
AFX

Client:

LumCAT: ELZV2402LAJD4LB

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.990

LampCAT:

Current(A): 0.141

Lamp flux(lm): 1370.2

Power (W): 16.670

Number of Lamps: 1

PF: 0.986

Length(mm): 600

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1370.22, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 82.20

Central intensity(cd): 333.677, Maximum intensity(cd): 394.428

Angle of maximum intensity: C=90.0 γ =30.0

Beam Angle(50%Imax): [C0/180]Total=108.4

[C90/270]Total=121.7

Field angle(10%Imax): [C0/180]Total=159.8

[C90/270]Total=233.4

Maximum s/h(1/2): C0_180=1.23 C90_270=1.74

Maximum s/h(1/4): C0_180=1.35 C90_270=1.84

Up flux rate of lamp(%): 15.81%

Down flux rate of lamp(%): 84.19%

Up flux rate of LUM(%): 15.81%

Down flux rate of LUM(%): 84.19%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 56.423%

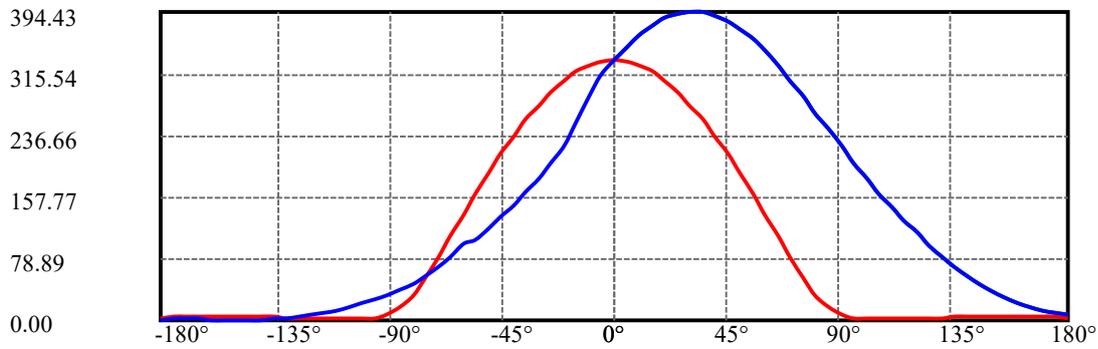
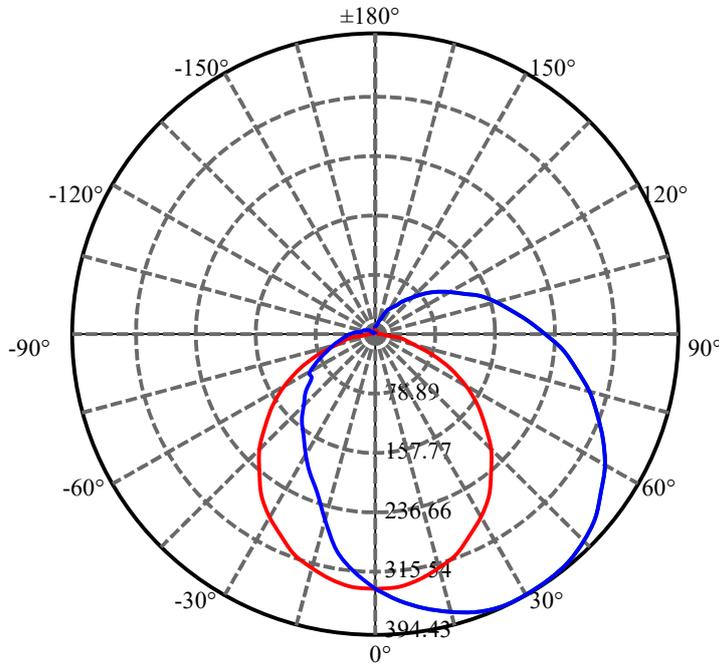
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	333.677	0.000	0	0.00%	0.00%
5.0	331.368	7.950	7.95	0.58%	0.58%
10.0	325.685	23.505	31.455	1.72%	2.30%
15.0	316.221	38.077	69.533	2.78%	5.07%
20.0	305.122	51.207	120.74	3.74%	8.81%
25.0	291.602	62.585	183.325	4.57%	13.38%
30.0	277.973	72.080	255.405	5.26%	18.64%
35.0	263.406	79.722	335.127	5.82%	24.46%
40.0	248.171	85.353	420.48	6.23%	30.69%
45.0	230.763	88.679	509.159	6.47%	37.16%
50.0	213.061	89.681	598.84	6.55%	43.70%
55.0	194.494	88.616	687.456	6.47%	50.17%
60.0	176.126	85.668	773.124	6.25%	56.42%
65.0	156.849	80.947	854.07	5.91%	62.33%
70.0	138.204	74.709	928.779	5.45%	67.78%
75.0	120.121	67.522	996.302	4.93%	72.71%
80.0	103.532	59.843	1056.145	4.37%	77.08%
85.0	88.876	52.282	1108.427	3.82%	80.89%
90.0	76.011	45.147	1153.574	3.29%	84.19%
95.0	65.235	38.674	1192.248	2.82%	87.01%
100.0	56.734	33.142	1225.39	2.42%	89.43%
105.0	49.093	28.316	1253.707	2.07%	91.50%
110.0	42.463	23.931	1277.638	1.75%	93.24%
115.0	36.767	20.061	1297.699	1.46%	94.71%
120.0	31.669	16.637	1314.336	1.21%	95.92%
125.0	27.021	13.566	1327.902	0.99%	96.91%
130.0	22.823	10.838	1338.74	0.79%	97.70%
135.0	19.373	8.526	1347.266	0.62%	98.32%
140.0	16.223	6.591	1353.857	0.48%	98.81%
145.0	13.934	5.032	1358.889	0.37%	99.17%
150.0	11.834	3.795	1362.683	0.28%	99.45%
155.0	10.107	2.777	1365.46	0.20%	99.65%
160.0	8.721	1.975	1367.435	0.14%	99.80%
165.0	7.632	1.348	1368.783	0.10%	99.89%
170.0	6.807	0.857	1369.639	0.06%	99.96%
175.0	6.320	0.470	1370.109	0.03%	99.99%
180.0	3.216	0.114	1370.223	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	255.41	18.64%	18.64%
0-40	420.48	30.69%	30.69%
0-60	773.12	56.42%	56.42%
0-90	1153.57	84.19%	84.19%
0-120	1314.34	95.92%	95.92%
0-180	1370.22	100.00%	100.00%
60-90	380.45	27.77%	27.77%
90-120	160.76	11.73%	11.73%
90-130	185.17	13.51%	13.51%
90-150	209.11	15.26%	15.26%
90-180	216.53	15.80%	15.80%
0-83.83	1096.18	80.00%	80.00%

