
AFX

Client:

LumCAT: ELZV2402LAJD4SN

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.000

LampCAT:

Current(A): 0.137

Lamp flux(lm): 1329.2

Power (W): 16.180

Number of Lamps: 1

PF: 0.986

Length(mm): 590

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1329.24, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 82.15

Central intensity(cd): 336.369, Maximum intensity(cd): 384.421

Angle of maximum intensity: C=90.0 γ =25.0

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

[C90/270]Total=119.7

Field angle(10%Imax): [C0/180]Total=158.2

[C90/270]Total=232.9

Maximum s/h(1/2): C0_180=1.23 C90_270=1.68

Maximum s/h(1/4): C0_180=1.35 C90_270=1.79

Up flux rate of lamp(%): 14.46%

Down flux rate of lamp(%): 85.54%

Up flux rate of LUM(%): 14.46%

Down flux rate of LUM(%): 85.54%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 57.913%

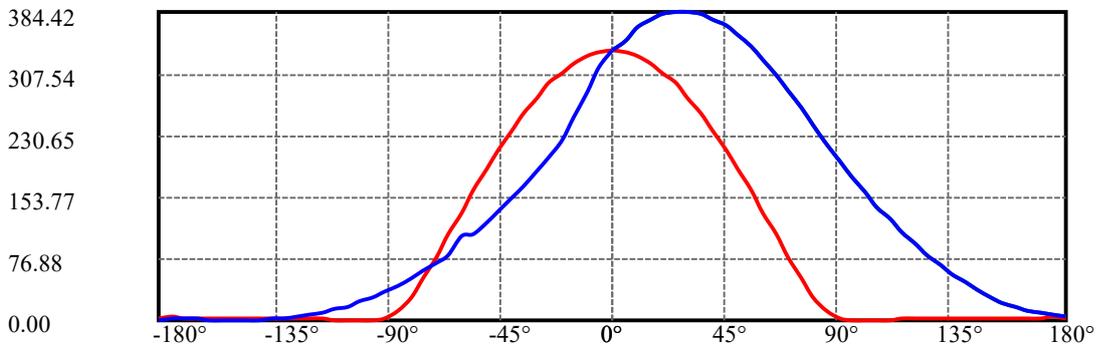
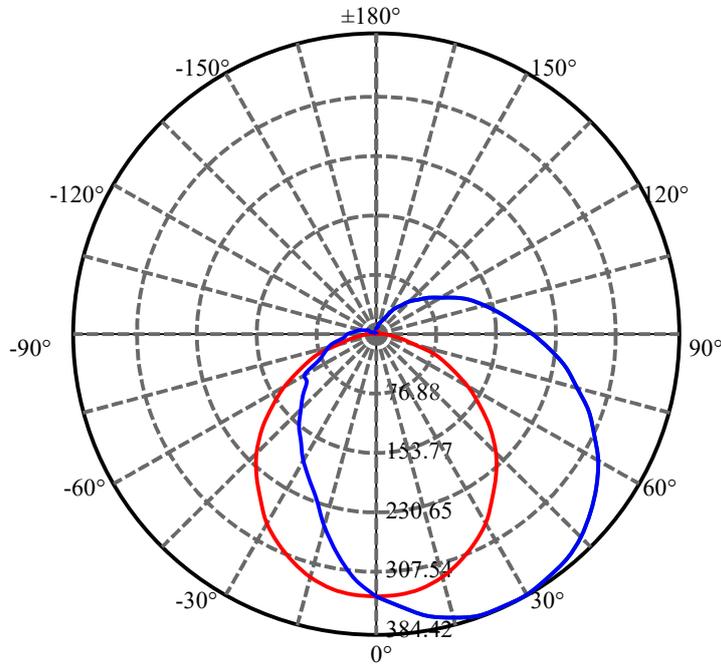
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	336.369	0.000	0	0.00%	0.00%
5.0	333.451	8.008	8.008	0.60%	0.60%
10.0	327.318	23.638	31.645	1.78%	2.38%
15.0	317.558	38.254	69.899	2.88%	5.26%
20.0	306.056	51.395	121.293	3.87%	9.13%
25.0	292.145	62.740	184.034	4.72%	13.85%
30.0	278.436	72.207	256.241	5.43%	19.28%
35.0	263.087	79.743	335.984	6.00%	25.28%
40.0	247.256	85.147	421.131	6.41%	31.68%
45.0	229.060	88.194	509.325	6.63%	38.32%
50.0	210.608	88.841	598.166	6.68%	45.00%
55.0	191.675	87.470	685.636	6.58%	51.58%
60.0	172.477	84.173	769.809	6.33%	57.91%
65.0	152.984	79.120	848.929	5.95%	63.87%
70.0	133.903	72.642	921.571	5.46%	69.33%
75.0	115.828	65.276	986.847	4.91%	74.24%
80.0	99.470	57.608	1044.454	4.33%	78.58%
85.0	84.224	49.914	1094.369	3.76%	82.33%
90.0	71.543	42.650	1137.019	3.21%	85.54%
95.0	60.791	36.234	1173.253	2.73%	88.27%
100.0	52.287	30.726	1203.979	2.31%	90.58%
105.0	44.642	25.936	1229.915	1.95%	92.53%
110.0	38.270	21.672	1251.587	1.63%	94.16%
115.0	32.422	17.900	1269.486	1.35%	95.50%
120.0	27.437	14.552	1284.038	1.09%	96.60%
125.0	23.238	11.713	1295.751	0.88%	97.48%
130.0	19.226	9.233	1304.984	0.69%	98.18%
135.0	15.889	7.096	1312.08	0.53%	98.71%
140.0	13.003	5.350	1317.429	0.40%	99.11%
145.0	10.527	3.926	1321.355	0.30%	99.41%
150.0	8.351	2.780	1324.135	0.21%	99.62%
155.0	6.891	1.929	1326.064	0.15%	99.76%
160.0	5.765	1.327	1327.391	0.10%	99.86%
165.0	5.016	0.889	1328.28	0.07%	99.93%
170.0	4.565	0.568	1328.848	0.04%	99.97%
175.0	4.228	0.315	1329.163	0.02%	99.99%
180.0	2.131	0.076	1329.239	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	256.24	19.28%	19.28%
0-40	421.13	31.68%	31.68%
0-60	769.81	57.91%	57.91%
0-90	1137.02	85.54%	85.54%
0-120	1284.04	96.60%	96.60%
0-180	1329.24	100.00%	100.00%
60-90	367.21	27.63%	27.63%
90-120	147.02	11.06%	11.06%
90-130	167.97	12.64%	12.64%
90-150	187.12	14.08%	14.08%
90-180	192.14	14.46%	14.46%
0-81.90	1063.39	80.00%	80.00%

