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Nata

LumCAT: 1-0927-M
Luminaire: 99.02.73.179+92.76.853.00

Report No: 220608-B007	Voltage(V): 38.4300
Test No: 220608-C007	Current(A): 0.3610
LampCAT: CREE CXA1507	Power (W): 13.8730
Lamp flux(lm): 1084.9	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 798.85
Efficiency(%): 73.63%
Lumens(lm)/Power(W): 57.58
Central intensity(cd): 4423.507
Maximum intensity(cd): 4423.507
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=23.7
[C90/270]Total=23.7
Field angle(10%Imax): [C0/180]Total=40.8
[C90/270]Total=40.8
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.40 C90_270=0.40
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 73.63%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.536%

Equipment: GMS1980	Date: 2022/6/08	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4423.507	0.000	0	.000%	.000%
1.0	4399.233	4.222	4.222	.389%	.528%
2.0	4341.272	12.545	16.767	1.156%	2.099%
3.0	4233.941	20.509	37.276	1.890%	4.666%
4.0	4094.792	27.879	65.155	2.570%	8.156%
5.0	3928.977	34.518	99.673	3.182%	12.477%
6.0	3720.664	40.201	139.873	3.705%	17.509%
7.0	3479.113	44.689	184.562	4.119%	23.104%
8.0	3247.346	48.140	232.702	4.437%	29.130%
9.0	2977.188	50.446	283.149	4.650%	35.445%
10.0	2690.748	51.293	334.442	4.728%	41.866%
11.0	2438.142	51.248	385.69	4.724%	48.281%
12.0	2177.022	50.450	436.14	4.650%	54.596%
13.0	1893.592	48.308	484.448	4.453%	60.643%
14.0	1649.912	45.357	529.805	4.181%	66.321%
15.0	1405.672	41.948	571.753	3.866%	71.572%
16.0	1198.658	38.161	609.914	3.517%	76.349%
17.0	991.532	34.107	644.021	3.144%	80.619%
18.0	802.511	29.580	673.601	2.726%	84.322%
19.0	642.097	25.133	698.734	2.317%	87.468%
20.0	492.566	20.767	719.501	1.914%	90.067%
21.0	362.259	16.414	735.916	1.513%	92.122%
22.0	263.891	12.583	748.499	1.160%	93.697%
23.0	182.052	9.357	757.856	.862%	94.869%
24.0	115.921	6.515	764.37	.600%	95.684%
25.0	72.443	4.283	768.653	.395%	96.220%
26.0	39.579	2.644	771.298	.244%	96.551%
27.0	23.296	1.538	772.836	.142%	96.744%
28.0	15.371	0.979	773.815	.090%	96.866%
29.0	12.496	0.729	774.544	.067%	96.958%
30.0	10.808	0.629	775.173	.058%	97.036%
31.0	9.613	0.568	775.741	.052%	97.108%
32.0	8.821	0.528	776.27	.049%	97.174%
33.0	8.186	0.501	776.771	.046%	97.236%
34.0	7.656	0.479	777.25	.044%	97.296%
35.0	7.178	0.461	777.711	.042%	97.354%
36.0	6.760	0.444	778.154	.041%	97.410%
37.0	6.416	0.430	778.584	.040%	97.463%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	6.117	0.418	779.003	.039%	97.516%
39.0	5.848	0.408	779.411	.038%	97.567%
40.0	5.587	0.399	779.81	.037%	97.617%
41.0	5.378	0.390	780.2	.036%	97.666%
42.0	5.199	0.384	780.584	.035%	97.714%
43.0	5.042	0.379	780.964	.035%	97.761%
44.0	4.907	0.375	781.339	.035%	97.808%
45.0	4.780	0.372	781.712	.034%	97.855%
46.0	4.661	0.369	782.081	.034%	97.901%
47.0	4.549	0.366	782.447	.034%	97.947%
48.0	4.467	0.364	782.812	.034%	97.993%
49.0	4.384	0.363	783.175	.034%	98.038%
50.0	4.302	0.362	783.537	.033%	98.083%
51.0	4.242	0.362	783.899	.033%	98.129%
52.0	4.175	0.361	784.26	.033%	98.174%
53.0	4.108	0.360	784.62	.033%	98.219%
54.0	4.071	0.360	784.981	.033%	98.264%
55.0	4.033	0.362	785.342	.033%	98.309%
56.0	3.966	0.361	785.704	.033%	98.355%
57.0	3.936	0.361	786.065	.033%	98.400%
58.0	3.899	0.362	786.428	.033%	98.445%
59.0	3.869	0.363	786.791	.033%	98.491%
60.0	3.847	0.365	787.155	.034%	98.536%
61.0	3.809	0.365	787.521	.034%	98.582%
62.0	3.787	0.366	787.887	.034%	98.628%
63.0	3.772	0.368	788.254	.034%	98.674%
64.0	3.720	0.368	788.622	.034%	98.720%
65.0	3.720	0.368	788.99	.034%	98.766%
66.0	3.705	0.370	789.36	.034%	98.812%
67.0	3.682	0.371	789.732	.034%	98.859%
68.0	3.675	0.373	790.105	.034%	98.906%
69.0	3.675	0.375	790.479	.035%	98.953%
70.0	3.637	0.376	790.855	.035%	99.000%
71.0	3.660	0.377	791.232	.035%	99.047%
72.0	3.667	0.381	791.613	.035%	99.094%
73.0	3.667	0.384	791.997	.035%	99.142%
74.0	3.772	0.391	792.388	.036%	99.191%
75.0	3.794	0.400	792.788	.037%	99.241%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.921	0.410	793.197	.038%	99.293%
77.0	3.974	0.421	793.618	.039%	99.345%
78.0	3.944	0.424	794.042	.039%	99.398%
79.0	3.959	0.425	794.466	.039%	99.452%
80.0	3.921	0.425	794.891	.039%	99.505%
81.0	3.817	0.418	795.31	.039%	99.557%
82.0	3.847	0.416	795.725	.038%	99.609%
83.0	3.847	0.418	796.144	.039%	99.662%
84.0	3.884	0.421	796.565	.039%	99.714%
85.0	3.869	0.423	796.988	.039%	99.767%
86.0	3.443	0.400	797.388	.037%	99.817%
87.0	3.301	0.369	797.757	.034%	99.863%
88.0	3.301	0.362	798.118	.033%	99.909%
89.0	3.346	0.364	798.483	.034%	99.954%
90.0	3.301	0.364	798.847	.034%	100.000%