ZONAL LUMEN SUMMARY

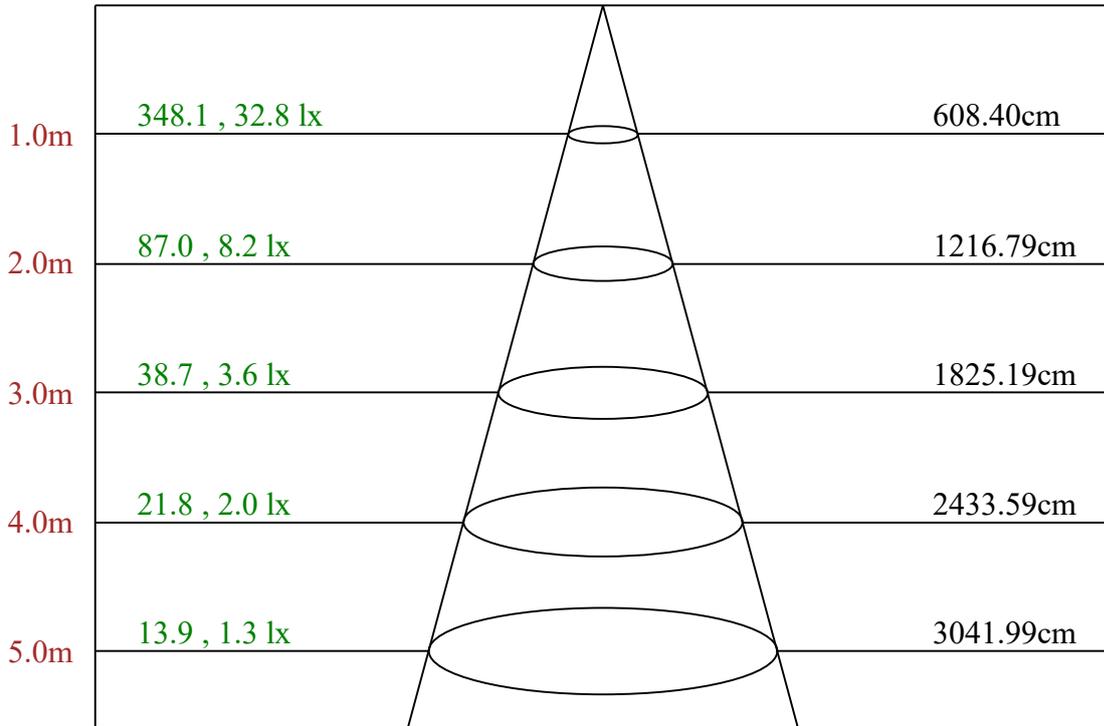
0-10	31.46
10-20	89.28
20-30	134.67
30-40	165.07
40-50	178.36
50-60	174.28
60-70	155.66
70-80	127.37
80-90	97.43
90-100	71.82
