NATA LIGHTING CO.,LTD.
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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 1-1008-M
Luminaire: BJB 47.360.1020

Report No: NATA0100	Voltage(V): 34.5100
Test No: GC2019102109	Current(A): 0.2970
LampCAT: CITIZEN CLU028	Power (W): 10.2500
Lamp flux(lm): 1571.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1108.36
Efficiency(%): 70.55%
Lumens(lm)/Power(W): 108.13
Central intensity(cd): 9464.626
Maximum intensity(cd): 9464.626
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=15.7
[C90/270]Total=15.7
Field angle(10%Imax): [C0/180]Total=36.8
[C90/270]Total=36.8
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
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(%): 70.55%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.554%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9464.625	0.000	0	.000%	.000%
1.0	9335.391	8.995	8.995	.573%	.812%
2.0	8870.063	26.130	35.126	1.663%	3.169%
3.0	8238.727	40.919	76.044	2.605%	6.861%
4.0	7591.641	52.989	129.034	3.373%	11.642%
5.0	6831.773	62.049	191.082	3.950%	17.240%
6.0	6059.461	67.747	258.829	4.312%	23.353%
7.0	5342.203	70.770	329.599	4.505%	29.738%
8.0	4628.883	71.361	400.96	4.542%	36.176%
9.0	4013.719	70.044	471.004	4.459%	42.496%
10.0	3489.117	67.898	538.902	4.322%	48.622%
11.0	3022.453	65.064	603.966	4.142%	54.492%
12.0	2639.250	61.891	665.856	3.940%	60.076%
13.0	2268.703	58.245	724.101	3.708%	65.331%
14.0	1943.227	53.912	778.014	3.432%	70.195%
15.0	1683.984	49.796	827.81	3.170%	74.688%
16.0	1453.641	45.975	873.785	2.926%	78.836%
17.0	1188.724	41.149	914.933	2.619%	82.549%
18.0	1011.572	36.278	951.211	2.309%	85.822%
19.0	839.159	32.199	983.41	2.050%	88.727%
20.0	654.961	27.347	1010.757	1.741%	91.194%
21.0	484.017	21.871	1032.628	1.392%	93.168%
22.0	348.173	16.723	1049.351	1.064%	94.676%
23.0	241.109	12.365	1061.716	.787%	95.792%
24.0	116.374	7.816	1069.531	.498%	96.497%
25.0	57.452	3.952	1073.484	.252%	96.854%
26.0	23.948	1.921	1075.405	.122%	97.027%
27.0	14.604	0.943	1076.349	.060%	97.112%
28.0	12.473	0.686	1077.034	.044%	97.174%
29.0	11.109	0.617	1077.651	.039%	97.230%
30.0	10.090	0.572	1078.223	.036%	97.281%
31.0	9.330	0.540	1078.764	.034%	97.330%
32.0	8.634	0.515	1079.279	.033%	97.377%
33.0	8.121	0.494	1079.772	.031%	97.421%
34.0	7.713	0.479	1080.251	.031%	97.464%
35.0	7.313	0.467	1080.718	.030%	97.506%
36.0	7.024	0.456	1081.174	.029%	97.548%
37.0	6.799	0.451	1081.625	.029%	97.588%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	6.609	0.448	1082.073	.028%	97.629%
39.0	6.413	0.444	1082.517	.028%	97.669%
40.0	6.272	0.442	1082.96	.028%	97.709%
41.0	6.152	0.442	1083.402	.028%	97.749%
42.0	6.033	0.443	1083.845	.028%	97.789%
43.0	5.970	0.445	1084.289	.028%	97.829%
44.0	5.878	0.447	1084.737	.028%	97.869%
45.0	5.815	0.449	1085.186	.029%	97.910%
46.0	5.752	0.452	1085.638	.029%	97.950%
47.0	5.695	0.455	1086.094	.029%	97.991%
48.0	5.646	0.458	1086.552	.029%	98.033%
49.0	5.611	0.462	1087.014	.029%	98.075%
50.0	5.569	0.466	1087.48	.030%	98.117%
51.0	5.520	0.469	1087.95	.030%	98.159%
52.0	5.505	0.473	1088.423	.030%	98.202%
53.0	5.477	0.478	1088.9	.030%	98.245%
54.0	5.421	0.480	1089.381	.031%	98.288%
55.0	5.400	0.483	1089.864	.031%	98.332%
56.0	5.386	0.487	1090.351	.031%	98.376%
57.0	5.351	0.491	1090.842	.031%	98.420%
58.0	5.330	0.494	1091.336	.031%	98.464%
59.0	5.316	0.498	1091.834	.032%	98.509%
60.0	5.302	0.502	1092.335	.032%	98.555%
61.0	5.295	0.506	1092.841	.032%	98.600%
62.0	5.259	0.509	1093.35	.032%	98.646%
63.0	5.252	0.511	1093.861	.033%	98.692%
64.0	5.231	0.514	1094.375	.033%	98.739%
65.0	5.217	0.517	1094.892	.033%	98.785%
66.0	5.203	0.520	1095.412	.033%	98.832%
67.0	5.189	0.523	1095.935	.033%	98.879%
68.0	5.182	0.525	1096.46	.033%	98.927%
69.0	5.182	0.529	1096.989	.034%	98.974%
70.0	5.168	0.532	1097.52	.034%	99.022%
71.0	5.147	0.533	1098.054	.034%	99.070%
72.0	5.133	0.535	1098.588	.034%	99.119%
73.0	5.140	0.537	1099.125	.034%	99.167%
74.0	5.140	0.540	1099.666	.034%	99.216%
75.0	5.126	0.542	1100.208	.035%	99.265%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.126	0.544	1100.752	.035%	99.314%
77.0	5.112	0.546	1101.298	.035%	99.363%
78.0	5.112	0.547	1101.845	.035%	99.413%
79.0	5.063	0.547	1102.392	.035%	99.462%
80.0	5.034	0.544	1102.936	.035%	99.511%
81.0	5.006	0.543	1103.479	.035%	99.560%
82.0	4.999	0.543	1104.022	.035%	99.609%
83.0	4.978	0.542	1104.564	.035%	99.658%
84.0	4.971	0.542	1105.106	.035%	99.707%
85.0	4.957	0.542	1105.648	.034%	99.756%
86.0	4.964	0.542	1106.19	.035%	99.805%
87.0	4.957	0.543	1106.733	.035%	99.854%
88.0	4.943	0.542	1107.276	.035%	99.903%
89.0	4.915	0.540	1107.816	.034%	99.951%
90.0	4.929	0.540	1108.356	.034%	100.000%