ZONAL LUMEN SUMMARY

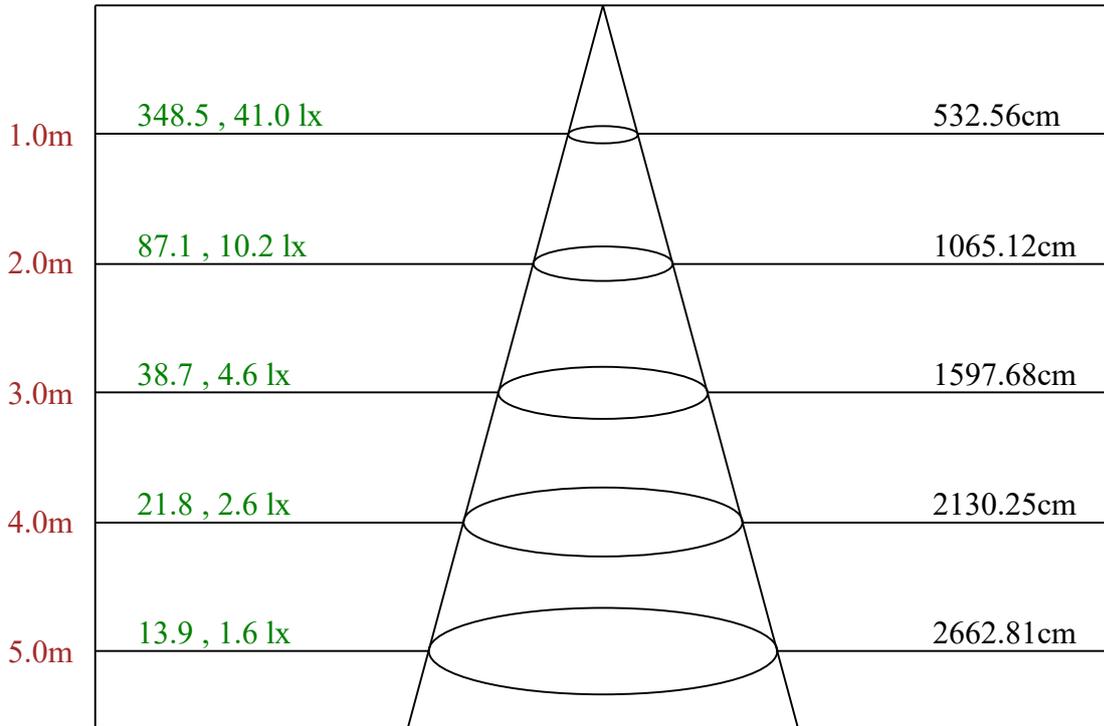
0-10	31.65
10-20	89.65
20-30	134.95
30-40	164.89
40-50	177.04
50-60	171.64
60-70	151.76
70-80	122.88
80-90	92.56
90-100	66.96
100-110	47.61
110-120	32.45
120-130	20.95
130-140	12.45
140-150	6.71
150-160	3.26
160-170	1.46
170-180	0.31



