NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: LN01D05024DA-N
Luminaire: 97.70.234.00

Report No: 210709-B011	Voltage(V): 35.8700
Test No: 210709-C011	Current(A): 0.5100
LampCAT: Fortimo LED SLM 1204 G7N	Power (W): 18.2930
Lamp flux(lm): 2429.4	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): 2235.66
Efficiency(%): 92.02%
Lumens(lm)/Power(W): 122.21
Central intensity(cd): 7554.656
Maximum intensity(cd): 7554.656
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=29.3
[C90/270]Total=29.3
Field angle(10%Imax): [C0/180]Total=49.4
[C90/270]Total=49.4
Maximum s/h(1/2): C0_180=0.49 C90_270=0.49
Maximum s/h(1/4): C0_180=0.47 C90_270=0.47
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.02%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.697%

Nata LN01D05024DA-N

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7554.656	0.000	0	.000%	.000%
1.0	7538.484	7.222	7.222	.297%	.323%
2.0	7483.430	21.561	28.783	.887%	1.287%
3.0	7384.289	35.559	64.341	1.464%	2.878%
4.0	7257.586	49.011	113.352	2.017%	5.070%
5.0	7097.555	61.755	175.107	2.542%	7.832%
6.0	6889.922	73.508	248.615	3.026%	11.120%
7.0	6637.500	83.964	332.58	3.456%	14.876%
8.0	6381.844	93.177	425.757	3.835%	19.044%
9.0	6060.656	100.840	526.597	4.151%	23.554%
10.0	5697.000	106.402	632.999	4.380%	28.314%
11.0	5342.836	110.311	743.31	4.541%	33.248%
12.0	4936.922	112.372	855.682	4.625%	38.274%
13.0	4487.695	111.846	967.529	4.604%	43.277%
14.0	4059.492	109.403	1076.932	4.503%	48.171%
15.0	3628.477	105.544	1182.476	4.344%	52.892%
16.0	3189.867	99.908	1282.384	4.112%	57.360%
17.0	2797.805	93.244	1375.628	3.838%	61.531%
18.0	2411.016	85.882	1461.51	3.535%	65.373%
19.0	2064.797	77.870	1539.38	3.205%	68.856%
20.0	1741.936	69.674	1609.054	2.868%	71.972%
21.0	1457.325	61.432	1670.486	2.529%	74.720%
22.0	1221.511	53.832	1724.318	2.216%	77.128%
23.0	1017.014	46.970	1771.289	1.933%	79.229%
24.0	861.989	41.082	1812.37	1.691%	81.066%
25.0	705.129	35.633	1848.003	1.467%	82.660%
26.0	593.937	30.665	1878.668	1.262%	84.032%
27.0	496.385	26.675	1905.343	1.098%	85.225%
28.0	414.457	23.061	1928.403	.949%	86.256%
29.0	354.277	20.112	1948.515	.828%	87.156%
30.0	309.945	17.934	1966.449	.738%	87.958%
31.0	266.984	16.055	1982.504	.661%	88.676%
32.0	237.389	14.450	1996.954	.595%	89.323%
33.0	208.758	13.144	2010.098	.541%	89.911%
34.0	183.916	11.883	2021.981	.489%	90.442%
35.0	165.994	10.867	2032.848	.447%	90.928%
36.0	150.694	10.083	2042.932	.415%	91.379%
37.0	135.949	9.349	2052.28	.385%	91.797%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	124.277	8.686	2060.966	.358%	92.186%
39.0	113.674	8.122	2069.088	.334%	92.549%
40.0	103.472	7.573	2076.661	.312%	92.888%
41.0	95.541	7.087	2083.748	.292%	93.205%
42.0	88.024	6.669	2090.417	.275%	93.503%
43.0	80.184	6.231	2096.648	.256%	93.782%
44.0	74.355	5.833	2102.481	.240%	94.043%
45.0	68.716	5.498	2107.98	.226%	94.289%
46.0	62.888	5.147	2113.126	.212%	94.519%
47.0	58.163	4.814	2117.941	.198%	94.734%
48.0	53.986	4.534	2122.474	.187%	94.937%
49.0	49.542	4.251	2126.726	.175%	95.127%
50.0	45.893	3.979	2130.705	.164%	95.305%
51.0	42.940	3.758	2134.463	.155%	95.473%
52.0	40.085	3.563	2138.026	.147%	95.633%
53.0	37.666	3.382	2141.408	.139%	95.784%
54.0	35.655	3.232	2144.64	.133%	95.929%
55.0	33.841	3.102	2147.742	.128%	96.067%
56.0	32.337	2.990	2150.732	.123%	96.201%
57.0	31.015	2.897	2153.629	.119%	96.331%
58.0	29.700	2.808	2156.437	.116%	96.456%
59.0	28.659	2.728	2159.165	.112%	96.578%
60.0	27.661	2.661	2161.826	.110%	96.697%
61.0	26.663	2.592	2164.418	.107%	96.813%
62.0	25.889	2.532	2166.95	.104%	96.927%
63.0	25.193	2.484	2169.435	.102%	97.038%
64.0	24.532	2.440	2171.875	.100%	97.147%
65.0	24.103	2.407	2174.282	.099%	97.255%
66.0	24.089	2.404	2176.686	.099%	97.362%
67.0	24.630	2.450	2179.136	.101%	97.472%
68.0	25.348	2.532	2181.668	.104%	97.585%
69.0	26.191	2.629	2184.297	.108%	97.702%
70.0	27.070	2.735	2187.032	.113%	97.825%
71.0	28.048	2.849	2189.881	.117%	97.952%
72.0	28.955	2.964	2192.845	.122%	98.085%
73.0	29.742	3.069	2195.915	.126%	98.222%
74.0	30.551	3.170	2199.084	.130%	98.364%
75.0	31.198	3.263	2202.347	.134%	98.510%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	31.613	3.334	2205.681	.137%	98.659%
77.0	31.795	3.381	2209.062	.139%	98.810%
78.0	31.373	3.381	2212.443	.139%	98.961%
79.0	29.932	3.294	2215.737	.136%	99.109%
80.0	27.837	3.114	2218.852	.128%	99.248%
81.0	24.933	2.854	2221.705	.117%	99.376%
82.0	21.234	2.504	2224.209	.103%	99.488%
83.0	17.712	2.117	2226.326	.087%	99.582%
84.0	15.251	1.796	2228.122	.074%	99.663%
85.0	12.945	1.539	2229.661	.063%	99.732%
86.0	11.798	1.352	2231.013	.056%	99.792%
87.0	10.920	1.243	2232.256	.051%	99.848%
88.0	10.463	1.171	2233.428	.048%	99.900%
89.0	10.146	1.130	2234.557	.046%	99.951%
90.0	9.998	1.104	2235.662	.045%	100.000%

