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

Nata

LumCAT: LN01D03515DA-N
Luminaire: 97.70.267.00
Report No: 200623-B001
Test No: 200623-C001
LampCAT: CITIZEN CLU7A2
Lamp flux(lm): 535.8
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 35.9600
Current(A): 0.1500
Power (W): 5.3940
PF: 1.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 471.11
Efficiency(%): 87.92%
Lumens(lm)/Power(W): 87.34
Central intensity(cd): 4374.422
Maximum intensity(cd): 4374.422
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=16.0
[C90/270]Total=16.0
Field angle(10%Imax): [C0/180]Total=29.6
[C90/270]Total=29.6
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
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(%): 87.92%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.499%

Nata LM01D03515DA

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4374.422	0.000	0	.000%	.000%
1.0	4332.305	4.166	4.166	.777%	.884%
2.0	4207.500	12.257	16.423	2.288%	3.486%
3.0	3976.523	19.573	35.997	3.653%	7.641%
4.0	3685.711	25.648	61.645	4.787%	13.085%
5.0	3345.891	30.250	91.894	5.645%	19.506%
6.0	2913.188	32.893	124.787	6.139%	26.488%
7.0	2541.656	33.858	158.645	6.319%	33.675%
8.0	2188.336	33.852	192.497	6.318%	40.860%
9.0	1818.141	32.470	224.967	6.060%	47.753%
10.0	1463.302	29.696	254.663	5.542%	54.056%
11.0	1177.488	26.387	281.05	4.924%	59.657%
12.0	952.383	23.283	304.333	4.345%	64.599%
13.0	712.617	19.759	324.092	3.688%	68.793%
14.0	543.080	16.073	340.165	3.000%	72.205%
15.0	409.521	13.078	353.243	2.441%	74.981%
16.0	310.148	10.545	363.788	1.968%	77.219%
17.0	245.355	8.651	372.438	1.614%	79.055%
18.0	194.513	7.252	379.691	1.354%	80.595%
19.0	152.782	6.042	385.733	1.128%	81.877%
20.0	125.951	5.102	390.835	.952%	82.960%
21.0	105.349	4.441	395.276	.829%	83.903%
22.0	90.056	3.927	399.203	.733%	84.737%
23.0	78.616	3.539	402.742	.661%	85.488%
24.0	68.484	3.216	405.958	.600%	86.171%
25.0	61.228	2.949	408.908	.550%	86.797%
26.0	55.455	2.754	411.662	.514%	87.381%
27.0	50.463	2.591	414.253	.484%	87.931%
28.0	45.872	2.439	416.692	.455%	88.449%
29.0	42.089	2.301	418.994	.429%	88.938%
30.0	38.531	2.177	421.17	.406%	89.400%
31.0	34.896	2.043	423.214	.381%	89.833%
32.0	31.746	1.909	425.123	.356%	90.239%
33.0	29.222	1.796	426.919	.335%	90.620%
34.0	26.838	1.697	428.616	.317%	90.980%
35.0	24.581	1.597	430.213	.298%	91.319%
36.0	22.894	1.512	431.724	.282%	91.640%
37.0	21.509	1.448	433.172	.270%	91.947%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	20.194	1.392	434.564	.260%	92.243%
39.0	18.963	1.337	435.901	.249%	92.526%
40.0	17.880	1.285	437.186	.240%	92.799%
41.0	16.847	1.237	438.422	.231%	93.062%
42.0	15.785	1.186	439.608	.221%	93.313%
43.0	14.773	1.132	440.74	.211%	93.553%
44.0	13.852	1.080	441.82	.202%	93.783%
45.0	13.015	1.033	442.853	.193%	94.002%
46.0	12.136	0.984	443.836	.184%	94.211%
47.0	11.482	0.939	444.776	.175%	94.410%
48.0	10.913	0.905	445.681	.169%	94.602%
49.0	10.378	0.874	446.555	.163%	94.788%
50.0	9.879	0.845	447.4	.158%	94.967%
51.0	9.471	0.819	448.219	.153%	95.141%
52.0	9.063	0.795	449.014	.148%	95.310%
53.0	8.670	0.771	449.785	.144%	95.473%
54.0	8.318	0.749	450.534	.140%	95.632%
55.0	7.995	0.728	451.262	.136%	95.787%
56.0	7.685	0.709	451.971	.132%	95.937%
57.0	7.383	0.689	452.66	.129%	96.084%
58.0	7.102	0.670	453.329	.125%	96.226%
59.0	6.841	0.652	453.981	.122%	96.364%
60.0	6.602	0.635	454.616	.119%	96.499%
61.0	6.356	0.618	455.235	.115%	96.630%
62.0	6.131	0.602	455.837	.112%	96.758%
63.0	5.948	0.587	456.424	.110%	96.883%
64.0	5.723	0.573	456.997	.107%	97.004%
65.0	5.555	0.558	457.555	.104%	97.123%
66.0	5.393	0.546	458.101	.102%	97.239%
67.0	5.288	0.537	458.638	.100%	97.353%
68.0	5.351	0.539	459.177	.101%	97.467%
69.0	5.583	0.558	459.735	.104%	97.585%
70.0	5.934	0.592	460.326	.110%	97.711%
71.0	6.434	0.639	460.966	.119%	97.847%
72.0	6.968	0.697	461.662	.130%	97.995%
73.0	7.369	0.750	462.412	.140%	98.154%
74.0	7.770	0.796	463.208	.149%	98.323%
75.0	7.952	0.831	464.039	.155%	98.499%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.784	0.835	464.874	.156%	98.676%
77.0	7.369	0.808	465.682	.151%	98.848%
78.0	6.827	0.760	466.442	.142%	99.009%
79.0	6.124	0.696	467.138	.130%	99.157%
80.0	5.365	0.619	467.757	.116%	99.288%
81.0	4.563	0.537	468.294	.100%	99.402%
82.0	3.930	0.461	468.755	.086%	99.500%
83.0	3.333	0.395	469.149	.074%	99.584%
84.0	3.045	0.347	469.497	.065%	99.658%
85.0	2.869	0.323	469.82	.060%	99.726%
86.0	2.665	0.302	470.122	.056%	99.790%
87.0	2.384	0.276	470.398	.052%	99.849%
88.0	2.201	0.251	470.65	.047%	99.902%
89.0	2.095	0.235	470.885	.044%	99.952%
90.0	2.011	0.225	471.11	.042%	100.000%

