
Nata

LumCAT: 3-2116-N

Luminaire: 92.70.135.00

Report No: NT2018041212

Voltage(V): 37.5000

Test No: nata-0100

Current(A): 0.6000

LampCAT: LUMILEDS LUXEON COB 1205

Power (W): 22.5000

Lamp flux(lm): 2186.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 80

Width(mm): 80

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1856.50

Efficiency(%): 84.93%

Lumens(lm)/Power(W): 82.51

Central intensity(cd): 8193.081

Maximum intensity(cd): 8193.081

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=23.3

[C90/270]Total=23.3

Field angle(10%Imax): [C0/180]Total=50.0

[C90/270]Total=50.0

Maximum s/h(1/2): C0_180=0.40 C90_270=0.40

Maximum s/h(1/4): C0_180=0.39 C90_270=0.39

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.09%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.804%

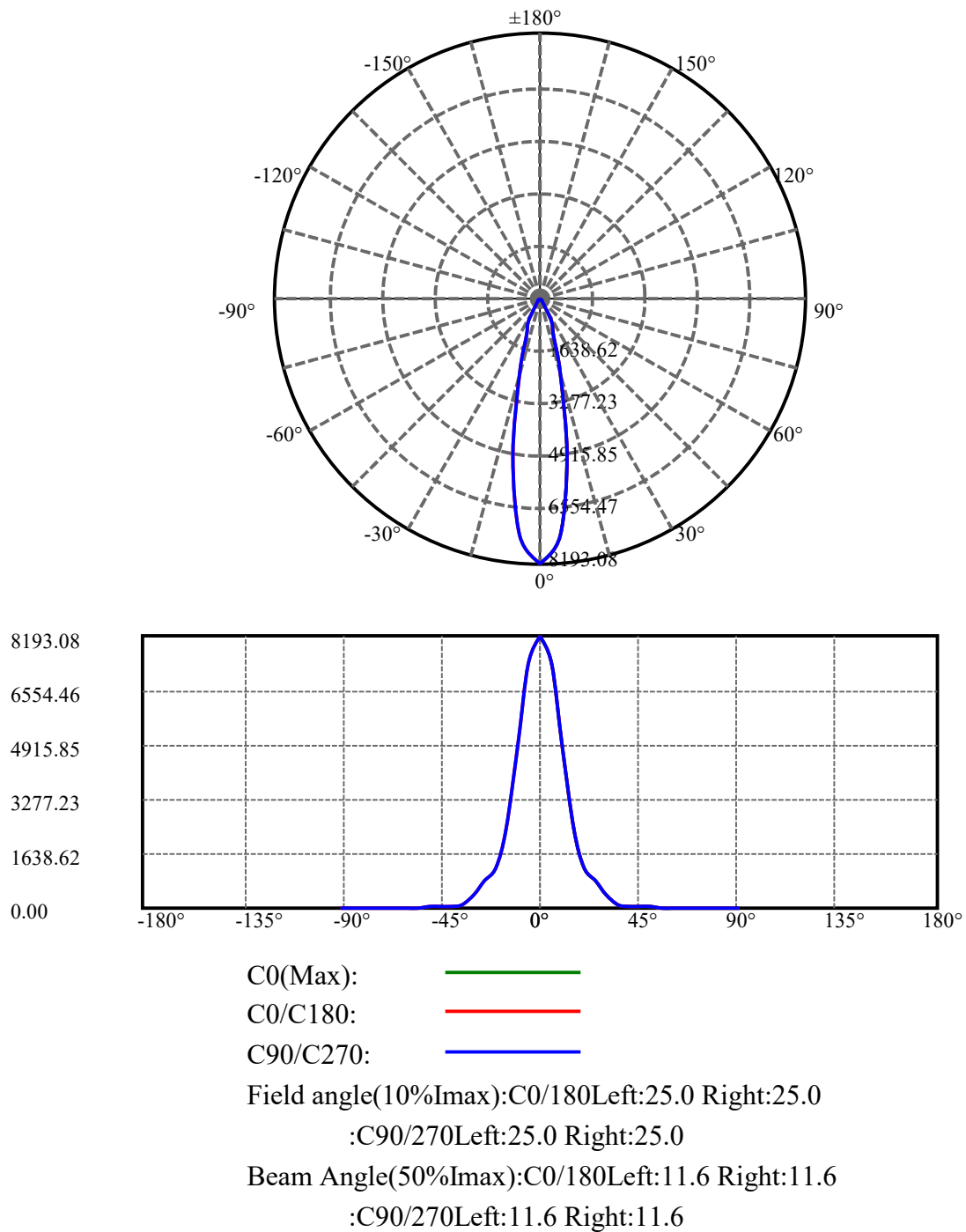
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8193.081	48.996	48.996	2.241%	2.639%
5.0	7338.261	350.573	399.569	16.037%	21.523%
10.0	4937.320	469.949	869.519	21.498%	46.836%
15.0	2378.849	337.484	1207.002	15.438%	65.015%
20.0	1204.730	225.856	1432.858	10.332%	77.181%
25.0	819.260	189.784	1622.642	8.682%	87.403%
30.0	432.379	118.501	1741.143	5.421%	93.786%
35.0	78.008	24.526	1765.669	1.122%	95.107%
40.0	42.662	15.031	1780.7	.688%	95.917%
45.0	34.555	13.393	1794.093	.613%	96.639%
50.0	27.590	11.585	1805.678	.530%	97.263%
55.0	21.424	9.619	1815.298	.440%	97.781%
60.0	18.003	8.546	1823.844	.391%	98.241%
65.0	15.030	7.467	1831.311	.342%	98.643%
70.0	11.803	6.079	1837.39	.278%	98.971%
75.0	10.956	5.801	1843.191	.265%	99.283%
80.0	10.860	5.862	1849.053	.268%	99.599%
85.0	9.731	5.314	1854.367	.243%	99.885%
90.0	7.777	2.131	1856.498	.098%	100.000%

