
NATA

LumCAT: 2-1155-M

Luminaire:

Report No: NT2015011701

Voltage(V): 220.0000

Test No: GC2015011701

Current(A): 0.0790

LampCAT: XICATO XTM LES19

Power (W): 14.4000

Lamp flux(lm): 1294.0

PF: 0.8260

Number of Lamps: 1

Ballast type: DC

Length(mm): 68

Width(mm): 68

Phm Type: C

Height(mm):0

Photometric Results

Lumens(lm): 1110.20

Efficiency(%): 85.80%

Lumens(lm)/Power(W): 77.10

Central intensity(cd): 1253.849

Maximum intensity(cd): 1254.828

Angle of maximum intensity: C=0.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=58.8

[C90/270]Total=58.8

Field angle(10%Imax): [C0/180]Total=77.4

[C90/270]Total=77.4

Maximum s/h(1/2): C0_180=0.95 C90_270=0.95

Maximum s/h(1/4): C0_180=0.87 C90_270=0.87

Up flux rate of lamp(%): 3.55%

Down flux rate of lamp(%): 82.75%

Up flux rate of LUM(%): 4.53%

Down flux rate of LUM(%): 95.89%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.483%

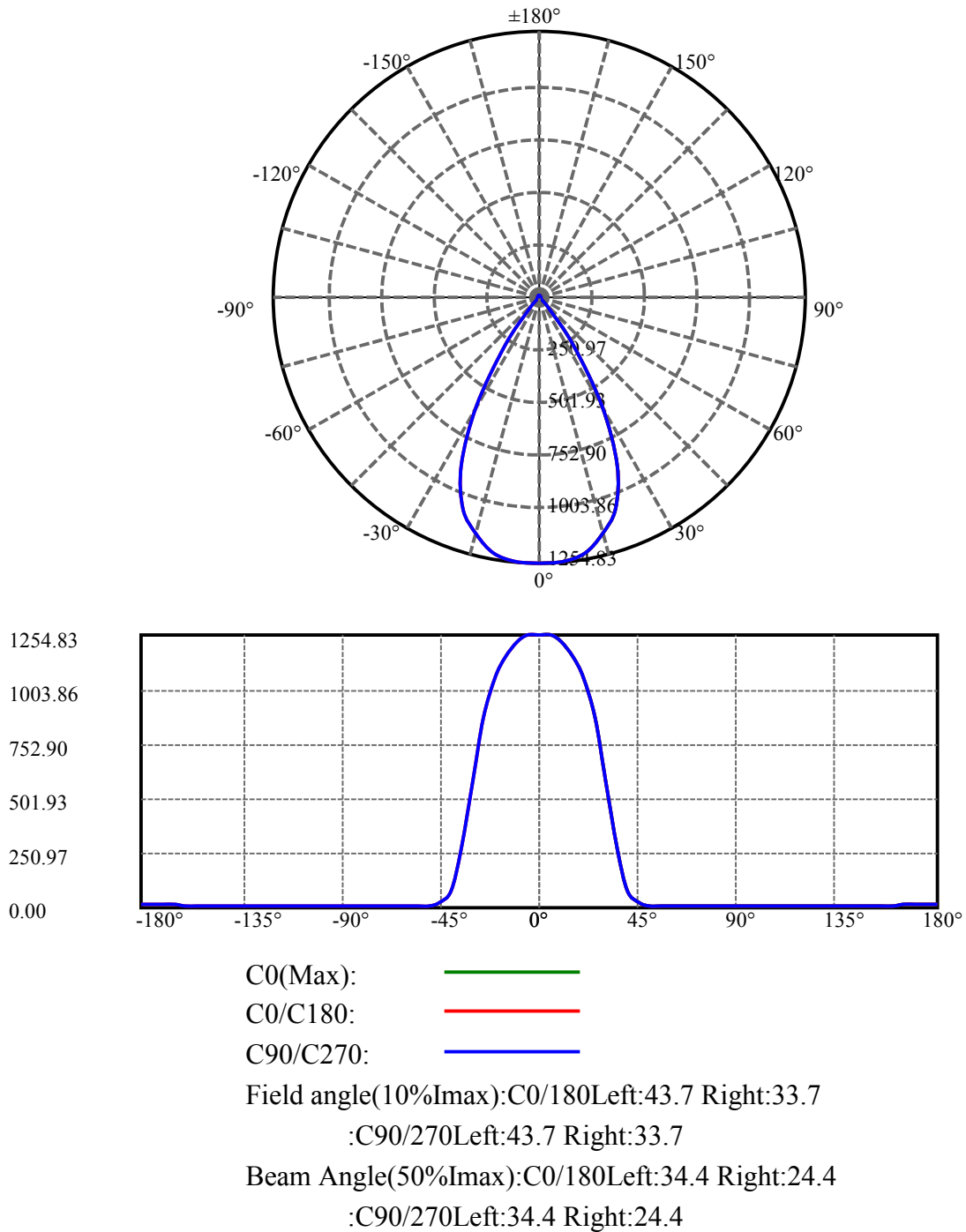
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1253.848	7.498	7.498	.579%	.675%
5.0	1254.828	59.947	67.446	4.633%	6.075%
10.0	1224.055	116.509	183.955	9.004%	16.569%
15.0	1156.816	164.116	348.071	12.683%	31.352%
20.0	1062.456	199.183	547.253	15.393%	49.293%
25.0	873.400	202.326	749.579	15.636%	67.517%
30.0	593.263	162.595	912.174	12.565%	82.163%
35.0	274.493	86.300	998.474	6.669%	89.936%
40.0	74.155	26.128	1024.602	2.019%	92.290%
45.0	22.604	8.761	1033.363	.677%	93.079%
50.0	9.798	4.114	1037.477	.318%	93.449%
55.0	7.169	3.219	1040.696	.249%	93.739%
60.0	6.868	3.260	1043.956	.252%	94.033%
65.0	6.777	3.367	1047.323	.260%	94.336%
70.0	6.770	3.487	1050.81	.269%	94.650%
75.0	6.756	3.577	1054.387	.276%	94.972%
80.0	6.805	3.673	1058.06	.284%	95.303%
85.0	8.050	4.396	1062.456	.340%	95.699%
90.0	6.728	3.688	1066.144	.285%	96.031%
95.0	6.826	3.727	1069.871	.288%	96.367%
100.0	6.847	3.696	1073.567	.286%	96.700%
105.0	6.735	3.566	1077.133	.276%	97.021%
110.0	6.714	3.458	1080.591	.267%	97.333%
115.0	6.728	3.342	1083.934	.258%	97.634%
120.0	6.721	3.190	1087.124	.247%	97.921%
125.0	6.735	3.024	1090.148	.234%	98.194%
130.0	6.777	2.846	1092.994	.220%	98.450%
135.0	6.861	2.659	1095.653	.206%	98.689%
140.0	6.987	2.462	1098.115	.190%	98.911%
145.0	7.204	2.265	1100.38	.175%	99.115%
150.0	7.784	2.133	1102.513	.165%	99.307%
155.0	8.959	2.075	1104.588	.160%	99.494%
160.0	10.393	1.948	1106.537	.151%	99.670%
165.0	11.813	1.676	1108.213	.130%	99.821%
170.0	13.029	1.240	1109.453	.096%	99.932%
175.0	13.932	0.666	1110.118	.051%	99.992%
180.0	14.211	0.085	1110.203	.007%	100.000%

