



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440228 KAI 16.6W 4000K 2000lm

Luminaire:

Report No:

Voltage(V): 230.1700

Test No: KYZ-A251011059-01-001

Current(A): 0.0804

LampCAT: LED

Power (W): 16.6000

Lamp flux(lm): -1.0

PF: 0.8975

Number of Lamps: 1

Ballast type:

Length(mm): -249

Width(mm): -249

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2000.00

Efficiency(%): 100.00%

Lumens(lm)/Power(W): 120.48

Central intensity(cd): 981.760

Maximum intensity(cd): 1001.412

Angle of maximum intensity: C=112.5 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=85.2

[C90/270]Total=84.2

Field angle(10%Imax): [C0/180]Total=143.2

[C90/270]Total=146.7

Maximum s/h(1/2): C0_180=1.11 C90_270=1.14

Maximum s/h(1/4): C0_180=1.17 C90_270=1.20

Up flux rate of lamp(%): 0.72%

Down flux rate of lamp(%): 99.28%

Up flux rate of LUM(%): 0.72%

Down flux rate of LUM(%): 99.28%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 85.223%

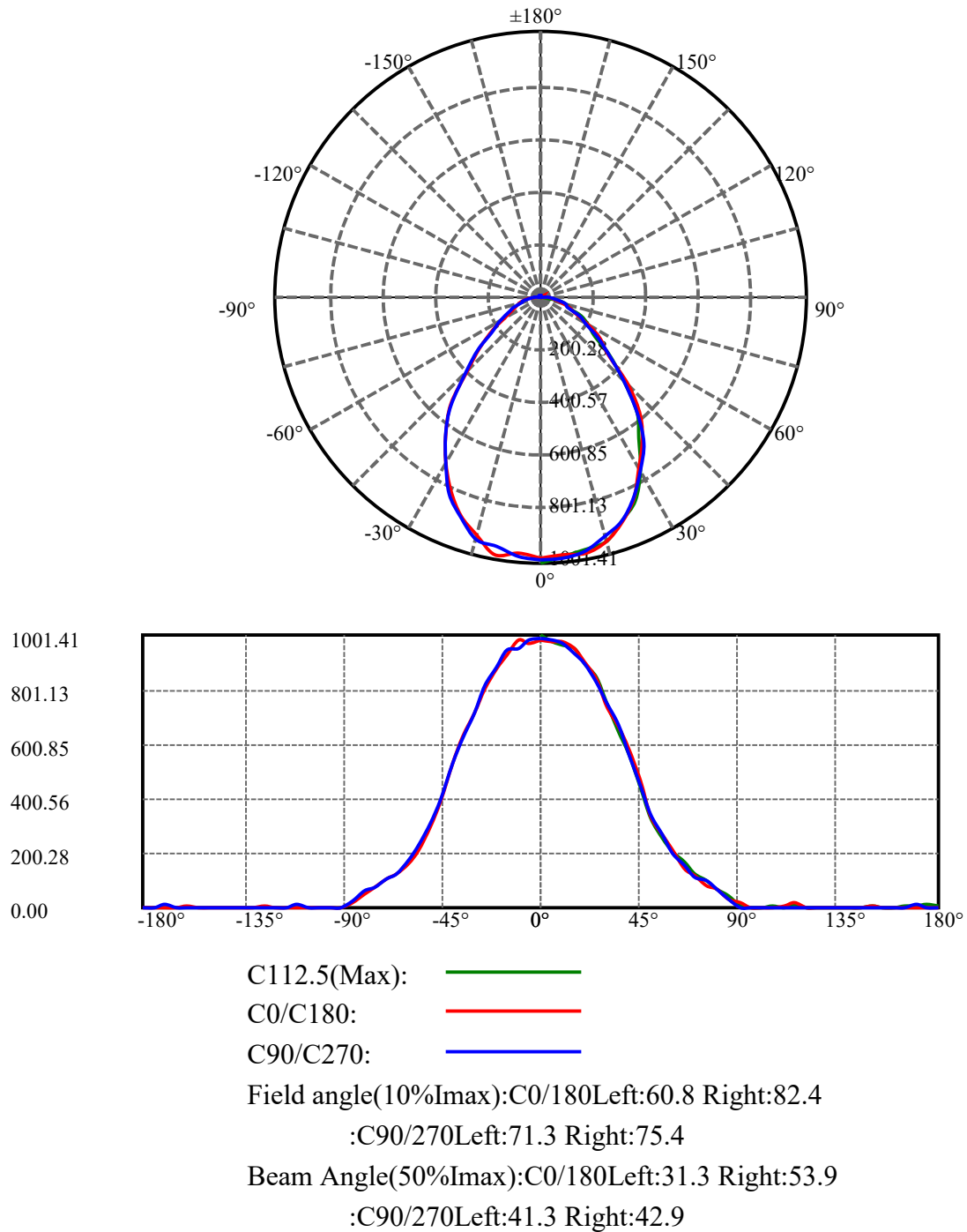
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	981.844	0.000	0	.000%	.000%
5.0	976.549	23.535	23.535	.000%	1.177%
10.0	961.398	69.691	93.226	.000%	4.661%
15.0	936.145	113.152	206.378	.000%	10.319%
20.0	884.094	150.801	357.179	.000%	17.859%
25.0	818.330	179.491	536.67	.000%	26.833%
30.0	733.233	197.383	734.053	.000%	36.703%
35.0	643.357	203.777	937.83	.000%	46.891%
40.0	546.666	199.589	1137.419	.000%	56.871%
45.0	434.118	182.554	1319.973	.000%	65.999%
50.0	333.300	155.883	1475.856	.000%	73.793%
55.0	246.656	126.764	1602.62	.000%	80.131%
60.0	191.671	101.850	1704.47	.000%	85.223%
65.0	150.806	83.694	1788.164	.000%	89.408%
70.0	116.757	68.105	1856.269	.000%	92.813%
75.0	88.437	53.916	1910.185	.000%	95.509%
80.0	62.397	40.571	1950.756	.000%	97.538%
85.0	30.737	25.440	1976.195	.000%	98.810%
90.0	3.367	9.387	1985.582	.000%	99.279%
95.0	0.760	1.136	1986.718	.000%	99.336%
100.0	2.797	0.972	1987.69	.000%	99.384%
105.0	1.629	1.190	1988.88	.000%	99.444%
110.0	3.774	1.420	1990.3	.000%	99.515%
115.0	2.933	1.707	1992.007	.000%	99.600%
120.0	1.439	1.068	1993.075	.000%	99.654%
125.0	2.987	1.028	1994.104	.000%	99.705%
130.0	3.557	1.430	1995.534	.000%	99.777%
135.0	1.548	1.037	1996.571	.000%	99.829%
140.0	1.059	0.485	1997.056	.000%	99.853%
145.0	2.552	0.606	1997.662	.000%	99.883%
150.0	1.792	0.643	1998.305	.000%	99.915%
155.0	2.009	0.484	1998.789	.000%	99.939%
160.0	1.249	0.344	1999.132	.000%	99.957%
165.0	1.792	0.252	1999.384	.000%	99.969%
170.0	4.372	0.368	1999.752	.000%	99.988%
175.0	1.086	0.196	1999.948	.000%	99.997%
180.0	3.313	0.053	2000.001	.000%	100.000%

