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Nata

LumCAT: LN01D05024DA-N
Luminaire: 97.70.234.00
Report No: 210701-B011
Test No: 210701-C011
LampCAT: Fortimo LED SLM 1202 G7N
Lamp flux(lm): 1511.8
Number of Lamps: 1
Length(mm): 570
Phm Type: C

Voltage(V): 37.1100
Current(A): 0.3040
Power (W): 11.2810
PF: 0.0000
Ballast type: DC
Width(mm): 45
Height(mm): 20

Photometric Results

Lumens(lm): 1354.61
Efficiency(%): 89.60%
Lumens(lm)/Power(W): 120.08
Central intensity(cd): 4470.047
Maximum intensity(cd): 4470.047
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=29.7
[C90/270]Total=29.7
Field angle(10%Imax): [C0/180]Total=49.8
[C90/270]Total=49.8
Maximum s/h(1/2): C0_180=0.50 C90_270=0.50
Maximum s/h(1/4): C0_180=0.48 C90_270=0.48
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.60%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.670%

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2021/7/01
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

Nata LN01D05024DA-N

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4470.047	0.000	0	.000%	.000%
1.0	4459.500	4.273	4.273	.283%	.315%
2.0	4425.750	12.753	17.026	.844%	1.257%
3.0	4371.398	21.040	38.065	1.392%	2.810%
4.0	4300.172	29.027	67.092	1.920%	4.953%
5.0	4211.648	36.617	103.709	2.422%	7.656%
6.0	4085.297	43.603	147.312	2.884%	10.875%
7.0	3948.398	49.865	197.177	3.298%	14.556%
8.0	3802.570	55.472	252.649	3.669%	18.651%
9.0	3618.281	60.142	312.791	3.978%	23.091%
10.0	3415.430	63.653	376.444	4.210%	27.790%
11.0	3208.641	66.188	442.632	4.378%	32.676%
12.0	2974.430	67.590	510.222	4.471%	37.666%
13.0	2703.094	67.378	577.6	4.457%	42.640%
14.0	2453.484	66.004	643.603	4.366%	47.512%
15.0	2197.477	63.850	707.454	4.223%	52.226%
16.0	1953.984	60.831	768.284	4.024%	56.716%
17.0	1676.749	56.540	824.825	3.740%	60.890%
18.0	1458.998	51.702	876.526	3.420%	64.707%
19.0	1254.270	47.205	923.732	3.122%	68.192%
20.0	1068.792	42.518	966.25	2.812%	71.331%
21.0	902.363	37.850	1004.1	2.504%	74.125%
22.0	766.392	33.534	1037.635	2.218%	76.600%
23.0	638.262	29.473	1067.108	1.950%	78.776%
24.0	523.575	25.402	1092.51	1.680%	80.651%
25.0	439.235	21.892	1114.402	1.448%	82.267%
26.0	365.323	18.992	1133.394	1.256%	83.669%
27.0	306.162	16.428	1149.822	1.087%	84.882%
28.0	257.653	14.275	1164.096	.944%	85.936%
29.0	225.366	12.637	1176.733	.836%	86.869%
30.0	186.778	11.128	1187.861	.736%	87.690%
31.0	163.638	9.752	1197.613	.645%	88.410%
32.0	143.283	8.793	1206.406	.582%	89.059%
33.0	127.315	7.972	1214.378	.527%	89.648%
34.0	114.722	7.325	1221.702	.485%	90.189%
35.0	102.551	6.748	1228.45	.446%	90.687%
36.0	92.995	6.226	1234.676	.412%	91.146%
37.0	85.465	5.820	1240.497	.385%	91.576%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	77.738	5.447	1245.944	.360%	91.978%
39.0	70.587	5.063	1251.007	.335%	92.352%
40.0	65.257	4.738	1255.745	.313%	92.702%
41.0	59.906	4.457	1260.202	.295%	93.031%
42.0	54.956	4.173	1264.375	.276%	93.339%
43.0	50.829	3.919	1268.293	.259%	93.628%
44.0	46.800	3.685	1271.978	.244%	93.900%
45.0	43.151	3.457	1275.435	.229%	94.155%
46.0	39.797	3.244	1278.679	.215%	94.395%
47.0	36.689	3.042	1281.721	.201%	94.619%
48.0	33.891	2.853	1284.574	.189%	94.830%
49.0	31.542	2.687	1287.261	.178%	95.028%
50.0	29.032	2.526	1289.787	.167%	95.215%
51.0	27.091	2.374	1292.161	.157%	95.390%
52.0	25.516	2.257	1294.419	.149%	95.557%
53.0	23.885	2.149	1296.568	.142%	95.715%
54.0	22.556	2.047	1298.615	.135%	95.866%
55.0	21.537	1.968	1300.583	.130%	96.012%
56.0	20.531	1.901	1302.484	.126%	96.152%
57.0	19.589	1.834	1304.318	.121%	96.287%
58.0	18.837	1.777	1306.095	.118%	96.419%
59.0	18.120	1.728	1307.823	.114%	96.546%
60.0	17.473	1.681	1309.504	.111%	96.670%
61.0	16.847	1.638	1311.142	.108%	96.791%
62.0	16.305	1.597	1312.74	.106%	96.909%
63.0	15.841	1.563	1314.303	.103%	97.025%
64.0	15.384	1.532	1315.835	.101%	97.138%
65.0	15.019	1.505	1317.34	.100%	97.249%
66.0	14.822	1.489	1318.829	.098%	97.359%
67.0	14.843	1.492	1320.321	.099%	97.469%
68.0	15.370	1.531	1321.851	.101%	97.582%
69.0	16.123	1.607	1323.458	.106%	97.700%
70.0	16.594	1.680	1325.138	.111%	97.824%
71.0	17.100	1.741	1326.879	.115%	97.953%
72.0	17.585	1.804	1328.683	.119%	98.086%
73.0	17.944	1.858	1330.541	.123%	98.223%
74.0	18.563	1.919	1332.46	.127%	98.365%
75.0	18.675	1.967	1334.428	.130%	98.510%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	19.090	2.005	1336.432	.133%	98.658%
77.0	19.160	2.039	1338.472	.135%	98.809%
78.0	19.273	2.057	1340.529	.136%	98.961%
79.0	18.640	2.037	1342.566	.135%	99.111%
80.0	17.213	1.933	1344.499	.128%	99.254%
81.0	15.476	1.768	1346.267	.117%	99.384%
82.0	13.057	1.547	1347.814	.102%	99.498%
83.0	10.800	1.297	1349.111	.086%	99.594%
84.0	8.909	1.074	1350.184	.071%	99.673%
85.0	7.706	0.907	1351.091	.060%	99.740%
86.0	6.877	0.797	1351.888	.053%	99.799%
87.0	6.448	0.729	1352.618	.048%	99.853%
88.0	6.138	0.689	1353.307	.046%	99.904%
89.0	5.906	0.660	1353.967	.044%	99.953%
90.0	5.808	0.642	1354.609	.042%	100.000%