Zonal flux distribution table

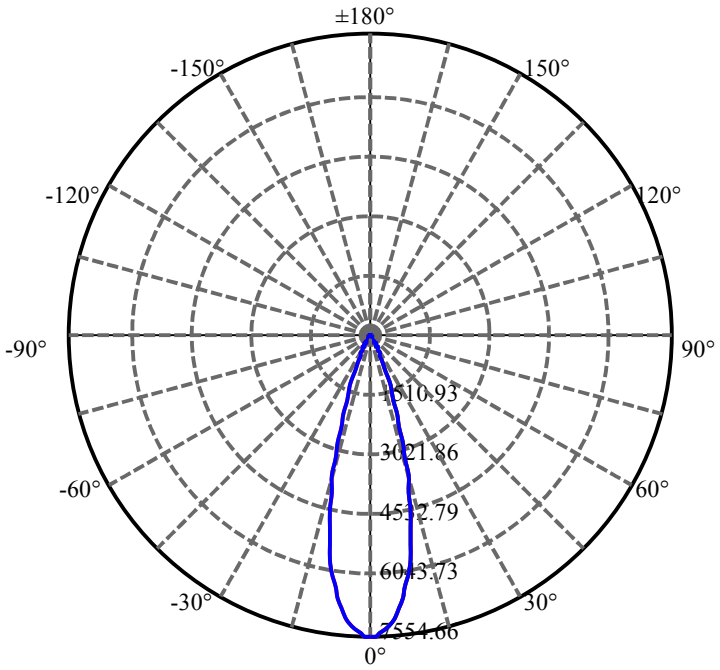
ZONAL LUMEN SUMMARY

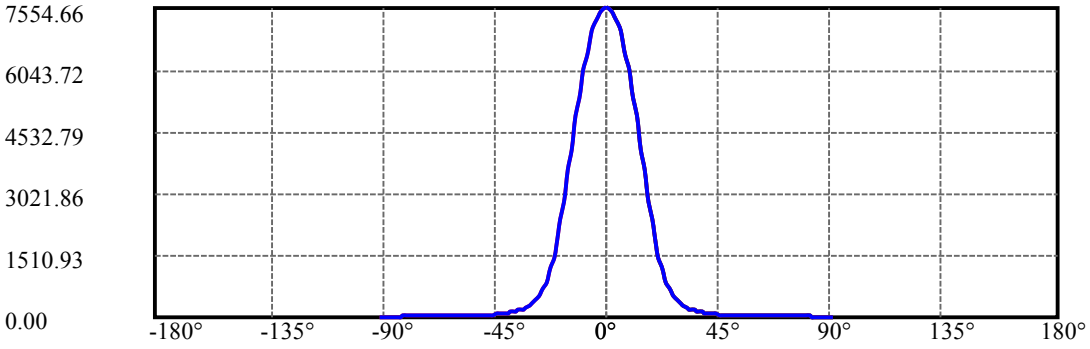
Zone	Lumens	%Lamp	%Fixt
0-30	1966.45	80.94%	87.96%
0-40	2076.66	85.48%	92.89%
0-60	2161.83	88.99%	96.70%
0-90	2234.56	91.98%	99.95%
0-120	2234.56	91.98%	99.95%
0-180	2235.66	92.02%	100.00%
60-90	75.39	3.10%	3.37%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-23.42	1788.53	73.62%	80.00%

ZONAL LUMEN SUMMARY

0-10	633.00
10-20	976.05
20-30	357.40
30-40	110.21
40-50	54.04
50-60	31.12
60-70	25.21
70-80	31.82
80-90	15.71
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):

