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Nata

LumCAT: 1657-S	
Luminaire: 92.70.122.000	
Report No: NATA0100	Voltage(V): 37.7000
Test No: GC2018080214	Current(A): 0.2000
LampCAT: BRIDGELUX V4 HD	Power (W): 7.5400
Lamp flux(lm): 719.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 47	Width(mm): 47
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 638.94
Efficiency(%): 88.87%
Lumens(lm)/Power(W): 87.86
Central intensity(cd): 4036.874
Maximum intensity(cd): 4036.874
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=17.1
[C90/270]Total=17.1
Field angle(10%Imax): [C0/180]Total=35.3
[C90/270]Total=35.3
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.31 C90_270=0.31
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.14%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.969%

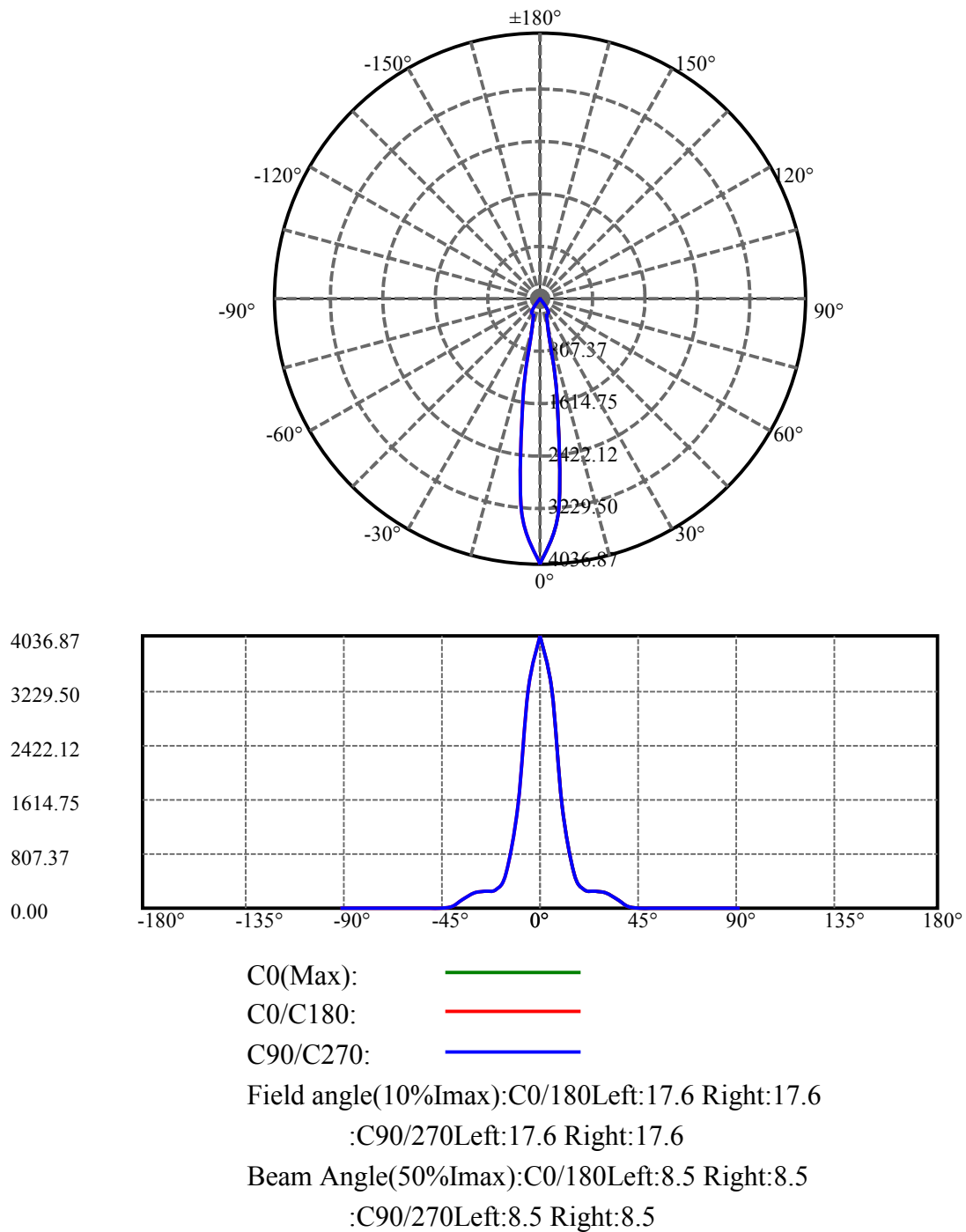
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4036.873	24.141	24.141	3.358%	3.778%
5.0	3227.337	154.181	178.322	21.444%	27.909%
10.0	1520.568	144.732	323.054	20.130%	50.561%
15.0	536.538	76.118	399.172	10.587%	62.474%
20.0	284.401	53.318	452.49	7.416%	70.818%
25.0	249.867	57.882	510.372	8.050%	79.877%
30.0	231.430	63.428	573.8	8.822%	89.804%
35.0	126.423	39.747	613.547	5.528%	96.025%
40.0	13.310	4.690	618.237	.652%	96.759%
45.0	8.004	3.102	621.339	.431%	97.245%
50.0	6.992	2.936	624.275	.408%	97.704%
55.0	5.781	2.596	626.871	.361%	98.110%
60.0	4.797	2.277	629.148	.317%	98.467%
65.0	4.047	2.010	631.158	.280%	98.781%
70.0	3.661	1.886	633.044	.262%	99.076%
75.0	3.365	1.782	634.825	.248%	99.355%
80.0	3.138	1.694	636.52	.236%	99.620%
85.0	3.007	1.642	638.162	.228%	99.877%
90.0	2.856	0.783	638.945	.109%	100.000%