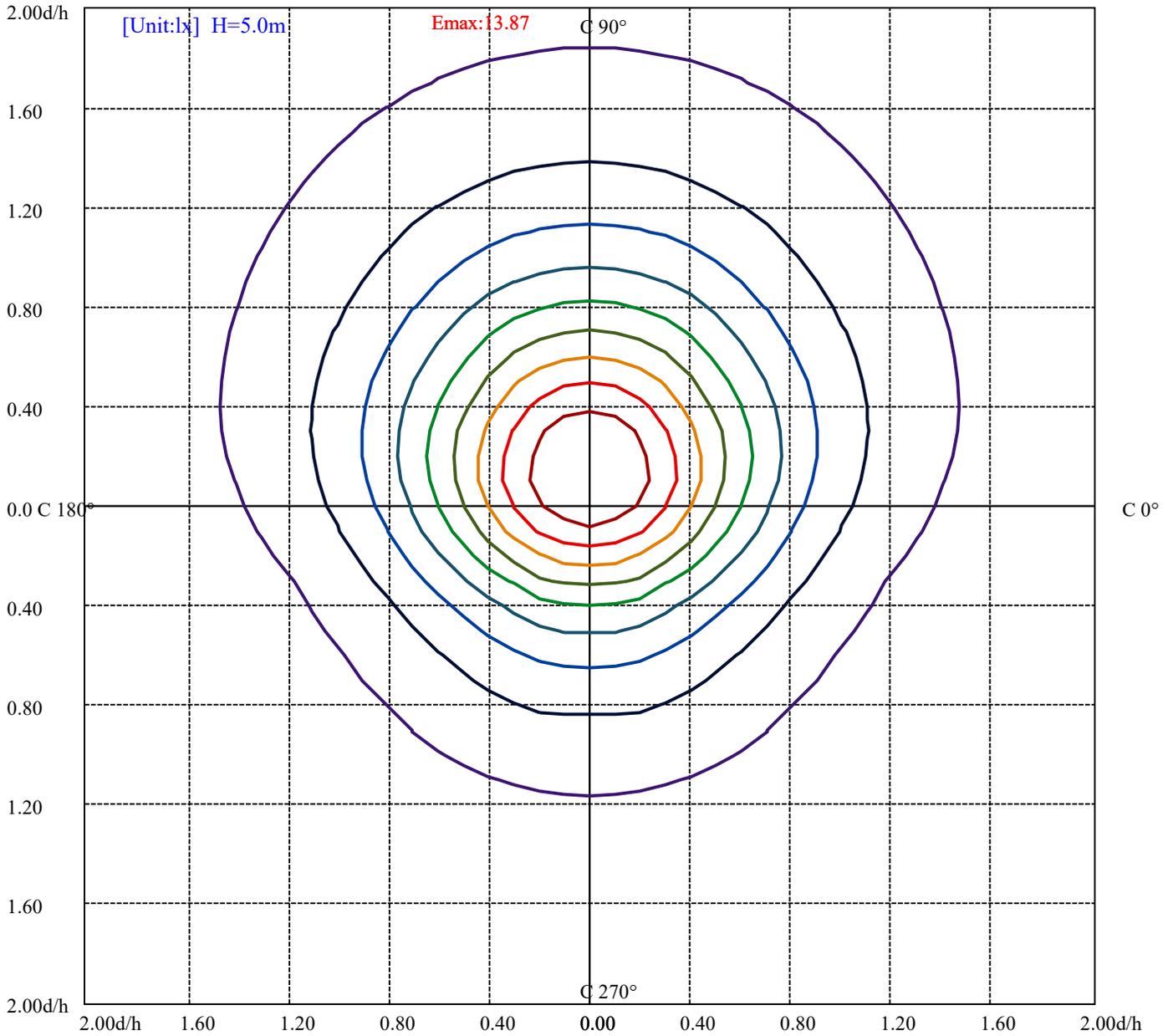
C90(Max): ———
 C0/C180: ———
 C90/C270: ———

