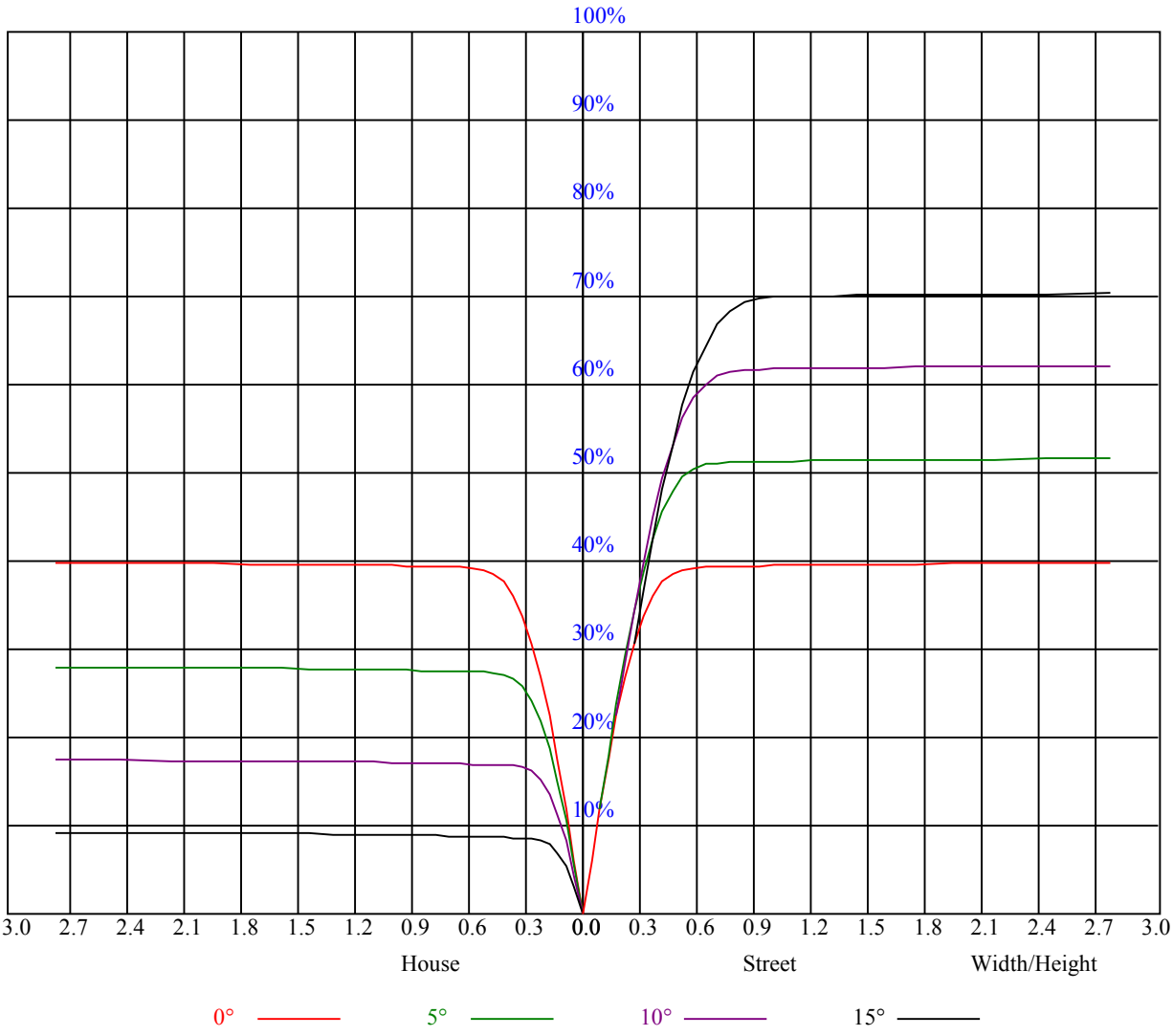


Equipment: GMS1980 Date: 2020/2/17 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.82	0.82	0.82	0.80
1	0.90	0.88	0.87	0.88	0.87	0.85	0.85	0.84	0.83	0.82	0.81	0.80	0.79	0.79	0.78	0.77
2	0.85	0.83	0.80	0.84	0.82	0.80	0.81	0.80	0.78	0.79	0.78	0.76	0.77	0.76	0.75	0.73
3	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.76	0.74	0.73	0.75	0.73	0.72	0.71
4	0.78	0.74	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.74	0.72	0.70	0.72	0.71	0.69	0.68
5	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.67	0.66
6	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.64	0.63
7	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.66	0.64	0.62	0.61
8	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.59
9	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.62	0.60	0.58	0.57
10	0.62	0.59	0.57	0.62	0.59	0.57	0.62	0.59	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.55