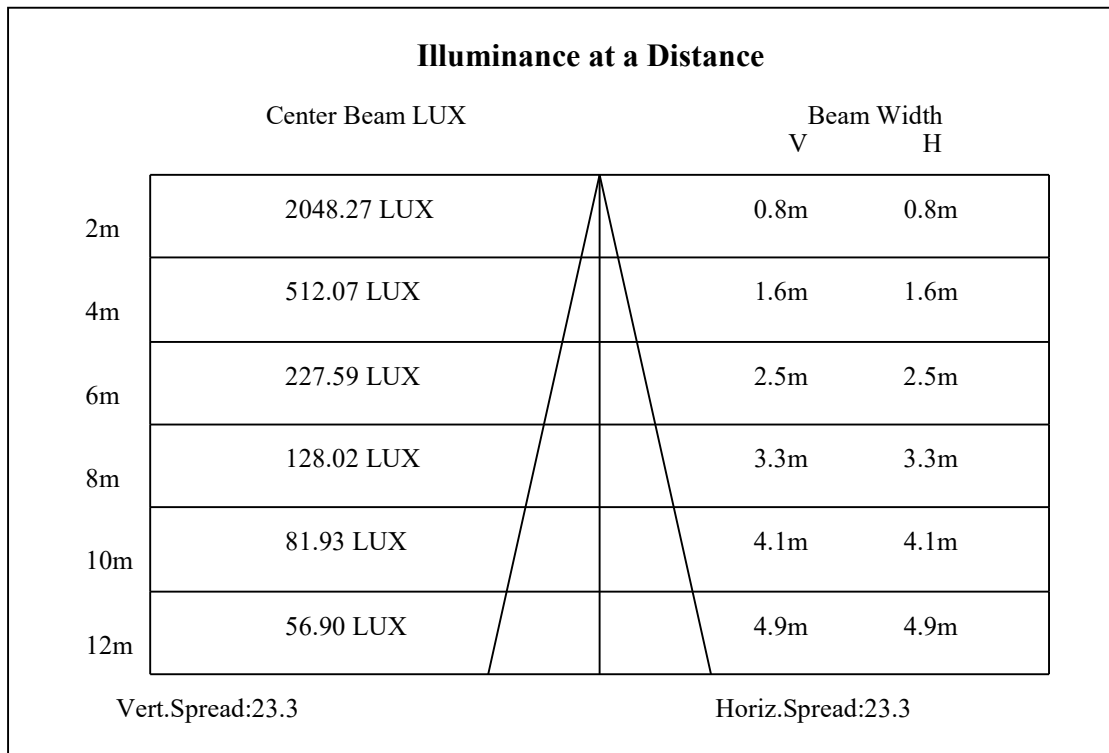
ZONAL LUMEN SUMMARY

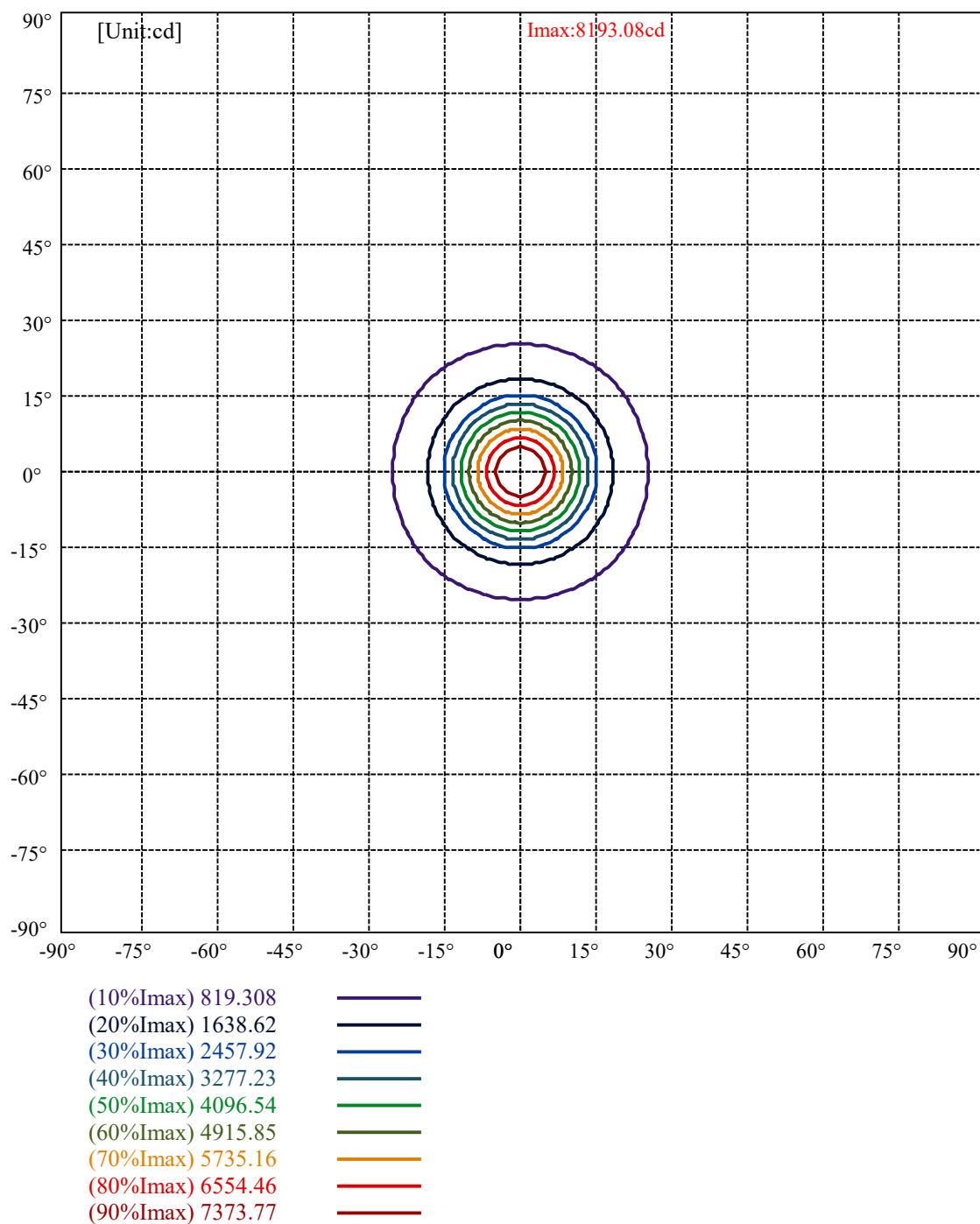
Zone	Lumens	%Lamp	%Fixt
0-30	1741.14	79.65%	93.79%
0-40	1780.70	81.46%	95.92%
0-60	1823.84	83.43%	98.24%
0-90	1854.37	84.83%	99.89%
0-120	1854.37	84.83%	99.89%
0-180	1856.50	84.93%	100.00%
60-90	39.07	1.79%	2.10%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-21.38	1485.20	67.94%	80.00%

