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Nata

LumCAT: 2-1672-M	
Luminaire: 92.70.131.00	
Report No: NT2017051902	Voltage(V): 220.4000
Test No: GC2017051902	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: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2408.19
Efficiency(%): 90.70%
Lumens(lm)/Power(W): 97.50
Central intensity(cd): 7712.026
Maximum intensity(cd): 7712.026
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=27.8
 [C90/270]Total=27.8
Field angle(10%Imax): [C0/180]Total=63.6
 [C90/270]Total=63.6
Maximum s/h(1/2): C0_180=0.47 C90_270=0.47
Maximum s/h(1/4): C0_180=0.44 C90_270=0.44
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.70%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.774%

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	7712.025	0.000	0	.000%	.000%
1.0	7705.281	7.377	7.377	.278%	.306%
2.0	7672.385	22.071	29.448	.831%	1.223%
3.0	7594.205	36.513	65.961	1.375%	2.739%
4.0	7511.620	50.564	116.525	1.904%	4.839%
5.0	7385.403	64.086	180.611	2.414%	7.500%
6.0	7217.068	76.740	257.351	2.890%	10.687%
7.0	7002.073	88.258	345.609	3.324%	14.351%
8.0	6737.802	98.334	443.943	3.704%	18.435%
9.0	6380.899	106.320	550.263	4.005%	22.850%
10.0	5962.883	111.707	661.969	4.207%	27.488%
11.0	5499.446	114.532	776.502	4.314%	32.244%
12.0	4946.955	114.194	890.696	4.301%	36.986%
13.0	4364.596	110.505	1001.2	4.162%	41.575%
14.0	3791.046	104.392	1105.592	3.932%	45.910%
15.0	3233.462	96.436	1202.028	3.632%	49.914%
16.0	2729.834	87.379	1289.407	3.291%	53.543%
17.0	2260.753	77.717	1367.123	2.927%	56.770%
18.0	1891.876	68.468	1435.591	2.579%	59.613%
19.0	1616.594	61.040	1496.631	2.299%	62.148%
20.0	1394.303	55.108	1551.739	2.076%	64.436%
21.0	1232.699	50.444	1602.183	1.900%	66.531%
22.0	1107.074	47.019	1649.202	1.771%	68.483%
23.0	1045.755	45.172	1694.374	1.701%	70.359%
24.0	986.446	44.431	1738.805	1.673%	72.204%
25.0	938.120	43.760	1782.565	1.648%	74.021%
26.0	903.448	43.470	1826.036	1.637%	75.826%
27.0	873.250	43.467	1869.503	1.637%	77.631%
28.0	850.539	43.643	1913.146	1.644%	79.443%
29.0	833.939	44.071	1957.217	1.660%	81.273%
30.0	818.468	44.615	2001.831	1.680%	83.126%
31.0	798.029	44.985	2046.816	1.694%	84.994%
32.0	765.408	44.791	2091.607	1.687%	86.854%
33.0	720.895	43.787	2135.394	1.649%	88.672%
34.0	659.218	41.766	2177.16	1.573%	90.407%
35.0	582.221	38.555	2215.714	1.452%	92.008%
36.0	500.201	34.465	2250.179	1.298%	93.439%
37.0	417.864	29.942	2280.121	1.128%	94.682%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	333.408	25.076	2305.198	.944%	95.723%
39.0	255.324	20.095	2325.293	.757%	96.558%
40.0	178.039	15.114	2340.407	.569%	97.185%
41.0	111.462	10.309	2350.716	.388%	97.613%
42.0	61.443	6.282	2356.998	.237%	97.874%
43.0	33.777	3.527	2360.525	.133%	98.021%
44.0	21.830	2.099	2362.624	.079%	98.108%
45.0	18.003	1.531	2364.154	.058%	98.172%
46.0	16.269	1.340	2365.495	.050%	98.227%
47.0	13.957	1.202	2366.697	.045%	98.277%
48.0	12.677	1.077	2367.774	.041%	98.322%
49.0	11.273	0.984	2368.757	.037%	98.363%
50.0	10.516	0.908	2369.666	.034%	98.400%
51.0	10.378	0.884	2370.55	.033%	98.437%
52.0	10.268	0.886	2371.436	.033%	98.474%
53.0	10.185	0.890	2372.325	.034%	98.511%
54.0	10.089	0.894	2373.219	.034%	98.548%
55.0	10.034	0.898	2374.117	.034%	98.585%
56.0	9.965	0.904	2375.021	.034%	98.623%
57.0	9.869	0.907	2375.928	.034%	98.660%
58.0	9.800	0.910	2376.837	.034%	98.698%
59.0	9.731	0.913	2377.75	.034%	98.736%
60.0	9.704	0.918	2378.669	.035%	98.774%
61.0	9.662	0.924	2379.593	.035%	98.813%
62.0	9.607	0.929	2380.521	.035%	98.851%
63.0	9.580	0.933	2381.454	.035%	98.890%
64.0	9.525	0.937	2382.392	.035%	98.929%
65.0	9.511	0.942	2383.334	.035%	98.968%
66.0	9.470	0.947	2384.281	.036%	99.007%
67.0	9.456	0.952	2385.233	.036%	99.047%
68.0	9.415	0.956	2386.189	.036%	99.086%
69.0	9.401	0.960	2387.148	.036%	99.126%
70.0	9.373	0.964	2388.113	.036%	99.166%
71.0	9.346	0.968	2389.08	.036%	99.207%
72.0	9.332	0.971	2390.051	.037%	99.247%
73.0	9.332	0.976	2391.027	.037%	99.287%
74.0	9.332	0.981	2392.009	.037%	99.328%
75.0	9.277	0.983	2392.992	.037%	99.369%

