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Nata

LumCAT: LN01D02824DA-N
Luminaire: 92.70.307.00

Report No: 211112-B003	Voltage(V): 30.4800
Test No: 211112-C003	Current(A): 0.2510
LampCAT: CITIZEN CLU701-1002C9303H5.3	Power (W): 7.6500
Lamp flux(lm): 831.6	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 111	Width(mm): 111
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 526.58
Efficiency(%): 63.32%
Lumens(lm)/Power(W): 68.83
Central intensity(cd): 1396.276
Maximum intensity(cd): 1396.276
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=28.6
[C90/270]Total=28.6
Field angle(10%Imax): [C0/180]Total=58.4
[C90/270]Total=58.4
Maximum s/h(1/2): C0_180=0.48 C90_270=0.48
Maximum s/h(1/4): C0_180=0.49 C90_270=0.49
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 63.32%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.374%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1396.276	0.000	0	.000%	.000%
1.0	1392.168	1.334	1.334	.160%	.253%
2.0	1378.350	3.977	5.311	.478%	1.009%
3.0	1355.270	6.538	11.849	.786%	2.250%
4.0	1325.917	8.975	20.823	1.079%	3.954%
5.0	1281.745	11.218	32.041	1.349%	6.085%
6.0	1237.946	13.242	45.283	1.592%	8.599%
7.0	1180.082	15.009	60.292	1.805%	11.450%
8.0	1123.608	16.487	76.779	1.983%	14.581%
9.0	1062.802	17.720	94.499	2.131%	17.946%
10.0	994.692	18.620	113.118	2.239%	21.482%
11.0	927.111	19.203	132.321	2.309%	25.128%
12.0	858.896	19.524	151.844	2.348%	28.836%
13.0	786.176	19.523	171.367	2.348%	32.543%
14.0	716.004	19.228	190.595	2.312%	36.195%
15.0	651.837	18.778	209.373	2.258%	39.761%
16.0	590.411	18.202	227.576	2.189%	43.218%
17.0	527.790	17.413	244.989	2.094%	46.524%
18.0	473.034	16.501	261.491	1.984%	49.658%
19.0	426.636	15.652	277.143	1.882%	52.631%
20.0	379.528	14.755	291.898	1.774%	55.433%
21.0	338.769	13.793	305.691	1.659%	58.052%
22.0	304.986	12.937	318.627	1.556%	60.509%
23.0	271.151	12.089	330.716	1.454%	62.804%
24.0	243.508	11.252	341.969	1.353%	64.941%
25.0	216.283	10.455	352.423	1.257%	66.927%
26.0	194.555	9.698	362.121	1.166%	68.768%
27.0	174.688	9.034	371.155	1.086%	70.484%
28.0	157.665	8.414	379.569	1.012%	72.082%
29.0	142.175	7.845	387.414	.943%	73.571%
30.0	128.857	7.318	394.732	.880%	74.961%
31.0	117.116	6.845	401.577	.823%	76.261%
32.0	106.203	6.398	407.975	.769%	77.476%
33.0	96.957	5.985	413.96	.720%	78.613%
34.0	88.920	5.625	419.585	.676%	79.681%
35.0	81.137	5.281	424.866	.635%	80.684%
36.0	74.362	4.951	429.817	.595%	81.624%
37.0	68.761	4.668	434.485	.561%	82.510%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	63.435	4.413	438.898	.531%	83.348%
39.0	58.341	4.157	443.054	.500%	84.138%
40.0	54.159	3.924	446.978	.472%	84.883%
41.0	50.379	3.723	450.7	.448%	85.590%
42.0	46.787	3.530	454.231	.425%	86.260%
43.0	43.612	3.349	457.579	.403%	86.896%
44.0	40.864	3.188	460.768	.383%	87.502%
45.0	38.317	3.043	463.811	.366%	88.079%
46.0	35.971	2.905	466.716	.349%	88.631%
47.0	33.843	2.777	469.493	.334%	89.158%
48.0	31.960	2.660	472.153	.320%	89.664%
49.0	30.160	2.551	474.704	.307%	90.148%
50.0	28.405	2.442	477.145	.294%	90.612%
51.0	26.896	2.340	479.485	.281%	91.056%
52.0	25.567	2.251	481.736	.271%	91.484%
53.0	24.222	2.166	483.902	.260%	91.895%
54.0	22.968	2.080	485.982	.250%	92.290%
55.0	21.899	2.003	487.985	.241%	92.670%
56.0	20.861	1.932	489.917	.232%	93.037%
57.0	19.816	1.860	491.777	.224%	93.390%
58.0	18.912	1.791	493.568	.215%	93.731%
59.0	18.030	1.727	495.295	.208%	94.058%
60.0	17.157	1.662	496.957	.200%	94.374%
61.0	16.305	1.597	498.554	.192%	94.677%
62.0	15.543	1.535	500.089	.185%	94.969%
63.0	14.789	1.475	501.564	.177%	95.249%
64.0	14.094	1.417	502.981	.170%	95.518%
65.0	13.422	1.362	504.343	.164%	95.777%
66.0	12.795	1.308	505.651	.157%	96.025%
67.0	12.197	1.257	506.908	.151%	96.264%
68.0	11.607	1.206	508.114	.145%	96.493%
69.0	11.099	1.158	509.272	.139%	96.713%
70.0	10.778	1.124	510.395	.135%	96.926%
71.0	10.509	1.100	511.496	.132%	97.135%
72.0	10.412	1.088	512.584	.131%	97.342%
73.0	10.330	1.085	513.668	.130%	97.548%
74.0	10.300	1.085	514.753	.130%	97.754%
75.0	10.404	1.094	515.847	.132%	97.961%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.464	1.108	516.954	.133%	98.172%
77.0	10.614	1.124	518.078	.135%	98.385%
78.0	10.546	1.133	519.211	.136%	98.600%
79.0	10.195	1.114	520.325	.134%	98.812%
80.0	9.673	1.071	521.397	.129%	99.015%
81.0	8.836	1.001	522.397	.120%	99.205%
82.0	7.723	0.898	523.295	.108%	99.376%
83.0	5.953	0.743	524.039	.089%	99.517%
84.0	5.154	0.605	524.644	.073%	99.632%
85.0	4.033	0.501	525.145	.060%	99.727%
86.0	2.965	0.383	525.528	.046%	99.800%
87.0	2.569	0.303	525.831	.036%	99.857%
88.0	2.330	0.268	526.099	.032%	99.908%
89.0	2.151	0.246	526.345	.030%	99.955%
90.0	2.174	0.237	526.582	.029%	100.000%

