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Nata

LumCAT: 1-0920-M
Luminaire: 99.02.73.179+92.76.853.00

Report No: 220608-B010	Voltage(V): 38.4400
Test No: 220608-C010	Current(A): 0.3610
LampCAT: CREE CXA1507	Power (W): 13.8760
Lamp flux(lm): 1084.9	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 784.58
Efficiency(%): 72.32%
Lumens(lm)/Power(W): 56.54
Central intensity(cd): 2956.723
Maximum intensity(cd): 2956.723
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=30.8
[C90/270]Total=30.8
Field angle(10%Imax): [C0/180]Total=46.9
[C90/270]Total=46.9
Maximum s/h(1/2): C0_180=0.52 C90_270=0.52
Maximum s/h(1/4): C0_180=0.49 C90_270=0.49
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 72.32%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.535%

Equipment: GMS1980	Date: 2022/6/08	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2956.723	0.000	0	.000%	.000%
1.0	2952.017	2.827	2.827	.261%	.360%
2.0	2930.730	8.443	11.271	.778%	1.437%
3.0	2893.609	13.930	25.201	1.284%	3.212%
4.0	2845.508	19.211	44.411	1.771%	5.661%
5.0	2778.286	24.193	68.605	2.230%	8.744%
6.0	2697.694	28.778	97.382	2.653%	12.412%
7.0	2606.421	32.923	130.305	3.035%	16.608%
8.0	2505.066	36.582	166.887	3.372%	21.271%
9.0	2391.162	39.681	206.568	3.658%	26.328%
10.0	2264.710	42.134	248.702	3.884%	31.699%
11.0	2139.229	44.004	292.706	4.056%	37.307%
12.0	2008.818	45.344	338.05	4.179%	43.087%
13.0	1856.896	45.876	383.927	4.229%	48.934%
14.0	1706.916	45.616	429.543	4.205%	54.748%
15.0	1554.696	44.777	474.32	4.127%	60.455%
16.0	1364.696	42.777	517.097	3.943%	65.907%
17.0	1215.889	40.187	557.284	3.704%	71.029%
18.0	1063.437	37.581	594.865	3.464%	75.819%
19.0	911.986	34.368	629.233	3.168%	80.200%
20.0	746.209	30.350	659.583	2.797%	84.068%
21.0	592.136	25.699	685.282	2.369%	87.344%
22.0	460.792	21.159	706.441	1.950%	90.040%
23.0	341.495	16.834	723.275	1.552%	92.186%
24.0	243.829	12.797	736.072	1.180%	93.817%
25.0	149.801	8.950	745.023	.825%	94.958%
26.0	98.025	5.850	750.873	.539%	95.704%
27.0	66.998	4.037	754.91	.372%	96.218%
28.0	41.857	2.756	757.666	.254%	96.569%
29.0	25.350	1.758	759.424	.162%	96.794%
30.0	17.037	1.144	760.569	.105%	96.939%
31.0	13.228	0.842	761.411	.078%	97.047%
32.0	10.838	0.689	762.1	.064%	97.135%
33.0	9.389	0.596	762.696	.055%	97.211%
34.0	8.321	0.536	763.232	.049%	97.279%
35.0	7.499	0.491	763.724	.045%	97.341%
36.0	6.946	0.460	764.183	.042%	97.400%
37.0	6.535	0.440	764.623	.041%	97.456%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	6.169	0.424	765.047	.039%	97.510%
39.0	5.856	0.410	765.458	.038%	97.563%
40.0	5.594	0.399	765.857	.037%	97.613%
41.0	5.385	0.391	766.248	.036%	97.663%
42.0	5.184	0.384	766.632	.035%	97.712%
43.0	4.997	0.377	767.009	.035%	97.760%
44.0	4.855	0.372	767.381	.034%	97.808%
45.0	4.720	0.368	767.749	.034%	97.855%
46.0	4.601	0.365	768.113	.034%	97.901%
47.0	4.481	0.361	768.475	.033%	97.947%
48.0	4.384	0.358	768.833	.033%	97.993%
49.0	4.302	0.357	769.19	.033%	98.038%
50.0	4.228	0.356	769.545	.033%	98.084%
51.0	4.160	0.355	769.9	.033%	98.129%
52.0	4.093	0.354	770.255	.033%	98.174%
53.0	4.026	0.353	770.608	.033%	98.219%
54.0	3.966	0.352	770.96	.032%	98.264%
55.0	3.936	0.353	771.313	.033%	98.309%
56.0	3.891	0.354	771.666	.033%	98.354%
57.0	3.854	0.354	772.021	.033%	98.399%
58.0	3.817	0.355	772.375	.033%	98.444%
59.0	3.787	0.355	772.731	.033%	98.490%
60.0	3.757	0.356	773.087	.033%	98.535%
61.0	3.720	0.357	773.444	.033%	98.580%
62.0	3.712	0.358	773.802	.033%	98.626%
63.0	3.705	0.361	774.163	.033%	98.672%
64.0	3.682	0.362	774.525	.033%	98.718%
65.0	3.660	0.363	774.889	.033%	98.765%
66.0	3.667	0.366	775.254	.034%	98.811%
67.0	3.637	0.367	775.621	.034%	98.858%
68.0	3.623	0.368	775.989	.034%	98.905%
69.0	3.608	0.369	776.358	.034%	98.952%
70.0	3.615	0.371	776.729	.034%	98.999%
71.0	3.630	0.374	777.103	.035%	99.047%
72.0	3.608	0.376	777.48	.035%	99.095%
73.0	3.600	0.377	777.857	.035%	99.143%
74.0	3.615	0.379	778.236	.035%	99.191%
75.0	3.667	0.385	778.621	.035%	99.240%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.712	0.392	779.013	.036%	99.290%
77.0	3.749	0.398	779.41	.037%	99.341%
78.0	3.809	0.405	779.815	.037%	99.392%
79.0	3.839	0.411	780.226	.038%	99.445%
80.0	3.847	0.414	780.64	.038%	99.498%
81.0	3.824	0.415	781.055	.038%	99.551%
82.0	3.720	0.409	781.464	.038%	99.603%
83.0	3.705	0.404	781.868	.037%	99.654%
84.0	3.742	0.406	782.273	.037%	99.706%
85.0	3.675	0.405	782.678	.037%	99.757%
86.0	3.652	0.401	783.079	.037%	99.808%
87.0	3.466	0.390	783.468	.036%	99.858%
88.0	3.369	0.374	783.843	.035%	99.906%
89.0	3.369	0.369	784.212	.034%	99.953%
90.0	3.376	0.370	784.582	.034%	100.000%

