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Nata

LumCAT: LN01D03517EE-N
Luminaire: 92.70.307.00
Report No: 210520-B001
Test No: 210520-C001
LampCAT: CITIZEN CLU700 LES6
Lamp flux(lm): 642.2
Number of Lamps: 1
Length(mm): 74
Phm Type: C

Voltage(V): 221.4000
Current(A): 0.0650
Power (W): 6.9000
PF: 0.4820
Ballast type: DC
Width(mm): 74
Height(mm): 56

Photometric Results

Lumens(lm): 427.98
Efficiency(%): 66.64%
Lumens(lm)/Power(W): 62.03
Central intensity(cd): 1715.203
Maximum intensity(cd): 1715.203
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=21.5
[C90/270]Total=21.5
Field angle(10%Imax): [C0/180]Total=47.0
[C90/270]Total=47.0
Maximum s/h(1/2): C0_180=0.36 C90_270=0.36
Maximum s/h(1/4): C0_180=0.39 C90_270=0.39
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 66.64%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 93.713%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1715.203	0.000	0	.000%	.000%
1.0	1702.055	1.635	1.635	.255%	.382%
2.0	1667.813	4.837	6.472	.753%	1.512%
3.0	1616.344	7.855	14.326	1.223%	3.347%
4.0	1546.031	10.585	24.912	1.648%	5.821%
5.0	1456.622	12.917	37.829	2.011%	8.839%
6.0	1358.768	14.796	52.625	2.304%	12.296%
7.0	1256.562	16.233	68.858	2.528%	16.089%
8.0	1153.448	17.248	86.106	2.686%	20.119%
9.0	1036.891	17.752	103.858	2.764%	24.267%
10.0	935.585	17.850	121.708	2.779%	28.438%
11.0	828.239	17.624	139.332	2.744%	32.556%
12.0	747.141	17.221	156.553	2.681%	36.580%
13.0	653.337	16.620	173.173	2.588%	40.463%
14.0	576.717	15.745	188.918	2.452%	44.142%
15.0	508.683	14.901	203.819	2.320%	47.624%
16.0	447.040	14.004	217.823	2.180%	50.896%
17.0	388.083	13.005	230.828	2.025%	53.934%
18.0	343.680	12.065	242.893	1.879%	56.754%
19.0	301.479	11.224	254.118	1.748%	59.376%
20.0	264.734	10.363	264.481	1.614%	61.798%
21.0	232.003	9.538	274.019	1.485%	64.026%
22.0	206.227	8.806	282.826	1.371%	66.084%
23.0	182.960	8.166	290.992	1.272%	67.992%
24.0	160.945	7.519	298.511	1.171%	69.749%
25.0	143.529	6.923	305.434	1.078%	71.367%
26.0	128.749	6.427	311.861	1.001%	72.868%
27.0	115.812	5.983	317.844	.932%	74.266%
28.0	103.345	5.549	323.393	.864%	75.563%
29.0	93.790	5.158	328.55	.803%	76.768%
30.0	85.331	4.836	333.387	.753%	77.898%
31.0	77.330	4.527	337.913	.705%	78.956%
32.0	70.298	4.229	342.143	.659%	79.944%
33.0	64.245	3.964	346.106	.617%	80.870%
34.0	58.985	3.729	349.836	.581%	81.741%
35.0	53.726	3.500	353.336	.545%	82.559%
36.0	49.458	3.285	356.621	.512%	83.327%
37.0	45.710	3.104	359.725	.483%	84.052%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	42.272	2.937	362.662	.457%	84.738%
39.0	38.820	2.768	365.43	.431%	85.385%
40.0	36.070	2.612	368.042	.407%	85.995%
41.0	33.673	2.484	370.525	.387%	86.576%
42.0	31.338	2.362	372.887	.368%	87.127%
43.0	29.123	2.240	375.127	.349%	87.651%
44.0	27.260	2.128	377.255	.331%	88.148%
45.0	25.629	2.033	379.288	.316%	88.623%
46.0	23.920	1.938	381.225	.302%	89.076%
47.0	22.500	1.846	383.072	.287%	89.507%
48.0	21.199	1.767	384.838	.275%	89.920%
49.0	19.891	1.687	386.526	.263%	90.314%
50.0	18.584	1.604	388.13	.250%	90.689%
51.0	17.677	1.534	389.664	.239%	91.047%
52.0	16.734	1.477	391.14	.230%	91.392%
53.0	15.877	1.419	392.559	.221%	91.724%
54.0	15.040	1.363	393.922	.212%	92.042%
55.0	14.280	1.309	395.23	.204%	92.348%
56.0	13.570	1.258	396.489	.196%	92.642%
57.0	12.881	1.209	397.698	.188%	92.925%
58.0	12.284	1.164	398.862	.181%	93.197%
59.0	11.742	1.123	399.985	.175%	93.459%
60.0	11.229	1.085	401.071	.169%	93.713%
61.0	10.730	1.048	402.118	.163%	93.958%
62.0	10.378	1.017	403.136	.158%	94.195%
63.0	10.181	1.000	404.135	.156%	94.429%
64.0	10.069	0.994	405.129	.155%	94.661%
65.0	10.055	0.996	406.125	.155%	94.894%
66.0	10.076	1.004	407.129	.156%	95.128%
67.0	10.238	1.021	408.151	.159%	95.367%
68.0	10.484	1.050	409.2	.163%	95.612%
69.0	10.688	1.080	410.281	.168%	95.865%
70.0	10.990	1.113	411.394	.173%	96.125%
71.0	11.292	1.152	412.545	.179%	96.394%
72.0	11.588	1.190	413.735	.185%	96.672%
73.0	11.791	1.223	414.958	.190%	96.958%
74.0	11.770	1.239	416.196	.193%	97.247%
75.0	11.602	1.235	417.431	.192%	97.535%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.412	1.222	418.653	.190%	97.821%
77.0	11.152	1.203	419.856	.187%	98.102%
78.0	10.772	1.174	421.029	.183%	98.376%
79.0	9.949	1.113	422.143	.173%	98.636%
80.0	8.670	1.004	423.147	.156%	98.871%
81.0	7.404	0.869	424.016	.135%	99.074%
82.0	6.441	0.751	424.767	.117%	99.249%
83.0	5.836	0.667	425.434	.104%	99.405%
84.0	4.802	0.580	426.013	.090%	99.541%
85.0	3.755	0.467	426.481	.073%	99.650%
86.0	3.030	0.371	426.851	.058%	99.737%
87.0	2.700	0.314	427.165	.049%	99.810%
88.0	2.524	0.286	427.451	.045%	99.877%
89.0	2.419	0.271	427.722	.042%	99.940%
90.0	2.264	0.257	427.979	.040%	100.000%

