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Nata

LumCAT: 3-1939-M
Luminaire: BJB 47.319.2011
Report No: NATA0100
Test No: GC2019112007
LampCAT: LUMILEDS LUXEON CoB 1204 LES13
Lamp flux(lm): 1930.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 35.8700
Current(A): 0.3970
Power (W): 14.2400
PF: 1.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1748.58
Efficiency(%): 90.60%
Lumens(lm)/Power(W): 122.79
Central intensity(cd): 6570.141
Maximum intensity(cd): 6570.141
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=25.4
[C90/270]Total=25.4
Field angle(10%Imax): [C0/180]Total=51.9
[C90/270]Total=51.9
Maximum s/h(1/2): C0_180=0.43 C90_270=0.43
Maximum s/h(1/4): C0_180=0.42 C90_270=0.42
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.60%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.504%

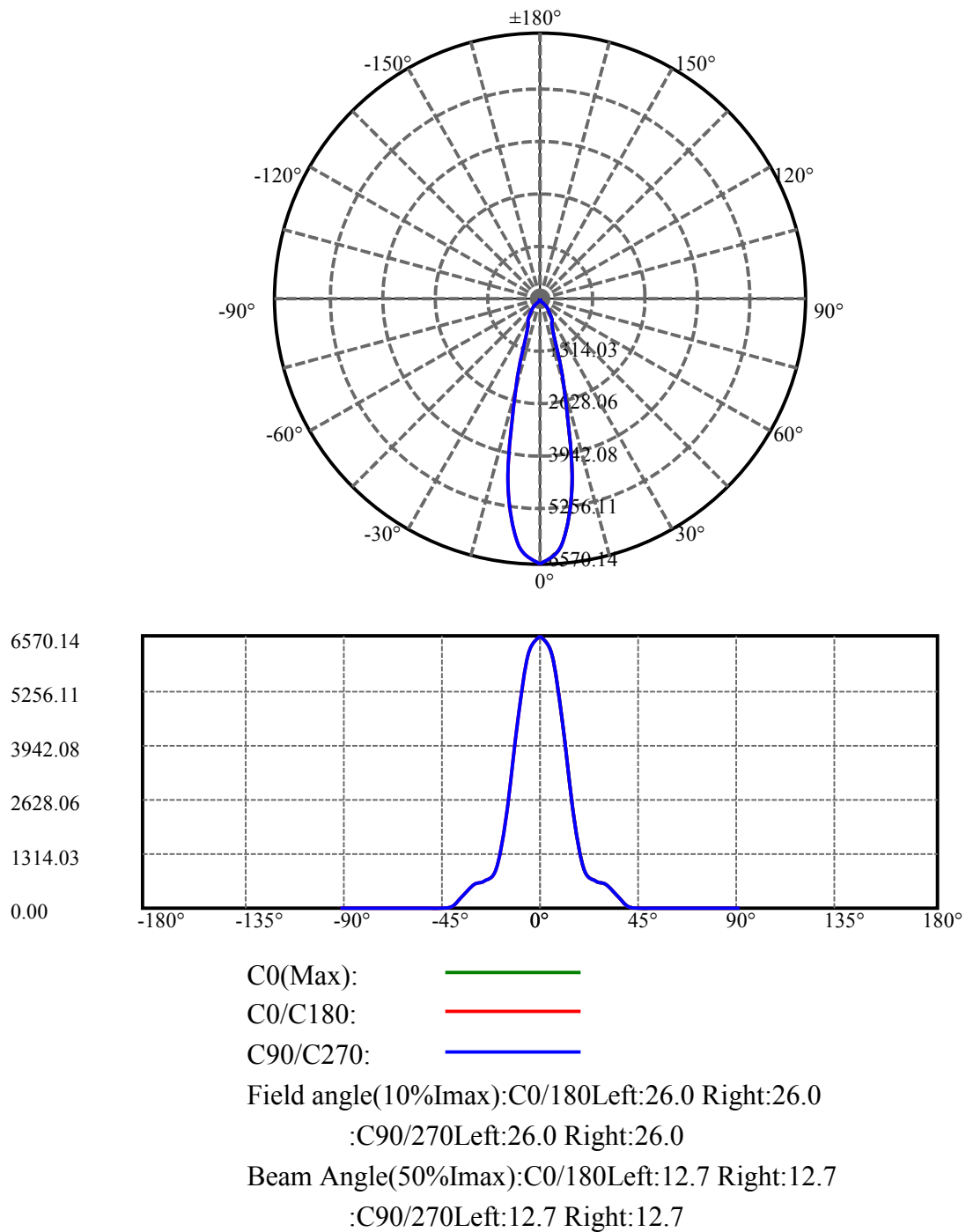
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6570.141	0.000	0	.000%	.000%
5.0	6107.625	151.559	151.559	7.853%	8.668%
10.0	4556.672	381.495	533.055	19.767%	30.485%
15.0	2190.734	400.252	933.306	20.738%	53.375%
20.0	928.160	257.041	1190.347	13.318%	68.075%
25.0	673.172	167.950	1358.297	8.702%	77.680%
30.0	589.978	159.853	1518.15	8.283%	86.822%
35.0	279.373	128.018	1646.168	6.633%	94.143%
40.0	29.616	51.552	1697.72	2.671%	97.091%
45.0	16.784	8.591	1706.311	.445%	97.583%
50.0	13.092	6.037	1712.348	.313%	97.928%
55.0	11.032	5.245	1717.593	.272%	98.228%
60.0	9.823	4.821	1722.414	.250%	98.504%
65.0	8.993	4.574	1726.988	.237%	98.765%
70.0	8.473	4.422	1731.41	.229%	99.018%
75.0	8.100	4.332	1735.742	.224%	99.266%
80.0	7.917	4.286	1740.028	.222%	99.511%
85.0	7.826	4.278	1744.306	.222%	99.756%
90.0	7.784	4.274	1748.58	.221%	100.000%

