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NATA

LumCAT: 2-2077-M
Luminaire: 92.70.131.00
Report No: NATA0100
Test No: GC2020011401
LampCAT: LUMINUS CXM-14-AC40 LES14.5
Lamp flux(lm): 2541.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C
Voltage(V): 34.2200
Current(A): 0.5970
Power (W): 20.4300
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 2011.17
Efficiency(%): 79.15%
Lumens(lm)/Power(W): 98.44
Central intensity(cd): 10450.550
Maximum intensity(cd): 10450.550
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=23.9
[C90/270]Total=23.9
Field angle(10%Imax): [C0/180]Total=42.5
[C90/270]Total=42.5
Maximum s/h(1/2): C0_180=0.41 C90_270=0.41
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 79.15%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.601%

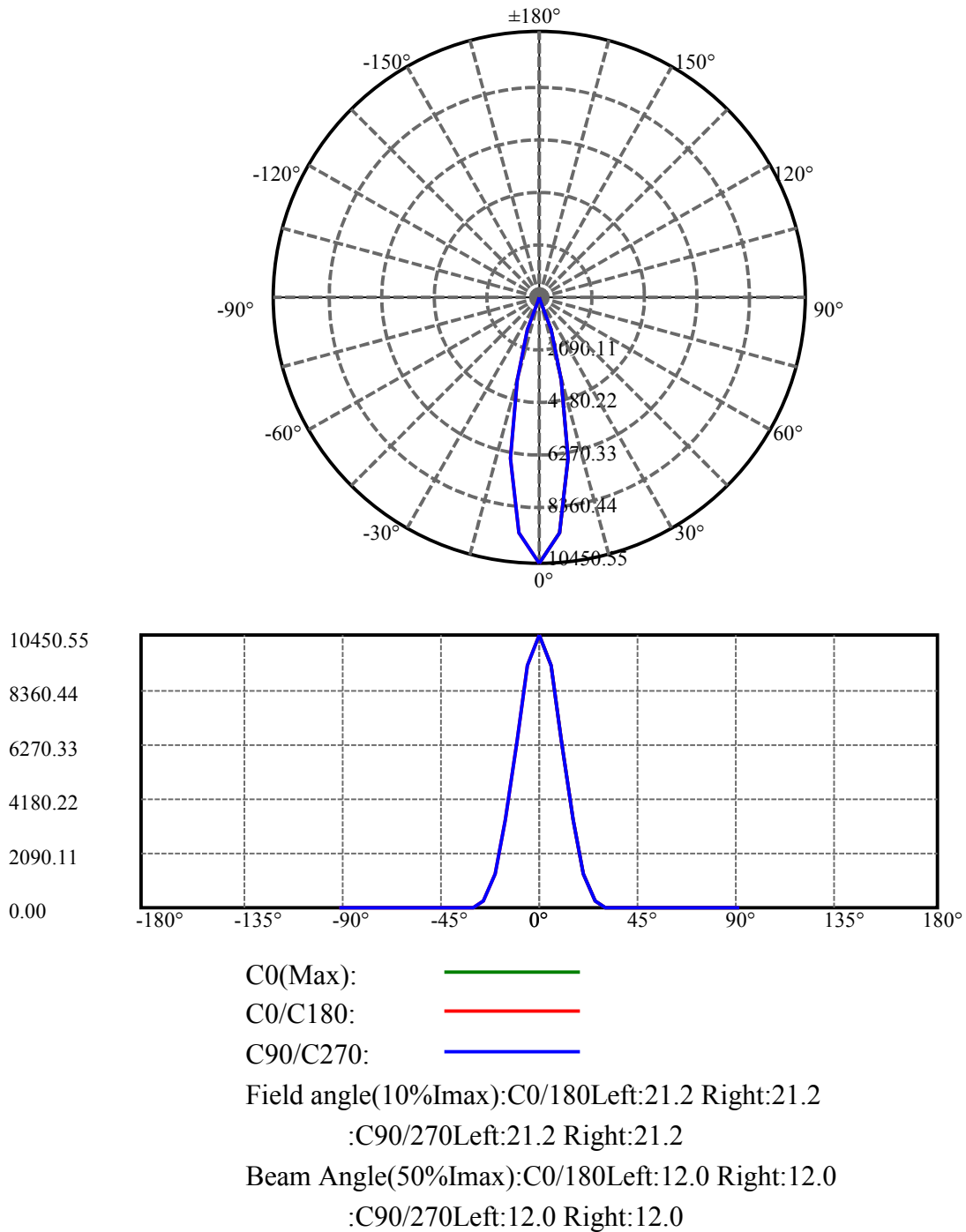
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10450.547	0.000	0	.000%	.000%
5.0	9276.398	235.830	235.83	9.281%	11.726%
10.0	6436.477	562.099	797.929	22.121%	39.675%
15.0	3363.820	581.347	1379.276	22.879%	68.581%
20.0	1314.738	385.579	1764.855	15.174%	87.753%
25.0	234.689	162.506	1927.361	6.395%	95.833%
30.0	15.877	31.709	1959.071	1.248%	97.410%
35.0	12.030	4.110	1963.18	.162%	97.614%
40.0	10.603	3.776	1966.956	.149%	97.802%
45.0	9.914	3.799	1970.755	.150%	97.991%
50.0	9.534	3.930	1974.685	.155%	98.186%
55.0	9.295	4.094	1978.779	.161%	98.390%
60.0	9.127	4.258	1983.038	.168%	98.601%
65.0	9.042	4.417	1987.454	.174%	98.821%
70.0	8.986	4.565	1992.019	.180%	99.048%
75.0	8.923	4.681	1996.7	.184%	99.281%
80.0	8.916	4.773	2001.473	.188%	99.518%
85.0	8.902	4.841	2006.315	.191%	99.759%
90.0	8.824	4.853	2011.168	.191%	100.000%

