
Nata

LumCAT: 3-1945-M	
Luminaire: BJB 47.319.2021	
Report No: GC2017050402	Voltage(V): 35.3000
Test No: NT-0010	Current(A): 0.5000
LampCAT: BRIDGELUX V13B	Power (W): 17.6500
Lamp flux(lm): 2274.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 86	Width(mm): 86
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2059.40
Efficiency(%): 90.56%
Lumens(lm)/Power(W): 116.68
Central intensity(cd): 2731.623
Maximum intensity(cd): 2731.623
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=56.1
[C90/270]Total=56.1
Field angle(10%Imax): [C0/180]Total=72.6
[C90/270]Total=72.6
Maximum s/h(1/2): C0_180=0.91 C90_270=0.91
Maximum s/h(1/4): C0_180=0.83 C90_270=0.83
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.56%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.689%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2731.623	0.000	0	.000%	.000%
1.0	2728.182	2.612	2.612	.115%	.127%
2.0	2722.264	7.823	10.435	.344%	.507%
3.0	2717.033	13.009	23.444	.572%	1.138%
4.0	2712.766	18.175	41.62	.799%	2.021%
5.0	2706.435	23.313	64.933	1.025%	3.153%
6.0	2698.727	28.406	93.338	1.249%	4.532%
7.0	2690.744	33.452	126.791	1.471%	6.157%
8.0	2680.421	38.440	165.231	1.690%	8.023%
9.0	2666.106	43.331	208.562	1.905%	10.127%
10.0	2648.626	48.096	256.658	2.115%	12.463%
11.0	2632.797	52.772	309.43	2.321%	15.025%
12.0	2610.774	57.320	366.75	2.521%	17.809%
13.0	2581.319	61.617	428.367	2.710%	20.801%
14.0	2545.670	65.625	493.992	2.886%	23.987%
15.0	2502.589	69.305	563.297	3.048%	27.352%
16.0	2453.451	72.620	635.917	3.193%	30.879%
17.0	2397.982	75.550	711.467	3.322%	34.547%
18.0	2337.282	78.074	789.541	3.433%	38.338%
19.0	2273.003	80.210	869.751	3.527%	42.233%
20.0	2205.697	81.973	951.723	3.605%	46.214%
21.0	2126.553	83.188	1034.911	3.658%	50.253%
22.0	2043.969	83.808	1118.72	3.686%	54.322%
23.0	1959.457	84.003	1202.722	3.694%	58.401%
24.0	1854.162	83.379	1286.102	3.667%	62.450%
25.0	1735.791	81.628	1367.729	3.590%	66.414%
26.0	1625.540	79.345	1447.074	3.489%	70.267%
27.0	1502.214	76.521	1523.595	3.365%	73.982%
28.0	1370.079	72.720	1596.315	3.198%	77.513%
29.0	1257.763	68.752	1665.067	3.023%	80.852%
30.0	1118.787	64.166	1729.234	2.822%	83.968%
31.0	981.669	58.453	1787.686	2.570%	86.806%
32.0	843.946	52.302	1839.988	2.300%	89.346%
33.0	701.597	45.532	1885.52	2.002%	91.557%
34.0	551.734	37.930	1923.45	1.668%	93.398%
35.0	414.575	30.010	1953.46	1.320%	94.856%
36.0	317.744	23.317	1976.777	1.025%	95.988%
37.0	174.377	16.050	1992.827	.706%	96.767%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	99.817	9.152	2001.979	.402%	97.212%
39.0	55.373	5.297	2007.277	.233%	97.469%
40.0	38.209	3.264	2010.54	.144%	97.627%
41.0	29.813	2.422	2012.963	.107%	97.745%
42.0	23.509	1.937	2014.9	.085%	97.839%
43.0	18.678	1.563	2016.463	.069%	97.915%
44.0	16.104	1.313	2017.775	.058%	97.979%
45.0	14.232	1.166	2018.941	.051%	98.035%
46.0	12.759	1.056	2019.997	.046%	98.086%
47.0	12.016	0.985	2020.982	.043%	98.134%
48.0	11.383	0.946	2021.928	.042%	98.180%
49.0	10.942	0.917	2022.845	.040%	98.225%
50.0	10.543	0.896	2023.741	.039%	98.268%
51.0	10.309	0.882	2024.623	.039%	98.311%
52.0	10.089	0.875	2025.498	.038%	98.354%
53.0	9.883	0.869	2026.367	.038%	98.396%
54.0	9.731	0.864	2027.232	.038%	98.438%
55.0	9.594	0.863	2028.094	.038%	98.480%
56.0	9.456	0.861	2028.955	.038%	98.521%
57.0	9.346	0.860	2029.815	.038%	98.563%
58.0	9.249	0.860	2030.675	.038%	98.605%
59.0	9.181	0.862	2031.536	.038%	98.647%
60.0	9.071	0.862	2032.398	.038%	98.689%
61.0	8.974	0.861	2033.26	.038%	98.730%
62.0	8.905	0.862	2034.121	.038%	98.772%
63.0	8.850	0.864	2034.985	.038%	98.814%
64.0	8.754	0.864	2035.848	.038%	98.856%
65.0	8.713	0.864	2036.713	.038%	98.898%
66.0	8.685	0.868	2037.581	.038%	98.940%
67.0	8.616	0.870	2038.451	.038%	98.983%
68.0	8.575	0.871	2039.322	.038%	99.025%
69.0	8.520	0.872	2040.194	.038%	99.067%
70.0	8.492	0.874	2041.068	.038%	99.110%
71.0	8.451	0.876	2041.943	.039%	99.152%
72.0	8.437	0.878	2042.821	.039%	99.195%
73.0	8.437	0.882	2043.704	.039%	99.238%
74.0	8.437	0.887	2044.591	.039%	99.281%
75.0	8.506	0.895	2045.486	.039%	99.324%