Zonal flux distribution table

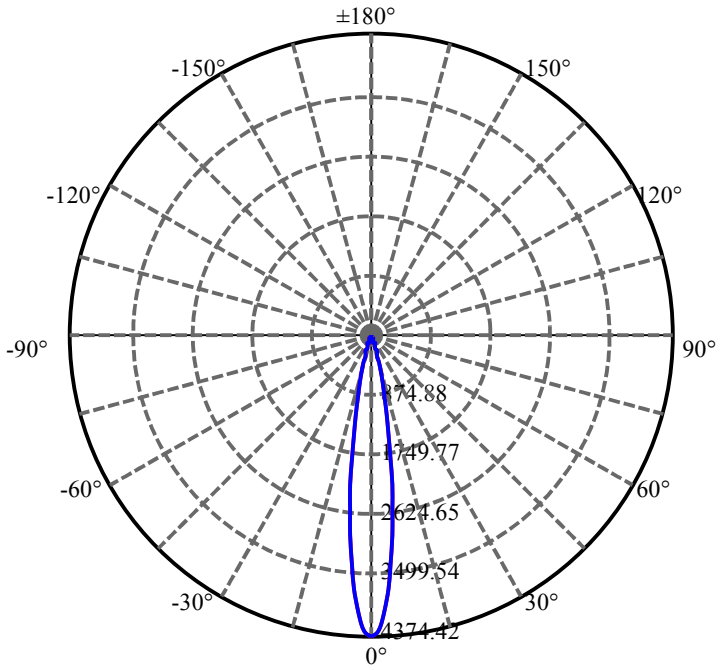
ZONAL LUMEN SUMMARY

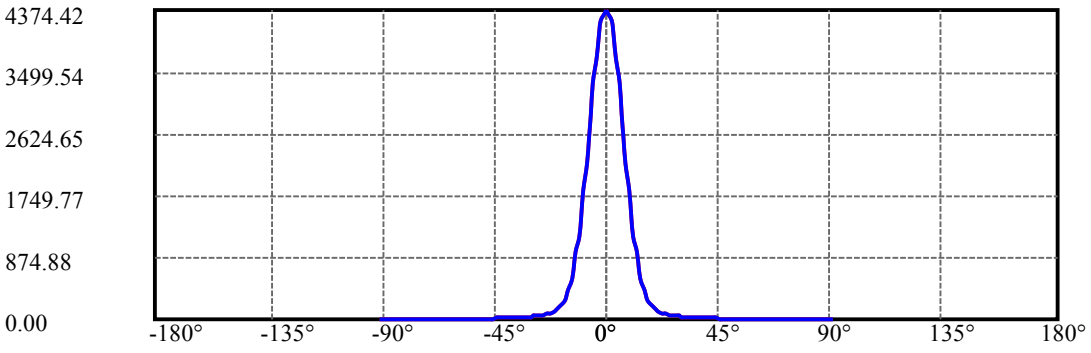
Zone	Lumens	%Lamp	%Fixt
0-30	421.17	78.60%	89.40%
0-40	437.19	81.59%	92.80%
0-60	454.62	84.84%	96.50%
0-90	470.88	87.88%	99.95%
0-120	470.88	87.88%	99.95%
0-180	471.11	87.92%	100.00%
60-90	16.90	3.15%	3.59%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-17.61	376.89	70.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	254.66
10-20	136.17
20-30	30.34
30-40	16.02
40-50	10.21
50-60	7.22
60-70	5.71
70-80	7.43
80-90	3.13
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/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:14.8 Right:14.8
:C90/270Left:14.8 Right:14.8

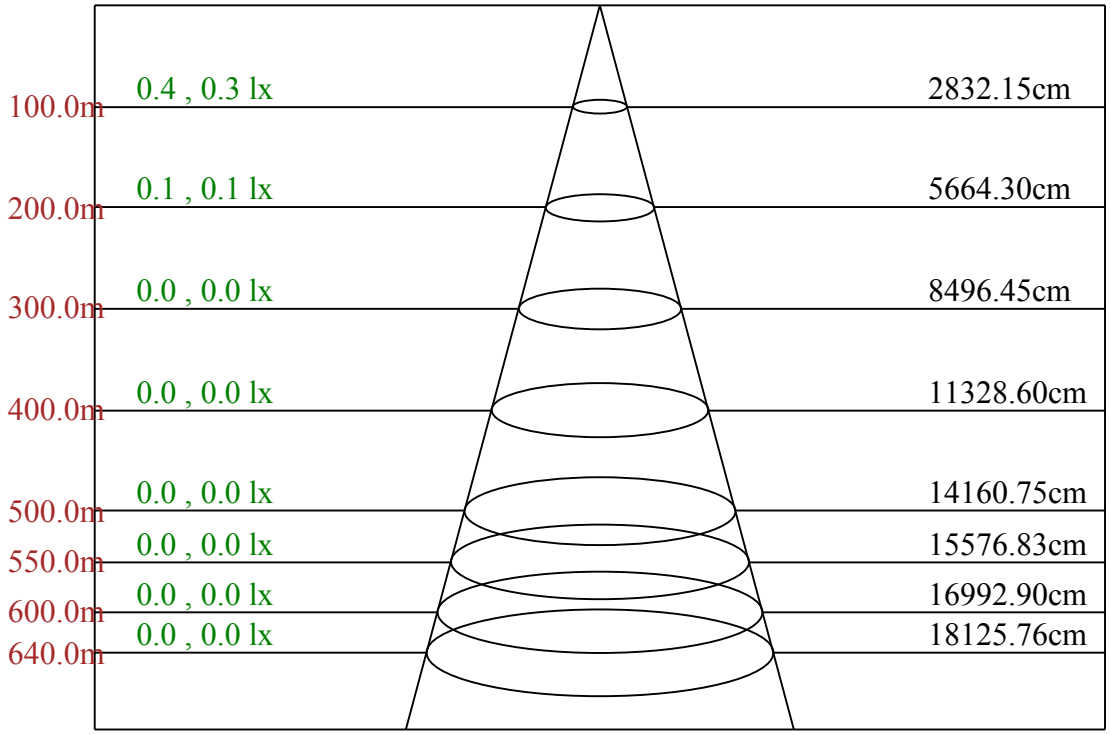
Beam Angle(50%Imax):C0/180Left:8.0 Right:8.0
:C90/270Left:8.0 Right:8.0