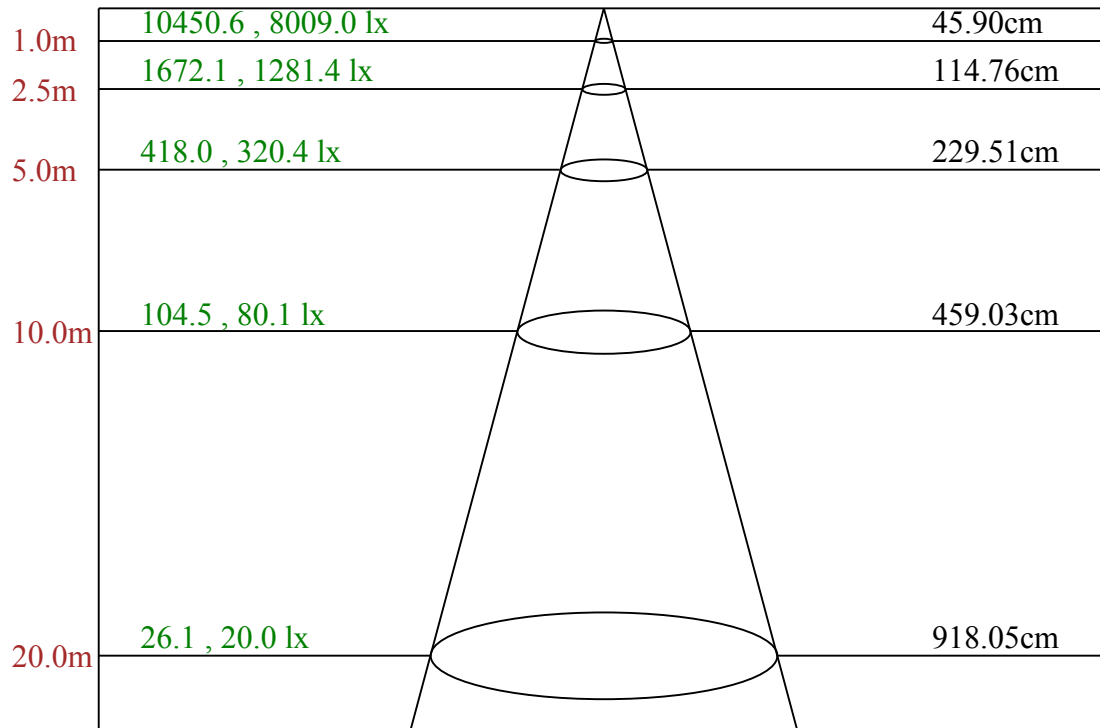
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1959.07	77.10%	97.41%
0-40	1966.96	77.41%	97.80%
0-60	1983.04	78.04%	98.60%
0-90	2006.31	78.96%	99.76%
0-120	2006.31	78.96%	99.76%
0-180	2011.17	79.15%	100.00%
60-90	27.54	1.08%	1.37%
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%
0-17.98	1608.93	63.32%	80.00%