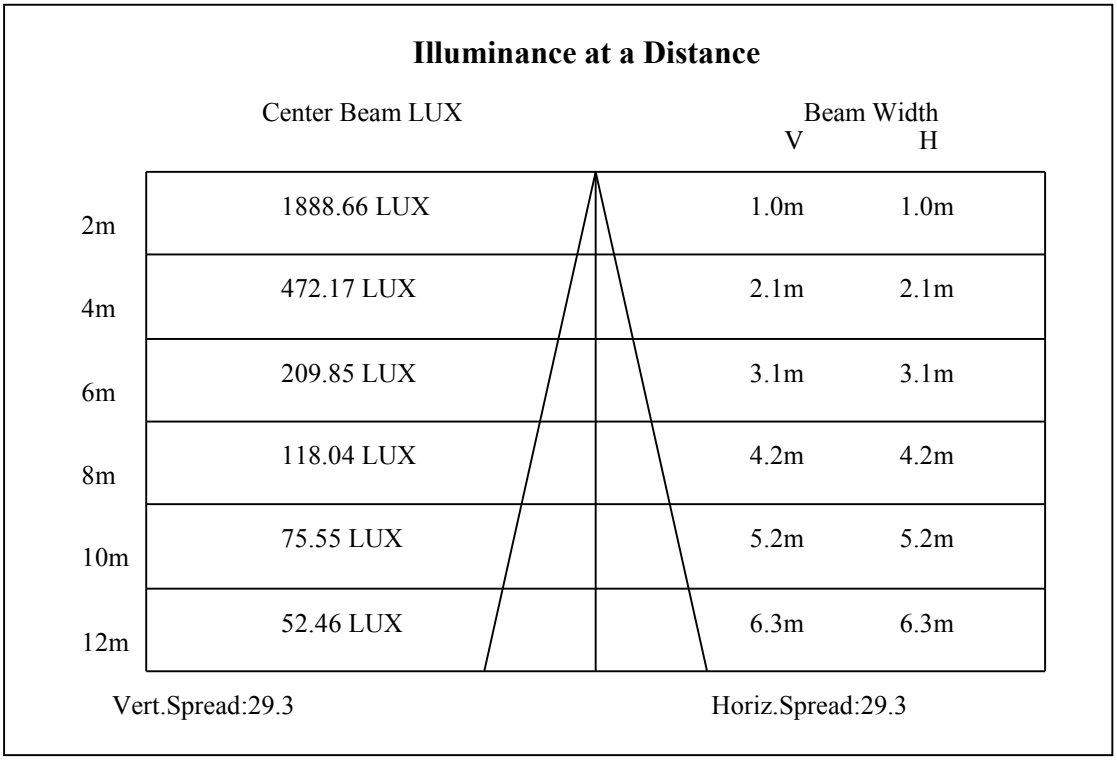
C0/C180:

C90/C270:

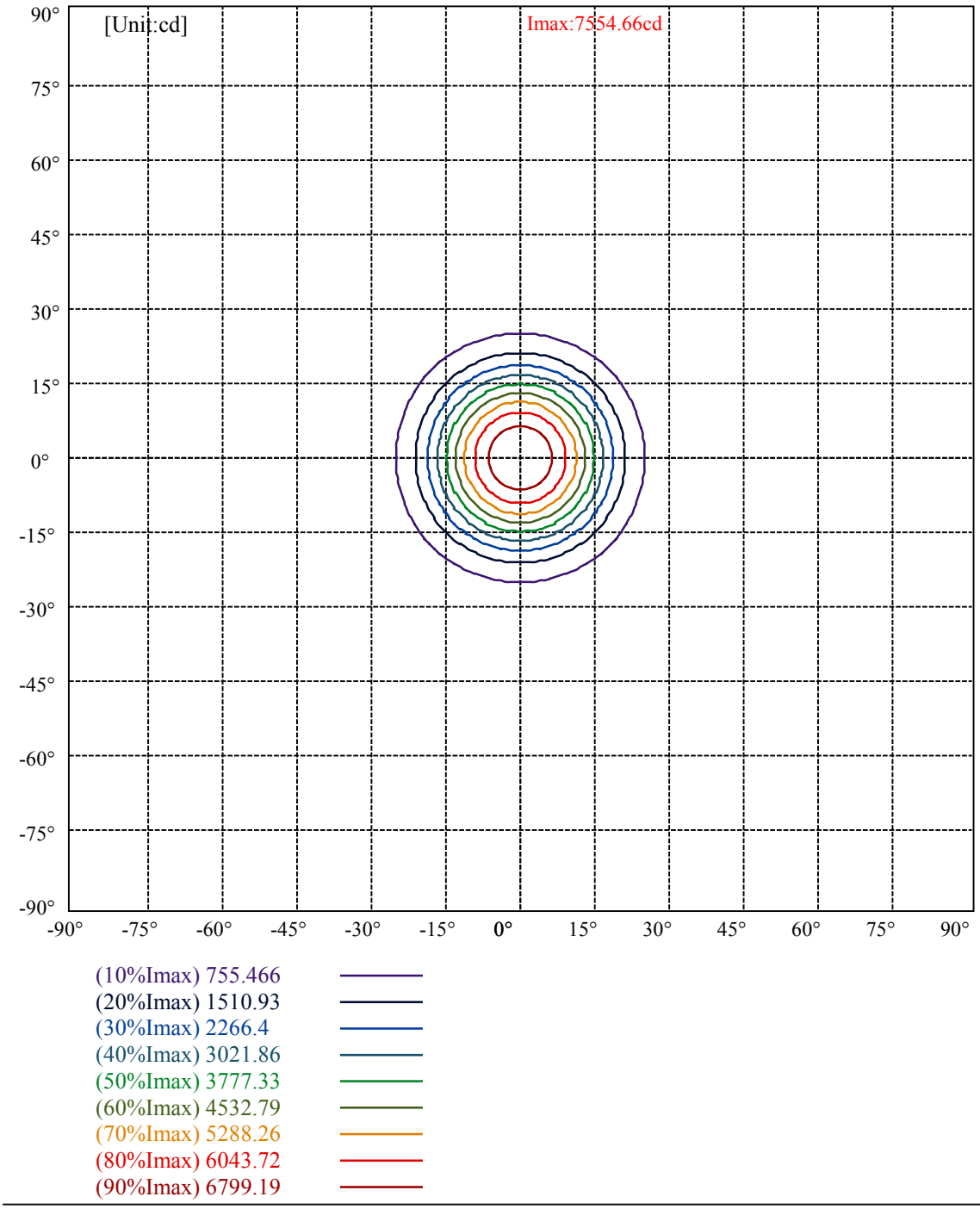
Field angle(10%Imax):C0/180Left:24.7 Right:24.7
:C90/270Left:24.7 Right:24.7

