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Nata

Client:

LumCAT: 3-2328-M

Luminaire: 92.70.129.00

Report No: GC2019091909

Test No: NATA07

LampCAT: CREE CXA1830

Lamp flux(lm): 1602.0

Number of Lamps: 1

Length(mm): 78

Phm Type: C

Voltage(V): 220.4000

Current(A): 0.0700

Power (W): 14.2300

PF: 0.9180

Ballast type: AC

Width(mm): 78

Height(mm): 0

Photometric Results

Lumens(lm): 1399.38, Efficiency(%): 87.35% , Luminous Efficacy(lm/W): 98.34

Central intensity(cd): 1658.270, Maximum intensity(cd): 1658.270

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=59.0

[C90/270]Total=59.0

Field angle(10%Imax): [C0/180]Total=79.0

[C90/270]Total=79.0

Maximum s/h(1/2): C0_180=0.93 C90_270=0.93

Maximum s/h(1/4): C0_180=0.88 C90_270=0.88

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.35%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 99.650%

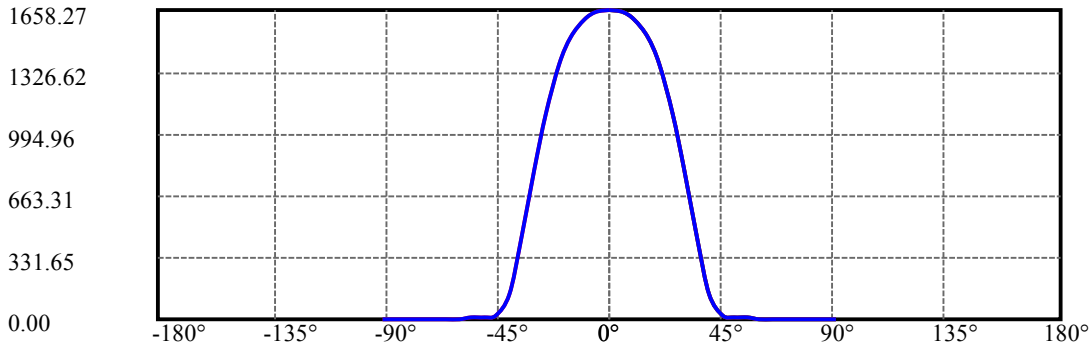
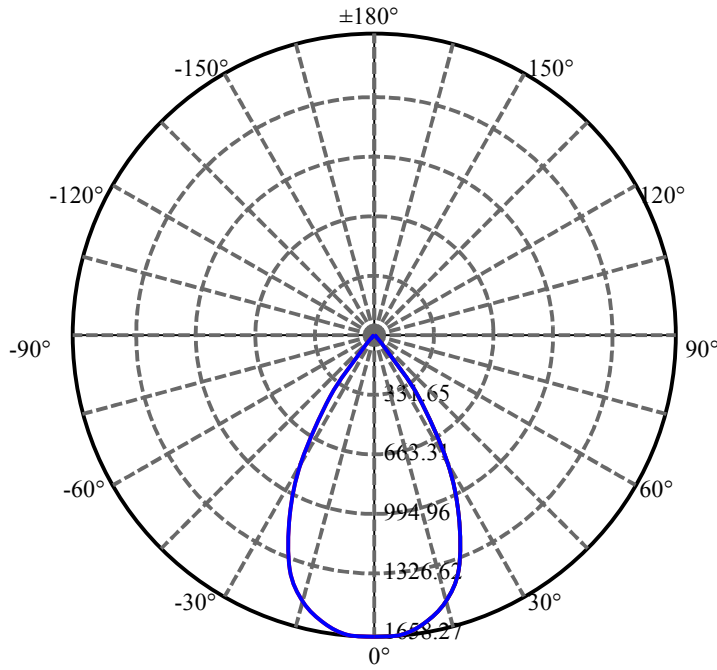
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1658.270	0.000	0	.000%	.000%
5.0	1649.743	39.546	39.546	2.469%	2.826%
10.0	1606.066	116.471	156.017	7.270%	11.149%
15.0	1516.914	185.253	341.27	11.564%	24.387%
20.0	1373.469	238.208	579.478	14.869%	41.410%
25.0	1100.206	259.443	838.921	16.195%	59.949%
30.0	799.593	240.421	1079.342	15.008%	77.130%
35.0	418.251	179.336	1258.678	11.195%	89.945%
40.0	138.491	92.888	1351.566	5.798%	96.583%
45.0	24.310	30.144	1381.71	1.882%	98.737%
50.0	11.270	7.189	1388.899	.449%	99.251%
55.0	5.609	3.670	1392.57	.229%	99.513%
60.0	2.674	1.915	1394.484	.120%	99.650%
65.0	1.526	1.021	1395.505	.064%	99.723%
70.0	1.363	0.731	1396.236	.046%	99.775%
75.0	1.375	0.716	1396.952	.045%	99.826%
80.0	1.410	0.745	1397.697	.047%	99.880%
85.0	1.468	0.782	1398.479	.049%	99.935%
90.0	1.833	0.904	1399.383	.056%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1079.34	67.37%	77.13%
0-40	1351.57	84.37%	96.58%
0-60	1394.48	87.05%	99.65%
0-90	1398.48	87.30%	99.94%
0-120	1398.48	87.30%	99.94%
0-180	1399.38	87.35%	100.00%
60-90	5.91	0.37%	0.42%
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%
0-31.12	1119.51	69.88%	80.00%