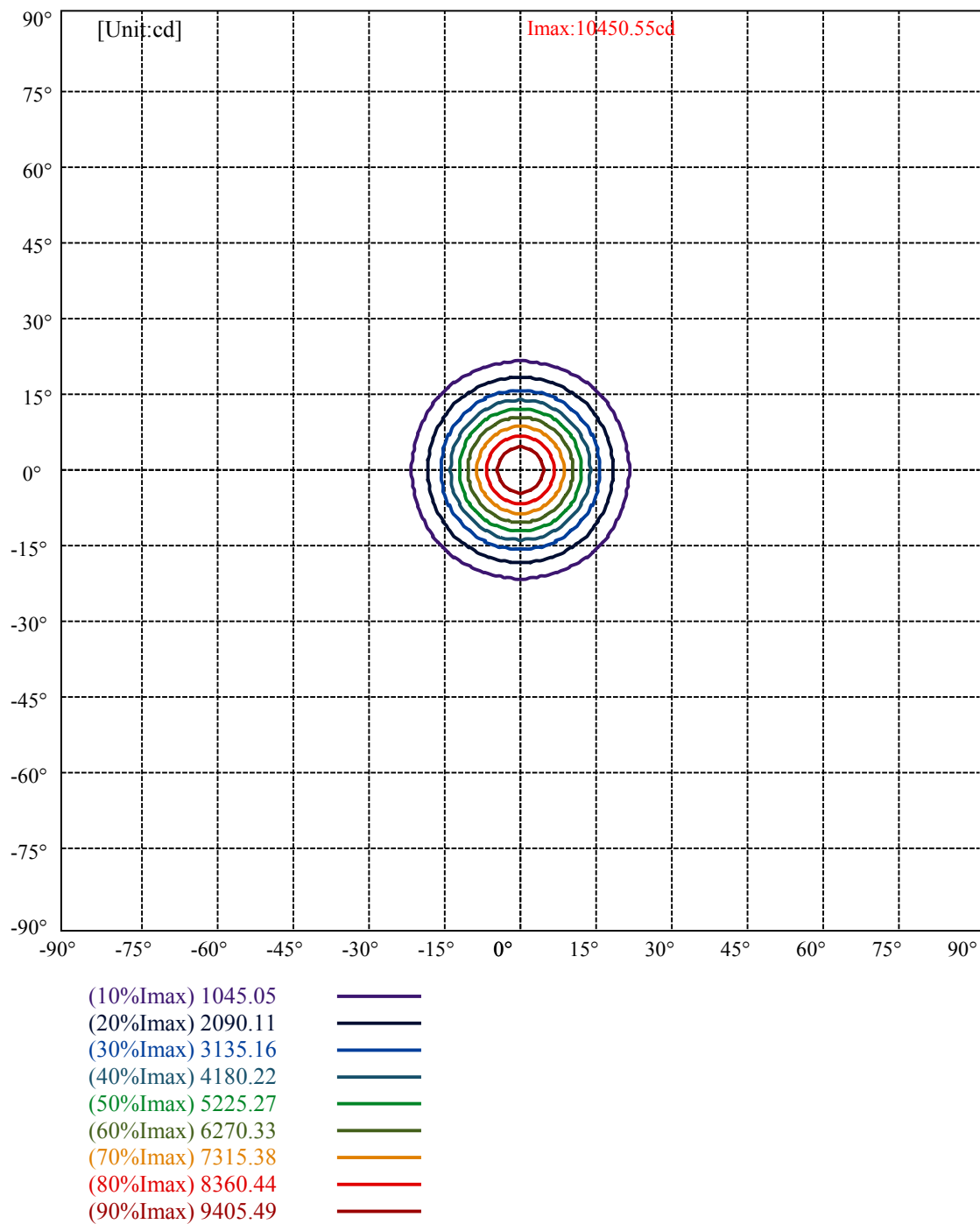
ZONAL LUMEN SUMMARY

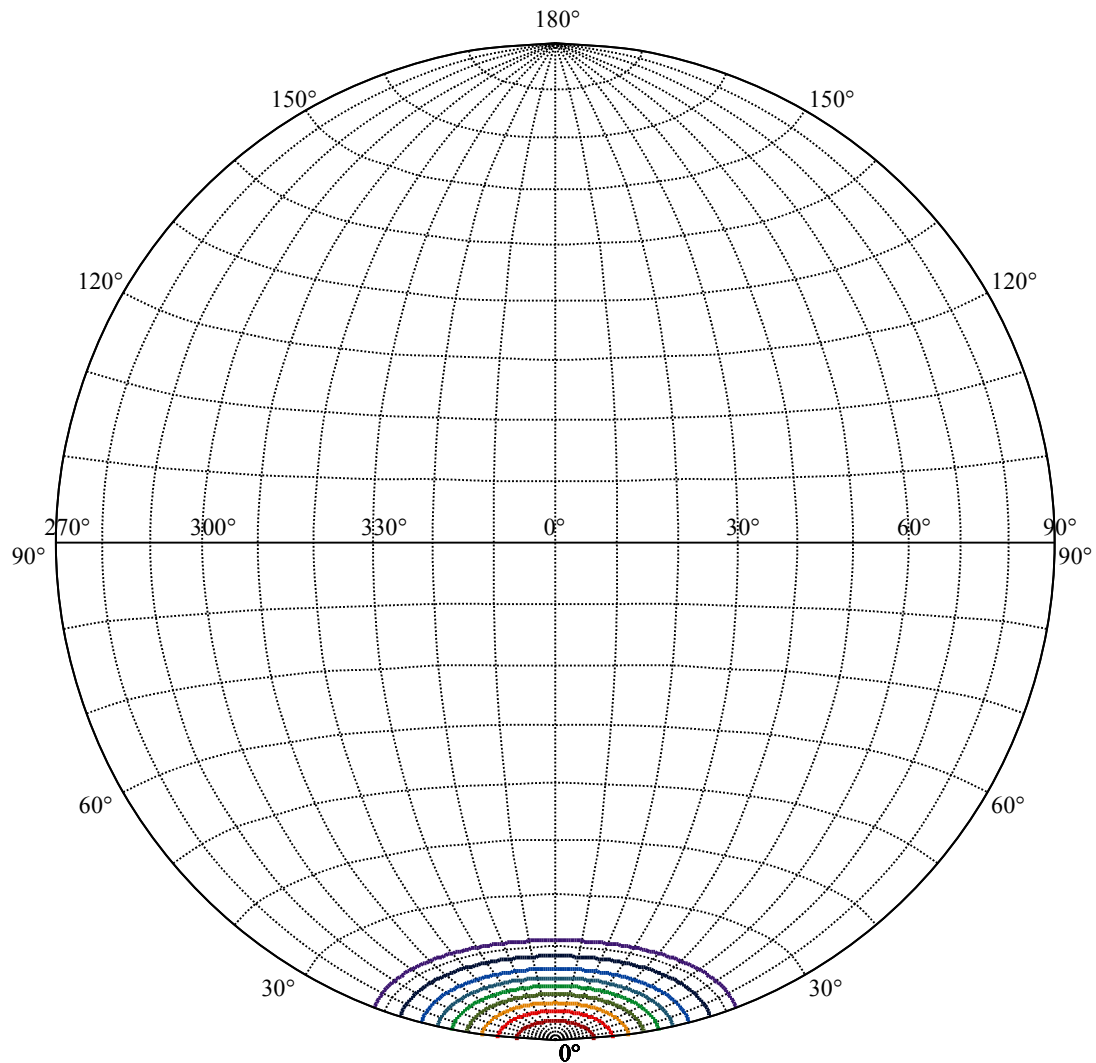
0-10	797.93
10-20	966.93
20-30	194.22
30-40	7.89
40-50	7.73
50-60	8.35
60-70	8.98
70-80	9.45
80-90	4.84
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00