Zonal flux distribution table

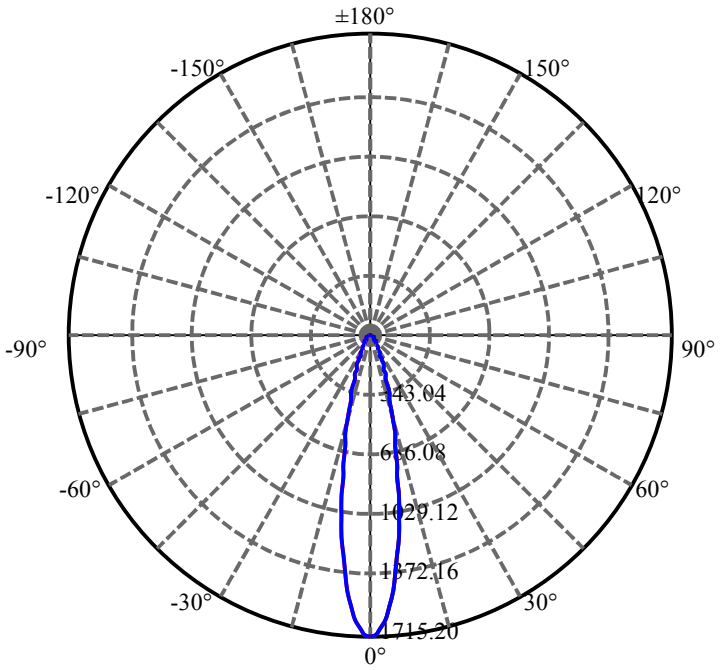
ZONAL LUMEN SUMMARY

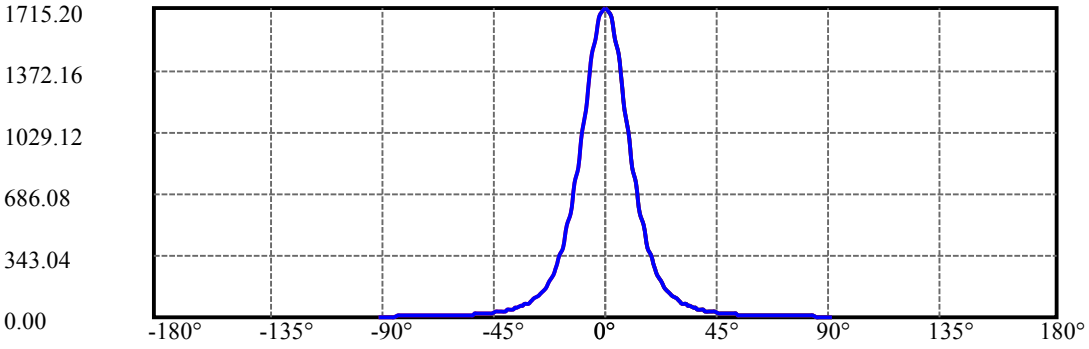
Zone	Lumens	%Lamp	%Fixt
0-30	333.39	51.91%	77.90%
0-40	368.04	57.31%	86.00%
0-60	401.07	62.45%	93.71%
0-90	427.72	66.60%	99.94%
0-120	427.72	66.60%	99.94%
0-180	427.98	66.64%	100.00%
60-90	27.74	4.32%	6.48%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-32.06	342.38	53.31%	80.00%

ZONAL LUMEN SUMMARY

0-10	121.71
10-20	142.77
20-30	68.91
30-40	34.66
40-50	20.09
50-60	12.94
60-70	10.32
70-80	11.75
80-90	4.58
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:23.5 Right:23.5
:C90/270Left:23.5 Right:23.5

