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Nata

LumCAT: 1677-A
Luminaire: 92.70.064.00+92.70.147.00

Report No: 200605-B010	Voltage(V): 33.8700
Test No: 200605-C010	Current(A): 0.3000
LampCAT: LUMINUS CXM-9-AC40	Power (W): 10.1600
Lamp flux(lm): 1131.0	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): 905.44
Efficiency(%): 80.06%
Lumens(lm)/Power(W): 89.12
Central intensity(cd): 2238.047
Maximum intensity(cd): 2238.047
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=32.1
[C90/270]Total=32.1
Field angle(10%Imax): [C0/180]Total=62.8
[C90/270]Total=62.8
Maximum s/h(1/2): C0_180=0.53 C90_270=0.53
Maximum s/h(1/4): C0_180=0.52 C90_270=0.52
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 80.06%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.442%

Equipment: GMS1980	Date: 2020/6/5	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2238.047	0.000	0	.000%	.000%
1.0	2233.898	2.140	2.14	.189%	.236%
2.0	2225.531	6.401	8.54	.566%	.943%
3.0	2206.125	10.599	19.139	.937%	2.114%
4.0	2180.039	14.682	33.821	1.298%	3.735%
5.0	2146.219	18.611	52.433	1.646%	5.791%
6.0	2094.891	22.288	74.721	1.971%	8.252%
7.0	2034.773	25.633	100.354	2.266%	11.083%
8.0	1969.875	28.661	129.014	2.534%	14.249%
9.0	1886.273	31.252	160.266	2.763%	17.700%
10.0	1789.805	33.267	193.533	2.941%	21.375%
11.0	1698.258	34.853	228.386	3.082%	25.224%
12.0	1595.391	36.004	264.39	3.183%	29.200%
13.0	1472.555	36.409	300.799	3.219%	33.221%
14.0	1361.377	36.274	337.073	3.207%	37.228%
15.0	1233.098	35.618	372.691	3.149%	41.161%
16.0	1122.799	34.520	407.212	3.052%	44.974%
17.0	1010.377	33.219	440.431	2.937%	48.643%
18.0	895.296	31.420	471.852	2.778%	52.113%
19.0	791.191	29.341	501.193	2.594%	55.354%
20.0	687.769	27.069	528.262	2.393%	58.343%
21.0	595.617	24.644	552.906	2.179%	61.065%
22.0	523.540	22.490	575.396	1.988%	63.549%
23.0	465.026	20.743	596.138	1.834%	65.840%
24.0	412.137	19.178	615.316	1.696%	67.958%
25.0	373.795	17.870	633.187	1.580%	69.932%
26.0	343.308	16.927	650.114	1.497%	71.801%
27.0	315.478	16.117	666.231	1.425%	73.581%
28.0	290.904	15.352	681.584	1.357%	75.277%
29.0	271.343	14.710	696.294	1.301%	76.901%
30.0	249.799	14.071	710.364	1.244%	78.455%
31.0	230.407	13.363	723.728	1.182%	79.931%
32.0	213.652	12.722	736.45	1.125%	81.336%
33.0	198.977	12.156	748.606	1.075%	82.679%
34.0	183.741	11.582	760.188	1.024%	83.958%
35.0	169.193	10.961	771.149	.969%	85.169%
36.0	156.002	10.354	781.503	.915%	86.312%
37.0	142.854	9.747	791.25	.862%	87.389%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	130.085	9.110	800.36	.806%	88.395%
39.0	116.557	8.419	808.779	.744%	89.325%
40.0	104.970	7.726	816.505	.683%	90.178%
41.0	94.338	7.097	823.602	.628%	90.962%
42.0	84.354	6.492	830.094	.574%	91.679%
43.0	74.841	5.897	835.991	.521%	92.330%
44.0	67.015	5.354	841.345	.473%	92.921%
45.0	59.948	4.879	846.225	.431%	93.460%
46.0	53.030	4.418	850.643	.391%	93.948%
47.0	47.531	4.000	854.643	.354%	94.390%
48.0	42.645	3.645	858.288	.322%	94.793%
49.0	38.257	3.322	861.61	.294%	95.159%
50.0	34.179	3.020	864.63	.267%	95.493%
51.0	30.776	2.748	867.379	.243%	95.797%
52.0	27.809	2.514	869.893	.222%	96.074%
53.0	24.595	2.280	872.172	.202%	96.326%
54.0	21.846	2.047	874.219	.181%	96.552%
55.0	19.343	1.839	876.058	.163%	96.755%
56.0	16.833	1.635	877.692	.145%	96.936%
57.0	14.309	1.424	879.116	.126%	97.093%
58.0	12.052	1.219	880.335	.108%	97.228%
59.0	10.195	1.040	881.375	.092%	97.342%
60.0	8.895	0.902	882.277	.080%	97.442%
61.0	8.079	0.810	883.087	.072%	97.531%
62.0	7.671	0.759	883.846	.067%	97.615%
63.0	7.460	0.736	884.582	.065%	97.697%
64.0	7.327	0.726	885.308	.064%	97.777%
65.0	7.235	0.721	886.028	.064%	97.856%
66.0	7.151	0.718	886.746	.063%	97.936%
67.0	7.073	0.715	887.461	.063%	98.015%
68.0	7.024	0.714	888.175	.063%	98.093%
69.0	7.017	0.716	888.892	.063%	98.173%
70.0	7.052	0.723	889.614	.064%	98.252%
71.0	7.137	0.733	890.348	.065%	98.333%
72.0	7.207	0.746	891.093	.066%	98.416%
73.0	7.235	0.755	891.849	.067%	98.499%
74.0	7.327	0.766	892.614	.068%	98.584%
75.0	7.502	0.784	893.398	.069%	98.670%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.643	0.804	894.202	.071%	98.759%
77.0	7.875	0.827	895.029	.073%	98.850%
78.0	8.058	0.853	895.882	.075%	98.945%
79.0	8.494	0.889	896.771	.079%	99.043%
80.0	8.958	0.941	897.712	.083%	99.147%
81.0	9.127	0.978	898.69	.086%	99.255%
82.0	9.042	0.985	899.675	.087%	99.364%
83.0	9.000	0.981	900.656	.087%	99.472%
84.0	8.838	0.972	901.628	.086%	99.579%
85.0	8.009	0.919	902.547	.081%	99.681%
86.0	6.820	0.811	903.358	.072%	99.770%
87.0	5.541	0.676	904.034	.060%	99.845%
88.0	4.486	0.549	904.584	.049%	99.906%
89.0	3.720	0.450	905.033	.040%	99.955%
90.0	3.663	0.405	905.438	.036%	100.000%

