



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440220 RIO 20W 3000K 2000lm

Luminaire:

Report No:

Voltage(V): 230.2600

Test No: KYZ-A251020063-02-003

Current(A): 0.0899

LampCAT: LED

Power (W): 20.0000

Lamp flux(lm): -1.0

PF: 0.9660

Number of Lamps: 1

Ballast type:

Length(mm): -175

Width(mm): -175

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2000.00

Efficiency(%): 100.00%

Lumens(lm)/Power(W): 100.00

Central intensity(cd): 1007.489

Maximum intensity(cd): 1032.479

Angle of maximum intensity: C=225.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=83.1

[C90/270]Total=83.2

Field angle(10%Imax): [C0/180]Total=139.0

[C90/270]Total=138.0

Maximum s/h(1/2): C0_180=1.14 C90_270=1.09

Maximum s/h(1/4): C0_180=1.19 C90_270=1.14

Up flux rate of lamp(%): 0.75%

Down flux rate of lamp(%): 99.25%

Up flux rate of LUM(%): 0.75%

Down flux rate of LUM(%): 99.25%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 86.585%

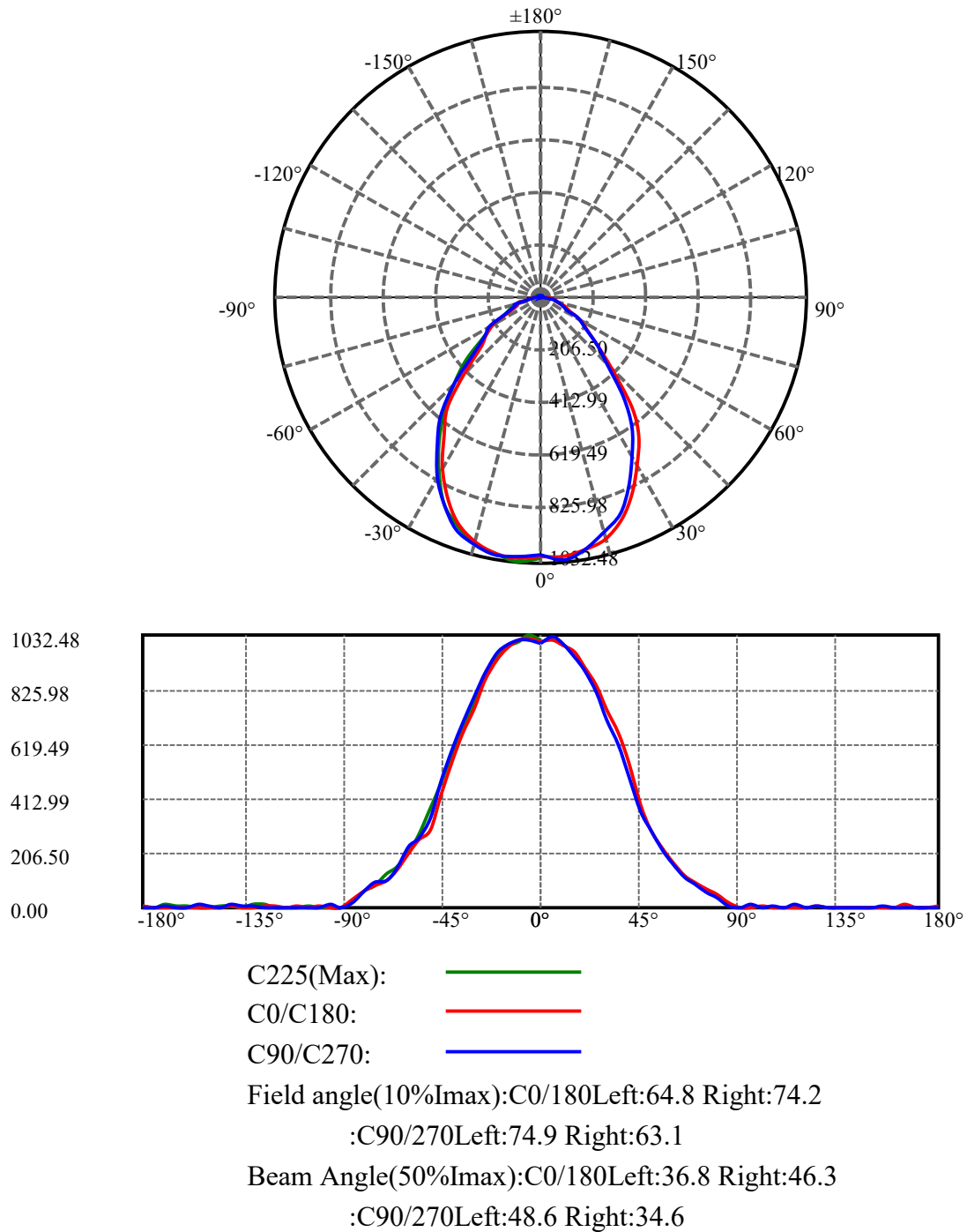
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	993.864	0.000	0	.000%	.000%
5.0	1000.589	24.288	24.288	.000%	1.214%
10.0	986.171	72.400	96.688	.000%	4.834%
15.0	957.335	117.440	214.128	.000%	10.706%
20.0	907.787	156.582	370.711	.000%	18.536%
25.0	835.590	186.262	556.973	.000%	27.849%
30.0	740.960	203.239	760.212	.000%	38.011%
35.0	646.813	208.175	968.387	.000%	48.419%
40.0	546.695	202.846	1171.233	.000%	58.562%
45.0	418.656	182.080	1353.313	.000%	67.666%
50.0	320.206	152.086	1505.399	.000%	75.270%
55.0	245.050	125.200	1630.599	.000%	81.530%
60.0	184.312	101.099	1731.698	.000%	86.585%
65.0	134.226	78.883	1810.581	.000%	90.529%
70.0	101.732	60.862	1871.443	.000%	93.572%
75.0	81.881	48.890	1920.332	.000%	96.017%
80.0	55.143	37.348	1957.68	.000%	97.884%
85.0	21.358	21.175	1978.856	.000%	98.943%
90.0	0.699	6.152	1985.008	.000%	99.250%
95.0	3.282	1.110	1986.118	.000%	99.306%
100.0	1.453	1.310	1987.429	.000%	99.371%
105.0	2.529	1.085	1988.514	.000%	99.426%
110.0	1.560	1.089	1989.602	.000%	99.480%
115.0	2.744	1.110	1990.712	.000%	99.536%
120.0	0.646	0.839	1991.552	.000%	99.578%
125.0	4.681	1.254	1992.806	.000%	99.640%
130.0	3.820	1.883	1994.689	.000%	99.734%
135.0	0.538	0.897	1995.586	.000%	99.779%
140.0	3.282	0.720	1996.306	.000%	99.815%
145.0	0.646	0.667	1996.974	.000%	99.849%
150.0	3.712	0.654	1997.627	.000%	99.881%
155.0	3.551	0.936	1998.563	.000%	99.928%
160.0	1.560	0.546	1999.11	.000%	99.955%
165.0	2.260	0.321	1999.43	.000%	99.972%
170.0	2.798	0.306	1999.736	.000%	99.987%
175.0	1.399	0.153	1999.889	.000%	99.994%
180.0	7.747	0.111	2000	.000%	100.000%