Zonal flux distribution table

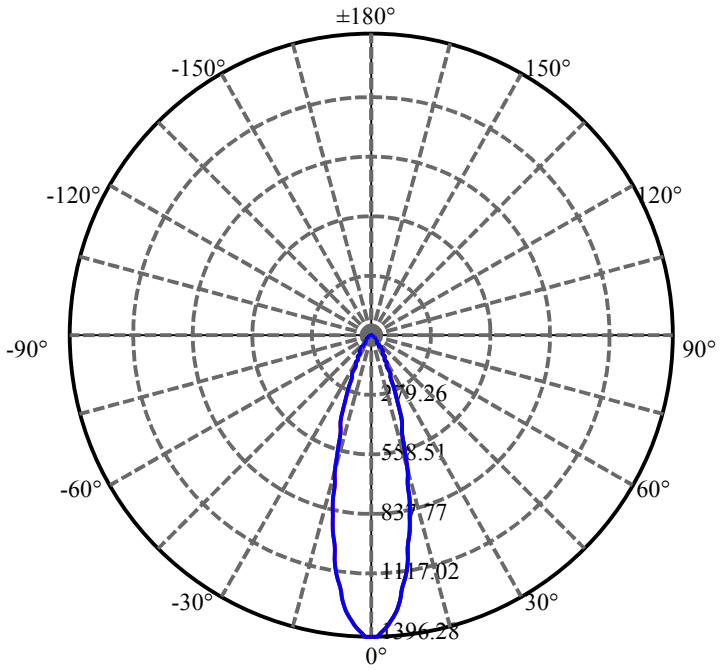
ZONAL LUMEN SUMMARY

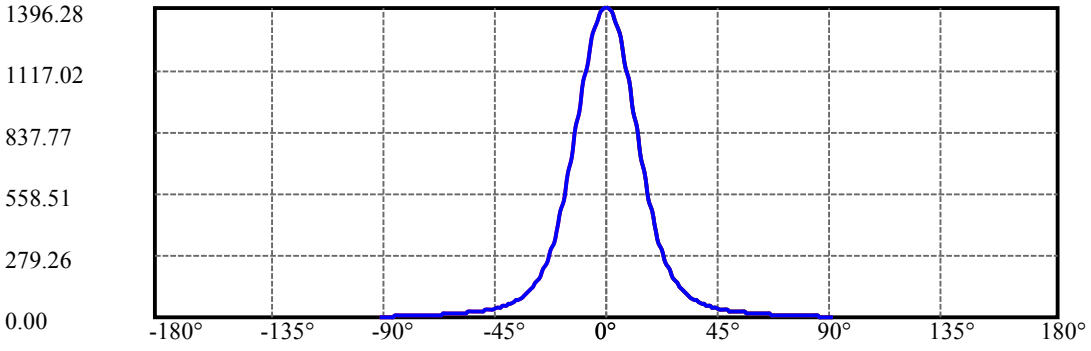
Zone	Lumens	%Lamp	%Fixt
0-30	394.73	47.47%	74.96%
0-40	446.98	53.75%	84.88%
0-60	496.96	59.76%	94.37%
0-90	526.34	63.30%	99.95%
0-120	526.34	63.30%	99.95%
0-180	526.58	63.32%	100.00%
60-90	31.05	3.73%	5.90%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-34.32	421.27	50.66%	80.00%

ZONAL LUMEN SUMMARY

0-10	113.12
10-20	178.78
20-30	102.83
30-40	52.25
40-50	30.17
50-60	19.81
60-70	13.44
70-80	11.00
80-90	4.95
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):

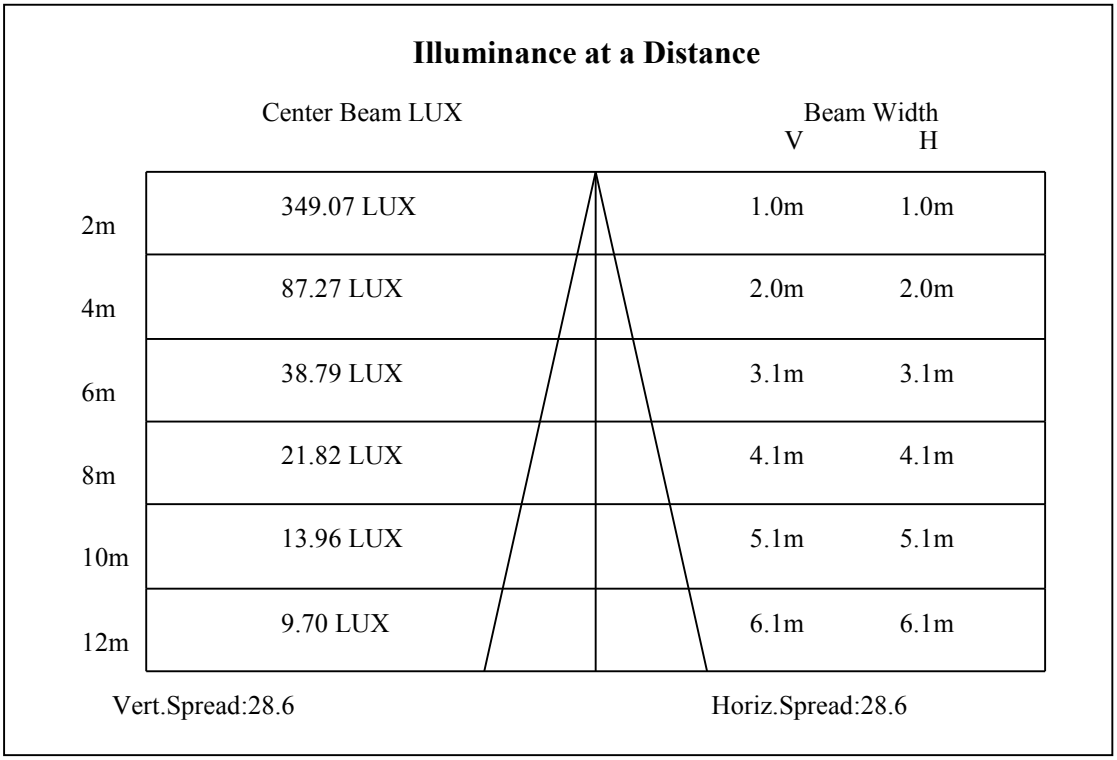
C0/C180:

C90/C270:

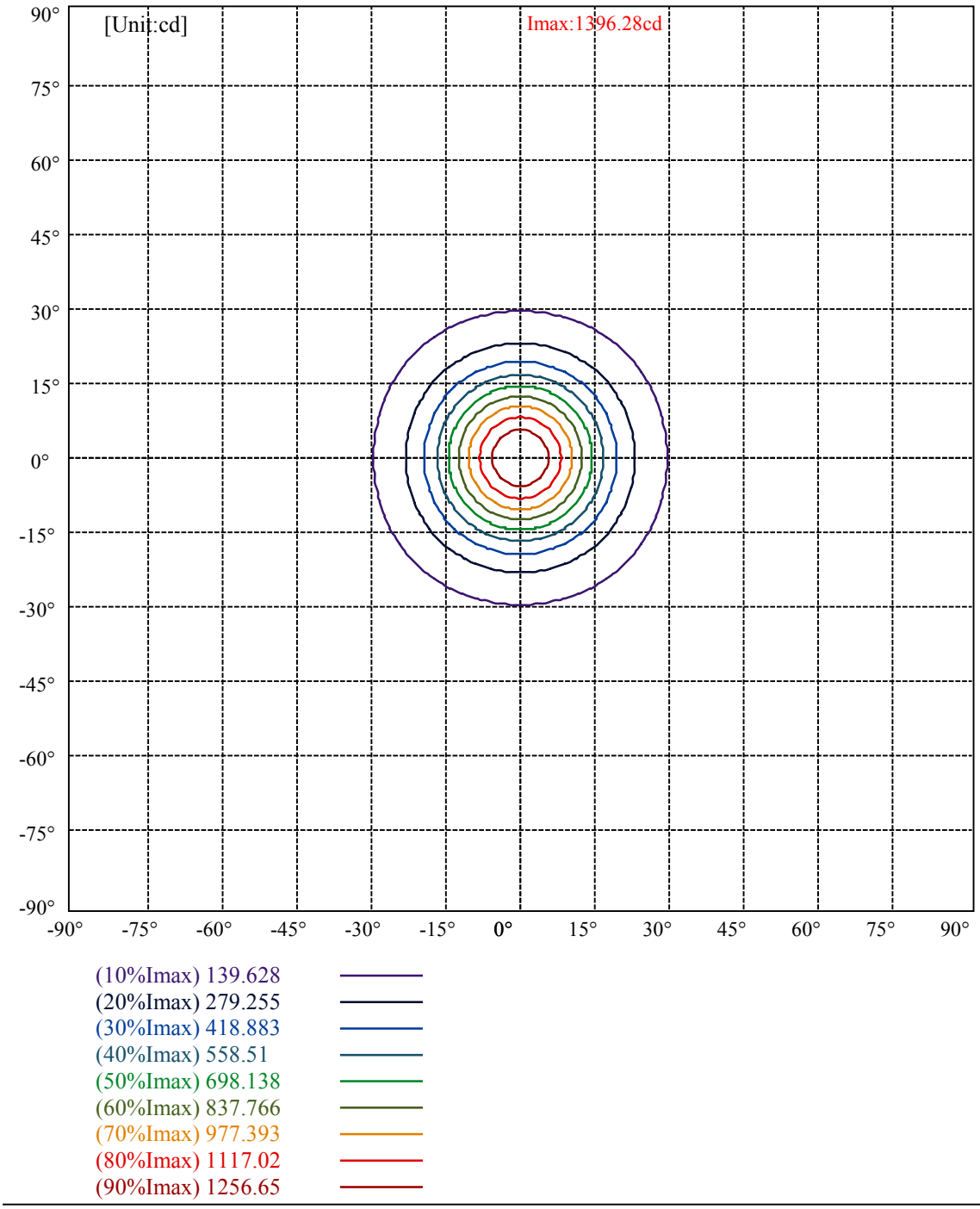
Field angle(10%Imax):C0/180Left:29.2 Right:29.2
:C90/270Left:29.2 Right:29.2

Beam Angle(50%Imax):C0/180Left:14.3 Right:14.3
:C90/270Left:14.3 Right:14.3

Lux distance Curve



ISO-Intensity(V-H)