Beam Angle(50%Imax):C0/180Left:14.7 Right:14.7
:C90/270Left:14.7 Right:14.7

Lux distance Curve

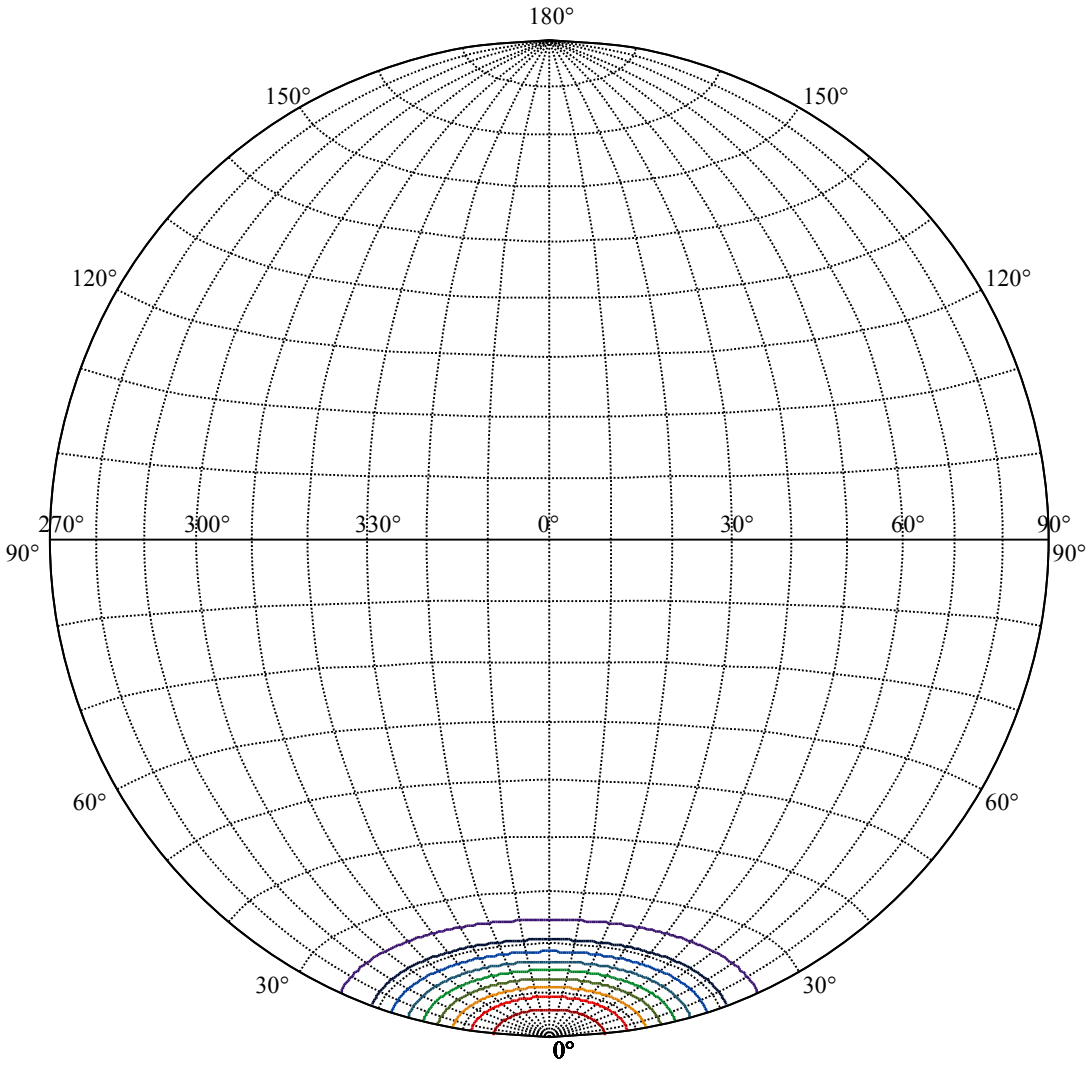


Equipment: GMS1980 Date: 2021/7/09 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50



Equipment: GMS1980
Temperature(°C): 25.0
Date: 2021/7/09
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