Zonal flux distribution table

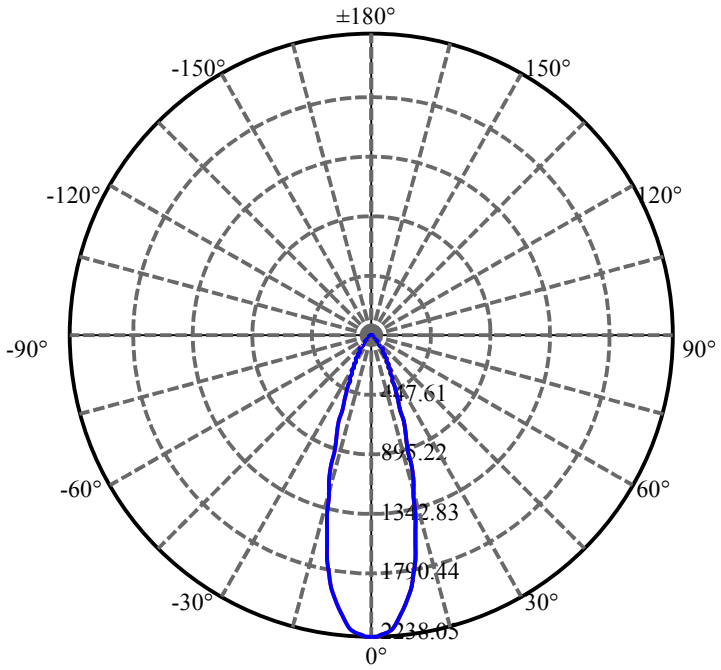
ZONAL LUMEN SUMMARY

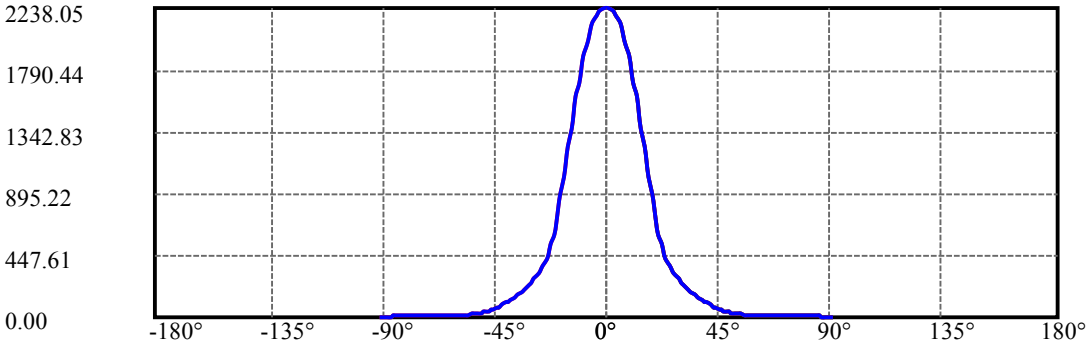
Zone	Lumens	%Lamp	%Fixt
0-30	710.36	62.81%	78.46%
0-40	816.50	72.19%	90.18%
0-60	882.28	78.01%	97.44%
0-90	905.03	80.02%	99.96%
0-120	905.03	80.02%	99.96%
0-180	905.44	80.06%	100.00%
60-90	23.66	2.09%	2.61%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-31.05	724.35	64.05%	80.00%

ZONAL LUMEN SUMMARY

0-10	193.53
10-20	334.73
20-30	182.10
30-40	106.14
40-50	48.13
50-60	17.65
60-70	7.34
70-80	8.10
80-90	7.32
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:

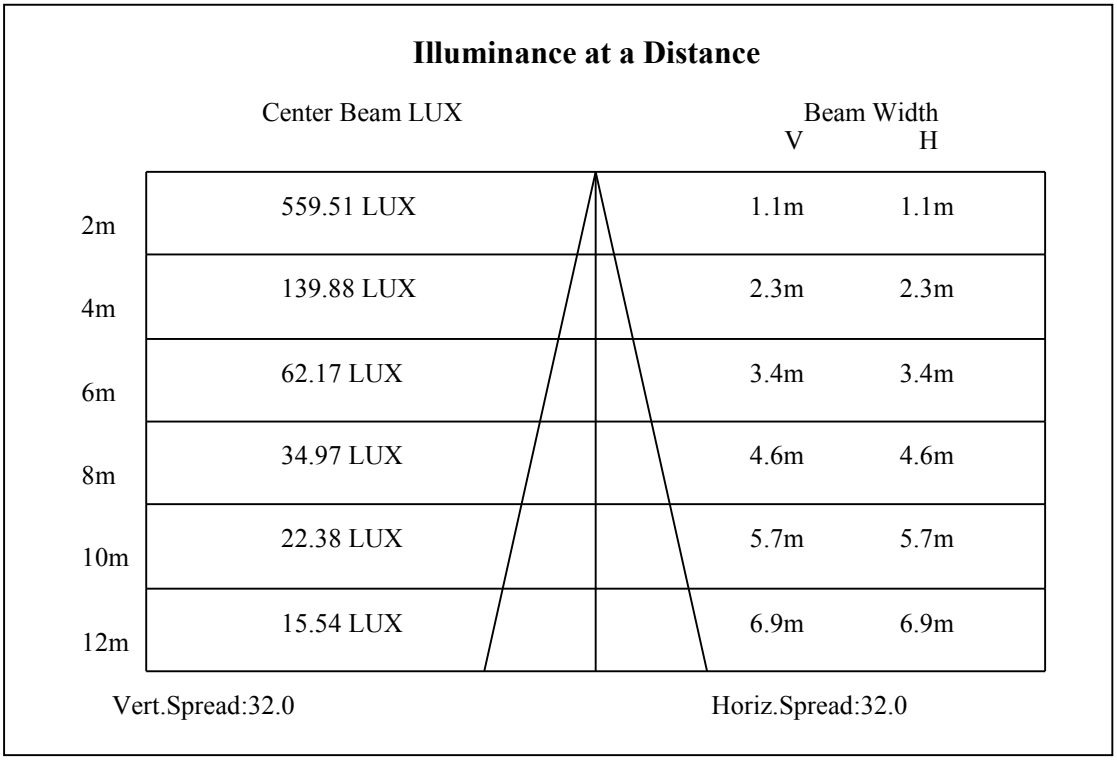
C90/C270:

Field angle(10%Imax):C0/180Left:31.4 Right:31.4
:C90/270Left:31.4 Right:31.4

Beam Angle(50%Imax):C0/180Left:16.0 Right:16.0
:C90/270Left:16.0 Right:16.0

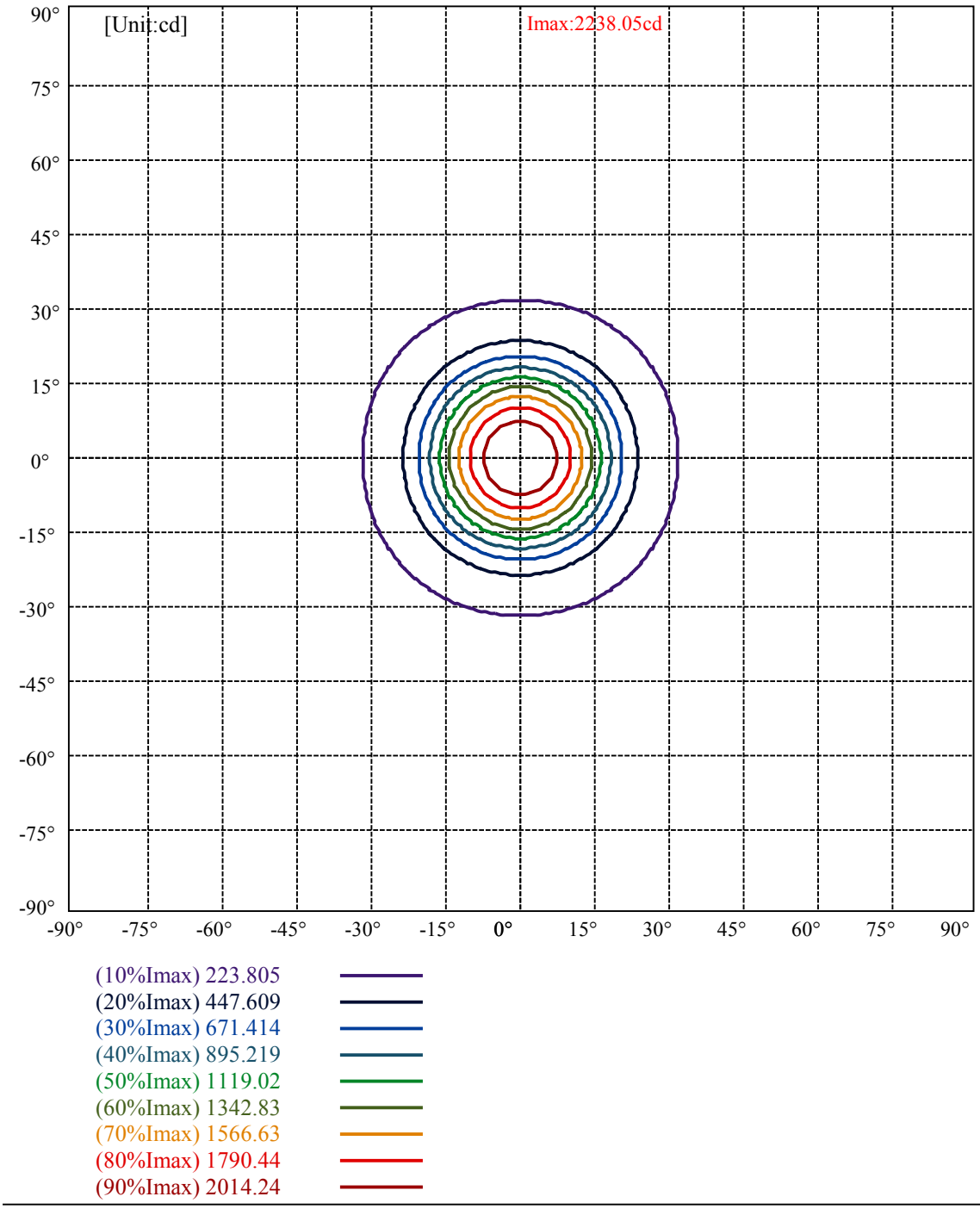
Equipment: GMS1980 Date: 2020/6/5 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Lux distance Curve



Equipment: GMS1980 Date: 2020/6/5 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

ISO-Intensity(V-H)