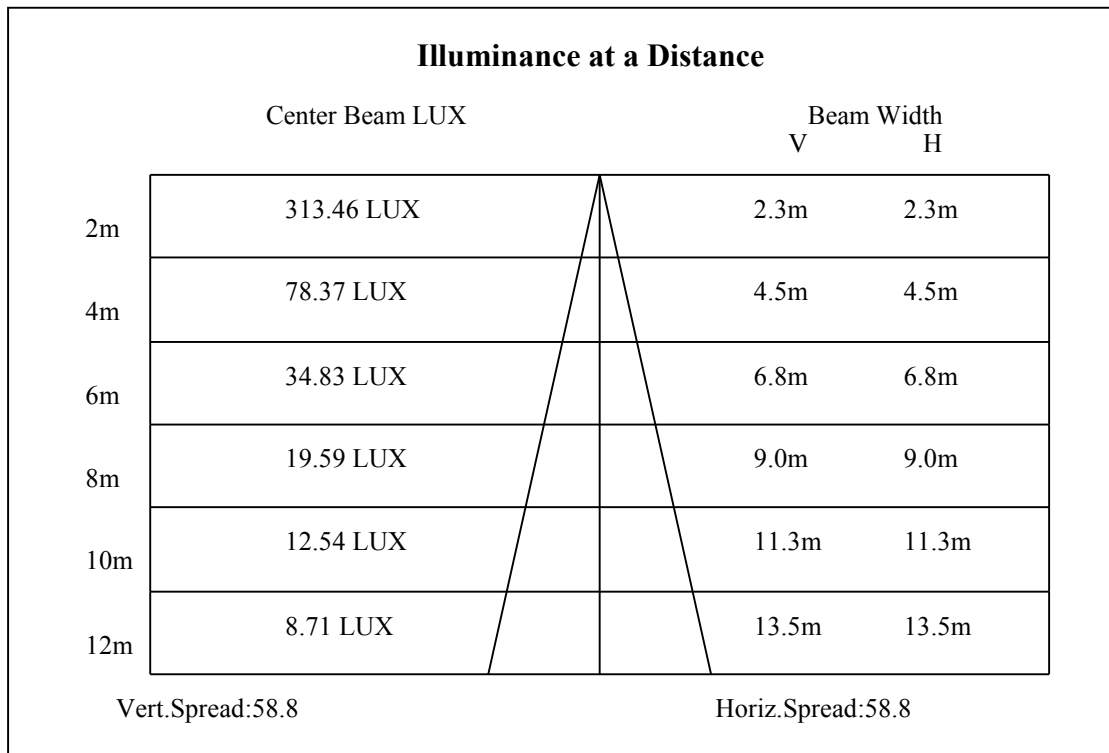
ZONAL LUMEN SUMMARY

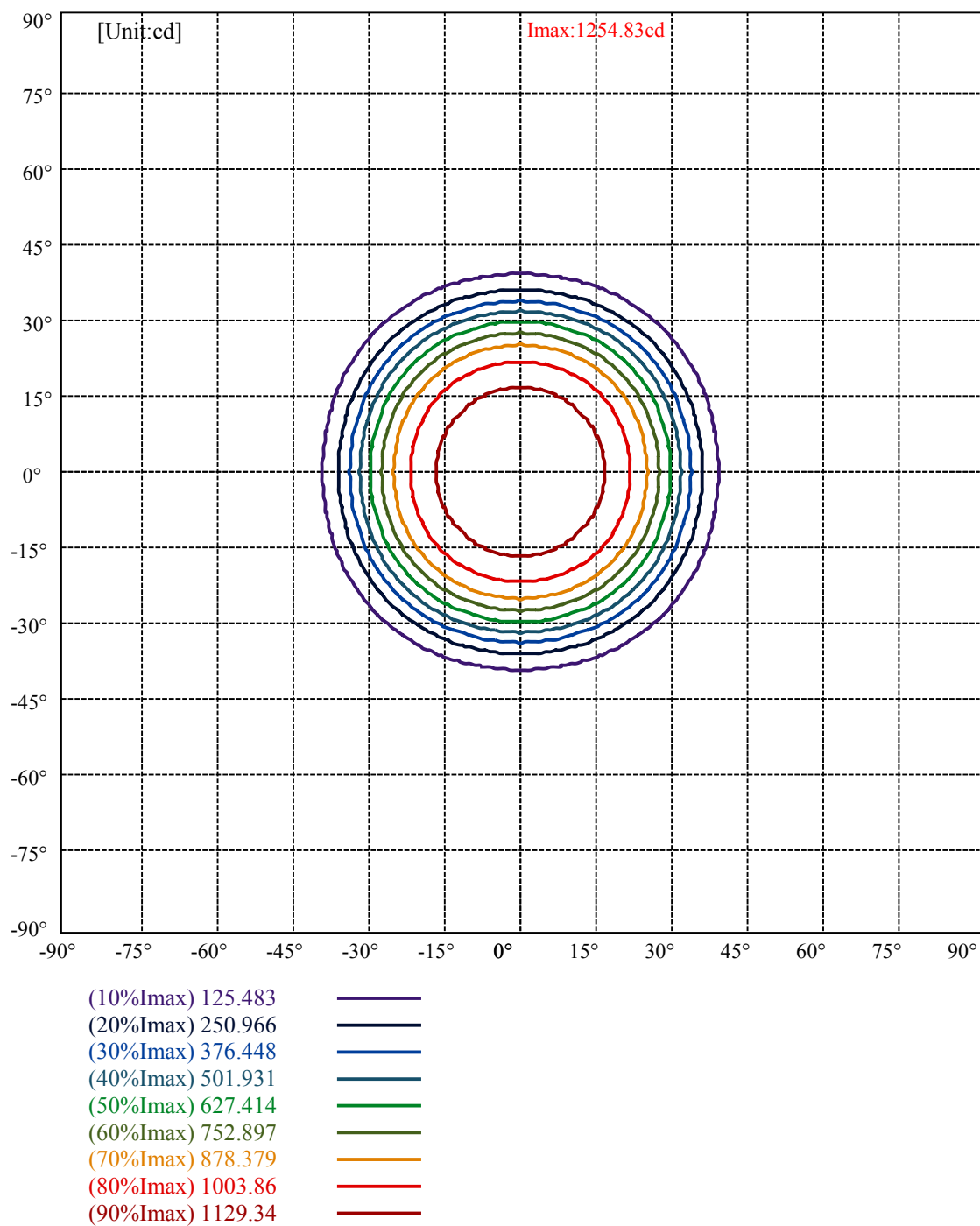
Zone	Lumens	%Lamp	%Fixt
0-30	912.17	70.49%	82.16%
0-40	1024.60	79.18%	92.29%
0-60	1043.96	80.68%	94.03%
0-90	1066.14	82.39%	96.03%
0-120	1087.12	84.01%	97.92%
0-180	1110.20	85.80%	100.00%
60-90	25.45	1.97%	2.29%
90-120	24.67	1.91%	2.22%
90-130	30.54	2.36%	2.75%
90-150	40.06	3.10%	3.61%
90-180	47.66	3.68%	4.29%
0-29.26	888.16	68.64%	80.00%