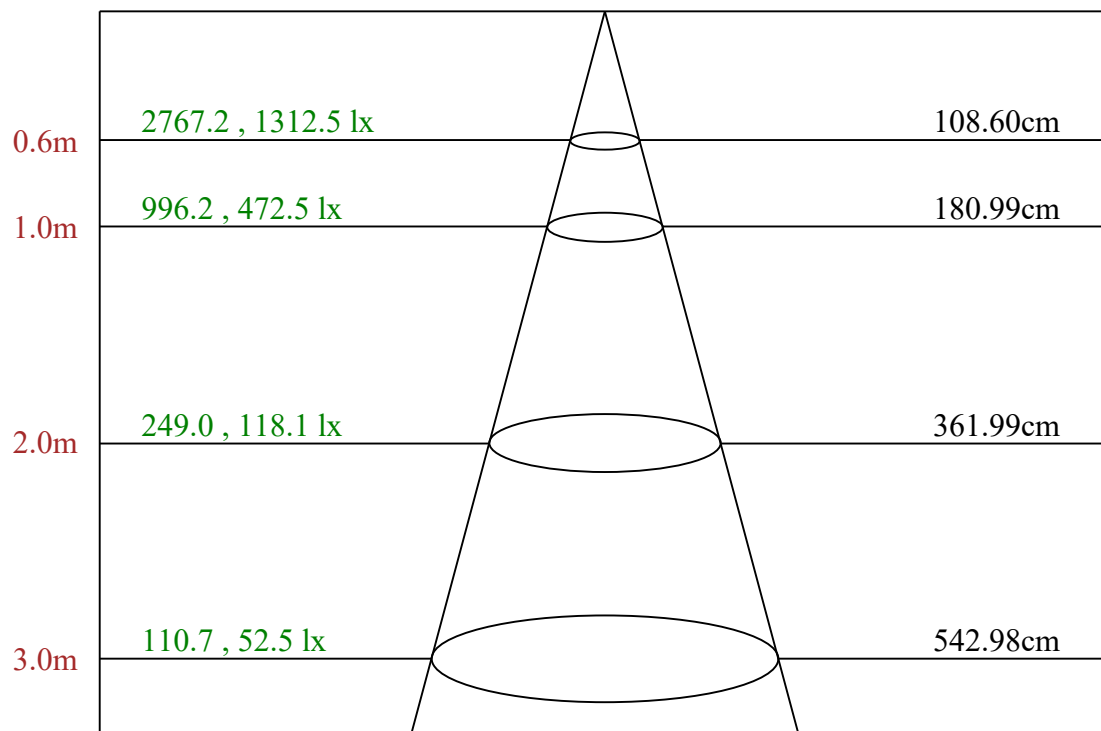
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	734.05	N.A.	36.70%
0-40	1137.42	N.A.	56.87%
0-60	1704.47	N.A.	85.22%
0-90	1985.58	N.A.	99.28%
0-120	1993.08	N.A.	99.65%
0-180	2000.00	N.A.	100.00%
60-90	382.96	N.A.	19.15%
90-120	16.88	N.A.	0.84%
90-130	19.34	N.A.	0.97%
90-150	22.11	N.A.	1.11%
90-180	23.75	N.A.	1.19%
0-54.90	1600.00	N.A.	80.00%

