NATA LIGHTNG CO.,LTD.
www.nata.cn
Email:info@nata.con
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,Ching

Nata

LumCAT: 1-0918-M
Luminaire: 99.02.73.179+92.76.853.00

Report No: 220609-B007	Voltage(V): 35.3400
Test No: 220609-C007	Current(A): 0.3610
LampCAT: CREE CXA1516	Power (W): 12.7570
Lamp flux(lm): 1492.4	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): 1077.93
Efficiency(%): 72.23%
Lumens(lm)/Power(W): 84.50
Central intensity(cd): 8910.502
Maximum intensity(cd): 8910.502
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=16.3
[C90/270]Total=16.3
Field angle(10%Imax): [C0/180]Total=36.8
[C90/270]Total=36.8
Maximum s/h(1/2): C0_180=0.28 C90_270=0.28
Maximum s/h(1/4): C0_180=0.31 C90_270=0.31
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 72.23%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.571%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8910.502	0.000	0	.000%	.000%
1.0	8854.334	8.500	8.5	.570%	.789%
2.0	8630.037	25.095	33.595	1.682%	3.117%
3.0	8182.637	40.210	73.806	2.694%	6.847%
4.0	7627.308	52.921	126.727	3.546%	11.756%
5.0	6871.658	62.374	189.101	4.179%	17.543%
6.0	6099.725	68.168	257.269	4.568%	23.867%
7.0	5273.791	70.595	327.864	4.730%	30.416%
8.0	4559.296	70.374	398.237	4.715%	36.945%
9.0	3876.395	68.367	466.604	4.581%	43.287%
10.0	3297.464	64.921	531.525	4.350%	49.310%
11.0	2840.205	61.328	592.853	4.109%	54.999%
12.0	2458.085	57.918	650.771	3.881%	60.372%
13.0	2107.858	54.186	704.957	3.631%	65.399%
14.0	1825.152	50.342	755.299	3.373%	70.069%
15.0	1552.425	46.369	801.668	3.107%	74.371%
16.0	1351.588	42.552	844.22	2.851%	78.318%
17.0	1136.157	38.741	882.961	2.596%	81.912%
18.0	960.558	34.570	917.531	2.316%	85.119%
19.0	793.623	30.519	948.05	2.045%	87.951%
20.0	631.140	26.077	974.127	1.747%	90.370%
21.0	479.988	21.336	995.463	1.430%	92.349%
22.0	363.619	16.953	1012.416	1.136%	93.922%
23.0	251.657	12.910	1025.326	.865%	95.120%
24.0	172.611	9.276	1034.602	.622%	95.980%
25.0	92.557	6.029	1040.631	.404%	96.540%
26.0	51.022	3.389	1044.021	.227%	96.854%
27.0	26.635	1.900	1045.92	.127%	97.030%
28.0	16.342	1.088	1047.008	.073%	97.131%
29.0	12.705	0.760	1047.768	.051%	97.202%
30.0	10.927	0.638	1048.407	.043%	97.261%
31.0	9.971	0.582	1048.988	.039%	97.315%
32.0	9.269	0.551	1049.539	.037%	97.366%
33.0	8.709	0.530	1050.069	.035%	97.415%
34.0	8.209	0.512	1050.581	.034%	97.463%
35.0	7.790	0.497	1051.078	.033%	97.509%
36.0	7.424	0.484	1051.562	.032%	97.554%
37.0	7.133	0.475	1052.037	.032%	97.598%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	6.849	0.467	1052.504	.031%	97.641%
39.0	6.625	0.460	1052.964	.031%	97.684%
40.0	6.423	0.455	1053.419	.030%	97.726%
41.0	6.267	0.452	1053.871	.030%	97.768%
42.0	6.110	0.450	1054.32	.030%	97.809%
43.0	5.975	0.448	1054.768	.030%	97.851%
44.0	5.863	0.447	1055.215	.030%	97.892%
45.0	5.759	0.447	1055.661	.030%	97.934%
46.0	5.669	0.447	1056.108	.030%	97.975%
47.0	5.579	0.447	1056.556	.030%	98.017%
48.0	5.512	0.448	1057.004	.030%	98.058%
49.0	5.430	0.449	1057.453	.030%	98.100%
50.0	5.385	0.451	1057.904	.030%	98.142%
51.0	5.318	0.453	1058.357	.030%	98.184%
52.0	5.273	0.454	1058.812	.030%	98.226%
53.0	5.213	0.456	1059.268	.031%	98.268%
54.0	5.169	0.458	1059.725	.031%	98.311%
55.0	5.146	0.460	1060.186	.031%	98.354%
56.0	5.109	0.463	1060.649	.031%	98.397%
57.0	5.072	0.465	1061.115	.031%	98.440%
58.0	5.049	0.468	1061.583	.031%	98.483%
59.0	5.027	0.471	1062.054	.032%	98.527%
60.0	4.997	0.474	1062.527	.032%	98.571%
61.0	4.959	0.475	1063.002	.032%	98.615%
62.0	4.952	0.478	1063.48	.032%	98.659%
63.0	4.930	0.481	1063.961	.032%	98.704%
64.0	4.907	0.483	1064.443	.032%	98.749%
65.0	4.900	0.485	1064.929	.033%	98.794%
66.0	4.892	0.489	1065.417	.033%	98.839%
67.0	4.892	0.492	1065.909	.033%	98.885%
68.0	4.870	0.495	1066.404	.033%	98.930%
69.0	4.870	0.497	1066.901	.033%	98.977%
70.0	4.862	0.500	1067.4	.033%	99.023%
71.0	4.855	0.502	1067.903	.034%	99.069%
72.0	4.892	0.507	1068.41	.034%	99.116%
73.0	4.945	0.514	1068.924	.034%	99.164%
74.0	5.004	0.523	1069.447	.035%	99.213%
75.0	5.064	0.532	1069.979	.036%	99.262%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.109	0.540	1070.519	.036%	99.312%
77.0	5.116	0.545	1071.064	.037%	99.363%
78.0	5.042	0.544	1071.608	.036%	99.413%
79.0	4.900	0.534	1072.142	.036%	99.463%
80.0	4.945	0.531	1072.673	.036%	99.512%
81.0	4.982	0.537	1073.21	.036%	99.562%
82.0	5.019	0.542	1073.752	.036%	99.612%
83.0	5.072	0.549	1074.3	.037%	99.663%
84.0	5.109	0.555	1074.855	.037%	99.714%
85.0	4.922	0.547	1075.403	.037%	99.765%
86.0	4.803	0.532	1075.934	.036%	99.815%
87.0	4.534	0.511	1076.445	.034%	99.862%
88.0	4.519	0.496	1076.941	.033%	99.908%
89.0	4.541	0.497	1077.438	.033%	99.954%
90.0	4.496	0.496	1077.933	.033%	100.000%