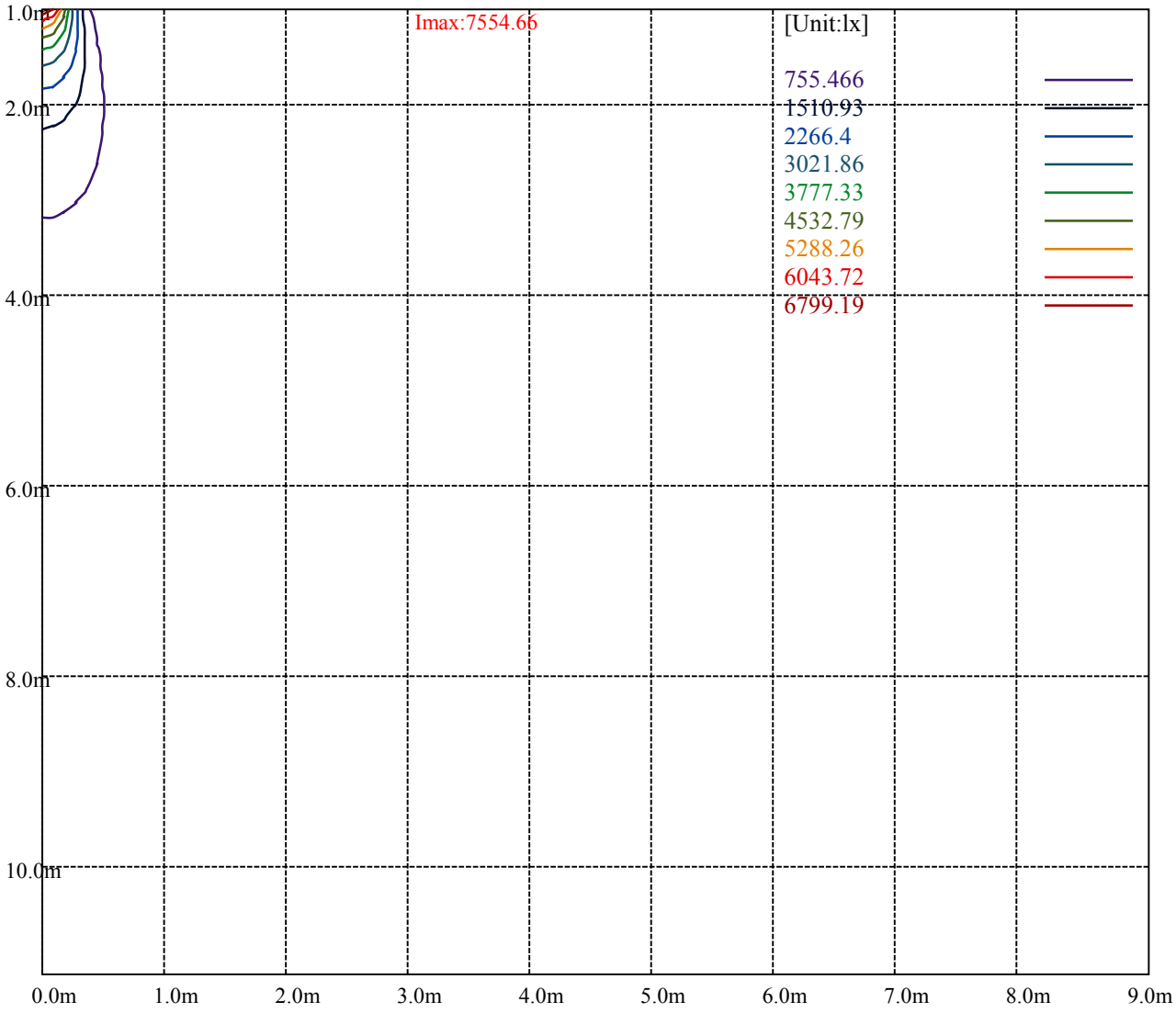
House [Unit:cd] Road

Imax:7554.66

(10%Imax) 755.466
(20%Imax) 1510.93
(30%Imax) 2266.4
(40%Imax) 3021.86
(50%Imax) 3777.33
(60%Imax) 4532.79
(70%Imax) 5288.26
(80%Imax) 6043.72
(90%Imax) 6799.19

Equipment: GMS1980 Date: 2021/7/09 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata LN01D05024DA-N

Luminance Limitting Curve(no luminous side)

Luminance Table

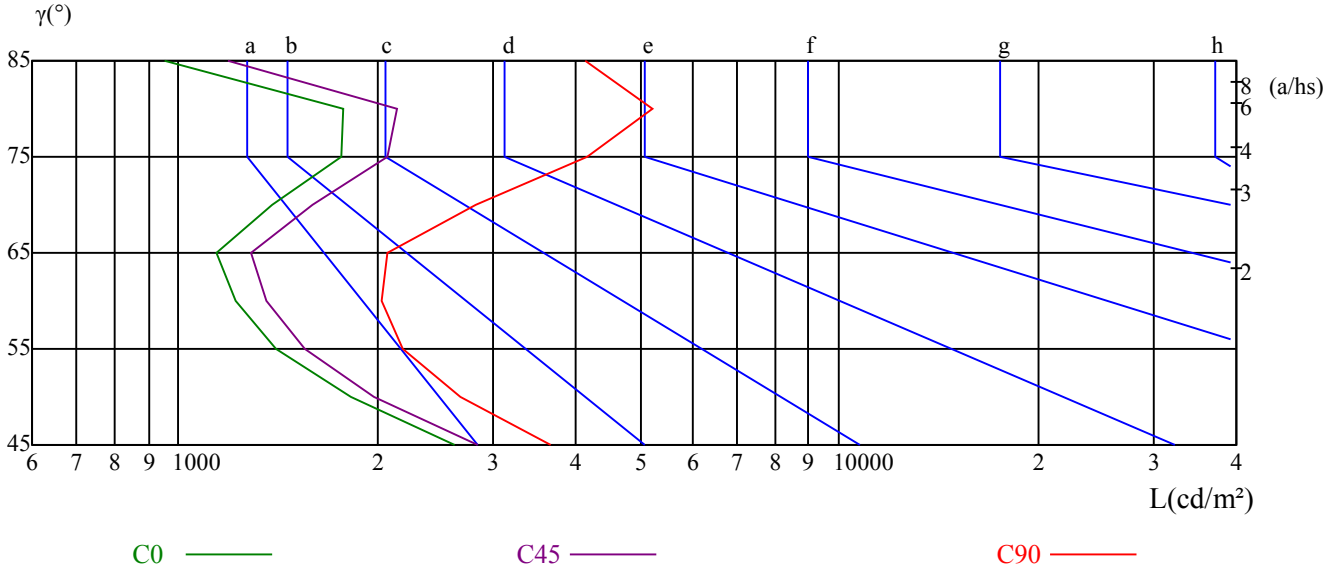
γ	45	50	55	60	65	70	75	80	85
C0	2623	1820	1407	1219	1138	1389	1768	1775	952
C45	2829	1982	1550	1359	1287	1597	2074	2138	1188
C90	3660	2672	2190	2033	2068	2814	4155	5212	4133

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2224	2224	2224	4699	4699	4699	5790	5790	5790