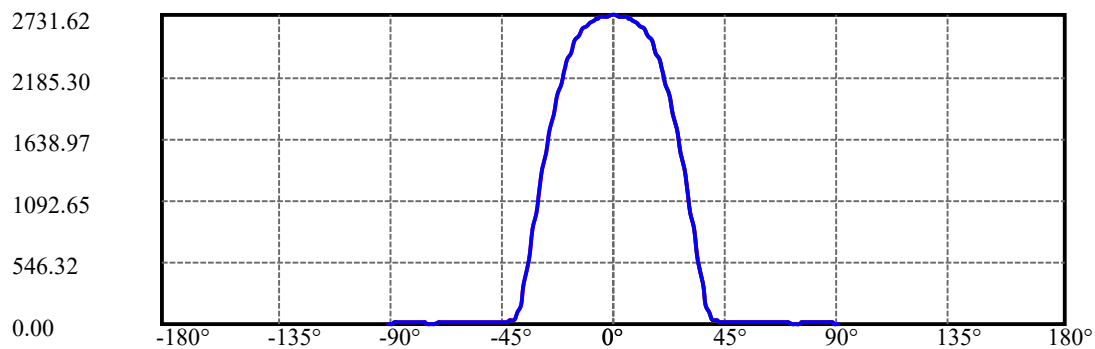
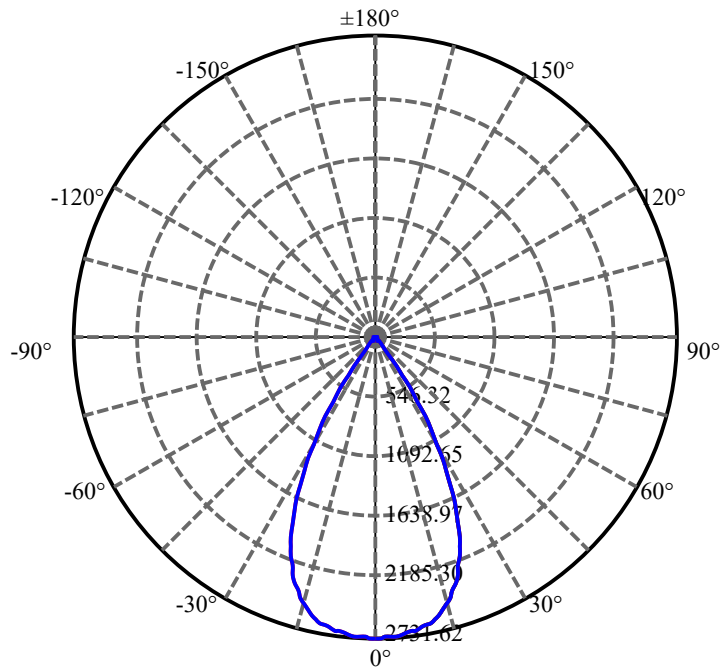
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.575	0.907	2046.393	.040%	99.368%
77.0	8.726	0.922	2047.315	.041%	99.413%
78.0	9.015	0.950	2048.265	.042%	99.459%
79.0	8.630	0.948	2049.213	.042%	99.505%
80.0	8.492	0.923	2050.136	.041%	99.550%
81.0	8.520	0.920	2051.056	.040%	99.595%
82.0	8.548	0.926	2051.982	.041%	99.640%
83.0	8.520	0.928	2052.91	.041%	99.685%
84.0	8.589	0.932	2053.842	.041%	99.730%
85.0	8.616	0.939	2054.781	.041%	99.775%
86.0	8.630	0.943	2055.724	.041%	99.821%
87.0	8.506	0.938	2056.661	.041%	99.867%
88.0	8.396	0.926	2057.587	.041%	99.912%
89.0	8.258	0.913	2058.5	.040%	99.956%
90.0	8.231	0.904	2059.404	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1729.23	76.04%	83.97%
0-40	2010.54	88.41%	97.63%
0-60	2032.40	89.38%	98.69%
0-90	2058.50	90.52%	99.96%
0-120	2058.50	90.52%	99.96%
0-180	2059.40	90.56%	100.00%
60-90	26.96	1.19%	1.31%
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%
0-28.74	1647.52	72.45%	80.00%

ZONAL LUMEN SUMMARY

0-10	256.66
10-20	695.06
20-30	777.51
30-40	281.31
40-50	13.20
50-60	8.66
60-70	8.67
70-80	9.07
80-90	8.36
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:

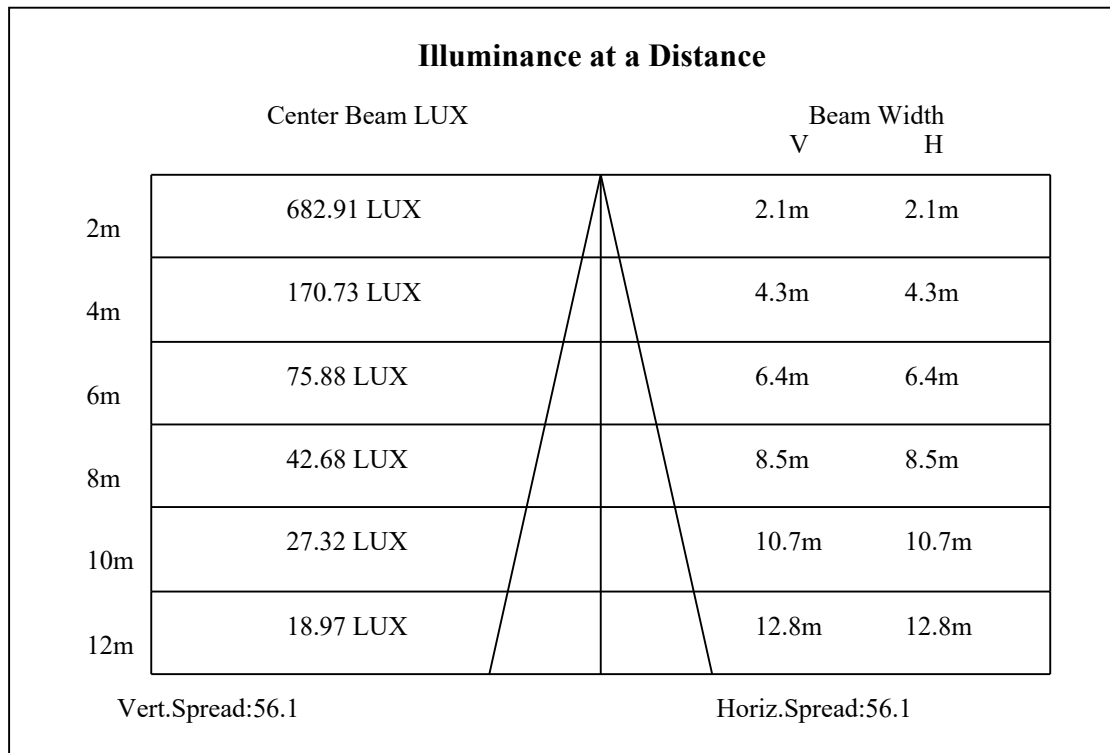
C90/C270:

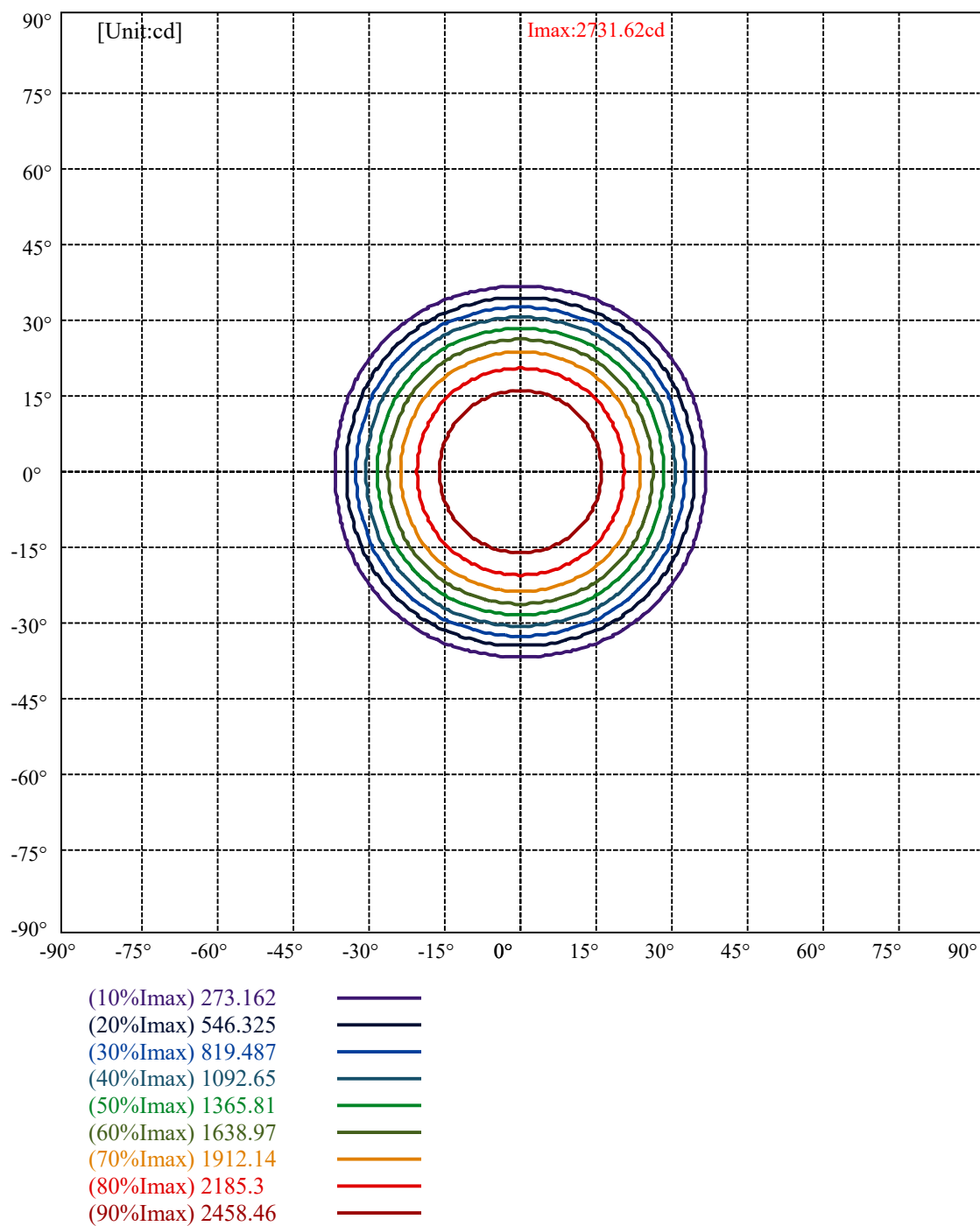
Field angle(10%Imax):C0/180Left:36.3 Right:36.3

