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Nata

LumCAT: 1654-S
Luminaire: 92.70.044.00
Report No: NATA0100
Test No: GC2018070617
LampCAT: NICHIA NTCWT012B-V3
Lamp flux(lm): 756.0
Number of Lamps: 1
Length(mm): 32
Phm Type: C

Voltage(V): 38.5000
Current(A): 0.2000
Power (W): 7.7000
PF: 0.0000
Ballast type: DC
Width(mm): 32
Height(mm): 0

Photometric Results

Lumens(lm): 653.96
Efficiency(%): 86.50%
Lumens(lm)/Power(W): 87.70
Central intensity(cd): 3675.290
Maximum intensity(cd): 3675.290
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=18.5
[C90/270]Total=18.5
Field angle(10%Imax): [C0/180]Total=39.2
[C90/270]Total=39.2
Maximum s/h(1/2): C0_180=0.32 C90_270=0.32
Maximum s/h(1/4): C0_180=0.34 C90_270=0.34
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.33%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.306%

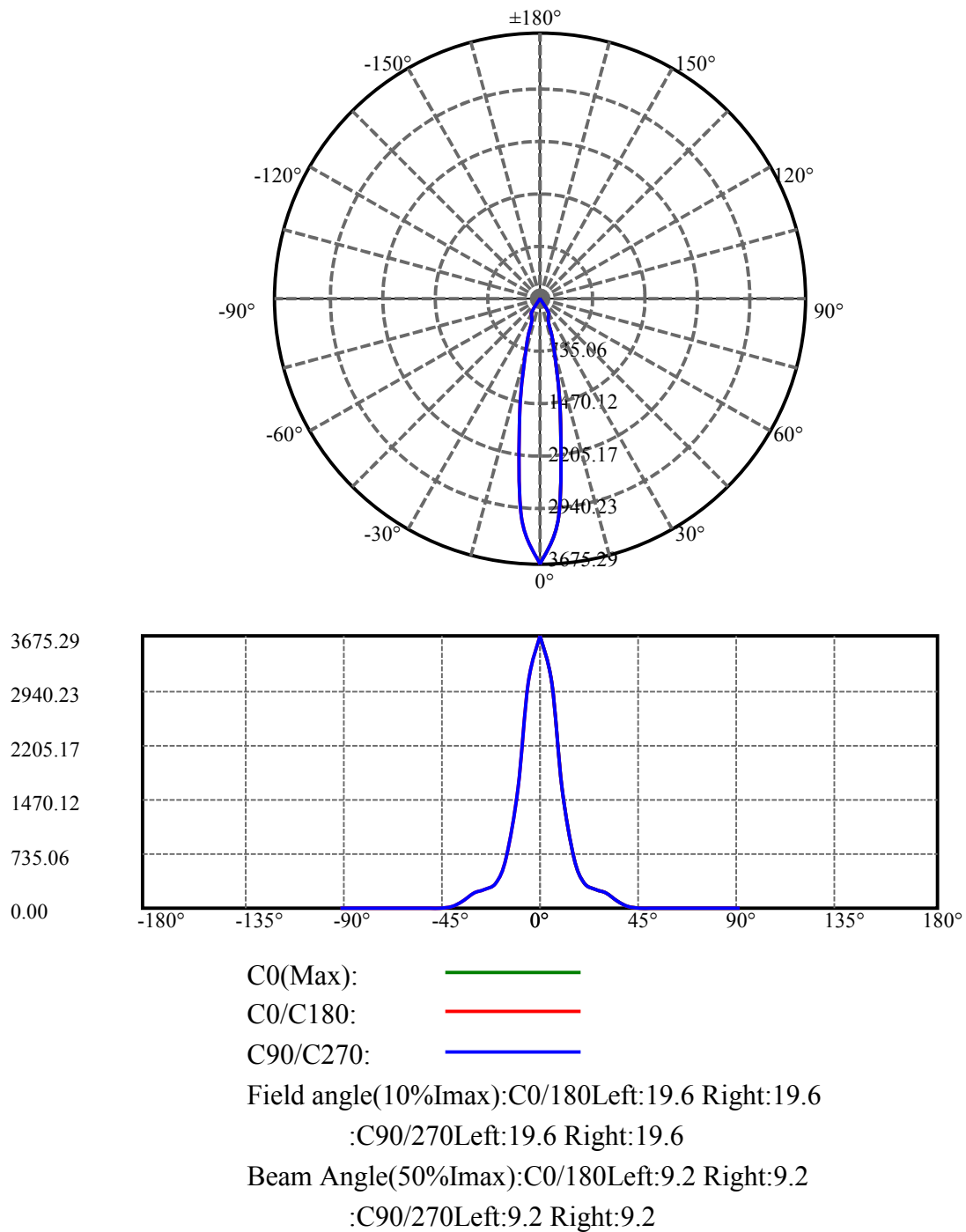
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3675.290	21.979	21.979	2.907%	3.361%
5.0	3039.870	145.225	167.204	19.210%	25.568%
10.0	1619.346	154.134	321.338	20.388%	49.137%
15.0	687.324	97.510	418.848	12.898%	64.048%
20.0	339.065	63.566	482.413	8.408%	73.768%
25.0	258.682	59.925	542.338	7.927%	82.931%
30.0	212.050	58.116	600.454	7.687%	91.818%
35.0	90.685	28.511	628.965	3.771%	96.178%
40.0	13.957	4.917	633.883	.650%	96.930%
45.0	7.157	2.774	636.657	.367%	97.354%
50.0	5.829	2.448	639.105	.324%	97.728%
55.0	5.148	2.311	641.416	.306%	98.082%
60.0	4.632	2.199	643.615	.291%	98.418%
65.0	4.177	2.075	645.69	.275%	98.735%
70.0	3.806	1.960	647.65	.259%	99.035%
75.0	3.551	1.880	649.53	.249%	99.323%
80.0	3.400	1.835	651.366	.243%	99.603%
85.0	3.248	1.774	653.139	.235%	99.875%
90.0	2.994	0.820	653.96	.109%	100.000%