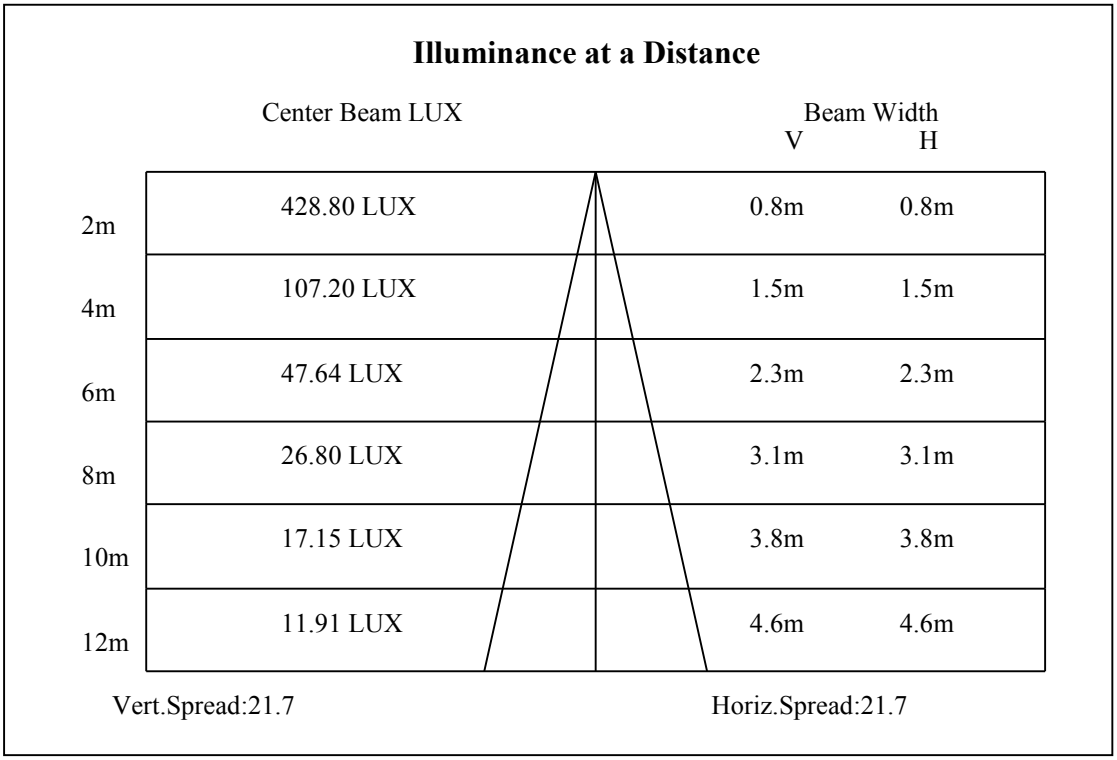
Beam Angle(50%Imax):C0/180Left:10.7 Right:10.7
:C90/270Left:10.7 Right:10.7

Equipment: GMS1980
Temperature(°C): 25.0

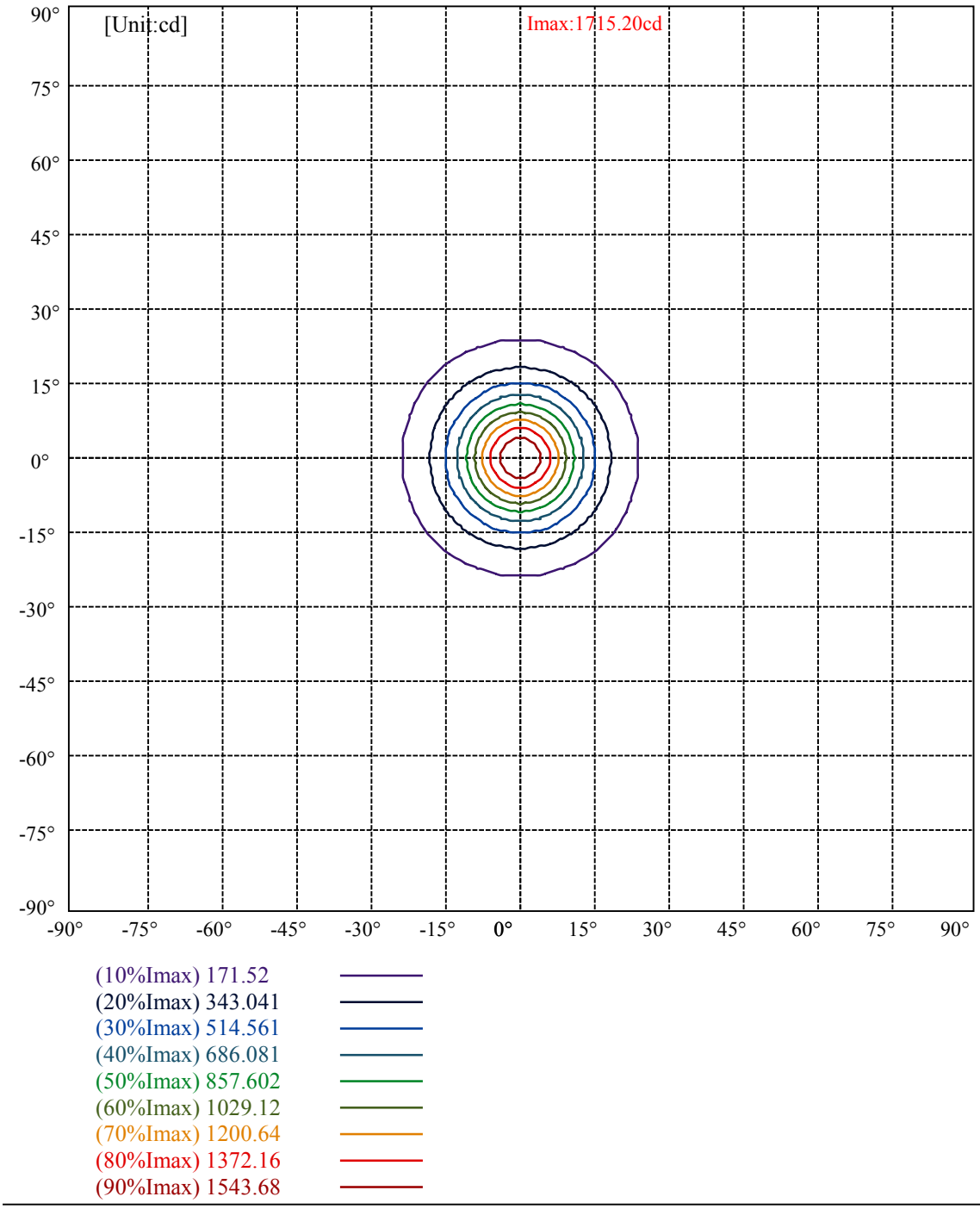
Date: 2021/05/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Lux distance Curve



ISO-Intensity(V-H)

