



SGSO

Address: LIT by CARDI

Client:

LumCAT: 0017440226 KAI 15W 4000K 1800lm

Luminaire:

Report No:

Voltage(V): 230.1700

Test No: KYZ-A251011059-03-001

Current(A): 0.0669

LampCAT: LED

Power (W): 15.0000

Lamp flux(lm): -1.0

PF: 0.9745

Number of Lamps: 1

Ballast type:

Length(mm): -175

Width(mm): -175

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1800.00

Efficiency(%): 100.00%

Lumens(lm)/Power(W): 120.00

Central intensity(cd): 860.982

Maximum intensity(cd): 869.007

Angle of maximum intensity: C=90.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=85.7

[C90/270]Total=86.4

Field angle(10%Imax): [C0/180]Total=148.4

[C90/270]Total=147.1

Maximum s/h(1/2): C0_180=1.15 C90_270=1.20

Maximum s/h(1/4): C0_180=1.19 C90_270=1.23

Up flux rate of lamp(%): 0.62%

Down flux rate of lamp(%): 99.38%

Up flux rate of LUM(%): 0.62%

Down flux rate of LUM(%): 99.38%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 86.192%

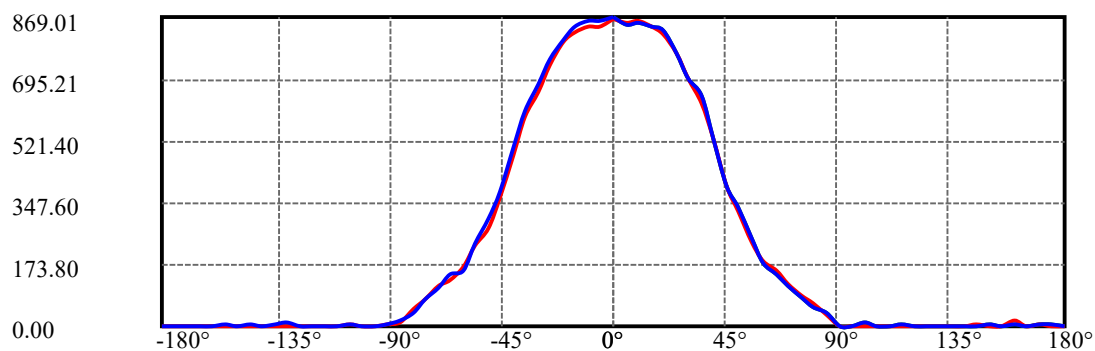
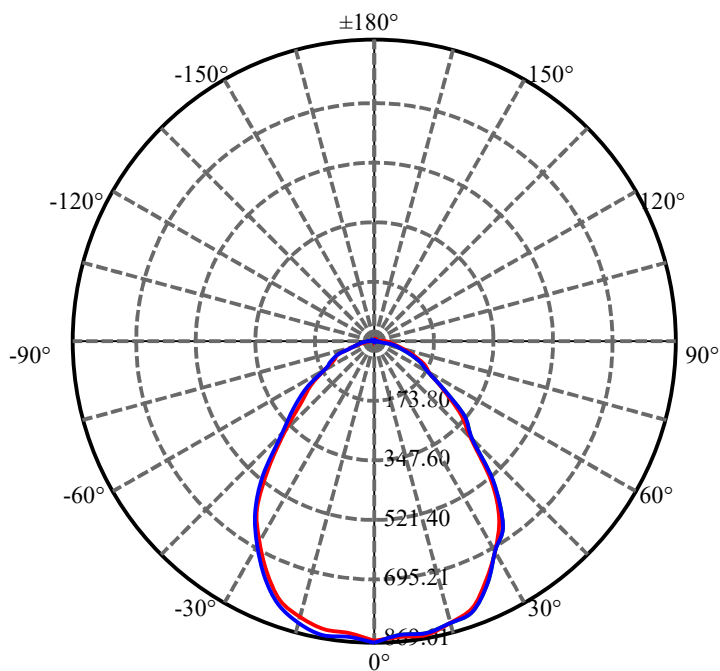
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	973.155	0.000	0	.000%	.000%
5.0	965.579	20.387	20.387	.000%	1.133%
10.0	965.796	60.775	81.162	.000%	4.509%
15.0	952.193	100.079	181.24	.000%	10.069%
20.0	914.831	135.347	316.588	.000%	17.588%
25.0	855.230	163.300	479.888	.000%	26.660%
30.0	778.470	181.860	661.748	.000%	36.764%
35.0	691.445	190.400	852.148	.000%	47.342%
40.0	582.508	186.964	1039.112	.000%	57.728%
45.0	446.147	167.537	1206.649	.000%	67.036%
50.0	340.360	139.795	1346.444	.000%	74.802%
55.0	257.354	114.319	1460.763	.000%	81.154%
60.0	188.712	90.696	1551.459	.000%	86.192%
65.0	147.684	71.935	1623.393	.000%	90.189%
70.0	117.897	59.152	1682.546	.000%	93.475%
75.0	86.672	47.035	1729.58	.000%	96.088%
80.0	57.971	34.044	1763.624	.000%	97.979%
85.0	22.944	19.340	1782.964	.000%	99.054%
90.0	1.819	5.964	1788.928	.000%	99.385%
95.0	2.851	1.125	1790.053	.000%	99.447%
100.0	2.145	1.194	1791.247	.000%	99.514%
105.0	3.991	1.444	1792.691	.000%	99.594%
110.0	1.385	1.236	1793.928	.000%	99.663%
115.0	2.607	0.889	1794.817	.000%	99.712%
120.0	0.353	0.633	1795.449	.000%	99.747%
125.0	0.787	0.232	1795.681	.000%	99.760%
130.0	1.901	0.514	1796.195	.000%	99.789%
135.0	1.846	0.666	1796.861	.000%	99.826%
140.0	0.597	0.398	1797.259	.000%	99.848%
145.0	2.227	0.414	1797.674	.000%	99.871%
150.0	1.521	0.485	1798.159	.000%	99.898%
155.0	2.145	0.408	1798.567	.000%	99.920%
160.0	3.394	0.511	1799.078	.000%	99.949%
165.0	1.602	0.362	1799.441	.000%	99.969%
170.0	4.670	0.327	1799.768	.000%	99.987%
175.0	2.009	0.210	1799.978	.000%	99.999%
180.0	0.054	0.022	1800	.000%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	661.75	N.A.	36.76%
0-40	1039.11	N.A.	57.73%
0-60	1551.46	N.A.	86.19%
0-90	1788.93	N.A.	99.38%
0-120	1795.45	N.A.	99.75%
0-180	1800.00	N.A.	100.00%
60-90	328.16	N.A.	18.23%
90-120	12.49	N.A.	0.69%
90-130	13.23	N.A.	0.74%
90-150	15.20	N.A.	0.84%
90-180	17.01	N.A.	0.95%
0-54.09	1440.00	N.A.	80.00%

