



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440217 RIO 2.4W 4000K 240lm

Luminaire:

Report No:

Voltage(V): 230.44

Test No: KYZ-A251030009-06-001

Current(A): 0.0205

LampCAT: LED

Power (W): 2.4000

Lamp flux(lm): -1.0

PF: 0.5090

Number of Lamps: 1

Ballast type:

Length(mm): -47

Width(mm): -47

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 240.00

Efficiency(%): 100.00%

Lumens(lm)/Power(W): 100.00

Central intensity(cd): 127.825

Maximum intensity(cd): 133.247

Angle of maximum intensity: C=90.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=82.6

[C90/270]Total=82.3

Field angle(10%Imax): [C0/180]Total=153.5

[C90/270]Total=146.1

Maximum s/h(1/2): C0_180=1.04 C90_270=1.11

Maximum s/h(1/4): C0_180=1.21 C90_270=1.24

Up flux rate of lamp(%): 2.89%

Down flux rate of lamp(%): 97.11%

Up flux rate of LUM(%): 2.89%

Down flux rate of LUM(%): 97.11%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 85.366%

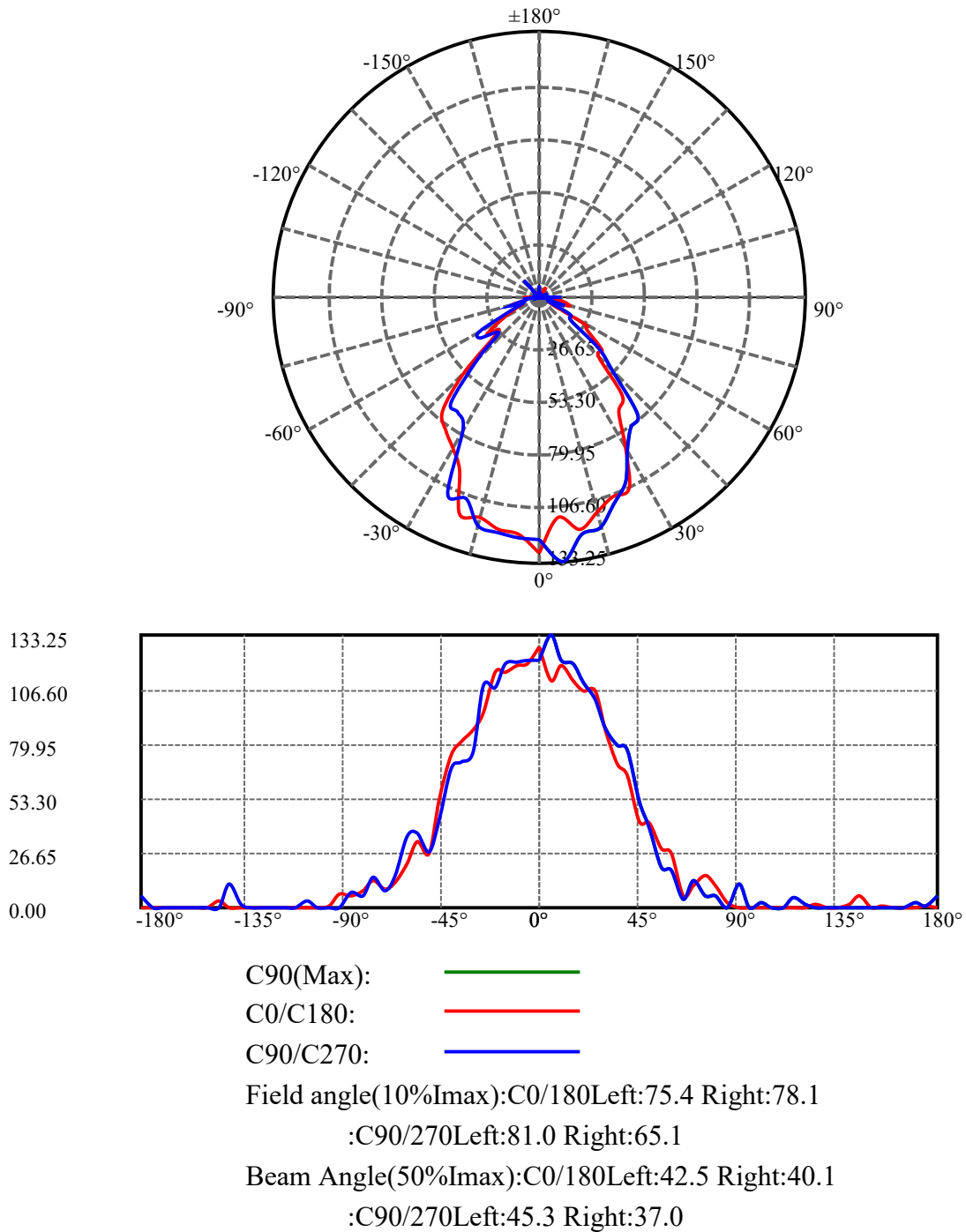
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	131.414	0.000	0	.000%	.000%
5.0	133.333	2.876	2.876	.000%	1.198%
10.0	128.643	8.515	11.391	.000%	4.746%
15.0	128.217	13.844	25.234	.000%	10.514%
20.0	122.515	18.775	44.009	.000%	18.337%
25.0	116.919	22.816	66.825	.000%	27.844%
30.0	96.775	24.571	91.396	.000%	38.081%
35.0	82.813	24.028	115.424	.000%	48.093%
40.0	77.058	24.235	139.659	.000%	58.190%
45.0	53.610	21.982	161.641	.000%	67.350%
50.0	41.780	17.513	179.154	.000%	74.647%
55.0	31.281	14.434	193.587	.000%	80.661%
60.0	22.489	11.292	204.88	.000%	85.366%
65.0	12.577	7.745	212.625	.000%	88.593%
70.0	10.072	5.210	217.835	.000%	90.764%
75.0	12.790	5.429	223.265	.000%	93.026%
80.0	6.768	4.755	228.019	.000%	95.007%
85.0	5.169	2.947	230.966	.000%	96.235%
90.0	3.304	2.108	233.074	.000%	97.113%
95.0	0.213	0.875	233.949	.000%	97.478%
100.0	0.799	0.250	234.199	.000%	97.582%
105.0	2.185	0.725	234.925	.000%	97.884%
110.0	1.226	0.810	235.735	.000%	98.222%
115.0	0.799	0.466	236.2	.000%	98.416%
120.0	0.213	0.224	236.424	.000%	98.509%
125.0	0.746	0.201	236.625	.000%	98.593%
130.0	1.759	0.495	237.12	.000%	98.799%
135.0	0.426	0.401	237.521	.000%	98.966%
140.0	1.918	0.394	237.916	.000%	99.131%
145.0	2.452	0.662	238.578	.000%	99.407%
150.0	0.000	0.328	238.906	.000%	99.543%
155.0	2.132	0.245	239.151	.000%	99.645%
160.0	1.705	0.366	239.517	.000%	99.798%
165.0	0.640	0.176	239.692	.000%	99.871%
170.0	2.611	0.175	239.868	.000%	99.944%
175.0	0.746	0.109	239.977	.000%	99.989%
180.0	1.599	0.025	240.002	.000%	100.000%