100-110	52.25
110-120	36.70
120-130	24.40
130-140	15.12
140-150	8.83
150-160	4.75
160-170	2.20
170-180	0.47



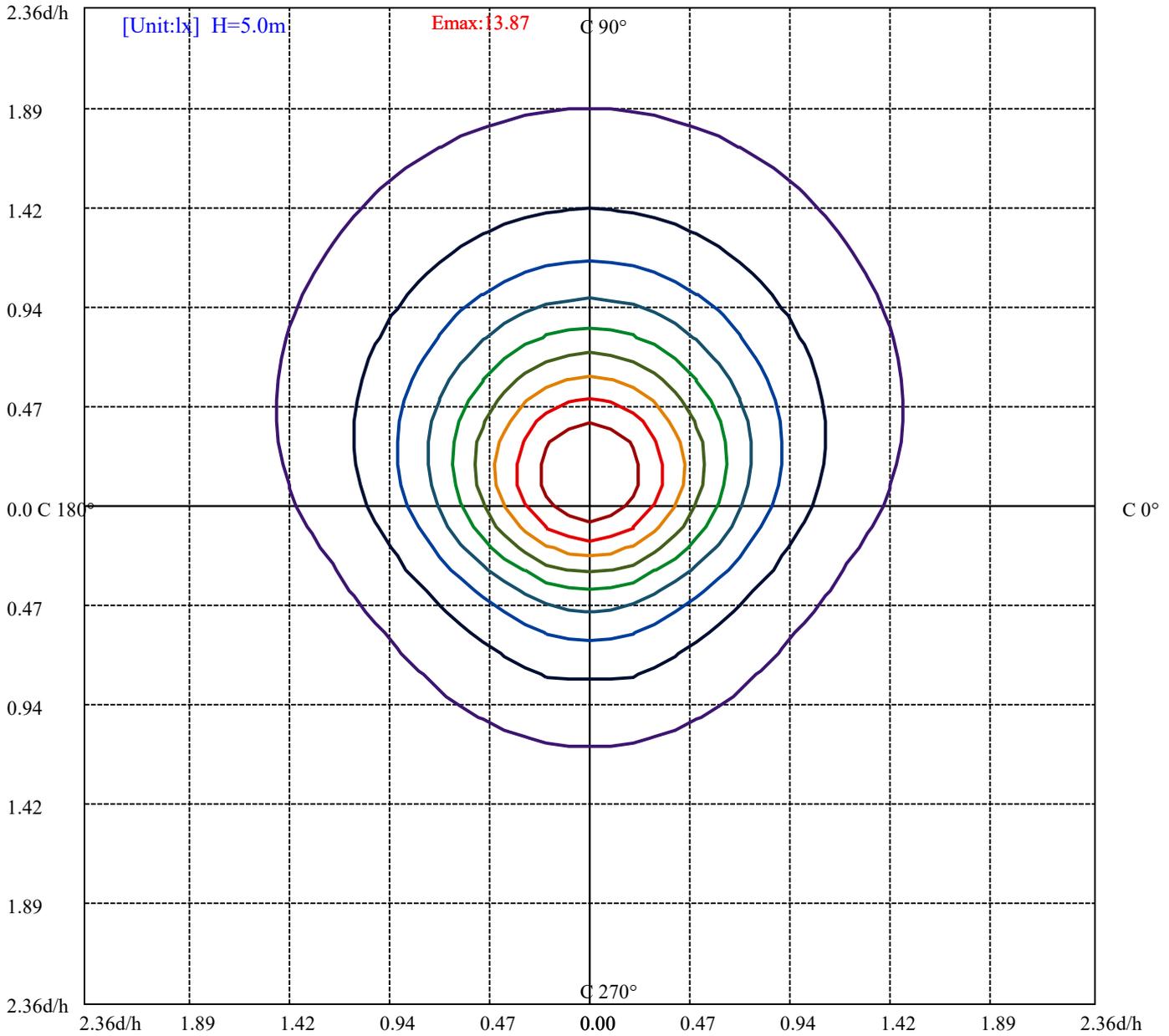
C90(Max): ———
 C0/C180: ———
 C90/C270: ———