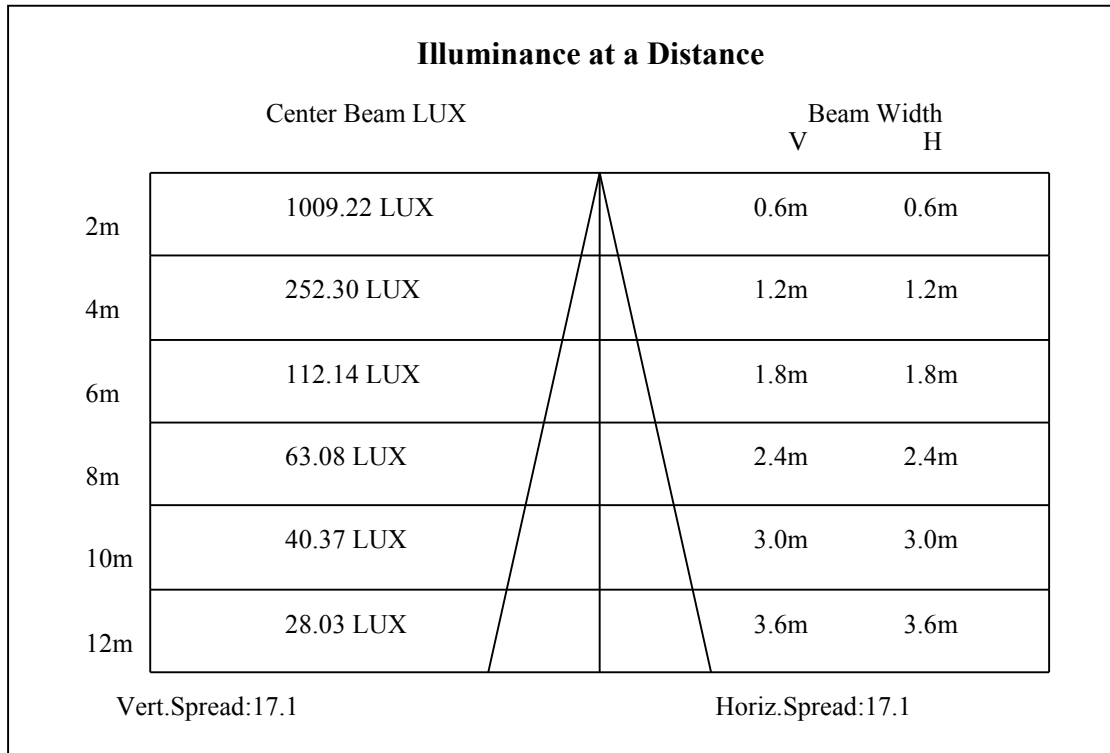
ZONAL LUMEN SUMMARY

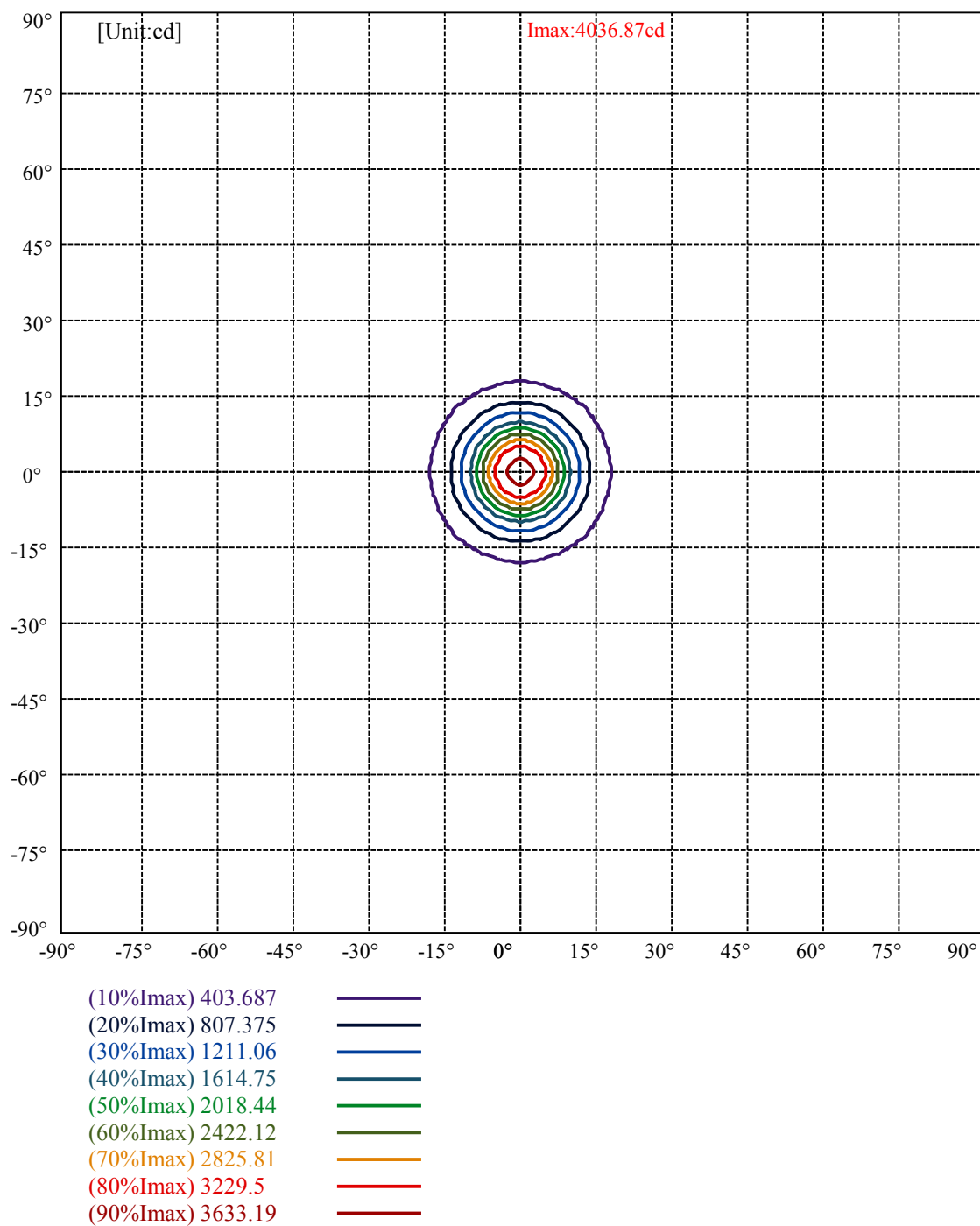
Zone	Lumens	%Lamp	%Fixt
0-30	573.80	79.81%	89.80%
0-40	618.24	85.99%	96.76%
0-60	629.15	87.50%	98.47%
0-90	638.16	88.76%	99.88%
0-120	638.16	88.76%	99.88%
0-180	638.94	88.87%	100.00%
60-90	11.29	1.57%	1.77%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.06	511.16	71.09%	80.00%

