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

Nata

LumCAT: 3-2500-L
Luminaire: 92.70.131.00
Report No: 200522-B001
Test No: 200522-C001
LampCAT: LUMINUS CXM-14 AC40
Lamp flux(lm): 2159.2
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 33.7000
Current(A): 0.5000
Power (W): 16.8500
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 2104.88
Efficiency(%): 97.48%
Lumens(lm)/Power(W): 124.92
Central intensity(cd): 14706.560
Maximum intensity(cd): 14706.560
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=16.5
[C90/270]Total=16.5
Field angle(10%Imax): [C0/180]Total=34.2
[C90/270]Total=34.2
Maximum s/h(1/2): C0_180=0.28 C90_270=0.28
Maximum s/h(1/4): C0_180=0.28 C90_270=0.28
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 97.48%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.577%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	14706.563	0.000	0	.000%	.000%
1.0	14604.609	14.025	14.025	.650%	.666%
2.0	14262.188	41.432	55.457	1.919%	2.635%
3.0	13605.469	66.650	122.107	3.087%	5.801%
4.0	12685.992	88.006	210.113	4.076%	9.982%
5.0	11554.805	104.283	314.396	4.830%	14.937%
6.0	10292.555	114.814	429.21	5.317%	20.391%
7.0	8999.367	119.745	548.954	5.546%	26.080%
8.0	7683.469	119.396	668.35	5.530%	31.752%
9.0	6315.961	113.458	781.808	5.255%	37.143%
10.0	4951.477	101.966	883.774	4.722%	41.987%
11.0	4021.031	89.654	973.428	4.152%	46.246%
12.0	3316.711	80.212	1053.64	3.715%	50.057%
13.0	2729.180	71.749	1125.39	3.323%	53.466%
14.0	2306.461	64.456	1189.845	2.985%	56.528%
15.0	1965.727	58.650	1248.496	2.716%	59.314%
16.0	1696.500	53.662	1302.158	2.485%	61.864%
17.0	1483.523	49.522	1351.679	2.294%	64.217%
18.0	1318.908	46.206	1397.885	2.140%	66.412%
19.0	1173.902	43.370	1441.255	2.009%	68.472%
20.0	1075.556	41.171	1482.426	1.907%	70.428%
21.0	1002.171	39.897	1522.323	1.848%	72.324%
22.0	931.662	38.861	1561.184	1.800%	74.170%
23.0	880.833	38.031	1599.215	1.761%	75.977%
24.0	836.044	37.537	1636.752	1.738%	77.760%
25.0	798.258	37.160	1673.913	1.721%	79.525%
26.0	771.237	37.048	1710.961	1.716%	81.286%
27.0	747.499	37.156	1748.117	1.721%	83.051%
28.0	723.248	37.236	1785.353	1.725%	84.820%
29.0	700.045	37.237	1822.591	1.725%	86.589%
30.0	665.459	36.868	1859.459	1.708%	88.341%
31.0	605.194	35.360	1894.819	1.638%	90.020%
32.0	535.535	32.681	1927.5	1.514%	91.573%
33.0	464.527	29.462	1956.962	1.365%	92.973%
34.0	379.723	25.549	1982.511	1.183%	94.187%
35.0	307.505	21.343	2003.854	.988%	95.201%
36.0	233.318	17.220	2021.074	.798%	96.019%
37.0	162.281	12.902	2033.976	.598%	96.632%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	93.178	8.527	2042.503	.395%	97.037%
39.0	50.534	4.905	2047.409	.227%	97.270%
40.0	29.700	2.798	2050.207	.130%	97.403%
41.0	22.141	1.846	2052.053	.085%	97.490%
42.0	19.666	1.519	2053.572	.070%	97.563%
43.0	17.944	1.393	2054.965	.065%	97.629%
44.0	17.023	1.320	2056.285	.061%	97.692%
45.0	16.425	1.285	2057.57	.060%	97.753%
46.0	15.736	1.258	2058.828	.058%	97.812%
47.0	14.984	1.222	2060.05	.057%	97.870%
48.0	14.393	1.188	2061.237	.055%	97.927%
49.0	14.027	1.167	2062.404	.054%	97.982%
50.0	13.725	1.157	2063.561	.054%	98.037%
51.0	13.451	1.150	2064.711	.053%	98.092%
52.0	13.191	1.143	2065.854	.053%	98.146%
53.0	12.966	1.138	2066.992	.053%	98.200%
54.0	12.586	1.126	2068.118	.052%	98.254%
55.0	12.347	1.113	2069.231	.052%	98.307%
56.0	12.234	1.111	2070.342	.051%	98.359%
57.0	12.234	1.119	2071.461	.052%	98.413%
58.0	12.241	1.132	2072.593	.052%	98.466%
59.0	12.389	1.151	2073.744	.053%	98.521%
60.0	12.410	1.172	2074.916	.054%	98.577%
61.0	12.220	1.175	2076.091	.054%	98.632%
62.0	11.939	1.164	2077.255	.054%	98.688%
63.0	11.651	1.147	2078.403	.053%	98.742%
64.0	11.370	1.130	2079.532	.052%	98.796%
65.0	11.088	1.111	2080.644	.051%	98.849%
66.0	10.905	1.097	2081.741	.051%	98.901%
67.0	10.716	1.087	2082.828	.050%	98.953%
68.0	10.470	1.073	2083.901	.050%	99.004%
69.0	10.266	1.058	2084.959	.049%	99.054%
70.0	10.090	1.045	2086.005	.048%	99.103%
71.0	9.773	1.027	2087.031	.048%	99.152%
72.0	9.527	1.004	2088.035	.046%	99.200%
73.0	9.302	0.985	2089.019	.046%	99.247%
74.0	9.098	0.967	2089.987	.045%	99.293%
75.0	8.951	0.954	2090.94	.044%	99.338%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.880	0.947	2091.887	.044%	99.383%
77.0	8.824	0.944	2092.831	.044%	99.428%
78.0	8.775	0.942	2093.773	.044%	99.473%
79.0	8.733	0.941	2094.714	.044%	99.517%
80.0	8.663	0.938	2095.652	.043%	99.562%
81.0	8.627	0.935	2096.587	.043%	99.606%
82.0	8.578	0.933	2097.52	.043%	99.651%
83.0	8.543	0.931	2098.45	.043%	99.695%
84.0	8.501	0.929	2099.379	.043%	99.739%
85.0	8.445	0.925	2100.304	.043%	99.783%
86.0	8.423	0.922	2101.226	.043%	99.827%
87.0	8.381	0.920	2102.145	.043%	99.870%
88.0	8.360	0.917	2103.062	.042%	99.914%
89.0	8.269	0.911	2103.974	.042%	99.957%
90.0	8.177	0.902	2104.876	.042%	100.000%