Field angle(10%Imax):C0/180Left:79.1 Right:79.1
 :C90/270Left:118.0 Right:114.9

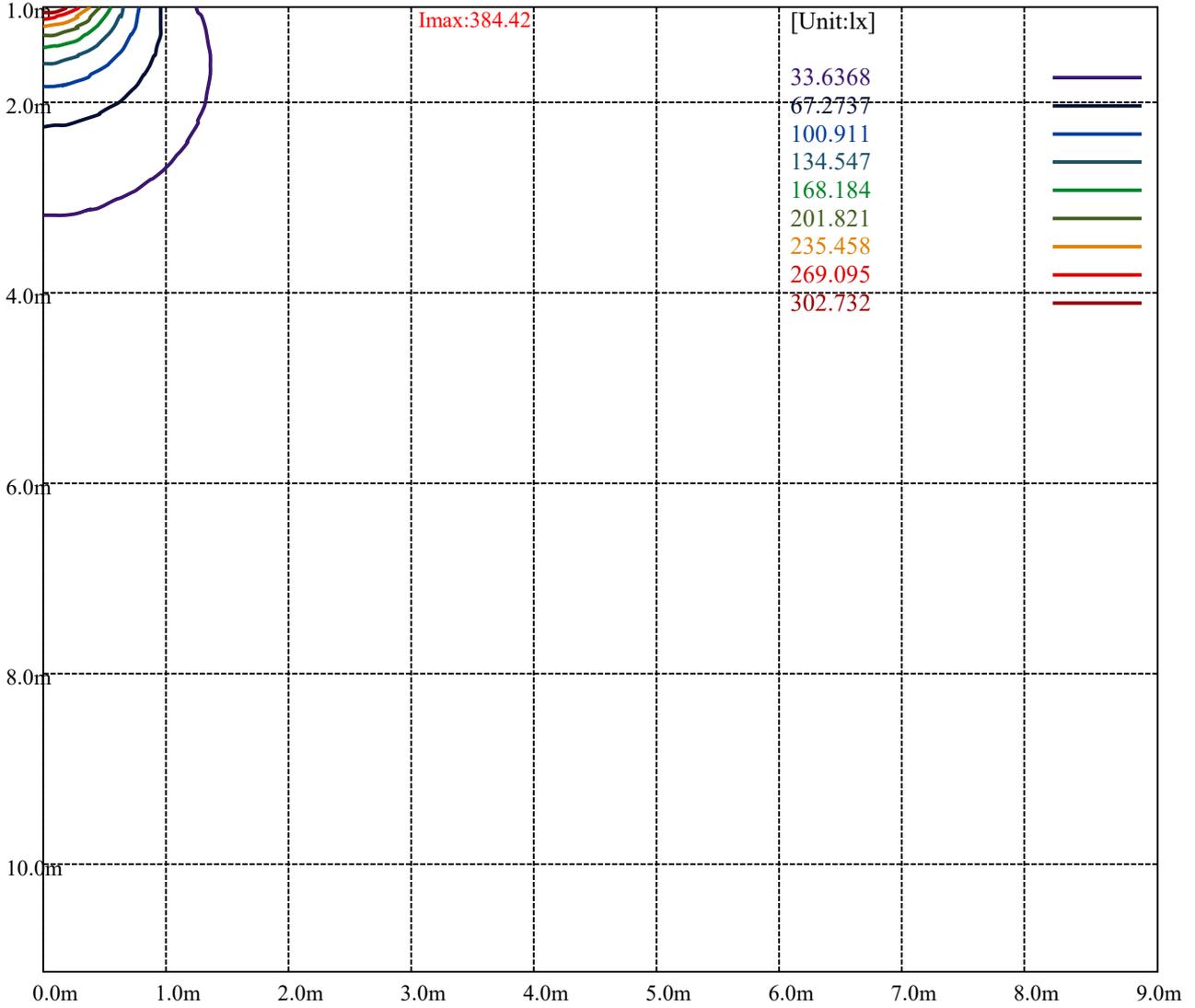
Beam Angle(50%Imax):C0/180Left:53.9 Right:53.9
 :C90/270Left:58.0 Right:61.7