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/2/17	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	7018.31	6998.06	6944.06	6858.00	6759.56	6639.19	6451.31	6280.31	6093.56
45.0	7022.25	6995.81	6934.50	6842.25	6740.44	6616.13	6427.69	6251.06	6057.00
90.0	7020.56	6993.56	6940.13	6850.69	6734.25	6611.06	6441.75	6243.75	6049.69
135.0	7021.69	7024.50	6997.50	6939.00	6860.81	6747.19	6608.25	6456.38	6285.94
180.0	7018.31	7012.69	6975.56	6917.06	6825.94	6722.44	6575.06	6396.19	6216.75
225.0	7022.25	7024.50	6998.06	6938.44	6850.13	6747.75	6605.44	6433.31	6259.50
270.0	7020.56	7021.69	6993.00	6929.44	6847.31	6742.69	6579.00	6419.25	6244.31
315.0	7021.69	6990.75	6935.63	6845.63	6729.19	6598.13	6440.63	6221.25	6026.63
360.0	7018.31	6998.06	6944.06	6858.00	6759.56	6639.19	6451.31	6280.31	6093.56

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5840.44	5622.19	5396.06	5131.69	4858.88	4609.13	4319.44	4041.56	3705.75
45.0	5802.19	5579.44	5346.00	5105.81	4799.25	4547.81	4288.50	3979.13	3642.75
90.0	5842.69	5565.38	5331.38	5094.56	4791.38	4541.63	4280.06	3970.69	3633.19
135.0	6050.81	5842.69	5619.94	5357.81	5087.25	4838.63	4556.81	4260.38	3978.00
180.0	6020.44	5754.94	5528.81	5298.19	5028.75	4750.88	4496.06	4194.56	3865.50
225.0	6068.81	5807.25	5586.19	5353.88	5050.69	4805.44	4558.50	4254.75	3921.75
270.0	6003.56	5794.31	5574.94	5317.88	5049.00	4803.75	4521.38	4251.38	3921.75
315.0	5816.25	5540.06	5307.19	5067.00	4786.88	4504.50	4242.38	3920.63	3609.00
360.0	5840.44	5622.19	5396.06	5131.69	4858.88	4609.13	4319.44	4041.56	3705.75

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	3354.75	3040.88	2688.75	2337.19	2039.63	1744.88	1371.94	1087.31	819.56
45.0	3331.13	2960.44	2594.25	2275.88	1968.19	1633.50	1319.63	1017.56	771.75
90.0	3316.50	2952.00	2634.19	2279.81	1946.81	1654.88	1108.13	979.71	761.06
135.0	3635.44	3310.88	2943.00	2584.69	2298.38	1935.00	1609.88	1319.63	1029.38
180.0	3550.50	3191.06	2871.00	2512.13	2166.75	1866.94	1533.94	1061.04	925.93
225.0	3612.94	3258.00	2936.81	2576.25	2221.31	1918.13	1569.38	1092.94	959.40
270.0	3573.56	3260.81	2904.75	2547.00	2235.94	1936.13	1559.25	1263.38	982.13
315.0	3256.88	2899.13	2584.13	2235.94	1896.19	1595.81	1088.78	956.31	712.41
360.0	3354.75	3040.88	2688.75	2337.19	2039.63	1744.88	1371.94	1087.31	819.56

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	555.19	342.00	301.50	96.30	62.10	44.72	32.23	25.43	20.70
45.0	567.56	309.94	289.69	87.81	50.96	36.11	27.23	21.43	18.17
90.0	540.56	292.78	174.54	88.59	53.38	35.61	26.38	20.48	17.38
135.0	706.50	490.50	305.44	284.63	68.01	44.10	32.06	21.94	18.39
180.0	677.31	436.95	244.24	122.63	61.48	36.45	26.66	21.21	17.78
225.0	708.30	438.47	264.83	136.86	62.61	42.69	30.99	23.12	19.80
270.0	725.06	454.50	299.81	146.53	73.07	51.02	36.79	27.11	21.66
315.0	496.74	294.81	150.02	87.47	58.05	40.56	30.49	23.57	19.80
360.0	555.19	342.00	301.50	96.30	62.10	44.72	32.23	25.43	20.70

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	17.89	16.26	15.19	14.18	13.56	13.11	12.66	12.32	12.04
45.0	16.48	15.24	14.51	13.84	13.33	12.94	12.54	12.26	11.98
90.0	15.86	14.79	14.06	13.50	13.05	12.66	12.38	12.04	11.81
135.0	16.71	15.30	14.40	13.84	13.28	12.88	12.54	12.21	11.93
180.0	16.26	15.36	14.51	13.89	13.39	12.94	12.54	12.26	11.98
225.0	17.89	16.26	15.47	14.68	14.01	13.61	13.16	12.77	12.49
270.0	18.84	16.93	15.75	14.91	14.18	13.67	13.22	12.83	12.49
315.0	17.33	15.81	14.85	14.12	13.39	12.99	12.71	12.26	11.98
360.0	17.89	16.26	15.19	14.18	13.56	13.11	12.66	12.32	12.04

