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NATA

Client:

LumCAT: 1536-E

Luminaire: 92.70.064.00

Report No: nt0100

Test No: GC2019122616

LampCAT: LUMINUS CXM-9-AC40

Lamp flux(lm): 1100.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 33.6100

Current(A): 0.2970

Power (W): 9.9800

PF: 1.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 948.71, Efficiency(%): 86.25% , Luminous Efficacy(lm/W): 95.06

Central intensity(cd): 868.648, Maximum intensity(cd): 868.648

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=65.0

[C90/270]Total=65.0

Field angle(10%Imax): [C0/180]Total=92.8

[C90/270]Total=92.8

Maximum s/h(1/2): C0_180=0.98 C90_270=0.98

Maximum s/h(1/4): C0_180=0.96 C90_270=0.96

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.25%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.405%

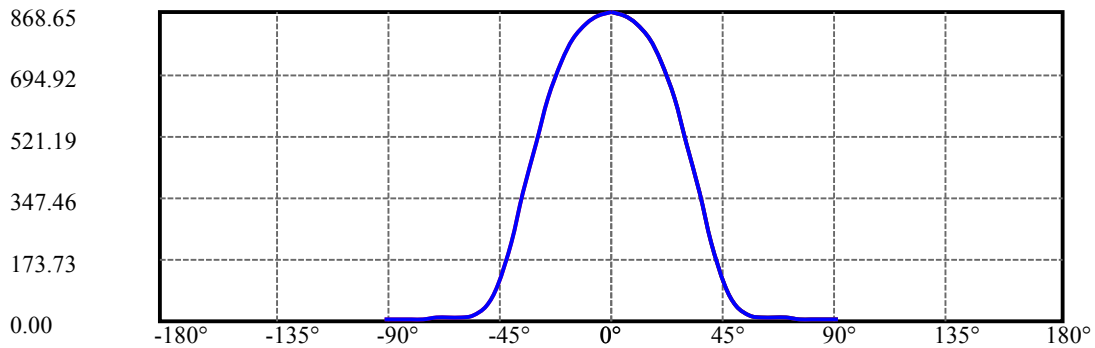
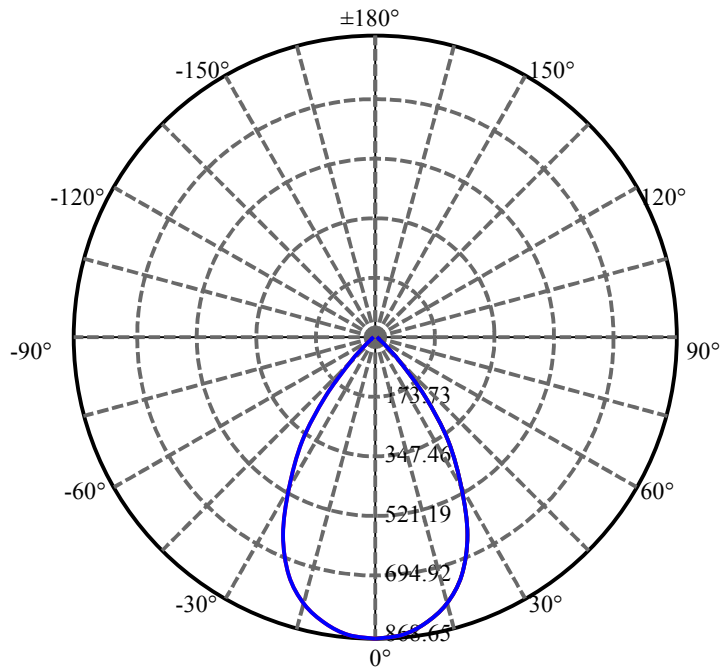
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	868.648	0.000	0	.000%	.000%
5.0	860.484	20.671	20.671	1.879%	2.179%
10.0	835.179	60.659	81.33	5.514%	8.573%
15.0	793.913	96.637	177.967	8.785%	18.759%
20.0	727.854	125.415	303.382	11.401%	31.978%
25.0	626.302	142.026	445.408	12.911%	46.949%
30.0	503.466	142.973	588.381	12.998%	62.019%
35.0	362.468	127.515	715.896	11.592%	75.460%
40.0	223.369	97.742	813.638	8.886%	85.763%
45.0	104.766	60.757	874.395	5.523%	92.167%
50.0	40.767	29.407	903.802	2.673%	95.266%
55.0	18.745	12.940	916.742	1.176%	96.630%
60.0	13.057	7.351	924.093	.668%	97.405%
65.0	10.491	5.724	929.817	.520%	98.009%
70.0	9.042	4.946	934.763	.450%	98.530%
75.0	7.889	4.426	939.189	.402%	98.996%
80.0	6.630	3.885	943.074	.353%	99.406%
85.0	5.063	3.177	946.251	.289%	99.741%
90.0	3.916	2.458	948.71	.223%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	588.38	53.49%	62.02%
0-40	813.64	73.97%	85.76%
0-60	924.09	84.01%	97.41%
0-90	946.25	86.02%	99.74%
0-120	946.25	86.02%	99.74%
0-180	948.71	86.25%	100.00%
60-90	29.51	2.68%	3.11%
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%
0-37.20	758.97	69.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	81.33
10-20	222.05
20-30	285.00
30-40	225.26
40-50	90.16
50-60	20.29
60-70	10.67
70-80	8.31
80-90	3.18
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: —————