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Lux distance Curve

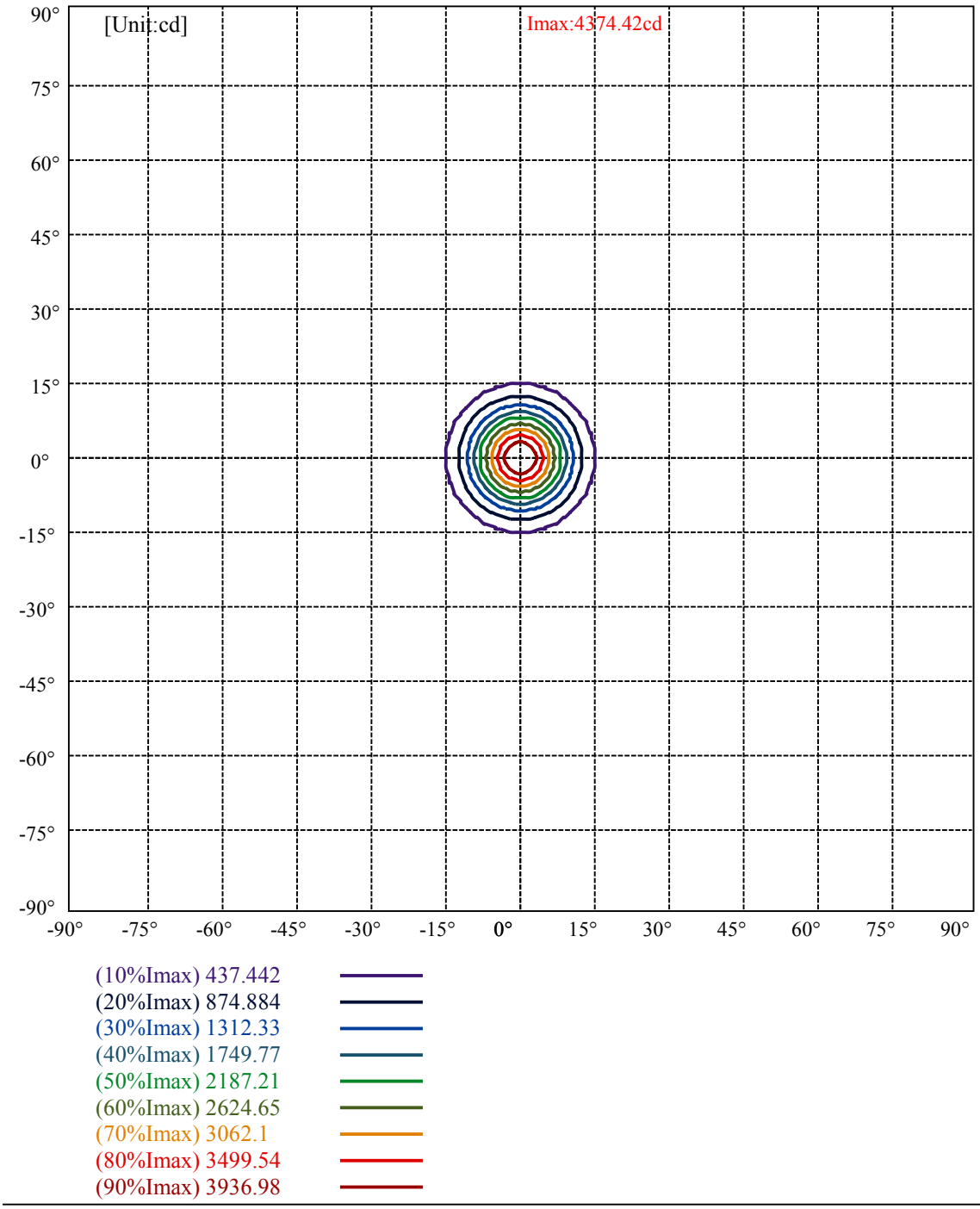


Max , Ave

Beam angle of C0 plane 16.12

Equipment: GMS1980	Date: 2020/6/23	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

ISO-Intensity(V-H)

