



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.cn
Tel:+86 750 3770000 Fax:+86 750 3771111
Address:380Jinou Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

Client:

LumCAT: 1658-S

Luminaire: 92.70.124.00

Report No: NT2017083105

Test No: nata-0100

LampCAT: CITIZEN CLU028

Lamp flux(lm): 1645.0

Number of Lamps: 1

Length(mm): 46

Phm Type: C

Voltage(V): 35.7000

Current(A): 0.3500

Power (W): 12.4950

PF: 0.0000

Ballast type: DC

Width(mm): 46

Height(mm): 0

Photometric Results

Lumens(lm): 1466.68, Efficiency(%): 89.16% , Luminous Efficacy(lm/W): 117.38

Central intensity(cd): 3572.885, Maximum intensity(cd): 3572.885

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=34.6

[C90/270]Total=34.6

Field angle(10%Imax): [C0/180]Total=65.2

[C90/270]Total=65.2

Maximum s/h(1/2): C0_180=0.56 C90_270=0.56

Maximum s/h(1/4): C0_180=0.59 C90_270=0.59

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.37%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.460%

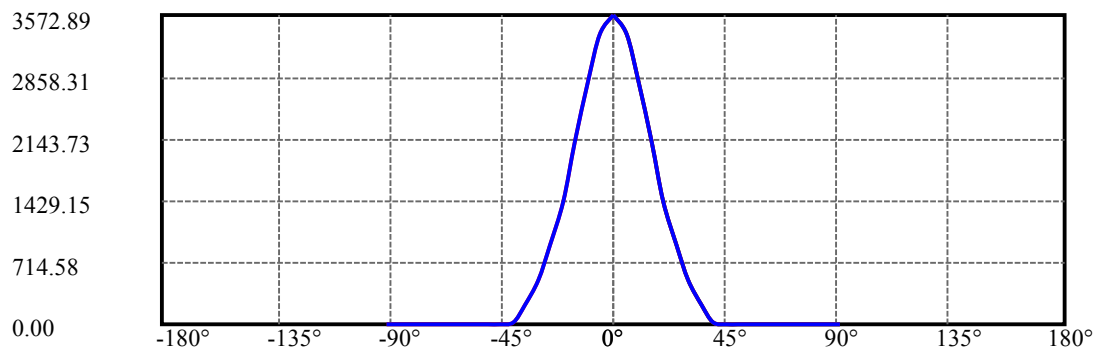
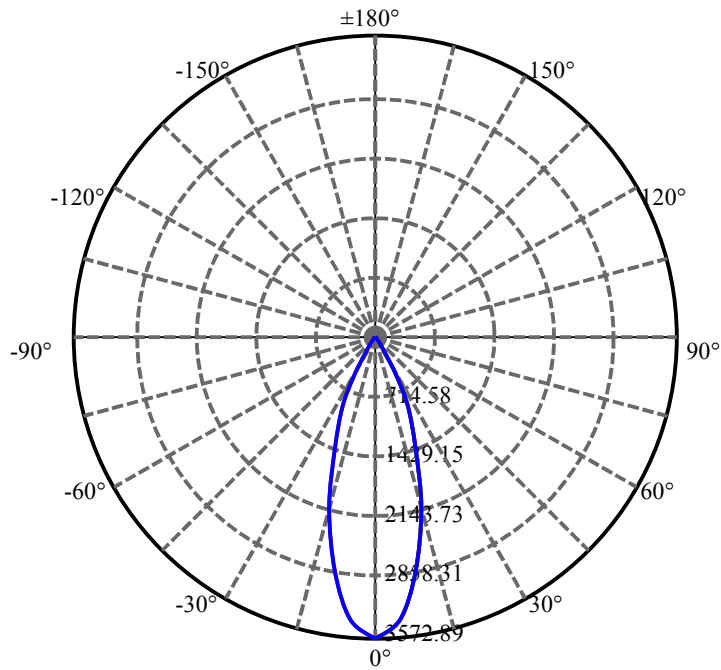
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3572.885	21.367	21.367	1.299%	1.457%
5.0	3354.311	160.247	181.613	9.741%	12.383%
10.0	2816.273	268.061	449.675	16.296%	30.659%
15.0	2101.985	298.205	747.88	18.128%	50.991%
20.0	1414.681	265.216	1013.096	16.123%	69.074%
25.0	903.482	209.294	1222.39	12.723%	83.344%
30.0	513.883	140.839	1363.229	8.562%	92.947%
35.0	214.665	67.490	1430.72	4.103%	97.548%
40.0	19.848	6.993	1437.713	.425%	98.025%
45.0	6.937	2.689	1440.401	.163%	98.208%
50.0	6.490	2.725	1443.126	.166%	98.394%
55.0	6.297	2.827	1445.954	.172%	98.587%
60.0	6.173	2.930	1448.884	.178%	98.787%
65.0	6.166	3.063	1451.948	.186%	98.995%
70.0	6.139	3.162	1455.11	.192%	99.211%
75.0	6.146	3.254	1458.363	.198%	99.433%
80.0	6.166	3.329	1461.692	.202%	99.660%
85.0	6.091	3.326	1465.018	.202%	99.887%
90.0	6.070	1.664	1466.681	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1363.23	82.87%	92.95%
0-40	1437.71	87.40%	98.02%
0-60	1448.88	88.08%	98.79%
0-90	1465.02	89.06%	99.89%
0-120	1465.02	89.06%	99.89%
0-180	1466.68	89.16%	100.00%
60-90	19.06	1.16%	1.30%
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%
0-23.83	1173.35	71.33%	80.00%