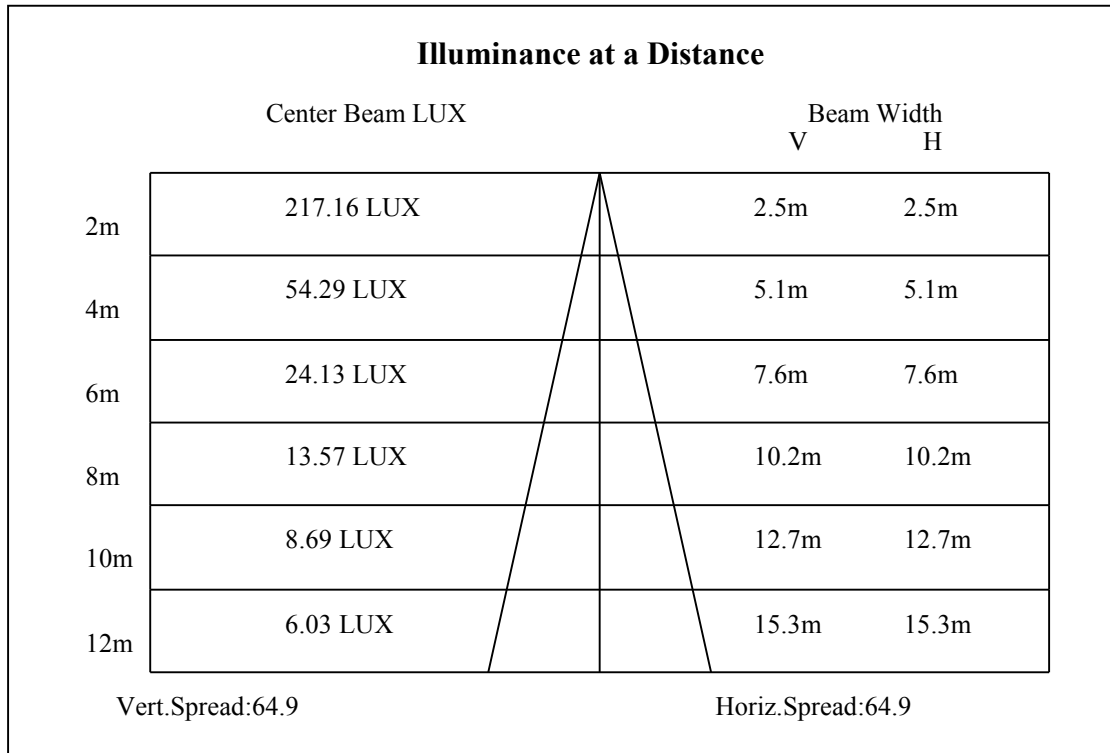
C90/C270: —————

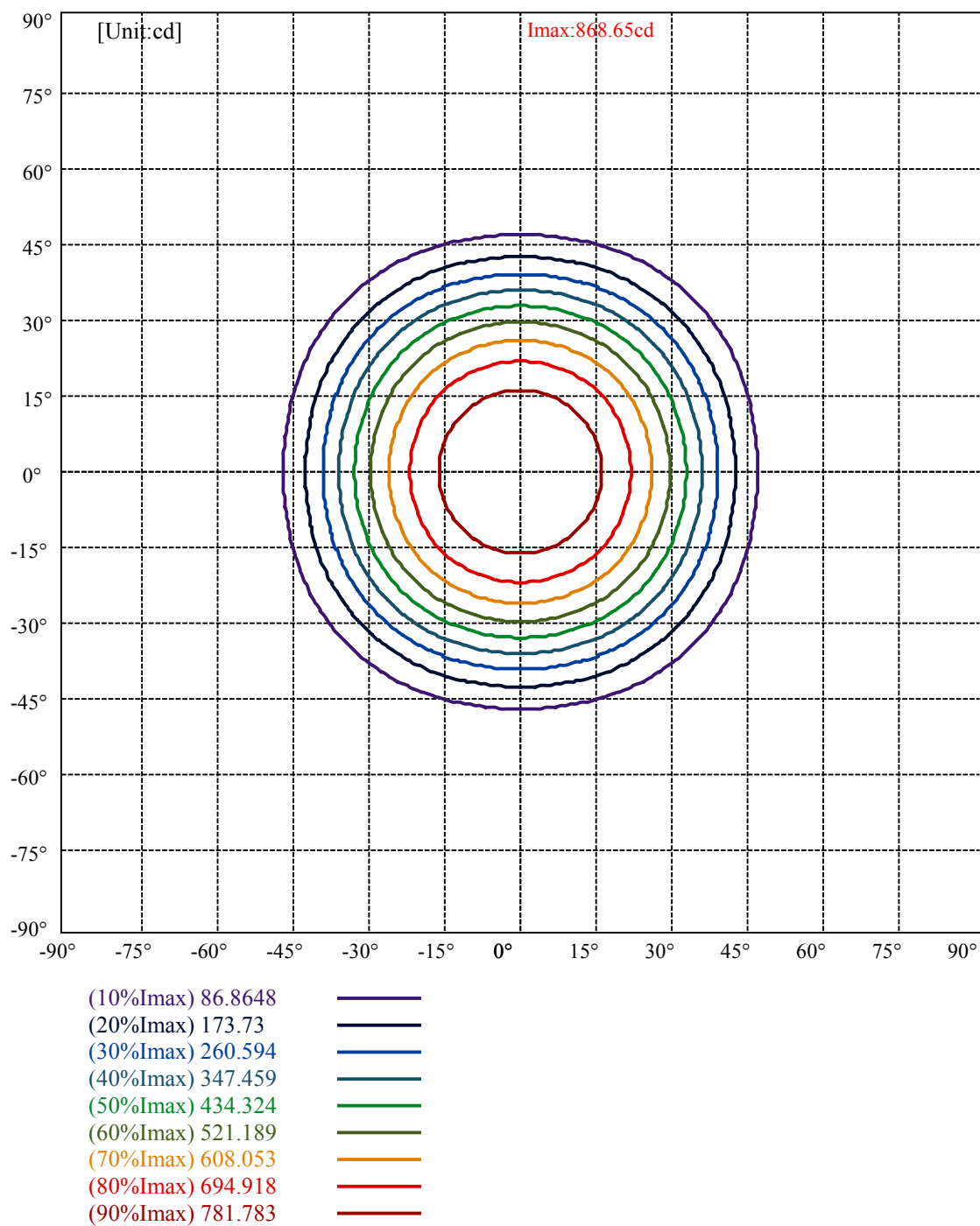
Field angle(10%Imax):C0/180Left:46.4 Right:46.4