Zonal flux distribution table

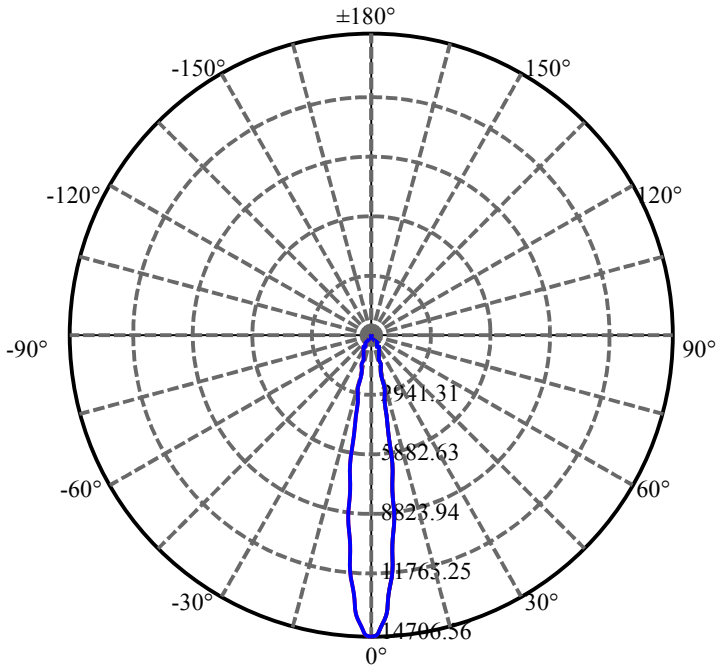
ZONAL LUMEN SUMMARY

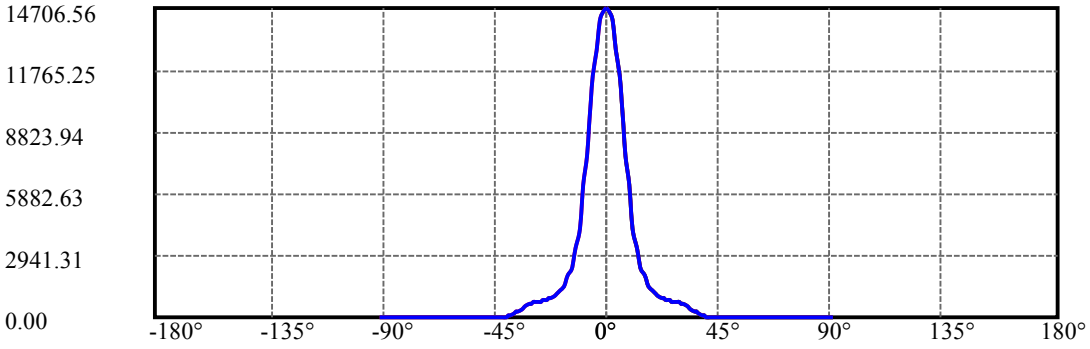
Zone	Lumens	%Lamp	%Fixt
0-30	1859.46	86.12%	88.34%
0-40	2050.21	94.95%	97.40%
0-60	2074.92	96.10%	98.58%
0-90	2103.97	97.44%	99.96%
0-120	2103.97	97.44%	99.96%
0-180	2104.88	97.48%	100.00%
60-90	30.23	1.40%	1.44%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.27	1683.90	77.99%	80.00%

ZONAL LUMEN SUMMARY

0-10	883.77
10-20	598.65
20-30	377.03
30-40	190.75
40-50	13.35
50-60	11.35
60-70	11.09
70-80	9.65
80-90	8.32
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:17.1 Right:17.1
:C90/270Left:17.1 Right:17.1

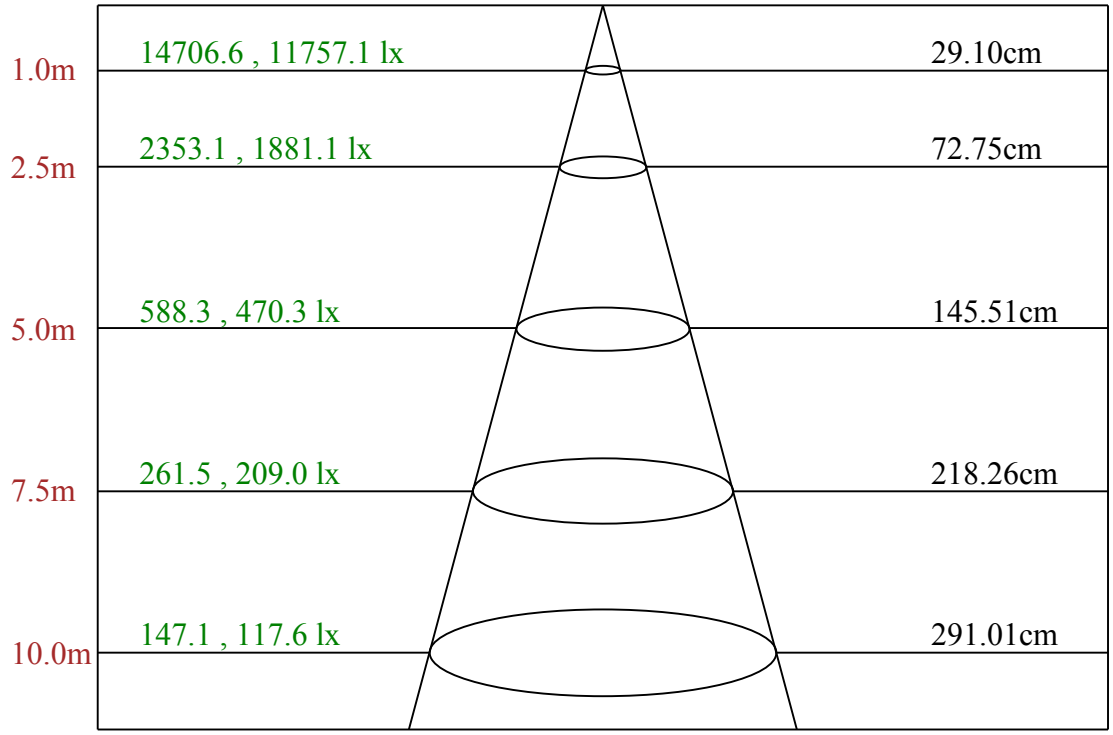
Beam Angle(50%Imax):C0/180Left:8.2 Right:8.2
:C90/270Left:8.2 Right:8.2