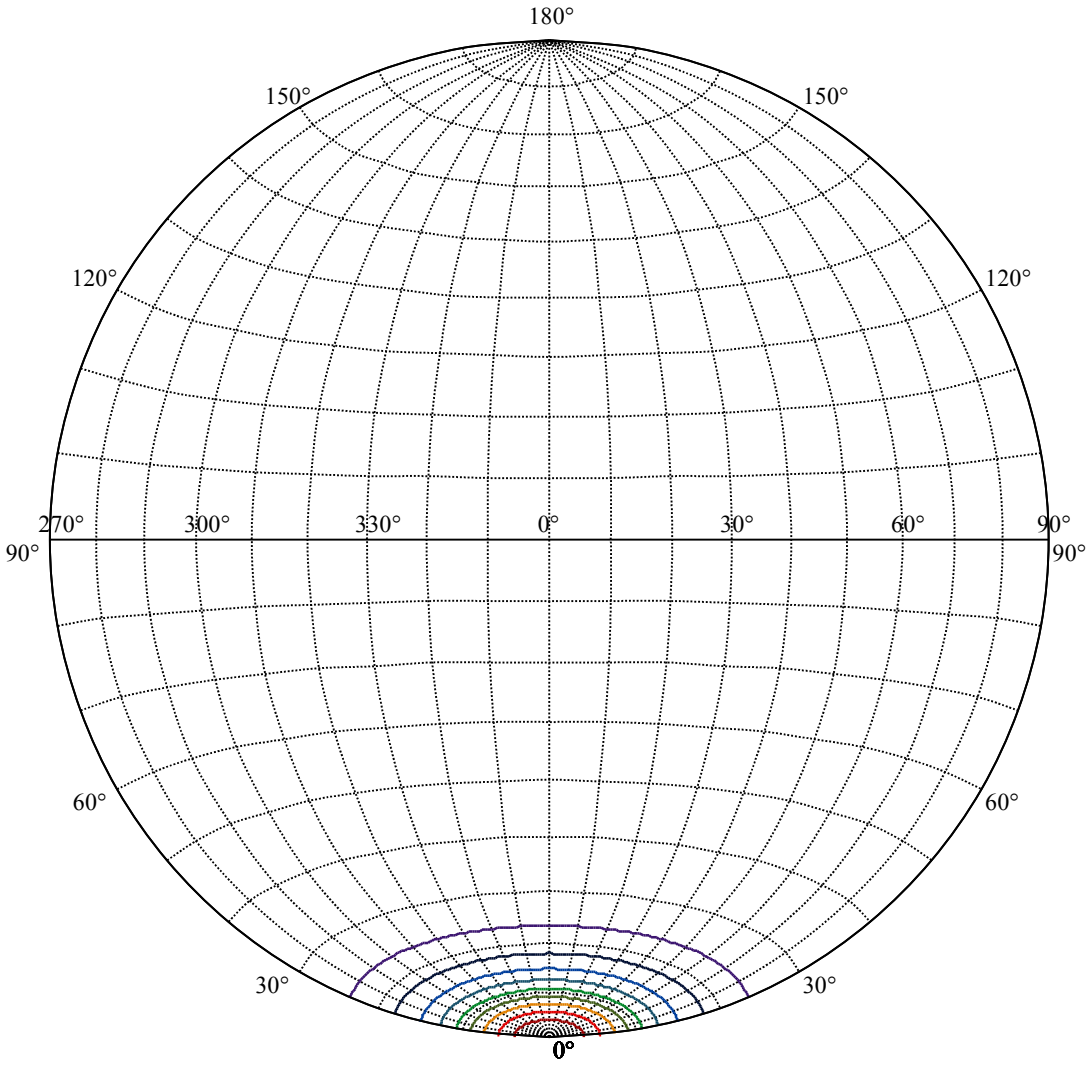


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/05/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1715.20

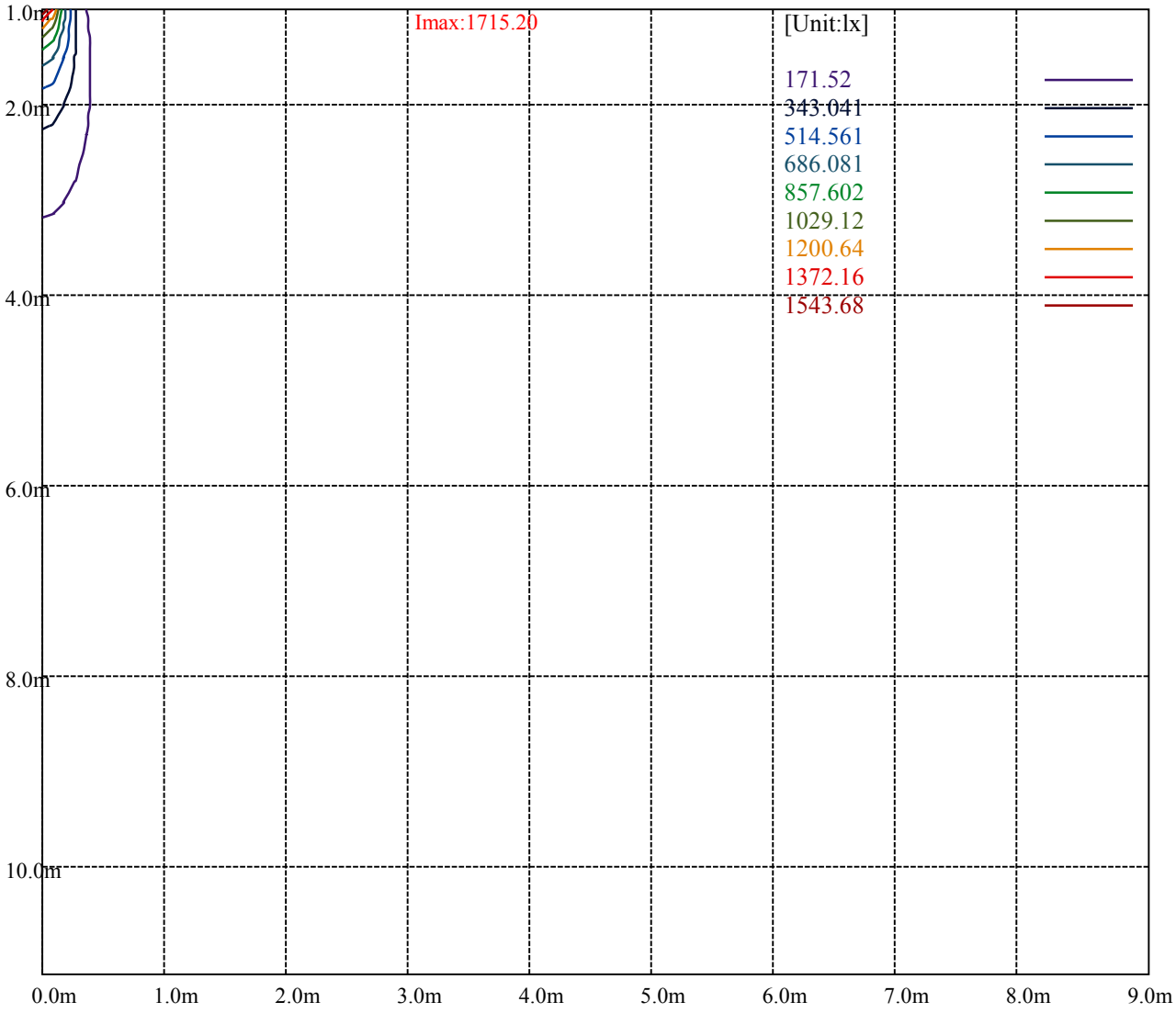
(10%Imax) 171.52
(20%Imax) 343.041
(30%Imax) 514.561
(40%Imax) 686.081
(50%Imax) 857.602
(60%Imax) 1029.12
(70%Imax) 1200.64
(80%Imax) 1372.16
(90%Imax) 1543.68

