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Nata

LumCAT: LN01D05015DA-N
Luminaire: 97.70.234.00

Report No: 210707-B007	Voltage(V): 36.7100
Test No: 210707-C007	Current(A): 0.4510
LampCAT: Fortimo LED SLM 1203 G7N	Power (W): 16.5560
Lamp flux(lm): 2182.7	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 570	Width(mm): 45
Phm Type: C	Height(mm): 20

Photometric Results

Lumens(lm): 1963.46
Efficiency(%): 89.95%
Lumens(lm)/Power(W): 118.60
Central intensity(cd): 10549.270
Maximum intensity(cd): 10549.270
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=20.6
[C90/270]Total=20.6
Field angle(10%Imax): [C0/180]Total=41.0
[C90/270]Total=41.0
Maximum s/h(1/2): C0_180=0.35 C90_270=0.35
Maximum s/h(1/4): C0_180=0.37 C90_270=0.37
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.95%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.746%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10549.266	0.000	0	.000%	.000%
1.0	10475.156	10.060	10.06	.461%	.512%
2.0	10261.898	29.764	39.824	1.364%	2.028%
3.0	9885.305	48.185	88.009	2.208%	4.482%
4.0	9427.430	64.646	152.655	2.962%	7.775%
5.0	8885.320	78.780	231.435	3.609%	11.787%
6.0	8258.766	90.097	321.532	4.128%	16.376%
7.0	7538.977	98.056	419.589	4.492%	21.370%
8.0	6894.633	103.299	522.887	4.733%	26.631%
9.0	6190.102	106.045	628.932	4.858%	32.032%
10.0	5460.609	105.435	734.366	4.830%	37.402%
11.0	4850.016	103.024	837.391	4.720%	42.649%
12.0	4249.898	99.475	936.866	4.557%	47.715%
13.0	3635.719	93.582	1030.448	4.287%	52.481%
14.0	3129.820	86.598	1117.047	3.967%	56.892%
15.0	2689.805	79.894	1196.941	3.660%	60.961%
16.0	2256.117	72.472	1269.413	3.320%	64.652%
17.0	1921.570	65.058	1334.47	2.981%	67.965%
18.0	1618.144	58.362	1392.833	2.674%	70.938%
19.0	1351.638	51.668	1444.501	2.367%	73.569%
20.0	1151.409	45.813	1490.313	2.099%	75.903%
21.0	962.494	40.591	1530.905	1.860%	77.970%
22.0	812.566	35.671	1566.575	1.634%	79.787%
23.0	691.587	31.561	1598.136	1.446%	81.394%
24.0	587.222	27.959	1626.096	1.281%	82.818%
25.0	490.634	24.508	1650.604	1.123%	84.066%
26.0	423.626	21.581	1672.185	.989%	85.165%
27.0	363.312	19.253	1691.438	.882%	86.146%
28.0	311.963	17.097	1708.534	.783%	87.017%
29.0	271.013	15.252	1723.786	.699%	87.793%
30.0	241.523	13.838	1737.625	.634%	88.498%
31.0	206.184	12.459	1750.084	.571%	89.133%
32.0	183.530	11.165	1761.249	.512%	89.701%
33.0	165.459	10.281	1771.53	.471%	90.225%
34.0	147.607	9.474	1781.004	.434%	90.708%
35.0	134.079	8.748	1789.753	.401%	91.153%
36.0	122.161	8.159	1797.911	.374%	91.569%
37.0	110.974	7.604	1805.515	.348%	91.956%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	101.777	7.101	1812.616	.325%	92.318%
39.0	93.445	6.663	1819.28	.305%	92.657%
40.0	85.577	6.244	1825.523	.286%	92.975%
41.0	79.320	5.872	1831.395	.269%	93.274%
42.0	73.209	5.542	1836.937	.254%	93.556%
43.0	67.127	5.198	1842.135	.238%	93.821%
44.0	62.325	4.886	1847.021	.224%	94.070%
45.0	57.783	4.616	1851.637	.211%	94.305%
46.0	53.234	4.342	1855.979	.199%	94.526%
47.0	49.465	4.085	1860.063	.187%	94.734%
48.0	46.392	3.875	1863.938	.178%	94.931%
49.0	43.158	3.677	1867.616	.168%	95.119%
50.0	40.479	3.487	1871.103	.160%	95.296%
51.0	38.370	3.336	1874.439	.153%	95.466%
52.0	36.281	3.203	1877.642	.147%	95.629%
53.0	34.425	3.076	1880.718	.141%	95.786%
54.0	32.836	2.965	1883.682	.136%	95.937%
55.0	31.289	2.862	1886.545	.131%	96.083%
56.0	29.939	2.767	1889.312	.127%	96.224%
57.0	28.730	2.682	1891.994	.123%	96.360%
58.0	27.499	2.600	1894.594	.119%	96.493%
59.0	26.452	2.522	1897.117	.116%	96.621%
60.0	25.488	2.454	1899.57	.112%	96.746%
61.0	24.504	2.386	1901.956	.109%	96.868%
62.0	23.681	2.322	1904.278	.106%	96.986%
63.0	22.971	2.269	1906.547	.104%	97.102%
64.0	22.233	2.218	1908.765	.102%	97.215%
65.0	21.769	2.178	1910.943	.100%	97.325%
66.0	21.642	2.166	1913.109	.099%	97.436%
67.0	21.895	2.189	1915.298	.100%	97.547%
68.0	22.212	2.234	1917.532	.102%	97.661%
69.0	22.641	2.288	1919.82	.105%	97.778%
70.0	23.330	2.361	1922.181	.108%	97.898%
71.0	23.829	2.437	1924.619	.112%	98.022%
72.0	24.469	2.511	1927.13	.115%	98.150%
73.0	25.207	2.598	1929.728	.119%	98.282%
74.0	25.784	2.681	1932.408	.123%	98.419%
75.0	26.423	2.758	1935.167	.126%	98.559%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	26.803	2.825	1937.992	.129%	98.703%
77.0	26.888	2.863	1940.855	.131%	98.849%
78.0	26.515	2.859	1943.713	.131%	98.994%
79.0	25.362	2.787	1946.501	.128%	99.136%
80.0	23.203	2.618	1949.119	.120%	99.270%
81.0	20.763	2.378	1951.497	.109%	99.391%
82.0	17.719	2.087	1953.583	.096%	99.497%
83.0	15.188	1.789	1955.372	.082%	99.588%
84.0	13.148	1.544	1956.916	.071%	99.667%
85.0	11.243	1.331	1958.247	.061%	99.735%
86.0	10.280	1.176	1959.424	.054%	99.795%
87.0	9.457	1.080	1960.504	.049%	99.850%
88.0	9.077	1.015	1961.519	.047%	99.901%
89.0	8.817	0.981	1962.5	.045%	99.951%
90.0	8.641	0.957	1963.457	.044%	100.000%

