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Nata

LumCAT: LN01D02824DA-N
Luminaire: 92.70.307.00
Report No: 211112-B007
Test No: 211112-C007
LampCAT: CITIZEN CLU7A2 LES4.5
Lamp flux(lm): 573.2
Number of Lamps: 1
Length(mm): 111
Phm Type: C

Voltage(V): 36.4900
Current(A): 0.1560
Power (W): 5.6920
PF: 0.0000
Ballast type: DC
Width(mm): 111
Height(mm): 0

Photometric Results

Lumens(lm): 365.11
Efficiency(%): 63.70%
Lumens(lm)/Power(W): 64.15
Central intensity(cd): 1150.303
Maximum intensity(cd): 1150.303
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=25.8
[C90/270]Total=25.8
Field angle(10%Imax): [C0/180]Total=52.8
[C90/270]Total=52.8
Maximum s/h(1/2): C0_180=0.43 C90_270=0.43
Maximum s/h(1/4): C0_180=0.45 C90_270=0.45
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 63.70%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.524%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1150.303	0.000	0	.000%	.000%
1.0	1145.478	1.098	1.098	.192%	.301%
2.0	1132.004	3.269	4.367	.570%	1.196%
3.0	1109.021	5.360	9.727	.935%	2.664%
4.0	1078.622	7.323	17.05	1.278%	4.670%
5.0	1039.364	9.111	26.161	1.590%	7.165%
6.0	993.355	10.682	36.844	1.864%	10.091%
7.0	939.779	11.999	48.843	2.094%	13.377%
8.0	886.113	13.068	61.91	2.280%	16.956%
9.0	823.806	13.858	75.768	2.418%	20.752%
10.0	757.361	14.309	90.077	2.497%	24.671%
11.0	696.465	14.527	104.604	2.535%	28.650%
12.0	632.417	14.527	119.131	2.535%	32.628%
13.0	569.027	14.258	133.389	2.488%	36.533%
14.0	509.274	13.802	147.191	2.408%	40.314%
15.0	454.690	13.234	160.425	2.309%	43.938%
16.0	401.405	12.544	172.969	2.189%	47.374%
17.0	355.067	11.780	184.749	2.055%	50.600%
18.0	312.299	11.003	195.752	1.920%	53.614%
19.0	276.185	10.238	205.991	1.786%	56.418%
20.0	243.799	9.517	215.508	1.661%	59.025%
21.0	213.893	8.789	224.297	1.533%	61.432%
22.0	189.506	8.106	232.403	1.414%	63.652%
23.0	168.884	7.520	239.923	1.312%	65.712%
24.0	149.681	6.965	246.888	1.215%	67.619%
25.0	133.510	6.439	253.327	1.123%	69.383%
26.0	120.178	5.988	259.316	1.045%	71.023%
27.0	107.608	5.573	264.888	.972%	72.549%
28.0	96.882	5.177	270.066	.903%	73.967%
29.0	87.844	4.833	274.899	.843%	75.291%
30.0	79.830	4.527	279.426	.790%	76.531%
31.0	72.495	4.239	283.665	.740%	77.692%
32.0	66.057	3.969	287.634	.693%	78.779%
33.0	60.642	3.733	291.367	.651%	79.801%
34.0	55.593	3.518	294.884	.614%	80.765%
35.0	51.096	3.313	298.198	.578%	81.672%
36.0	47.093	3.126	301.324	.545%	82.529%
37.0	43.582	2.957	304.281	.516%	83.339%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	40.273	2.799	307.08	.488%	84.105%
39.0	37.271	2.647	309.727	.462%	84.830%
40.0	34.761	2.512	312.239	.438%	85.518%
41.0	32.364	2.390	314.63	.417%	86.173%
42.0	30.272	2.276	316.905	.397%	86.796%
43.0	28.293	2.169	319.075	.379%	87.390%
44.0	26.598	2.072	321.146	.361%	87.958%
45.0	25.059	1.985	323.132	.346%	88.501%
46.0	23.632	1.904	325.036	.332%	89.023%
47.0	22.273	1.826	326.862	.319%	89.523%
48.0	21.070	1.752	328.614	.306%	90.003%
49.0	19.957	1.685	330.299	.294%	90.464%
50.0	18.852	1.618	331.917	.282%	90.907%
51.0	17.881	1.554	333.471	.271%	91.333%
52.0	17.000	1.497	334.968	.261%	91.743%
53.0	16.133	1.441	336.409	.251%	92.138%
54.0	15.289	1.385	337.794	.242%	92.517%
55.0	14.595	1.334	339.128	.233%	92.883%
56.0	13.907	1.288	340.416	.225%	93.235%
57.0	13.235	1.241	341.657	.217%	93.575%
58.0	12.638	1.196	342.853	.209%	93.903%
59.0	12.070	1.155	344.008	.202%	94.219%
60.0	11.510	1.114	345.122	.194%	94.524%
61.0	10.957	1.072	346.195	.187%	94.818%
62.0	10.457	1.032	347.226	.180%	95.101%
63.0	9.949	0.992	348.219	.173%	95.372%
64.0	9.478	0.953	349.172	.166%	95.633%
65.0	9.023	0.916	350.088	.160%	95.884%
66.0	8.612	0.880	350.968	.154%	96.125%
67.0	8.201	0.845	351.813	.148%	96.357%
68.0	7.828	0.812	352.625	.142%	96.579%
69.0	7.462	0.780	353.405	.136%	96.793%
70.0	7.118	0.749	354.154	.131%	96.998%
71.0	6.774	0.718	354.872	.125%	97.195%
72.0	6.558	0.693	355.565	.121%	97.384%
73.0	6.446	0.680	356.245	.119%	97.571%
74.0	6.341	0.672	356.917	.117%	97.755%
75.0	6.386	0.672	357.59	.117%	97.939%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	6.565	0.688	358.277	.120%	98.127%
77.0	6.827	0.714	358.991	.125%	98.323%
78.0	7.170	0.749	359.74	.131%	98.528%
79.0	7.155	0.770	360.51	.134%	98.739%
80.0	6.760	0.750	361.26	.131%	98.944%
81.0	6.326	0.708	361.968	.123%	99.138%
82.0	5.804	0.658	362.626	.115%	99.318%
83.0	4.877	0.581	363.206	.101%	99.477%
84.0	4.302	0.500	363.707	.087%	99.614%
85.0	3.159	0.407	364.114	.071%	99.726%
86.0	1.979	0.281	364.395	.049%	99.803%
87.0	1.740	0.204	364.598	.036%	99.859%
88.0	1.613	0.184	364.782	.032%	99.909%
89.0	1.486	0.170	364.952	.030%	99.955%
90.0	1.486	0.163	365.115	.028%	100.000%