ZONAL LUMEN SUMMARY

0-10	449.67
10-20	563.42
20-30	350.13
30-40	74.48
40-50	5.41
50-60	5.76
60-70	6.23
70-80	6.58
80-90	3.33
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:

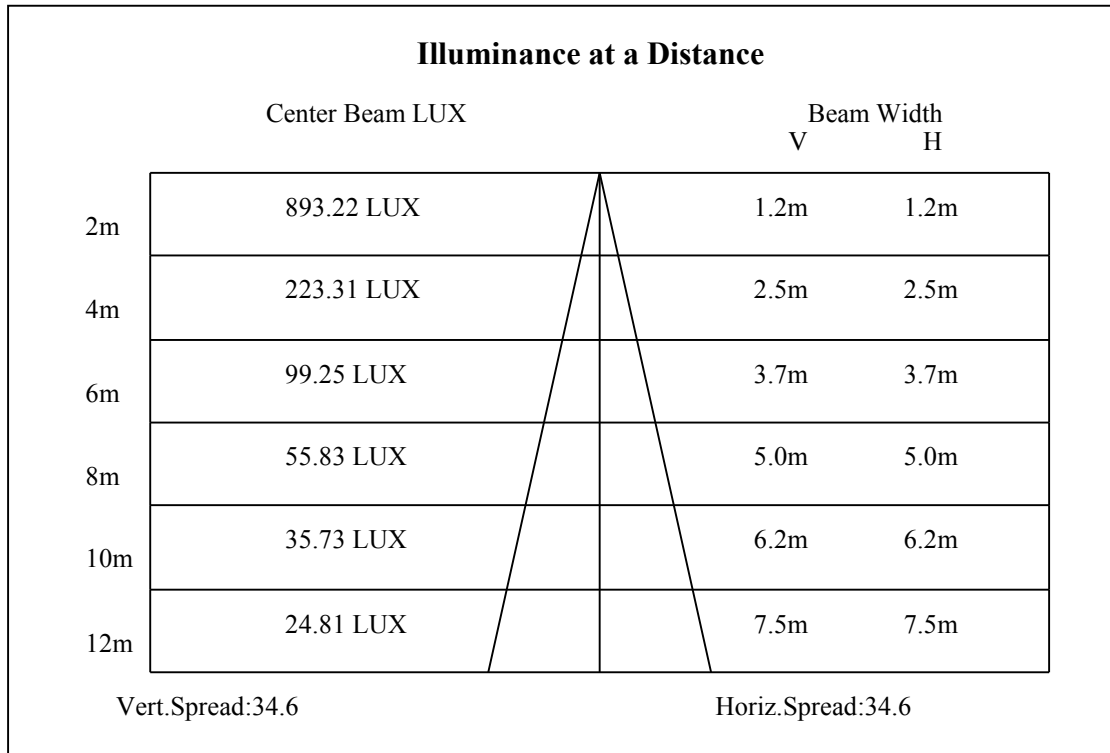
C90/C270:

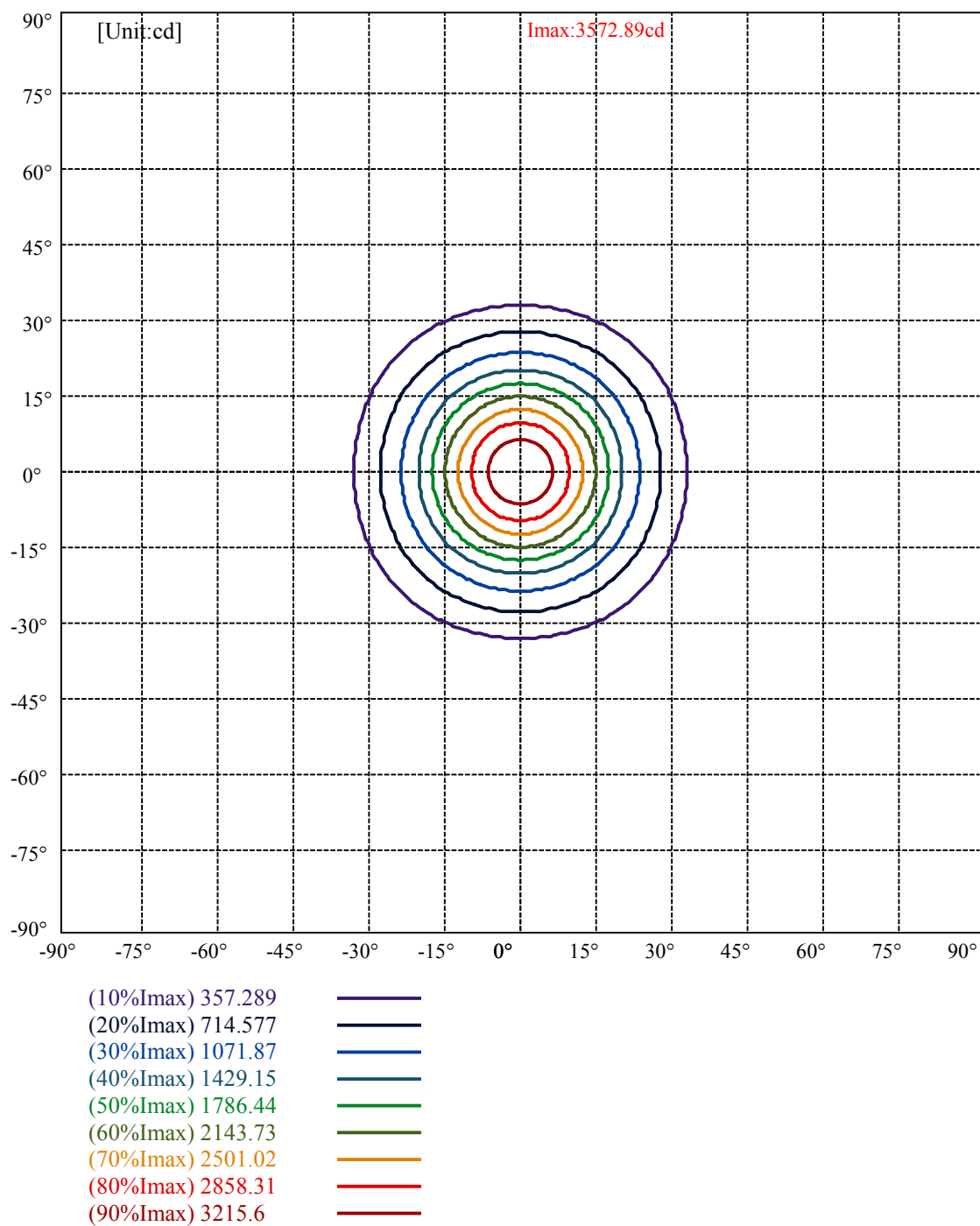
Field angle(10%Imax):C0/180Left:32.6 Right:32.6