ZONAL LUMEN SUMMARY

0-10	81.16
10-20	235.43
20-30	345.16
30-40	377.36
40-50	307.33
50-60	205.01
60-70	131.09
70-80	81.08
80-90	25.30
90-100	2.32
100-110	2.68
110-120	1.52
120-130	0.75
130-140	1.06
140-150	0.90
150-160	0.92
160-170	0.69
170-180	0.21



C90(Max):

C0/C180:

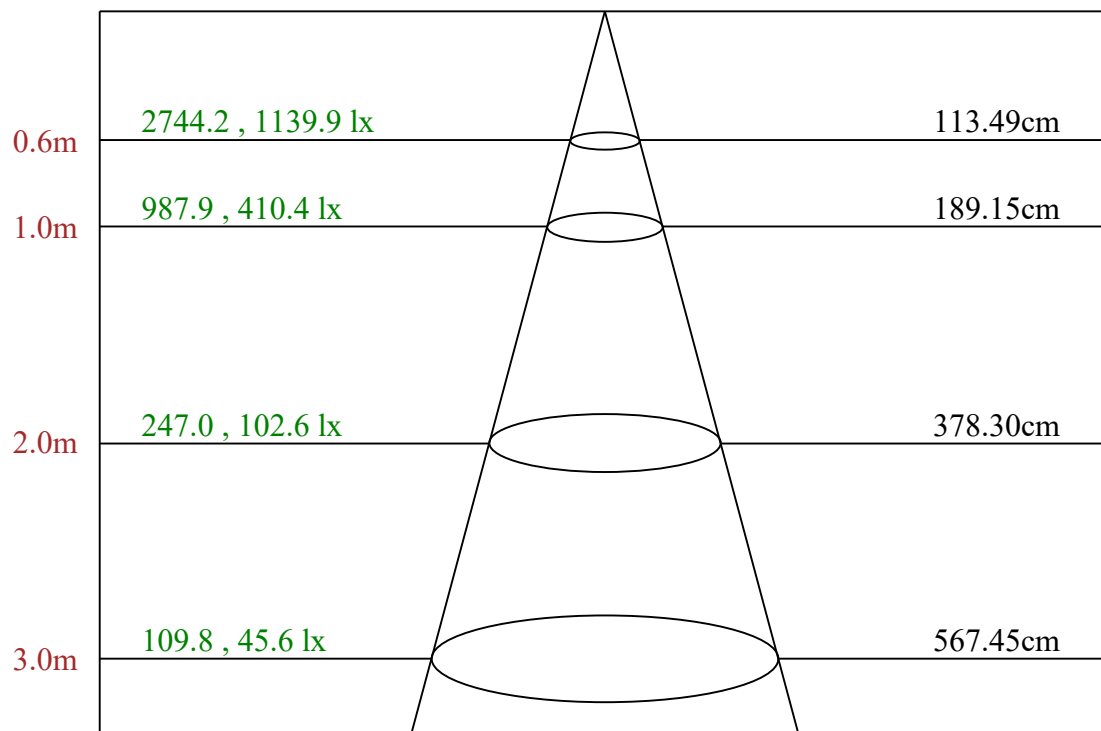
C90/C270:

Field angle(10%Imax):C0/180Left:73.7 Right:74.7

:C90/270Left:73.3 Right:73.8

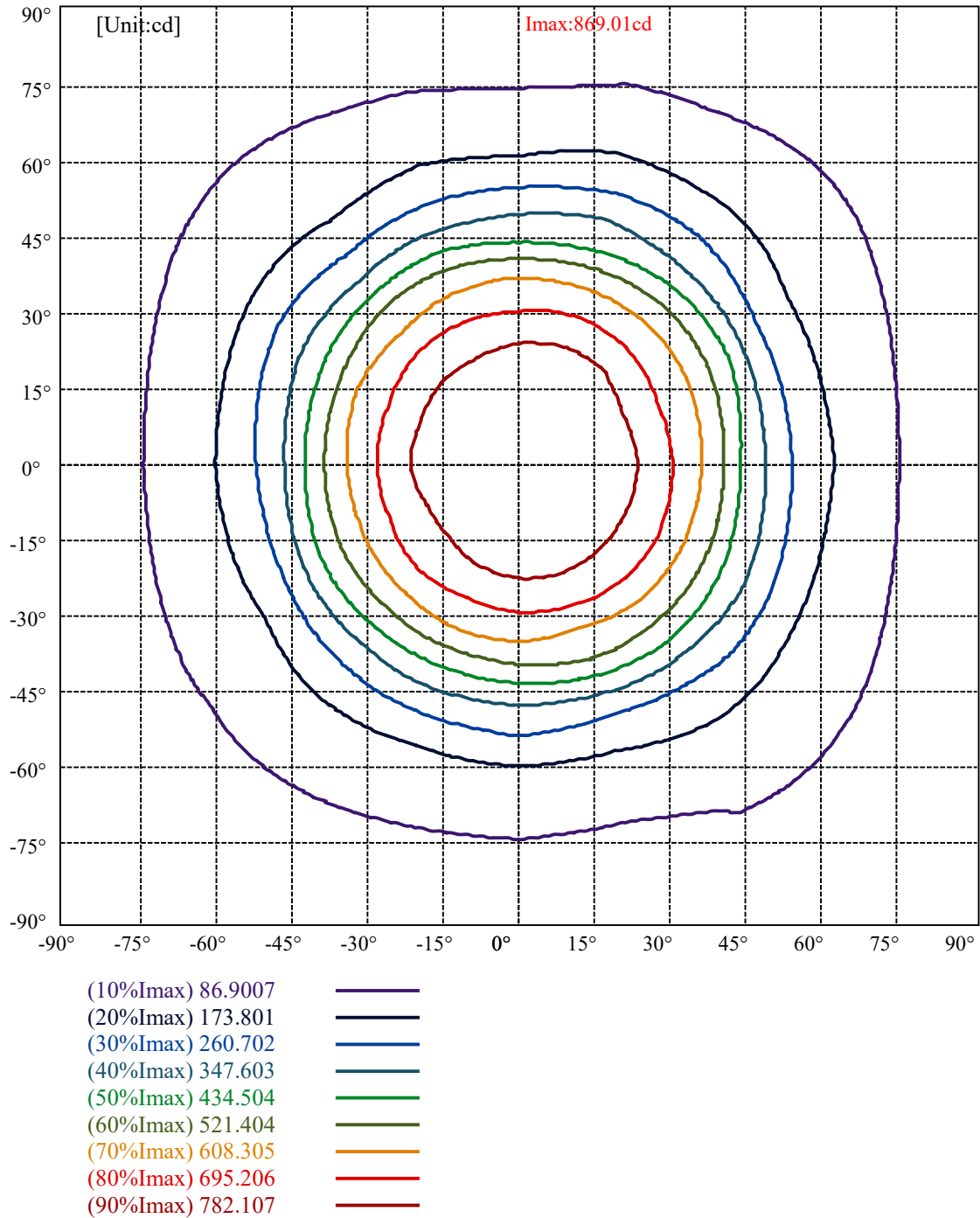
Beam Angle(50%Imax):C0/180Left:42.1 Right:43.6