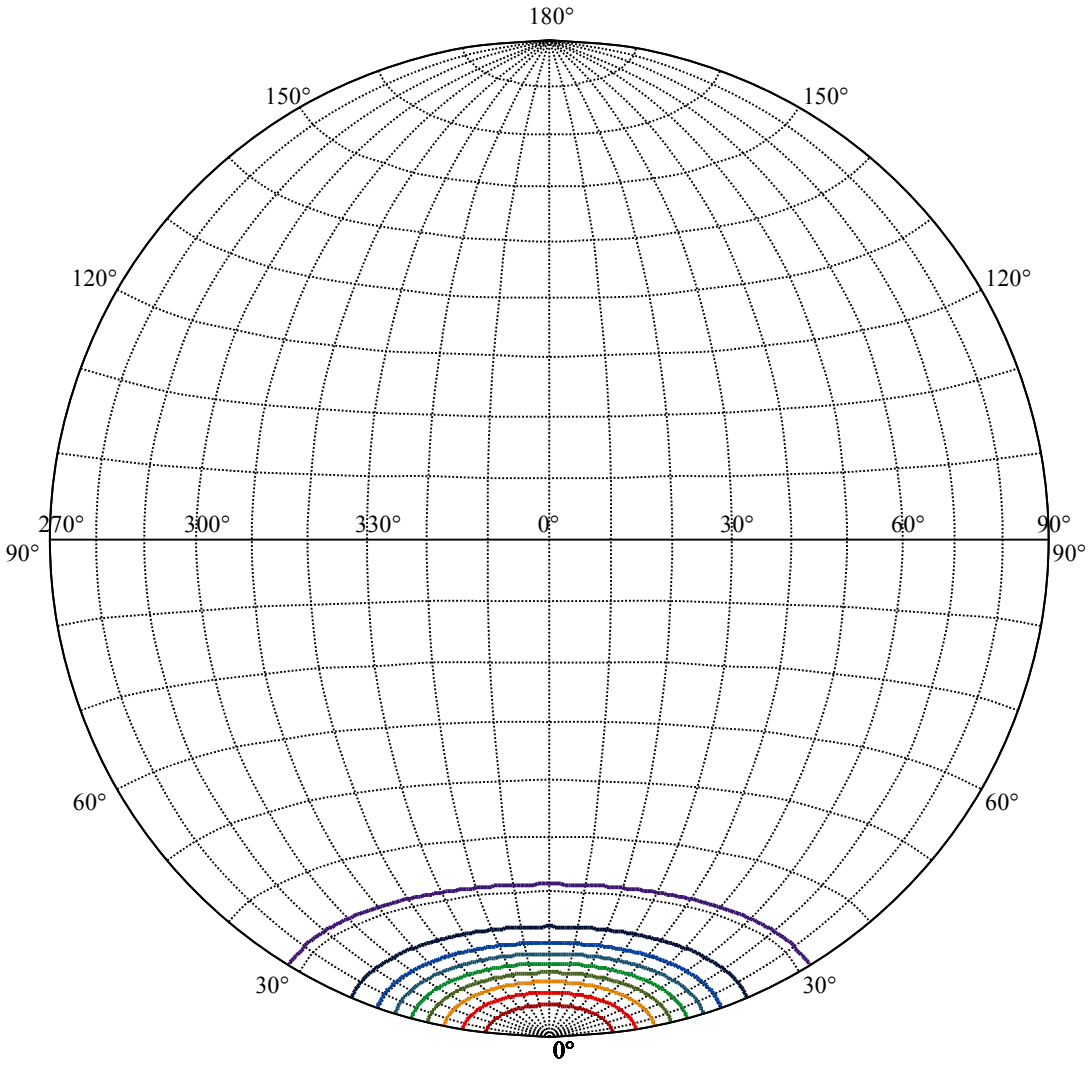


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:2238.05

(10%Imax) 223.805
(20%Imax) 447.609
(30%Imax) 671.414
(40%Imax) 895.219
(50%Imax) 1119.02
(60%Imax) 1342.83
(70%Imax) 1566.63
(80%Imax) 1790.44
(90%Imax) 2014.24

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

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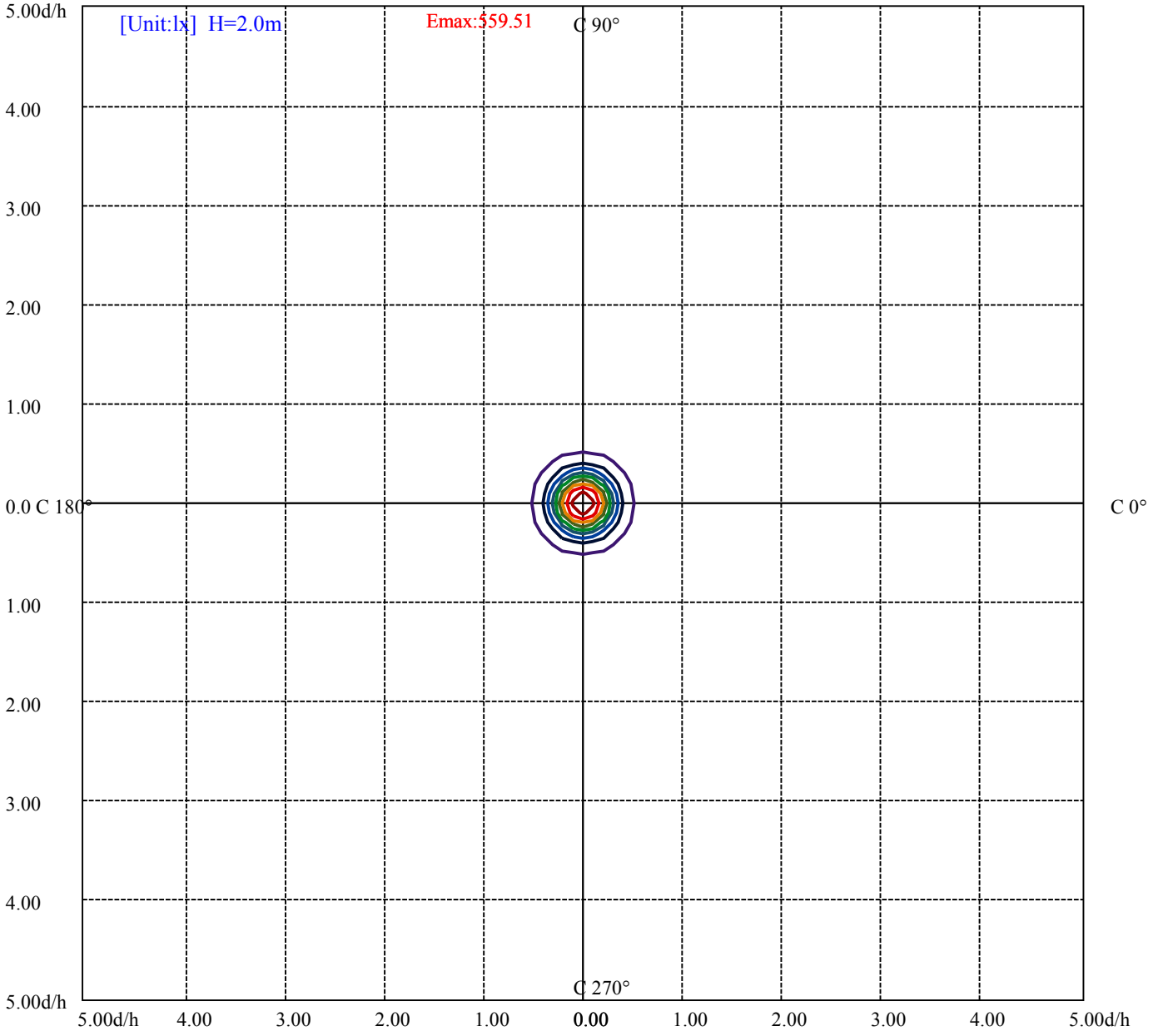
ISO illuminance diagram

