
AFX

Client:

LumCAT: ELZV2402LAJD4SN

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.000

LampCAT:

Current(A): 0.136

Lamp flux(lm): 1455.4

Power (W): 16.130

Number of Lamps: 1

PF: 0.987

Length(mm): 590

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1455.36, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 90.23

Central intensity(cd): 368.219, Maximum intensity(cd): 420.694

Angle of maximum intensity: C=90.0 γ =25.0

Beam Angle(50%Imax): [C0/180]Total=108.0

[C90/270]Total=119.7

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

[C90/270]Total=233.1

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 : 57.916%

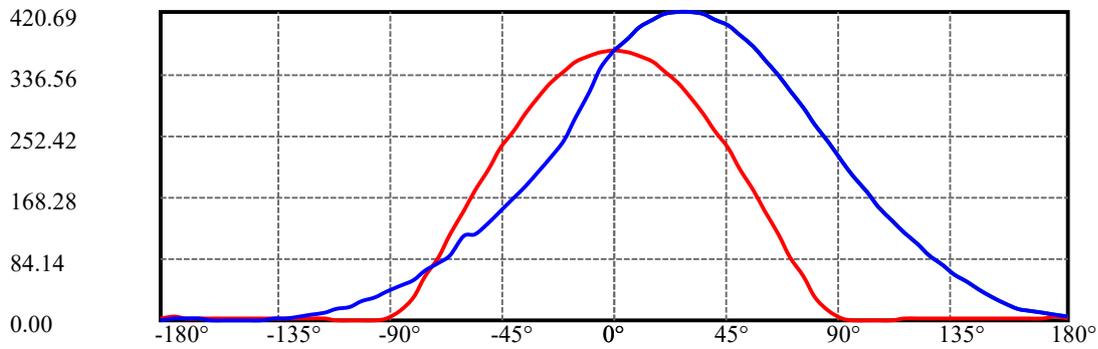
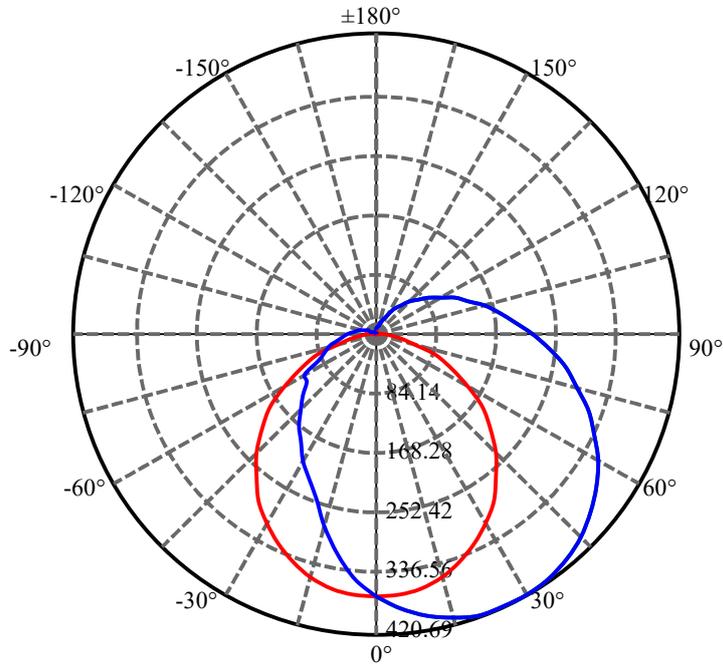
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	368.219	0.000	0	0.00%	0.00%
5.0	365.078	8.766	8.766	0.60%	0.60%
10.0	358.383	25.880	34.647	1.78%	2.38%
15.0	347.763	41.888	76.535	2.88%	5.26%
20.0	335.140	56.281	132.816	3.87%	9.13%
25.0	319.923	68.704	201.52	4.72%	13.85%
30.0	304.792	79.058	280.578	5.43%	19.28%
35.0	288.214	87.324	367.902	6.00%	25.28%
40.0	270.629	93.239	461.141	6.41%	31.69%
45.0	250.788	96.545	557.686	6.63%	38.32%
50.0	230.543	97.260	654.946	6.68%	45.00%
55.0	209.890	95.765	750.711	6.58%	51.58%
60.0	188.863	92.171	842.881	6.33%	57.92%
65.0	167.466	86.624	929.506	5.95%	63.87%
70.0	146.629	79.531	1009.037	5.46%	69.33%
75.0	126.872	71.489	1080.525	4.91%	74.24%
80.0	108.909	63.088	1143.614	4.33%	78.58%
85.0	92.243	54.658	1198.272	3.76%	82.33%
90.0	78.251	46.683	1244.955	3.21%	85.54%
95.0	66.639	39.672	1284.626	2.73%	88.27%
100.0	57.312	33.680	1318.307	2.31%	90.58%
105.0	48.841	28.404	1346.71	1.95%	92.53%
110.0	41.833	23.701	1370.411	1.63%	94.16%
115.0	35.347	19.542	1389.953	1.34%	95.51%
120.0	29.987	15.883	1405.836	1.09%	96.60%
125.0	25.374	12.797	1418.633	0.88%	97.48%
130.0	21.140	10.114	1428.747	0.69%	98.17%
135.0	17.390	7.785	1436.532	0.53%	98.71%
140.0	14.315	5.870	1442.402	0.40%	99.11%
145.0	11.502	4.307	1446.71	0.30%	99.41%
150.0	9.177	3.045	1449.755	0.21%	99.61%
155.0	7.563	2.119	1451.873	0.15%	99.76%
160.0	6.365	1.461	1453.334	0.10%	99.86%
165.0	5.501	0.978	1454.312	0.07%	99.93%
170.0	4.939	0.619	1454.931	0.04%	99.97%
175.0	4.750	0.347	1455.278	0.02%	99.99%
180.0	2.356	0.085	1455.363	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	280.58	19.28%	19.28%
0-40	461.14	31.69%	31.69%
0-60	842.88	57.92%	57.92%
0-90	1244.95	85.54%	85.54%
0-120	1405.84	96.60%	96.60%
0-180	1455.36	100.00%	100.00%
60-90	402.07	27.63%	27.63%
90-120	160.88	11.05%	11.05%
90-130	183.79	12.63%	12.63%
90-150	204.80	14.07%	14.07%
90-180	210.32	14.45%	14.45%
0-81.89	1164.29	80.00%	80.00%