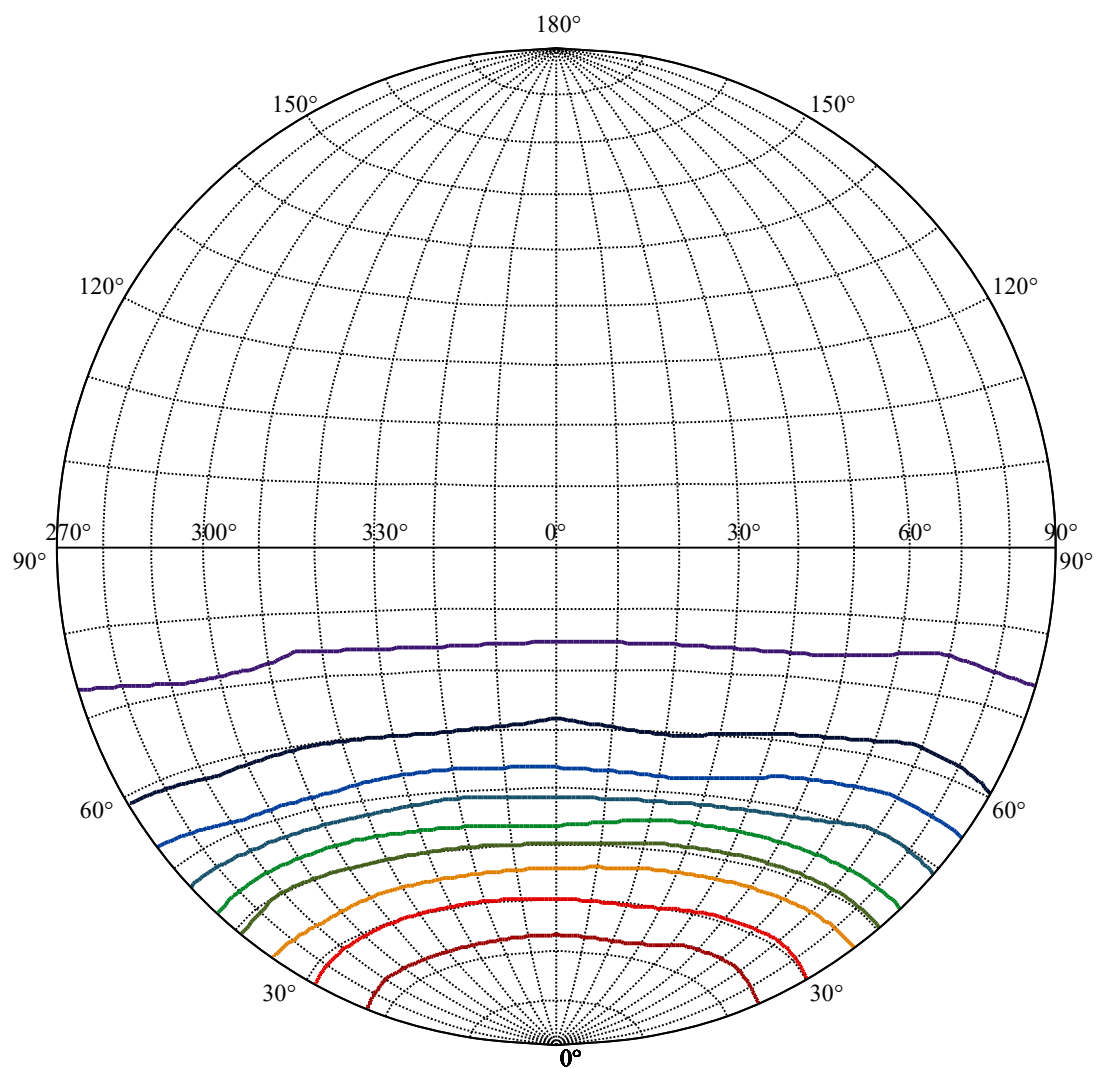
:C90/270Left:42.8 Right:43.6



Max , Ave

Beam angle of C90 plane 86.81





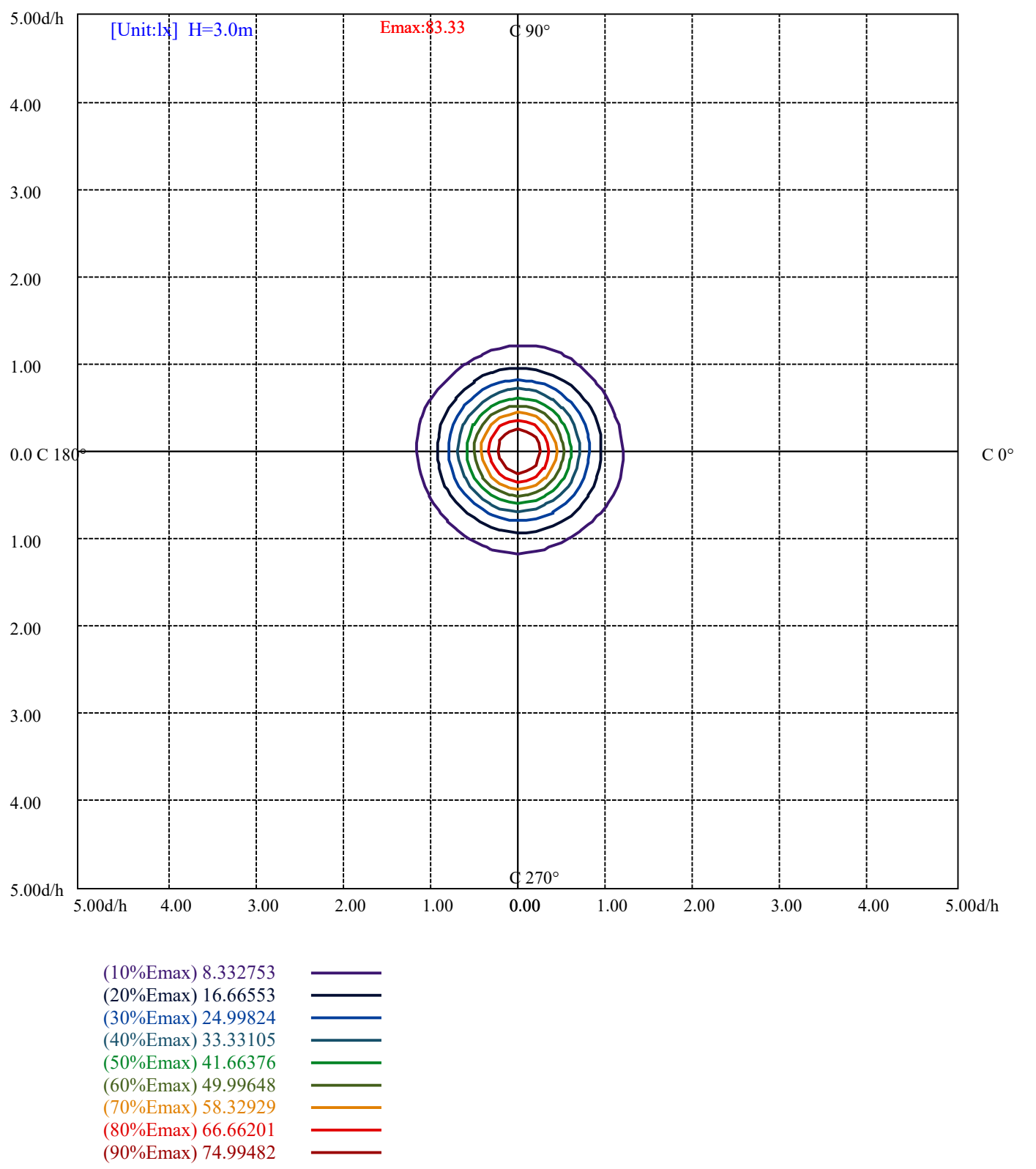
House

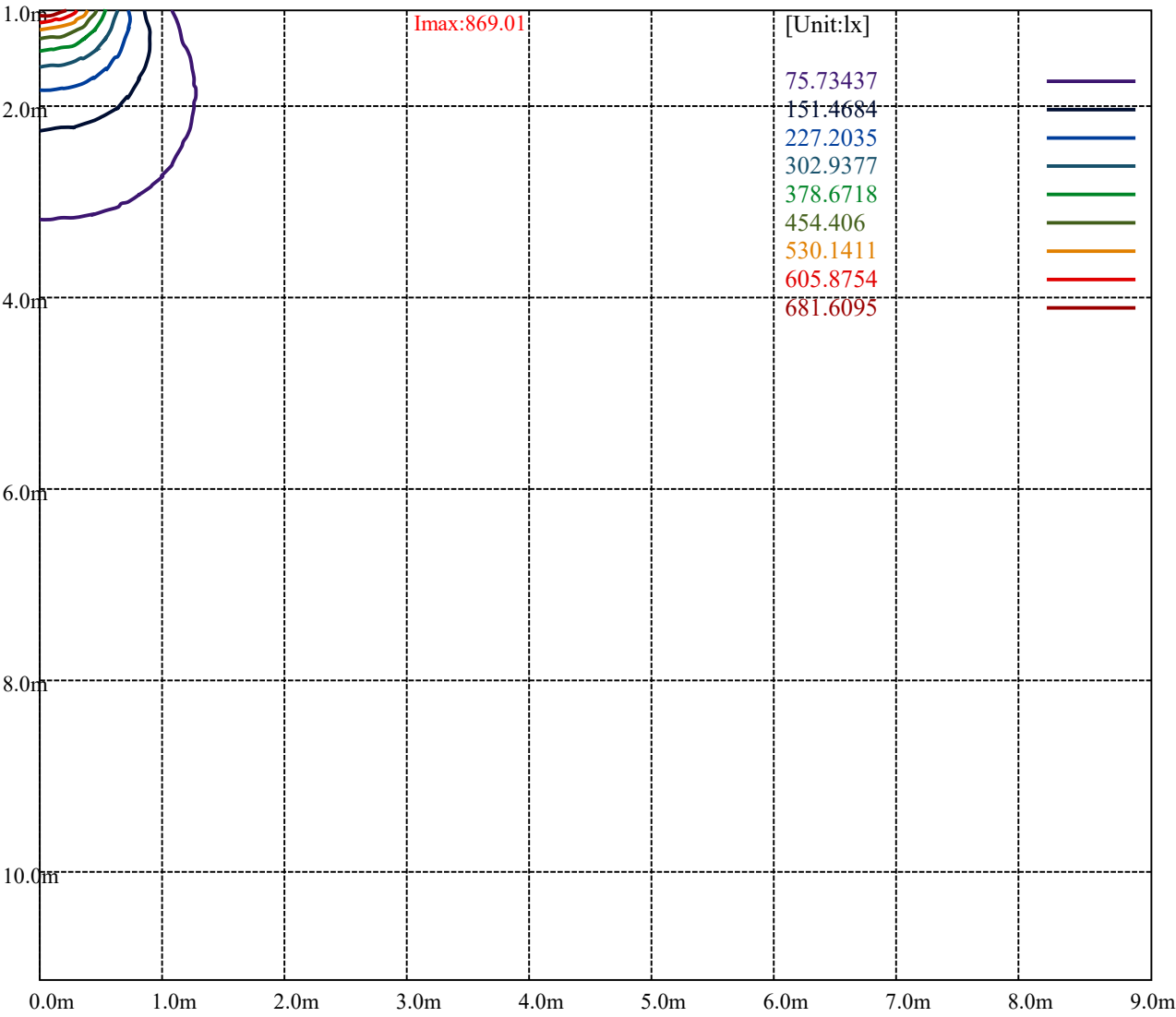
[Unit:cd]

Road

Imax:869.01
(10%Imax) 76.44028
(20%Imax) 152.8802
(30%Imax) 229.3207
(40%Imax) 305.7613
(50%Imax) 382.2018
(60%Imax) 458.6414
(70%Imax) 535.082
(80%Imax) 611.5225
(90%Imax) 687.9631