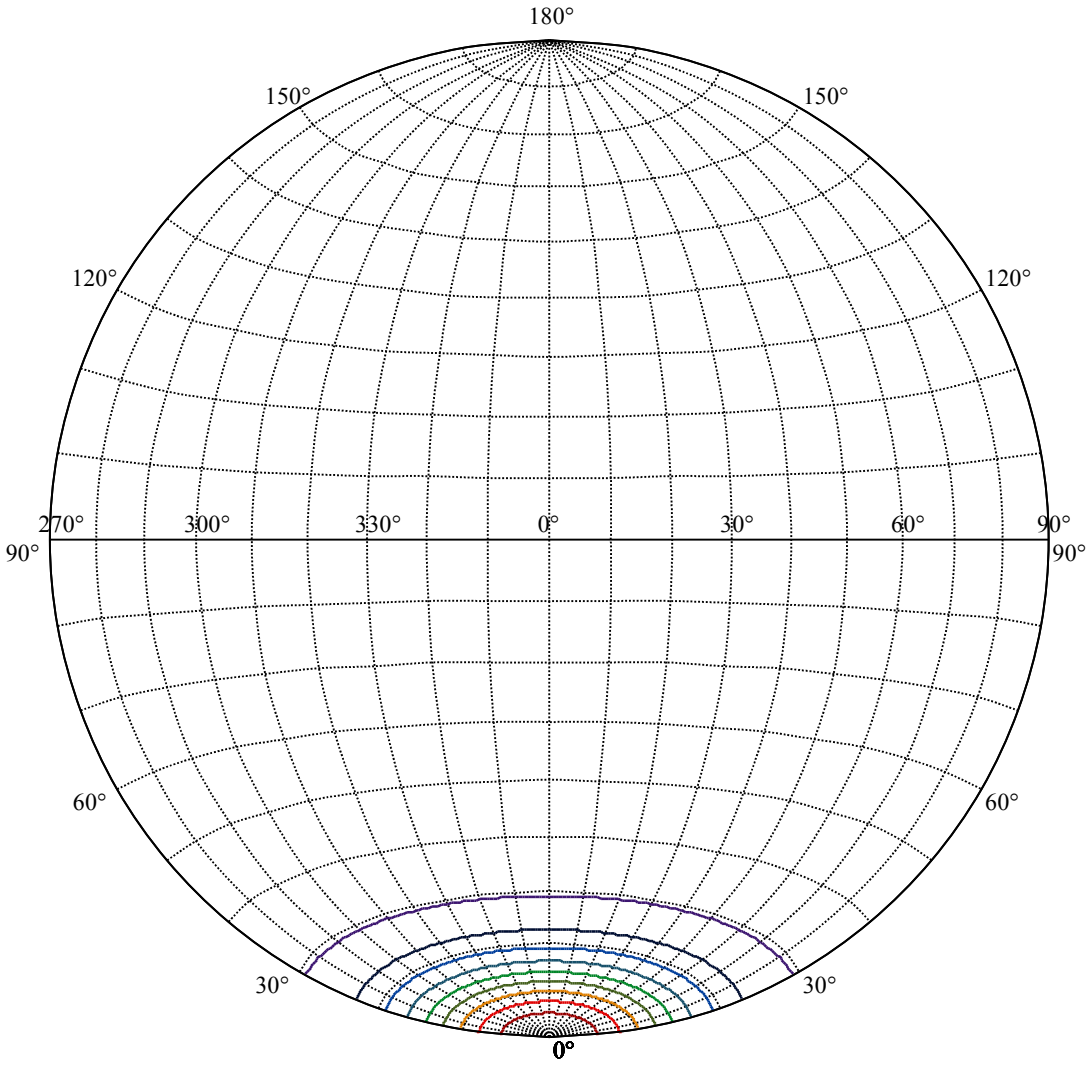


Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:1396.28

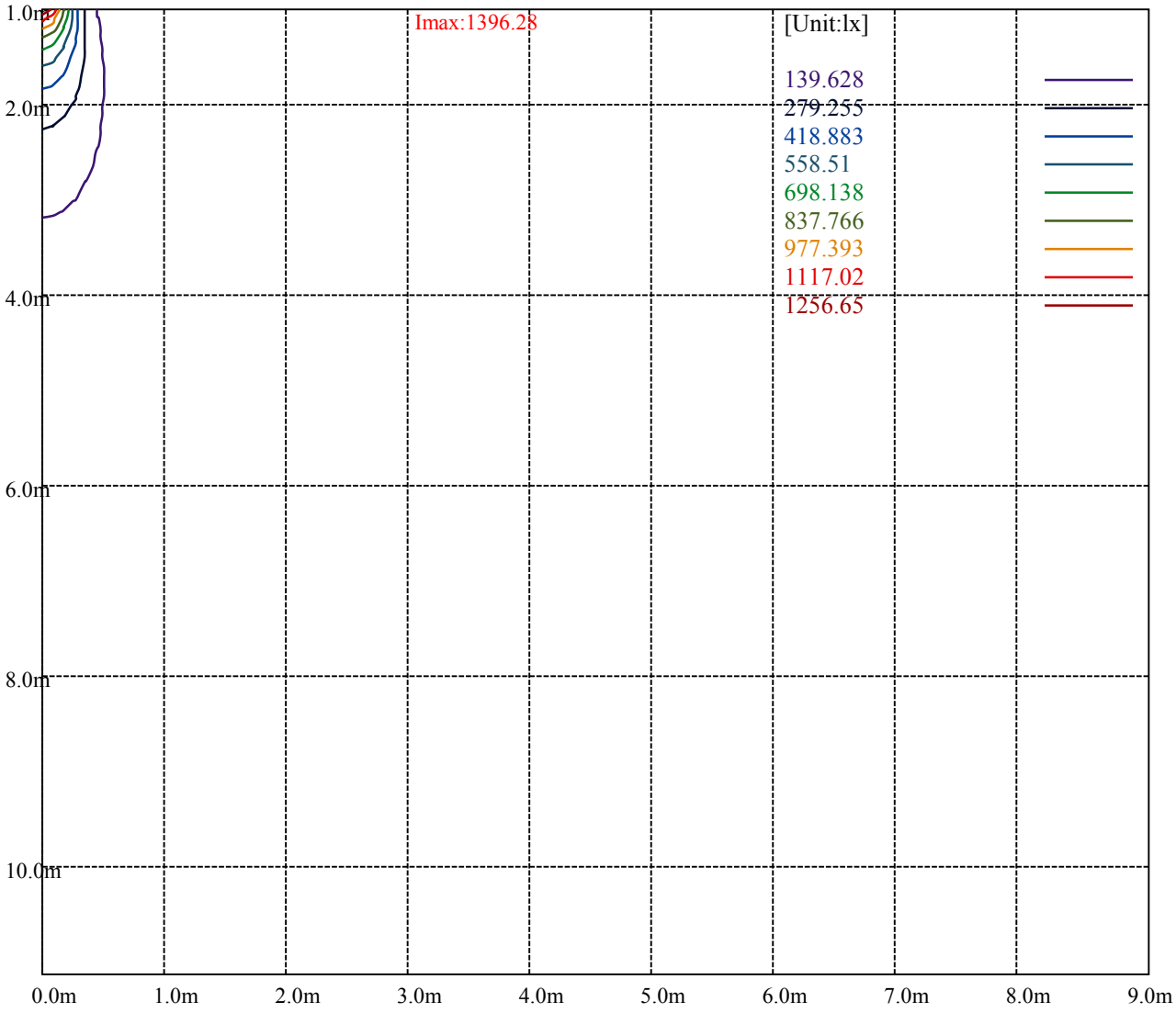
(10%Imax) 139.628
(20%Imax) 279.255
(30%Imax) 418.883
(40%Imax) 558.51
(50%Imax) 698.138
(60%Imax) 837.766
(70%Imax) 977.393
(80%Imax) 1117.02
(90%Imax) 1256.65