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/5/22
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

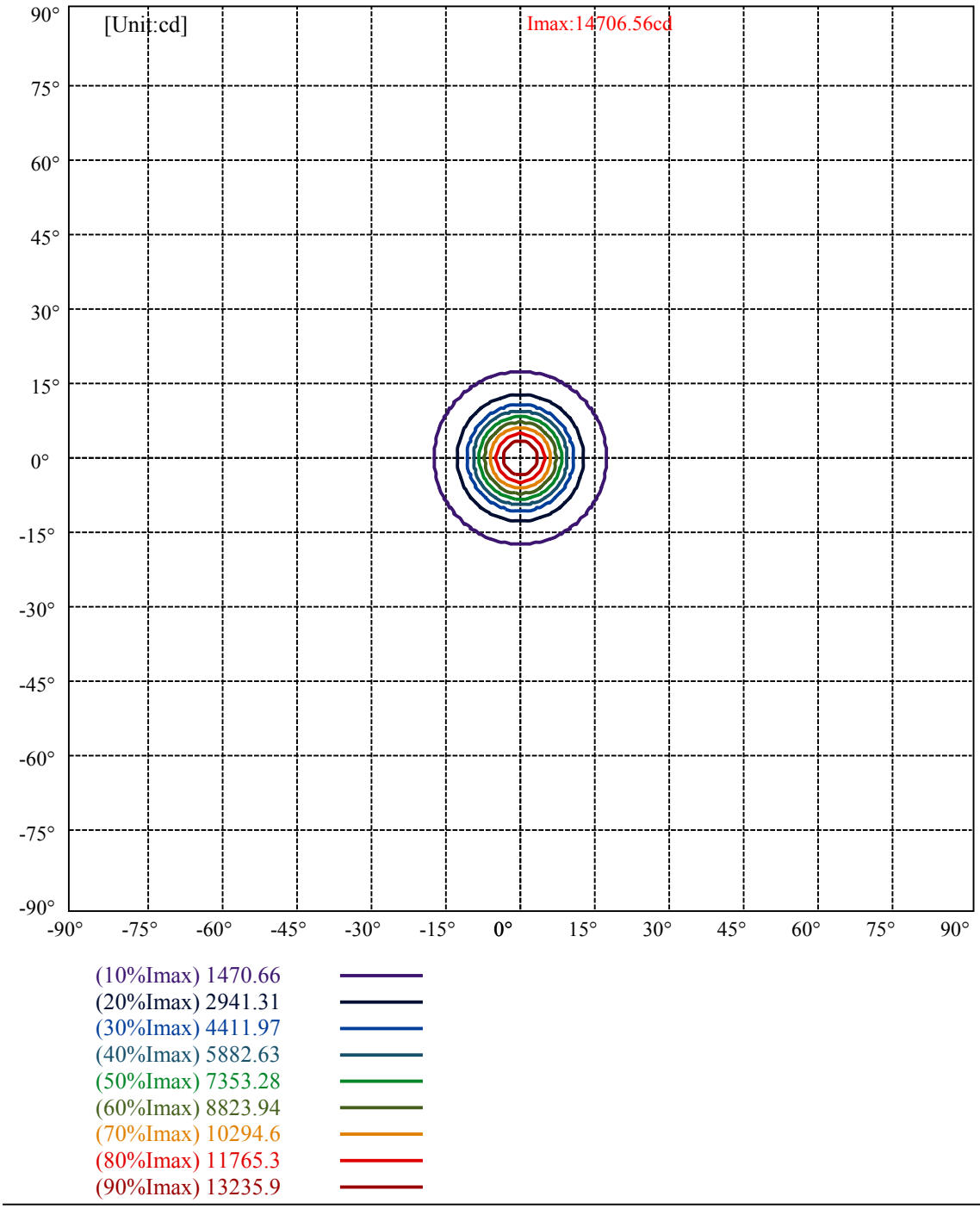
Lux distance Curve



Max , Ave

Beam angle of C0 plane 16.56

ISO-Intensity(V-H)