Zonal flux distribution table

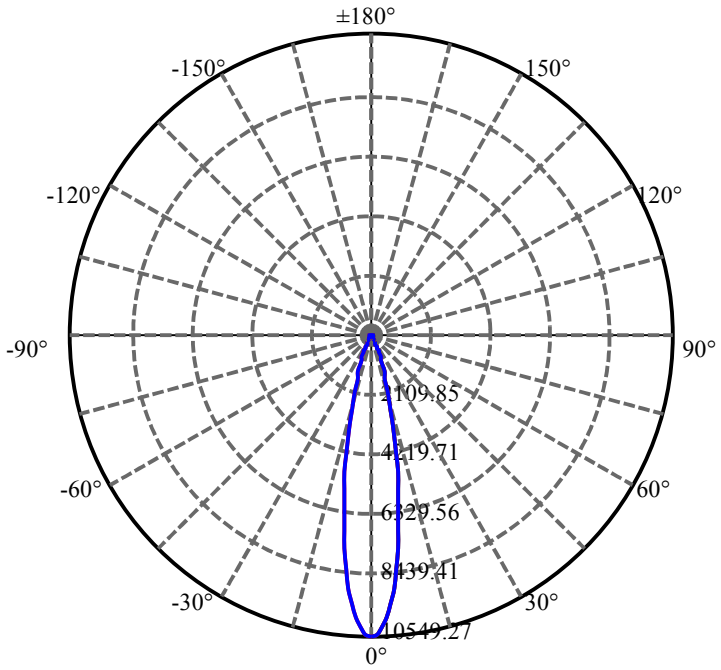
ZONAL LUMEN SUMMARY

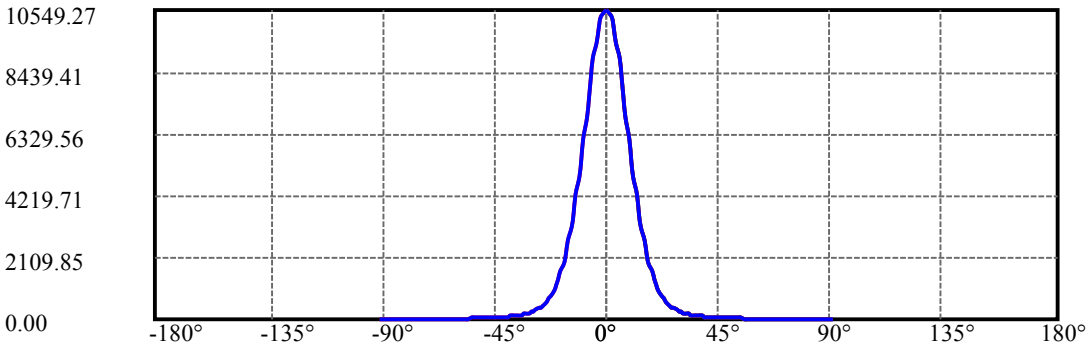
Zone	Lumens	%Lamp	%Fixt
0-30	1737.62	79.61%	88.50%
0-40	1825.52	83.63%	92.97%
0-60	1899.57	87.03%	96.75%
0-90	1962.50	89.91%	99.95%
0-120	1962.50	89.91%	99.95%
0-180	1963.46	89.95%	100.00%
60-90	65.38	3.00%	3.33%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-22.13	1570.77	71.96%	80.00%

ZONAL LUMEN SUMMARY

0-10	734.37
10-20	755.95
20-30	247.31
30-40	87.90
40-50	45.58
50-60	28.47
60-70	22.61
70-80	26.94
80-90	13.38
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:20.5 Right:20.5
:C90/270Left:20.5 Right:20.5

