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Nata

LumCAT: LN01D02817DA-N
Luminaire: 92.70.307.00
Report No: 211112-B004
Test No: 211112-C004
LampCAT: CITIZEN CLU701-1002C9303H5.3
Lamp flux(lm): 831.6
Number of Lamps: 1
Length(mm): 111
Phm Type: C

Voltage(V): 30.4800
Current(A): 0.2510
Power (W): 7.6500
PF: 0.0000
Ballast type: DC
Width(mm): 111
Height(mm): 0

Photometric Results

Lumens(lm): 529.03
Efficiency(%): 63.62%
Lumens(lm)/Power(W): 69.15
Central intensity(cd): 1744.486
Maximum intensity(cd): 1744.486
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=24.9
[C90/270]Total=24.9
Field angle(10%Imax): [C0/180]Total=52.7
[C90/270]Total=52.7
Maximum s/h(1/2): C0_180=0.42 C90_270=0.42
Maximum s/h(1/4): C0_180=0.44 C90_270=0.44
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 63.62%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.818%

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

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1744.486	0.000	0	.000%	.000%
1.0	1736.494	1.666	1.666	.200%	.315%
2.0	1712.892	4.951	6.616	.595%	1.251%
3.0	1669.720	8.090	14.707	.973%	2.780%
4.0	1617.138	11.002	25.709	1.323%	4.860%
5.0	1551.559	13.632	39.34	1.639%	7.436%
6.0	1470.967	15.884	55.224	1.910%	10.439%
7.0	1381.338	17.704	72.929	2.129%	13.785%
8.0	1280.856	19.053	91.981	2.291%	17.387%
9.0	1195.491	20.069	112.051	2.413%	21.180%
10.0	1092.783	20.708	132.759	2.490%	25.095%
11.0	1003.781	20.949	153.708	2.519%	29.055%
12.0	912.509	20.948	174.656	2.519%	33.014%
13.0	818.951	20.548	195.204	2.471%	36.898%
14.0	738.180	19.931	215.135	2.397%	40.666%
15.0	663.548	19.244	234.379	2.314%	44.303%
16.0	589.731	18.364	252.743	2.208%	47.774%
17.0	527.790	17.403	270.145	2.093%	51.064%
18.0	466.693	16.397	286.542	1.972%	54.163%
19.0	416.597	15.367	301.91	1.848%	57.068%
20.0	370.296	14.402	316.312	1.732%	59.791%
21.0	326.520	13.380	329.692	1.609%	62.320%
22.0	293.432	12.458	342.15	1.498%	64.675%
23.0	258.028	11.571	353.722	1.391%	66.862%
24.0	229.369	10.656	364.378	1.281%	68.876%
25.0	202.570	9.821	374.199	1.181%	70.733%
26.0	180.962	9.053	383.252	1.089%	72.444%
27.0	161.146	8.370	391.622	1.007%	74.026%
28.0	143.497	7.713	399.335	.928%	75.484%
29.0	128.252	7.110	406.445	.855%	76.828%
30.0	115.517	6.582	413.027	.791%	78.072%
31.0	103.246	6.088	419.114	.732%	79.223%
32.0	93.155	5.627	424.741	.677%	80.286%
33.0	84.633	5.238	429.979	.630%	81.276%
34.0	76.469	4.875	434.854	.586%	82.198%
35.0	69.762	4.541	439.396	.546%	83.056%
36.0	63.659	4.248	443.644	.511%	83.859%
37.0	58.319	3.978	447.622	.478%	84.611%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	53.583	3.735	451.357	.449%	85.317%
39.0	49.132	3.506	454.863	.422%	85.980%
40.0	45.375	3.296	458.159	.396%	86.603%
41.0	42.223	3.119	461.278	.375%	87.193%
42.0	39.302	2.962	464.24	.356%	87.753%
43.0	36.606	2.812	467.052	.338%	88.284%
44.0	34.440	2.681	469.734	.322%	88.791%
45.0	32.408	2.569	472.303	.309%	89.277%
46.0	30.452	2.458	474.761	.296%	89.741%
47.0	28.764	2.355	477.116	.283%	90.187%
48.0	27.352	2.268	479.385	.273%	90.615%
49.0	25.940	2.188	481.573	.263%	91.029%
50.0	24.626	2.108	483.681	.254%	91.427%
51.0	23.543	2.038	485.719	.245%	91.813%
52.0	22.534	1.977	487.697	.238%	92.186%
53.0	21.556	1.918	489.614	.231%	92.549%
54.0	20.697	1.862	491.477	.224%	92.901%
55.0	19.913	1.813	493.29	.218%	93.244%
56.0	19.113	1.763	495.053	.212%	93.577%
57.0	18.404	1.715	496.768	.206%	93.901%
58.0	17.657	1.668	498.436	.201%	94.216%
59.0	16.925	1.617	500.053	.194%	94.522%
60.0	16.178	1.564	501.617	.188%	94.818%
61.0	15.312	1.503	503.119	.181%	95.102%
62.0	14.542	1.439	504.558	.173%	95.374%
63.0	13.818	1.379	505.937	.166%	95.634%
64.0	13.034	1.318	507.255	.158%	95.883%
65.0	12.332	1.255	508.51	.151%	96.121%
66.0	11.652	1.197	509.707	.144%	96.347%
67.0	11.017	1.140	510.847	.137%	96.562%
68.0	10.352	1.082	511.929	.130%	96.767%
69.0	9.747	1.025	512.954	.123%	96.961%
70.0	9.209	0.974	513.928	.117%	97.145%
71.0	8.769	0.929	514.857	.112%	97.320%
72.0	8.537	0.900	515.757	.108%	97.491%
73.0	8.522	0.892	516.649	.107%	97.659%
74.0	8.687	0.905	517.554	.109%	97.830%
75.0	8.978	0.933	518.487	.112%	98.007%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.292	0.970	519.457	.117%	98.190%
77.0	9.650	1.010	520.467	.121%	98.381%
78.0	10.046	1.054	521.521	.127%	98.580%
79.0	10.270	1.092	522.613	.131%	98.786%
80.0	10.053	1.096	523.708	.132%	98.994%
81.0	9.224	1.043	524.751	.125%	99.191%
82.0	7.955	0.932	525.683	.112%	99.367%
83.0	6.648	0.794	526.476	.095%	99.517%
84.0	5.355	0.654	527.13	.079%	99.640%
85.0	3.742	0.497	527.627	.060%	99.734%
86.0	2.861	0.361	527.988	.043%	99.802%
87.0	2.472	0.292	528.28	.035%	99.858%
88.0	2.308	0.262	528.541	.031%	99.907%
89.0	2.203	0.247	528.789	.030%	99.954%
90.0	2.248	0.244	529.033	.029%	100.000%