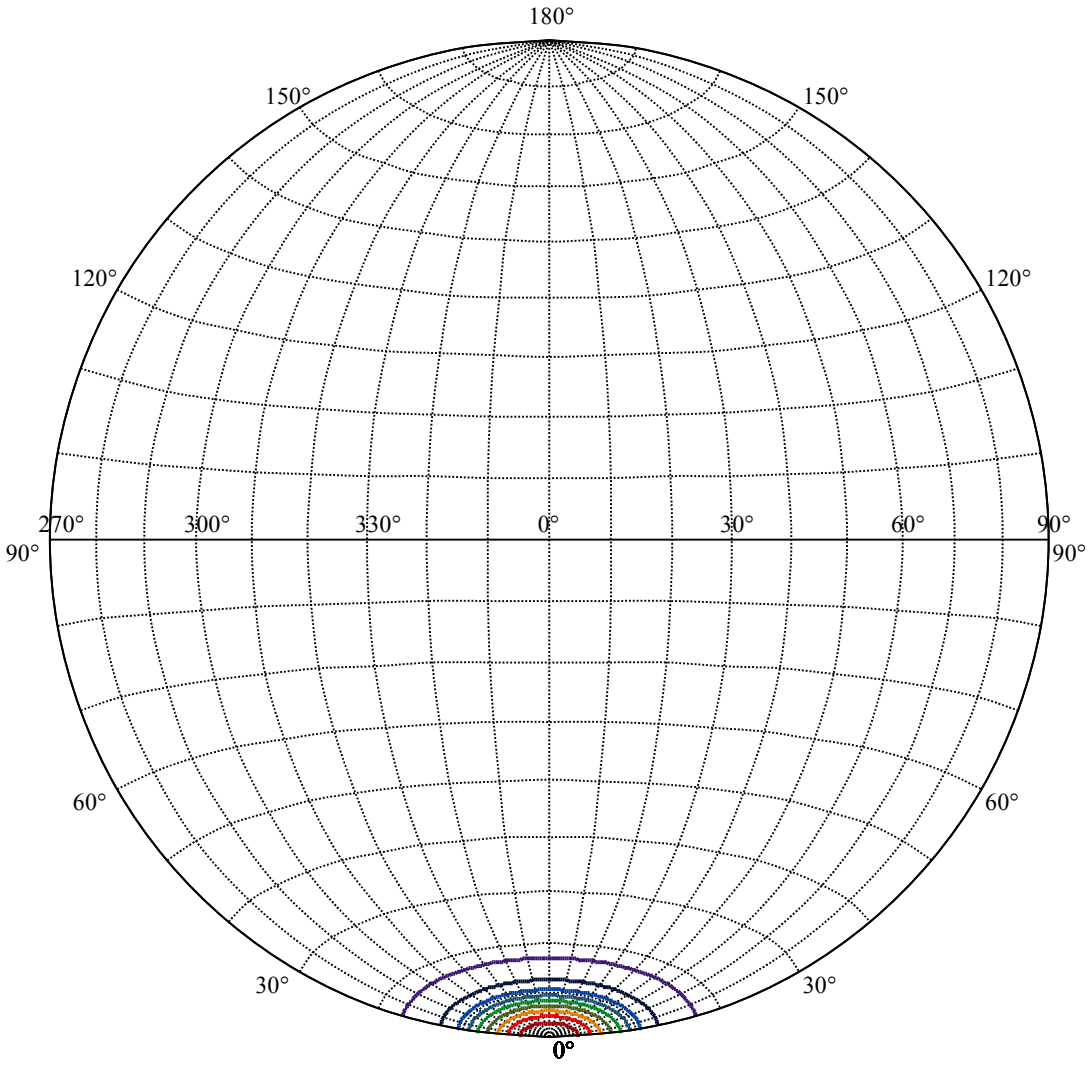


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/5/22
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



[Unit:cd]

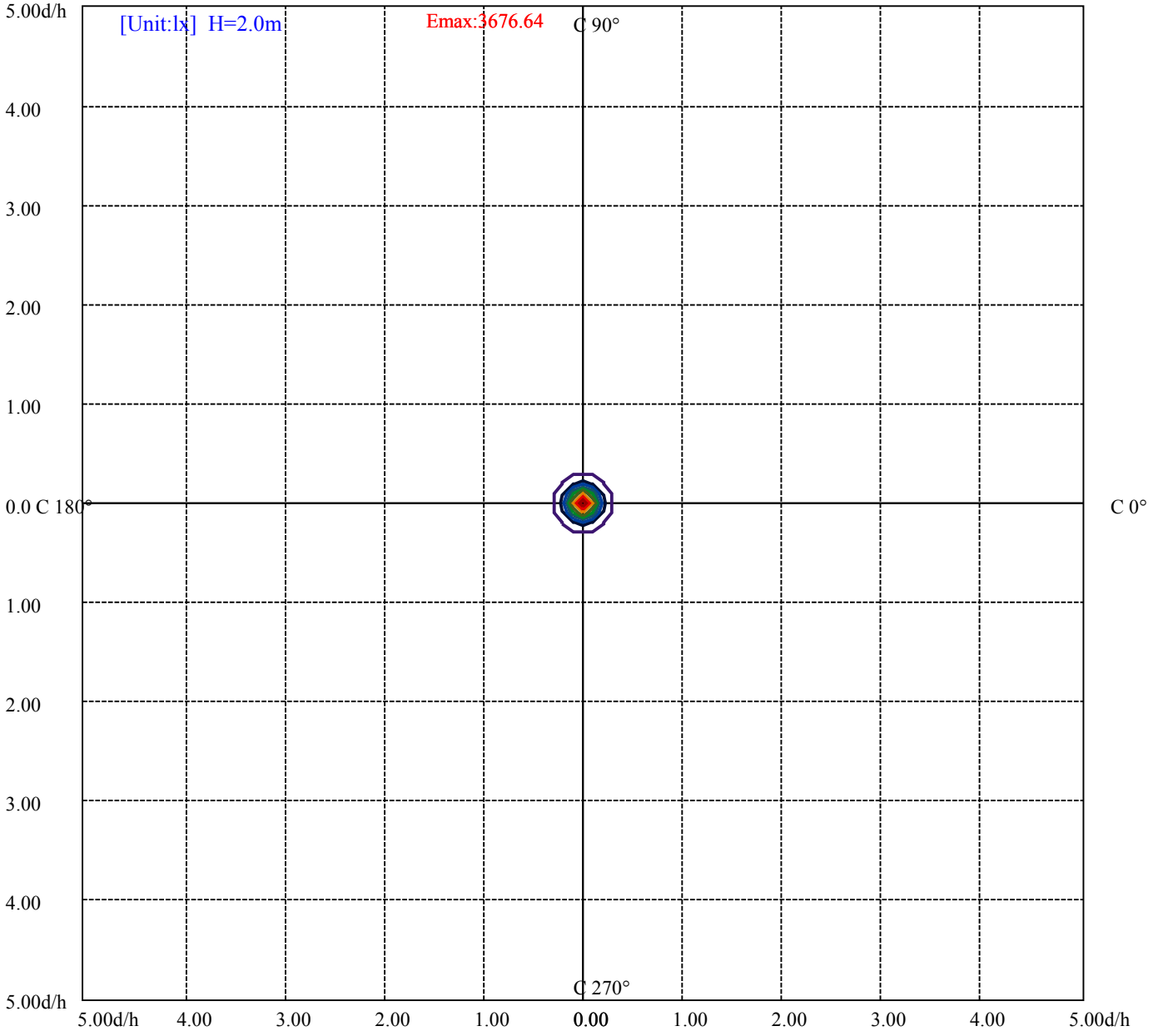
Imax:14706.56

(10%Imax) 1470.66
(20%Imax) 2941.31
(30%Imax) 4411.97
(40%Imax) 5882.63
(50%Imax) 7353.28
(60%Imax) 8823.94
(70%Imax) 10294.6
(80%Imax) 11765.3
(90%Imax) 13235.9

Equipment: GMS1980	Date: 2020/5/22	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