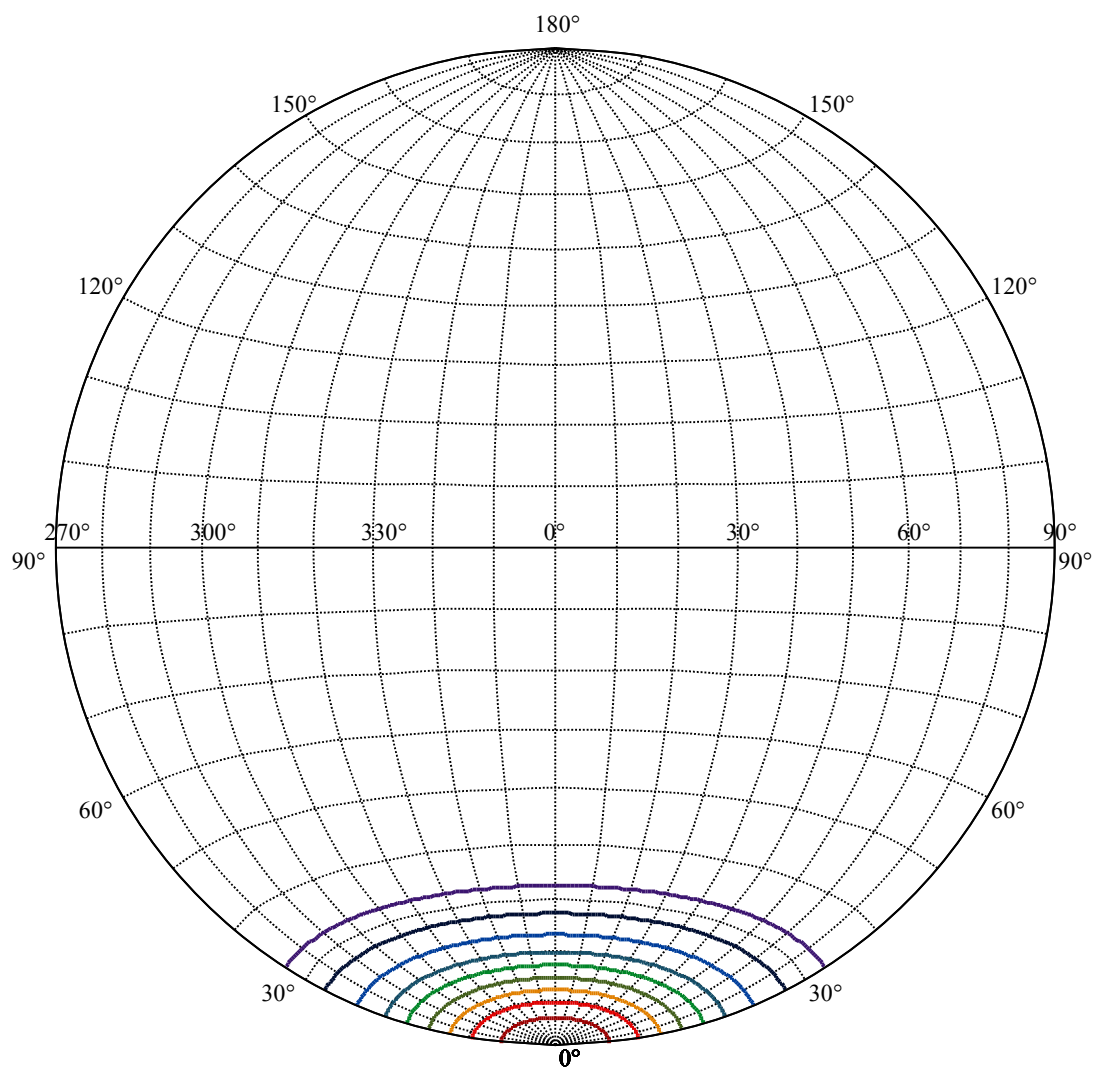
:C90/270Left:32.6 Right:32.6

Beam Angle(50%Imax):C0/180Left:17.3 Right:17.3

