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Nata

LumCAT: LN01D04524DA-N
Luminaire: 97.70.234.00
Report No: 210701-B007
Test No: 210701-C007
LampCAT: Fortimo LED SLM 1202 G7N
Lamp flux(lm): 1511.8
Number of Lamps: 1
Length(mm): 570
Phm Type: C

Voltage(V): 37.2000
Current(A): 0.3040
Power (W): 11.3080
PF: 0.0000
Ballast type: DC
Width(mm): 45
Height(mm): 20

Photometric Results

Lumens(lm): 1324.50
Efficiency(%): 87.61%
Lumens(lm)/Power(W): 117.13
Central intensity(cd): 4312.828
Maximum intensity(cd): 4312.828
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=29.8
[C90/270]Total=29.8
Field angle(10%Imax): [C0/180]Total=50.0
[C90/270]Total=50.0
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(%): 87.61%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.213%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4312.828	0.000	0	.000%	.000%
1.0	4302.000	4.122	4.122	.273%	.311%
2.0	4267.547	12.300	16.422	.814%	1.240%
3.0	4205.883	20.266	36.688	1.340%	2.770%
4.0	4129.313	27.901	64.588	1.846%	4.876%
5.0	4034.039	35.118	99.706	2.323%	7.528%
6.0	3903.961	41.716	141.423	2.759%	10.677%
7.0	3768.398	47.622	189.045	3.150%	14.273%
8.0	3623.484	52.902	241.947	3.499%	18.267%
9.0	3448.758	57.317	299.264	3.791%	22.594%
10.0	3261.094	60.722	359.986	4.016%	27.179%
11.0	3076.102	63.322	423.307	4.188%	31.960%
12.0	2861.578	64.907	488.215	4.293%	36.860%
13.0	2617.945	65.028	553.243	4.301%	41.770%
14.0	2379.586	63.968	617.211	4.231%	46.600%
15.0	2134.898	61.977	679.187	4.100%	51.279%
16.0	1894.992	59.049	738.237	3.906%	55.737%
17.0	1632.973	54.940	793.177	3.634%	59.885%
18.0	1400.435	50.014	843.191	3.308%	63.661%
19.0	1203.905	45.310	888.501	2.997%	67.082%
20.0	1034.445	40.968	929.469	2.710%	70.175%
21.0	865.181	36.477	965.946	2.413%	72.929%
22.0	733.620	32.129	998.074	2.125%	75.355%
23.0	616.324	28.325	1026.4	1.874%	77.493%
24.0	508.050	24.583	1050.983	1.626%	79.349%
25.0	431.248	21.358	1072.34	1.413%	80.962%
26.0	364.662	18.788	1091.128	1.243%	82.380%
27.0	309.424	16.492	1107.619	1.091%	83.626%
28.0	269.873	14.667	1122.286	.970%	84.733%
29.0	230.513	13.092	1135.377	.866%	85.721%
30.0	195.659	11.507	1146.884	.761%	86.590%
31.0	170.937	10.202	1157.086	.675%	87.360%
32.0	150.687	9.214	1166.3	.609%	88.056%
33.0	134.452	8.400	1174.7	.556%	88.690%
34.0	120.705	7.722	1182.422	.511%	89.273%
35.0	107.740	7.095	1189.517	.469%	89.809%
36.0	97.650	6.540	1196.056	.433%	90.303%
37.0	89.086	6.090	1202.147	.403%	90.762%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	80.944	5.675	1207.822	.375%	91.191%
39.0	73.343	5.266	1213.088	.348%	91.588%
40.0	67.620	4.916	1218.005	.325%	91.960%
41.0	62.009	4.616	1222.621	.305%	92.308%
42.0	56.904	4.320	1226.941	.286%	92.634%
43.0	52.601	4.056	1230.997	.268%	92.941%
44.0	48.572	3.819	1234.816	.253%	93.229%
45.0	44.979	3.595	1238.411	.238%	93.500%
46.0	41.555	3.384	1241.795	.224%	93.756%
47.0	38.426	3.181	1244.976	.210%	93.996%
48.0	35.684	2.996	1247.972	.198%	94.222%
49.0	33.258	2.831	1250.803	.187%	94.436%
50.0	30.748	2.669	1253.472	.177%	94.637%
51.0	28.688	2.515	1255.986	.166%	94.827%
52.0	27.028	2.391	1258.377	.158%	95.008%
53.0	25.291	2.276	1260.653	.151%	95.180%
54.0	23.871	2.167	1262.82	.143%	95.343%
55.0	22.753	2.081	1264.901	.138%	95.500%
56.0	21.698	2.009	1266.91	.133%	95.652%
57.0	20.728	1.940	1268.85	.128%	95.798%
58.0	19.955	1.881	1270.731	.124%	95.940%
59.0	19.216	1.831	1272.562	.121%	96.079%
60.0	18.563	1.785	1274.347	.118%	96.213%
61.0	17.965	1.743	1276.09	.115%	96.345%
62.0	17.445	1.706	1277.796	.113%	96.474%
63.0	17.086	1.679	1279.476	.111%	96.601%
64.0	16.966	1.671	1281.147	.111%	96.727%
65.0	17.339	1.698	1282.845	.112%	96.855%
66.0	18.021	1.764	1284.609	.117%	96.988%
67.0	18.548	1.839	1286.448	.122%	97.127%
68.0	18.893	1.897	1288.344	.125%	97.270%
69.0	19.364	1.952	1290.296	.129%	97.418%
70.0	19.779	2.010	1292.306	.133%	97.569%
71.0	20.138	2.063	1294.369	.136%	97.725%
72.0	20.763	2.127	1296.496	.141%	97.886%
73.0	20.820	2.174	1298.671	.144%	98.050%
74.0	21.291	2.214	1300.884	.146%	98.217%
75.0	21.396	2.255	1303.14	.149%	98.387%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	21.551	2.280	1305.42	.151%	98.559%
77.0	21.495	2.295	1307.715	.152%	98.733%
78.0	20.707	2.259	1309.974	.149%	98.903%
79.0	19.399	2.155	1312.129	.143%	99.066%
80.0	17.712	2.001	1314.129	.132%	99.217%
81.0	15.771	1.811	1315.94	.120%	99.354%
82.0	13.493	1.587	1317.527	.105%	99.474%
83.0	11.257	1.345	1318.872	.089%	99.575%
84.0	9.246	1.117	1319.989	.074%	99.659%
85.0	7.966	0.939	1320.929	.062%	99.730%
86.0	7.045	0.821	1321.749	.054%	99.792%
87.0	6.574	0.745	1322.495	.049%	99.849%
88.0	6.188	0.699	1323.194	.046%	99.901%
89.0	5.920	0.664	1323.857	.044%	99.952%
90.0	5.787	0.642	1324.499	.042%	100.000%