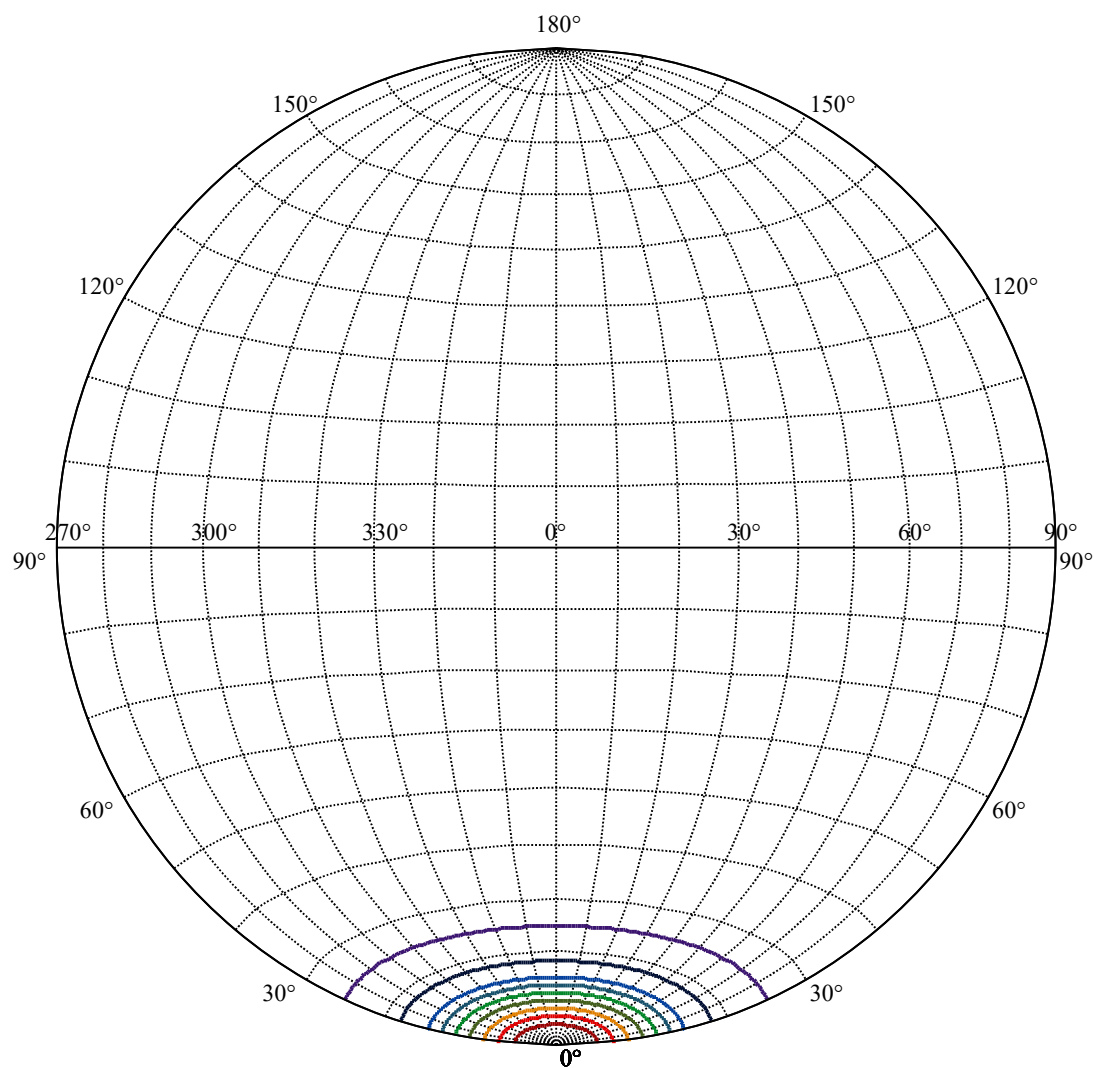
ZONAL LUMEN SUMMARY

0-10	869.52
10-20	563.34
20-30	308.29
30-40	39.56
40-50	24.98
50-60	18.17
60-70	13.55
70-80	11.66
80-90	5.31
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