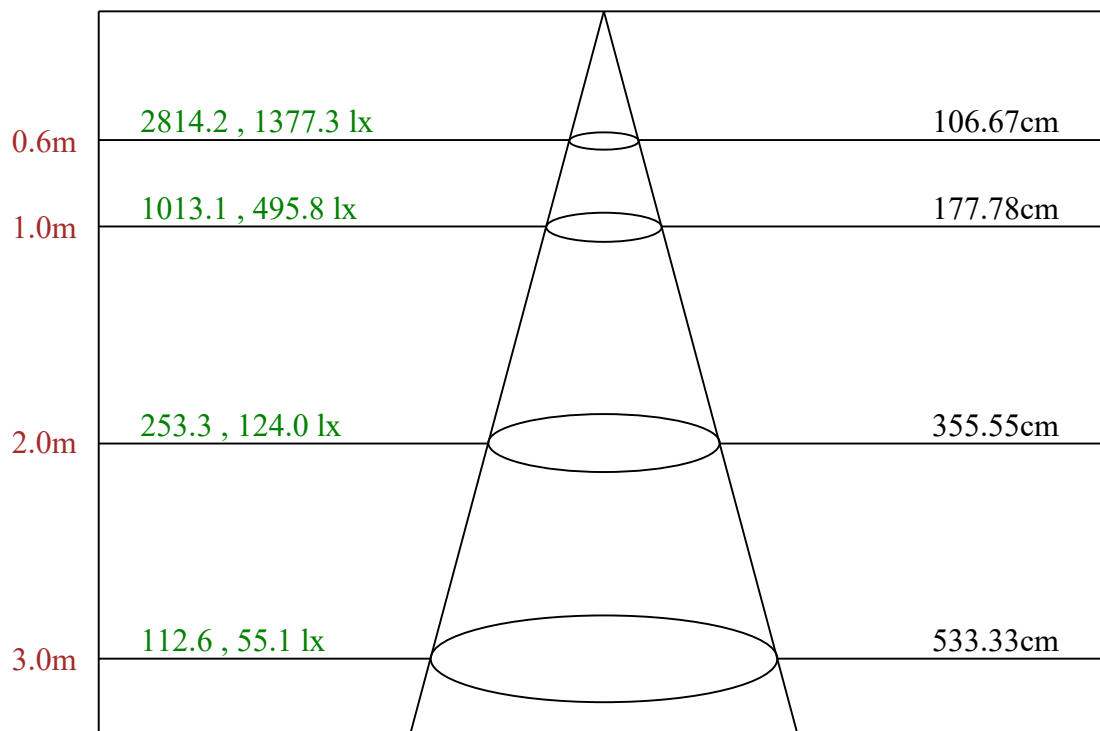
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	760.21	N.A.	38.01%
0-40	1171.23	N.A.	58.56%
0-60	1731.70	N.A.	86.58%
0-90	1985.01	N.A.	99.25%
0-120	1991.55	N.A.	99.58%
0-180	2000.00	N.A.	100.00%
60-90	354.41	N.A.	17.72%
90-120	12.70	N.A.	0.63%
90-130	15.83	N.A.	0.79%
90-150	18.77	N.A.	0.94%
90-180	21.03	N.A.	1.05%
0-53.78	1600.00	N.A.	80.00%

