



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

Nata

Client:

LumCAT: 2-1676-M	
Luminaire: 92.70.131.00	
Report No: nata-0100	Voltage(V): 220.4000
Test No: 2017051903	Current(A): 0.1210
LampCAT: BMTC MA-1919 30W	Power (W): 24.7000
Lamp flux(lm): 2655.0	PF: 0.9280
Number of Lamps: 1	Ballast type:
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2399.99, Efficiency(%): 90.40% , Luminous Efficacy(lm/W): 97.17
Central intensity(cd): 5378.185, Maximum intensity(cd): 5378.185
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=36.2
 [C90/270]Total=36.2
Field angle(10%Imax): [C0/180]Total=70.6
 [C90/270]Total=70.6
Maximum s/h(1/2): C0_180=0.60 C90_270=0.60
Maximum s/h(1/4): C0_180=0.58 C90_270=0.58
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.44%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.705%

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/19
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5378.184	1.287	1.287	.048%	.054%
1.0	5363.044	10.264	11.551	.387%	.481%
2.0	5317.485	20.351	31.901	.767%	1.329%
3.0	5248.251	30.121	62.022	1.134%	2.584%
4.0	5167.456	39.529	101.551	1.489%	4.231%
5.0	5077.576	48.529	150.08	1.828%	6.253%
6.0	4963.610	56.896	206.976	2.143%	8.624%
7.0	4840.146	64.685	271.662	2.436%	11.319%
8.0	4720.811	72.048	343.71	2.714%	14.321%
9.0	4578.077	78.536	422.246	2.958%	17.594%
10.0	4420.616	84.179	506.425	3.171%	21.101%
11.0	4258.613	89.108	595.533	3.356%	24.814%
12.0	4077.615	92.969	688.502	3.502%	28.688%
13.0	3871.015	95.491	783.993	3.597%	32.667%
14.0	3672.812	97.437	881.431	3.670%	36.726%
15.0	3463.048	98.289	979.72	3.702%	40.822%
16.0	3216.395	97.221	1076.941	3.662%	44.873%
17.0	2971.669	95.277	1172.218	3.589%	48.843%
18.0	2723.640	92.296	1264.514	3.476%	52.688%
19.0	2466.251	88.050	1352.564	3.316%	56.357%
20.0	2217.534	83.171	1435.736	3.133%	59.823%
21.0	1965.926	77.259	1512.995	2.910%	63.042%
22.0	1735.102	71.277	1584.272	2.685%	66.012%
23.0	1550.801	66.449	1650.721	2.503%	68.780%
24.0	1386.871	61.859	1712.579	2.330%	71.358%
25.0	1247.303	57.806	1770.385	2.177%	73.766%
26.0	1129.262	54.286	1824.671	2.045%	76.028%
27.0	1060.717	52.808	1877.479	1.989%	78.229%
28.0	990.506	50.994	1928.473	1.921%	80.353%
29.0	935.009	49.709	1978.182	1.872%	82.425%
30.0	888.927	48.740	2026.923	1.836%	84.455%
31.0	839.734	47.428	2074.35	1.786%	86.432%
32.0	784.567	45.592	2119.943	1.717%	88.331%
33.0	723.744	43.226	2163.169	1.628%	90.132%
34.0	643.334	39.450	2202.619	1.486%	91.776%
35.0	563.034	35.414	2238.033	1.334%	93.252%
36.0	480.794	30.991	2269.024	1.167%	94.543%
37.0	390.983	25.803	2294.827	.972%	95.618%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	305.425	20.620	2315.447	.777%	96.477%
39.0	245.373	16.934	2332.381	.638%	97.183%
40.0	144.358	10.176	2342.557	.383%	97.607%
41.0	83.342	5.996	2348.553	.226%	97.857%
42.0	39.820	2.922	2351.474	.110%	97.979%
43.0	21.568	1.613	2353.088	.061%	98.046%
44.0	18.816	1.433	2354.521	.054%	98.105%
45.0	16.228	1.258	2355.779	.047%	98.158%
46.0	14.163	1.117	2356.896	.042%	98.204%
47.0	13.379	1.073	2357.969	.040%	98.249%
48.0	11.342	0.924	2358.894	.035%	98.288%
49.0	11.039	0.914	2359.807	.034%	98.326%
50.0	10.887	0.915	2360.722	.034%	98.364%
51.0	10.791	0.920	2361.641	.035%	98.402%
52.0	10.653	0.921	2362.562	.035%	98.440%
53.0	10.571	0.926	2363.488	.035%	98.479%
54.0	10.461	0.928	2364.416	.035%	98.518%
55.0	10.406	0.935	2365.351	.035%	98.557%
56.0	10.309	0.937	2366.288	.035%	98.596%
57.0	10.240	0.942	2367.23	.035%	98.635%
58.0	10.172	0.946	2368.176	.036%	98.674%
59.0	10.144	0.954	2369.129	.036%	98.714%
60.0	10.089	0.958	2370.087	.036%	98.754%
61.0	10.020	0.961	2371.048	.036%	98.794%
62.0	9.993	0.968	2372.016	.036%	98.834%
63.0	9.951	0.972	2372.988	.037%	98.875%
64.0	9.910	0.977	2373.965	.037%	98.916%
65.0	9.869	0.981	2374.946	.037%	98.956%
66.0	9.855	0.987	2375.933	.037%	98.998%
67.0	9.814	0.991	2376.924	.037%	99.039%
68.0	9.773	0.994	2377.917	.037%	99.080%
69.0	9.759	0.999	2378.917	.038%	99.122%
70.0	9.731	1.003	2379.919	.038%	99.164%
71.0	9.704	1.006	2380.925	.038%	99.206%
72.0	9.704	1.012	2381.937	.038%	99.248%
73.0	9.662	1.013	2382.951	.038%	99.290%
74.0	9.635	1.016	2383.966	.038%	99.332%
75.0	9.621	1.019	2384.985	.038%	99.375%