ZONAL LUMEN SUMMARY

0-10	156.02
10-20	423.46
20-30	499.86
30-40	272.22
40-50	37.33
50-60	5.58
60-70	1.75
70-80	1.46
80-90	0.78
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



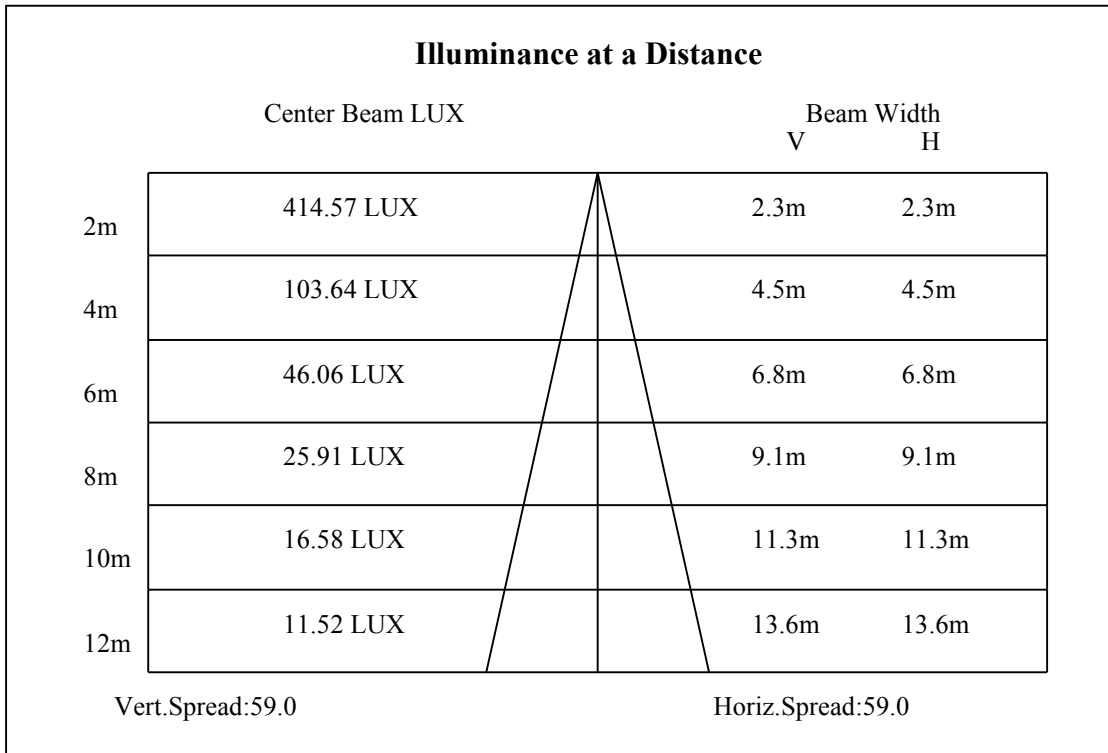