Zonal flux distribution table

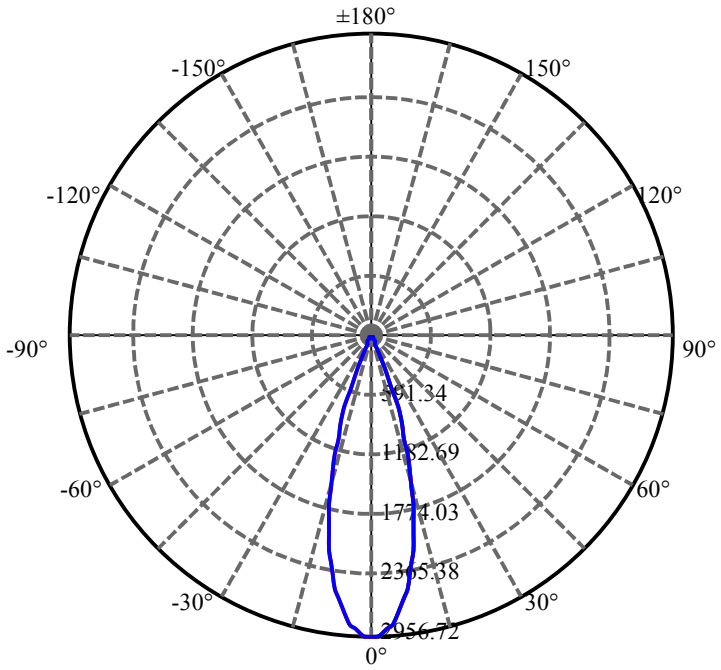
ZONAL LUMEN SUMMARY

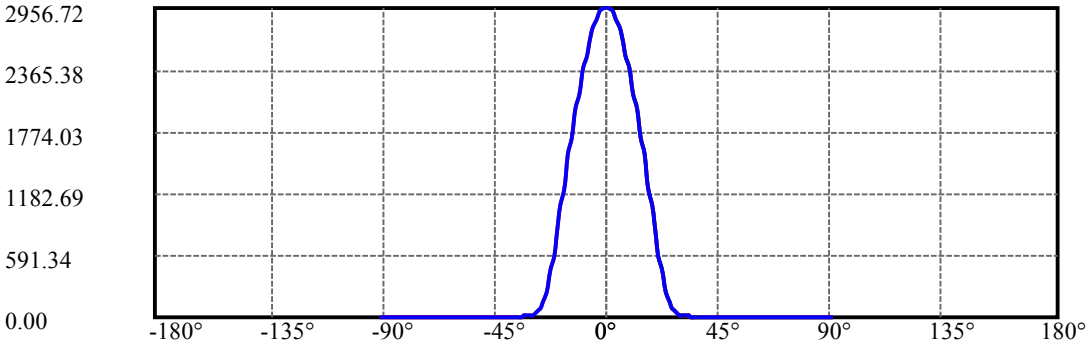
Zone	Lumens	%Lamp	%Fixt
0-30	760.57	70.10%	96.94%
0-40	765.86	70.59%	97.61%
0-60	773.09	71.26%	98.53%
0-90	784.21	72.28%	99.95%
0-120	784.21	72.28%	99.95%
0-180	784.58	72.32%	100.00%
60-90	11.48	1.06%	1.46%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-18.95	627.67	57.85%	80.00%

ZONAL LUMEN SUMMARY

0-10	248.70
10-20	410.88
20-30	100.99
30-40	5.29
40-50	3.69
50-60	3.54
60-70	3.64
70-80	3.91
80-90	3.57
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):

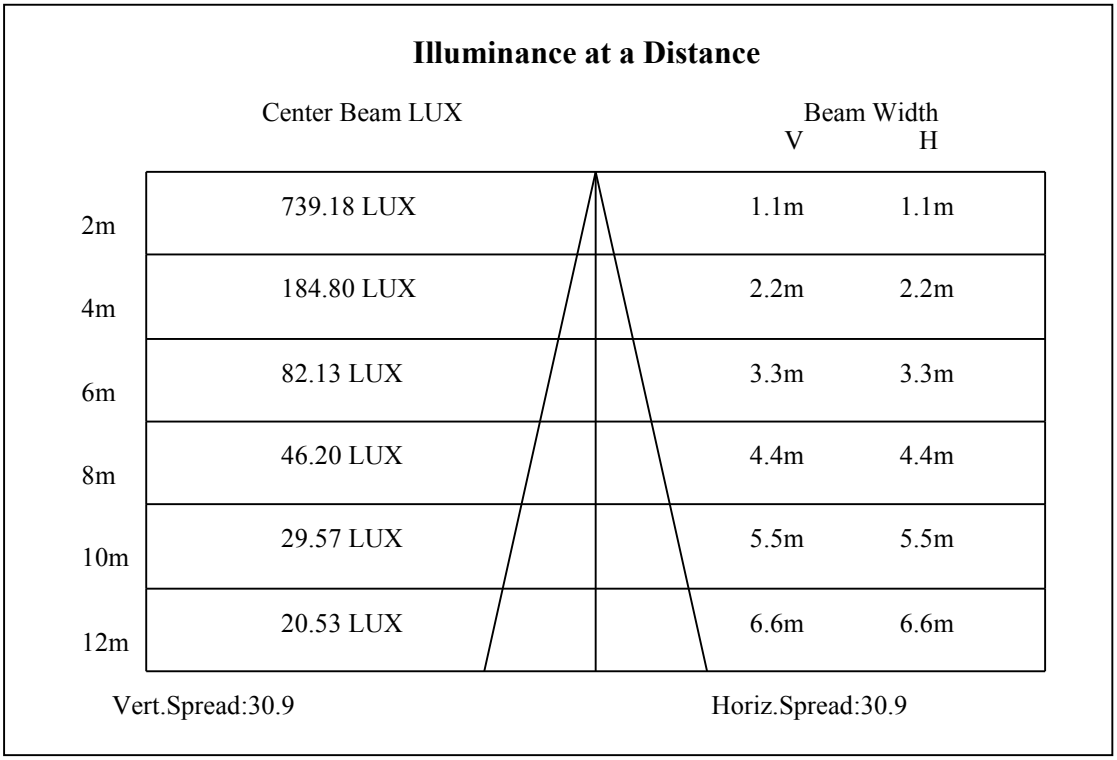
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:23.5 Right:23.5
:C90/270Left:23.5 Right:23.5