Zonal flux distribution table

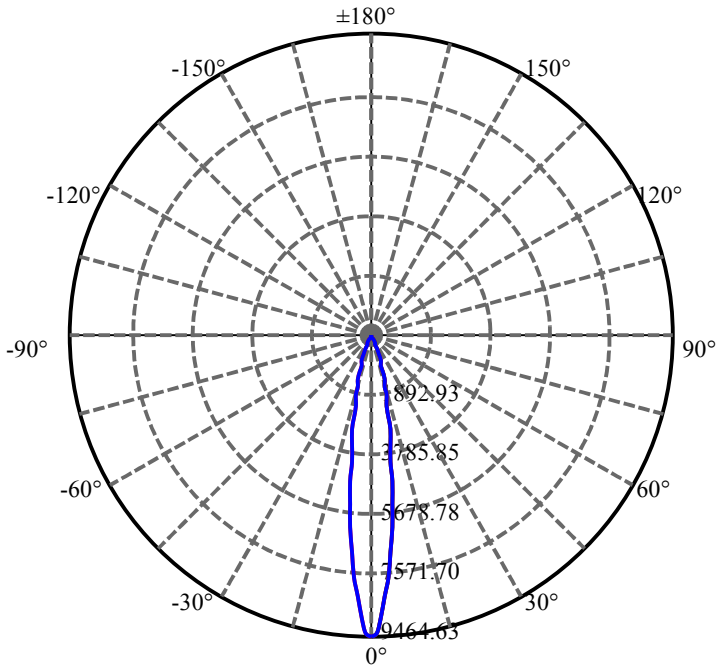
ZONAL LUMEN SUMMARY

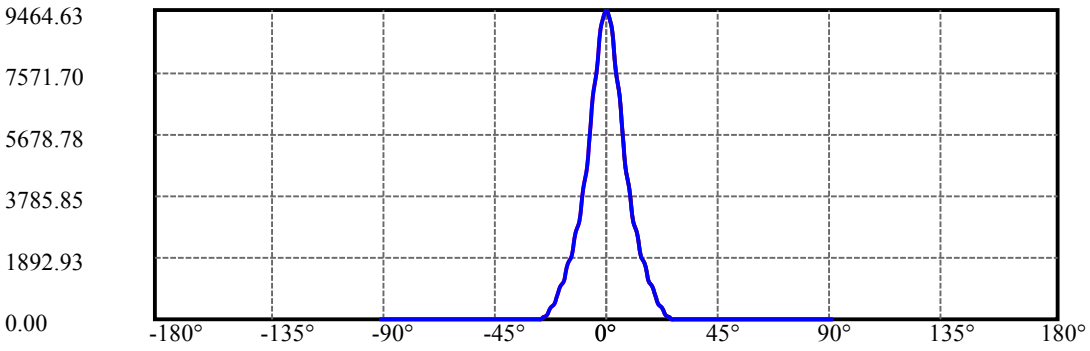
Zone	Lumens	%Lamp	%Fixt
0-30	1078.22	68.63%	97.28%
0-40	1082.96	68.93%	97.71%
0-60	1092.34	69.53%	98.55%
0-90	1107.82	70.52%	99.95%
0-120	1107.82	70.52%	99.95%
0-180	1108.36	70.55%	100.00%
60-90	15.98	1.02%	1.44%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-16.31	886.68	56.44%	80.00%

ZONAL LUMEN SUMMARY

0-10	538.90
10-20	471.86
20-30	67.47
30-40	4.74
40-50	4.52
50-60	4.85
60-70	5.19
70-80	5.42
80-90	4.88
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):

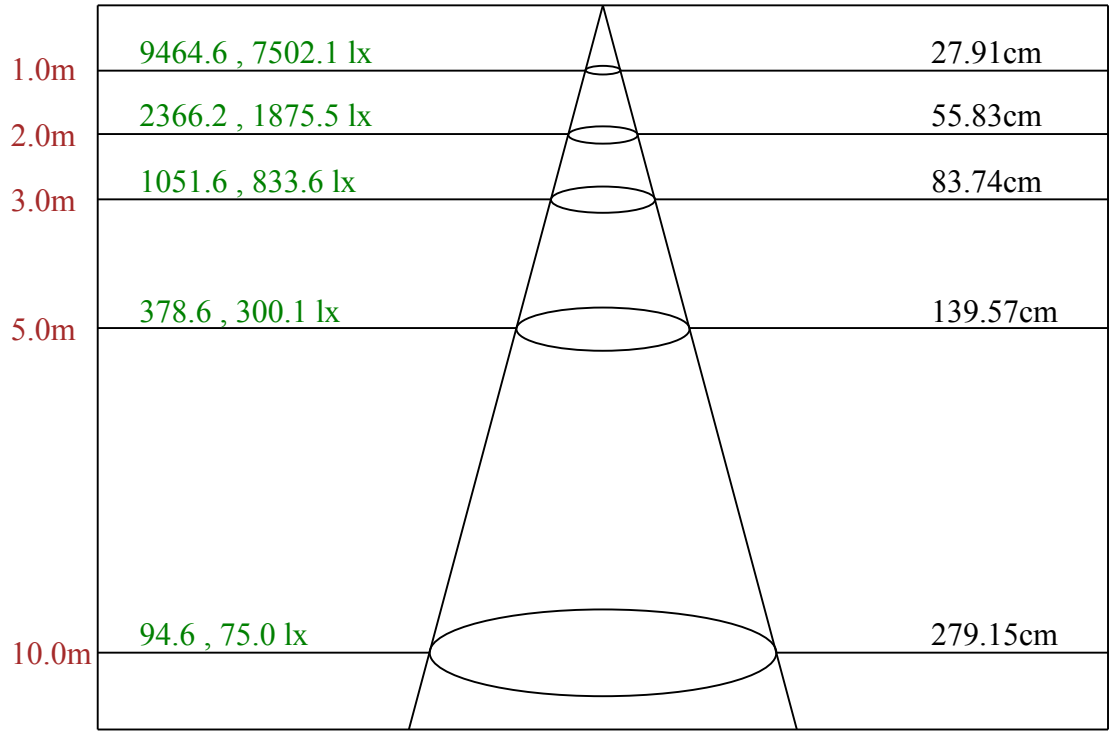
C0/C180:

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:7.9 Right:7.9
:C90/270Left:7.9 Right:7.9

Lux distance Curve

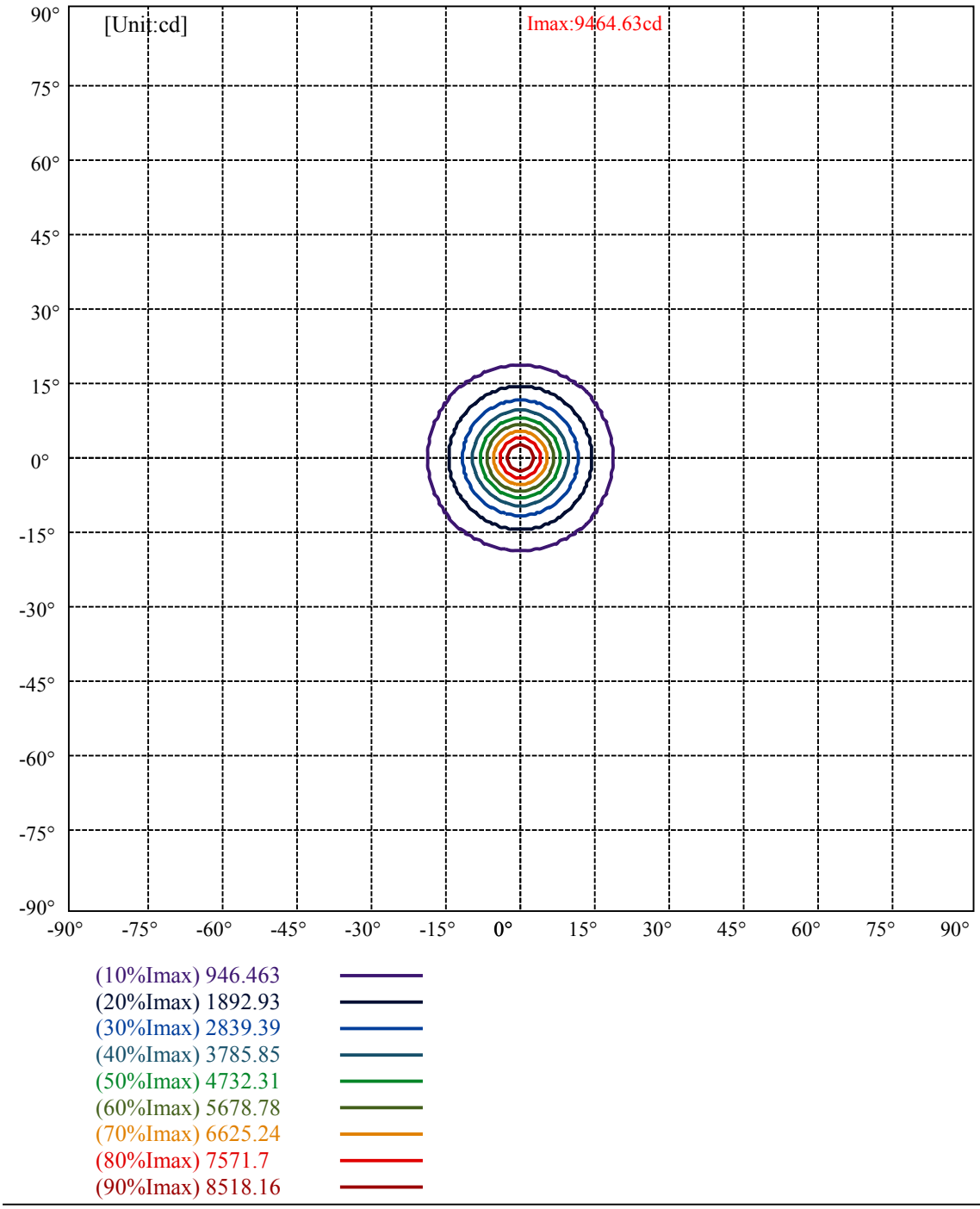


Max , Ave

Beam angle of C0 plane 15.89

Equipment: GMS1980	Date: 2019/10/21	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

ISO-Intensity(V-H)