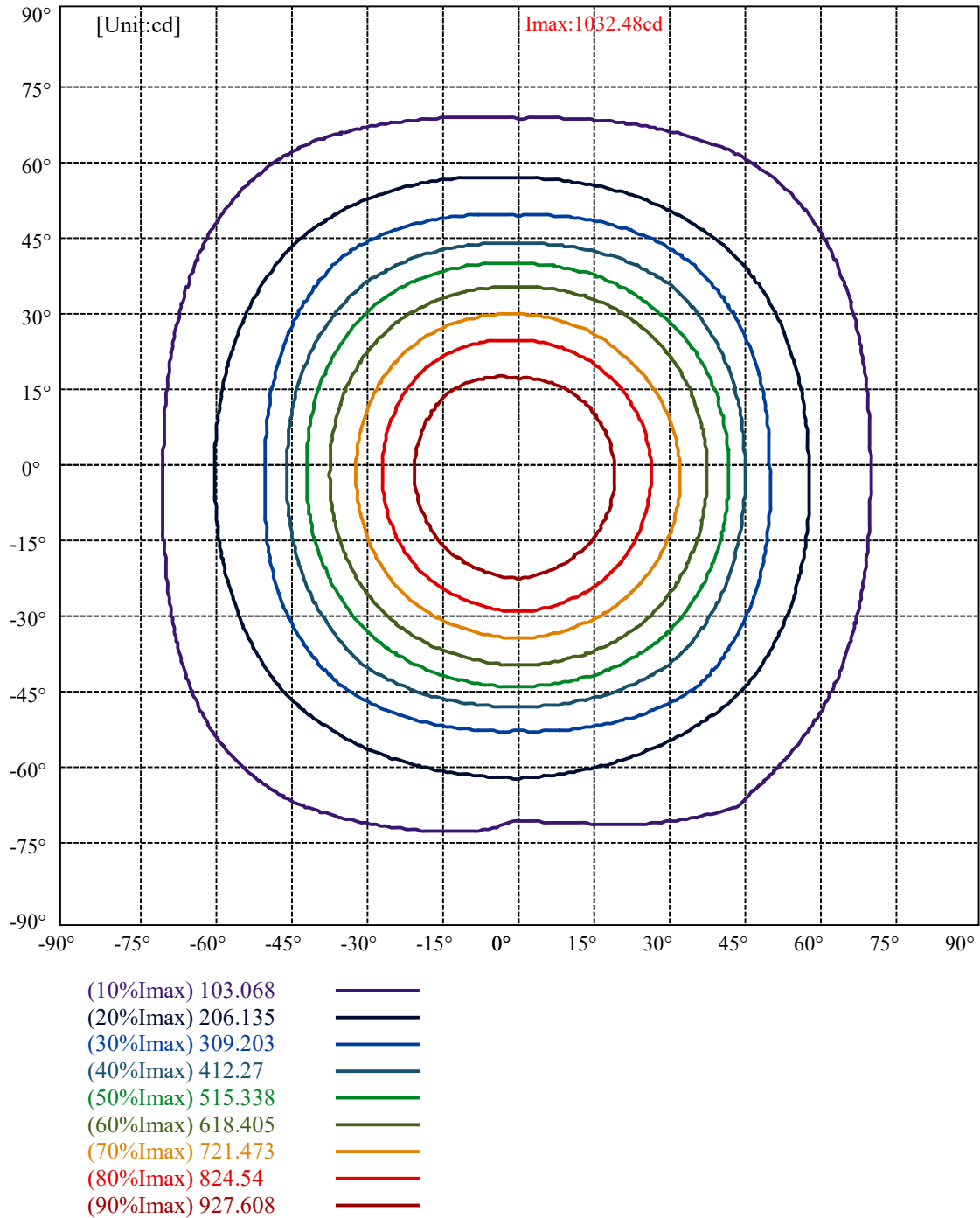
ZONAL LUMEN SUMMARY

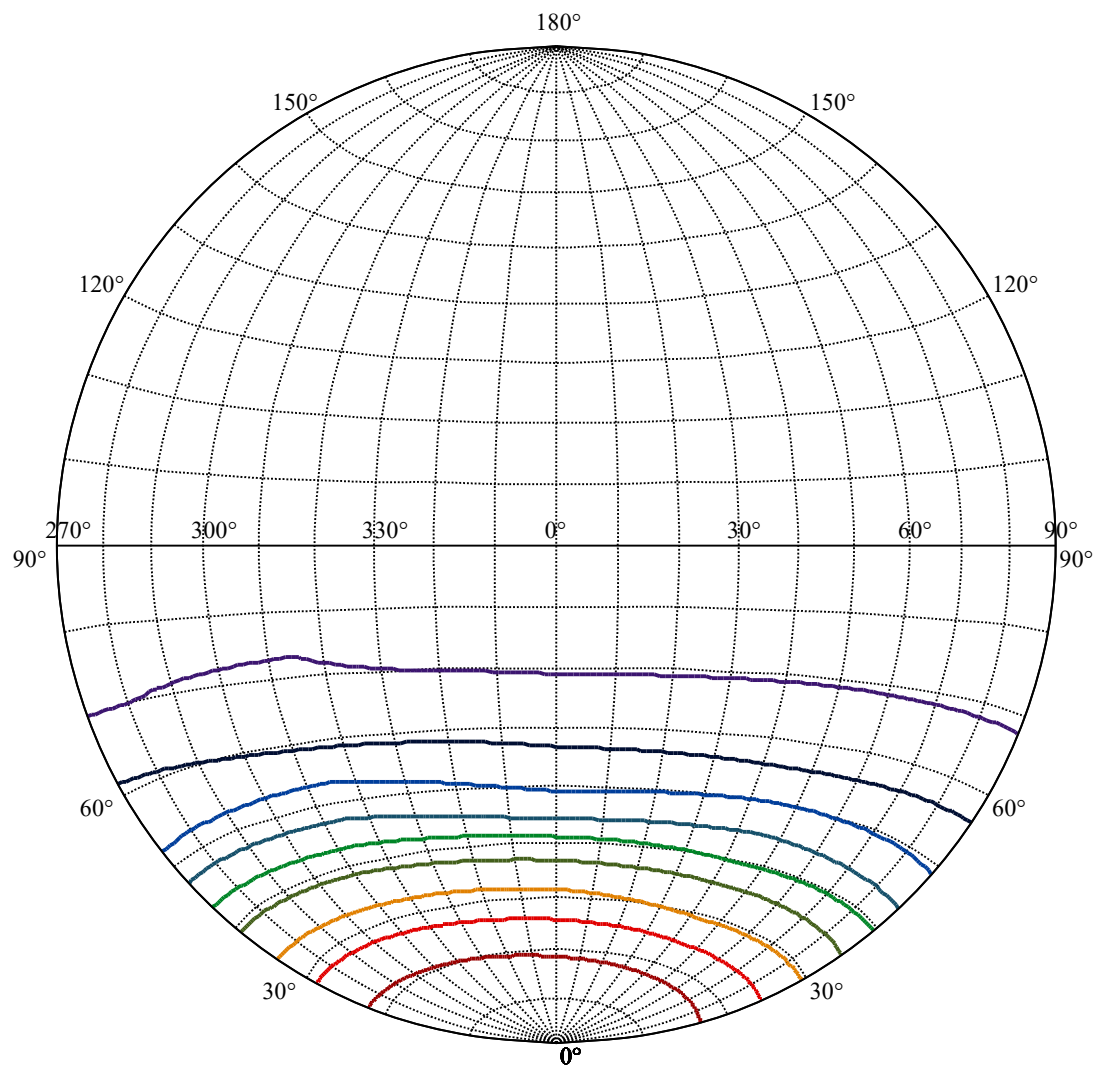
0-10	96.69
10-20	274.02
20-30	389.50
30-40	411.02
40-50	334.17
50-60	226.30
60-70	139.74
70-80	86.24
80-90	27.33
90-100	2.42
100-110	2.17
110-120	1.95
120-130	3.14
130-140	1.62
140-150	1.32
150-160	1.48
160-170	0.63
170-180	0.15