Zonal flux distribution table

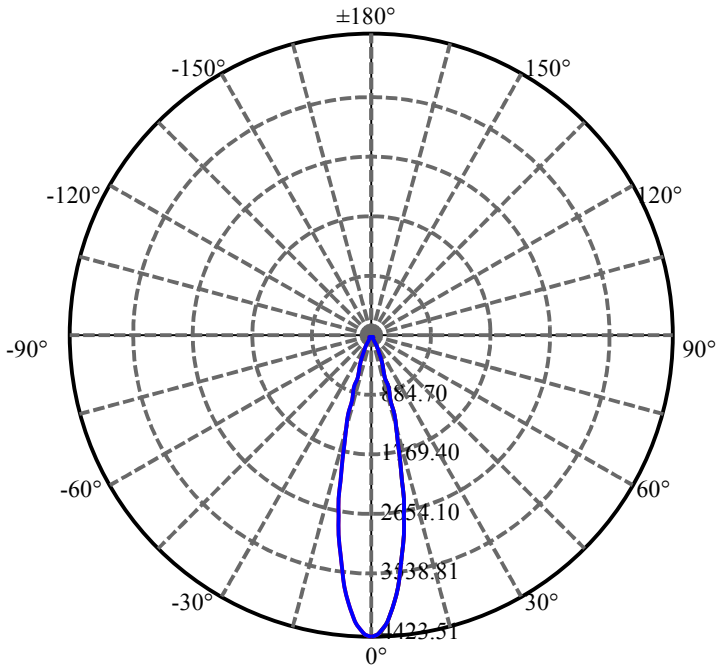
ZONAL LUMEN SUMMARY

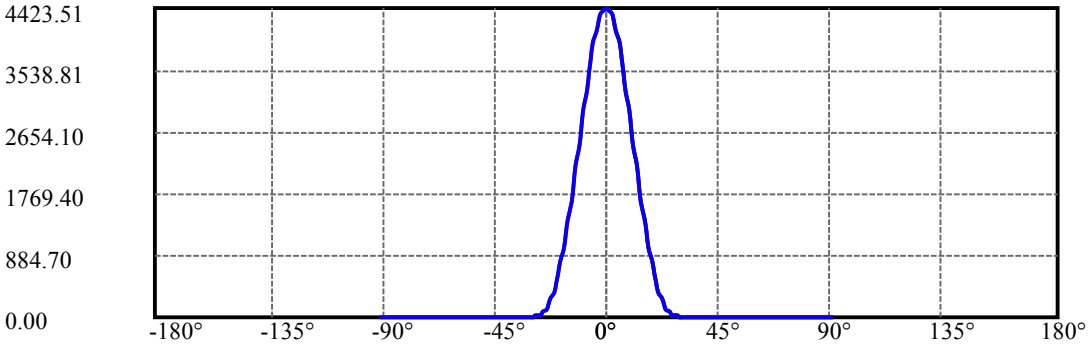
Zone	Lumens	%Lamp	%Fixt
0-30	775.17	71.45%	97.04%
0-40	779.81	71.88%	97.62%
0-60	787.16	72.55%	98.54%
0-90	798.48	73.60%	99.95%
0-120	798.48	73.60%	99.95%
0-180	798.85	73.63%	100.00%
60-90	11.69	1.08%	1.46%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-16.86	639.08	58.91%	80.00%

ZONAL LUMEN SUMMARY

0-10	334.44
10-20	385.06
20-30	55.67
30-40	4.64
40-50	3.73
50-60	3.62
60-70	3.70
70-80	4.04
80-90	3.59
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):

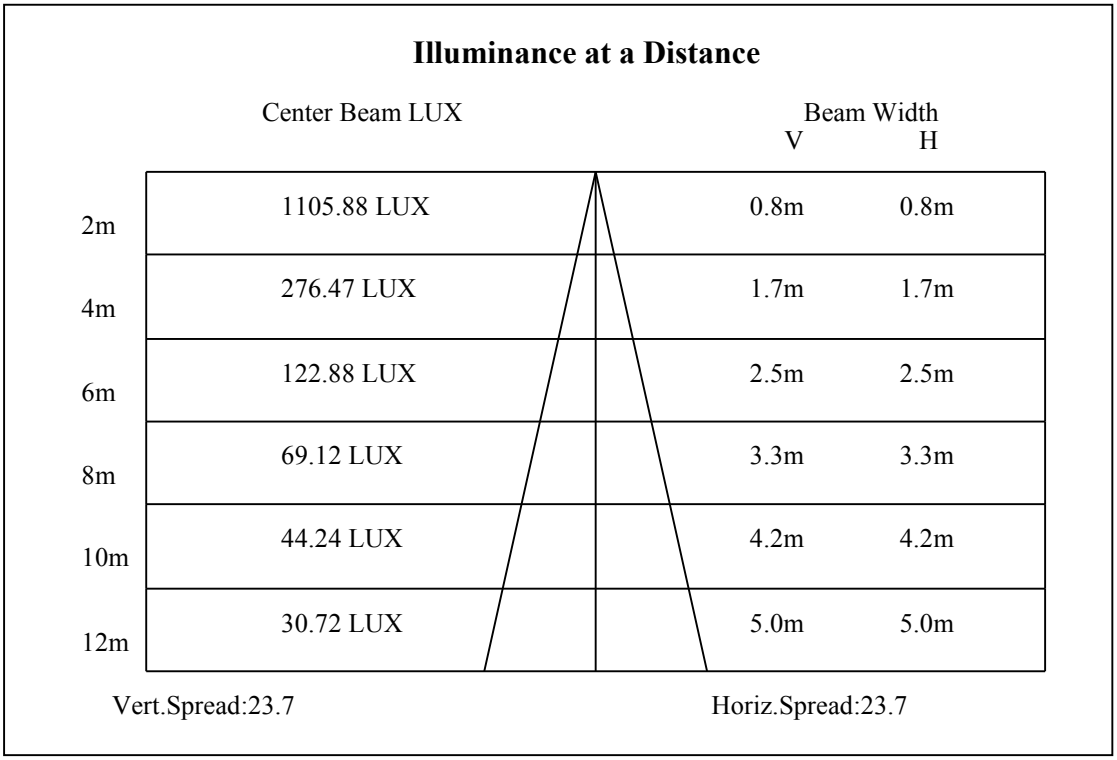
C0/C180:

C90/C270:

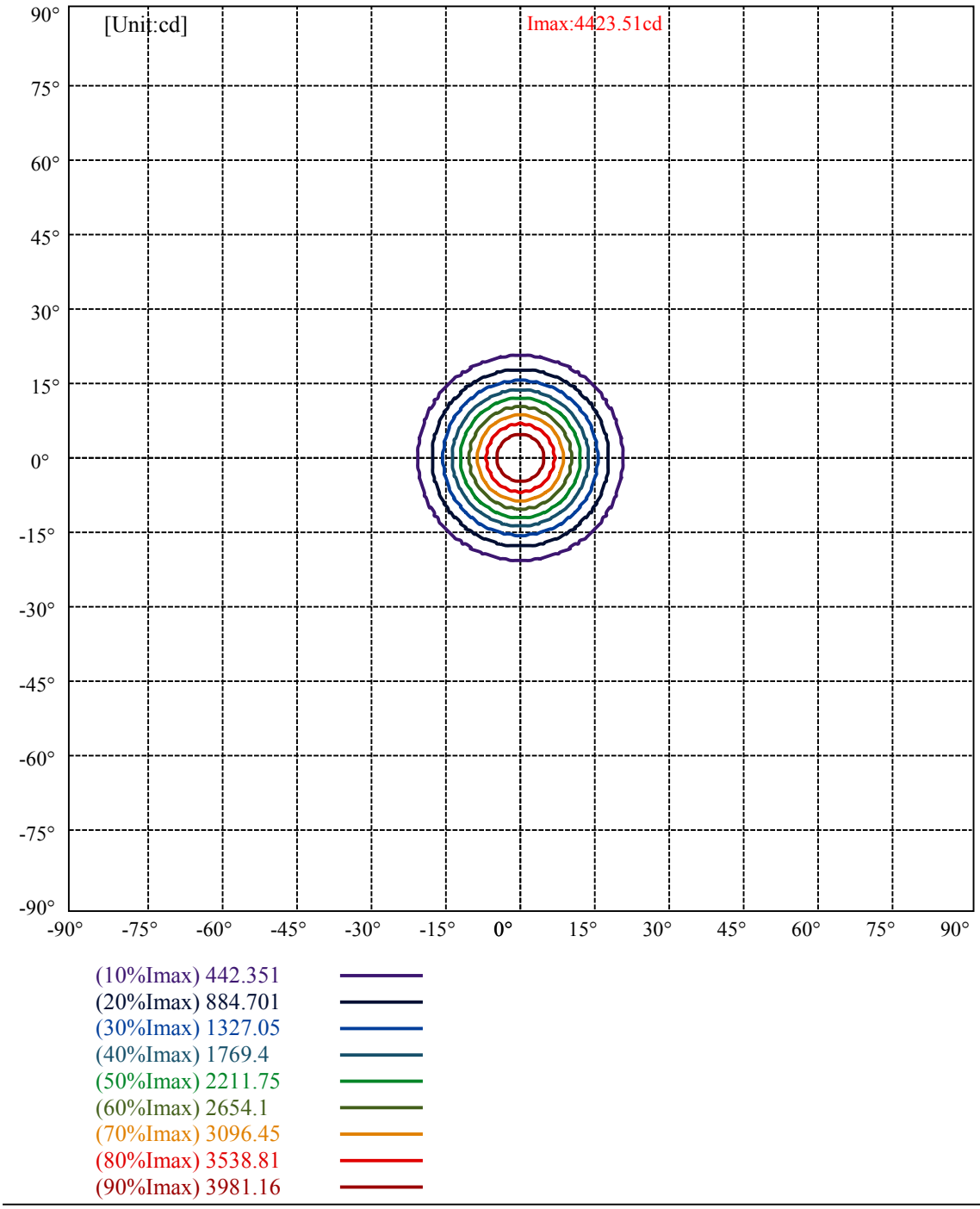
Field angle(10%Imax):C0/180Left:20.4 Right:20.4
:C90/270Left:20.4 Right:20.4

Beam Angle(50%Imax):C0/180Left:11.9 Right:11.9
:C90/270Left:11.9 Right:11.9

Lux distance Curve



ISO-Intensity(V-H)