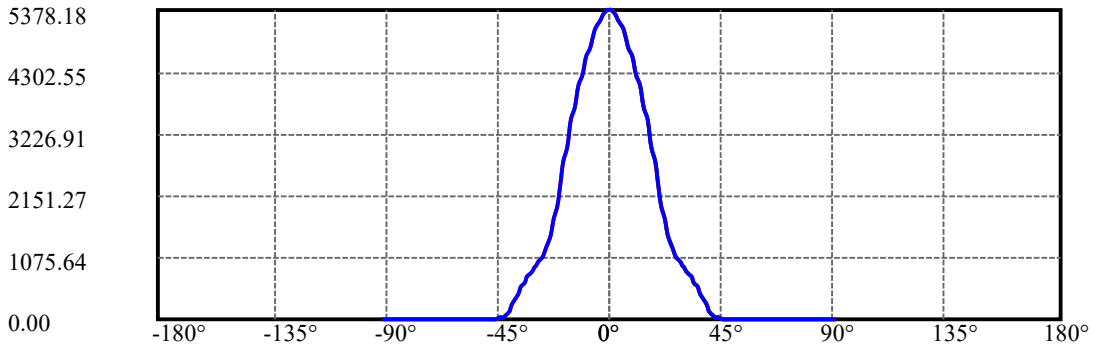
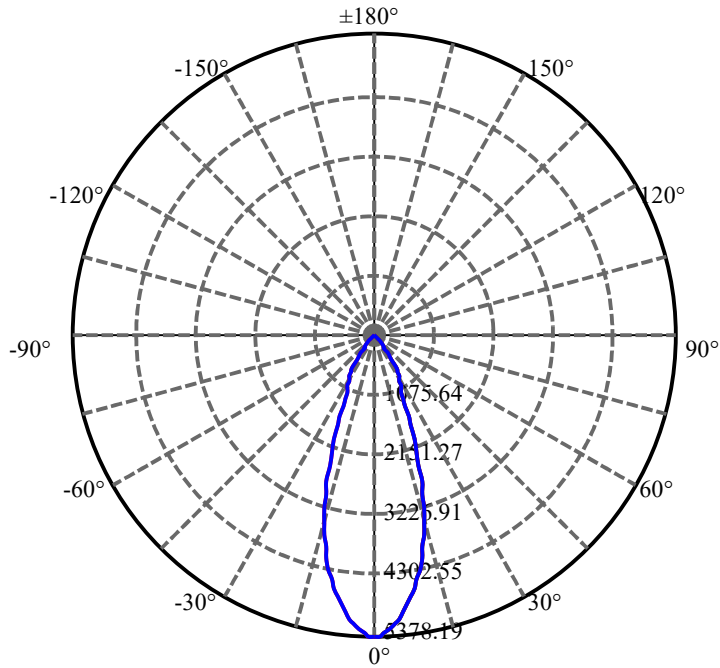
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.607	1.022	2386.008	.039%	99.417%
77.0	9.607	1.027	2387.034	.039%	99.460%
78.0	9.580	1.028	2388.062	.039%	99.503%
79.0	9.552	1.028	2389.09	.039%	99.546%
80.0	9.552	1.032	2390.122	.039%	99.589%
81.0	9.539	1.033	2391.155	.039%	99.632%
82.0	9.566	1.039	2392.194	.039%	99.675%
83.0	9.525	1.037	2393.23	.039%	99.718%
84.0	9.539	1.040	2394.271	.039%	99.762%
85.0	9.511	1.039	2395.31	.039%	99.805%
86.0	9.511	1.040	2396.35	.039%	99.848%
87.0	9.511	1.042	2397.392	.039%	99.892%
88.0	9.497	1.041	2398.433	.039%	99.935%
89.0	9.470	1.038	2399.471	.039%	99.978%
90.0	9.470	0.519	2399.99	.020%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2026.92	76.34%	84.46%
0-40	2342.56	88.23%	97.61%
0-60	2370.09	89.27%	98.75%
0-90	2399.47	90.38%	99.98%
0-120	2399.47	90.38%	99.98%
0-180	2399.99	90.40%	100.00%
60-90	30.34	1.14%	1.26%
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%
0-27.83	1919.99	72.32%	80.00%

ZONAL LUMEN SUMMARY

0-10	506.42
10-20	929.31
20-30	591.19
30-40	315.63
40-50	18.17
50-60	9.37
60-70	9.83
70-80	10.20
80-90	9.35
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