Zonal flux distribution table

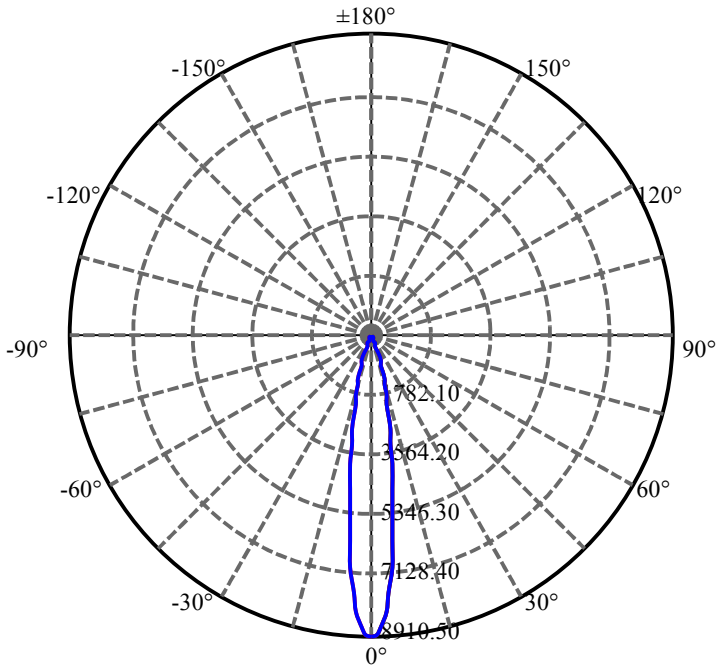
ZONAL LUMEN SUMMARY

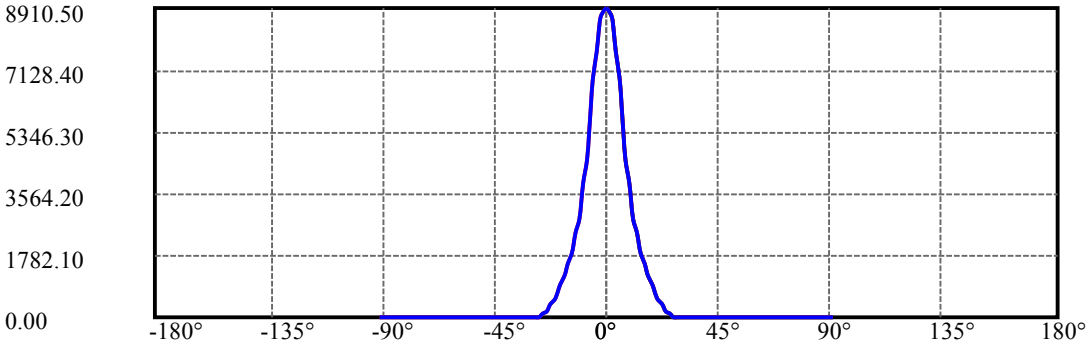
Zone	Lumens	%Lamp	%Fixt
0-30	1048.41	70.25%	97.26%
0-40	1053.42	70.59%	97.73%
0-60	1062.53	71.20%	98.57%
0-90	1077.44	72.20%	99.95%
0-120	1077.44	72.20%	99.95%
0-180	1077.93	72.23%	100.00%
60-90	15.38	1.03%	1.43%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-16.47	862.35	57.78%	80.00%

ZONAL LUMEN SUMMARY

0-10	531.52
10-20	442.60
20-30	74.28
30-40	5.01
40-50	4.49
50-60	4.62
60-70	4.87
70-80	5.27
80-90	4.76
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):

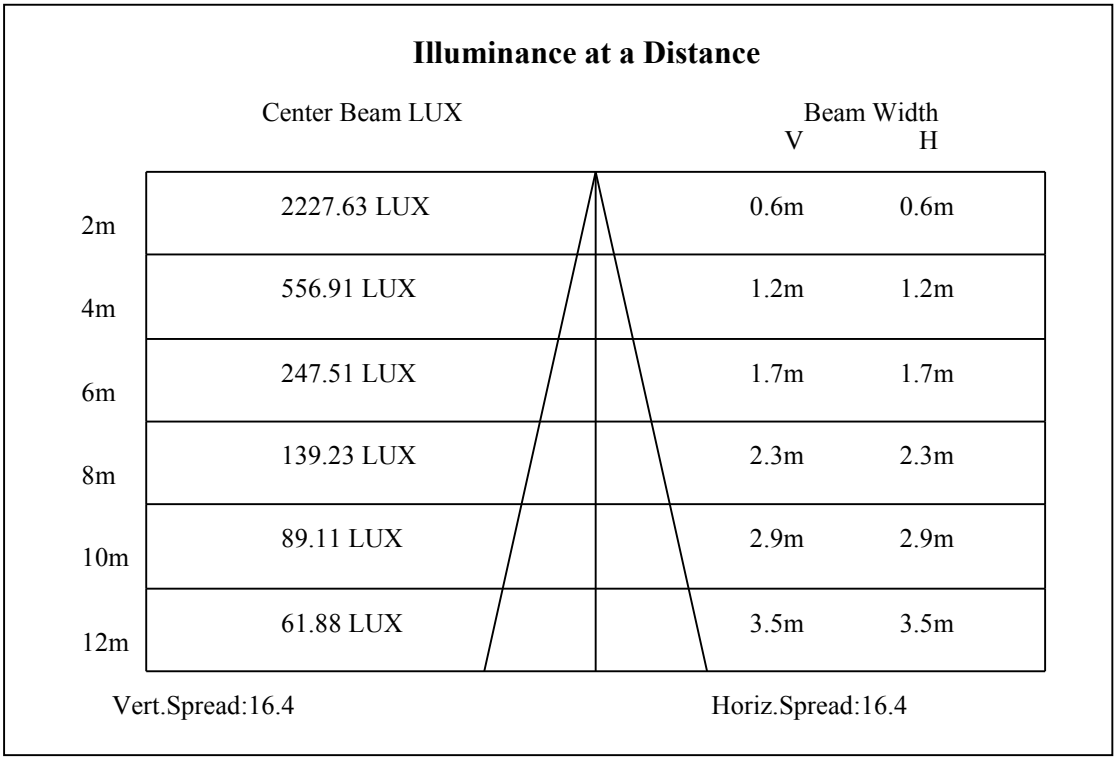
C0/C180:

C90/C270:

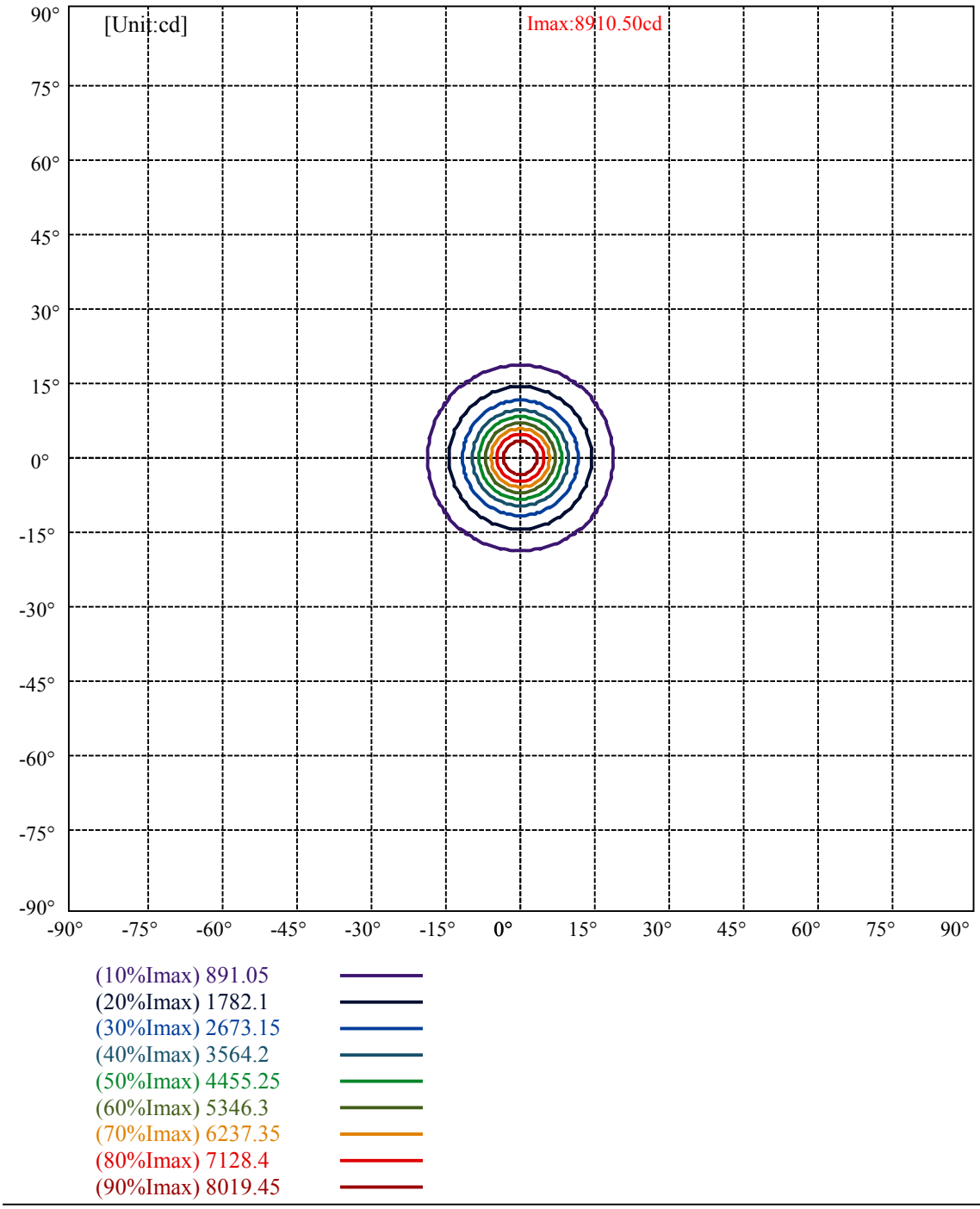
Field angle(10%Imax):C0/180Left:18.4 Right:18.4
:C90/270Left:18.4 Right:18.4

Beam Angle(50%Imax):C0/180Left:8.2 Right:8.2
:C90/270Left:8.2 Right:8.2

Lux distance Curve



ISO-Intensity(V-H)