Zonal flux distribution table

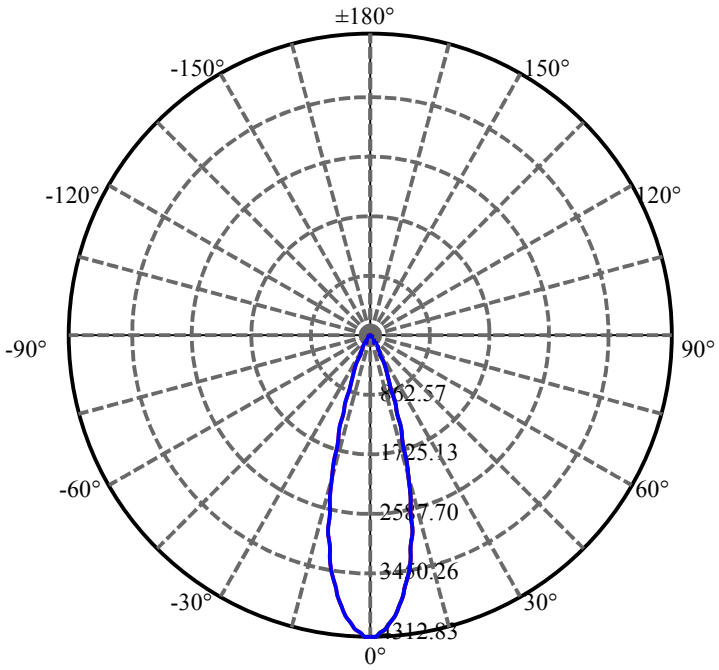
ZONAL LUMEN SUMMARY

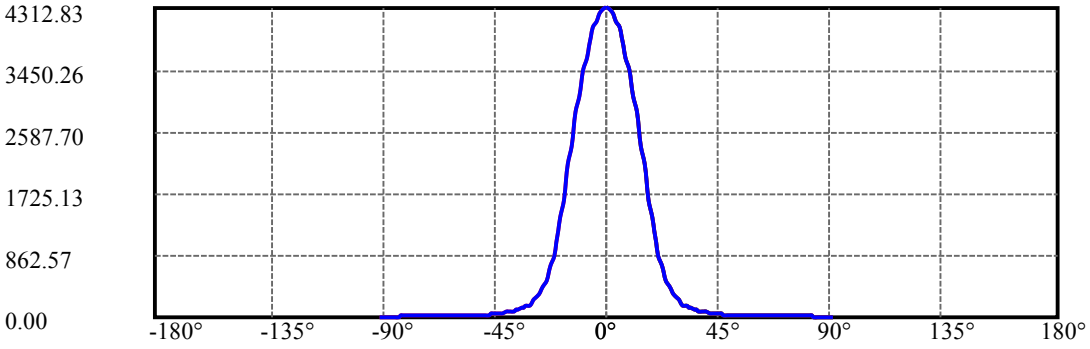
Zone	Lumens	%Lamp	%Fixt
0-30	1146.88	75.86%	86.59%
0-40	1218.00	80.57%	91.96%
0-60	1274.35	84.29%	96.21%
0-90	1323.86	87.57%	99.95%
0-120	1323.86	87.57%	99.95%
0-180	1324.50	87.61%	100.00%
60-90	51.30	3.39%	3.87%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.40	1059.60	70.09%	80.00%

ZONAL LUMEN SUMMARY

0-10	359.99
10-20	569.48
20-30	217.41
30-40	71.12
40-50	35.47
50-60	20.88
60-70	17.96
70-80	21.82
80-90	9.73
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):