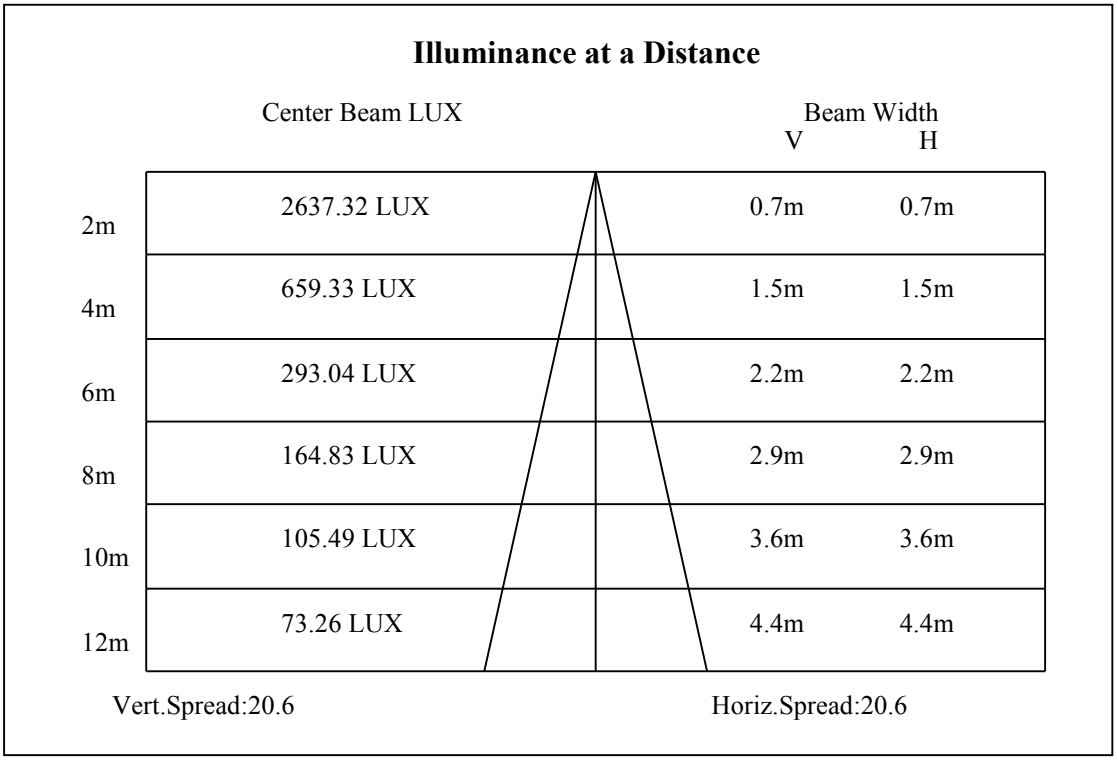
Beam Angle(50%Imax):C0/180Left:10.3 Right:10.3
:C90/270Left:10.3 Right:10.3

Equipment: GMS1980
Temperature(°C): 25.0

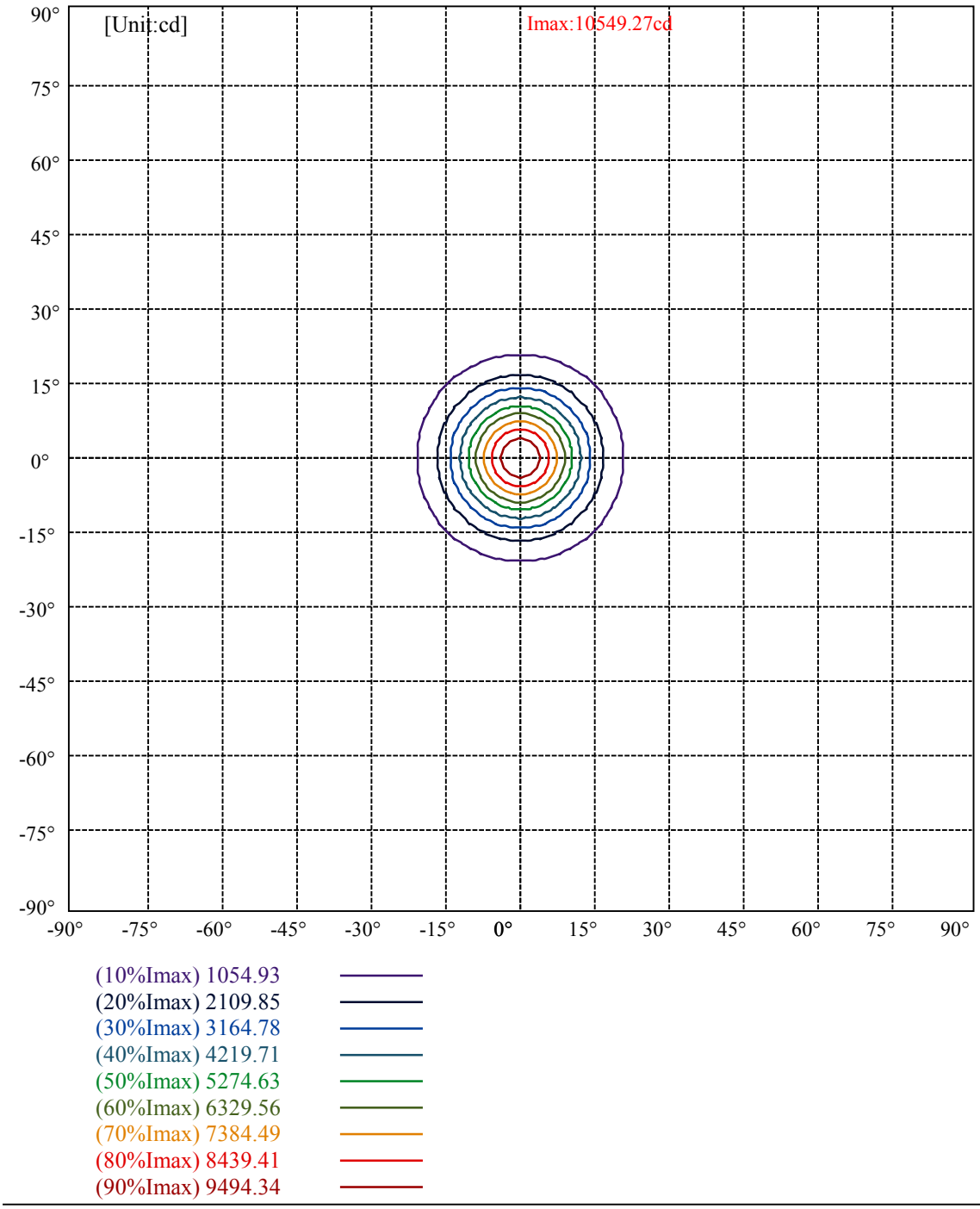
Date: 2021/7/07
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Lux distance Curve