:C90/270Left:17.3 Right:17.3







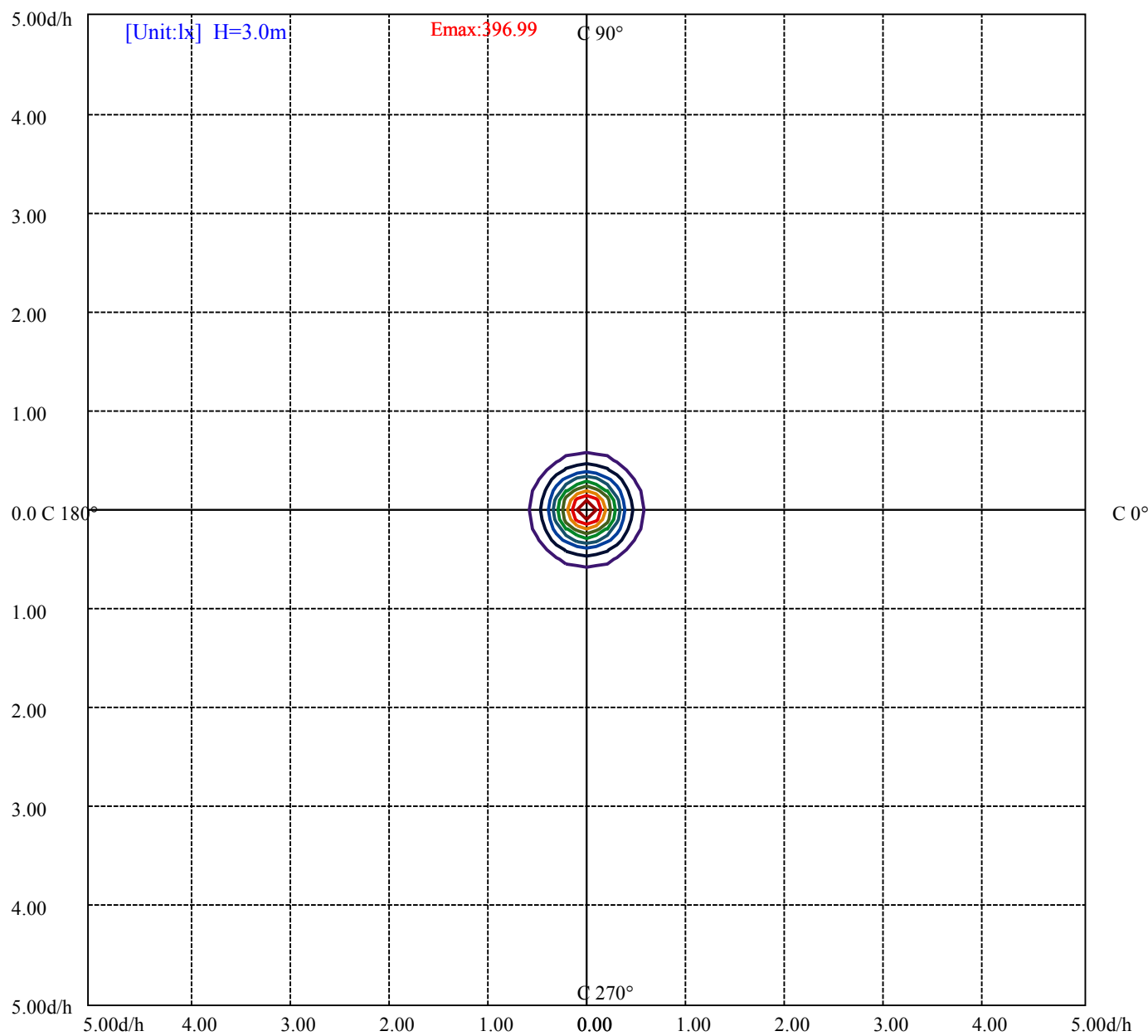
House

[Unit:cd]