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/05/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/05/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata LN01D03517EE-N

Luminance Limitting Curve(no luminous side)

Luminance Table

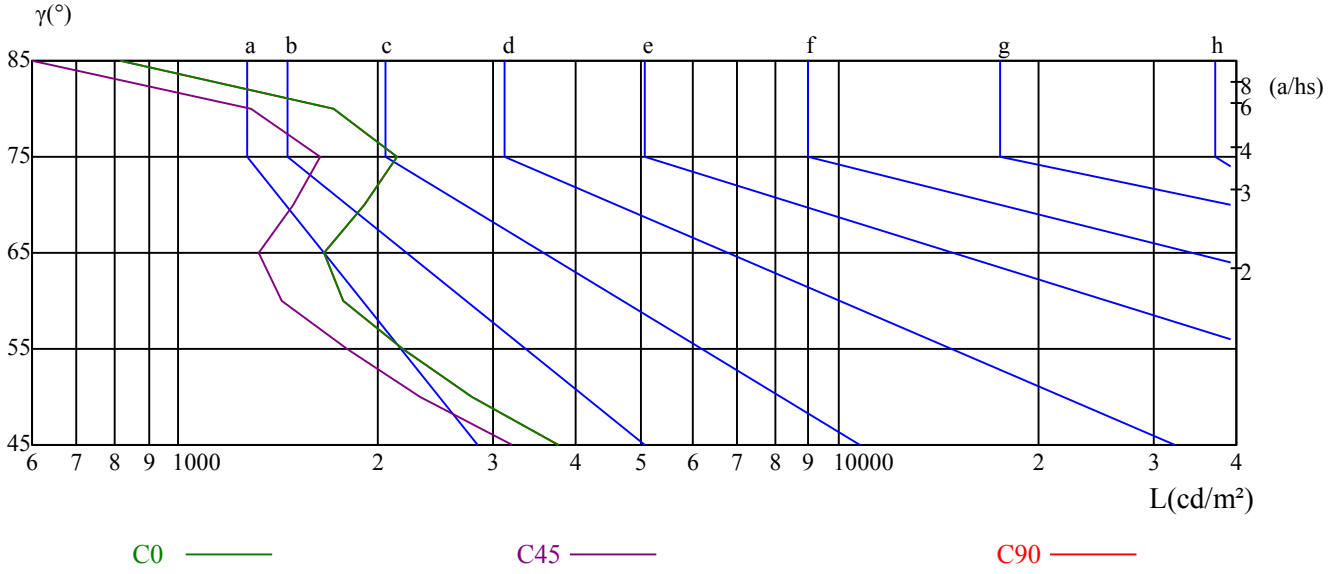
γ	45	50	55	60	65	70	75	80	85
C0	3768	2776	2185	1775	1656	1906	2140	1723	815
C45	3197	2320	1798	1437	1319	1489	1639	1290	595
C90	3768	2776	2185	1775	1656	1906	2140	1723	815

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4345	4345	4345	8186	8186	8186	7867	7867	7867

