
AFX

Client:

LumCAT: EMAF06LAJD1SN

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.010

LampCAT:

Current(A): 0.134

Lamp flux(lm): 1116.1

Power (W): 15.270

Number of Lamps: 1

PF: 0.948

Length(mm): -140

Width(mm): -140

Phm Type: C

Height(mm): 20

Photometric Results

Lumens(lm): 1116.14, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 73.09

Central intensity(cd): 358.408, Maximum intensity(cd): 358.408

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=107.8

[C90/270]Total=107.8

Field angle(10%Imax): [C0/180]Total=165.4

[C90/270]Total=165.4

Maximum s/h(1/2): C0_180=1.22 C90_270=1.22

Maximum s/h(1/4): C0_180=1.33 C90_270=1.33

Up flux rate of lamp(%): 10.53%

Down flux rate of lamp(%): 89.47%

Up flux rate of LUM(%): 10.53%

Down flux rate of LUM(%): 89.47%

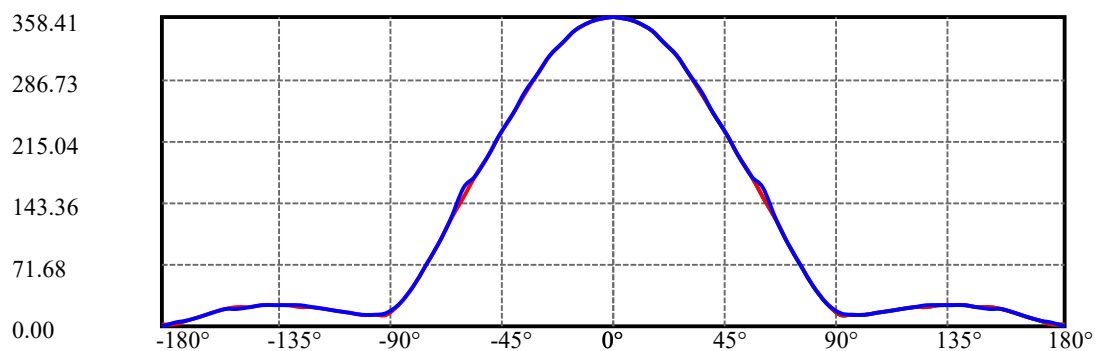
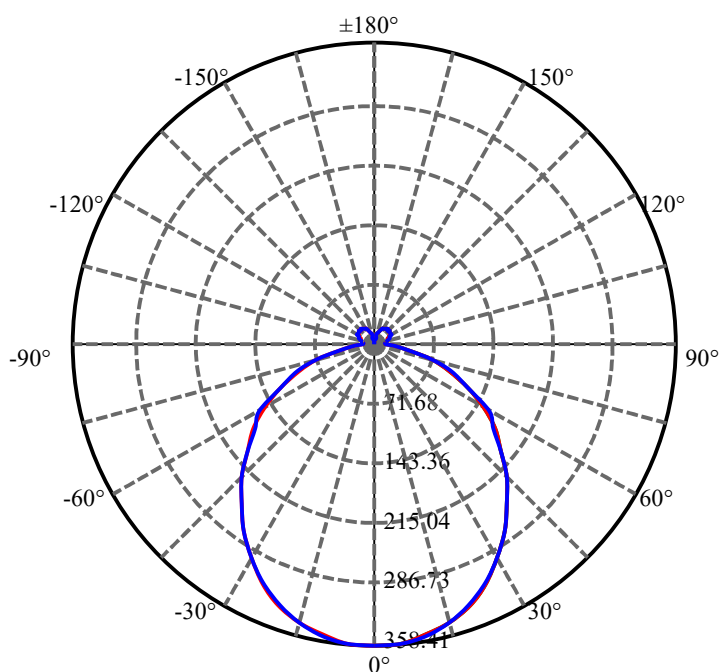
CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 69.081%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	358.408	0.000	0	0.00%	0.00%
5.0	356.539	8.547	8.547	0.77%	0.77%
10.0	351.084	25.314	33.861	2.27%	3.03%
15.0	342.306	41.131	74.992	3.69%	6.72%
20.0	329.907	55.400	130.392	4.96%	11.68%
25.0	313.079	67.437	197.829	6.04%	17.72%
30.0	293.242	76.730	274.56	6.87%	24.60%
35.0	270.197	82.970	357.53	7.43%	32.03%
40.0	247.158	86.317	443.847	7.73%	39.77%
45.0	221.932	86.856	530.703	7.78%	47.55%
50.0	197.706	84.794	615.497	7.60%	55.15%
55.0	173.743	80.765	696.262	7.24%	62.38%
60.0	149.785	74.783	771.045	6.70%	69.08%
65.0	122.694	66.240	837.285	5.93%	75.02%
70.0	95.342	55.208	892.494	4.95%	79.96%
75.0	69.970	43.210	935.704	3.87%	83.83%
80.0	47.346	31.391	967.094	2.81%	86.65%
85.0	26.636	20.103	987.197	1.80%	88.45%
90.0	15.040	11.411	998.609	1.02%	89.47%
95.0	13.581	7.837	1006.445	0.70%	90.17%
100.0	13.889	7.464	1013.91	0.67%	90.84%
105.0	15.528	7.871	1021.781	0.71%	91.55%
110.0	18.198	8.816	1030.597	0.79%	92.34%
115.0	20.411	9.776	1040.373	0.88%	93.21%
120.0	22.091	10.332	1050.705	0.93%	94.14%
125.0	23.236	10.477	1061.183	0.94%	95.08%
130.0	23.655	10.196	1071.378	0.91%	95.99%
135.0	23.770	9.583	1080.961	0.86%	96.85%
140.0	23.310	8.717	1089.679	0.78%	97.63%
145.0	22.663	7.670	1097.349	0.69%	98.32%
150.0	21.328	6.478	1103.827	0.58%	98.90%
155.0	18.924	5.094	1108.921	0.46%	99.35%
160.0	15.376	3.597	1112.518	0.32%	99.68%
165.0	10.989	2.173	1114.691	0.19%	99.87%
170.0	6.563	1.041	1115.733	0.09%	99.96%
175.0	3.397	0.356	1116.089	0.03%	100.00%
180.0	1.107	0.054	1116.143	0.00%	100.00%

ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	274.56	24.60%	24.60%
0-40	443.85	39.77%	39.77%
0-60	771.05	69.08%	69.08%
0-90	998.61	89.47%	89.47%
0-120	1050.71	94.14%	94.14%
0-180	1116.14	100.00%	100.00%
60-90	227.56	20.39%	20.39%
90-120	52.10	4.67%	4.67%
90-130	72.77	6.52%	6.52%
90-150	105.22	9.43%	9.43%
90-180	117.48	10.53%	10.53%
0-70.05	892.91	80.00%	80.00%

ZONAL LUMEN SUMMARY	
0-10	33.86
10-20	96.53
20-30	144.17
30-40	169.29
40-50	171.65
50-60	155.55
60-70	121.45
70-80	74.60
80-90	31.51
90-100	15.30
100-110	16.69
110-120	20.11
120-130	20.67
130-140	18.30
140-150	14.15
150-160	8.69
160-170	3.21
170-180	0.36



C0(Max):

C0/C180:

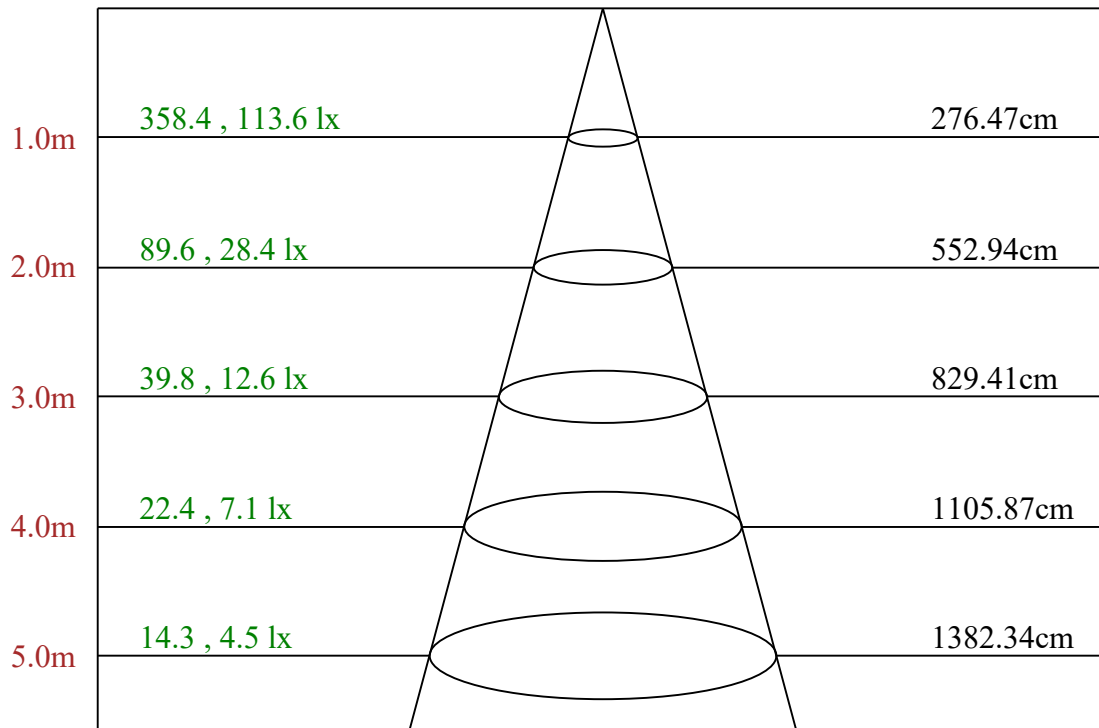
C90/C270:

Field angle(10%Imax):C0/180Left:82.7 Right:82.7

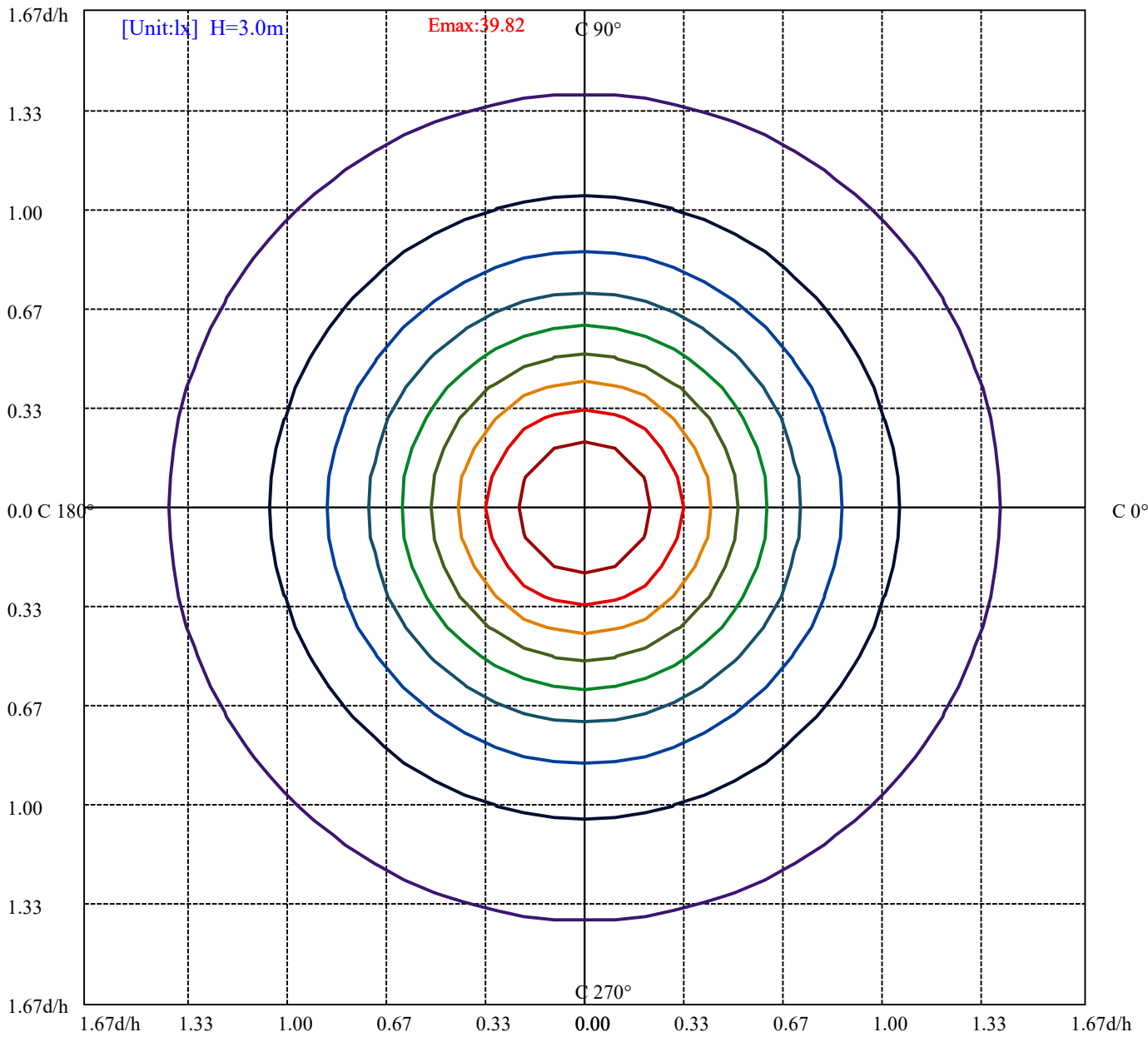
:C90/270Left:82.7 Right:82.7

Beam Angle(50%Imax):C0/180Left:53.9 Right:53.9

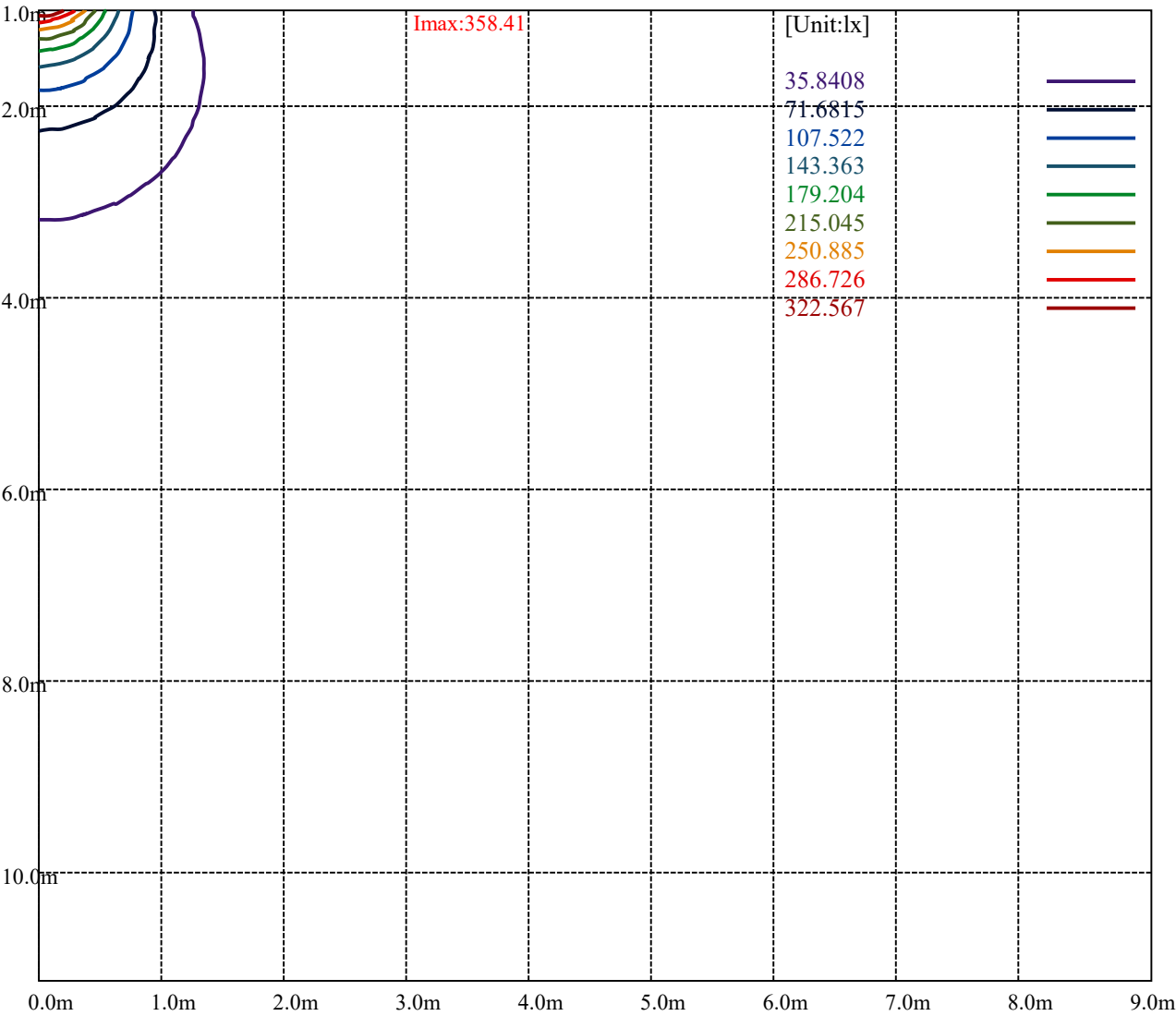
:C90/270Left:53.9 Right:53.9



Max , Ave Beam angle of C0 plane 108.24