ISO-Intensity(V-H)



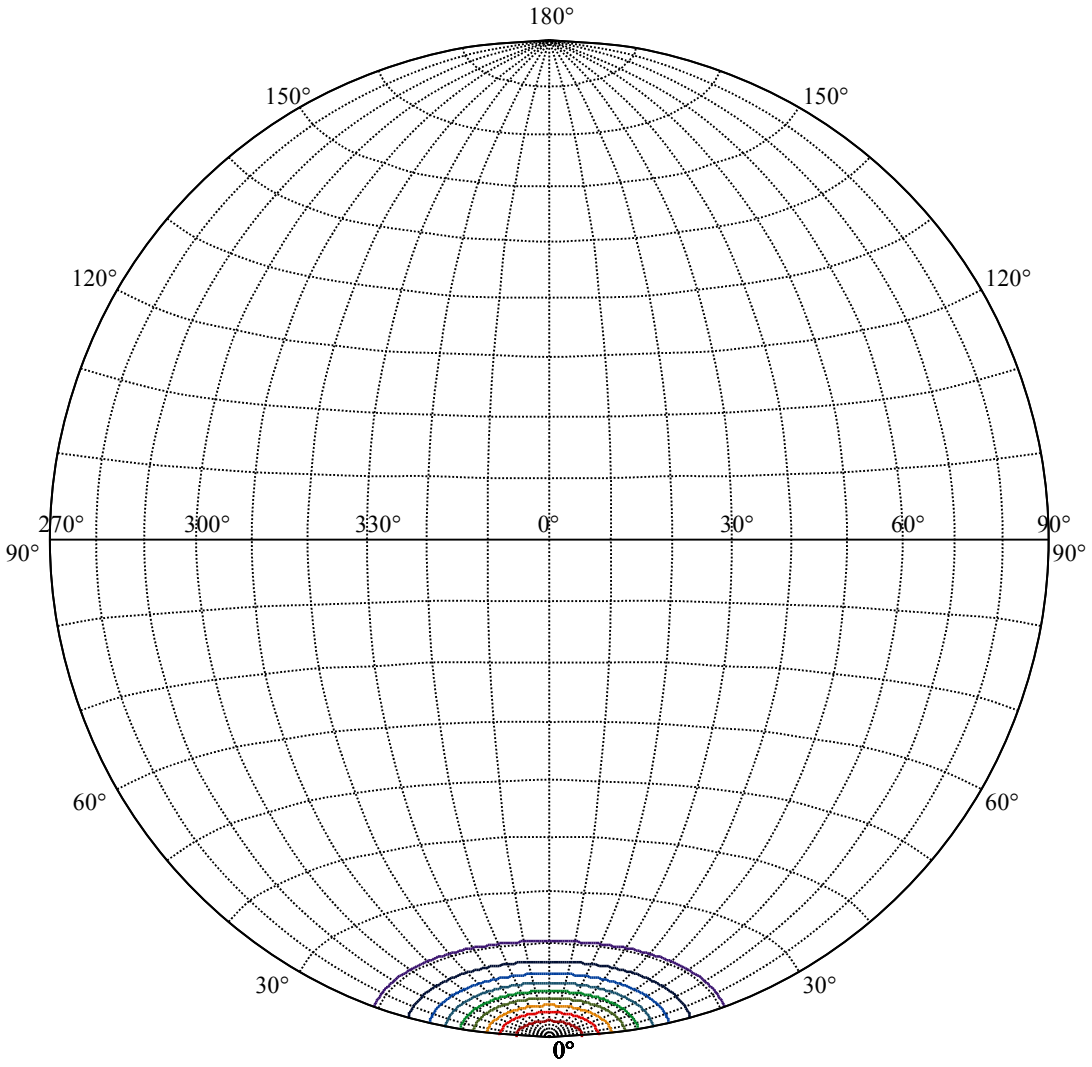
(10%Imax) 1054.93
(20%Imax) 2109.85
(30%Imax) 3164.78
(40%Imax) 4219.71
(50%Imax) 5274.63
(60%Imax) 6329.56
(70%Imax) 7384.49
(80%Imax) 8439.41
(90%Imax) 9494.34

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/07
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:10549.27