Field angle(10%Imax):C0/180Left:79.9 Right:79.9
 :C90/270Left:114.6 Right:118.8

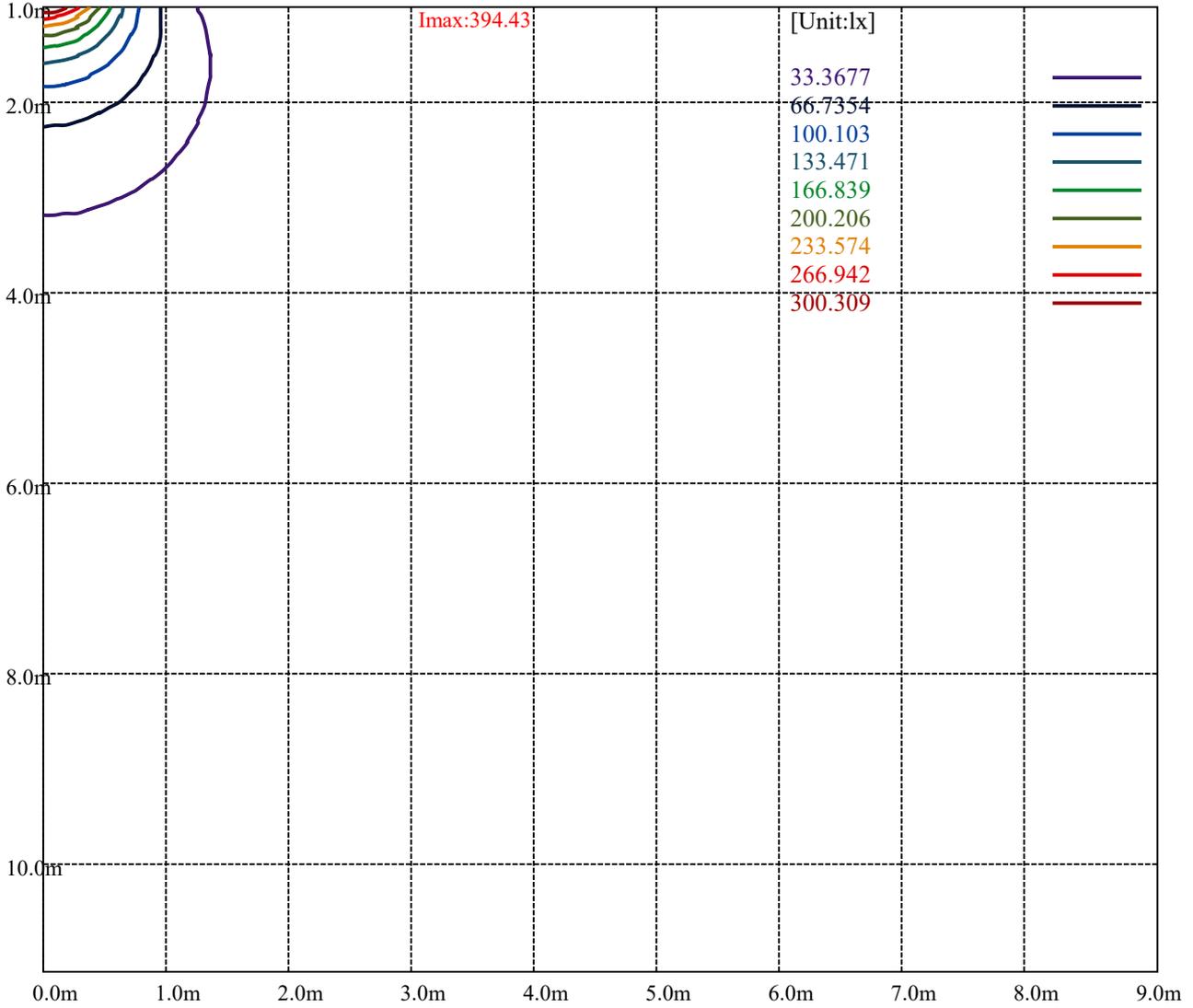
Beam Angle(50%Imax):C0/180Left:54.2 Right:54.2
 :C90/270Left:55.9 Right:65.8