C0(Max): —————

C0/C180: —————

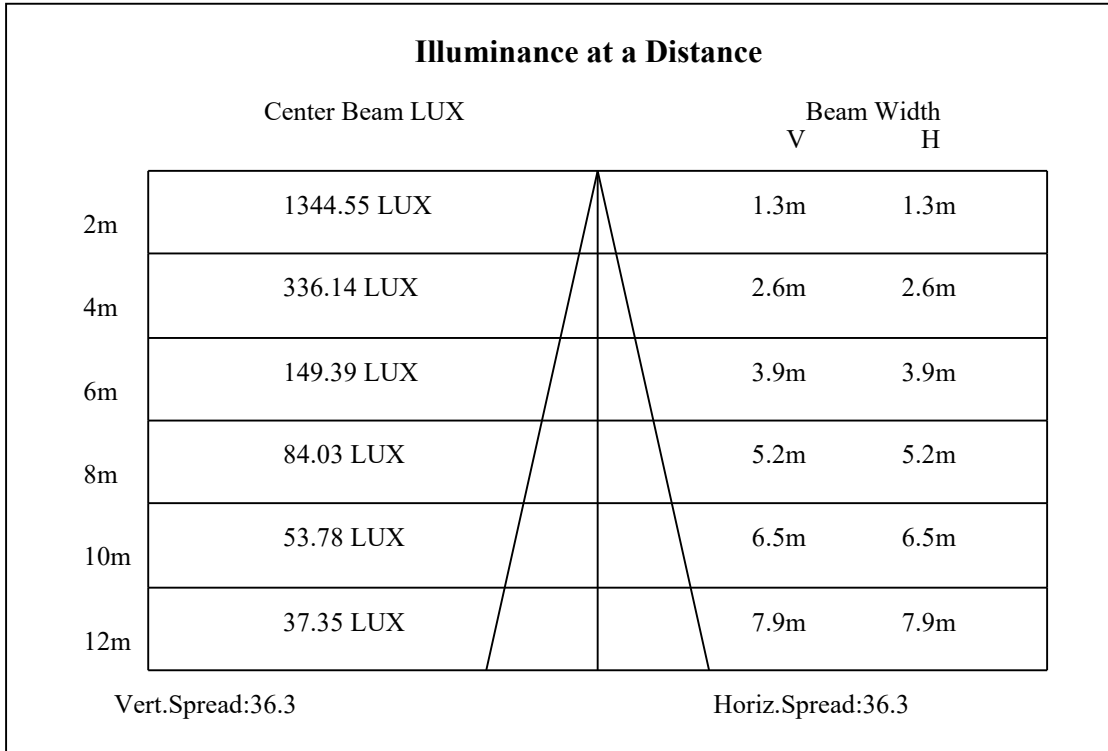
C90/C270: —————

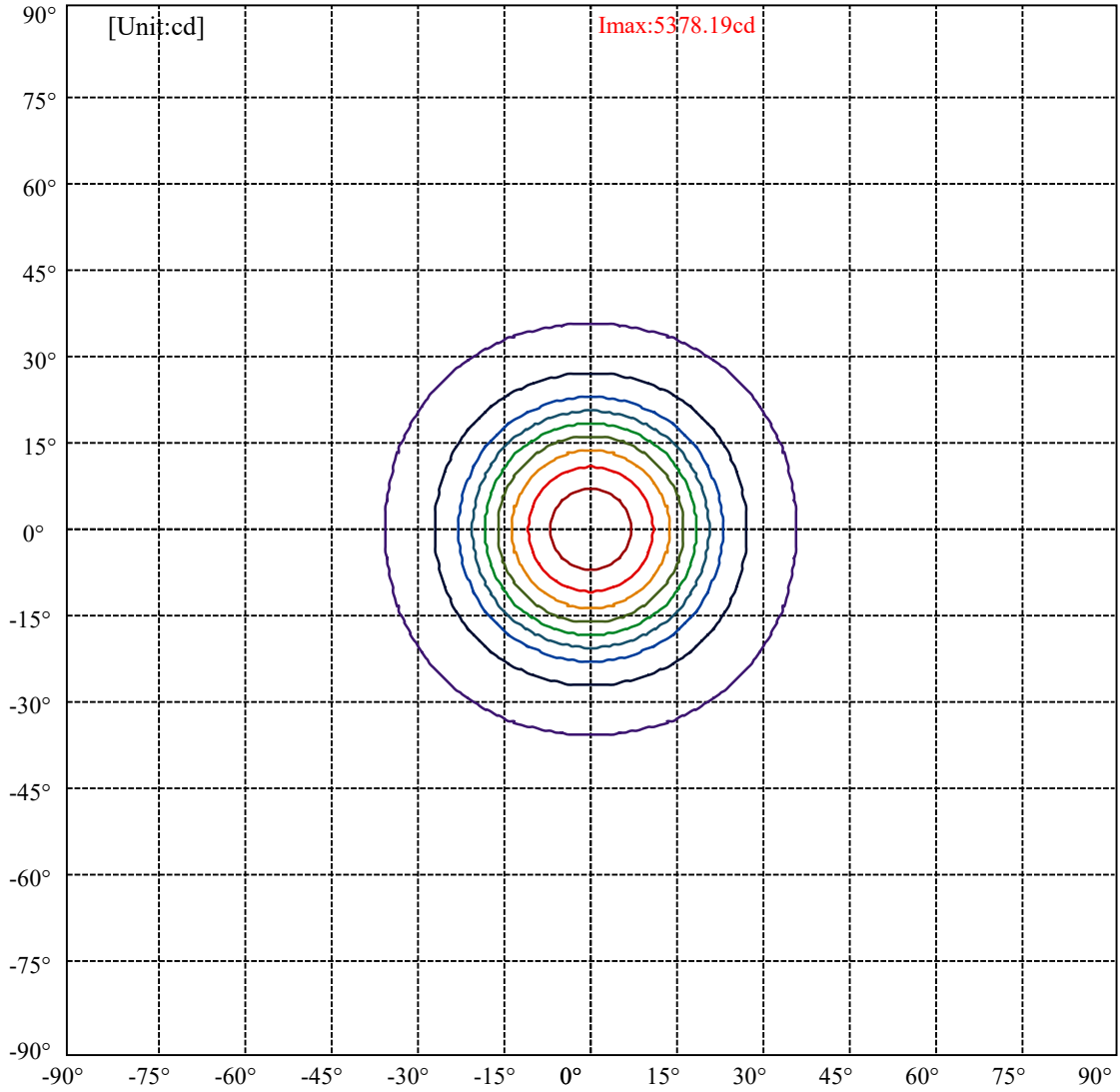
Field angle(10%Imax):C0/180Left:35.3 Right:35.3

