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Nata

LumCAT: 1-1008-S
Luminaire: BJB 47.360.1030

Report No: NATA0100	Voltage(V): 35.3200
Test No: GC2019102805	Current(A): 0.2970
LampCAT: LUMILEDS LUXEON 1203	Power (W): 10.4900
Lamp flux(lm): 1288.0	PF: 1.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 922.05
Efficiency(%): 71.59%
Lumens(lm)/Power(W): 87.90
Central intensity(cd): 8415.703
Maximum intensity(cd): 8415.703
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=15.0
[C90/270]Total=15.0
Field angle(10%Imax): [C0/180]Total=35.5
[C90/270]Total=35.5
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.29 C90_270=0.29
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 71.59%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.168%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8415.703	0.000	0	.000%	.000%
1.0	8253.914	7.976	7.976	.619%	.865%
2.0	7830.422	23.086	31.062	1.792%	3.369%
3.0	7206.539	35.963	67.025	2.792%	7.269%
4.0	6550.102	46.048	113.073	3.575%	12.263%
5.0	5942.039	53.741	166.814	4.172%	18.092%
6.0	5174.016	58.418	225.232	4.536%	24.427%
7.0	4489.313	59.980	285.212	4.657%	30.932%
8.0	3920.344	60.186	345.398	4.673%	37.460%
9.0	3357.633	58.984	404.382	4.580%	43.857%
10.0	2865.234	56.315	460.697	4.372%	49.964%
11.0	2510.789	53.718	514.414	4.171%	55.790%
12.0	2160.422	51.063	565.477	3.965%	61.328%
13.0	1839.516	47.469	612.946	3.685%	66.477%
14.0	1585.547	43.841	656.787	3.404%	71.231%
15.0	1353.720	40.352	697.138	3.133%	75.608%
16.0	1117.216	36.206	733.345	2.811%	79.534%
17.0	964.786	32.422	765.767	2.517%	83.051%
18.0	801.387	29.120	794.887	2.261%	86.209%
19.0	653.393	25.310	820.198	1.965%	88.954%
20.0	503.627	21.177	841.374	1.644%	91.250%
21.0	364.191	16.664	858.038	1.294%	93.058%
22.0	260.086	12.545	870.583	.974%	94.418%
23.0	156.431	8.740	879.323	.679%	95.366%
24.0	75.220	5.065	884.388	.393%	95.915%
25.0	32.920	2.459	886.846	.191%	96.182%
26.0	16.980	1.178	888.024	.091%	96.310%
27.0	12.923	0.732	888.756	.057%	96.389%
28.0	11.377	0.615	889.371	.048%	96.456%
29.0	10.413	0.570	889.941	.044%	96.518%
30.0	9.633	0.541	890.483	.042%	96.576%
31.0	8.972	0.518	891	.040%	96.633%
32.0	8.416	0.498	891.498	.039%	96.687%
33.0	8.002	0.484	891.982	.038%	96.739%
34.0	7.657	0.474	892.456	.037%	96.791%
35.0	7.362	0.466	892.922	.036%	96.841%
36.0	7.123	0.461	893.384	.036%	96.891%
37.0	6.947	0.459	893.842	.036%	96.941%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	6.792	0.459	894.301	.036%	96.991%
39.0	6.623	0.458	894.759	.036%	97.040%
40.0	6.511	0.458	895.217	.036%	97.090%
41.0	6.434	0.461	895.678	.036%	97.140%
42.0	6.363	0.465	896.143	.036%	97.190%
43.0	6.314	0.470	896.613	.036%	97.241%
44.0	6.265	0.475	897.087	.037%	97.293%
45.0	6.216	0.480	897.567	.037%	97.345%
46.0	6.180	0.485	898.052	.038%	97.397%
47.0	6.131	0.490	898.541	.038%	97.450%
48.0	6.089	0.494	899.035	.038%	97.504%
49.0	6.040	0.498	899.533	.039%	97.558%
50.0	5.991	0.502	900.035	.039%	97.612%
51.0	5.963	0.506	900.541	.039%	97.667%
52.0	5.906	0.509	901.05	.040%	97.723%
53.0	5.843	0.511	901.561	.040%	97.778%
54.0	5.773	0.512	902.073	.040%	97.834%
55.0	5.709	0.513	902.586	.040%	97.889%
56.0	5.653	0.513	903.099	.040%	97.945%
57.0	5.597	0.514	903.613	.040%	98.001%
58.0	5.534	0.515	904.128	.040%	98.056%
59.0	5.470	0.514	904.643	.040%	98.112%
60.0	5.435	0.515	905.158	.040%	98.168%
61.0	5.393	0.517	905.675	.040%	98.224%
62.0	5.358	0.518	906.193	.040%	98.280%
63.0	5.351	0.521	906.713	.040%	98.337%
64.0	5.316	0.523	907.237	.041%	98.394%
65.0	5.330	0.527	907.764	.041%	98.451%
66.0	5.407	0.536	908.299	.042%	98.509%
67.0	5.569	0.552	908.851	.043%	98.569%
68.0	5.794	0.576	909.427	.045%	98.631%
69.0	6.040	0.604	910.031	.047%	98.697%
70.0	6.321	0.635	910.665	.049%	98.765%
71.0	6.595	0.668	911.333	.052%	98.838%
72.0	6.785	0.696	912.029	.054%	98.913%
73.0	6.926	0.717	912.746	.056%	98.991%
74.0	6.989	0.732	913.477	.057%	99.070%
75.0	6.855	0.731	914.209	.057%	99.150%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	6.504	0.709	914.918	.055%	99.227%
77.0	5.927	0.663	915.581	.051%	99.298%
78.0	5.428	0.608	916.189	.047%	99.364%
79.0	4.838	0.552	916.74	.043%	99.424%
80.0	4.725	0.516	917.256	.040%	99.480%
81.0	4.613	0.505	917.761	.039%	99.535%
82.0	4.528	0.496	918.256	.038%	99.589%
83.0	4.542	0.493	918.749	.038%	99.642%
84.0	4.500	0.493	919.242	.038%	99.696%
85.0	4.507	0.492	919.734	.038%	99.749%
86.0	4.380	0.486	920.219	.038%	99.802%
87.0	4.184	0.469	920.688	.036%	99.852%
88.0	4.155	0.457	921.145	.035%	99.902%
89.0	4.120	0.454	921.598	.035%	99.951%
90.0	4.099	0.451	922.049	.035%	100.000%