Zonal flux distribution table

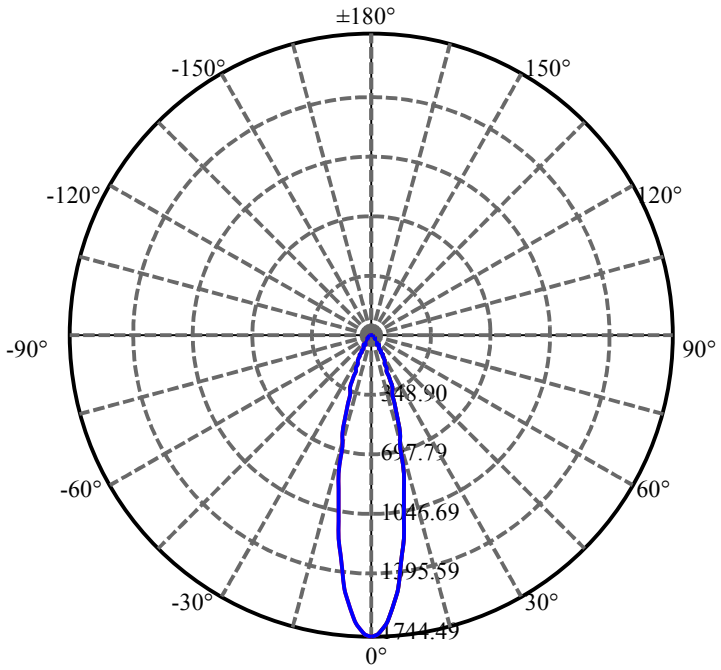
ZONAL LUMEN SUMMARY

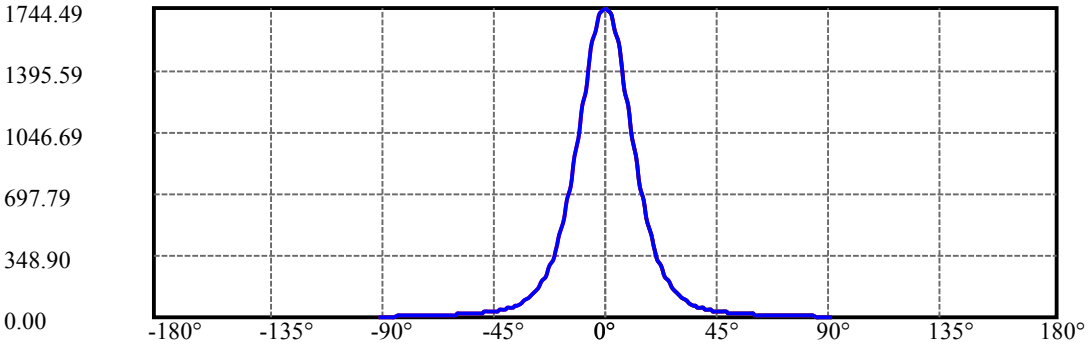
Zone	Lumens	%Lamp	%Fixt
0-30	413.03	49.67%	78.07%
0-40	458.16	55.10%	86.60%
0-60	501.62	60.32%	94.82%
0-90	528.79	63.59%	99.95%
0-120	528.79	63.59%	99.95%
0-180	529.03	63.62%	100.00%
60-90	28.74	3.46%	5.43%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-31.73	423.23	50.90%	80.00%

ZONAL LUMEN SUMMARY

0-10	132.76
10-20	183.55
20-30	96.71
30-40	45.13
40-50	25.52
50-60	17.94
60-70	12.31
70-80	9.78
80-90	5.08
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):

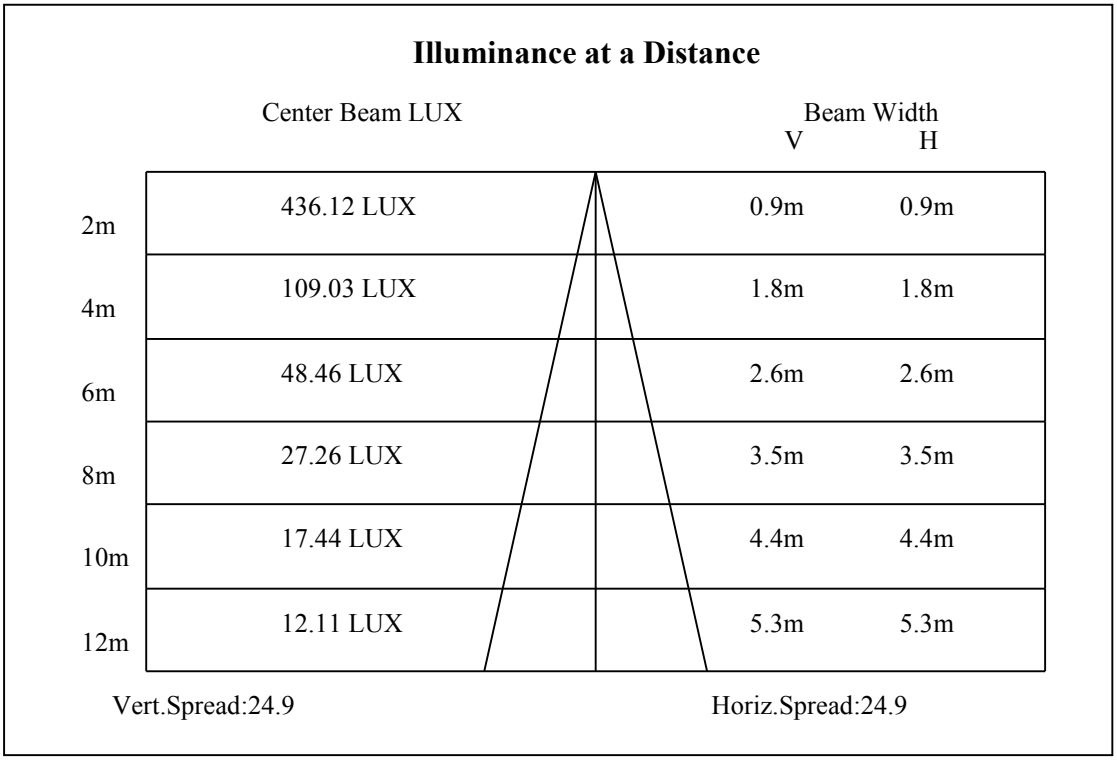
C0/C180:

C90/C270:

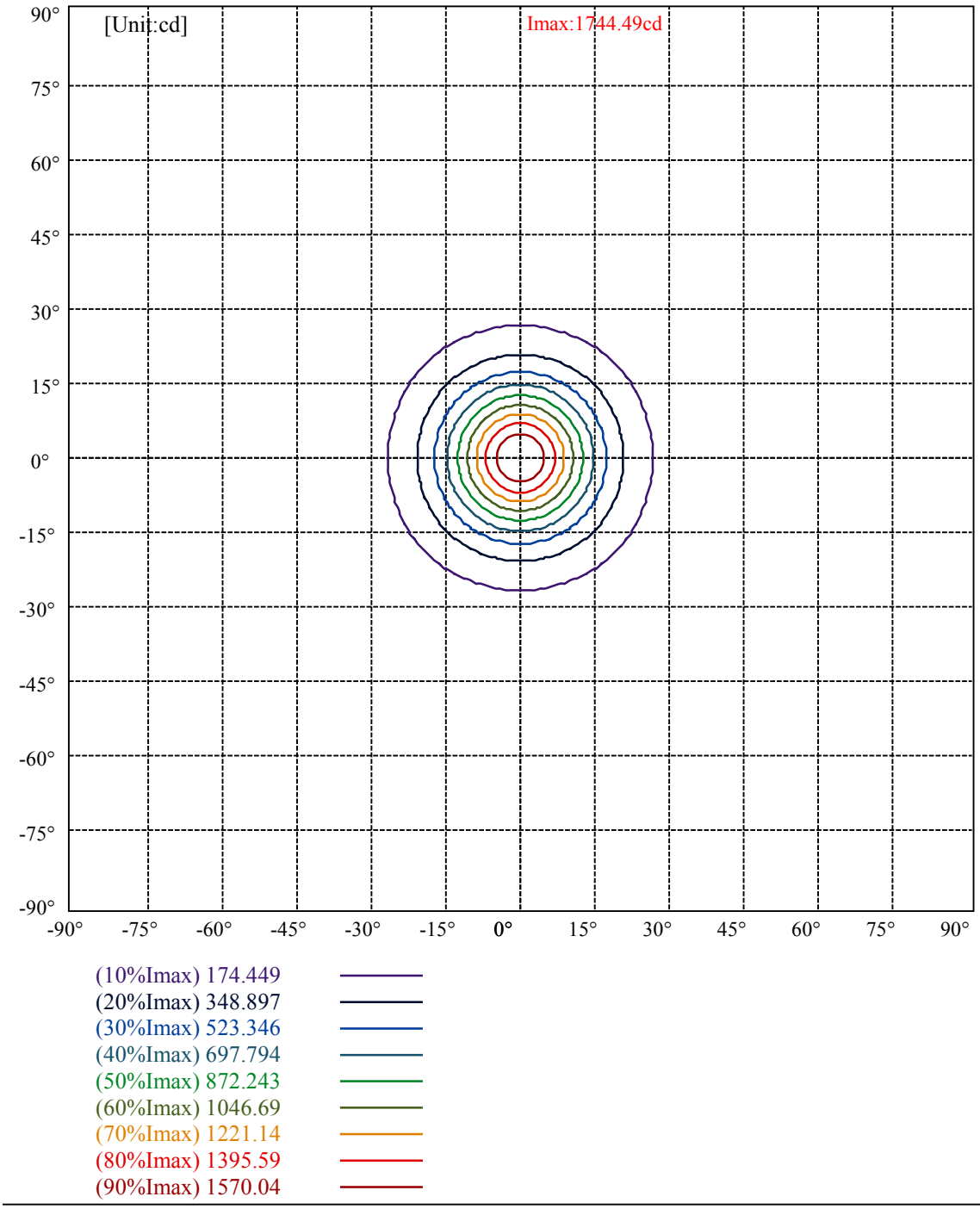
Field angle(10%Imax):C0/180Left:26.3 Right:26.3
:C90/270Left:26.3 Right:26.3

Beam Angle(50%Imax):C0/180Left:12.4 Right:12.4
:C90/270Left:12.4 Right:12.4

Lux distance Curve



ISO-Intensity(V-H)