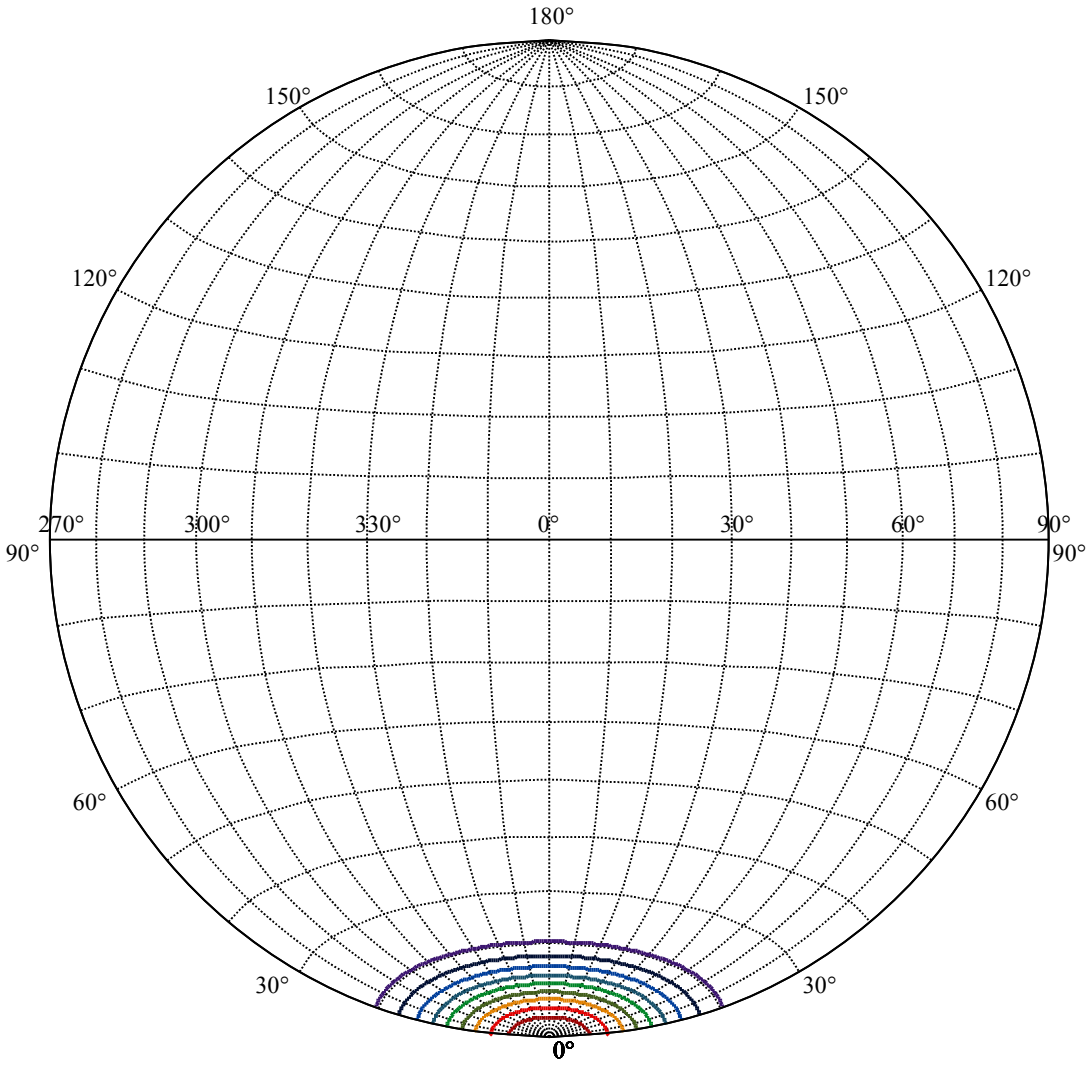


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:4423.51

(10%Imax) 442.351
(20%Imax) 884.701
(30%Imax) 1327.05
(40%Imax) 1769.4
(50%Imax) 2211.75
(60%Imax) 2654.1
(70%Imax) 3096.45
(80%Imax) 3538.81
(90%Imax) 3981.16

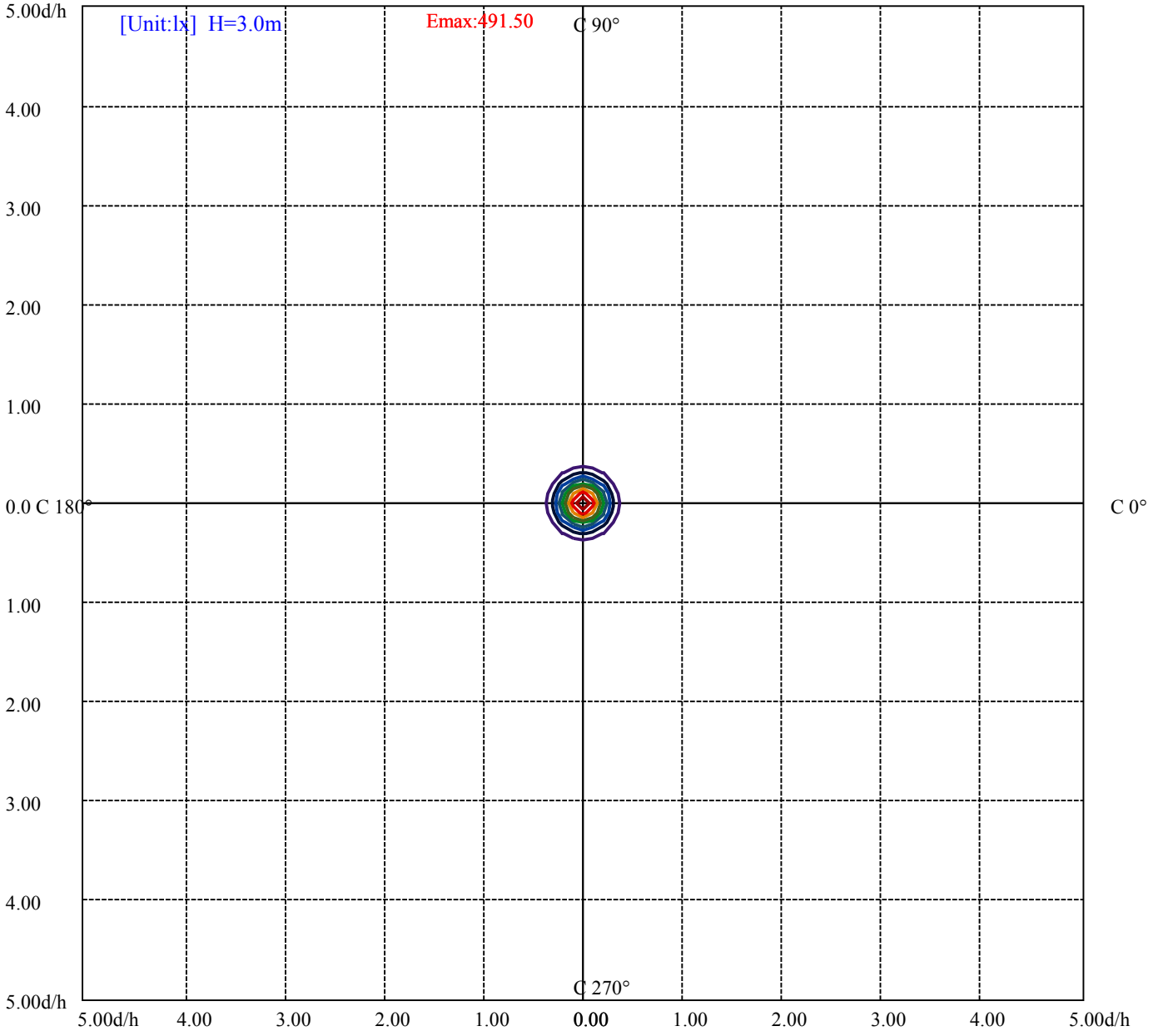
Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Nata 1-0927-M