Zonal flux distribution table

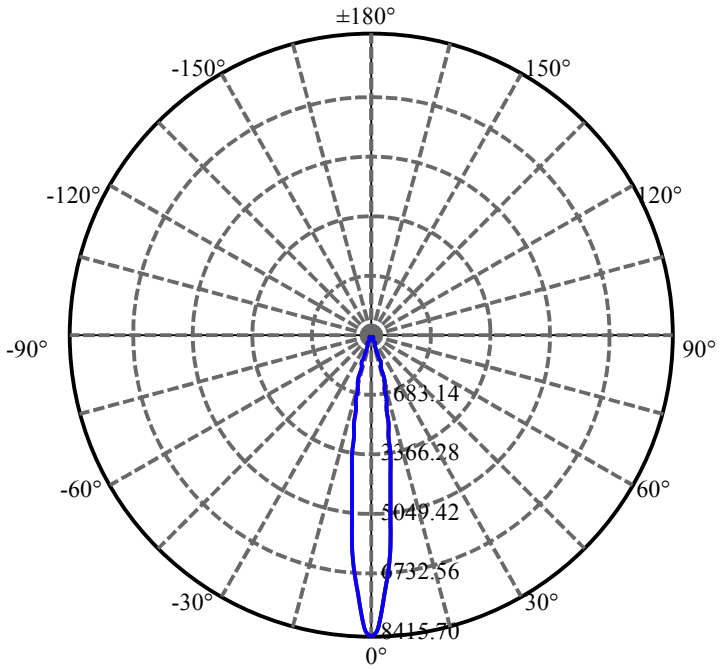
ZONAL LUMEN SUMMARY

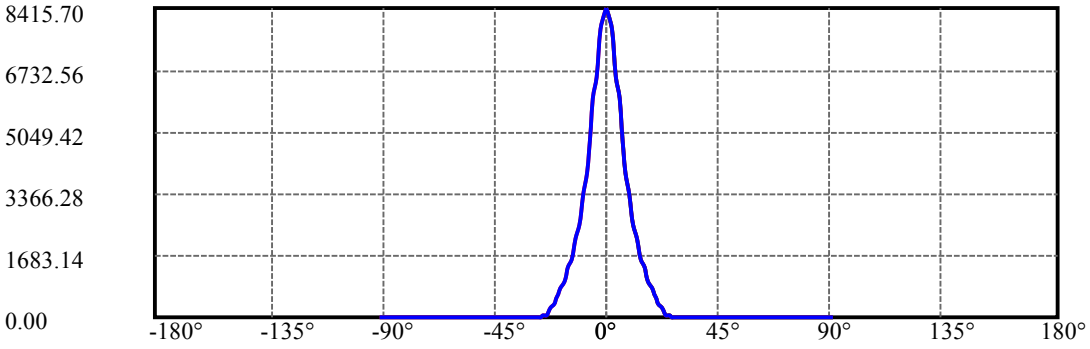
Zone	Lumens	%Lamp	%Fixt
0-30	890.48	69.14%	96.58%
0-40	895.22	69.50%	97.09%
0-60	905.16	70.28%	98.17%
0-90	921.60	71.55%	99.95%
0-120	921.60	71.55%	99.95%
0-180	922.05	71.59%	100.00%
60-90	16.96	1.32%	1.84%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-16.13	737.64	57.27%	80.00%

ZONAL LUMEN SUMMARY

0-10	460.70
10-20	380.68
20-30	49.11
30-40	4.73
40-50	4.82
50-60	5.12
60-70	5.51
70-80	6.59
80-90	4.34
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):

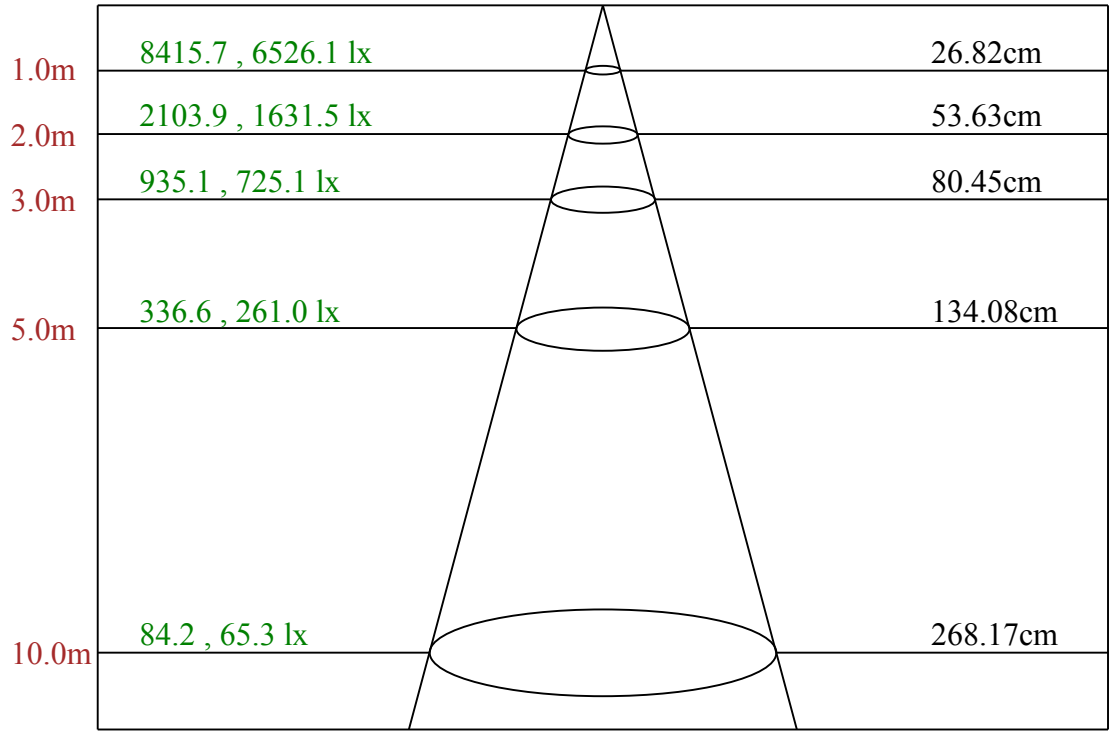
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:17.8 Right:17.8
:C90/270Left:17.8 Right:17.8