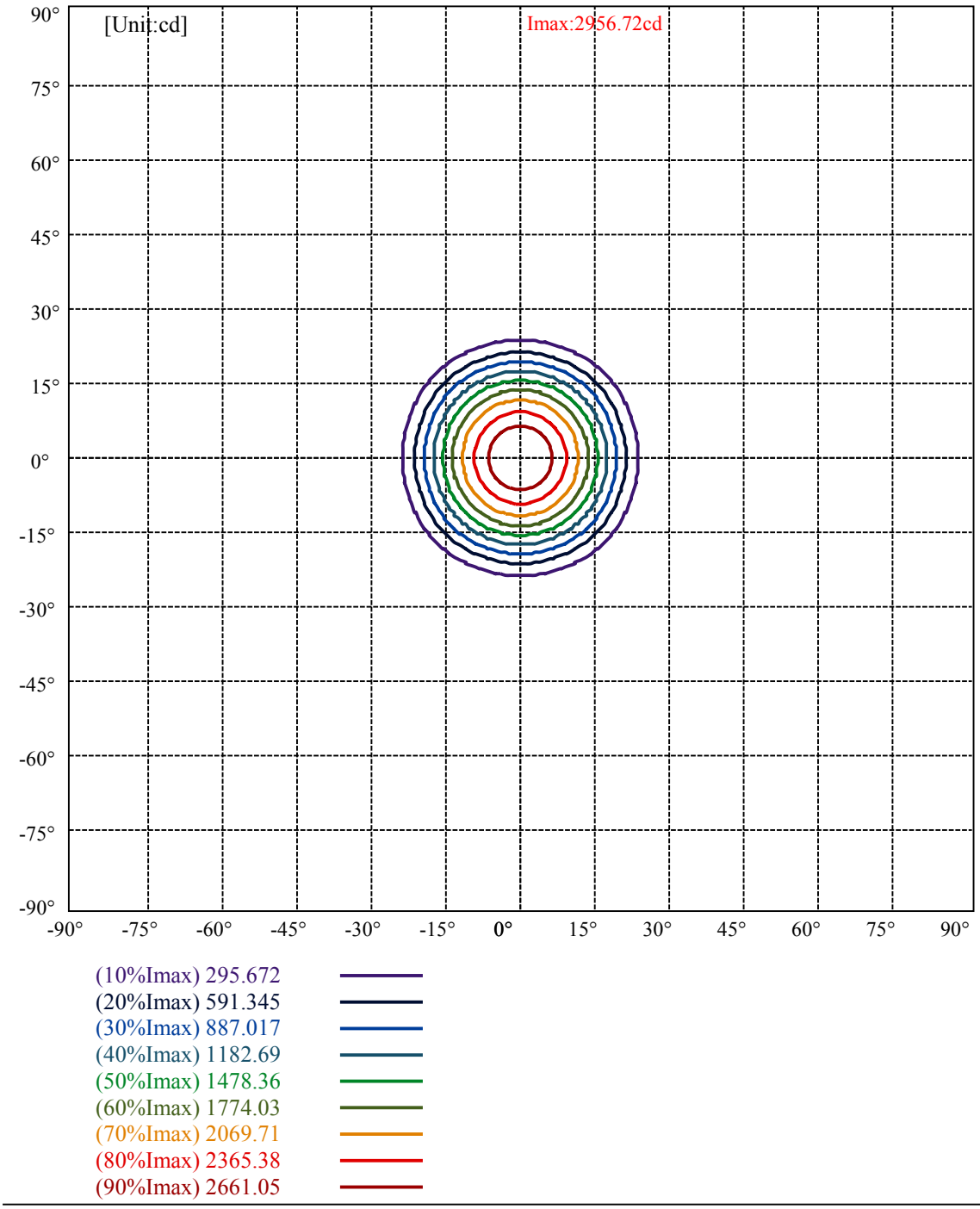
Beam Angle(50%Imax):C0/180Left:15.4 Right:15.4
:C90/270Left:15.4 Right:15.4

Lux distance Curve



Equipment: GMS1980 Date: 2022/6/08 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

ISO-Intensity(V-H)