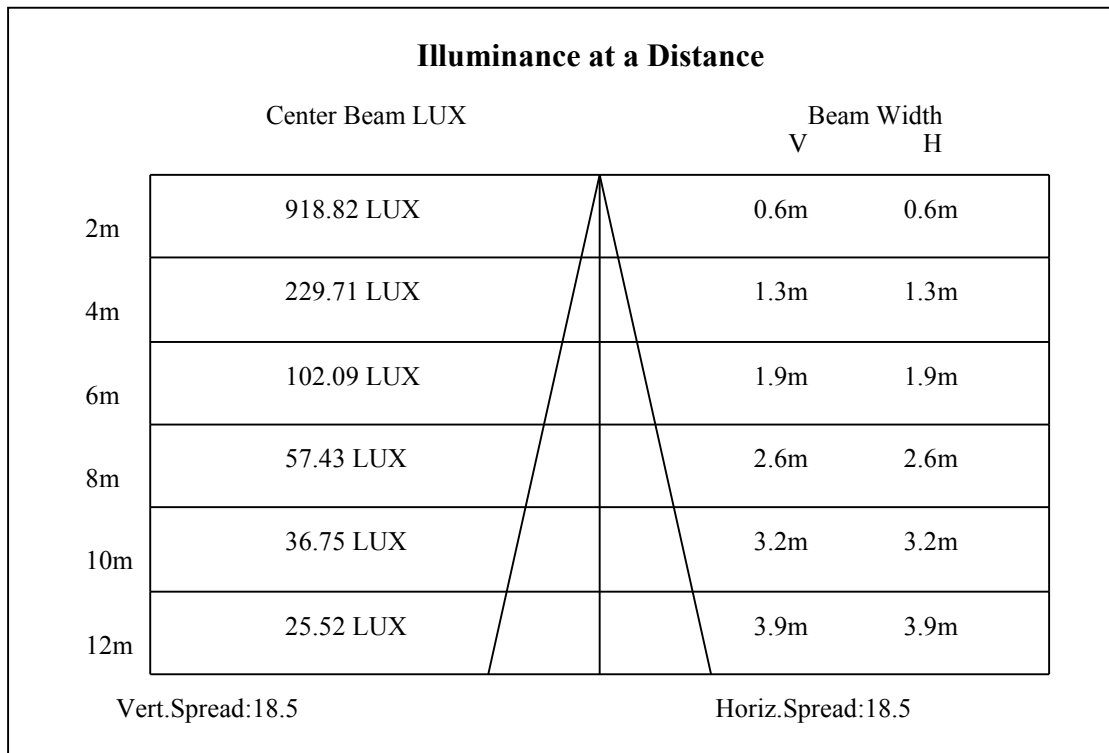
ZONAL LUMEN SUMMARY

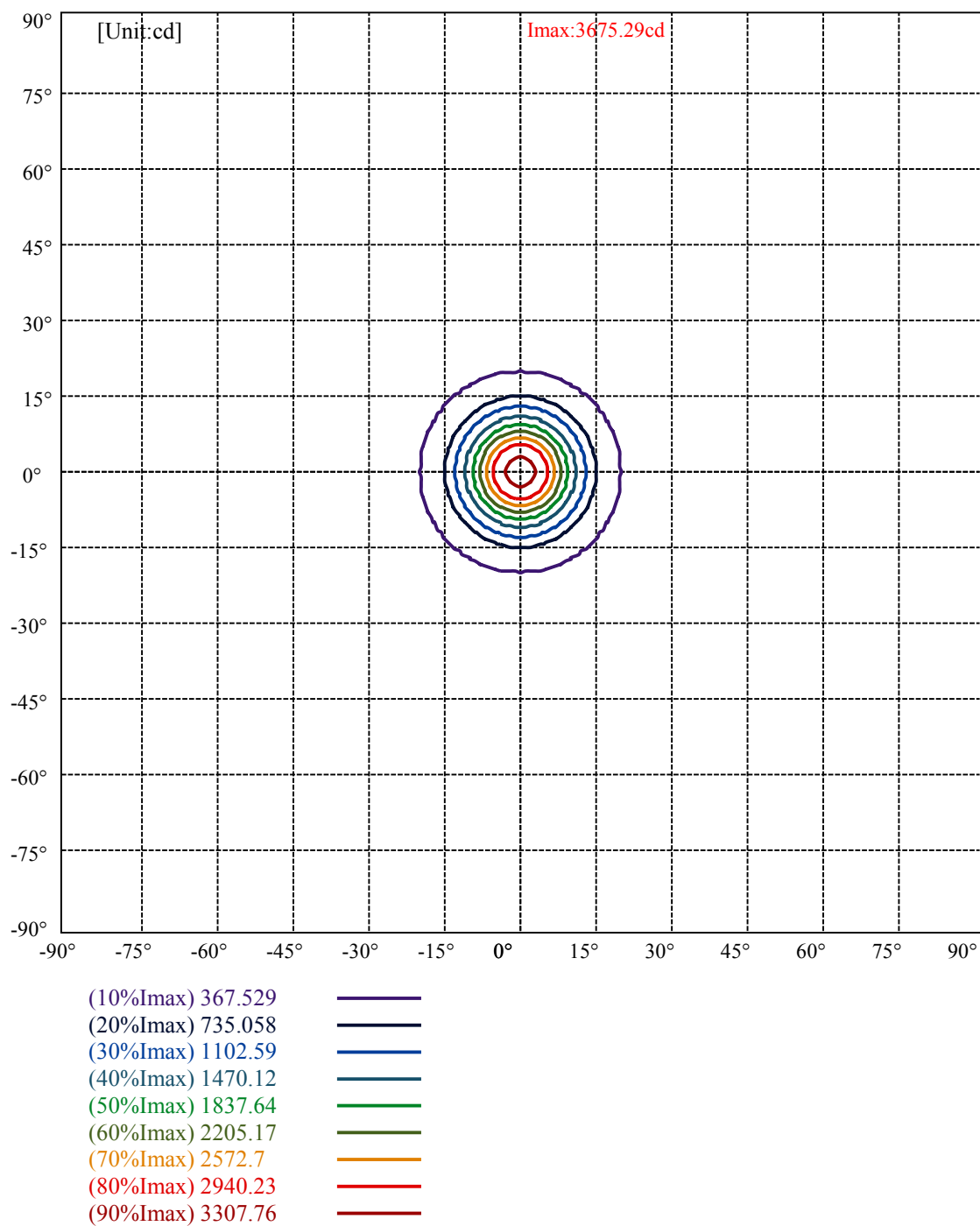
Zone	Lumens	%Lamp	%Fixt
0-30	600.45	79.43%	91.82%
0-40	633.88	83.85%	96.93%
0-60	643.61	85.13%	98.42%
0-90	653.14	86.39%	99.87%
0-120	653.14	86.39%	99.87%
0-180	653.96	86.50%	100.00%
60-90	11.72	1.55%	1.79%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-23.40	523.17	69.20%	80.00%