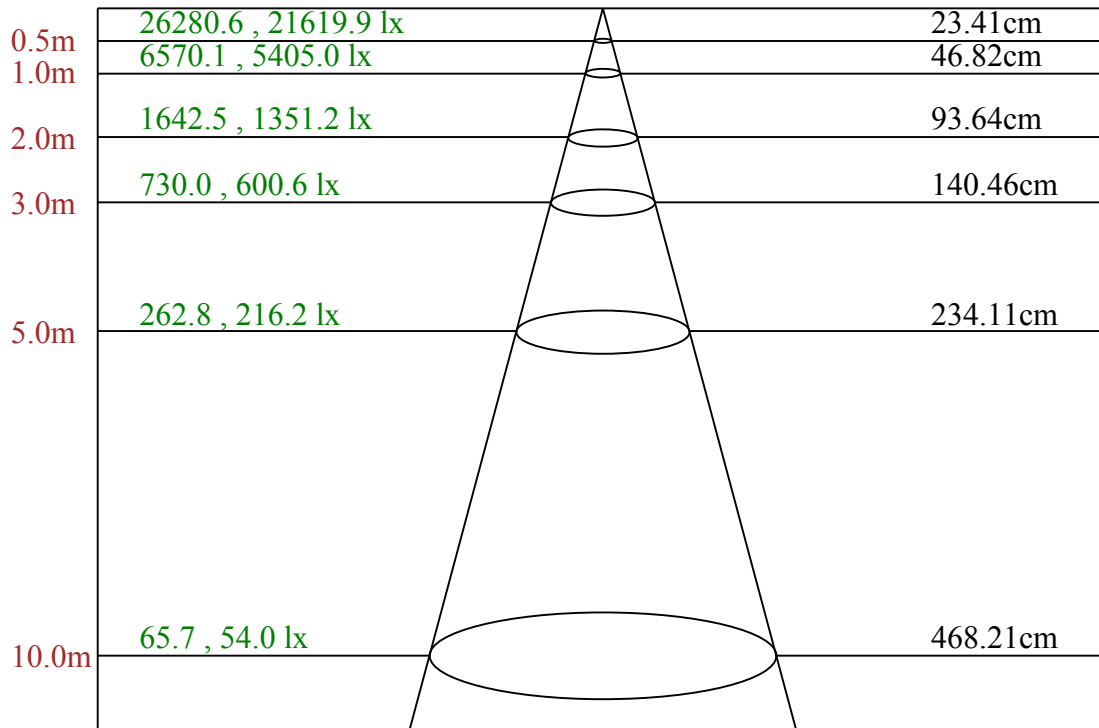
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1518.15	78.66%	86.82%
0-40	1697.72	87.96%	97.09%
0-60	1722.41	89.24%	98.50%
0-90	1744.31	90.38%	99.76%
0-120	1744.31	90.38%	99.76%
0-180	1748.58	90.60%	100.00%
60-90	26.71	1.38%	1.53%
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%
0-26.27	1398.86	72.48%	80.00%