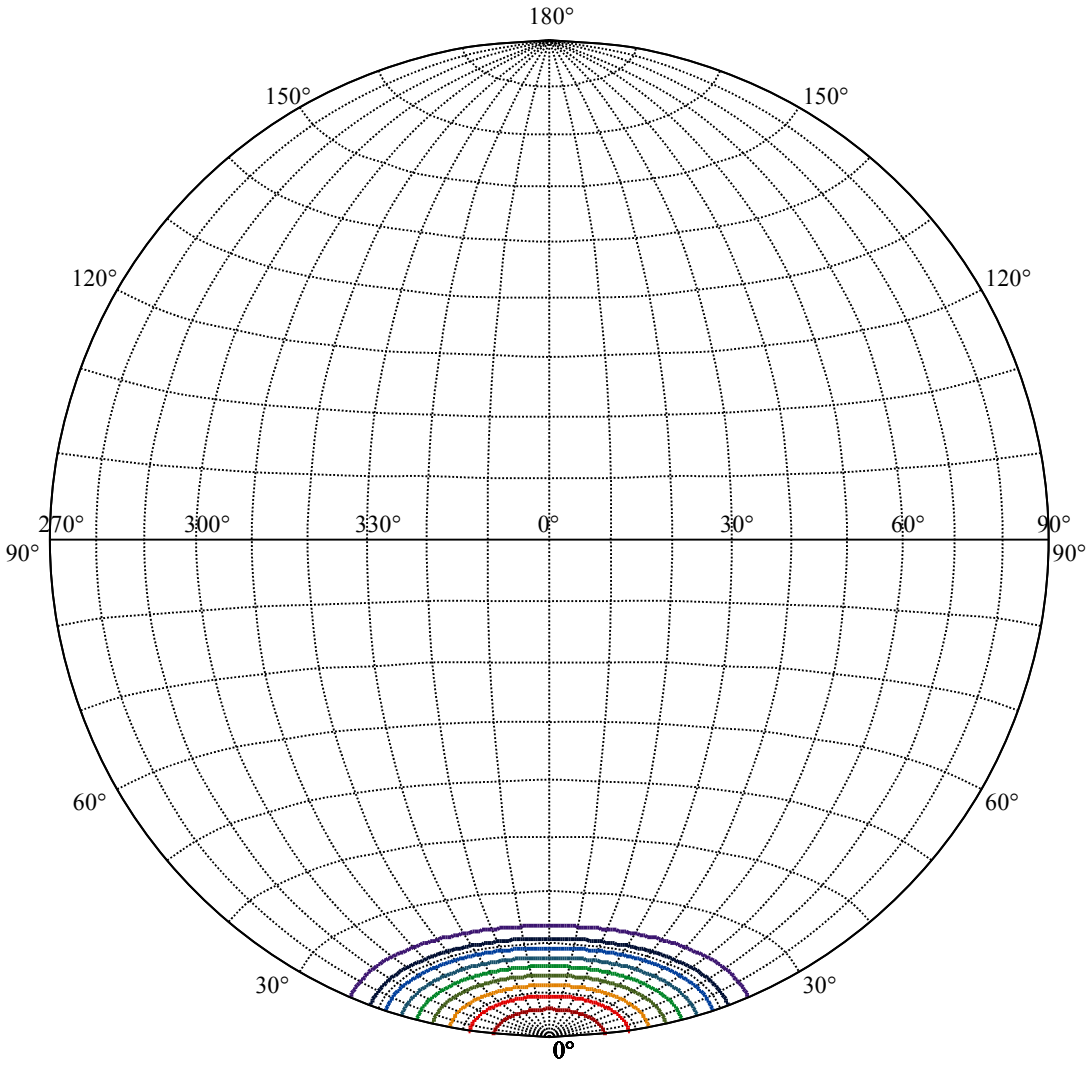


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:2956.72

(10%Imax) 295.672
(20%Imax) 591.345
(30%Imax) 887.017
(40%Imax) 1182.69
(50%Imax) 1478.36
(60%Imax) 1774.03
(70%Imax) 2069.71
(80%Imax) 2365.38
(90%Imax) 2661.05

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

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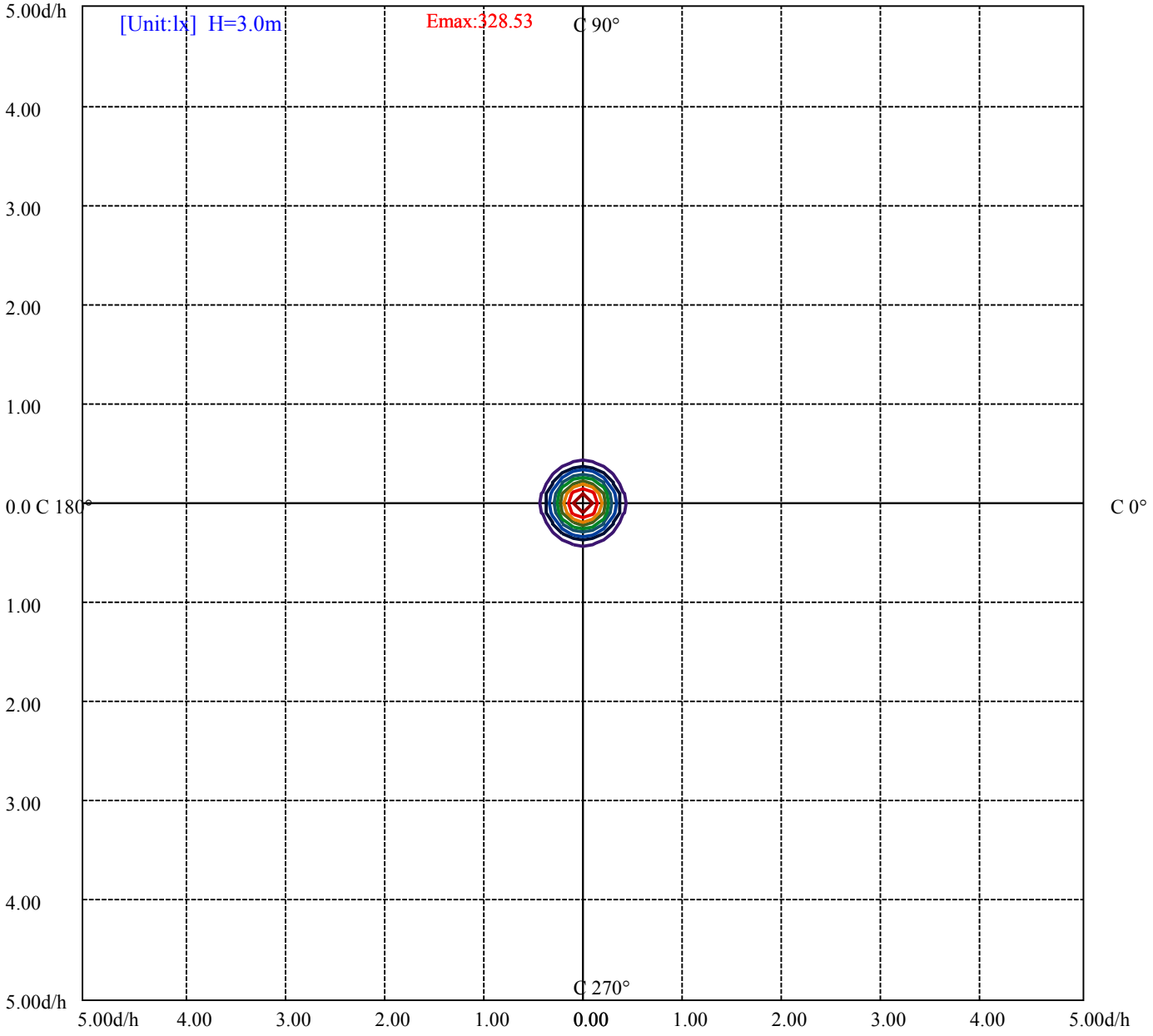
ISO illuminance diagram