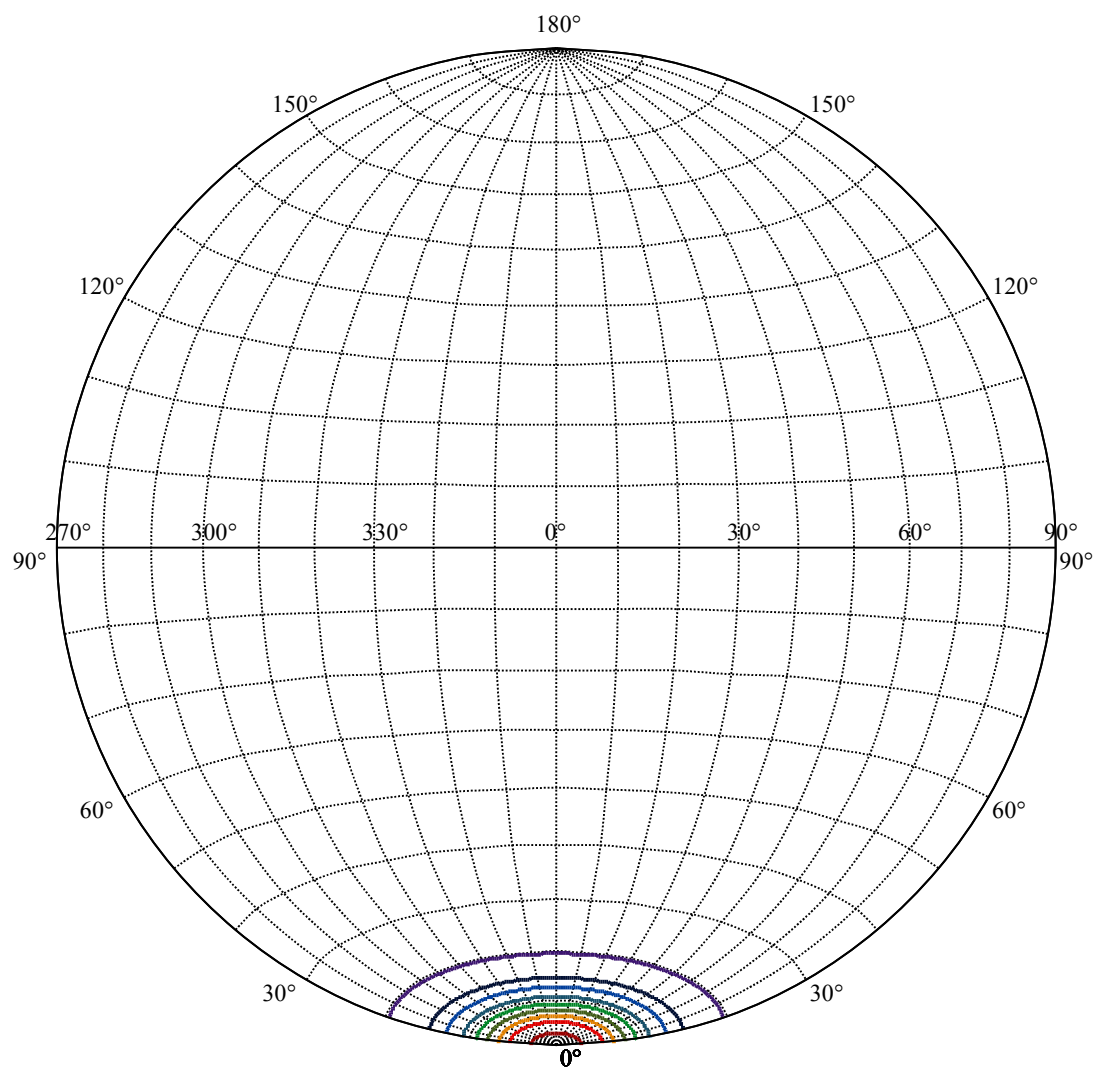
ZONAL LUMEN SUMMARY

0-10	321.34
10-20	161.08
20-30	118.04
30-40	33.43
40-50	5.22
50-60	4.51
60-70	4.04
70-80	3.72
80-90	1.77
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