ZONAL LUMEN SUMMARY

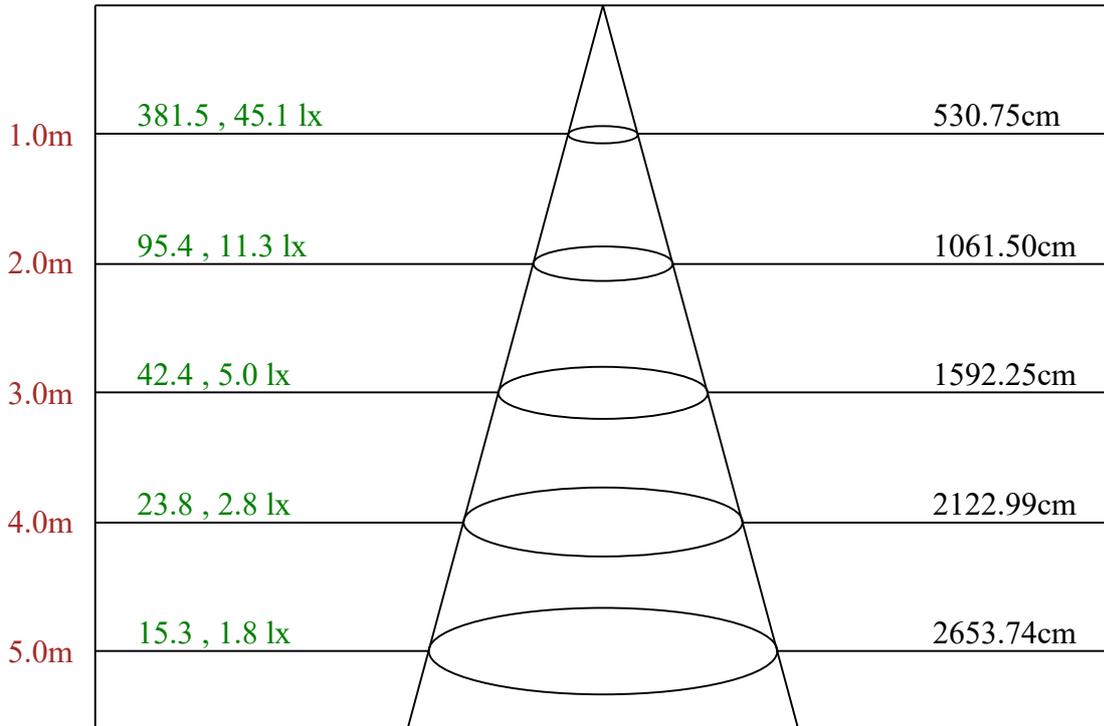
0-10	34.65
10-20	98.17
20-30	147.76
30-40	180.56
40-50	193.80
50-60	187.94
60-70	166.16
70-80	134.58
80-90	101.34
90-100	73.35
100-110	52.10
110-120	35.43
120-130	22.91
130-140	13.66
140-150	7.35
150-160	3.58
160-170	1.60
170-180	0.35