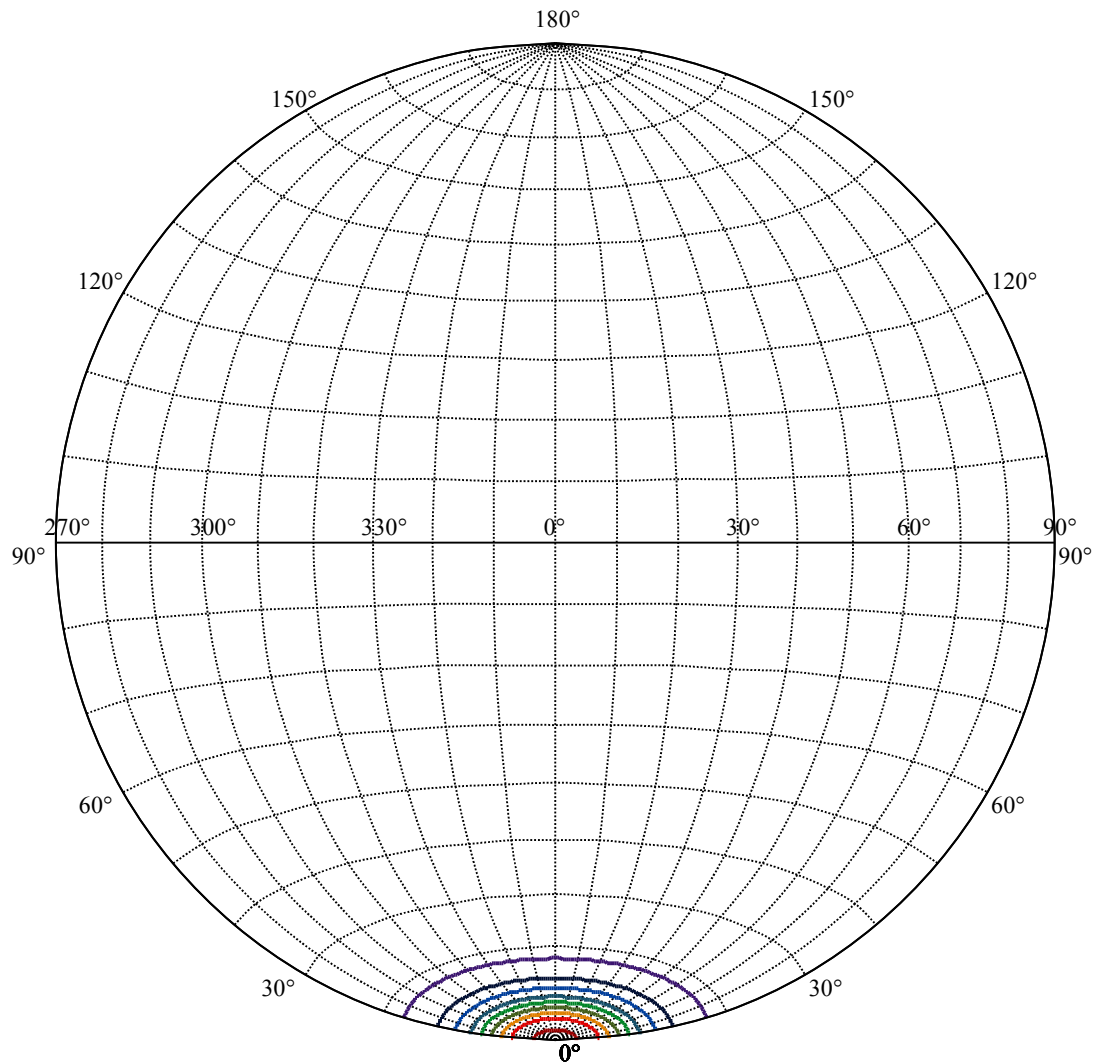
ZONAL LUMEN SUMMARY

0-10	323.05
10-20	129.44
20-30	121.31
30-40	44.44
40-50	6.04
50-60	4.87
60-70	3.90
70-80	3.48
80-90	1.64
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