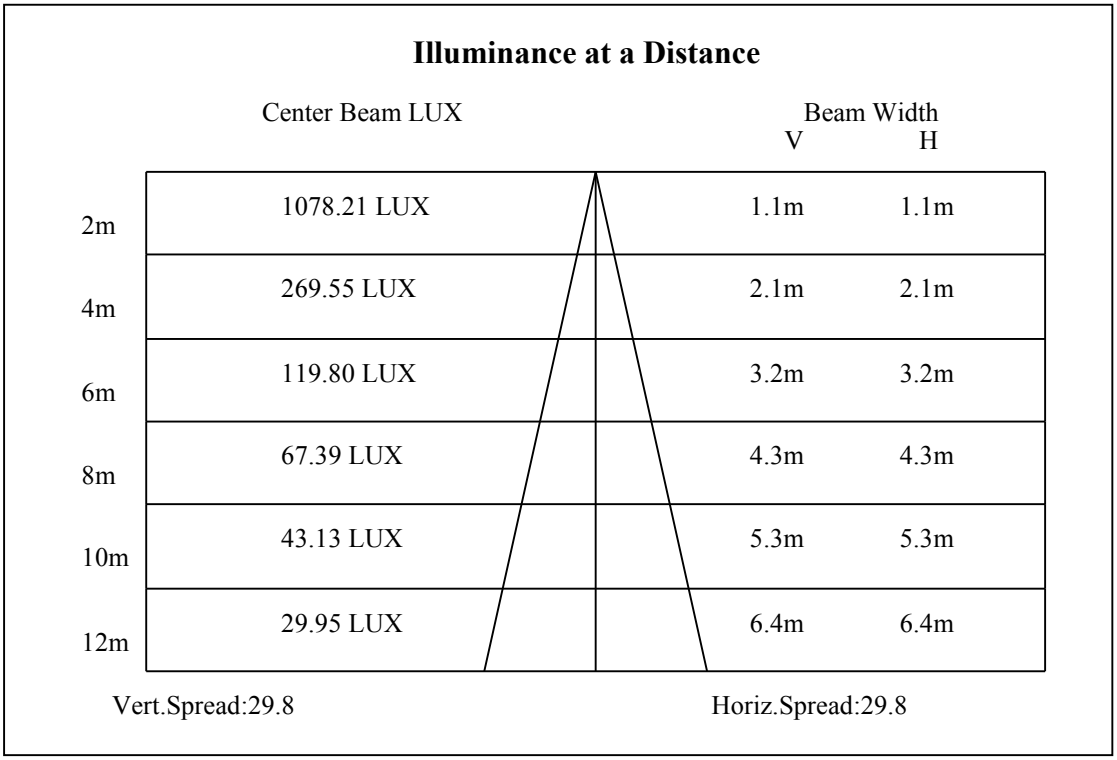
C0/C180:

C90/C270:

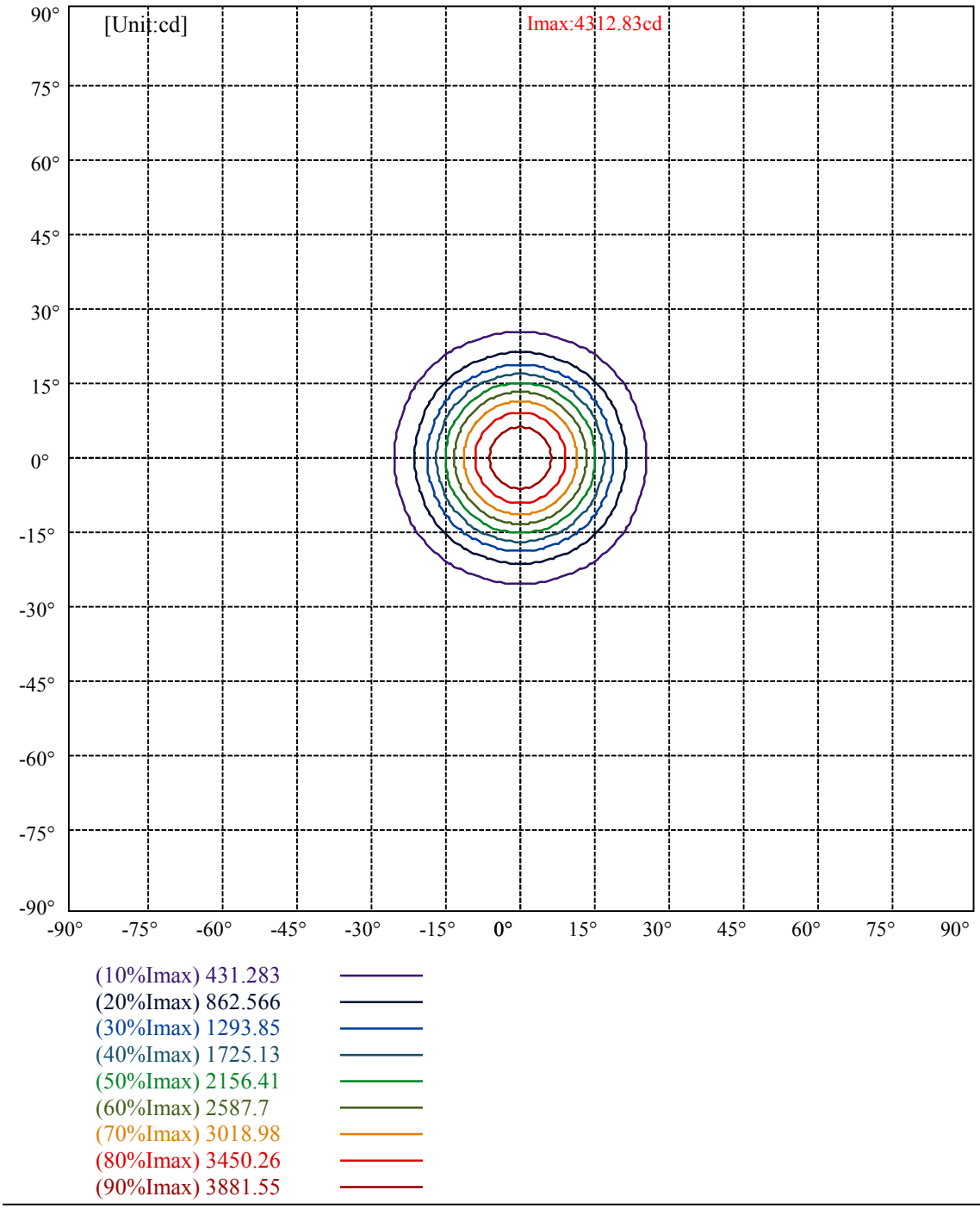
Field angle(10%Imax):C0/180Left:25.0 Right:25.0
:C90/270Left:25.0 Right:25.0

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)