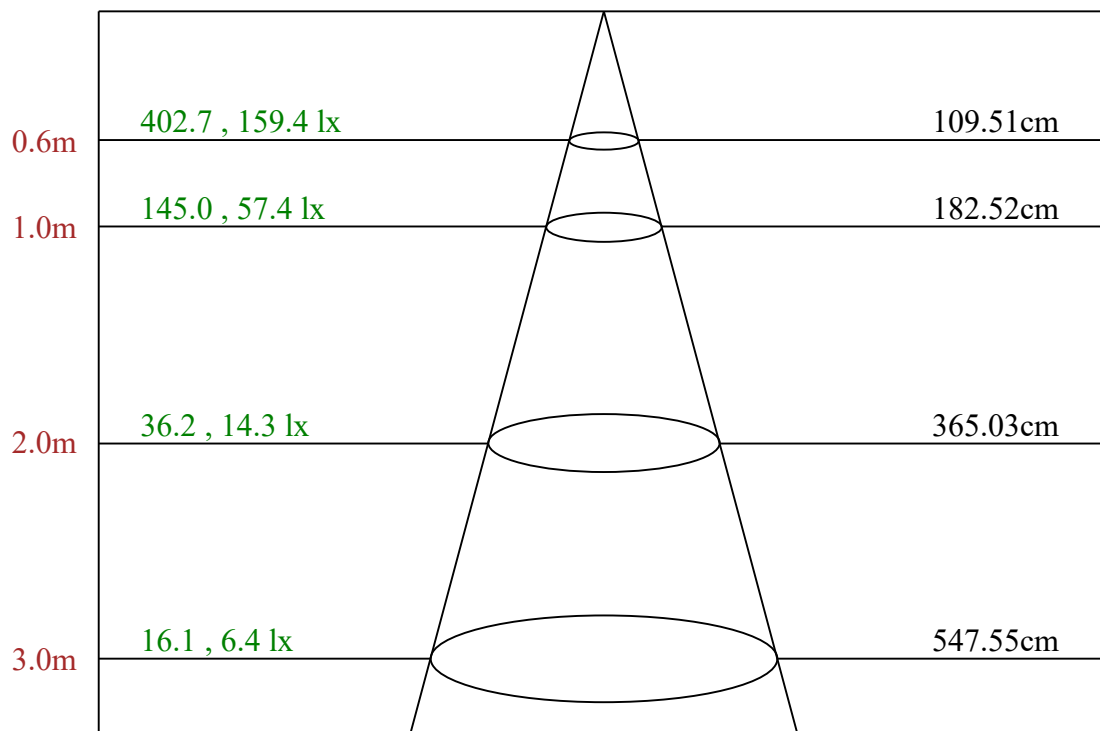
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	91.40	N.A.	38.08%
0-40	139.66	N.A.	58.19%
0-60	204.88	N.A.	85.37%
0-90	233.07	N.A.	97.11%
0-120	236.42	N.A.	98.51%
0-180	240.00	N.A.	100.00%
60-90	39.49	N.A.	16.45%
90-120	5.46	N.A.	2.27%
90-130	6.15	N.A.	2.56%
90-150	7.94	N.A.	3.31%
90-180	9.01	N.A.	3.75%
0-54.45	192.00	N.A.	80.00%