Zonal flux distribution table

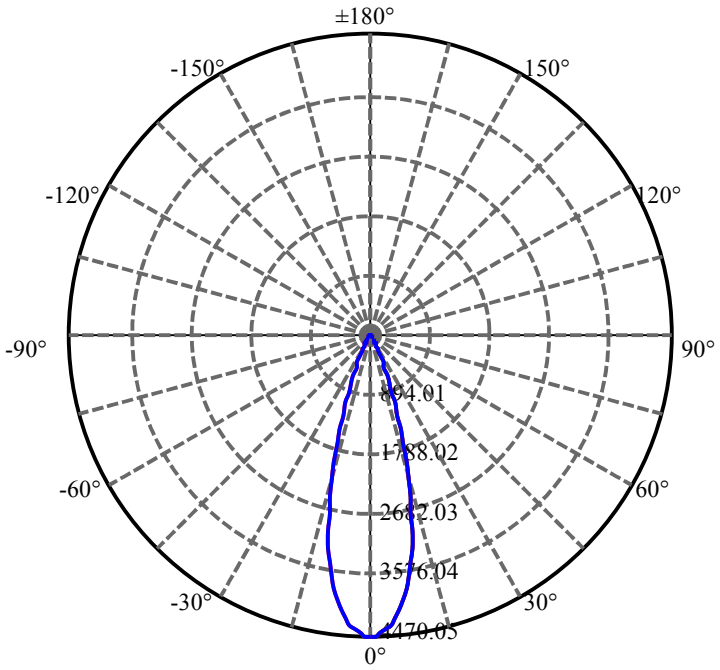
ZONAL LUMEN SUMMARY

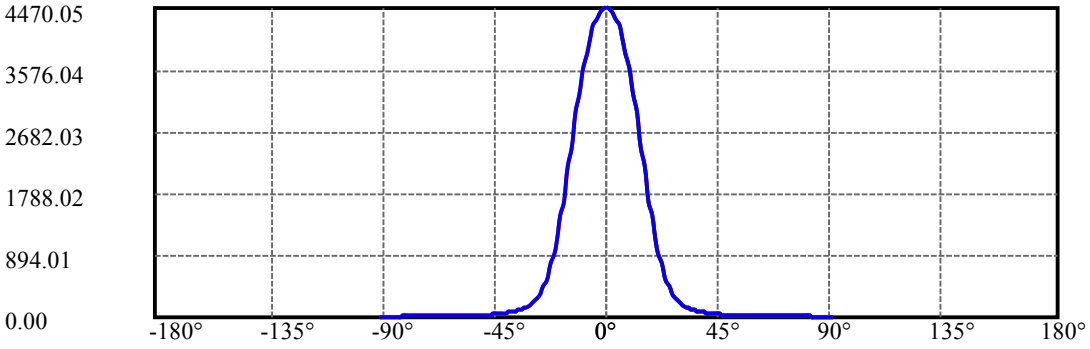
Zone	Lumens	%Lamp	%Fixt
0-30	1187.86	78.57%	87.69%
0-40	1255.74	83.06%	92.70%
0-60	1309.50	86.62%	96.67%
0-90	1353.97	89.56%	99.95%
0-120	1353.97	89.56%	99.95%
0-180	1354.61	89.60%	100.00%
60-90	46.14	3.05%	3.41%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-23.65	1083.69	71.68%	80.00%

ZONAL LUMEN SUMMARY

0-10	376.44
10-20	589.81
20-30	221.61
30-40	67.88
40-50	34.04
50-60	19.72
60-70	15.63
70-80	19.36
80-90	9.47
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):