:C90/270Left:35.3 Right:35.3

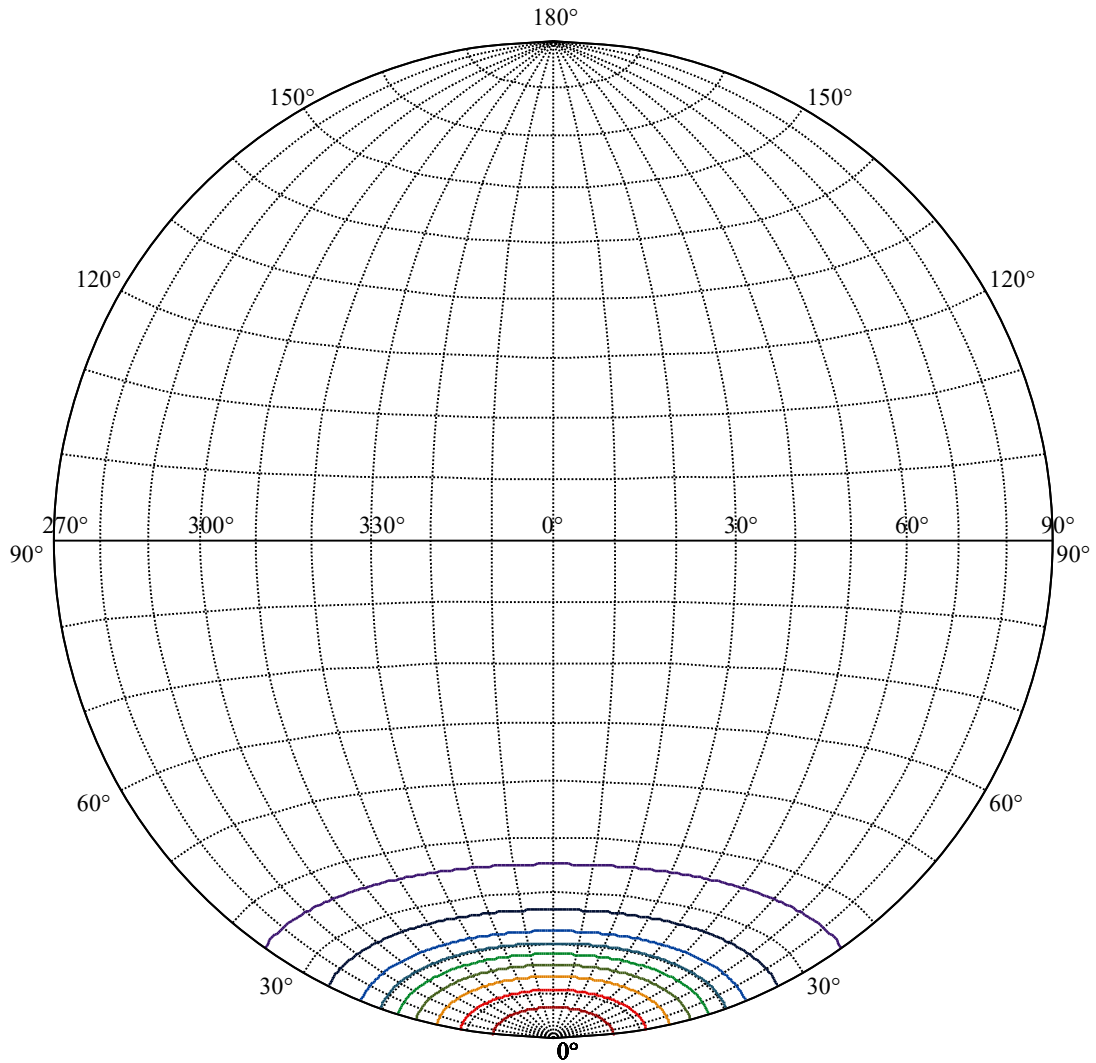
Beam Angle(50%Imax):C0/180Left:18.1 Right:18.1

:C90/270Left:18.1 Right:18.1





(10%Imax) 537.818	—
(20%Imax) 1075.64	—
(30%Imax) 1613.46	—
(40%Imax) 2151.27	—
(50%Imax) 2689.09	—
(60%Imax) 3226.91	—
(70%Imax) 3764.73	—
(80%Imax) 4302.55	—
(90%Imax) 4840.37	—