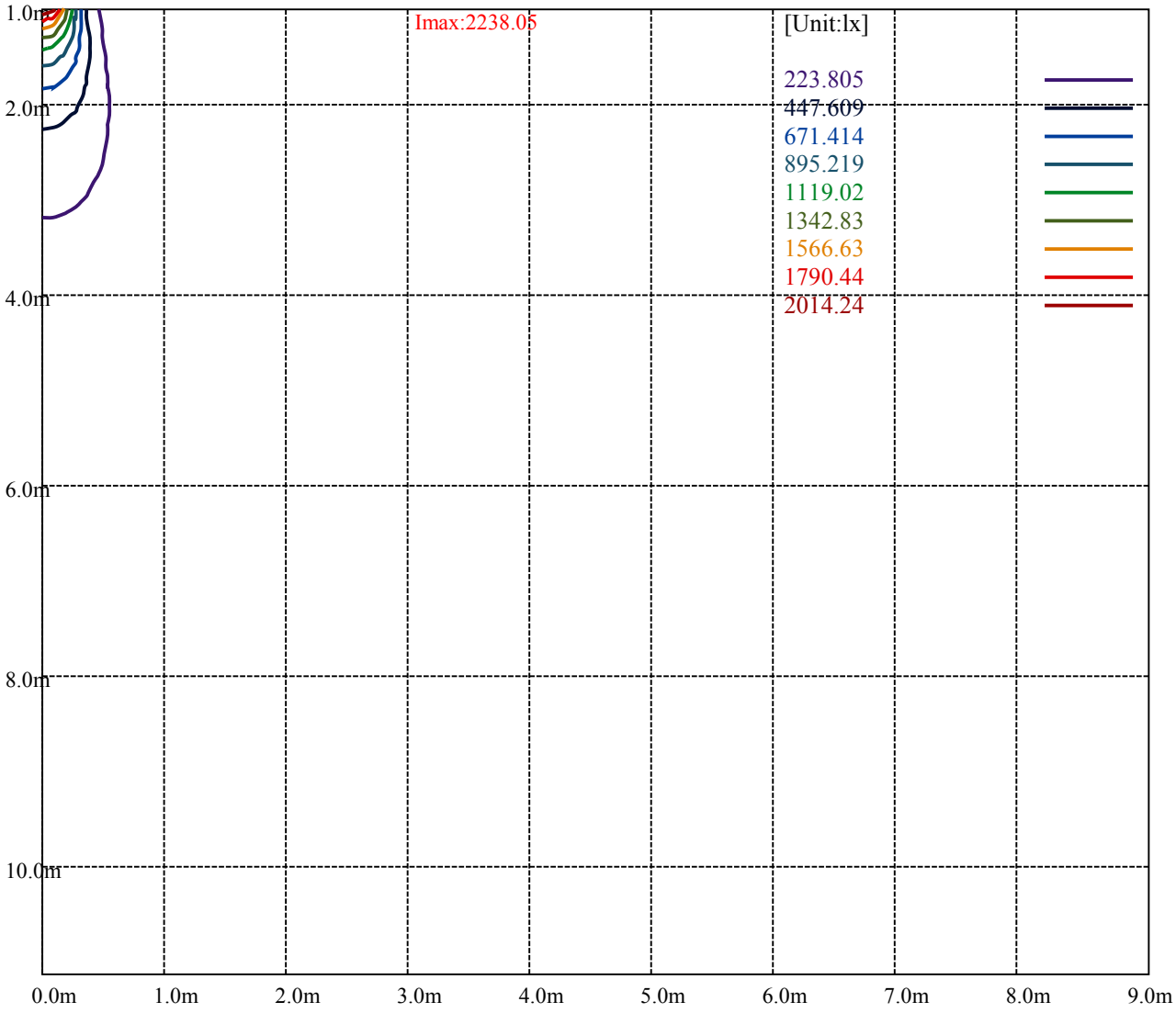


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/6/5
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

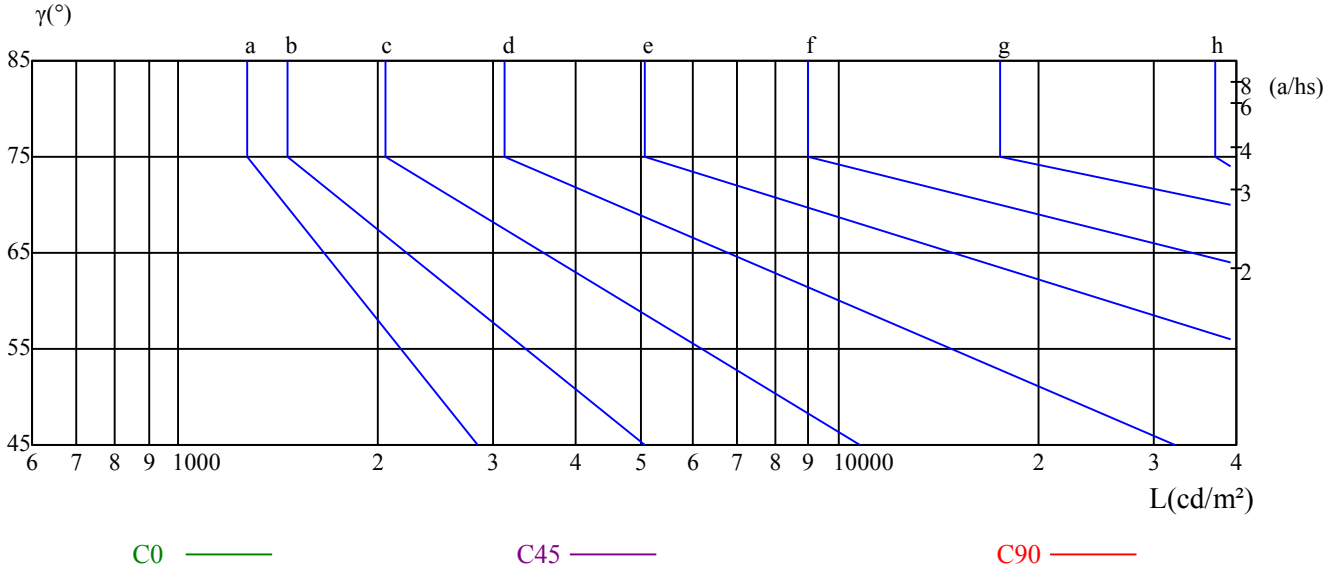
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