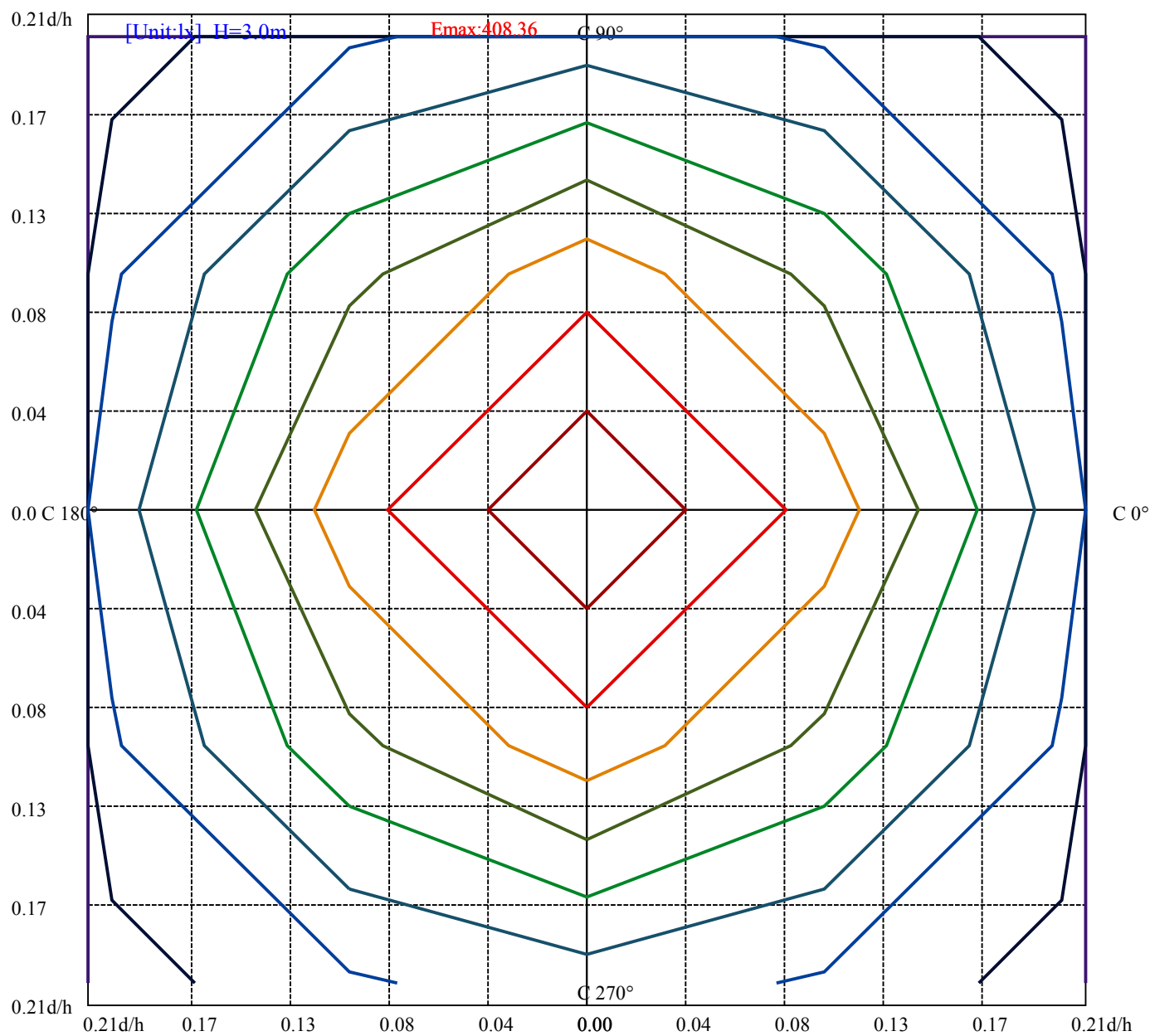
House

[Unit:cd]