Beam Angle(50%Imax):C0/180Left:7.5 Right:7.5
:C90/270Left:7.5 Right:7.5

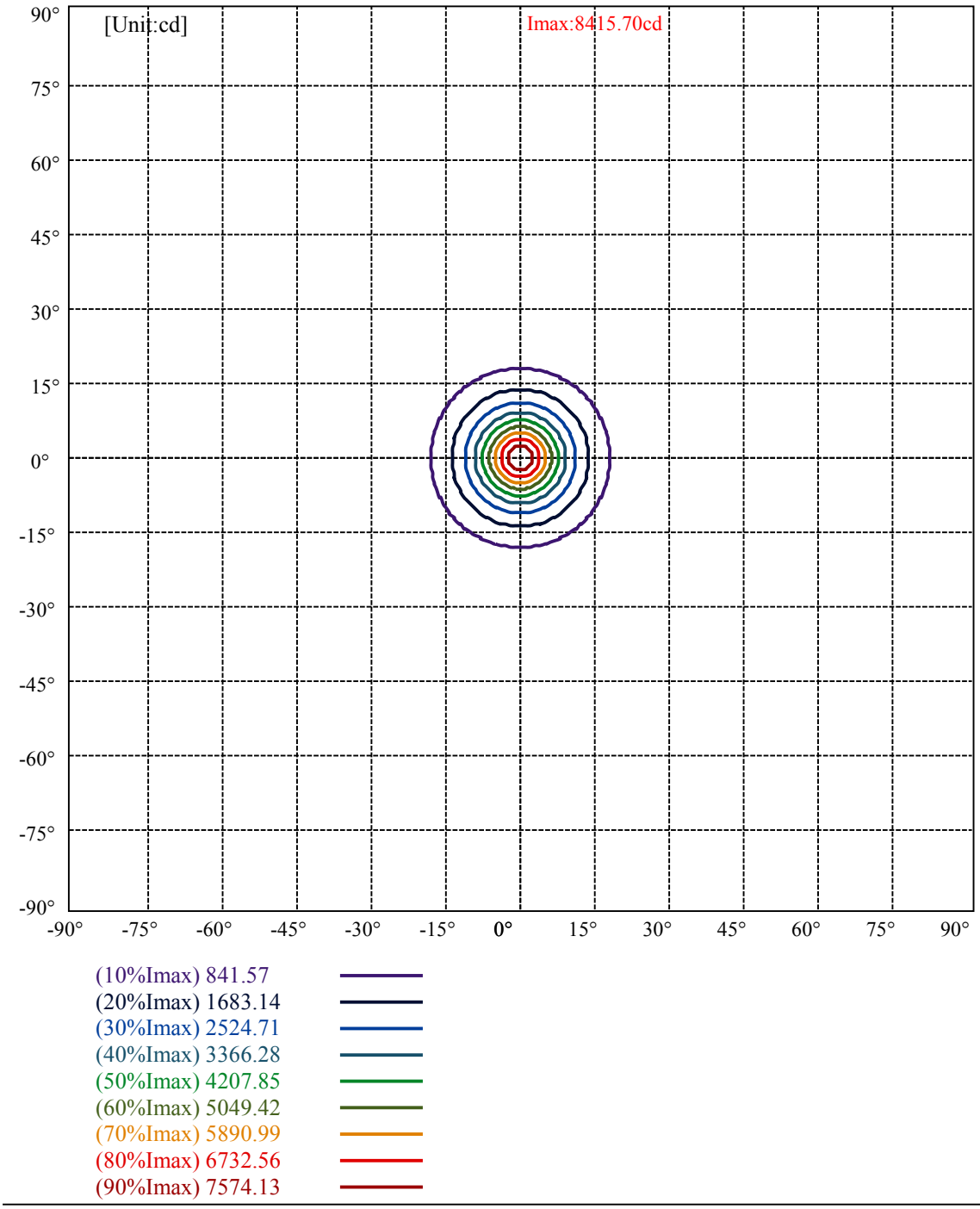
Lux distance Curve



Max , Ave

Beam angle of C0 plane 15.27

ISO-Intensity(V-H)