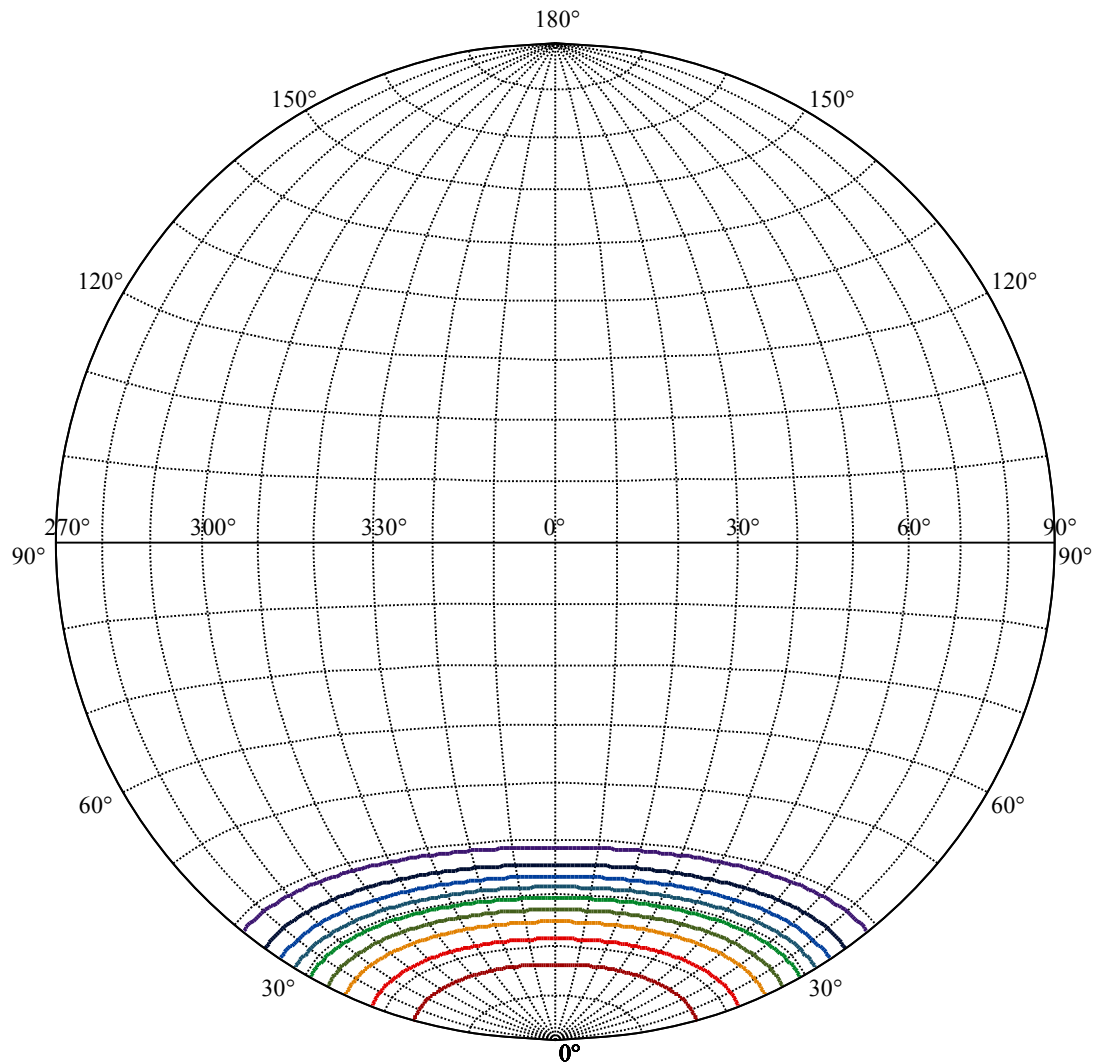
ZONAL LUMEN SUMMARY

0-10	183.95
10-20	363.30
20-30	364.92
30-40	112.43
40-50	12.88
50-60	6.48
60-70	6.85
70-80	7.25
80-90	8.08
90-100	7.42
100-110	7.02
110-120	6.53
120-130	5.87
130-140	5.12
140-150	4.40
150-160	4.02
160-170	2.92
170-180	0.67









House

[Unit:cd]