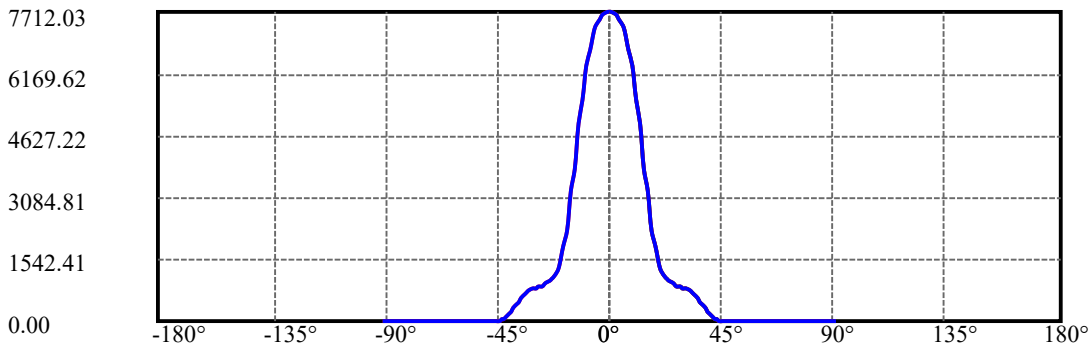
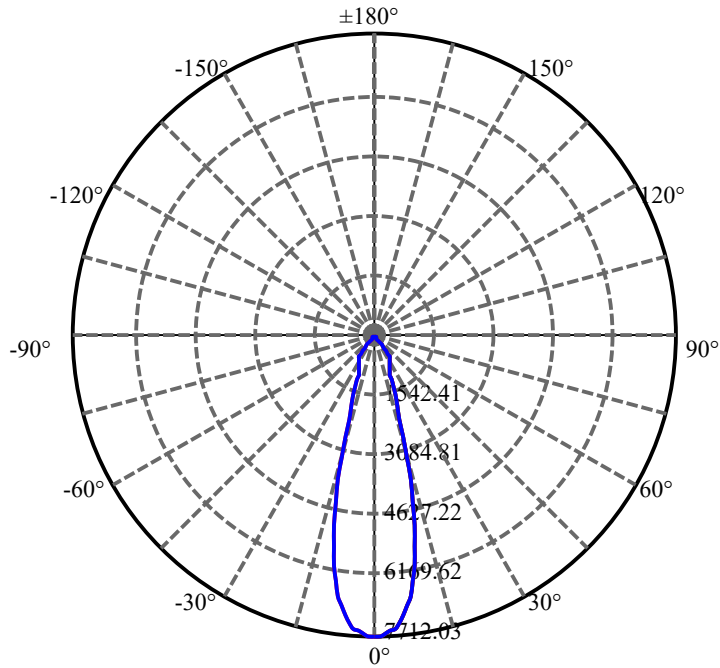
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.277	0.985	2393.977	.037%	99.410%
77.0	9.249	0.988	2394.964	.037%	99.451%
78.0	9.249	0.990	2395.955	.037%	99.492%
79.0	9.277	0.995	2396.95	.037%	99.533%
80.0	9.525	1.014	2397.964	.038%	99.575%
81.0	9.800	1.045	2399.009	.039%	99.619%
82.0	9.841	1.065	2400.074	.040%	99.663%
83.0	9.442	1.048	2401.122	.039%	99.707%
84.0	9.277	1.020	2402.142	.038%	99.749%
85.0	9.208	1.009	2403.151	.038%	99.791%
86.0	9.208	1.007	2404.158	.038%	99.833%
87.0	9.208	1.008	2405.165	.038%	99.874%
88.0	9.194	1.008	2406.173	.038%	99.916%
89.0	9.181	1.007	2407.181	.038%	99.958%
90.0	9.194	1.007	2408.188	.038%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2001.83	75.40%	83.13%
0-40	2340.41	88.15%	97.19%
0-60	2378.67	89.59%	98.77%
0-90	2407.18	90.67%	99.96%
0-120	2407.18	90.67%	99.96%
0-180	2408.19	90.70%	100.00%
60-90	29.43	1.11%	1.22%
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%
0-28.30	1926.55	72.56%	80.00%

ZONAL LUMEN SUMMARY

0-10	661.97
10-20	889.77
20-30	450.09
30-40	338.58
40-50	29.26
50-60	9.00
60-70	9.44
70-80	9.85
80-90	9.22
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: —————