(10%Emax)	3.982311	
(20%Emax)	7.964612	
(30%Emax)	11.94689	
(40%Emax)	15.92922	
(50%Emax)	19.91155	
(60%Emax)	23.89389	
(70%Emax)	27.87611	
(80%Emax)	31.85845	
(90%Emax)	35.84077	



Luminance Limiting Curve(no luminous side)

Appendix Page: 8 Total:12

Luminance Table

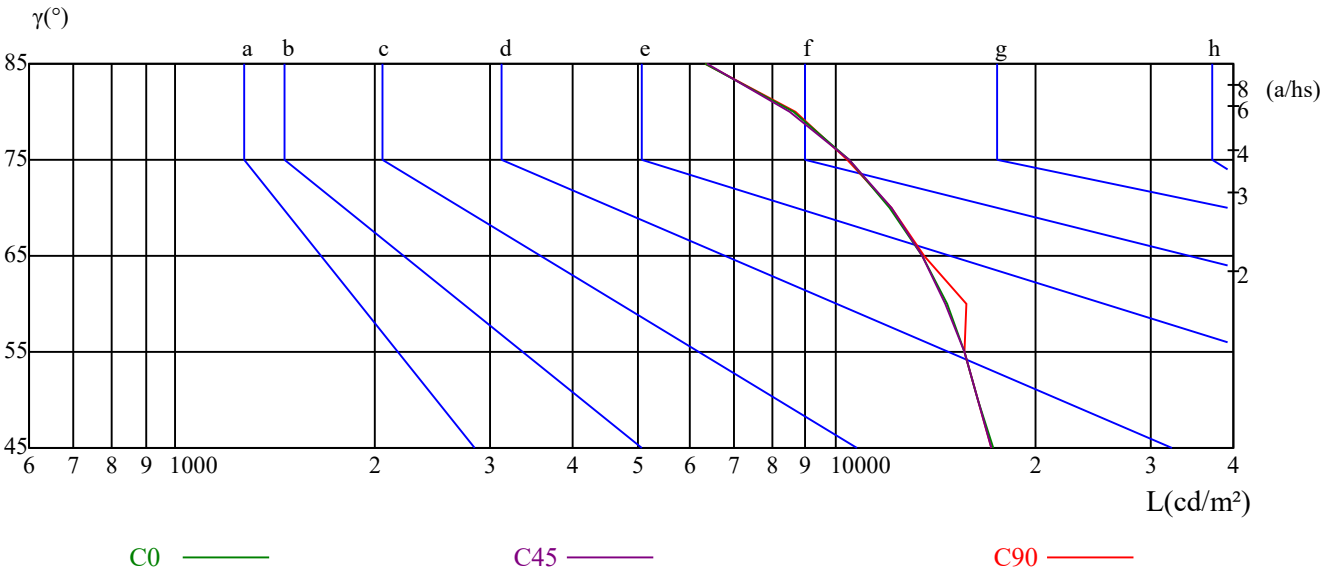
γ	45	50	55	60	65	70	75	80	85
C0	17333	16384	15664	14761	13527	12062	10460	8645	6338
C45	17242	16407	15616	14693	13556	12102	10483	8524	6381
C90	17251	16411	15656	15753	13617	12162	10442	8715	6340