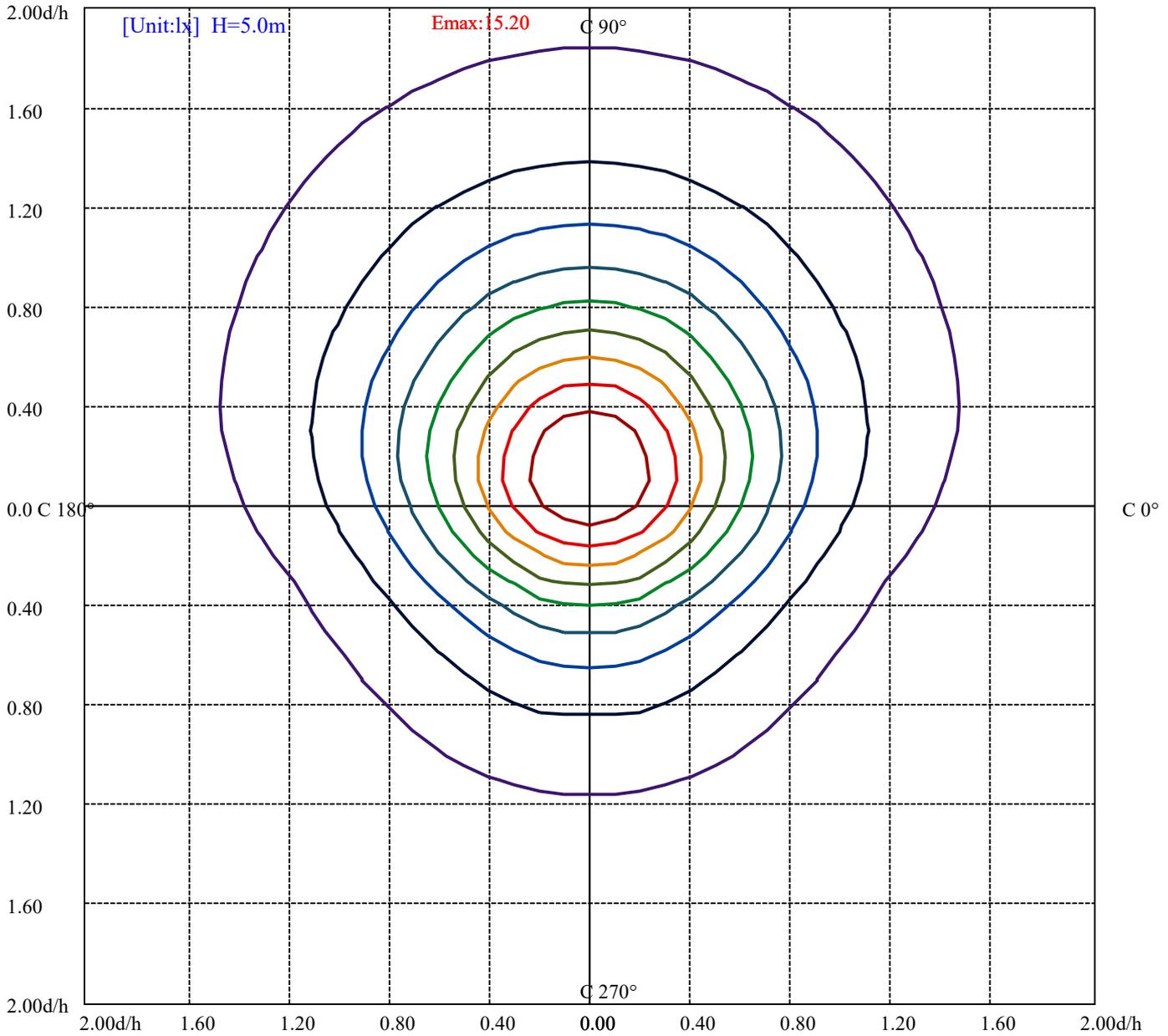
C90(Max): ———
 C0/C180: ———
 C90/C270: ———