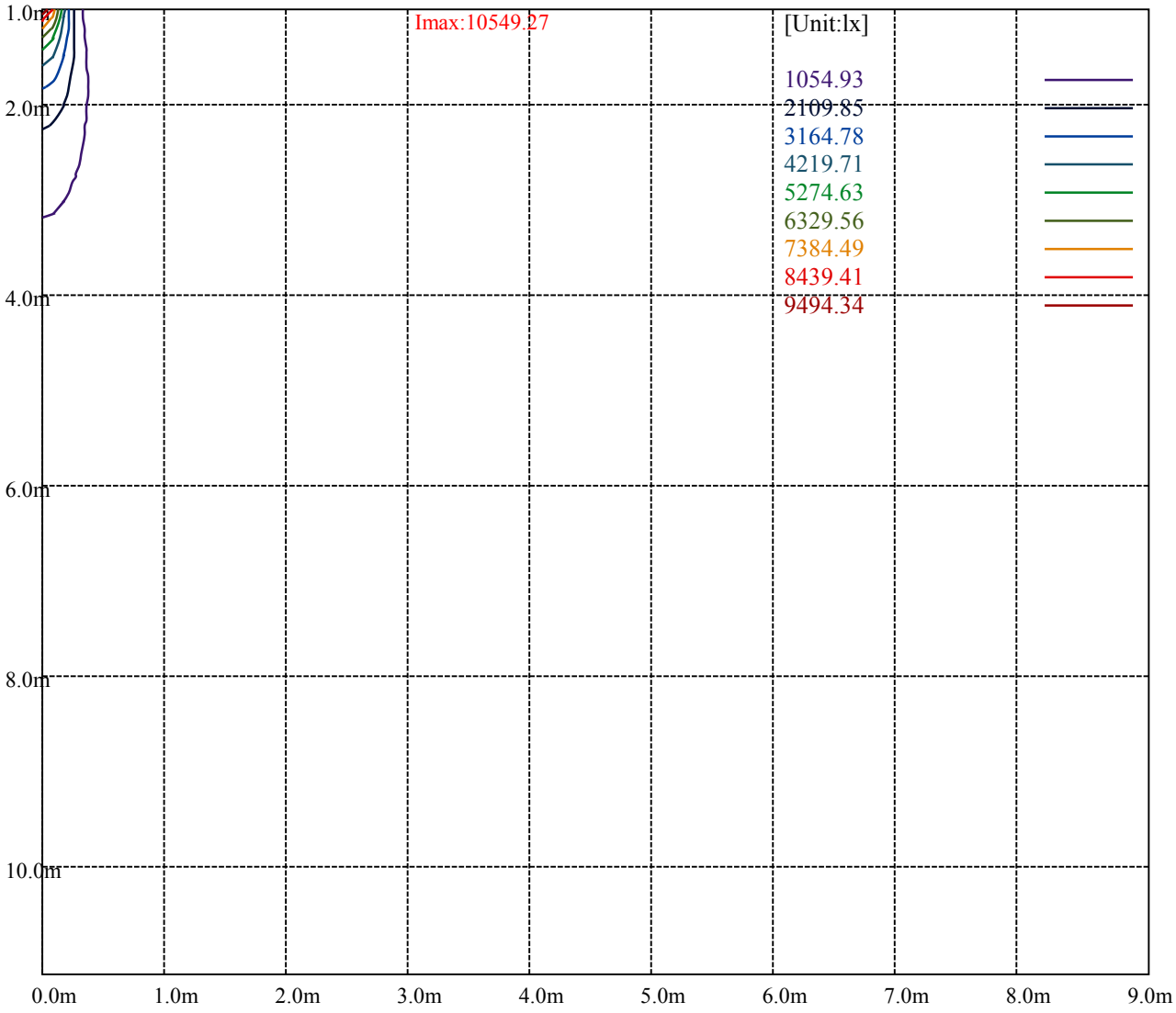
(10%Imax) 1054.93
(20%Imax) 2109.85
(30%Imax) 3164.78
(40%Imax) 4219.71
(50%Imax) 5274.63
(60%Imax) 6329.56
(70%Imax) 7384.49
(80%Imax) 8439.41
(90%Imax) 9494.34

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/07
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/07
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata LN01D05015DA-N

Luminance Limitting Curve(no luminous side)

Luminance Table

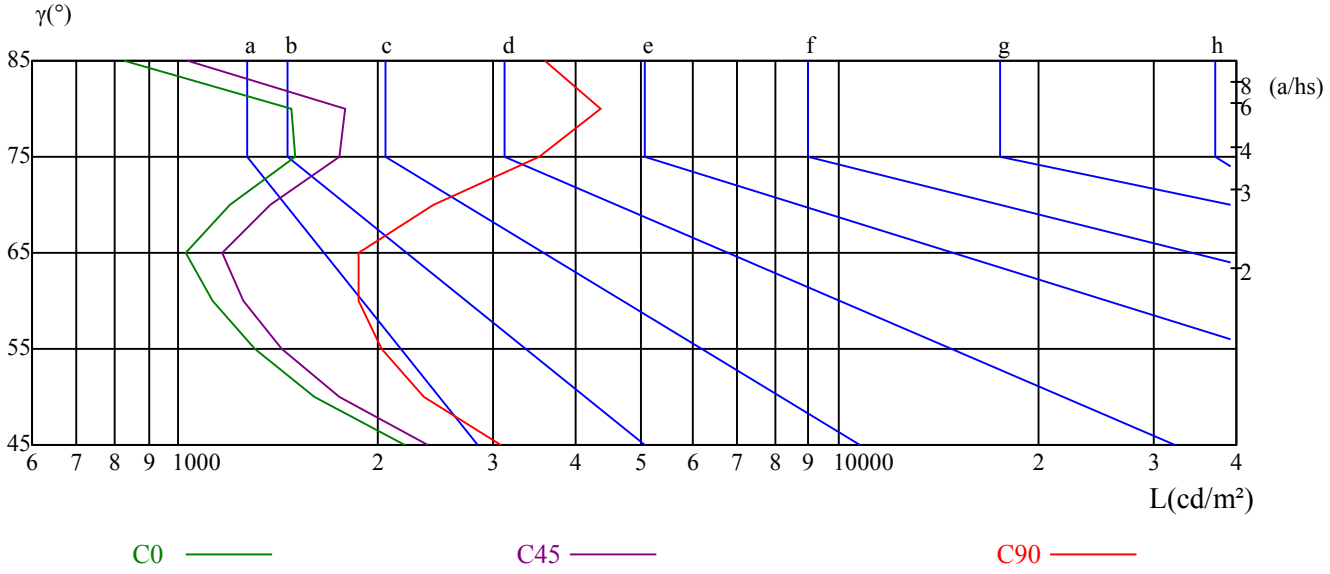
γ	45	50	55	60	65	70	75	80	85
C0	2206	1605	1301	1123	1028	1197	1497	1480	827
C45	2379	1749	1433	1252	1163	1377	1757	1782	1031
C90	3078	2357	2025	1874	1868	2425	3519	4345	3590

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2008	2008	2008	3980	3980	3980	5029	5029	5029