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
18803	18929	18844	17561	17530	17600	19514	19522	19648

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



RHOC	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	1.17	1.17	1.17	1.13	1.13	1.13	1.05	1.05	1.05	0.99	0.99	0.99	0.92	0.92	0.92	0.89
1	1.01	0.97	0.93	0.98	0.94	0.90	0.91	0.88	0.85	0.86	0.83	0.81	0.81	0.79	0.77	0.74
2	0.88	0.81	0.75	0.85	0.79	0.73	0.80	0.75	0.70	0.75	0.71	0.67	0.70	0.67	0.64	0.61
3	0.77	0.69	0.62	0.75	0.67	0.61	0.70	0.64	0.59	0.66	0.61	0.56	0.62	0.58	0.54	0.52
4	0.68	0.60	0.53	0.66	0.58	0.52	0.62	0.55	0.50	0.59	0.53	0.48	0.56	0.51	0.47	0.44
5	0.61	0.52	0.45	0.59	0.51	0.45	0.56	0.49	0.43	0.53	0.47	0.42	0.50	0.45	0.40	0.38
6	0.55	0.46	0.40	0.53	0.45	0.39	0.50	0.43	0.38	0.48	0.42	0.37	0.45	0.40	0.36	0.33
7	0.50	0.41	0.35	0.48	0.40	0.34	0.46	0.39	0.34	0.44	0.37	0.33	0.41	0.36	0.32	0.29
8	0.45	0.37	0.31	0.44	0.36	0.31	0.42	0.35	0.30	0.40	0.34	0.29	0.38	0.32	0.28	0.26
9	0.42	0.33	0.28	0.41	0.33	0.28	0.39	0.32	0.27	0.37	0.31	0.26	0.35	0.30	0.26	0.24
10	0.38	0.31	0.25	0.37	0.30	0.25	0.36	0.29	0.24	0.34	0.28	0.24	0.33	0.27	0.23	0.21