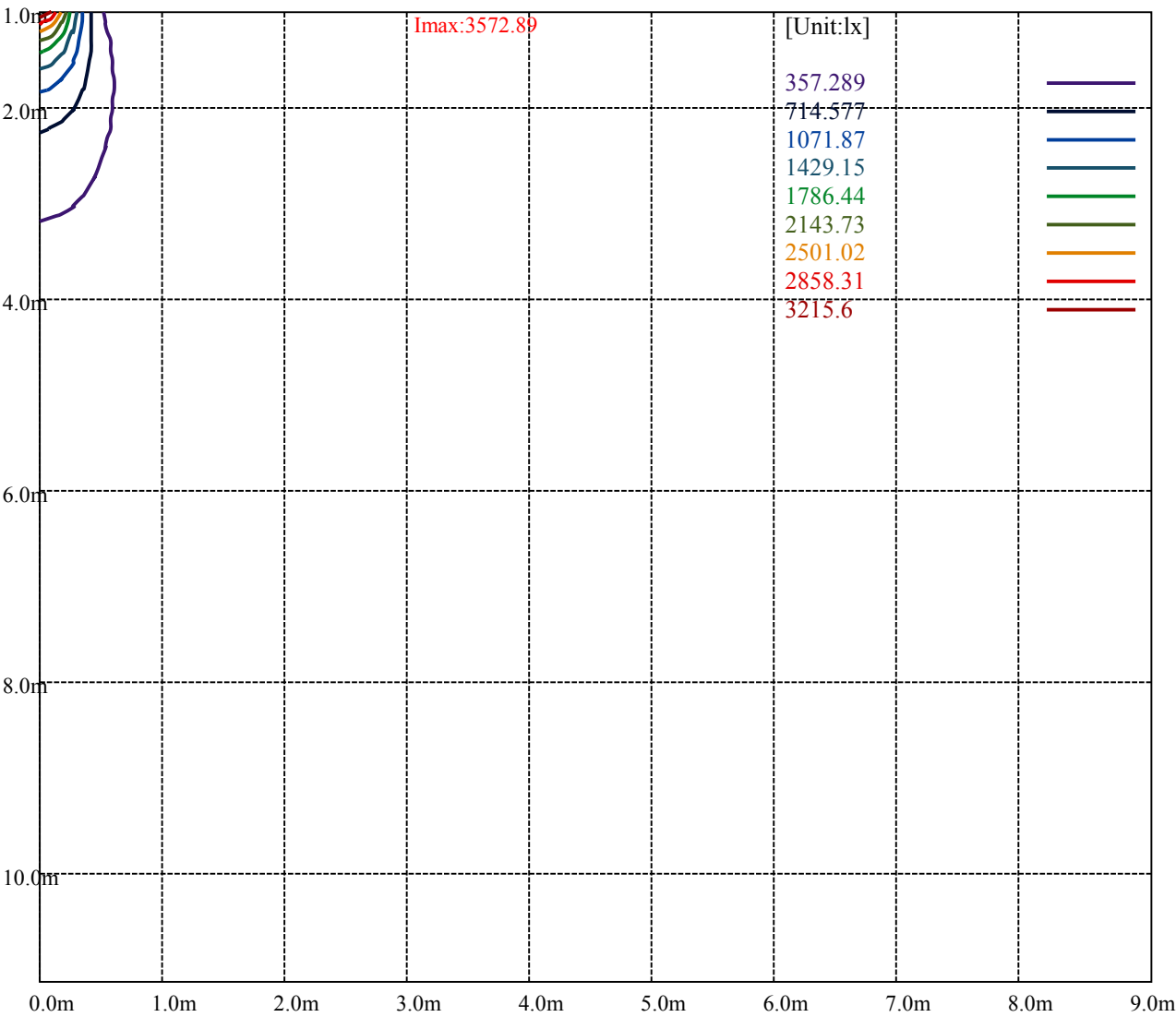
Road

Imax:3572.89

(10%Imax)	357.289	—
(20%Imax)	714.577	—
(30%Imax)	1071.87	—
(40%Imax)	1429.15	—
(50%Imax)	1786.44	—
(60%Imax)	2143.73	—
(70%Imax)	2501.02	—
(80%Imax)	2858.31	—
(90%Imax)	3215.6	—



(10%E _{max}) 39.69867	—
(20%E _{max}) 79.39733	—
(30%E _{max}) 119.0956	—
(40%E _{max}) 158.7944	—
(50%E _{max}) 198.4933	—
(60%E _{max}) 238.1922	—
(70%E _{max}) 277.8911	—
(80%E _{max}) 317.5889	—
(90%E _{max}) 357.2878	—



Luminance Table

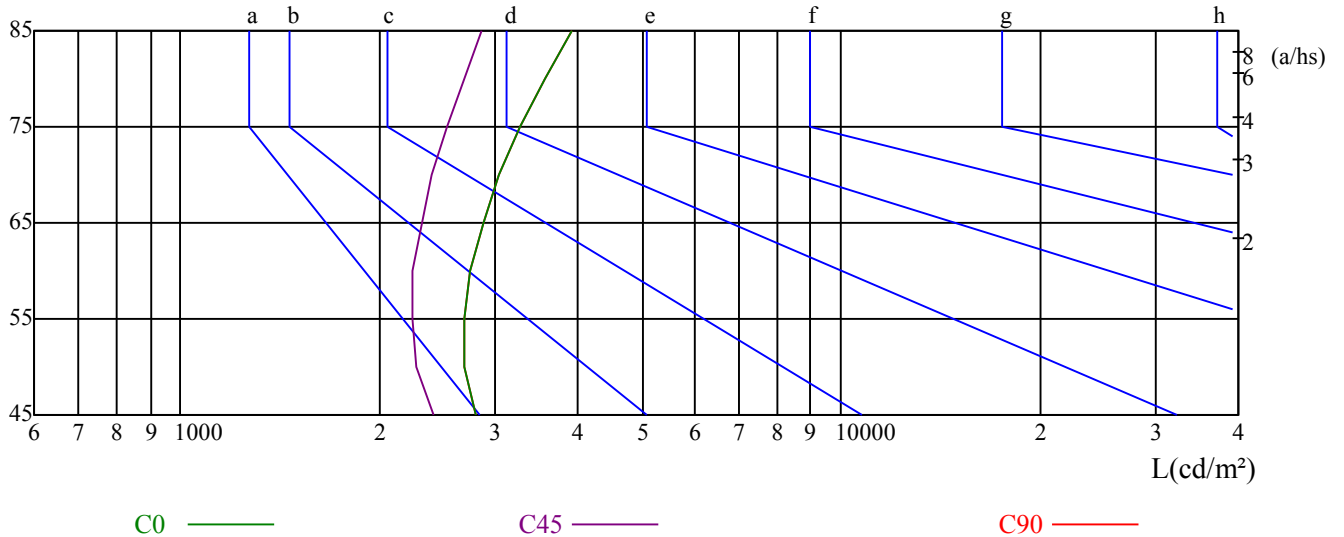
γ	45	50	55	60	65	70	75	80	85
C0	2806	2685	2686	2740	2875	3038	3268	3572	3906
C45	2412	2273	2239	2246	2316	2400	2526	2693	2861
C90	2806	2685	2686	2740	2875	3038	3268	3572	3906