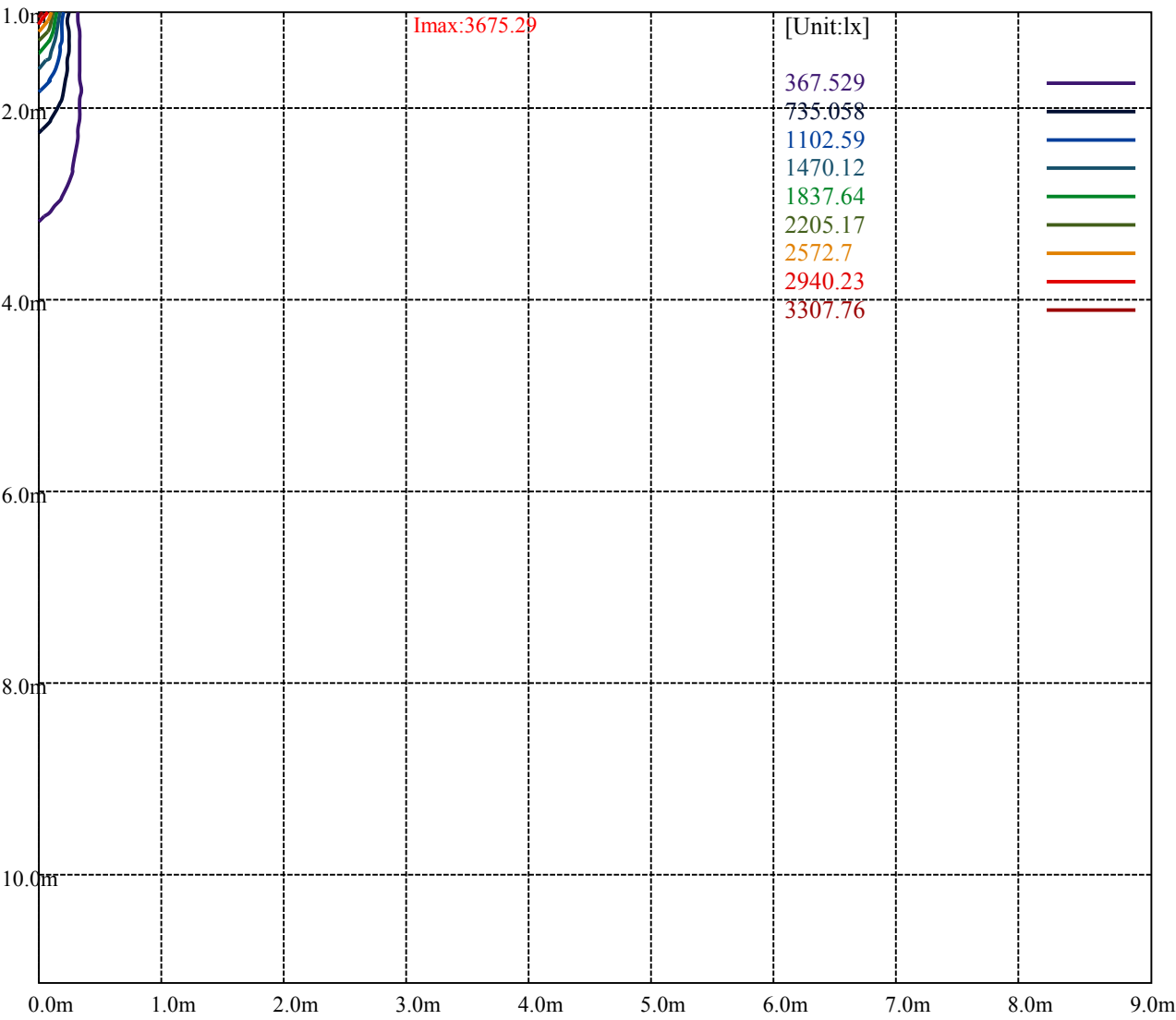
Road

Imax:3675.29

(10%Imax)	367.529	—
(20%Imax)	735.058	—
(30%Imax)	1102.59	—
(40%Imax)	1470.12	—
(50%Imax)	1837.64	—
(60%Imax)	2205.17	—
(70%Imax)	2572.7	—
(80%Imax)	2940.23	—
(90%Imax)	3307.76	—



(10%Emax) 40.83633	—