Max , Ave Beam angle of C0 plane 25.85





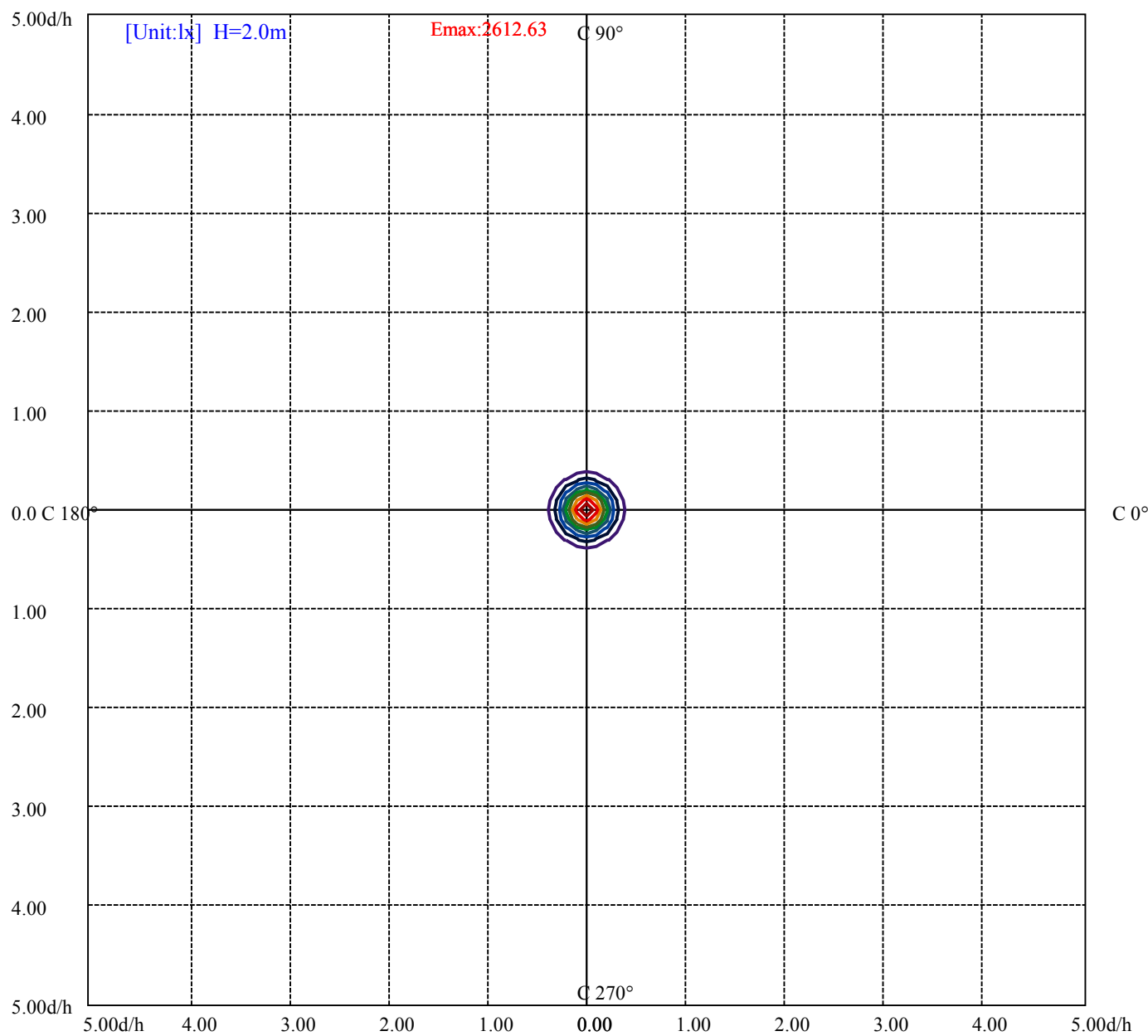
House

[Unit:cd]

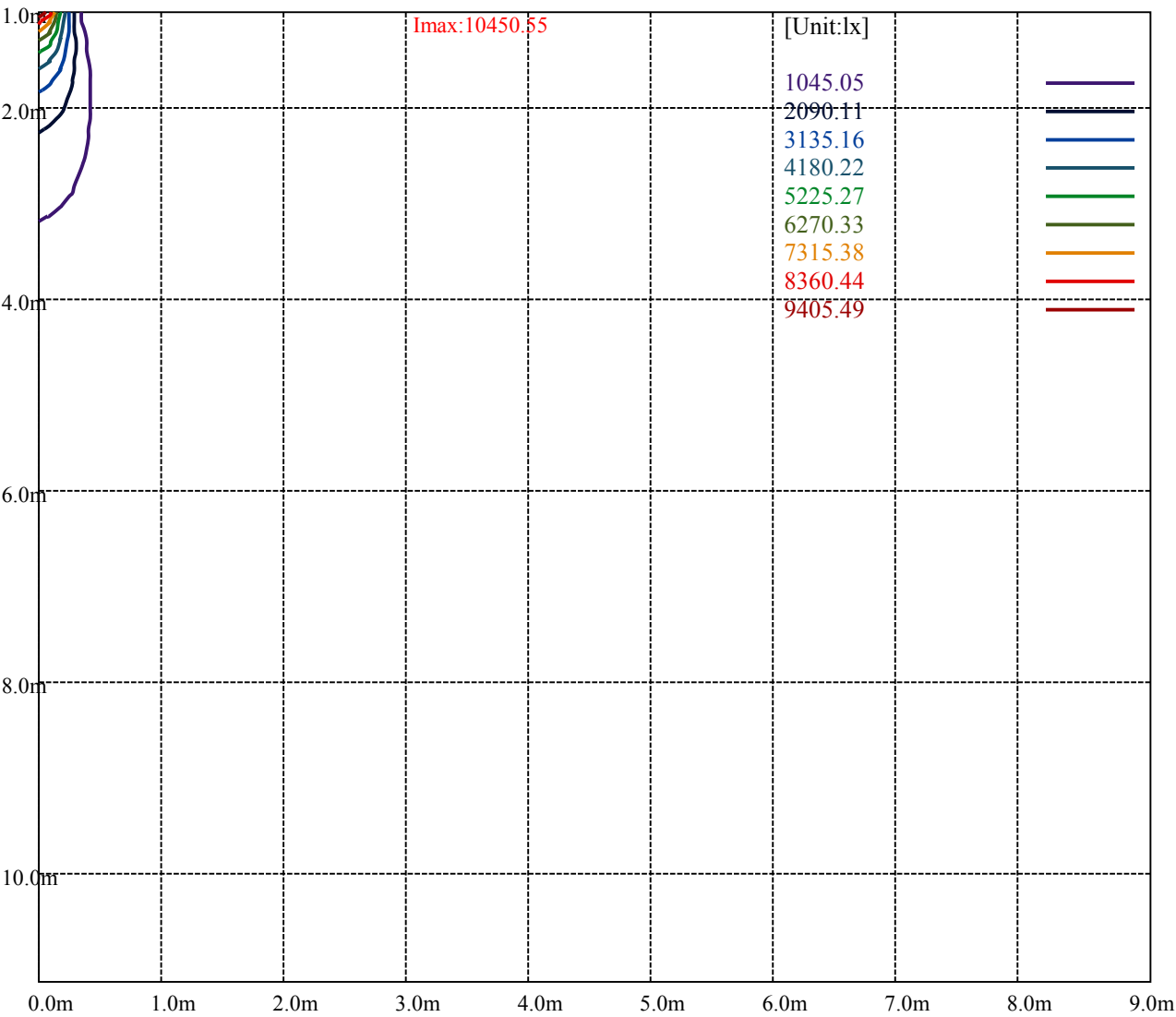
Road

Imax:10450.55

(10%Imax)	1045.05	—
(20%Imax)	2090.11	—
(30%Imax)	3135.16	—
(40%Imax)	4180.22	—
(50%Imax)	5225.27	—
(60%Imax)	6270.33	—
(70%Imax)	7315.38	—
(80%Imax)	8360.44	—
(90%Imax)	9405.49	—



