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

LumCAT: 1-1010-M
Luminaire: 92.70.277.00
Report No: 221126-B004
Test No: 221130-C004
LampCAT: CREE CXA1512 LES8.5
Lamp flux(lm): 812.3
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 17.5300
Current(A): 0.3050
Power (W): 5.3460
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 608.64
Efficiency(%): 74.93%
Lumens(lm)/Power(W): 113.85
Central intensity(cd): 1953.173
Maximum intensity(cd): 1953.173
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=34.5
[C90/270]Total=34.5
Field angle(10%Imax): [C0/180]Total=48.8
[C90/270]Total=48.8
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.53 C90_270=0.53
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 74.93%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.350%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1953.173	0.000	0	.000%	.000%
1.0	1950.111	1.868	1.868	.230%	.307%
2.0	1937.562	5.580	7.448	.687%	1.224%
3.0	1920.234	9.227	16.674	1.136%	2.740%
4.0	1896.706	12.777	29.451	1.573%	4.839%
5.0	1863.693	16.177	45.628	1.992%	7.497%
6.0	1824.331	19.382	65.009	2.386%	10.681%
7.0	1784.371	22.399	87.408	2.758%	14.361%
8.0	1733.805	25.179	112.587	3.100%	18.498%
9.0	1682.567	27.688	140.275	3.409%	23.047%
10.0	1620.200	29.889	170.164	3.680%	27.958%
11.0	1549.841	31.675	201.839	3.900%	33.162%
12.0	1481.947	33.142	234.981	4.080%	38.607%
13.0	1397.994	34.178	269.159	4.208%	44.223%
14.0	1304.070	34.586	303.745	4.258%	49.905%
15.0	1214.493	34.576	338.321	4.257%	55.586%
16.0	1120.232	34.210	372.531	4.212%	61.207%
17.0	1005.231	33.099	405.63	4.075%	66.645%
18.0	899.281	31.401	437.031	3.866%	71.804%
19.0	793.541	29.452	466.483	3.626%	76.643%
20.0	667.754	26.746	493.229	3.293%	81.038%
21.0	542.638	23.242	516.471	2.861%	84.856%
22.0	433.216	19.610	536.081	2.414%	88.078%
23.0	325.534	15.921	552.002	1.960%	90.694%
24.0	225.657	12.051	564.053	1.484%	92.674%
25.0	152.176	8.591	572.644	1.058%	94.085%
26.0	94.320	5.819	578.462	.716%	95.041%
27.0	59.730	3.769	582.231	.464%	95.661%
28.0	37.241	2.455	584.686	.302%	96.064%
29.0	24.850	1.624	586.311	.200%	96.331%
30.0	18.053	1.158	587.469	.143%	96.521%
31.0	13.579	0.880	588.349	.108%	96.666%
32.0	10.397	0.687	589.036	.085%	96.779%
33.0	8.470	0.556	589.592	.068%	96.870%
34.0	7.230	0.475	590.067	.058%	96.948%
35.0	6.229	0.418	590.485	.051%	97.017%
36.0	5.677	0.379	590.864	.047%	97.079%
37.0	5.311	0.358	591.223	.044%	97.138%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	5.004	0.344	591.567	.042%	97.194%
39.0	4.743	0.333	591.9	.041%	97.249%
40.0	4.586	0.325	592.225	.040%	97.303%
41.0	4.422	0.321	592.546	.039%	97.355%
42.0	4.287	0.316	592.862	.039%	97.407%
43.0	4.205	0.315	593.177	.039%	97.459%
44.0	4.108	0.314	593.491	.039%	97.511%
45.0	4.026	0.313	593.803	.038%	97.562%
46.0	3.966	0.313	594.116	.038%	97.613%
47.0	3.891	0.313	594.428	.038%	97.665%
48.0	3.839	0.313	594.741	.038%	97.716%
49.0	3.794	0.313	595.054	.039%	97.767%
50.0	3.749	0.315	595.369	.039%	97.819%
51.0	3.720	0.316	595.685	.039%	97.871%
52.0	3.682	0.318	596.002	.039%	97.923%
53.0	3.660	0.319	596.322	.039%	97.976%
54.0	3.608	0.320	596.642	.039%	98.028%
55.0	3.593	0.321	596.963	.040%	98.081%
56.0	3.585	0.324	597.288	.040%	98.134%
57.0	3.555	0.326	597.614	.040%	98.188%
58.0	3.533	0.328	597.942	.040%	98.242%
59.0	3.510	0.329	598.271	.041%	98.296%
60.0	3.503	0.331	598.603	.041%	98.350%
61.0	3.496	0.334	598.937	.041%	98.405%
62.0	3.488	0.337	599.273	.041%	98.461%
63.0	3.488	0.339	599.612	.042%	98.516%
64.0	3.466	0.341	599.954	.042%	98.572%
65.0	3.458	0.343	600.296	.042%	98.629%
66.0	3.451	0.345	600.641	.042%	98.685%
67.0	3.428	0.346	600.987	.043%	98.742%
68.0	3.436	0.348	601.335	.043%	98.799%
69.0	3.428	0.350	601.685	.043%	98.857%
70.0	3.406	0.351	602.036	.043%	98.915%
71.0	3.398	0.352	602.388	.043%	98.972%
72.0	3.376	0.352	602.74	.043%	99.030%
73.0	3.361	0.352	603.092	.043%	99.088%
74.0	3.346	0.353	603.445	.043%	99.146%
75.0	3.301	0.351	603.796	.043%	99.204%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.271	0.349	604.145	.043%	99.261%
77.0	3.227	0.346	604.491	.043%	99.318%
78.0	3.167	0.342	604.834	.042%	99.374%
79.0	3.137	0.339	605.172	.042%	99.430%
80.0	3.077	0.335	605.507	.041%	99.485%
81.0	3.018	0.330	605.837	.041%	99.539%
82.0	2.995	0.326	606.163	.040%	99.593%
83.0	2.980	0.325	606.488	.040%	99.646%
84.0	2.995	0.326	606.813	.040%	99.699%
85.0	2.853	0.319	607.132	.039%	99.752%
86.0	2.853	0.312	607.444	.038%	99.803%
87.0	2.719	0.305	607.749	.038%	99.853%
88.0	2.711	0.297	608.047	.037%	99.902%
89.0	2.726	0.298	608.345	.037%	99.951%
90.0	2.704	0.298	608.643	.037%	100.000%