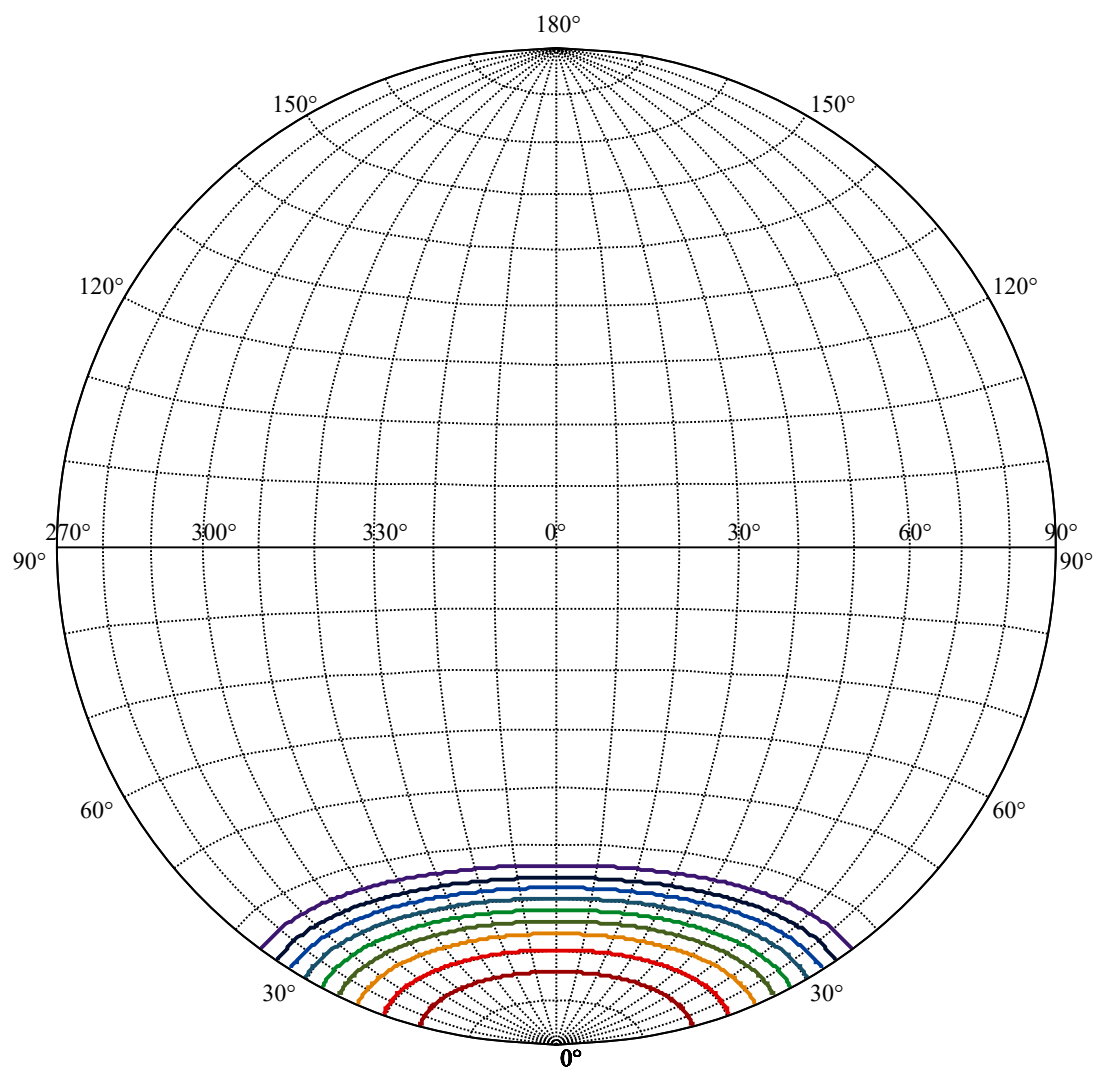
:C90/270Left:36.3 Right:36.3

Beam Angle(50%Imax):C0/180Left:28.0 Right:28.0

:C90/270Left:28.0 Right:28.0







House

[Unit:cd]