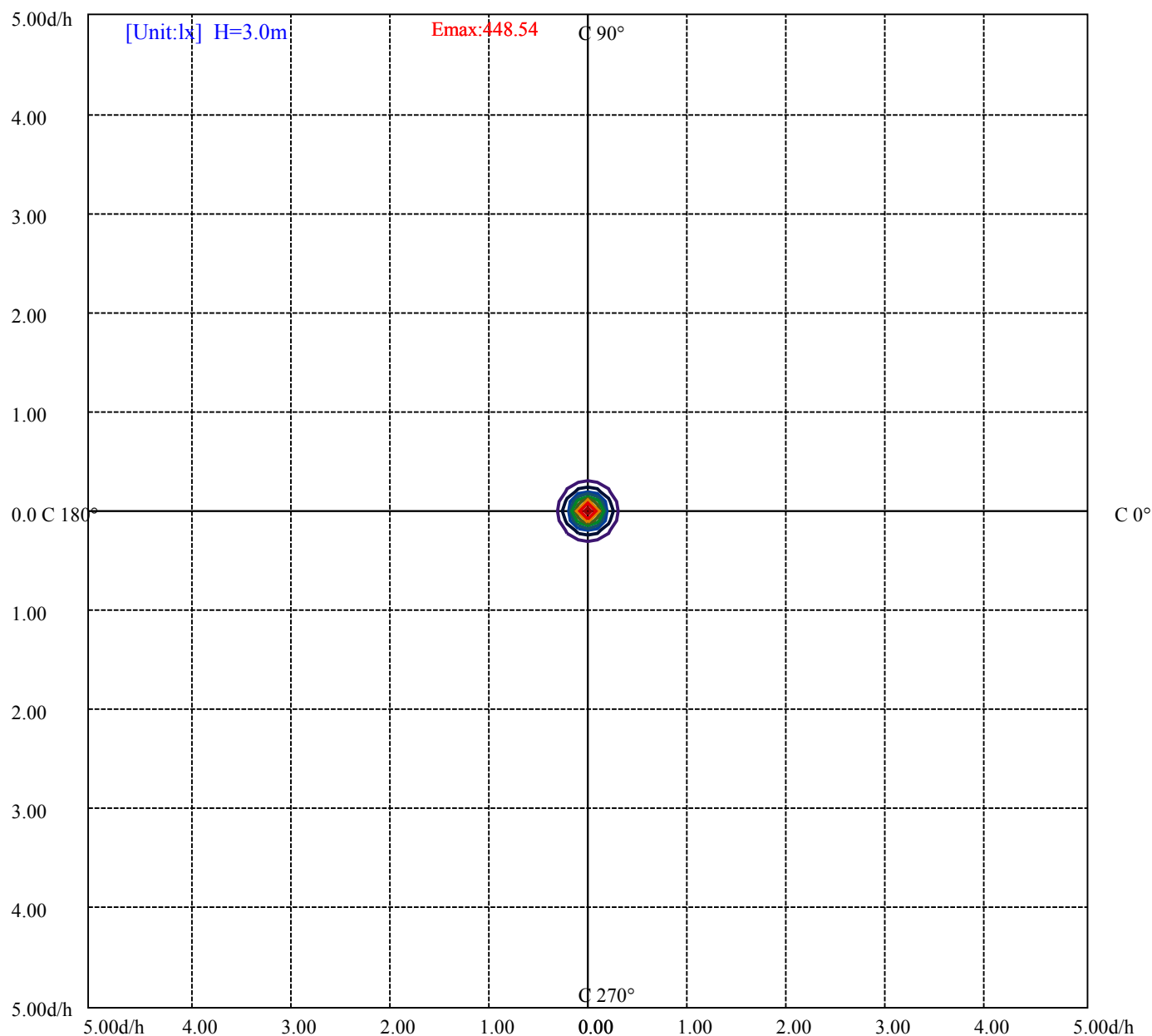
House

[Unit:cd]