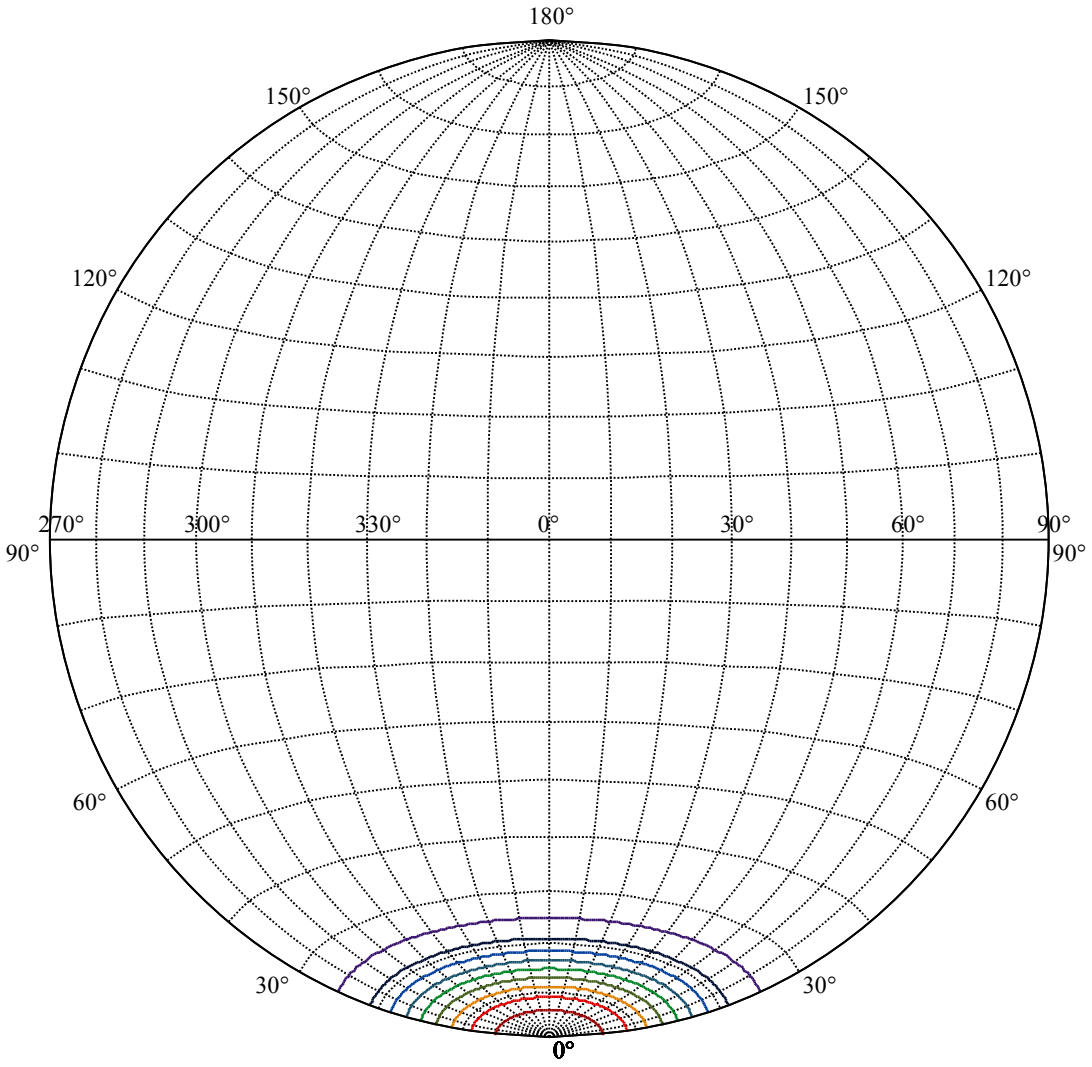
(10%Imax) 431.283
(20%Imax) 862.566
(30%Imax) 1293.85
(40%Imax) 1725.13
(50%Imax) 2156.41
(60%Imax) 2587.7
(70%Imax) 3018.98
(80%Imax) 3450.26
(90%Imax) 3881.55