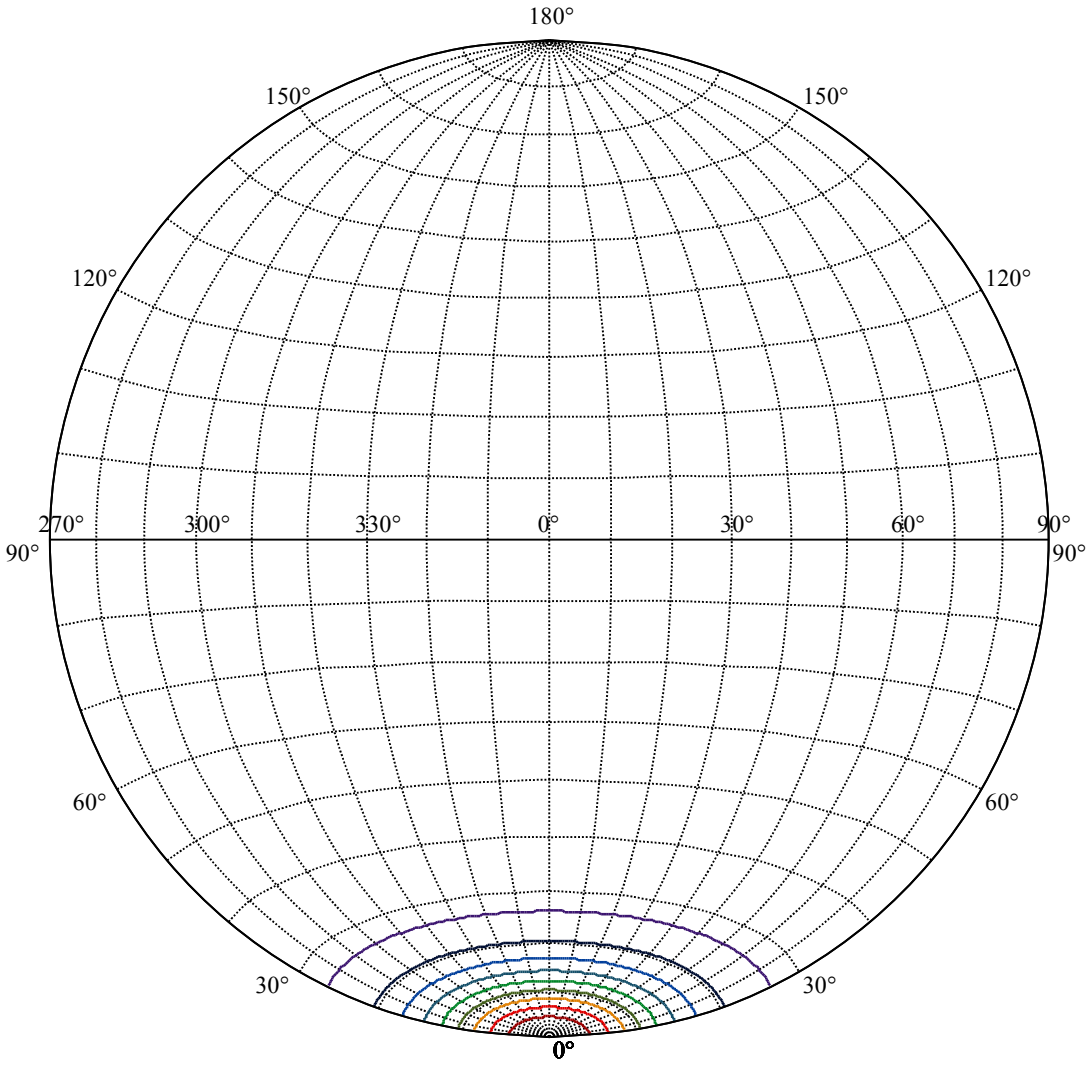
(10%Imax) 174.449
(20%Imax) 348.897
(30%Imax) 523.346
(40%Imax) 697.794
(50%Imax) 872.243
(60%Imax) 1046.69
(70%Imax) 1221.14
(80%Imax) 1395.59
(90%Imax) 1570.04

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:1744.49

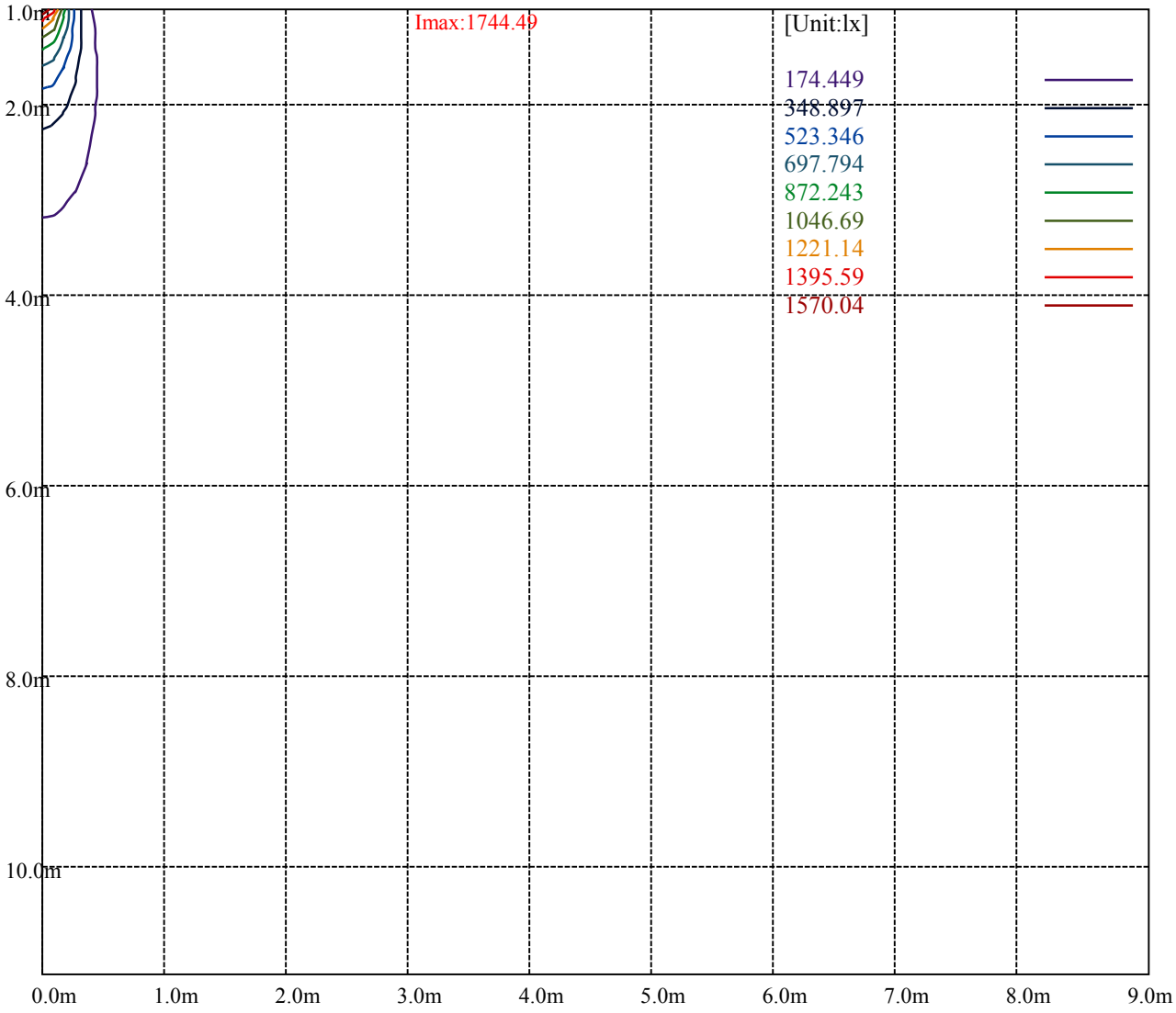
(10%Imax) 174.449
(20%Imax) 348.897
(30%Imax) 523.346
(40%Imax) 697.794
(50%Imax) 872.243
(60%Imax) 1046.69
(70%Imax) 1221.14
(80%Imax) 1395.59
(90%Imax) 1570.04