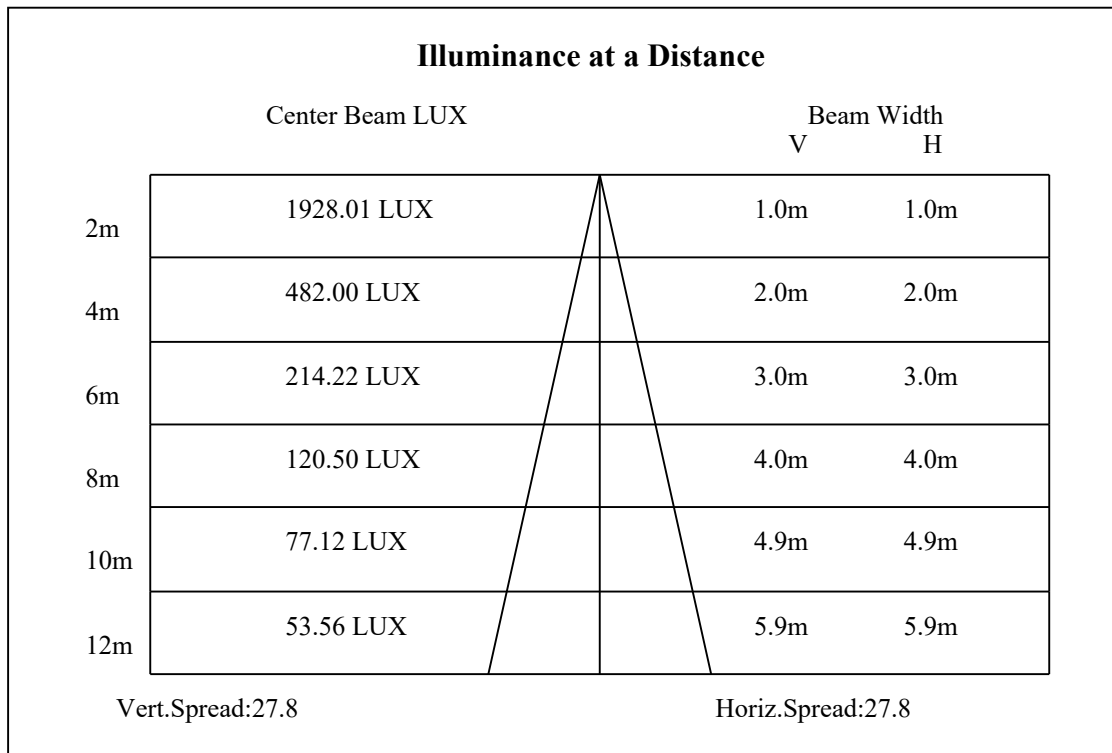
C90/C270: —————

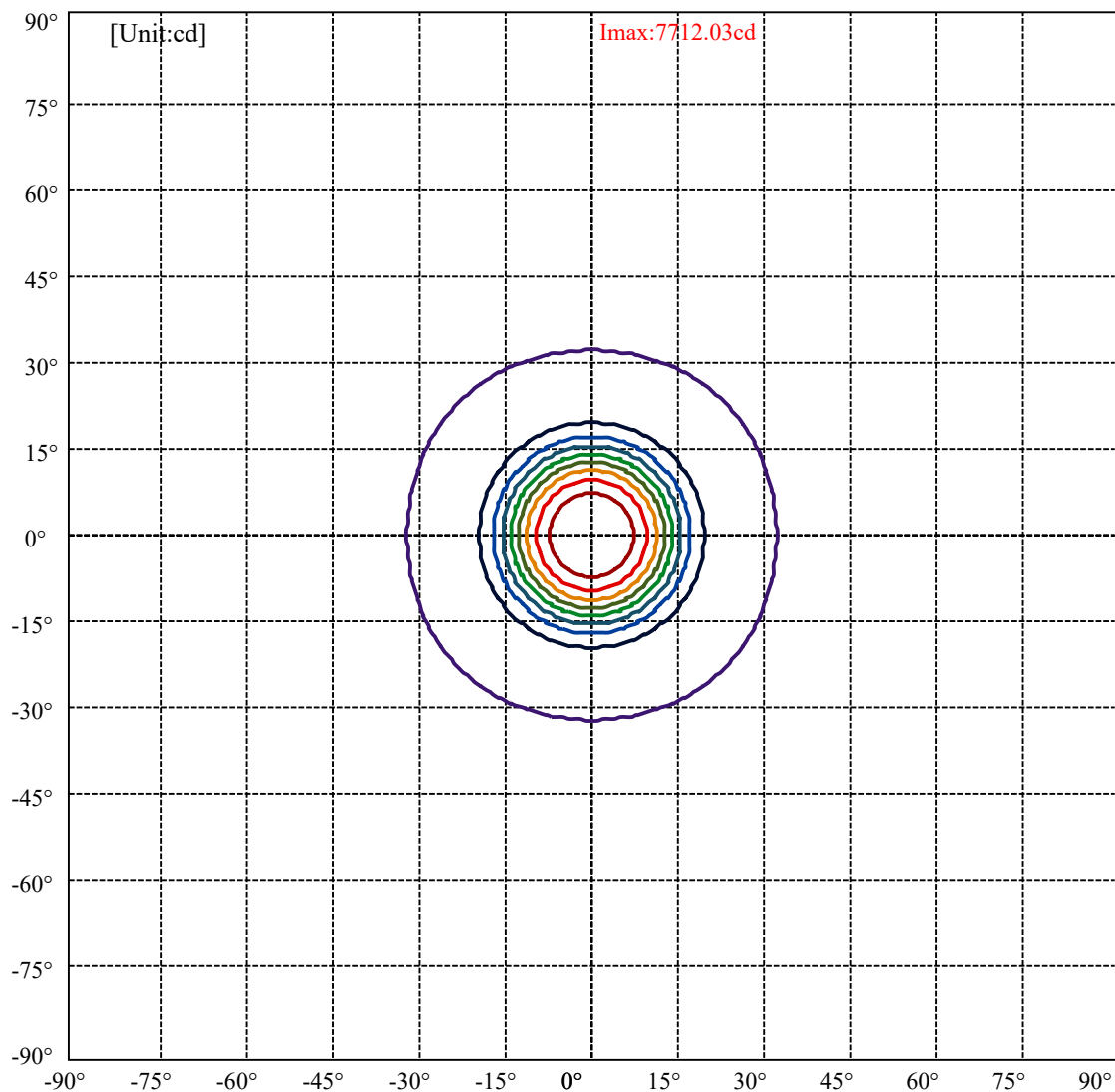
Field angle(10%Imax):C0/180Left:31.8 Right:31.8