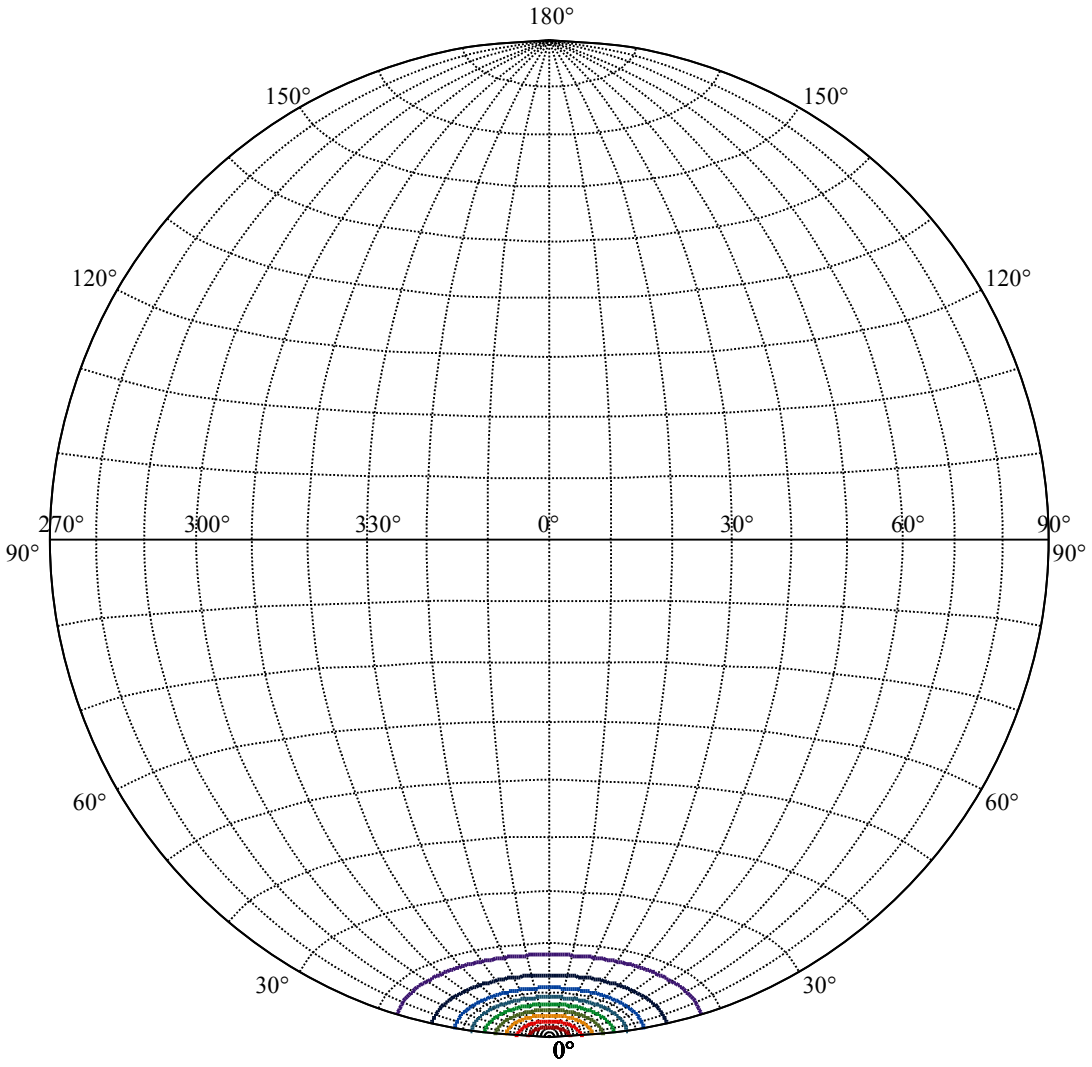


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/28
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:8415.70

(10%Imax) 841.57
(20%Imax) 1683.14
(30%Imax) 2524.71
(40%Imax) 3366.28
(50%Imax) 4207.85
(60%Imax) 5049.42
(70%Imax) 5890.99
(80%Imax) 6732.56
(90%Imax) 7574.13

Equipment: GMS1980 Date: 2019/10/28 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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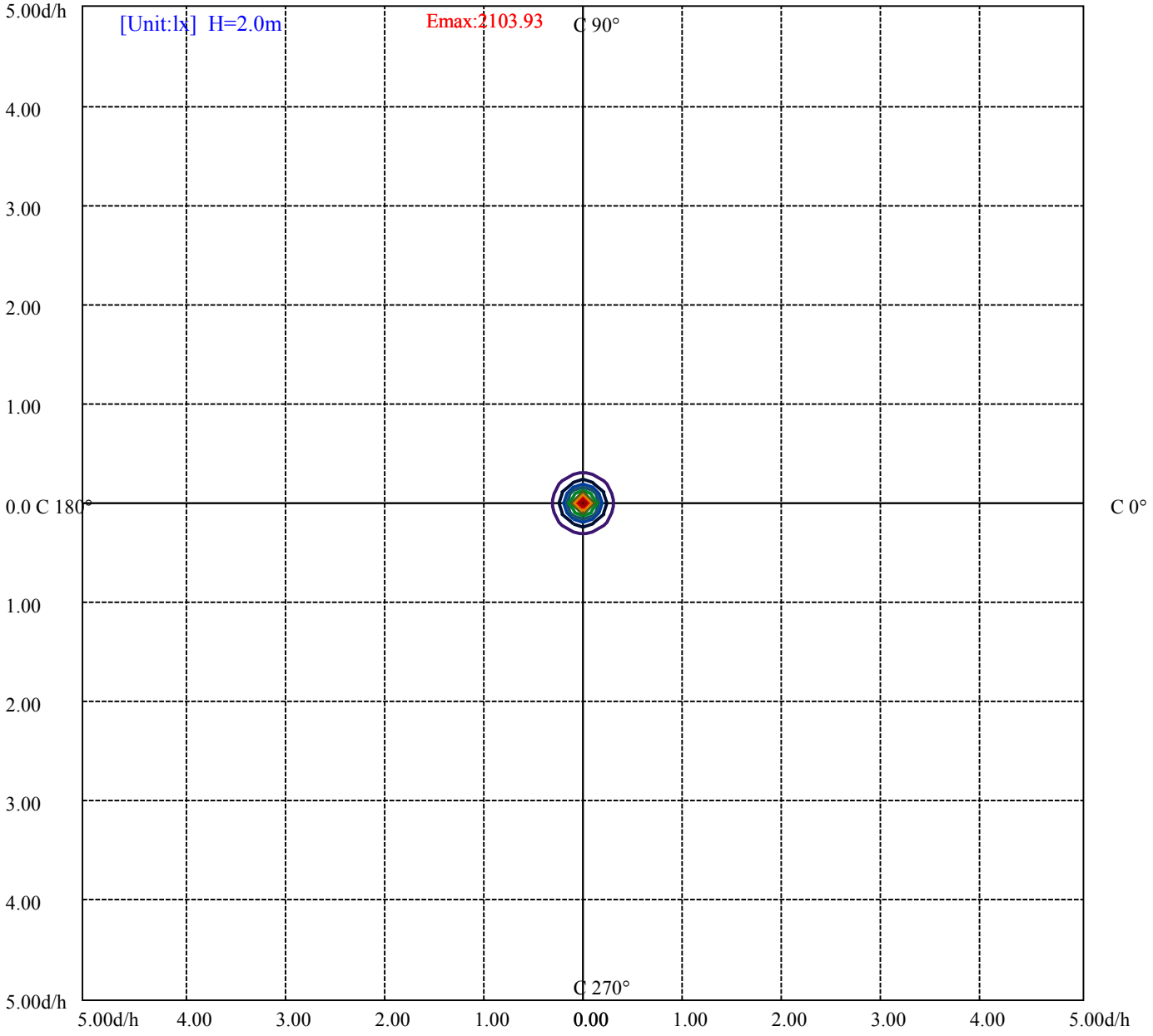
ISO illuminance diagram

