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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 2-1536-E
Luminaire: 92.76.323.00
Report No: NATA0100
Test No: GC2019111512
LampCAT: LUMENS EDC-57-20W
Lamp flux(lm): 1515.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 218.0000
Current(A): 0.0810
Power (W): 17.6000
PF: 0.9940
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1343.29
Efficiency(%): 88.67%
Lumens(lm)/Power(W): 76.32
Central intensity(cd): 10728.210
Maximum intensity(cd): 10728.210
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=13.1
[C90/270]Total=13.1
Field angle(10%Imax): [C0/180]Total=29.7
[C90/270]Total=29.7
Maximum s/h(1/2): C0_180=0.23 C90_270=0.23
Maximum s/h(1/4): C0_180=0.24 C90_270=0.24
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.67%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.406%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10728.211	0.000	0	.000%	.000%
1.0	10563.328	10.188	10.188	.672%	.758%
2.0	10034.156	29.563	39.751	1.951%	2.959%
3.0	9244.969	46.109	85.86	3.044%	6.392%
4.0	8308.336	58.757	144.617	3.878%	10.766%
5.0	7150.359	66.503	211.119	4.390%	15.717%
6.0	5985.141	69.031	280.15	4.556%	20.856%
7.0	4893.609	67.524	347.674	4.457%	25.882%
8.0	3918.867	63.069	410.743	4.163%	30.578%
9.0	3116.250	57.016	467.759	3.763%	34.822%
10.0	2508.680	50.904	518.663	3.360%	38.612%
11.0	2045.039	45.501	564.164	3.003%	41.999%
12.0	1699.734	40.936	605.1	2.702%	45.046%
13.0	1403.262	36.825	641.924	2.431%	47.788%
14.0	1190.180	33.196	675.12	2.191%	50.259%
15.0	1053.816	30.807	705.927	2.033%	52.552%
16.0	924.166	28.983	734.91	1.913%	54.710%
17.0	819.991	27.161	762.071	1.793%	56.732%
18.0	749.805	25.883	787.953	1.708%	58.659%
19.0	699.736	25.219	813.172	1.665%	60.536%
20.0	661.219	24.909	838.082	1.644%	62.390%
21.0	634.753	24.885	862.967	1.643%	64.243%
22.0	614.791	25.110	888.077	1.657%	66.112%
23.0	596.848	25.423	913.501	1.678%	68.005%
24.0	580.275	25.736	939.237	1.699%	69.921%
25.0	565.088	26.043	965.28	1.719%	71.860%
26.0	550.631	26.337	991.616	1.738%	73.820%
27.0	536.773	26.604	1018.22	1.756%	75.801%
28.0	521.613	26.796	1045.016	1.769%	77.796%
29.0	506.960	26.910	1071.926	1.776%	79.799%
30.0	495.506	27.066	1098.993	1.787%	81.814%
31.0	483.799	27.253	1126.245	1.799%	83.843%
32.0	467.951	27.267	1153.512	1.800%	85.872%
33.0	443.644	26.856	1180.368	1.773%	87.872%
34.0	404.445	25.666	1206.034	1.694%	89.782%
35.0	352.491	23.508	1229.541	1.552%	91.532%
36.0	299.433	20.757	1250.299	1.370%	93.078%
37.0	244.230	17.731	1268.03	1.170%	94.398%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	182.616	14.248	1282.277	.940%	95.458%
39.0	119.735	10.320	1292.597	.681%	96.227%
40.0	74.306	6.767	1299.365	.447%	96.730%
41.0	42.279	4.152	1303.516	.274%	97.039%
42.0	26.916	2.514	1306.03	.166%	97.227%
43.0	22.521	1.831	1307.862	.121%	97.363%
44.0	20.208	1.613	1309.474	.106%	97.483%
45.0	17.585	1.452	1310.927	.096%	97.591%
46.0	14.759	1.265	1312.192	.083%	97.685%
47.0	12.263	1.075	1313.266	.071%	97.765%
48.0	10.266	0.911	1314.177	.060%	97.833%
49.0	8.156	0.757	1314.934	.050%	97.889%
50.0	7.523	0.654	1315.587	.043%	97.938%
51.0	7.270	0.626	1316.213	.041%	97.985%
52.0	7.193	0.621	1316.834	.041%	98.031%
53.0	7.080	0.621	1317.455	.041%	98.077%
54.0	7.017	0.621	1318.076	.041%	98.123%
55.0	6.961	0.624	1318.7	.041%	98.170%
56.0	6.919	0.627	1319.327	.041%	98.216%
57.0	6.863	0.630	1319.957	.042%	98.263%
58.0	6.834	0.633	1320.591	.042%	98.311%
59.0	6.813	0.638	1321.229	.042%	98.358%
60.0	6.785	0.642	1321.871	.042%	98.406%
61.0	6.771	0.647	1322.518	.043%	98.454%
62.0	6.764	0.652	1323.17	.043%	98.503%
63.0	6.736	0.657	1323.827	.043%	98.551%
64.0	6.743	0.661	1324.488	.044%	98.601%
65.0	6.715	0.666	1325.154	.044%	98.650%
66.0	6.792	0.674	1325.828	.044%	98.700%
67.0	6.891	0.688	1326.516	.045%	98.752%
68.0	7.052	0.706	1327.223	.047%	98.804%
69.0	7.235	0.729	1327.951	.048%	98.858%
70.0	7.467	0.755	1328.707	.050%	98.915%
71.0	7.748	0.786	1329.493	.052%	98.973%
72.0	8.191	0.829	1330.322	.055%	99.035%
73.0	8.543	0.875	1331.197	.058%	99.100%
74.0	8.782	0.911	1332.108	.060%	99.168%
75.0	8.564	0.917	1333.024	.060%	99.236%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.601	0.858	1333.882	.057%	99.300%
77.0	6.884	0.772	1334.655	.051%	99.357%
78.0	6.567	0.720	1335.375	.048%	99.411%
79.0	6.300	0.691	1336.066	.046%	99.463%
80.0	6.216	0.675	1336.741	.045%	99.513%
81.0	6.152	0.669	1337.41	.044%	99.563%
82.0	6.110	0.665	1338.075	.044%	99.612%
83.0	6.054	0.661	1338.736	.044%	99.661%
84.0	6.033	0.658	1339.394	.043%	99.710%
85.0	6.005	0.657	1340.051	.043%	99.759%
86.0	5.963	0.654	1340.705	.043%	99.808%
87.0	5.941	0.651	1341.357	.043%	99.856%
88.0	5.892	0.648	1342.005	.043%	99.905%
89.0	5.829	0.642	1342.648	.042%	99.953%
90.0	5.808	0.638	1343.286	.042%	100.000%