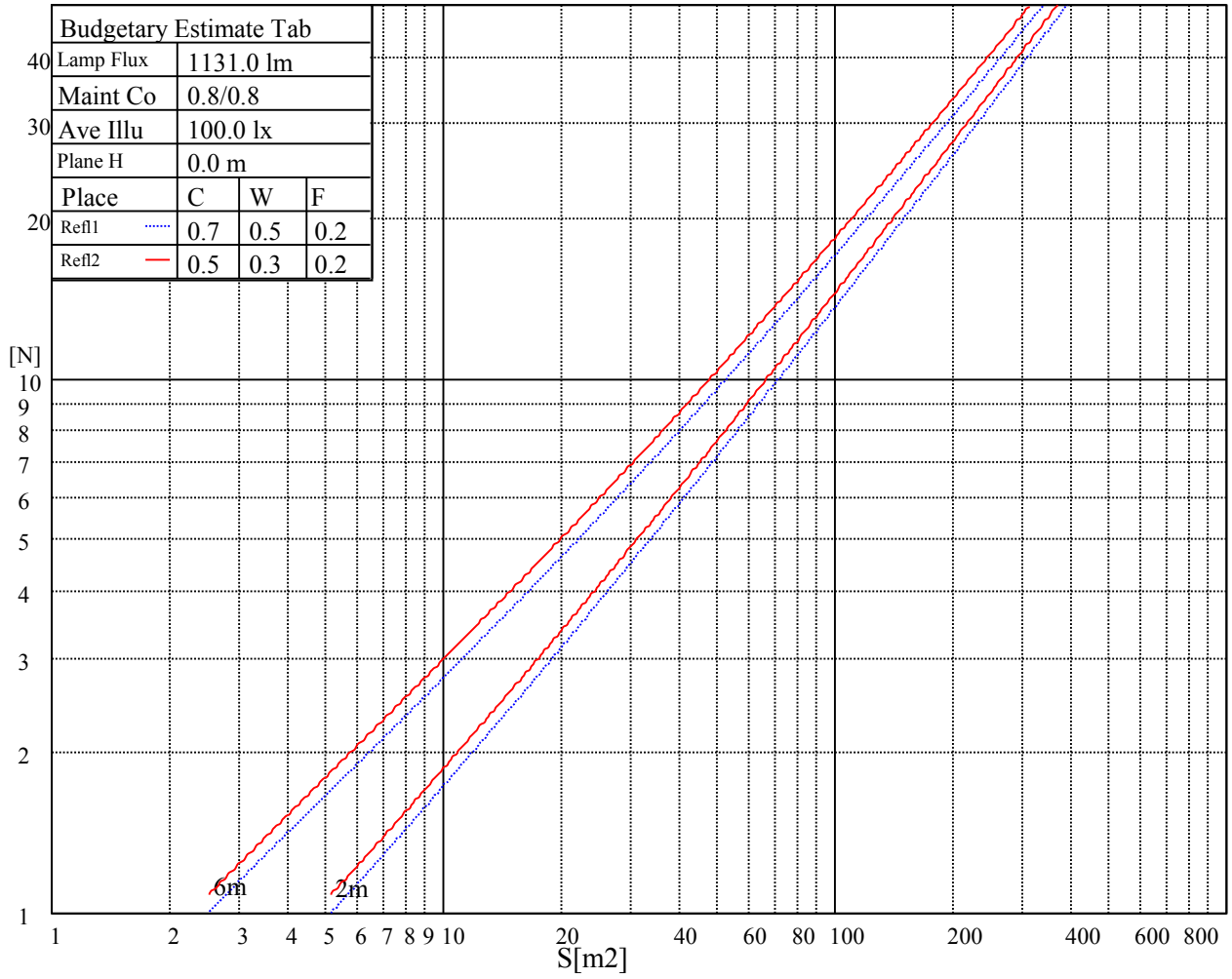
Glare Table

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

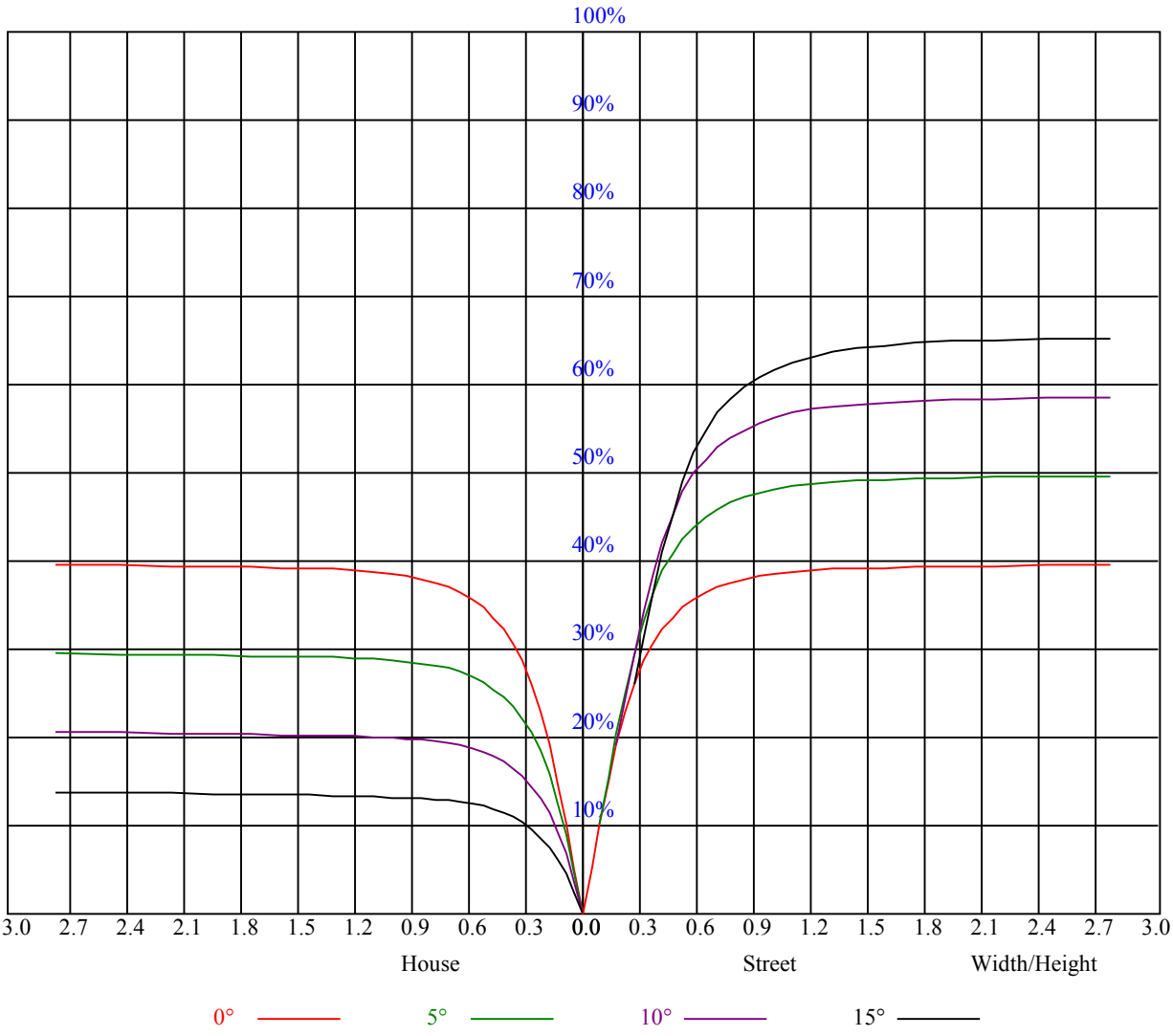


Equipment: GMS1980 Date: 2020/6/5 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.82	0.82	0.82	0.80
1	0.89	0.87	0.85	0.87	0.85	0.84	0.84	0.82	0.81	0.81	0.80	0.79	0.78	0.77	0.76	0.75
2	0.83	0.80	0.77	0.82	0.79	0.77	0.79	0.77	0.75	0.77	0.75	0.73	0.75	0.73	0.72	0.71
3	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.73	0.71	0.69	0.71	0.69	0.68	0.67
4	0.74	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.68	0.66	0.64	0.63
5	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.61	0.65	0.63	0.61	0.60
6	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.57
7	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.55	0.60	0.57	0.55	0.54
8	0.61	0.56	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.53	0.52
9	0.58	0.54	0.51	0.58	0.54	0.51	0.57	0.53	0.51	0.56	0.53	0.51	0.56	0.53	0.51	0.50
10	0.56	0.52	0.49	0.55	0.52	0.49	0.55	0.51	0.49	0.54	0.51	0.49	0.54	0.51	0.49	0.48

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2020/6/5	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	2241.56	2248.88	2253.38	2252.25	2246.63	2230.31	2195.44	2158.31	2111.63
45.0	2237.06	2235.94	2232.00	2216.25	2193.19	2158.88	2107.69	2057.06	1993.50
90.0	2229.19	2224.13	2201.06	2182.50	2145.94	2105.44	2046.94	1976.06	1905.19
135.0	2244.38	2234.81	2221.31	2182.50	2148.19	2107.13	2038.50	1975.50	1902.38
180.0	2241.56	2218.50	2191.50	2158.31	2120.06	2059.88	1985.63	1899.56	1813.50
225.0	2237.06	2228.63	2223.00	2200.50	2164.50	2128.50	2084.06	2013.19	1945.69