ZONAL LUMEN SUMMARY

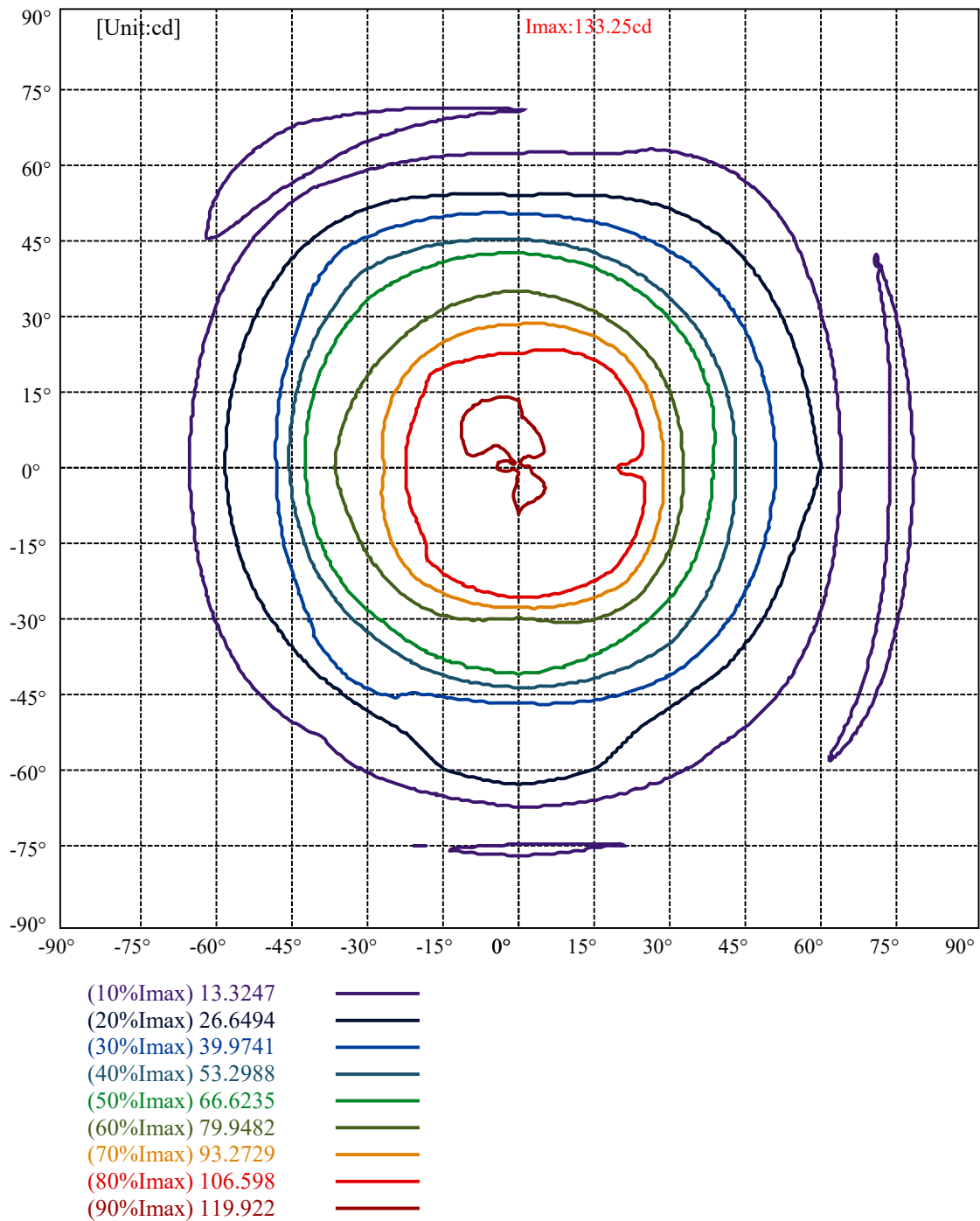
0-10	11.39
10-20	32.62
20-30	47.39
30-40	48.26
40-50	39.50
50-60	25.73
60-70	12.96
70-80	10.18
80-90	5.05
90-100	1.12
100-110	1.54
110-120	0.69
120-130	0.70
130-140	0.80
140-150	0.99
150-160	0.61
160-170	0.35
170-180	0.11