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:4312.83

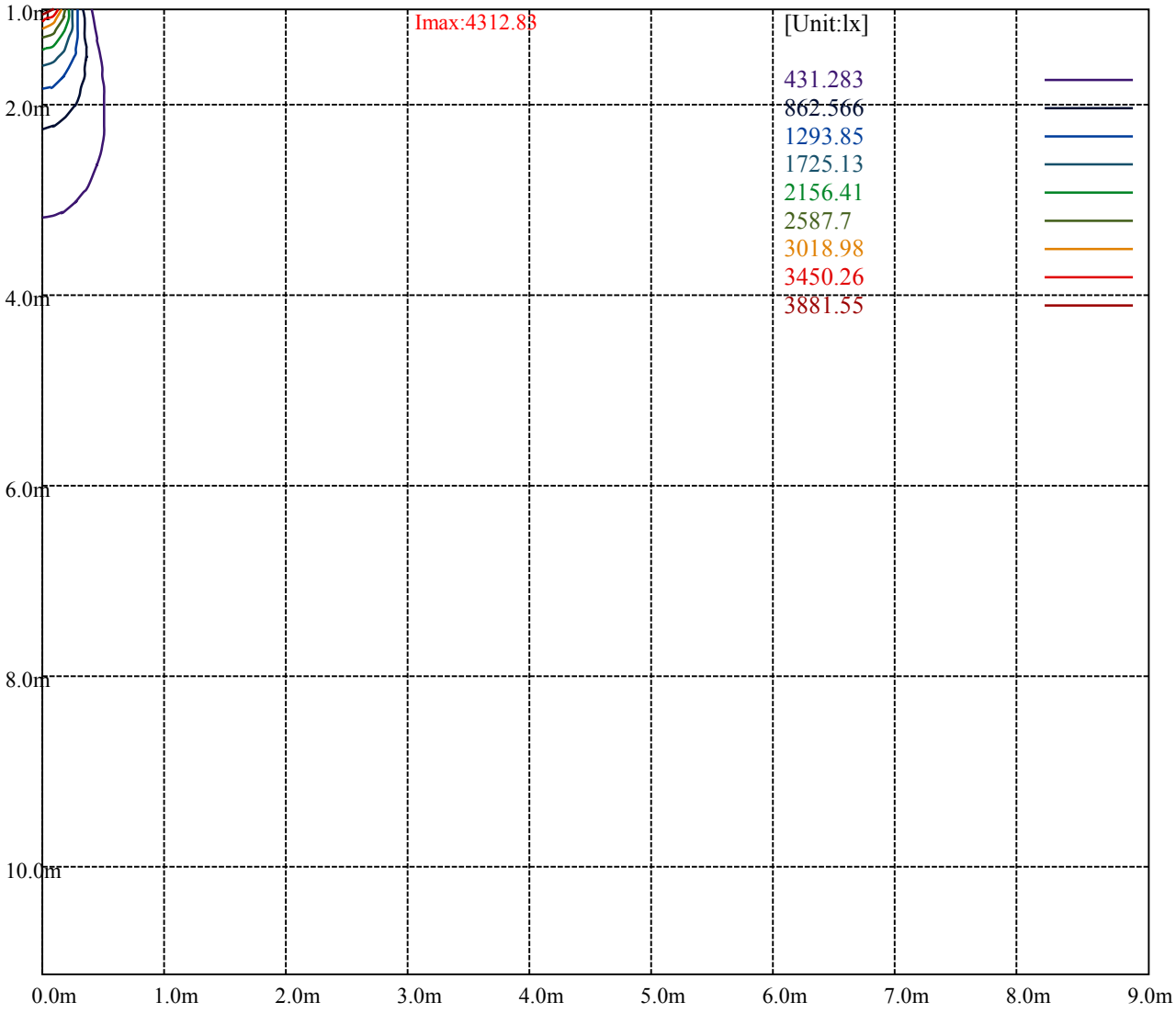
(10%Imax) 431.283
(20%Imax) 862.566
(30%Imax) 1293.85
(40%Imax) 1725.13
(50%Imax) 2156.41
(60%Imax) 2587.7
(70%Imax) 3018.98
(80%Imax) 3450.26
(90%Imax) 3881.55

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 LN01D04524DA-N

Luminance Limitting Curve(no luminous side)

Luminance Table

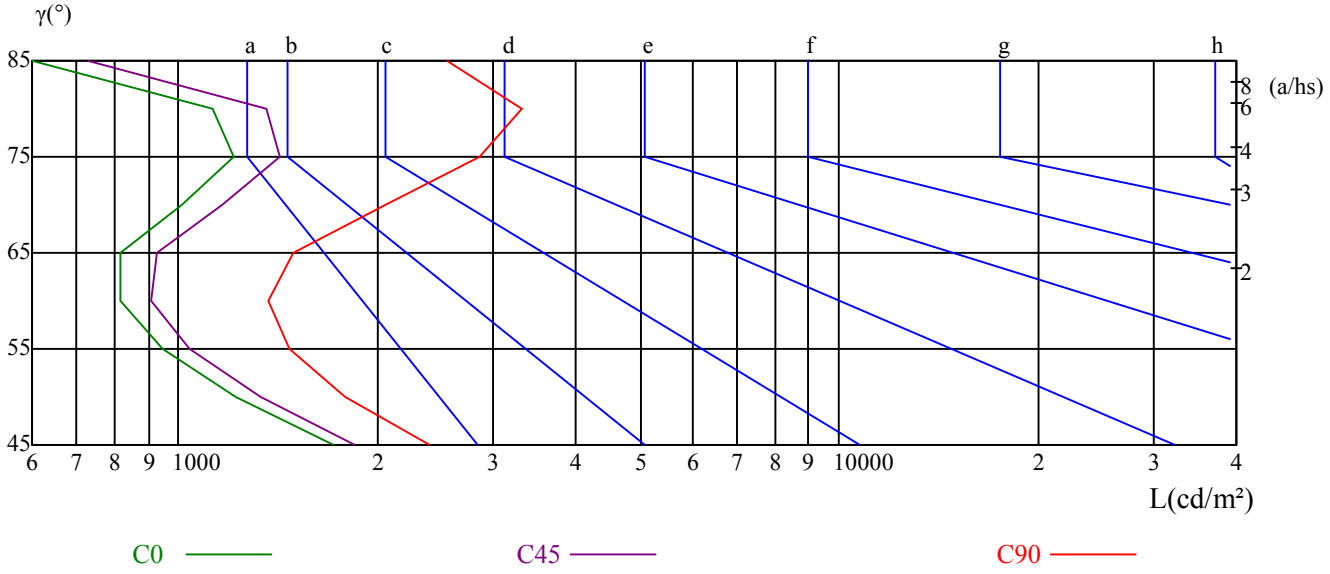
γ	45	50	55	60	65	70	75	80	85
C0	1717	1219	946	818	819	1015	1212	1130	586
C45	1852	1328	1042	912	926	1167	1423	1360	731
C90	2396	1790	1473	1364	1488	2056	2850	3317	2543

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1600	1600	1600	3223	3223	3223	3564	3564	3564