(10%Emax)	261.2625	
(20%Emax)	522.525	
(30%Emax)	783.7875	
(40%Emax)	1045.05	
(50%Emax)	1306.315	
(60%Emax)	1567.578	
(70%Emax)	1828.84	
(80%Emax)	2090.103	
(90%Emax)	2351.365	



Luminance Table

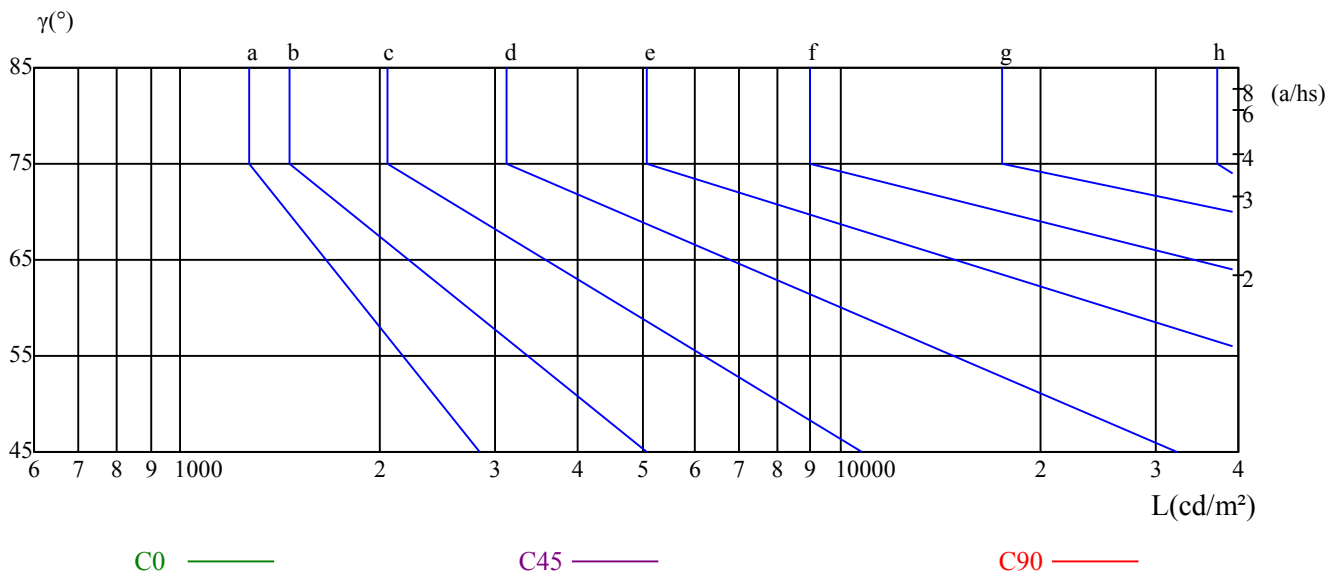
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