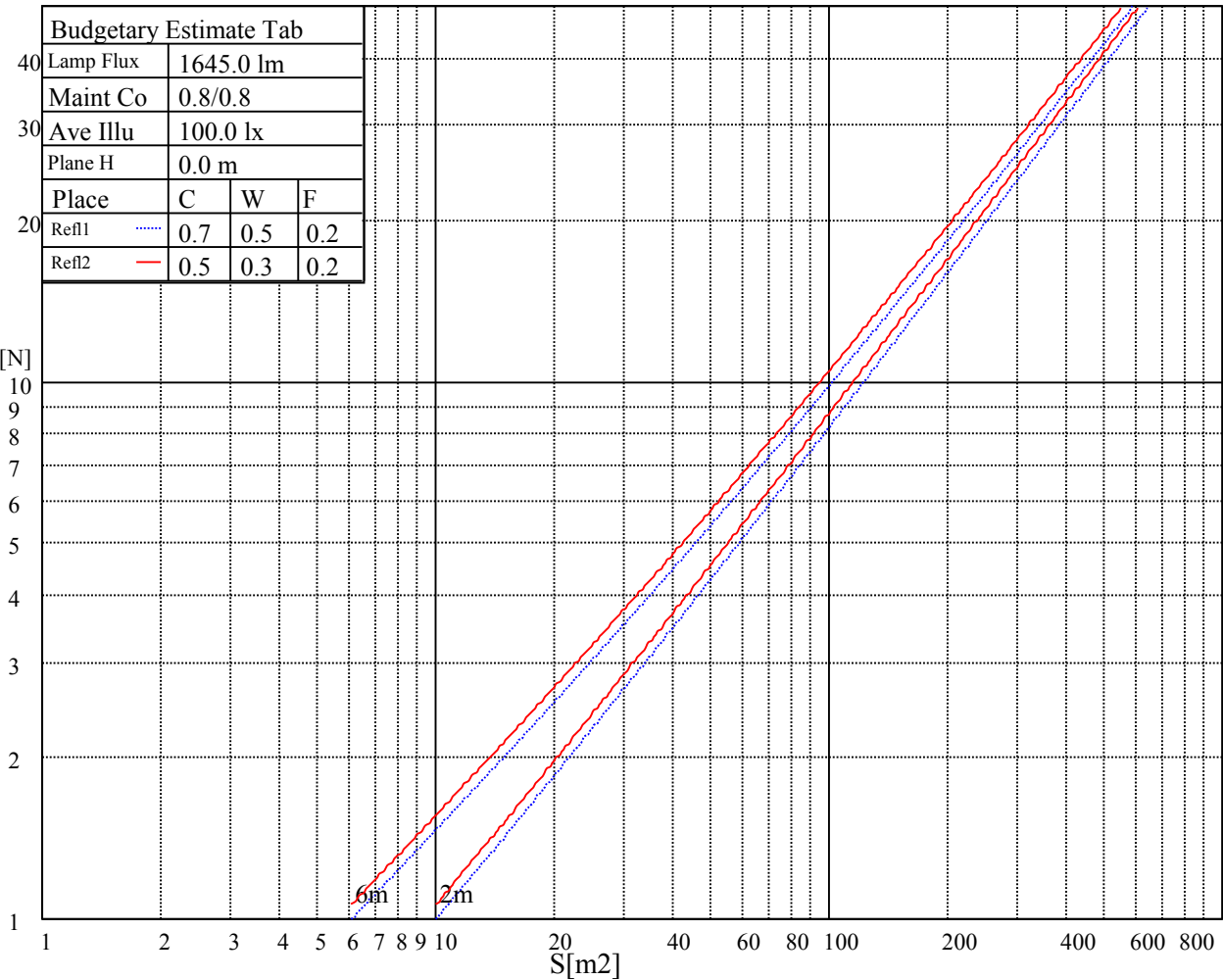
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6895	6895	6895	11222	11222	11222	33025	33025	33025