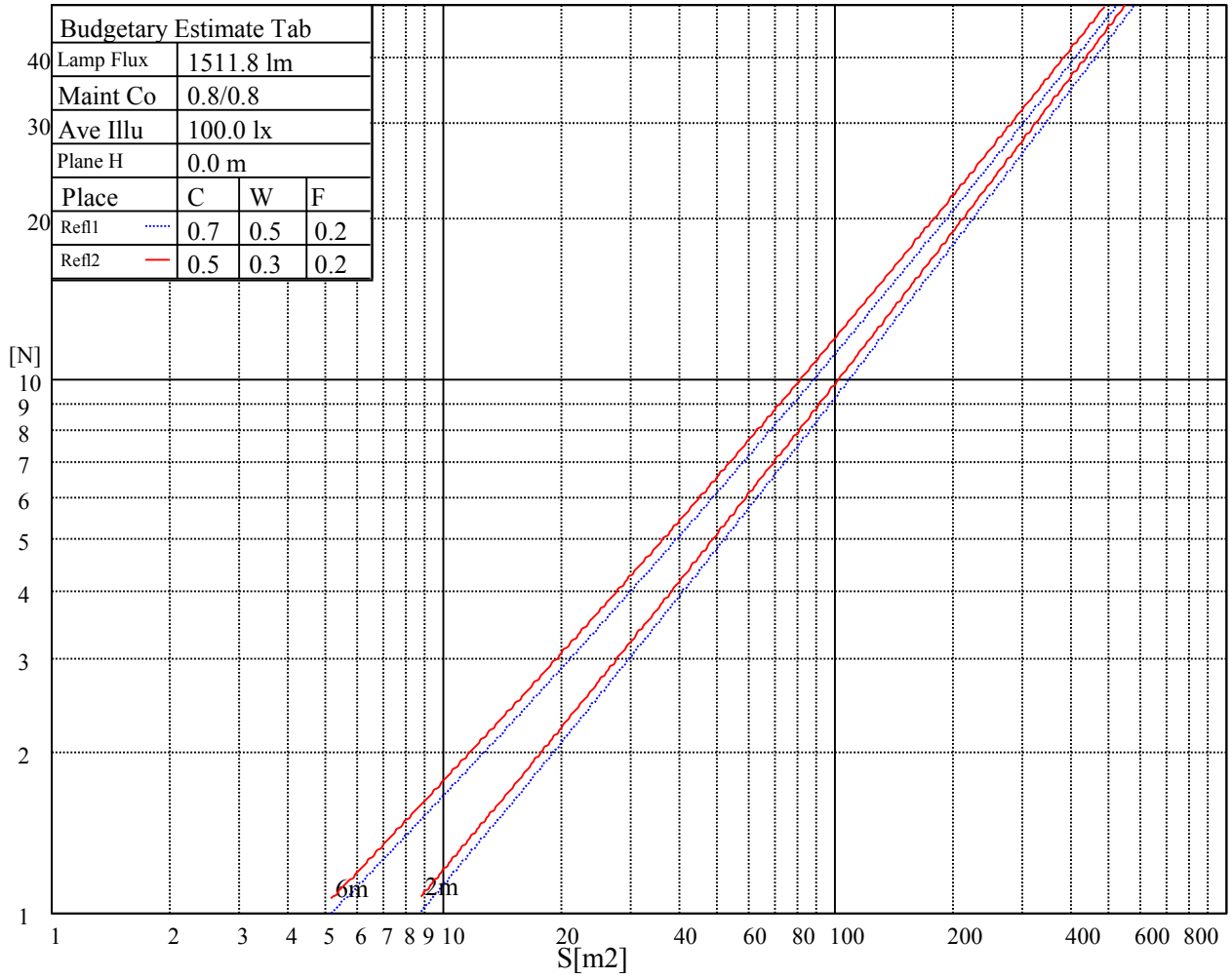
Glare Table

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

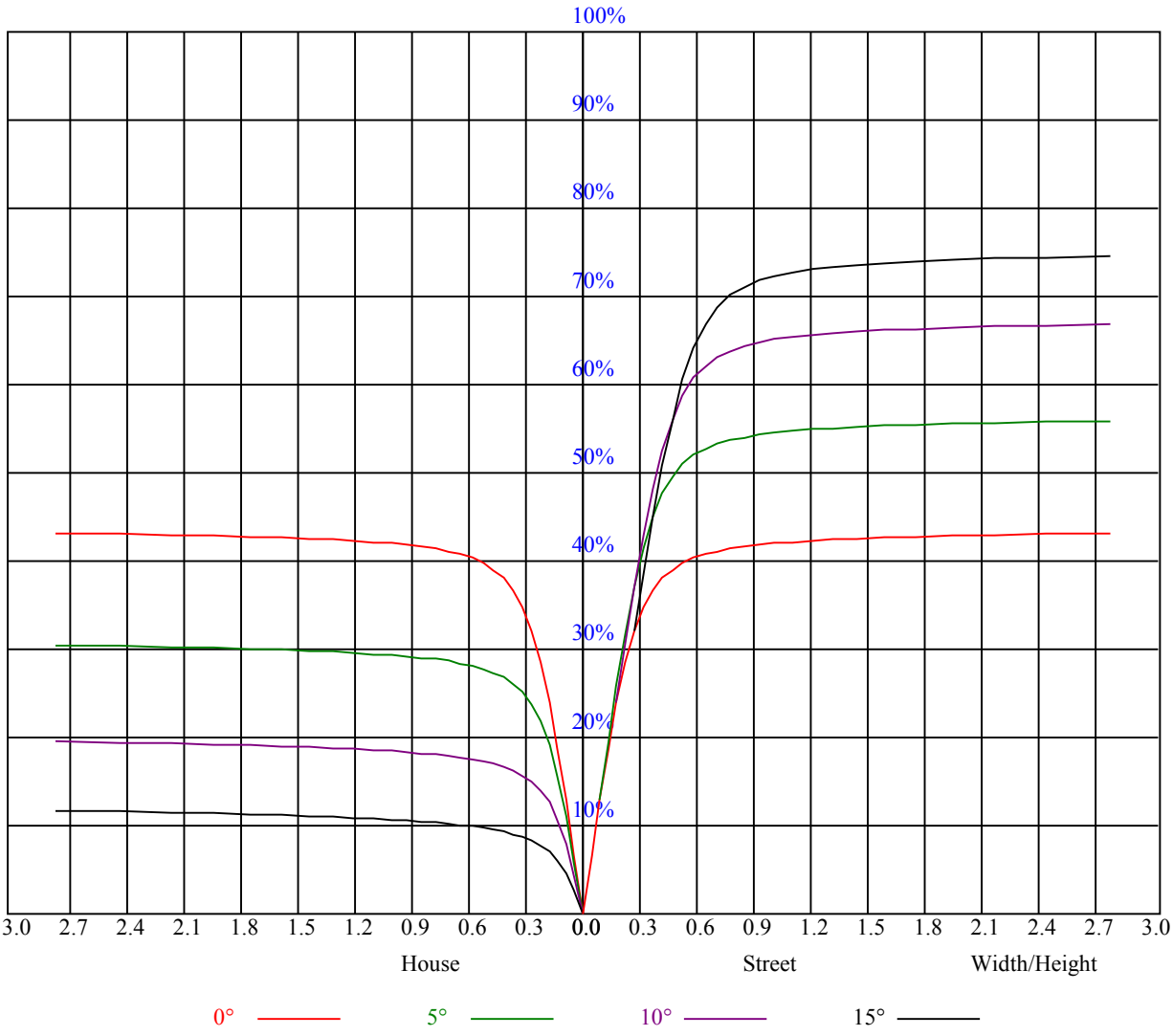


Equipment: GMS1980 Date: 2021/7/01 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.88
1	0.97	0.95	0.94	0.96	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.83
2	0.92	0.89	0.86	0.90	0.87	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.80	0.78
3	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.78	0.81	0.79	0.77	0.80	0.78	0.76	0.75
4	0.83	0.79	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.77	0.75	0.73	0.71
5	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.74	0.72	0.70	0.69
6	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
7	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64
8	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.62	0.61
9	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.59
10	0.66	0.62	0.59	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.58	0.57

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	4295.25	4327.31	4333.50	4316.06	4268.25	4201.31	4108.50	3998.81	3871.69
45.0	4321.13	4322.81	4312.69	4275.00	4219.31	4140.56	4028.06	3909.38	3763.69
90.0	4317.75	4300.31	4257.56	4187.81	4109.63	4017.38	3893.63	3755.25	3614.06
135.0	4317.19	4292.44	4234.50	4159.69	4067.44	3964.50	3831.75	3683.25	3535.31
180.0	4295.25	4241.81	4160.25	4062.94	3957.75	3836.25	3656.81	3489.75	3324.38
225.0	4321.13	4295.25	4250.25	4158.00	4082.06	3970.13	3811.50	3675.38	3526.88
270.0	4317.75	4316.06	4284.00	4237.88	4163.06	4060.13	3948.75	3804.19	3659.63
315.0	4317.19	4320.00	4307.63	4249.69	4167.00	4082.06	3952.69	3831.19	3692.25
360.0	4295.25	4327.31	4333.50	4316.06	4268.25	4201.31	4108.50	3998.81	3871.69

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3708.00	3531.94	3371.63	3189.94	2944.13	2728.13	2502.56	2235.94	1959.75
45.0	3602.81	3439.69	3250.69	3068.44	2843.44	2592.00	2361.94	2159.44	1848.38