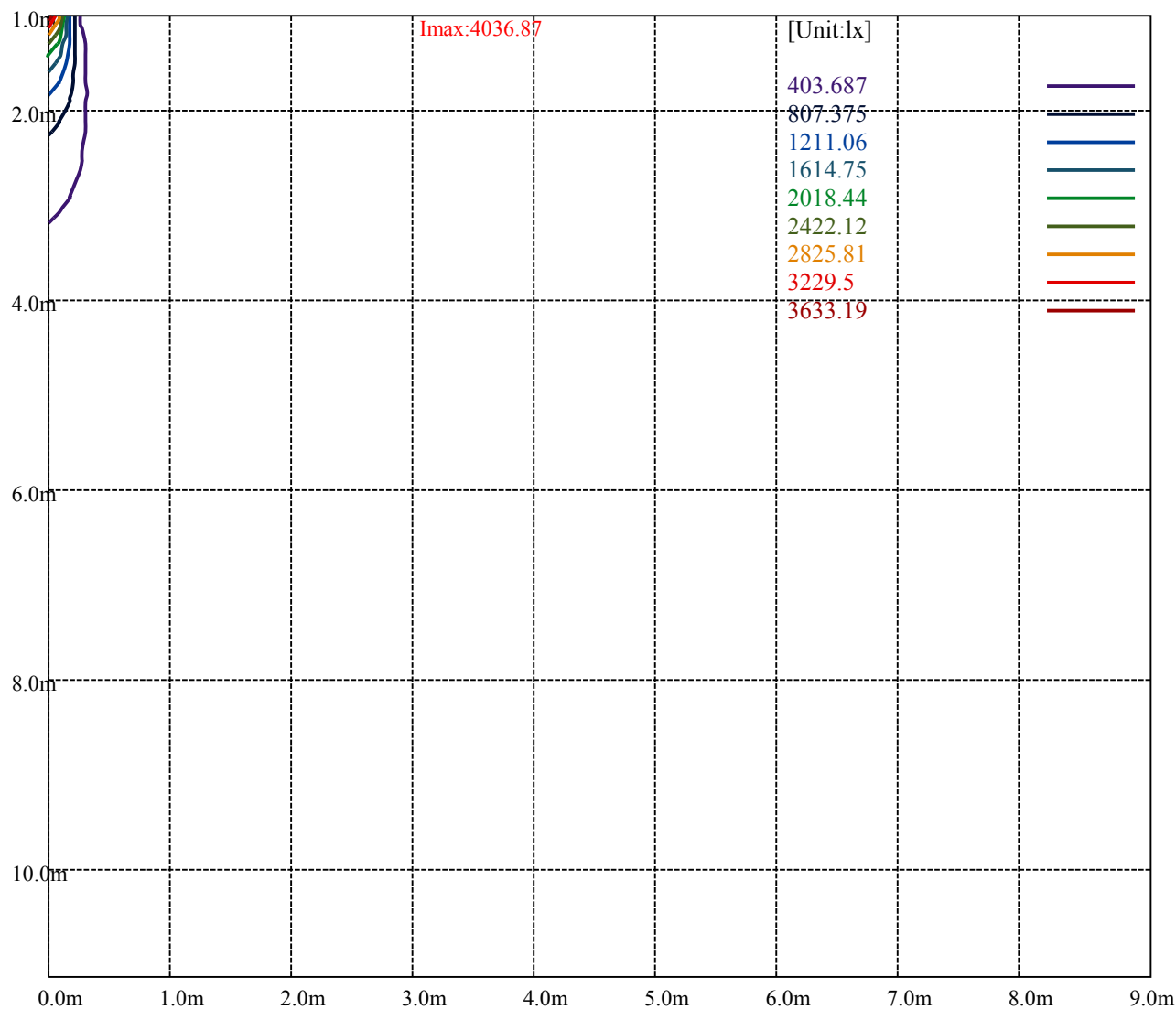
Road

Imax:4036.87

(10%Imax)	403.687	—
(20%Imax)	807.375	—
(30%Imax)	1211.06	—
(40%Imax)	1614.75	—
(50%Imax)	2018.44	—
(60%Imax)	2422.12	—
(70%Imax)	2825.81	—
(80%Imax)	3229.5	—
(90%Imax)	3633.19	—



(10%Emax)	44.85389	
(20%Emax)	89.70778	
(30%Emax)	134.5611	
(40%Emax)	179.4156	
(50%Emax)	224.2689	
(60%Emax)	269.1234	
(70%Emax)	313.9767	