C0(Max): —————

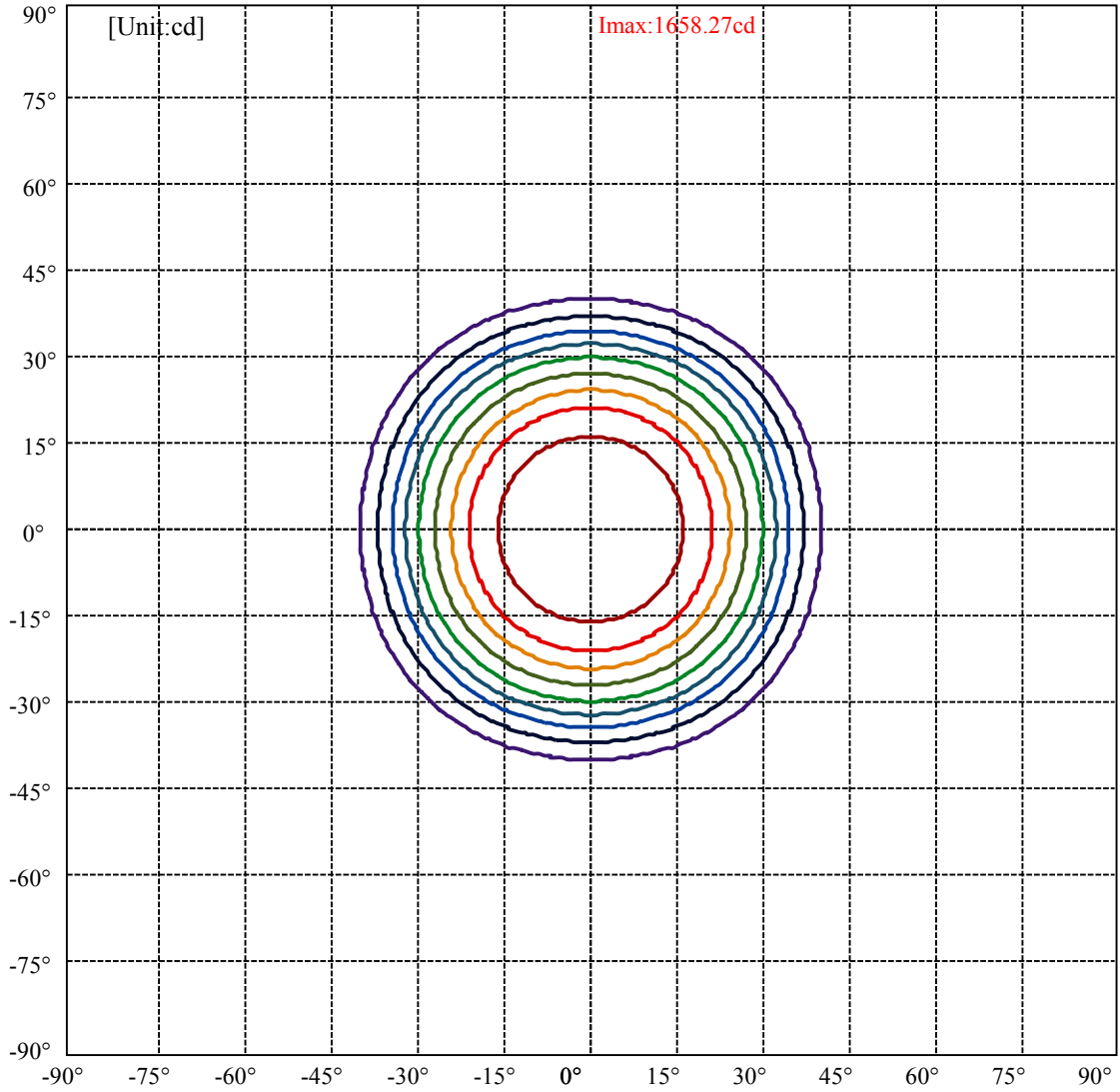
C0/C180: —————

C90/C270: —————

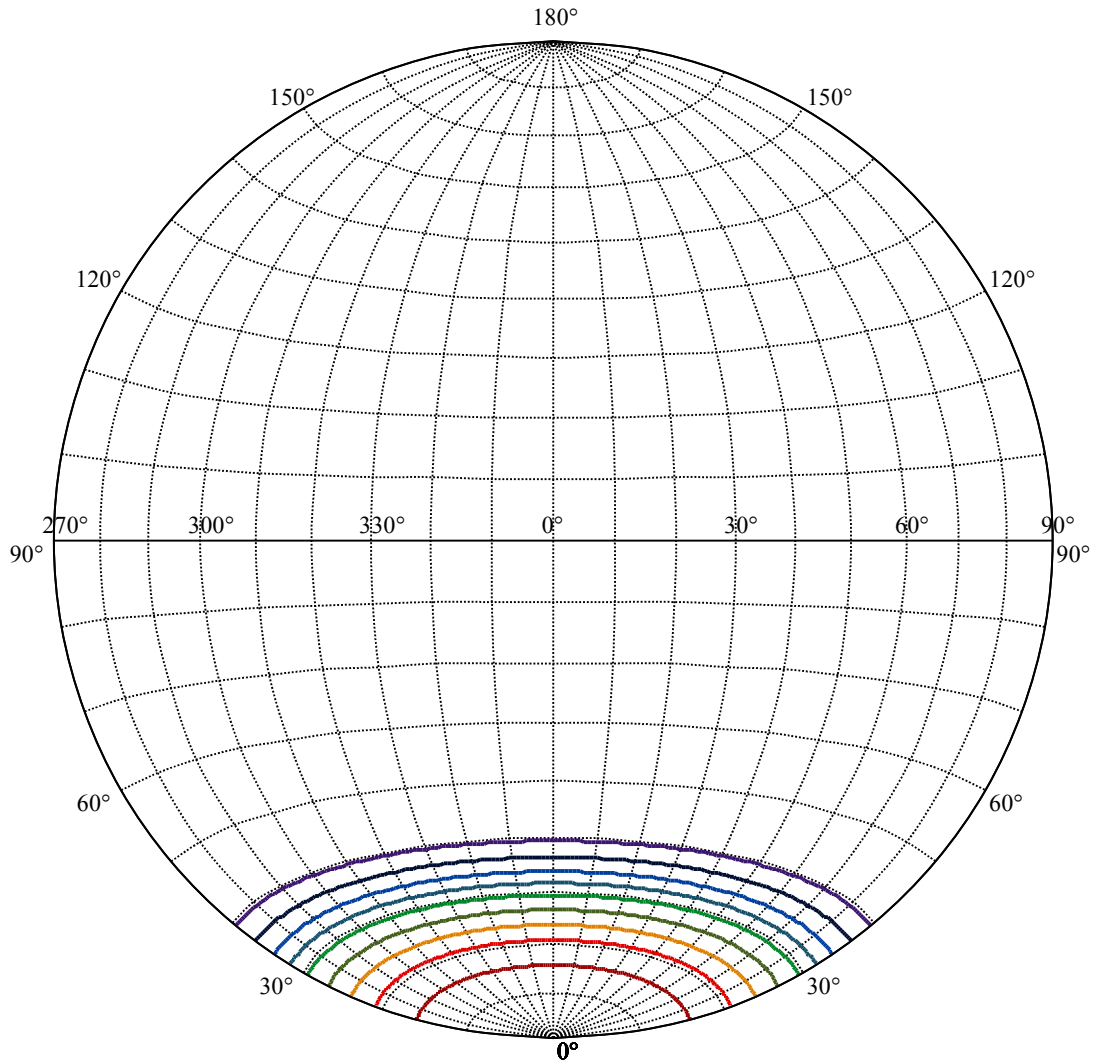
Field angle(10%Imax):C0/180Left:39.5 Right:39.5
:C90/270Left:39.5 Right:39.5