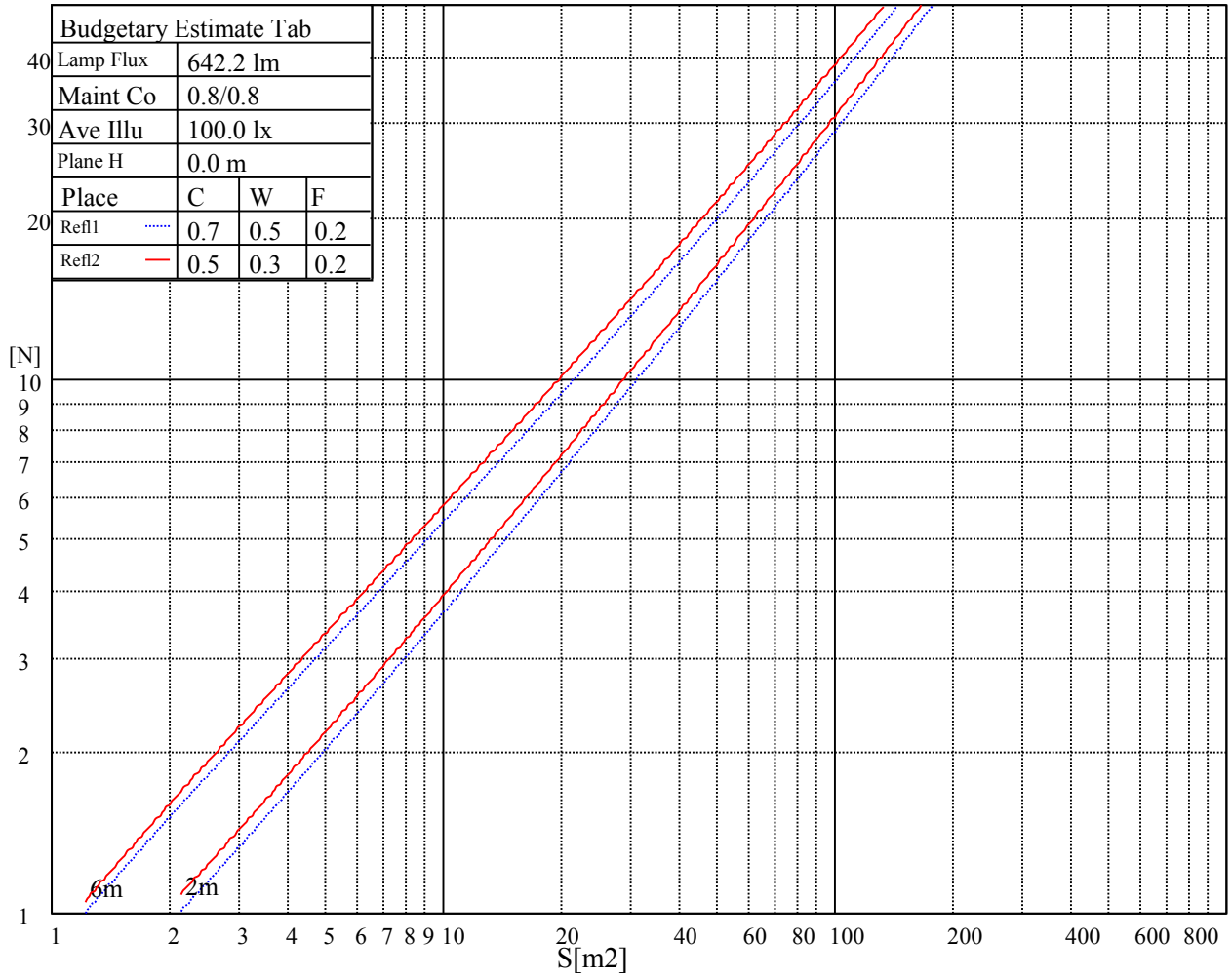
Glare Table

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

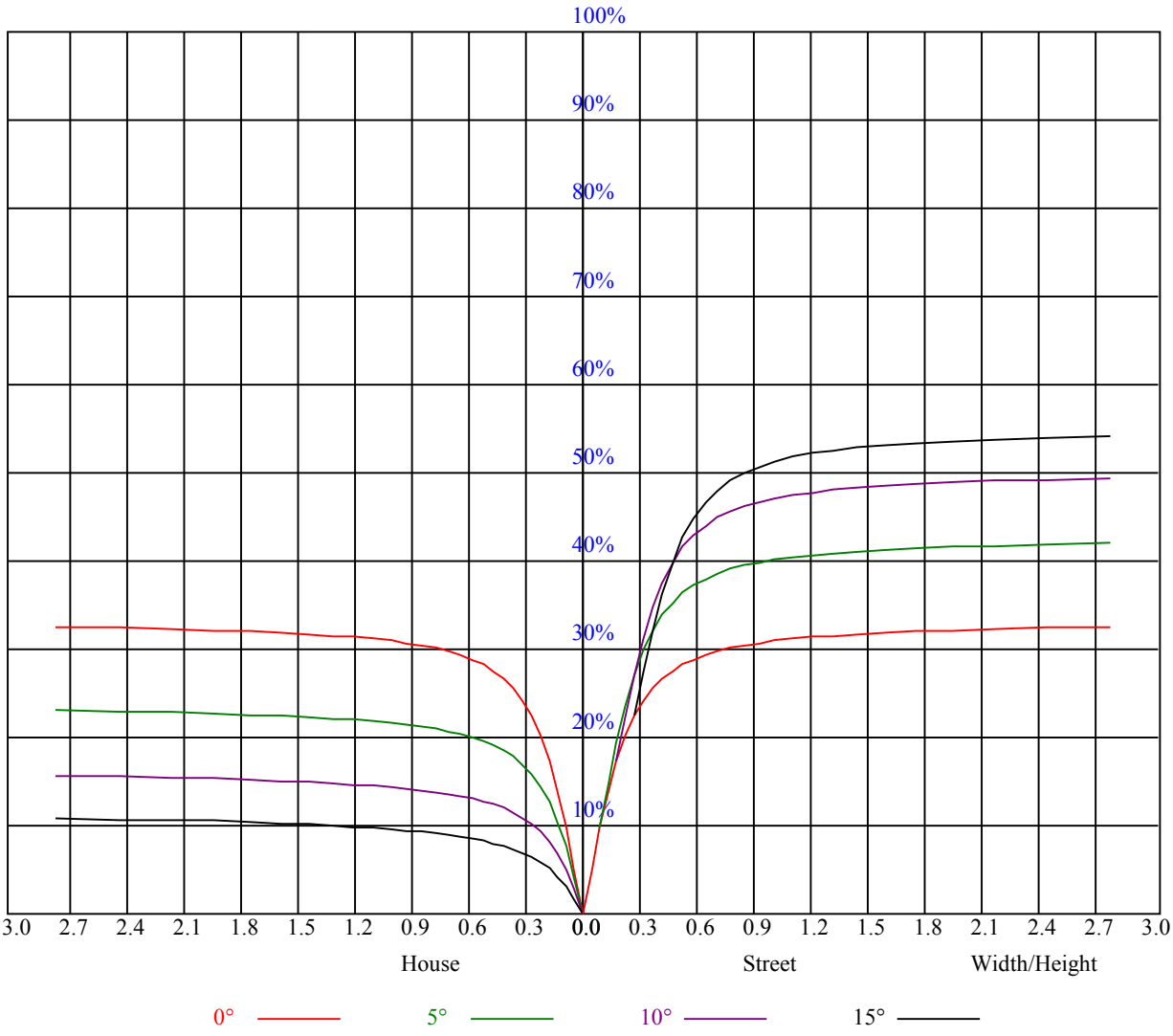


Equipment: GMS1980 Date: 2021/05/20 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	0.79	0.79	0.79	0.77	0.77	0.77	0.74	0.74	0.74	0.71	0.71	0.71	0.68	0.68	0.68	0.67
1	0.73	0.72	0.70	0.72	0.70	0.69	0.69	0.68	0.67	0.67	0.66	0.65	0.65	0.64	0.63	0.62
2	0.69	0.66	0.64	0.67	0.65	0.63	0.65	0.63	0.62	0.63	0.62	0.60	0.61	0.60	0.59	0.58
3	0.65	0.61	0.59	0.64	0.61	0.58	0.62	0.59	0.57	0.60	0.58	0.56	0.59	0.57	0.56	0.55
4	0.61	0.58	0.55	0.60	0.57	0.55	0.59	0.56	0.54	0.58	0.55	0.53	0.56	0.54	0.53	0.52
5	0.58	0.55	0.52	0.57	0.54	0.52	0.56	0.53	0.51	0.55	0.53	0.51	0.54	0.52	0.50	0.49
6	0.55	0.52	0.49	0.55	0.52	0.49	0.54	0.51	0.49	0.53	0.50	0.48	0.52	0.50	0.48	0.47
7	0.53	0.50	0.47	0.53	0.49	0.47	0.52	0.49	0.47	0.51	0.48	0.47	0.50	0.48	0.46	0.45
8	0.51	0.48	0.45	0.51	0.47	0.45	0.50	0.47	0.45	0.49	0.47	0.45	0.49	0.46	0.45	0.44
9	0.49	0.46	0.43	0.49	0.46	0.43	0.48	0.45	0.43	0.48	0.45	0.43	0.47	0.45	0.43	0.42
10	0.47	0.44	0.42	0.47	0.44	0.42	0.47	0.44	0.42	0.46	0.44	0.42	0.46	0.43	0.42	0.41

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/05/20	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	1764.00	1730.81	1666.69	1581.19	1487.81	1384.88	1249.31	1140.19	1018.13
45.0	1694.25	1607.63	1504.13	1401.75	1281.94	1171.69	1047.94	928.69	830.25
90.0	1675.69	1602.00	1507.50	1418.06	1305.56	1116.79	1077.02	959.68	860.34
135.0	1726.88	1711.13	1674.00	1609.31	1535.63	1459.69	1328.06	1224.56	1131.19
180.0	1764.00	1778.63	1771.88	1733.06	1677.94	1596.38	1496.25	1396.69	1274.06
225.0	1694.25	1752.19	1790.44	1810.69	1802.81	1774.13	1706.06	1632.38	1549.13
270.0	1675.69	1719.56	1744.88	1751.06	1729.69	1688.63	1611.00	1530.56	1443.94
315.0	1726.88	1714.50	1683.00	1625.63	1546.88	1460.81	1354.50	1239.75	1120.56
360.0	1764.00	1730.81	1666.69	1581.19	1487.81	1384.88	1249.31	1140.19	1018.13