Nata 3-2500-L

ISO illuminance diagram

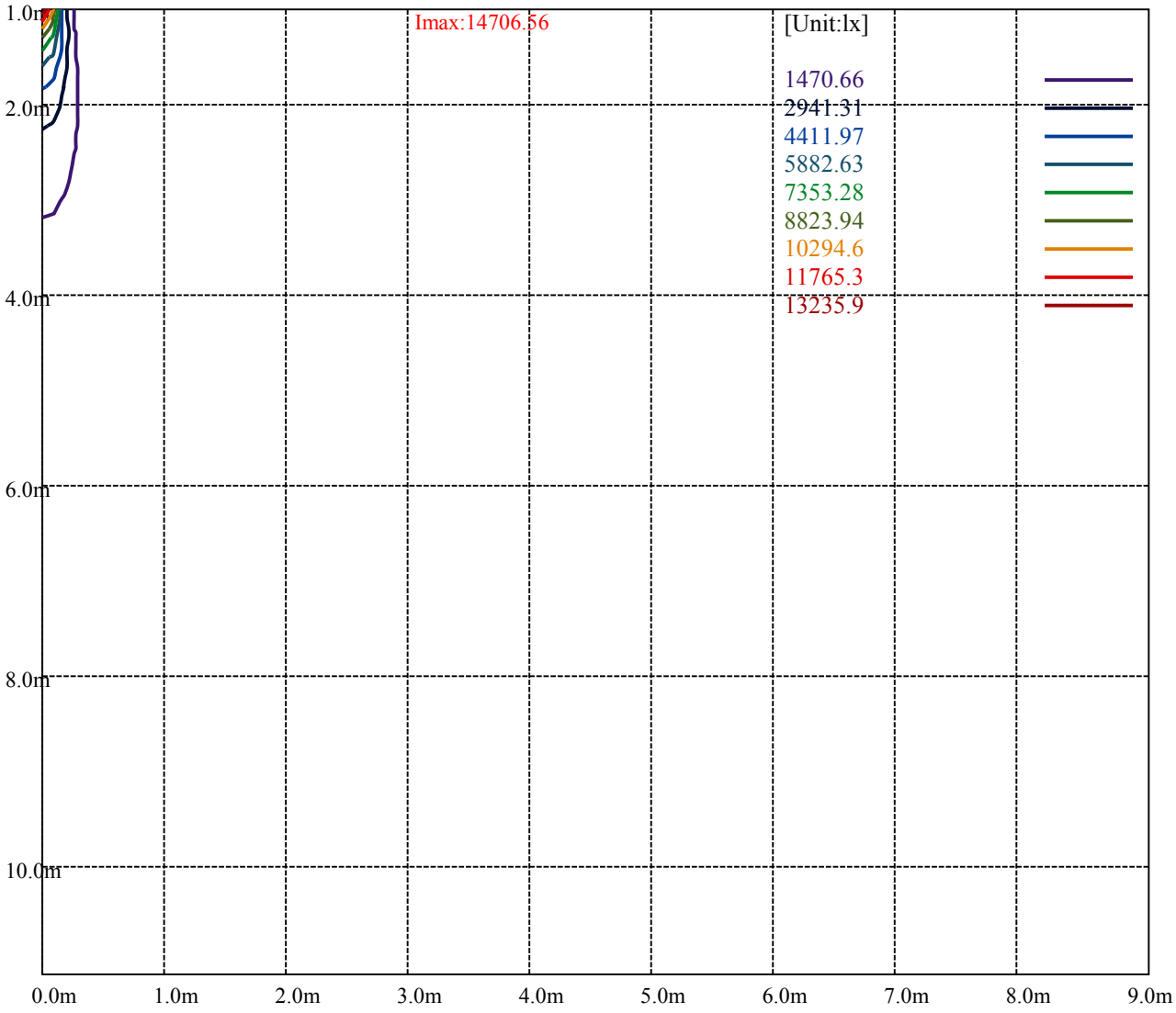


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/5/22
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/5/22
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

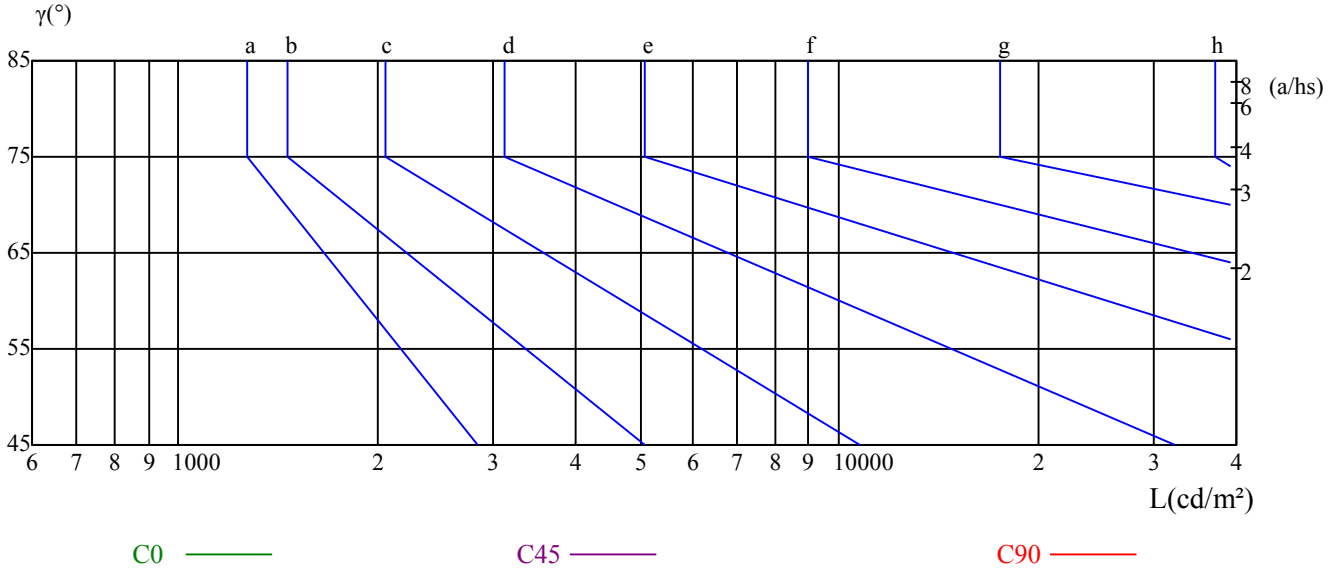
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