:C90/270Left:31.8 Right:31.8

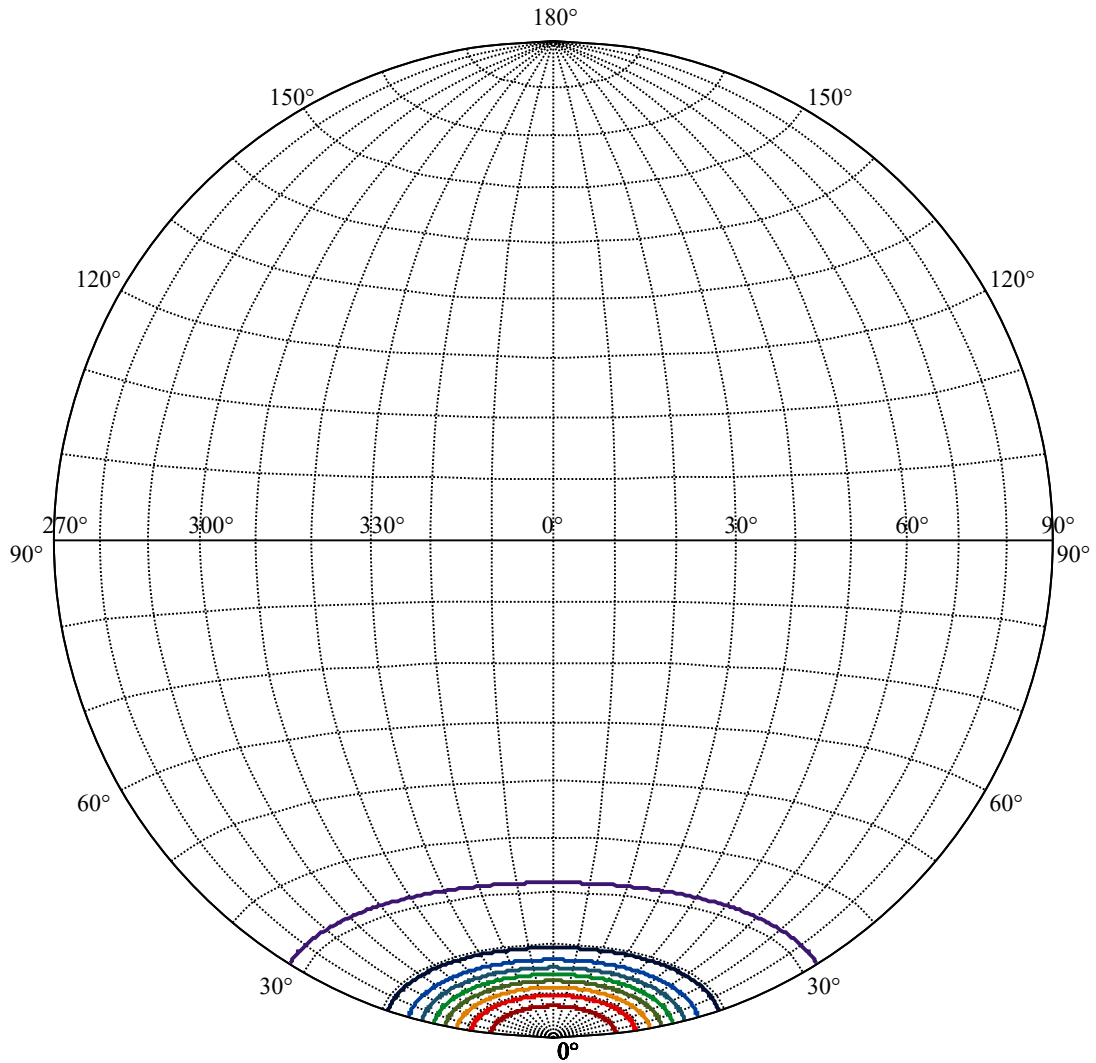
Beam Angle(50%Imax):C0/180Left:13.9 Right:13.9

:C90/270Left:13.9 Right:13.9





(10%Imax) 771.203	—
(20%Imax) 1542.41	—
(30%Imax) 2313.61	—
(40%Imax) 3084.81	—
(50%Imax) 3856.01	—
(60%Imax) 4627.22	—
(70%Imax) 5398.42	—
(80%Imax) 6169.62	—
(90%Imax) 6940.82	—