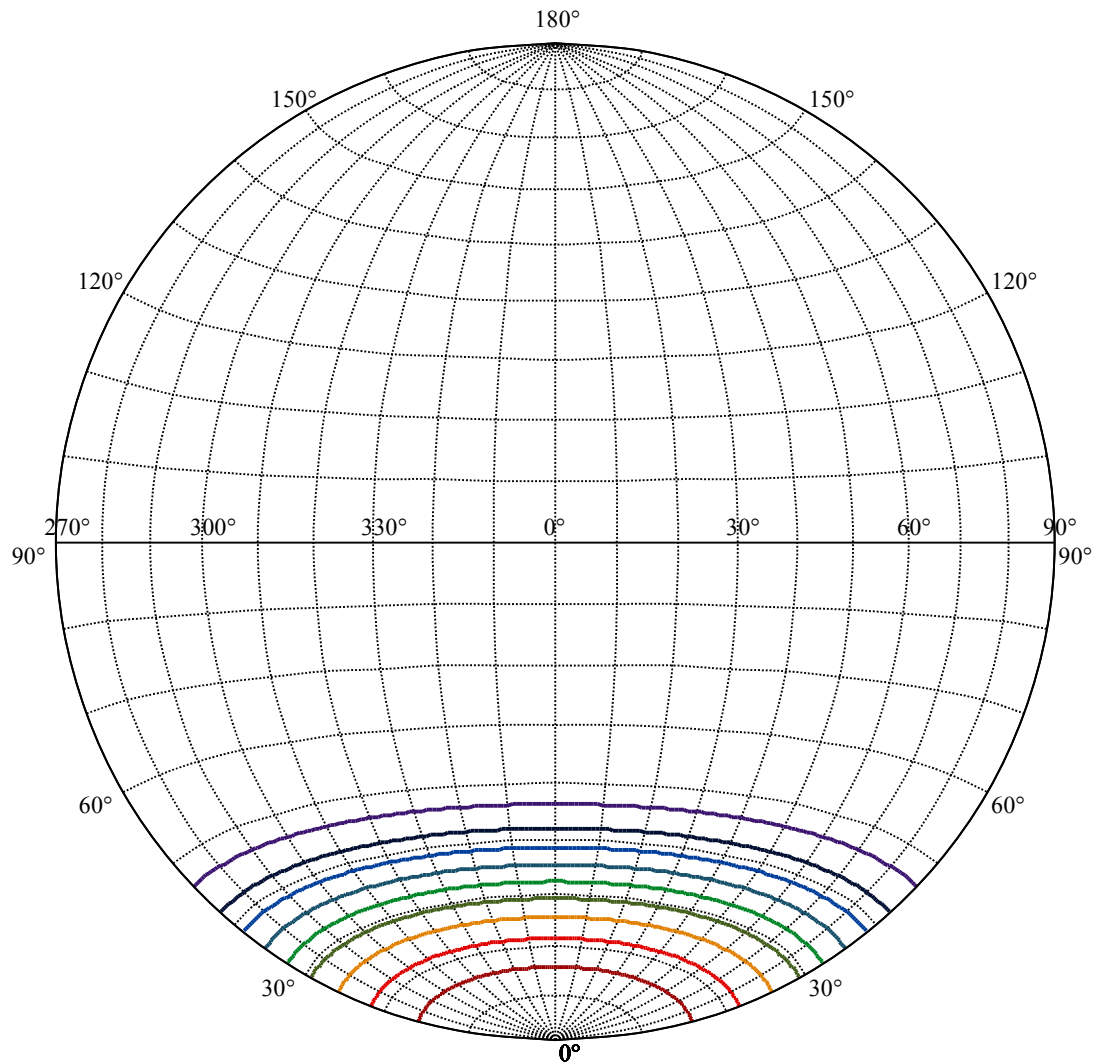
:C90/270Left:46.4 Right:46.4

Beam Angle(50%Imax):C0/180Left:32.5 Right:32.5