Max , Ave Beam angle of C225 plane 83.27





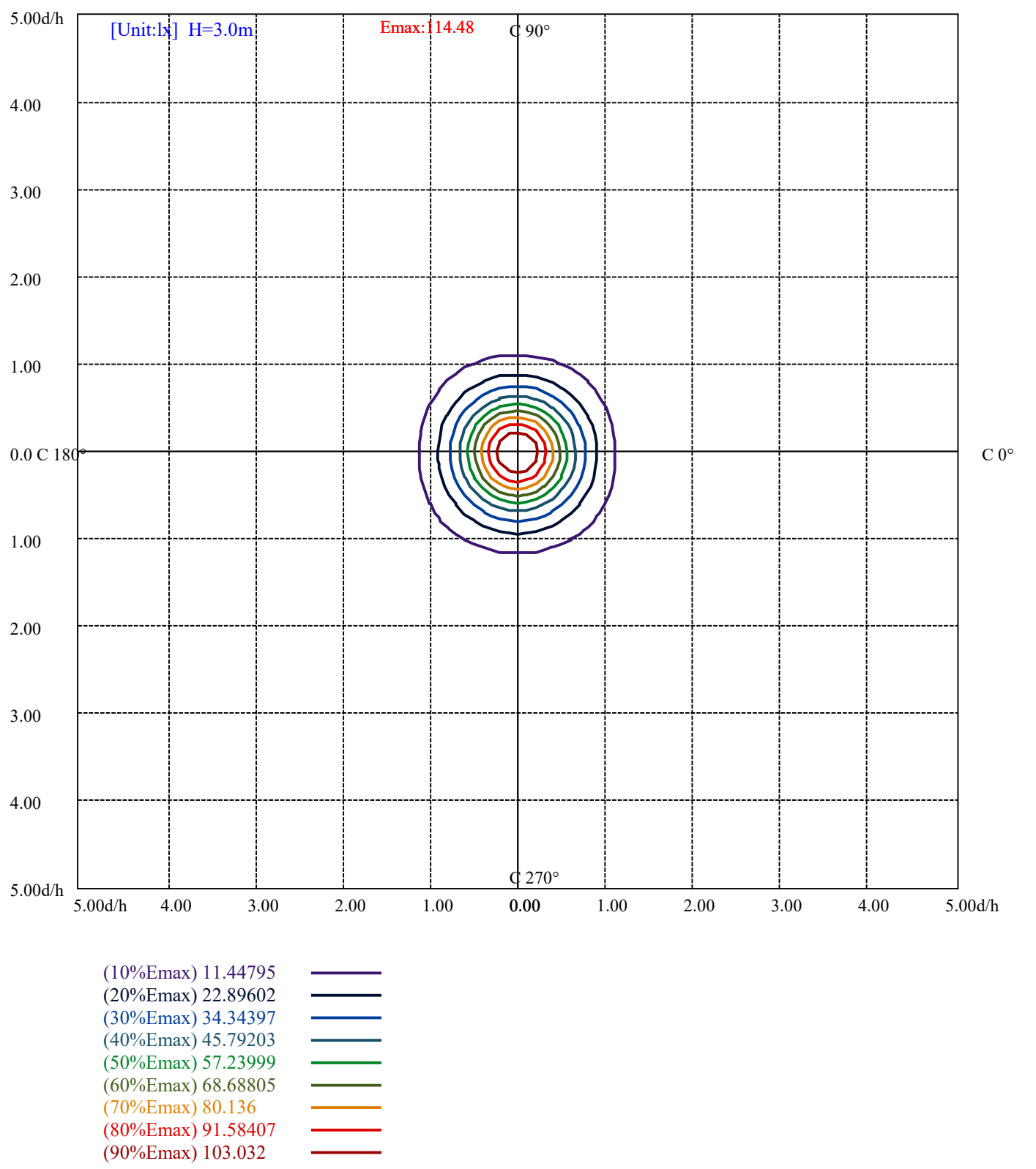
House

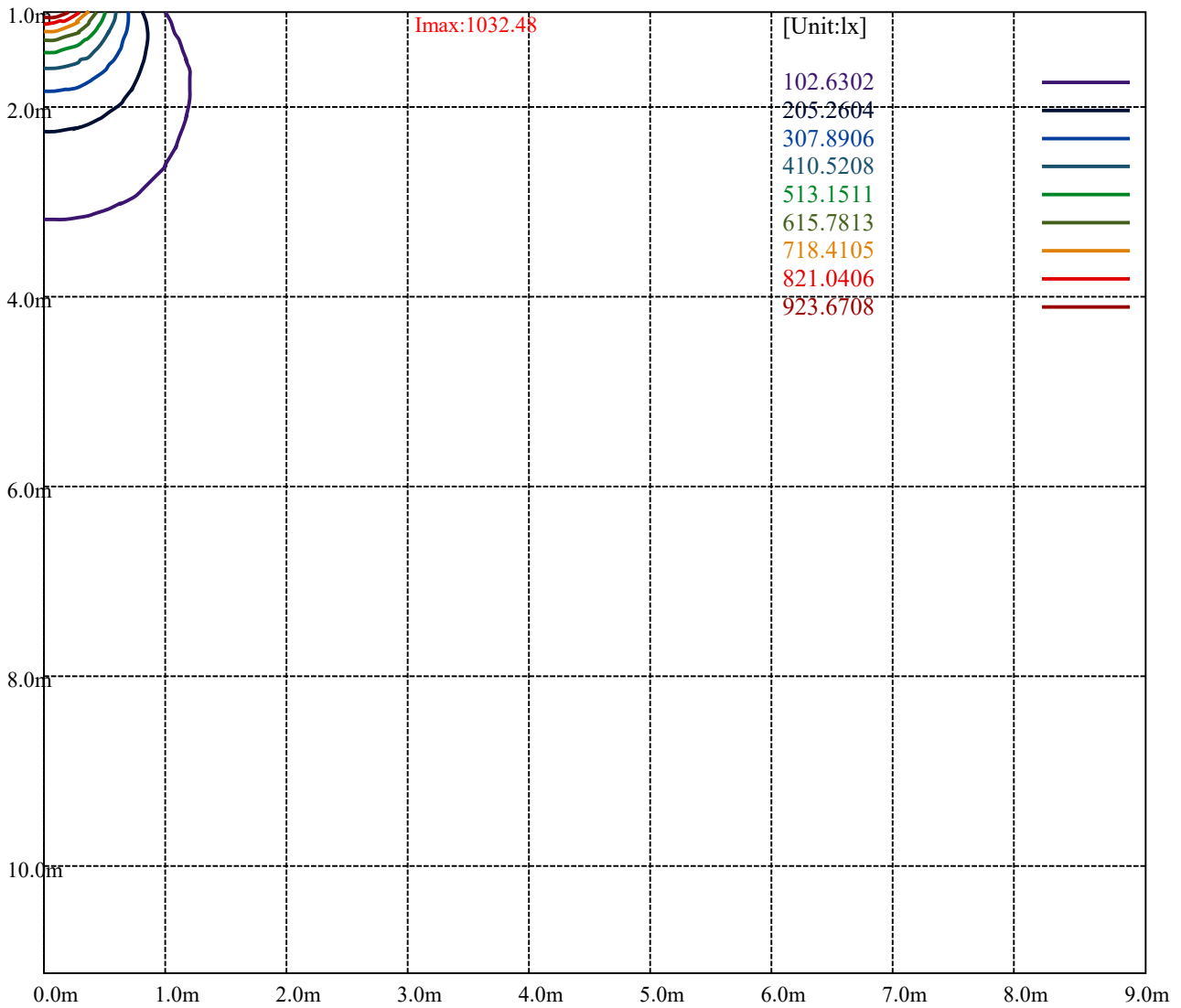
[Unit:cd]