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

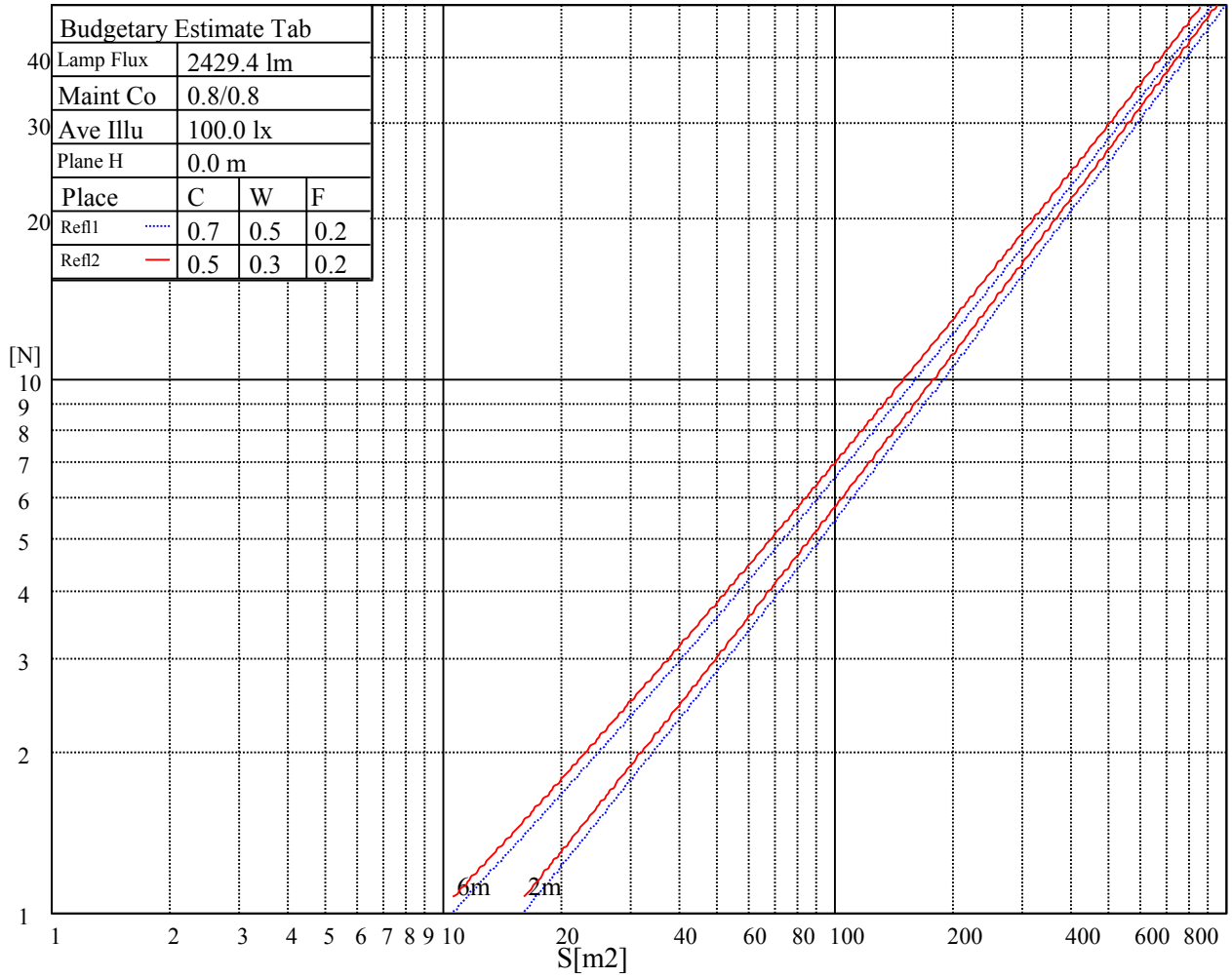


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/09
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