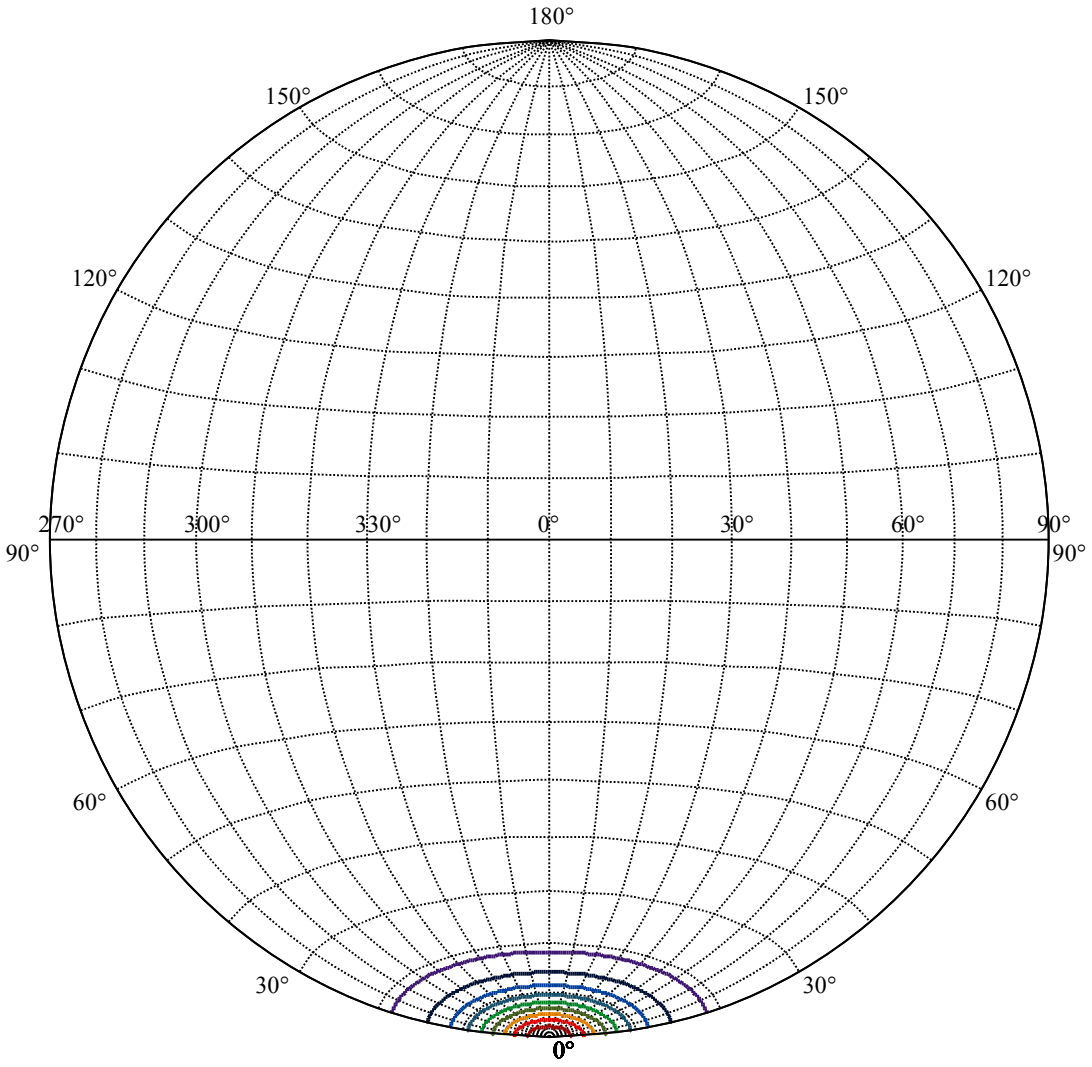


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/21
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:9464.63

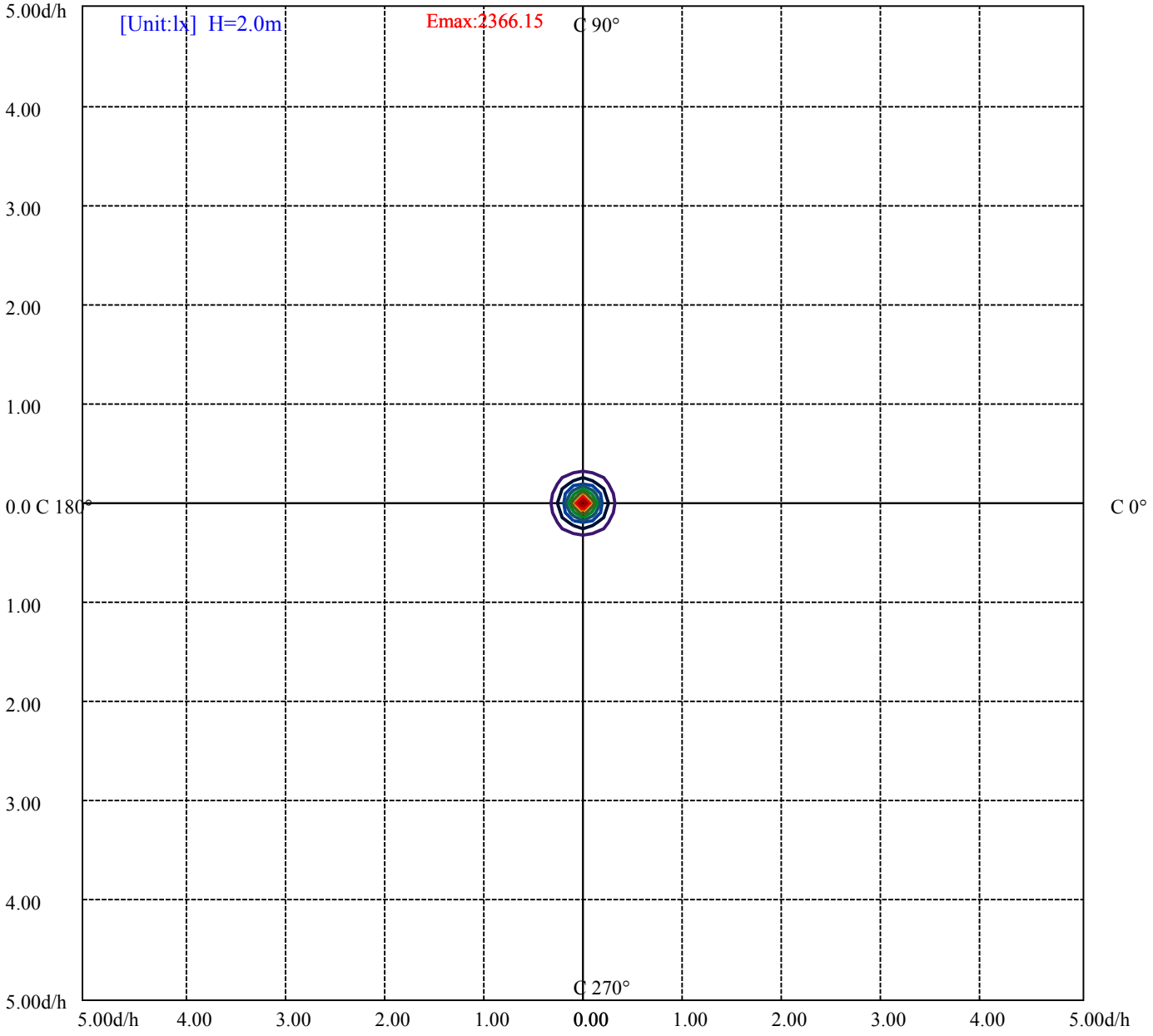
(10%Imax) 946.463
(20%Imax) 1892.93
(30%Imax) 2839.39
(40%Imax) 3785.85
(50%Imax) 4732.31
(60%Imax) 5678.78
(70%Imax) 6625.24
(80%Imax) 7571.7
(90%Imax) 8518.16

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/21
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO illuminance diagram