Road

Imax:1032.48
(10%Imax) 105.1759
(20%Imax) 210.3517
(30%Imax) 315.5276
(40%Imax) 420.7035
(50%Imax) 525.8793
(60%Imax) 631.0552
(70%Imax) 736.2311
(80%Imax) 841.407
(90%Imax) 946.5818







Luminance Table

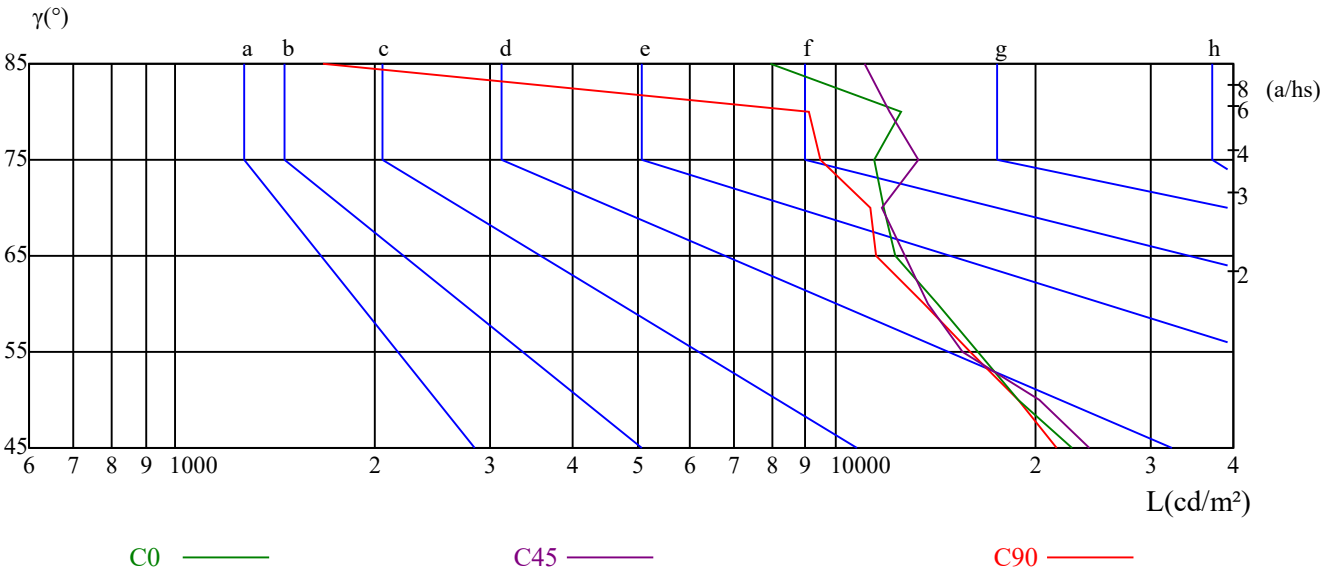
γ	45	50	55	60	65	70	75	80	85
C0	22865	18942	16366	14290	12292	11831	11409	12596	7947
C45	24153	20275	15508	13816	12723	11778	13310	12071	11084
C90	21576	18886	15953	13634	11516	11298	9507	9132	1673

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
13047	13133	13812	12606	12712	14138	10980	5124	12705