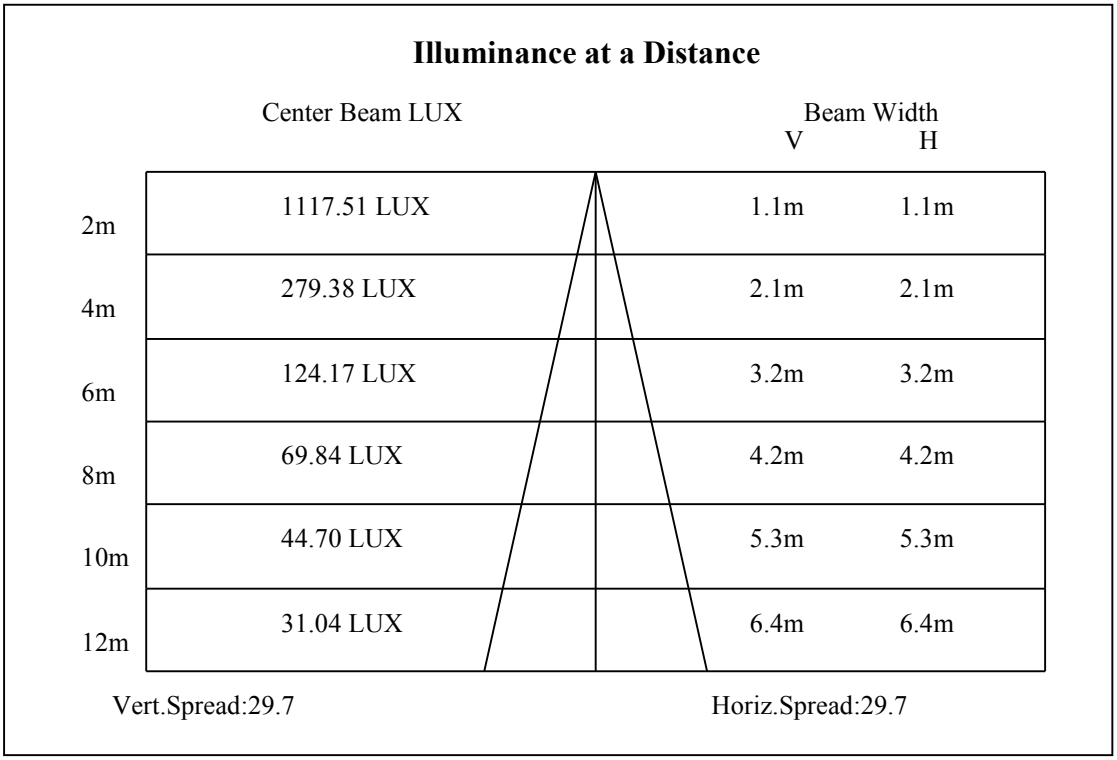
C0/C180:

C90/C270:

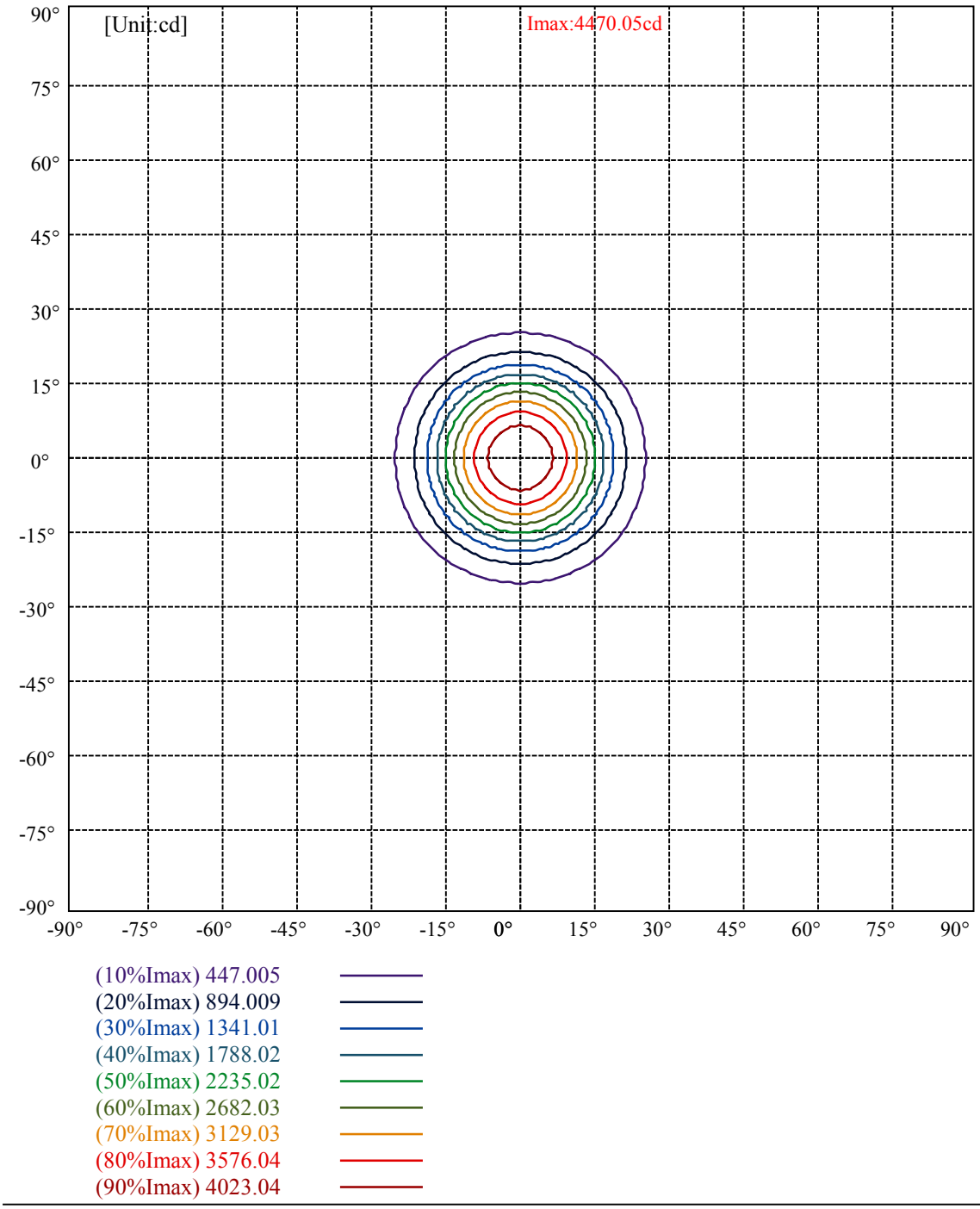
Field angle(10%Imax):C0/180Left:24.9 Right:24.9
:C90/270Left:24.9 Right:24.9