(80%Emax)	358.8311	
(90%Emax)	403.6844	



Luminance Table

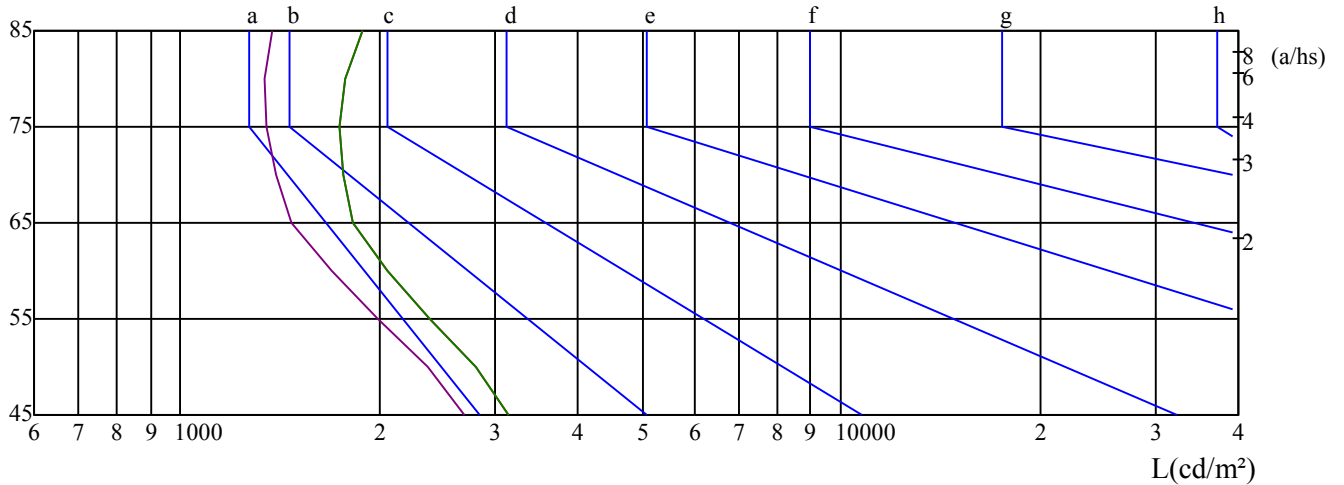
γ	45	50	55	60	65	70	75	80	85
C0	3128	2797	2387	2063	1830	1760	1740	1771	1883
C45	2693	2372	1993	1694	1476	1392	1347	1337	1380
C90	3128	2797	2387	2063	1830	1760	1740	1771	1883

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4335	4335	4335	5886	5886	5886	15621	15621	15621