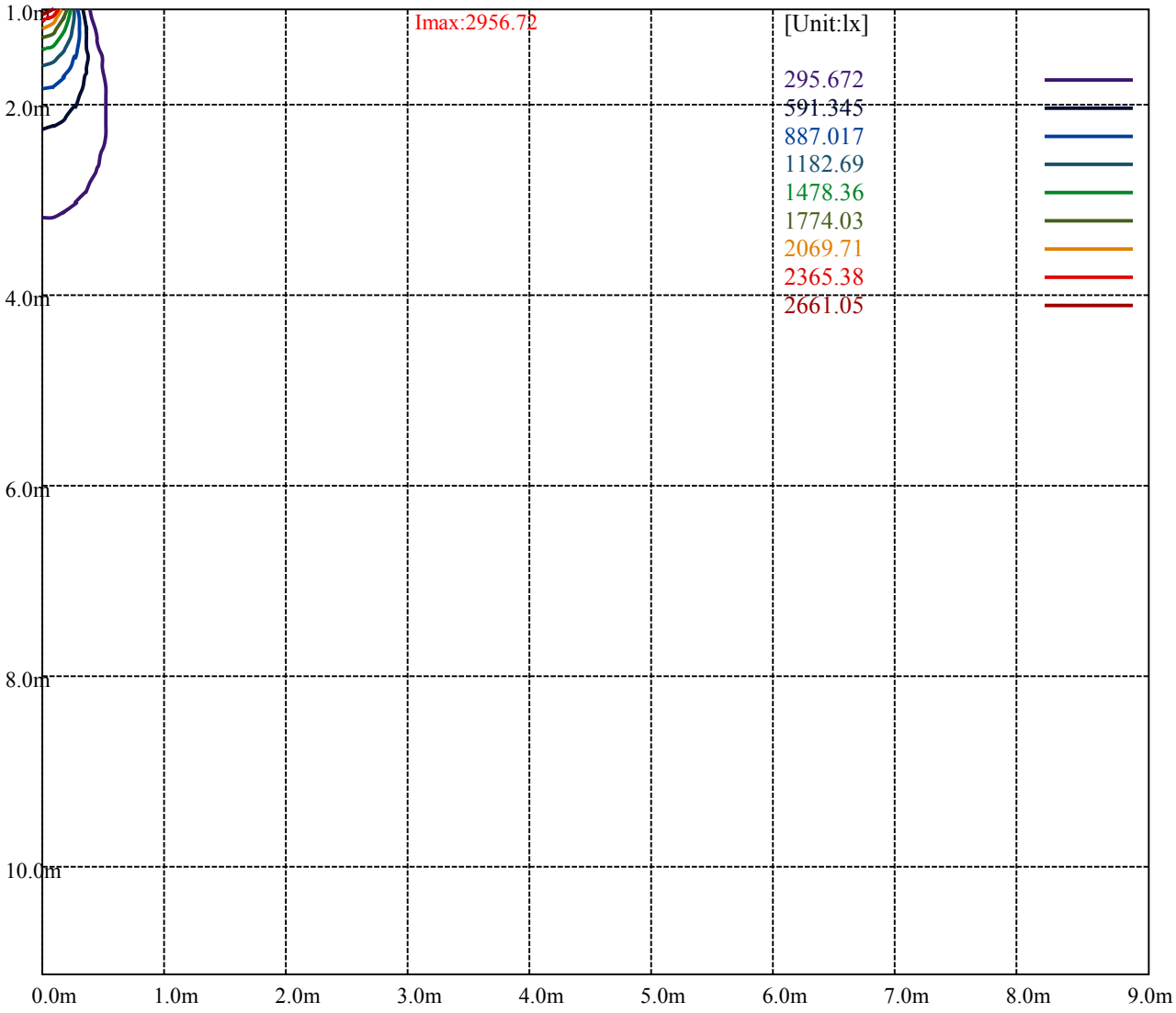
(10%Emax) 32.85244
(20%Emax) 65.70489
(30%Emax) 98.55745
(40%Emax) 131.41
(50%Emax) 164.2622
(60%Emax) 197.1144
(70%Emax) 229.9678
(80%Emax) 262.82
(90%Emax) 295.6722

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Luminance Limitting Curve(no luminous side)

Luminance Table

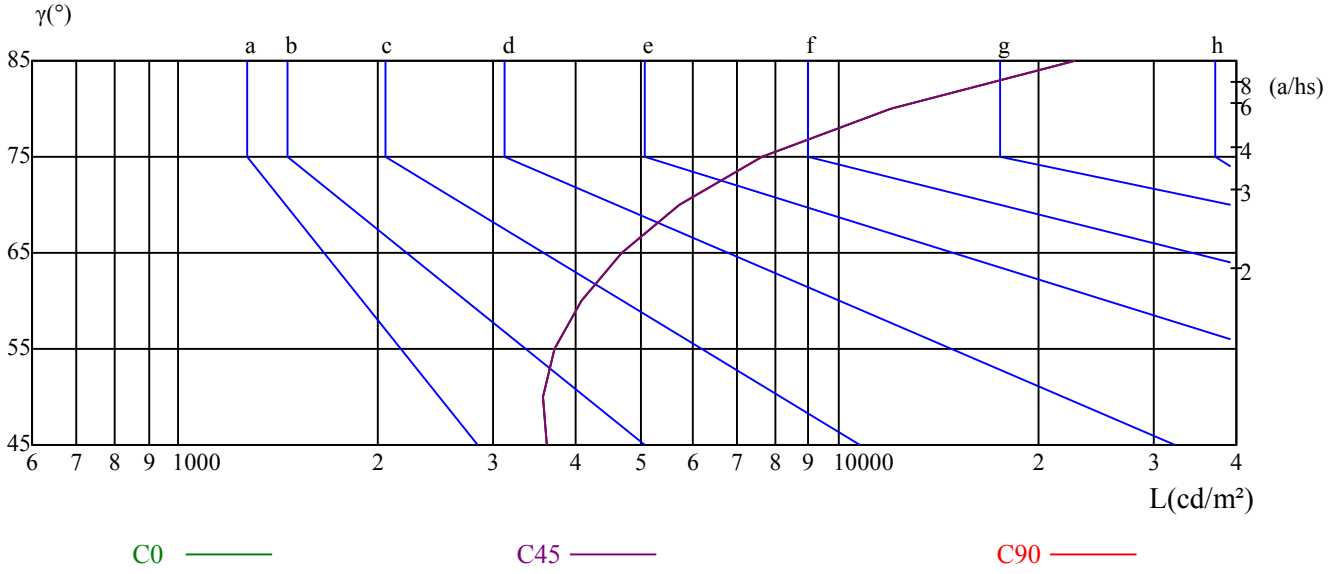
γ	45	50	55	60	65	70	75	80	85
C0	3610	3557	3712	4064	4684	5716	7663	11980	22803
C45	3610	3557	3712	4064	4684	5716	7663	11980	22803
C90	3610	3557	3712	4064	4684	5716	7663	11980	22803