Max , Ave Beam angle of C90 plane 138.83



(10%Emax) 1.38662	—
(20%Emax) 2.773236	—
(30%Emax) 4.15984	—
(40%Emax) 5.54648	—
(50%Emax) 6.93308	—
(60%Emax) 8.31972	—
(70%Emax) 9.70632	—
(80%Emax) 11.09296	—
(90%Emax) 12.47956	—



Luminance Table

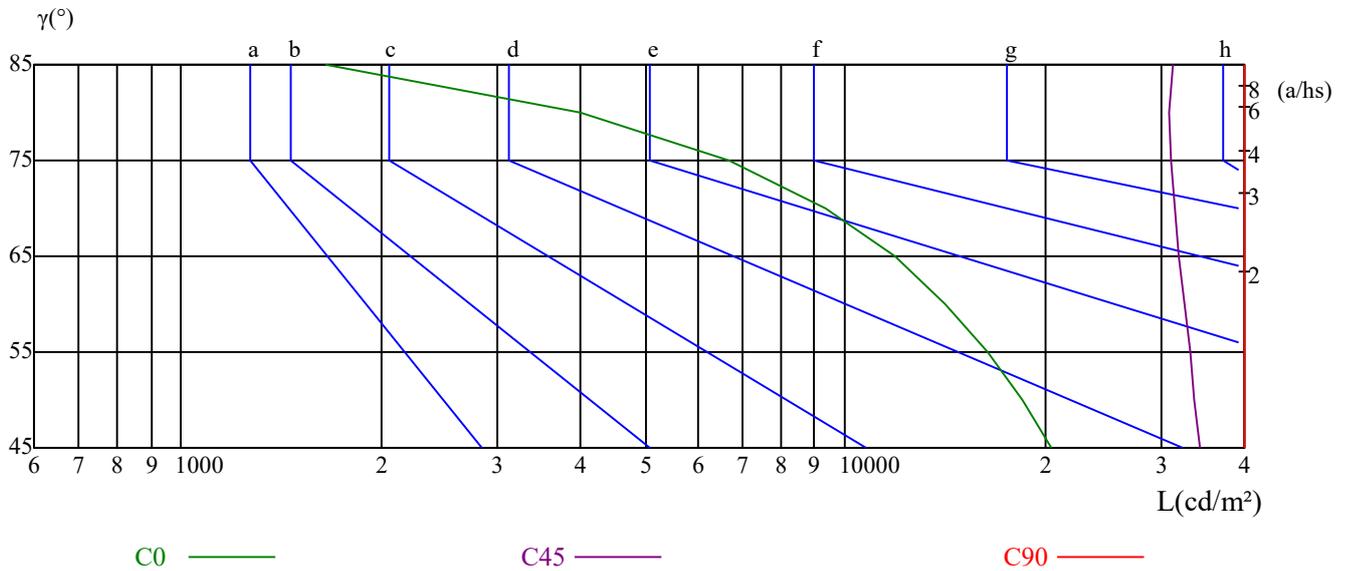
γ	45	50	55	60	65	70	75	80	85
C0	20462	18454	16397	14139	11936	9324	6705	4004	1651
C45	34209	33620	33094	32449	31869	31398	31102	30847	31146
C90	57609	61332	65554	71112	78974	90452	108518	144744	239679