Zonal flux distribution table

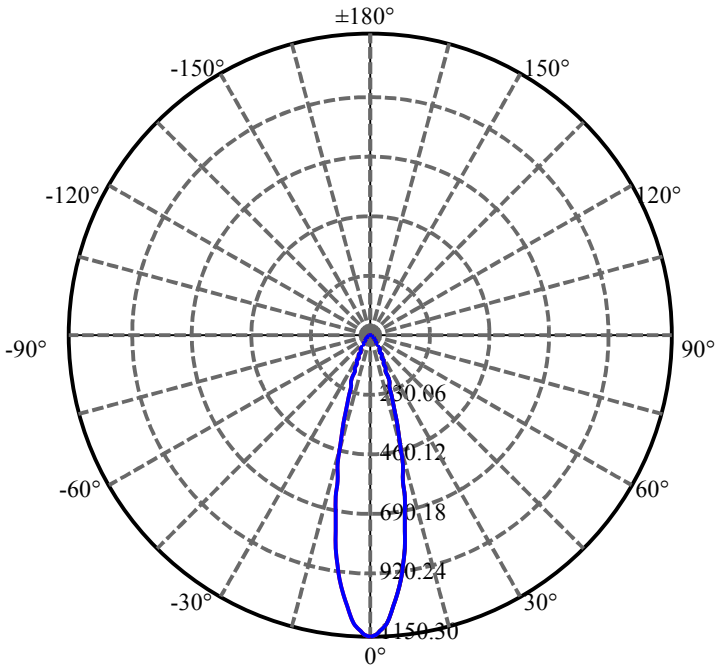
ZONAL LUMEN SUMMARY

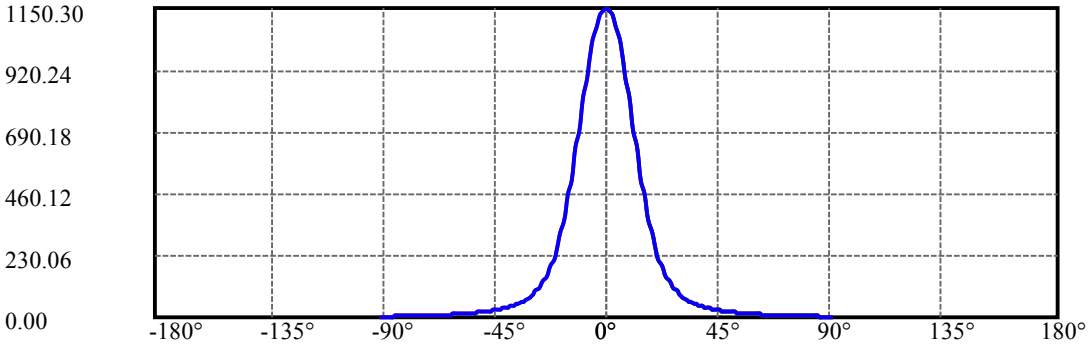
Zone	Lumens	%Lamp	%Fixt
0-30	279.43	48.75%	76.53%
0-40	312.24	54.48%	85.52%
0-60	345.12	60.22%	94.52%
0-90	364.95	63.67%	99.96%
0-120	364.95	63.67%	99.96%
0-180	365.11	63.70%	100.00%
60-90	20.94	3.65%	5.74%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-33.21	292.09	50.96%	80.00%

ZONAL LUMEN SUMMARY

0-10	90.08
10-20	125.43
20-30	63.92
30-40	32.81
40-50	19.68
50-60	13.21
60-70	9.03
70-80	7.11
80-90	3.69
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):

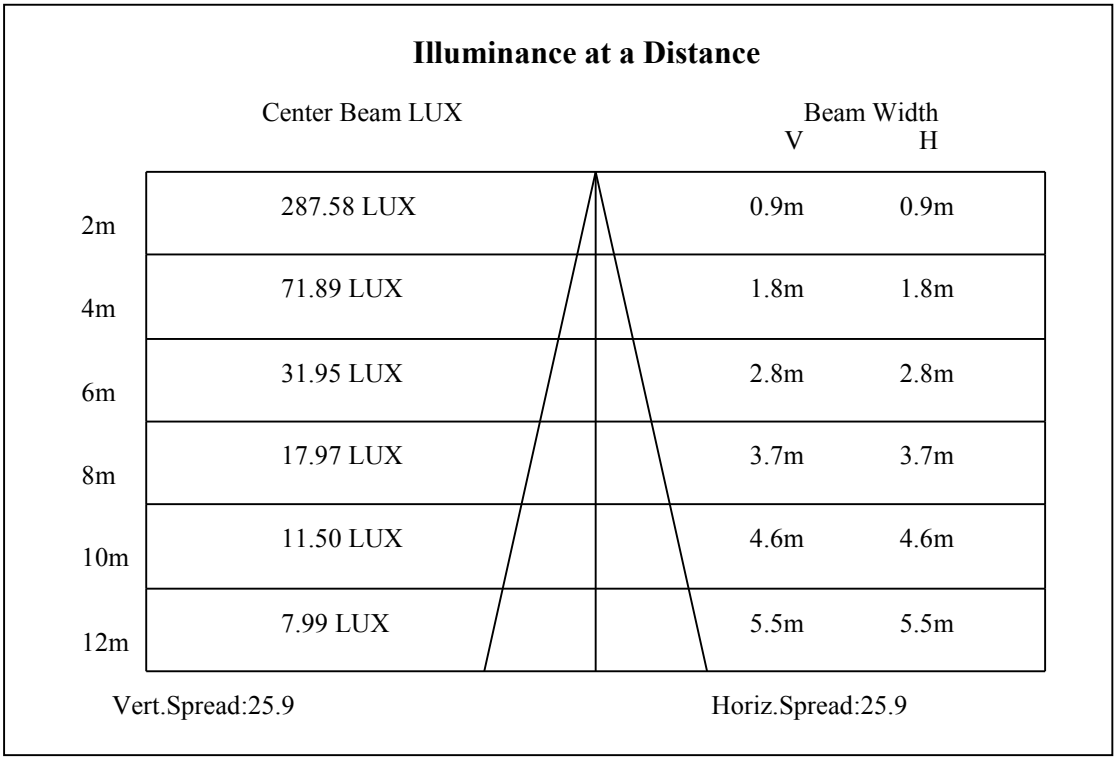
C0/C180:

C90/C270:

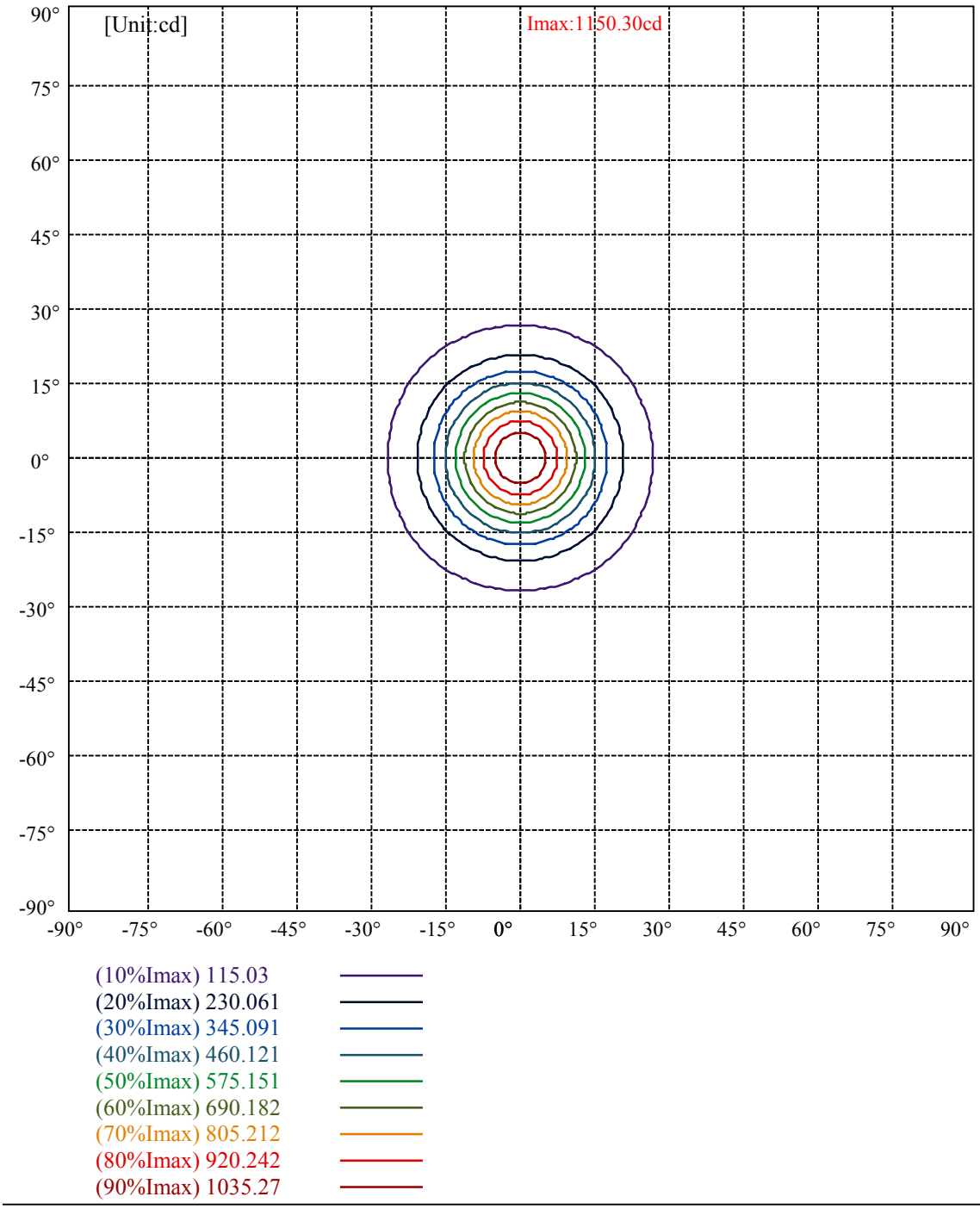
Field angle(10%Imax):C0/180Left:26.4 Right:26.4
:C90/270Left:26.4 Right:26.4

Beam Angle(50%Imax):C0/180Left:12.9 Right:12.9
:C90/270Left:12.9 Right:12.9

Lux distance Curve



ISO-Intensity(V-H)