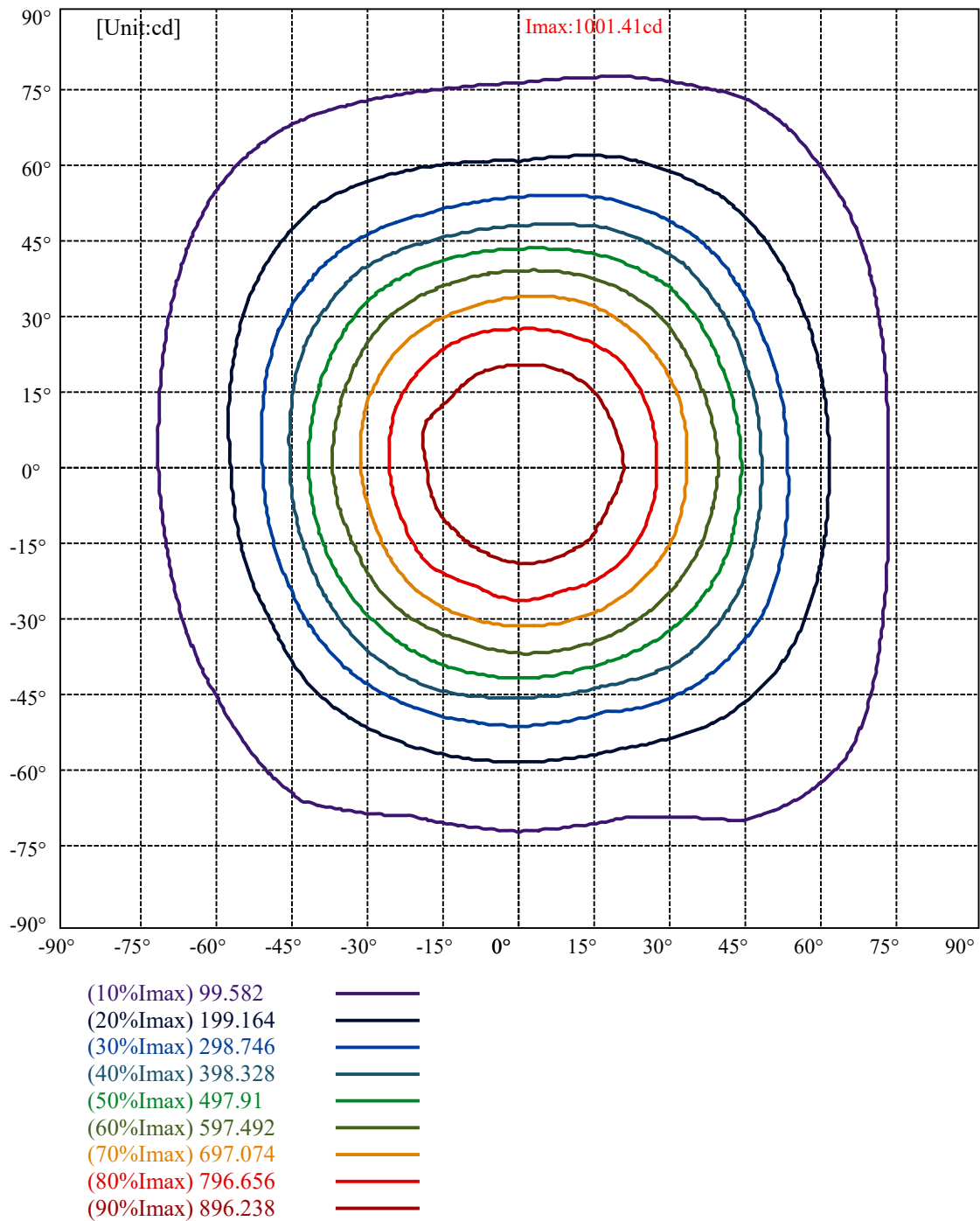
ZONAL LUMEN SUMMARY

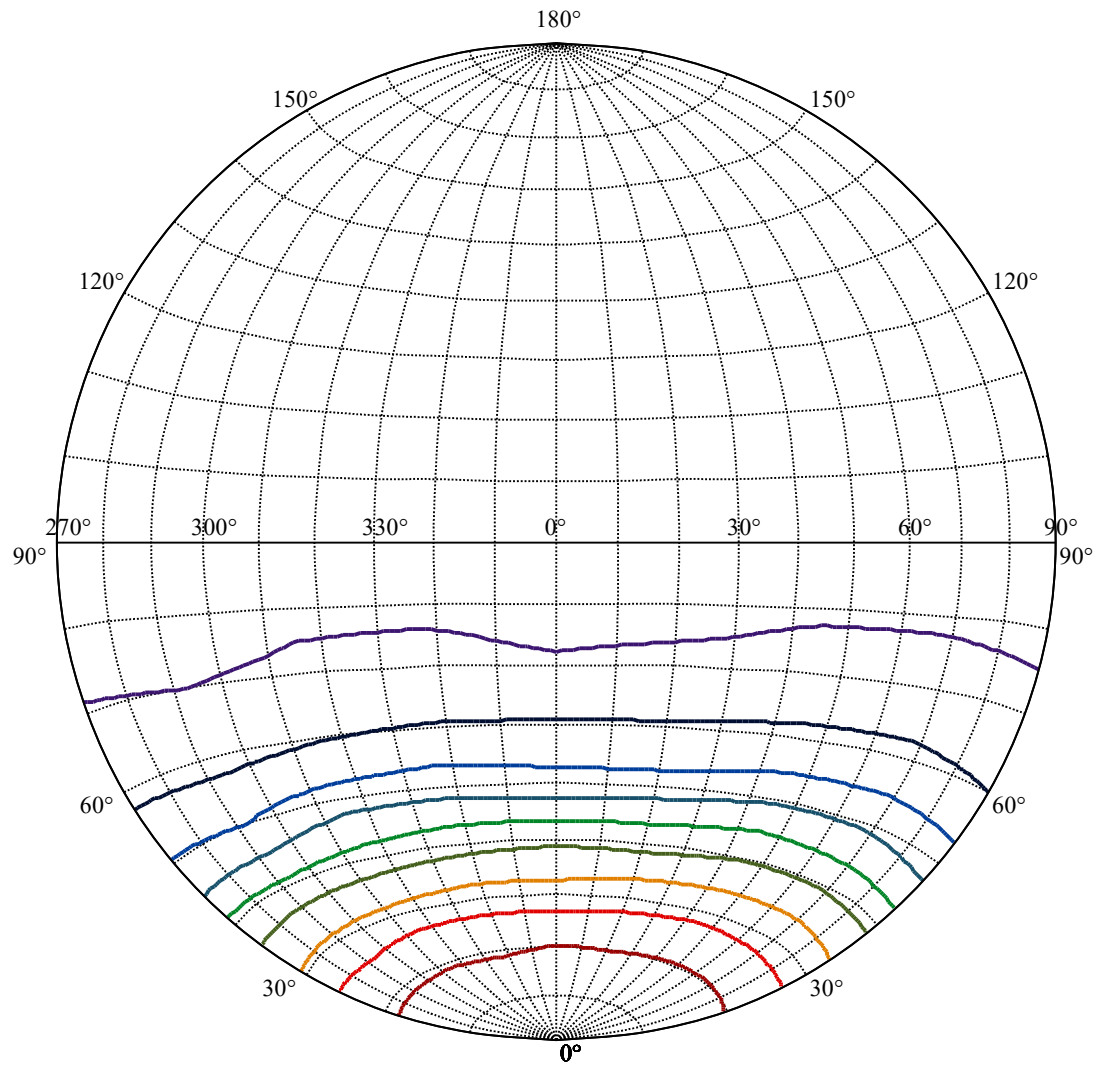
0-10	93.23
10-20	263.95
20-30	376.87
30-40	403.37
40-50	338.44
50-60	228.61
60-70	151.80
70-80	94.49
80-90	34.83
90-100	2.11
100-110	2.61
110-120	2.78
120-130	2.46
130-140	1.52
140-150	1.25
150-160	0.83
160-170	0.62
170-180	0.20