Field angle(10%Imax):C0/180Left:79.1 Right:79.1
 :C90/270Left:118.2 Right:114.9

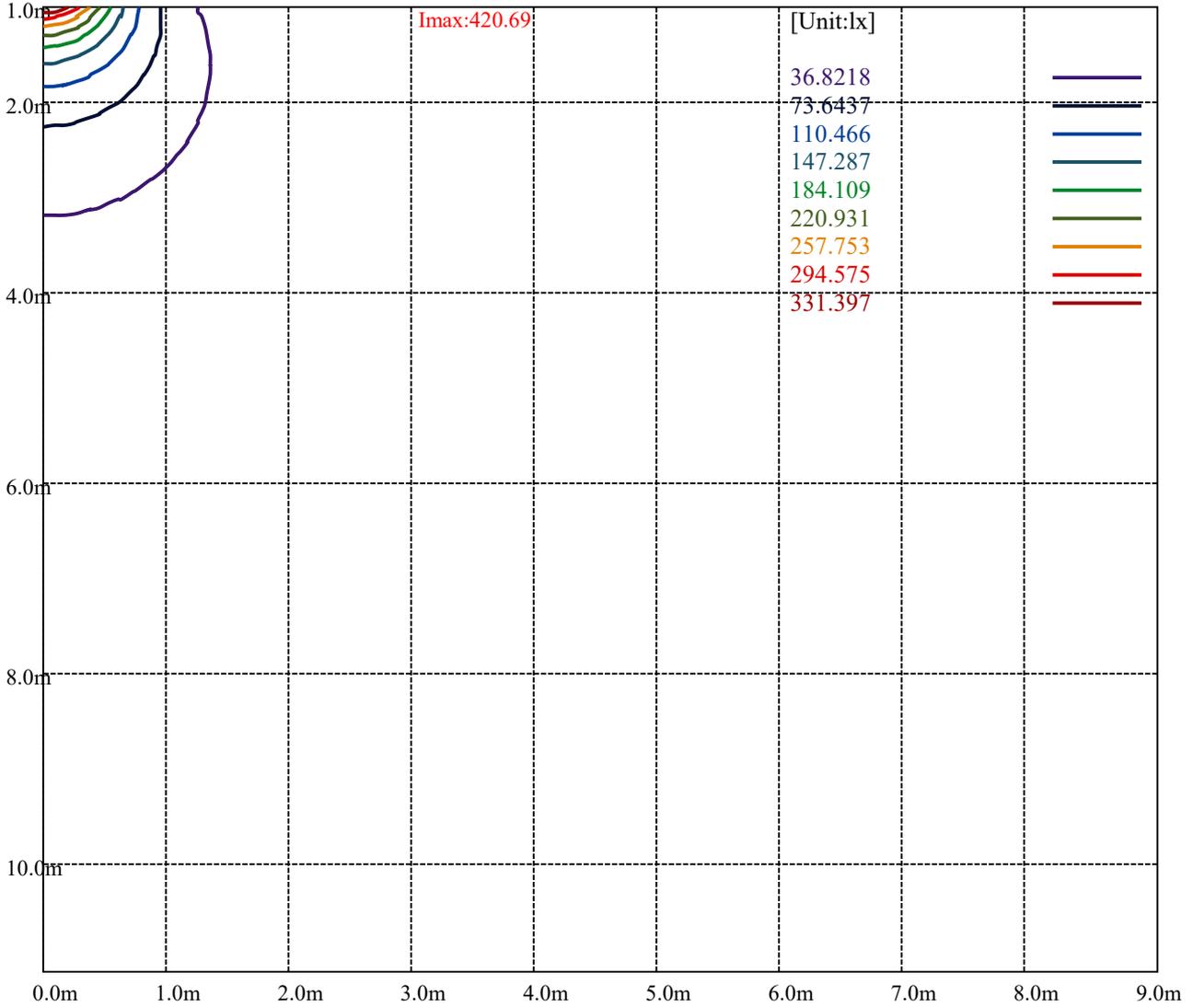
Beam Angle(50%Imax):C0/180Left:54.0 Right:54.0
 :C90/270Left:58.1 Right:61.6