Glare Table

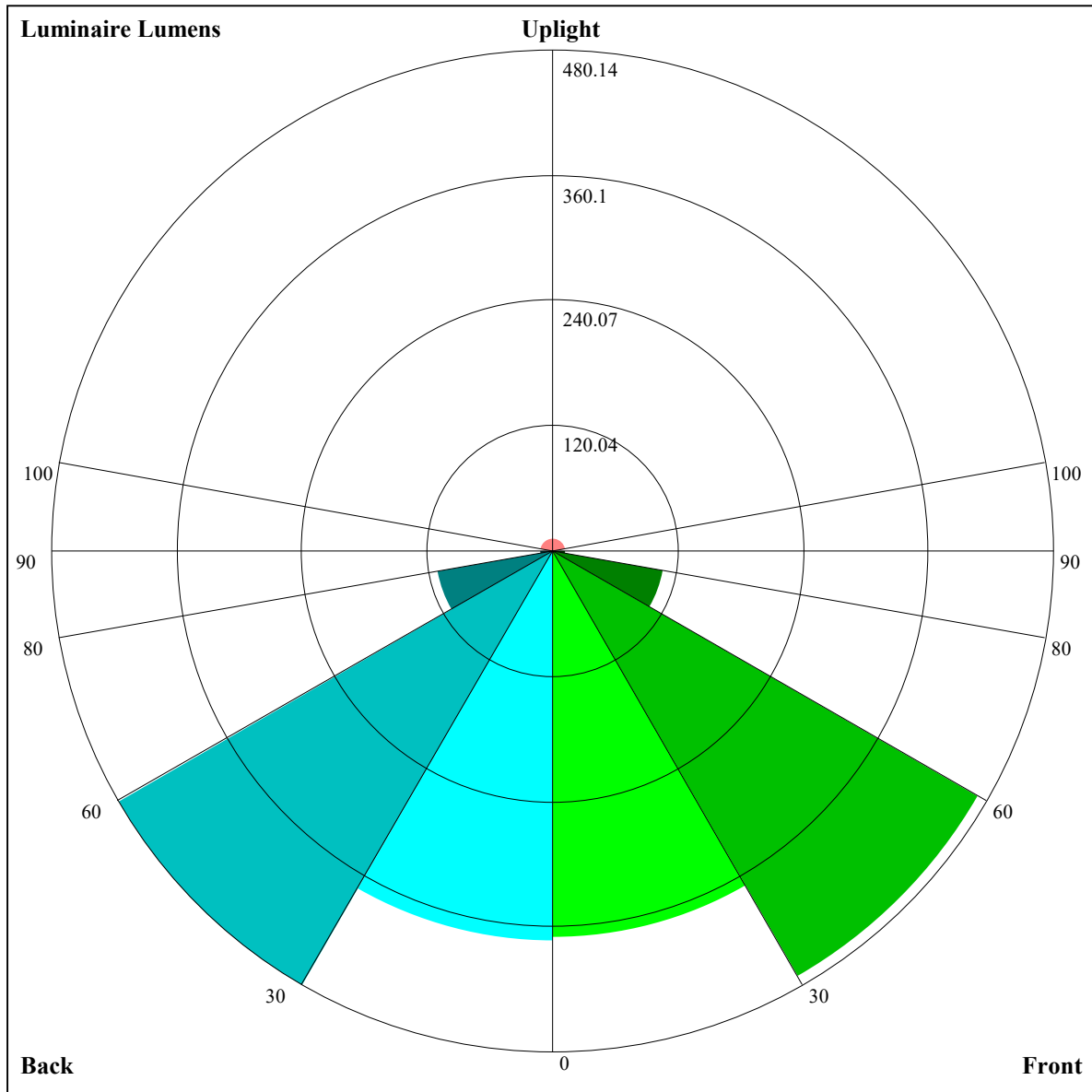
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling		70	70	50	50	30	70	70	50	50	30
Rf of Wall		50	30	50	30	30	50	30	50	30	30
Rf of Floor		20	20	20	20	20	20	20	20	20	20
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	16.39	17.83	16.77	18.16	18.50	16.22	17.66	16.59	17.99	18.32
	3H	17.38	18.68	17.78	19.03	19.39	17.17	18.47	17.57	18.82	19.18
	4H	17.86	19.07	18.26	19.44	19.82	17.57	18.78	17.97	19.14	19.53
	6H	18.34	19.46	18.76	19.85	20.26	17.89	19.01	18.31	19.39	19.81
	8H	18.49	19.57	18.91	19.96	20.38	17.94	19.02	18.36	19.41	19.83
	12H	18.54	19.57	18.97	19.98	20.40	17.91	18.94	18.34	19.35	19.78
4H	2H	16.77	17.98	17.18	18.35	18.73	16.62	17.84	17.03	18.20	18.58
	3H	17.97	19.00	18.41	19.40	19.83	17.79	18.81	18.22	19.22	19.64
	4H	18.66	19.56	19.11	20.00	20.45	18.39	19.29	18.83	19.72	20.18
	6H	19.26	20.06	19.74	20.52	20.98	18.81	19.61	19.28	20.07	20.53
	8H	19.49	20.24	19.98	20.70	21.19	18.93	19.67	19.41	20.14	20.62
	12H	19.61	20.31	20.10	20.76	21.29	18.94	19.64	19.43	20.09	20.62
8H	4H	18.92	19.66	19.40	20.13	20.61	18.67	19.41	19.15	19.88	20.36
	6H	19.66	20.29	20.17	20.77	21.29	19.23	19.85	19.73	20.34	20.86
	8H	20.02	20.57	20.55	21.09	21.60	19.46	20.01	19.99	20.53	21.04
	12H	20.20	20.66	20.74	21.18	21.71	19.51	19.97	20.05	20.49	21.02
12H	4H	18.93	19.63	19.43	20.08	20.61	18.70	19.39	19.19	19.85	20.37
	6H	19.76	20.31	20.29	20.83	21.34	19.35	19.90	19.88	20.42	20.93
	8H	20.12	20.58	20.66	21.10	21.63	19.59	20.04	20.12	20.57	21.09
Variation with the observer position at spacings:											
S = 1.0H		0.4/-0.7					0.4/-0.7				
S = 1.5H		0.8/-1.1					0.8/-1.1				
S = 2.0H		1.7/-1.3					1.6/-1.2				
Standard tables:		BK3					BK3				
Uncorrected UGR		6.0					6.4				