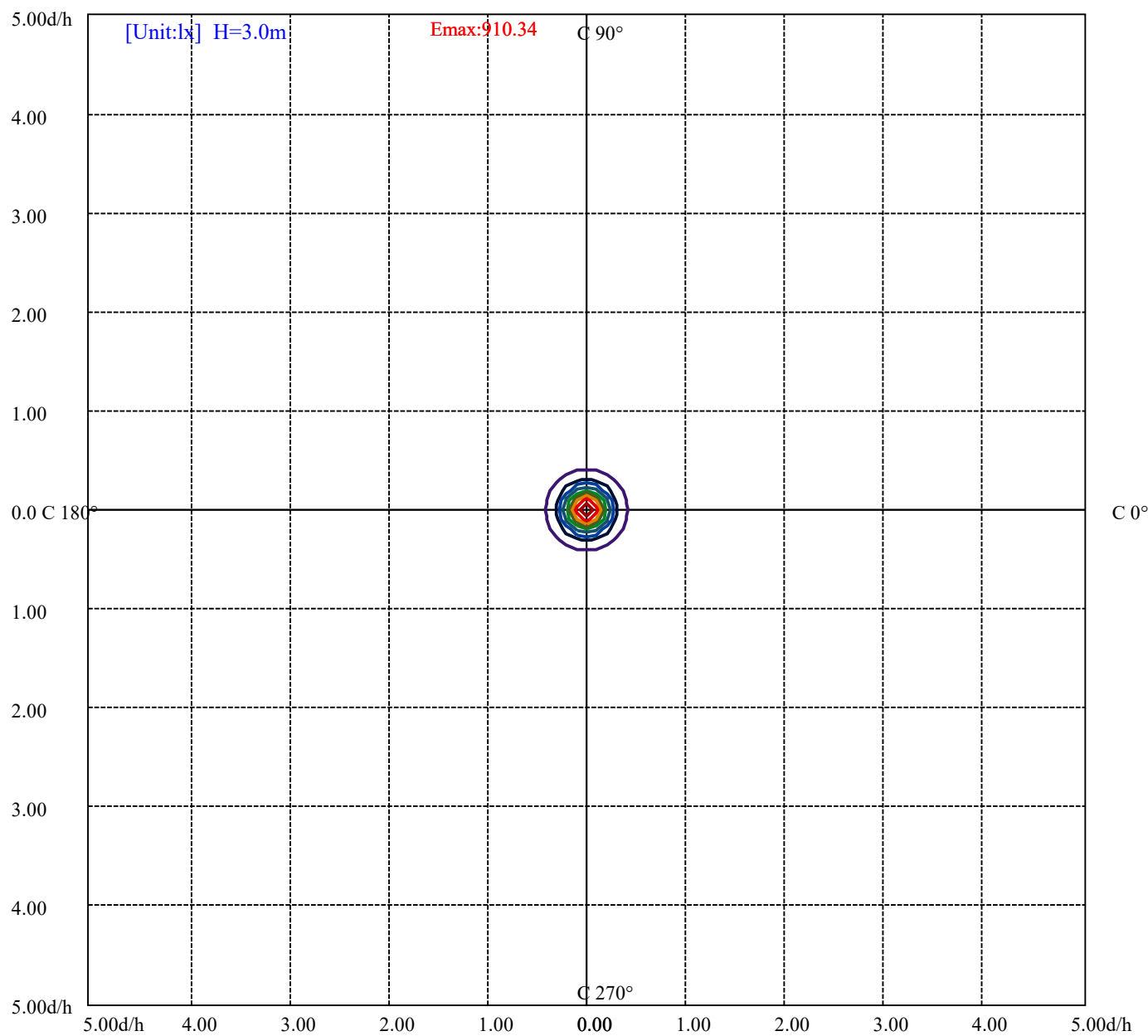
House

[Unit:cd]