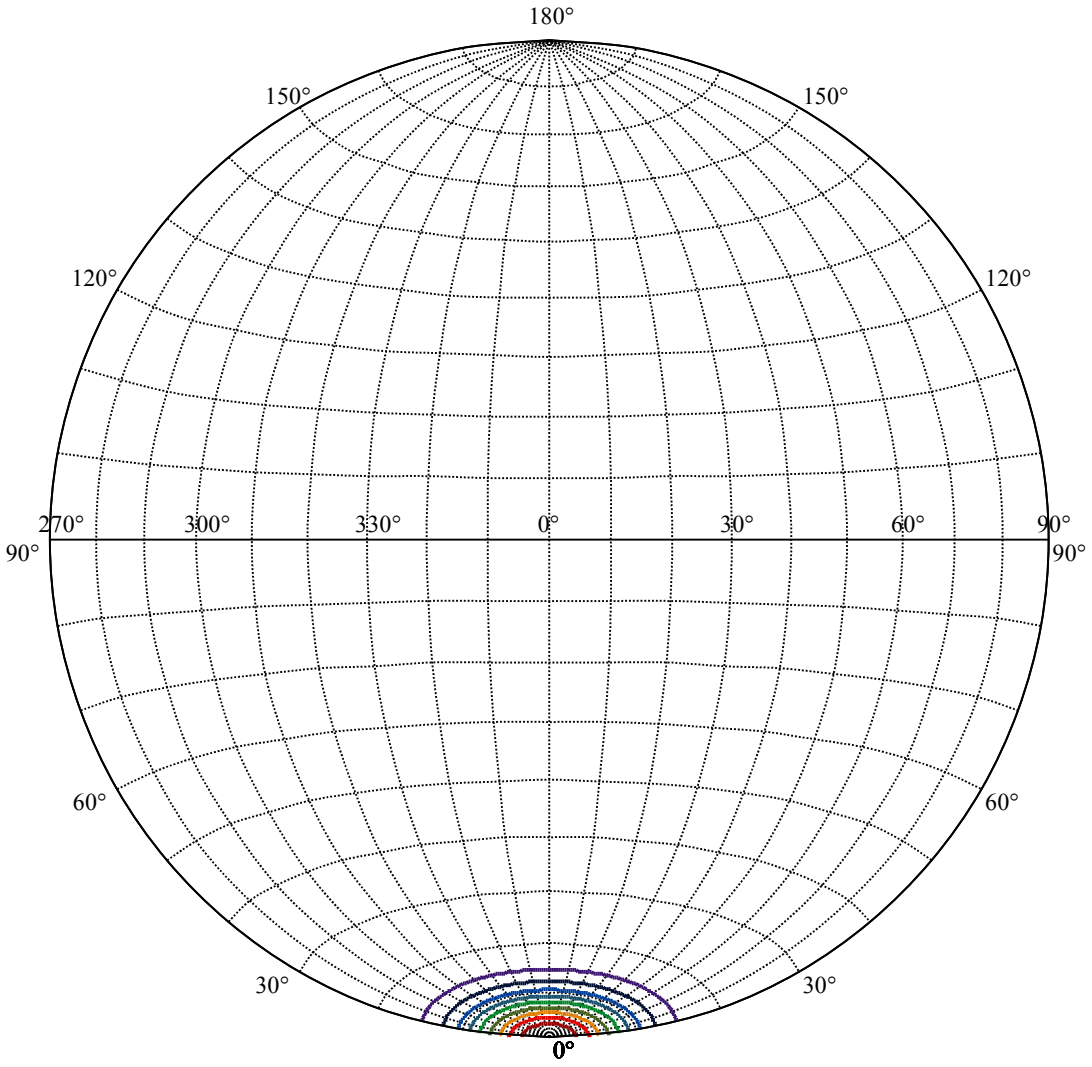


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:4374.42

(10%Imax) 437.442
(20%Imax) 874.884
(30%Imax) 1312.33
(40%Imax) 1749.77
(50%Imax) 2187.21
(60%Imax) 2624.65
(70%Imax) 3062.1
(80%Imax) 3499.54
(90%Imax) 3936.98

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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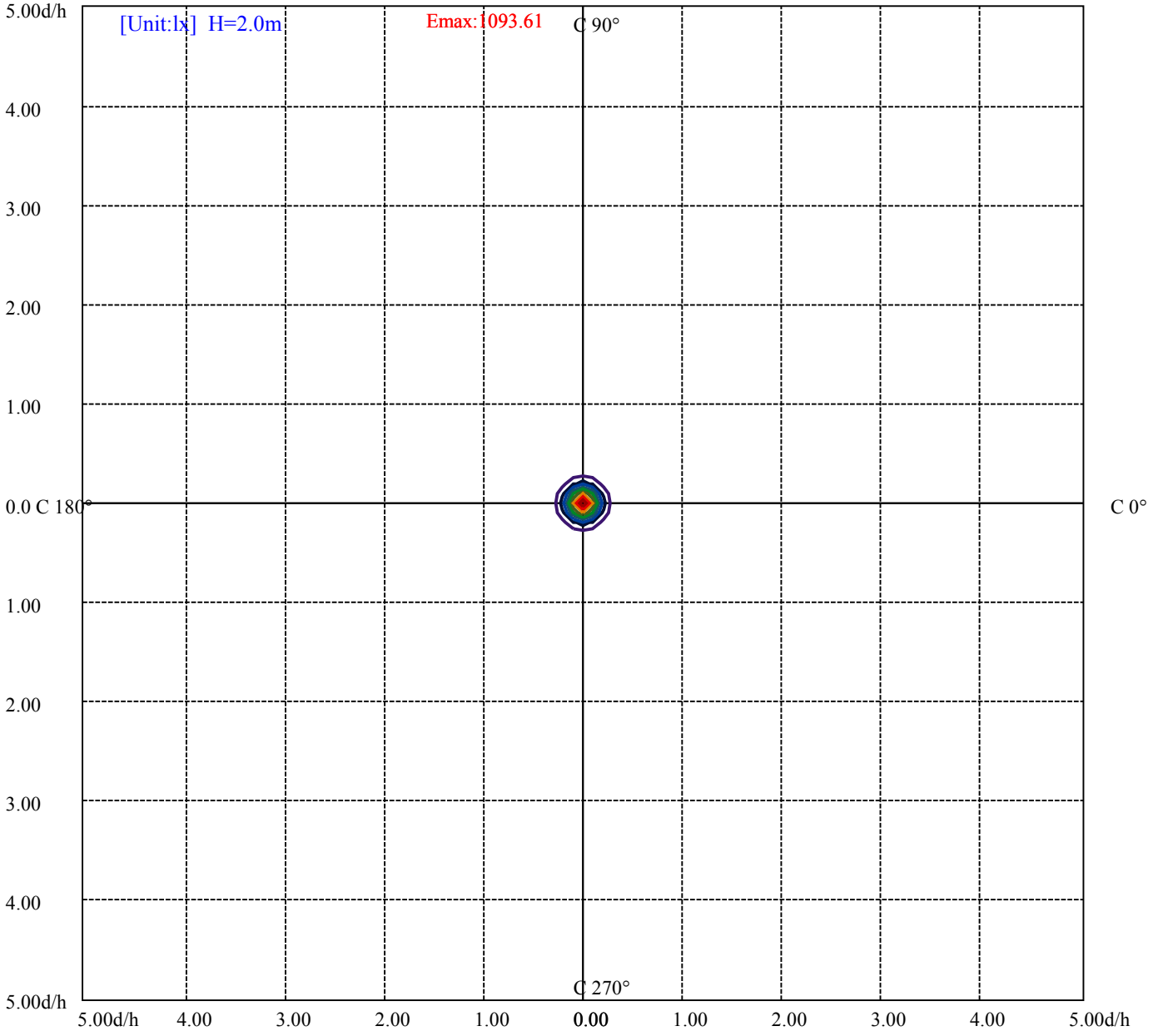
ISO illuminance diagram