Max , Ave Beam angle of C112.5 plane 84.29



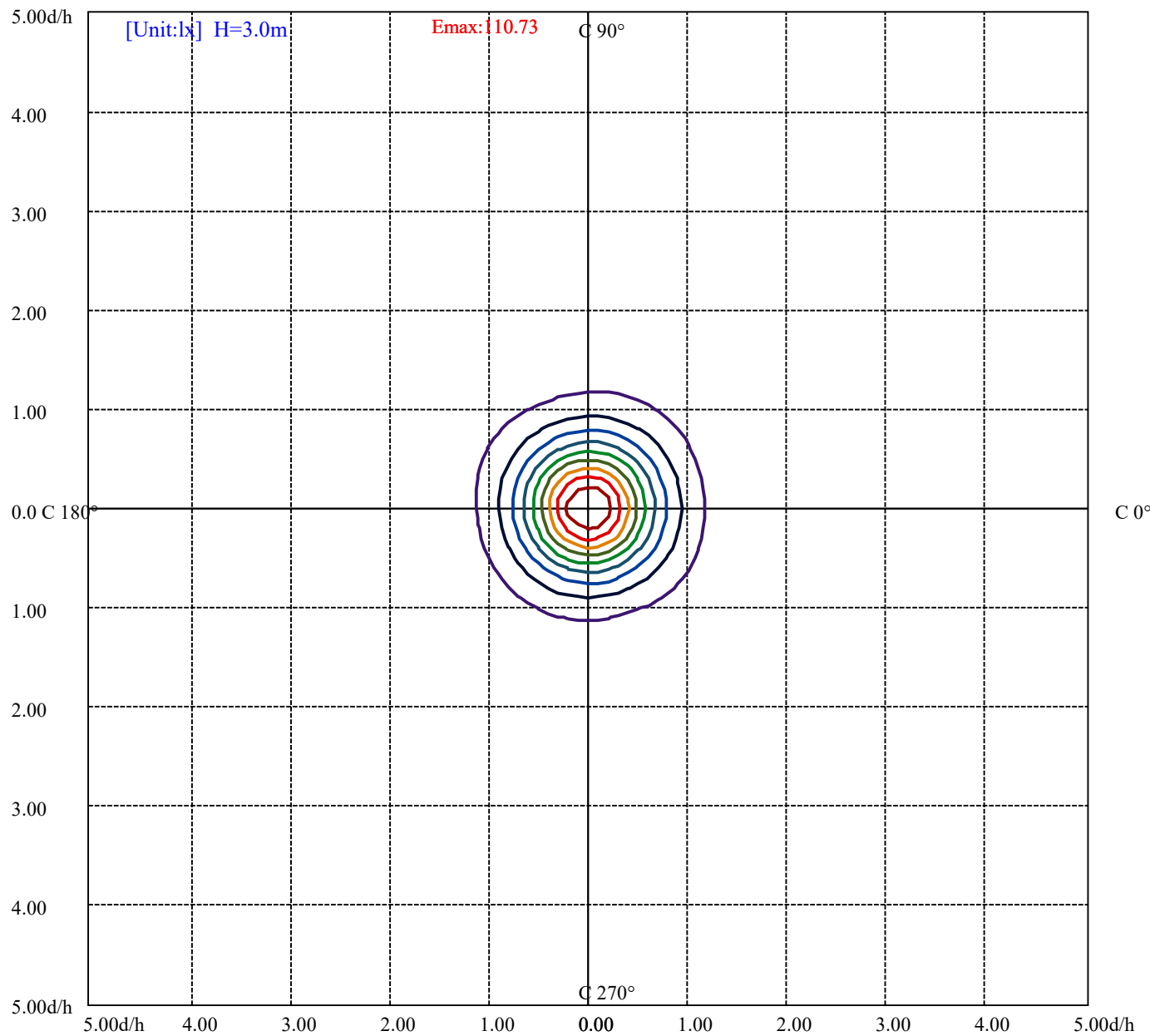


House

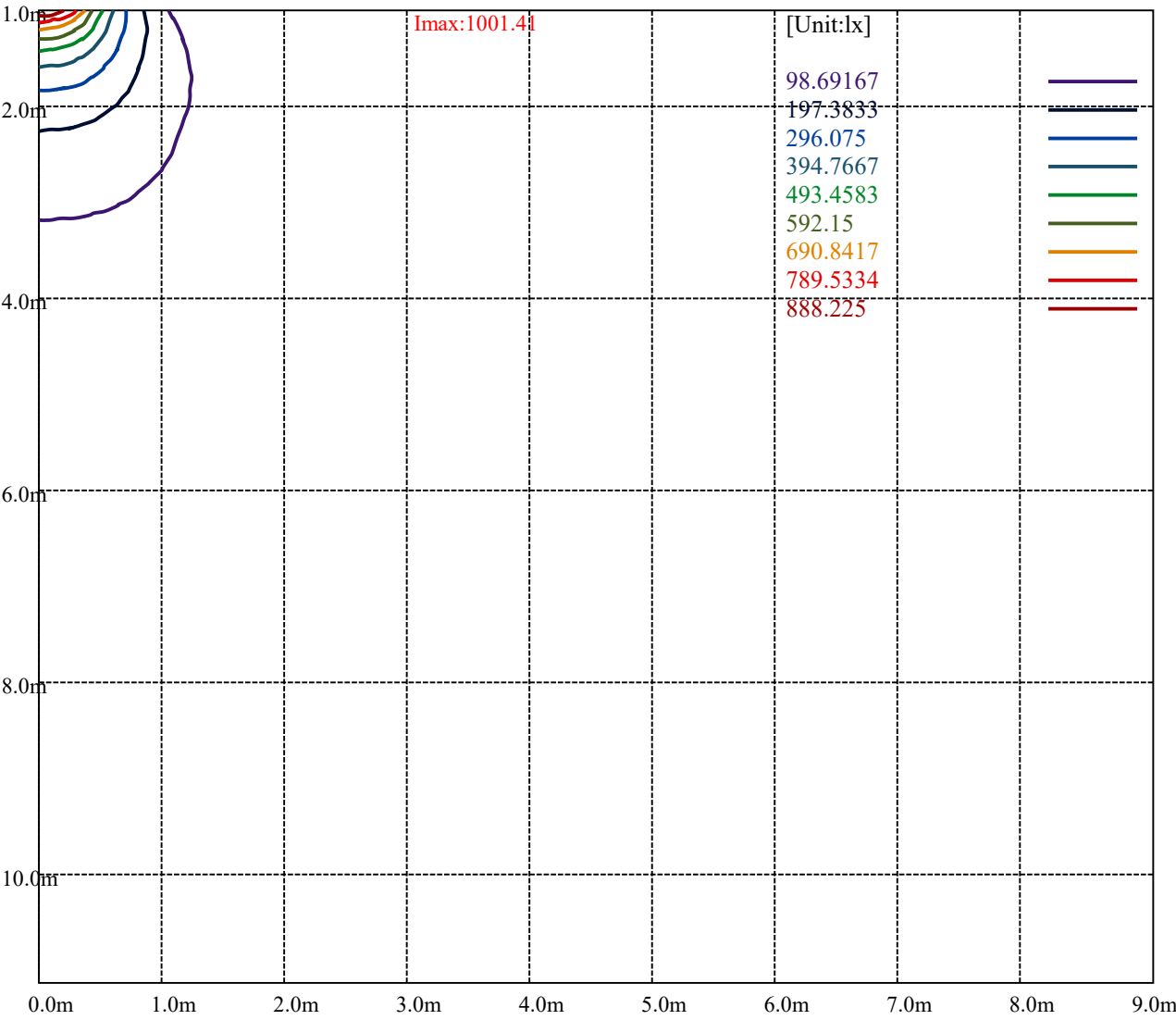
[Unit:cd]

Road

Imax:1001.41	
(10%Imax) 100.6439	
(20%Imax) 201.2877	
(30%Imax) 301.9316	
(40%Imax) 402.5755	
(50%Imax) 503.2193	
(60%Imax) 603.8632	
(70%Imax) 704.5071	
(80%Imax) 805.1509	
(90%Imax) 905.7948	



(10%Emax)	11.07305	
(20%Emax)	22.14605	
(30%Emax)	33.21913	
(40%Emax)	44.29221	
(50%Emax)	55.36528	
(60%Emax)	66.43826	
(70%Emax)	77.51133	
(80%Emax)	88.58441	
(90%Emax)	99.65749	