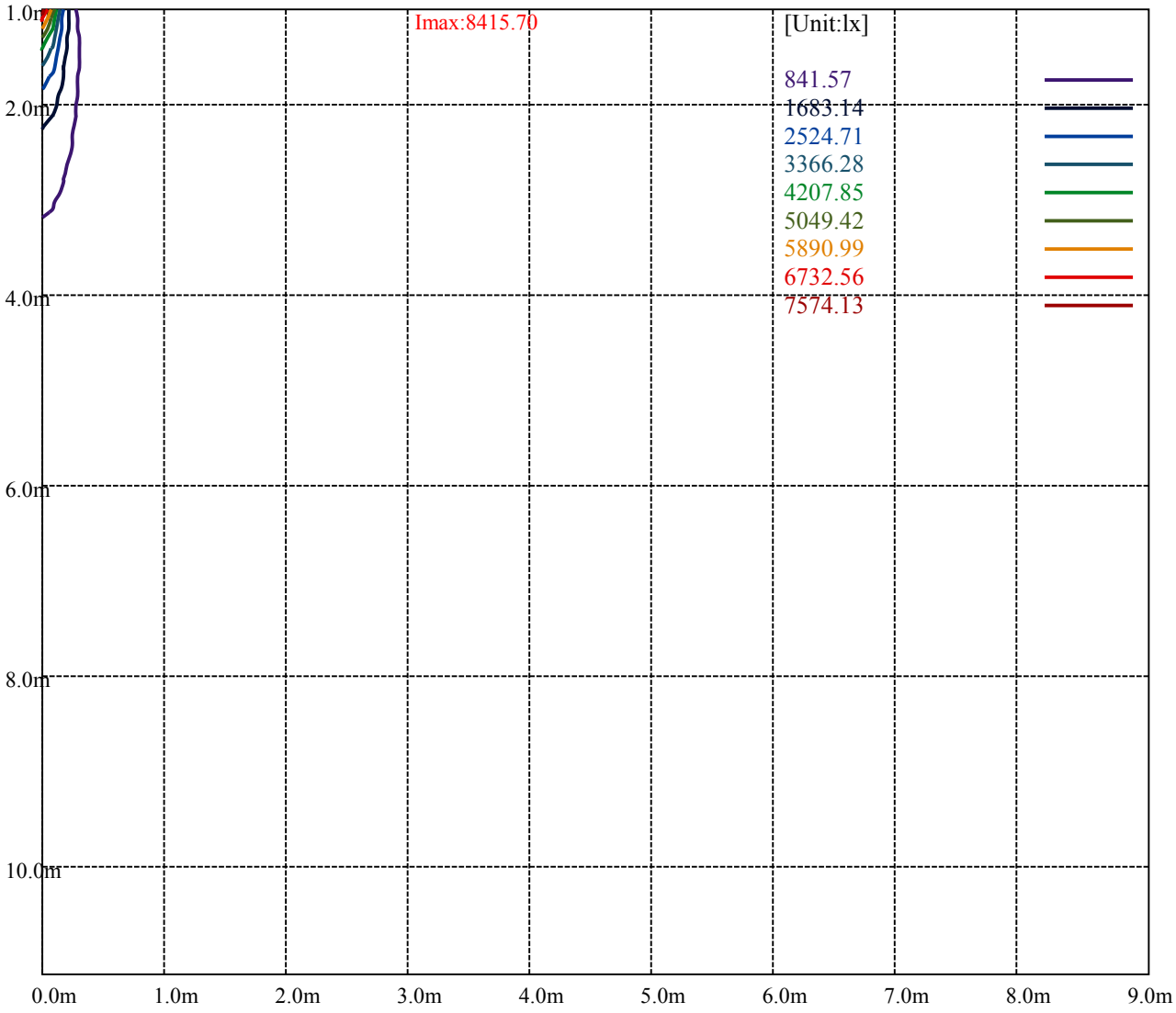


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/28
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/28
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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Luminance Limitting Curve(no luminous side)

Luminance Table

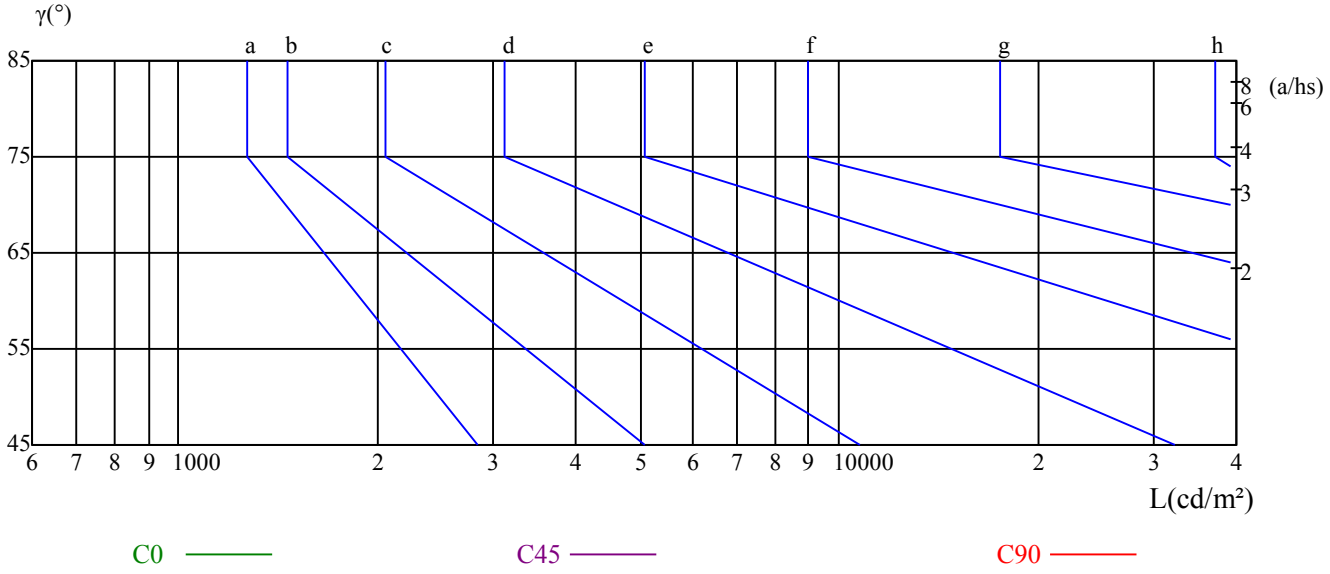
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