Zonal flux distribution table

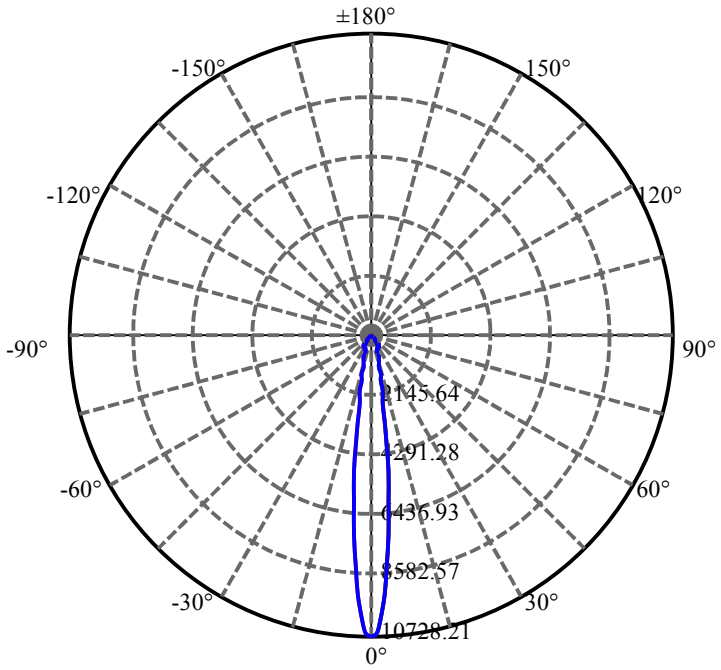
ZONAL LUMEN SUMMARY

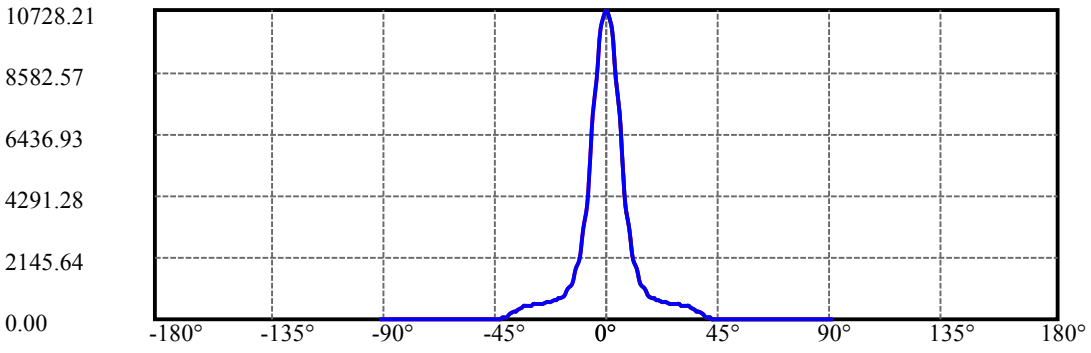
Zone	Lumens	%Lamp	%Fixt
0-30	1098.99	72.54%	81.81%
0-40	1299.36	85.77%	96.73%
0-60	1321.87	87.25%	98.41%
0-90	1342.65	88.62%	99.95%
0-120	1342.65	88.62%	99.95%
0-180	1343.29	88.67%	100.00%
60-90	21.42	1.41%	1.59%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-29.10	1074.63	70.93%	80.00%

ZONAL LUMEN SUMMARY

0-10	518.66
10-20	319.42
20-30	260.91
30-40	200.37
40-50	16.22
50-60	6.28
60-70	6.84
70-80	8.03
80-90	5.91
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):

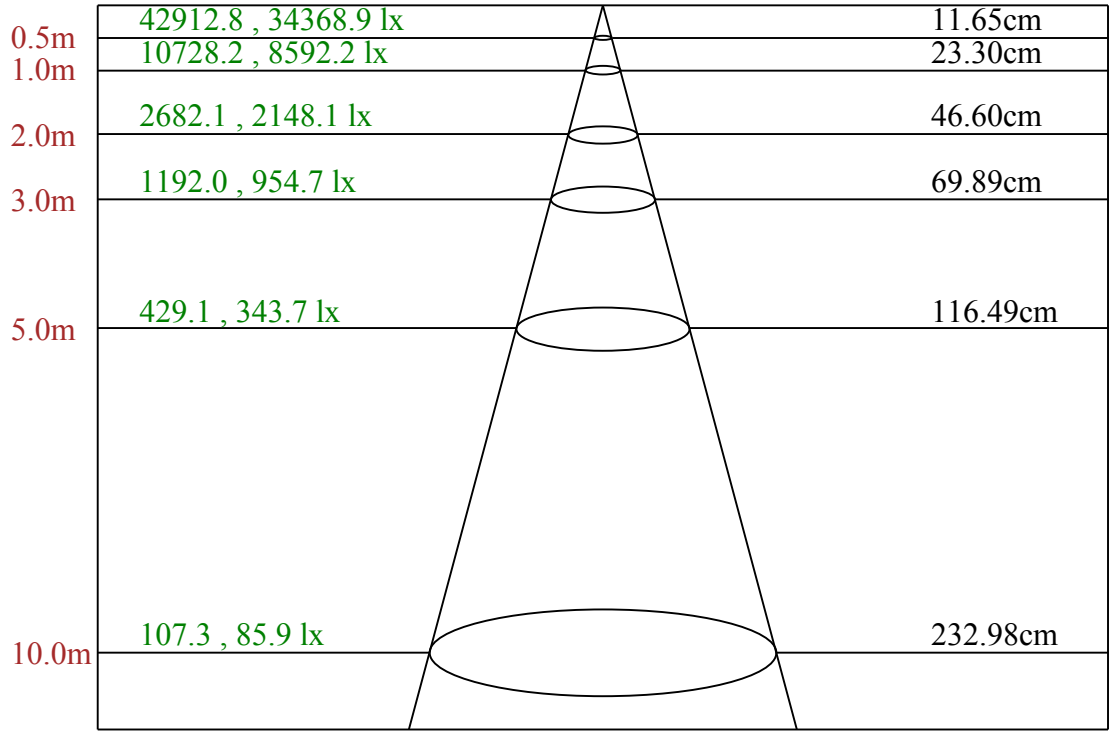
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:14.9 Right:14.9
:C90/270Left:14.9 Right:14.9