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 LN01D02817DA-N

Luminance Limitting Curve(no luminous side)

Luminance Table

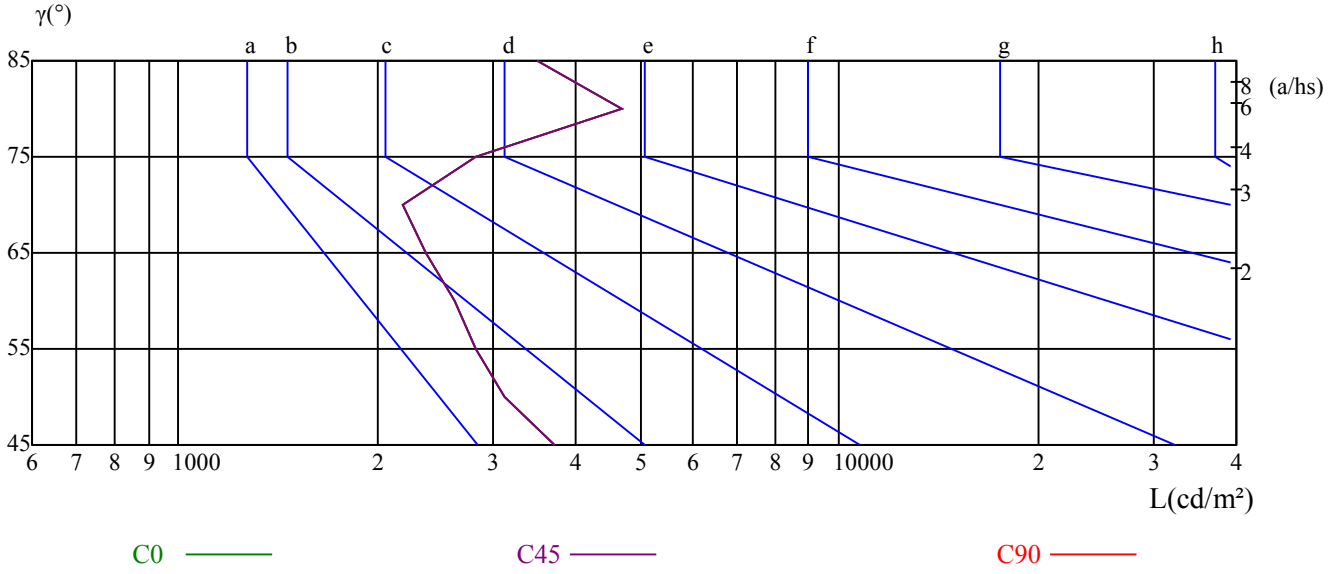
γ	45	50	55	60	65	70	75	80	85
C0	3720	3109	2818	2626	2368	2185	2815	4699	3485
C45	3720	3109	2818	2626	2368	2185	2815	4699	3485
C90	3720	3109	2818	2626	2368	2185	2815	4699	3485

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2368	2368	2368	2815	2815	2815	3485	3485	3485