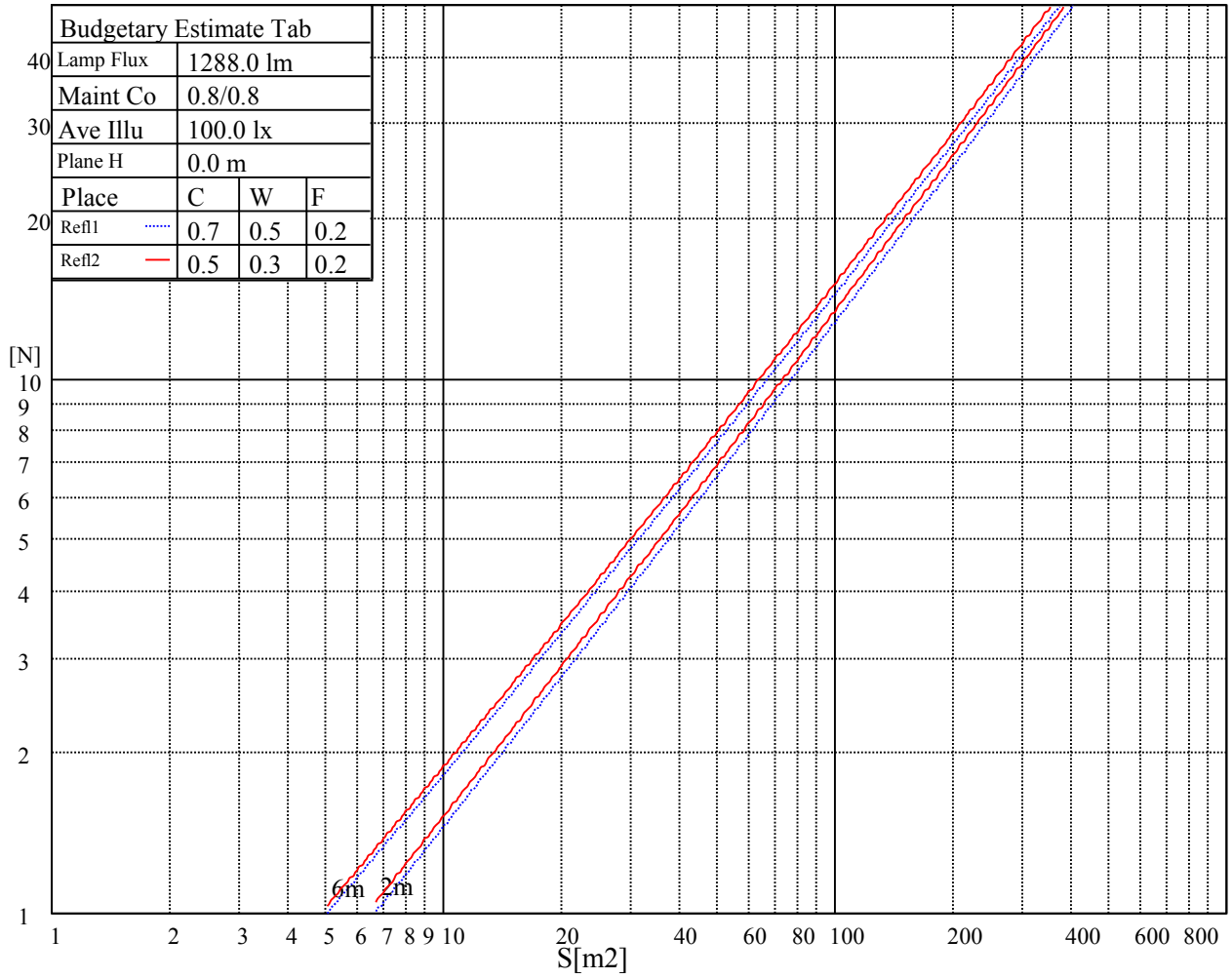


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/10/28
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