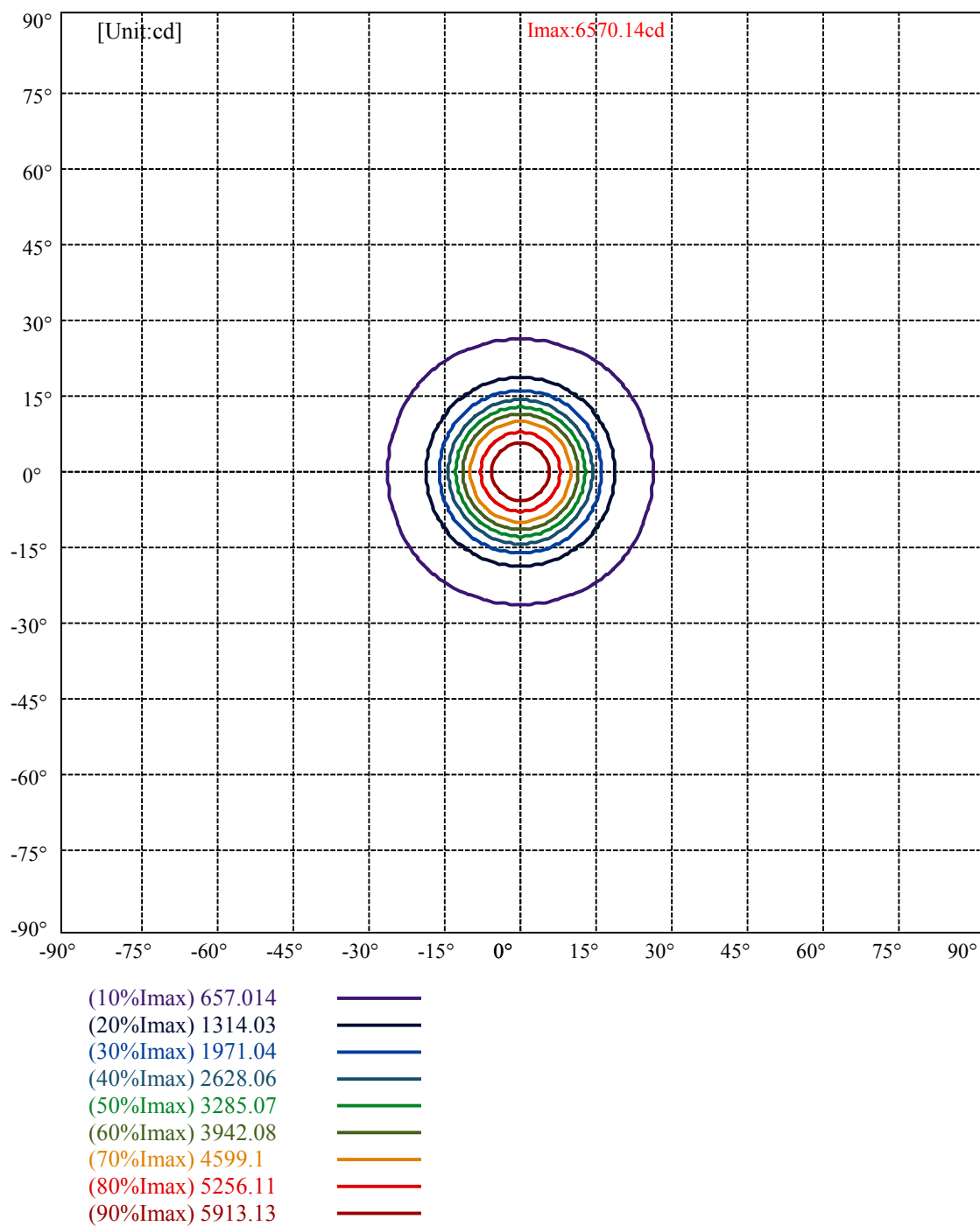
ZONAL LUMEN SUMMARY

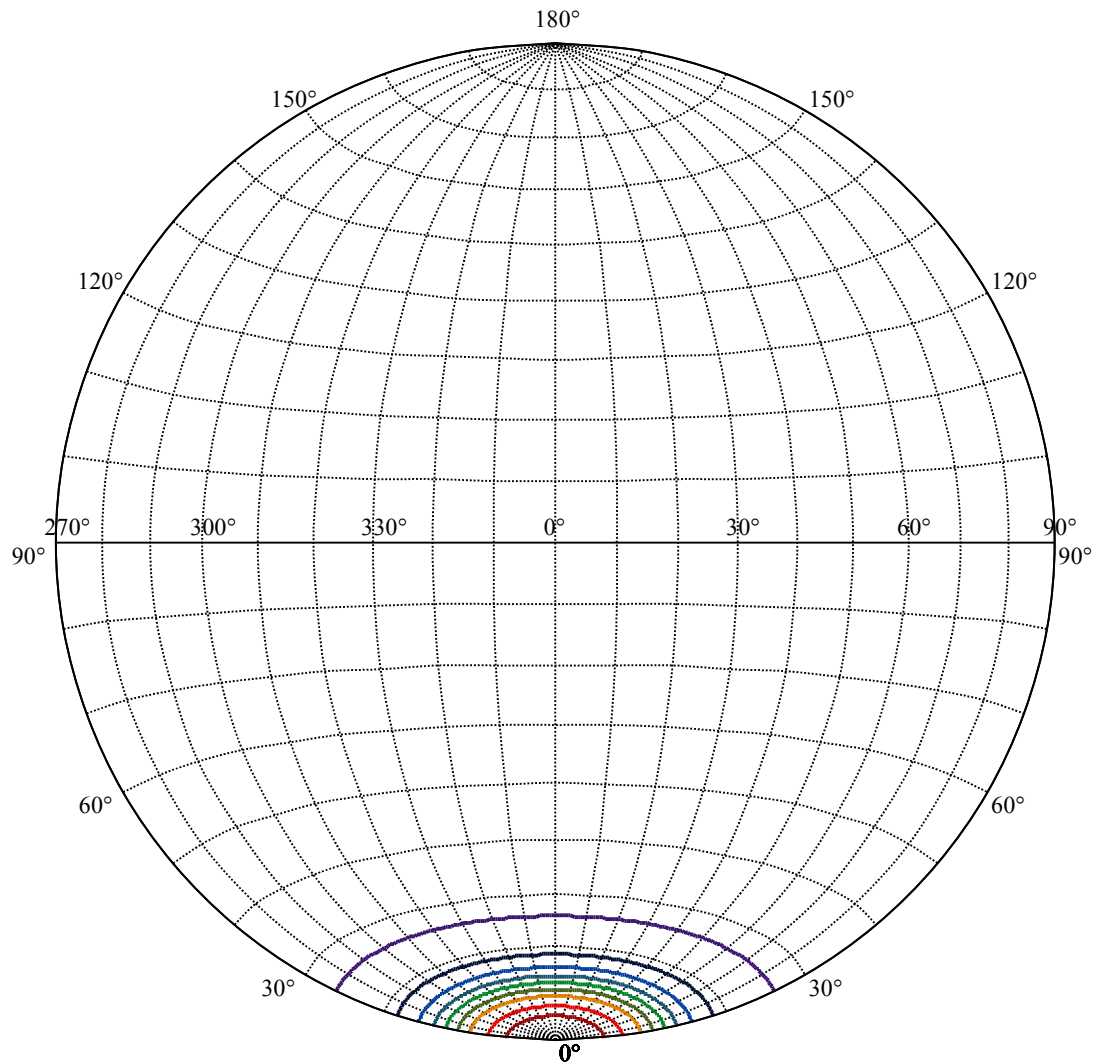
0-10	533.05
10-20	657.29
20-30	327.80
30-40	179.57
40-50	14.63
50-60	10.07
60-70	9.00
70-80	8.62
80-90	4.28
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00