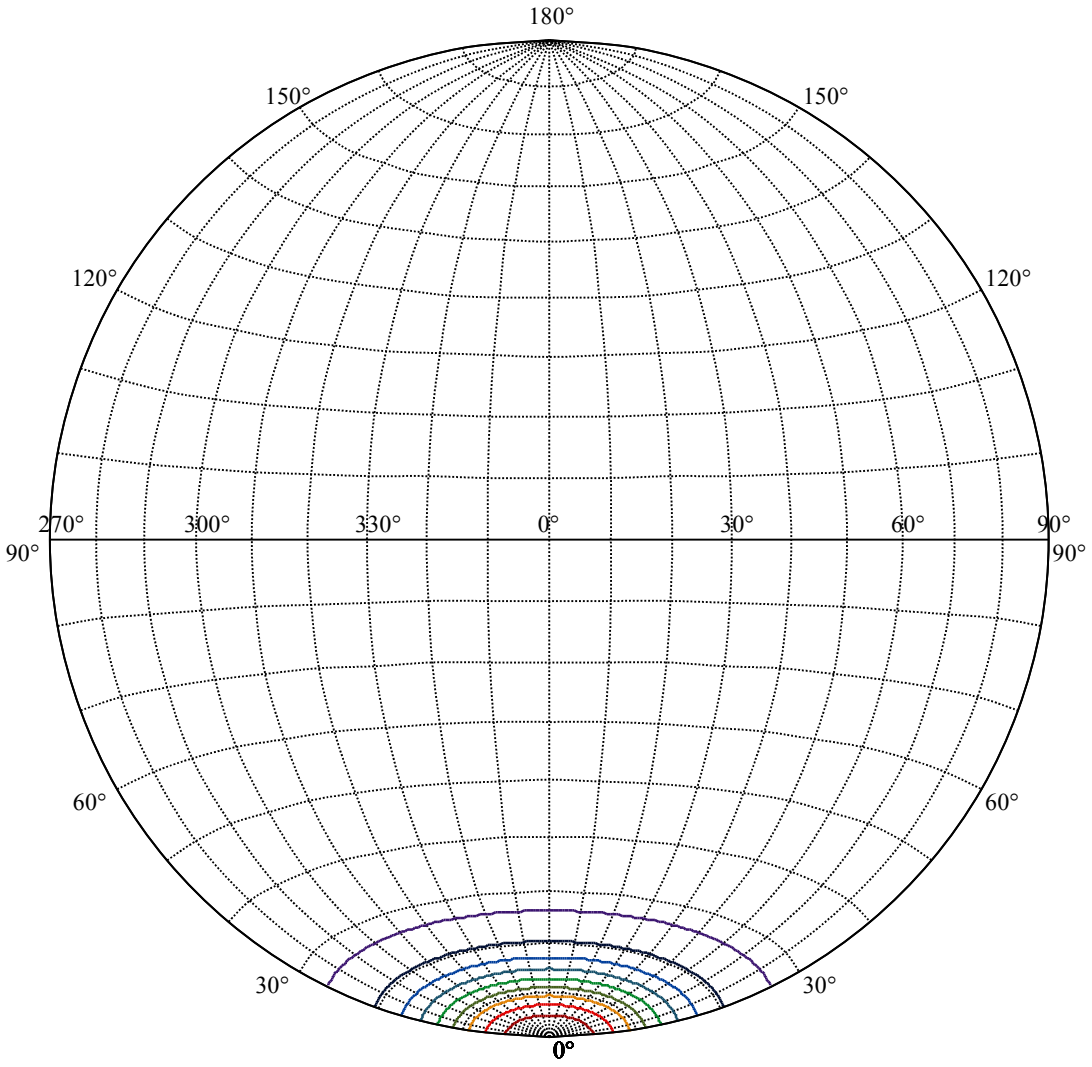
(10%Imax) 115.03
(20%Imax) 230.061
(30%Imax) 345.091
(40%Imax) 460.121
(50%Imax) 575.151
(60%Imax) 690.182
(70%Imax) 805.212
(80%Imax) 920.242
(90%Imax) 1035.27

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/12
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1150.30

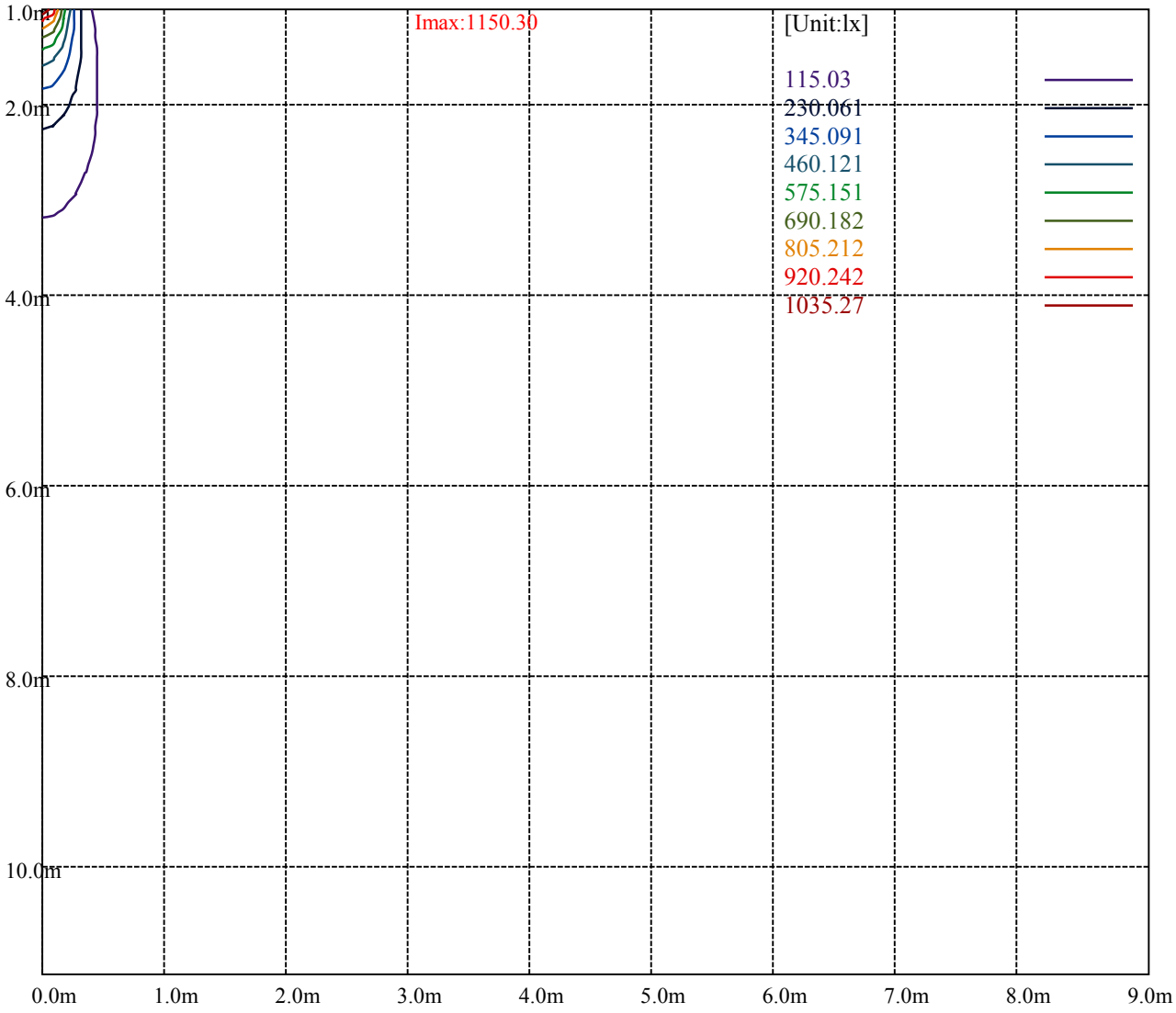
(10%Imax) 115.03
(20%Imax) 230.061
(30%Imax) 345.091
(40%Imax) 460.121
(50%Imax) 575.151
(60%Imax) 690.182
(70%Imax) 805.212
(80%Imax) 920.242
(90%Imax) 1035.27