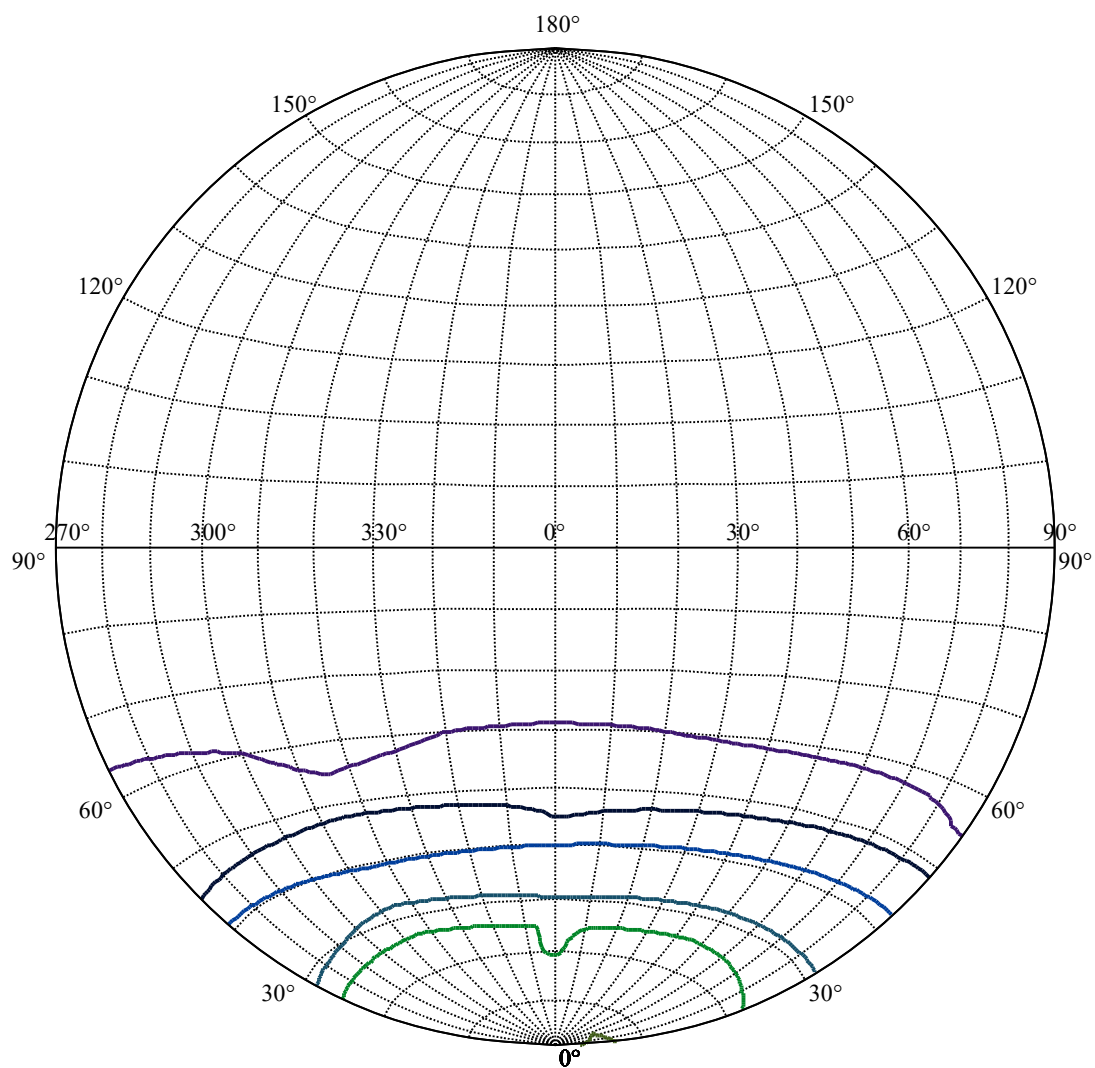




Max , Ave

Beam angle of C90 plane 84.77





House

[Unit:cd]