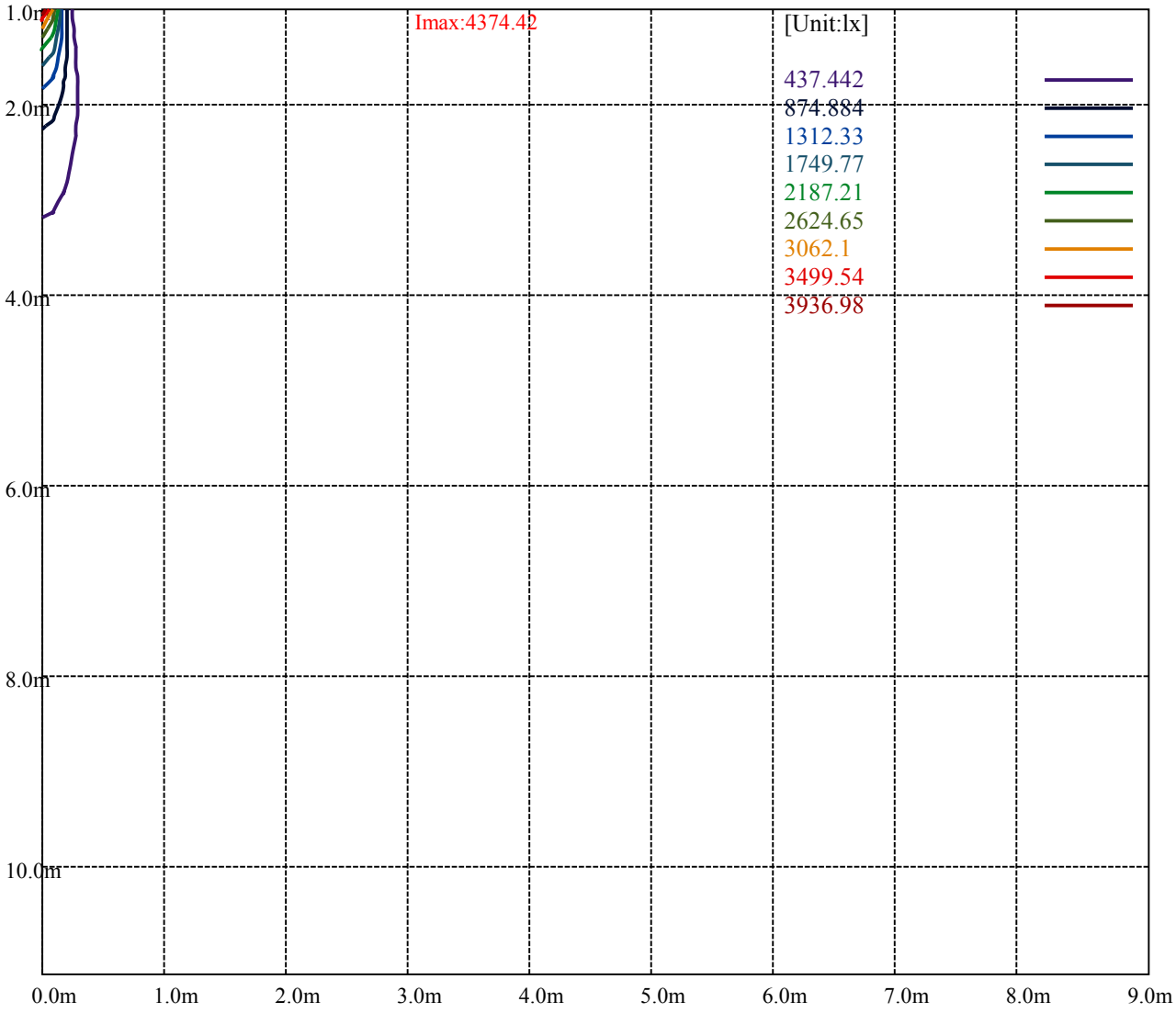
(10%Emax) 109.3605
(20%Emax) 218.7207
(30%Emax) 328.08
(40%Emax) 437.4425
(50%Emax) 546.8025
(60%Emax) 656.1625
(70%Emax) 765.5225
(80%Emax) 874.8825
(90%Emax) 984.2425

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata LM01D03515DA

Luminance Limitting Curve(no luminous side)

Luminance Table

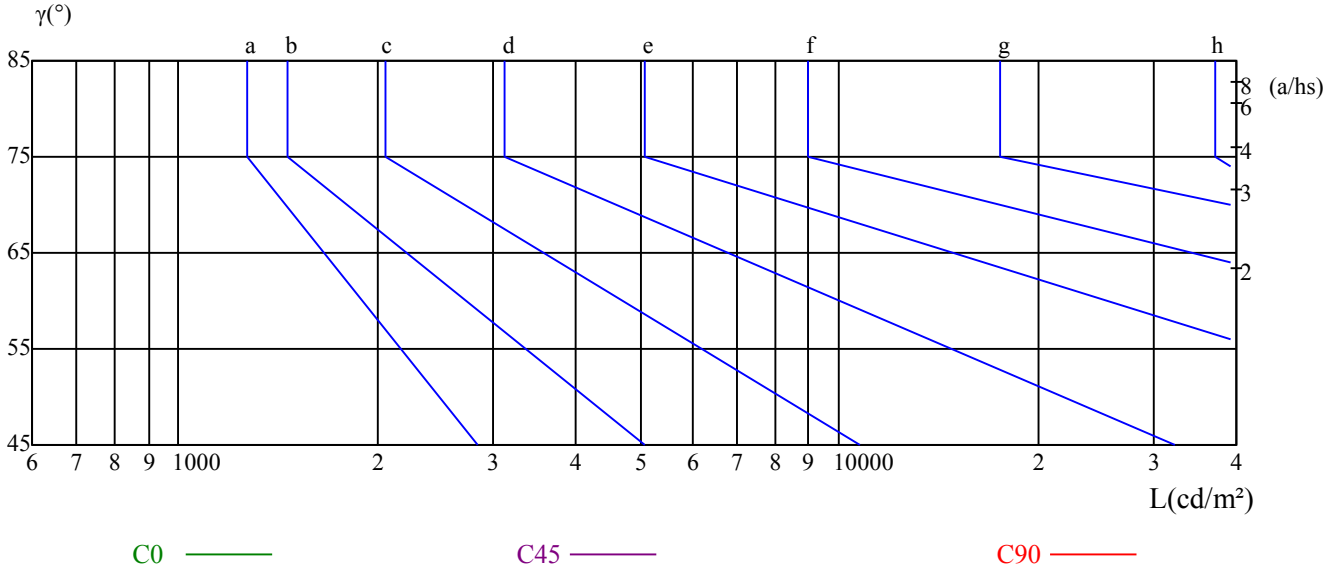
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