90.0	3440.25	3259.69	3086.44	2860.31	2649.94	2394.56	2132.44	1903.50	1680.75
135.0	3359.81	3162.38	2966.06	2757.94	2487.94	2259.00	2023.88	1771.88	1534.50
180.0	3114.56	2891.25	2672.44	2410.31	2143.69	1907.44	1653.19	1437.19	1115.72
225.0	3350.81	3147.75	2956.50	2711.81	2455.31	2218.50	1956.38	1731.38	1488.38
270.0	3492.56	3317.06	3143.25	2950.31	2689.31	2460.94	2226.38	1932.75	1705.50
315.0	3521.25	3339.00	3161.81	2943.56	2729.81	2476.13	2222.44	1987.88	1730.81
360.0	3708.00	3531.94	3371.63	3189.94	2944.13	2728.13	2502.56	2235.94	1959.75

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1727.44	1485.00	1260.00	1076.63	896.06	756.00	622.13	510.75	429.19
45.0	1626.75	1443.38	1185.19	1018.69	885.94	725.06	606.38	531.00	438.75
90.0	1412.44	1105.71	1043.72	854.55	726.36	617.85	516.88	433.24	370.69
135.0	1330.88	1125.56	943.88	801.56	667.13	565.88	477.00	400.50	345.38
180.0	1006.03	848.48	710.27	583.93	480.99	407.14	333.96	286.93	248.12
225.0	1113.64	1093.56	937.58	764.16	649.91	550.63	448.03	381.43	325.46
270.0	1491.75	1295.44	1077.19	921.94	784.13	650.81	540.00	456.75	378.00
315.0	1494.56	1234.13	1117.74	900.00	778.44	657.23	520.03	449.38	381.71
360.0	1727.44	1485.00	1260.00	1076.63	896.06	756.00	622.13	510.75	429.19

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	363.94	298.13	287.44	222.41	190.18	169.43	151.59	136.69	120.88
45.0	378.00	329.06	285.19	236.59	205.03	179.89	160.76	142.09	125.38
90.0	313.20	271.24	231.30	198.96	175.22	153.39	135.06	121.28	109.46
135.0	298.13	287.44	218.31	191.25	166.95	147.71	132.64	119.93	105.36
180.0	216.06	183.77	162.90	145.29	128.70	115.14	105.13	95.29	86.63
225.0	273.43	231.36	201.21	174.09	154.35	136.18	120.71	109.18	98.10
270.0	312.75	288.56	224.16	195.81	169.82	148.05	132.36	117.79	105.75
315.0	319.89	269.44	233.61	200.87	177.24	155.70	137.36	123.41	110.36
360.0	363.94	298.13	287.44	222.41	190.18	169.43	151.59	136.69	120.88