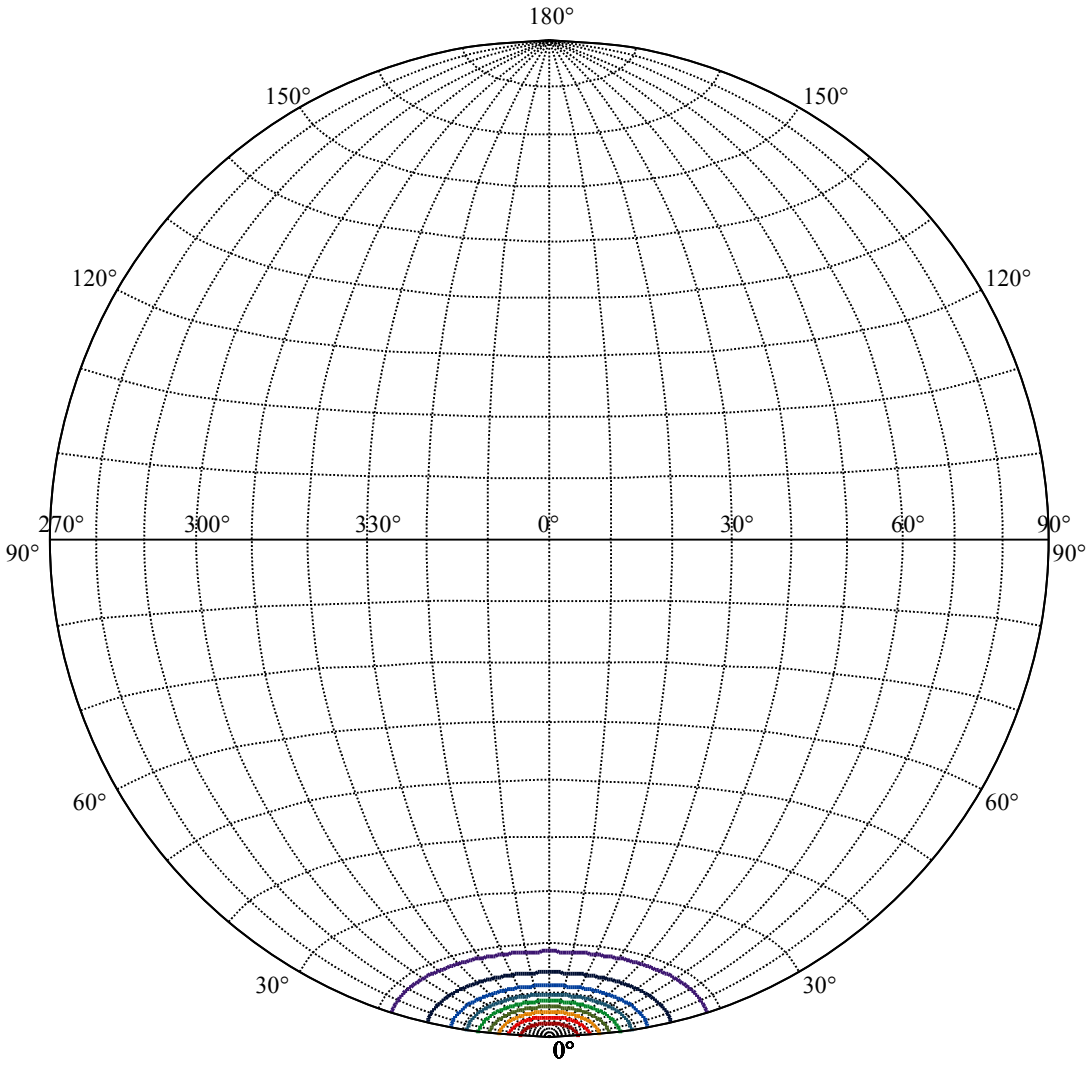


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:8910.50

(10%Imax) 891.05
(20%Imax) 1782.1
(30%Imax) 2673.15
(40%Imax) 3564.2
(50%Imax) 4455.25
(60%Imax) 5346.3
(70%Imax) 6237.35
(80%Imax) 7128.4
(90%Imax) 8019.45

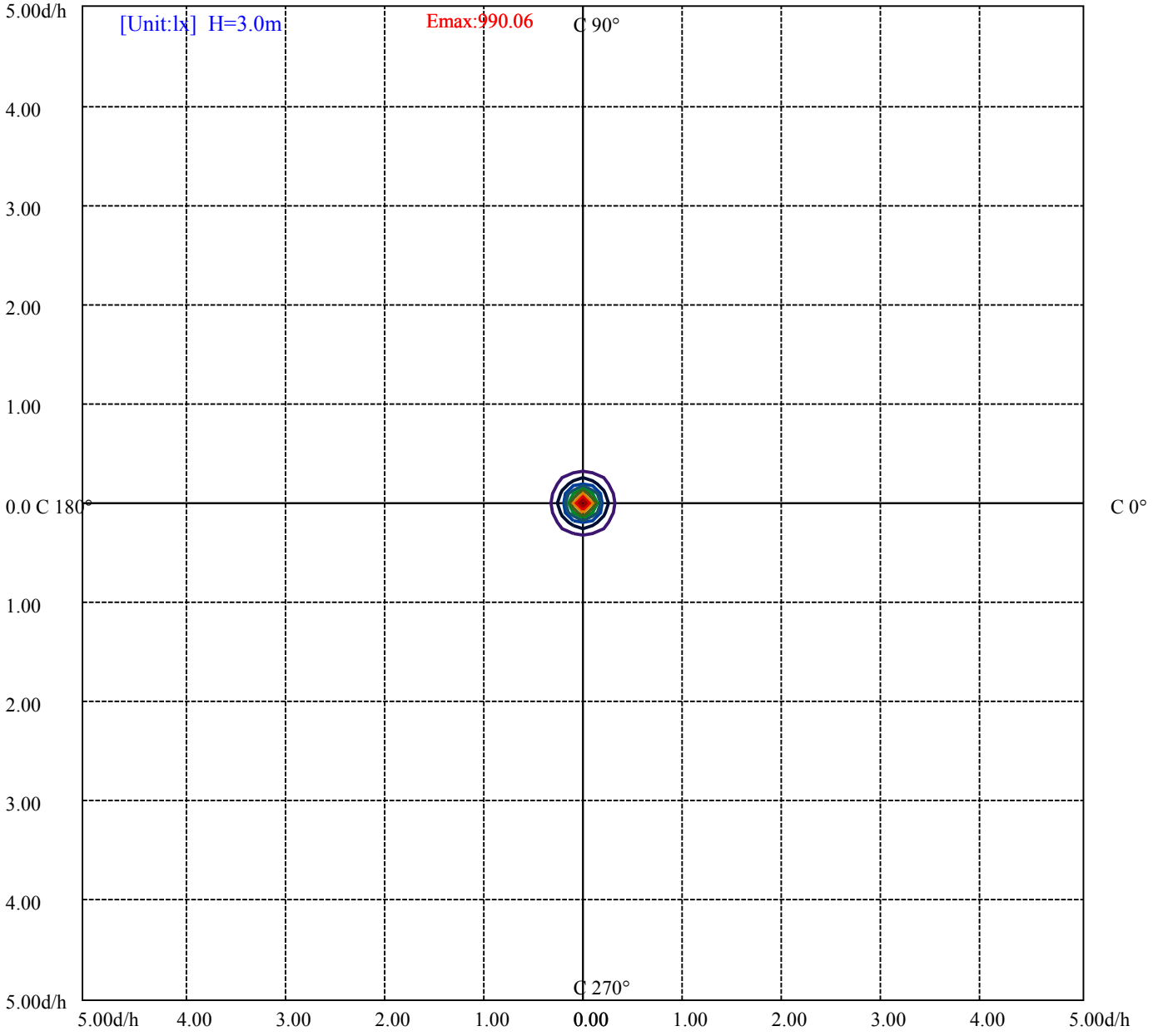
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Nata 1-0918-M