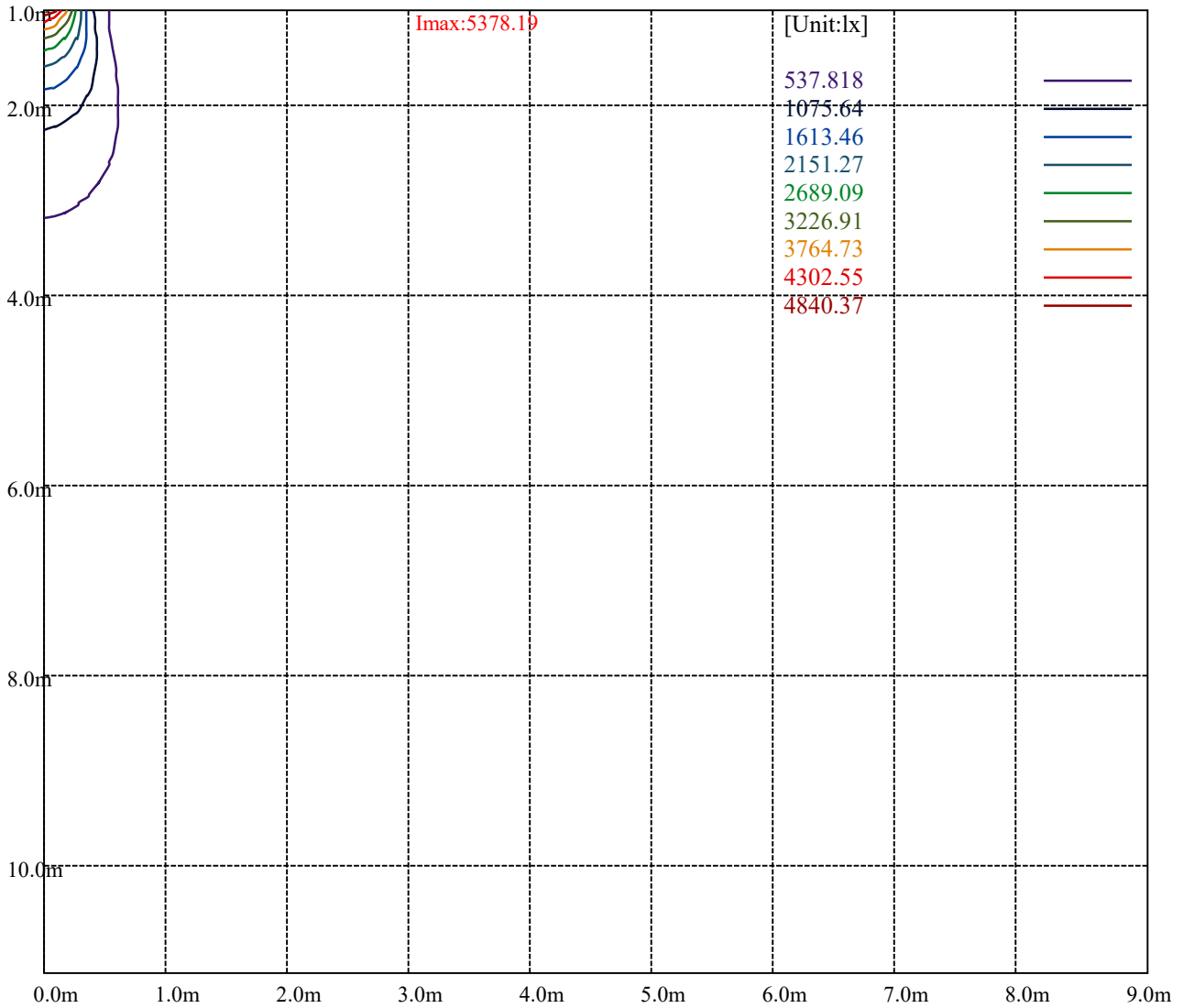
House

[Unit:cd]

Road

Imax:5378.19

(10%Imax)	537.818	—
(20%Imax)	1075.64	—
(30%Imax)	1613.46	—
(40%Imax)	2151.27	—
(50%Imax)	2689.09	—
(60%Imax)	3226.91	—
(70%Imax)	3764.73	—
(80%Imax)	4302.55	—
(90%Imax)	4840.37	—



Luminance Table

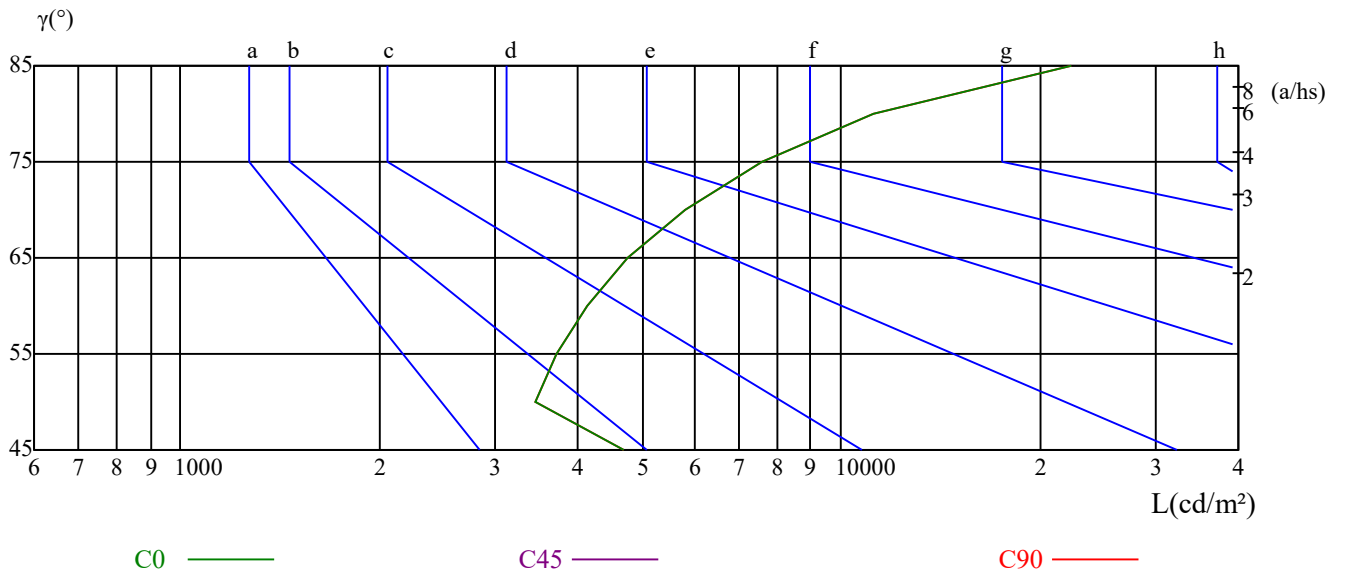
γ	45	50	55	60	65	70	75	80	85
C0	4684	3457	3702	4118	4766	5807	7586	11226	22271
C45	0	0	0	0	0	0	0	0	0
C90	4684	3457	3702	4118	4766	5807	7586	11226	22271