Glare Table

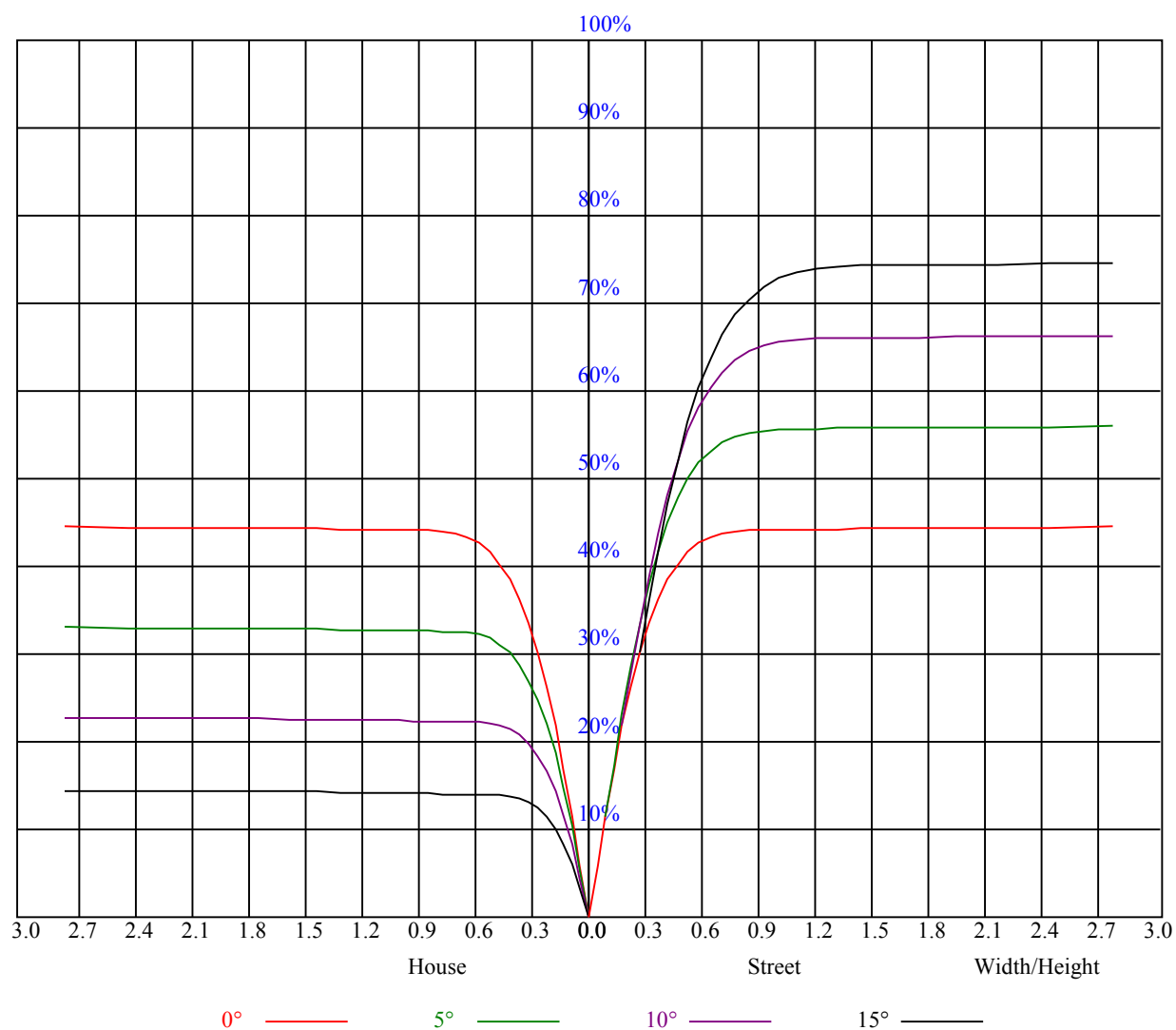
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