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	358.41	356.60	352.09	343.06	331.32	315.07	295.21	272.64	248.27
15.0	358.41	355.69	350.26	342.12	329.45	314.06	293.24	271.52	247.99
30.0	358.41	355.69	349.33	341.17	328.46	312.13	292.17	269.49	245.89
45.0	358.41	355.68	350.22	340.21	328.39	312.01	292.00	270.17	246.52
60.0	358.41	356.58	350.18	341.95	329.15	312.69	293.49	270.63	246.86
75.0	358.41	356.58	350.18	341.04	329.15	312.69	293.49	269.72	247.78
90.0	358.41	356.57	351.97	341.87	330.84	315.21	295.00	273.86	249.05
105.0	358.41	357.49	352.88	343.67	332.61	316.03	298.52	275.49	252.45
120.0	358.41	358.41	353.79	345.48	334.39	318.69	300.21	278.04	254.03
135.0	358.41	358.41	353.79	346.40	336.24	319.61	301.14	279.89	256.80
150.0	358.41	357.48	353.79	347.32	326.08	322.38	304.83	282.66	258.64
165.0	358.41	357.48	355.64	348.25	338.09	323.31	306.68	284.51	259.57
180.0	358.41	356.60	350.28	342.16	329.52	312.37	292.50	268.13	244.66
195.0	358.41	356.60	351.17	343.02	330.35	314.06	293.24	269.71	245.27
210.0	358.41	356.59	351.15	342.98	330.28	313.95	293.08	271.30	246.80
225.0	358.41	356.59	351.13	343.85	331.12	313.83	293.82	271.08	246.52
240.0	358.41	357.49	352.92	344.69	331.89	314.52	294.41	269.72	246.86
255.0	358.41	356.58	351.09	342.86	330.98	312.69	292.58	268.81	244.12
270.0	358.41	356.57	351.97	342.78	329.92	311.54	291.32	267.43	243.53
285.0	358.41	357.49	350.12	341.82	328.00	309.58	289.31	265.35	261.67
300.0	358.41	356.56	350.09	339.93	337.16	308.53	286.36	262.34	237.40
315.0	358.41	355.64	349.17	338.09	324.23	304.83	284.51	259.57	235.55
330.0	358.41	354.71	346.40	336.24	321.46	302.98	281.74	256.80	233.70
345.0	358.41	352.87	346.40	334.39	318.69	301.14	278.97	255.87	231.86
360.0	358.41	356.60	352.09	343.06	331.32	315.07	295.21	272.64	248.27
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	225.70	199.52	177.85	152.57	124.59	96.60	71.32	46.95	26.18
15.0	223.55	200.02	176.49	151.15	125.80	95.94	70.60	46.16	25.34
30.0	222.30	200.53	176.94	152.44	126.12	97.09	70.77	47.18	26.31
45.0	222.87	199.22	176.47	152.82	127.35	98.24	72.77	48.21	26.38
60.0	224.00	199.32	178.29	154.52	128.92	100.57	74.06	50.29	27.43
75.0	224.00	200.23	177.38	154.52	129.83	101.49	75.89	52.12	30.17
90.0	225.15	201.26	179.20	156.23	131.42	104.77	78.11	55.14	32.16
105.0	227.57	203.62	179.66	156.63	133.60	105.96	81.08	56.20	34.09
120.0	230.93	205.07	181.97	158.88	133.94	108.08	82.21	58.20	36.95
135.0	231.86	207.84	183.82	159.81	134.86	110.85	84.98	60.04	37.87
150.0	233.70	209.69	186.59	162.58	137.64	111.77	85.91	61.89	40.64
165.0	236.48	212.46	187.52	163.50	138.56	113.62	87.75	63.74	41.57
180.0	220.28	195.00	170.63	146.25	120.07	93.89	68.61	46.95	26.18
195.0	219.93	195.50	171.96	146.62	121.28	95.03	69.69	47.06	26.25
210.0	221.40	196.90	171.49	146.99	120.68	93.46	69.87	45.37	26.31
225.0	221.96	196.49	172.84	147.37	120.08	93.70	68.22	44.57	24.56
240.0	221.26	197.49	171.89	146.29	118.86	91.43	66.74	43.89	23.77
255.0	219.43	195.66	170.06	145.37	117.95	89.60	64.00	58.52	21.94
270.0	218.72	193.91	169.09	162.66	114.87	87.30	61.57	39.52	20.22
285.0	216.52	191.64	165.84	140.05	113.33	83.84	59.89	36.85	19.35
300.0	213.38	190.29	164.42	138.56	109.92	82.21	56.35	34.18	17.55
315.0	210.61	186.59	161.65	134.86	108.08	79.44	54.50	32.33	16.63
330.0	207.84	184.75	159.81	133.02	104.38	76.67	52.65	30.48	15.70
345.0	206.92	181.97	157.96	131.17	102.53	76.67	51.73	30.48	15.70
360.0	225.70	199.52	177.85	152.57	124.59	96.60	71.32	46.95	26.18

Intensity data(cd)