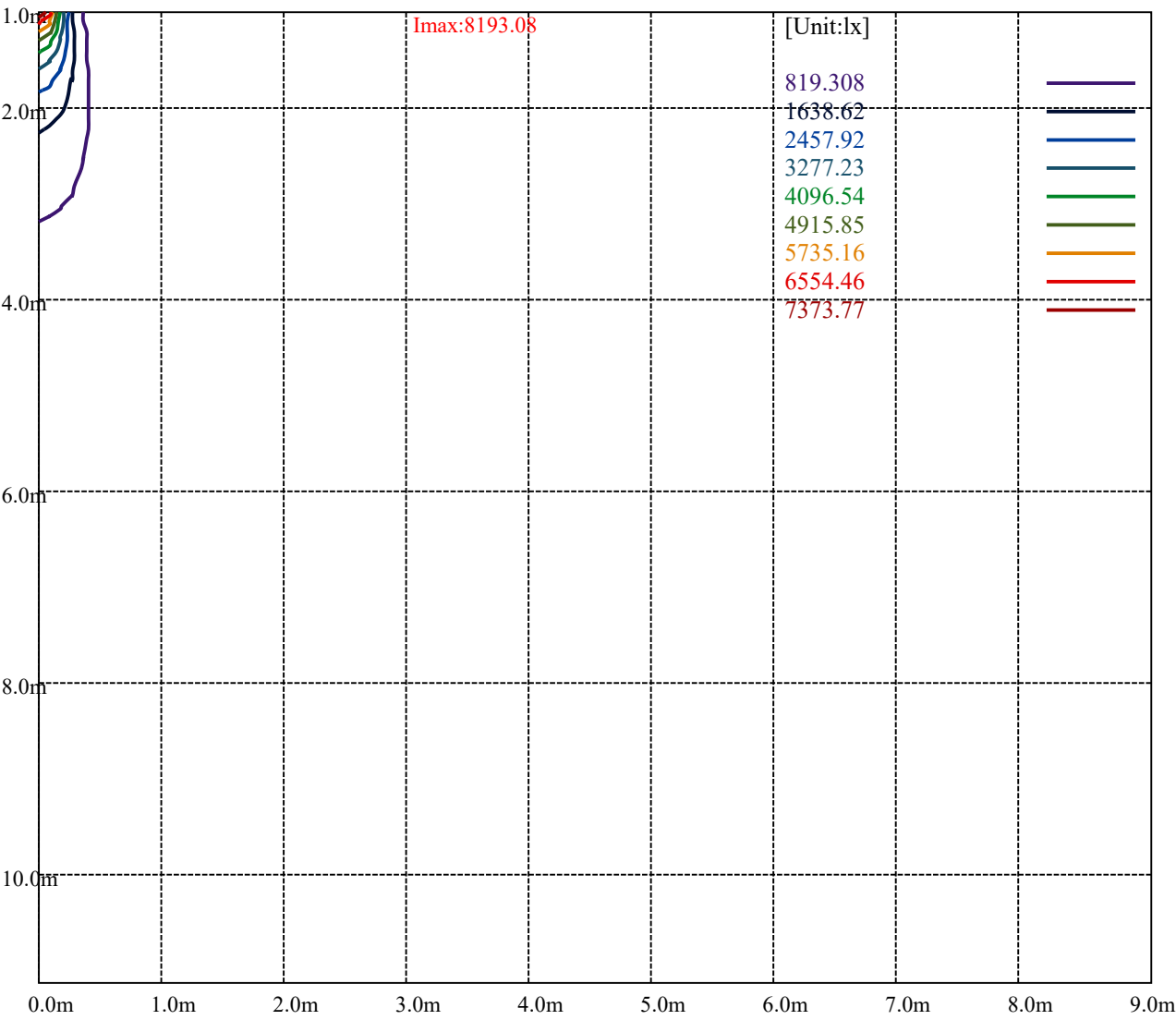
Road

Imax:8193.08

(10%Imax)	819.308	—
(20%Imax)	1638.62	—
(30%Imax)	2457.92	—
(40%Imax)	3277.23	—
(50%Imax)	4096.54	—
(60%Imax)	4915.85	—
(70%Imax)	5735.16	—
(80%Imax)	6554.46	—
(90%Imax)	7373.77	—



(10%Emax)	91.034	—
(20%Emax)	182.0678	—
(30%Emax)	273.1022	—
(40%Emax)	364.1356	—
(50%Emax)	455.17	—
(60%Emax)	546.2034	—
(70%Emax)	637.2378	—