Beam Angle(50%Imax):C0/180Left:6.6 Right:6.6
:C90/270Left:6.6 Right:6.6

Lux distance Curve



Max , Ave

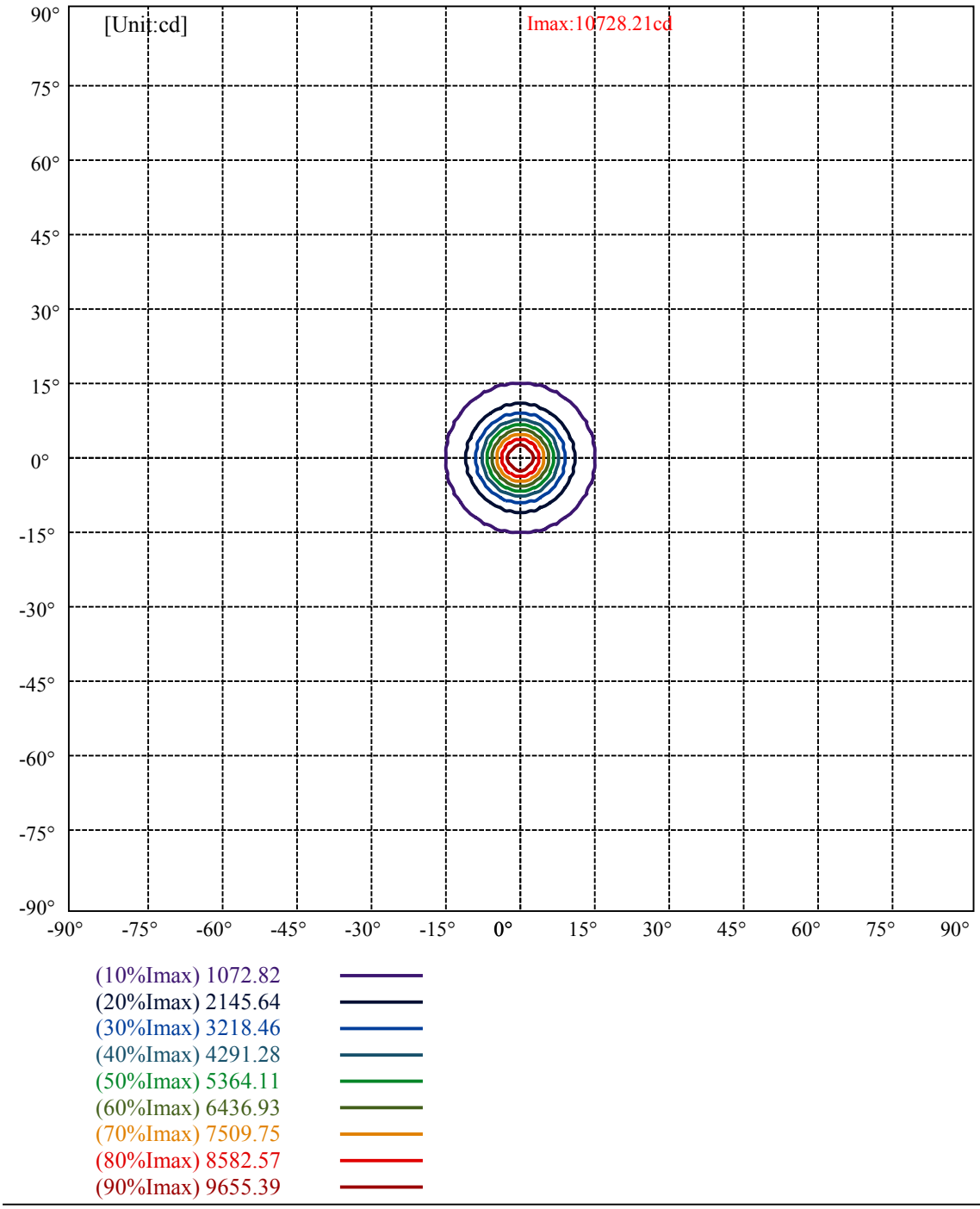
Beam angle of C0 plane 13.29

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO-Intensity(V-H)