ISO illuminance diagram



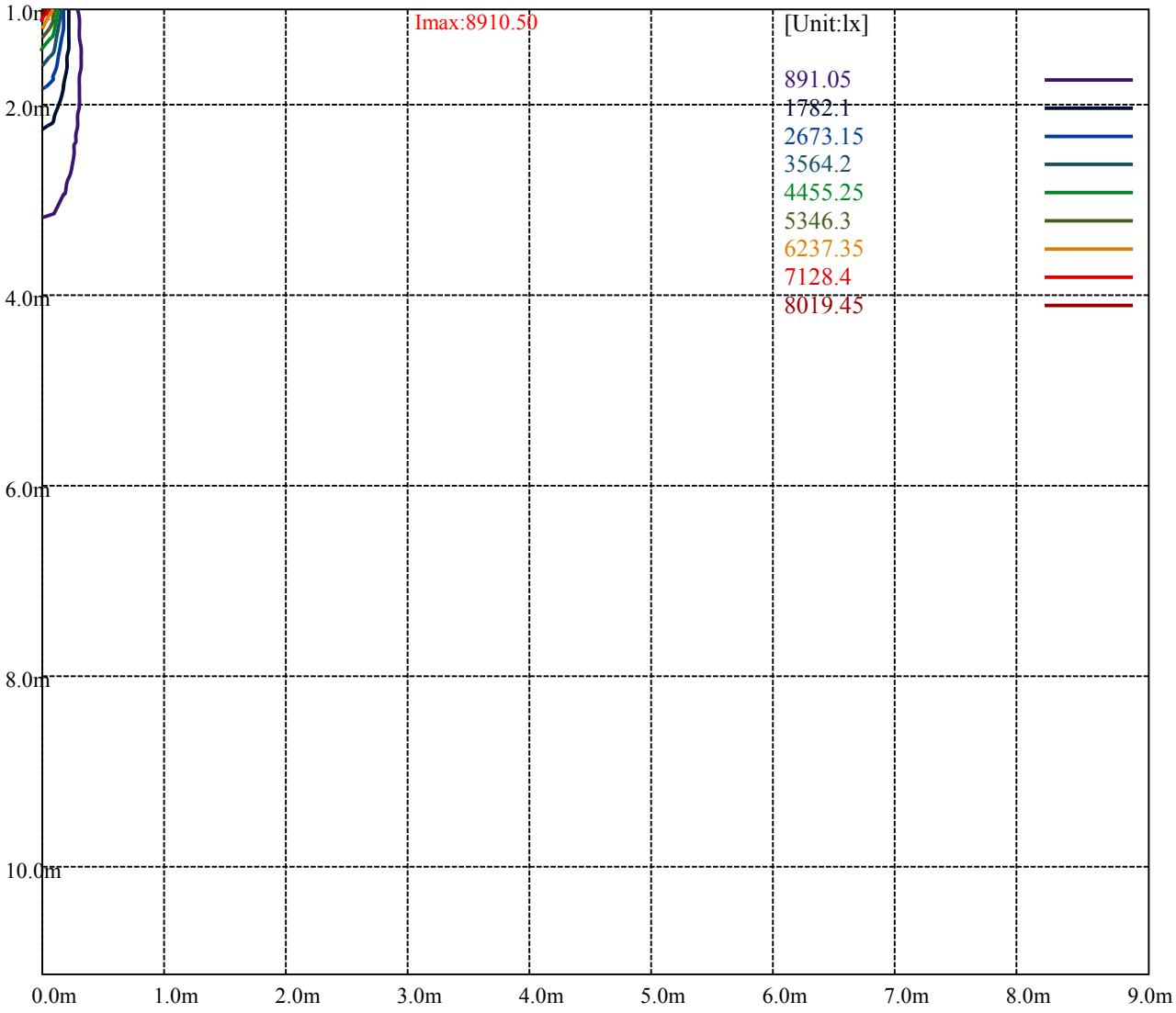
(10%Emax) 99.00545
(20%Emax) 198.0111
(30%Emax) 297.0167
(40%Emax) 396.0222
(50%Emax) 495.0278
(60%Emax) 594.0333
(70%Emax) 693.0389
(80%Emax) 792.0433
(90%Emax) 891.0489

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Luminance Limitting Curve(no luminous side)

Luminance Table

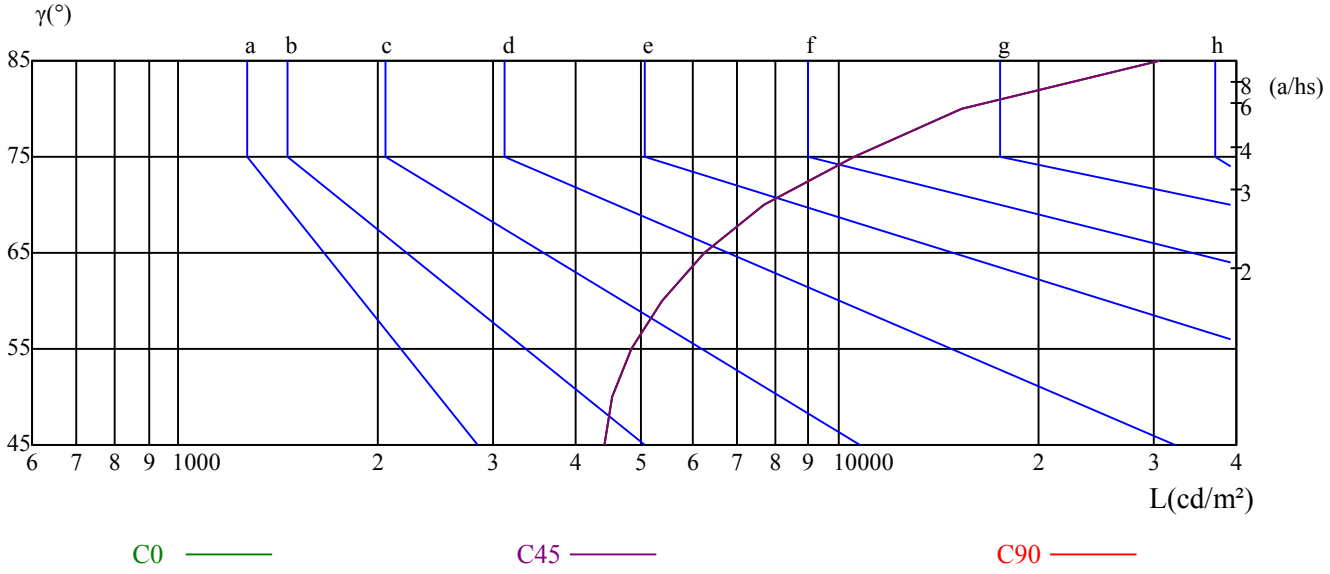
γ	45	50	55	60	65	70	75	80	85
C0	4405	4531	4852	5405	6270	7689	10582	15400	30544
C45	4405	4531	4852	5405	6270	7689	10582	15400	30544
C90	4405	4531	4852	5405	6270	7689	10582	15400	30544