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

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Luminance Limitting Curve(no luminous side)

Luminance Table

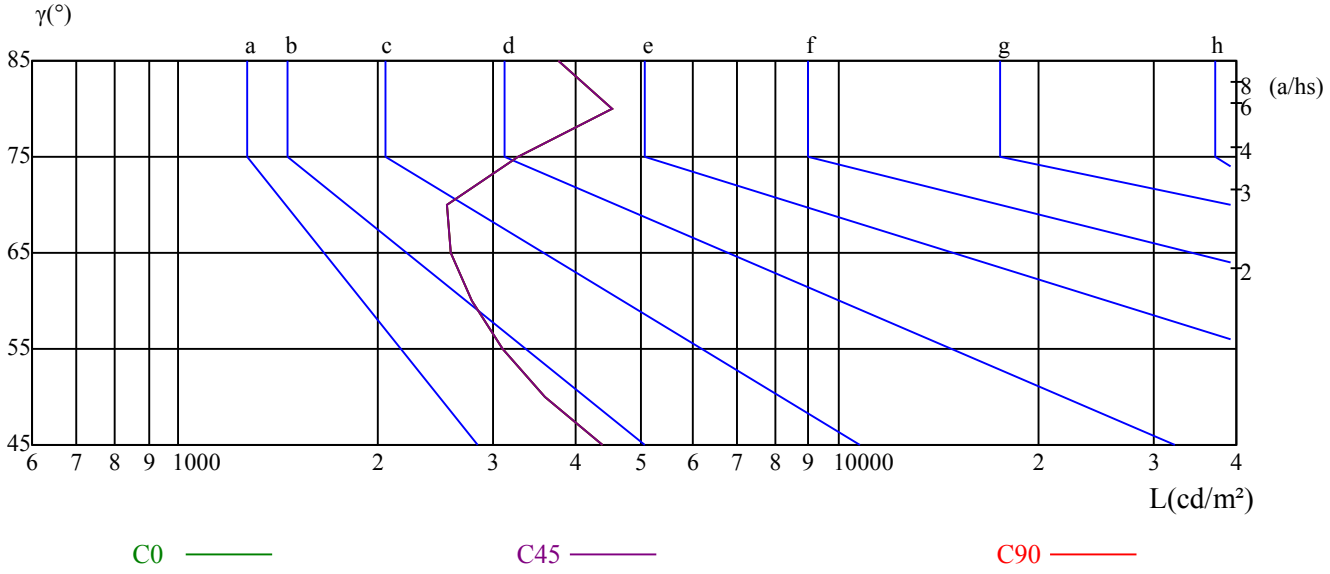
γ	45	50	55	60	65	70	75	80	85
C0	4398	3587	3099	2785	2578	2558	3263	4521	3756
C45	4398	3587	3099	2785	2578	2558	3263	4521	3756
C90	4398	3587	3099	2785	2578	2558	3263	4521	3756

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2578	2578	2578	3263	3263	3263	3756	3756	3756