Zonal flux distribution table

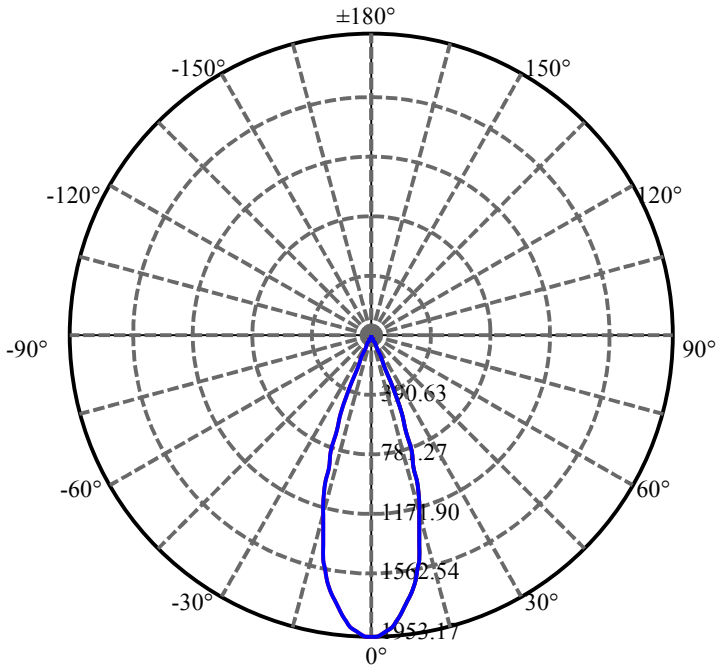
ZONAL LUMEN SUMMARY

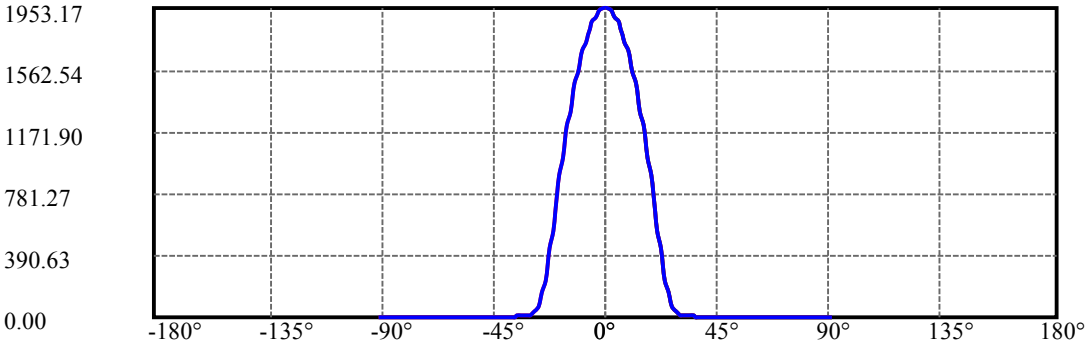
Zone	Lumens	%Lamp	%Fixt
0-30	587.47	72.33%	96.52%
0-40	592.23	72.91%	97.30%
0-60	598.60	73.70%	98.35%
0-90	608.34	74.90%	99.95%
0-120	608.34	74.90%	99.95%
0-180	608.64	74.93%	100.00%
60-90	10.07	1.24%	1.66%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-19.76	486.91	59.95%	80.00%

ZONAL LUMEN SUMMARY

0-10	170.16
10-20	323.06
20-30	94.24
30-40	4.76
40-50	3.14
50-60	3.23
60-70	3.43
70-80	3.47
80-90	2.84
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:

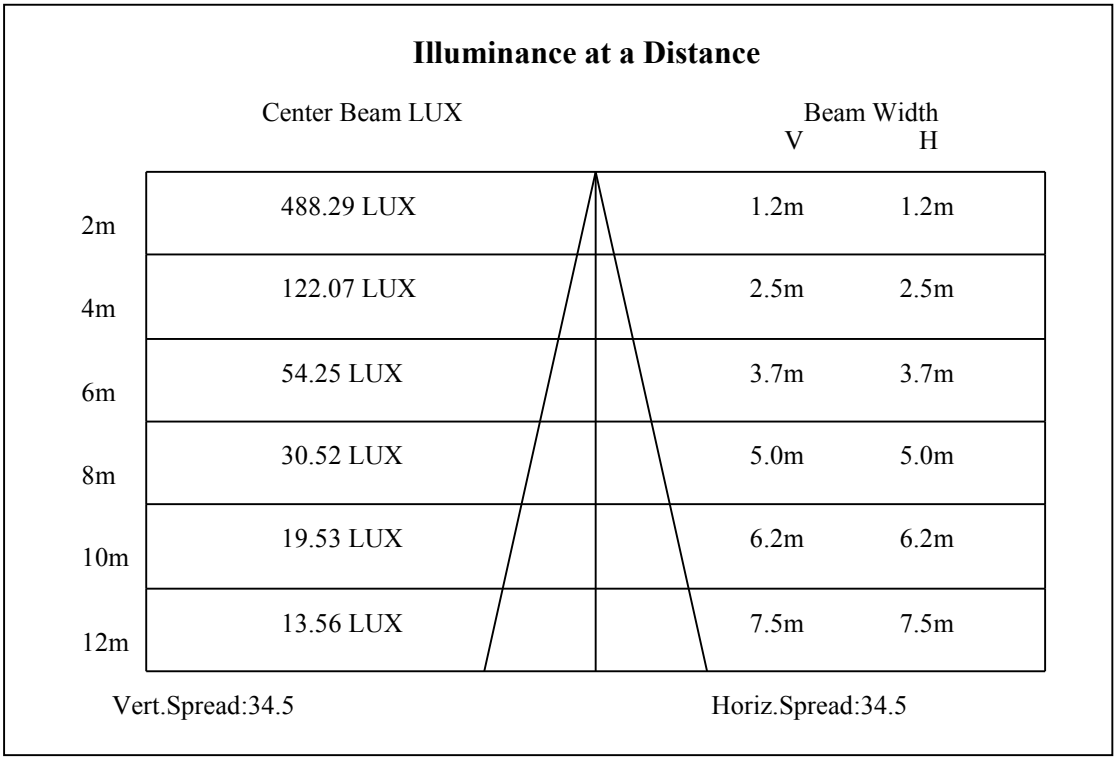
C90/C270:

Field angle(10%Imax):C0/180Left:24.4 Right:24.4
:C90/270Left:24.4 Right:24.4

Beam Angle(50%Imax):C0/180Left:17.3 Right:17.3
:C90/270Left:17.3 Right:17.3

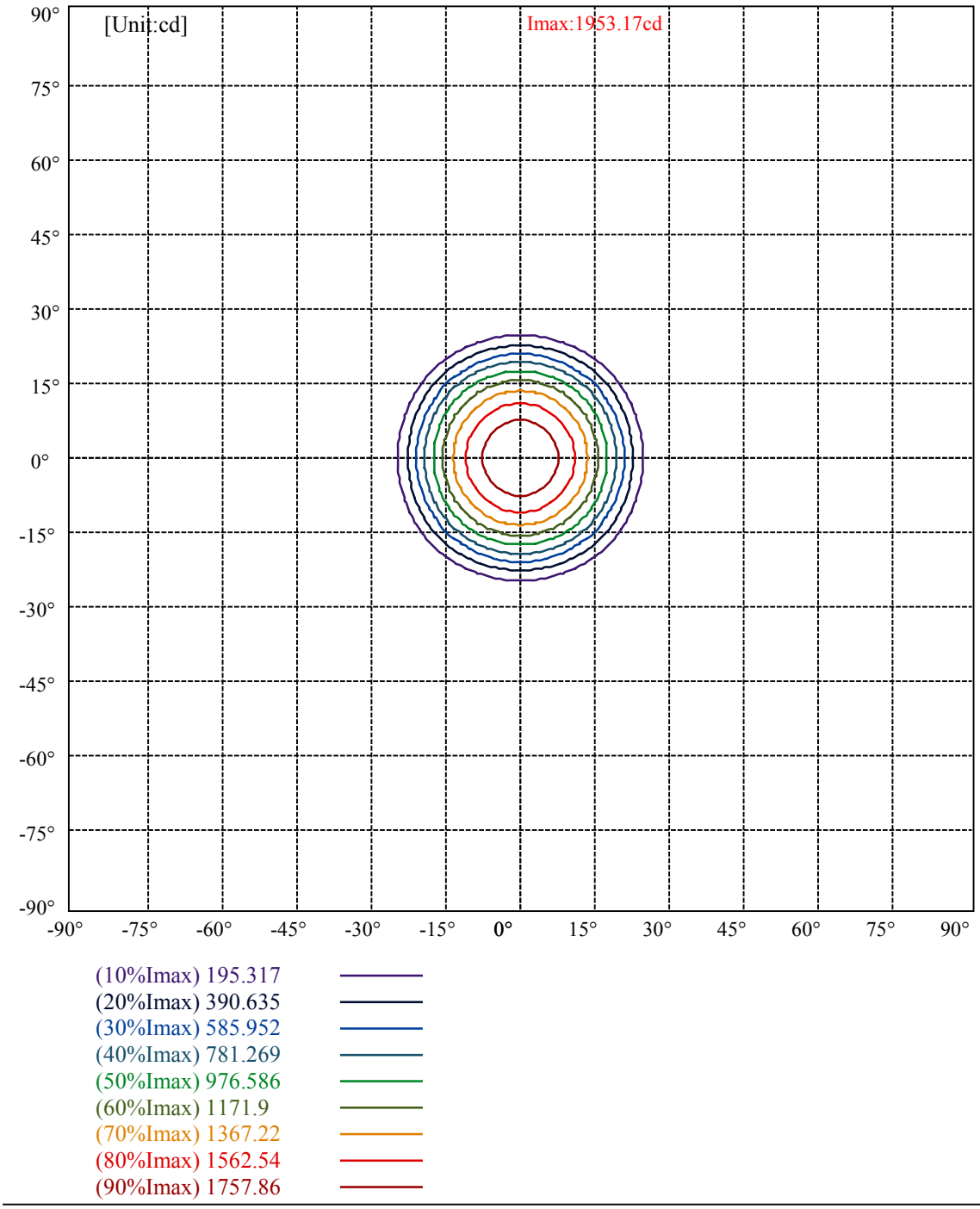
Equipment: GMS1980 Date: 2022/11/30 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

Lux distance Curve



Equipment: GMS1980 Date: 2022/11/30 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

ISO-Intensity(V-H)