Beam Angle(50%Imax):C0/180Left:29.5 Right:29.5
:C90/270Left:29.5 Right:29.5





(10%Imax) 165.827	—
(20%Imax) 331.654	—
(30%Imax) 497.481	—
(40%Imax) 663.308	—
(50%Imax) 829.135	—
(60%Imax) 994.962	—
(70%Imax) 1160.79	—
(80%Imax) 1326.62	—
(90%Imax) 1492.44	—



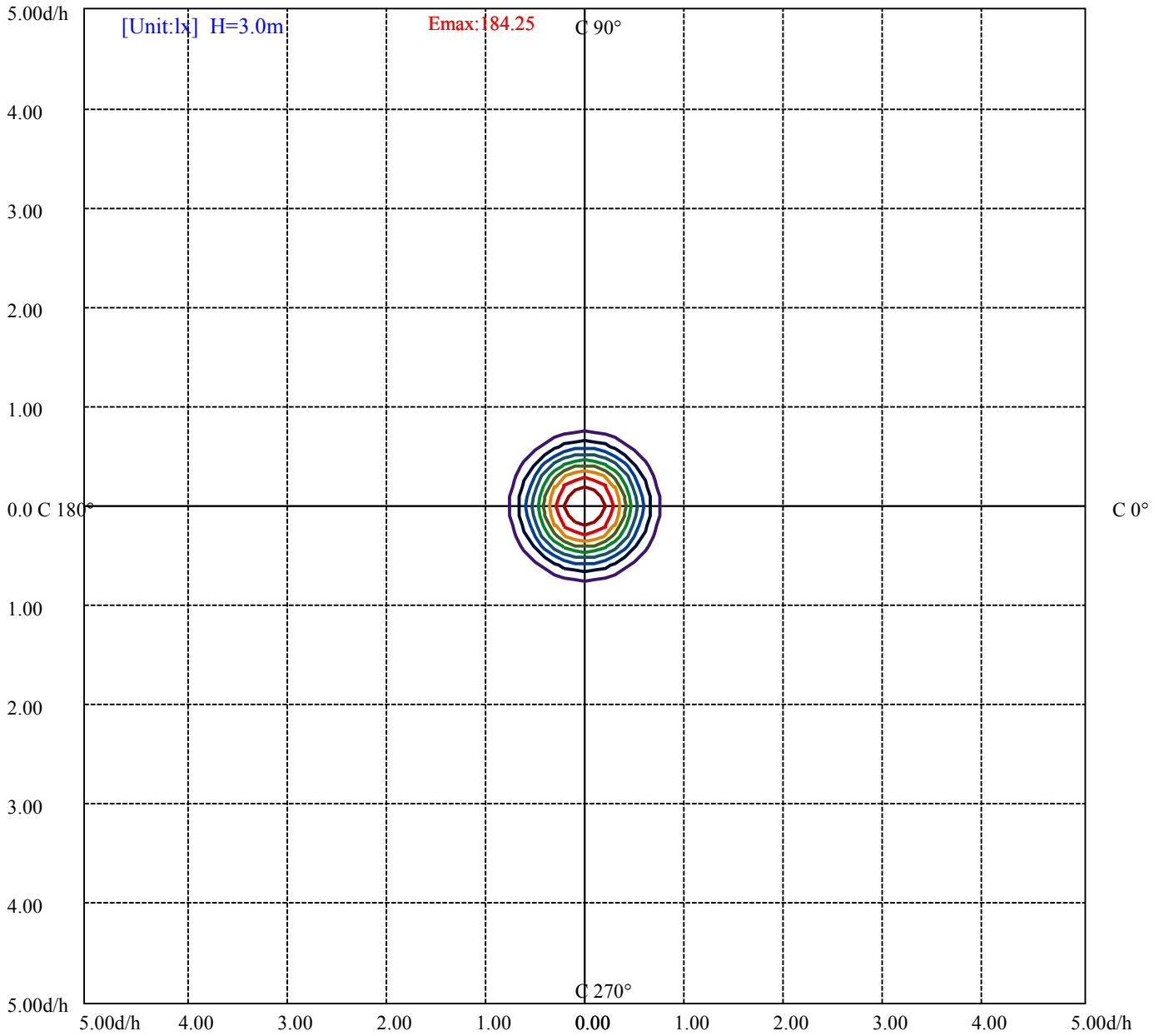
House

[Unit:cd]