(20%Emax) 81.67267	—
(30%Emax) 122.5089	—
(40%Emax) 163.3456	—
(50%Emax) 204.1822	—
(60%Emax) 245.0178	—
(70%Emax) 285.8544	—
(80%Emax) 326.6911	—
(90%Emax) 367.5267	—



Luminance Table

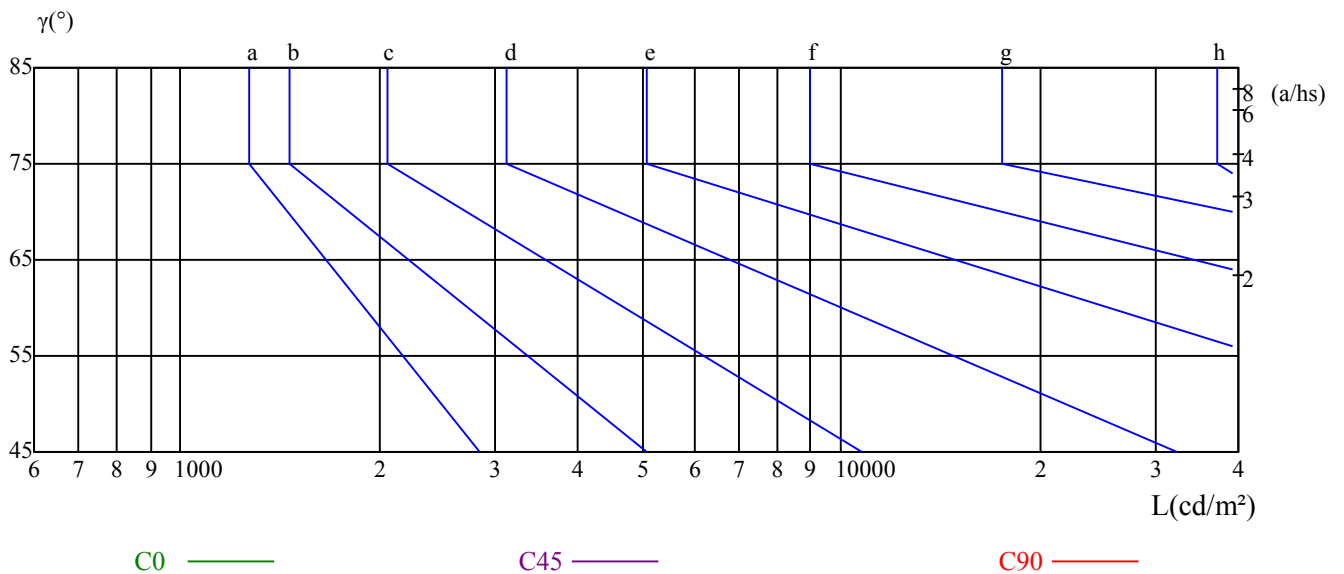
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