ISO illuminance diagram

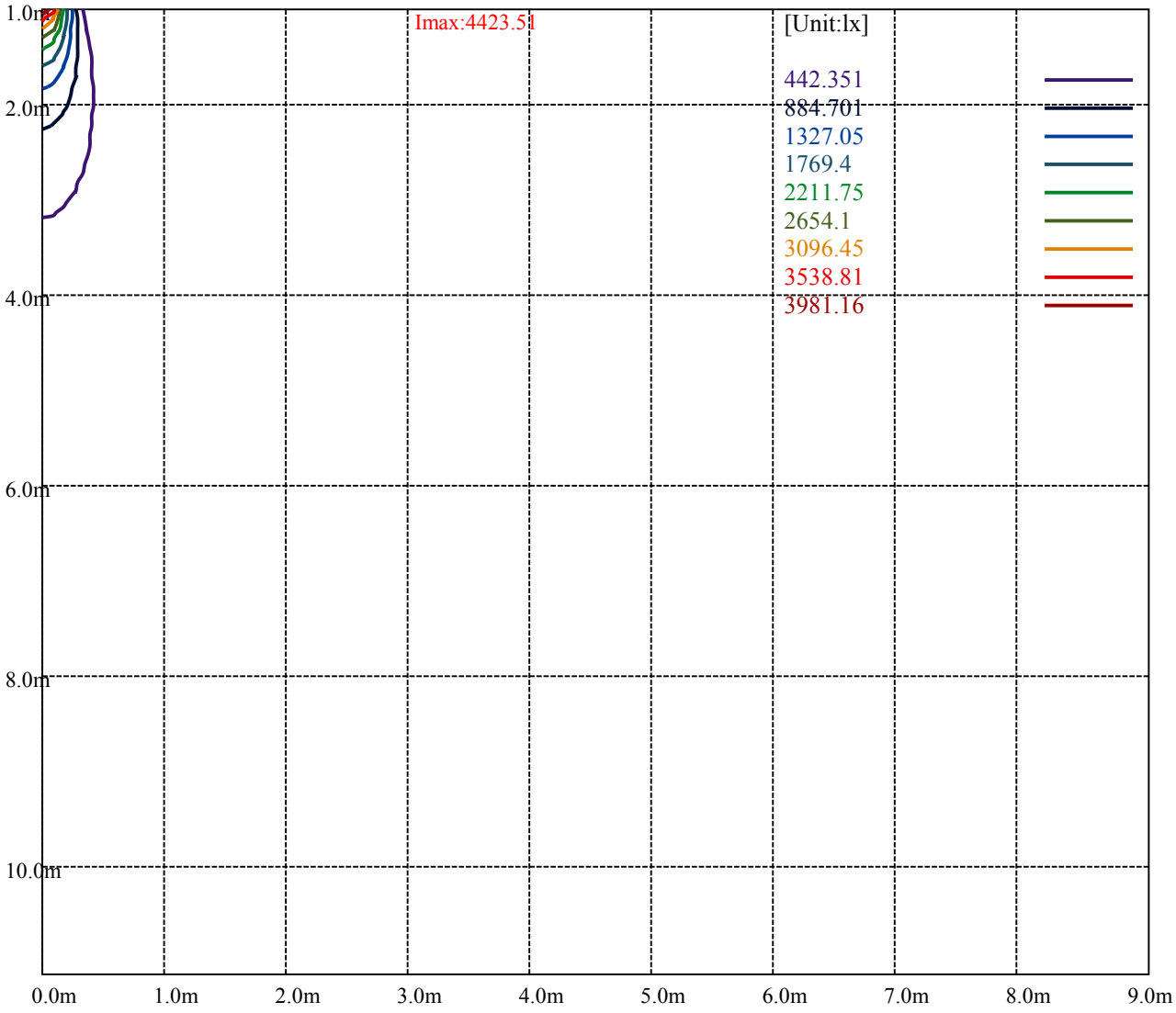


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Luminance Limitting Curve(no luminous side)

Luminance Table

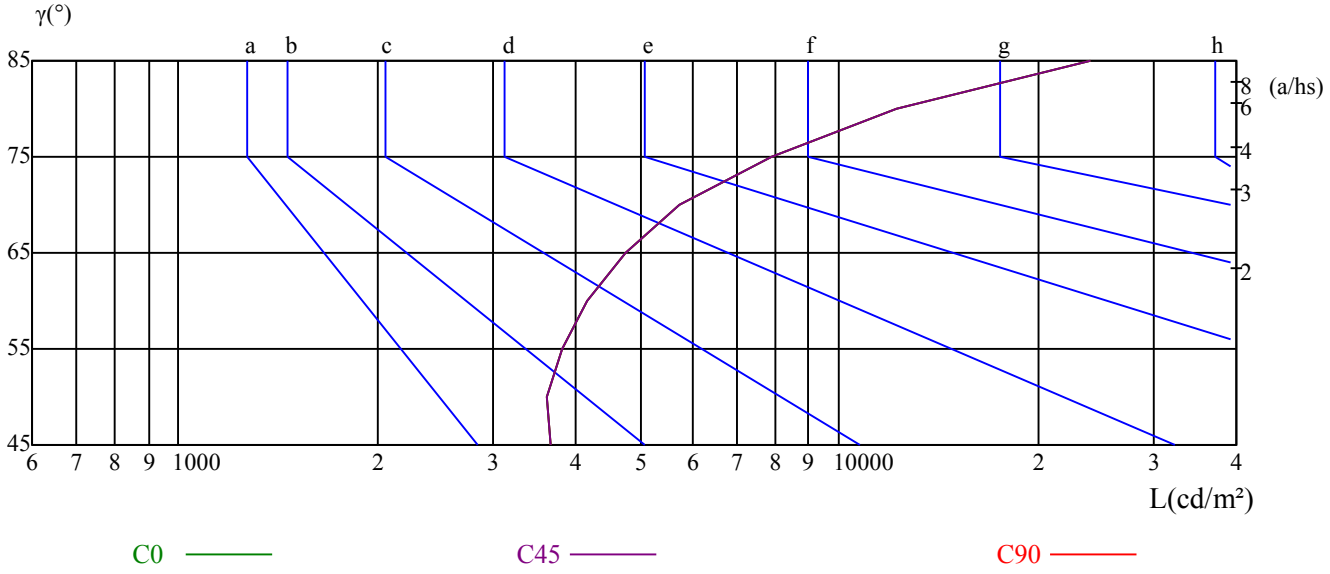
γ	45	50	55	60	65	70	75	80	85
C0	3656	3620	3803	4161	4760	5752	7929	12213	24009
C45	3656	3620	3803	4161	4760	5752	7929	12213	24009
C90	3656	3620	3803	4161	4760	5752	7929	12213	24009