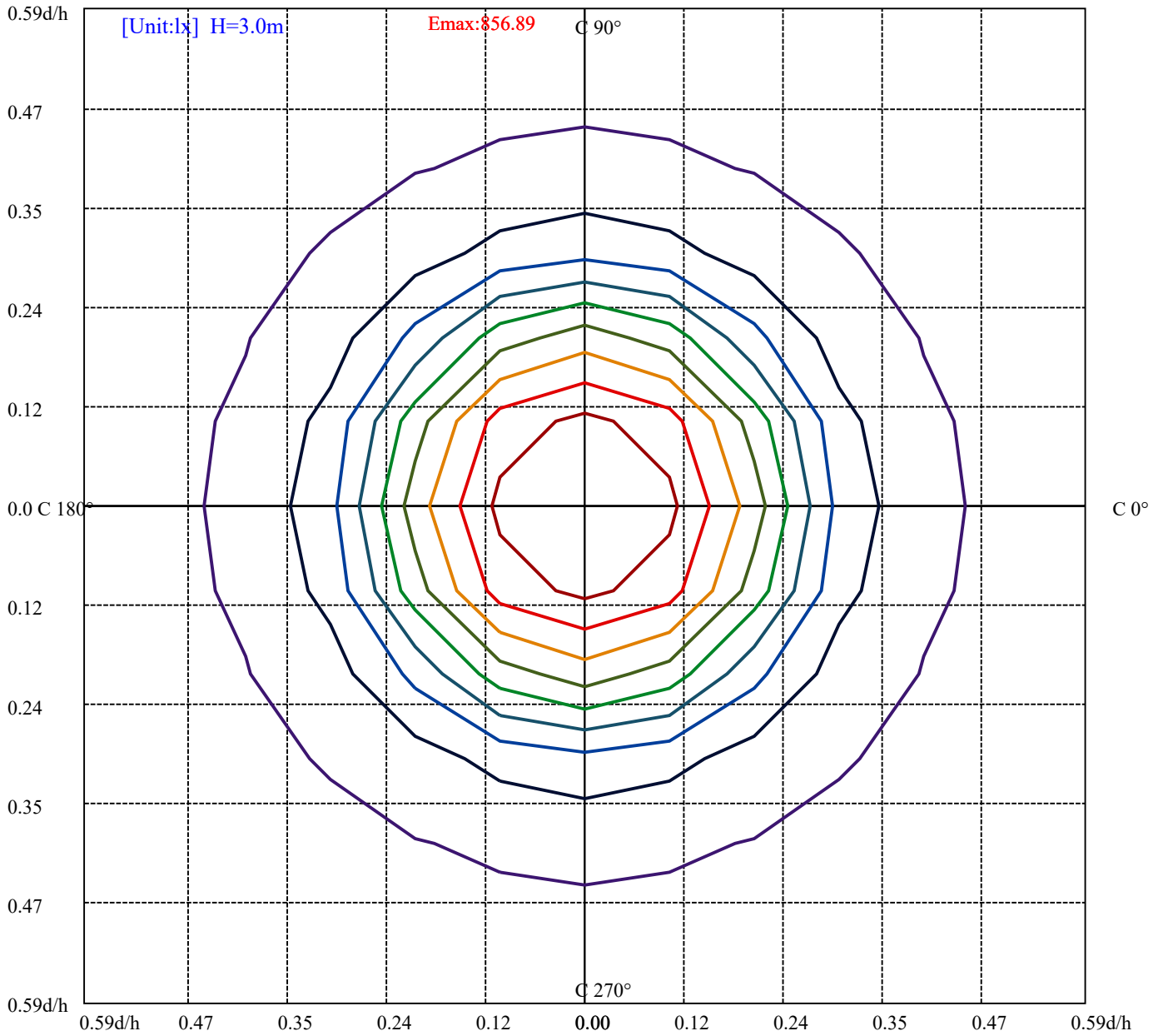
House

[Unit:cd]

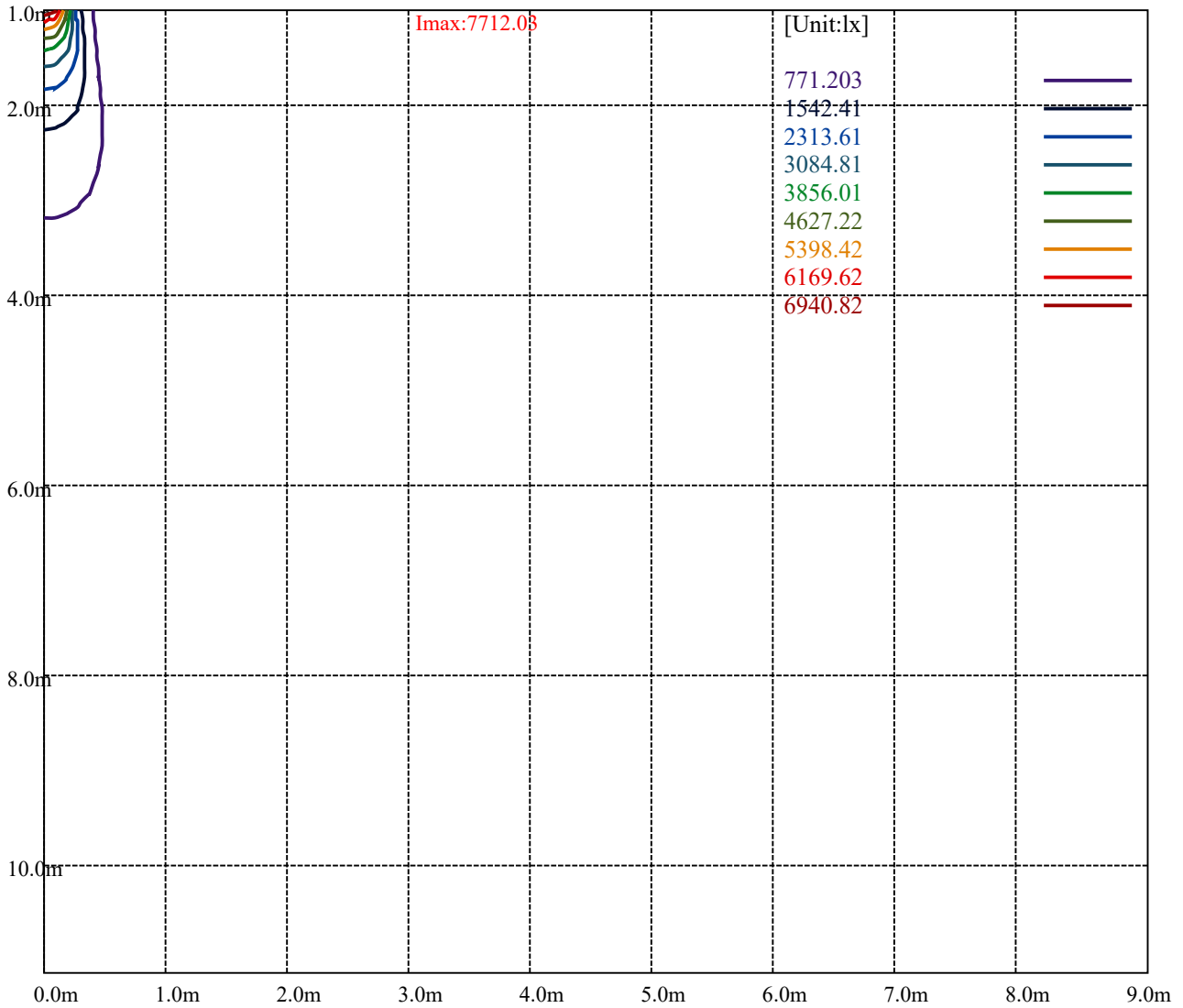
Road

Imax:7712.03

(10%Imax) 771.203	—
(20%Imax) 1542.41	—
(30%Imax) 2313.61	—
(40%Imax) 3084.81	—
(50%Imax) 3856.01	—
(60%Imax) 4627.22	—
(70%Imax) 5398.42	—
(80%Imax) 6169.62	—
(90%Imax) 6940.82	—