Road

Imax:133.25

(10%Imax) 19.42714

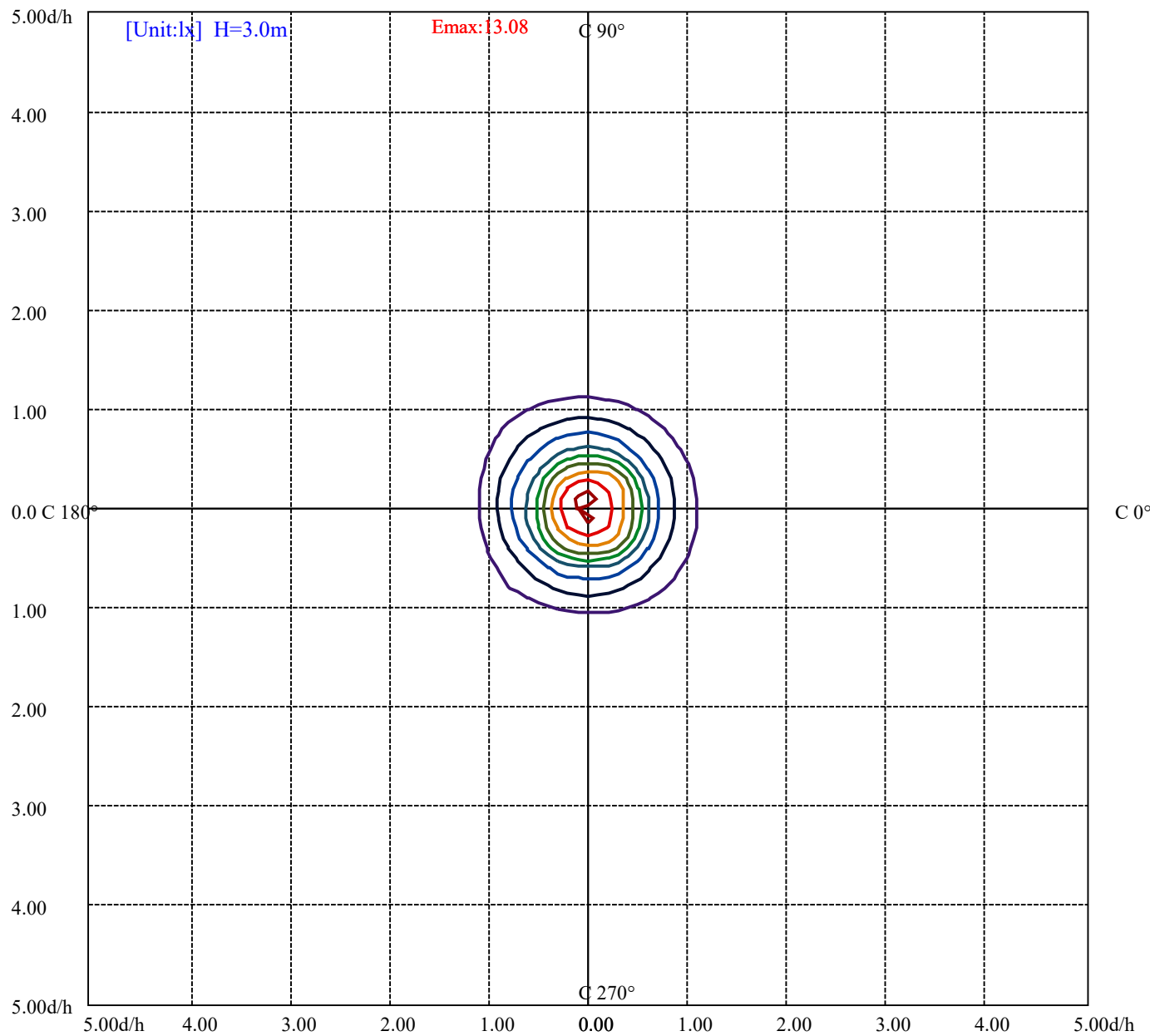
(20%Imax) 38.85438

(30%Imax) 58.28152

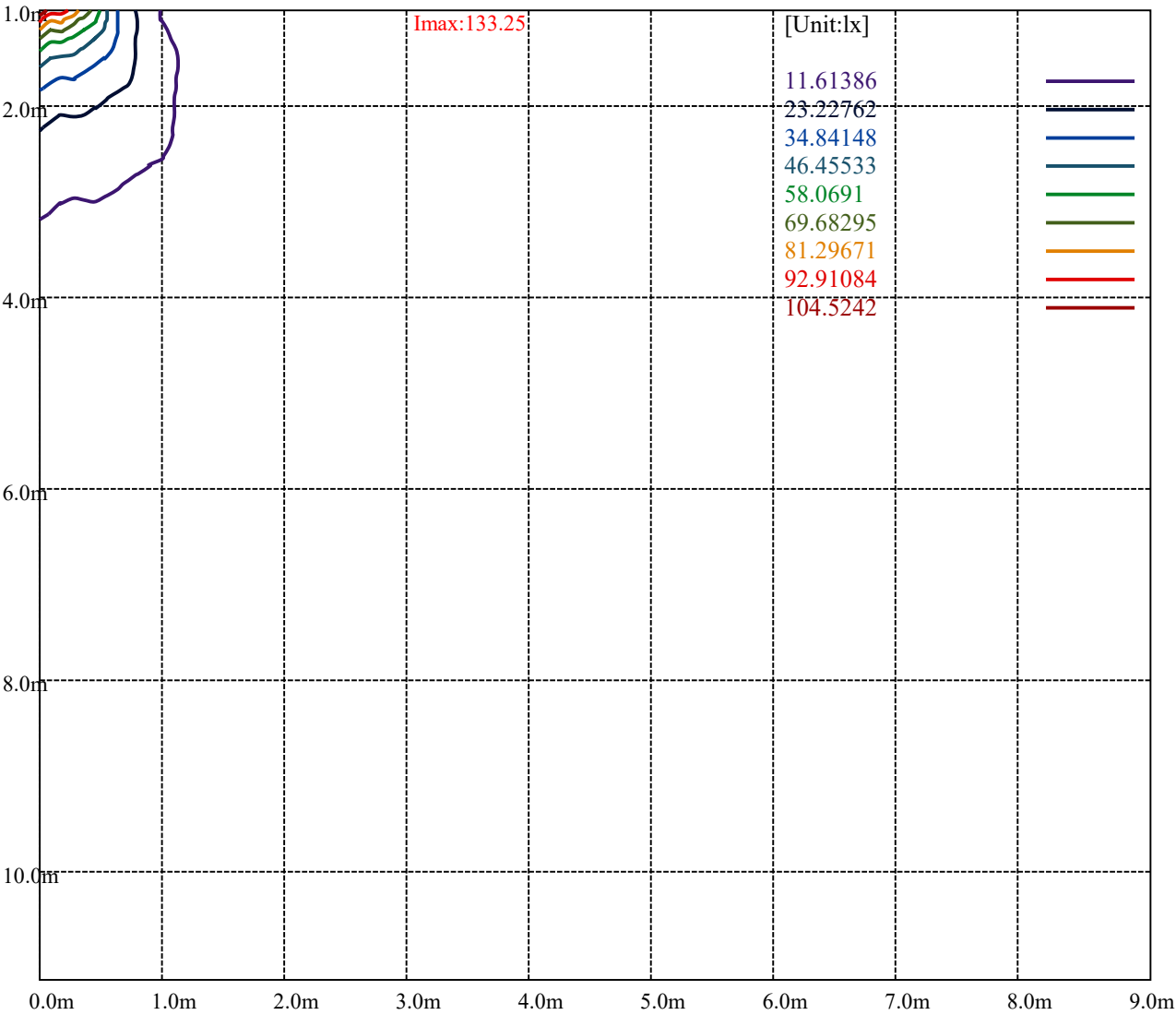
(40%Imax) 77.70866

(50%Imax) 97.13572

(60%Imax) 116.5629



(10%Emax)	1.307681	
(20%Emax)	2.615373	
(30%Emax)	3.923054	
(40%Emax)	5.230745	
(50%Emax)	6.538426	
(60%Emax)	7.846107	
(70%Emax)	9.153799	
(80%Emax)	10.46153	