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
29000	51867	41374	23389	71094	53186	14233	170744	119328

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	1.16	1.16	1.16	1.11	1.11	1.11	1.03	1.03	1.03	0.96	0.96	0.96	0.89	0.89	0.89	0.86
1	0.97	0.92	0.87	0.93	0.88	0.84	0.86	0.82	0.79	0.80	0.77	0.74	0.74	0.71	0.69	0.66
2	0.83	0.75	0.69	0.80	0.73	0.67	0.74	0.68	0.63	0.68	0.64	0.60	0.63	0.60	0.56	0.53
3	0.72	0.63	0.56	0.70	0.61	0.55	0.64	0.58	0.52	0.60	0.54	0.49	0.55	0.51	0.47	0.44
4	0.64	0.54	0.47	0.61	0.53	0.46	0.57	0.50	0.44	0.53	0.47	0.42	0.49	0.44	0.39	0.37
5	0.57	0.47	0.40	0.55	0.46	0.39	0.51	0.43	0.37	0.47	0.41	0.36	0.44	0.38	0.34	0.31
6	0.51	0.41	0.35	0.49	0.40	0.34	0.46	0.38	0.33	0.43	0.36	0.31	0.40	0.34	0.30	0.27
7	0.46	0.37	0.30	0.44	0.36	0.30	0.41	0.34	0.29	0.39	0.32	0.27	0.36	0.31	0.26	0.24
8	0.42	0.33	0.27	0.40	0.32	0.26	0.38	0.31	0.25	0.35	0.29	0.24	0.33	0.28	0.23	0.21
9	0.38	0.30	0.24	0.37	0.29	0.24	0.35	0.28	0.23	0.33	0.26	0.22	0.31	0.25	0.21	0.19
10	0.35	0.27	0.22	0.34	0.26	0.21	0.32	0.25	0.21	0.30	0.24	0.20	0.28	0.23	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	336.37	337.25	332.86	325.83	315.29	302.12	286.31	268.74	246.79
15.0	336.37	340.79	340.79	338.14	331.06	322.21	310.70	296.54	278.83
30.0	336.37	342.58	347.91	349.68	347.02	341.69	332.82	321.28	307.97
45.0	336.37	347.10	355.16	360.52	362.31	360.52	354.26	345.31	333.68
60.0	336.37	349.90	361.62	369.73	376.05	376.05	372.44	367.93	358.01
75.0	336.37	350.80	364.32	374.24	380.56	383.26	383.26	379.65	373.34
90.0	336.37	349.72	364.84	375.52	382.64	384.42	384.42	380.86	375.52
105.0	336.37	350.84	364.40	375.25	381.58	384.29	383.39	379.77	372.54
120.0	336.37	348.19	360.01	369.10	373.64	374.55	371.82	365.46	357.28
135.0	336.37	339.06	348.03	353.41	355.21	354.31	348.93	339.96	329.19
150.0	336.37	343.64	348.19	349.10	345.46	343.64	335.46	324.55	310.00
165.0	336.37	340.00	340.00	337.28	330.91	321.82	310.91	297.28	280.91
180.0	336.37	332.86	326.71	316.17	303.00	288.06	269.62	247.67	224.83
195.0	336.37	329.29	318.66	304.50	285.91	266.44	244.31	215.98	189.43
210.0	336.37	323.94	309.74	289.33	264.48	237.85	211.23	183.72	159.75
225.0	336.37	322.05	300.58	274.64	246.91	215.60	193.23	173.55	153.87
240.0	336.37	320.14	293.08	264.23	232.66	209.22	189.38	171.34	154.21