- (10%Emax) 85.68922
- (20%Emax) 171.3789
- (30%Emax) 257.0678
- (40%Emax) 342.7567
- (50%Emax) 428.4456
- (60%Emax) 514.1345
- (70%Emax) 599.8245
- (80%Emax) 685.5134
- (90%Emax) 771.2022



Luminance Table

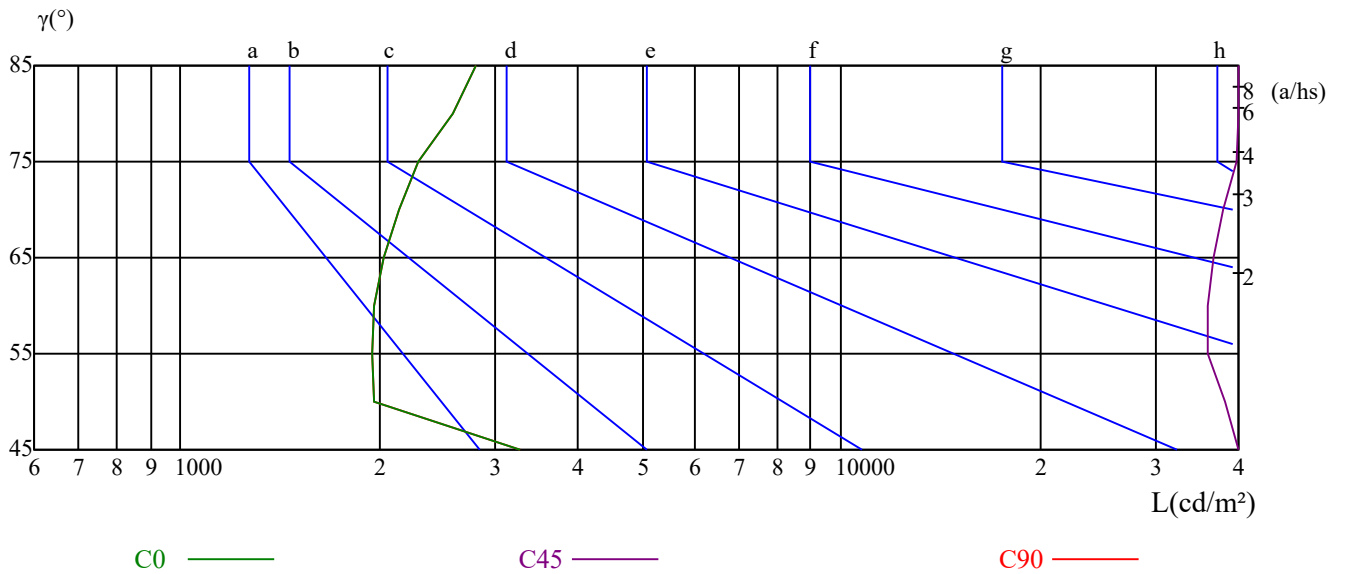
γ	45	50	55	60	65	70	75	80	85
C0	3277	1966	1944	1966	2036	2144	2296	2590	2802
C45	64810	38240	36017	35904	36645	37858	39781	42479	46067
C90	3277	1966	1944	1966	2036	2144	2296	2590	2802

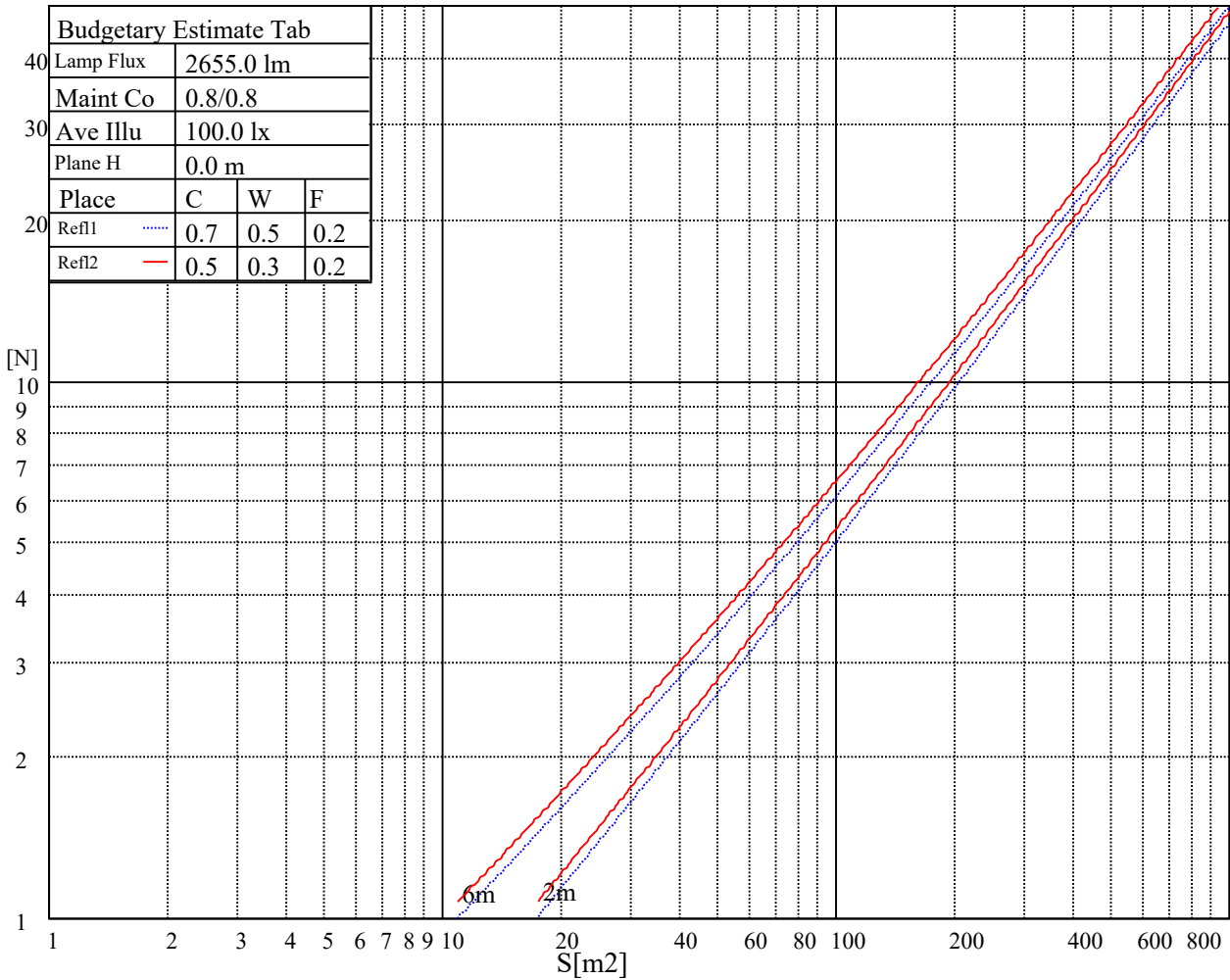
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4593	4593	101740	7315	7315	162759	21562	21562	482220