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

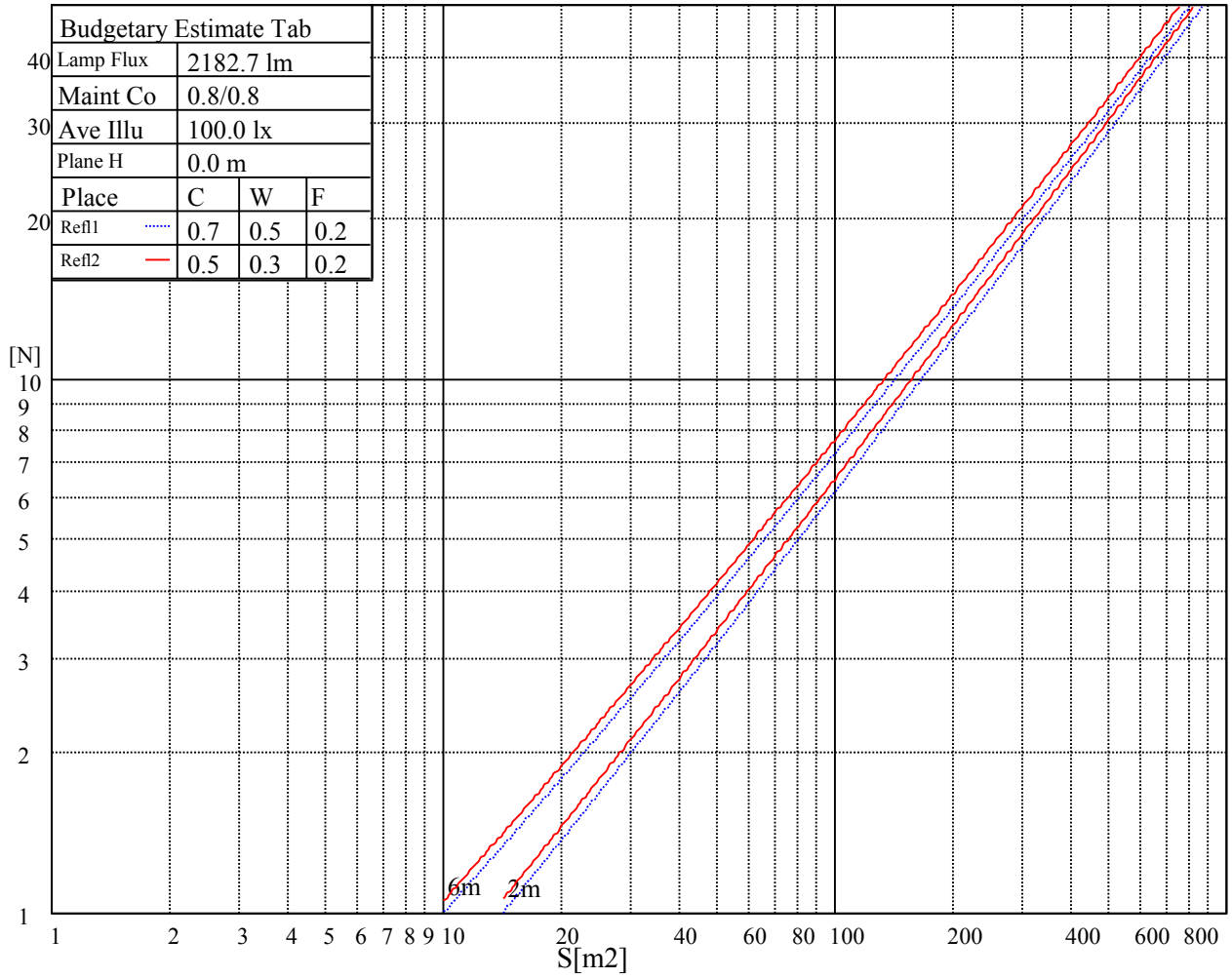


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/07
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