(80%Emax)	728.2711	—
(90%Emax)	819.3055	—



Luminance Table

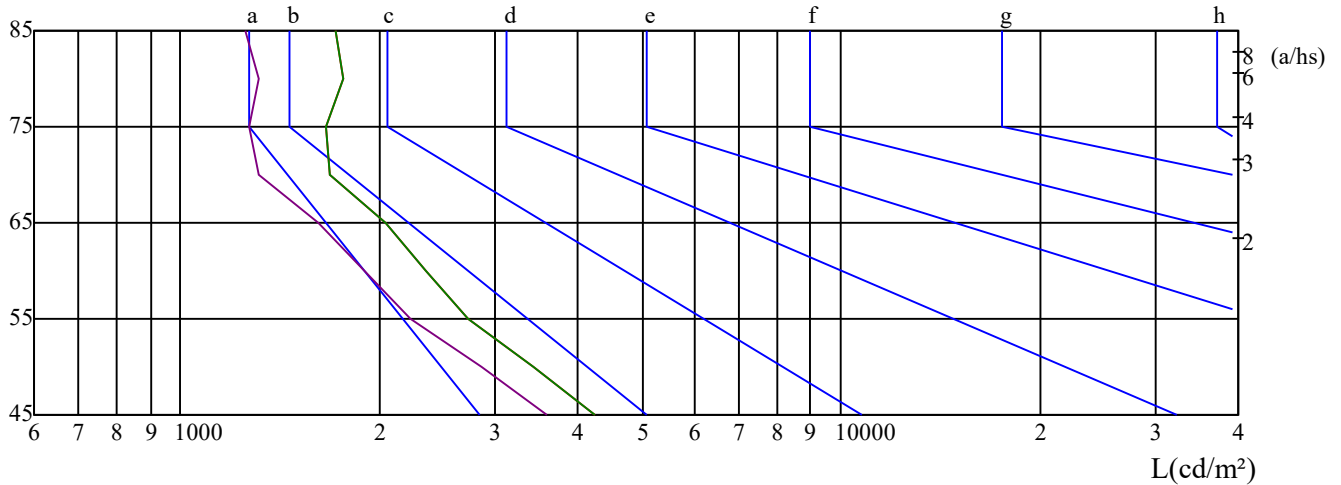
γ	45	50	55	60	65	70	75	80	85
C0	4242	3433	2724	2358	2046	1686	1660	1765	1720
C45	3582	2856	2231	1901	1622	1312	1267	1318	1252
C90	4242	3433	2724	2358	2046	1686	1660	1765	1720

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5557	5557	5557	6614	6614	6614	17446	17446	17446