Luminance Table

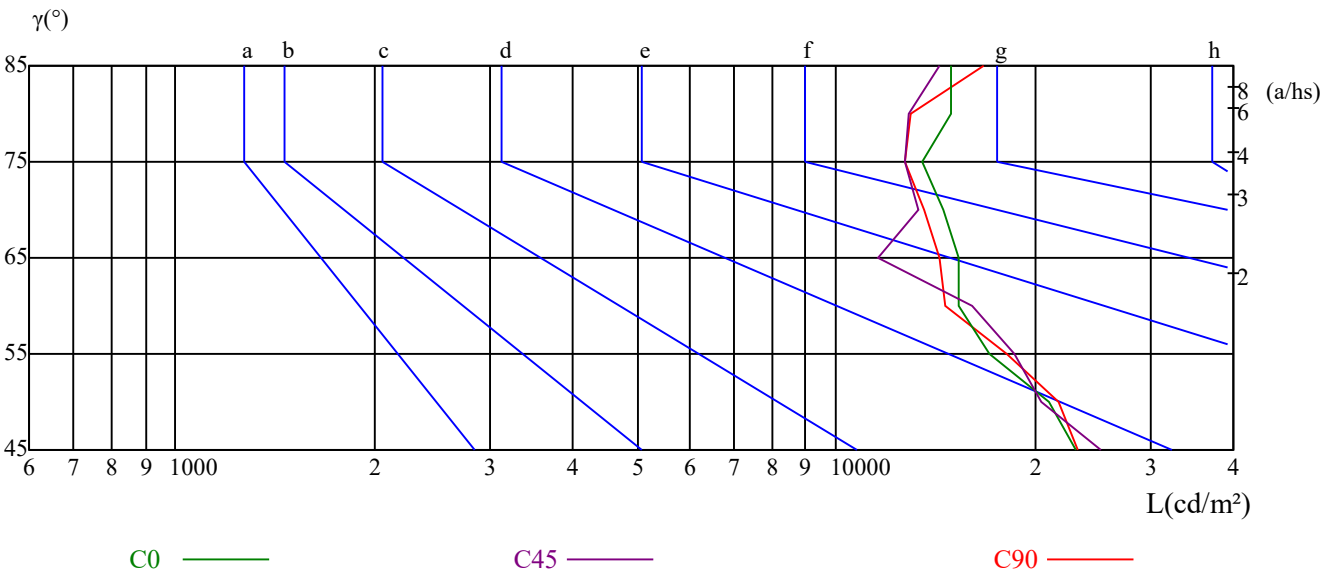
γ	45	50	55	60	65	70	75	80	85
C0	23121	21084	17063	15348	15338	14540	13505	14914	14948
C45	25278	20441	18587	16110	11579	13332	12707	12901	14401
C90	23323	21801	18143	14680	14323	13564	12707	12992	16771

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
14060	14211	11476	12922	12369	12170	9753	11849	9844