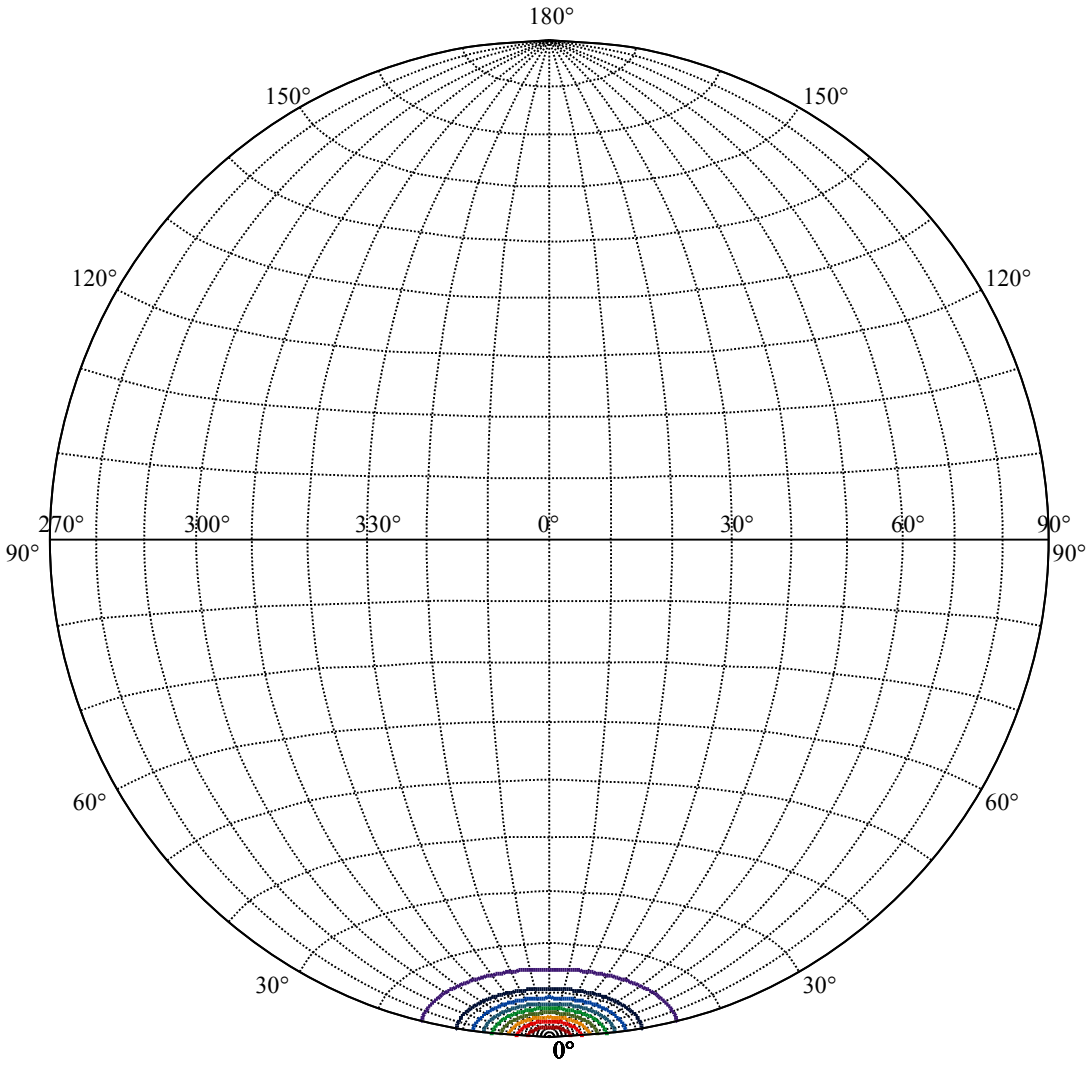
(10%Imax) 1072.82
(20%Imax) 2145.64
(30%Imax) 3218.46
(40%Imax) 4291.28
(50%Imax) 5364.11
(60%Imax) 6436.93
(70%Imax) 7509.75
(80%Imax) 8582.57
(90%Imax) 9655.39

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:10728.21

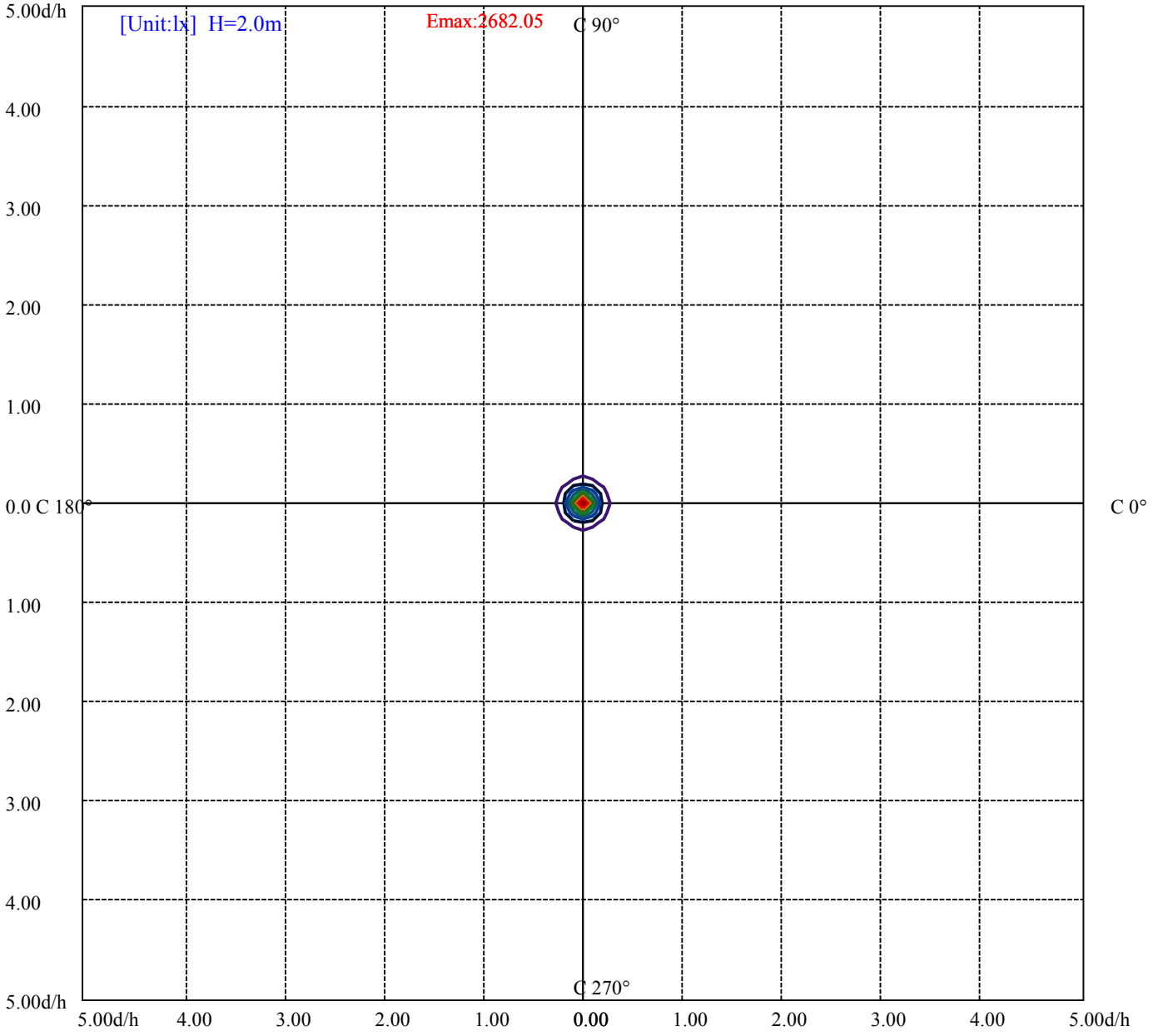
(10%Imax) 1072.82
(20%Imax) 2145.64
(30%Imax) 3218.46
(40%Imax) 4291.28
(50%Imax) 5364.11
(60%Imax) 6436.93
(70%Imax) 7509.75
(80%Imax) 8582.57
(90%Imax) 9655.39