Max , Ave Beam angle of C0 plane 26.35





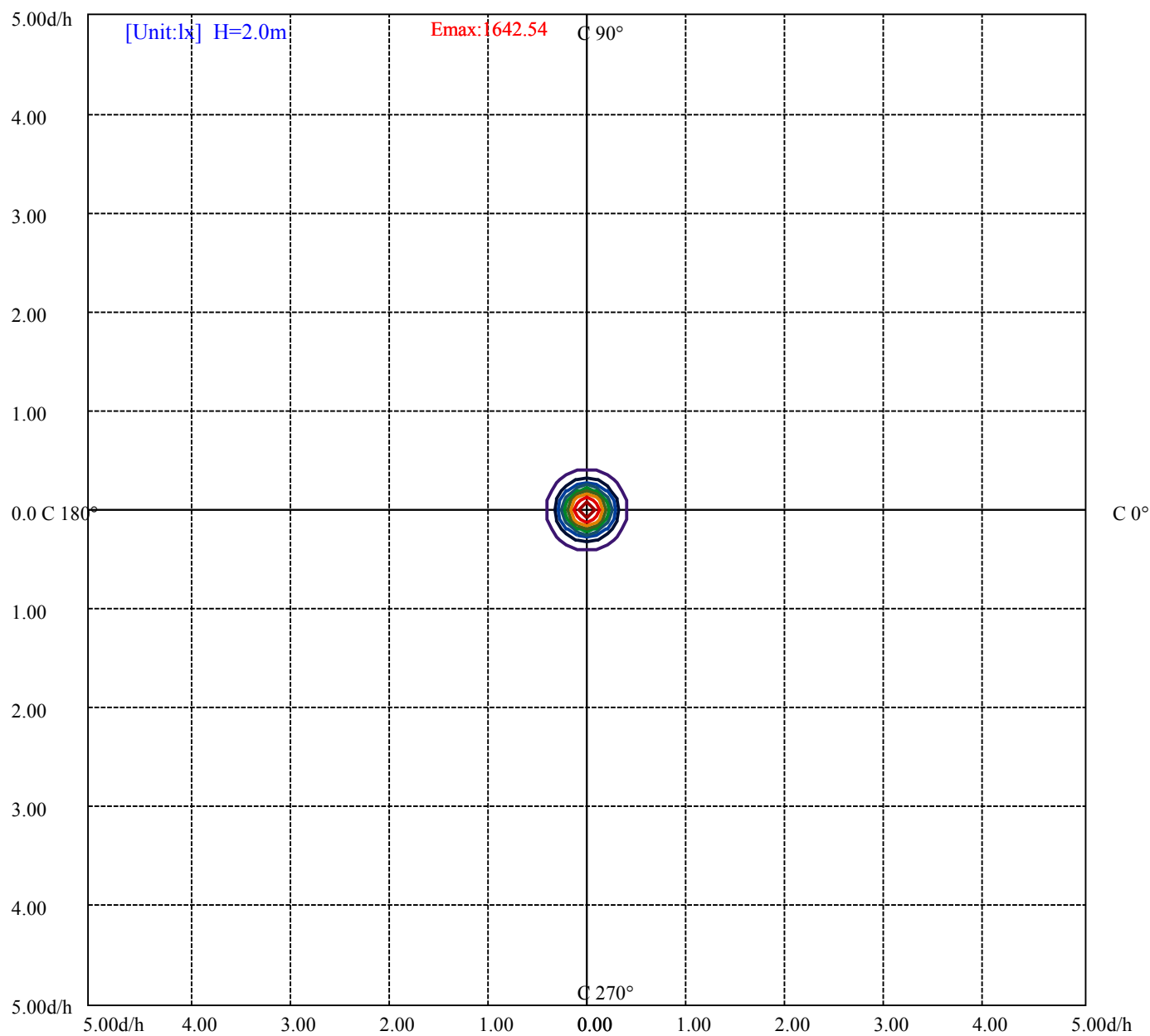
House

[Unit:cd]