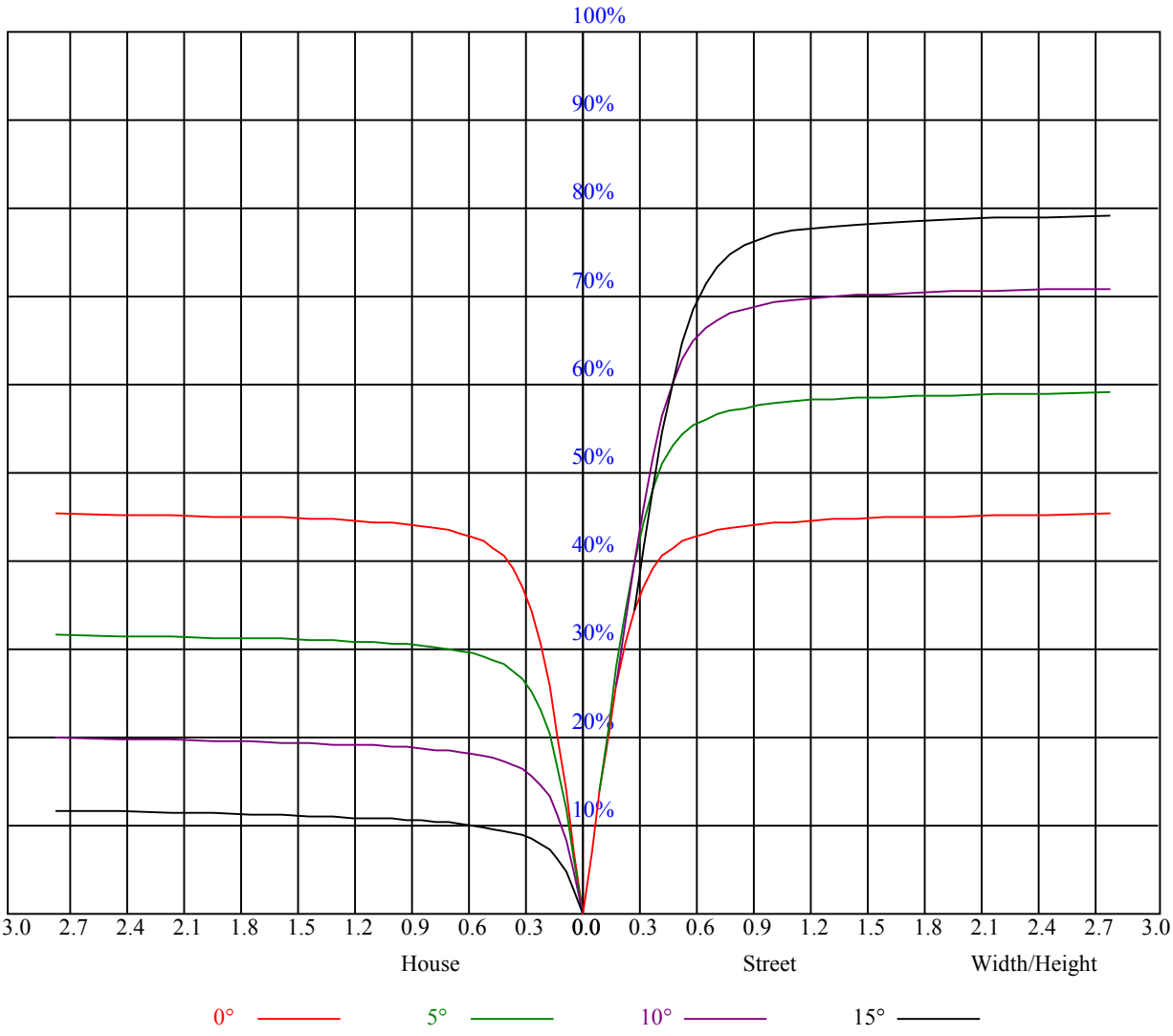


Equipment: GMS1980 Date: 2021/7/09 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.10	1.10	1.10	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.03	1.00	0.99	1.01	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.87
2	0.97	0.94	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.83
3	0.92	0.88	0.85	0.91	0.87	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.79
4	0.88	0.83	0.80	0.87	0.83	0.80	0.85	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.79	0.76	0.83	0.79	0.76	0.82	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.68
8	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
9	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.64	0.63
10	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

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/7/09	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	7537.50	7573.50	7575.19	7536.94	7466.06	7346.81	7187.06	7010.44	6806.81
45.0	7571.81	7557.75	7503.75	7421.06	7297.31	7158.38	6954.19	6715.69	6463.69
90.0	7538.63	7494.75	7415.44	7253.44	7123.50	6944.63	6702.75	6415.31	6132.38
135.0	7570.69	7515.00	7412.06	7277.63	7130.25	6914.81	6657.75	6391.13	6107.06
180.0	7537.50	7459.31	7349.06	7191.56	6989.63	6769.69	6520.50	6157.69	5830.31
225.0	7571.81	7551.56	7498.69	7393.50	7269.19	7112.25	6861.38	6633.56	6379.31
270.0	7538.63	7567.31	7552.13	7507.13	7394.63	7265.81	7135.31	6908.06	6684.75
315.0	7570.69	7588.69	7561.13	7493.06	7390.13	7268.06	7100.44	6868.13	6650.44
360.0	7537.50	7573.50	7575.19	7536.94	7466.06	7346.81	7187.06	7010.44	6806.81

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6504.75	6233.06	5931.00	5514.19	5144.06	4748.06	4278.94	3805.31	3386.81
45.0	6160.50	5805.56	5463.00	5092.88	4597.88	4190.06	3779.44	3328.88	2899.13
90.0	5780.81	5394.94	5022.56	4581.56	4177.13	3720.94	3273.75	2893.50	2528.44
135.0	5713.31	5356.69	4960.69	4562.44	4042.69	3630.94	3231.56	2760.19	2406.94
180.0	5475.94	4983.75	4566.38	4146.19	3673.69	3214.69	2827.13	2421.56	2089.13
225.0	6010.88	5673.38	5303.25	4809.38	4389.19	3967.31	3457.69	3114.56	2691.00
270.0	6437.25	6085.13	5767.31	5416.31	4933.69	4521.38	4103.44	3581.44	3173.63
315.0	6401.81	6043.50	5728.50	5372.44	4943.25	4482.56	4075.88	3613.50	3207.38
360.0	6504.75	6233.06	5931.00	5514.19	5144.06	4748.06	4278.94	3805.31	3386.81

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2942.44	2576.25	2200.50	1856.25	1582.31	1312.31	1079.44	900.56	748.69
45.0	2538.00	2159.44	1805.06	1556.44	1280.25	1083.38	891.56	729.00	608.06
90.0	2107.69	1808.44	1543.50	1104.08	1057.89	889.59	747.84	601.26	507.21
135.0	2078.44	1747.69	1446.19	1234.69	1010.25	832.50	700.88	583.31	490.50
180.0	1745.44	1447.31	1112.74	996.53	795.99	681.19	572.06	454.16	396.39
225.0	2306.81	1999.13	1720.69	1413.00	1120.39	1008.56	831.15	684.90	581.01
270.0	2790.56	2393.44	2039.06	1754.44	1468.69	1222.31	1036.13	853.88	719.44
315.0	2778.75	2386.69	2067.75	1743.19	1456.31	1106.27	1036.86	833.96	700.20
360.0	2942.44	2576.25	2200.50	1856.25	1582.31	1312.31	1079.44	900.56	748.69

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	594.00	497.25	420.19	352.13	300.38	286.31	236.36	203.68	184.39
45.0	514.69	421.31	359.44	312.75	284.06	232.43	207.79	183.60	165.32
90.0	430.03	360.68	305.72	266.96	232.14	204.24	183.71	164.03	149.18
135.0	411.19	348.19	303.75	285.75	228.32	206.94	185.29	165.49	150.13
180.0	342.45	294.41	256.28	228.77	203.57	182.98	167.51	152.10	139.95
225.0	496.01	410.46	356.01	311.68	271.24	238.61	213.69	190.13	169.93
270.0	592.88	495.56	425.81	370.69	315.56	286.88	244.07	207.84	185.23
315.0	589.84	487.80	407.03	350.83	300.60	260.72	231.64	204.47	183.83
360.0	594.00	497.25	420.19	352.13	300.38	286.31	236.36	203.68	184.39