Beam Angle(50%Imax):C0/180Left:14.9 Right:14.9
:C90/270Left:14.9 Right:14.9

Lux distance Curve



ISO-Intensity(V-H)



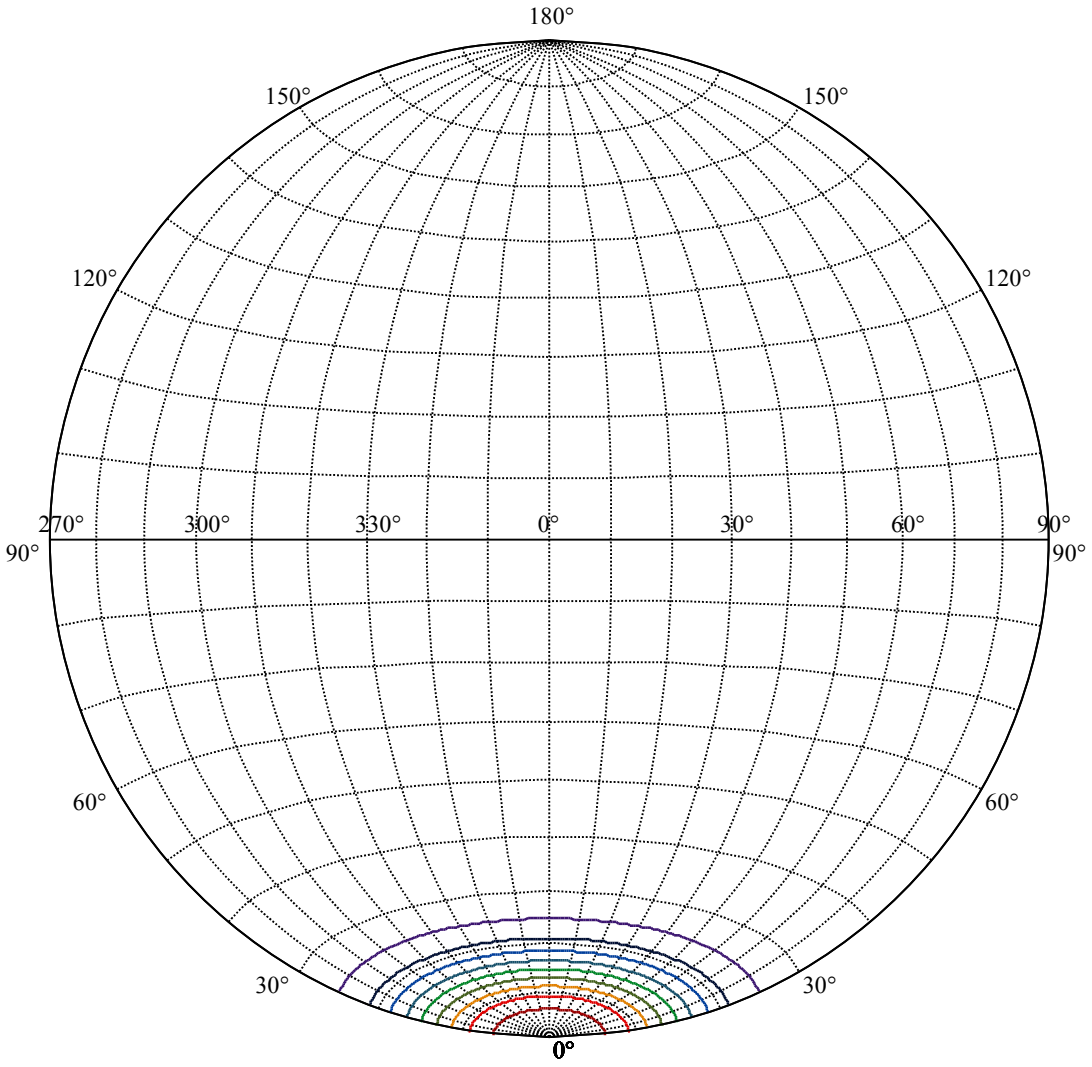
(10%Imax) 447.005
(20%Imax) 894.009
(30%Imax) 1341.01
(40%Imax) 1788.02
(50%Imax) 2235.02
(60%Imax) 2682.03
(70%Imax) 3129.03
(80%Imax) 3576.04
(90%Imax) 4023.04

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/01
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:4470.05