:C90/270Left:32.5 Right:32.5







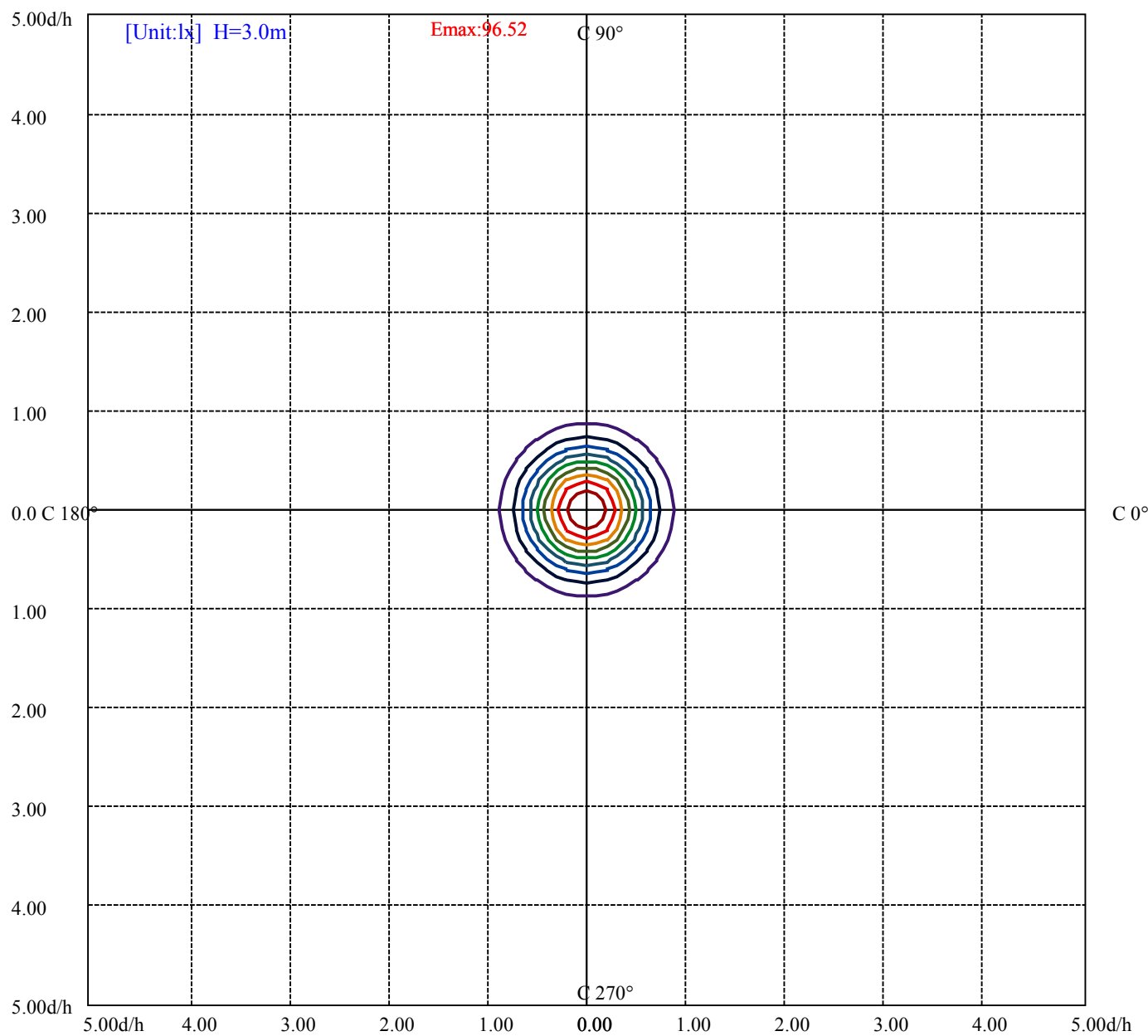
House

[Unit:cd]