UGR calculation is based on CIE Publ. 117 ,S/H = 0.25



Luminaire Lumens:

FL=370.69,FM=470.23,FH=107.61,FVH=12.01

BL=374.62,BM=480.14,BH=112.67,BVH=13.39

UL=2.38,UH=12.32

BUG Rating:B1-U2-G1

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	1007.49	1011.87	993.90	970.66	913.67	842.20	751.01	660.70	554.16
45.0	1011.44	1017.57	996.53	964.96	893.06	816.78	704.98	633.52	506.37
90.0	998.72	1023.27	998.28	947.86	895.69	814.15	711.12	616.86	503.31
135.0	1032.04	1027.22	1003.10	976.80	922.87	843.96	737.86	640.09	545.83
180.0	1007.49	1019.33	1010.12	980.75	933.40	859.74	758.47	657.63	558.55
225.0	1011.44	1032.48	1007.49	986.45	945.67	883.86	784.33	689.20	587.48
270.0	998.72	1012.75	1015.38	995.65	959.70	887.80	804.06	701.03	604.14
315.0	1032.04	1009.68	1011.87	978.55	933.84	861.06	786.53	672.10	595.37
360.0	1007.49	1011.87	993.90	970.66	913.67	842.20	751.01	660.70	554.16
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	388.88	292.86	225.79	171.86	124.95	97.33	71.02	52.61	16.66
45.0	410.80	313.47	213.95	166.16	129.33	96.89	82.86	50.42	23.24
90.0	366.96	291.99	220.09	163.97	117.06	92.94	59.19	38.14	3.51
135.0	418.69	331.01	255.16	174.93	133.28	103.03	82.42	63.57	28.94
180.0	420.88	297.69	257.79	202.11	140.29	99.96	85.93	63.13	29.37
225.0	470.42	375.29	274.01	210.00	153.01	128.90	86.37	62.69	23.67
270.0	477.00	342.84	263.49	227.98	149.94	101.71	99.08	61.38	17.98
315.0	458.15	364.33	286.73	185.01	145.99	108.29	100.40	57.43	30.69
360.0	388.88	292.86	225.79	171.86	124.95	97.33	71.02	52.61	16.66
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	0.00	0.00	4.82	0.00	0.00	0.88	0.00	5.70	0.00
45.0	0.00	0.00	0.00	5.26	0.00	0.00	0.00	0.00	13.15
90.0	3.07	15.78	0.00	7.89	0.00	12.28	0.00	7.01	0.00
135.0	0.00	0.00	0.00	0.44	0.00	0.00	0.00	6.58	0.00
180.0	0.00	0.00	7.01	0.00	5.70	0.00	5.26	7.01	1.32
225.0	0.00	0.44	0.00	5.70	2.63	0.00	0.00	10.08	13.15
270.0	2.63	10.52	0.00	0.44	0.00	0.00	0.00	1.75	3.51
315.0	0.00	0.00	0.00	0.88	4.38	9.21	0.00	0.00	0.00
360.0	0.00	0.00	4.82	0.00	0.00	0.88	0.00	5.70	0.00
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.00	0.00	0.00	0.00	0.44	0.00	10.08	0.00	0.00
45.0	0.88	0.00	0.00	14.47	1.32	0.00	0.00	0.00	3.95
90.0	0.00	0.00	0.00	0.00	6.14	3.07	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	7.89	0.00	2.19	0.00	7.45
180.0	0.00	6.58	0.00	0.00	1.32	2.63	0.00	0.00	0.00
225.0	0.00	3.95	5.26	0.00	2.19	7.01	6.14	14.47	0.00
270.0	3.51	10.96	0.00	4.82	9.64	0.00	0.00	7.45	0.00
315.0	0.00	5.26	0.00	10.96	0.00	0.00	0.00	0.88	0.00
360.0	0.00	0.00	0.00	0.00	0.44	0.00	10.08	0.00	0.00
C/γ(°)	180.0								
0.0	7.01								
45.0	6.58								
90.0	0.00								
135.0	17.98								
180.0	7.01								
225.0	6.58								
270.0	0.00								
315.0	17.98								
360.0	7.01								