Road

Imax:2731.62

(10%Imax) 273.162

(20%Imax) 546.325

(30%Imax) 819.487

(40%Imax) 1092.65

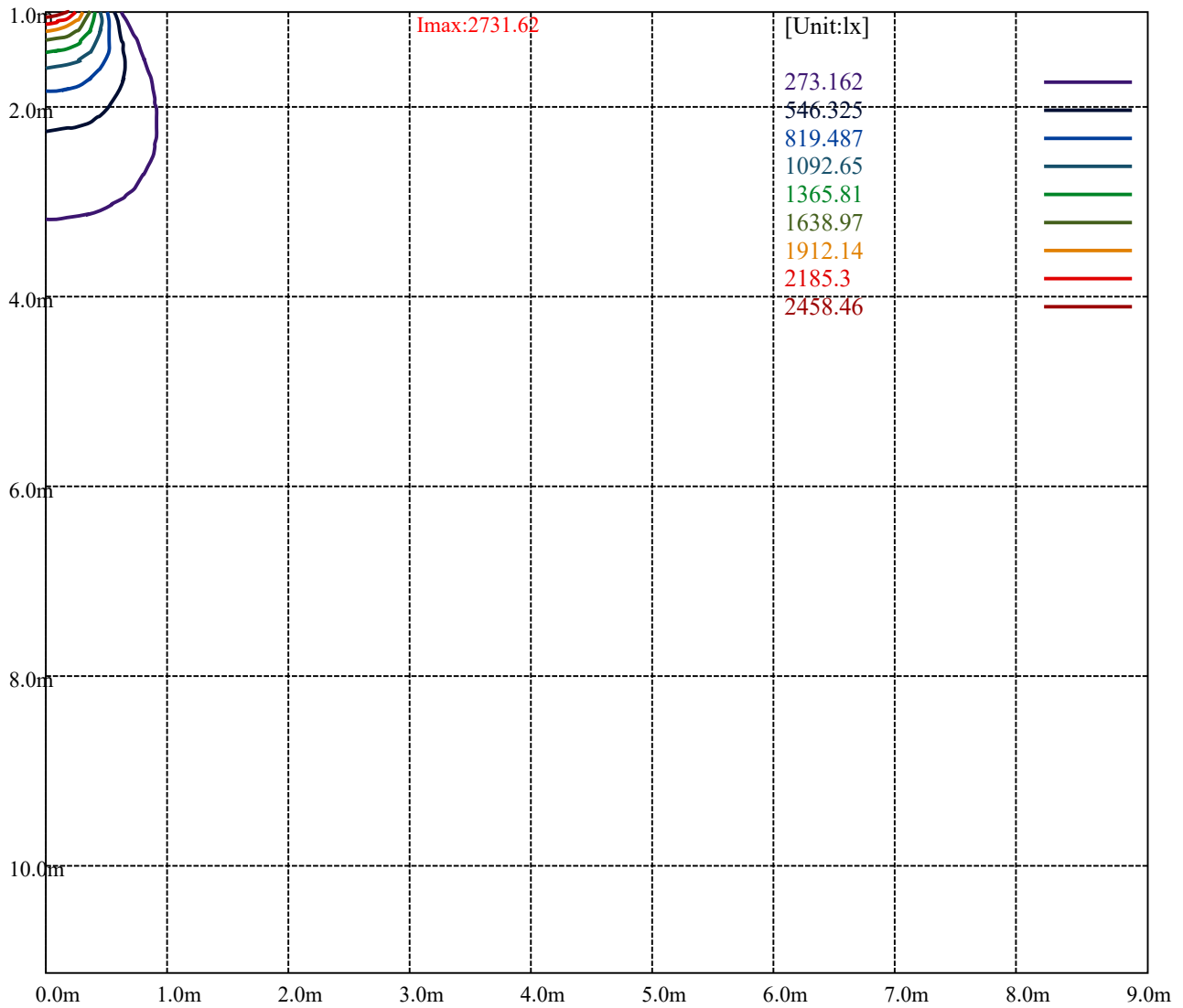
(50%Imax) 1365.81

(60%Imax) 1638.97

(70%Imax) 1912.14

(80%Imax) 2185.3

(90%Imax) 2458.46



Luminance Table

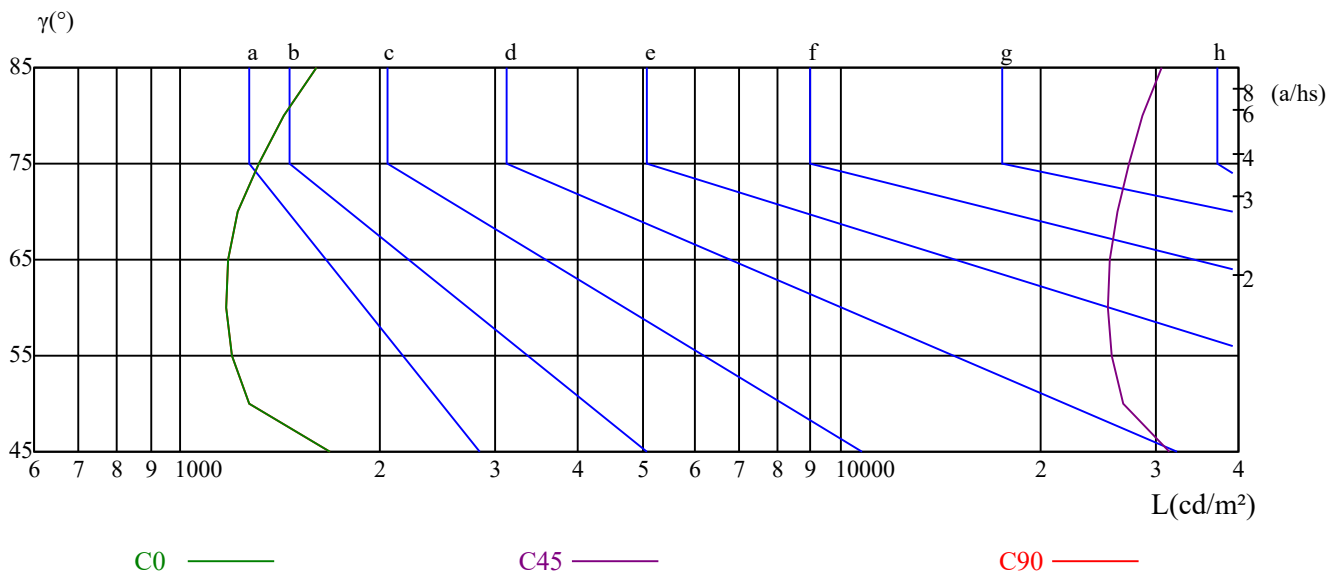
γ	45	50	55	60	65	70	75	80	85