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4684	4684	4684	7663	7663	7663	22803	22803	22803

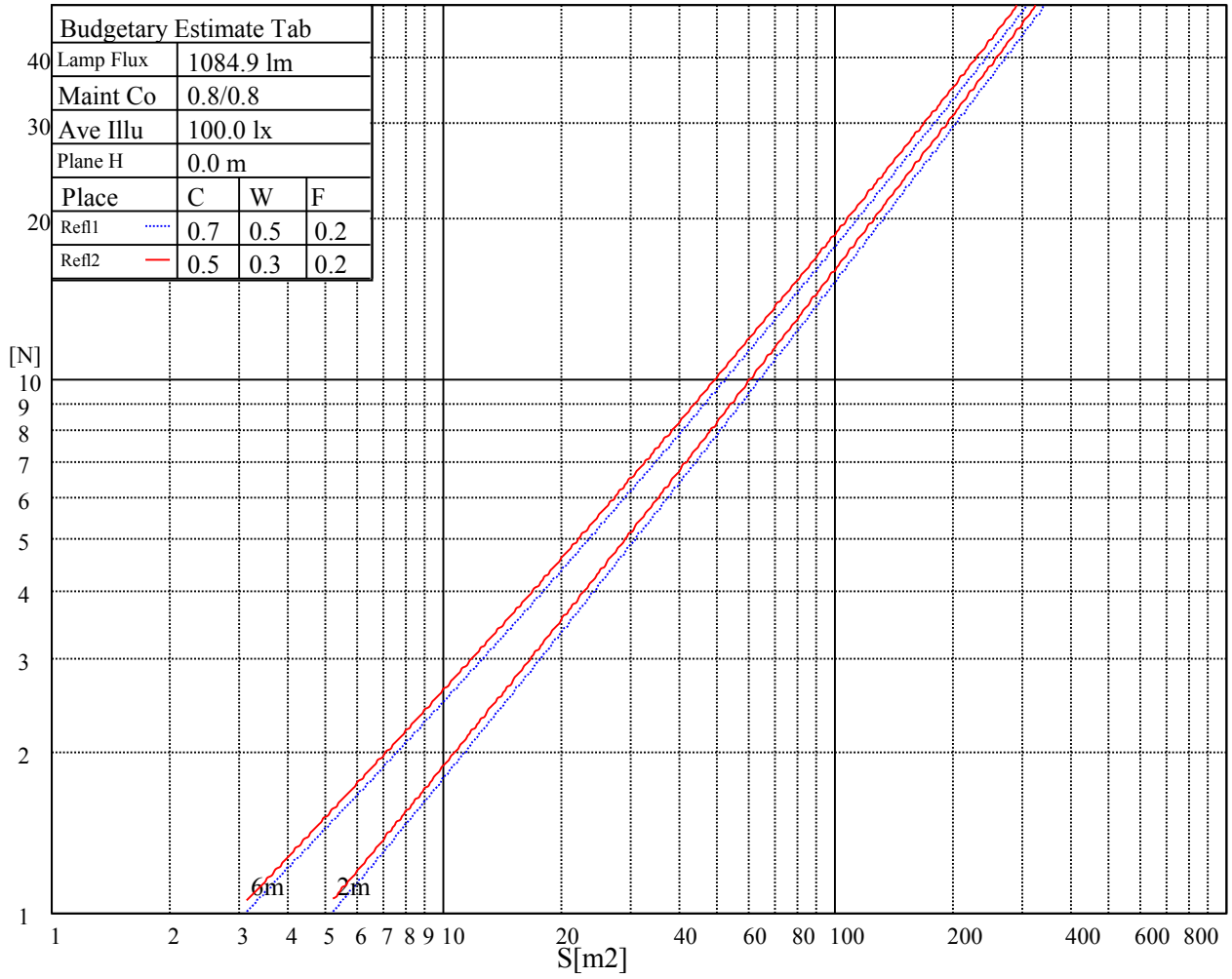
Glare Table

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

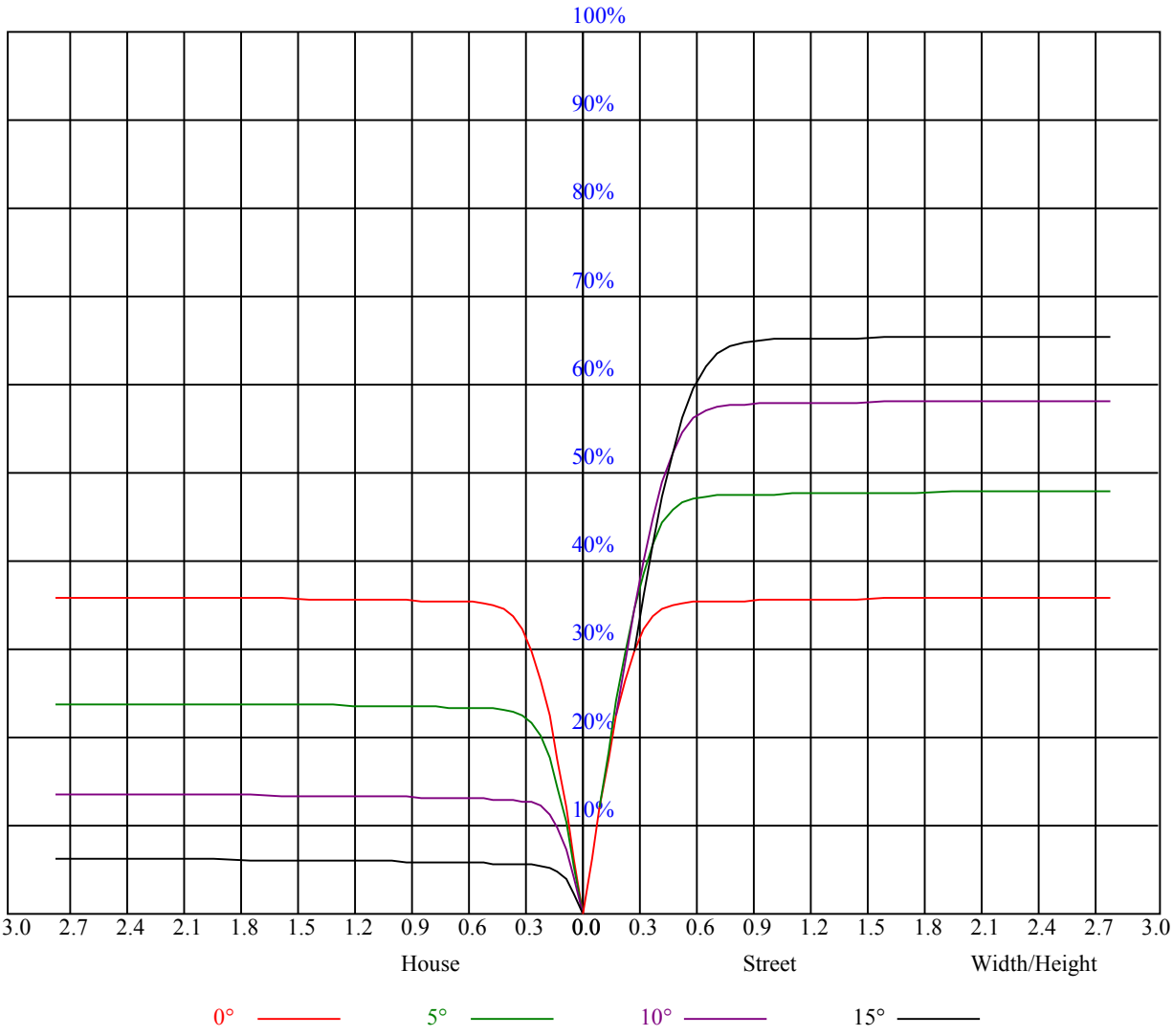


Equipment: GMS1980 Date: 2022/6/08 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.86	0.86	0.86	0.84	0.84	0.84	0.80	0.80	0.80	0.77	0.77	0.77	0.74	0.74	0.74	0.72
1	0.81	0.80	0.79	0.80	0.79	0.77	0.77	0.76	0.75	0.74	0.73	0.73	0.72	0.71	0.71	0.69
2	0.77	0.75	0.73	0.76	0.74	0.73	0.74	0.72	0.71	0.72	0.71	0.69	0.70	0.69	0.68	0.67
3	0.74	0.72	0.69	0.73	0.71	0.69	0.71	0.69	0.68	0.70	0.68	0.67	0.68	0.67	0.66	0.65
4	0.71	0.68	0.66	0.71	0.68	0.66	0.69	0.67	0.65	0.68	0.66	0.64	0.67	0.65	0.64	0.63
5	0.69	0.66	0.64	0.68	0.65	0.63	0.67	0.65	0.63	0.66	0.64	0.62	0.65	0.63	0.62	0.61
6	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.61	0.64	0.62	0.60	0.63	0.61	0.60	0.59
7	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.62	0.60	0.58	0.62	0.60	0.58	0.57
8	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.61	0.58	0.57	0.60	0.58	0.57	0.56
9	0.61	0.58	0.56	0.60	0.57	0.56	0.60	0.57	0.55	0.59	0.57	0.55	0.59	0.57	0.55	0.54
10	0.59	0.56	0.54	0.59	0.56	0.54	0.58	0.56	0.54	0.58	0.55	0.54	0.57	0.55	0.54	0.53

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2022/6/08	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

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	2955.38	2960.16	2947.61	2920.12	2881.88	2825.12	2742.06	2663.78	2573.56
45.0	2955.38	2944.62	2911.76	2865.15	2808.98	2721.15	2635.70	2543.68	2431.94
90.0	2955.98	2943.43	2908.17	2857.38	2801.22	2725.33	2644.66	2537.71	2421.19
135.0	2960.16	2958.37	2938.05	2899.21	2854.40	2794.64	2705.61	2620.76	2525.76