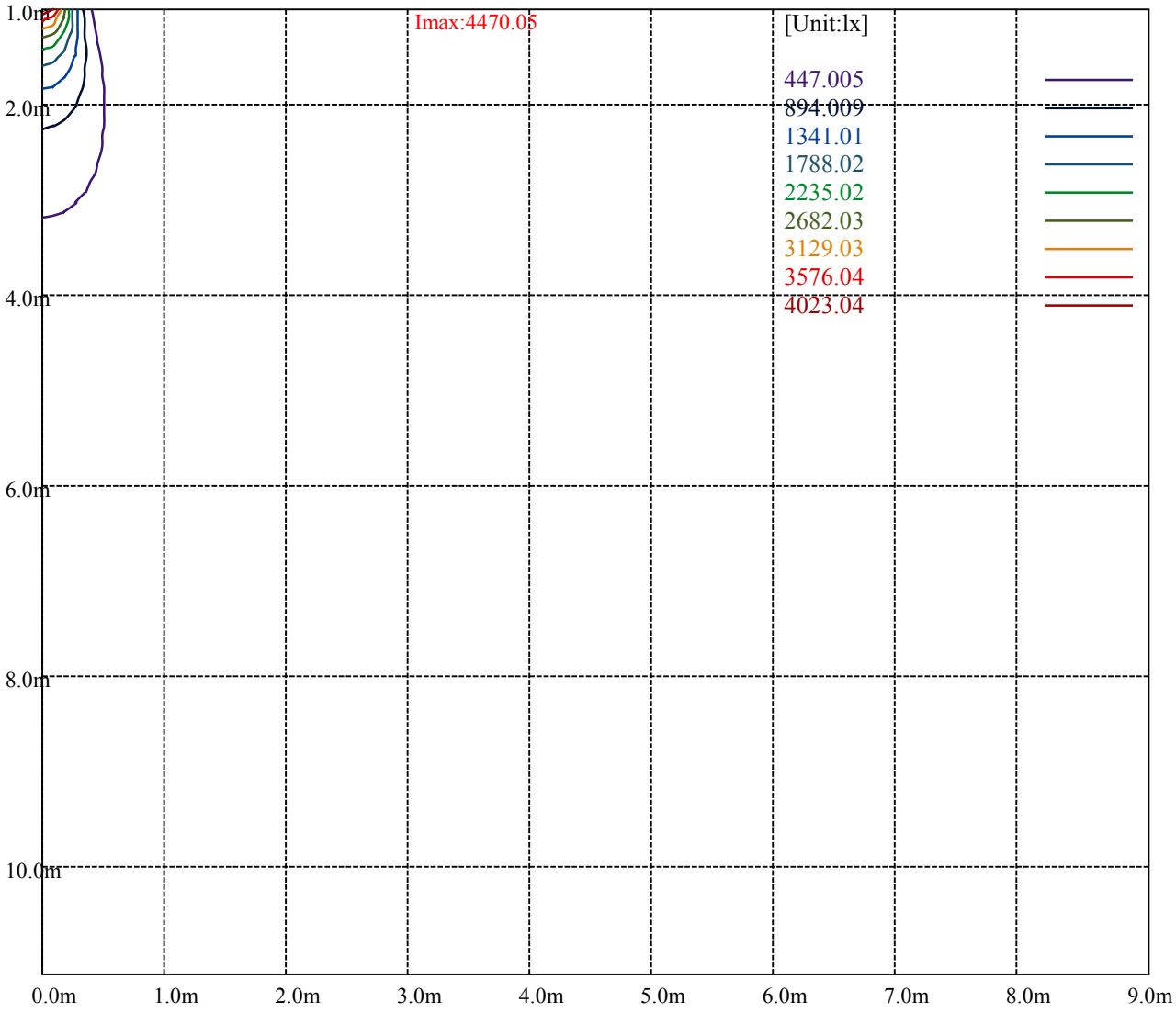
(10%Imax) 447.005
(20%Imax) 894.009
(30%Imax) 1341.01
(40%Imax) 1788.02
(50%Imax) 2235.02
(60%Imax) 2682.03
(70%Imax) 3129.03
(80%Imax) 3576.04
(90%Imax) 4023.04

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/01
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/01
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata LN01D05024DA-N

Luminance Limitting Curve(no luminous side)

Luminance Table

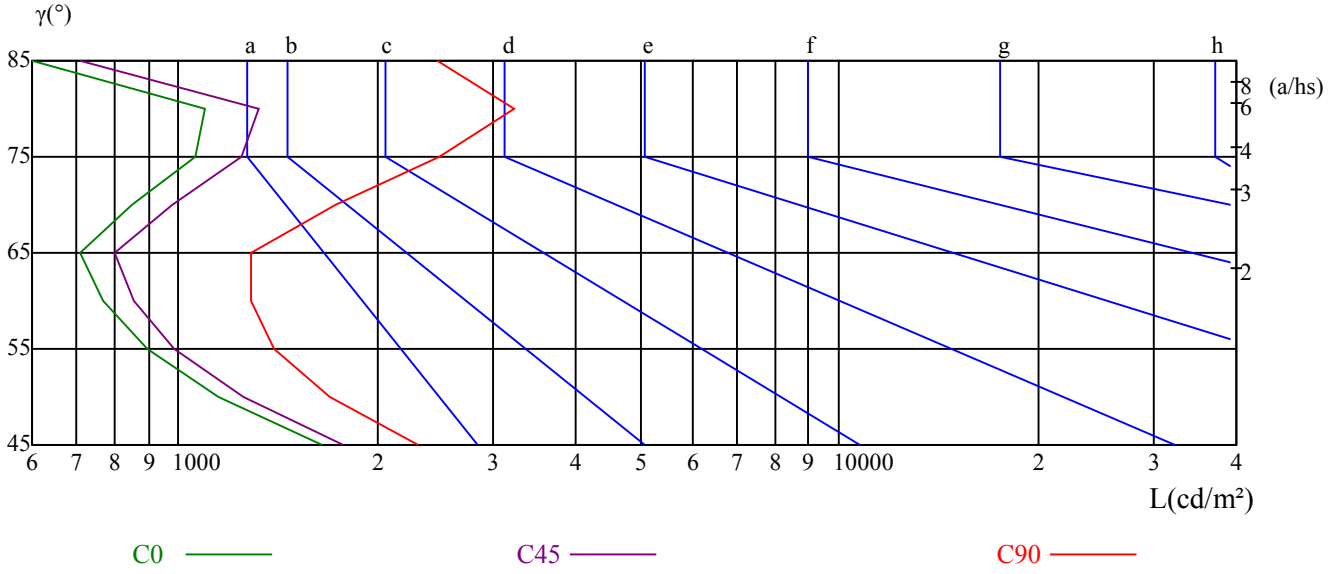
γ	45	50	55	60	65	70	75	80	85
C0	1647	1151	895	770	709	852	1058	1098	567
C45	1777	1254	986	858	802	979	1242	1322	707
C90	2298	1690	1394	1284	1289	1725	2487	3223	2460

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1385	1385	1385	2813	2813	2813	3447	3447	3447