Max , Ave Beam angle of C90 plane 138.70



(10%Emax) 1.519608	—
(20%Emax) 3.039216	—
(30%Emax) 4.55884	—
(40%Emax) 6.07844	—
(50%Emax) 7.59804	—
(60%Emax) 9.11764	—
(70%Emax) 10.63724	—
(80%Emax) 12.15688	—
(90%Emax) 13.67648	—



Luminance Table

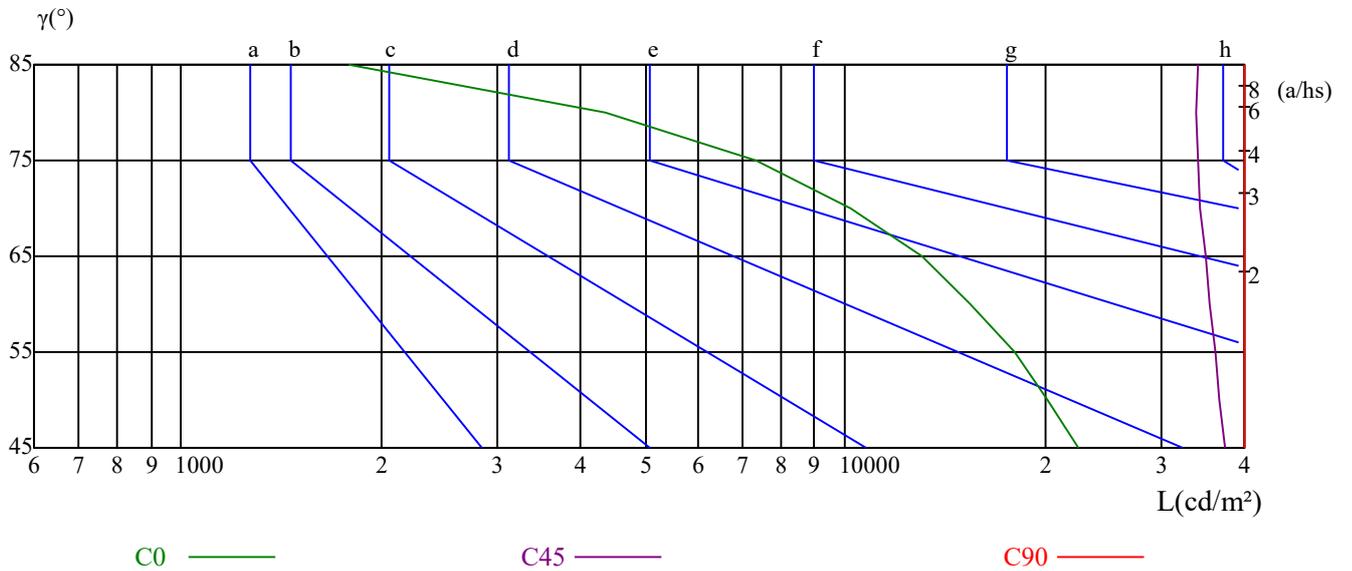
γ	45	50	55	60	65	70	75	80	85
C0	22455	20187	18003	15485	13055	10202	7370	4366	1784
C45	37401	36777	36187	35496	34889	34348	33994	33771	34135
C90	63031	67125	71851	77911	86277	99110	118689	157871	262742

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
31720	56716	45277	25706	77660	58207	15381	187378	130800