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6270	6270	6270	10582	10582	10582	30544	30544	30544

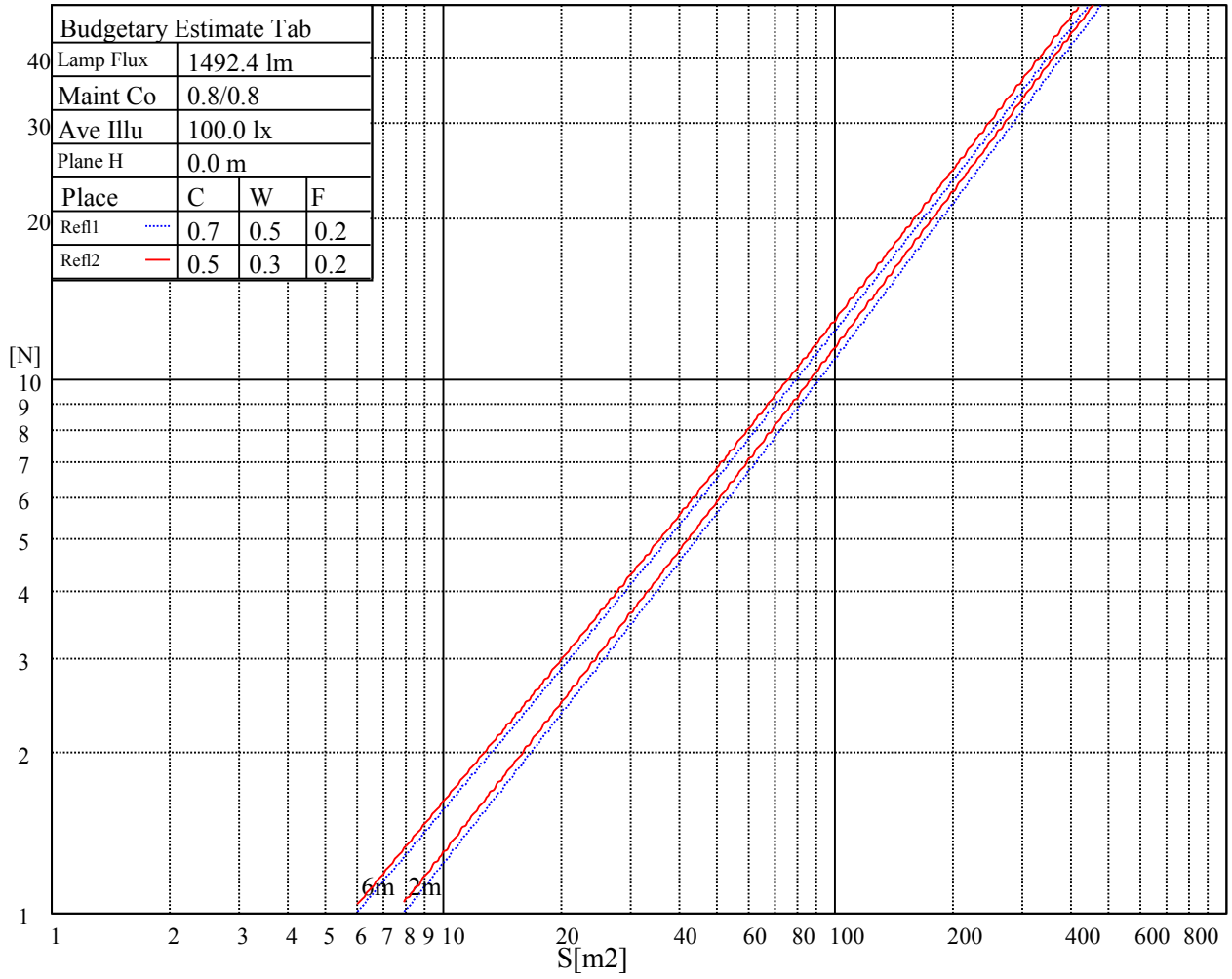
Glare Table

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

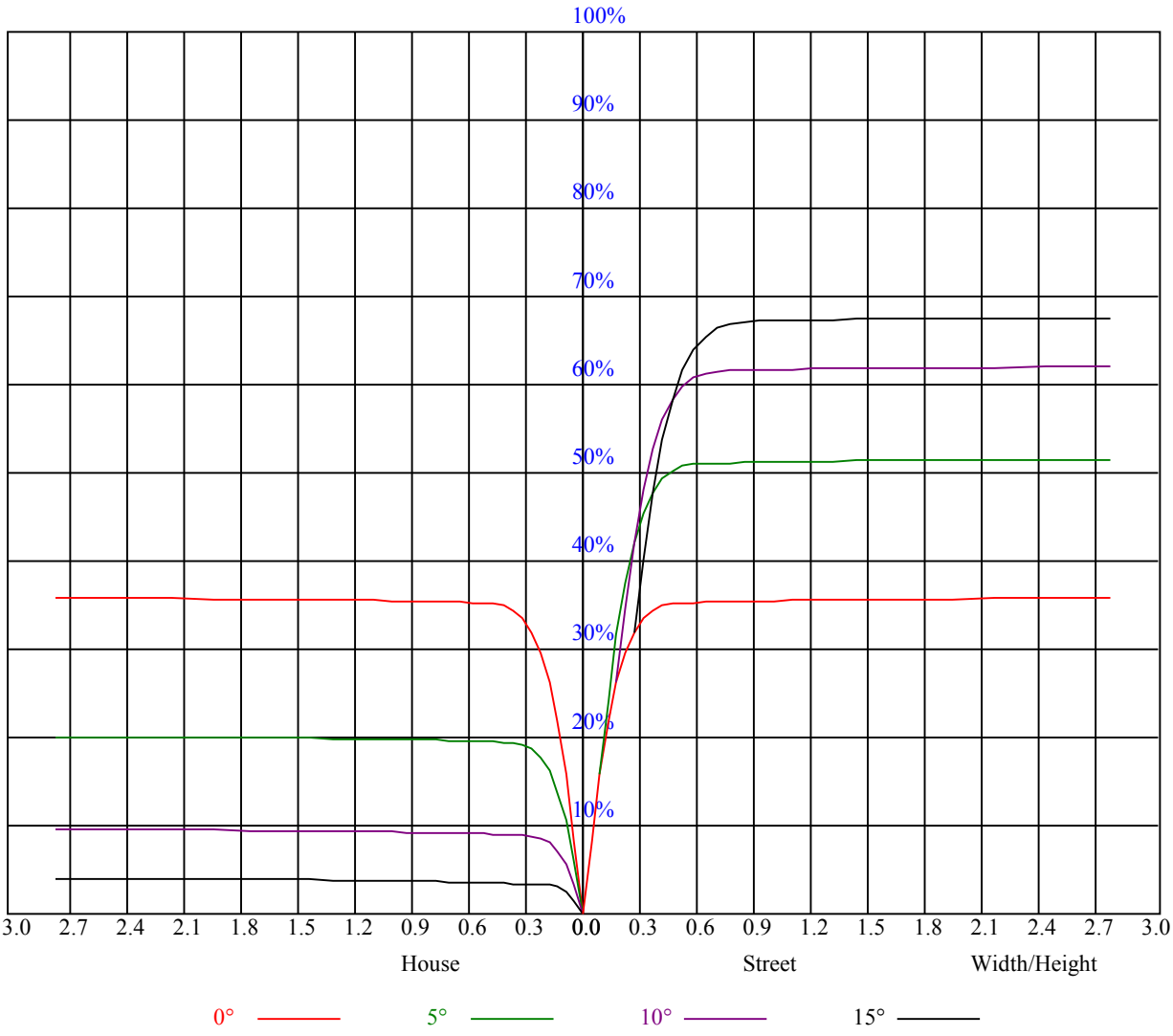


Equipment: GMS1980 Date: 2022/6/09 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.82	0.80	0.79	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74	0.73	0.72	0.72	0.71	0.70
2	0.78	0.76	0.75	0.77	0.75	0.74	0.75	0.73	0.72	0.73	0.72	0.71	0.71	0.70	0.69	0.68
3	0.75	0.73	0.71	0.75	0.72	0.71	0.73	0.71	0.70	0.71	0.70	0.68	0.70	0.68	0.67	0.67
4	0.73	0.70	0.69	0.72	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.67	0.68	0.67	0.66	0.65
5	0.71	0.68	0.66	0.70	0.68	0.66	0.69	0.67	0.66	0.68	0.66	0.65	0.67	0.66	0.64	0.64
6	0.69	0.66	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.64	0.66	0.64	0.63	0.62
7	0.67	0.65	0.63	0.67	0.65	0.63	0.66	0.64	0.63	0.66	0.64	0.62	0.65	0.63	0.62	0.61
8	0.66	0.63	0.62	0.66	0.63	0.61	0.65	0.63	0.61	0.64	0.62	0.61	0.64	0.62	0.61	0.60
9	0.65	0.62	0.60	0.64	0.62	0.60	0.64	0.62	0.60	0.63	0.61	0.60	0.63	0.61	0.60	0.59
10	0.63	0.61	0.59	0.63	0.61	0.59	0.63	0.60	0.59	0.62	0.60	0.59	0.62	0.60	0.59	0.58

Coefficient Utilization Curve



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/09
Humidity(%): 65.0%

Operator: NT07
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	8851.79	8949.19	8903.78	8768.14	8361.22	7727.84	7132.11	6225.65	5493.08
45.0	8943.81	8867.93	8532.12	8061.86	7520.50	6560.27	5797.23	5142.93	4296.23
90.0	8902.58	8725.12	8380.94	7674.06	7000.65	6254.34	5384.93	4561.54	3927.56
135.0	8943.81	8830.28	8514.79	8027.20	7304.79	6486.18	5706.40	4847.75	4168.96
180.0	8851.79	8644.45	8232.75	7384.26	6760.44	5983.06	5091.54	4274.72	3662.26