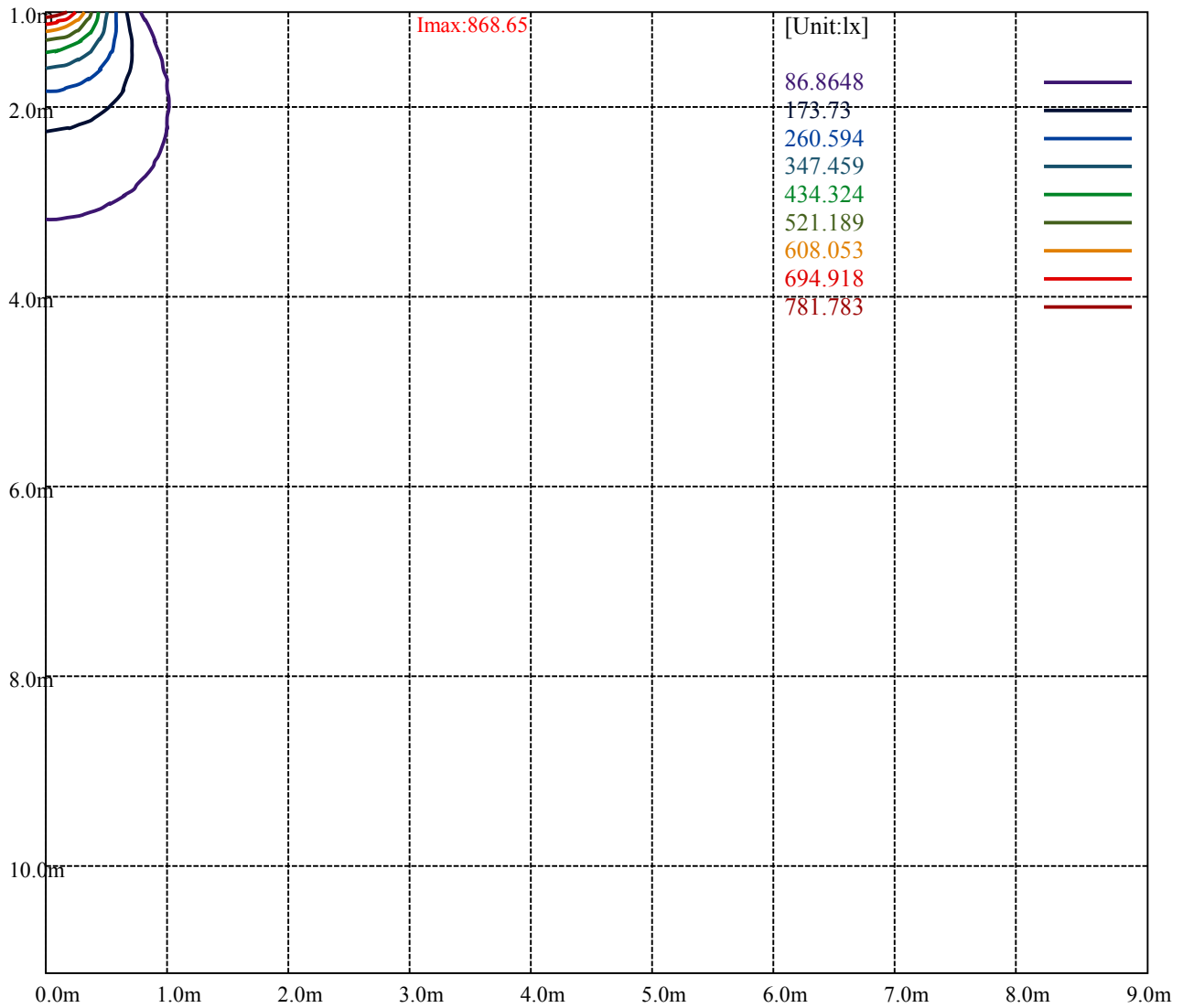
Road

Imax:868.65
(10%Imax) 86.8648
(20%Imax) 173.73
(30%Imax) 260.594
(40%Imax) 347.459
(50%Imax) 434.324
(60%Imax) 521.189
(70%Imax) 608.053
(80%Imax) 694.918
(90%Imax) 781.783





(10%E _{max}) 9.651633	—
(20%E _{max}) 19.30322	—
(30%E _{max}) 28.95489	—
(40%E _{max}) 38.60656	—
(50%E _{max}) 48.25822	—
(60%E _{max}) 57.90977	—
(70%E _{max}) 67.56144	—
(80%E _{max}) 77.21311	—
(90%E _{max}) 86.86478	—



Luminance Table

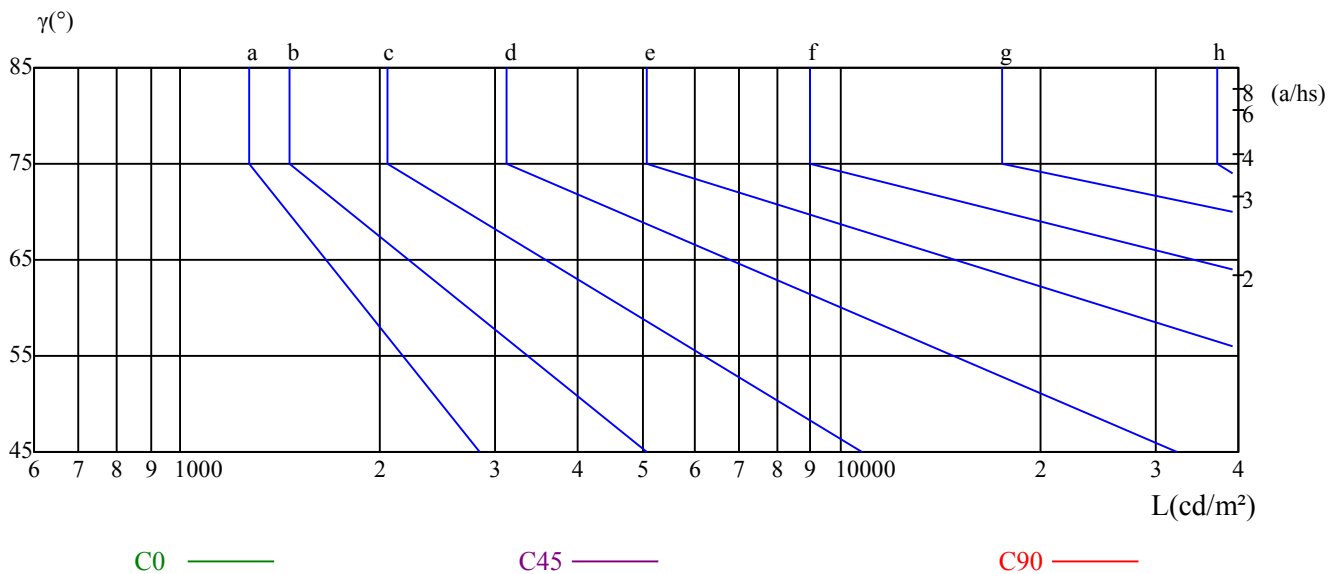
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