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/12
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/12
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Nata LN01D02824DA-N

Luminance Limitting Curve(no luminous side)

Luminance Table

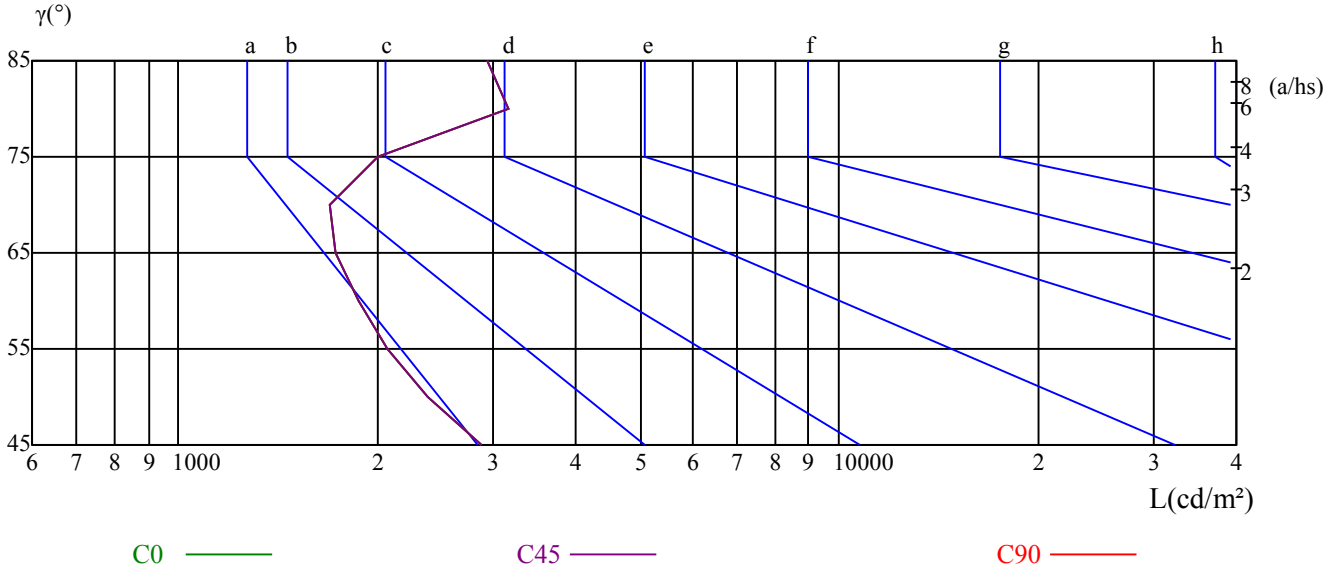
γ	45	50	55	60	65	70	75	80	85
C0	2876	2380	2065	1868	1733	1689	2003	3159	2942
C45	2876	2380	2065	1868	1733	1689	2003	3159	2942
C90	2876	2380	2065	1868	1733	1689	2003	3159	2942

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1733	1733	1733	2003	2003	2003	2942	2942	2942