270.0	2229.19	2230.31	2230.31	2213.44	2194.31	2170.13	2121.75	2075.63	2019.94
315.0	2244.38	2250.00	2251.69	2243.25	2227.50	2209.50	2179.13	2122.88	2067.19
360.0	2241.56	2248.88	2253.38	2252.25	2246.63	2230.31	2195.44	2158.31	2111.63

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2040.19	1968.19	1890.00	1784.81	1673.44	1576.13	1457.44	1343.81	1217.25
45.0	1906.88	1818.00	1729.13	1619.44	1498.50	1394.44	1278.00	1153.13	1035.00
90.0	1829.25	1716.75	1630.13	1535.63	1400.06	1301.06	1117.58	1072.97	941.57
135.0	1801.13	1712.81	1617.19	1511.44	1397.25	1295.44	1171.13	1062.56	939.38
180.0	1722.38	1620.00	1516.50	1413.00	1283.06	1121.51	1065.88	960.30	826.14
225.0	1861.88	1747.69	1650.94	1549.13	1431.56	1312.31	1114.14	1071.17	963.79
270.0	1928.81	1846.69	1761.75	1654.31	1540.13	1438.88	1315.13	1206.00	1076.63
315.0	1999.69	1888.31	1790.44	1695.38	1556.44	1451.25	1345.50	1112.46	1083.26
360.0	2040.19	1968.19	1890.00	1784.81	1673.44	1576.13	1457.44	1343.81	1217.25

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1094.63	986.06	862.88	752.06	659.25	586.13	497.25	442.13	405.00
45.0	908.44	804.94	697.50	595.69	520.88	455.63	407.81	373.50	342.00
90.0	833.06	732.09	631.18	547.03	484.43	427.95	386.10	350.61	322.59
135.0	826.88	727.31	628.88	544.50	480.38	434.25	385.31	354.94	327.94
180.0	726.98	638.83	551.87	482.91	434.98	391.22	355.89	328.89	303.24
225.0	848.87	736.03	648.51	564.81	485.21	442.24	403.09	359.04	335.31
270.0	954.00	844.31	734.06	635.06	560.25	496.69	434.25	394.31	361.69
315.0	969.53	859.95	747.28	642.88	562.95	486.11	427.39	386.94	348.69
360.0	1094.63	986.06	862.88	752.06	659.25	586.13	497.25	442.13	405.00