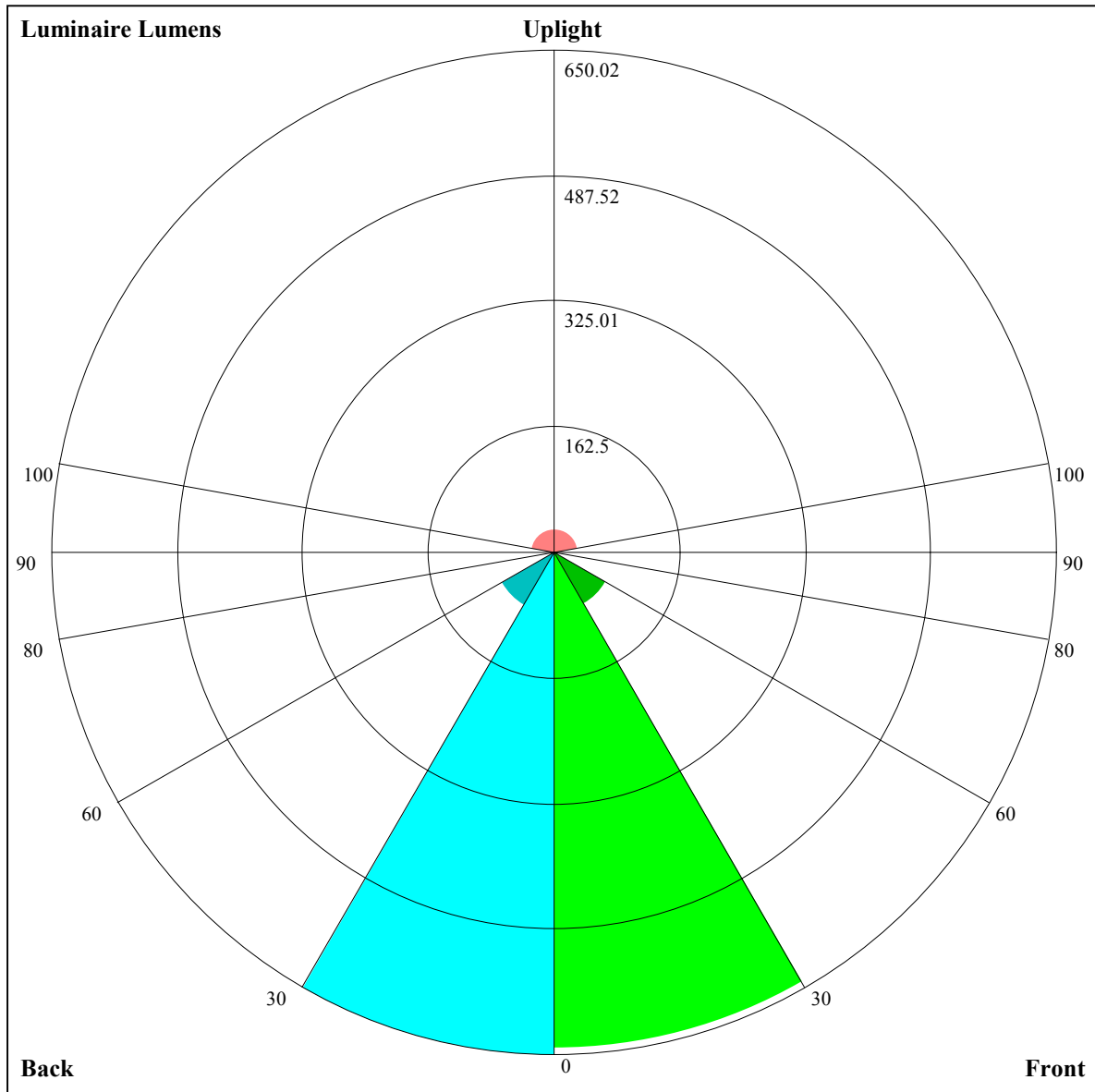
Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.97	0.95	0.98	0.96	0.94	0.94	0.92	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.84
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.88	0.85	0.87	0.85	0.84	0.85	0.83	0.82	0.80
3	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.78	0.77
4	0.86	0.82	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
5	0.82	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.73	0.77	0.75	0.73	0.71
6	0.79	0.75	0.72	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	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.71	0.67	0.64	0.70	0.66	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.62
10	0.68	0.64	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.60





Luminaire Lumens:

FL=641.17,FM=77.64,FH=6.31,FVH=3.33

BL=650.02,BM=79.68,BH=6.31,BVH=3.33

UL=6.62,UH=31.52

BUG Rating:B2-U2-G0

Nata 1658-S

Intensity data(cd)										Appendix Page: 15 Total:15	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	3566.00	3378.26	2833.75	2127.38	1497.53	913.39	523.04	279.14	20.98		
45.0	3584.17	3354.59	2778.15	2100.40	1385.22	861.08	475.14	212.52	17.45		
90.0	3563.80	3218.05	2664.18	1928.08	1074.76	813.68	425.15	115.40	14.81		
135.0	3577.56	3392.58	2879.45	2137.84	1456.24	937.06	537.90	289.60	21.42		
180.0	3566.00	3332.01	2780.90	2078.38	1410.54	883.05	498.81	172.77	18.11		
225.0	3584.17	3390.37	2879.45	2138.94	1510.20	944.71	545.00	203.21	20.81		
270.0	3563.80	3455.34	2955.98	2253.46	1588.38	1005.33	611.68	289.60	27.42		
315.0	3577.56	3313.29	2758.33	2051.40	1394.58	869.56	494.35	155.09	17.78		
360.0	3566.00	3378.26	2833.75	2127.38	1497.53	913.39	523.04	279.14	20.98		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	6.99	6.44	6.33	6.17	6.17	6.06	6.11	6.06	6.06		
45.0	6.88	6.44	6.28	6.22	6.22	6.17	6.22	6.22	6.06		
90.0	6.66	6.39	6.22	6.17	6.17	6.17	6.17	6.11	6.11		
135.0	7.05	6.50	6.33	6.17	6.11	6.17	6.11	6.11	6.06		
180.0	6.94	6.55	6.28	6.11	6.17	6.06	6.06	6.11	6.06		
225.0	6.99	6.55	6.33	6.17	6.22	6.17	6.28	6.44	6.11		
270.0	7.16	6.61	6.28	6.22	6.11	6.22	6.11	6.17	6.17		
315.0	6.83	6.44	6.33	6.17	6.17	6.11	6.11	6.11	6.11		
360.0	6.99	6.44	6.33	6.17	6.17	6.06	6.11	6.06	6.06		
C/γ(°)	90.0										
0.0	6.11										
45.0	6.06										
90.0	6.06										
135.0	6.06										
180.0	6.00										
225.0	6.11										
270.0	6.06										
315.0	6.11										
360.0	6.11										