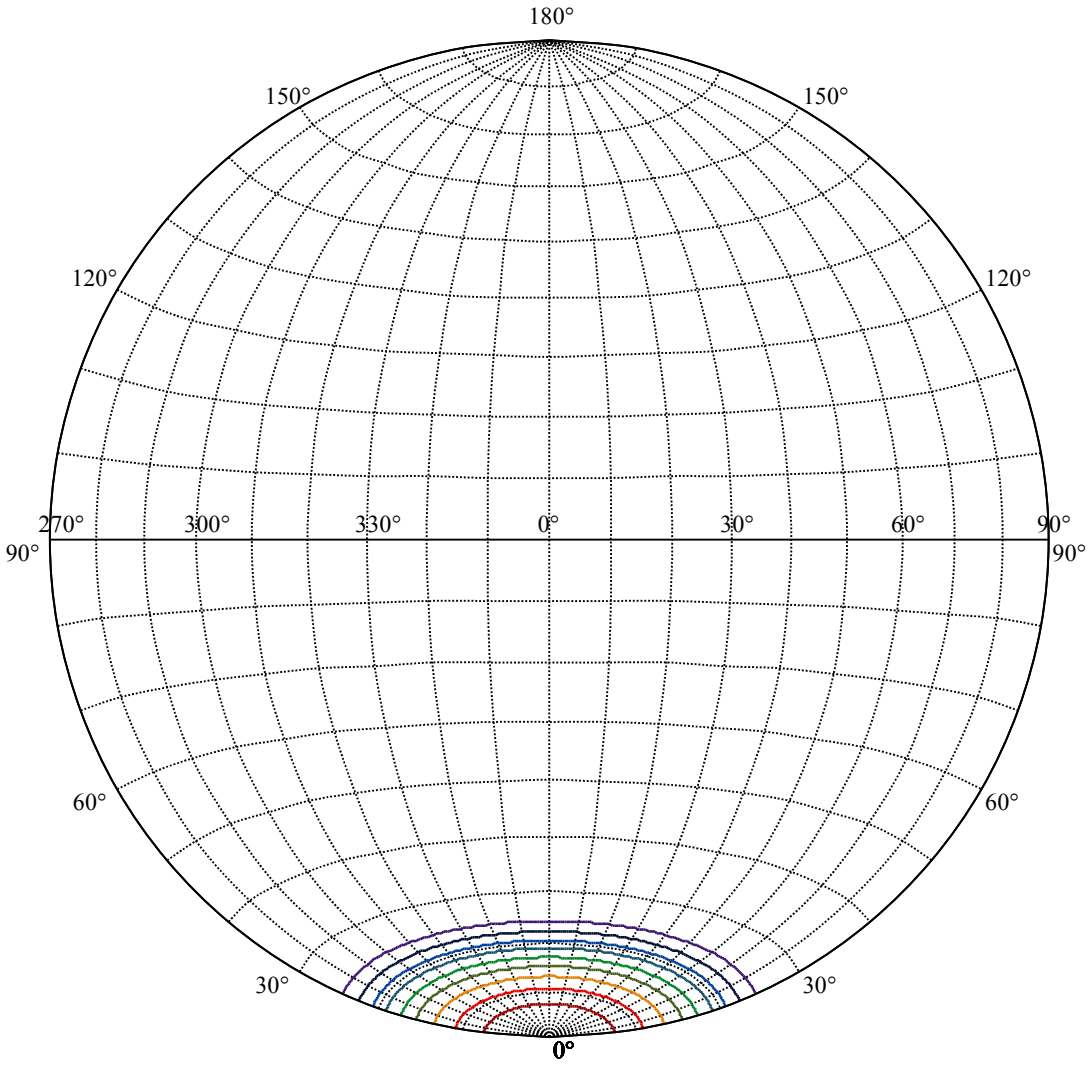


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/11/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1953.17

(10%Imax) 195.317
(20%Imax) 390.635
(30%Imax) 585.952
(40%Imax) 781.269
(50%Imax) 976.586
(60%Imax) 1171.9
(70%Imax) 1367.22
(80%Imax) 1562.54
(90%Imax) 1757.86

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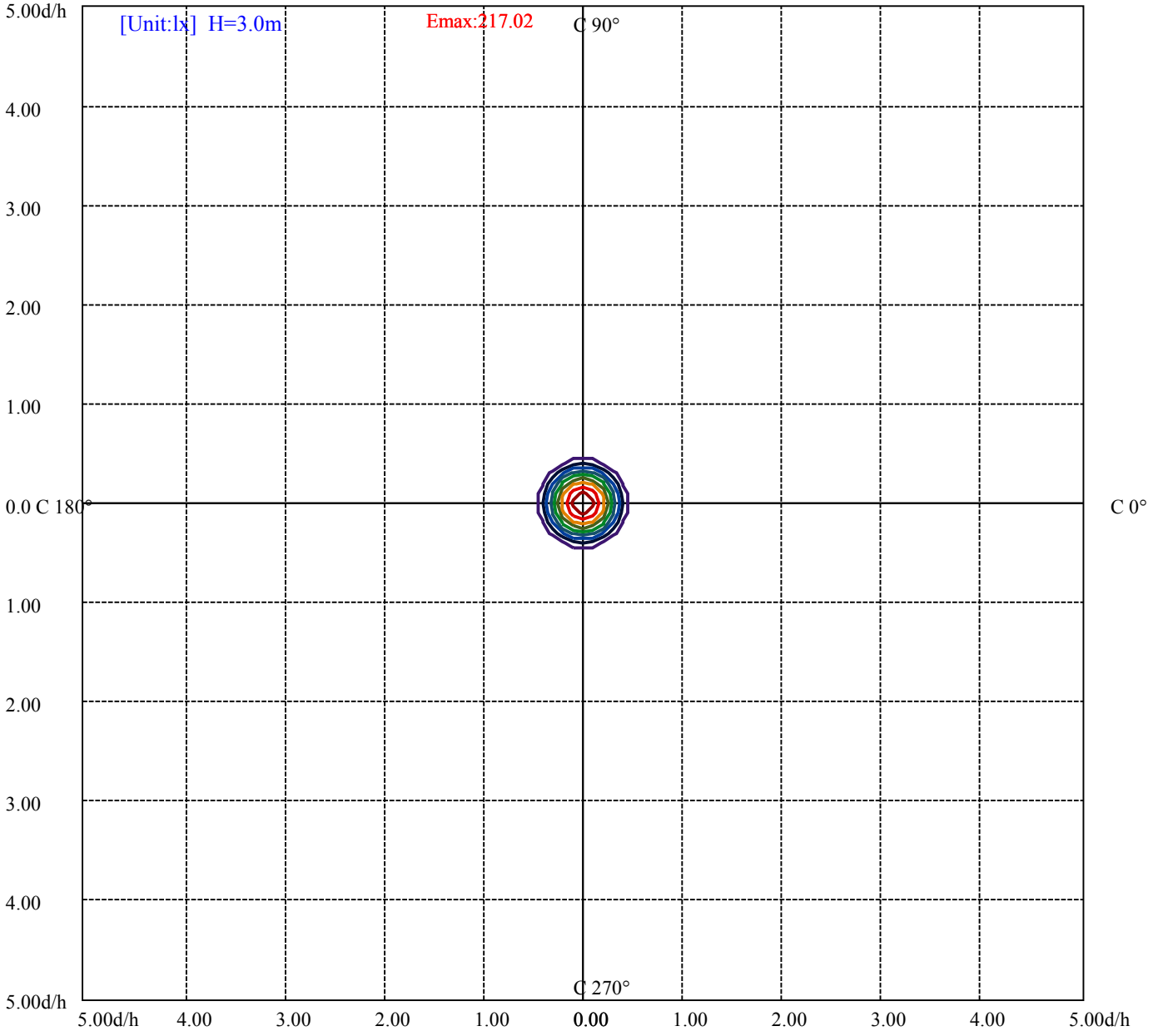
ISO illuminance diagram