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

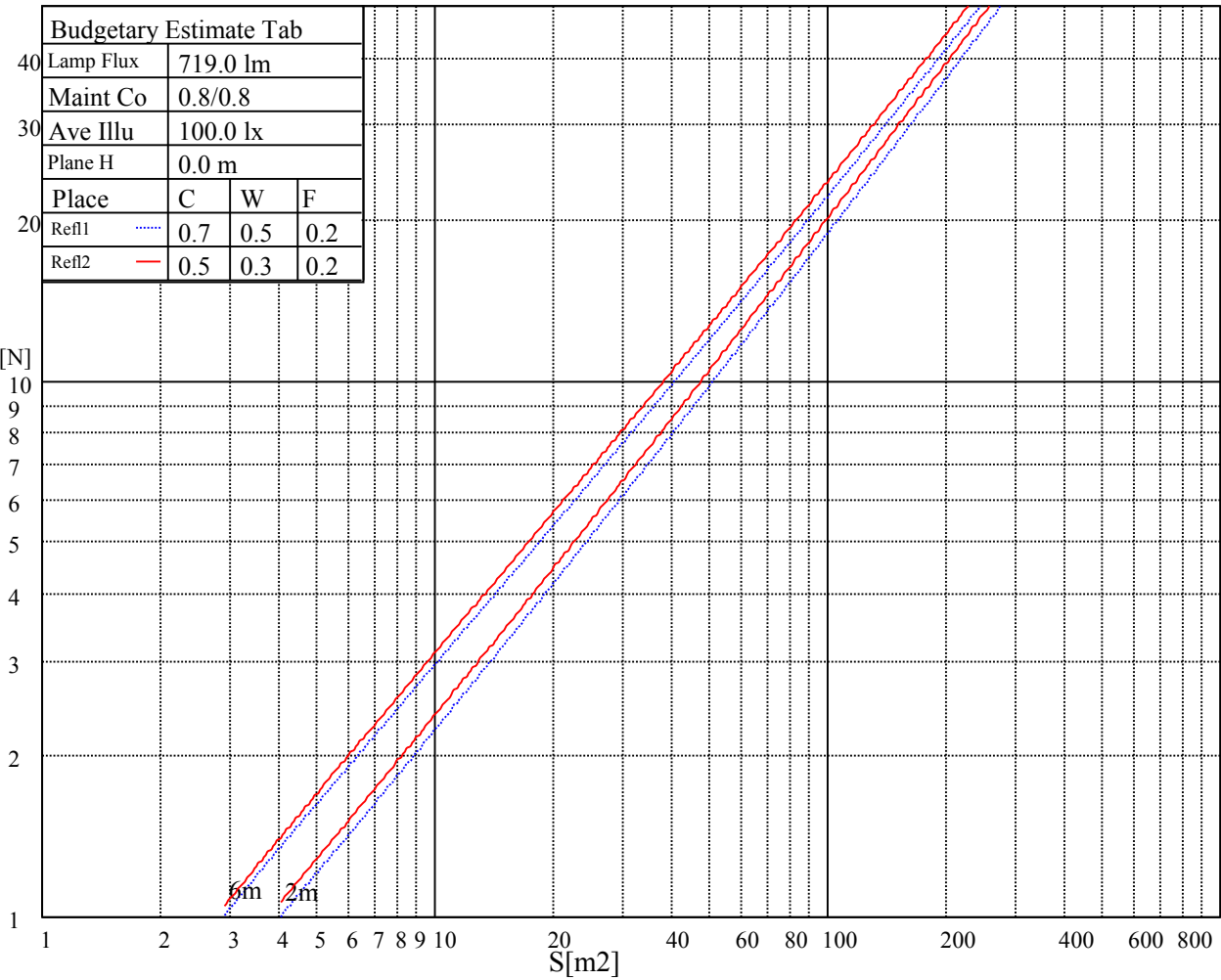
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