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

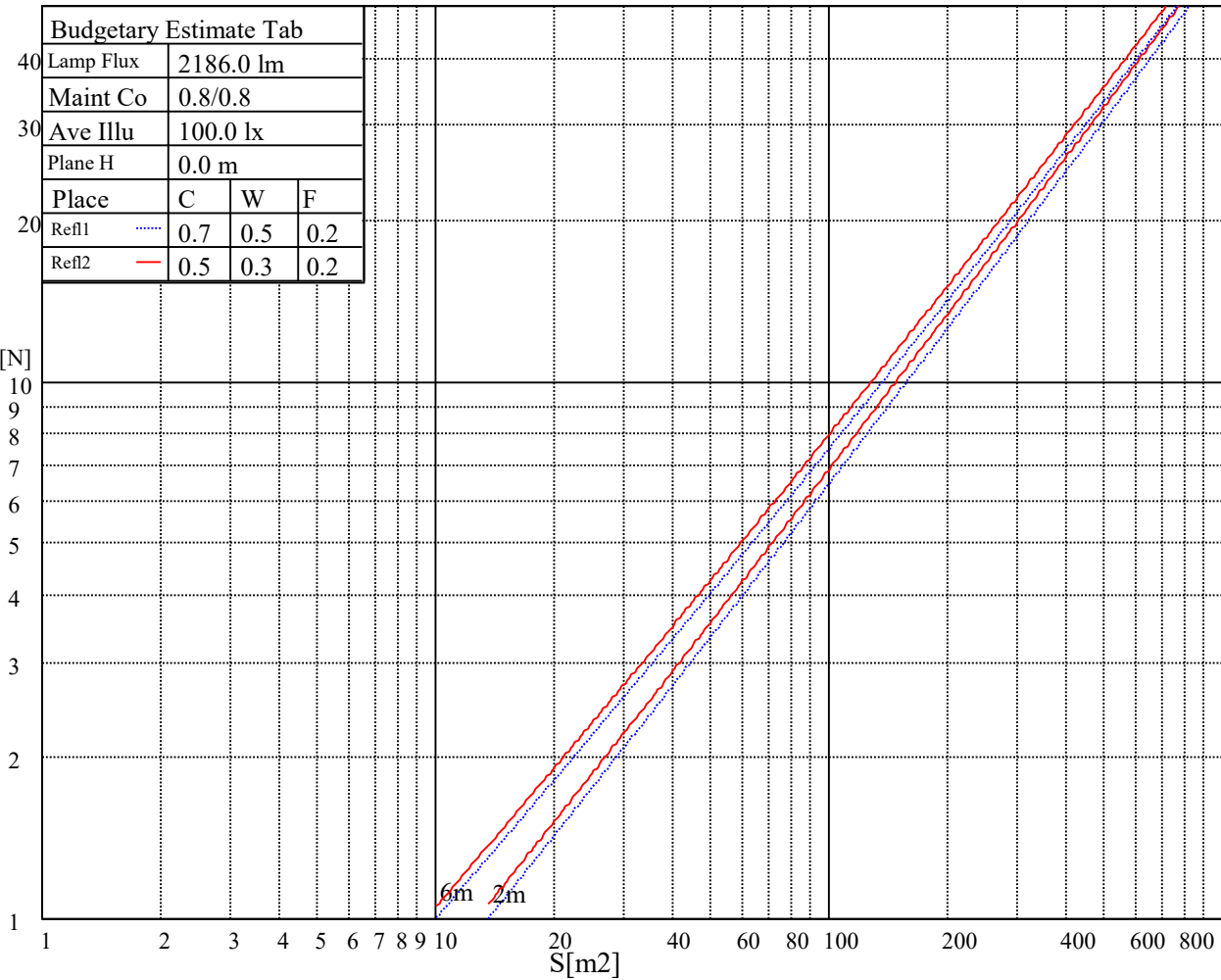
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