Glare Table

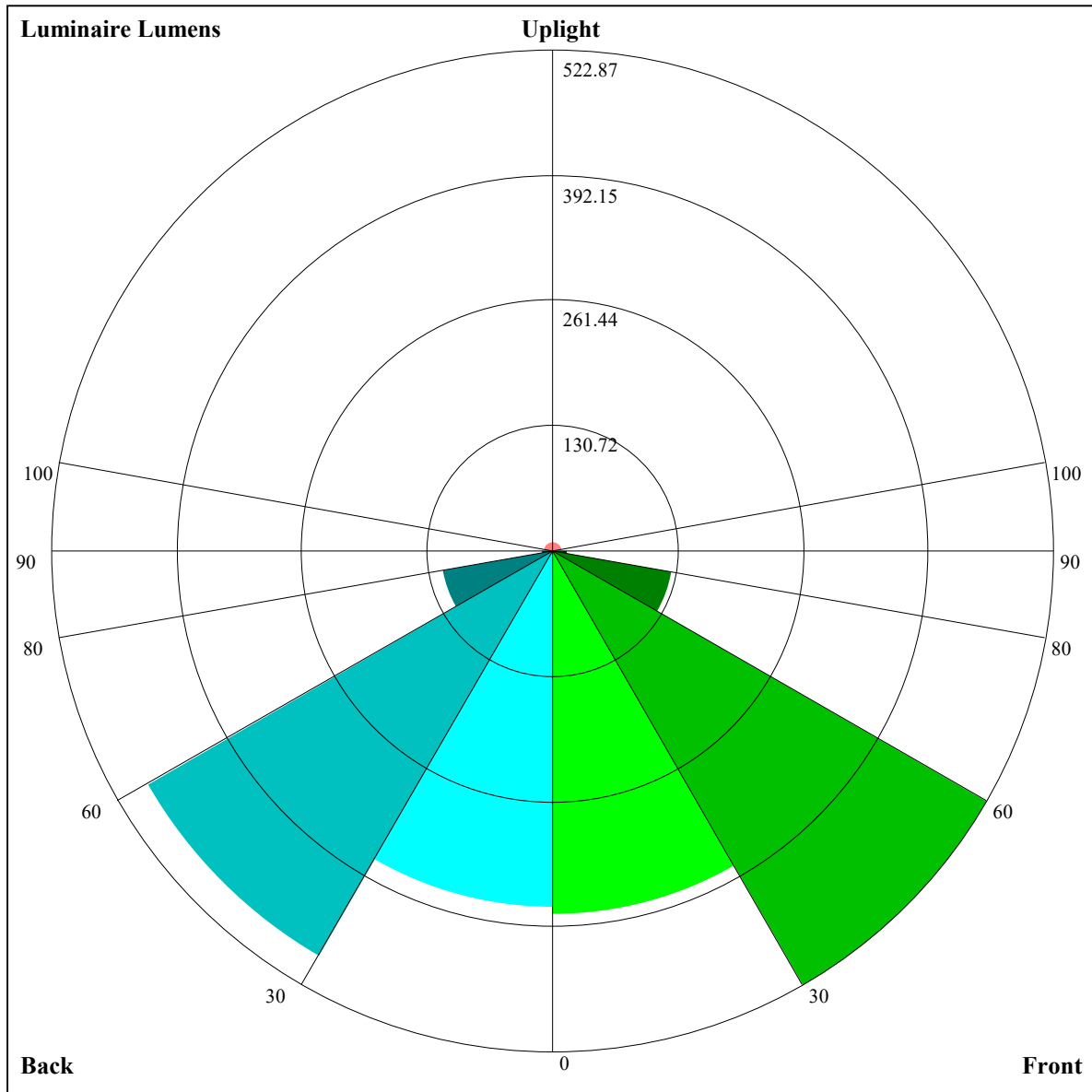
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	18.03	19.48	18.40	19.81	20.14	18.46	19.91	18.83	20.24	20.57
	3H	19.24	20.54	19.63	20.90	21.25	19.51	20.82	19.90	21.17	21.52
	4H	19.79	21.02	20.20	21.38	21.76	20.00	21.22	20.40	21.59	21.96
	6H	20.34	21.48	20.76	21.86	22.27	20.48	21.61	20.89	21.99	22.40
	8H	20.56	21.65	20.98	22.04	22.46	20.66	21.75	21.08	22.14	22.56
	12H	20.73	21.78	21.16	22.17	22.60	20.83	21.87	21.25	22.27	22.70
4H	2H	18.45	19.68	18.86	20.04	20.42	18.81	20.03	19.21	20.40	20.78
	3H	19.84	20.87	20.26	21.27	21.70	20.05	21.09	20.48	21.49	21.91
	4H	20.59	21.51	21.04	21.93	22.39	20.78	21.69	21.22	22.12	22.57
	6H	21.25	22.06	21.72	22.52	22.98	21.43	22.24	21.90	22.69	23.15
	8H	21.57	22.33	22.06	22.79	23.27	21.71	22.47	22.20	22.93	23.41
	12H	21.85	22.55	22.34	23.00	23.52	21.96	22.67	22.45	23.12	23.64
8H	4H	20.83	21.59	21.31	22.04	22.52	21.00	21.76	21.49	22.22	22.70
	6H	21.63	22.26	22.13	22.74	23.25	21.84	22.47	22.34	22.95	23.47
	8H	22.11	22.66	22.63	23.18	23.68	22.27	22.83	22.80	23.35	23.85
	12H	22.52	22.99	23.06	23.51	24.03	22.59	23.06	23.13	23.58	24.10
12H	4H	20.87	21.57	21.36	22.03	22.55	21.03	21.73	21.52	22.18	22.70
	6H	21.75	22.31	22.28	22.83	23.33	21.95	22.50	22.48	23.02	23.53
	8H	22.24	22.71	22.78	23.23	23.75	22.39	22.85	22.92	23.37	23.90
Variation with the observer position at spacings:											
S = 1.0H		0.3/-0.6					0.2/-0.6				
S = 1.5H		0.7/-1.1					0.8/-1.0				
S = 2.0H		1.3/-1.1					1.1/-1.0				
Standard tables:		BK3					BK4				
Uncorrected UGR		7.1					7.4				

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



Luminaire Lumens:

FL=379.89,FM=522.87,FH=125.86,FVH=16.47

BL=372.39,BM=489.43,BH=116.44,BVH=12.41

UL=2.64,UH=9.96

BUG Rating:B1-U1-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	860.98	854.49	859.45	842.64	818.18	764.30	697.80	624.81	526.98
22.5	860.98	854.49	858.69	849.90	813.60	755.13	689.40	636.66	544.94
45.0	852.57	831.94	854.87	855.63	801.75	780.35	705.06	637.42	547.62
67.5	851.05	855.25	857.16	841.49	817.42	781.11	709.65	639.72	541.12
90.0	869.01	847.61	855.25	843.40	830.41	767.36	696.28	646.98	530.81
112.5	846.84	861.75	860.22	837.67	812.07	750.16	692.84	619.85	530.81
135.0	858.31	851.81	844.93	841.87	803.66	742.90	684.81	589.27	515.90
157.5	848.37	849.14	856.01	821.62	791.43	742.52	661.88	603.41	481.51
180.0	860.98	843.40	840.73	823.15	796.78	735.25	661.12	589.27	477.69
202.5	860.98	836.14	827.74	809.01	779.20	717.29	666.85	568.64	485.71
225.0	852.57	845.70	829.65	826.21	775.38	740.61	664.18	567.87	466.99
247.5	851.05	850.66	846.84	833.85	796.78	732.58	664.94	595.39	470.04
270.0	869.01	857.16	859.45	841.11	805.19	752.45	677.93	602.27	502.53
292.5	846.84	849.90	849.90	840.73	809.77	760.09	686.34	586.98	526.98
315.0	858.31	848.37	840.35	850.66	810.16	755.89	695.51	607.24	520.49
337.5	848.37	851.81	851.43	842.26	813.60	758.57	701.63	615.64	528.13
360.0	860.98	854.49	859.45	842.64	818.18	764.30	697.80	624.81	526.98
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	393.23	325.97	235.40	184.58	155.92	119.61	84.07	62.29	31.34
22.5	443.29	300.75	220.12	167.76	136.04	102.42	84.45	53.88	38.21
45.0	429.92	316.04	256.42	193.75	117.70	109.68	79.10	53.88	30.19
67.5	409.66	352.72	267.50	202.92	152.86	100.51	90.19	66.88	23.69
90.0	396.67	337.06	250.31	176.55	145.60	111.59	79.10	54.27	35.16
112.5	410.43	304.95	236.93	180.37	127.64	95.54	85.60	53.12	25.60
135.0	371.45	278.20	204.45	143.31	112.35	101.27	77.96	36.69	13.76
157.5	379.47	299.60	232.73	160.88	139.10	103.56	77.19	57.32	17.20
180.0	363.04	275.53	225.85	167.00	129.93	111.59	76.81	49.68	9.55
202.5	363.42	256.80	183.05	133.37	108.91	89.42	55.79	50.44	0.00
225.0	351.96	263.30	197.19	142.16	107.77	93.63	60.38	34.78	19.49
247.5	369.54	284.32	196.04	149.80	134.90	100.89	68.40	45.09	9.55
270.0	379.09	303.04	234.64	158.59	143.31	110.44	74.90	37.07	14.52
292.5	394.00	279.73	210.18	150.19	119.23	95.54	62.29	48.92	4.20
315.0	415.40	282.41	232.35	171.58	128.78	94.39	85.60	48.92	19.11
337.5	408.52	329.79	238.84	173.11	118.47	119.23	77.96	62.67	31.34
360.0	393.23	325.97	235.40	184.58	155.92	119.61	84.07	62.29	31.34
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	0.00	0.00
22.5	0.00	0.00	0.00	0.00	7.64	0.00	0.00	1.15	0.00
45.0	0.00	0.00	4.20	0.00	2.29	0.00	0.00	7.26	0.00
67.5	6.11	0.00	9.55	0.38	6.88	0.00	0.00	0.00	0.00
90.0	0.00	0.00	13.38	0.00	0.00	6.50	0.00	0.00	0.00
112.5	0.00	6.11	0.00	0.00	0.00	0.00	0.00	0.00	1.53
135.0	0.00	6.88	0.00	10.70	0.00	2.29	0.76	0.00	0.76
157.5	0.00	0.00	0.00	16.05	0.38	4.20	0.00	0.00	0.00
180.0	3.44	0.76	0.00	8.02	1.53	2.67	1.53	1.91	0.00
202.5	7.26	0.00	0.00	10.32	0.00	11.08	0.00	0.00	0.00
225.0	0.76	0.00	3.06	0.00	0.00	0.00	2.67	0.76	1.91
247.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.06
270.0	3.06	0.00	0.00	4.20	0.00	0.00	0.00	0.00	12.61
292.5	0.00	13.38	0.00	0.00	0.00	1.91	0.00	0.00	0.00
315.0	4.97	6.50	0.00	2.67	0.76	8.02	0.00	0.00	1.53
337.5	0.00	6.50	0.00	3.82	0.00	0.00	0.00	0.00	5.35
360.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	5.35	0.00	0.38	14.14	0.00	7.64	0.00
22.5	0.00	0.00	0.00	0.00	3.44	0.00	0.00	5.35	0.00
45.0	0.00	1.15	0.00	4.97	0.00	0.00	3.06	0.00	4.59
67.5	0.00	0.00	10.70	1.91	0.00	0.00	0.00	0.00	3.82
90.0	0.00	0.00	0.00	7.64	0.00	3.44	0.00	7.64	3.06
112.5	0.00	0.00	1.91	0.00	0.00	0.00	0.00	5.35	11.85
135.0	0.00	0.00	4.20	1.53	0.00	6.88	0.00	0.00	3.06
157.5	0.00	0.00	0.00	5.35	0.00	3.82	8.02	12.99	0.00
180.0	1.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
202.5	10.32	0.00	0.00	0.00	1.53	11.08	0.00	8.02	1.91
225.0	9.94	0.00	1.53	0.00	0.00	0.00	5.73	7.26	0.00
247.5	0.00	0.76	0.00	0.00	10.70	0.76	3.82	6.50	0.00
270.0	3.82	1.15	7.64	0.00	3.82	0.00	0.00	0.00	0.00
292.5	0.00	4.20	0.00	0.00	10.32	7.64	0.00	4.97	0.00
315.0	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.00	0.00
337.5	0.00	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	0.00	0.00	5.35	0.00	0.38	14.14	0.00	7.64	0.00

C/γ(°)	180.0
0.0	0.00
22.5	0.00
45.0	0.38
67.5	0.00
90.0	0.00
112.5	0.00
135.0	0.00
157.5	0.00
180.0	0.00
202.5	0.00
225.0	0.38
247.5	0.00
270.0	0.00
292.5	0.00
315.0	0.00
337.5	0.00
360.0	0.00