Max , Ave Beam angle of C90 plane 143.61



(10%Emax) 1.387376	—
(20%Emax) 2.774756	—
(30%Emax) 4.16212	—
(40%Emax) 5.54952	—
(50%Emax) 6.93688	—
(60%Emax) 8.32428	—
(70%Emax) 9.71164	—
(80%Emax) 11.099	—
(90%Emax) 12.4864	—



Luminance Table

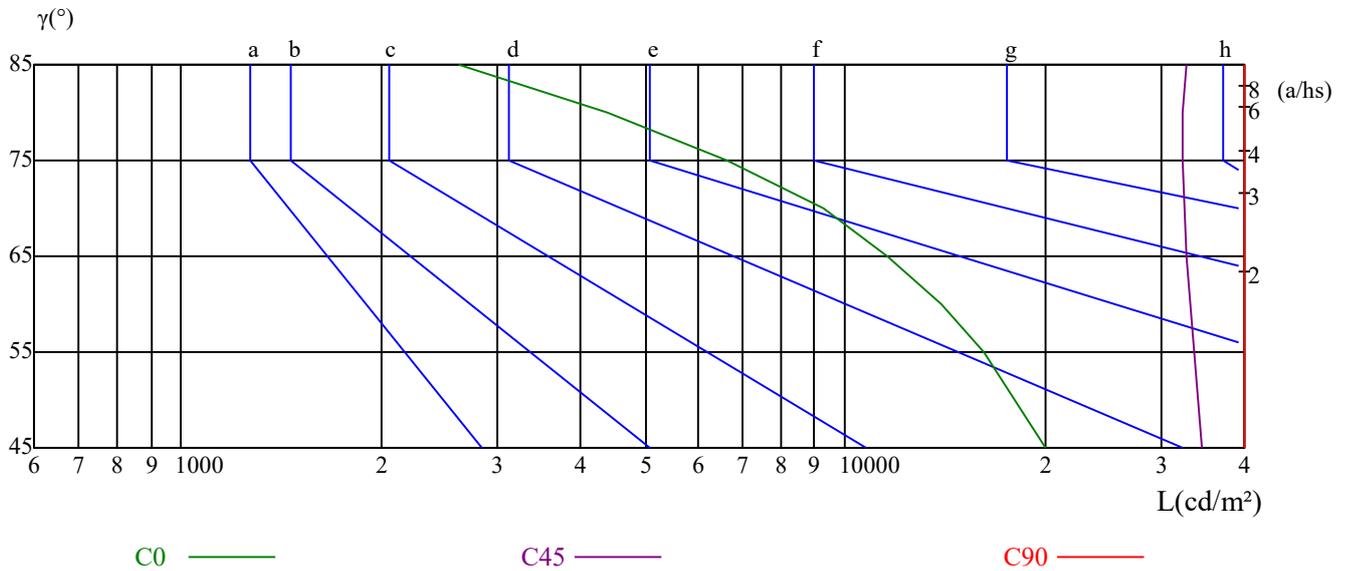
γ	45	50	55	60	65	70	75	80	85
C0	20039	18080	16160	14003	11619	9265	6663	4395	2625
C45	34613	34130	33675	33176	32824	32500	32320	32375	32811
C90	59140	63318	68111	74420	82859	95204	116170	155313	262165