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	900.56	803.81	711.56	617.06	534.94	460.13	402.75	352.69	303.75
45.0	726.75	632.81	559.69	500.63	420.19	371.81	334.13	286.88	248.96
90.0	756.56	663.24	588.54	521.55	448.59	398.14	353.64	309.60	272.93
135.0	987.19	887.63	803.25	693.56	605.81	545.06	468.56	414.56	367.88
180.0	1119.66	1039.39	923.63	826.03	723.60	632.14	558.84	494.38	421.88
225.0	1440.00	1321.31	1113.30	1098.84	966.94	866.36	773.04	676.29	588.77
270.0	1334.81	1219.50	1116.56	1000.13	900.00	795.38	696.38	617.06	537.75
315.0	1029.60	916.99	809.38	719.33	626.63	544.73	482.12	424.86	362.76
360.0	900.56	803.81	711.56	617.06	534.94	460.13	402.75	352.69	303.75

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	284.63	229.84	203.91	175.28	155.31	139.28	121.67	109.69	98.89
45.0	222.30	196.48	172.97	154.69	137.14	123.53	110.59	99.62	90.90
90.0	243.90	218.14	192.49	172.74	154.35	139.84	125.10	112.33	101.93
135.0	315.56	284.63	243.96	215.16	191.98	170.94	148.11	133.48	120.21
180.0	372.94	329.74	286.88	251.38	223.65	196.31	172.46	154.46	136.63
225.0	520.82	453.04	399.94	348.69	303.86	269.72	235.69	205.82	183.43
270.0	468.56	415.69	368.44	318.38	288.00	251.89	221.85	196.09	176.18
315.0	320.74	284.29	249.30	219.71	195.53	172.18	152.10	136.74	121.84
360.0	284.63	229.84	203.91	175.28	155.31	139.28	121.67	109.69	98.89

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	88.88	80.72	73.86	66.88	61.03	56.53	52.09	48.43	44.78
45.0	83.36	75.26	69.13	63.68	57.21	52.99	48.88	44.89	41.18
90.0	92.98	83.08	75.88	69.92	63.06	58.11	53.55	49.67	45.73
135.0	108.11	97.43	88.71	80.21	72.51	66.49	60.08	55.86	51.24
180.0	122.91	109.80	98.16	89.94	82.24	73.29	66.88	61.37	55.52
225.0	163.86	142.76	129.66	117.28	104.63	94.50	86.63	78.36	70.65
270.0	156.04	138.88	125.55	112.61	102.49	92.36	83.42	76.28	69.30
315.0	110.36	98.83	89.38	82.13	75.49	68.12	62.44	57.04	51.41
360.0	88.88	80.72	73.86	66.88	61.03	56.53	52.09	48.43	44.78