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

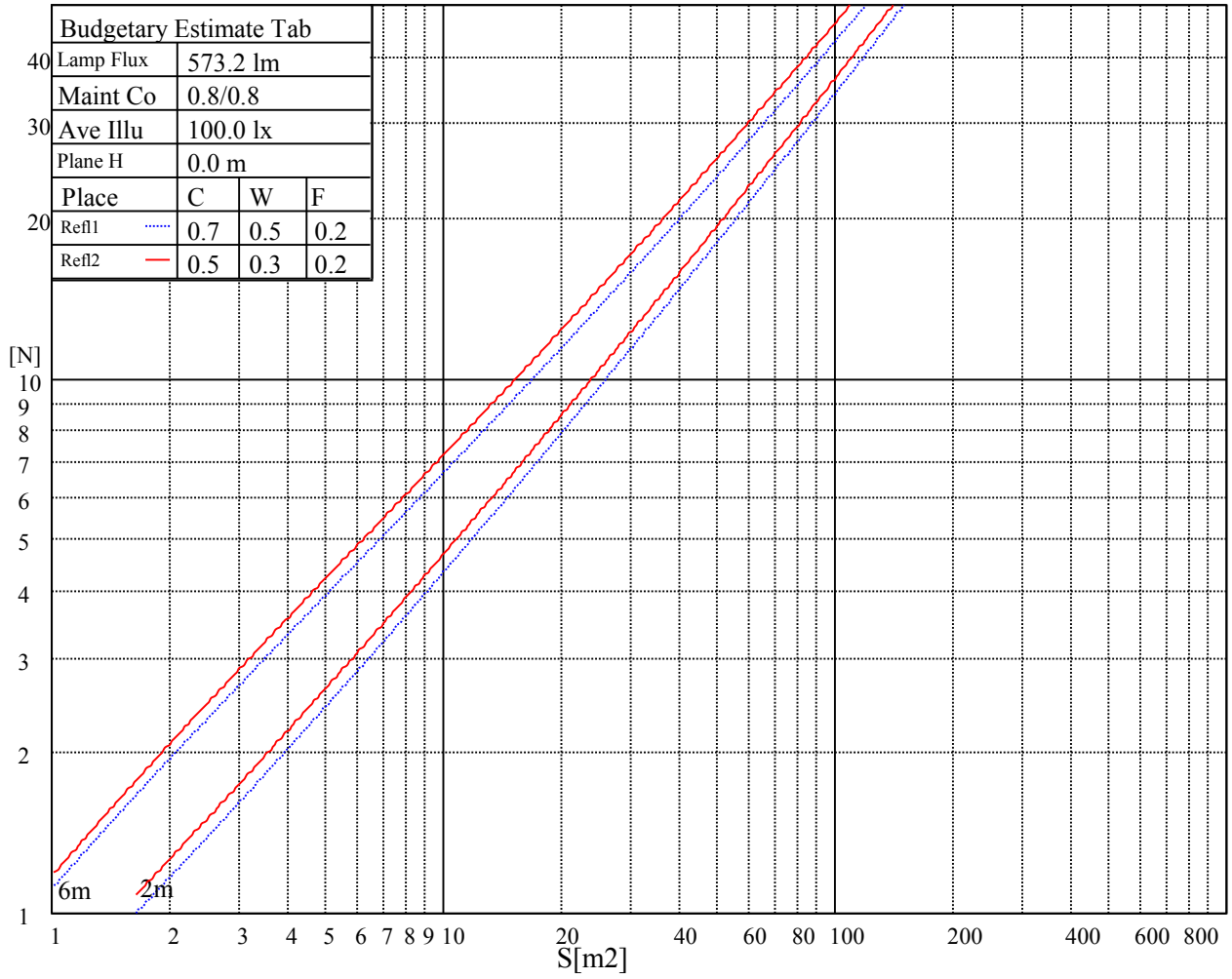


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/11/12
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Budgetary Estimate Table