(90%Emax)	11.76917	



Luminance Table

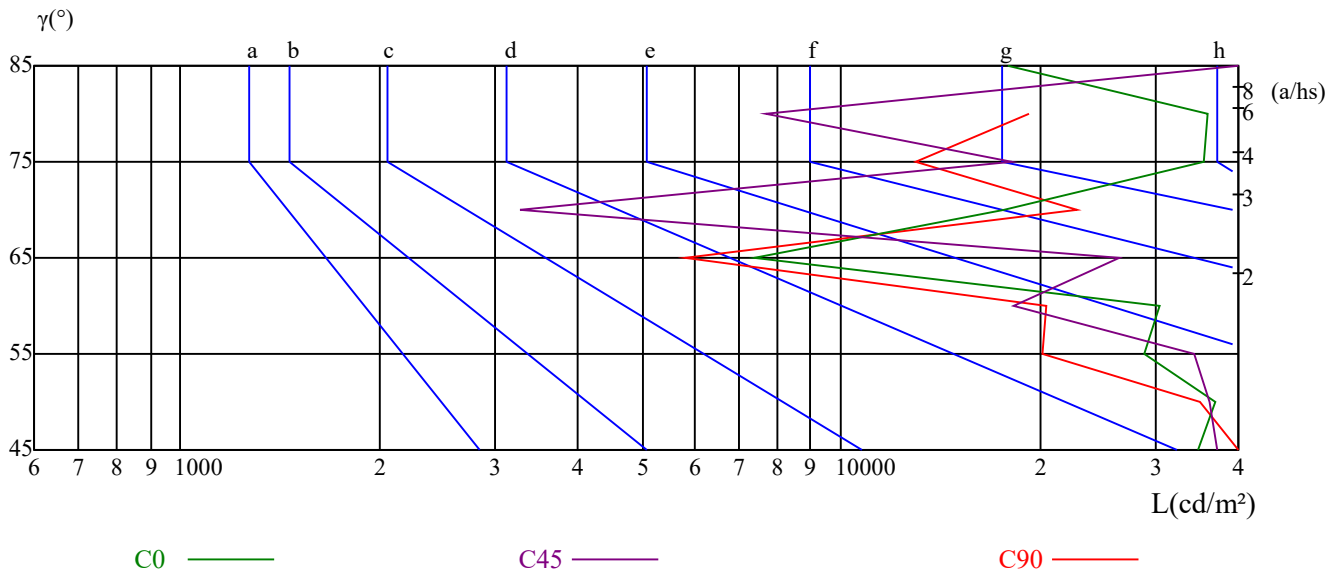
γ	45	50	55	60	65	70	75	80	85
C0	34732	36817	28804	30364	7397	17625	35367	36000	17930
C45	37257	36123	34253	18307	26414	3264	18115	7714	58915
C90	42309	35081	20241	20540	5812	22847	12940	19286	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
12151	13472	18358	32348	23291	23938	29458	25615	34581