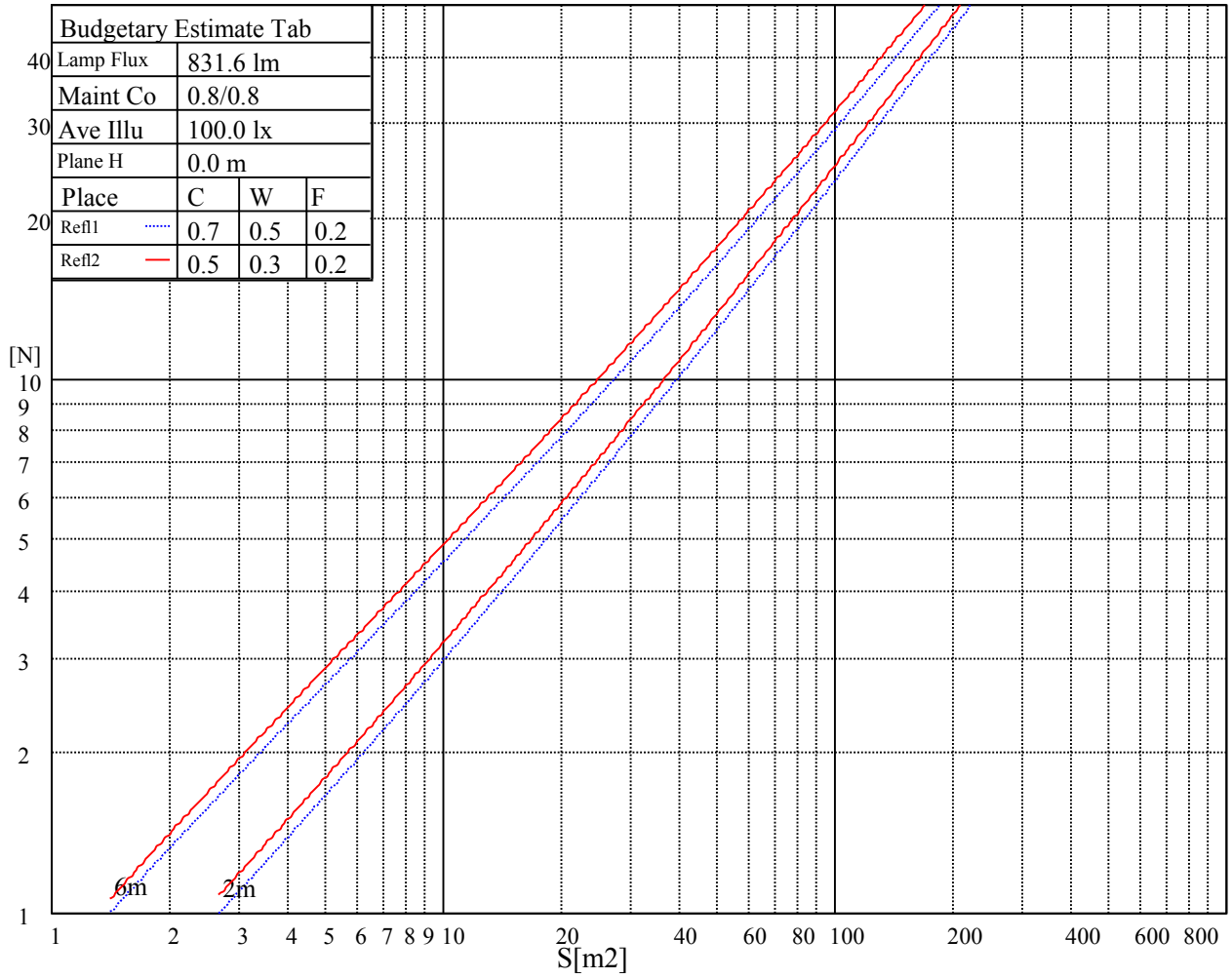
Glare Table

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

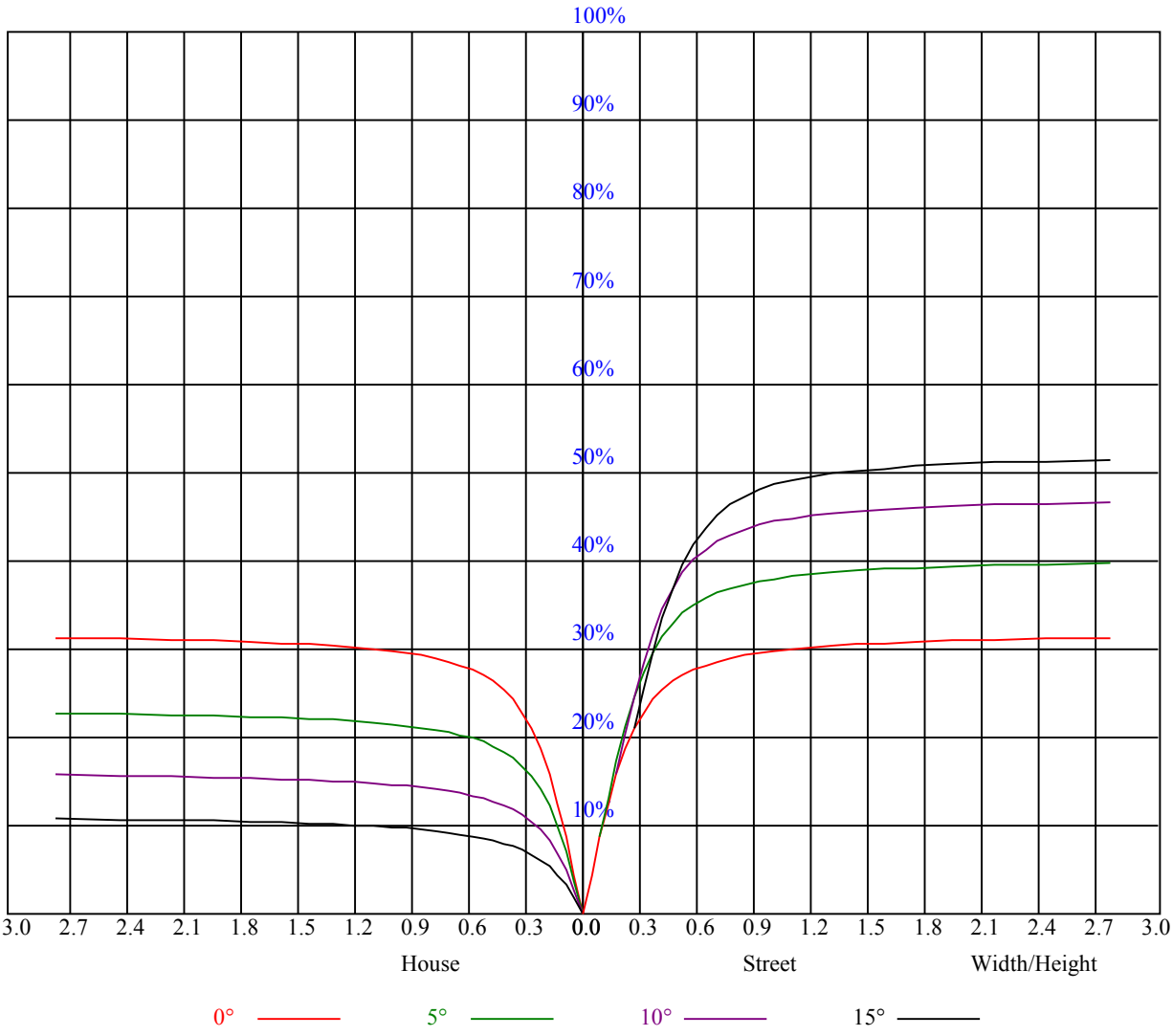


Equipment: GMS1980 Date: 2021/11/12 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.76	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	0.66	0.63	0.61	0.64	0.62	0.60	0.62	0.61	0.59	0.61	0.59	0.58	0.59	0.58	0.56	0.55
3	0.62	0.59	0.56	0.61	0.58	0.56	0.59	0.57	0.55	0.58	0.56	0.54	0.56	0.55	0.53	0.52
4	0.58	0.55	0.52	0.58	0.54	0.52	0.56	0.54	0.51	0.55	0.53	0.51	0.54	0.52	0.50	0.49
5	0.55	0.52	0.49	0.55	0.51	0.49	0.54	0.51	0.49	0.53	0.50	0.48	0.52	0.49	0.48	0.47
6	0.53	0.49	0.47	0.52	0.49	0.47	0.51	0.48	0.46	0.50	0.48	0.46	0.50	0.47	0.46	0.45
7	0.50	0.47	0.44	0.50	0.47	0.44	0.49	0.46	0.44	0.48	0.46	0.44	0.48	0.45	0.44	0.43
8	0.48	0.45	0.43	0.48	0.45	0.42	0.47	0.44	0.42	0.47	0.44	0.42	0.46	0.44	0.42	0.41
9	0.46	0.43	0.41	0.46	0.43	0.41	0.45	0.43	0.41	0.45	0.42	0.40	0.44	0.42	0.40	0.40
10	0.45	0.41	0.39	0.44	0.41	0.39	0.44	0.41	0.39	0.43	0.41	0.39	0.43	0.41	0.39	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	1734.63	1741.20	1732.83	1705.95	1667.11	1615.12	1533.86	1460.36	1380.29
45.0	1740.60	1736.42	1714.31	1679.65	1626.47	1558.36	1486.05	1395.23	1310.38
90.0	1755.54	1749.56	1728.65	1683.84	1634.24	1572.10	1490.24	1397.62	1309.78
135.0	1747.17	1745.98	1726.26	1699.37	1643.20	1578.07	1517.13	1418.53	1334.28
180.0	1734.63	1710.13	1673.68	1612.13	1549.99	1478.29	1376.11	1288.87	1182.63
225.0	1740.60	1728.65	1703.56	1652.77	1600.18	1535.65	1452.00	1362.37	1257.20
270.0	1755.54	1745.98	1717.90	1677.86	1618.71	1544.61	1468.73	1376.11	1290.07
315.0	1747.17	1734.03	1705.95	1646.19	1597.20	1530.27	1443.63	1351.61	1182.21
360.0	1734.63	1741.20	1732.83	1705.95	1667.11	1615.12	1533.86	1460.36	1380.29

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1284.69	1185.50	1096.47	998.47	902.87	821.00	744.52	665.05	592.15