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

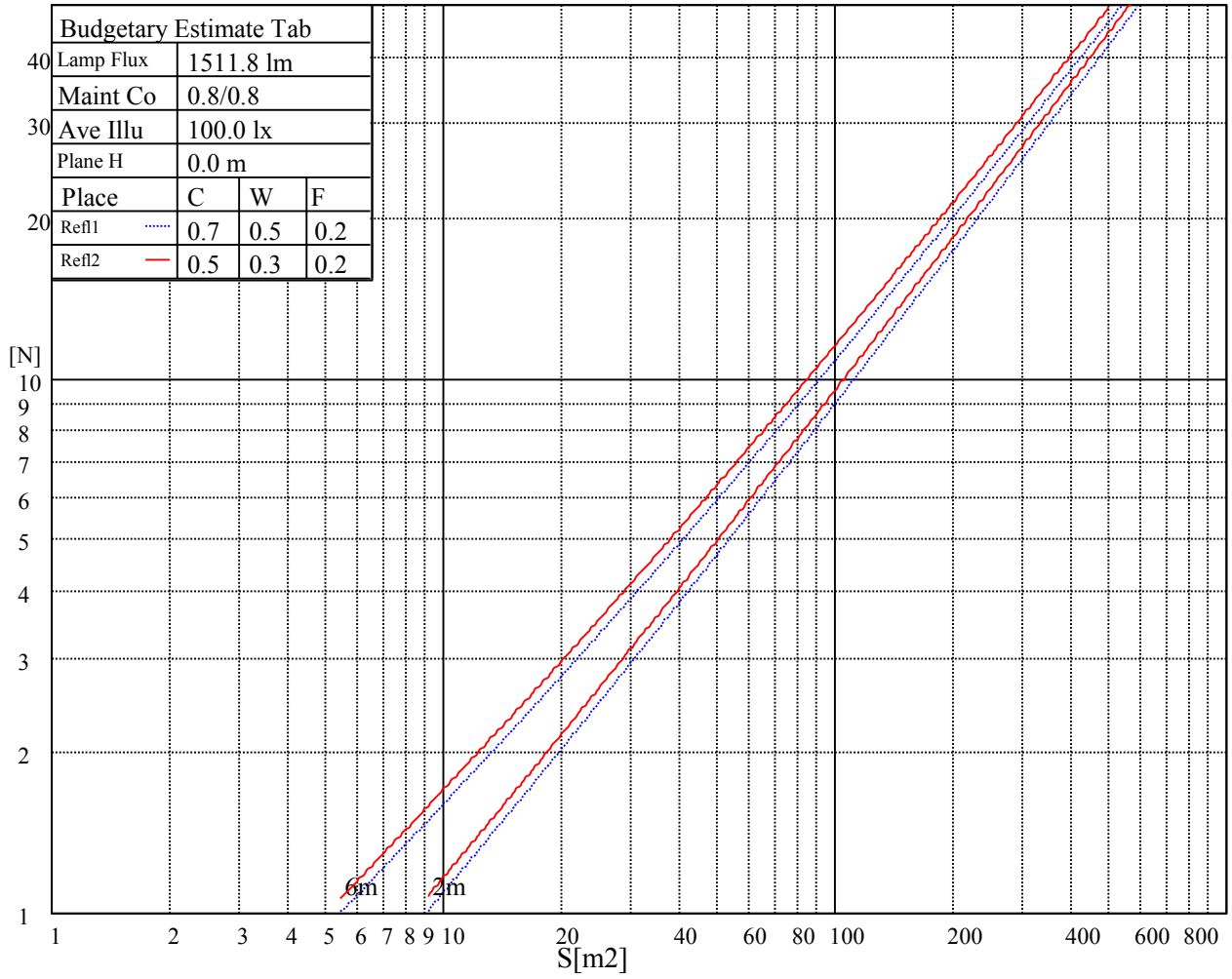


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/01
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