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
28231	53399	41722	23240	73765	54181	22627	180907	122330

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



RHOCC	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	1.15	1.15	1.15	1.11	1.11	1.11	1.02	1.02	1.02	0.95	0.95	0.95	0.88	0.88	0.88	0.84
1	0.96	0.91	0.86	0.93	0.88	0.84	0.85	0.82	0.78	0.79	0.76	0.73	0.73	0.70	0.68	0.65
2	0.83	0.75	0.68	0.79	0.72	0.66	0.73	0.67	0.62	0.67	0.63	0.59	0.62	0.58	0.55	0.52
3	0.72	0.63	0.56	0.69	0.61	0.54	0.64	0.57	0.51	0.59	0.53	0.48	0.54	0.50	0.46	0.43
4	0.63	0.54	0.47	0.61	0.52	0.45	0.56	0.49	0.43	0.52	0.46	0.41	0.48	0.43	0.39	0.36
5	0.56	0.47	0.40	0.54	0.45	0.39	0.50	0.43	0.37	0.46	0.40	0.35	0.43	0.38	0.33	0.31
6	0.50	0.41	0.34	0.49	0.40	0.34	0.45	0.38	0.32	0.42	0.35	0.30	0.39	0.33	0.29	0.27
7	0.45	0.36	0.30	0.44	0.35	0.29	0.41	0.33	0.28	0.38	0.32	0.27	0.35	0.30	0.26	0.23
8	0.41	0.33	0.27	0.40	0.32	0.26	0.37	0.30	0.25	0.35	0.29	0.24	0.32	0.27	0.23	0.21
9	0.38	0.29	0.24	0.37	0.29	0.23	0.34	0.27	0.22	0.32	0.26	0.21	0.30	0.25	0.21	0.18
10	0.35	0.27	0.21	0.34	0.26	0.21	0.32	0.25	0.20	0.30	0.24	0.19	0.28	0.22	0.19	0.17