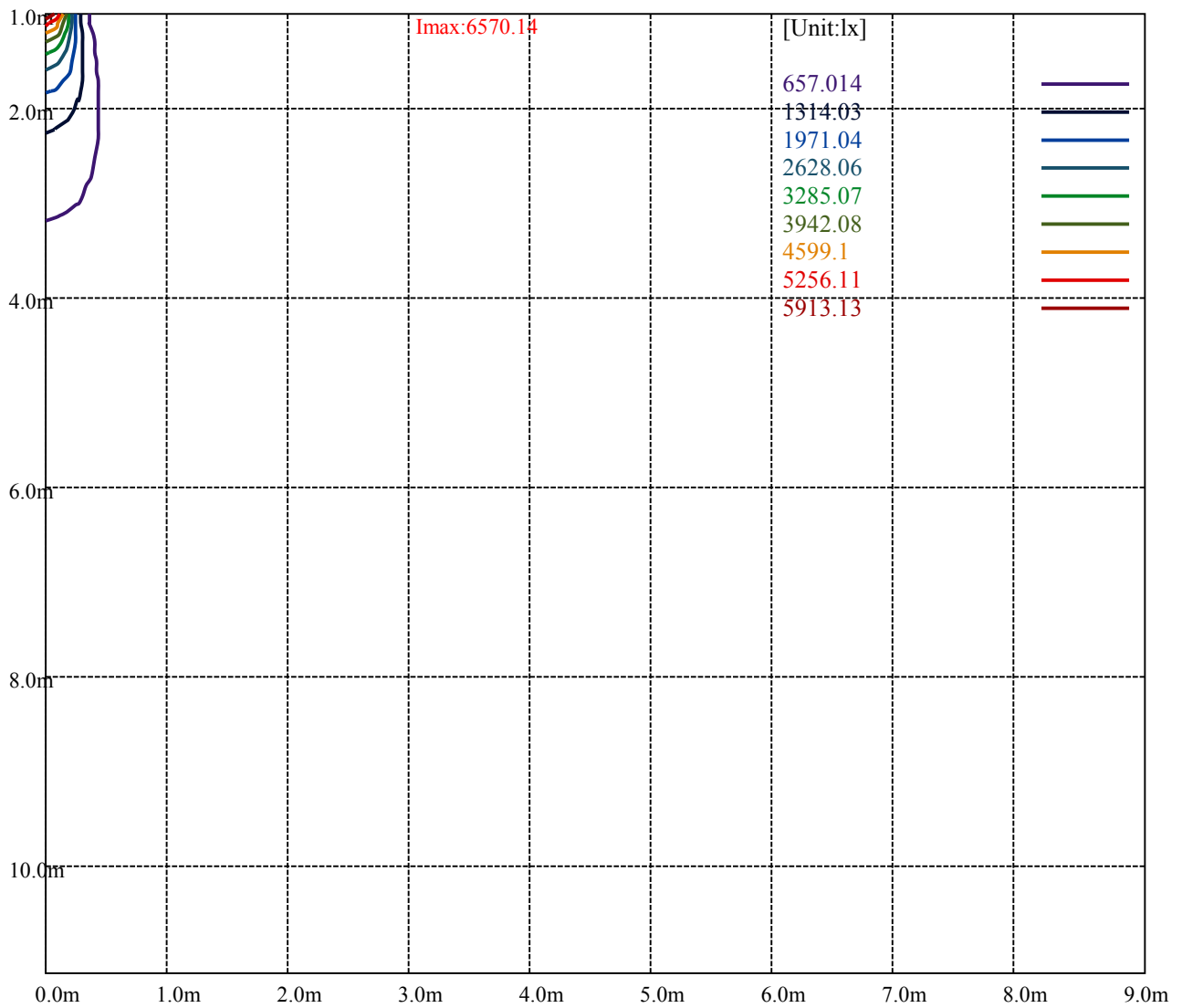
Road

Imax:6570.14

(10%Imax)	657.014	—
(20%Imax)	1314.03	—
(30%Imax)	1971.04	—
(40%Imax)	2628.06	—
(50%Imax)	3285.07	—
(60%Imax)	3942.08	—
(70%Imax)	4599.1	—
(80%Imax)	5256.11	—
(90%Imax)	5913.13	—



(10%Emax)	164.2533	—
(20%Emax)	328.5075	—
(30%Emax)	492.76	—
(40%Emax)	657.0125	—
(50%Emax)	821.265	—
(60%Emax)	985.52	—
(70%Emax)	1149.772	—
(80%Emax)	1314.025	—
(90%Emax)	1478.277	—



Luminance Table

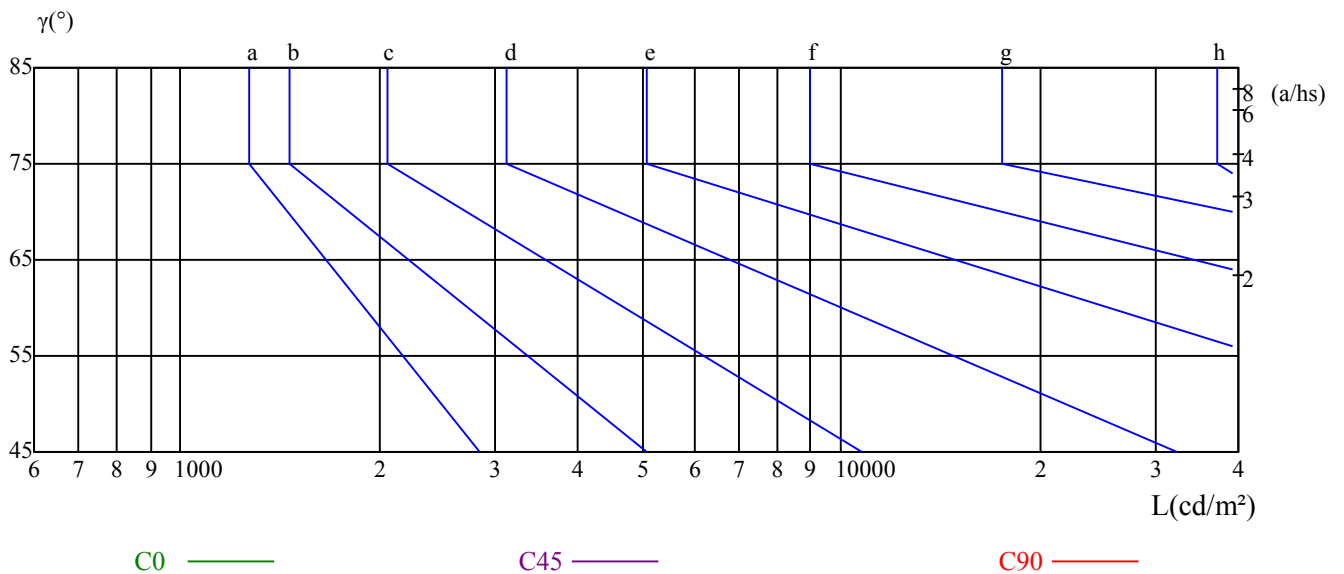
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