Road

Imax:1254.83

(10%Imax) 125.483

(20%Imax) 250.966

(30%Imax) 376.448

(40%Imax) 501.931

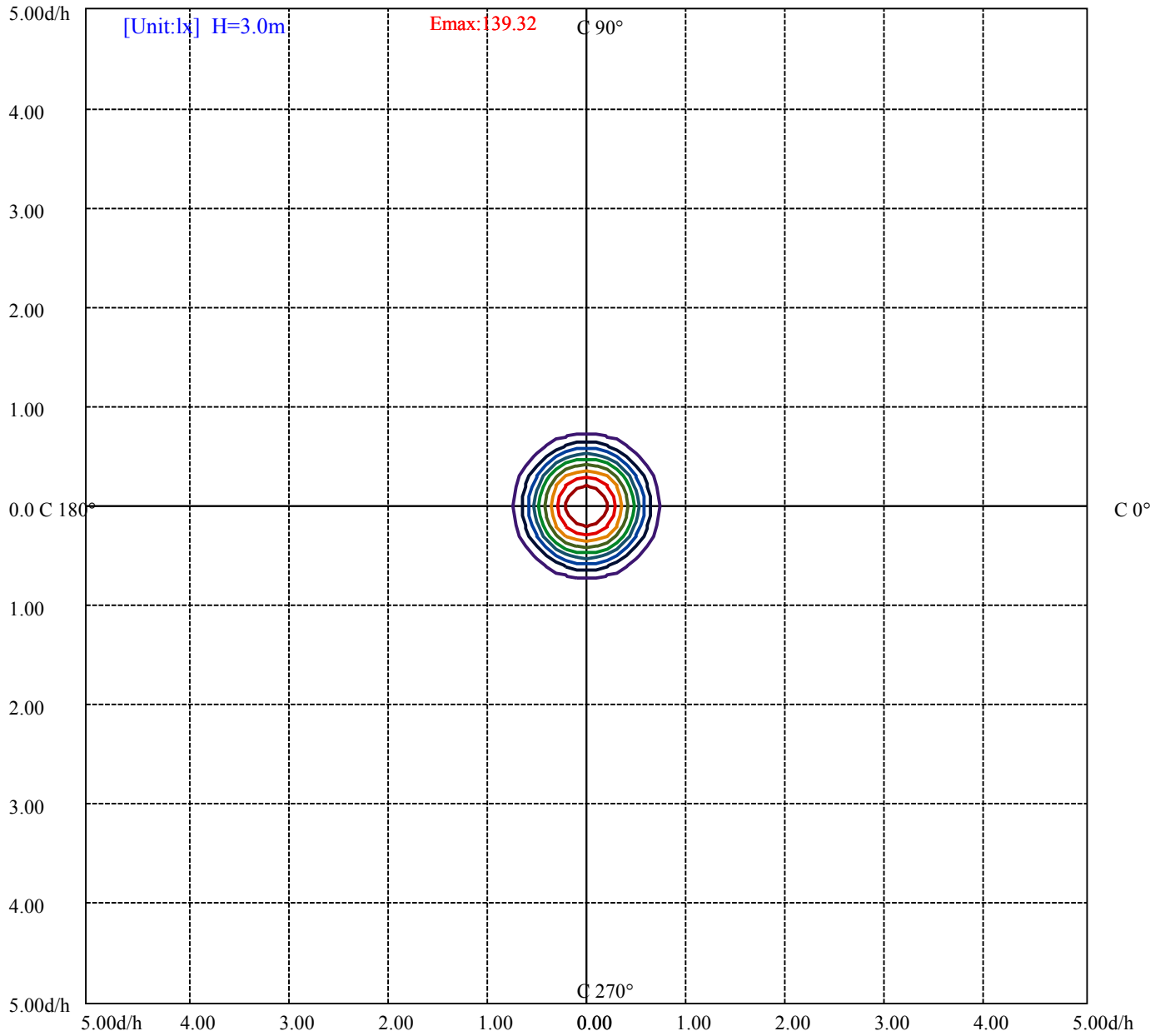
(50%Imax) 627.414

(60%Imax) 752.897

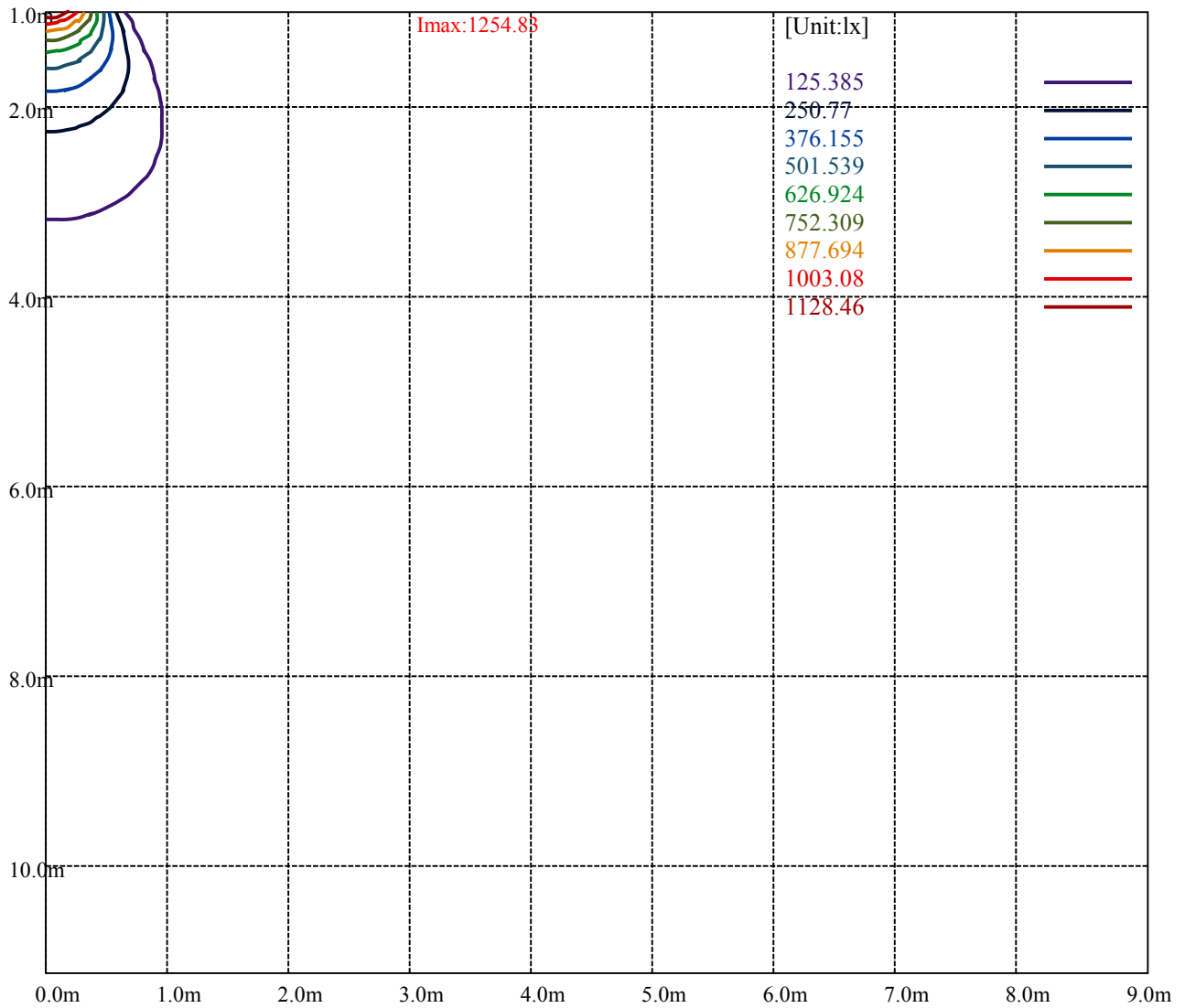
(70%Imax) 878.379

(80%Imax) 1003.86

(90%Imax) 1129.34



(10%Emax)	13.93167	—
(20%Emax)	27.86333	—
(30%Emax)	41.795	—
(40%Emax)	55.72655	—
(50%Emax)	69.65823	—
(60%Emax)	83.58989	—
(70%Emax)	97.52155	—
(80%Emax)	111.4533	—
(90%Emax)	125.3844	—