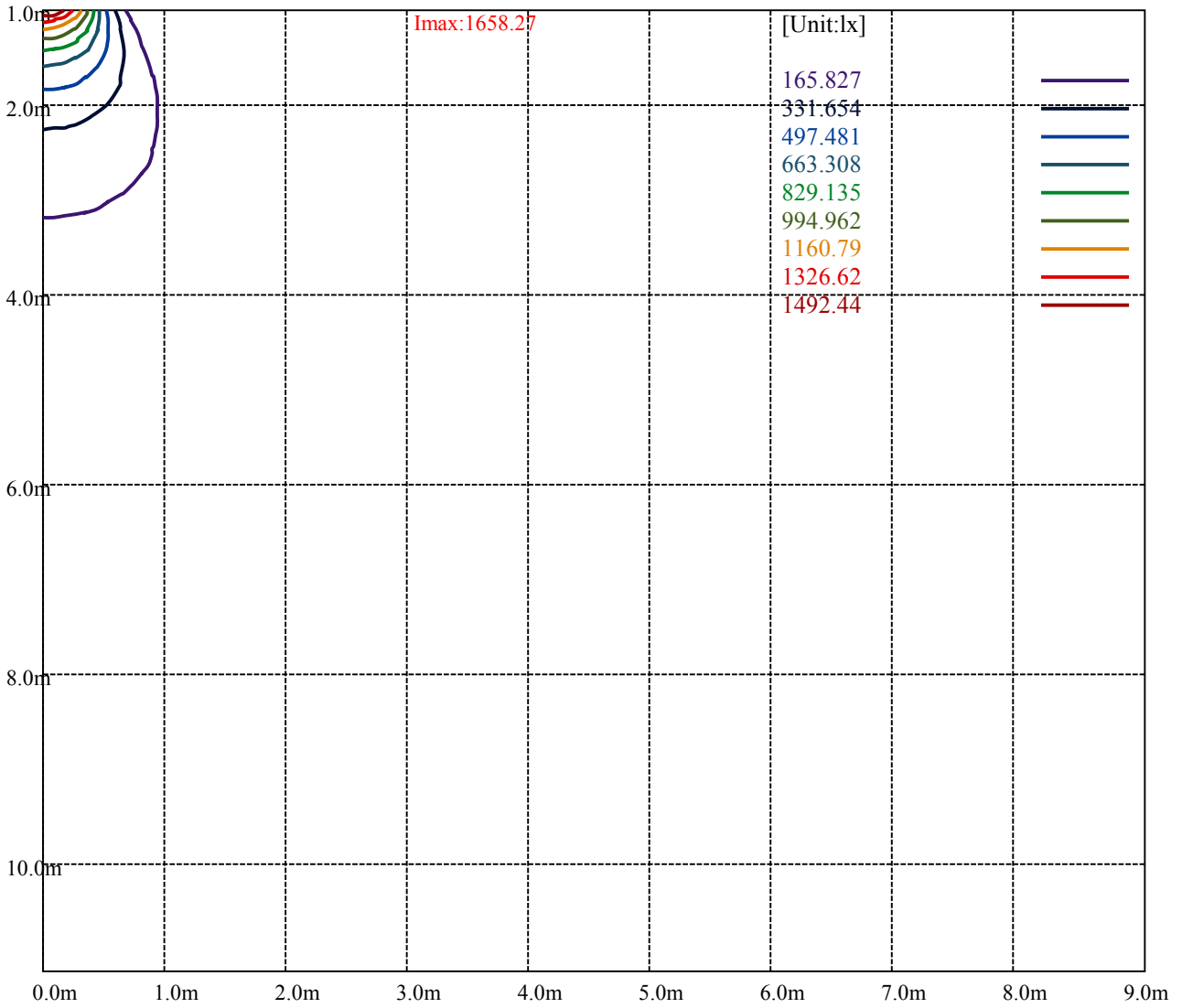
Road

Imax:1658.27

(10%Imax)	165.827	—
(20%Imax)	331.654	—
(30%Imax)	497.481	—
(40%Imax)	663.308	—
(50%Imax)	829.135	—
(60%Imax)	994.962	—
(70%Imax)	1160.79	—
(80%Imax)	1326.62	—
(90%Imax)	1492.44	—



(10%Emax) 18.42522	—
(20%Emax) 36.85044	—
(30%Emax) 55.27567	—
(40%Emax) 73.70089	—
(50%Emax) 92.12611	—
(60%Emax) 110.5513	—
(70%Emax) 128.9767	—
(80%Emax) 147.4022	—
(90%Emax) 165.8267	—



Luminance Table

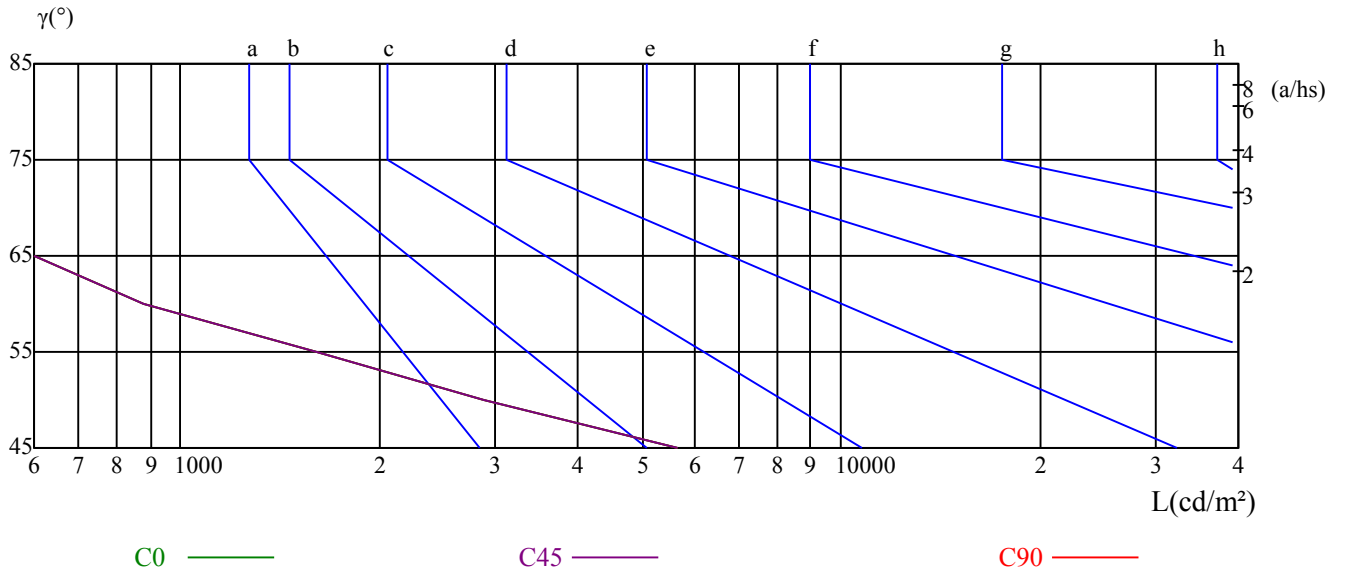
γ	45	50	55	60	65	70	75	80	85
C0	5651	2882	1607	879	593	655	873	1334	2768
C45	5651	2882	1607	879	593	655	873	1334	2768
C90	5651	2882	1607	879	593	655	873	1334	2768