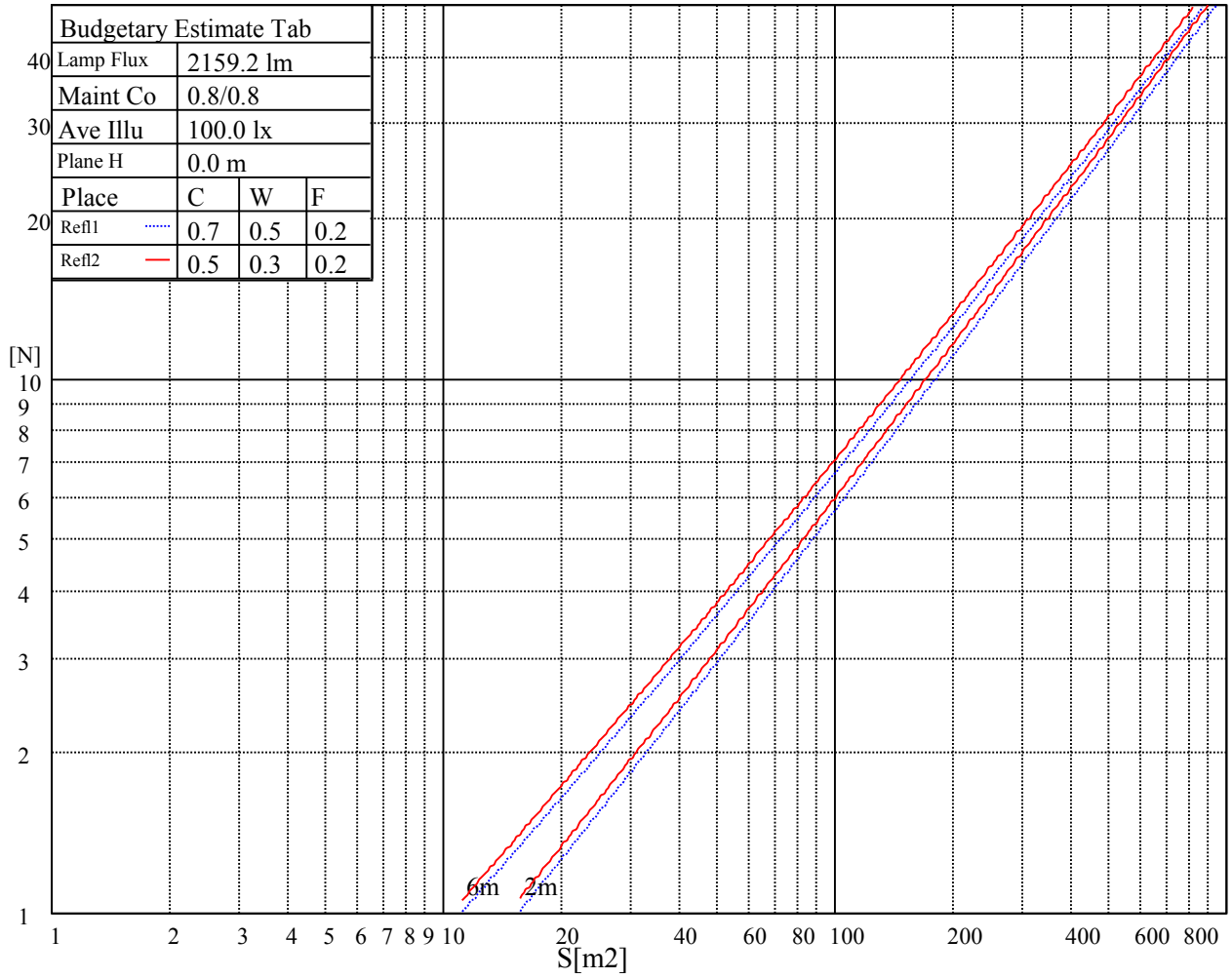
Glare Table

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
Temperature(°C): 25.0

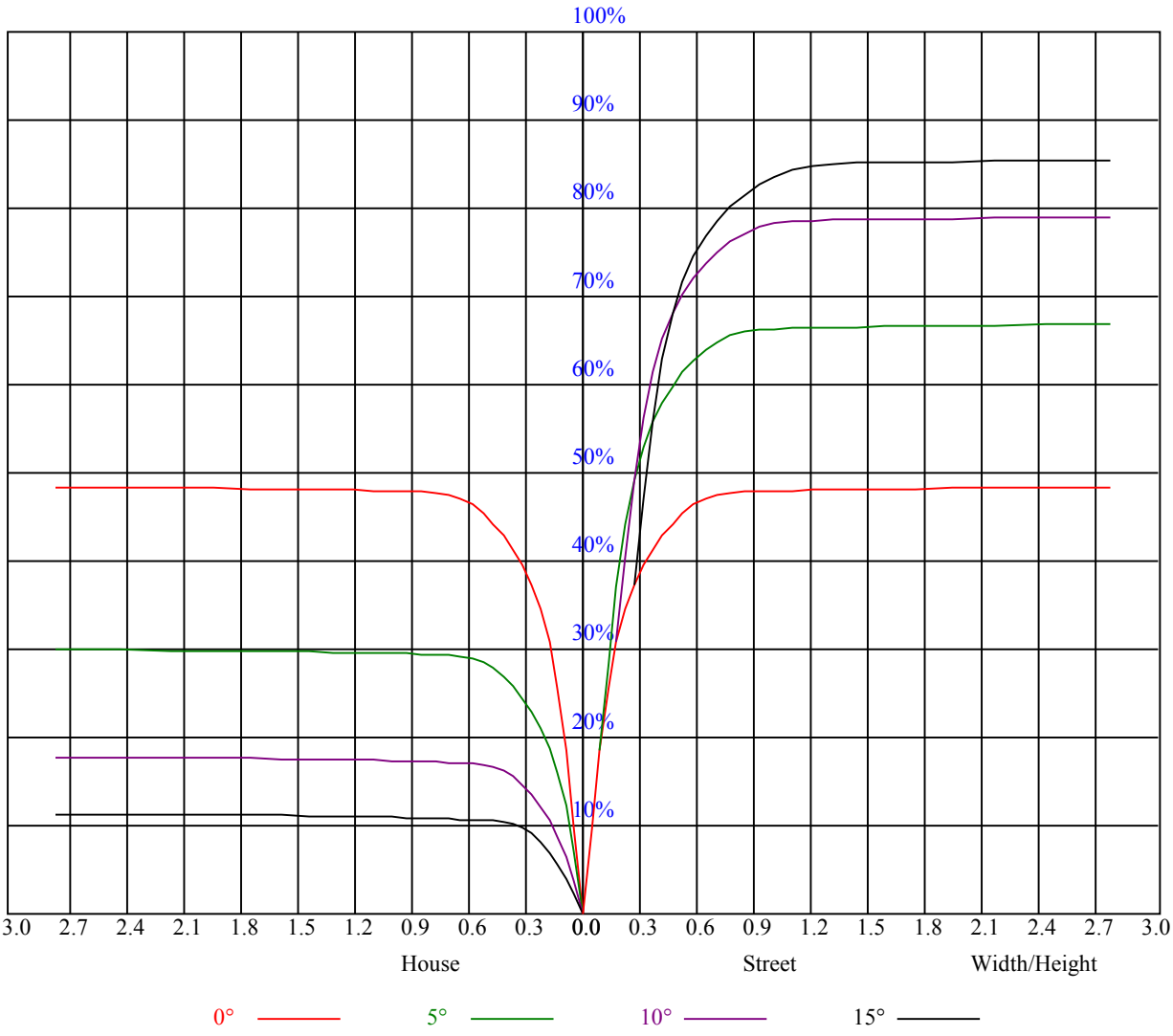
Date: 2020/5/22
Humidity(%): 65.0%

Operator: NT07
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	1.16	1.16	1.16	1.13	1.13	1.13	1.08	1.08	1.08	1.04	1.04	1.04	0.99	0.99	0.99	0.97
1	1.10	1.08	1.06	1.07	1.06	1.04	1.04	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.93
2	1.04	1.01	0.98	1.02	1.00	0.97	0.99	0.97	0.95	0.97	0.95	0.93	0.94	0.93	0.91	0.90
3	0.99	0.96	0.93	0.98	0.95	0.92	0.96	0.93	0.91	0.93	0.91	0.89	0.91	0.90	0.88	0.87
4	0.95	0.91	0.88	0.94	0.91	0.88	0.92	0.89	0.87	0.91	0.88	0.86	0.89	0.87	0.85	0.84
5	0.92	0.88	0.84	0.91	0.87	0.84	0.89	0.86	0.83	0.88	0.85	0.83	0.86	0.84	0.82	0.81
6	0.88	0.84	0.81	0.88	0.84	0.81	0.86	0.83	0.80	0.85	0.82	0.80	0.84	0.81	0.79	0.78
7	0.86	0.81	0.78	0.85	0.81	0.78	0.84	0.80	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.76
8	0.83	0.79	0.76	0.82	0.78	0.76	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.75	0.74
9	0.80	0.76	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.73	0.72
10	0.78	0.74	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.70

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/5/22	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	14776.88	14568.75	14096.25	13404.38	12431.25	11424.38	10085.63	8611.88	7290.00
45.0	14765.63	14355.00	13674.38	12960.00	11739.38	10468.13	9326.25	7605.00	6283.13
90.0	14585.63	14265.00	13696.88	12656.25	11217.94	10477.13	8660.25	7462.13	6143.63
135.0	14698.13	14686.88	14394.38	13933.13	12954.38	11936.25	10777.50	9140.63	7796.25
180.0	14776.88	14805.00	14596.88	13961.25	13156.88	11166.19	10538.44	9377.44	8003.25