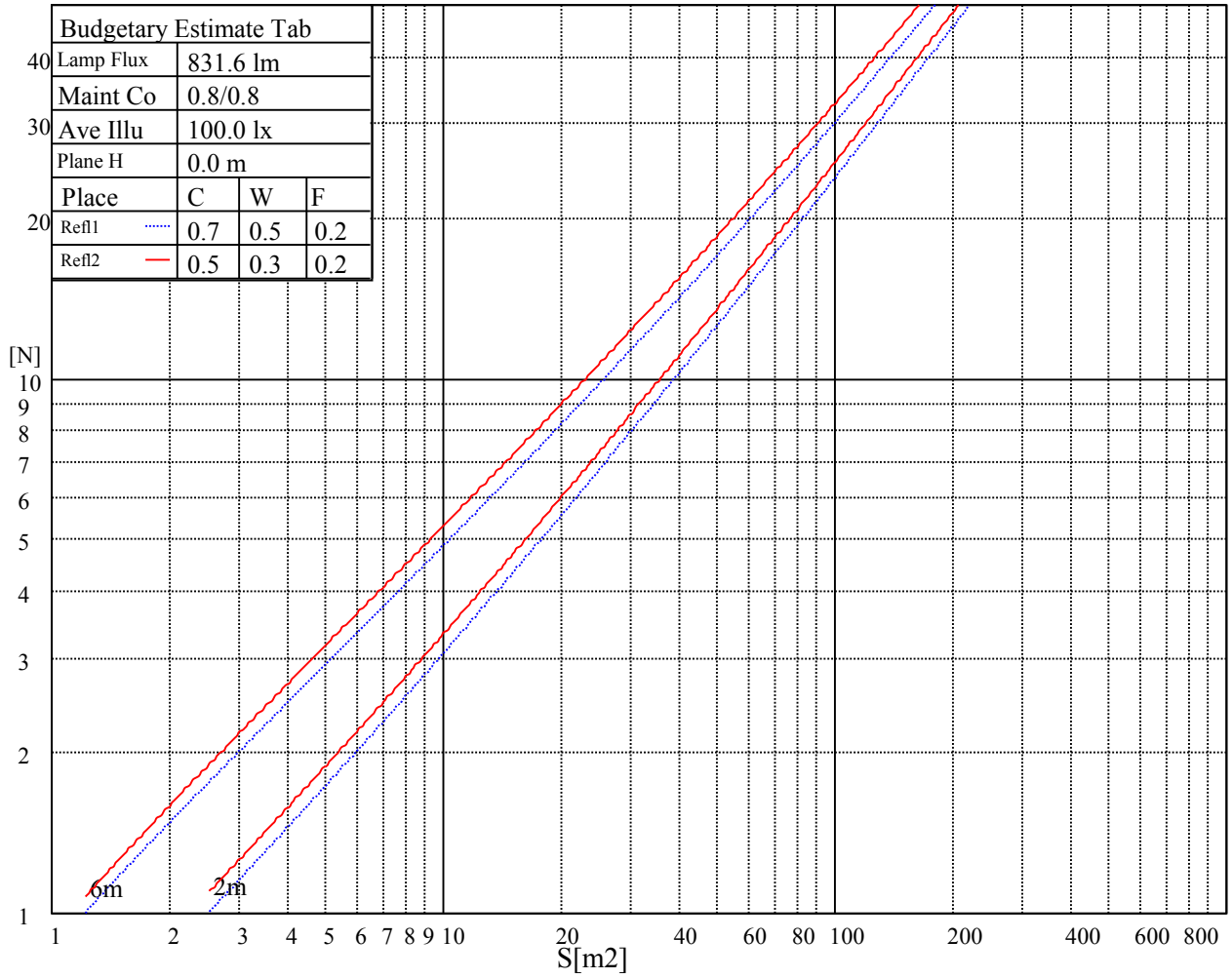
Glare Table

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

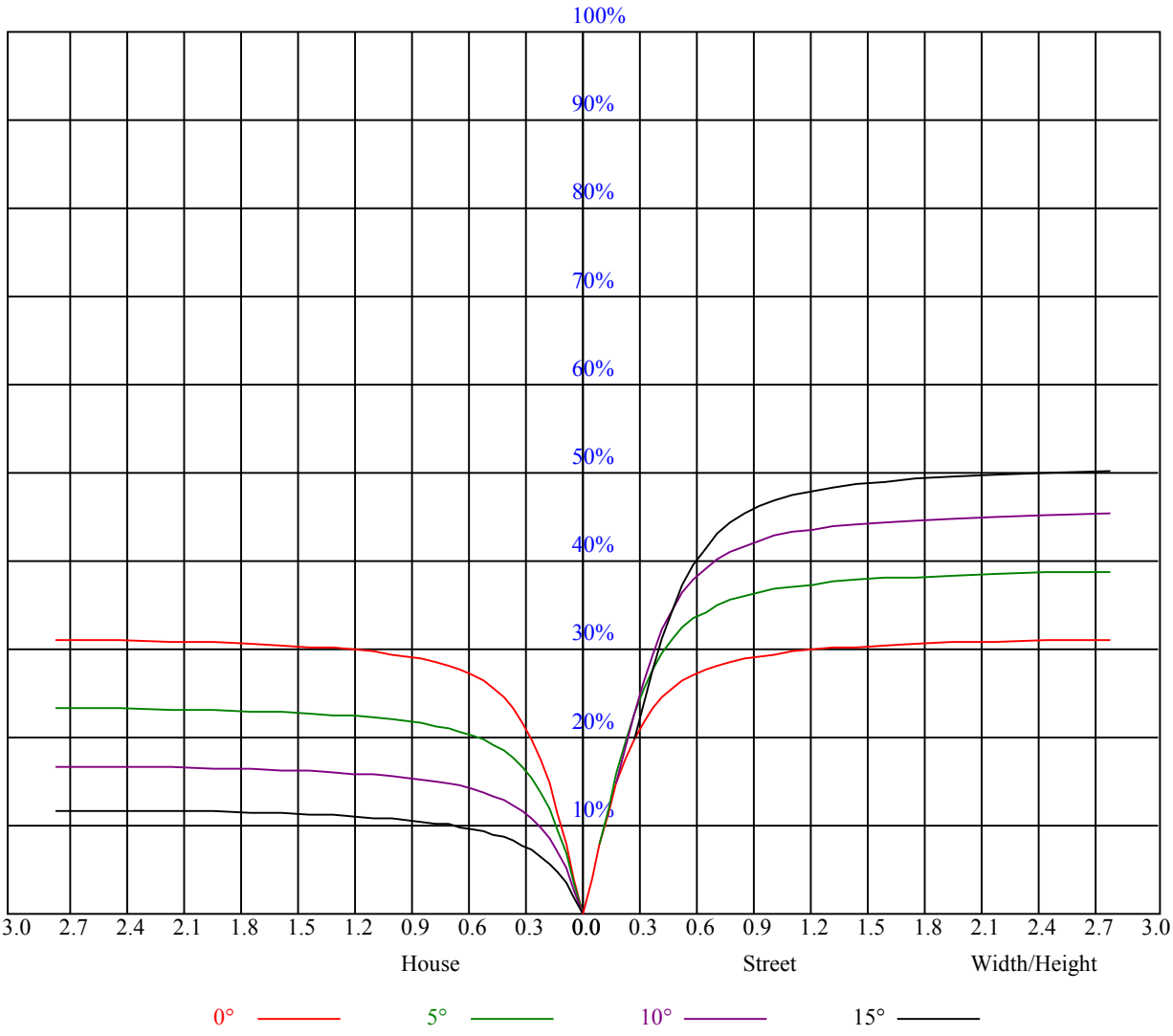


Equipment: GMS1980 Date: 2021/11/12 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.75	0.75	0.75	0.74	0.74	0.74	0.70	0.70	0.70	0.67	0.67	0.67	0.65	0.65	0.65	0.63
1	0.70	0.68	0.66	0.68	0.67	0.65	0.66	0.64	0.63	0.63	0.62	0.61	0.61	0.60	0.60	0.59
2	0.65	0.62	0.60	0.64	0.61	0.59	0.62	0.60	0.58	0.60	0.58	0.57	0.58	0.57	0.56	0.54
3	0.61	0.57	0.55	0.60	0.57	0.54	0.58	0.56	0.54	0.57	0.55	0.53	0.55	0.53	0.52	0.51
4	0.57	0.54	0.51	0.56	0.53	0.51	0.55	0.52	0.50	0.54	0.51	0.49	0.53	0.51	0.49	0.48
5	0.54	0.50	0.48	0.53	0.50	0.48	0.52	0.49	0.47	0.51	0.49	0.47	0.50	0.48	0.46	0.45
6	0.51	0.48	0.45	0.51	0.47	0.45	0.50	0.47	0.45	0.49	0.46	0.44	0.48	0.46	0.44	0.43
7	0.49	0.45	0.43	0.48	0.45	0.43	0.48	0.45	0.42	0.47	0.44	0.42	0.46	0.44	0.42	0.41
8	0.47	0.43	0.41	0.46	0.43	0.41	0.46	0.42	0.40	0.45	0.42	0.40	0.44	0.42	0.40	0.39
9	0.45	0.41	0.39	0.44	0.41	0.39	0.44	0.41	0.39	0.43	0.40	0.38	0.43	0.40	0.38	0.38
10	0.43	0.39	0.37	0.42	0.39	0.37	0.42	0.39	0.37	0.42	0.39	0.37	0.41	0.39	0.37	0.36

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	1395.23	1407.78	1410.17	1403.00	1385.07	1356.99	1323.53	1276.92	1229.71
45.0	1400.01	1390.45	1367.15	1340.26	1306.20	1260.19	1205.81	1150.84	1084.52
90.0	1390.45	1370.73	1339.06	1299.03	1256.60	1190.70	1134.95	1074.89	1011.86
135.0	1399.41	1379.10	1349.22	1315.16	1269.15	1217.17	1162.79	1096.47	1036.12
180.0	1395.23	1375.51	1348.62	1305.00	1263.18	1190.82	1149.53	1083.14	1021.00
225.0	1400.01	1401.80	1393.44	1376.11	1353.40	1313.37	1273.93	1187.83	1168.41
270.0	1390.45	1403.00	1408.38	1403.00	1389.85	1365.95	1331.89	1294.85	1245.85
315.0	1399.41	1408.97	1410.77	1400.61	1383.88	1358.78	1321.14	1275.72	1191.41
360.0	1395.23	1407.78	1410.17	1403.00	1385.07	1356.99	1323.53	1276.92	1229.71