180.0	2955.38	2939.25	2913.55	2867.54	2804.80	2738.48	2647.05	2546.67	2442.10
225.0	2955.38	2959.56	2948.21	2919.53	2880.69	2821.53	2756.40	2672.15	2574.75
270.0	2955.98	2958.96	2945.82	2924.90	2887.26	2820.93	2753.41	2672.15	2573.56
315.0	2960.16	2951.79	2932.67	2895.03	2844.84	2779.11	2696.65	2594.47	2497.67
360.0	2955.38	2960.16	2947.61	2920.12	2881.88	2825.12	2742.06	2663.78	2573.56

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2450.47	2341.72	2229.38	2091.35	1941.97	1806.93	1646.19	1492.63	1316.95
45.0	2304.67	2185.16	2044.74	1910.90	1760.92	1599.59	1452.00	1283.49	1138.29
90.0	2310.05	2179.79	2036.98	1907.91	1770.48	1588.83	1436.46	1174.26	1118.22
135.0	2400.27	2285.55	2165.45	2022.64	1874.45	1734.03	1567.92	1411.96	1244.06
180.0	2333.35	2169.03	2059.08	1934.80	1745.98	1622.29	1473.51	1187.89	1131.18
225.0	2474.37	2350.68	2222.81	2100.31	1971.85	1802.15	1658.14	1506.97	1285.88
270.0	2464.21	2357.85	2228.78	2103.30	1959.30	1811.11	1664.72	1490.24	1315.16
315.0	2391.91	2247.90	2126.61	1999.33	1830.23	1690.41	1538.64	1370.13	1177.37
360.0	2450.47	2341.72	2229.38	2091.35	1941.97	1806.93	1646.19	1492.63	1316.95

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1156.82	1005.64	834.75	670.43	535.39	407.51	310.72	182.84	116.52
45.0	967.40	818.02	656.09	500.13	371.07	307.73	156.07	98.59	69.49
90.0	945.77	797.22	634.52	486.15	370.17	253.59	168.56	106.30	69.55
135.0	1077.94	928.56	761.25	605.89	472.05	353.74	313.11	151.53	99.31
180.0	977.68	829.49	666.90	516.92	395.09	278.09	181.77	123.15	83.89
225.0	1166.26	1017.77	850.28	686.68	551.46	409.37	301.93	204.71	131.04
270.0	1169.36	1018.19	832.96	691.94	555.10	402.14	305.93	199.04	126.02
315.0	1046.27	881.00	732.93	578.95	436.02	319.80	212.54	132.23	88.37
360.0	1156.82	1005.64	834.75	670.43	535.39	407.51	310.72	182.84	116.52