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	169.71	151.26	136.97	126.96	114.53	105.81	97.93	88.99	82.46
45.0	149.79	135.06	124.20	113.01	102.60	94.84	86.63	79.26	73.41
90.0	134.72	122.29	112.39	102.26	93.09	85.73	78.92	71.27	65.81
135.0	137.19	124.82	114.19	105.86	96.75	89.55	82.58	75.83	70.82
180.0	128.03	117.17	108.51	99.56	91.41	84.66	78.41	71.44	66.32
225.0	154.52	139.28	127.63	115.71	105.47	97.26	89.83	81.28	75.09
270.0	167.29	150.08	135.45	124.03	112.95	104.18	95.51	87.81	81.62
315.0	164.31	147.66	134.89	122.01	110.98	102.32	94.39	85.61	79.31
360.0	169.71	151.26	136.97	126.96	114.53	105.81	97.93	88.99	82.46

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	76.56	69.75	64.86	60.24	54.96	51.13	47.48	44.04	41.06
45.0	68.01	61.99	57.60	53.66	50.12	46.07	43.14	40.67	37.63
90.0	60.81	55.80	51.13	47.59	43.88	40.56	38.19	35.78	33.92
135.0	64.97	60.02	56.08	52.43	48.21	45.45	42.69	40.05	37.74
180.0	61.54	57.15	52.31	48.77	45.62	42.19	39.77	37.63	35.61
225.0	69.30	62.94	58.22	54.11	49.95	46.01	43.26	40.39	38.08
270.0	75.09	68.68	63.17	57.60	50.96	46.63	43.14	39.77	37.07
315.0	73.46	66.77	61.93	57.49	52.65	49.11	45.84	42.36	40.22
360.0	76.56	69.75	64.86	60.24	54.96	51.13	47.48	44.04	41.06

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	38.70	36.45	34.54	33.02	31.56	30.38	29.14	28.01	27.11
45.0	35.78	34.20	32.68	31.28	30.15	29.03	27.96	27.06	26.10
90.0	32.18	30.77	29.70	28.69	27.56	26.83	26.10	25.43	24.98
135.0	35.94	34.20	32.63	31.33	29.98	28.86	27.79	26.78	25.93
180.0	33.86	32.46	31.11	29.98	28.91	27.90	27.06	26.16	25.31
225.0	36.11	34.20	32.74	31.33	30.04	28.91	27.96	26.78	25.93
270.0	34.88	32.91	31.22	29.87	28.58	27.56	26.55	25.65	25.03
315.0	37.80	35.55	34.09	32.63	30.83	29.81	28.74	27.45	26.72
360.0	38.70	36.45	34.54	33.02	31.56	30.38	29.14	28.01	27.11

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	26.27	25.37	24.64	24.02	23.34	22.78	22.22	21.66	21.15
45.0	25.31	24.58	23.85	23.23	22.73	22.05	21.49	21.09	20.42
90.0	24.64	24.47	25.59	28.63	33.98	39.09	43.88	49.33	54.00
135.0	25.09	24.24	23.57	22.95	22.22	21.66	21.09	20.42	19.80
180.0	24.64	24.02	23.23	22.73	22.11	21.54	20.87	20.31	19.69
225.0	25.09	24.24	23.51	22.89	22.22	21.66	21.09	20.53	20.03
270.0	24.58	24.24	24.08	24.58	27.39	31.50	36.96	41.91	48.43
315.0	25.93	25.09	24.36	23.68	23.06	22.50	21.94	21.32	20.87
360.0	26.27	25.37	24.64	24.02	23.34	22.78	22.22	21.66	21.15

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	20.64	20.08	19.52	18.96	18.28	17.72	17.21	16.65	16.14
45.0	19.97	19.63	19.29	19.13	19.01	18.68	18.28	17.66	16.31
90.0	59.06	63.62	67.61	71.10	74.19	75.04	71.89	62.66	52.82
135.0	19.24	18.62	18.06	17.44	16.88	16.37	15.75	15.13	14.63
180.0	19.07	18.56	17.94	17.38	16.82	16.26	15.75	15.30	14.68
225.0	19.52	18.96	18.45	17.83	16.82	16.31	15.92	15.47	15.24
270.0	53.89	58.78	64.41	69.19	72.96	76.61	79.31	80.27	77.18
315.0	20.25	19.69	19.13	18.56	17.94	17.38	16.88	16.31	15.69
360.0	20.64	20.08	19.52	18.96	18.28	17.72	17.21	16.65	16.14

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	15.69	15.13	14.63	14.12	13.67	13.28	12.15	11.53	10.97
45.0	15.47	14.63	13.84	13.11	12.15	11.42	10.86	10.35	10.01
90.0	41.51	28.80	18.68	14.18	11.64	10.97	10.35	10.01	9.73
135.0	14.01	13.50	13.05	12.54	11.53	10.74	10.24	9.84	9.73
180.0	14.23	13.78	13.28	12.94	11.81	11.03	10.46	10.35	10.41
225.0	14.96	14.12	13.56	12.88	12.26	11.59	10.74	10.18	9.90
270.0	68.46	55.41	40.73	28.80	17.55	13.39	11.42	10.74	10.24
315.0	15.13	14.51	13.95	13.44	12.94	11.98	11.14	10.69	10.18
360.0	15.69	15.13	14.63	14.12	13.67	13.28	12.15	11.53	10.97

Intensity data(cd)

C/γ(°)	90.0
0.0	10.58
45.0	9.79
90.0	9.68
135.0	9.68
180.0	10.58
225.0	9.90
270.0	9.96
315.0	9.84
360.0	10.58