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	11.81	11.59	11.36	11.19	11.08	10.97	10.80	10.74	10.63
45.0	11.81	11.59	11.48	11.31	11.19	10.97	10.97	10.74	10.74
90.0	11.64	11.48	11.31	11.19	11.08	10.91	10.86	10.74	10.69
135.0	11.70	11.48	11.31	11.25	11.08	10.91	10.86	10.74	10.63
180.0	11.81	11.53	11.42	11.25	11.08	10.91	10.91	10.74	10.63
225.0	12.26	11.98	11.81	11.64	11.42	11.25	11.08	11.08	10.91
270.0	12.26	12.04	11.81	11.64	11.42	11.31	11.19	11.03	10.86
315.0	11.81	11.59	11.42	11.25	11.08	10.97	10.86	10.74	10.63
360.0	11.81	11.59	11.36	11.19	11.08	10.97	10.80	10.74	10.63

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.52	10.46	10.35	10.29	10.24	10.18	10.13	10.13	10.07
45.0	10.63	10.58	10.46	10.41	10.29	10.29	10.24	10.18	10.18
90.0	10.58	10.58	10.46	10.41	10.35	10.35	10.35	10.24	10.24
135.0	10.58	10.46	10.35	10.35	10.29	10.24	10.18	10.13	10.07
180.0	10.58	10.46	10.41	10.35	10.35	10.29	10.18	10.07	10.07
225.0	10.80	10.69	10.63	10.52	10.46	10.41	10.29	10.29	10.24
270.0	10.86	10.69	10.58	10.58	10.46	10.41	10.35	10.35	10.29
315.0	10.58	10.46	10.41	10.29	10.24	10.24	10.24	10.13	10.13
360.0	10.52	10.46	10.35	10.29	10.24	10.18	10.13	10.13	10.07

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.01	9.96	9.90	9.90	9.90	9.84	9.84	9.79	9.73
45.0	10.18	10.07	10.01	10.01	10.01	9.96	9.90	9.96	9.90
90.0	10.24	10.13	10.18	10.13	10.18	10.13	10.18	10.18	10.24
135.0	10.07	9.96	10.01	9.96	9.90	9.90	9.90	9.84	9.84
180.0	10.01	9.96	9.96	9.90	9.84	9.79	9.79	9.79	9.79
225.0	10.18	10.07	10.13	10.07	10.01	9.96	9.96	9.90	9.90
270.0	10.24	10.24	10.18	10.18	10.13	10.13	10.07	10.07	10.01
315.0	10.07	10.01	9.96	9.90	9.96	9.90	9.84	9.84	9.79
360.0	10.01	9.96	9.90	9.90	9.90	9.84	9.84	9.79	9.73

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.79	9.73	9.73	9.68	9.62	9.68	9.68	9.62	9.68
45.0	9.90	9.84	9.84	9.79	9.84	9.79	9.73	9.79	9.73
90.0	10.18	10.29	10.24	10.29	10.24	10.24	10.24	10.24	10.18
135.0	9.79	9.79	9.79	9.79	9.79	9.73	9.73	9.73	9.68
180.0	9.73	9.68	9.68	9.73	9.68	9.73	9.68	9.68	9.68
225.0	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84	9.84
270.0	10.07	10.07	10.07	10.07	10.13	10.07	10.07	10.07	10.13
315.0	9.84	9.79	9.79	9.73	9.73	9.79	9.73	9.68	9.73
360.0	9.79	9.73	9.73	9.68	9.62	9.68	9.68	9.62	9.68

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.62	9.62	9.56	9.56	9.56	9.62	9.56	9.56	9.56
45.0	9.73	9.79	9.68	9.73	9.73	9.68	9.68	9.68	9.68
90.0	10.24	10.24	10.41	10.13	9.84	9.68	9.68	9.68	9.62
135.0	9.73	9.62	9.68	9.68	9.68	9.62	9.68	9.68	9.68
180.0	9.68	9.68	9.68	9.62	9.73	9.73	9.56	9.56	9.51
225.0	9.79	9.79	9.73	9.79	9.84	9.79	9.84	9.68	9.68
270.0	10.13	10.18	10.29	10.46	10.80	9.90	9.79	9.73	9.68
315.0	9.68	9.73	9.73	9.79	9.73	9.73	9.62	9.62	9.62
360.0	9.62	9.62	9.56	9.56	9.56	9.62	9.56	9.56	9.56

Intensity data(cd)

C/γ(°)	90.0
0.0	9.62
45.0	9.68
90.0	9.68
135.0	9.68
180.0	9.56
225.0	9.68
270.0	9.68
315.0	9.68
360.0	9.62