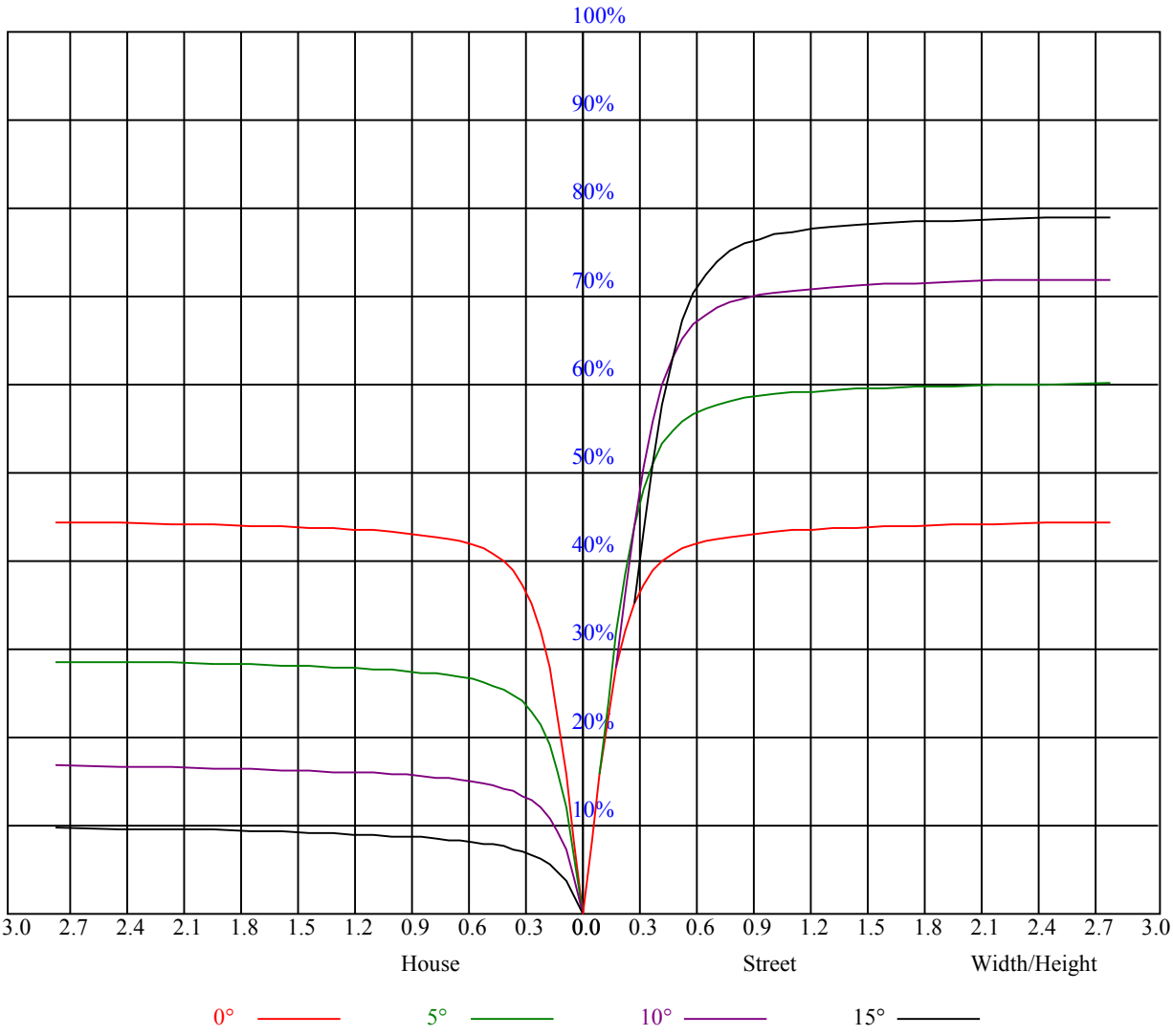


Equipment: GMS1980 Date: 2021/7/07 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.01	0.99	0.97	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.85
2	0.95	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.91	0.87	0.84	0.90	0.86	0.84	0.87	0.85	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.67
9	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
10	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.64

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/7/07	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	10476.56	10657.13	10691.44	10527.19	10254.94	9880.88	9271.13	8687.81	8067.94
45.0	10622.81	10549.69	10315.13	10049.06	9527.63	8957.25	8434.13	7626.94	6985.69
90.0	10521.00	10243.69	9904.50	9336.38	8786.81	8190.56	7549.88	6725.81	6067.13
135.0	10589.63	10333.13	9936.56	9417.94	8879.63	8187.19	7432.31	6763.50	6118.31
180.0	10476.56	10134.00	9722.81	9154.13	8497.13	7855.88	7109.44	6367.50	5709.38
225.0	10622.81	10527.75	10281.38	9793.13	9385.88	8839.13	8142.75	7431.19	6793.88
270.0	10495.13	10639.69	10578.38	10371.94	10023.19	9538.31	9018.00	8345.81	7701.75
315.0	10589.63	10716.19	10665.00	10432.69	10064.25	9633.38	9112.50	8363.25	7713.00
360.0	10476.56	10657.13	10691.44	10527.19	10254.94	9880.88	9271.13	8687.81	8067.94

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	7251.75	6611.06	5955.75	5236.31	4554.56	3984.19	3395.81	2912.63	2427.19
45.0	6345.56	5530.50	4903.31	4312.69	3643.31	3144.38	2700.56	2239.31	1919.81
90.0	5421.94	4663.13	4101.75	3583.13	3049.88	2585.25	2227.50	1882.13	1613.25
135.0	5315.63	4703.63	4123.69	3539.25	3009.38	2589.19	2183.63	1840.50	1576.13
180.0	5071.50	4320.00	3768.75	3268.13	2701.69	2307.38	1965.38	1602.56	1353.38
225.0	6071.06	5351.06	4741.88	4169.25	3565.13	3015.56	2544.75	2183.06	1865.25
270.0	6995.25	6269.06	5616.56	4927.50	4265.44	3725.44	3297.94	2680.31	2295.56
315.0	7048.13	6236.44	5588.44	4962.94	4296.38	3687.19	3202.88	2708.44	2322.00
360.0	7251.75	6611.06	5955.75	5236.31	4554.56	3984.19	3395.81	2912.63	2427.19

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2024.44	1723.50	1436.06	1187.44	1002.38	845.44	685.13	576.56	488.25
45.0	1642.50	1376.44	1152.00	983.25	821.25	687.38	587.81	497.25	429.19
90.0	1352.81	1108.18	966.94	816.30	690.08	595.86	515.59	432.17	375.30
135.0	1319.06	1128.38	947.81	797.63	682.88	586.13	488.81	424.69	367.88
180.0	1111.28	934.99	786.60	649.91	548.44	454.84	379.24	318.99	275.57
225.0	1530.00	1232.44	1108.24	925.88	773.66	659.53	564.08	465.13	401.06
270.0	2008.69	1657.69	1396.13	1217.81	1001.81	847.13	741.94	613.13	527.06
315.0	1956.38	1651.50	1417.50	1121.74	980.04	856.41	735.19	597.15	524.70
360.0	2024.44	1723.50	1436.06	1187.44	1002.38	845.44	685.13	576.56	488.25

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	405.56	339.75	293.06	287.44	215.72	191.64	172.13	154.18	139.11
45.0	365.63	314.44	285.19	240.08	208.07	187.20	168.86	148.78	134.94
90.0	327.49	282.77	244.24	215.55	188.21	167.12	151.09	135.79	123.98
135.0	311.06	284.06	240.41	212.91	185.57	167.12	151.59	135.17	123.58
180.0	239.96	208.01	181.91	163.35	147.94	133.09	122.79	114.02	104.01
225.0	347.68	297.68	257.18	228.04	200.42	177.69	160.37	143.72	131.01
270.0	454.50	380.81	331.88	291.38	248.23	220.89	197.49	172.97	156.71
315.0	454.61	388.18	334.24	293.46	255.32	223.48	199.35	176.23	159.30
360.0	405.56	339.75	293.06	287.44	215.72	191.64	172.13	154.18	139.11