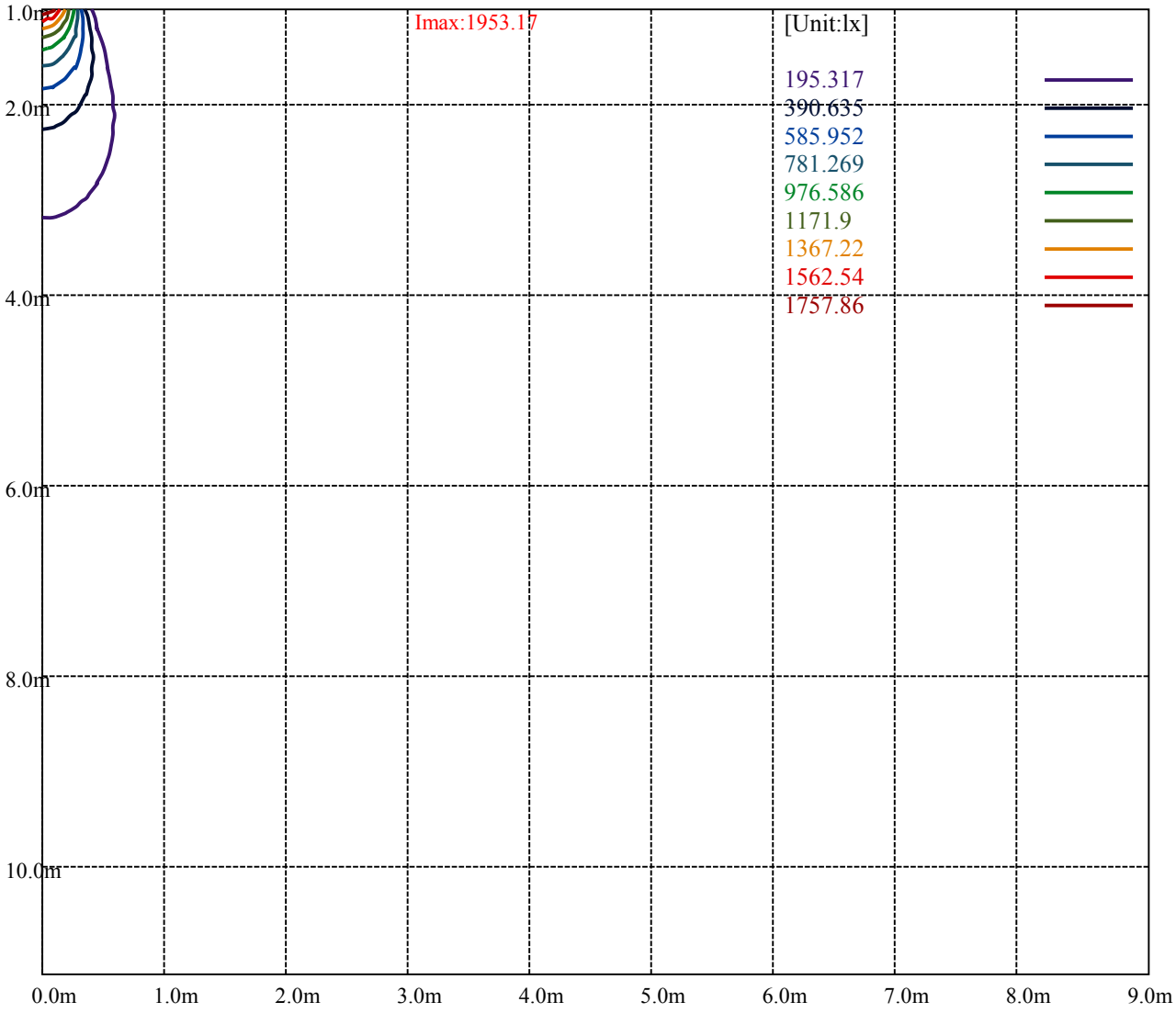
(10%Emax) 21.70189
(20%Emax) 43.40378
(30%Emax) 65.10578
(40%Emax) 86.80766
(50%Emax) 108.5096
(60%Emax) 130.2111
(70%Emax) 151.9133
(80%Emax) 173.6156
(90%Emax) 195.3178

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/11/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/11/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

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Luminance Limitting Curve(no luminous side)

Luminance Table

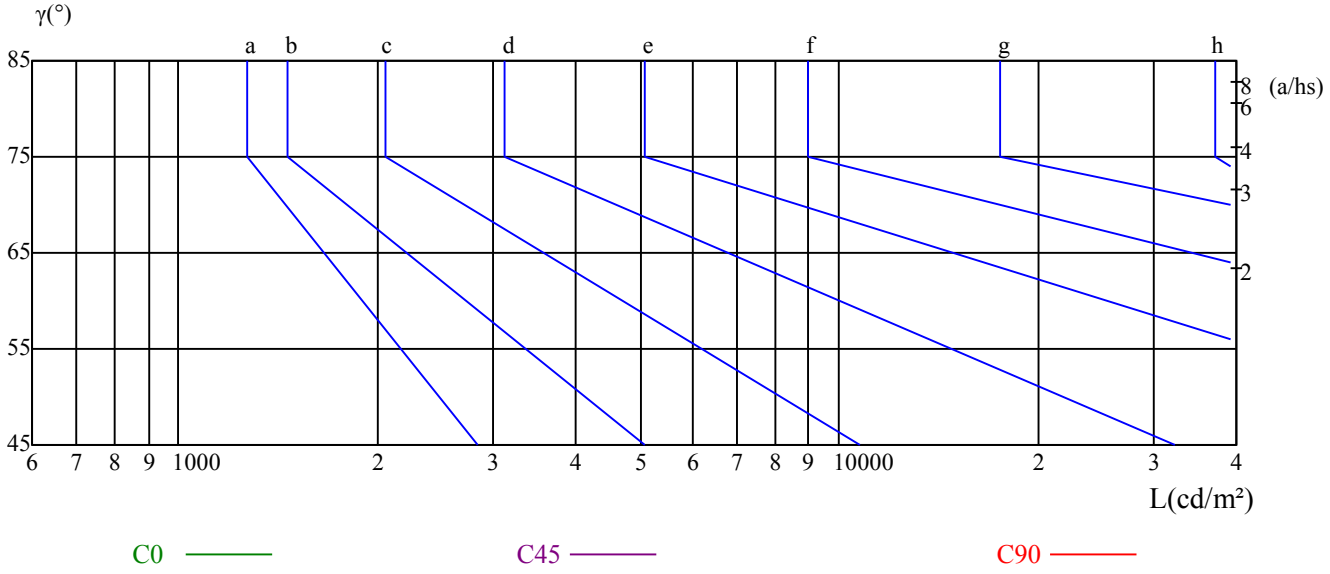
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