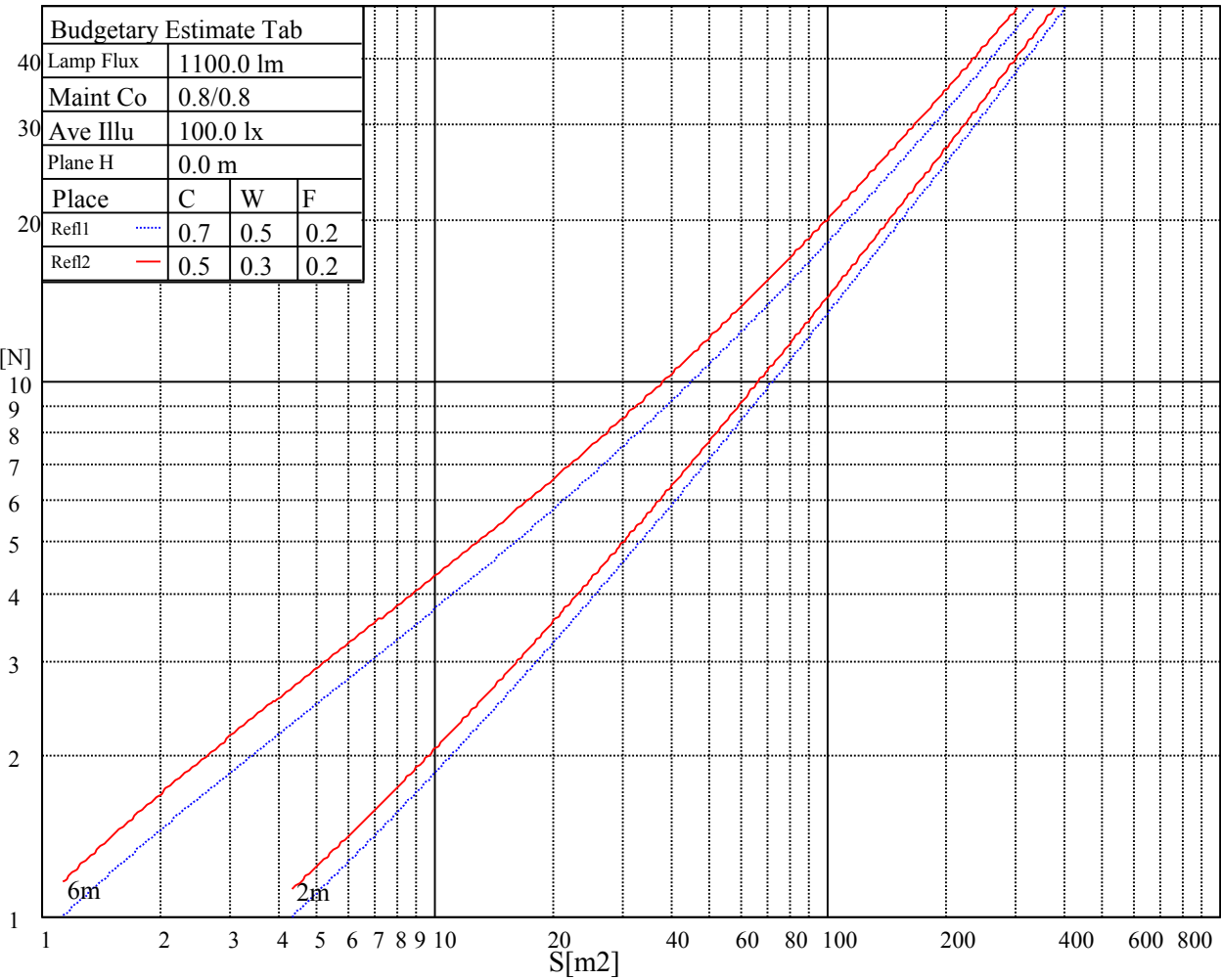
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