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO illuminance diagram

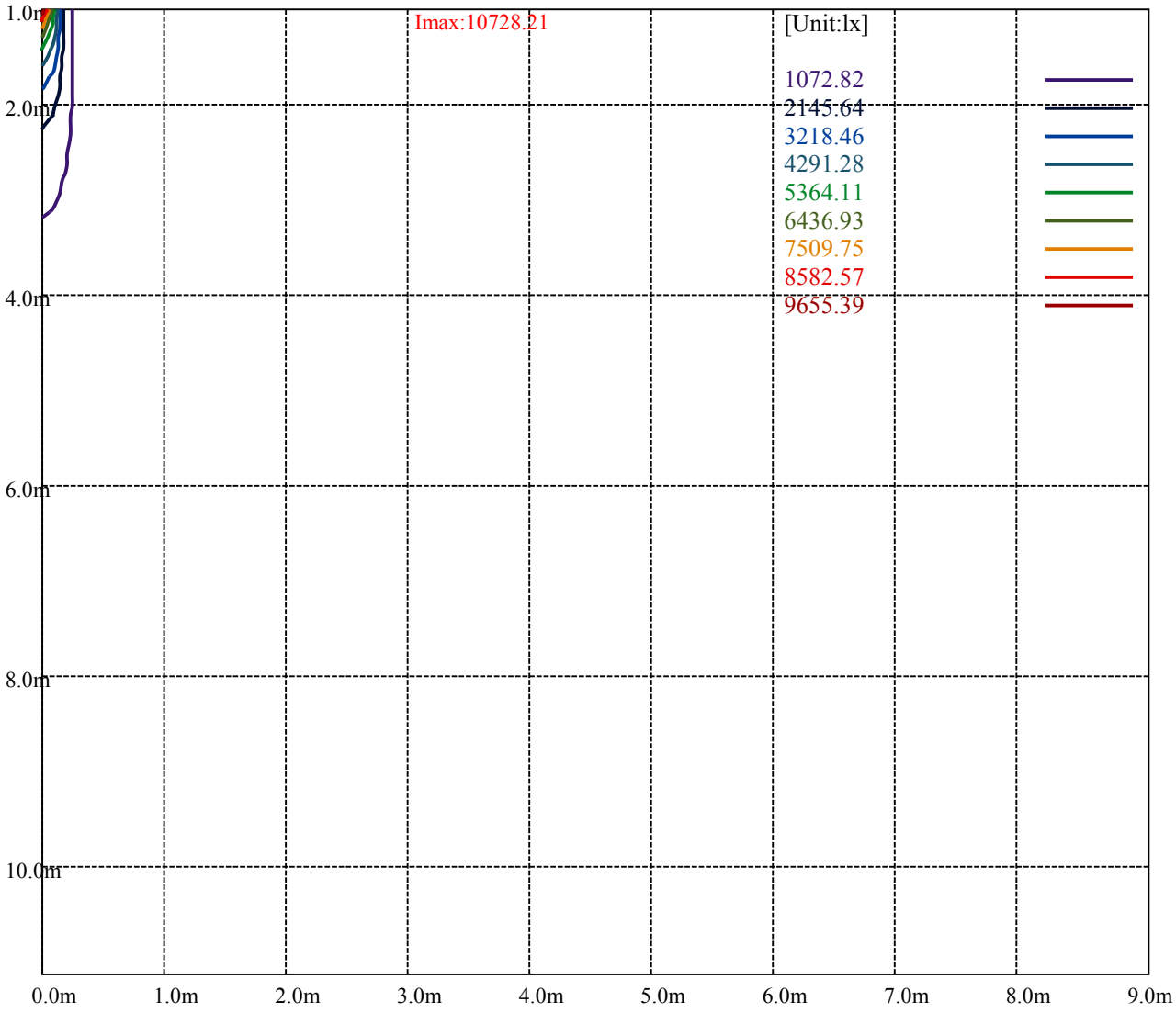


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

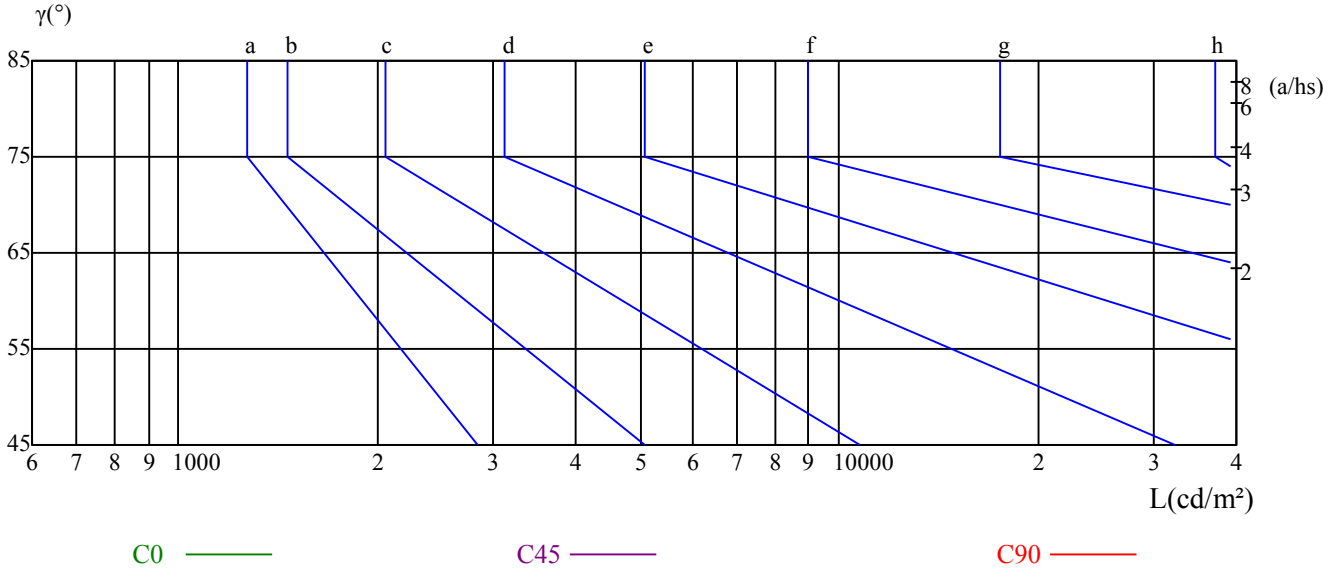
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