225.0	14765.63	14883.75	14838.75	14383.13	13860.00	13050.00	11173.50	10559.81	9277.31
270.0	14585.63	14743.13	14653.13	14315.63	13646.25	12825.00	11722.50	10440.00	9196.88
315.0	14698.13	14529.38	14146.88	13230.00	12481.88	11091.38	10056.38	8798.06	7477.31
360.0	14776.88	14568.75	14096.25	13404.38	12431.25	11424.38	10085.63	8611.88	7290.00

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5861.25	4640.63	3813.75	3189.38	2868.75	2257.88	1960.88	1693.13	1483.88
45.0	5090.63	3903.75	3195.00	2851.88	2189.25	1886.63	1653.19	1425.94	1283.06
90.0	4818.38	3779.44	3107.81	2563.88	2156.06	1881.56	1630.13	1451.81	1284.75
135.0	6480.00	4966.88	3988.13	3279.38	2868.75	2279.25	1977.75	1708.31	1490.06
180.0	6473.81	5095.69	4120.31	3308.06	2721.38	2335.50	1986.75	1737.56	1511.44
225.0	7911.56	6235.88	5016.38	4025.25	3204.56	2631.38	2252.81	1910.81	1672.31
270.0	7717.50	6221.25	5023.13	4055.63	3172.50	2896.88	2275.31	1927.13	1638.00
315.0	6174.56	4768.31	3903.75	3260.25	2652.19	2282.63	1989.00	1717.31	1504.69
360.0	5861.25	4640.63	3813.75	3189.38	2868.75	2257.88	1960.88	1693.13	1483.88

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1335.38	1202.63	1098.00	1023.19	956.25	906.19	858.38	819.00	790.31
45.0	1167.75	1062.00	978.19	923.63	873.56	831.38	801.00	769.50	745.88
90.0	1121.51	1050.19	976.28	912.32	856.24	816.47	780.58	755.55	736.37
135.0	1324.13	1180.69	1068.75	990.00	917.44	868.50	824.06	788.63	762.19
180.0	1327.50	1112.91	1087.93	993.60	920.98	869.12	825.92	789.58	764.78
225.0	1466.44	1306.13	1114.71	1083.43	997.65	937.01	885.32	837.56	804.49
270.0	1449.56	1287.00	1160.44	1058.63	971.44	911.81	857.81	812.81	780.19
315.0	1359.00	1189.69	1120.16	1032.58	959.74	906.19	855.28	813.43	785.70
360.0	1335.38	1202.63	1098.00	1023.19	956.25	906.19	858.38	819.00	790.31