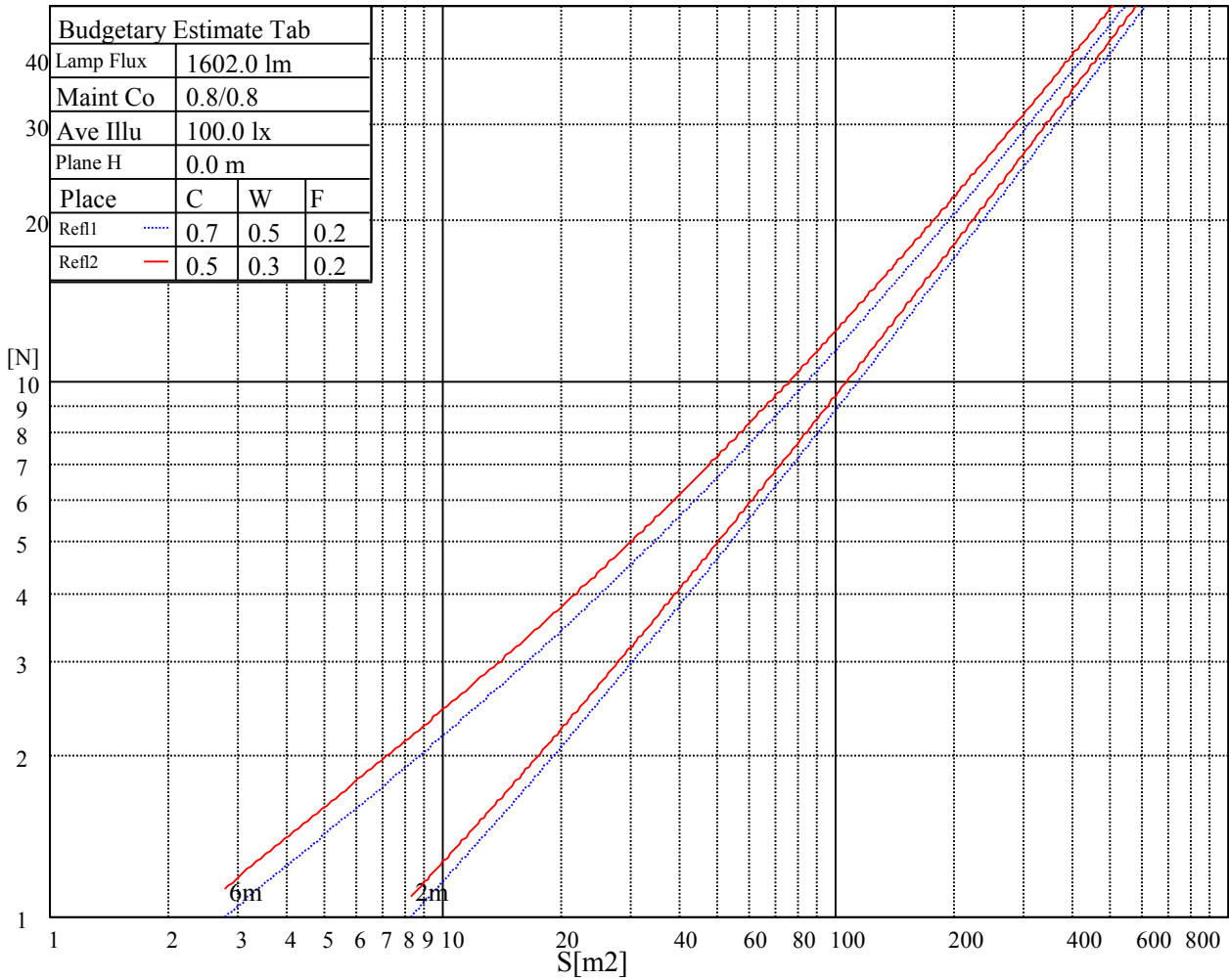
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
593	593	593	873	873	873	2768	2768	2768