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	13.54	13.54	13.54	15.35	17.15	19.86	21.67	22.57	23.47
15.0	13.58	13.58	13.58	15.39	18.10	19.91	21.72	22.63	23.53
30.0	13.61	13.61	13.61	15.43	18.15	19.96	21.78	22.68	23.59
45.0	13.64	13.64	13.64	15.46	18.19	20.01	21.83	23.65	23.65
60.0	14.63	13.71	13.71	15.54	18.29	20.11	21.94	23.77	23.77
75.0	14.63	13.71	13.71	14.63	18.29	21.03	22.86	23.77	24.69
90.0	15.62	13.78	13.78	14.70	18.38	20.22	22.97	23.89	24.81
105.0	16.58	12.90	13.82	14.74	17.51	20.27	22.11	23.96	24.88
120.0	18.47	12.93	13.86	14.78	17.55	20.32	22.17	24.02	24.94
135.0	19.40	12.93	13.86	14.78	16.63	19.40	22.17	24.02	24.02
150.0	20.32	12.93	13.86	13.86	16.63	19.40	22.17	23.09	24.02
165.0	21.25	12.93	13.86	13.86	16.63	19.40	21.25	23.09	24.02
180.0	14.44	14.44	14.44	16.25	18.96	21.67	22.57	23.47	24.38
195.0	14.48	13.58	13.58	15.39	19.01	20.82	22.63	23.53	23.53
210.0	14.52	13.61	13.61	15.43	18.15	20.87	21.78	22.68	23.59
225.0	14.55	13.64	13.64	15.46	18.19	20.92	20.92	22.74	22.74
240.0	13.71	13.71	13.71	15.54	18.29	20.11	21.94	22.86	22.86
255.0	13.71	13.71	13.71	15.54	18.29	20.11	21.94	22.86	22.86
270.0	13.78	13.78	13.78	16.54	18.38	20.22	22.06	22.97	22.97
285.0	12.90	13.82	13.82	16.58	18.43	20.27	22.11	23.03	23.03
300.0	13.86	13.86	13.86	16.63	19.40	21.25	22.17	23.09	23.09
315.0	13.86	13.86	14.78	16.63	19.40	21.25	22.17	23.09	23.09
330.0	12.93	13.86	14.78	16.63	19.40	21.25	22.17	23.09	23.09
345.0	12.93	13.86	14.78	17.55	19.40	21.25	23.09	23.09	23.09
360.0	13.54	13.54	13.54	15.35	17.15	19.86	21.67	22.57	23.47
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	23.47	23.47	22.57	20.76	18.96	16.25	11.74	7.22	3.61
15.0	23.53	23.53	22.63	20.82	19.01	15.39	11.77	7.24	3.62
30.0	23.59	23.59	22.68	20.87	19.05	15.43	11.80	7.26	3.63
45.0	23.65	23.65	22.74	21.83	19.10	15.46	11.83	7.28	3.64
60.0	23.77	23.77	22.86	21.94	20.11	15.54	11.89	7.31	3.66
75.0	24.69	23.77	22.86	21.94	20.11	16.46	11.89	8.23	3.66
90.0	24.81	23.89	23.89	22.06	20.22	16.54	12.87	8.27	4.59
105.0	24.88	23.96	23.96	23.03	20.27	17.51	13.82	9.21	4.61
120.0	24.94	24.94	24.02	23.09	21.25	17.55	13.86	9.24	5.54
135.0	24.94	24.02	24.02	23.09	20.32	18.47	13.86	9.24	5.54
150.0	24.94	24.02	24.02	23.09	21.25	16.63	13.86	8.31	5.54
165.0	24.02	24.02	24.02	23.09	21.25	18.47	12.93	9.24	5.54
180.0	24.38	23.47	22.57	21.67	18.96	13.54	9.93	5.42	2.71
195.0	23.53	23.53	22.63	21.72	18.10	17.20	9.05	5.43	2.72
210.0	23.59	23.59	22.68	20.87	19.05	14.52	9.98	5.44	2.72
225.0	23.65	22.74	22.74	20.92	18.19	14.55	10.01	5.46	2.73
240.0	22.86	22.86	21.94	21.03	18.29	14.63	10.06	5.49	2.74
255.0	22.86	22.86	21.94	21.03	18.29	14.63	10.06	5.49	2.74
270.0	22.97	22.97	22.06	20.22	18.38	14.70	10.11	5.51	2.76
285.0	23.03	22.11	22.11	20.27	17.51	13.82	9.21	4.61	1.84
300.0	23.09	22.17	21.25	20.32	17.55	13.86	9.24	4.62	1.85
315.0	23.09	22.17	21.25	19.40	16.63	12.93	8.31	4.62	1.85
330.0	23.09	22.17	21.25	19.40	16.63	12.93	8.31	3.69	1.85
345.0	23.09	22.17	21.25	19.40	15.70	12.01	7.39	3.69	1.85
360.0	23.47	23.47	22.57	20.76	18.96	16.25	11.74	7.22	3.61

Intensity data(cd)

Appendix Page: 12 Total:12

C/ γ (°)	180.0
0.0	2.71
15.0	1.81
30.0	1.81
45.0	1.82
60.0	1.83
75.0	1.83
90.0	1.84
105.0	1.84
120.0	2.77
135.0	2.77
150.0	2.77
165.0	2.77
180.0	0.00
195.0	0.00
210.0	0.00
225.0	0.00
240.0	0.00
255.0	0.00
270.0	0.00
285.0	0.00
300.0	0.00
315.0	0.00
330.0	0.00
345.0	0.00
360.0	2.71