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	72.60	48.04	30.29	19.06	14.34	11.89	10.04	8.90	7.95
45.0	44.16	24.38	16.67	12.79	10.58	9.20	8.19	7.41	6.93
90.0	48.58	26.35	16.19	12.91	10.82	9.14	8.25	7.53	6.99
135.0	72.78	41.29	22.59	16.01	12.19	10.34	9.02	7.95	7.23
180.0	59.57	32.86	18.52	14.28	11.59	9.44	8.37	7.53	6.87
225.0	91.60	64.77	37.88	21.87	16.55	12.67	10.64	9.26	8.13
270.0	83.95	59.69	37.58	22.17	16.31	12.91	10.93	9.50	8.25
315.0	62.74	37.47	23.06	17.21	13.44	11.11	9.68	8.48	7.65
360.0	72.60	48.04	30.29	19.06	14.34	11.89	10.04	8.90	7.95

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	7.23	6.81	6.39	5.98	5.74	5.50	5.26	5.08	4.96
45.0	6.51	6.21	5.86	5.62	5.44	5.26	5.02	4.90	4.78
90.0	6.51	6.21	5.92	5.62	5.38	5.14	5.02	4.84	4.66
135.0	6.75	6.33	6.04	5.80	5.50	5.32	5.14	4.90	4.78
180.0	6.51	6.15	5.86	5.56	5.32	5.14	4.96	4.78	4.66
225.0	7.35	6.87	6.45	6.09	5.80	5.56	5.32	5.14	4.96
270.0	7.59	7.05	6.57	6.21	5.92	5.68	5.44	5.26	5.08
315.0	7.11	6.63	6.27	5.98	5.68	5.50	5.32	5.08	4.96
360.0	7.23	6.81	6.39	5.98	5.74	5.50	5.26	5.08	4.96

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	4.78	4.60	4.54	4.36	4.30	4.24	4.18	4.12	4.00
45.0	4.60	4.54	4.42	4.30	4.24	4.18	4.12	4.00	4.00
90.0	4.60	4.48	4.42	4.30	4.24	4.12	4.06	4.00	3.94
135.0	4.66	4.54	4.42	4.36	4.24	4.18	4.12	4.00	3.94
180.0	4.54	4.42	4.30	4.24	4.18	4.06	4.00	3.94	3.88
225.0	4.78	4.66	4.54	4.42	4.30	4.24	4.18	4.12	4.06
270.0	4.96	4.84	4.66	4.60	4.48	4.42	4.30	4.30	4.18
315.0	4.84	4.72	4.54	4.48	4.42	4.36	4.30	4.24	4.18
360.0	4.78	4.60	4.54	4.36	4.30	4.24	4.18	4.12	4.00

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.94	3.88	3.88	3.82	3.76	3.76	3.70	3.64	3.64
45.0	3.88	3.88	3.82	3.82	3.76	3.76	3.70	3.64	3.64
90.0	3.94	3.88	3.82	3.76	3.76	3.70	3.64	3.64	3.64
135.0	3.88	3.88	3.82	3.82	3.76	3.70	3.70	3.64	3.64
180.0	3.82	3.82	3.76	3.70	3.70	3.64	3.64	3.59	3.59
225.0	4.00	3.94	3.88	3.82	3.82	3.76	3.76	3.70	3.70
270.0	4.12	4.12	4.06	4.00	3.94	3.94	3.94	3.94	3.88
315.0	4.12	4.06	4.06	4.06	4.00	4.00	3.94	3.94	3.94
360.0	3.94	3.88	3.88	3.82	3.76	3.76	3.70	3.64	3.64

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.64	3.64	3.64	3.64	3.59	3.59	3.53	3.53	3.59
45.0	3.64	3.64	3.59	3.59	3.59	3.59	3.59	3.53	3.59
90.0	3.64	3.59	3.59	3.59	3.53	3.53	3.53	3.53	3.53
135.0	3.64	3.59	3.59	3.59	3.53	3.53	3.47	3.53	3.53
180.0	3.59	3.59	3.53	3.53	3.53	3.47	3.53	3.47	3.53
225.0	3.64	3.64	3.64	3.64	3.64	3.59	3.59	3.59	3.53
270.0	3.88	3.82	3.82	3.88	3.82	3.82	3.76	3.82	3.82
315.0	3.94	3.94	3.88	3.88	3.88	3.88	3.88	3.94	3.94
360.0	3.64	3.64	3.64	3.64	3.59	3.59	3.53	3.53	3.59

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.47	3.53
45.0	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53
90.0	3.53	3.53	3.53	3.47	3.47	3.47	3.47	3.53	3.47
135.0	3.53	3.47	3.53	3.47	3.47	3.47	3.47	3.47	3.53
180.0	3.47	3.47	3.47	3.47	3.53	3.47	3.53	3.47	3.53
225.0	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.47
270.0	3.82	3.82	3.82	3.82	3.82	3.76	3.82	3.82	3.88
315.0	3.94	3.94	4.00	4.54	4.84	5.26	5.62	5.92	5.86
360.0	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.47	3.53

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.53	3.53	3.53	3.59	3.59	3.64	3.64	3.35	3.29
45.0	3.53	3.59	3.59	3.64	3.59	3.41	3.41	3.41	3.41
90.0	3.53	3.47	3.47	3.53	3.41	3.41	3.41	3.41	3.41
135.0	3.53	3.53	3.53	3.53	3.41	3.35	3.35	3.35	3.35
180.0	3.53	3.59	3.59	3.59	3.35	3.35	3.35	3.29	3.35
225.0	3.53	3.53	3.53	3.53	3.53	3.53	3.41	3.41	3.41
270.0	3.94	4.00	4.12	4.18	4.12	4.06	3.82	3.41	3.41
315.0	5.50	4.54	4.30	4.36	4.42	4.48	3.35	3.35	3.35
360.0	3.53	3.53	3.53	3.59	3.59	3.64	3.64	3.35	3.29

Intensity data(cd)

C/γ(°)	90.0
0.0	3.35
45.0	3.41
90.0	3.41
135.0	3.35
180.0	3.35
225.0	3.41
270.0	3.41
315.0	3.35
360.0	3.35