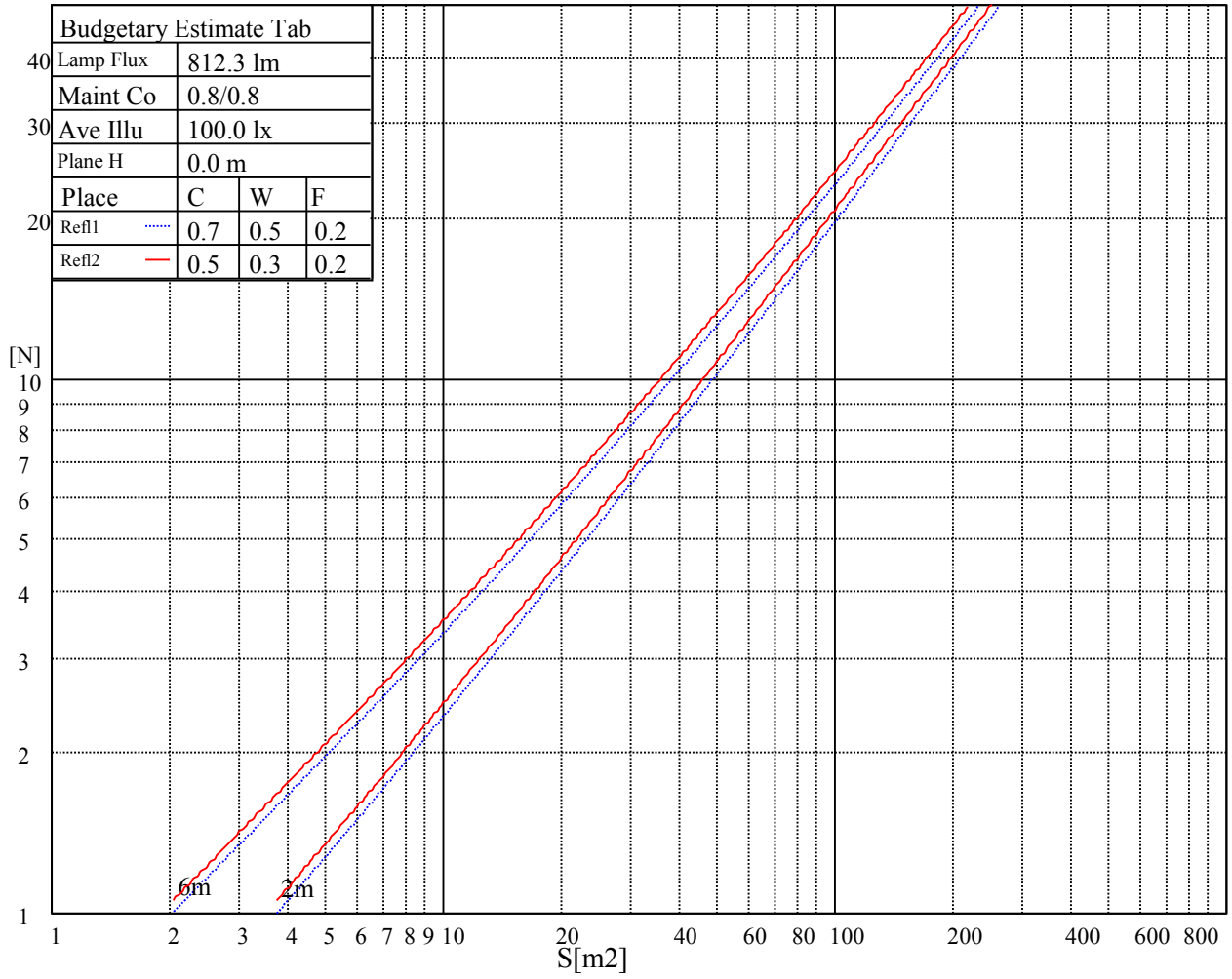


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/11/30
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Budgetary Estimate Table