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	41.46	38.76	36.34	33.58	31.39	29.53	27.34	25.71	24.36
45.0	38.42	35.49	33.41	31.16	29.25	27.51	25.43	23.57	22.11
90.0	42.64	39.49	35.66	32.91	30.83	29.03	27.51	26.21	24.92
135.0	46.86	43.37	40.16	36.84	34.14	32.01	29.81	27.96	26.10
180.0	51.58	48.09	44.38	40.89	38.03	35.16	32.85	30.32	28.07
225.0	64.52	58.78	54.34	49.56	45.34	42.24	38.81	35.66	33.41
270.0	62.89	57.77	53.27	48.15	44.49	41.29	38.42	35.16	32.85
315.0	47.31	43.93	40.61	37.46	35.10	32.63	30.54	28.41	26.27
360.0	41.46	38.76	36.34	33.58	31.39	29.53	27.34	25.71	24.36

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	22.84	21.26	20.08	18.96	18.00	17.21	16.37	15.75	15.08
45.0	21.04	19.86	19.01	17.94	17.04	16.26	15.58	14.68	13.89
90.0	23.79	22.44	21.15	20.31	18.51	16.37	15.41	14.63	13.84
135.0	24.24	22.61	21.26	19.97	19.01	18.06	17.44	16.26	15.41
180.0	26.44	24.86	23.46	21.83	20.42	18.96	18.06	17.21	16.31
225.0	31.28	28.91	26.72	24.98	23.12	21.60	20.42	19.35	18.45
270.0	30.77	28.41	26.72	25.14	23.51	21.94	20.64	19.29	18.23
315.0	24.64	23.01	21.60	20.48	19.52	18.28	17.49	16.71	15.81
360.0	22.84	21.26	20.08	18.96	18.00	17.21	16.37	15.75	15.08

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	14.46	13.78	13.05	12.26	11.76	11.25	10.63	10.13	9.73
45.0	13.22	12.54	12.04	11.53	10.97	10.52	10.07	9.62	9.28
90.0	13.16	12.60	12.04	11.53	11.08	10.74	10.35	10.13	10.46
135.0	14.57	13.84	13.22	12.49	11.93	11.48	10.91	10.52	10.13
180.0	15.69	14.96	14.12	13.56	12.94	12.09	11.59	10.97	10.35
225.0	17.33	16.31	15.47	14.68	13.89	13.33	12.77	12.15	11.64
270.0	17.10	16.14	15.30	14.40	13.61	13.05	12.49	11.81	11.36
315.0	14.79	14.06	13.33	12.60	12.09	11.48	11.03	10.52	10.07
360.0	14.46	13.78	13.05	12.26	11.76	11.25	10.63	10.13	9.73

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.28	8.89	8.55	8.16	7.88	7.54	7.26	6.98	6.75
45.0	8.94	8.49	8.16	7.82	7.48	7.14	6.86	6.53	6.13
90.0	11.81	13.84	16.20	18.51	20.93	23.74	25.82	27.84	30.09
135.0	9.73	9.28	8.94	8.61	8.27	7.93	7.65	7.37	7.03
180.0	9.96	9.51	9.06	8.72	8.38	7.99	7.71	7.43	7.09
225.0	11.14	10.69	10.29	10.01	9.68	9.23	8.83	8.33	7.99
270.0	10.91	10.52	10.18	10.18	10.97	12.38	13.73	16.09	18.23
315.0	9.68	9.34	9.06	8.61	8.33	7.93	7.65	7.37	7.03
360.0	9.28	8.89	8.55	8.16	7.88	7.54	7.26	6.98	6.75

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	6.47	6.19	6.02	5.74	5.46	5.18	4.84	4.61	4.33
45.0	5.91	5.57	5.29	5.01	4.73	4.50	4.28	3.99	3.83
90.0	31.61	32.46	31.84	29.93	28.01	25.88	24.02	20.81	14.23
135.0	6.69	6.41	6.13	5.74	5.46	5.18	4.84	4.56	4.33
180.0	6.75	6.47	6.24	5.91	5.68	5.51	5.34	5.01	4.56
225.0	7.65	7.31	6.98	6.69	6.36	6.13	5.91	5.51	5.23
270.0	20.87	23.40	25.48	27.84	29.93	31.44	31.84	30.21	28.24
315.0	6.75	6.53	6.19	5.96	5.68	5.40	5.12	4.89	4.61
360.0	6.47	6.19	6.02	5.74	5.46	5.18	4.84	4.61	4.33

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.99	3.77	3.49	3.26	3.04	2.81	2.59	2.48	2.42
45.0	3.60	3.38	3.15	2.98	2.70	2.64	2.48	2.48	2.48
90.0	7.54	3.83	3.32	2.76	2.53	2.31	2.14	2.08	2.08
135.0	4.11	3.77	3.43	3.15	2.76	2.59	2.42	2.25	2.08
180.0	4.28	3.99	3.66	3.43	3.04	2.81	2.59	2.42	2.25
225.0	5.12	4.73	4.39	4.11	3.88	3.66	3.26	2.98	2.81
270.0	26.33	24.02	21.49	15.19	8.78	4.33	3.43	2.87	2.76
315.0	4.28	4.05	3.77	3.54	3.32	3.09	2.70	2.64	2.48
360.0	3.99	3.77	3.49	3.26	3.04	2.81	2.59	2.48	2.42

Intensity data(cd)

C/γ(°)	90.0
0.0	2.36
45.0	2.31
90.0	1.91
135.0	1.91
180.0	2.08
225.0	2.76
270.0	2.48
315.0	2.31
360.0	2.36