Glare Table

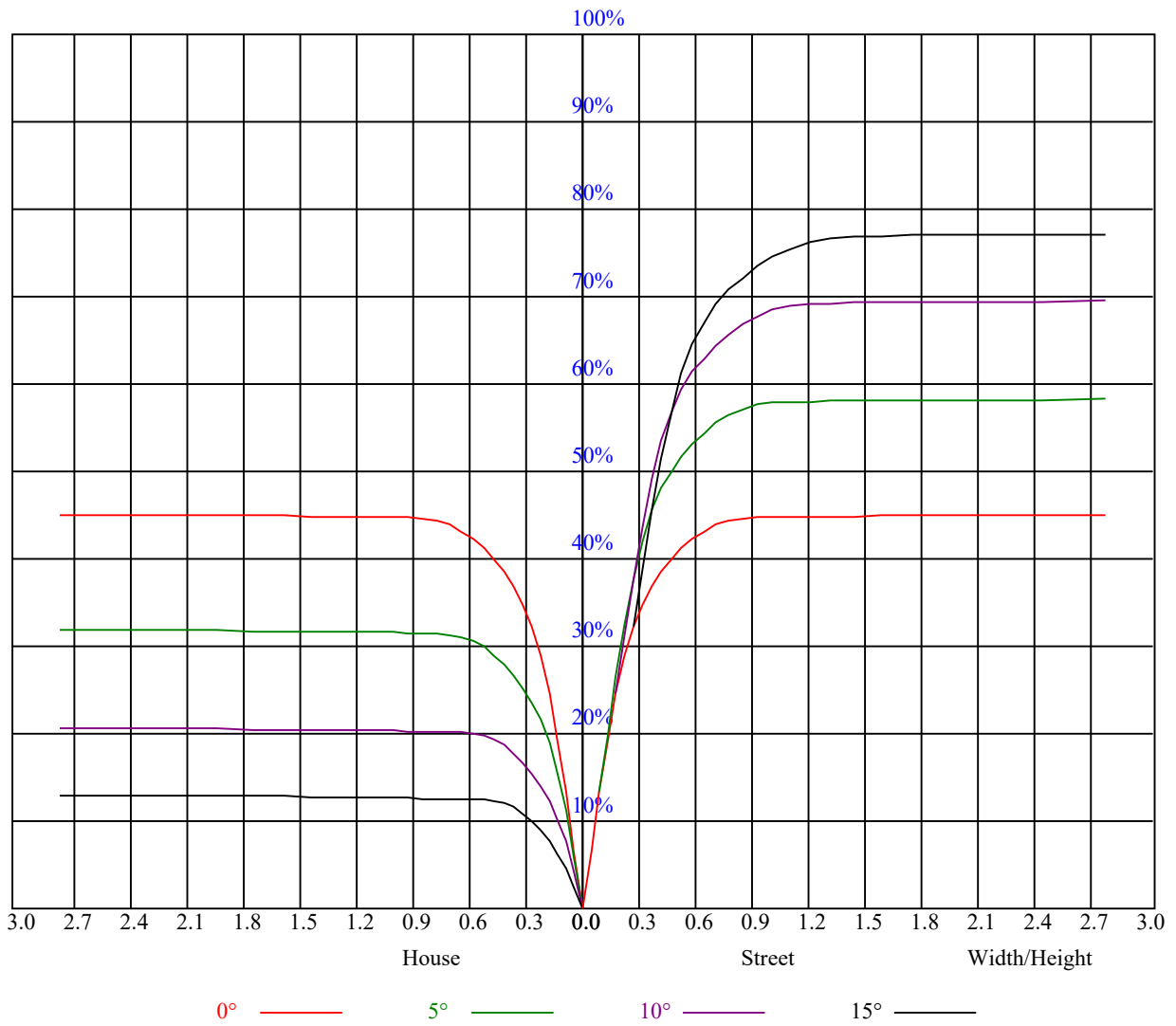
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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 RHOF=20 CU															
0	1.08	1.08	1.08	1.05	1.05	1.05	1.01	1.01	1.01	0.96	0.96	0.96	0.93	0.93	0.93	0.91
1	1.01	0.99	0.98	0.99	0.98	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.86
2	0.96	0.93	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.78
4	0.86	0.82	0.79	0.85	0.82	0.79	0.84	0.80	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
5	0.82	0.78	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.73	0.77	0.75	0.73	0.72
6	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
7	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	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	0.65	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.61
10	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59