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4760	4760	4760	7929	7929	7929	24009	24009	24009

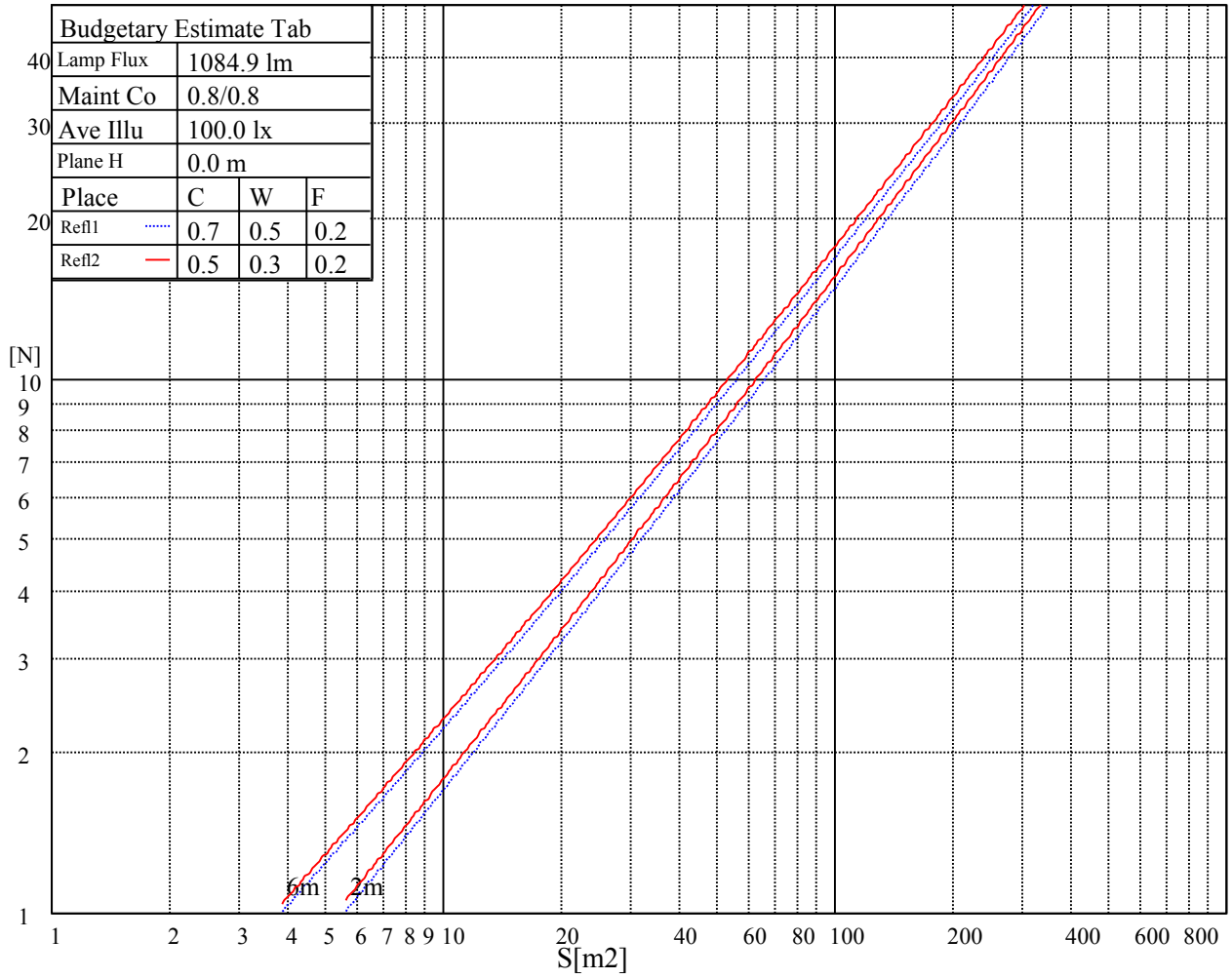
Glare Table

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

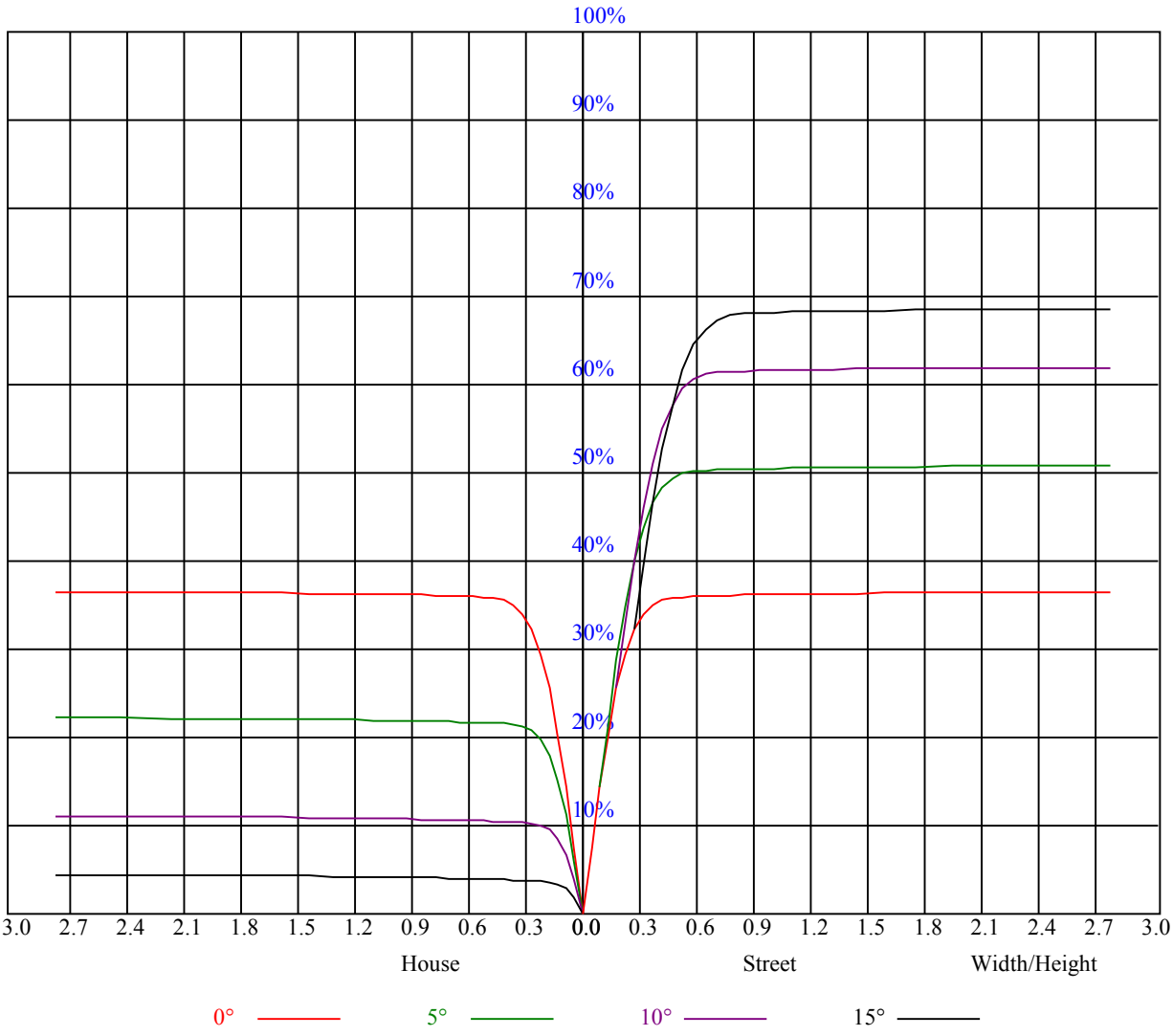


Equipment: GMS1980 Date: 2022/6/08 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.88	0.88	0.88	0.86	0.86	0.86	0.82	0.82	0.82	0.78	0.78	0.78	0.75	0.75	0.75	0.74
1	0.83	0.82	0.80	0.82	0.80	0.79	0.79	0.78	0.77	0.76	0.75	0.75	0.73	0.73	0.72	0.71
2	0.79	0.77	0.76	0.78	0.76	0.75	0.76	0.74	0.73	0.74	0.73	0.72	0.72	0.71	0.70	0.69
3	0.76	0.74	0.72	0.75	0.73	0.71	0.74	0.72	0.70	0.72	0.70	0.69	0.70	0.69	0.68	0.67
4	0.74	0.71	0.69	0.73	0.71	0.69	0.72	0.70	0.68	0.70	0.69	0.67	0.69	0.68	0.66	0.66
5	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.67	0.66	0.69	0.67	0.65	0.68	0.66	0.65	0.64
6	0.69	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.64	0.66	0.65	0.63	0.62
7	0.68	0.65	0.63	0.67	0.65	0.63	0.66	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.62	0.61
8	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.64	0.62	0.61	0.64	0.62	0.60	0.60
9	0.64	0.62	0.60	0.64	0.61	0.60	0.63	0.61	0.59	0.63	0.61	0.59	0.62	0.61	0.59	0.59
10	0.63	0.60	0.58	0.63	0.60	0.58	0.62	0.60	0.58	0.62	0.60	0.58	0.61	0.59	0.58	0.57

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2022/6/08	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

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	4348.22	4468.92	4557.35	4590.22	4578.86	4526.28	4412.75	4244.85	4070.37
45.0	4496.41	4492.82	4440.24	4350.61	4207.20	4043.48	3823.59	3576.21	3334.21
90.0	4407.97	4315.35	4181.51	3973.57	3778.77	3560.08	3293.58	3012.74	2749.83
135.0	4441.43	4287.27	4108.01	3918.60	3684.96	3425.04	3204.55	2879.49	2620.16