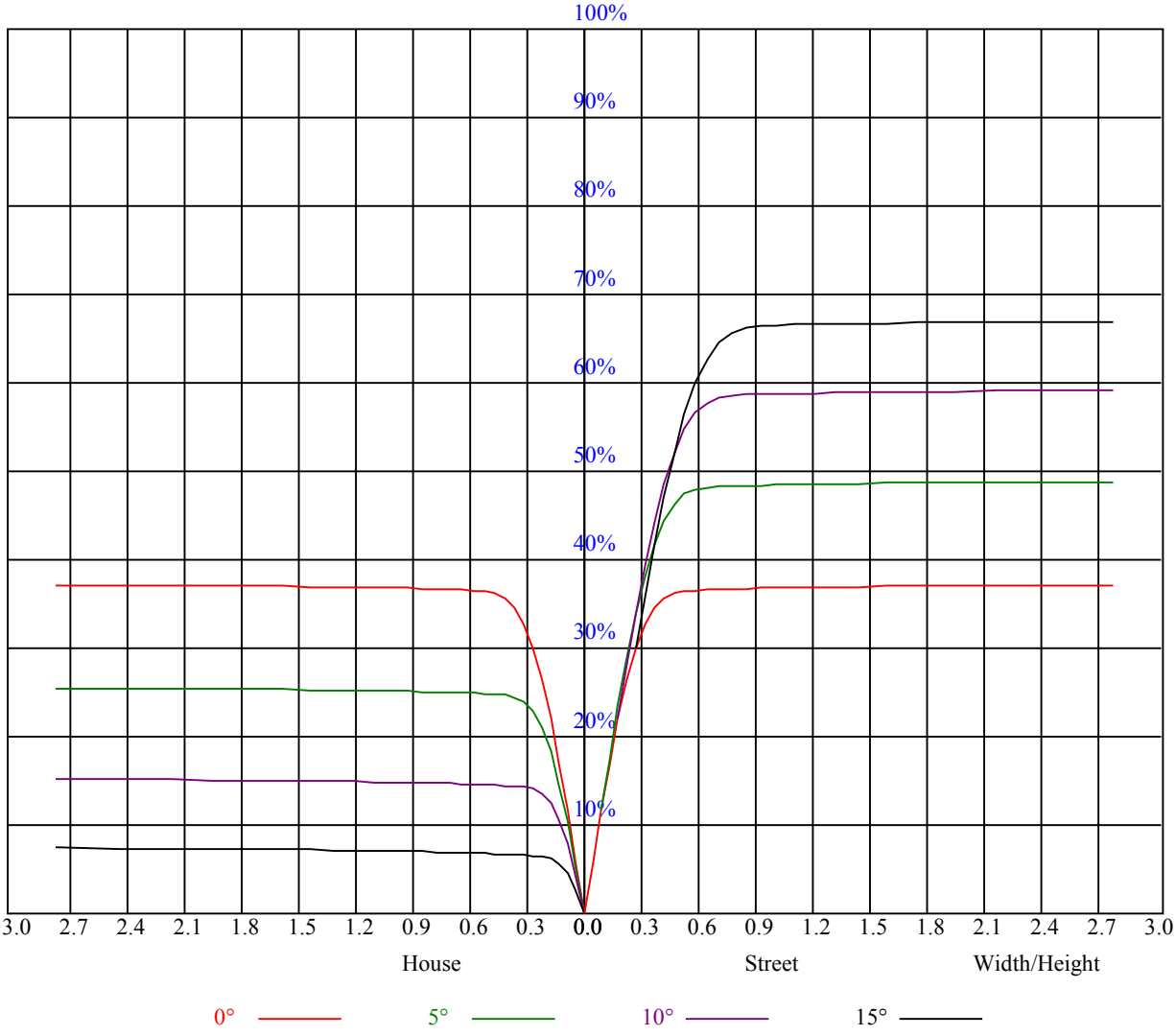


Equipment: GMS1980 Date: 2022/11/30 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.89	0.89	0.89	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.76	0.76	0.76	0.75
1	0.84	0.83	0.81	0.83	0.81	0.80	0.80	0.78	0.77	0.77	0.76	0.75	0.74	0.74	0.73	0.72
2	0.80	0.78	0.76	0.79	0.77	0.75	0.76	0.75	0.73	0.74	0.73	0.72	0.72	0.71	0.70	0.69
3	0.76	0.74	0.71	0.75	0.73	0.71	0.74	0.71	0.70	0.72	0.70	0.69	0.70	0.69	0.68	0.67
4	0.73	0.70	0.68	0.72	0.70	0.67	0.71	0.69	0.67	0.70	0.68	0.66	0.68	0.67	0.65	0.64
5	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.67	0.65	0.64	0.66	0.65	0.63	0.62
6	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.61	0.65	0.63	0.61	0.60
7	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.64	0.61	0.59	0.63	0.61	0.59	0.58
8	0.64	0.60	0.58	0.63	0.60	0.58	0.62	0.60	0.58	0.62	0.59	0.58	0.61	0.59	0.57	0.57
9	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.60	0.58	0.56	0.60	0.57	0.56	0.55
10	0.60	0.57	0.55	0.59	0.56	0.54	0.59	0.56	0.54	0.58	0.56	0.54	0.58	0.56	0.54	0.53

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2022/11/30	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	1952.72	1952.72	1944.96	1931.21	1909.70	1877.44	1839.79	1802.15	1754.35
45.0	1953.92	1943.76	1920.46	1895.36	1865.49	1831.43	1781.23	1735.22	1684.43
90.0	1951.53	1941.37	1921.06	1894.17	1865.49	1827.84	1781.83	1735.22	1676.07
135.0	1954.52	1952.13	1940.77	1922.85	1897.75	1864.29	1825.45	1785.42	1734.03
180.0	1952.72	1947.94	1933.01	1913.89	1887.00	1851.74	1810.51	1768.69	1714.31
225.0	1953.92	1956.31	1950.33	1940.77	1924.64	1897.75	1866.08	1832.02	1789.00
270.0	1951.53	1955.11	1949.74	1940.18	1923.45	1896.56	1861.90	1828.44	1784.82
315.0	1954.52	1951.53	1940.18	1923.45	1900.14	1862.50	1827.84	1787.81	1733.43
360.0	1952.72	1952.72	1944.96	1931.21	1909.70	1877.44	1839.79	1802.15	1754.35

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1706.54	1647.39	1580.46	1515.33	1435.86	1349.82	1266.16	1175.34	1050.46
45.0	1619.90	1548.20	1480.08	1398.22	1307.99	1220.15	1113.79	1014.60	899.88
90.0	1618.11	1547.00	1468.73	1395.23	1305.00	1189.38	1106.68	1009.11	883.63
135.0	1683.24	1619.30	1547.00	1477.69	1393.44	1302.02	1215.37	1120.96	998.47
180.0	1660.53	1593.61	1521.31	1451.40	1366.55	1252.42	1181.14	1086.07	973.67
225.0	1745.98	1689.81	1626.47	1563.73	1478.29	1403.60	1323.53	1183.11	1110.09
270.0	1741.80	1686.82	1624.08	1563.14	1487.85	1405.99	1325.92	1237.48	1115.59
315.0	1684.43	1629.46	1550.59	1490.83	1408.97	1309.19	1183.35	1135.19	1010.06
360.0	1706.54	1647.39	1580.46	1515.33	1435.86	1349.82	1266.16	1175.34	1050.46

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	949.47	846.10	722.41	594.54	483.40	361.51	311.31	166.65	101.58
45.0	776.79	664.45	537.18	411.70	310.72	252.10	133.31	88.61	60.83
90.0	771.05	657.76	516.32	407.04	307.19	202.56	140.30	97.22	59.04
135.0	898.68	792.92	666.84	538.97	427.83	311.91	207.88	138.51	93.99
180.0	858.59	749.54	636.97	495.95	385.94	287.11	181.05	118.61	76.96
225.0	1011.80	912.37	778.16	662.96	548.23	420.48	301.51	209.91	125.42
270.0	1015.80	917.21	800.09	672.22	557.49	431.42	312.51	254.31	141.85
315.0	912.07	807.98	684.05	557.73	444.92	337.19	217.38	143.59	94.89
360.0	949.47	846.10	722.41	594.54	483.40	361.51	311.31	166.65	101.58