Luminance Table

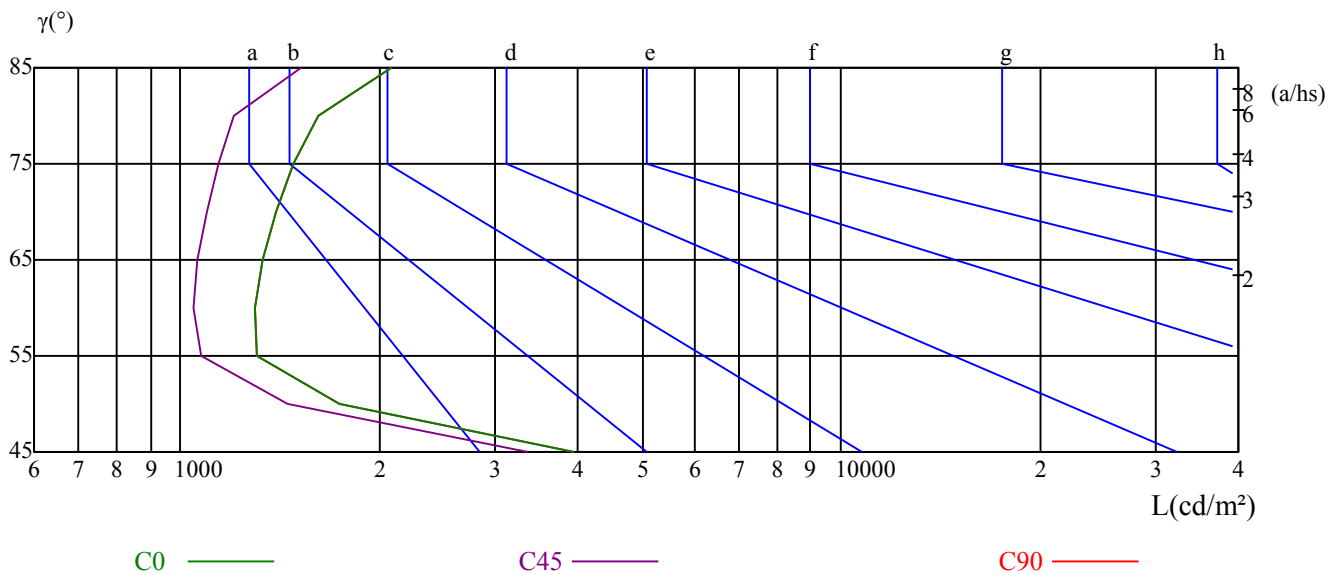
γ	45	50	55	60	65	70	75	80	85
C0	3950	1741	1305	1292	1330	1399	1486	1613	2087
C45	3355	1456	1075	1047	1059	1094	1138	1208	1522
C90	3950	1741	1305	1292	1330	1399	1486	1613	2087

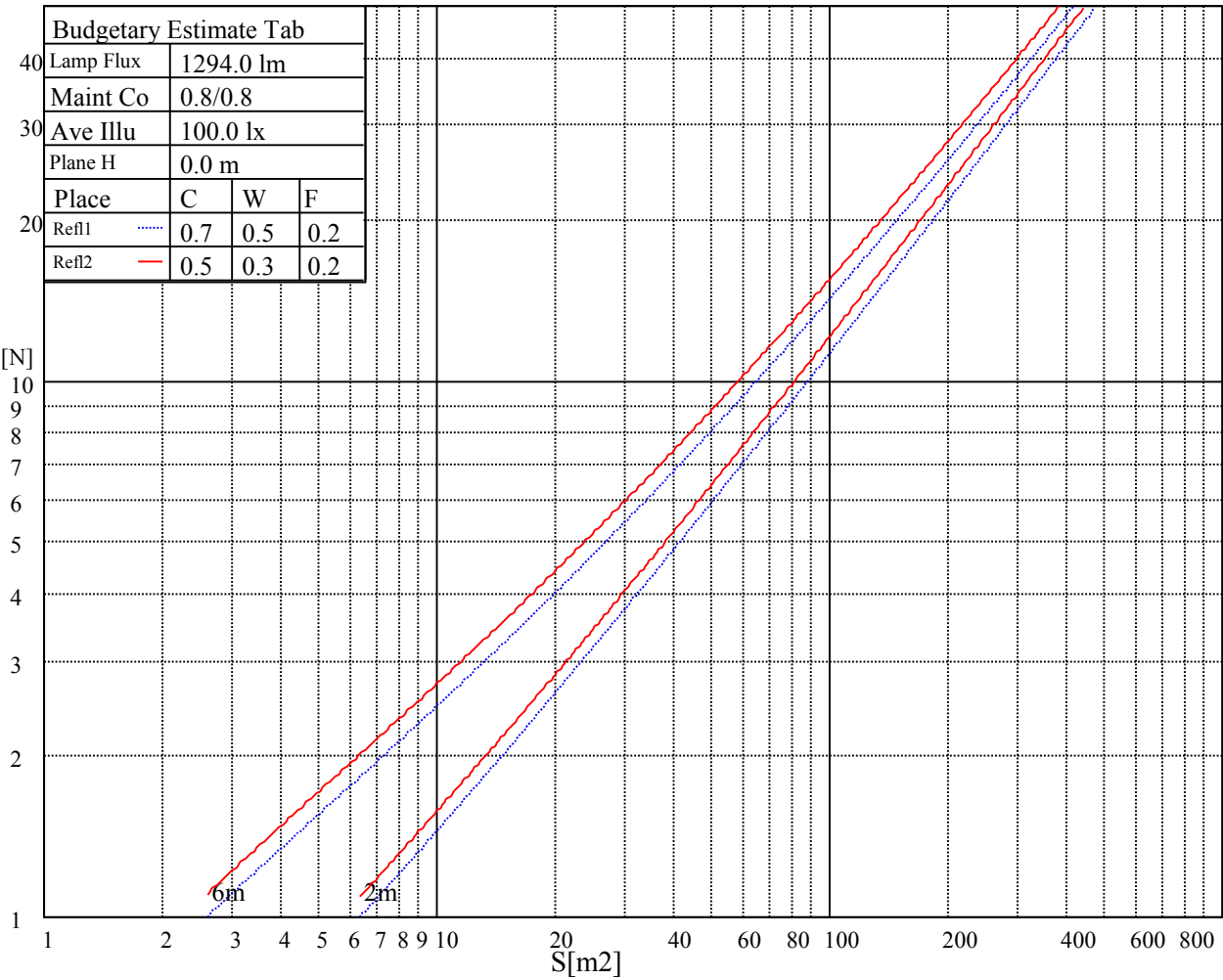
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3468	3468	3468	5645	5645	5645	19974	19974	19974