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	368.22	369.10	364.70	357.67	346.25	330.43	313.73	294.40	269.79
15.0	368.22	372.64	373.53	369.99	362.91	353.17	339.89	324.85	304.49
30.0	368.22	374.43	380.64	383.30	380.64	373.54	364.67	352.25	337.16
45.0	368.22	378.94	388.77	394.14	396.82	394.14	387.88	378.05	365.54
60.0	368.22	383.56	396.20	405.22	411.54	411.54	407.93	403.42	391.68
75.0	368.22	384.46	398.90	410.64	416.95	419.66	419.66	416.05	408.83
90.0	368.22	383.34	399.35	410.91	418.03	420.69	420.69	417.14	410.91
105.0	368.22	384.50	399.88	410.74	417.98	421.60	419.79	416.17	408.03
120.0	368.22	381.86	393.68	403.68	409.13	410.04	406.40	400.95	390.95
135.0	368.22	370.91	379.87	387.03	388.82	387.03	381.66	371.80	360.16
150.0	368.22	376.40	380.95	382.77	378.22	376.40	366.40	355.49	340.03
165.0	368.22	371.86	372.76	369.13	362.76	352.76	340.94	325.49	307.30
180.0	368.22	364.70	357.67	346.25	332.19	315.49	295.28	271.55	246.06
195.0	368.22	361.14	349.63	333.70	313.34	292.10	268.20	236.33	207.12
210.0	368.22	354.91	338.94	316.76	289.25	260.86	230.69	201.41	174.79
225.0	368.22	353.03	328.89	300.29	269.91	235.95	211.82	189.47	168.92
240.0	368.22	350.17	321.29	289.70	254.50	229.23	207.57	187.72	168.77
255.0	368.22	346.56	315.87	280.68	249.09	225.62	206.67	186.82	167.86
270.0	368.22	345.09	312.19	276.61	244.59	222.35	202.79	184.11	166.32
285.0	368.22	346.51	316.65	280.46	248.80	227.08	206.27	187.28	181.85
300.0	368.22	347.31	320.94	289.12	280.94	227.30	206.38	186.38	167.29
315.0	368.22	344.03	321.63	295.65	264.29	233.83	209.64	186.35	165.74
330.0	368.22	356.40	340.03	319.12	291.85	265.48	233.66	203.66	176.38
345.0	368.22	360.04	348.22	332.76	314.58	291.85	266.39	240.02	209.11
360.0	368.22	369.10	364.70	357.67	346.25	330.43	313.73	294.40	269.79
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	246.94	219.70	192.46	163.46	134.46	101.94	73.82	44.82	20.21
15.0	283.24	260.23	235.45	208.89	180.57	149.59	120.38	92.94	65.50
30.0	317.64	297.24	274.17	248.44	222.71	196.09	171.24	146.40	123.33
45.0	349.45	331.58	312.81	289.57	267.23	243.99	219.86	195.73	173.38
60.0	380.85	365.51	347.46	327.61	305.95	284.29	259.02	237.36	213.89
75.0	398.00	384.46	369.12	349.27	328.51	306.85	283.38	259.92	236.45
90.0	401.13	389.56	373.55	354.88	334.42	313.96	289.06	265.94	241.92
105.0	397.17	384.50	368.22	348.31	329.32	305.79	283.18	259.65	237.04
120.0	379.13	362.76	346.40	326.40	306.39	282.76	260.03	235.48	212.75
135.0	344.92	327.90	308.19	287.59	264.29	240.10	216.81	192.62	170.22
150.0	320.03	297.30	273.66	249.12	222.75	198.20	171.84	146.38	122.74
165.0	282.76	260.03	234.57	210.02	180.93	150.01	119.10	90.01	64.55
180.0	221.46	192.46	164.34	131.82	102.82	72.94	43.94	19.33	3.52
195.0	176.14	144.28	115.07	87.63	64.62	41.60	24.78	14.16	7.08
210.0	149.95	127.77	104.70	84.29	64.77	49.69	37.27	26.62	18.63
225.0	147.47	126.91	107.25	89.37	73.29	60.77	49.16	38.43	30.39
240.0	148.91	131.76	114.62	98.37	83.03	70.39	58.66	48.73	39.71
255.0	150.72	133.57	118.23	102.88	90.25	75.81	65.88	64.08	46.03
270.0	148.53	133.41	118.29	113.85	89.83	78.27	66.71	56.03	47.14
285.0	151.09	132.99	117.61	103.14	89.57	76.90	64.23	53.38	45.24
300.0	148.20	130.01	112.74	96.37	82.74	69.10	58.19	48.19	39.09
315.0	144.24	125.43	105.72	87.80	72.57	59.13	47.48	37.63	29.56
330.0	151.83	126.38	105.47	83.64	63.64	49.10	36.37	26.37	18.18
345.0	179.11	147.29	117.28	90.01	64.55	41.82	24.55	13.64	7.27
360.0	246.94	219.70	192.46	163.46	134.46	101.94	73.82	44.82	20.21