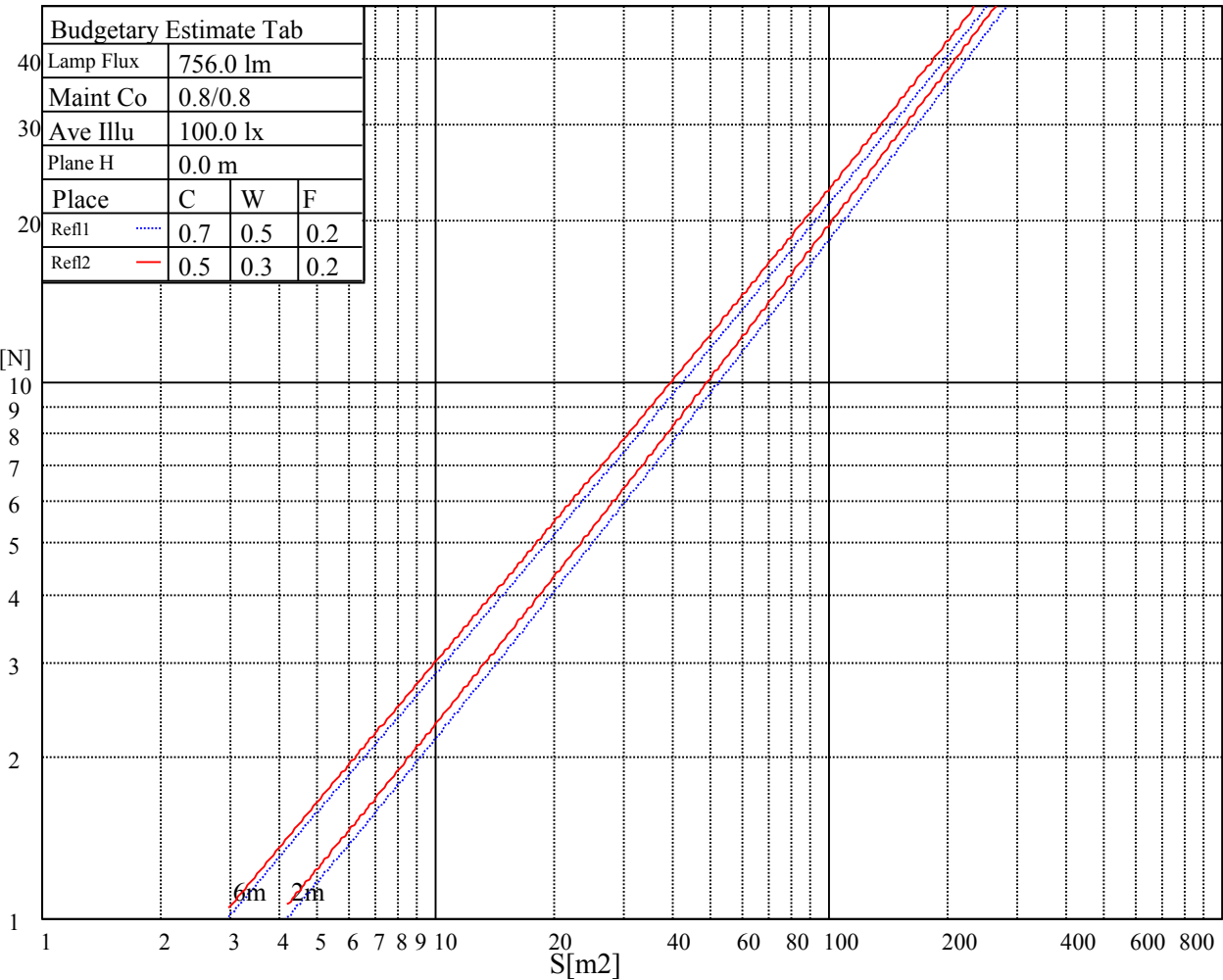
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