C0	1679	1272	1193	1173	1183	1223	1315	1429	1604
C45	31528	26830	25661	25337	25606	26219	27215	28641	30630
C90	1679	1272	1193	1173	1183	1223	1315	1429	1604

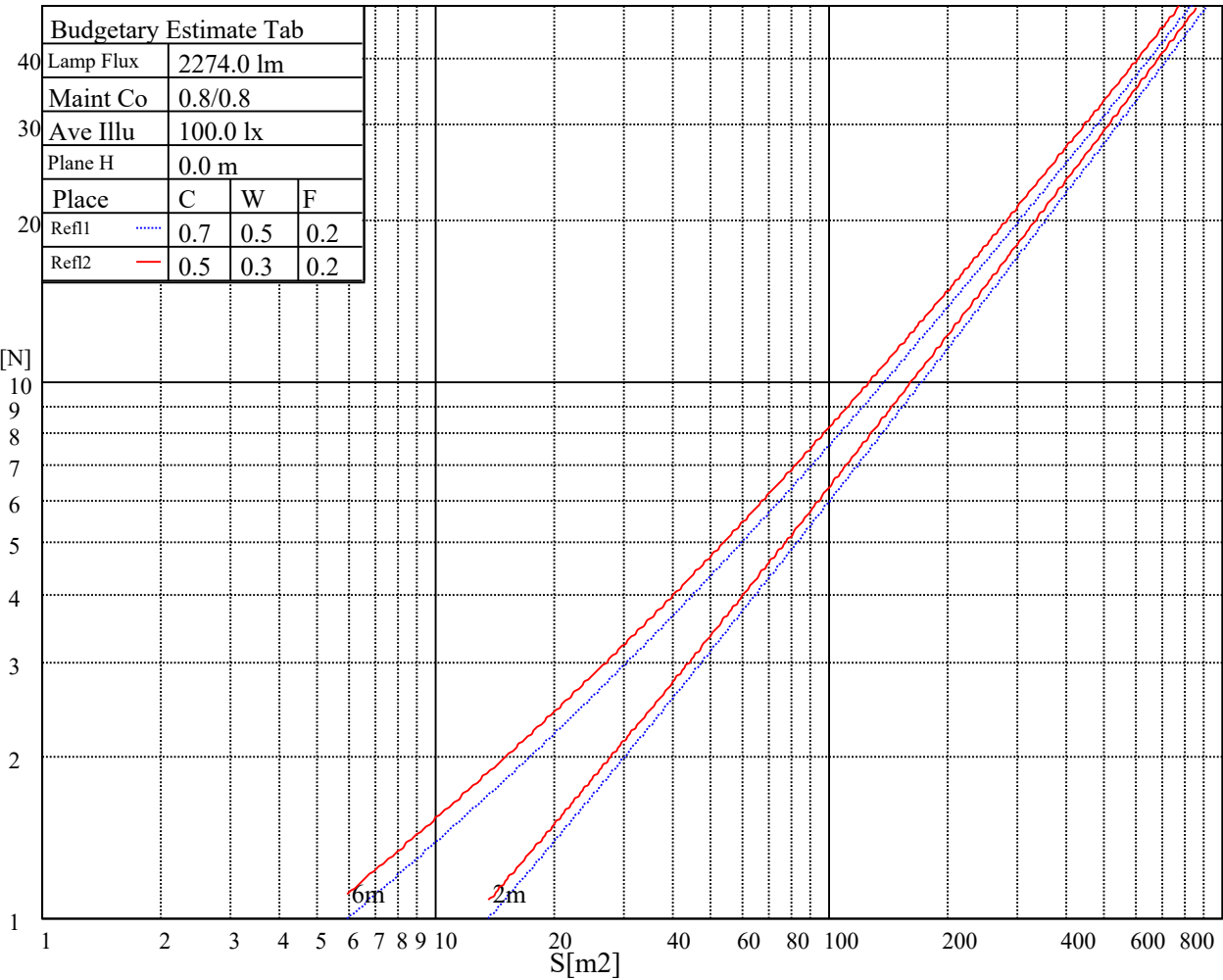
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2853	2853	76770	4549	4549	121848	13683	13683	356824