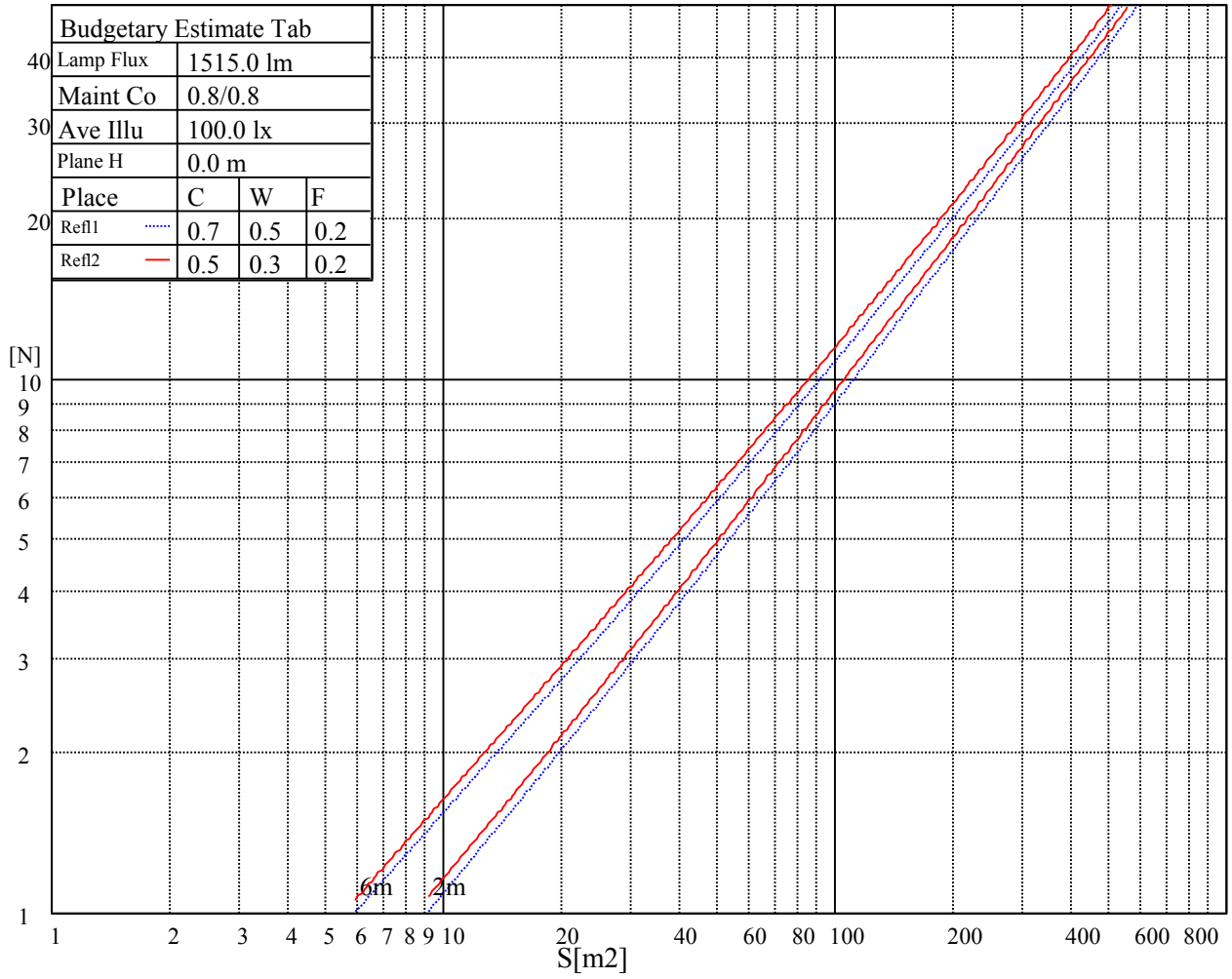
Glare Table

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

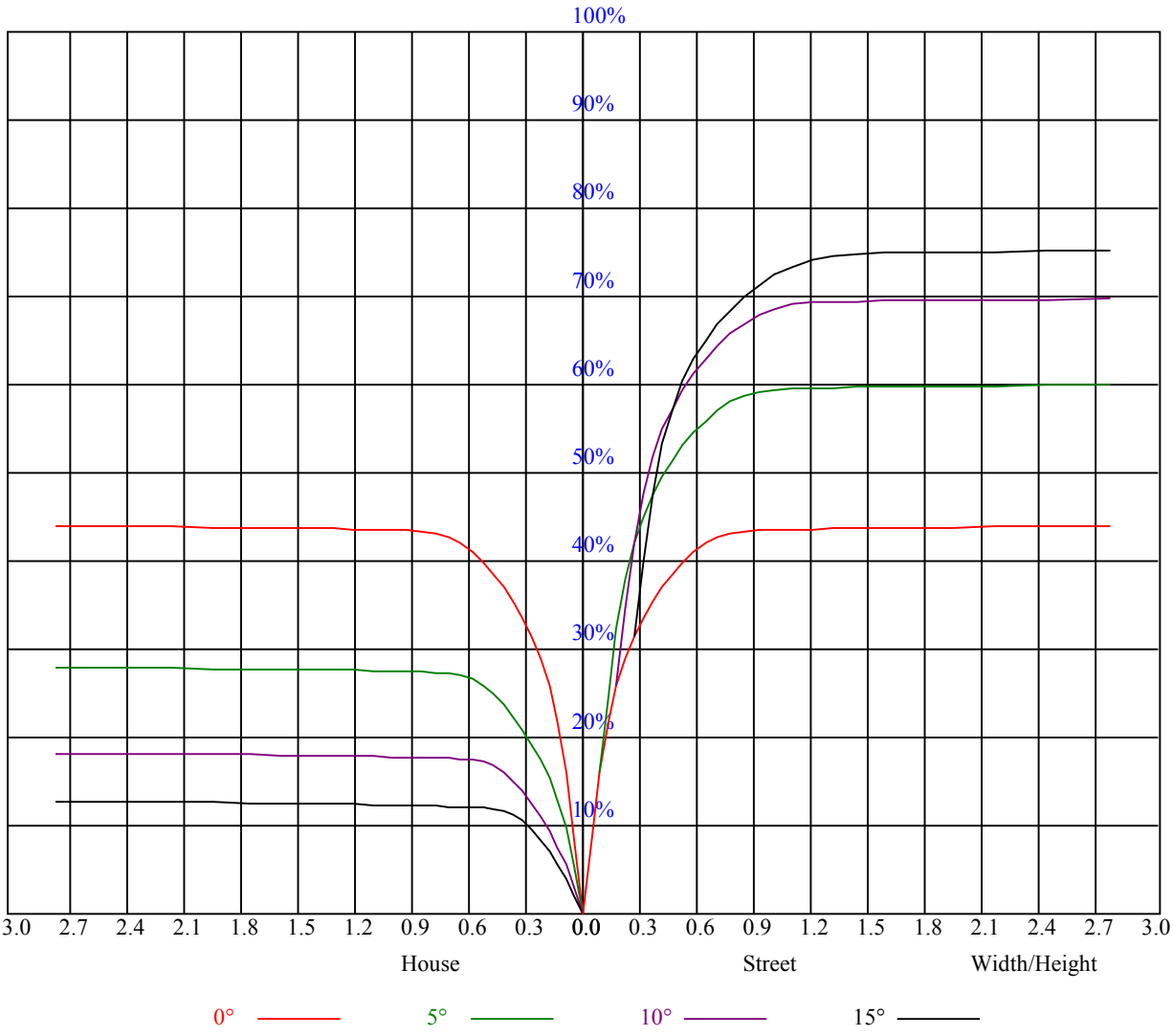


Equipment: GMS1980 Date: 2019/11/15 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.94	0.94	0.94	0.90	0.90	0.90	0.89
1	0.99	0.97	0.96	0.97	0.96	0.94	0.94	0.92	0.91	0.91	0.89	0.89	0.88	0.87	0.86	0.84
2	0.94	0.91	0.88	0.92	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.84	0.85	0.83	0.82	0.81
3	0.89	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.80	0.82	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.81	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.64
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62
10	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.60

Coefficient Utilization Curve



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/11/15
Humidity(%): 65.0%

Operator: NT07
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	10602.56	10774.13	10532.81	10007.44	9134.44	8171.44	6968.25	5759.44	4758.75
45.0	10787.63	10689.75	10146.38	9428.63	8515.13	7202.25	6101.44	5026.50	3958.88
90.0	10675.13	10214.44	9399.94	8347.50	7278.75	6168.38	4952.25	3874.50	3018.38
135.0	10827.00	10396.69	9639.00	8768.81	7635.38	6417.00	5349.38	4260.94	3465.56
180.0	10643.63	10142.44	9349.31	8348.06	7320.38	6246.00	4957.31	4058.44	3315.94
225.0	10787.63	10571.63	9990.00	9125.44	8167.50	6946.88	5850.56	4699.13	3713.06
270.0	10675.13	10847.81	10632.94	10104.19	9428.63	8076.38	6962.06	5965.31	4627.69