180.0	4348.22	4193.46	4012.41	3785.94	3526.62	3285.81	2999.00	2710.39	2441.50
225.0	4496.41	4450.99	4376.90	4222.14	4066.18	3888.12	3627.00	3398.74	3151.97
270.0	4407.97	4470.71	4488.64	4460.55	4382.28	4252.02	4095.46	3890.51	3686.75
315.0	4441.43	4514.33	4565.12	4569.90	4533.45	4450.99	4309.38	4119.96	3923.97
360.0	4348.22	4468.92	4557.35	4590.22	4578.86	4526.28	4412.75	4244.85	4070.37

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3833.15	3576.21	3324.65	3061.14	2725.33	2453.45	2183.37	1885.80	1596.00
45.0	3053.97	2762.97	2501.85	2237.15	1910.30	1668.30	1441.84	1236.29	999.07
90.0	2451.66	2160.66	1912.09	1643.20	1425.70	1173.19	967.46	825.19	667.68
135.0	2323.79	2029.81	1778.25	1547.60	1285.88	1091.69	914.82	716.44	570.04
180.0	2176.20	1863.69	1631.85	1417.34	1166.56	981.98	824.23	646.83	481.13
225.0	2868.74	2583.72	2326.78	2037.57	1762.71	1526.69	1168.95	1097.48	898.38
270.0	3439.38	3158.54	2897.42	2639.88	2313.63	2051.32	1795.57	1492.63	1273.93
315.0	3670.62	3390.38	3132.25	2832.29	2558.62	2252.68	1949.14	1688.62	1446.02
360.0	3833.15	3576.21	3324.65	3061.14	2725.33	2453.45	2183.37	1885.80	1596.00

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1366.55	1136.50	927.37	764.24	591.55	453.52	333.42	246.18	124.64
45.0	830.57	670.43	500.73	369.87	311.91	154.58	83.30	36.93	21.15
90.0	469.00	360.07	249.65	127.45	73.02	34.24	18.70	14.04	12.25
135.0	425.44	302.95	174.78	100.03	42.96	20.26	14.64	12.37	11.11
180.0	348.36	227.00	140.78	69.19	28.68	17.39	13.21	11.53	10.58
225.0	723.31	576.14	438.83	287.95	191.15	115.08	46.91	23.18	16.79
270.0	1078.54	877.17	696.12	547.34	399.15	313.11	175.79	100.68	45.89
315.0	1178.33	986.52	812.28	632.01	472.71	348.24	241.40	134.62	74.21
360.0	1366.55	1136.50	927.37	764.24	591.55	453.52	333.42	246.18	124.64