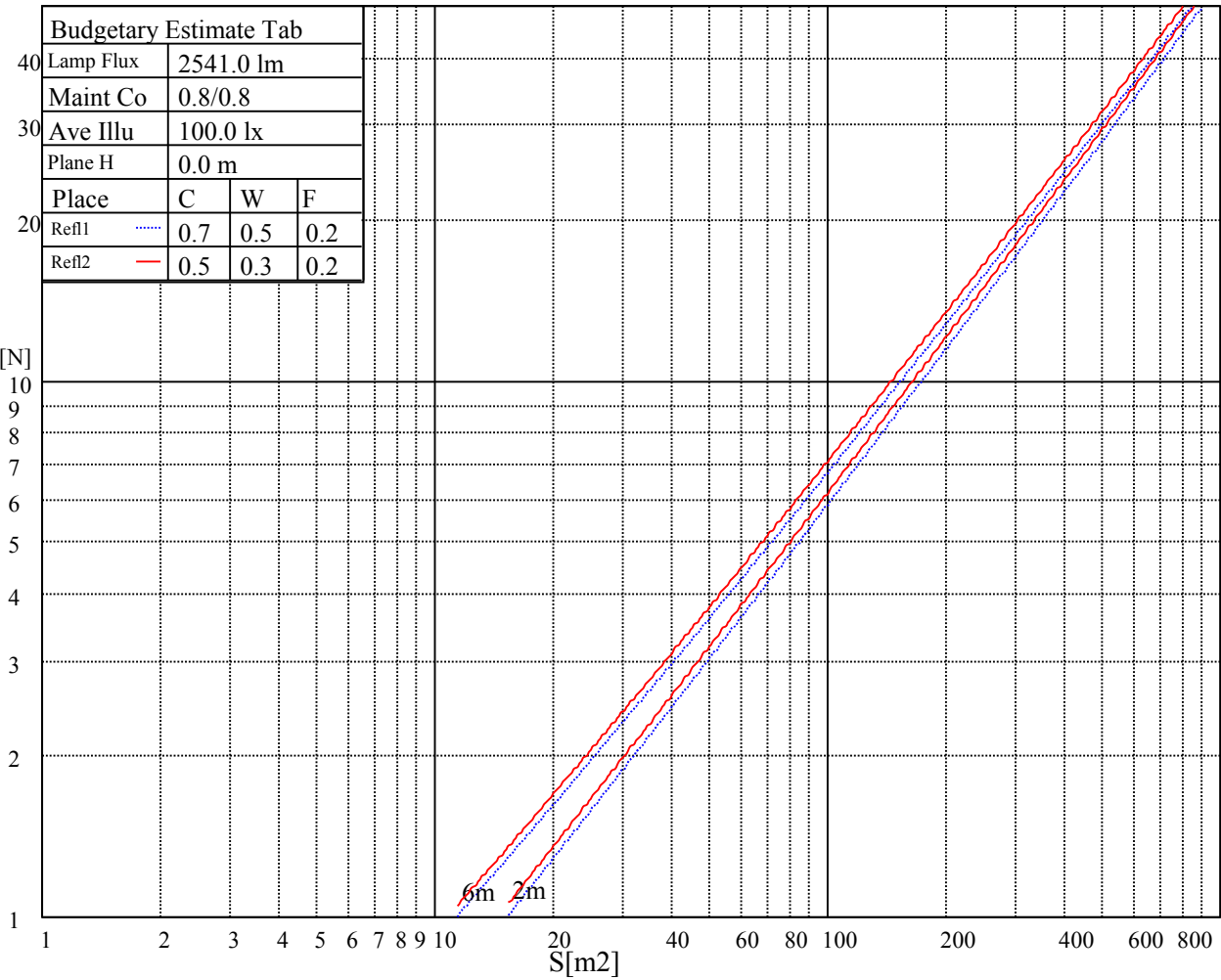
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