Glare Table

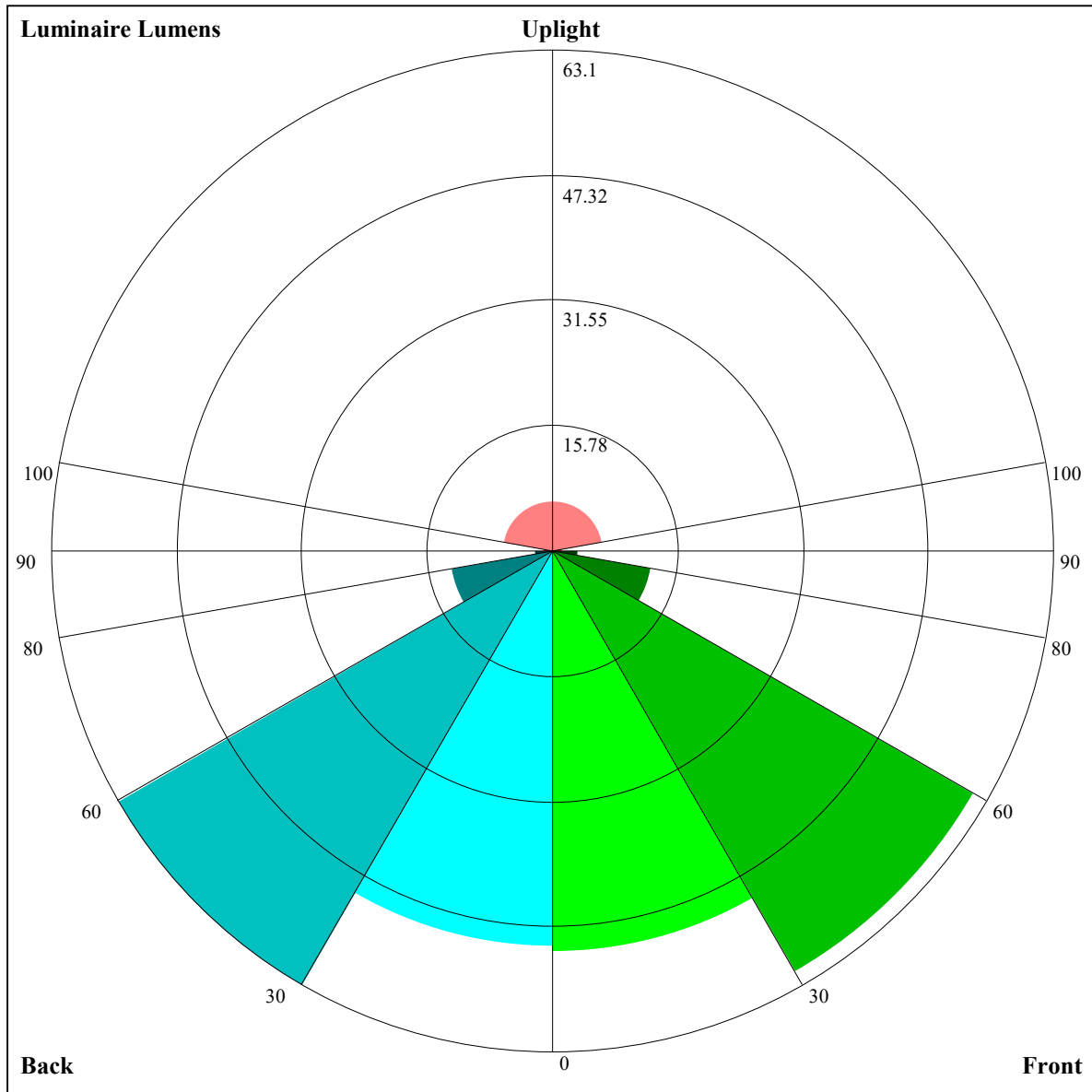
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	19.23	20.61	19.63	20.98	21.37	18.77	20.15	19.18	20.53	20.92
	3H	19.62	20.87	20.05	21.27	21.68	19.32	20.56	19.75	20.96	21.37
	4H	20.66	21.82	21.10	22.23	22.67	19.65	20.81	20.09	21.22	21.66
	6H	21.77	22.85	22.23	23.28	23.74	20.01	21.09	20.47	21.52	21.98
	8H	22.10	23.14	22.56	23.58	24.05	20.12	21.16	20.58	21.59	22.06
	12H	22.24	23.23	22.71	23.68	24.16	20.10	21.10	20.57	21.54	22.02
4H	2H	19.50	20.67	19.95	21.08	21.51	19.13	20.29	19.57	20.70	21.14
	3H	19.99	20.97	20.46	21.42	21.90	19.73	20.71	20.20	21.16	21.64
	4H	21.31	22.18	21.80	22.66	23.16	20.23	21.10	20.71	21.57	22.08
	6H	22.55	23.32	23.06	23.82	24.33	20.68	21.45	21.19	21.95	22.46
	8H	23.00	23.73	23.52	24.23	24.76	20.88	21.60	21.40	22.11	22.64
	12H	23.25	23.93	23.78	24.42	25.00	20.95	21.62	21.47	22.12	22.69
8H	4H	21.39	22.12	21.92	22.62	23.15	20.36	21.09	20.88	21.59	22.12
	6H	22.72	23.33	23.26	23.85	24.42	20.90	21.51	21.44	22.03	22.59
	8H	23.37	23.91	23.93	24.47	25.02	21.29	21.82	21.85	22.38	22.94
	12H	23.82	24.28	24.39	24.84	25.41	21.54	21.99	22.11	22.55	23.13
12H	4H	21.38	22.06	21.91	22.55	23.13	20.40	21.07	20.92	21.57	22.14
	6H	22.79	23.33	23.35	23.89	24.44	21.04	21.58	21.61	22.14	22.70
	8H	23.50	23.95	24.07	24.51	25.09	21.53	21.99	22.10	22.55	23.12
Variation with the observer position at spacings:											
S = 1.0H		0.5/-1.4					0.7/-0.9				
S = 1.5H		1.1/-1.8					0.3/-0.8				
S = 2.0H		2.4/-3.4					1.4/-1.6				
Standard tables:		BK4					BK3				
Uncorrected UGR		7.8					8.5				