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	7722.76	7685.87	7641.28	7555.94	7454.09	7305.43	7107.78	6879.30	6553.91
90.0	7701.29	7740.93	7732.67	7682.02	7637.42	7554.84	7463.45	7306.53	7111.08
180.0	7722.76	7740.93	7719.46	7653.39	7586.22	7492.63	7347.28	7173.30	6960.23
270.0	7701.29	7653.39	7596.13	7485.47	7368.75	7188.71	6949.77	6649.16	6325.98
360.0	7722.76	7685.87	7641.28	7555.94	7454.09	7305.43	7107.78	6879.30	6553.91
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6145.95	5712.10	5149.43	4598.86	3966.81	3338.62	2808.98	2396.61	1887.33
90.0	6852.32	6518.68	6164.11	5676.31	5113.09	4581.79	4026.83	3349.08	2835.96
180.0	6640.90	6253.86	5839.83	5294.77	4712.28	4163.92	3563.25	3044.07	2516.08
270.0	5884.43	5366.90	4844.41	4217.87	3666.21	3079.86	2534.80	2129.58	1803.65
360.0	6145.95	5712.10	5149.43	4598.86	3966.81	3338.62	2808.98	2396.61	1887.33
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1612.60	1428.71	1232.71	1136.91	1071.95	1002.03	955.23	919.99	885.31
90.0	2377.89	1951.20	1625.82	1406.69	1228.31	1112.69	1040.02	978.90	941.46
180.0	2072.87	1753.00	1510.20	1291.07	1094.96	1087.42	1015.52	961.39	919.50
270.0	1504.14	1333.47	1208.49	1096.12	1033.08	980.88	935.02	892.19	867.52
360.0	1612.60	1428.71	1232.71	1136.91	1071.95	1002.03	955.23	919.99	885.31
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	863.28	848.42	831.90	819.79	804.92	758.13	704.72	644.71	543.96
90.0	900.72	868.79	849.52	834.10	816.49	803.82	782.35	739.96	673.89
180.0	881.07	853.65	835.48	815.61	804.92	786.43	747.50	694.65	623.79
270.0	847.92	831.30	818.85	804.37	765.78	713.26	649.00	557.56	487.25
360.0	863.28	848.42	831.90	819.79	804.92	758.13	704.72	644.71	543.96
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	463.57	379.89	288.50	231.18	131.64	70.53	32.87	22.85	20.48
90.0	600.11	521.93	430.54	351.26	281.34	184.66	112.54	56.10	29.07
180.0	542.97	466.55	389.58	293.67	219.68	151.07	78.01	37.49	21.69
270.0	394.15	303.09	225.02	145.18	79.50	39.59	22.35	18.66	16.08
360.0	463.57	379.89	288.50	231.18	131.64	70.53	32.87	22.85	20.48
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	18.17	16.63	14.09	10.90	10.68	10.46	10.35	10.24	10.19
90.0	21.03	18.88	16.63	15.53	13.05	10.68	10.52	10.41	10.30
180.0	18.50	16.08	14.31	13.65	10.90	10.57	10.41	10.35	10.24
270.0	14.31	13.49	10.79	10.63	10.46	10.35	10.24	10.08	10.02
360.0	18.17	16.63	14.09	10.90	10.68	10.46	10.35	10.24	10.19
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.08	10.02	9.91	9.86	9.74	9.69	9.69	9.63	9.58
90.0	10.19	10.13	10.08	9.97	9.91	9.86	9.80	9.74	9.69
180.0	10.13	10.08	10.02	9.91	9.86	9.74	9.74	9.69	9.63
270.0	9.97	9.91	9.86	9.74	9.69	9.63	9.58	9.58	9.52
360.0	10.08	10.02	9.91	9.86	9.74	9.69	9.69	9.63	9.58
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.52	9.47	9.47	9.47	9.41	9.36	9.36	9.36	9.30
90.0	9.69	9.63	9.58	9.52	9.52	9.52	9.52	9.47	9.41
180.0	9.58	9.52	9.52	9.47	9.47	9.41	9.36	9.36	9.30
270.0	9.52	9.47	9.47	9.41	9.41	9.36	9.36	9.30	9.36
360.0	9.52	9.47	9.47	9.47	9.41	9.36	9.36	9.36	9.30

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Intensity data(cd)										Appendix Page: 17 Total:17
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0	
0.0	9.30	9.30	9.30	9.25	9.25	9.25	9.25	9.25	9.19	
90.0	9.41	9.41	9.41	9.36	9.36	9.30	9.30	9.36	10.46	
180.0	9.30	9.30	9.30	9.25	9.25	9.19	9.19	9.25	9.19	
270.0	9.30	9.30	9.30	9.25	9.25	9.25	9.25	9.25	9.25	
360.0	9.30	9.30	9.30	9.25	9.25	9.25	9.25	9.25	9.19	
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0	
0.0	9.19	9.19	9.19	9.19	9.19	9.19	9.19	9.14	9.14	
90.0	11.56	11.73	10.13	9.47	9.25	9.25	9.25	9.25	9.25	
180.0	9.19	9.19	9.19	9.19	9.14	9.14	9.14	9.14	9.14	
270.0	9.25	9.25	9.25	9.25	9.25	9.25	9.25	9.25	9.19	
360.0	9.19	9.19	9.19	9.19	9.19	9.19	9.19	9.14	9.14	
C/γ(°)	90.0									
0.0	9.14									
90.0	9.25									
180.0	9.14									
270.0	9.25									
360.0	9.14									