Glare Table

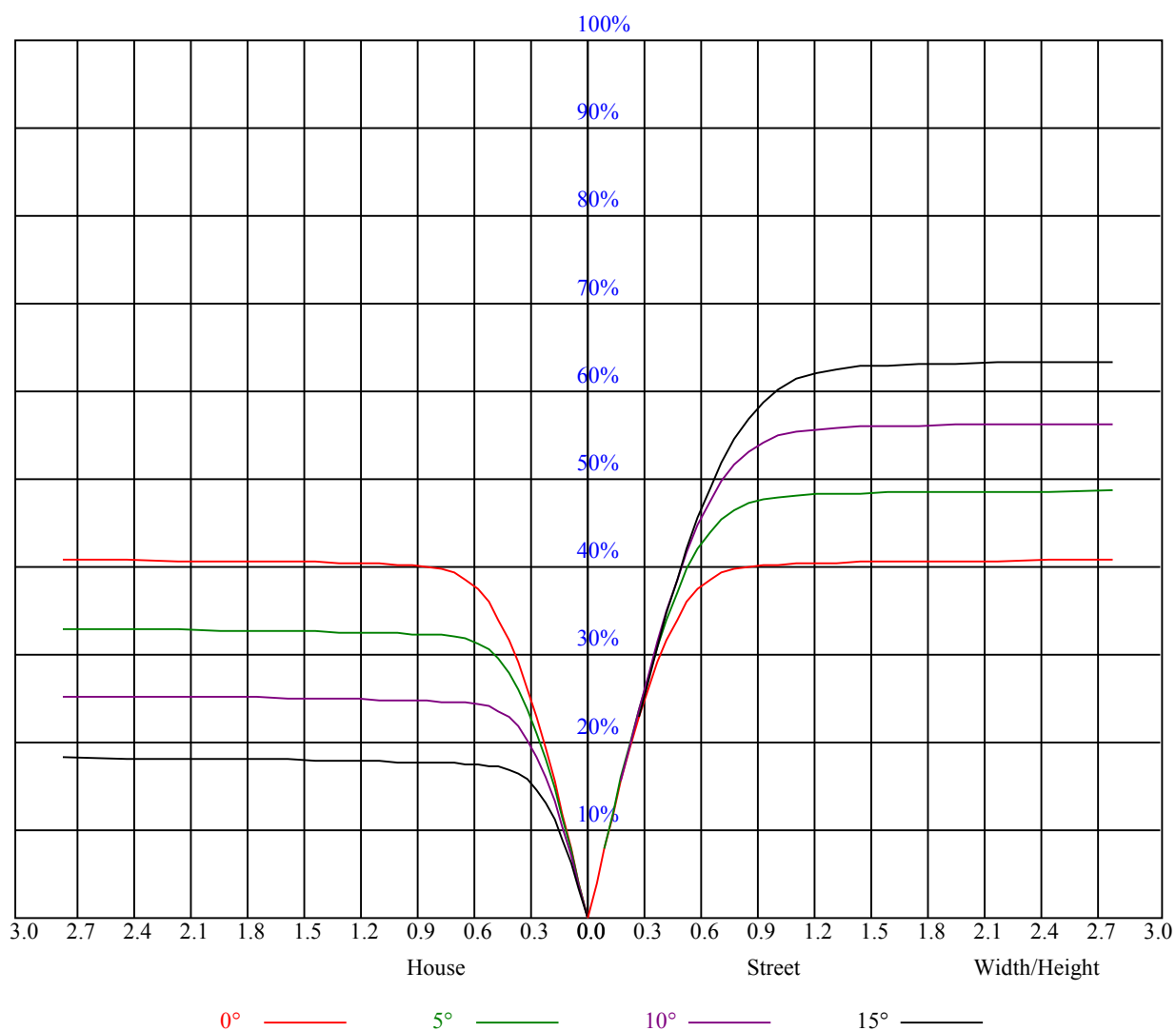
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.02	1.02	1.02	0.99	0.99	0.99	0.94	0.94	0.94	0.89	0.89	0.89	0.85	0.85	0.85	0.83
1	0.94	0.92	0.90	0.92	0.90	0.88	0.88	0.86	0.85	0.84	0.83	0.82	0.80	0.79	0.79	0.77
2	0.88	0.85	0.82	0.86	0.83	0.81	0.83	0.80	0.78	0.80	0.78	0.76	0.77	0.75	0.74	0.72
3	0.83	0.79	0.75	0.81	0.78	0.75	0.79	0.75	0.73	0.76	0.73	0.71	0.74	0.72	0.70	0.68
4	0.78	0.74	0.70	0.77	0.73	0.70	0.75	0.71	0.68	0.72	0.70	0.67	0.71	0.68	0.66	0.65
5	0.74	0.69	0.66	0.73	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.63	0.67	0.65	0.63	0.61
6	0.70	0.65	0.62	0.69	0.65	0.61	0.67	0.64	0.61	0.66	0.63	0.60	0.65	0.62	0.59	0.58
7	0.66	0.62	0.58	0.66	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.57	0.62	0.59	0.56	0.55
8	0.63	0.59	0.55	0.63	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.54	0.59	0.56	0.54	0.53
9	0.60	0.56	0.53	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.51	0.50
10	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.55	0.52	0.49	0.55	0.51	0.49	0.48