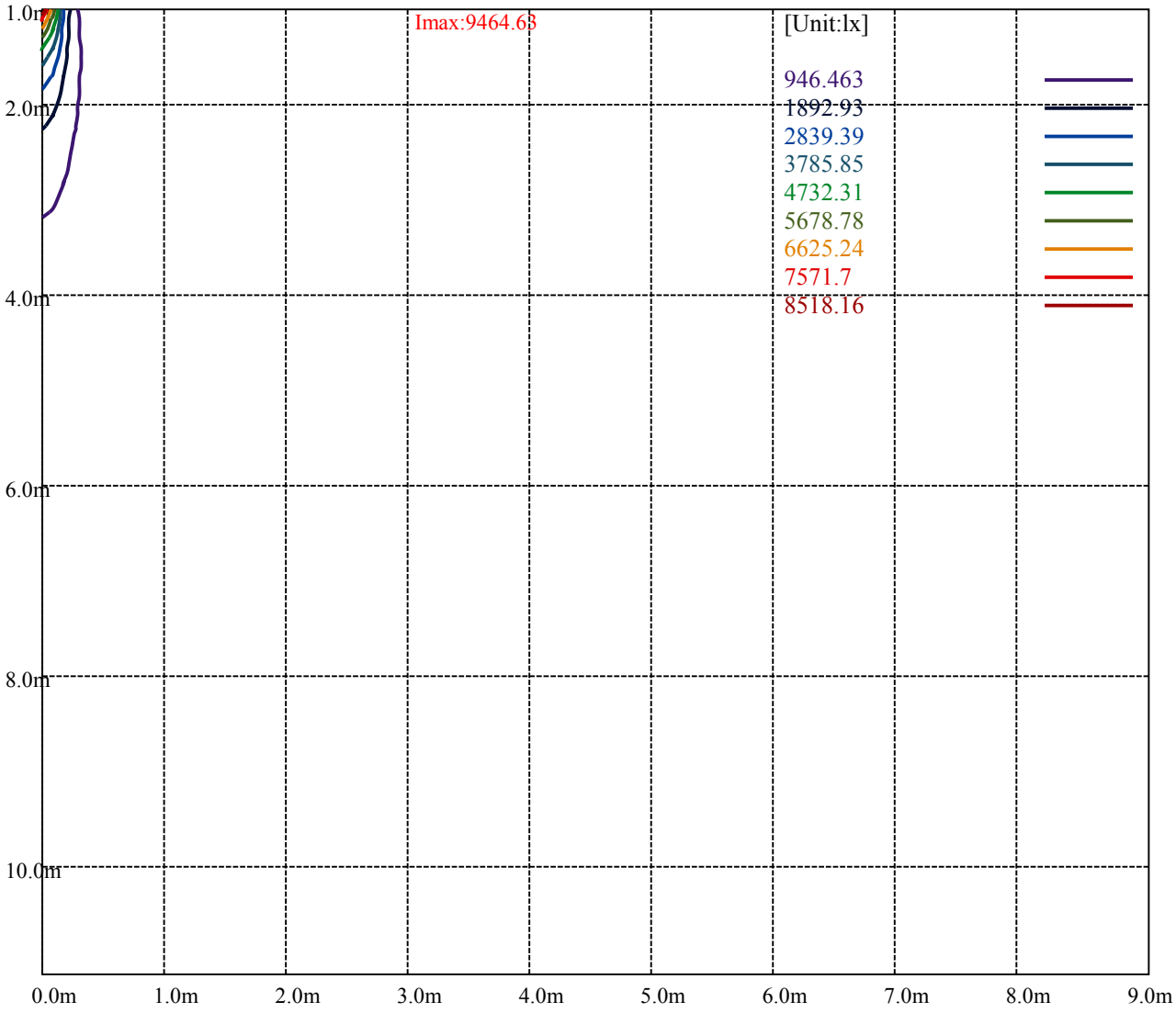


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/21
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/21
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

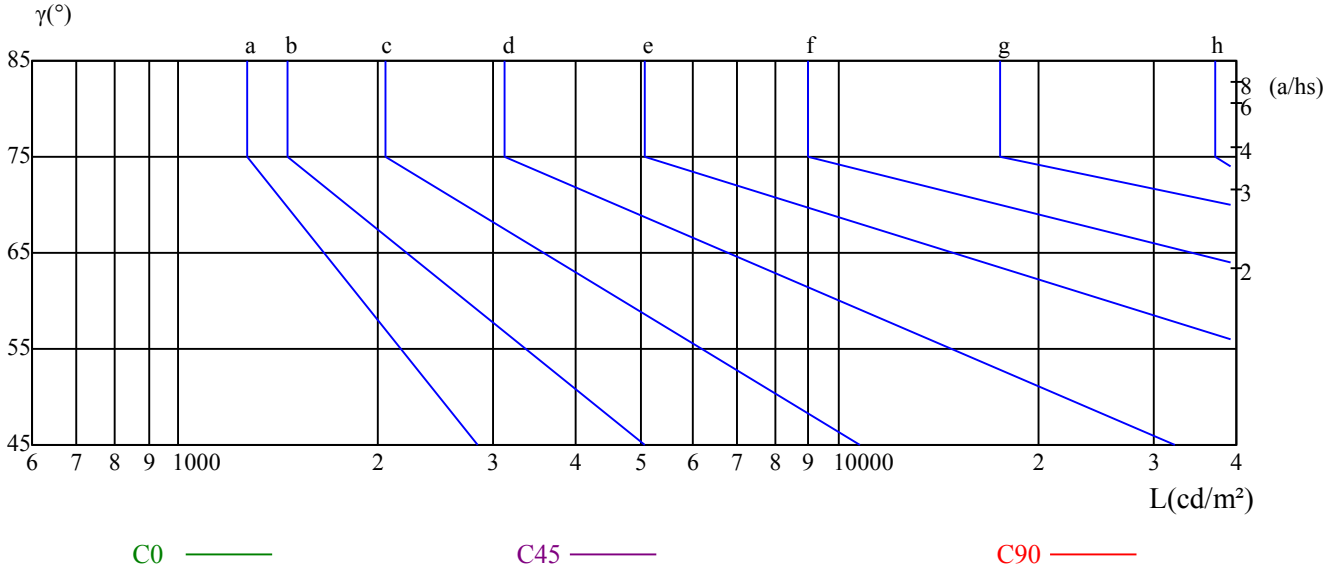
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