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	766.13	739.69	719.44	686.25	620.44	552.94	478.13	392.63	304.88
45.0	723.94	704.81	676.69	627.19	551.25	477.00	398.81	301.50	292.50
90.0	717.81	697.44	656.55	603.28	531.39	447.36	374.01	292.67	212.34
135.0	740.25	716.63	699.19	657.56	586.13	519.19	450.00	359.44	286.31
180.0	742.56	719.16	702.68	668.25	609.02	534.26	462.43	379.86	295.09
225.0	779.01	753.19	729.84	710.94	670.61	605.36	536.51	452.98	377.66
270.0	748.69	720.56	702.56	685.69	647.44	596.25	536.63	464.06	383.06
315.0	761.63	734.51	713.42	684.51	625.28	551.93	479.70	394.65	308.19
360.0	766.13	739.69	719.44	686.25	620.44	552.94	478.13	392.63	304.88

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	286.88	166.67	81.96	40.22	24.19	21.15	17.94	16.31	15.58
45.0	158.06	102.49	45.23	29.31	25.54	22.22	20.59	20.42	19.97
90.0	147.15	84.09	43.99	26.78	23.06	19.86	18.11	17.72	17.27
135.0	210.09	141.75	79.09	34.37	22.05	19.46	17.16	15.92	15.58
180.0	223.48	147.94	89.83	43.65	23.74	21.54	19.01	16.82	16.26
225.0	293.46	212.29	144.56	86.91	36.00	23.57	21.09	18.06	16.59
270.0	312.75	285.19	164.19	98.89	60.13	29.14	25.48	22.78	20.08
315.0	234.68	157.84	96.58	44.16	22.89	20.19	17.94	15.53	14.85
360.0	286.88	166.67	81.96	40.22	24.19	21.15	17.94	16.31	15.58

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	15.02	14.46	13.89	13.33	12.83	12.54	12.49	12.38	12.09
45.0	19.13	18.17	16.93	16.20	15.81	15.64	15.24	14.40	14.12
90.0	16.31	15.41	14.91	14.34	14.40	14.34	13.73	13.61	13.73
135.0	15.36	14.74	14.12	13.67	13.28	13.05	12.99	12.94	12.71
180.0	15.69	15.08	14.51	14.01	13.56	13.05	12.71	12.54	12.43
225.0	16.20	15.58	14.91	14.01	13.56	13.33	12.94	12.77	12.71
270.0	19.41	18.84	17.66	17.16	16.76	16.03	15.75	15.41	14.57
315.0	14.29	13.61	12.94	12.43	12.04	11.81	11.76	11.48	11.36
360.0	15.02	14.46	13.89	13.33	12.83	12.54	12.49	12.38	12.09

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.81	11.64	11.59	11.59	11.53	11.53	11.42	11.36	11.08
45.0	13.39	12.99	13.16	13.50	13.67	13.73	13.73	13.44	12.88
90.0	13.28	12.83	13.05	13.44	13.56	13.67	13.67	13.39	12.54
135.0	12.49	12.26	12.09	11.93	11.81	11.81	11.70	11.64	11.31
180.0	12.09	11.70	11.48	11.31	11.25	11.19	11.14	11.08	10.91
225.0	12.43	12.32	12.09	11.87	11.70	11.98	12.26	12.26	12.21
270.0	14.01	14.01	13.50	13.33	13.50	14.34	14.51	13.78	13.95
315.0	11.19	11.03	10.91	10.91	10.91	10.86	10.86	10.80	10.63
360.0	11.81	11.64	11.59	11.59	11.53	11.53	11.42	11.36	11.08

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.80	10.58	10.52	10.46	10.35	10.24	10.07	9.90	9.68
45.0	12.32	12.09	11.53	10.97	10.97	10.63	10.13	9.90	9.51
90.0	12.09	12.09	11.64	11.08	10.97	10.69	10.29	10.01	9.73
135.0	11.03	10.91	10.80	10.69	10.63	10.52	10.35	10.18	9.79
180.0	10.74	10.63	10.52	10.46	10.41	10.29	10.18	10.01	9.79
225.0	12.15	11.19	10.86	10.74	10.63	10.52	10.41	10.35	9.90
270.0	13.67	13.11	12.54	12.66	11.64	10.80	10.69	10.46	10.07
315.0	10.41	10.35	10.29	10.18	10.13	10.07	10.01	9.90	9.73
360.0	10.80	10.58	10.52	10.46	10.35	10.24	10.07	9.90	9.68

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.39	9.17	8.89	8.72	8.66	8.61	8.61	8.55	8.49
45.0	9.28	9.06	8.89	8.83	8.78	8.72	8.61	8.55	8.49
90.0	9.45	9.34	9.23	9.23	9.17	9.11	9.06	8.94	8.83
135.0	9.51	9.28	9.00	8.78	8.72	8.72	8.66	8.66	8.55
180.0	9.45	9.23	9.11	8.94	8.89	8.78	8.72	8.72	8.66
225.0	9.73	9.51	9.28	9.11	9.00	8.94	8.94	8.89	8.78
270.0	9.96	9.73	9.51	9.28	9.17	9.11	9.06	9.00	8.94
315.0	9.45	9.11	8.89	8.72	8.66	8.61	8.55	8.55	8.55
360.0	9.39	9.17	8.89	8.72	8.66	8.61	8.61	8.55	8.49

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.44	8.44	8.38	8.38	8.33	8.33	8.33	8.33	8.33
45.0	8.49	8.49	8.44	8.38	8.33	8.33	8.38	8.38	8.21
90.0	8.78	8.72	8.66	8.61	8.49	8.44	8.49	8.38	8.16
135.0	8.55	8.49	8.49	8.44	8.44	8.44	8.33	8.38	8.33
180.0	8.61	8.55	8.55	8.49	8.44	8.49	8.38	8.44	8.27
225.0	8.78	8.72	8.61	8.55	8.49	8.44	8.38	8.33	8.27
270.0	8.89	8.78	8.78	8.78	8.66	8.61	8.44	8.38	8.38
315.0	8.49	8.44	8.44	8.38	8.38	8.33	8.33	8.27	8.21
360.0	8.44	8.44	8.38	8.38	8.33	8.33	8.33	8.33	8.33

Intensity data(cd)

C/γ(°)	90.0
0.0	8.10
45.0	8.16
90.0	8.10
135.0	8.16
180.0	8.16
225.0	8.27
270.0	8.33
315.0	8.16
360.0	8.10