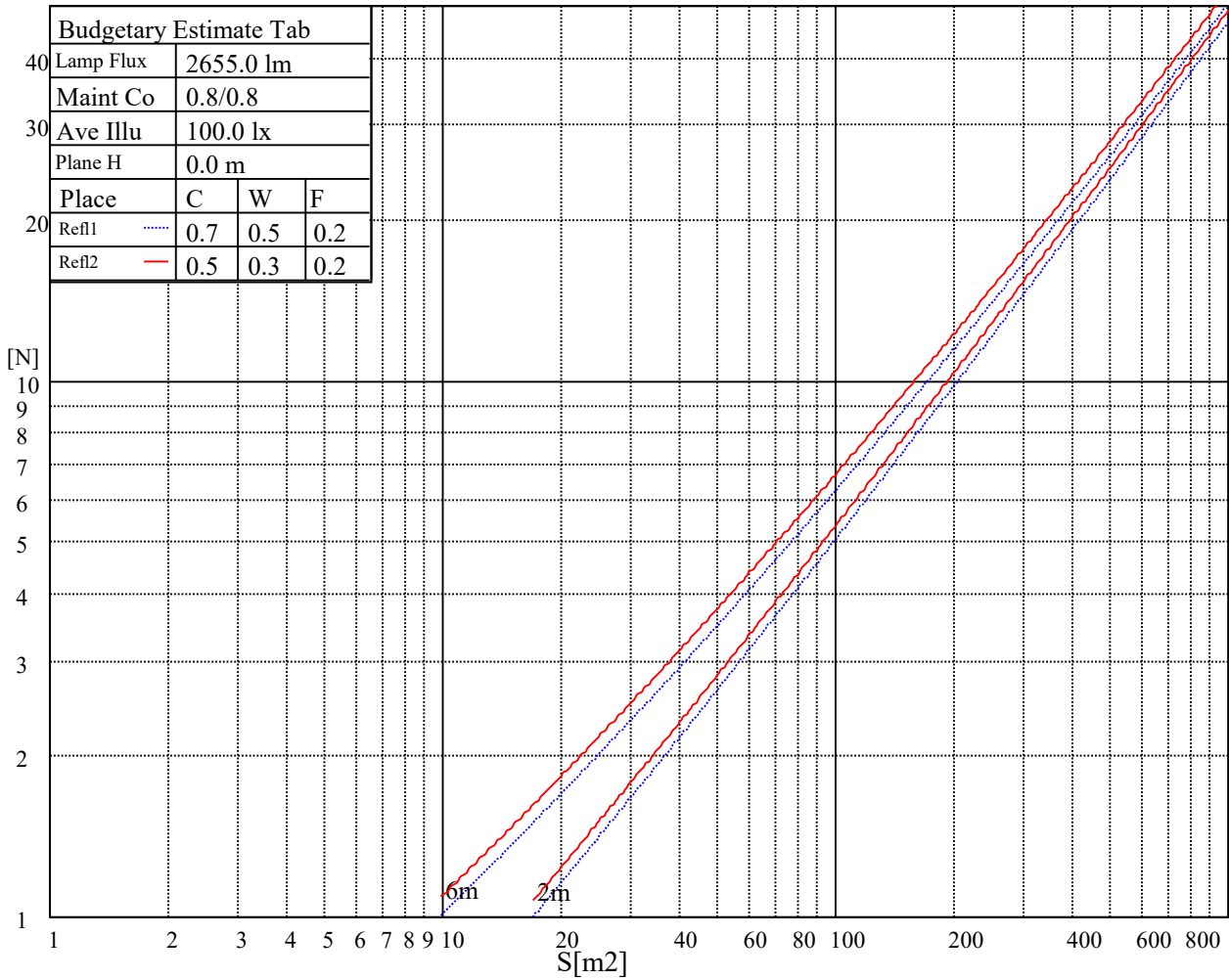
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4766	4766	0	7586	7586	0	22271	22271	0

Glare Table

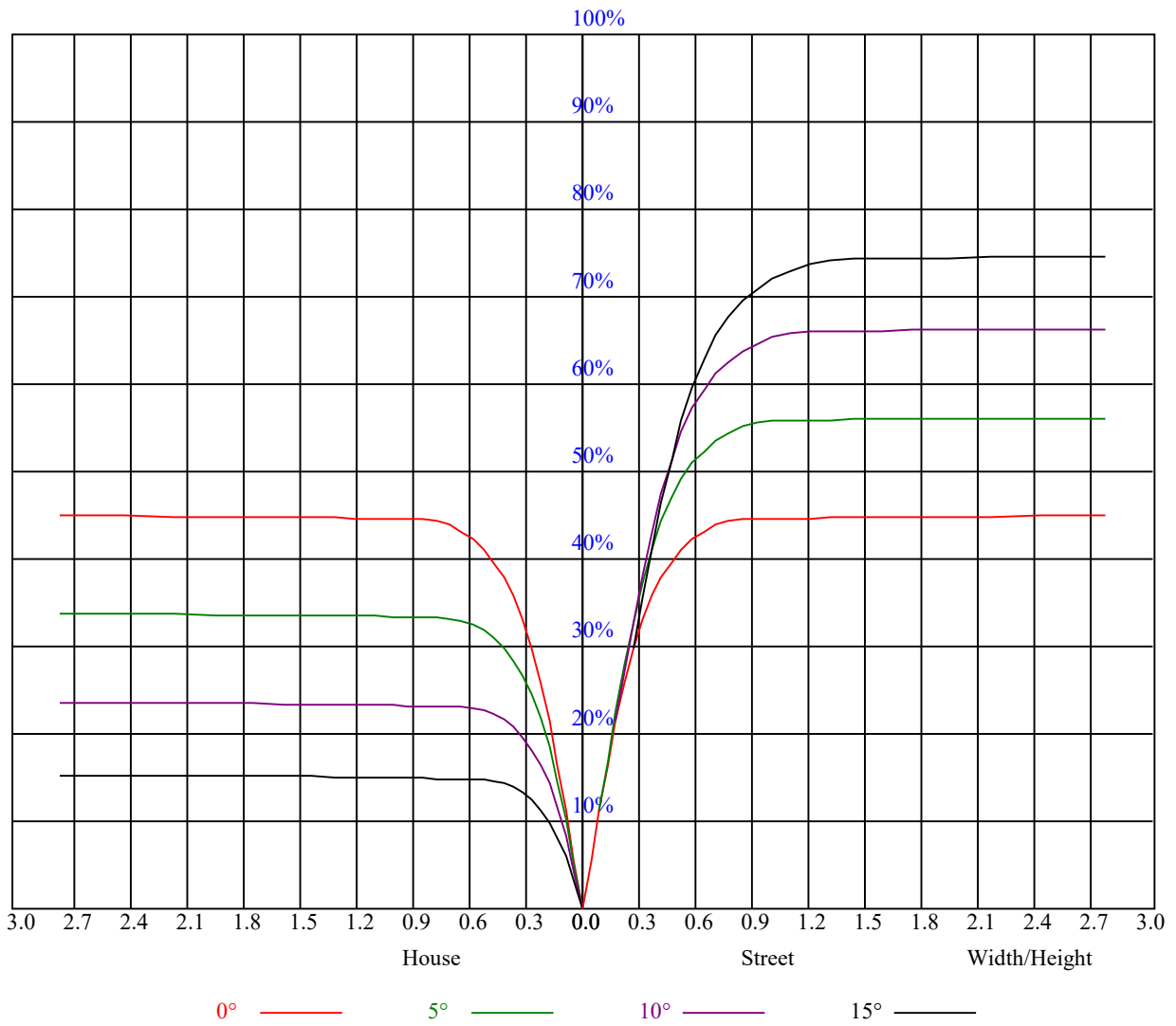
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