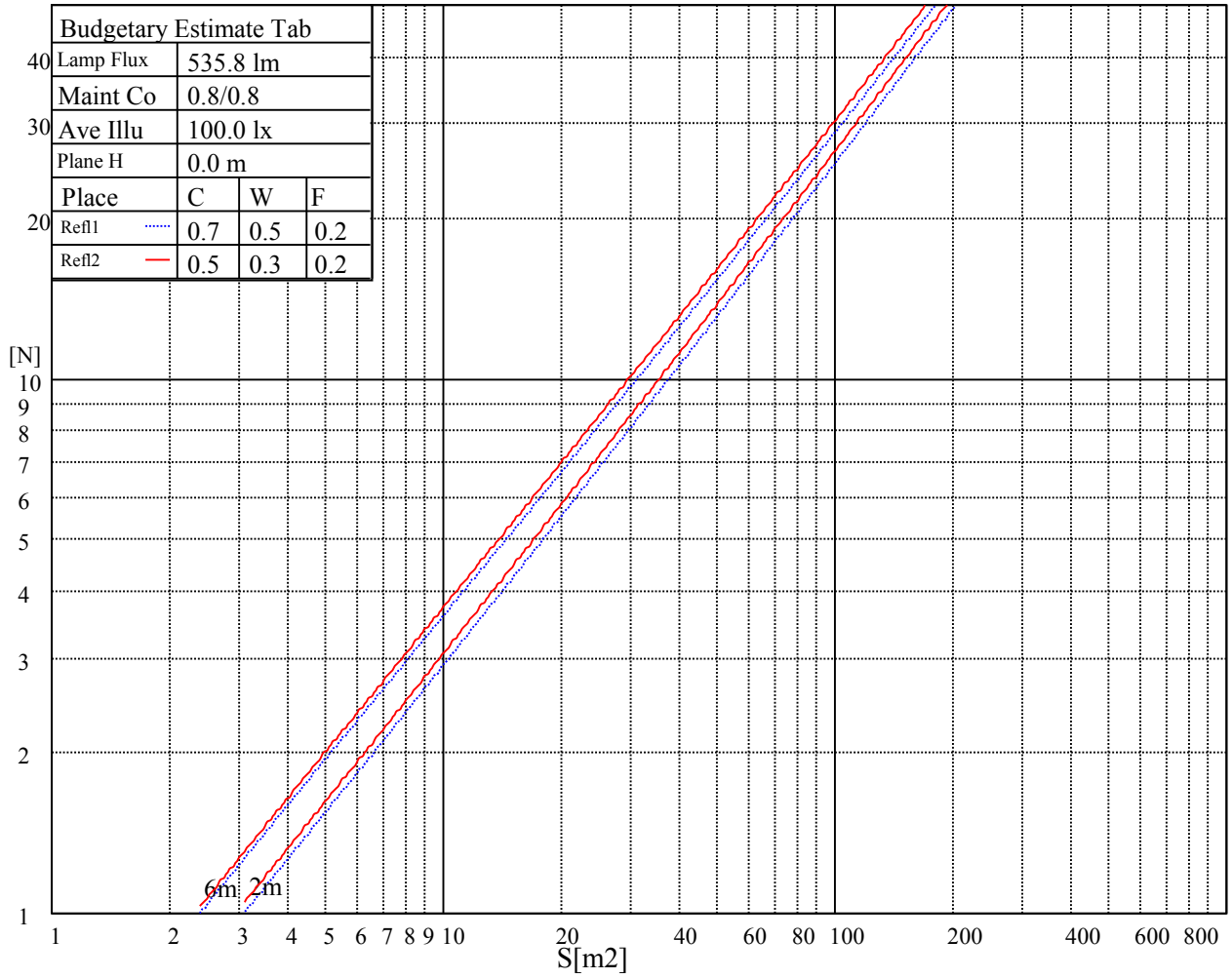


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/23
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table