255.0	336.37	316.53	288.57	256.11	227.25	205.61	188.47	170.44	153.30
270.0	336.37	315.01	284.76	252.72	224.25	202.89	185.09	168.18	152.17
285.0	336.37	316.48	289.35	255.89	226.96	207.07	188.08	170.90	166.38
300.0	336.37	317.28	293.64	263.64	256.37	208.18	189.09	170.00	152.73
315.0	336.37	314.84	294.21	269.99	242.19	213.48	191.95	170.43	151.59
330.0	336.37	325.46	310.00	291.82	266.37	241.82	213.64	185.46	160.91
345.0	336.37	329.10	318.19	304.55	287.28	266.37	243.64	219.09	190.91
360.0	336.37	337.25	332.86	325.83	315.29	302.12	286.31	268.74	246.79
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	224.83	201.12	175.65	149.30	122.95	93.09	66.75	41.28	18.44
15.0	259.36	238.11	215.10	191.20	164.64	137.20	109.76	84.98	60.19
30.0	290.22	271.58	250.28	227.20	203.24	179.28	156.20	134.01	112.71
45.0	319.37	303.27	286.27	264.80	244.23	222.75	201.28	178.92	158.34
60.0	347.19	333.66	317.43	298.49	279.56	259.72	236.27	216.43	194.79
75.0	363.42	350.80	336.37	319.23	300.30	279.56	257.91	237.17	216.43
90.0	366.62	355.95	340.82	323.91	306.11	286.54	264.29	243.82	220.69
105.0	362.59	350.84	336.37	318.28	300.20	279.40	258.61	236.90	217.01
120.0	346.37	330.91	316.37	298.19	280.00	258.19	237.28	215.46	194.55
135.0	315.74	299.59	281.65	262.82	241.29	219.76	198.23	175.81	155.18
150.0	291.82	270.91	250.00	227.28	203.64	180.91	157.28	133.64	111.82
165.0	258.19	237.28	214.55	191.82	165.46	137.27	109.09	82.73	59.09
180.0	202.00	175.65	149.30	120.32	93.97	66.75	40.40	17.56	3.51
195.0	161.10	131.89	104.45	79.67	59.31	38.06	23.01	12.39	7.08
210.0	137.56	117.15	95.85	77.21	59.46	45.26	33.73	23.96	17.75
225.0	135.08	115.40	98.41	81.41	67.09	55.47	44.73	34.89	27.73
240.0	136.17	120.84	104.61	89.28	75.75	64.03	53.21	44.19	36.07
255.0	137.07	122.64	108.22	93.79	82.06	69.44	59.52	58.62	41.48
270.0	136.15	121.91	107.67	104.11	81.87	71.19	61.40	51.61	42.71
285.0	137.44	121.17	107.60	94.04	81.38	69.62	58.77	48.83	40.69
300.0	135.46	119.09	102.73	88.18	75.46	63.64	53.64	43.64	35.46
315.0	131.86	114.81	96.87	79.83	66.38	53.82	43.06	34.09	26.91
330.0	138.18	115.46	96.37	76.36	58.18	44.55	33.64	23.64	16.36
345.0	163.64	134.55	107.27	82.73	59.09	38.18	21.82	12.73	6.36
360.0	224.83	201.12	175.65	149.30	122.95	93.09	66.75	41.28	18.44