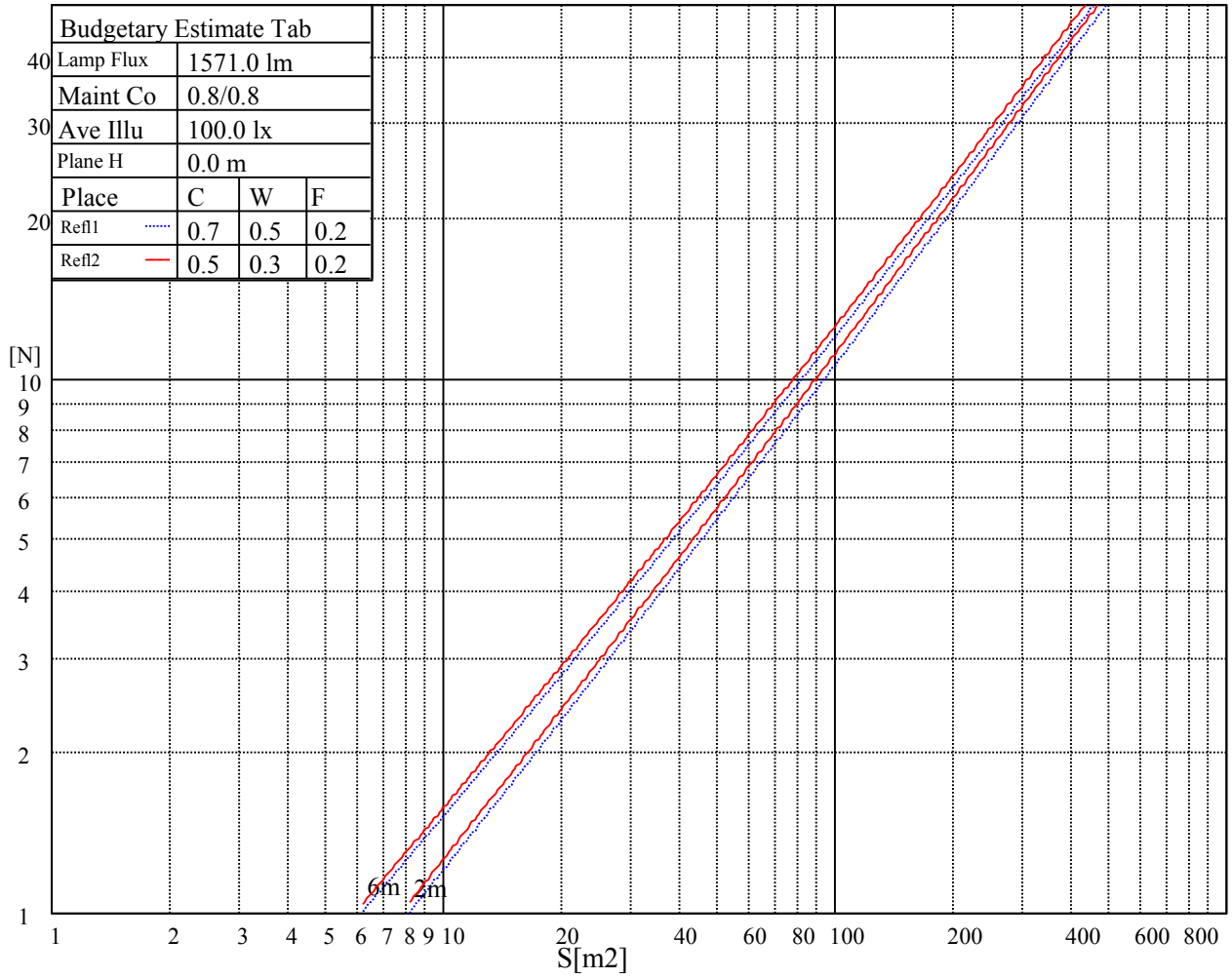
Glare Table

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

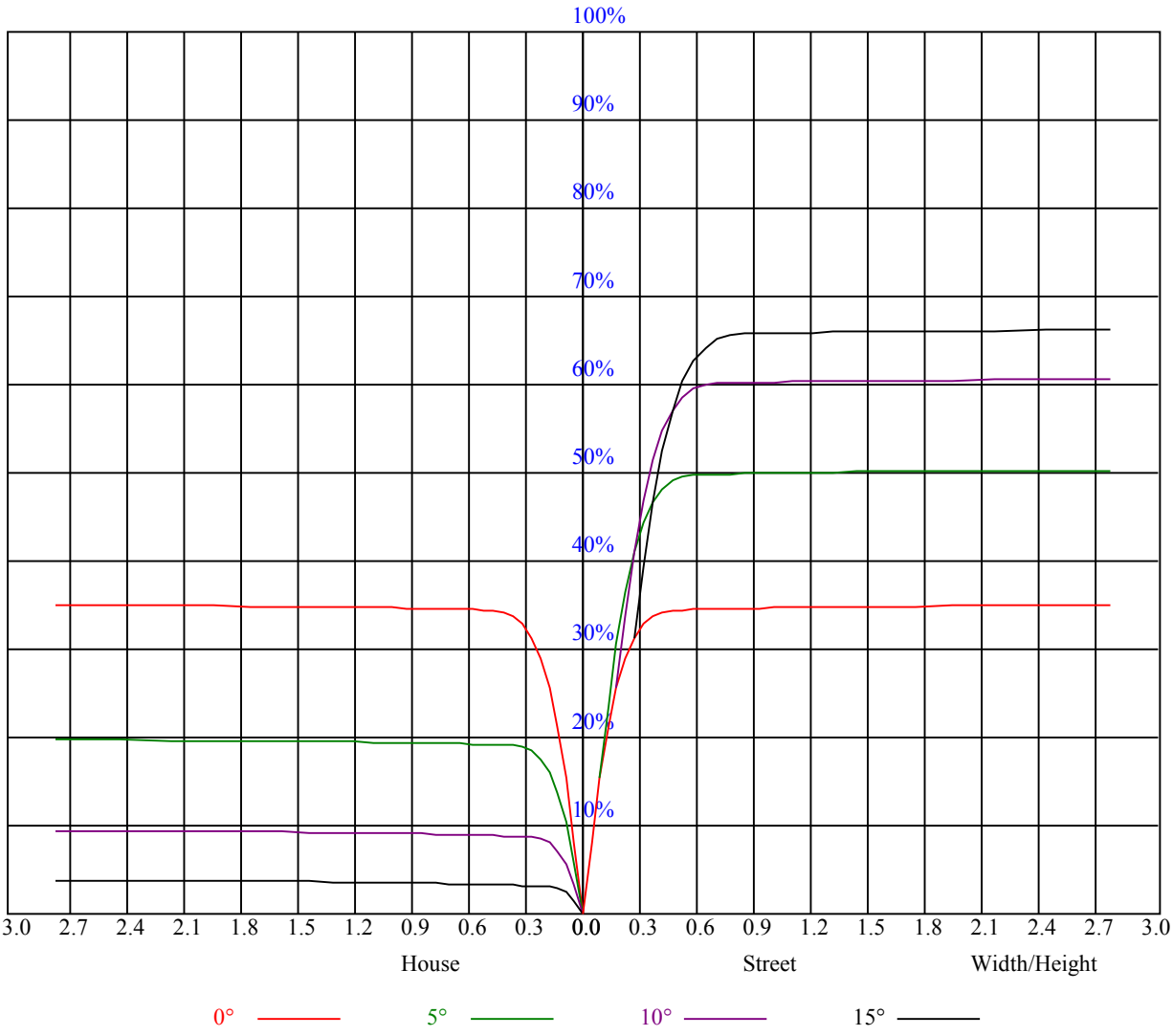


Equipment: GMS1980 Date: 2019/10/21 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	0.84	0.84	0.84	0.82	0.82	0.82	0.78	0.78	0.78	0.75	0.75	0.75	0.72	0.72	0.72	0.71
1	0.80	0.79	0.77	0.78	0.77	0.76	0.76	0.75	0.74	0.73	0.72	0.72	0.71	0.70	0.70	0.68
2	0.76	0.75	0.73	0.75	0.74	0.72	0.73	0.72	0.70	0.71	0.70	0.69	0.69	0.68	0.68	0.67
3	0.74	0.71	0.70	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	0.69	0.67	0.71	0.68	0.67	0.69	0.67	0.66	0.68	0.66	0.65	0.67	0.65	0.64	0.64
5	0.69	0.67	0.65	0.69	0.66	0.65	0.68	0.66	0.64	0.67	0.65	0.63	0.66	0.64	0.63	0.62
6	0.67	0.65	0.63	0.67	0.65	0.63	0.66	0.64	0.62	0.65	0.63	0.62	0.64	0.63	0.62	0.61
7	0.66	0.63	0.61	0.65	0.63	0.61	0.65	0.63	0.61	0.64	0.62	0.61	0.63	0.62	0.60	0.60
8	0.64	0.62	0.60	0.64	0.62	0.60	0.63	0.61	0.60	0.63	0.61	0.60	0.62	0.61	0.59	0.59
9	0.63	0.61	0.59	0.63	0.60	0.59	0.62	0.60	0.59	0.62	0.60	0.58	0.61	0.60	0.58	0.58
10	0.62	0.59	0.58	0.61	0.59	0.58	0.61	0.59	0.57	0.61	0.59	0.57	0.60	0.58	0.57	0.57

Coefficient Utilization Curve



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/21
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	9440.44	9440.44	9114.75	8584.31	7946.44	7199.44	6419.81	5637.94	4965.75
45.0	9455.63	9484.31	9149.06	8637.19	8015.06	7282.69	6512.63	5801.63	5026.50
90.0	9503.44	9388.69	8960.63	8309.25	7666.88	6917.63	6131.25	5421.94	4669.31
135.0	9459.00	9437.63	9046.69	8502.75	7871.06	7048.69	6355.69	5650.88	4888.69
180.0	9440.44	9161.44	8659.13	7882.88	7227.56	6540.75	5658.75	4961.81	4329.00