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1170.56	1104.23	1040.30	974.57	888.53	819.21	750.50	667.44	605.30
45.0	1013.41	947.08	870.00	801.88	727.19	655.49	596.33	539.57	474.44
90.0	938.42	863.97	798.06	725.88	663.79	597.23	535.03	484.06	431.06
135.0	964.41	889.72	823.39	758.26	679.39	619.64	564.66	499.53	451.73
180.0	948.64	875.20	810.13	738.73	677.12	610.73	548.35	496.73	448.68
225.0	1112.96	1045.62	974.87	909.92	835.47	761.85	699.05	638.10	565.20
270.0	1190.28	1134.71	1066.59	1003.25	927.96	851.48	783.36	725.40	636.37
315.0	1163.75	1097.00	1033.55	958.68	889.96	812.40	737.41	672.46	609.54
360.0	1170.56	1104.23	1040.30	974.57	888.53	819.21	750.50	667.44	605.30

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	546.14	485.79	431.42	387.80	342.98	308.32	283.89	240.98	217.02
45.0	427.23	384.21	337.01	302.35	282.09	240.21	214.81	194.91	174.72
90.0	382.96	344.95	310.95	273.85	247.56	224.37	198.80	180.75	164.50
135.0	408.11	367.48	324.46	304.14	265.18	232.80	208.42	191.21	169.82
180.0	393.59	354.51	319.44	280.90	253.65	229.57	208.00	184.28	167.61
225.0	511.96	462.91	418.09	367.00	330.49	297.69	261.42	235.84	213.32
270.0	577.21	528.81	458.90	412.89	375.85	329.24	304.14	260.64	231.54
315.0	537.06	484.42	435.96	381.22	342.09	307.01	268.59	241.64	217.92
360.0	546.14	485.79	431.42	387.80	342.98	308.32	283.89	240.98	217.02

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	193.24	172.63	156.61	142.51	127.21	116.52	106.78	96.02	88.43
45.0	158.70	143.05	128.89	117.59	106.48	96.68	88.91	81.98	74.27
90.0	148.37	133.91	122.31	110.84	101.64	92.50	84.43	77.98	71.46
135.0	152.91	141.08	125.84	115.02	105.34	94.65	87.18	80.31	72.78
180.0	152.61	137.49	123.99	113.41	102.83	93.51	86.22	78.87	72.96
225.0	190.91	171.07	155.54	140.06	127.87	115.80	104.87	96.14	87.48
270.0	208.66	186.07	166.59	151.41	136.42	123.27	112.87	103.43	93.10
315.0	192.11	176.03	157.63	140.00	129.13	116.70	104.39	96.62	88.61
360.0	193.24	172.63	156.61	142.51	127.21	116.52	106.78	96.02	88.43