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	3.52	0.88	0.88	0.88	0.88	0.88	0.88	1.76	1.76
15.0	46.03	30.98	22.13	16.82	13.28	10.62	8.85	7.97	7.08
30.0	102.04	84.29	68.32	56.79	47.03	38.15	31.94	27.51	21.29
45.0	151.93	132.27	113.50	97.42	84.01	70.61	59.88	50.94	42.01
60.0	191.33	170.57	150.72	130.86	114.62	98.37	84.83	72.20	60.47
75.0	213.89	190.43	171.47	152.52	134.47	116.42	101.08	86.64	73.10
90.0	217.91	194.78	174.33	154.76	136.97	120.07	104.06	89.83	75.60
105.0	212.61	189.99	170.09	151.09	132.99	115.80	100.42	85.95	72.38
120.0	190.02	167.29	149.11	130.92	114.56	98.19	84.55	71.83	60.92
135.0	149.62	129.01	111.99	95.86	81.53	68.98	59.13	49.27	41.21
150.0	100.92	82.74	68.19	55.46	46.37	38.19	31.82	27.28	20.91
165.0	44.55	30.00	21.82	16.37	12.73	10.00	8.18	7.27	7.27
180.0	0.88	0.88	0.88	0.88	0.88	1.76	1.76	1.76	1.76
195.0	3.54	2.66	1.77	0.89	0.89	0.89	0.89	0.89	0.89
210.0	12.42	8.87	5.32	3.55	2.66	1.77	0.89	0.89	0.89
225.0	22.34	16.98	12.51	8.94	6.26	4.47	2.68	1.79	0.89
240.0	31.59	24.37	23.46	14.44	10.83	7.22	5.41	3.61	2.71
255.0	37.00	29.78	23.46	18.05	13.54	9.93	7.22	4.51	3.61
270.0	39.13	31.13	24.90	19.57	15.12	11.56	8.00	5.34	3.56
285.0	37.09	29.86	23.52	18.09	13.57	9.95	7.24	4.52	3.62
300.0	30.91	24.55	19.09	14.55	10.91	7.27	5.46	3.64	2.73
315.0	22.40	17.02	11.65	8.96	6.27	4.48	2.69	1.79	0.90
330.0	12.73	8.18	5.46	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	3.52	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	2.64	2.64	2.64	3.52	3.52	3.52	3.52	4.39
15.0	7.08	6.20	6.20	6.20	6.20	6.20	5.31	4.43	4.43
30.0	16.86	14.20	12.42	10.65	9.76	7.99	7.10	5.32	4.44
45.0	34.86	26.81	20.56	16.98	13.41	10.72	8.94	6.26	4.47
60.0	50.54	41.51	30.68	23.46	18.95	14.44	10.83	8.12	5.41
75.0	60.47	49.64	39.71	28.88	21.66	16.24	12.63	9.02	7.22
90.0	63.15	52.48	41.80	30.24	23.12	16.90	12.45	9.78	7.12
105.0	60.62	49.76	39.81	28.95	21.71	16.28	12.67	9.05	7.24
120.0	50.00	40.91	30.91	23.64	18.18	14.55	10.91	8.18	6.36
135.0	34.04	25.98	20.61	17.02	13.44	10.75	8.96	7.17	6.27
150.0	17.27	14.55	11.82	10.91	9.09	8.18	7.27	6.36	5.46
165.0	6.36	6.36	6.36	6.36	6.36	5.46	5.46	5.46	4.55
180.0	1.76	2.64	2.64	2.64	2.64	2.64	2.64	3.52	4.39
195.0	0.89	0.89	0.89	1.77	1.77	1.77	2.66	3.54	4.43
210.0	0.89	0.89	0.89	0.89	1.77	1.77	2.66	3.55	4.44
225.0	0.89	0.89	0.89	0.89	0.89	1.79	2.68	2.68	3.57
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	0.89	1.78	2.67	2.67
285.0	1.81	0.90	0.90	0.90	0.90	1.81	1.81	2.71	3.62
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	3.58
330.0	0.91	0.91	0.91	0.91	1.82	1.82	1.82	2.73	4.55
345.0	0.91	0.91	0.91	1.82	1.82	1.82	2.73	3.64	4.55
360.0	1.76	2.64	2.64	2.64	3.52	3.52	3.52	3.52	4.39

Intensity data(cd)

C/ γ ($^{\circ}$)	180.0
0.0	4.39
15.0	4.43
30.0	4.44
45.0	4.47
60.0	4.51
75.0	3.61
90.0	4.45
105.0	5.43
120.0	5.46
135.0	5.38
150.0	5.46
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