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	333.68	335.45	334.56	329.24	321.25	309.72	295.52	280.43	260.02
15.0	333.68	339.94	342.62	341.73	339.94	333.68	323.84	310.42	296.10
30.0	333.68	343.54	350.72	357.00	357.90	356.10	351.62	341.75	330.99
45.0	333.68	346.23	357.90	367.76	372.25	373.14	370.45	365.97	357.00
60.0	333.68	348.93	363.28	374.94	382.11	385.70	385.70	383.01	376.73
75.0	333.68	349.01	364.34	376.06	385.08	390.49	392.30	391.39	386.88
90.0	333.68	350.00	364.51	377.20	387.17	392.61	394.43	393.52	389.89
105.0	333.68	347.24	362.61	373.47	380.70	384.32	385.22	383.41	377.08
120.0	333.68	344.47	356.16	364.26	369.65	370.55	368.75	362.46	355.26
135.0	333.68	335.44	342.50	346.92	348.68	346.04	340.74	332.79	322.20
150.0	333.68	339.09	340.89	340.89	333.68	331.87	321.95	310.23	295.80
165.0	333.68	335.47	332.78	327.40	319.33	307.66	294.21	278.06	257.43
180.0	333.68	328.35	318.59	307.94	292.85	275.11	255.58	233.40	212.10
195.0	333.68	324.73	311.31	295.21	275.53	254.06	227.22	201.28	171.76
210.0	333.68	320.22	303.18	279.86	255.64	226.04	194.64	168.63	146.21
225.0	333.68	318.43	295.11	266.40	235.01	205.41	182.98	160.56	141.72
240.0	333.68	314.84	287.93	255.64	221.55	197.34	177.60	158.77	140.83
255.0	333.68	314.74	284.98	251.61	219.14	198.40	178.56	162.33	144.29
270.0	333.68	313.73	287.43	251.16	222.15	200.39	182.25	164.12	146.89
285.0	333.68	315.59	289.37	257.72	225.16	202.56	184.47	166.39	162.77
300.0	333.68	317.49	295.00	266.22	258.13	207.76	187.07	168.19	150.20
315.0	333.68	315.14	296.60	275.42	248.05	218.92	192.44	172.13	152.71
330.0	333.68	324.66	312.03	294.00	275.06	251.61	225.46	196.60	168.64
345.0	333.68	330.09	322.02	311.25	296.90	278.96	258.33	235.91	212.58
360.0	333.68	335.45	334.56	329.24	321.25	309.72	295.52	280.43	260.02
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	239.61	216.54	192.57	166.84	139.33	113.59	86.08	58.57	33.72
15.0	279.11	258.53	237.06	214.70	189.65	162.81	135.98	109.14	85.88
30.0	315.74	297.80	279.86	257.43	235.01	209.89	187.47	163.25	139.93
45.0	345.34	330.99	313.94	296.00	276.27	253.85	231.42	209.89	186.57
60.0	368.66	356.10	340.85	323.81	304.97	285.24	265.51	242.18	220.66
75.0	380.57	370.65	357.12	341.79	323.76	305.72	284.08	262.43	240.79
90.0	382.64	373.57	359.97	344.56	326.42	306.48	287.43	265.67	244.82
105.0	368.94	357.19	342.72	327.35	310.17	292.08	269.47	250.48	227.88
120.0	342.67	330.08	314.79	297.70	277.91	257.23	238.34	215.86	196.07
135.0	308.08	291.31	273.65	252.46	232.16	211.86	190.67	168.60	149.18
150.0	277.76	257.92	237.18	214.64	190.29	165.94	141.59	119.04	97.40
165.0	238.60	217.07	194.64	167.74	142.62	113.92	86.11	60.10	40.36
180.0	185.47	158.85	133.12	104.72	75.43	47.92	22.19	7.10	1.77
195.0	141.34	114.51	91.25	68.88	48.31	31.31	19.68	10.73	6.26
210.0	125.58	104.05	86.11	68.17	52.92	40.36	29.60	21.53	15.25
225.0	122.89	104.95	88.80	74.45	61.89	49.33	40.36	32.29	25.12
240.0	124.68	109.43	93.29	81.63	69.07	58.30	48.44	40.36	32.29
255.0	128.96	114.53	99.20	88.38	75.75	65.83	54.11	51.40	36.98
270.0	132.38	116.97	102.46	98.83	79.79	68.00	56.22	45.34	38.99
285.0	132.02	117.56	99.47	90.43	77.77	64.20	52.45	43.41	37.08
300.0	133.11	116.92	99.83	83.64	72.85	61.16	47.67	38.67	30.58
315.0	133.29	115.64	97.98	80.33	64.44	53.85	42.37	30.01	22.95
330.0	145.19	123.55	102.81	82.97	64.03	46.90	35.17	24.35	15.33
345.0	185.68	158.77	129.17	99.56	73.55	51.13	30.50	14.35	7.18
360.0	239.61	216.54	192.57	166.84	139.33	113.59	86.08	58.57	33.72