Equipment: GMS1980
Temperature(°C): 25.0

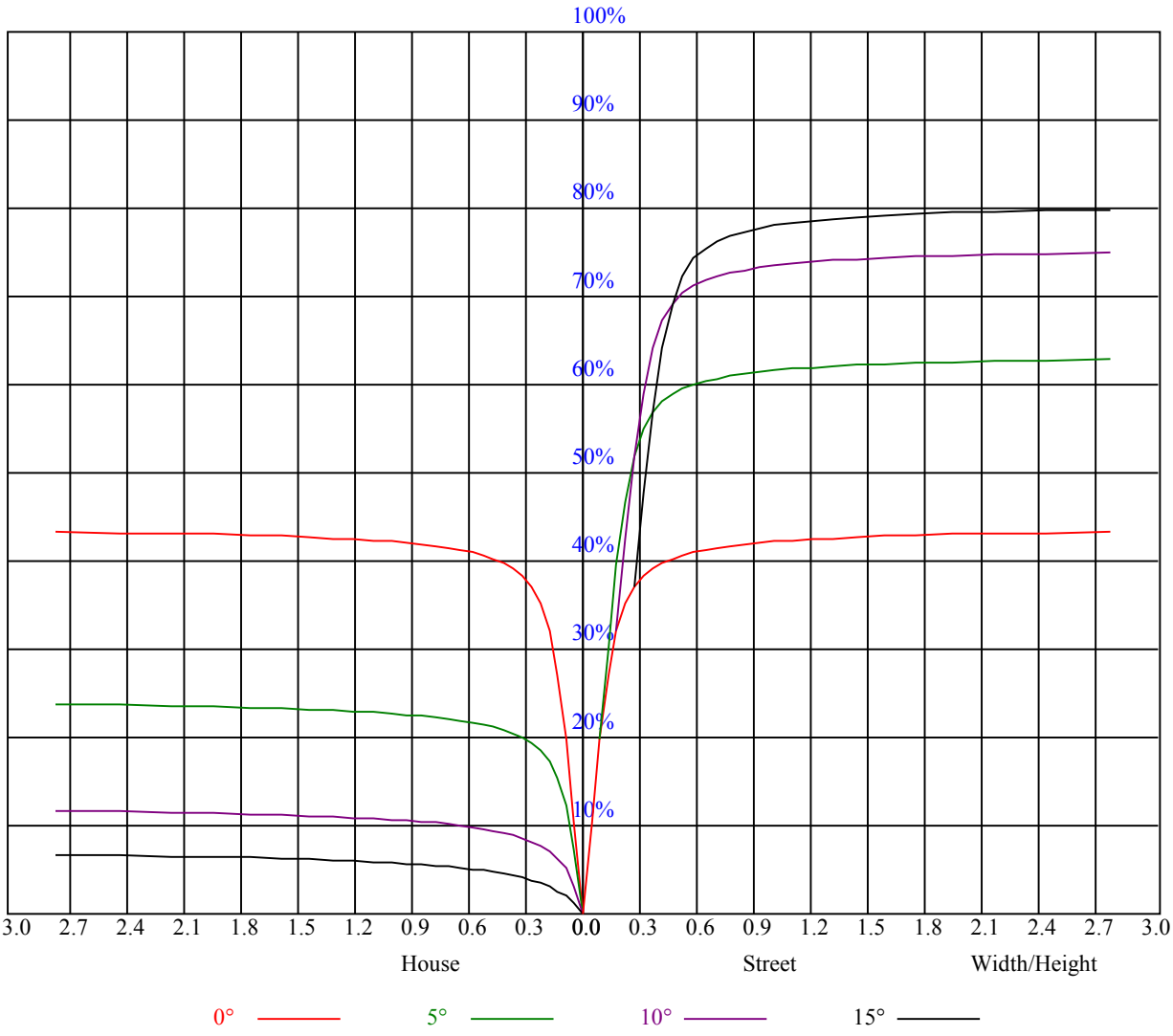
Date: 2020/6/23
Humidity(%): 65.0%

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	1.05	1.05	1.05	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.99	0.97	0.95	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.84
2	0.94	0.91	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.85	0.84	0.83	0.81
3	0.90	0.87	0.85	0.89	0.86	0.84	0.87	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.80	0.79
4	0.87	0.84	0.81	0.86	0.83	0.81	0.84	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.78	0.77
5	0.84	0.81	0.78	0.84	0.80	0.78	0.82	0.79	0.77	0.81	0.79	0.77	0.80	0.78	0.76	0.75
6	0.82	0.79	0.76	0.81	0.78	0.76	0.80	0.77	0.75	0.79	0.77	0.75	0.78	0.76	0.74	0.73
7	0.80	0.77	0.74	0.79	0.76	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.77	0.75	0.73	0.72
8	0.78	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.72	0.76	0.73	0.72	0.71
9	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.70
10	0.75	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.74	0.71	0.69	0.73	0.71	0.69	0.68

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/6/23	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	4354.88	4392.56	4343.06	4218.75	3974.06	3679.88	3289.50	2881.13	2523.38
45.0	4350.94	4381.88	4320.00	4174.31	3965.63	3675.94	3241.69	2878.31	2526.19
90.0	4399.88	4370.63	4275.56	4042.69	3774.94	3441.94	2991.94	2622.94	2264.63
135.0	4392.00	4360.50	4234.50	4036.50	3731.06	3398.06	2988.56	2580.19	2228.06
180.0	4354.88	4233.38	4036.50	3681.00	3346.88	2980.13	2474.44	2167.31	1826.44
225.0	4350.94	4239.00	4049.44	3747.38	3367.13	3004.88	2599.88	2207.81	1874.25
270.0	4399.88	4344.19	4194.56	3968.44	3679.88	3287.25	2876.63	2511.56	2125.13
315.0	4392.00	4336.31	4206.38	3943.13	3646.13	3299.06	2842.88	2484.00	2138.63
360.0	4354.88	4392.56	4343.06	4218.75	3974.06	3679.88	3289.50	2881.13	2523.38

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2135.25	1766.81	1465.31	1189.13	887.06	684.00	519.19	377.44	289.69
45.0	2090.81	1756.69	1449.00	1139.06	871.31	676.13	504.56	390.38	295.31
90.0	1885.50	1537.88	1099.24	982.41	770.68	577.35	430.59	333.23	254.36
135.0	1855.69	1514.81	1239.19	993.38	730.13	559.13	425.81	314.44	286.31
180.0	1474.31	1103.01	927.17	724.73	515.76	392.40	298.58	224.04	172.80
225.0	1563.75	1115.72	965.08	753.69	543.26	414.34	319.28	242.49	189.90
270.0	1763.44	1469.25	1167.75	933.75	705.38	522.56	397.13	306.00	249.02
315.0	1776.38	1442.25	1107.17	902.93	677.36	518.74	381.04	293.18	225.45
360.0	2135.25	1766.81	1465.31	1189.13	887.06	684.00	519.19	377.44	289.69

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	218.81	172.74	140.46	118.86	99.84	86.34	74.31	65.36	59.29
45.0	286.88	186.64	153.45	128.14	106.14	92.25	78.69	69.19	61.93
90.0	199.46	163.52	136.86	111.09	95.40	83.36	71.78	64.41	58.50
135.0	187.71	152.78	121.05	100.52	85.67	73.91	64.86	58.16	52.09
180.0	140.51	114.13	96.13	81.39	70.82	63.79	57.54	52.43	48.32
225.0	157.39	128.81	109.24	92.42	80.66	70.59	62.38	55.91	51.13
270.0	185.57	154.35	125.16	107.83	93.54	81.28	71.72	64.74	58.22
315.0	179.78	149.29	125.27	102.54	88.37	77.40	66.60	59.63	54.17
360.0	218.81	172.74	140.46	118.86	99.84	86.34	74.31	65.36	59.29