Luminance Table

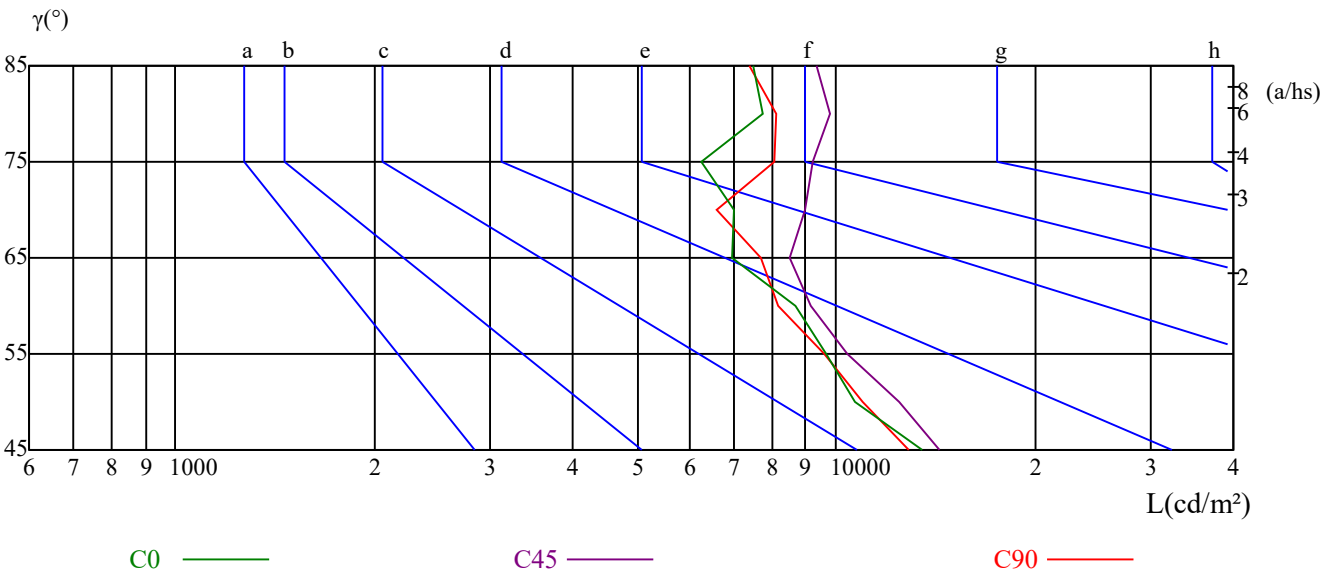
γ	45	50	55	60	65	70	75	80	85
C0	13520	10688	9663	8664	6961	7028	6237	7747	7512
C45	14396	12446	10429	9166	8531	8994	9217	9813	9364
C90	12937	10995	9616	8197	7703	6582	8074	8109	7409

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6441	6918	7804	6185	6965	7675	5968	6689	6792