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	12.42	2.66	1.77	1.77	1.77	2.66	2.66	3.55	3.55
15.0	63.51	45.62	33.99	25.94	20.58	17.89	15.21	13.42	12.52
30.0	118.40	98.67	83.42	69.96	58.30	49.33	41.26	34.98	29.60
45.0	165.04	144.41	126.47	110.33	95.98	81.63	69.96	60.10	50.23
60.0	198.23	177.60	158.77	140.83	123.78	108.53	93.29	80.73	68.17
75.0	219.14	196.60	177.66	156.92	140.69	124.45	109.12	93.79	78.46
90.0	222.15	200.39	180.44	162.30	144.17	126.94	111.53	95.21	81.61
105.0	207.08	186.28	167.29	149.21	132.02	116.65	101.28	87.71	74.15
120.0	175.38	156.50	138.51	123.22	107.93	94.44	81.85	70.15	60.26
135.0	130.65	112.99	98.87	85.63	74.15	63.56	54.73	46.79	39.72
150.0	80.26	65.83	55.01	45.99	38.78	33.37	27.96	24.35	21.64
165.0	24.22	17.04	12.56	10.76	9.87	8.97	8.97	8.07	8.07
180.0	0.89	0.89	0.89	1.77	1.77	1.77	2.66	2.66	2.66
195.0	3.58	1.79	1.79	0.89	0.89	0.89	0.89	0.89	0.89
210.0	10.76	7.18	5.38	3.59	2.69	1.79	1.79	0.90	0.90
225.0	18.84	14.35	10.76	8.07	6.28	4.48	4.48	1.79	0.90
240.0	26.01	20.63	18.84	12.56	8.97	7.18	4.48	3.59	1.79
255.0	30.66	24.35	19.84	15.33	11.72	8.12	6.31	4.51	2.71
270.0	31.74	26.30	20.85	16.32	12.69	9.07	6.35	4.53	2.72
285.0	29.84	24.42	18.99	14.47	10.85	8.14	6.33	4.52	2.71
300.0	24.28	19.79	15.29	11.69	8.09	6.30	4.50	2.70	1.80
315.0	17.65	13.24	9.71	7.06	4.41	3.53	2.65	1.77	0.88
330.0	9.92	6.31	3.61	2.71	1.80	1.80	0.90	0.90	0.90
345.0	3.59	1.79	0.90	0.90	0.90	0.90	0.90	0.90	0.90
360.0	12.42	2.66	1.77	1.77	1.77	2.66	2.66	3.55	3.55
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	4.44	4.44	5.32	6.21	6.21	6.21	6.21	5.32	5.32
15.0	11.63	10.73	10.73	9.84	9.84	8.95	8.05	6.26	6.26
30.0	25.12	21.53	18.84	16.15	14.35	12.56	10.76	8.07	6.28
45.0	42.16	34.98	29.60	24.22	19.73	16.15	13.45	10.76	7.18
60.0	56.51	46.64	38.57	31.39	25.12	19.73	15.25	11.66	8.97
75.0	65.83	55.01	45.09	36.07	27.96	21.64	17.13	12.63	9.92
90.0	68.91	56.22	46.24	37.18	29.92	22.67	17.23	12.69	9.97
105.0	63.30	51.54	42.50	34.36	27.13	21.70	16.28	12.66	9.95
120.0	50.37	41.37	34.18	28.78	23.38	18.89	14.39	11.69	8.99
135.0	33.54	28.25	23.83	20.30	17.65	14.12	12.36	10.59	8.83
150.0	18.94	17.13	15.33	13.53	12.63	10.82	9.92	9.02	8.12
165.0	8.07	8.07	8.07	8.07	8.07	8.07	8.07	8.07	7.18
180.0	3.55	3.55	4.44	4.44	4.44	4.44	4.44	5.32	5.32
195.0	0.89	0.89	1.79	1.79	2.68	2.68	3.58	4.47	5.37
210.0	0.90	0.90	0.90	0.90	1.79	2.69	2.69	3.59	4.48
225.0	0.90	0.90	0.90	0.90	0.90	1.79	2.69	3.59	4.48
240.0	0.90	0.90	0.90	0.90	0.90	1.79	2.69	3.59	3.59
255.0	1.80	0.90	0.90	0.90	0.90	1.80	2.71	3.61	2.71
270.0	1.81	0.91	0.91	0.91	0.91	0.91	2.72	2.72	3.63
285.0	1.81	0.90	0.90	0.90	0.90	1.81	1.81	2.71	4.52
300.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	2.70	4.50
315.0	0.88	0.88	0.88	0.88	1.77	1.77	2.65	3.53	4.41
330.0	0.90	0.00	0.90	1.80	1.80	2.71	2.71	3.61	5.41
345.0	0.90	1.79	1.79	2.69	2.69	3.59	3.59	4.48	6.28
360.0	4.44	4.44	5.32	6.21	6.21	6.21	6.21	5.32	5.32

Intensity data(cd)

C/ γ ($^{\circ}$)	180.0
0.0	5.32
15.0	5.37
30.0	5.38
45.0	5.38
60.0	5.38
75.0	7.21
90.0	7.25
105.0	7.23
120.0	7.20
135.0	7.06
150.0	7.21
165.0	7.18
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	5.32