45.0	1211.79	1109.01	1018.79	931.55	828.77	751.69	680.59	599.32	540.17
90.0	1181.14	1101.72	1012.57	905.67	834.21	747.27	658.30	601.17	540.41
135.0	1247.04	1132.32	1040.30	951.27	844.91	764.84	690.74	603.50	541.36
180.0	1102.74	990.28	903.58	821.18	724.74	653.04	586.83	519.07	457.53
225.0	1173.97	1073.52	985.44	889.24	807.32	720.74	642.10	577.51	517.46
270.0	1191.47	1091.09	1002.06	916.61	813.83	736.75	663.85	581.99	521.64
315.0	1171.10	1058.82	971.04	886.08	794.95	710.10	641.45	570.22	511.60
360.0	1284.69	1185.50	1096.47	998.47	902.87	821.00	744.52	665.05	592.15

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	526.42	473.84	420.66	372.26	334.02	303.54	266.38	232.26	207.94
45.0	485.79	435.00	381.22	340.59	303.54	265.90	235.19	211.70	186.91
90.0	464.70	421.97	377.82	324.58	294.70	264.11	233.63	206.86	185.65
135.0	484.00	426.64	378.24	336.41	303.54	256.94	231.12	204.59	182.84
180.0	407.99	358.70	319.98	281.62	247.91	221.80	198.62	173.34	155.60
225.0	450.78	403.75	361.39	314.00	280.48	250.54	220.97	195.03	175.14
270.0	467.27	412.30	363.90	325.65	303.54	251.14	224.97	201.49	178.12
315.0	446.59	400.58	359.17	317.05	279.70	250.25	224.07	195.27	175.49
360.0	526.42	473.84	420.66	372.26	334.02	303.54	266.38	232.26	207.94

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	186.19	162.47	146.04	131.64	116.10	105.17	95.43	85.86	77.56
45.0	165.46	148.61	131.87	118.73	105.88	94.71	86.04	77.44	69.91
90.0	164.62	148.07	131.46	117.06	105.76	94.77	85.15	77.56	70.87
135.0	162.05	144.00	129.78	117.12	103.43	93.99	85.63	76.42	70.03
180.0	139.88	122.67	110.66	100.03	88.55	80.73	73.79	66.33	61.01
225.0	155.42	139.94	124.70	111.62	101.46	91.36	82.52	75.53	69.37
270.0	157.63	141.79	126.32	114.55	102.95	92.86	84.91	77.02	70.09
315.0	157.93	140.42	125.18	113.41	101.82	91.66	83.59	75.59	69.25
360.0	186.19	162.47	146.04	131.64	116.10	105.17	95.43	85.86	77.56