Glare Table

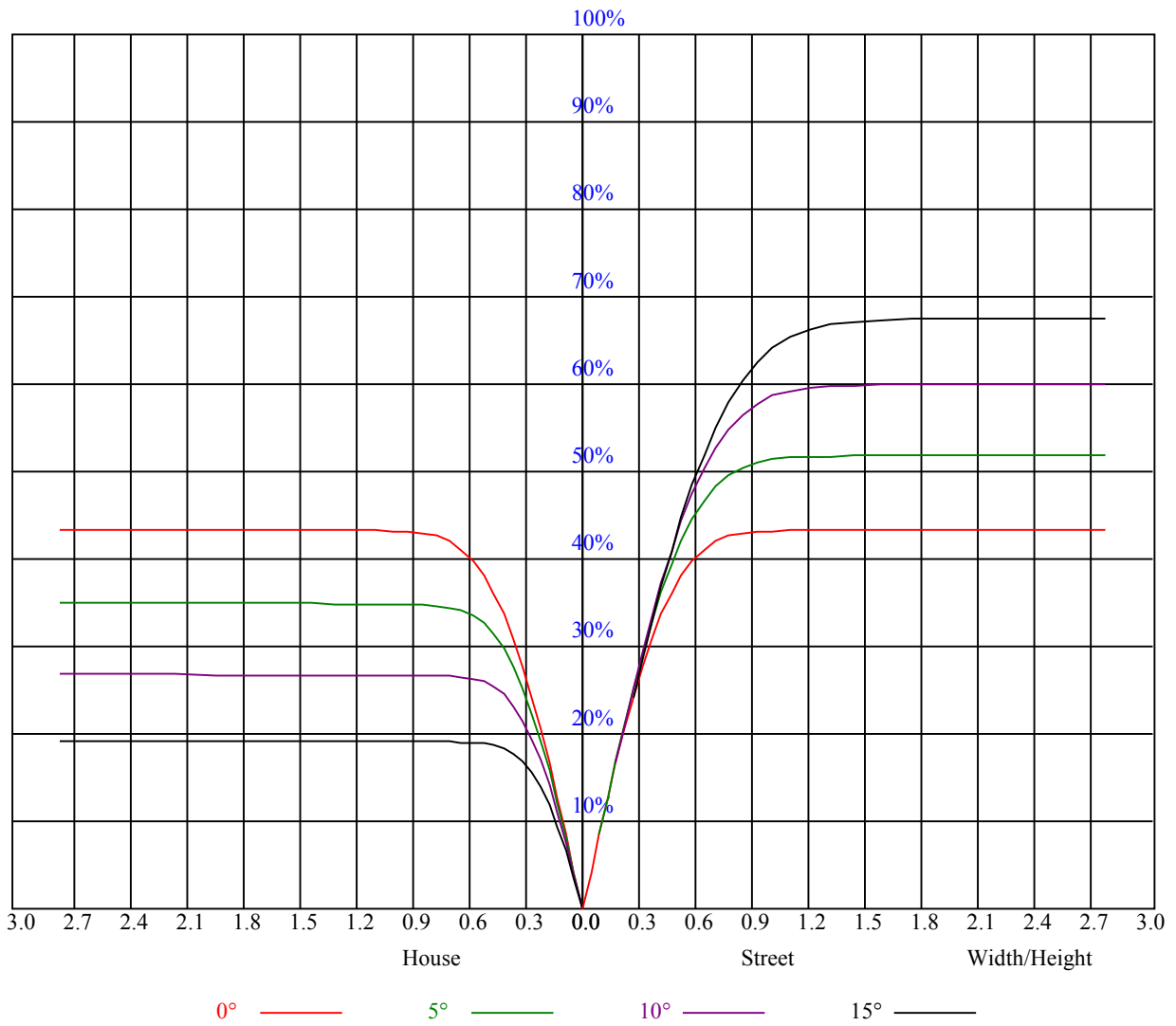
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