315.0	10827.00	10869.75	10582.88	9829.69	8986.50	7974.56	6739.88	5504.63	4492.69
360.0	10602.56	10774.13	10532.81	10007.44	9134.44	8171.44	6968.25	5759.44	4758.75

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3789.00	3000.38	2448.56	2013.75	1599.75	1346.06	1171.69	979.88	855.56
45.0	3095.44	2502.00	2010.94	1686.94	1409.63	1198.69	1054.13	927.56	828.00
90.0	2455.31	1998.00	1691.44	1421.44	1116.84	1064.98	938.64	842.34	765.34
135.0	2763.56	2225.81	1856.81	1534.50	1311.19	1119.94	990.00	871.88	780.75
180.0	2658.94	2161.69	1820.25	1549.69	1224.00	1113.69	982.24	864.68	773.16
225.0	3015.00	2412.56	1953.56	1643.63	1401.75	1117.01	1031.96	914.96	811.52
270.0	3621.94	2990.25	2313.00	1923.19	1629.56	1344.38	1168.88	1029.94	895.50
315.0	3530.81	2778.75	2265.75	1824.75	1533.38	1216.69	1092.99	962.10	850.11
360.0	3789.00	3000.38	2448.56	2013.75	1599.75	1346.06	1171.69	979.88	855.56

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	784.69	714.38	671.06	645.75	618.75	601.31	587.25	571.50	559.69
45.0	755.44	702.00	655.88	630.00	612.56	594.56	578.25	565.31	550.69
90.0	700.43	665.89	639.68	614.98	598.67	584.16	568.01	553.67	541.35
135.0	722.25	680.63	646.31	624.38	606.94	589.50	572.06	557.44	542.25
180.0	718.43	679.67	653.57	628.59	609.47	592.31	572.01	554.96	539.83
225.0	743.68	702.62	664.54	640.97	621.00	598.95	585.00	566.10	547.20
270.0	807.19	739.69	684.00	653.63	631.69	611.44	595.13	580.50	565.31
315.0	766.35	713.03	674.72	639.73	619.26	602.55	584.49	571.22	558.73
360.0	784.69	714.38	671.06	645.75	618.75	601.31	587.25	571.50	559.69