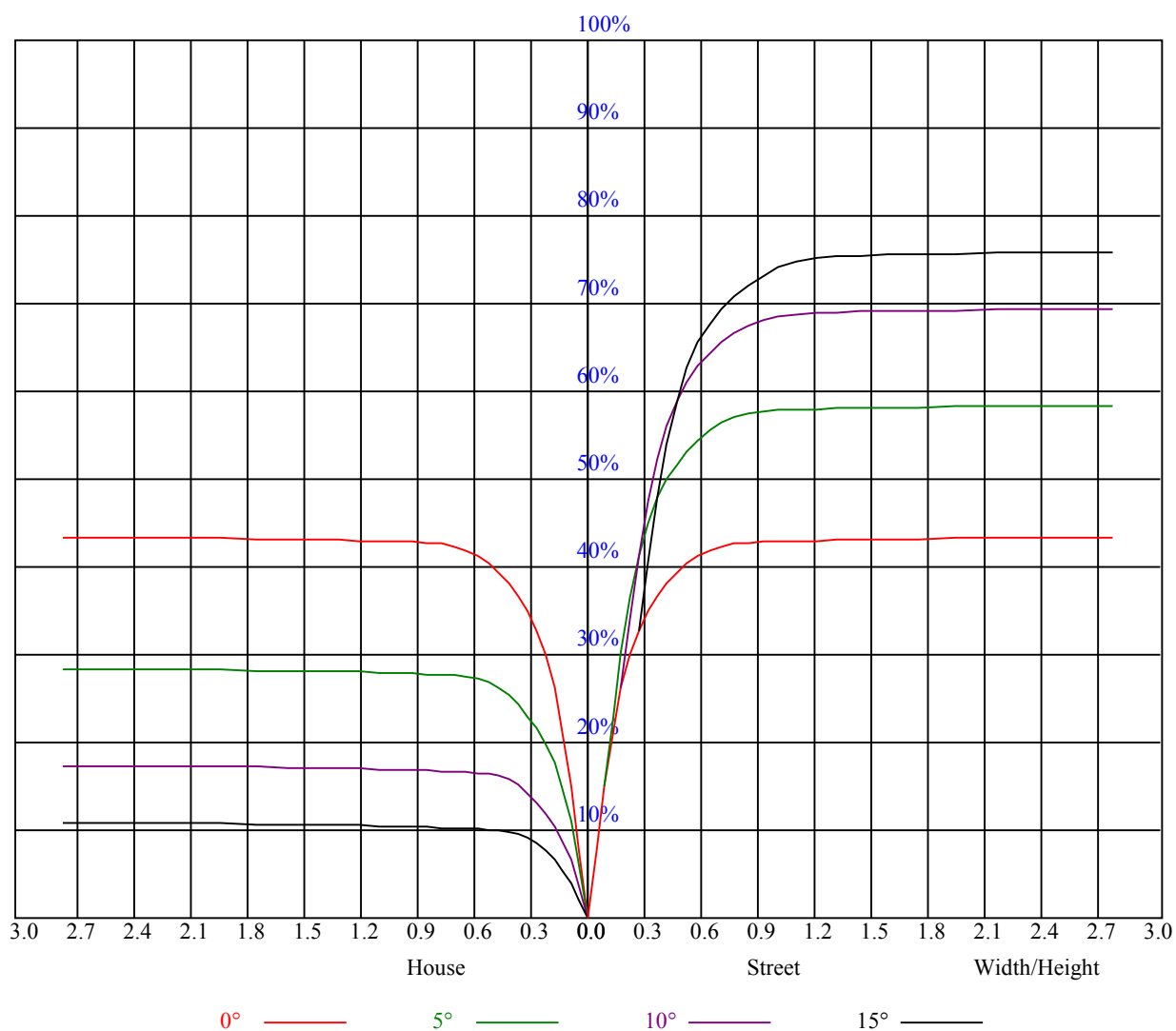
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.97	0.94	0.91	0.95	0.92	0.90	0.91	0.89	0.87	0.88	0.86	0.85	0.85	0.83	0.82	0.80
2	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.82	0.85	0.83	0.81	0.82	0.81	0.79	0.78
3	0.88	0.84	0.81	0.87	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.76	0.75
4	0.84	0.80	0.77	0.83	0.80	0.77	0.82	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.74	0.72	0.71
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	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
9	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64
10	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62



Nata 1654-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	3657.95	2713.73	1370.90	537.90	329.79	265.87	200.30	60.62	9.08	
45.0	3743.84	2811.18	1365.40	576.44	319.33	257.50	189.61	51.09	7.98	
90.0	3641.98	2567.28	1094.36	451.35	274.62	236.69	169.63	37.27	9.47	
135.0	3657.40	3085.36	1799.79	709.68	330.89	242.19	205.47	87.87	13.71	
180.0	3657.95	3354.04	1951.20	831.19	356.38	264.82	243.29	130.81	18.06	
225.0	3743.84	3426.71	2084.44	842.97	374.38	258.65	236.69	140.34	20.32	
270.0	3641.98	3476.81	2191.80	951.93	391.45	280.24	226.94	139.13	22.79	
315.0	3657.40	2883.85	1096.89	597.14	335.68	263.50	224.46	78.35	10.24	
360.0	3657.95	2713.73	1370.90	537.90	329.79	265.87	200.30	60.62	9.08	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	4.79	4.24	3.91	3.80	3.74	3.74	3.58	3.52	3.36	
45.0	4.57	4.07	3.85	3.85	3.80	3.69	3.47	3.36	3.25	
90.0	6.22	5.45	5.51	5.12	4.24	3.69	3.52	3.36	3.08	
135.0	8.59	7.32	6.11	5.12	4.35	3.80	3.47	3.30	3.19	
180.0	8.92	6.83	5.51	4.68	4.29	3.91	3.63	3.47	3.36	
225.0	9.19	7.32	5.73	4.73	4.24	3.80	3.52	3.30	3.19	
270.0	9.41	6.77	6.28	5.51	4.57	3.96	3.58	3.41	3.25	
315.0	5.56	4.62	4.29	4.24	4.18	3.85	3.63	3.47	3.30	
360.0	4.79	4.24	3.91	3.80	3.74	3.74	3.58	3.52	3.36	
C/γ(°)	90.0									
0.0	2.92									
45.0	2.86									
90.0	2.92									
135.0	3.03									
180.0	3.19									
225.0	3.08									
270.0	2.97									
315.0	2.97									
360.0	2.92									