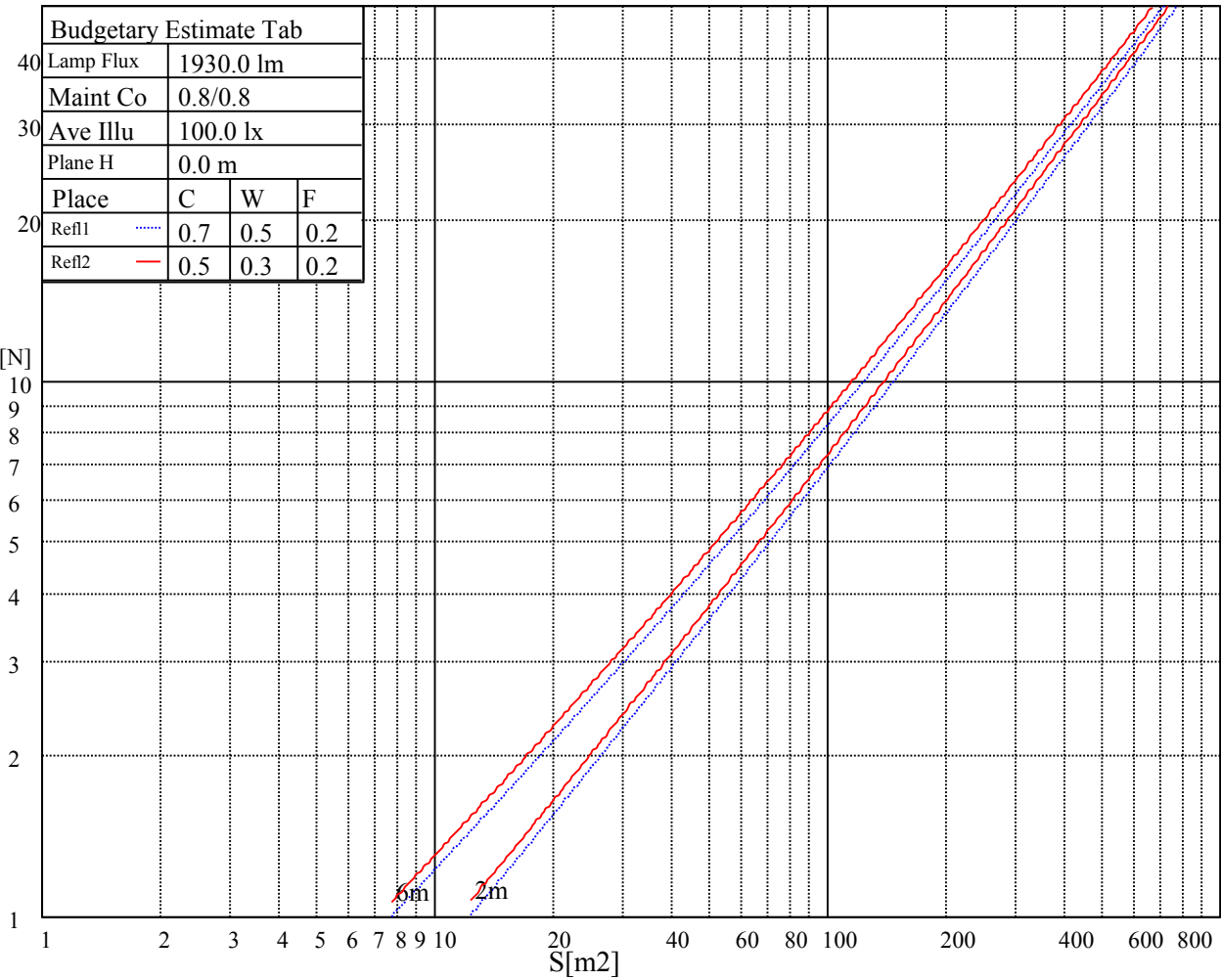
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