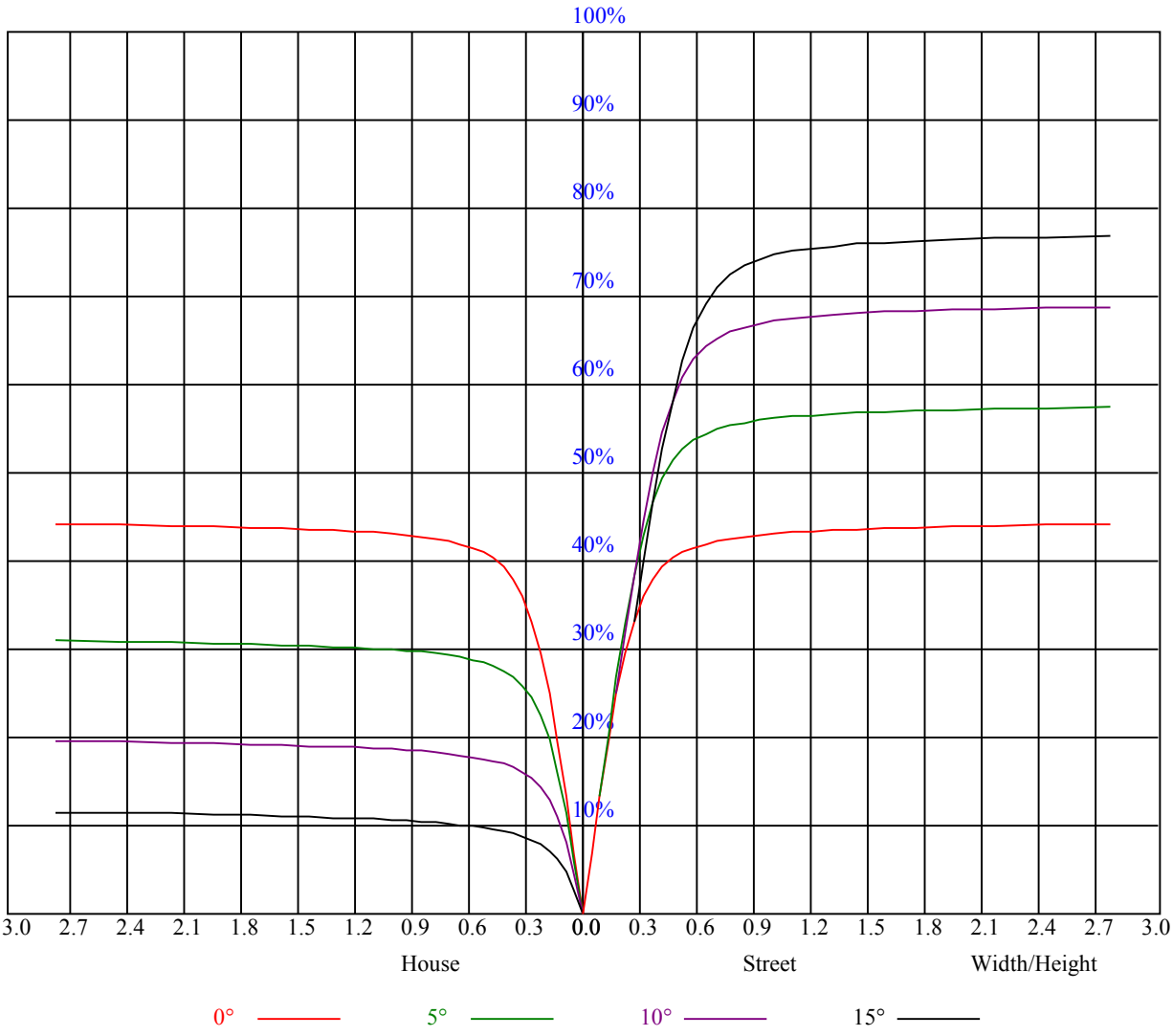


Equipment: GMS1980 Date: 2021/7/01 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	1.00	0.98	0.96	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.84	0.85	0.83	0.82	0.80
3	0.89	0.86	0.82	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.64	0.63
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.61
10	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.60	0.60

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/7/01	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	4461.19	4485.94	4492.13	4481.44	4443.75	4380.19	4306.50	4201.88	4085.44
45.0	4476.94	4480.31	4457.81	4429.13	4376.25	4303.13	4205.81	4087.13	3945.94
90.0	4465.13	4446.00	4404.94	4335.19	4263.75	4176.56	4038.75	3907.69	3764.25
135.0	4476.94	4447.13	4390.31	4321.13	4223.81	4121.44	3980.81	3818.25	3661.88
180.0	4461.19	4412.81	4341.38	4235.63	4124.25	3994.31	3824.44	3633.75	3450.38
225.0	4476.94	4454.44	4417.88	4343.06	4264.31	4159.13	4000.50	3862.69	3702.38
270.0	4465.13	4468.50	4443.75	4406.06	4339.69	4259.81	4146.19	4014.56	3880.13
315.0	4476.94	4480.88	4457.81	4419.56	4365.56	4298.63	4179.38	4061.25	3930.19
360.0	4461.19	4485.94	4492.13	4481.44	4443.75	4380.19	4306.50	4201.88	4085.44

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3935.81	3763.13	3591.56	3403.13	3134.25	2895.19	2647.13	2329.88	2078.44
45.0	3778.88	3619.69	3410.44	3207.94	2956.50	2691.56	2450.25	2239.31	1916.44
90.0	3576.38	3375.00	3174.19	2930.63	2671.31	2431.69	2163.94	1932.19	1679.63
135.0	3476.25	3255.75	3039.75	2805.75	2507.06	2266.88	2030.06	1774.13	1535.06
180.0	3217.50	2961.56	2720.25	2440.13	2190.94	1921.50	1663.31	1451.25	1112.12
225.0	3503.81	3281.06	3060.00	2791.69	2512.69	2263.50	1992.94	1761.19	1517.63
270.0	3704.06	3504.38	3305.81	3089.81	2793.38	2543.63	2295.56	2050.31	1754.44
315.0	3753.56	3562.88	3367.13	3126.38	2858.63	2613.94	2336.63	2093.63	1820.25
360.0	3935.81	3763.13	3591.56	3403.13	3134.25	2895.19	2647.13	2329.88	2078.44

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1839.38	1590.19	1359.00	1170.00	979.31	813.38	684.00	559.13	464.63
45.0	1688.63	1504.69	1242.00	1068.19	928.69	748.69	620.44	536.63	428.06
90.0	1440.56	1114.31	1072.52	882.28	748.97	633.04	510.64	429.13	361.07
135.0	1334.81	1130.06	952.31	813.94	675.56	563.63	466.88	387.56	324.56
180.0	1027.80	871.43	734.74	590.01	493.65	412.59	346.22	280.69	239.23
225.0	1232.44	1116.73	957.32	782.21	661.61	556.31	447.30	375.08	318.04
270.0	1535.06	1334.25	1112.63	953.44	811.69	675.00	558.00	469.13	386.44
315.0	1573.31	1372.50	1119.83	958.84	831.66	703.46	555.13	476.55	400.56
360.0	1839.38	1590.19	1359.00	1170.00	979.31	813.38	684.00	559.13	464.63

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	378.00	308.81	289.69	221.23	189.17	164.19	146.08	129.54	116.10
45.0	363.94	306.00	287.44	213.08	182.76	158.57	141.36	126.68	111.66
90.0	292.89	249.75	214.71	180.34	161.21	141.36	123.41	113.06	101.25
135.0	284.63	231.24	197.27	172.97	153.73	133.93	120.54	109.52	97.76
180.0	206.66	177.64	154.69	138.26	123.36	111.21	100.74	92.64	85.33
225.0	266.34	224.55	195.30	168.75	150.08	132.58	117.73	106.59	95.85
270.0	326.81	289.69	229.95	200.87	174.71	152.55	134.94	119.64	105.19
315.0	330.02	273.54	233.89	198.73	174.09	151.88	133.71	120.09	107.27
360.0	378.00	308.81	289.69	221.23	189.17	164.19	146.08	129.54	116.10