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	3.51	0.88	0.88	0.88	0.88	0.88	0.88	1.76	1.76
15.0	41.60	28.33	20.36	15.05	12.39	9.74	7.97	7.08	6.20
30.0	93.19	77.21	62.13	51.48	42.60	35.50	29.29	24.85	19.53
45.0	138.66	121.67	103.77	89.46	76.94	64.41	55.47	46.52	38.47
60.0	174.05	155.11	137.97	119.94	104.61	90.18	77.55	65.83	55.01
75.0	195.69	174.05	156.91	138.88	122.64	106.41	92.88	78.46	66.73
90.0	199.33	177.97	159.29	141.49	125.47	110.34	95.22	81.87	69.41
105.0	193.50	173.61	154.62	138.35	121.17	105.79	92.23	78.67	66.01
120.0	173.64	152.73	135.46	120.00	104.55	90.00	77.27	65.46	55.46
135.0	137.24	117.50	102.26	87.01	75.35	63.69	53.82	45.75	37.67
150.0	92.73	75.46	62.73	50.91	41.82	34.55	29.09	24.55	19.09
165.0	40.91	27.27	19.09	14.55	11.82	9.09	7.27	7.27	6.36
180.0	0.88	0.88	0.88	0.88	0.88	1.76	1.76	1.76	1.76
195.0	3.54	1.77	0.89	0.89	0.89	0.89	0.89	0.89	0.89
210.0	11.54	7.99	5.33	3.55	2.66	1.78	0.89	0.89	0.89
225.0	20.58	15.21	11.63	8.05	6.26	3.58	2.68	1.79	0.89
240.0	28.86	22.54	20.74	13.53	9.92	7.21	4.51	3.61	1.80
255.0	33.37	27.05	21.64	17.13	12.63	9.02	6.31	4.51	2.71
270.0	35.59	28.48	23.14	17.80	13.35	9.79	7.12	4.45	3.56
285.0	34.36	27.13	21.70	16.28	12.66	9.04	6.33	4.52	2.71
300.0	29.09	21.82	17.27	12.73	10.00	7.27	4.55	3.64	1.82
315.0	20.63	15.25	10.76	8.07	5.38	4.48	2.69	1.79	0.90
330.0	10.91	7.27	4.55	3.64	2.73	1.82	0.91	0.91	0.91
345.0	3.64	1.82	0.91	0.91	0.91	0.91	0.91	0.91	0.91
360.0	3.51	0.88	0.88	0.88	0.88	0.88	0.88	1.76	1.76
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.76	1.76	2.63	2.63	2.63	2.63	2.63	3.51	3.51
15.0	6.20	6.20	6.20	6.20	5.31	5.31	4.43	3.54	3.54
30.0	15.98	13.31	11.54	9.76	8.88	7.10	6.21	4.44	3.55
45.0	31.31	24.15	18.79	15.21	12.52	9.84	8.05	6.26	3.58
60.0	45.99	37.88	27.96	21.64	17.13	13.53	9.92	8.12	4.51
75.0	55.01	45.09	36.07	26.15	19.84	15.33	11.72	8.12	6.31
90.0	57.84	48.05	38.26	27.59	20.47	16.02	11.57	8.90	6.23
105.0	55.16	45.21	36.17	26.22	19.89	15.37	11.75	9.04	6.33
120.0	45.46	37.27	28.18	20.91	16.36	12.73	10.00	8.18	6.36
135.0	31.39	23.32	18.84	15.25	12.56	9.87	8.07	7.18	5.38
150.0	15.45	12.73	10.91	10.00	9.09	7.27	6.36	6.36	5.45
165.0	5.45	5.45	5.45	5.45	5.45	5.45	5.45	4.55	4.55
180.0	1.76	1.76	1.76	2.63	2.63	2.63	2.63	3.51	4.39
195.0	0.89	0.89	0.89	1.77	1.77	1.77	2.66	2.66	3.54
210.0	0.89	0.89	0.89	0.89	0.89	1.78	1.78	2.66	3.55
225.0	0.89	0.89	0.89	0.89	0.89	1.79	1.79	2.68	3.58
240.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	2.71	3.61
255.0	1.80	0.90	0.90	0.90	0.90	1.80	1.80	2.71	3.61
270.0	1.78	0.89	0.89	0.89	0.89	1.78	1.78	2.67	2.67
285.0	1.81	0.90	0.90	0.90	0.90	1.81	1.81	2.71	2.71
300.0	0.91	0.91	0.91	0.91	0.91	1.82	1.82	2.73	3.64
315.0	0.90	0.90	0.90	0.90	0.90	1.79	1.79	2.69	3.59
330.0	0.91	0.91	0.91	0.91	1.82	1.82	1.82	2.73	3.64
345.0	0.91	0.91	0.91	0.91	1.82	1.82	2.73	2.73	3.64
360.0	1.76	1.76	2.63	2.63	2.63	2.63	2.63	3.51	3.51

Intensity data(cd)

C/ γ (°)	180.0
0.0	4.39
15.0	4.43
30.0	4.44
45.0	3.58
60.0	3.61
75.0	3.61
90.0	4.45
105.0	4.52
120.0	4.55
135.0	4.48
150.0	4.55
165.0	4.55
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	4.39