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



Luminaire Lumens:

FL=50.42,FM=61.29,FH=12.65,FVH=3.15

BL=49.93,BM=63.1,BH=12.96,BVH=2.45

UL=1.24,UH=6.39

BUG Rating:B0-U1-G0

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	127.82	110.78	118.14	111.17	106.13	105.75	87.15	70.11	64.30
45.0	110.01	125.50	109.23	114.65	119.69	110.01	92.58	73.60	70.11
90.0	121.24	133.25	120.85	119.30	110.39	101.87	87.93	79.41	76.69
135.0	118.53	118.14	124.34	120.08	110.01	106.91	87.54	77.08	78.24
180.0	127.82	118.92	118.14	114.65	115.43	95.29	86.77	81.34	74.76
225.0	110.01	115.82	113.49	117.37	107.68	107.30	90.64	73.60	65.46
270.0	121.24	121.24	119.69	118.92	107.68	108.46	76.31	70.88	68.17
315.0	118.53	125.50	111.17	115.82	113.49	114.27	94.51	75.92	62.36
360.0	127.82	110.78	118.14	111.17	106.13	105.75	87.15	70.11	64.30
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	42.61	41.06	28.66	26.34	5.42	10.46	15.88	10.85	2.71
45.0	45.71	40.28	34.09	15.88	19.37	1.94	8.13	2.32	8.91
90.0	51.90	39.12	20.14	17.82	4.26	13.56	5.81	5.81	0.00
135.0	59.65	47.64	34.09	17.43	12.01	17.82	11.62	9.68	0.00
180.0	53.07	26.73	32.15	21.30	12.39	9.30	13.17	8.13	6.20
225.0	41.45	44.93	20.92	14.72	10.46	0.00	11.62	6.59	0.00
270.0	43.38	27.11	36.02	34.47	15.49	8.13	15.11	5.81	7.75
315.0	51.90	36.80	21.30	15.49	12.01	12.01	11.62	0.00	12.01
360.0	42.61	41.06	28.66	26.34	5.42	10.46	15.88	10.85	2.71
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	0.00	0.00	0.00	0.00	0.00	1.55	0.00
45.0	6.20	0.00	0.00	0.00	3.10	0.00	0.00	3.87	0.00
90.0	11.23	0.00	2.32	0.00	0.39	4.65	1.55	0.00	0.00
135.0	0.00	0.00	3.49	7.36	5.04	0.00	0.00	0.00	10.85
180.0	6.59	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	1.55
270.0	0.00	0.00	0.00	3.49	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.39	0.00	5.04	0.00	1.16	0.00	0.00	0.39
360.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	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	1.55	6.20	0.00	0.78	0.00	0.00	0.00	1.16
45.0	1.55	0.00	0.78	0.00	5.81	7.36	4.65	3.10	2.71
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.71	0.78
135.0	0.00	1.16	5.42	0.00	5.42	0.00	0.00	10.07	0.00
180.0	0.00	0.00	3.49	0.00	0.00	0.00	0.00	0.00	0.00
225.0	0.00	0.00	1.94	0.00	0.00	5.04	0.00	3.10	0.78
270.0	1.55	11.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	3.49	0.00	0.00	0.00	0.00
360.0	0.00	1.55	6.20	0.00	0.78	0.00	0.00	0.00	1.16
C/γ(°)	180.0								
0.0	0.00								
45.0	0.00								
90.0	5.81								
135.0	0.00								
180.0	0.00								
225.0	0.00								
270.0	5.81								
315.0	0.00								
360.0	0.00								