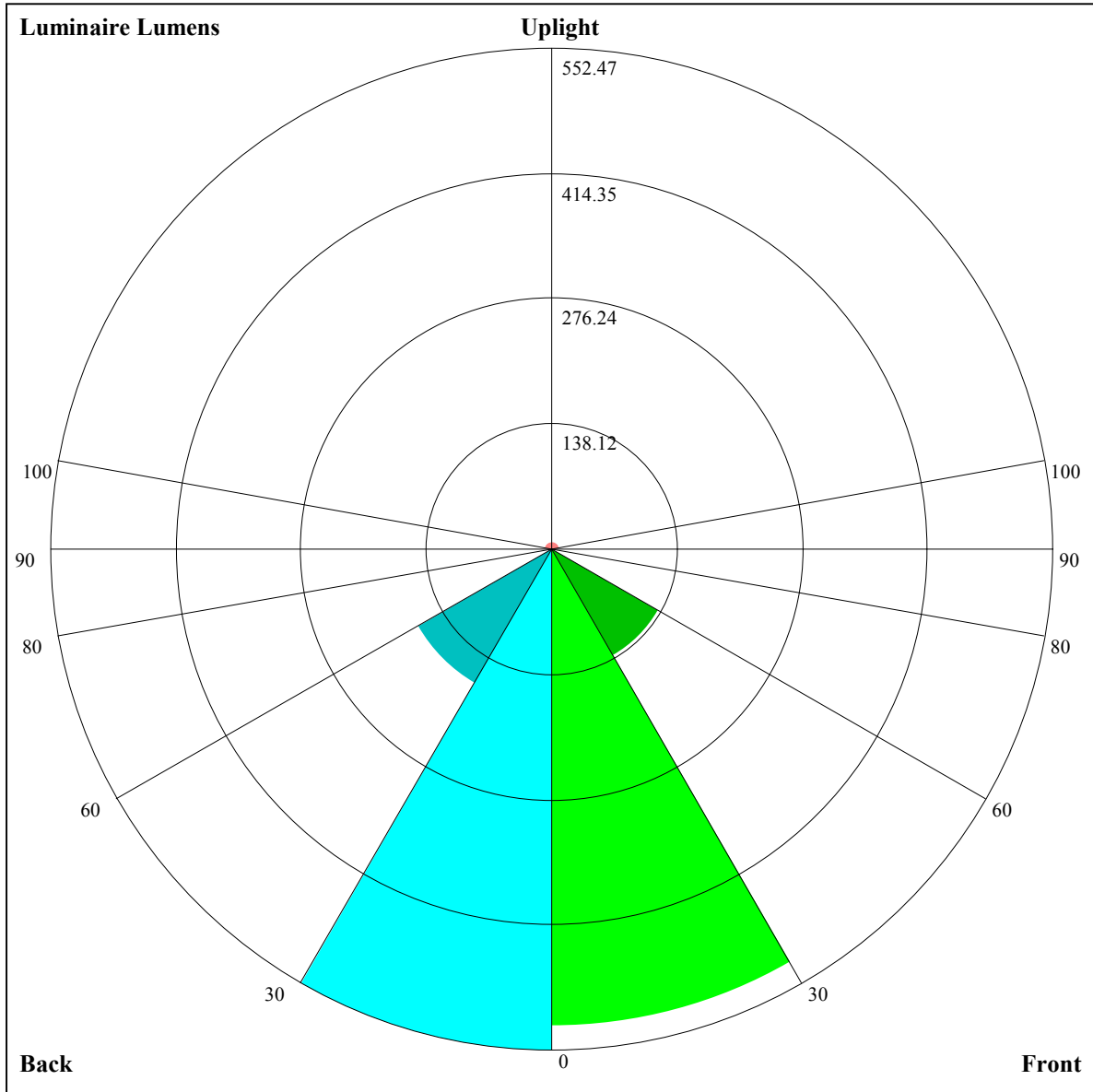
Luminance Limiting Curve





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	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.97	0.95	0.93	0.95	0.93	0.92	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.84	0.84	0.82
2	0.91	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	0.85	0.81	0.77	0.84	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.74	0.77	0.75	0.73	0.72
4	0.80	0.75	0.71	0.79	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.69	0.73	0.71	0.69	0.67
5	0.75	0.70	0.66	0.74	0.69	0.66	0.72	0.69	0.65	0.71	0.68	0.65	0.70	0.67	0.64	0.63
6	0.70	0.65	0.62	0.70	0.65	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.60	0.59
7	0.66	0.61	0.58	0.66	0.61	0.58	0.65	0.61	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.56
8	0.63	0.58	0.54	0.62	0.58	0.54	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.52
9	0.59	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.54	0.51	0.57	0.53	0.51	0.49
10	0.56	0.52	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.48	0.47





Luminaire Lumens:

FL=525.53,FM=136.25,FH=1.55,FVH=0.91

BL=552.47,BM=171.4,BH=1.67,BVH=0.83

UL=2,UH=9.52

BUG Rating:B2-U1-G0

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1658.97	1626.02	1550.85	1442.26	1260.83	889.74	673.78	197.26	40.00
45.0	1658.04	1647.37	1619.52	1526.72	1431.13	1242.26	938.79	571.74	292.85
90.0	1656.18	1653.86	1615.81	1531.36	1401.43	1158.74	843.71	510.72	80.37
135.0	1659.89	1665.00	1657.11	1587.04	1483.56	1293.77	990.76	665.01	285.89
180.0	1658.97	1670.10	1656.18	1595.39	1475.21	1285.88	963.84	603.75	288.21
225.0	1658.04	1652.01	1589.82	1496.55	1299.80	902.08	655.96	273.92	34.43
270.0	1656.18	1651.08	1609.31	1507.69	1375.44	1105.84	752.24	352.25	51.28
315.0	1659.89	1632.52	1549.92	1448.29	1260.36	923.33	577.68	171.37	34.90
360.0	1658.97	1626.02	1550.85	1442.26	1260.83	889.74	673.78	197.26	40.00
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	17.68	8.86	4.08	1.86	1.30	1.30	1.30	1.25	1.30
45.0	30.58	13.50	6.87	3.57	1.62	1.44	1.48	1.76	1.90
90.0	25.43	12.11	5.80	2.83	1.53	1.44	1.53	1.62	1.86
135.0	37.40	16.47	8.72	3.81	1.90	1.39	1.30	1.25	1.25
180.0	34.66	14.85	7.52	3.62	1.81	1.35	1.30	1.30	1.35
225.0	15.92	8.03	3.81	1.86	1.44	1.48	1.48	1.53	1.39
270.0	18.93	8.96	4.50	2.32	1.35	1.30	1.39	1.35	1.44
315.0	13.87	7.38	3.57	1.53	1.25	1.21	1.21	1.21	1.25
360.0	17.68	8.86	4.08	1.86	1.30	1.30	1.30	1.25	1.30
C/γ(°)	90.0								
0.0	1.86								
45.0	2.69								
90.0	3.11								
135.0	1.35								
180.0	1.30								
225.0	1.35								
270.0	1.62								
315.0	1.39								
360.0	1.86								