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	110.36	100.86	91.41	83.14	76.61	70.14	64.41	59.85	55.24
45.0	113.18	102.21	92.14	82.97	76.05	68.85	62.72	57.99	53.21
90.0	96.86	88.09	80.33	71.72	65.81	60.47	54.62	50.51	46.74
135.0	95.40	88.26	78.92	71.78	66.83	60.53	55.52	52.14	47.59
180.0	79.82	73.01	67.61	62.04	57.04	53.10	49.39	45.17	42.13
225.0	88.54	81.17	74.59	67.39	62.38	57.77	53.21	49.05	45.62
270.0	96.64	88.48	79.54	73.13	67.44	61.65	56.53	52.37	48.15
315.0	100.41	90.62	83.03	74.59	68.79	63.56	58.84	53.72	49.89
360.0	110.36	100.86	91.41	83.14	76.61	70.14	64.41	59.85	55.24

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	51.47	47.48	43.88	40.89	37.80	34.88	32.51	30.71	28.18
45.0	49.39	45.39	41.85	39.04	36.39	33.36	31.22	29.25	27.11
90.0	42.47	39.77	36.62	33.36	31.39	29.08	26.72	25.37	23.96
135.0	44.44	41.34	37.86	35.38	33.19	30.60	28.74	27.11	25.37
180.0	39.32	36.11	33.69	31.56	29.31	27.39	25.82	24.36	23.23
225.0	42.02	38.87	36.23	33.58	31.50	29.25	27.34	25.82	24.36
270.0	44.33	41.06	37.86	35.16	32.34	29.81	27.79	25.93	24.08
315.0	46.41	42.41	39.43	36.51	34.14	31.61	29.36	27.68	26.04
360.0	51.47	47.48	43.88	40.89	37.80	34.88	32.51	30.71	28.18

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	26.55	25.26	23.79	22.56	21.71	20.70	19.91	19.35	18.68
45.0	25.48	24.19	23.01	21.88	21.09	20.19	19.46	18.73	18.06
90.0	22.50	21.54	20.70	19.86	19.07	18.51	18.00	17.55	17.27
135.0	24.13	23.06	21.99	20.98	20.19	19.35	18.62	17.89	17.21
180.0	22.05	21.15	20.42	19.69	19.07	18.45	17.89	17.27	16.76
225.0	22.89	21.94	21.04	20.08	19.35	18.68	17.94	17.38	16.88
270.0	22.84	21.71	20.53	19.74	19.07	18.51	18.06	17.72	17.44
315.0	24.53	23.18	22.11	21.04	20.08	19.35	18.62	17.83	17.27
360.0	26.55	25.26	23.79	22.56	21.71	20.70	19.91	19.35	18.68

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	18.06	17.49	16.88	16.31	15.81	15.24	14.79	14.40	13.89
45.0	17.44	16.76	16.20	15.75	15.24	14.74	14.34	14.01	13.50
90.0	17.55	18.73	21.83	26.27	29.53	32.23	35.83	38.53	40.95
135.0	16.59	15.98	15.41	14.96	14.51	13.95	13.50	13.11	12.60
180.0	16.20	15.64	15.13	14.74	14.29	13.84	13.44	12.99	12.66
225.0	16.20	15.75	15.36	14.85	14.51	14.12	13.67	13.44	13.11
270.0	17.94	19.29	22.33	26.10	29.81	32.74	35.49	38.31	41.29
315.0	16.71	16.09	15.58	15.19	14.68	14.29	13.84	13.44	13.11
360.0	18.06	17.49	16.88	16.31	15.81	15.24	14.79	14.40	13.89

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.50	13.11	12.77	12.38	12.09	11.70	11.31	10.91	10.58
45.0	13.16	12.83	12.54	12.32	12.15	12.04	11.87	11.48	11.03
90.0	44.72	45.73	48.43	49.56	50.51	50.74	48.38	44.44	39.04
135.0	12.26	11.87	11.42	11.03	10.74	10.35	10.01	9.68	9.23
180.0	12.26	11.87	11.53	11.14	10.74	10.35	10.01	9.56	9.23
225.0	12.83	12.77	12.66	12.49	12.32	12.04	11.64	10.74	10.07
270.0	44.72	46.13	49.05	50.68	52.65	53.89	51.92	48.32	42.81
315.0	12.66	12.26	11.93	11.59	11.19	10.86	10.52	10.07	9.73
360.0	13.50	13.11	12.77	12.38	12.09	11.70	11.31	10.91	10.58

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.24	9.84	9.45	9.06	8.61	8.21	7.71	7.20	6.58
45.0	10.35	9.79	9.23	8.72	8.21	7.48	6.98	6.41	6.08
90.0	32.85	25.54	18.34	11.42	8.55	6.81	6.30	5.96	5.68
135.0	8.89	8.55	8.10	7.65	7.20	6.53	6.13	5.79	5.63
180.0	8.94	8.55	8.10	7.76	7.48	6.64	6.19	6.02	6.08
225.0	9.34	8.83	8.33	7.82	7.43	6.75	6.30	5.91	5.74
270.0	36.23	27.90	19.97	13.44	8.55	6.92	6.41	6.02	5.74
315.0	9.34	8.94	8.55	8.10	7.71	7.03	6.58	6.19	5.85
360.0	10.24	9.84	9.45	9.06	8.61	8.21	7.71	7.20	6.58

Intensity data(cd)

C/γ(°)	90.0
0.0	6.30
45.0	5.79
90.0	5.57
135.0	5.63
180.0	6.08
225.0	5.79
270.0	5.57
315.0	5.57
360.0	6.30