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	362.81	331.31	309.94	285.75	260.66	243.62	226.13	210.99	195.13
45.0	313.31	291.38	285.75	253.97	231.13	216.96	204.36	184.89	173.87
90.0	298.41	275.06	253.18	235.58	219.38	201.04	186.47	172.46	157.05
135.0	303.19	284.06	257.63	238.78	219.83	204.86	188.94	175.78	161.89
180.0	281.59	259.76	238.73	221.63	205.99	187.99	174.21	161.55	146.93
225.0	312.13	288.06	266.34	248.23	229.95	212.96	199.01	182.48	168.98
270.0	330.19	302.06	285.75	260.49	239.18	223.26	208.41	191.53	176.18
315.0	322.20	295.54	273.43	253.97	237.15	218.53	204.30	190.24	173.53
360.0	362.81	331.31	309.94	285.75	260.66	243.62	226.13	210.99	195.13

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	180.39	167.63	156.26	140.23	127.97	116.55	103.44	93.38	84.26
45.0	161.89	147.26	133.59	122.79	108.51	97.65	88.09	77.40	69.81
90.0	145.58	133.14	120.49	107.72	97.09	86.18	77.34	68.51	60.81
135.0	149.40	134.61	122.06	107.72	96.98	87.47	76.22	68.01	60.98
180.0	134.33	122.12	109.18	97.31	87.98	77.96	69.81	61.76	55.01
225.0	154.29	140.01	127.41	113.96	101.64	92.19	83.08	72.68	65.19
270.0	161.16	148.89	136.35	121.61	110.14	99.39	89.04	79.03	71.04
315.0	160.99	149.18	135.34	121.11	109.46	97.31	87.81	77.96	69.02
360.0	180.39	167.63	156.26	140.23	127.97	116.55	103.44	93.38	84.26

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	74.81	66.09	59.51	52.43	47.08	42.69	38.25	35.33	31.61
45.0	62.49	55.29	50.29	45.28	39.88	36.45	33.24	29.81	26.55
90.0	54.62	48.04	42.69	38.42	34.48	30.38	27.17	24.58	21.54
135.0	53.83	47.87	43.31	38.53	34.93	31.22	27.79	24.81	21.88
180.0	49.44	44.21	39.49	35.61	32.18	28.13	24.86	21.94	18.51
225.0	58.56	51.98	46.18	41.57	37.29	33.24	29.87	26.78	23.51
270.0	64.07	55.97	50.18	45.45	40.28	36.06	32.85	29.59	26.27
315.0	61.76	54.79	48.60	43.88	39.94	35.27	32.18	29.64	26.89
360.0	74.81	66.09	59.51	52.43	47.08	42.69	38.25	35.33	31.61

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	28.46	25.88	23.12	19.86	17.27	14.74	11.93	9.68	8.83
45.0	23.79	21.09	18.56	16.09	13.44	11.14	9.51	8.78	8.21
90.0	19.01	16.65	14.46	12.09	10.63	9.06	8.44	7.88	7.65
135.0	19.07	16.71	14.34	11.48	9.23	7.76	7.26	6.81	6.75
180.0	15.92	13.50	10.63	8.38	6.98	6.47	6.08	6.02	6.02
225.0	20.59	17.72	15.24	12.83	10.18	8.16	7.43	6.92	6.92
270.0	23.68	20.93	18.62	16.43	13.67	11.76	10.07	9.23	8.61
315.0	24.24	22.28	19.69	17.33	15.02	12.49	10.46	9.34	8.38
360.0	28.46	25.88	23.12	19.86	17.27	14.74	11.93	9.68	8.83

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.04	7.76	7.65	7.48	7.31	7.26	7.20	7.09	7.03
45.0	8.04	7.88	7.76	7.65	7.65	7.76	8.10	8.66	9.23
90.0	7.48	7.43	7.37	7.26	7.20	6.98	6.81	6.81	6.81
135.0	6.69	6.58	6.58	6.58	6.53	6.53	6.47	6.47	6.47
180.0	6.02	6.08	6.13	6.19	6.30	6.47	6.64	6.75	6.92
225.0	6.92	6.98	7.03	7.09	7.14	7.14	7.14	7.14	7.20
270.0	8.38	8.10	7.88	7.71	7.43	7.20	7.09	6.92	6.92
315.0	8.10	7.82	7.48	7.26	7.03	6.86	6.69	6.58	6.53
360.0	8.04	7.76	7.65	7.48	7.31	7.26	7.20	7.09	7.03

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.03	7.03	7.03	7.03	7.03	7.09	7.09	7.48	7.76
45.0	9.51	9.17	9.00	8.94	8.94	8.94	8.94	8.94	9.00
90.0	6.69	6.75	6.98	7.48	7.65	8.44	8.66	9.06	9.23
135.0	6.53	6.64	6.75	6.98	7.20	7.37	7.59	8.72	9.90
180.0	7.09	7.20	7.31	7.48	7.65	7.88	8.04	8.27	8.49
225.0	7.31	7.37	7.54	7.71	7.99	8.27	8.55	9.11	9.73
270.0	7.03	7.20	7.48	7.76	7.99	8.16	8.49	9.00	9.34
315.0	6.47	6.53	6.53	6.64	6.69	6.86	7.09	7.37	8.21
360.0	7.03	7.03	7.03	7.03	7.03	7.09	7.09	7.48	7.76

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.82	7.93	8.10	8.44	8.78	8.83	8.27	7.54	4.11
45.0	8.94	8.78	8.72	8.66	8.27	6.92	4.39	3.88	3.83
90.0	9.17	8.78	9.06	8.38	6.47	4.16	3.71	3.60	3.49
135.0	9.56	8.27	8.38	8.49	8.27	3.94	3.77	3.66	3.60
180.0	8.66	8.61	8.33	7.76	4.61	3.83	3.83	3.66	3.60
225.0	10.24	10.46	10.29	10.24	8.89	8.16	3.83	3.77	3.71
270.0	9.56	9.84	10.07	9.90	9.79	9.51	7.76	3.71	3.60
315.0	9.06	9.68	9.06	8.83	9.00	9.23	8.78	6.08	3.83
360.0	7.82	7.93	8.10	8.44	8.78	8.83	8.27	7.54	4.11

Intensity data(cd)

C/γ(°)	90.0
0.0	4.05
45.0	3.77
90.0	3.54
135.0	3.54
180.0	3.54
225.0	3.60
270.0	3.49
315.0	3.77
360.0	4.05