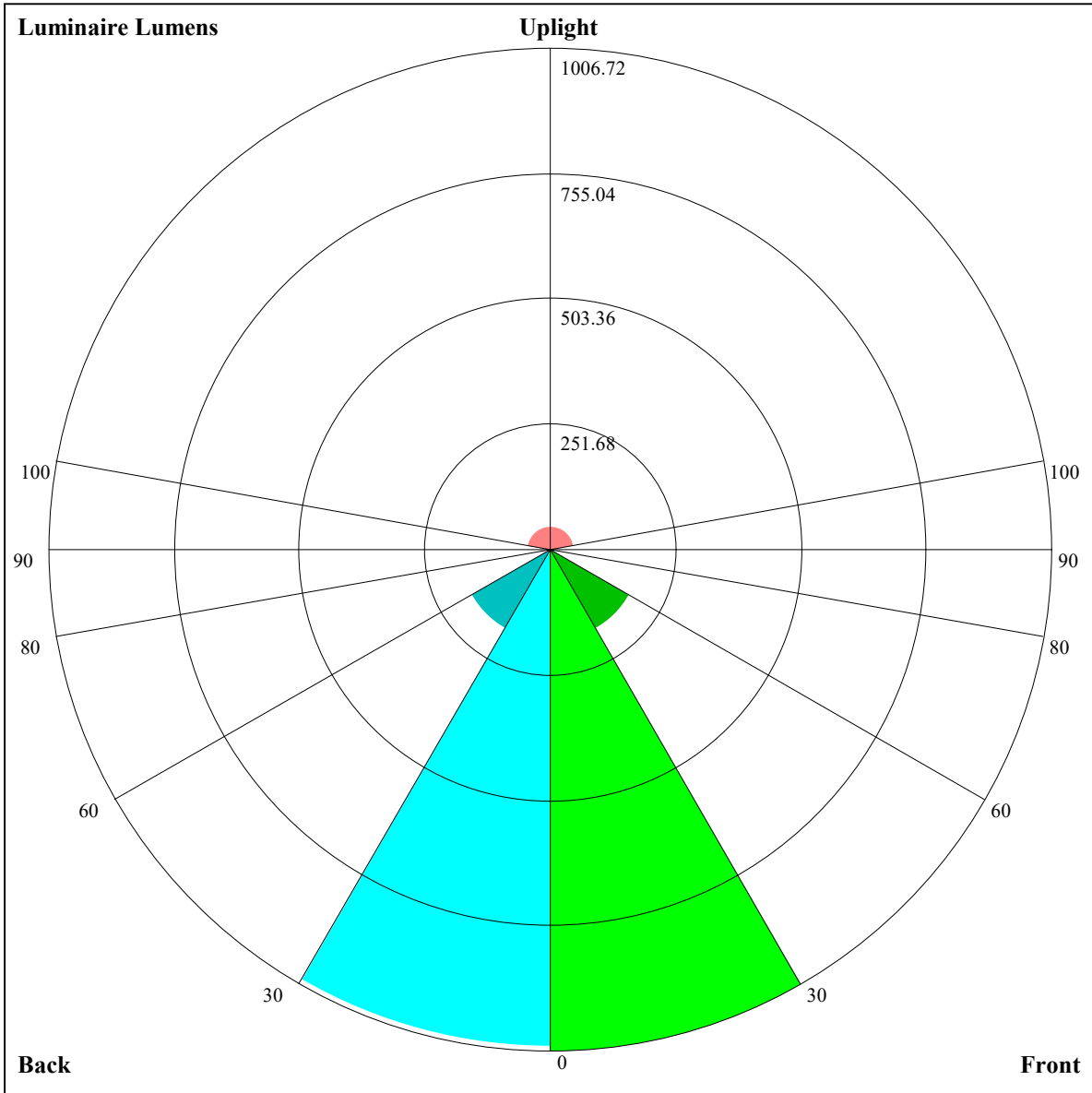
Luminance Limiting Curve





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	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	1.08	1.08	1.08	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	0.86
2	0.95	0.92	0.89	0.93	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.83	0.81
3	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	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	0.76	0.81	0.78	0.75	0.79	0.77	0.75	0.73
5	0.81	0.77	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
6	0.77	0.73	0.69	0.77	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
8	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.68	0.64	0.62	0.61
9	0.68	0.63	0.60	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.58
10	0.65	0.61	0.58	0.65	0.60	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.56