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	64.29	28.44	20.97	15.95	12.85	11.65	10.64	9.80	9.02
45.0	15.83	12.79	11.35	10.40	9.56	8.72	8.13	7.71	7.17
90.0	11.05	10.16	9.38	8.66	8.07	7.47	6.99	6.63	6.33
135.0	10.16	9.38	8.66	8.13	7.53	7.11	6.69	6.39	6.09
180.0	9.80	8.96	8.37	7.89	7.35	6.93	6.57	6.27	5.98
225.0	13.27	11.59	10.58	9.62	8.90	8.19	7.65	7.17	6.75
270.0	24.38	17.93	13.74	12.07	10.76	9.80	9.02	8.31	7.71
315.0	37.58	23.72	16.91	13.74	11.89	10.70	9.80	8.96	8.37
360.0	64.29	28.44	20.97	15.95	12.85	11.65	10.64	9.80	9.02

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	8.43	7.89	7.41	6.93	6.57	6.27	5.98	5.74	5.56
45.0	6.81	6.45	6.15	5.92	5.68	5.38	5.26	5.08	4.90
90.0	6.04	5.80	5.62	5.44	5.26	5.08	4.96	4.84	4.72
135.0	5.86	5.68	5.44	5.32	5.14	5.02	4.90	4.84	4.72
180.0	5.74	5.50	5.38	5.20	5.02	4.90	4.78	4.66	4.60
225.0	6.33	6.04	5.80	5.50	5.26	5.08	4.90	4.78	4.66
270.0	7.17	6.75	6.33	6.04	5.74	5.50	5.26	5.08	4.96
315.0	7.71	7.23	6.81	6.45	6.04	5.80	5.56	5.32	5.14
360.0	8.43	7.89	7.41	6.93	6.57	6.27	5.98	5.74	5.56

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	5.38	5.14	5.02	4.90	4.72	4.66	4.54	4.48	4.36
45.0	4.78	4.66	4.54	4.42	4.36	4.24	4.18	4.12	4.06
90.0	4.60	4.60	4.48	4.42	4.36	4.30	4.24	4.18	4.18
135.0	4.66	4.60	4.54	4.48	4.42	4.36	4.36	4.30	4.24
180.0	4.54	4.42	4.36	4.30	4.18	4.18	4.12	4.06	4.00
225.0	4.54	4.42	4.30	4.24	4.18	4.06	4.00	3.94	3.88
270.0	4.78	4.66	4.48	4.42	4.36	4.24	4.18	4.12	4.00
315.0	4.96	4.78	4.66	4.54	4.48	4.36	4.30	4.18	4.12
360.0	5.38	5.14	5.02	4.90	4.72	4.66	4.54	4.48	4.36

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	4.30	4.24	4.18	4.12	4.06	4.06	4.00	3.94	3.94
45.0	4.00	3.94	3.88	3.82	3.82	3.76	3.76	3.70	3.64
90.0	4.12	4.06	4.00	4.00	4.00	3.94	3.94	3.88	3.88
135.0	4.24	4.24	4.18	4.18	4.12	4.12	4.12	4.12	4.12
180.0	4.00	3.94	3.88	3.88	3.82	3.82	3.82	3.76	3.76
225.0	3.82	3.82	3.76	3.70	3.70	3.64	3.59	3.59	3.59
270.0	3.94	3.94	3.88	3.82	3.76	3.76	3.70	3.70	3.64
315.0	4.12	4.06	3.94	3.94	3.88	3.82	3.82	3.76	3.70
360.0	4.30	4.24	4.18	4.12	4.06	4.06	4.00	3.94	3.94

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.88	3.82	3.82	3.82	3.76	3.76	3.76	3.70	3.70
45.0	3.64	3.59	3.59	3.59	3.53	3.53	3.47	3.47	3.47
90.0	3.88	3.82	3.82	3.82	3.82	3.82	3.88	3.88	3.94
135.0	4.12	4.06	4.06	4.06	4.06	4.06	4.06	4.00	4.06
180.0	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.64	3.70
225.0	3.59	3.53	3.53	3.47	3.47	3.47	3.47	3.41	3.41
270.0	3.64	3.59	3.59	3.53	3.53	3.47	3.47	3.47	3.47
315.0	3.70	3.64	3.64	3.64	3.59	3.59	3.59	3.53	3.53
360.0	3.88	3.82	3.82	3.82	3.76	3.76	3.76	3.70	3.70

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.70	3.64	3.64	3.64	3.64	3.59	3.64	3.64	3.64
45.0	3.47	3.41	3.41	3.41	3.35	3.35	3.35	3.35	3.35
90.0	3.94	4.06	4.12	4.18	4.78	4.66	4.36	4.36	4.42
135.0	4.12	4.18	4.96	5.14	5.56	5.98	5.98	6.04	5.62
180.0	3.70	3.64	3.70	3.70	3.76	3.82	3.82	3.88	3.94
225.0	3.41	3.41	3.41	3.35	3.35	3.41	3.41	3.41	3.41
270.0	3.47	3.47	3.41	3.41	3.41	3.47	3.47	3.47	3.47
315.0	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53
360.0	3.70	3.64	3.64	3.64	3.64	3.59	3.64	3.64	3.64

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.64	3.64	3.64	3.70	3.70	3.70	3.47	3.41	3.41
45.0	3.35	3.41	3.35	3.35	3.35	3.23	3.23	3.23	3.23
90.0	4.30	4.24	4.12	4.12	3.59	3.23	3.23	3.23	3.23
135.0	4.84	4.78	4.84	4.90	5.08	3.35	3.29	3.29	3.35
180.0	4.00	4.12	4.24	4.42	4.54	3.41	3.41	3.47	3.70
225.0	3.41	3.47	3.53	3.53	3.59	3.64	3.23	3.23	3.23
270.0	3.47	3.47	3.47	3.41	3.47	3.41	3.23	3.23	3.29
315.0	3.53	3.64	3.59	3.64	3.64	3.59	3.35	3.35	3.35
360.0	3.64	3.64	3.64	3.70	3.70	3.70	3.47	3.41	3.41

Intensity data(cd)

C/γ(°)	90.0
0.0	3.41
45.0	3.23
90.0	3.23
135.0	3.35
180.0	3.41
225.0	3.23
270.0	3.23
315.0	3.35
360.0	3.41