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	66.15	41.11	27.96	20.85	16.19	11.89	9.68	8.01	6.69
45.0	36.99	26.05	19.90	15.06	11.71	9.32	7.71	6.75	5.98
90.0	38.66	26.59	18.76	14.82	11.35	8.78	7.53	6.63	5.74
135.0	57.60	33.58	22.59	17.27	12.97	9.80	8.07	6.99	6.04
180.0	45.47	27.31	19.12	13.80	10.34	8.37	6.99	6.15	5.50
225.0	85.57	52.10	31.79	22.35	16.01	11.89	9.56	7.95	6.69
270.0	87.12	54.91	33.82	22.41	16.73	12.55	9.74	8.13	6.87
315.0	60.29	36.27	24.86	17.87	13.32	10.58	8.48	7.23	6.33
360.0	66.15	41.11	27.96	20.85	16.19	11.89	9.68	8.01	6.69

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	6.04	5.56	5.14	4.84	4.66	4.48	4.36	4.30	4.18
45.0	5.50	5.14	4.90	4.66	4.54	4.42	4.24	4.12	4.06
90.0	5.32	5.02	4.78	4.54	4.42	4.24	4.12	4.06	4.00
135.0	5.56	5.20	4.90	4.66	4.48	4.36	4.24	4.12	4.06
180.0	5.14	4.90	4.66	4.48	4.36	4.24	4.12	4.06	3.94
225.0	6.04	5.62	5.20	4.96	4.78	4.54	4.42	4.30	4.18
270.0	6.09	5.62	5.38	4.96	4.78	4.60	4.42	4.36	4.24
315.0	5.74	5.44	5.08	4.84	4.66	4.48	4.36	4.30	4.18
360.0	6.04	5.56	5.14	4.84	4.66	4.48	4.36	4.30	4.18

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	4.06	4.00	3.94	3.88	3.88	3.76	3.76	3.76	3.76
45.0	4.00	3.94	3.88	3.82	3.82	3.76	3.70	3.70	3.64
90.0	3.88	3.82	3.76	3.70	3.70	3.64	3.59	3.59	3.53
135.0	4.00	3.94	3.88	3.82	3.76	3.70	3.70	3.64	3.64
180.0	3.88	3.82	3.76	3.76	3.64	3.70	3.64	3.59	3.59
225.0	4.12	4.06	3.94	3.88	3.82	3.76	3.76	3.70	3.64
270.0	4.12	4.06	3.94	3.88	3.82	3.82	3.76	3.70	3.70
315.0	4.12	4.06	4.00	3.94	3.88	3.82	3.82	3.76	3.76
360.0	4.06	4.00	3.94	3.88	3.88	3.76	3.76	3.76	3.76

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.70	3.64	3.64	3.59	3.59	3.53	3.59	3.53	3.59
45.0	3.59	3.64	3.59	3.59	3.59	3.53	3.53	3.53	3.53
90.0	3.47	3.53	3.47	3.41	3.41	3.41	3.35	3.41	3.41
135.0	3.59	3.59	3.59	3.59	3.53	3.53	3.53	3.53	3.53
180.0	3.53	3.47	3.53	3.47	3.47	3.47	3.41	3.41	3.41
225.0	3.64	3.59	3.59	3.59	3.53	3.47	3.53	3.47	3.47
270.0	3.64	3.59	3.59	3.59	3.53	3.53	3.47	3.47	3.41
315.0	3.70	3.70	3.70	3.64	3.64	3.64	3.64	3.64	3.59
360.0	3.70	3.64	3.64	3.59	3.59	3.53	3.59	3.53	3.59

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.59	3.53	3.53	3.53	3.47	3.53	3.53	3.47	3.47
45.0	3.53	3.53	3.53	3.47	3.47	3.47	3.47	3.41	3.41
90.0	3.35	3.35	3.29	3.29	3.29	3.29	3.23	3.23	3.23
135.0	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53
180.0	3.41	3.35	3.35	3.41	3.35	3.35	3.35	3.35	3.29
225.0	3.47	3.41	3.41	3.41	3.35	3.41	3.35	3.35	3.35
270.0	3.41	3.41	3.41	3.35	3.35	3.35	3.35	3.29	3.29
315.0	3.64	3.64	3.64	3.64	3.64	3.59	3.64	3.64	3.64
360.0	3.59	3.53	3.53	3.53	3.47	3.53	3.53	3.47	3.47

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.41	3.41	3.35	3.35	3.29	3.23	3.17	3.11	3.11
45.0	3.35	3.35	3.35	3.29	3.23	3.23	3.17	3.17	3.17
90.0	3.23	3.23	3.23	3.23	3.17	3.17	3.17	3.17	3.11
135.0	3.53	3.47	3.47	3.41	3.41	3.35	3.17	3.05	2.93
180.0	3.29	3.23	3.23	3.17	3.17	3.11	3.11	3.05	2.99
225.0	3.29	3.29	3.29	3.23	3.23	3.17	3.11	3.05	3.05
270.0	3.29	3.29	3.29	3.23	3.23	3.17	3.17	3.17	3.17
315.0	3.64	3.64	3.59	3.53	3.47	3.41	3.29	3.35	3.11
360.0	3.41	3.41	3.35	3.35	3.29	3.23	3.17	3.11	3.11

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.05	2.99	2.93	2.99	2.99	3.11	2.75	2.69	2.69
45.0	3.17	3.17	3.17	3.29	2.75	2.75	2.75	2.69	2.75
90.0	3.11	3.11	3.11	3.11	2.75	2.75	2.69	2.75	2.75
135.0	2.87	2.87	2.87	2.87	2.81	2.75	2.69	2.69	2.75
180.0	2.93	2.93	2.87	2.87	2.75	2.69	2.69	2.69	2.69
225.0	2.99	2.93	2.99	2.99	2.99	2.99	2.75	2.75	2.75
270.0	3.11	3.11	3.05	2.99	2.99	2.99	2.75	2.75	2.75
315.0	2.93	2.87	2.87	2.87	2.81	2.81	2.69	2.69	2.69
360.0	3.05	2.99	2.93	2.99	2.99	3.11	2.75	2.69	2.69

Intensity data(cd)

C/γ(°)	90.0
0.0	2.69
45.0	2.75
90.0	2.69
135.0	2.69
180.0	2.69
225.0	2.75
270.0	2.69
315.0	2.69
360.0	2.69