225.0	9455.63	9162.00	8477.44	7837.88	7175.81	6300.00	5603.63	4933.13	4177.13
270.0	9503.44	9393.75	8818.88	8191.13	7524.00	6750.56	5961.94	5270.06	4546.13
315.0	9459.00	9214.88	8733.94	7964.44	7306.31	6614.44	5832.00	5060.25	4428.56
360.0	9440.44	9440.44	9114.75	8584.31	7946.44	7199.44	6419.81	5637.94	4965.75

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4287.94	3710.81	3263.06	2857.50	2413.13	2102.06	1823.06	1573.31	1300.50
45.0	4330.69	3793.50	3272.06	2861.44	2450.81	2098.69	1821.38	1584.56	1314.56
90.0	4074.75	3516.75	3033.00	2656.69	2280.38	1953.56	1700.44	1474.88	1090.13
135.0	4208.06	3691.69	3182.63	2785.50	2387.81	2045.25	1774.13	1514.81	1284.19
180.0	3726.00	3212.44	2815.88	2423.81	2117.25	1812.38	1550.81	1341.56	1116.39
225.0	3731.63	3225.94	2732.06	2428.88	2084.63	1754.44	1550.81	1336.50	1109.25
270.0	3927.38	3456.00	2987.44	2615.63	2248.88	1924.31	1670.06	1441.69	1184.06
315.0	3823.31	3305.81	2893.50	2484.56	2166.75	1855.13	1581.19	1361.81	1110.71
360.0	4287.94	3710.81	3263.06	2857.50	2413.13	2102.06	1823.06	1573.31	1300.50

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1102.50	902.81	716.06	559.69	414.00	284.63	153.11	86.68	32.12
45.0	1113.75	936.00	726.75	565.31	414.00	284.06	156.26	80.33	33.41
90.0	1021.44	847.86	683.44	490.28	354.49	236.48	124.88	61.65	25.82
135.0	1085.63	930.94	702.56	543.94	409.50	294.75	142.88	71.78	29.48
180.0	916.43	748.74	588.66	404.66	275.57	172.46	72.11	34.99	16.14
225.0	916.37	748.86	588.43	407.81	281.25	174.94	77.34	34.48	17.21
270.0	1002.94	832.50	628.88	478.69	343.69	297.56	112.39	52.43	19.63
315.0	933.53	765.56	604.91	421.76	292.89	183.99	92.03	37.29	17.78
360.0	1102.50	902.81	716.06	559.69	414.00	284.63	153.11	86.68	32.12