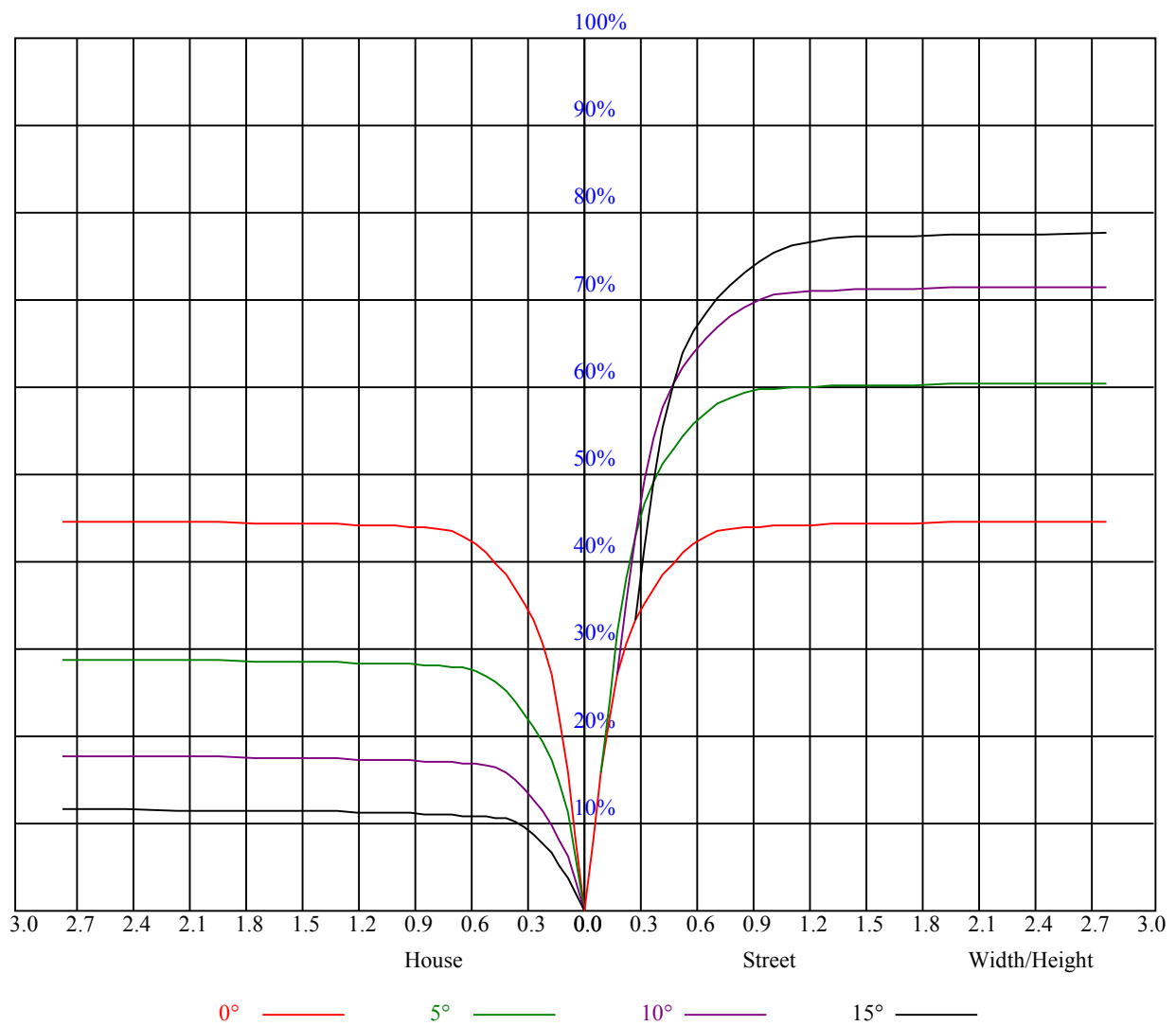
C0 ———

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	1.10	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	0.99	0.96	0.94	0.97	0.94	0.92	0.93	0.91	0.89	0.90	0.88	0.86	0.87	0.85	0.84	0.82
2	0.94	0.90	0.87	0.93	0.89	0.86	0.90	0.87	0.84	0.87	0.85	0.82	0.84	0.82	0.81	0.79
3	0.90	0.86	0.82	0.89	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.76
4	0.86	0.82	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.76	0.80	0.77	0.75	0.74
5	0.83	0.79	0.75	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.72
6	0.80	0.76	0.73	0.80	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
7	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
8	0.75	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
9	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63



Nata 1657-S

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	4050.50	3268.15	1718.86	570.93	300.06	262.67	241.09	142.38	11.18		
45.0	4050.50	3131.06	1632.42	477.34	290.15	261.85	237.40	119.47	12.17		
90.0	4029.03	2917.44	1066.06	402.24	258.77	236.80	210.48	72.51	13.05		
135.0	4017.47	3291.27	1720.51	574.24	278.03	239.94	236.25	150.58	15.14		
180.0	4050.50	3226.31	1374.21	546.60	280.13	259.59	236.14	116.72	12.50		
225.0	4050.50	3264.29	1674.82	596.92	273.85	230.19	226.17	136.21	14.26		
270.0	4029.03	3555.54	1887.33	676.64	297.30	247.31	226.67	160.54	16.46		
315.0	4017.47	3164.64	1090.34	447.39	296.92	260.58	237.24	112.98	11.73		
360.0	4050.50	3268.15	1718.86	570.93	300.06	262.67	241.09	142.38	11.18		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	5.67	4.73	4.29	4.35	4.02	3.85	3.25	3.03	3.03		
45.0	7.32	6.44	5.12	4.40	3.85	3.52	3.47	3.14	2.97		
90.0	8.97	7.71	5.78	4.46	3.85	3.52	3.36	3.14	2.92		
135.0	8.86	8.09	6.72	5.29	4.29	3.69	3.30	3.08	2.97		
180.0	7.32	6.06	5.51	5.01	4.18	3.63	3.25	3.14	3.03		
225.0	8.92	8.26	6.83	5.34	4.24	3.69	3.36	3.08	3.03		
270.0	9.97	8.37	6.77	5.07	4.07	3.74	3.47	3.36	3.14		
315.0	6.99	6.28	5.23	4.46	3.85	3.63	3.47	3.14	2.97		
360.0	5.67	4.73	4.29	4.35	4.02	3.85	3.25	3.03	3.03		
C/γ(°)	90.0										
0.0	2.92										
45.0	2.86										
90.0	2.81										
135.0	2.81										
180.0	2.86										
225.0	2.86										
270.0	2.86										
315.0	2.86										
360.0	2.92										