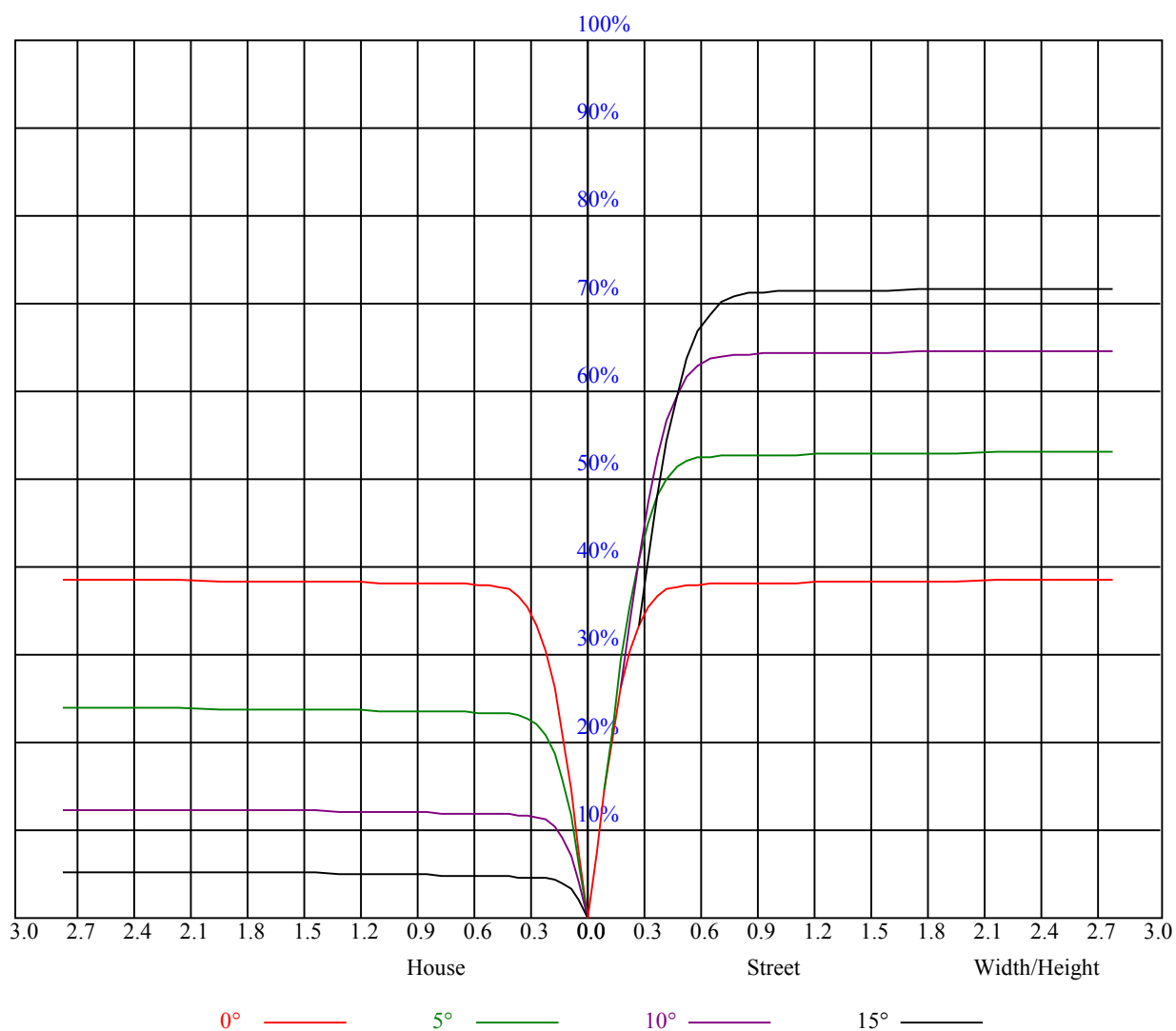
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.81	0.81	0.81	0.79
1	0.89	0.88	0.86	0.88	0.86	0.85	0.84	0.83	0.82	0.82	0.81	0.80	0.79	0.78	0.78	0.76
2	0.85	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.78	0.79	0.78	0.77	0.77	0.76	0.75	0.74
3	0.82	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.77	0.75	0.74	0.76	0.74	0.73	0.72
4	0.79	0.76	0.74	0.78	0.75	0.73	0.77	0.74	0.73	0.75	0.73	0.72	0.74	0.72	0.71	0.70
5	0.76	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.73	0.71	0.70	0.72	0.71	0.69	0.68
6	0.74	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.72	0.69	0.68	0.71	0.69	0.67	0.67
7	0.72	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.68	0.66	0.69	0.67	0.66	0.65
8	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.64	0.68	0.66	0.64	0.63
9	0.68	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.66	0.64	0.63	0.62
10	0.67	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.62	0.66	0.63	0.62	0.65	0.63	0.61	0.61



NATA 2-2077-M

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	10432.69	9650.25	7315.88	3894.19	1658.25	324.00	17.72	12.60	10.74		
45.0	10431.00	9818.44	7240.50	3968.44	1720.13	415.13	16.93	12.38	10.91		
90.0	10477.13	9189.00	6276.38	3211.88	1099.41	206.49	15.13	11.93	10.58		
135.0	10461.38	9389.25	6613.88	3591.00	1474.31	290.81	15.69	11.98	10.58		
180.0	10432.69	8830.13	5792.63	2834.44	1007.72	101.70	14.23	11.36	10.35		
225.0	10431.00	8766.56	5574.94	2794.50	1003.95	54.79	15.02	11.64	10.41		
270.0	10477.13	9462.94	6509.25	3520.69	1449.56	324.56	16.48	12.43	10.74		
315.0	10461.38	9104.63	6168.38	3095.44	1104.58	160.03	15.81	11.93	10.52		
360.0	10432.69	9650.25	7315.88	3894.19	1658.25	324.00	17.72	12.60	10.74		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	9.96	9.56	9.28	9.11	9.00	8.94	8.83	8.83	8.83		
45.0	10.07	9.68	9.39	9.23	9.11	9.06	8.94	8.94	8.94		
90.0	9.90	9.56	9.34	9.17	9.06	9.00	8.94	8.94	8.94		
135.0	9.84	9.51	9.28	9.11	9.00	8.94	8.89	8.83	8.83		
180.0	9.79	9.39	9.17	9.06	9.00	8.89	8.89	8.83	8.89		
225.0	9.84	9.51	9.28	9.11	9.06	9.00	8.94	8.94	8.94		
270.0	10.01	9.56	9.34	9.17	9.11	9.11	9.06	9.17	9.00		
315.0	9.90	9.51	9.28	9.06	9.00	8.94	8.89	8.83	8.83		
360.0	9.96	9.56	9.28	9.11	9.00	8.94	8.83	8.83	8.83		
C/ γ (°)	90.0										
0.0	8.83										
45.0	8.89										
90.0	8.83										
135.0	8.78										
180.0	8.83										
225.0	8.83										
270.0	8.83										
315.0	8.78										
360.0	8.83										