Glare Table

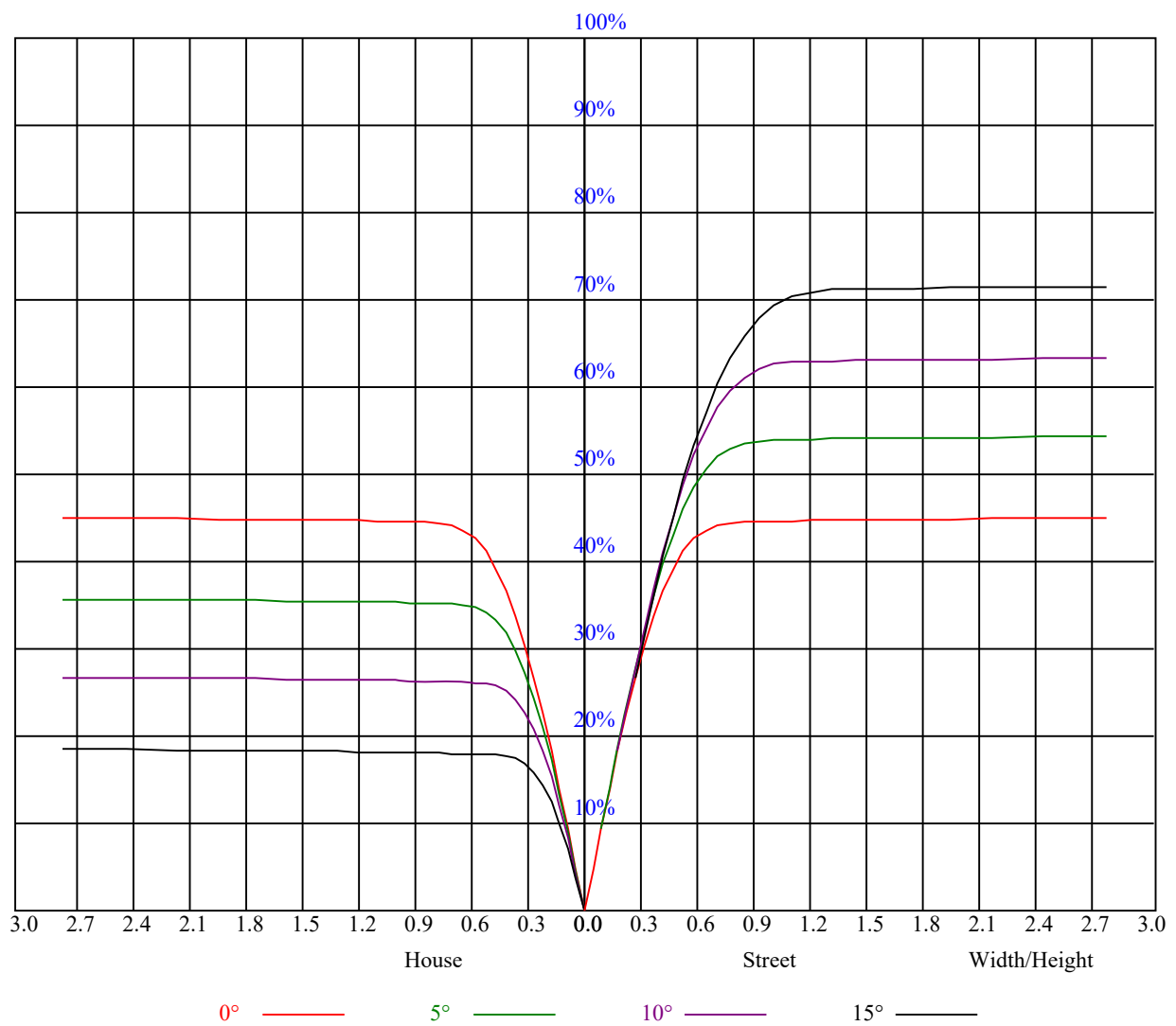
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.91
1	1.01	0.98	0.96	0.99	0.97	0.95	0.95	0.93	0.92	0.92	0.90	0.89	0.88	0.88	0.87	0.85
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.81	0.80
3	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.75
4	0.83	0.79	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.71
5	0.79	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.69	0.75	0.71	0.69	0.73	0.70	0.68	0.67
6	0.74	0.69	0.66	0.74	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.64	0.63
7	0.71	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.63	0.61	0.60
8	0.67	0.62	0.59	0.66	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.57
9	0.64	0.59	0.55	0.63	0.59	0.55	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.54
10	0.61	0.56	0.53	0.60	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.55	0.52	0.51