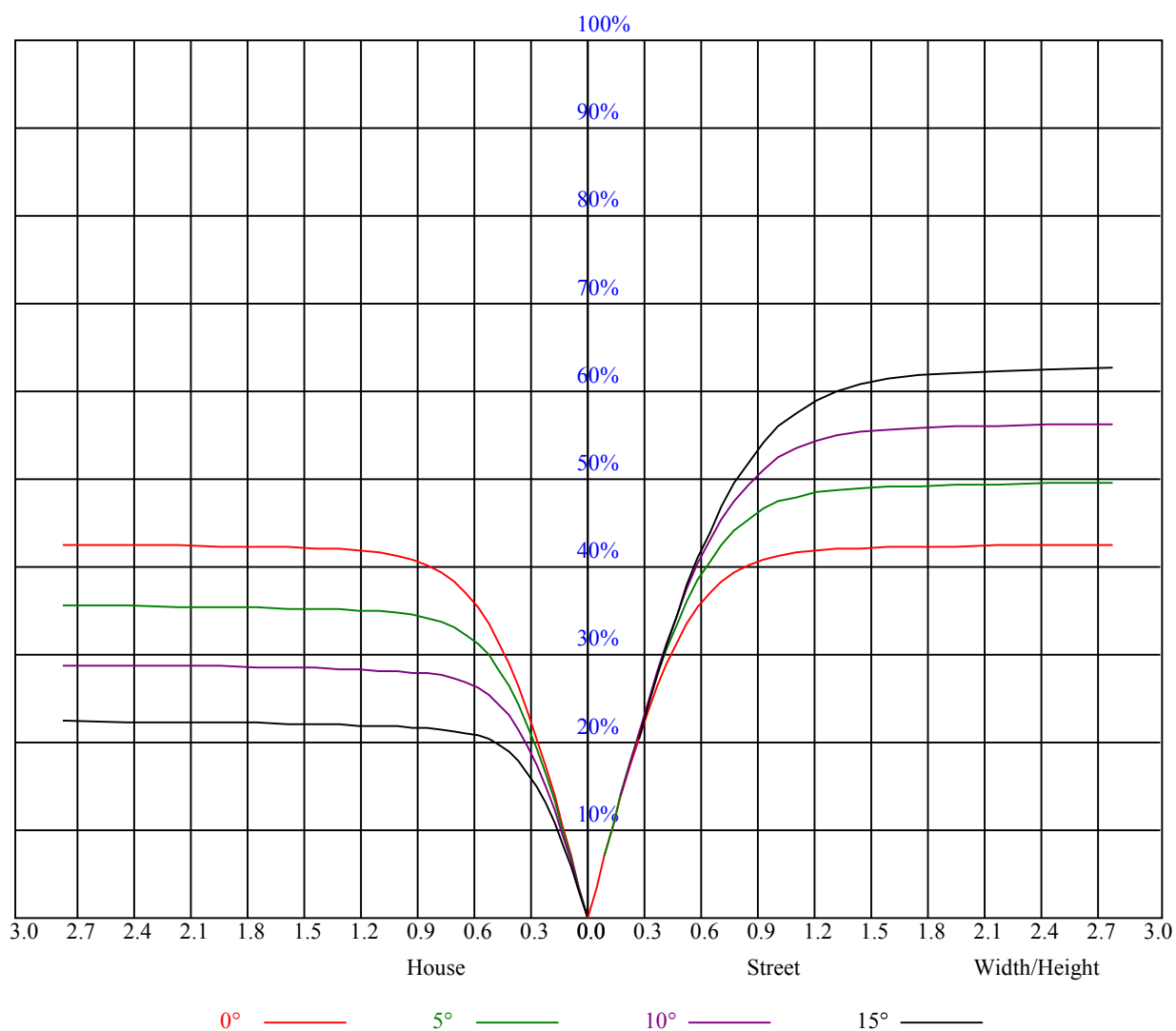
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