Glare Table

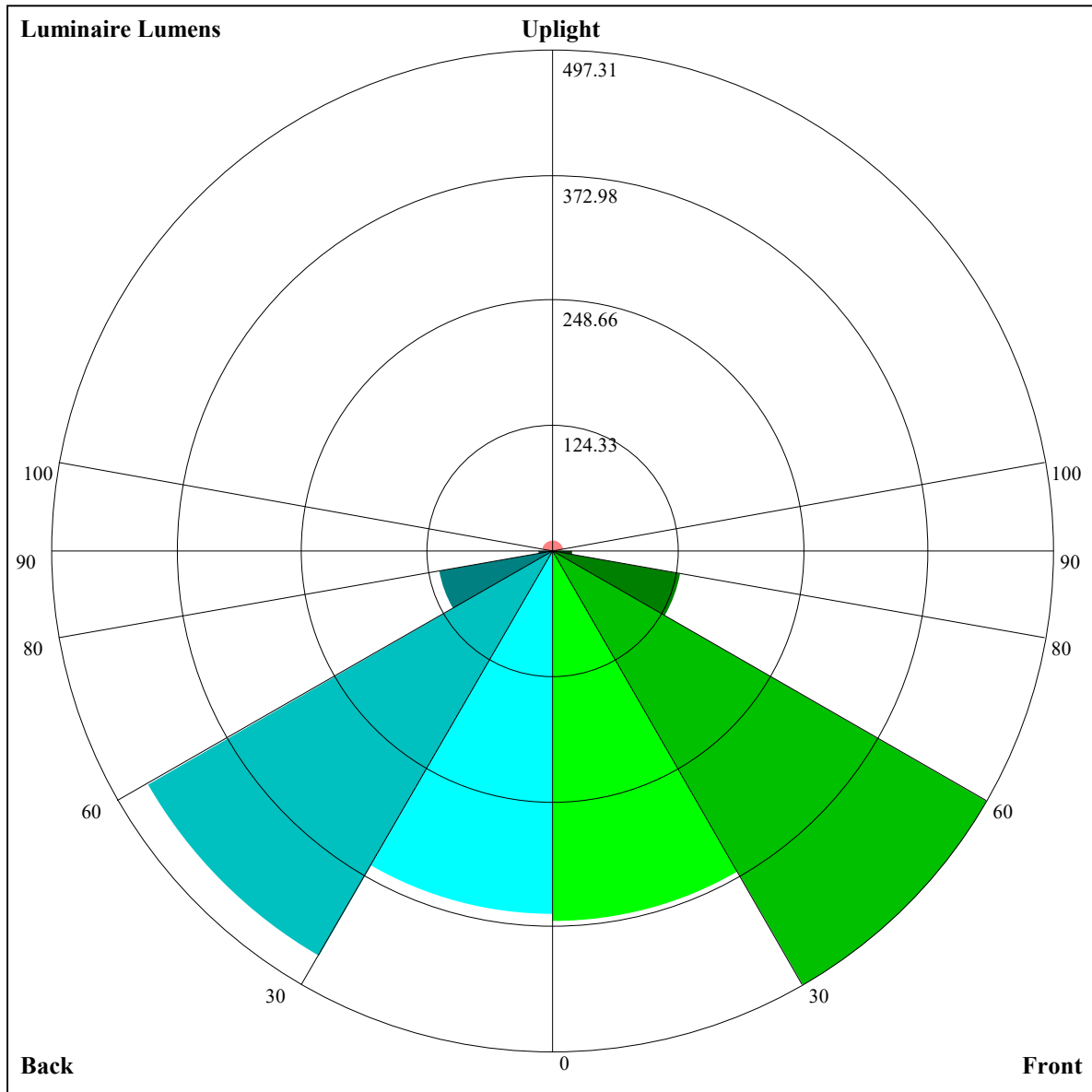
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	15.16	16.63	15.54	16.96	17.29	15.42	16.88	15.79	17.21	17.54
	3H	16.28	17.60	16.67	17.95	18.31	16.57	17.89	16.97	18.25	18.61
	4H	16.74	17.97	17.14	18.34	18.72	17.19	18.43	17.60	18.79	19.17
	6H	17.24	18.39	17.66	18.77	19.18	17.78	18.92	18.20	19.31	19.72
	8H	17.45	18.55	17.88	18.95	19.36	17.98	19.08	18.40	19.47	19.89
	12H	17.61	18.66	18.04	19.07	19.49	18.11	19.17	18.54	19.57	20.00
4H	2H	15.72	16.96	16.13	17.32	17.70	15.93	17.16	16.33	17.53	17.91
	3H	17.10	18.15	17.53	18.55	18.98	17.38	18.43	17.81	18.83	19.26
	4H	17.76	18.68	18.21	19.11	19.57	18.26	19.18	18.70	19.61	20.07
	6H	18.38	19.20	18.85	19.65	20.12	18.98	19.80	19.45	20.26	20.72
	8H	18.69	19.46	19.17	19.92	20.40	19.28	20.05	19.77	20.51	20.99
	12H	18.95	19.66	19.44	20.12	20.64	19.51	20.23	20.00	20.68	21.21
8H	4H	18.16	18.93	18.65	19.39	19.87	18.60	19.37	19.08	19.83	20.31
	6H	18.97	19.61	19.47	20.10	20.61	19.52	20.17	20.03	20.65	21.17
	8H	19.46	20.02	19.98	20.54	21.05	20.02	20.58	20.54	21.10	21.61
	12H	19.86	20.33	20.39	20.85	21.38	20.40	20.88	20.94	21.40	21.92
12H	4H	18.23	18.94	18.72	19.40	19.92	18.64	19.35	19.13	19.81	20.33
	6H	19.15	19.72	19.68	20.24	20.74	19.67	20.24	20.20	20.76	21.26
	8H	19.66	20.14	20.20	20.66	21.19	20.19	20.66	20.73	21.19	21.71
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.6					0.3/-0.6				
S = 1.5H		0.6/-0.9					0.5/-1.0				
S = 2.0H		0.9/-1.1					0.9/-1.1				
Standard tables:		BKBF					BKBF				
Uncorrected UGR		9.2					8.7				

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



Luminaire Lumens:

FL=367.36,FM=497.31,FH=129.11,FVH=19.46

BL=361.71,BM=465.1,BH=114.55,BVH=15.01

UL=2.1,UH=12.24

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	981.76	976.08	975.21	953.37	904.46	837.64	740.25	666.88	582.59
22.5	977.39	984.38	971.72	955.99	898.78	838.51	762.09	678.67	567.74
45.0	991.37	983.07	969.53	957.74	907.95	832.84	782.18	684.79	594.38
67.5	990.06	996.61	991.80	954.25	906.21	839.82	762.96	690.46	587.40
90.0	990.93	983.07	969.97	931.97	898.34	830.22	751.61	673.43	567.31
112.5	1001.41	978.70	966.47	949.88	897.04	843.32	749.86	648.10	566.87
135.0	978.70	987.44	962.11	929.79	885.24	831.53	740.25	659.89	562.94
157.5	984.38	969.09	962.54	938.09	900.53	821.04	740.25	636.75	534.55
180.0	981.76	969.53	984.82	925.42	876.07	802.27	712.74	627.14	528.00
202.5	977.39	985.25	963.85	938.52	866.03	795.28	698.32	601.37	512.72
225.0	991.37	977.83	942.89	923.24	868.65	807.94	712.74	614.04	506.17
247.5	990.06	976.08	947.26	934.16	866.90	788.73	717.98	602.24	519.70
270.0	990.93	982.20	952.94	942.45	880.88	817.11	715.79	622.33	529.75
292.5	1001.41	983.51	977.83	938.09	886.12	807.07	723.66	638.49	523.63
315.0	978.70	986.13	958.61	933.72	892.67	834.15	734.57	642.86	544.16
337.5	984.38	987.87	965.60	950.32	883.93	834.58	748.11	660.33	564.69
360.0	981.76	976.08	975.21	953.37	904.46	837.64	740.25	666.88	582.59
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	465.55	334.53	269.90	210.94	143.25	117.04	78.61	65.51	31.88
22.5	471.23	351.13	258.98	211.38	159.40	138.88	92.59	69.88	48.04
45.0	495.68	389.56	291.30	223.17	175.56	149.80	116.17	82.98	39.74
67.5	475.60	385.63	293.48	224.48	178.18	144.56	120.10	80.36	52.84
90.0	445.46	344.14	268.59	199.58	158.53	109.62	101.76	68.57	31.44
112.5	440.22	330.17	252.43	203.51	169.45	123.16	97.39	69.44	41.49
135.0	455.51	362.92	246.75	209.19	171.20	122.72	93.90	68.57	24.02
157.5	433.23	345.45	253.74	195.65	151.11	110.49	87.35	64.64	38.00
180.0	390.87	300.47	214.43	159.84	121.85	102.63	77.30	49.35	18.78
202.5	377.33	287.37	198.27	160.71	133.20	86.91	61.14	55.46	11.36
225.0	402.66	298.28	214.43	165.08	136.70	113.99	77.30	40.18	18.34
247.5	414.45	303.52	216.62	178.18	124.90	98.26	64.64	51.53	17.91
270.0	397.42	308.33	229.28	174.25	126.21	108.31	73.81	62.02	25.33
292.5	403.10	298.28	230.59	164.21	150.67	99.14	68.57	50.66	27.51
315.0	445.90	361.61	245.44	194.78	158.97	118.35	99.57	62.89	33.19
337.5	468.17	359.43	283.00	207.88	166.39	134.07	112.24	61.58	34.50
360.0	465.55	334.53	269.90	210.94	143.25	117.04	78.61	65.51	31.88
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	20.09	0.00	0.00	0.00	5.24	16.60	2.62	0.00	0.00
22.5	6.11	0.00	10.92	10.92	3.06	0.00	1.75	0.00	6.11
45.0	0.00	0.00	4.37	0.00	7.42	0.00	0.00	0.00	0.44
67.5	7.86	2.18	6.11	0.00	0.00	0.00	0.00	18.34	2.18
90.0	1.75	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00
112.5	6.11	0.87	0.00	3.49	0.00	11.79	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	0.00	0.00	5.68	2.62	0.00
157.5	0.00	8.30	10.48	4.80	0.00	0.00	10.04	10.04	13.10
180.0	0.00	0.00	2.18	0.00	0.87	2.18	0.00	6.55	0.87
202.5	0.00	0.00	3.06	0.00	9.17	1.75	0.00	4.80	0.00
225.0	0.00	0.00	0.00	0.00	2.62	6.11	1.31	0.00	5.68
247.5	7.86	0.00	0.00	3.93	8.73	0.00	0.00	0.00	0.00
270.0	0.00	0.00	0.00	0.00	10.92	0.00	0.00	0.00	0.87
292.5	0.00	0.00	7.86	3.06	2.62	0.44	0.00	5.68	22.27
315.0	4.37	0.00	0.00	0.00	10.04	0.00	1.75	0.00	0.00
337.5	0.00	0.87	0.00	0.00	0.00	7.42	0.00	0.00	5.68
360.0	20.09	0.00	0.00	0.00	5.24	16.60	2.62	0.00	0.00

Intensity data(cd)

Appendix Page: 14 Total:14

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	8.73	0.00	0.00	0.00	0.00	0.00
22.5	13.98	0.00	0.00	7.42	0.00	0.00	0.44	0.00	0.87
45.0	0.00	1.31	0.00	0.00	2.18	0.00	0.00	0.00	0.00
67.5	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.04	0.00
112.5	0.00	0.00	0.00	7.42	1.75	0.00	7.86	7.86	10.04
135.0	3.93	0.00	13.98	0.87	16.16	2.62	3.06	0.00	0.00
157.5	0.00	9.61	0.00	0.00	0.00	0.00	0.00	3.49	0.00
180.0	0.00	1.75	2.62	2.18	0.00	7.42	0.00	0.00	1.75
202.5	0.00	0.00	0.00	0.00	0.00	1.31	3.06	5.24	0.00
225.0	0.00	0.00	6.99	0.00	0.00	6.11	2.62	13.10	0.00
247.5	0.00	0.00	12.67	1.31	12.23	2.62	0.00	0.00	4.80
270.0	3.06	0.00	0.44	0.00	0.00	0.00	0.00	14.41	0.00
292.5	3.93	0.00	0.87	0.87	0.00	0.00	2.62	10.48	0.00
315.0	0.00	0.00	3.06	0.00	0.00	0.00	9.17	0.00	0.00
337.5	0.00	4.37	0.00	0.00	0.00	0.00	0.00	5.68	0.00
360.0	0.00	0.00	0.00	8.73	0.00	0.00	0.00	0.00	0.00

C/γ(°)	180.0
0.0	0.00
22.5	0.00
45.0	6.11
67.5	5.68
90.0	0.00
112.5	3.49
135.0	11.36
157.5	0.00
180.0	0.00
202.5	0.00
225.0	6.11
247.5	5.68
270.0	0.00
292.5	3.49
315.0	11.36
337.5	0.00
360.0	0.00