225.0	8943.81	8938.44	8795.03	8436.51	7932.20	7179.31	6427.02	5555.82	4812.50
270.0	8902.58	8950.98	8872.11	8673.13	8195.71	7492.42	6780.76	5931.67	5185.95
315.0	8943.81	8928.28	8808.77	8435.91	7942.95	7289.85	6477.81	5650.23	4927.82
360.0	8851.79	8949.19	8903.78	8768.14	8361.22	7727.84	7132.11	6225.65	5493.08

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4780.83	4011.81	3489.57	3040.23	2566.39	2249.70	1968.86	1667.11	1448.41
45.0	3653.29	3223.67	2707.40	2363.23	2035.78	1752.55	1527.88	1324.12	1091.09
90.0	3328.83	2833.48	2464.21	2112.27	1845.77	1586.44	1181.97	1158.43	984.85
135.0	3520.04	2968.52	2557.42	2209.06	1851.14	1614.52	1400.01	1168.17	995.48
180.0	3076.68	2601.64	2257.46	1963.48	1689.21	1446.62	1180.42	1048.07	882.31
225.0	4052.44	3426.83	2899.21	2504.84	2177.99	1872.06	1610.94	1400.61	1178.33
270.0	4407.97	3739.34	3240.40	2812.57	2370.40	2072.83	1815.89	1532.06	1324.72
315.0	4191.07	3574.42	3105.96	2659.00	2326.18	2006.50	1733.43	1514.14	1184.06
360.0	4780.83	4011.81	3489.57	3040.23	2566.39	2249.70	1968.86	1667.11	1448.41

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1247.04	1046.87	861.64	703.89	541.36	397.36	313.11	180.51	109.71
45.0	920.79	762.45	579.60	436.20	323.26	242.42	120.88	64.59	27.84
90.0	780.67	632.07	491.59	342.26	244.03	163.24	89.09	40.39	23.06
135.0	834.15	662.66	509.69	378.83	310.72	163.72	98.59	50.07	24.62
180.0	704.43	545.13	417.67	294.76	194.91	124.58	69.49	30.00	21.03
225.0	983.53	823.93	672.58	499.24	377.70	271.22	173.22	99.19	53.30
270.0	1138.89	968.00	769.02	619.64	483.40	335.81	309.52	151.65	80.97
315.0	1074.95	907.89	747.33	565.08	433.57	314.90	206.98	124.05	67.64
360.0	1247.04	1046.87	861.64	703.89	541.36	397.36	313.11	180.51	109.71