Luminaire Lumens:

FL=1006.72,FM=184.74,FH=9.99,FVH=5.19

BL=999.12,BM=182.07,BH=9.97,BVH=5.18

UL=10.33,UH=49.17

BUG Rating:B2-U2-G0

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	5379.56	5380.11	5341.02	5273.85	5184.66	5101.53	4984.26	4859.28	4739.25
90.0	5378.46	5365.25	5331.66	5277.71	5201.18	5111.44	5004.08	4895.62	4780.55
180.0	5379.56	5355.89	5293.12	5219.90	5141.72	5044.82	4913.23	4798.17	4675.94
270.0	5375.16	5350.93	5304.13	5221.55	5142.27	5052.53	4952.87	4807.52	4687.50
360.0	5379.56	5380.11	5341.02	5273.85	5184.66	5101.53	4984.26	4859.28	4739.25
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4593.91	4443.05	4288.89	4118.77	3897.44	3704.19	3499.94	3251.08	2991.76
90.0	4637.95	4482.69	4326.88	4134.19	3936.53	3743.84	3541.78	3266.50	3034.16
180.0	4518.48	4356.06	4196.95	4009.76	3810.45	3619.96	3397.53	3186.11	2924.60
270.0	4561.97	4400.66	4221.72	4047.75	3839.63	3623.26	3412.95	3161.89	2936.16
360.0	4593.91	4443.05	4288.89	4118.77	3897.44	3704.19	3499.94	3251.08	2991.76
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2760.53	2497.36	2229.78	1999.10	1762.91	1582.87	1409.44	1268.50	1166.09
90.0	2797.97	2525.99	2263.92	2034.33	1781.07	1567.46	1407.24	1262.99	1157.29
180.0	2664.18	2429.09	2194.55	1910.46	1708.40	1538.28	1358.24	1235.47	1096.56
270.0	2671.89	2412.57	2181.89	1919.82	1688.03	1514.60	1372.56	1222.25	1097.11
360.0	2760.53	2497.36	2229.78	1999.10	1762.91	1582.87	1409.44	1268.50	1166.09
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1075.80	1007.53	946.97	901.82	850.62	797.77	735.00	665.08	572.59
90.0	1064.79	994.87	942.02	898.52	839.06	790.06	740.51	648.56	579.19
180.0	1051.52	980.11	926.98	874.19	832.40	772.22	708.03	628.85	547.76
270.0	1050.75	979.51	924.07	881.18	836.86	778.22	711.44	630.84	552.60
360.0	1075.80	1007.53	946.97	901.82	850.62	797.77	735.00	665.08	572.59
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	492.20	407.42	315.47	284.09	154.32	87.10	39.92	22.90	19.60
90.0	507.07	405.77	314.37	284.64	153.28	91.56	42.34	21.75	18.88
180.0	461.32	380.33	302.31	209.43	140.89	81.70	40.25	20.98	18.55
270.0	462.58	370.42	289.54	203.32	128.94	73.00	36.78	20.65	18.22
360.0	492.20	407.42	315.47	284.09	154.32	87.10	39.92	22.90	19.60
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	16.96	14.76	14.09	11.62	11.29	11.07	10.96	10.85	10.74
90.0	16.19	14.20	13.60	11.45	10.90	10.79	10.68	10.57	10.52
180.0	16.02	13.82	12.99	11.18	11.07	10.90	10.85	10.68	10.57
270.0	15.75	13.87	12.83	11.12	10.90	10.79	10.68	10.52	10.46
360.0	16.96	14.76	14.09	11.62	11.29	11.07	10.96	10.85	10.74
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.63	10.57	10.46	10.35	10.30	10.24	10.19	10.13	10.08
90.0	10.41	10.35	10.24	10.19	10.13	10.13	10.08	9.97	9.97
180.0	10.52	10.46	10.35	10.30	10.24	10.19	10.13	10.08	10.02
270.0	10.30	10.24	10.19	10.13	10.02	10.02	9.97	9.91	9.91
360.0	10.63	10.57	10.46	10.35	10.30	10.24	10.19	10.13	10.08
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.02	9.97	9.97	9.91	9.91	9.86	9.80	9.80	9.74
90.0	9.91	9.91	9.86	9.86	9.80	9.74	9.74	9.69	9.69
180.0	10.02	9.97	9.91	9.91	9.86	9.80	9.80	9.80	9.74
270.0	9.86	9.80	9.74	9.74	9.69	9.69	9.69	9.63	9.63
360.0	10.02	9.97	9.97	9.91	9.91	9.86	9.80	9.80	9.74

Nata 2-1676-M

Intensity data(cd)

C/ γ ($^{\circ}$)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.74	9.74	9.69	9.69	9.69	9.69	9.63	9.63	9.63
90.0	9.69	9.63	9.63	9.58	9.58	9.58	9.58	9.52	9.52
180.0	9.74	9.69	9.63	9.63	9.63	9.63	9.58	9.58	9.58
270.0	9.63	9.58	9.58	9.58	9.52	9.52	9.52	9.47	9.47
360.0	9.74	9.74	9.69	9.69	9.69	9.69	9.63	9.63	9.63
C/ γ ($^{\circ}$)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.58	9.63	9.58	9.58	9.58	9.58	9.58	9.52	9.52
90.0	9.52	9.52	9.47	9.52	9.47	9.47	9.47	9.47	9.41
180.0	9.58	9.58	9.58	9.58	9.52	9.52	9.52	9.52	9.52
270.0	9.47	9.52	9.47	9.47	9.47	9.47	9.47	9.47	9.41
360.0	9.58	9.63	9.58	9.58	9.58	9.58	9.58	9.52	9.52
C/ γ ($^{\circ}$)	90.0								
0.0	9.52								
90.0	9.41								
180.0	9.52								
270.0	9.41								
360.0	9.52								