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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	1251.05	1251.05	1227.55	1177.20	1078.16	885.69	623.85	284.79	72.40
45.0	1258.32	1269.51	1251.61	1206.29	1111.73	919.27	643.99	298.78	82.36
90.0	1254.97	1266.72	1243.22	1189.51	1064.51	866.06	559.28	255.92	63.73
135.0	1251.05	1261.12	1232.03	1181.67	1079.84	894.65	627.20	290.38	79.39
180.0	1251.05	1248.81	1207.41	1113.69	1034.80	844.57	570.97	261.96	71.34
225.0	1258.32	1251.61	1210.77	1115.71	1032.96	838.47	544.17	253.46	70.95
270.0	1254.97	1249.37	1213.56	1157.05	1059.70	887.93	621.05	295.42	87.90
315.0	1251.05	1240.42	1206.29	1113.41	1037.94	850.56	555.59	255.25	65.18
360.0	1251.05	1251.05	1227.55	1177.20	1078.16	885.69	623.85	284.79	72.40
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	23.16	9.85	7.16	6.83	6.77	6.77	6.71	6.83	9.90
45.0	21.76	10.02	7.22	6.94	6.83	6.83	6.83	6.94	8.28
90.0	19.58	9.06	7.16	6.88	6.83	6.83	6.83	6.83	9.29
135.0	24.06	10.24	7.22	6.88	6.77	6.77	6.77	6.77	8.73
180.0	22.16	9.68	7.11	6.83	6.77	6.71	6.71	6.77	6.77
225.0	22.88	9.51	7.16	6.88	6.77	6.77	6.77	6.77	7.05
270.0	26.86	10.63	7.22	6.88	6.77	6.77	6.71	6.77	6.77
315.0	20.37	9.40	7.11	6.83	6.71	6.71	6.71	6.77	7.61
360.0	23.16	9.85	7.16	6.83	6.77	6.77	6.71	6.83	9.90
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	6.71	6.99	7.16	6.71	6.71	6.71	6.71	6.71	6.77
45.0	6.77	6.77	6.77	6.77	6.71	6.77	6.71	6.77	6.77
90.0	6.71	7.05	6.94	6.77	6.71	6.71	6.71	6.71	6.77
135.0	6.71	6.83	6.94	6.71	6.71	6.71	6.71	6.71	6.71
180.0	6.71	6.77	6.71	6.71	6.66	6.71	6.71	6.71	6.71
225.0	6.77	6.77	6.83	6.77	6.77	6.77	6.77	6.83	6.83
270.0	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.83
315.0	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.83
360.0	6.71	6.99	7.16	6.71	6.71	6.71	6.71	6.71	6.77
C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	6.94	7.11	7.33	7.83	8.95	10.24	11.69	12.81	13.76
45.0	6.83	6.88	7.11	7.55	8.78	10.24	11.75	12.92	13.99
90.0	6.77	6.88	7.05	7.72	8.95	10.46	11.81	13.09	13.99
135.0	6.77	6.83	6.94	7.50	8.56	10.02	11.53	12.76	13.76
180.0	6.71	6.77	6.94	7.55	8.84	10.13	11.58	12.81	13.65
225.0	6.99	7.22	7.50	8.22	9.40	11.02	12.25	13.54	14.27
270.0	6.94	7.11	7.39	7.89	9.06	10.46	11.97	13.09	14.04
315.0	6.94	7.11	7.39	8.00	9.12	10.57	11.92	13.20	13.99
360.0	6.94	7.11	7.33	7.83	8.95	10.24	11.69	12.81	13.76
C/ γ (°)	180.0								
0.0	14.04								
45.0	14.38								
90.0	14.27								
135.0	14.16								
180.0	14.04								
225.0	14.38								
270.0	14.27								
315.0	14.16								
360.0	14.04								