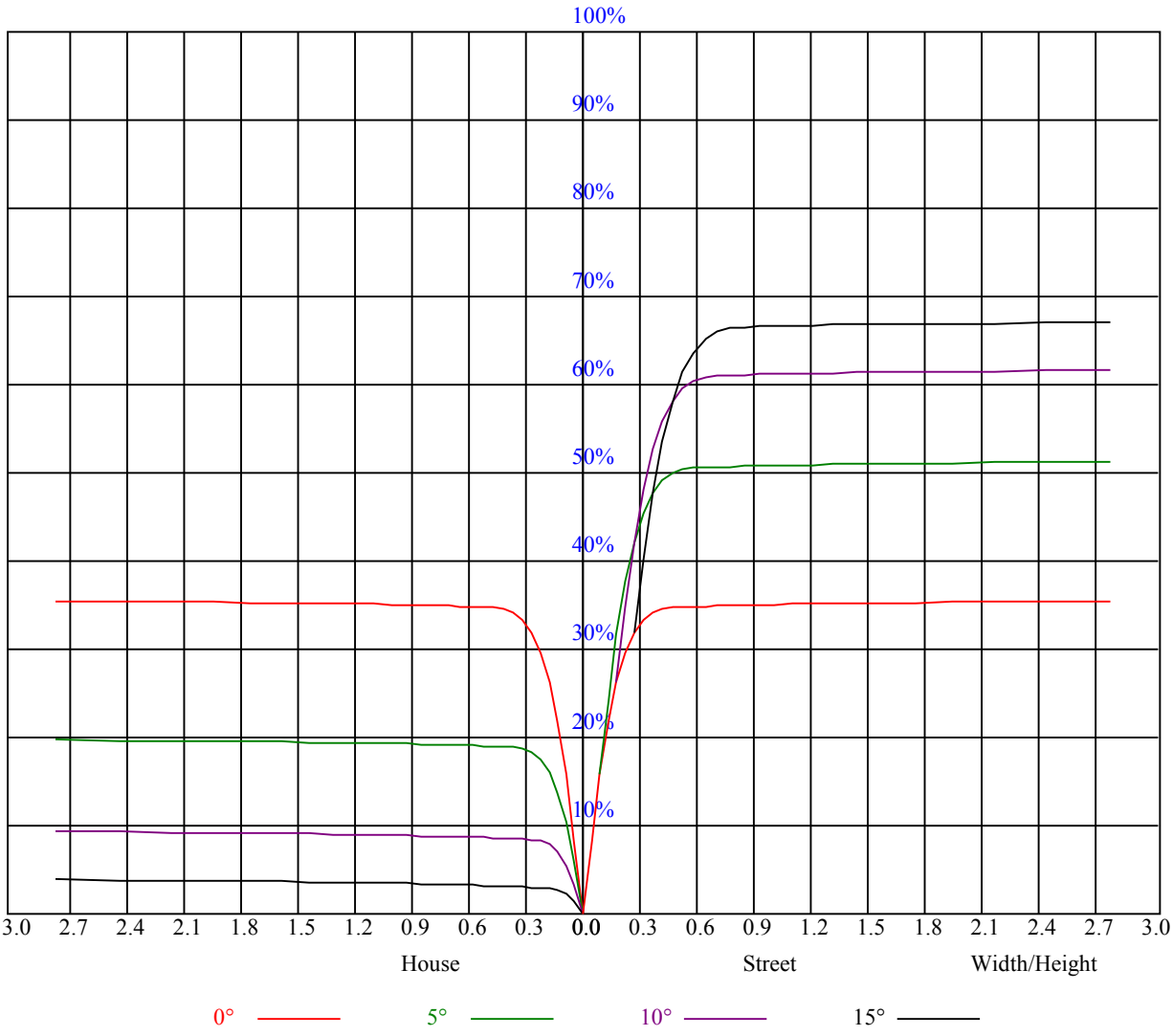


Equipment: GMS1980 Date: 2019/10/28 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	0.85	0.85	0.85	0.83	0.83	0.83	0.80	0.80	0.80	0.76	0.76	0.76	0.73	0.73	0.73	0.72
1	0.81	0.80	0.78	0.79	0.78	0.77	0.77	0.76	0.75	0.74	0.73	0.73	0.72	0.71	0.71	0.69
2	0.78	0.75	0.74	0.76	0.75	0.73	0.74	0.73	0.71	0.72	0.71	0.70	0.70	0.69	0.68	0.67
3	0.75	0.72	0.70	0.74	0.72	0.70	0.72	0.70	0.69	0.70	0.69	0.68	0.69	0.68	0.67	0.66
4	0.72	0.70	0.68	0.72	0.69	0.67	0.70	0.68	0.67	0.69	0.67	0.66	0.68	0.66	0.65	0.64
5	0.70	0.68	0.66	0.70	0.67	0.65	0.69	0.66	0.65	0.68	0.66	0.64	0.67	0.65	0.64	0.63
6	0.68	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.63	0.66	0.64	0.63	0.65	0.64	0.63	0.62
7	0.67	0.64	0.62	0.66	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.62	0.64	0.63	0.61	0.61
8	0.65	0.63	0.61	0.65	0.63	0.61	0.64	0.62	0.61	0.64	0.62	0.60	0.63	0.62	0.60	0.60
9	0.64	0.61	0.60	0.64	0.61	0.60	0.63	0.61	0.60	0.63	0.61	0.59	0.62	0.60	0.59	0.59
10	0.63	0.60	0.59	0.62	0.60	0.59	0.62	0.60	0.58	0.62	0.60	0.58	0.61	0.59	0.58	0.58

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/10/28	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	8413.31	8225.44	7780.50	7049.81	6432.19	5792.06	4977.00	4344.19	3768.75
45.0	8471.81	8181.56	7585.88	6894.00	6263.44	5625.00	4814.44	4180.50	3615.75
90.0	8365.50	7916.63	7346.25	6654.94	5947.31	5302.69	4570.88	3890.25	3368.25
135.0	8412.19	8285.06	7836.19	7200.56	6598.69	6066.56	5198.63	4546.69	4019.63
180.0	8413.31	8258.06	7862.63	7315.31	6640.31	6029.44	5318.44	4589.44	3991.50
225.0	8471.81	8463.94	8173.69	7611.19	6923.25	6290.44	5583.94	4864.50	4246.31
270.0	8365.50	8488.13	8283.38	7777.13	7193.25	6579.00	5797.69	5159.25	4520.25
315.0	8412.19	8212.50	7774.88	7149.38	6402.38	5851.13	5131.13	4339.69	3832.31
360.0	8413.31	8225.44	7780.50	7049.81	6432.19	5792.06	4977.00	4344.19	3768.75

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3220.31	2763.00	2410.88	2059.31	1756.13	1524.38	1294.31	1110.94	919.13
45.0	3042.56	2651.63	2299.50	1953.00	1661.06	1435.50	1217.81	1023.19	861.19
90.0	2934.00	2468.81	2145.38	1863.00	1557.00	1348.88	1117.63	990.73	796.39
135.0	3376.13	2907.56	2583.56	2171.81	1851.75	1605.94	1363.50	1176.19	983.81
180.0	3465.56	2932.88	2566.13	2242.69	1922.63	1645.88	1424.81	1089.73	1003.16
225.0	3691.69	3119.06	2729.81	2377.69	2030.63	1735.31	1504.13	1110.77	1068.64
270.0	3802.50	3314.81	2901.38	2488.50	2125.69	1843.88	1569.94	1329.75	1145.25
315.0	3328.31	2764.13	2449.69	2127.38	1811.25	1544.63	1337.63	1106.44	940.73
360.0	3220.31	2763.00	2410.88	2059.31	1756.13	1524.38	1294.31	1110.94	919.13

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	751.50	609.75	460.13	319.50	291.38	126.51	52.20	20.64	14.68
45.0	699.19	558.56	411.19	290.25	170.61	96.75	44.55	16.54	13.28
90.0	656.38	514.07	368.16	239.34	140.85	75.71	32.01	14.91	12.49
135.0	806.63	664.88	509.06	364.50	289.69	152.72	65.76	27.51	15.19
180.0	839.81	675.11	532.52	387.23	271.29	164.14	84.99	37.97	16.20
225.0	906.13	744.98	603.23	451.24	310.39	203.63	121.05	50.18	20.76
270.0	958.50	810.00	649.69	510.19	365.06	291.94	136.18	69.30	28.01
315.0	792.96	649.80	495.06	351.28	241.43	140.06	65.03	26.33	15.24
360.0	751.50	609.75	460.13	319.50	291.38	126.51	52.20	20.64	14.68