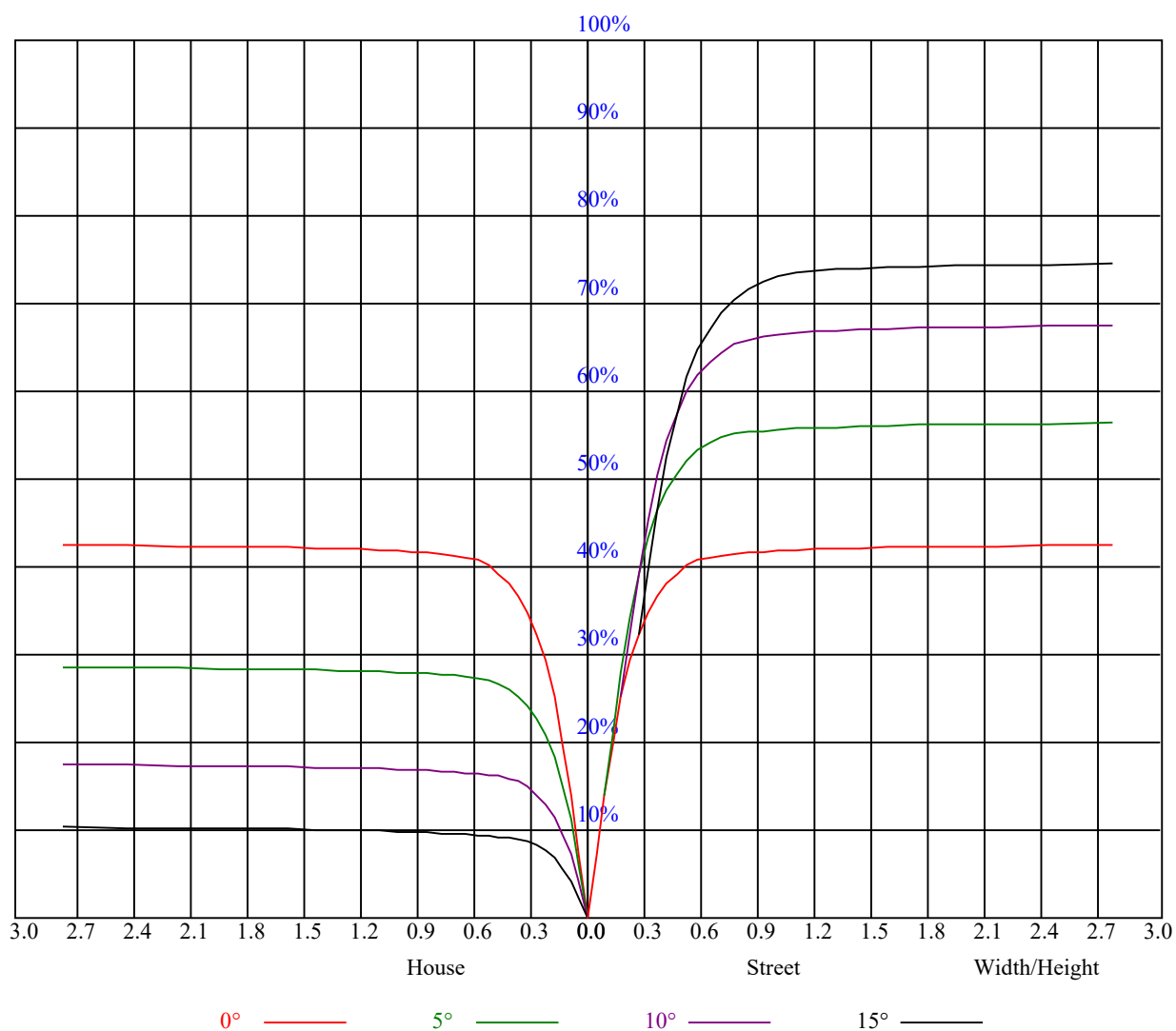
C0 ———

C45 ———

C90 ———



RHOC	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	1.04	1.04	1.04	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.95	0.93	0.90	0.93	0.91	0.89	0.90	0.88	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.80
2	0.90	0.87	0.84	0.89	0.86	0.83	0.86	0.84	0.82	0.84	0.82	0.80	0.81	0.80	0.78	0.77
3	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.76	0.74
4	0.83	0.79	0.76	0.82	0.79	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
5	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.75	0.73	0.71	0.70
6	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
7	0.75	0.71	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
8	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65
9	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.64	0.69	0.66	0.64	0.63
10	0.69	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.62



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Intensity data(cd)										Appendix Page: 14 Total:14	
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	8200.65	7431.51	5124.65	2565.63	1284.47	838.51	480.64	62.27	42.28		
45.0	8171.47	7750.29	5664.20	2824.94	1467.80	880.90	531.84	91.56	44.60		
90.0	8243.04	7636.32	5355.89	2493.50	1086.32	848.42	502.33	75.81	44.16		
135.0	8157.16	7771.21	5844.79	2967.54	1410.54	900.17	591.31	165.39	45.42		
180.0	8200.65	7321.40	4694.11	2175.83	1072.50	809.82	403.51	57.81	41.84		
225.0	8171.47	6970.69	4180.98	1967.72	1088.85	743.98	317.68	60.01	41.46		
270.0	8243.04	7173.85	4492.60	2150.50	1152.88	792.81	343.00	56.82	41.02		
315.0	8157.16	6650.81	4141.34	1885.13	1074.48	739.46	288.72	54.40	40.52		
360.0	8200.65	7431.51	5124.65	2565.63	1284.47	838.51	480.64	62.27	42.28		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	35.24	27.97	21.86	18.50	16.41	12.11	11.40	12.17	10.30		
45.0	36.17	29.07	22.74	18.77	16.19	12.22	11.34	10.57	10.13		
90.0	35.68	28.35	22.19	18.06	15.58	11.67	10.79	10.02	9.86		
135.0	37.00	29.35	22.35	18.11	15.69	11.51	10.68	9.91	9.63		
180.0	33.86	26.43	20.54	17.01	14.15	11.23	10.41	9.86	9.30		
225.0	32.65	26.54	20.37	17.45	13.65	11.73	10.79	10.13	9.36		
270.0	33.42	27.20	20.98	18.17	14.98	12.00	11.07	10.96	9.36		
315.0	32.43	25.82	20.37	17.95	13.60	11.95	11.18	13.27	9.91		
360.0	35.24	27.97	21.86	18.50	16.41	12.11	11.40	12.17	10.30		
C/ γ (°)	90.0										
0.0	7.65										
45.0	7.87										
90.0	7.82										
135.0	7.71										
180.0	7.71										
225.0	7.93										
270.0	7.82										
315.0	7.71										
360.0	7.65										