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	547.88	533.81	520.31	509.06	495.56	486.56	475.88	448.31	407.25
45.0	538.88	522.56	509.06	497.81	485.44	473.63	449.44	410.63	349.31
90.0	525.21	512.44	499.61	487.18	475.65	447.41	406.01	360.00	306.51
135.0	526.50	509.06	496.69	484.88	473.06	455.06	420.75	368.44	309.94
180.0	524.64	505.74	492.81	481.84	470.59	450.90	417.60	370.41	315.11
225.0	535.50	519.41	501.69	492.92	483.19	465.86	443.42	402.02	342.68
270.0	550.13	536.63	518.63	506.25	493.88	483.19	469.69	438.75	396.00
315.0	545.46	533.25	516.88	504.11	493.03	480.99	466.37	437.01	393.13
360.0	547.88	533.81	520.31	509.06	495.56	486.56	475.88	448.31	407.25

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	360.56	299.81	284.63	172.69	115.37	73.97	38.98	25.88	23.91
45.0	296.44	289.69	178.82	120.26	73.01	35.33	23.74	21.71	19.41
90.0	231.47	171.56	119.31	67.61	38.08	24.36	21.83	19.29	16.88
135.0	289.69	202.56	138.94	91.01	51.24	26.94	22.89	20.59	17.89
180.0	259.43	195.64	141.64	89.44	49.78	27.73	23.23	20.70	18.39
225.0	281.53	227.76	166.84	113.79	63.79	31.89	24.36	21.66	18.84
270.0	348.19	291.38	209.31	150.08	100.74	58.95	31.33	25.14	22.89
315.0	328.16	275.46	221.46	153.00	102.43	59.06	28.97	25.20	23.46
360.0	360.56	299.81	284.63	172.69	115.37	73.97	38.98	25.88	23.91

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	21.77	18.79	16.14	14.18	9.68	8.10	7.26	7.20	7.03
45.0	17.27	14.34	11.81	8.16	7.71	7.26	7.14	7.09	6.98
90.0	13.44	10.91	9.00	8.38	7.54	7.43	7.31	7.26	7.14
135.0	15.02	12.09	10.01	7.76	7.26	7.20	7.09	7.03	6.92
180.0	15.58	12.26	9.56	7.82	7.54	7.26	7.20	7.14	7.09
225.0	15.98	12.83	10.07	9.17	8.55	7.54	7.37	7.31	7.20
270.0	20.53	17.89	15.08	13.28	8.10	7.59	7.37	7.20	7.03
315.0	21.09	18.96	16.43	13.39	8.89	7.82	7.43	7.31	7.26
360.0	21.77	18.79	16.14	14.18	9.68	8.10	7.26	7.20	7.03

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	6.98	6.92	6.86	6.75	6.75	6.69	6.75	6.69	6.69
45.0	6.92	6.92	6.81	6.75	6.75	6.75	6.69	6.64	6.64
90.0	7.09	7.03	7.03	6.98	6.92	6.92	6.86	6.86	6.86
135.0	6.92	6.86	6.86	6.86	6.86	6.86	6.86	6.92	6.92
180.0	6.98	6.92	6.92	6.86	6.86	6.81	6.75	6.81	6.75
225.0	7.14	7.03	6.98	6.92	6.86	6.81	6.81	6.75	6.75
270.0	6.98	6.86	6.86	6.75	6.69	6.75	6.69	6.69	6.69
315.0	7.14	7.14	7.03	7.03	6.98	6.92	6.86	6.81	6.81
360.0	6.98	6.92	6.86	6.75	6.75	6.69	6.75	6.69	6.69

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.64	6.64	6.58	6.58	6.58	6.58	6.58	6.53	6.53
45.0	6.64	6.58	6.58	6.58	6.58	6.53	6.53	6.64	6.75
90.0	6.81	6.81	6.81	7.37	8.21	9.34	10.52	11.64	12.83
135.0	6.92	6.98	7.03	7.09	7.14	7.26	7.37	7.54	7.71
180.0	6.69	6.75	6.69	6.69	6.64	6.81	7.09	7.65	8.16
225.0	6.69	6.69	6.64	6.64	6.58	6.58	6.53	6.58	6.98
270.0	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.64
315.0	6.81	6.81	6.69	6.69	6.69	6.64	6.58	6.47	6.41
360.0	6.64	6.64	6.58	6.58	6.58	6.58	6.58	6.53	6.53

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	6.53	6.47	6.41	6.53	6.58	6.64	6.53	6.30	6.24
45.0	6.98	7.14	7.31	7.37	6.86	6.41	6.30	6.24	6.19
90.0	14.29	15.47	15.41	11.76	8.44	6.69	6.36	6.30	6.24
135.0	7.88	7.99	7.99	7.99	7.71	7.09	6.53	6.30	6.24
180.0	8.83	9.51	9.96	10.18	9.17	8.44	8.04	6.64	6.30
225.0	8.04	8.78	9.45	10.07	9.28	7.26	6.36	6.24	6.19
270.0	6.64	6.58	6.53	6.47	6.41	6.36	6.30	6.24	6.19
315.0	6.36	6.41	7.20	8.16	6.36	6.19	6.13	6.13	6.13
360.0	6.53	6.47	6.41	6.53	6.58	6.64	6.53	6.30	6.24

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.13	6.13	6.08	6.02	6.02	5.96	5.96	5.85	5.85
45.0	6.13	6.08	6.02	6.02	5.96	5.96	5.91	5.85	5.79
90.0	6.19	6.13	6.08	6.02	6.02	5.96	5.91	5.85	5.79
135.0	6.19	6.13	6.08	6.02	6.02	5.96	5.91	5.91	5.85
180.0	6.19	6.13	6.08	6.08	6.02	5.96	5.96	5.96	5.85
225.0	6.19	6.13	6.08	6.08	6.02	5.96	5.96	5.96	5.85
270.0	6.13	6.08	6.02	6.02	5.96	5.96	5.96	5.91	5.85
315.0	6.08	6.08	6.02	6.02	6.02	5.96	5.96	5.85	5.79
360.0	6.13	6.13	6.08	6.02	6.02	5.96	5.96	5.85	5.85

Intensity data(cd)

C/γ(°)	90.0
0.0	5.85
45.0	5.79
90.0	5.79
135.0	5.79
180.0	5.79
225.0	5.85
270.0	5.79
315.0	5.79
360.0	5.85