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	12.32	11.03	10.07	9.28	8.61	8.16	7.65	7.37	7.03
45.0	11.87	10.63	9.90	9.28	8.66	8.21	7.93	7.59	7.31
90.0	11.31	10.24	9.56	9.00	8.55	8.10	7.82	7.54	7.37
135.0	12.09	10.91	10.07	9.34	8.72	8.27	7.88	7.54	7.26
180.0	12.88	11.36	10.35	9.56	8.94	8.33	7.93	7.65	7.31
225.0	14.79	12.71	11.53	10.58	9.68	9.06	8.55	8.04	7.76
270.0	15.41	12.94	11.70	10.63	9.84	9.11	8.55	8.16	7.82
315.0	12.71	11.19	10.13	9.39	8.78	8.10	7.71	7.37	7.03
360.0	12.32	11.03	10.07	9.28	8.61	8.16	7.65	7.37	7.03

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	6.81	6.58	6.47	6.30	6.13	6.08	5.96	5.91	5.85
45.0	7.20	6.98	6.81	6.69	6.58	6.47	6.41	6.36	6.30
90.0	7.20	7.09	6.98	6.86	6.81	6.81	6.81	6.81	6.81
135.0	6.98	6.86	6.75	6.58	6.53	6.41	6.30	6.24	6.19
180.0	7.09	6.92	6.75	6.53	6.41	6.30	6.19	6.13	6.08
225.0	7.43	7.20	7.03	6.81	6.64	6.53	6.47	6.41	6.30
270.0	7.48	7.31	7.09	6.92	6.81	6.75	6.69	6.69	6.69
315.0	6.81	6.64	6.47	6.30	6.19	6.13	6.08	5.96	5.91
360.0	6.81	6.58	6.47	6.30	6.13	6.08	5.96	5.91	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	5.74	5.74	5.68	5.63	5.57	5.51	5.46	5.46	5.40
45.0	6.24	6.19	6.13	6.08	6.02	5.96	5.96	5.85	5.79
90.0	6.81	6.86	6.86	6.86	6.86	6.81	6.81	6.75	6.69
135.0	6.13	6.08	6.02	6.02	5.96	5.91	5.91	5.85	5.79
180.0	6.02	5.96	5.85	5.79	5.74	5.74	5.68	5.63	5.57
225.0	6.24	6.13	6.13	6.02	5.96	5.91	5.85	5.79	5.74
270.0	6.69	6.69	6.64	6.64	6.58	6.53	6.47	6.41	6.30
315.0	5.85	5.79	5.74	5.68	5.63	5.57	5.57	5.51	5.46
360.0	5.74	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	5.29	5.23	5.18	5.18	5.12	5.06	5.06
45.0	5.74	5.68	5.63	5.63	5.57	5.51	5.51	5.46	5.46
90.0	6.53	6.41	6.30	6.13	6.02	5.91	5.85	5.79	5.79
135.0	5.74	5.68	5.68	5.63	5.63	5.57	5.51	5.51	5.46
180.0	5.51	5.46	5.46	5.46	5.40	5.34	5.29	5.29	5.23
225.0	5.68	5.63	5.57	5.51	5.46	5.40	5.40	5.34	5.29
270.0	6.19	6.08	5.96	5.85	5.74	5.63	5.57	5.46	5.40
315.0	5.46	5.40	5.34	5.34	5.29	5.23	5.23	5.23	5.18
360.0	5.34	5.34	5.29	5.23	5.18	5.18	5.12	5.06	5.06

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	5.06	5.01	5.01	4.95	4.89	4.89	4.84	4.84	4.84
45.0	5.46	5.40	5.40	5.40	5.46	5.46	5.57	5.68	5.79
90.0	5.85	5.85	6.08	6.92	8.21	10.18	11.59	12.38	12.77
135.0	5.46	5.40	5.40	5.34	5.34	5.29	5.29	5.23	5.18
180.0	5.18	5.18	5.12	5.06	5.06	5.01	5.01	4.95	4.95
225.0	5.29	5.29	5.23	5.18	5.18	5.12	5.12	5.18	5.23
270.0	5.34	5.29	5.29	5.29	5.34	5.34	5.85	7.31	8.94
315.0	5.18	5.12	5.12	5.12	5.06	5.06	5.06	5.01	5.06
360.0	5.06	5.01	5.01	4.95	4.89	4.89	4.84	4.84	4.84

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.78	4.73	4.73	4.67	4.67	4.61	4.56	4.50	4.44
45.0	5.91	6.02	6.02	5.96	5.79	5.51	5.18	4.78	4.50
90.0	12.77	12.60	12.04	10.41	7.88	5.68	4.89	4.84	4.73
135.0	5.18	5.29	5.68	6.19	6.41	6.19	5.91	5.29	5.46
180.0	4.89	4.89	4.84	4.78	4.78	4.73	4.73	4.61	4.50
225.0	5.29	5.40	5.51	5.51	5.51	5.40	5.23	4.95	4.67
270.0	10.46	11.53	11.98	12.04	11.59	9.90	7.82	4.95	4.67
315.0	5.01	4.95	5.12	5.29	5.40	5.40	5.12	4.78	4.84
360.0	4.78	4.73	4.73	4.67	4.67	4.61	4.56	4.50	4.44

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.39	4.44	4.33	4.33	4.28	4.22	4.22	4.16	4.16
45.0	4.33	4.28	4.22	4.22	4.22	4.16	4.11	4.05	4.05
90.0	4.67	4.61	4.67	4.73	4.84	4.22	4.22	4.11	4.11
135.0	5.40	5.12	5.40	5.12	5.12	5.23	4.22	4.22	4.16
180.0	4.50	4.44	4.44	4.39	4.33	4.33	4.22	4.22	4.16
225.0	4.44	4.28	4.28	4.22	4.16	4.16	4.11	4.11	4.05
270.0	4.50	4.39	4.39	4.39	4.44	4.44	4.16	4.16	4.11
315.0	4.67	4.67	4.61	4.61	4.67	4.28	4.22	4.22	4.16
360.0	4.39	4.44	4.33	4.33	4.28	4.22	4.22	4.16	4.16

Intensity data(cd)

C/γ(°)	90.0
0.0	4.16
45.0	4.05
90.0	4.11
135.0	4.11
180.0	4.11
225.0	4.05
270.0	4.11
315.0	4.11
360.0	4.16