Intensity data(cd)										Appendix Page: 16 Total:17	
C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0		
0.0	2729.70	2720.89	2715.38	2704.92	2690.06	2680.15	2670.24	2659.22	2646.56		
90.0	2733.55	2729.15	2717.03	2714.83	2711.53	2699.42	2691.16	2682.90	2668.03		
180.0	2729.70	2731.90	2728.60	2720.89	2720.34	2718.69	2713.73	2707.67	2701.07		
270.0	2733.55	2730.80	2728.04	2727.49	2729.15	2727.49	2719.79	2713.18	2706.02		
360.0	2729.70	2720.89	2715.38	2704.92	2690.06	2680.15	2670.24	2659.22	2646.56		
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0		
0.0	2624.54	2606.92	2588.20	2561.22	2516.08	2473.68	2429.09	2371.28	2320.08		
90.0	2653.72	2637.20	2622.89	2605.82	2576.09	2541.40	2502.86	2451.11	2403.21		
180.0	2692.26	2677.39	2665.28	2648.76	2627.84	2600.31	2561.77	2516.08	2456.62		
270.0	2693.91	2672.99	2654.82	2627.29	2605.27	2567.28	2516.63	2475.34	2412.02		
360.0	2624.54	2606.92	2588.20	2561.22	2516.08	2473.68	2429.09	2371.28	2320.08		
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0		
0.0	2268.87	2207.21	2138.94	2066.82	1982.58	1895.04	1780.52	1659.40	1539.93		
90.0	2352.56	2282.09	2208.86	2137.84	2047.55	1959.46	1846.59	1726.57	1613.15		
180.0	2388.90	2316.77	2253.46	2179.13	2090.49	2007.36	1922.02	1802.55	1700.14		
270.0	2338.80	2285.94	2221.53	2122.42	2055.26	1975.97	1867.51	1754.65	1648.94		
360.0	2268.87	2207.21	2138.94	2066.82	1982.58	1895.04	1780.52	1659.40	1539.93		
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0		
0.0	1405.59	1275.11	1156.18	1019.64	846.77	709.68	576.99	432.19	299.51		
90.0	1486.52	1358.24	1244.83	1118.75	960.18	819.24	675.54	533.50	363.92		
180.0	1595.53	1456.24	1346.13	1243.72	1089.46	964.37	831.35	661.94	547.59		
270.0	1521.21	1390.72	1283.92	1093.03	1030.27	882.50	722.51	579.30	447.28		
360.0	1405.59	1275.11	1156.18	1019.64	846.77	709.68	576.99	432.19	299.51		
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0		
0.0	285.19	102.96	48.95	37.44	28.08	22.24	18.00	15.42	13.71		
90.0	289.60	147.66	67.55	43.71	34.25	26.21	20.81	17.62	15.03		
180.0	404.11	258.54	171.06	85.78	48.39	38.04	29.40	21.69	18.72		
270.0	292.07	188.35	111.71	54.56	42.12	32.76	25.82	19.99	16.96		
360.0	285.19	102.96	48.95	37.44	28.08	22.24	18.00	15.42	13.71		
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0		
0.0	12.39	11.56	11.07	10.74	10.35	10.08	9.91	9.74	9.63		
90.0	13.49	12.17	11.51	11.01	10.74	10.46	10.30	10.13	9.86		
180.0	16.35	13.93	12.99	12.00	11.40	10.85	10.52	10.24	10.02		
270.0	14.70	13.38	12.50	11.78	11.29	10.79	10.52	10.24	10.02		
360.0	12.39	11.56	11.07	10.74	10.35	10.08	9.91	9.74	9.63		
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0		
0.0	9.52	9.36	9.25	9.14	9.08	9.03	8.97	8.86	8.81		
90.0	9.69	9.58	9.47	9.41	9.30	9.19	9.08	9.03	8.92		
180.0	9.86	9.69	9.52	9.41	9.30	9.19	9.08	8.97	8.92		
270.0	9.86	9.74	9.58	9.41	9.30	9.30	9.14	9.03	8.97		
360.0	9.52	9.36	9.25	9.14	9.08	9.03	8.97	8.86	8.81		
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0		
0.0	8.75	8.70	8.64	8.64	8.59	8.59	8.53	8.48	8.42		
90.0	8.86	8.75	8.70	8.70	8.64	8.59	8.53	8.53	8.48		
180.0	8.86	8.75	8.75	8.70	8.59	8.53	8.48	8.48	8.48		
270.0	8.92	8.81	8.75	8.70	8.64	8.59	8.53	8.48	8.42		
360.0	8.75	8.70	8.64	8.64	8.59	8.59	8.53	8.48	8.42		

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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	8.42	8.42	8.37	8.42	8.42	8.48	8.42	8.42	8.48
90.0	8.42	8.42	8.48	8.70	8.97	8.53	8.48	8.48	8.48
180.0	8.42	8.42	8.42	8.42	8.48	9.41	10.63	9.03	8.42
270.0	8.48	8.48	8.48	8.48	8.42	8.48	8.53	8.59	8.59
360.0	8.42	8.42	8.37	8.42	8.42	8.48	8.42	8.42	8.48
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.53	8.53	8.53	8.59	8.59	8.64	8.20	8.20	8.20
90.0	8.48	8.48	8.48	8.48	8.48	8.37	8.31	8.31	8.31
180.0	8.42	8.53	8.42	8.42	8.42	8.37	8.31	8.20	8.20
270.0	8.64	8.64	8.64	8.86	8.97	9.14	9.19	8.86	8.31
360.0	8.53	8.53	8.53	8.59	8.59	8.64	8.20	8.20	8.20
C/ γ (°)	90.0								
0.0	8.20								
90.0	8.26								
180.0	8.15								
270.0	8.31								
360.0	8.20								