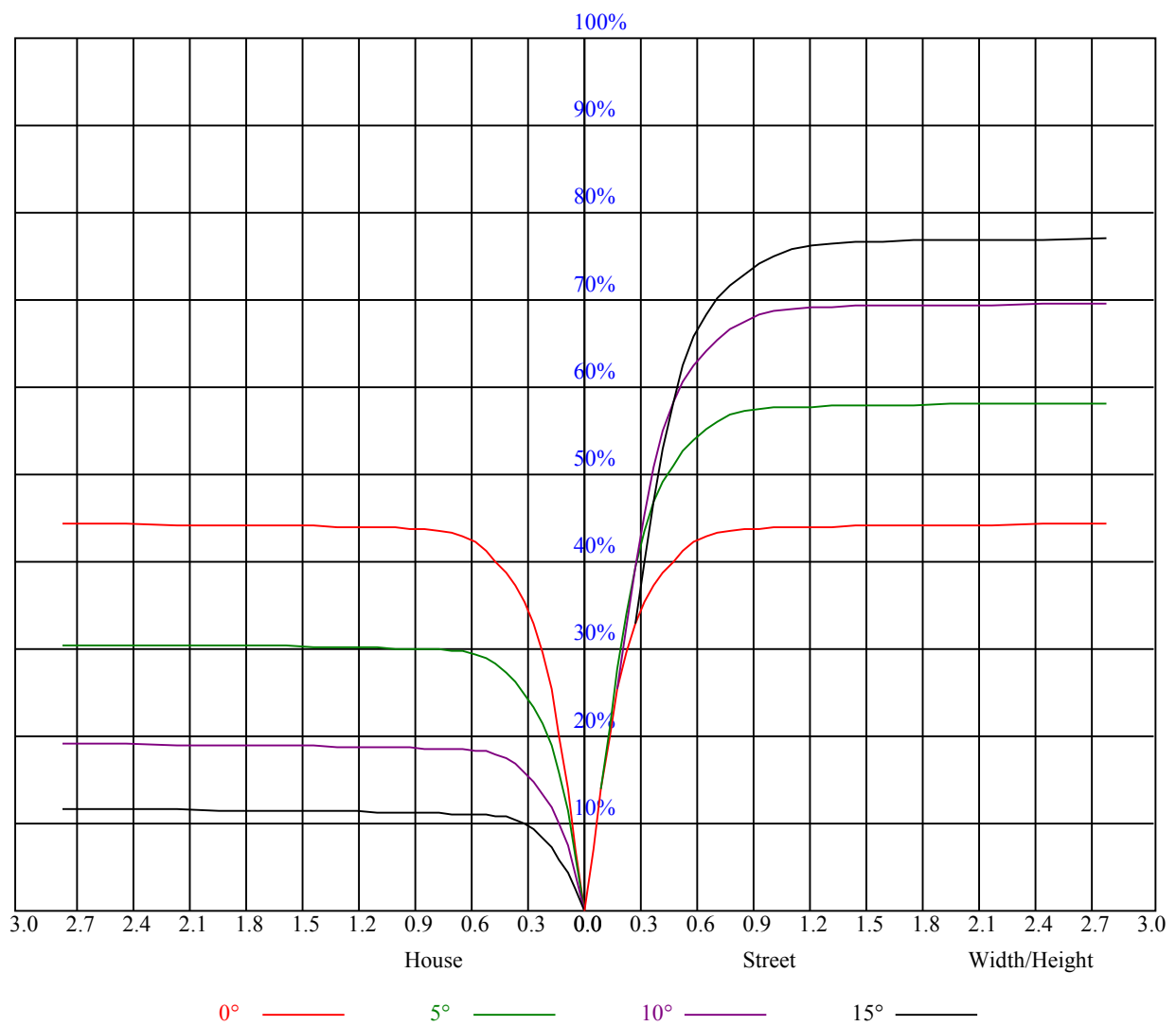
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.05	1.05	1.05	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.91
1	1.01	0.99	0.98	0.99	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.89	0.88	0.86
2	0.96	0.93	0.90	0.94	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.86	0.87	0.85	0.84	0.82
3	0.91	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.83	0.81	0.84	0.82	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.83	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.68	0.67
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
9	0.72	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61



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	6553.69	6364.69	5082.75	2995.88	1166.06	714.94	619.88	402.19	46.91		
45.0	6568.31	6298.88	5004.56	2619.56	996.75	678.38	603.56	330.75	33.86		
90.0	6579.56	5986.13	4230.00	2037.94	841.22	646.88	579.71	220.78	25.09		
135.0	6579.00	6167.81	4511.81	2139.19	875.25	659.81	586.13	297.56	25.43		
180.0	6553.69	5830.31	4001.63	1120.56	794.08	637.76	532.58	145.69	23.23		
225.0	6568.31	5822.44	4253.06	1887.75	846.62	666.90	584.89	206.89	24.98		
270.0	6579.56	6267.38	4762.69	2469.38	957.94	699.19	612.00	324.56	29.53		
315.0	6579.00	6123.38	4606.88	2255.63	947.36	681.53	601.09	306.56	27.90		
360.0	6553.69	6364.69	5082.75	2995.88	1166.06	714.94	619.88	402.19	46.91		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	20.08	14.06	11.64	10.24	9.28	8.66	8.21	7.99	7.93		
45.0	17.89	13.56	11.31	10.07	9.17	8.55	8.16	7.93	7.82		
90.0	16.03	12.71	10.74	9.62	8.89	8.38	7.99	7.88	7.76		
135.0	15.30	12.71	10.74	9.68	8.89	8.44	8.04	7.88	7.76		
180.0	14.91	12.21	10.52	9.45	8.78	8.33	7.99	7.88	7.82		
225.0	15.98	12.77	10.80	9.68	8.89	8.38	8.10	7.93	7.82		
270.0	17.16	13.33	11.31	9.96	9.06	8.49	8.16	7.93	7.82		
315.0	16.93	13.39	11.19	9.90	9.00	8.55	8.16	7.93	7.88		
360.0	20.08	14.06	11.64	10.24	9.28	8.66	8.21	7.99	7.93		
C/ γ (°)	90.0										
0.0	7.76										
45.0	7.82										
90.0	7.76										
135.0	7.76										
180.0	7.82										
225.0	7.76										
270.0	7.76										
315.0	7.82										
360.0	7.76										