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	81.62	74.69	68.54	63.64	58.92	55.09	51.33	47.92	45.29
45.0	68.72	63.76	58.86	54.08	50.31	46.49	43.02	40.21	37.47
90.0	65.61	60.95	56.71	51.75	48.22	44.99	41.65	38.66	36.27
135.0	67.40	62.62	57.24	53.12	49.48	45.77	42.48	39.80	37.05
180.0	67.16	61.96	57.90	53.78	50.01	46.97	44.40	41.59	39.56
225.0	79.71	73.56	68.12	61.96	57.60	53.66	49.59	45.95	43.02
270.0	85.69	78.93	72.06	66.03	61.25	56.53	52.28	48.82	45.23
315.0	78.99	73.62	68.06	62.38	57.48	53.54	49.54	45.95	43.02
360.0	81.62	74.69	68.54	63.64	58.92	55.09	51.33	47.92	45.29

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	42.72	40.51	38.72	37.11	35.13	33.58	32.15	30.83	29.40
45.0	35.13	32.86	30.77	29.10	27.55	25.69	24.32	23.06	21.81
90.0	33.82	31.55	29.70	27.90	26.29	24.68	23.12	21.87	20.67
135.0	34.60	32.57	30.53	28.86	27.07	25.45	24.14	22.89	21.39
180.0	37.76	35.91	34.06	32.51	30.83	29.34	28.08	26.89	25.93
225.0	40.03	37.29	35.02	32.74	30.95	29.04	27.31	25.93	24.62
270.0	42.42	39.50	36.87	34.66	32.45	30.35	28.68	27.13	25.34
315.0	40.03	37.58	35.07	32.80	31.01	29.10	27.37	25.93	24.62
360.0	42.72	40.51	38.72	37.11	35.13	33.58	32.15	30.83	29.40

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	28.32	27.37	26.17	25.34	24.44	23.42	22.53	21.75	20.85
45.0	20.61	19.60	18.64	17.51	16.67	15.89	15.06	14.34	13.62
90.0	19.36	18.34	17.45	16.31	15.48	14.70	13.92	13.09	12.43
135.0	20.32	19.30	18.11	17.21	16.37	15.48	14.64	13.92	13.21
180.0	24.98	24.02	23.30	22.59	21.87	21.21	20.55	19.60	18.94
225.0	23.06	21.93	20.91	19.66	18.70	17.75	16.79	15.89	15.12
270.0	24.02	22.77	21.51	20.26	19.24	18.16	17.09	16.13	15.24
315.0	23.06	21.87	20.79	19.66	18.52	17.63	16.67	15.72	14.94
360.0	28.32	27.37	26.17	25.34	24.44	23.42	22.53	21.75	20.85

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	20.02	19.24	18.40	17.63	16.79	16.07	15.54	14.94	14.16
45.0	12.91	12.25	11.71	11.17	10.64	10.04	9.56	9.14	8.66
90.0	11.71	11.17	10.58	9.98	9.50	8.96	8.43	8.01	7.53
135.0	12.55	11.95	11.29	10.76	10.22	9.68	9.26	8.84	8.31
180.0	18.16	17.45	16.79	16.19	15.54	15.06	14.70	15.48	17.09
225.0	14.28	13.56	12.97	12.25	11.71	11.11	10.52	10.04	9.62
270.0	14.46	13.62	12.85	12.25	11.65	10.88	10.40	9.86	9.20
315.0	14.22	13.50	12.79	12.13	11.53	11.05	10.40	9.92	9.50
360.0	20.02	19.24	18.40	17.63	16.79	16.07	15.54	14.94	14.16

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.68	13.92	15.48	17.87	18.58	19.00	19.18	19.72	20.38
45.0	8.25	7.83	7.47	6.99	7.05	8.43	8.60	7.17	5.68
90.0	7.05	6.57	6.15	5.68	5.26	4.90	4.42	4.12	3.76
135.0	7.95	7.53	7.05	6.69	6.33	5.98	5.62	5.32	4.96
180.0	19.66	21.39	22.23	23.30	25.04	26.23	26.47	25.75	24.20
225.0	9.02	8.60	8.19	7.71	7.35	7.05	7.53	7.77	7.41
270.0	8.72	8.25	7.71	7.23	6.81	6.39	5.98	5.50	5.14
315.0	8.96	8.54	8.13	7.77	7.29	6.93	6.57	6.21	5.86
360.0	13.68	13.92	15.48	17.87	18.58	19.00	19.18	19.72	20.38

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	19.72	18.11	15.83	12.97	8.78	4.78	3.53	3.11	2.33
45.0	4.72	4.48	4.18	3.94	2.87	2.51	2.21	2.15	2.09
90.0	3.41	3.17	2.87	2.57	2.27	2.15	2.09	2.09	2.09
135.0	4.66	4.42	4.42	4.72	2.75	2.45	2.27	2.09	2.15
180.0	21.63	16.55	6.45	3.94	3.11	2.69	2.27	2.21	2.15
225.0	6.15	5.38	4.90	4.60	4.36	3.17	2.81	2.21	2.09
270.0	4.78	4.42	4.00	3.70	3.35	2.87	2.57	2.33	2.15
315.0	5.62	5.26	4.96	4.78	4.78	3.11	2.81	2.45	2.15
360.0	19.72	18.11	15.83	12.97	8.78	4.78	3.53	3.11	2.33

Intensity data(cd)

C/γ(°)	90.0
0.0	2.27
45.0	2.09
90.0	2.09
135.0	2.15
180.0	2.39
225.0	2.15
270.0	2.15
315.0	2.09
360.0	2.27