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	54.23	48.77	45.23	41.91	37.74	34.76	32.06	29.42	27.17
45.0	56.08	50.85	46.69	43.31	37.97	34.82	32.34	29.14	26.38
90.0	52.88	48.09	44.33	40.11	36.62	33.13	30.15	27.68	25.31
135.0	47.64	43.48	39.99	36.73	33.41	30.43	28.13	26.33	23.85
180.0	44.49	40.44	37.24	34.14	30.94	28.35	26.38	24.36	22.73
225.0	46.86	42.53	38.36	34.99	31.89	28.46	26.21	23.96	21.99
270.0	53.21	48.32	43.76	39.88	36.06	32.57	29.76	27.23	24.69
315.0	48.32	44.49	41.12	37.18	34.54	31.44	28.74	26.61	24.53
360.0	54.23	48.77	45.23	41.91	37.74	34.76	32.06	29.42	27.17

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	25.43	23.63	22.28	20.93	19.69	18.68	17.55	16.43	15.47
45.0	24.69	22.89	21.38	20.25	18.90	17.83	16.54	15.53	14.51
90.0	23.29	21.83	20.64	19.13	18.11	17.04	15.81	14.85	13.89
135.0	22.39	21.38	19.91	18.84	17.94	16.76	15.75	14.96	13.95
180.0	21.38	20.08	19.07	18.00	16.93	16.03	15.13	14.12	13.33
225.0	20.53	19.35	18.11	17.04	15.98	15.08	14.12	13.11	12.32
270.0	22.84	21.38	19.80	18.51	17.44	16.26	15.24	14.23	13.28
315.0	22.61	21.54	20.36	19.01	18.06	17.10	16.14	14.96	14.06
360.0	25.43	23.63	22.28	20.93	19.69	18.68	17.55	16.43	15.47

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	14.57	13.50	12.77	12.04	11.36	10.80	10.35	9.90	9.45
45.0	13.78	12.54	11.87	11.36	10.63	10.13	9.73	9.23	8.83
90.0	12.88	12.09	11.42	10.74	10.24	9.73	9.28	8.89	8.55
135.0	13.16	12.43	11.64	11.14	10.63	10.13	9.73	9.34	8.89
180.0	12.54	11.81	11.25	10.74	10.29	9.84	9.45	9.06	8.66
225.0	11.70	10.80	10.29	9.79	9.45	8.94	8.61	8.27	7.88
270.0	12.38	11.59	10.86	10.35	9.79	9.28	8.89	8.49	8.16
315.0	13.11	12.32	11.76	11.14	10.63	10.18	9.73	9.34	8.94
360.0	14.57	13.50	12.77	12.04	11.36	10.80	10.35	9.90	9.45

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.06	8.72	8.33	7.99	7.65	7.37	7.09	6.86	6.58
45.0	8.49	8.16	7.82	7.54	7.26	6.98	6.75	6.47	6.24
90.0	8.10	7.88	7.59	7.20	6.98	6.81	6.53	6.30	6.13
135.0	8.49	8.16	7.82	7.54	7.26	6.92	6.69	6.47	6.19
180.0	8.33	7.99	7.71	7.43	7.14	6.92	6.64	6.41	6.19
225.0	7.65	7.31	7.03	6.81	6.58	6.30	6.13	5.91	5.74
270.0	7.88	7.59	7.37	7.09	6.81	6.58	6.36	6.13	5.91
315.0	8.55	8.16	7.82	7.48	7.14	6.86	6.64	6.30	6.08
360.0	9.06	8.72	8.33	7.99	7.65	7.37	7.09	6.86	6.58

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.36	6.08	5.85	5.68	5.51	5.29	5.12	4.95	4.78
45.0	6.08	5.79	5.63	5.46	5.29	5.18	5.01	4.84	4.67
90.0	5.91	5.74	5.63	5.51	5.51	5.91	6.81	8.10	9.84
135.0	6.02	5.79	5.63	5.40	5.29	5.06	4.95	4.78	4.61
180.0	6.02	5.79	5.63	5.46	5.29	5.12	4.95	4.78	4.67
225.0	5.57	5.40	5.23	5.06	4.95	4.78	4.61	4.50	4.39
270.0	5.74	5.51	5.40	5.29	5.34	6.53	8.44	10.91	14.06
315.0	5.91	5.68	5.46	5.29	5.12	4.95	4.78	4.61	4.44
360.0	6.36	6.08	5.85	5.68	5.51	5.29	5.12	4.95	4.78

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.67	4.61	4.67	4.73	4.67	4.44	4.28	3.99	3.66
45.0	4.56	4.44	4.61	4.84	5.01	5.18	5.18	4.78	4.16
90.0	12.26	14.12	15.64	16.76	16.48	15.47	13.89	12.04	10.24
135.0	4.50	4.33	4.22	4.05	3.94	3.77	3.60	3.43	3.38
180.0	4.56	4.39	4.28	4.11	3.99	3.83	3.66	3.54	3.38
225.0	4.33	4.33	4.39	4.44	4.50	4.33	3.99	3.60	3.43
270.0	16.54	18.56	20.31	20.76	19.86	18.23	16.43	14.12	11.31
315.0	4.33	4.16	4.05	3.94	3.83	3.71	3.60	3.49	3.38
360.0	4.67	4.61	4.67	4.73	4.67	4.44	4.28	3.99	3.66

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.54	3.38	3.21	3.09	2.98	2.87	2.70	2.53	2.36
45.0	3.54	3.32	3.21	3.09	2.93	2.81	2.59	2.31	2.14
90.0	8.04	6.13	4.33	3.38	3.21	2.93	2.36	2.19	2.03
135.0	3.21	3.09	2.93	2.76	2.59	2.48	2.31	2.14	2.08
180.0	3.26	3.15	2.98	2.87	2.70	2.53	2.31	2.19	2.14
225.0	3.38	3.26	3.09	2.93	2.76	2.48	2.14	2.03	1.97
270.0	8.33	6.08	3.99	3.49	3.15	2.76	2.42	2.08	1.97
315.0	3.21	3.04	2.93	2.76	2.64	2.48	2.25	2.14	2.08
360.0	3.54	3.38	3.21	3.09	2.98	2.87	2.70	2.53	2.36

Intensity data(cd)

C/γ(°)	90.0
0.0	2.25
45.0	1.97
90.0	1.97
135.0	1.97
180.0	2.03
225.0	1.97
270.0	1.91
315.0	2.03
360.0	2.25