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	16.71	13.61	11.81	10.69	9.90	9.00	8.44	7.99	7.48
45.0	16.09	13.05	11.53	10.46	9.56	8.83	8.33	7.88	7.43
90.0	14.46	12.21	10.97	9.84	9.11	8.49	7.93	7.54	7.20
135.0	14.57	12.43	10.91	9.96	9.11	8.44	7.99	7.54	7.14
180.0	12.71	11.36	10.35	9.34	8.78	8.21	7.76	7.43	7.09
225.0	13.95	12.26	11.14	10.18	9.45	8.78	8.21	7.82	7.43
270.0	14.63	12.71	11.31	10.41	9.56	8.83	8.33	7.93	7.48
315.0	13.73	12.15	10.86	9.84	9.17	8.49	7.99	7.59	7.26
360.0	16.71	13.61	11.81	10.69	9.90	9.00	8.44	7.99	7.48

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	7.20	6.92	6.69	6.47	6.30	6.19	6.02	5.96	5.85
45.0	7.14	6.92	6.75	6.53	6.36	6.24	6.13	6.08	5.91
90.0	6.92	6.69	6.53	6.36	6.19	6.08	5.96	5.91	5.85
135.0	6.92	6.69	6.47	6.30	6.19	6.08	5.96	5.85	5.79
180.0	6.81	6.64	6.47	6.30	6.19	6.08	5.96	5.91	5.79
225.0	7.14	6.92	6.75	6.47	6.36	6.24	6.13	6.08	5.96
270.0	7.20	6.92	6.69	6.53	6.41	6.24	6.13	6.08	6.02
315.0	6.86	6.69	6.53	6.36	6.19	6.08	5.96	5.91	5.85
360.0	7.20	6.92	6.69	6.47	6.30	6.19	6.02	5.96	5.85

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	5.79	5.74	5.68	5.63	5.57	5.51	5.46	5.46	5.40
45.0	5.91	5.79	5.74	5.68	5.68	5.57	5.57	5.51	5.51
90.0	5.74	5.68	5.63	5.57	5.51	5.51	5.46	5.46	5.46
135.0	5.74	5.68	5.63	5.57	5.57	5.51	5.46	5.46	5.40
180.0	5.74	5.68	5.63	5.57	5.51	5.51	5.46	5.40	5.40
225.0	5.91	5.85	5.79	5.74	5.68	5.68	5.63	5.63	5.57
270.0	5.91	5.85	5.79	5.79	5.74	5.68	5.63	5.63	5.63
315.0	5.79	5.74	5.68	5.63	5.63	5.57	5.51	5.51	5.46
360.0	5.79	5.74	5.68	5.63	5.57	5.51	5.46	5.46	5.40

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.34	5.34	5.34	5.29	5.29	5.23	5.23	5.23	5.18
45.0	5.46	5.46	5.40	5.34	5.34	5.34	5.34	5.34	5.29
90.0	5.34	5.34	5.34	5.29	5.29	5.29	5.29	5.29	5.23
135.0	5.34	5.34	5.34	5.29	5.29	5.23	5.23	5.23	5.18
180.0	5.34	5.34	5.29	5.29	5.23	5.23	5.23	5.18	5.18
225.0	5.51	5.46	5.46	5.46	5.40	5.40	5.34	5.34	5.34
270.0	5.57	5.51	5.51	5.51	5.46	5.46	5.46	5.46	5.46
315.0	5.46	5.40	5.40	5.34	5.34	5.34	5.29	5.29	5.23
360.0	5.34	5.34	5.34	5.29	5.29	5.23	5.23	5.23	5.18

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	5.18	5.12	5.12	5.12	5.06	5.06	5.06	5.06	5.01
45.0	5.23	5.23	5.23	5.23	5.18	5.23	5.18	5.18	5.12
90.0	5.23	5.23	5.18	5.18	5.18	5.18	5.18	5.18	5.12
135.0	5.18	5.18	5.18	5.12	5.12	5.12	5.12	5.06	5.06
180.0	5.18	5.12	5.12	5.06	5.12	5.06	5.06	5.06	5.06
225.0	5.34	5.29	5.29	5.29	5.23	5.23	5.23	5.23	5.23
270.0	5.46	5.46	5.40	5.40	5.40	5.40	5.46	5.40	5.40
315.0	5.23	5.23	5.23	5.23	5.23	5.18	5.18	5.18	5.18
360.0	5.18	5.12	5.12	5.12	5.06	5.06	5.06	5.06	5.01

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	5.01	5.01	5.01	5.01	5.01	5.01	5.01	4.95	4.95
45.0	5.12	5.12	5.12	5.12	5.12	5.06	5.12	5.06	5.06
90.0	5.12	5.12	5.12	5.12	5.12	5.12	5.06	5.06	5.01
135.0	5.06	5.06	5.06	5.01	5.01	5.01	5.01	5.01	5.01
180.0	5.01	5.01	5.01	5.01	5.01	5.01	5.01	4.95	4.95
225.0	5.18	5.23	5.23	5.18	5.18	5.18	5.18	5.18	5.12
270.0	5.40	5.46	5.46	5.46	5.46	5.46	5.46	5.29	5.12
315.0	5.18	5.12	5.12	5.12	5.12	5.06	5.06	5.01	5.06
360.0	5.01	5.01	5.01	5.01	5.01	5.01	5.01	4.95	4.95

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.95	4.95	4.95	4.89	4.89	4.89	4.95	4.95	4.89
45.0	5.06	5.06	5.01	5.01	5.01	5.01	5.01	4.95	4.95
90.0	4.95	5.01	4.95	4.95	4.95	4.95	4.95	4.95	4.89
135.0	5.01	5.01	4.95	4.95	4.95	4.95	4.95	4.95	4.89
180.0	4.95	4.95	4.95	4.95	4.89	4.95	4.89	4.89	4.89
225.0	5.12	5.06	5.06	5.06	5.01	5.06	4.95	5.01	4.95
270.0	5.01	5.01	5.01	5.01	5.01	5.01	5.01	4.95	4.95
315.0	5.01	4.95	4.95	4.95	4.95	4.89	4.95	4.89	4.89
360.0	4.95	4.95	4.95	4.89	4.89	4.89	4.95	4.95	4.89

Intensity data(cd)

C/γ(°)	90.0
0.0	4.89
45.0	4.95
90.0	4.89
135.0	4.89
180.0	4.95
225.0	5.01
270.0	4.89
315.0	4.95
360.0	4.89