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	127.91	116.89	108.34	99.39	91.69	85.73	79.37	73.80	69.02
45.0	123.98	111.94	102.09	94.56	86.51	80.10	73.69	67.89	63.23
90.0	112.39	101.81	93.66	85.16	77.74	71.78	66.21	59.91	55.52
135.0	112.61	102.32	93.38	86.63	78.75	72.84	66.71	61.20	56.64
180.0	97.03	90.79	84.32	78.36	73.41	68.29	63.73	59.06	54.84
225.0	118.52	107.78	99.51	91.29	83.64	77.57	72.17	65.93	61.43
270.0	142.26	128.08	115.93	106.31	96.69	89.55	82.07	75.15	69.58
315.0	142.59	128.19	117.00	105.86	96.19	88.71	81.73	74.08	68.34
360.0	127.91	116.89	108.34	99.39	91.69	85.73	79.37	73.80	69.02

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	64.91	59.06	55.18	52.09	47.98	44.55	42.36	39.60	37.29
45.0	58.28	54.11	50.74	47.64	44.38	42.02	39.94	38.08	36.00
90.0	51.53	46.97	43.93	41.12	38.14	36.17	34.26	32.29	30.99
135.0	51.98	47.93	44.78	42.02	39.26	37.18	35.33	33.53	31.89
180.0	51.58	47.98	44.78	42.41	40.22	37.69	35.89	34.26	32.63
225.0	57.15	52.99	49.16	46.29	43.43	40.89	38.93	36.84	35.21
270.0	63.79	58.61	54.34	50.51	46.24	43.31	40.67	38.25	36.06
315.0	63.06	58.22	52.82	49.05	45.62	42.02	39.60	37.41	35.33
360.0	64.91	59.06	55.18	52.09	47.98	44.55	42.36	39.60	37.29

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	35.72	33.81	32.40	31.05	29.53	28.41	27.34	26.10	25.14
45.0	34.43	32.79	31.28	30.04	28.80	27.62	26.49	25.54	24.47
90.0	29.59	28.01	27.11	26.16	24.98	24.30	23.51	22.84	22.61
135.0	30.54	29.19	27.96	26.89	25.82	24.86	24.02	23.12	22.39
180.0	31.05	29.76	28.41	27.17	26.27	25.20	24.41	23.46	22.56
225.0	33.53	31.95	30.60	29.31	27.84	26.78	25.76	24.64	23.74
270.0	34.43	32.85	31.33	30.09	28.86	27.79	26.66	25.59	24.75
315.0	33.41	31.95	30.43	29.14	27.90	26.66	25.71	24.75	23.79
360.0	35.72	33.81	32.40	31.05	29.53	28.41	27.34	26.10	25.14

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	24.30	23.29	22.61	21.94	21.26	20.59	20.03	19.41	18.79
45.0	23.63	22.67	21.77	21.09	20.42	19.69	19.13	18.51	17.72
90.0	22.28	22.11	23.29	26.21	31.11	35.16	38.08	42.47	46.07
135.0	21.71	21.04	20.42	19.91	19.35	18.79	18.45	18.28	18.39
180.0	21.88	21.26	20.53	19.97	19.35	18.62	18.11	17.61	16.99
225.0	22.89	21.99	21.21	20.59	19.97	19.35	18.62	17.94	17.33
270.0	24.08	23.18	22.78	22.39	23.23	25.65	29.48	33.58	37.07
315.0	23.01	22.33	21.54	21.04	20.48	19.86	19.24	18.84	18.28
360.0	24.30	23.29	22.61	21.94	21.26	20.59	20.03	19.41	18.79

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	18.23	17.61	17.10	16.48	15.92	15.53	15.13	14.63	14.23
45.0	17.10	16.59	15.92	15.36	14.96	14.46	14.01	13.61	13.11
90.0	49.67	53.83	56.31	58.50	60.24	60.86	59.06	53.21	42.81
135.0	18.73	19.52	20.42	21.21	21.49	20.93	19.52	17.72	15.75
180.0	16.37	15.92	15.41	14.91	14.51	14.06	13.67	13.22	12.77
225.0	16.59	16.03	15.53	15.02	14.51	14.18	13.78	13.22	12.83
270.0	41.18	44.49	47.81	51.81	54.06	55.97	57.60	58.22	56.36
315.0	17.89	17.66	17.78	18.11	18.73	19.13	19.35	19.07	17.78
360.0	18.23	17.61	17.10	16.48	15.92	15.53	15.13	14.63	14.23

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	13.84	13.39	12.94	12.43	11.98	11.64	10.63	9.96	9.51
45.0	12.66	12.09	11.59	11.14	10.52	9.90	9.34	9.00	8.78
90.0	34.76	24.92	16.93	12.54	10.01	9.39	8.83	8.66	8.55
135.0	13.73	12.66	12.09	11.36	10.07	9.17	8.78	8.61	8.44
180.0	12.38	11.98	11.53	11.31	10.13	9.51	9.17	9.06	9.17
225.0	12.38	11.87	11.42	10.91	10.46	9.90	9.28	8.83	8.55
270.0	50.06	40.16	31.84	23.06	14.91	12.15	9.96	9.28	8.83
315.0	16.31	14.68	13.16	12.43	11.87	10.58	9.68	9.23	8.72
360.0	13.84	13.39	12.94	12.43	11.98	11.64	10.63	9.96	9.51

Intensity data(cd)

C/γ(°)	90.0
0.0	9.23
45.0	8.66
90.0	8.55
135.0	8.44
180.0	8.78
225.0	8.49
270.0	8.49
315.0	8.49
360.0	9.23