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	70.99	64.35	59.33	54.32	50.07	46.97	44.10	41.83	40.39
45.0	64.00	58.86	53.18	48.82	44.99	41.23	37.94	35.31	32.74
90.0	63.46	58.32	53.60	48.40	44.70	41.47	38.48	35.19	32.92
135.0	64.29	58.74	53.72	49.42	45.17	41.83	38.54	35.55	33.22
180.0	56.53	51.45	48.40	44.93	41.83	39.97	38.30	36.63	35.31
225.0	62.50	57.78	53.42	48.58	45.17	42.01	38.90	36.03	33.70
270.0	64.59	59.63	54.08	50.07	46.49	42.90	39.68	37.11	34.36
315.0	62.92	57.42	52.94	48.52	44.58	41.41	38.48	35.19	32.86
360.0	70.99	64.35	59.33	54.32	50.07	46.97	44.10	41.83	40.39

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	39.32	37.35	36.03	34.96	33.94	33.10	32.45	31.79	31.19
45.0	30.35	28.38	26.53	24.98	23.36	21.87	20.73	19.60	18.34
90.0	30.77	28.62	26.65	25.10	23.42	21.87	20.61	19.30	18.22
135.0	30.83	28.62	26.89	25.34	23.72	22.23	20.97	19.72	18.52
180.0	34.06	32.80	32.15	31.55	30.95	30.41	30.00	29.64	29.46
225.0	31.25	29.34	27.31	25.51	24.08	22.53	21.15	20.08	19.06
270.0	31.91	29.88	27.90	26.23	24.50	22.89	21.57	20.50	19.00
315.0	30.77	28.62	26.65	25.16	23.54	22.11	20.85	19.66	18.64
360.0	39.32	37.35	36.03	34.96	33.94	33.10	32.45	31.79	31.19

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	30.77	30.47	30.23	29.94	29.58	29.10	28.32	26.89	25.57
45.0	17.45	16.55	15.54	14.82	14.10	13.38	12.67	12.07	11.35
90.0	17.09	16.01	15.18	14.40	13.38	12.67	12.01	11.17	10.64
135.0	17.57	16.55	15.60	14.82	14.04	13.32	12.61	11.89	11.35
180.0	29.22	28.92	28.50	27.96	27.25	26.41	25.45	24.14	23.06
225.0	17.93	17.09	16.25	15.30	14.58	13.86	13.09	12.49	11.89
270.0	17.99	17.15	15.89	15.06	14.34	13.38	12.61	12.01	11.23
315.0	17.57	16.55	15.72	14.94	13.98	13.27	12.67	11.83	11.23
360.0	30.77	30.47	30.23	29.94	29.58	29.10	28.32	26.89	25.57

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	24.44	23.00	21.81	20.55	19.30	17.99	16.73	15.54	14.46
45.0	10.82	10.28	9.80	9.32	8.90	8.43	8.07	7.71	7.35
90.0	10.04	9.44	8.90	8.43	8.01	7.59	7.17	6.75	6.39
135.0	10.76	10.16	9.68	9.26	8.72	8.37	8.01	7.65	7.29
180.0	21.87	20.38	19.06	17.81	16.61	15.12	14.10	13.27	12.97
225.0	11.23	10.76	10.28	9.68	9.32	8.96	8.43	8.07	7.77
270.0	10.64	10.10	9.44	8.96	8.54	8.01	7.59	7.23	6.81
315.0	10.76	10.16	9.68	9.20	8.72	8.37	7.89	7.47	7.11
360.0	24.44	23.00	21.81	20.55	19.30	17.99	16.73	15.54	14.46

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.92	14.22	15.42	17.33	19.96	22.59	24.62	26.35	27.55
45.0	6.99	6.69	6.33	5.98	5.92	6.81	7.89	8.13	7.65
90.0	6.04	5.68	5.38	5.14	4.78	4.48	4.24	4.00	3.76
135.0	6.99	6.63	6.33	6.04	5.74	5.44	5.14	4.96	4.78
180.0	13.80	15.36	17.45	19.60	21.15	21.93	22.47	22.47	20.79
225.0	7.29	7.05	6.69	6.45	6.15	5.92	6.57	7.41	7.53
270.0	6.45	6.09	5.74	5.44	5.14	4.84	4.48	4.18	3.88
315.0	6.81	6.45	6.15	5.86	5.50	5.20	4.96	4.66	4.48
360.0	13.92	14.22	15.42	17.33	19.96	22.59	24.62	26.35	27.55

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	27.73	25.63	22.11	17.33	7.53	4.54	3.35	2.87	2.39
45.0	5.02	4.24	4.00	3.76	2.75	2.57	2.33	2.21	2.21
90.0	3.59	3.35	3.05	2.69	2.51	2.33	2.15	2.09	2.15
135.0	4.60	4.36	4.18	3.53	2.69	2.51	2.33	2.21	2.21
180.0	17.99	13.32	8.66	4.84	3.64	2.99	2.33	2.27	2.15
225.0	6.99	5.20	4.12	3.88	3.76	2.81	2.57	2.33	2.21
270.0	3.64	3.47	3.17	2.93	2.75	2.51	2.27	2.15	2.15
315.0	4.24	4.06	3.88	3.88	4.30	2.63	2.45	2.33	2.15
360.0	27.73	25.63	22.11	17.33	7.53	4.54	3.35	2.87	2.39

Intensity data(cd)

C/γ(°)	90.0
0.0	2.33
45.0	2.15
90.0	2.15
135.0	2.15
180.0	2.63
225.0	2.21
270.0	2.15
315.0	2.21
360.0	2.33