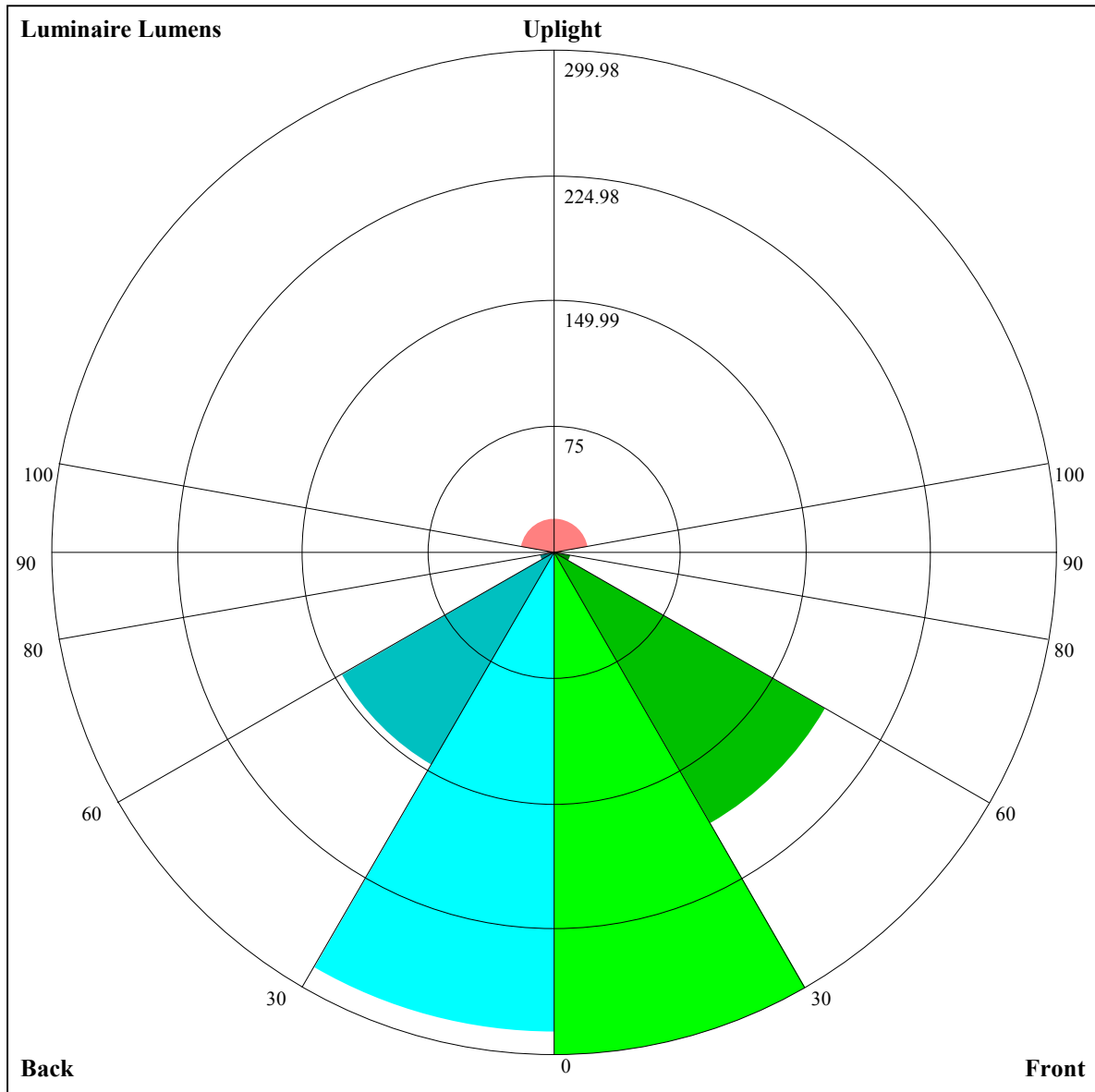
Luminance Limiting Curve





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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.95	0.92	0.90	0.93	0.91	0.89	0.89	0.87	0.86	0.86	0.85	0.83	0.83	0.82	0.81	0.79
2	0.87	0.83	0.80	0.86	0.82	0.79	0.83	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.74	0.73
3	0.81	0.76	0.72	0.79	0.75	0.72	0.77	0.73	0.70	0.75	0.72	0.69	0.73	0.70	0.68	0.67
4	0.75	0.70	0.66	0.74	0.69	0.65	0.72	0.68	0.64	0.70	0.67	0.64	0.68	0.65	0.63	0.62
5	0.70	0.64	0.60	0.69	0.64	0.60	0.67	0.63	0.59	0.66	0.62	0.59	0.64	0.61	0.58	0.57
6	0.65	0.59	0.55	0.64	0.59	0.55	0.63	0.58	0.55	0.62	0.57	0.54	0.60	0.57	0.54	0.53
7	0.61	0.55	0.51	0.60	0.55	0.51	0.59	0.54	0.51	0.58	0.53	0.50	0.57	0.53	0.50	0.49
8	0.57	0.51	0.47	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.53	0.50	0.47	0.45
9	0.53	0.48	0.44	0.53	0.48	0.44	0.52	0.47	0.44	0.51	0.47	0.44	0.50	0.46	0.44	0.42
10	0.50	0.45	0.41	0.50	0.45	0.41	0.49	0.44	0.41	0.48	0.44	0.41	0.48	0.44	0.41	0.40





Luminaire Lumens:

FL=299.98,FM=186.8,FH=10.09,FVH=2.94

BL=286.79,BM=146.56,BH=9.42,BVH=2.76

UL=4.27,UH=20.33

BUG Rating:B1-U2-G0

NATA 1536-E

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	868.61	866.93	853.20	824.01	772.93	695.31	590.63	474.41	323.78		
45.0	866.42	864.51	835.37	795.94	727.93	639.73	510.36	369.51	235.29		
90.0	871.43	867.77	829.58	786.88	707.46	592.26	468.11	319.44	183.32		
135.0	867.99	863.49	840.04	793.24	723.32	602.49	468.23	317.98	184.05		
180.0	868.89	850.50	816.30	752.34	678.71	557.89	419.06	273.15	135.56		
225.0	866.42	854.89	831.66	787.22	718.14	603.28	487.58	336.54	196.37		
270.0	871.43	859.28	837.96	807.24	746.04	656.38	534.94	393.02	252.68		
315.0	867.99	856.52	837.34	804.43	748.29	663.08	548.83	415.69	275.91		
360.0	868.61	866.93	853.20	824.01	772.93	695.31	590.63	474.41	323.78		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	176.12	74.59	27.56	14.34	10.18	8.33	7.09	6.30	5.34		
45.0	121.78	46.01	20.81	15.08	12.09	10.41	9.11	7.71	5.40		
90.0	86.29	36.28	18.96	14.18	11.98	10.24	8.55	6.69	4.89		
135.0	67.56	25.99	13.16	10.18	8.49	7.37	6.75	5.51	4.33		
180.0	44.72	18.28	11.93	9.62	8.04	7.09	6.47	5.40	4.05		
225.0	83.03	30.38	16.82	13.22	11.19	10.07	8.78	7.31	5.51		
270.0	122.23	45.28	21.26	15.36	12.15	10.69	9.51	7.88	5.79		
315.0	136.41	49.33	19.46	12.49	9.79	8.16	6.86	6.24	5.18		
360.0	176.12	74.59	27.56	14.34	10.18	8.33	7.09	6.30	5.34		
C/γ(°)	90.0										
0.0	4.22										
45.0	3.88										
90.0	3.77										
135.0	3.77										
180.0	3.83										
225.0	3.83										
270.0	3.94										
315.0	4.11										
360.0	4.22										