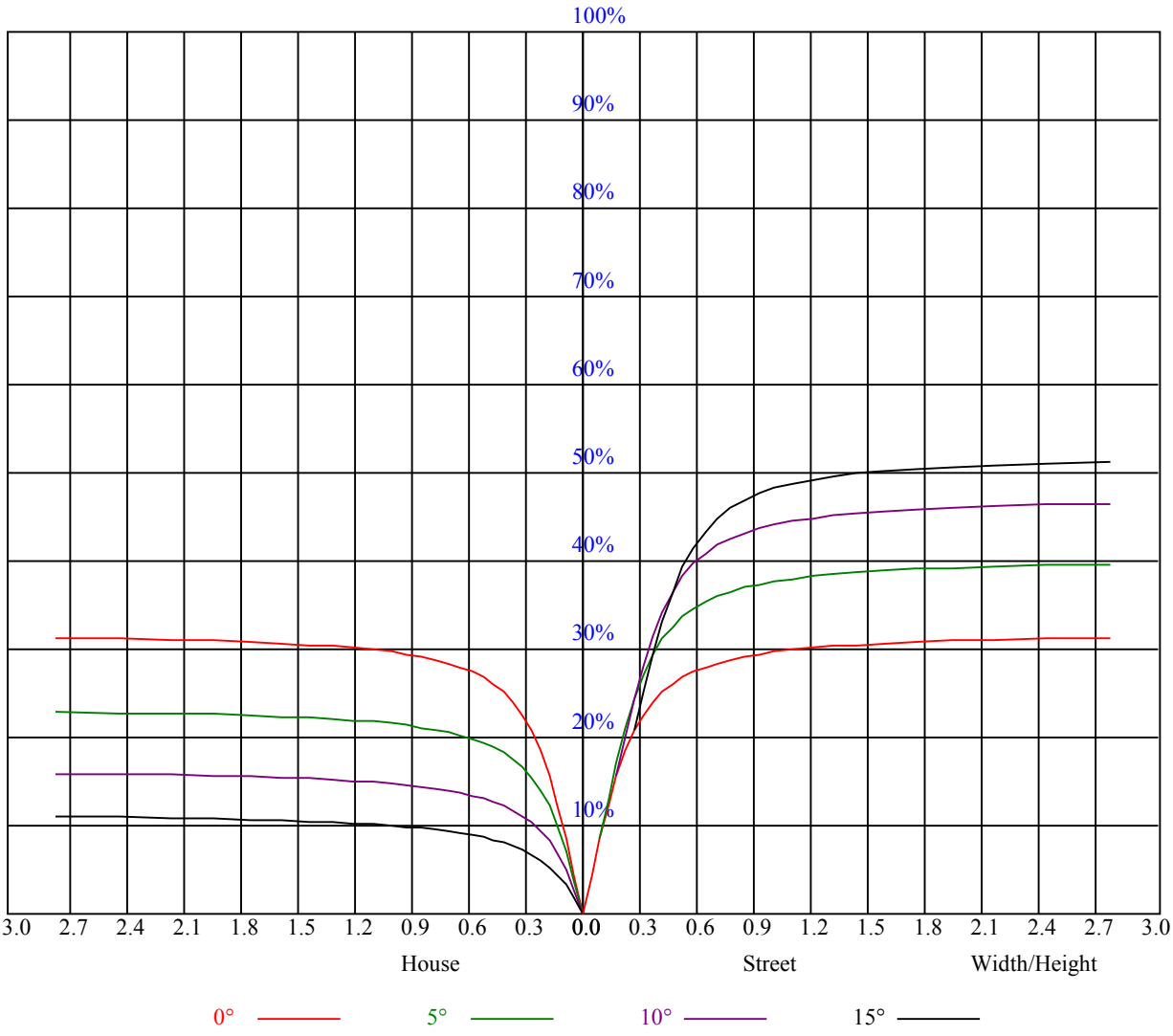


Equipment: GMS1980 Date: 2021/11/12 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.76	0.76	0.76	0.74	0.74	0.74	0.71	0.71	0.71	0.68	0.68	0.68	0.65	0.65	0.65	0.64
1	0.70	0.69	0.67	0.69	0.67	0.66	0.66	0.65	0.64	0.64	0.63	0.62	0.62	0.61	0.60	0.59
2	0.65	0.63	0.61	0.64	0.62	0.60	0.62	0.60	0.59	0.60	0.59	0.57	0.59	0.57	0.56	0.55
3	0.61	0.58	0.56	0.61	0.58	0.55	0.59	0.57	0.55	0.57	0.55	0.54	0.56	0.54	0.53	0.52
4	0.58	0.55	0.52	0.57	0.54	0.52	0.56	0.53	0.51	0.55	0.52	0.51	0.54	0.52	0.50	0.49
5	0.55	0.52	0.49	0.54	0.51	0.49	0.53	0.50	0.48	0.52	0.50	0.48	0.51	0.49	0.47	0.47
6	0.52	0.49	0.46	0.52	0.49	0.46	0.51	0.48	0.46	0.50	0.47	0.46	0.49	0.47	0.45	0.44
7	0.50	0.46	0.44	0.50	0.46	0.44	0.49	0.46	0.44	0.48	0.45	0.43	0.47	0.45	0.43	0.42
8	0.48	0.44	0.42	0.48	0.44	0.42	0.47	0.44	0.42	0.46	0.44	0.42	0.46	0.43	0.41	0.41
9	0.46	0.43	0.40	0.46	0.42	0.40	0.45	0.42	0.40	0.45	0.42	0.40	0.44	0.42	0.40	0.39
10	0.44	0.41	0.39	0.44	0.41	0.39	0.43	0.41	0.39	0.43	0.40	0.39	0.43	0.40	0.38	0.38

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/11/12	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	1148.69	1157.77	1158.31	1148.09	1130.17	1100.29	1060.85	1018.97	977.98
45.0	1154.13	1143.01	1122.10	1095.69	1057.87	1012.45	964.53	904.90	849.27
90.0	1146.66	1126.28	1100.29	1062.82	1017.59	971.16	918.88	848.13	788.86
135.0	1151.74	1136.44	1106.38	1074.36	1036.12	980.31	928.56	872.99	808.46
180.0	1148.69	1129.21	1103.82	1067.01	1022.07	975.76	916.79	852.97	793.76
225.0	1154.13	1155.38	1148.69	1129.39	1105.85	1074.84	1031.28	981.38	931.73
270.0	1146.66	1156.82	1158.73	1150.24	1134.11	1106.32	1073.70	1029.24	983.95
315.0	1151.74	1158.91	1157.71	1144.57	1125.21	1093.78	1052.25	1009.64	954.91
360.0	1148.69	1157.77	1158.31	1148.09	1130.17	1100.29	1060.85	1018.97	977.98

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	905.85	848.79	796.33	720.08	650.47	597.11	523.79	469.06	417.61
45.0	783.36	714.41	652.98	585.94	522.00	468.46	418.87	361.09	322.49
90.0	728.39	652.80	593.82	537.36	477.13	421.32	375.85	329.90	293.21
135.0	741.77	680.94	613.24	555.52	494.34	437.33	390.96	343.22	302.05
180.0	733.17	657.52	598.49	541.96	481.67	425.62	379.97	333.66	292.25
225.0	870.54	805.11	745.06	676.94	616.65	550.98	489.97	439.00	391.26
270.0	926.77	864.33	805.47	737.23	667.74	606.55	547.52	477.90	426.10
315.0	900.60	834.99	766.33	704.31	642.22	566.82	510.59	457.41	395.56
360.0	905.85	848.79	796.33	720.08	650.47	597.11	523.79	469.06	417.61

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	360.25	319.98	284.30	244.99	217.80	194.20	168.86	151.29	135.88
45.0	285.26	249.53	219.35	196.05	171.91	154.52	136.36	121.78	110.24
90.0	256.28	224.73	200.41	176.93	156.73	141.20	127.63	112.99	102.72
135.0	268.17	238.65	206.80	184.64	165.52	145.68	129.60	117.59	105.17
180.0	259.27	230.59	202.56	178.66	158.11	142.33	126.92	115.08	103.19
225.0	338.26	301.04	267.87	231.54	206.21	183.98	162.47	143.88	129.66
270.0	379.01	332.17	291.00	258.43	226.40	198.98	177.94	157.21	141.14
315.0	351.88	312.81	278.09	239.91	213.38	190.19	167.67	148.25	133.43
360.0	360.25	319.98	284.30	244.99	217.80	194.20	168.86	151.29	135.88

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	119.33	107.91	97.94	88.20	79.83	73.26	66.62	61.37	56.29
45.0	98.95	89.09	81.26	74.27	67.28	61.25	56.53	51.21	47.50
90.0	93.63	84.61	76.54	70.21	63.82	58.32	53.90	49.48	45.89
135.0	94.53	86.16	77.80	71.17	64.59	58.98	54.43	50.85	45.83
180.0	93.99	83.83	76.60	70.15	64.41	58.32	53.90	49.95	46.07
225.0	115.92	105.05	94.35	84.13	77.86	70.63	64.17	59.16	54.55
270.0	125.42	111.98	101.58	93.51	82.64	75.71	70.21	62.62	57.78
315.0	119.09	106.42	96.68	87.00	79.53	72.00	65.37	60.11	54.85
360.0	119.33	107.91	97.94	88.20	79.83	73.26	66.62	61.37	56.29