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	105.81	97.76	86.63	79.71	74.14	67.16	61.59	57.60	52.54
45.0	101.19	92.25	83.48	75.66	69.58	63.28	57.83	53.49	48.94
90.0	90.45	83.70	76.84	68.46	63.62	58.56	53.44	48.77	44.94
135.0	89.49	83.19	75.09	68.68	63.56	58.33	53.72	50.34	46.01
180.0	78.24	71.83	66.54	61.20	56.31	52.26	48.54	44.27	41.12
225.0	86.51	79.20	72.79	65.64	60.64	56.08	50.96	47.25	43.76
270.0	95.79	87.64	79.76	72.62	67.11	61.54	56.70	52.59	48.43
315.0	96.47	88.14	80.78	72.73	67.11	62.04	56.87	52.31	48.66
360.0	105.81	97.76	86.63	79.71	74.14	67.16	61.59	57.60	52.54

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	48.26	45.23	41.29	38.31	35.55	32.40	30.15	28.18	26.04
45.0	45.34	41.51	38.25	35.55	33.13	30.32	28.29	26.55	24.58
90.0	41.18	37.69	34.88	32.01	29.81	27.45	25.54	24.08	22.67
135.0	42.86	39.60	36.62	34.31	32.18	29.70	27.96	26.44	24.69
180.0	38.31	35.33	32.68	30.49	28.35	26.49	24.98	23.57	22.44
225.0	39.77	36.90	34.31	31.39	29.53	27.45	25.48	24.19	22.84
270.0	44.83	41.01	37.24	33.81	30.88	28.01	25.99	24.47	22.61
315.0	44.66	41.12	38.25	35.27	32.91	30.43	28.35	26.66	25.20
360.0	48.26	45.23	41.29	38.31	35.55	32.40	30.15	28.18	26.04

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	24.53	23.29	21.88	20.93	20.03	19.13	18.39	17.78	17.04
45.0	23.18	22.11	21.04	20.03	19.29	18.51	17.83	17.27	16.59
90.0	21.38	20.36	19.58	18.68	18.00	17.44	16.88	16.31	15.92
135.0	23.51	22.44	21.32	20.36	19.58	18.68	17.94	17.27	16.65
180.0	21.32	20.42	19.58	18.90	18.11	17.55	17.04	16.37	15.92
225.0	21.54	20.76	19.97	18.96	18.34	17.72	17.10	16.43	15.92
270.0	21.43	20.42	19.41	18.51	17.83	17.16	16.48	16.03	15.64
315.0	23.57	22.50	21.49	20.36	19.52	18.79	18.11	17.33	16.76
360.0	24.53	23.29	21.88	20.93	20.03	19.13	18.39	17.78	17.04

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	16.54	15.98	15.53	15.13	14.68	14.29	13.95	13.61	13.16
45.0	16.14	15.58	15.13	14.74	14.40	13.89	13.67	13.33	12.99
90.0	15.53	15.30	15.13	15.47	16.76	20.08	24.19	27.11	29.98
135.0	16.09	15.53	15.02	14.57	14.18	13.67	13.33	12.88	12.43
180.0	15.47	15.02	14.57	14.23	13.78	13.44	13.05	12.60	12.21
225.0	15.36	14.91	14.51	14.12	13.78	13.39	13.05	12.77	12.43
270.0	15.36	15.13	15.08	15.53	16.82	20.25	24.13	27.23	30.71
315.0	16.26	15.64	15.19	14.79	14.34	13.95	13.61	13.22	12.88
360.0	16.54	15.98	15.53	15.13	14.68	14.29	13.95	13.61	13.16

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	12.83	12.49	12.09	11.76	11.31	10.97	10.58	10.29	9.90
45.0	12.71	12.49	12.43	12.49	12.54	12.66	12.66	12.43	11.48
90.0	32.91	35.49	38.64	39.88	42.19	43.09	44.21	42.36	38.03
135.0	12.09	11.70	11.31	10.86	10.52	10.13	9.79	9.39	9.00
180.0	11.81	11.36	11.03	10.63	10.18	9.84	9.56	9.11	8.83
225.0	12.21	12.15	12.09	12.04	12.04	11.87	11.48	10.46	9.84
270.0	33.64	35.83	39.21	40.50	43.03	44.21	45.73	45.34	41.23
315.0	12.49	12.04	11.70	11.25	10.91	10.52	10.18	9.73	9.39
360.0	12.83	12.49	12.09	11.76	11.31	10.97	10.58	10.29	9.90

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.56	9.23	8.89	8.61	8.21	7.99	7.31	6.81	6.47
45.0	10.58	9.56	8.83	8.33	7.88	7.14	6.69	6.30	6.02
90.0	32.85	24.64	17.38	11.14	8.27	6.75	6.30	5.96	5.74
135.0	8.66	8.33	7.88	7.59	7.20	6.47	6.08	5.85	5.63
180.0	8.49	8.16	7.88	7.59	6.86	6.41	6.08	6.02	6.02
225.0	9.11	8.44	8.04	7.59	7.20	6.53	6.19	5.91	5.68
270.0	35.55	27.45	19.24	12.54	8.44	6.86	6.47	6.08	5.85
315.0	9.00	8.66	8.27	7.88	7.59	6.86	6.47	6.19	5.85
360.0	9.56	9.23	8.89	8.61	8.21	7.99	7.31	6.81	6.47

Intensity data(cd)

C/γ(°)	90.0
0.0	6.19
45.0	5.79
90.0	5.63
135.0	5.63
180.0	6.13
225.0	5.79
270.0	5.68
315.0	5.63
360.0	6.19