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	51.21	23.30	16.73	12.73	10.93	10.16	9.44	8.78	8.31
45.0	18.11	13.27	11.11	10.28	9.56	8.90	8.48	8.01	7.65
90.0	16.07	12.25	10.76	9.92	9.26	8.66	8.19	7.77	7.41
135.0	17.69	12.73	11.17	10.34	9.62	9.02	8.48	8.07	7.65
180.0	15.48	11.71	10.58	9.86	9.20	8.60	8.19	7.77	7.47
225.0	25.45	17.87	13.32	11.35	10.46	9.68	8.96	8.48	8.07
270.0	37.64	21.15	14.88	11.77	10.52	9.68	9.08	8.54	8.01
315.0	31.43	18.46	13.09	11.17	10.22	9.44	8.84	8.25	7.77
360.0	51.21	23.30	16.73	12.73	10.93	10.16	9.44	8.78	8.31

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	7.89	7.53	7.17	6.87	6.63	6.45	6.27	6.09	5.98
45.0	7.35	7.11	6.81	6.63	6.45	6.27	6.09	5.98	5.92
90.0	7.05	6.81	6.63	6.39	6.21	6.09	5.92	5.80	5.68
135.0	7.29	6.99	6.69	6.51	6.33	6.15	6.04	5.92	5.80
180.0	7.17	6.93	6.69	6.57	6.33	6.21	6.15	6.04	5.98
225.0	7.59	7.35	7.05	6.75	6.57	6.39	6.21	6.09	5.98
270.0	7.65	7.29	6.93	6.69	6.51	6.33	6.15	6.04	5.86
315.0	7.41	7.05	6.81	6.57	6.33	6.21	6.04	5.86	5.74
360.0	7.89	7.53	7.17	6.87	6.63	6.45	6.27	6.09	5.98

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	5.86	5.74	5.68	5.56	5.44	5.38	5.32	5.26	5.20
45.0	5.80	5.68	5.56	5.50	5.44	5.38	5.32	5.26	5.20
90.0	5.62	5.56	5.44	5.38	5.32	5.26	5.20	5.14	5.08
135.0	5.68	5.56	5.56	5.50	5.38	5.38	5.32	5.26	5.20
180.0	5.86	5.80	5.74	5.68	5.62	5.62	5.56	5.56	5.50
225.0	5.86	5.80	5.68	5.62	5.56	5.50	5.38	5.38	5.32
270.0	5.74	5.68	5.56	5.50	5.38	5.32	5.26	5.20	5.14
315.0	5.68	5.56	5.44	5.38	5.32	5.26	5.20	5.14	5.08
360.0	5.86	5.74	5.68	5.56	5.44	5.38	5.32	5.26	5.20

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.20	5.08	5.08	5.02	4.96	4.96	4.96	4.90	4.90
45.0	5.14	5.14	5.08	5.02	5.02	4.96	4.90	4.90	4.84
90.0	5.08	5.02	4.96	4.96	4.90	4.90	4.84	4.84	4.84
135.0	5.14	5.14	5.08	5.02	5.02	5.02	4.96	4.90	4.90
180.0	5.44	5.44	5.44	5.44	5.44	5.38	5.44	5.44	5.44
225.0	5.26	5.26	5.26	5.20	5.20	5.14	5.14	5.08	5.08
270.0	5.08	5.08	5.02	4.96	4.96	4.96	4.90	4.84	4.84
315.0	5.02	5.02	4.96	4.96	4.90	4.90	4.84	4.78	4.78
360.0	5.20	5.08	5.08	5.02	4.96	4.96	4.96	4.90	4.90

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.84	4.84	4.84	4.78	4.78	4.72	4.72	4.78	4.72
45.0	4.84	4.84	4.84	4.84	4.78	4.78	4.78	4.72	4.78
90.0	4.78	4.78	4.78	4.72	4.78	4.72	4.72	4.72	4.66
135.0	4.84	4.84	4.84	4.84	4.84	4.78	4.78	4.78	4.78
180.0	5.44	5.38	5.38	5.44	5.50	5.50	5.50	5.50	5.56
225.0	5.08	5.08	5.02	5.02	5.02	5.02	5.02	5.02	5.02
270.0	4.84	4.78	4.78	4.78	4.72	4.72	4.72	4.72	4.66
315.0	4.78	4.72	4.72	4.72	4.72	4.72	4.72	4.66	4.66
360.0	4.84	4.84	4.84	4.78	4.78	4.72	4.72	4.78	4.72

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.72	4.72	4.72	4.72	4.66	4.66	4.66	4.66	4.66
45.0	4.78	4.72	4.78	4.72	4.72	4.78	4.96	4.78	4.72
90.0	4.66	4.72	4.72	4.66	4.66	4.66	4.66	4.66	4.66
135.0	4.78	4.78	4.72	4.72	4.72	4.72	4.72	4.72	4.78
180.0	5.80	6.27	6.75	7.29	7.71	7.65	6.81	5.98	6.21
225.0	5.02	5.02	5.02	5.08	5.08	5.08	5.20	5.08	5.14
270.0	4.72	4.66	4.66	4.66	4.66	4.72	4.66	4.66	4.66
315.0	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.72
360.0	4.72	4.72	4.72	4.72	4.66	4.66	4.66	4.66	4.66

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.72	4.72	4.72	4.72	4.72	4.78	4.60	4.54	4.54
45.0	4.72	4.72	4.78	4.84	4.90	4.48	4.54	4.54	4.48
90.0	4.72	4.72	4.78	4.84	4.60	4.48	4.48	4.48	4.48
135.0	4.78	4.78	4.84	4.90	4.96	4.54	4.54	4.48	4.48
180.0	6.39	6.69	6.75	6.63	5.08	4.54	4.54	4.60	4.78
225.0	5.14	5.14	5.26	5.38	5.56	5.86	4.54	4.54	4.54
270.0	4.66	4.72	4.72	4.78	4.78	4.90	4.54	4.48	4.54
315.0	4.72	4.66	4.72	4.78	4.78	4.84	4.48	4.48	4.48
360.0	4.72	4.72	4.72	4.72	4.72	4.78	4.60	4.54	4.54

Intensity data(cd)

C/γ(°)	90.0
0.0	4.54
45.0	4.48
90.0	4.48
135.0	4.48
180.0	4.48
225.0	4.54
270.0	4.48
315.0	4.48
360.0	4.54