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	51.63	47.86	44.10	40.69	38.12	35.73	33.16	31.25	29.58
45.0	44.10	40.69	37.70	35.07	32.74	30.35	28.26	26.41	24.62
90.0	42.36	39.08	36.39	33.70	31.25	29.22	27.37	25.34	23.84
135.0	42.60	40.09	36.51	34.00	32.09	29.58	27.67	26.05	24.20
180.0	42.54	39.80	36.99	34.48	32.45	30.35	28.86	27.43	26.17
225.0	49.48	45.83	42.60	38.90	36.33	33.94	31.55	29.34	27.55
270.0	53.90	48.88	44.81	42.01	38.42	35.49	33.46	30.89	28.98
315.0	50.13	46.43	43.08	39.32	36.69	34.24	31.85	29.64	27.84
360.0	51.63	47.86	44.10	40.69	38.12	35.73	33.16	31.25	29.58

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	28.02	26.71	25.63	24.56	23.54	22.59	21.57	20.67	19.78
45.0	23.06	21.75	20.44	19.30	18.11	17.09	16.25	15.36	14.46
90.0	22.47	21.03	19.72	18.64	17.51	16.43	15.60	14.64	13.92
135.0	22.89	21.63	20.20	19.12	18.16	17.03	16.13	15.36	14.40
180.0	25.10	24.02	22.89	21.93	20.97	19.90	19.06	18.34	17.57
225.0	25.75	24.20	22.65	21.15	20.08	18.94	17.75	16.91	16.07
270.0	27.19	25.22	23.72	22.35	20.85	19.66	18.58	17.51	16.49
315.0	25.99	24.50	22.95	21.51	20.44	19.18	18.11	17.21	16.37
360.0	28.02	26.71	25.63	24.56	23.54	22.59	21.57	20.67	19.78

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	18.94	18.28	17.69	17.03	16.49	16.01	15.42	14.94	14.46
45.0	13.68	13.03	12.25	11.59	11.11	10.52	9.98	9.44	8.96
90.0	13.09	12.37	11.71	11.17	10.46	9.92	9.44	8.84	8.43
135.0	13.74	13.09	12.37	11.71	11.17	10.58	10.04	9.62	9.08
180.0	16.91	16.37	15.83	15.30	14.88	14.46	13.98	13.44	12.97
225.0	15.00	14.28	13.62	12.79	12.13	11.47	10.88	10.28	9.74
270.0	15.60	14.70	13.86	13.21	12.43	11.77	11.11	10.46	9.92
315.0	15.36	14.64	13.92	13.09	12.43	11.83	11.23	10.64	10.10
360.0	18.94	18.28	17.69	17.03	16.49	16.01	15.42	14.94	14.46

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	13.86	13.27	12.79	12.25	11.71	11.29	10.82	10.40	9.92
45.0	8.54	8.13	7.71	7.35	6.99	6.63	6.33	6.09	5.68
90.0	8.01	7.59	7.17	6.81	6.39	6.09	5.80	5.44	5.20
135.0	8.66	8.25	7.83	7.53	7.17	6.81	6.51	6.27	5.92
180.0	12.43	11.89	11.35	10.88	10.46	9.98	9.56	9.14	8.72
225.0	9.14	8.78	8.31	7.89	7.53	7.17	6.69	6.39	6.15
270.0	9.32	8.78	8.37	7.95	7.47	7.11	6.81	6.39	6.04
315.0	9.62	9.14	8.66	8.25	7.89	7.53	7.17	6.81	6.57
360.0	13.86	13.27	12.79	12.25	11.71	11.29	10.82	10.40	9.92

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.44	9.02	8.66	9.50	10.93	11.95	13.32	14.88	16.73
45.0	5.38	5.20	4.78	4.54	4.36	5.02	6.33	5.68	4.12
90.0	4.84	4.54	4.30	4.00	3.64	3.41	3.23	2.93	2.69
135.0	5.68	5.38	5.14	4.78	4.54	4.30	4.12	3.94	3.76
180.0	9.50	10.76	12.01	13.32	15.00	16.55	16.91	16.25	14.52
225.0	5.74	5.44	5.20	4.90	4.60	4.48	5.20	5.74	4.96
270.0	5.68	5.32	5.02	4.72	4.42	4.12	3.82	3.59	3.35
315.0	6.21	5.92	5.62	5.32	5.02	4.78	4.42	4.24	3.94
360.0	9.44	9.02	8.66	9.50	10.93	11.95	13.32	14.88	16.73

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	18.76	19.30	17.93	14.40	9.74	3.11	2.45	2.15	1.61
45.0	3.05	2.87	2.69	2.51	1.85	1.67	1.49	1.49	1.43
90.0	2.51	2.27	2.09	1.85	1.61	1.49	1.43	1.49	1.43
135.0	3.53	3.41	3.41	4.42	2.03	1.73	1.55	1.49	1.49
180.0	12.19	8.90	3.88	2.81	2.15	1.79	1.55	1.55	1.49
225.0	3.76	3.29	2.99	2.81	2.63	1.91	1.73	1.55	1.43
270.0	3.11	2.87	2.63	2.39	2.21	1.97	1.73	1.55	1.49
315.0	3.70	3.53	3.41	3.23	3.05	2.15	1.97	1.61	1.49
360.0	18.76	19.30	17.93	14.40	9.74	3.11	2.45	2.15	1.61

Intensity data(cd)

C/γ(°)	90.0
0.0	1.55
45.0	1.43
90.0	1.49
135.0	1.49
180.0	1.49
225.0	1.49
270.0	1.43
315.0	1.49
360.0	1.55