
AFX

Client:

LumCAT: ELZV3602LAJD4LB

Luminaire: LED Lamp

Report No:

Ballast type:

Test No: LCZP25070006

Voltage(V): 119.960

LampCAT:

Current(A): 0.165

Lamp flux(lm): 1674.2

Power (W): 19.480

Number of Lamps: 1

PF: 0.982

Length(mm): 900

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1674.15, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 85.94

Central intensity(cd): 358.335, Maximum intensity(cd): 469.580

Angle of maximum intensity: C=90.0 γ =40.0

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

[C90/270]Total=128.1

Field angle(10%Imax): [C0/180]Total=158.4

[C90/270]Total=236.4

Maximum s/h(1/2): C0_180=1.23 C90_270=1.90

Maximum s/h(1/4): C0_180=1.35 C90_270=1.98

Up flux rate of lamp(%): 19.65%

Down flux rate of lamp(%): 80.35%

Up flux rate of LUM(%): 19.65%

Down flux rate of LUM(%): 80.35%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 52.070%

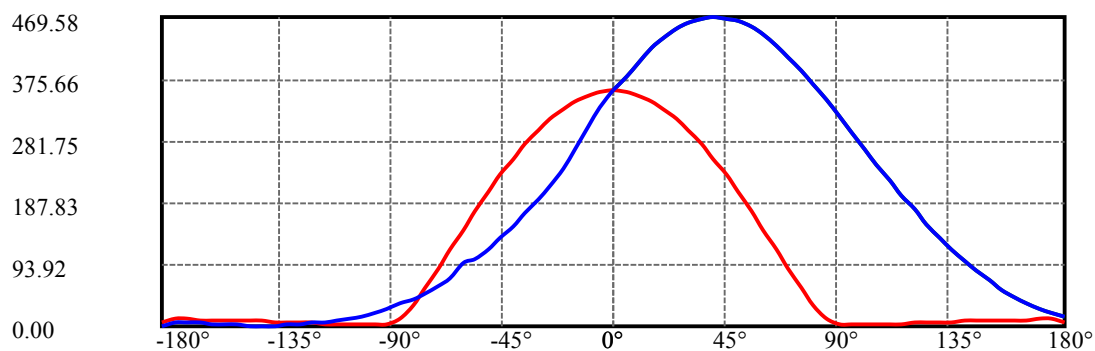
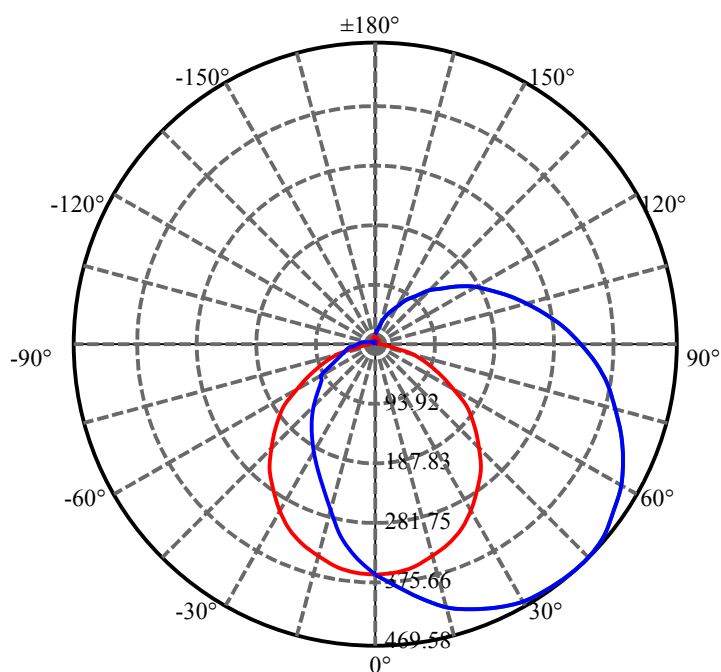
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	358.335	0.000	0	0.00%	0.00%
5.0	355.570	8.535	8.535	0.51%	0.51%
10.0	350.955	25.275	33.809	1.51%	2.02%
15.0	343.080	41.170	74.979	2.46%	4.48%
20.0	334.108	55.810	130.789	3.33%	7.81%
25.0	321.735	68.786	199.574	4.11%	11.92%
30.0	309.270	79.854	279.428	4.77%	16.69%
35.0	295.276	89.024	368.452	5.32%	22.01%
40.0	280.678	96.094	464.546	5.74%	27.75%
45.0	263.411	100.742	565.288	6.02%	33.77%
50.0	245.922	102.918	668.206	6.15%	39.91%
55.0	227.108	102.853	771.059	6.14%	46.06%
60.0	208.444	100.677	871.735	6.01%	52.07%
65.0	188.446	96.485	968.22	5.76%	57.83%
70.0	169.062	90.523	1058.743	5.41%	63.24%
75.0	150.257	83.465	1142.208	4.99%	68.23%
80.0	132.771	75.730	1217.938	4.52%	72.75%
85.0	116.020	67.602	1285.541	4.04%	76.79%
90.0	102.021	59.701	1345.242	3.57%	80.35%
95.0	90.247	52.645	1397.887	3.14%	83.50%
100.0	80.425	46.376	1444.262	2.77%	86.27%
105.0	71.546	40.663	1484.926	2.43%	88.70%
110.0	63.643	35.336	1520.262	2.11%	90.81%
115.0	56.441	30.406	1550.668	1.82%	92.62%
120.0	50.073	25.894	1576.562	1.55%	94.17%
125.0	44.041	21.754	1598.316	1.30%	95.47%
130.0	38.554	17.959	1616.275	1.07%	96.54%
135.0	33.725	14.605	1630.88	0.87%	97.42%
140.0	29.548	11.715	1642.595	0.70%	98.12%
145.0	26.065	9.279	1651.874	0.55%	98.67%
150.0	22.974	7.221	1659.095	0.43%	99.10%
155.0	20.179	5.461	1664.556	0.33%	99.43%
160.0	17.540	3.956	1668.512	0.24%	99.66%
165.0	15.412	2.716	1671.228	0.16%	99.83%
170.0	13.749	1.730	1672.958	0.10%	99.93%
175.0	12.968	0.956	1673.914	0.06%	99.99%
180.0	6.536	0.233	1674.147	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	279.43	16.69%	16.69%
0-40	464.55	27.75%	27.75%
0-60	871.74	52.07%	52.07%
0-90	1345.24	80.35%	80.35%
0-120	1576.56	94.17%	94.17%
0-180	1674.15	100.00%	100.00%
60-90	473.51	28.28%	28.28%
90-120	231.32	13.82%	13.82%
90-130	271.03	16.19%	16.19%
90-150	313.85	18.75%	18.75%
90-180	328.67	19.63%	19.63%
0-89.50	1339.32	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	33.81
10-20	96.98
20-30	148.64
30-40	185.12
40-50	203.66
50-60	203.53
60-70	187.01
70-80	159.20
80-90	127.30
90-100	99.02
100-110	76.00
110-120	56.30
120-130	39.71
130-140	26.32
140-150	16.50
150-160	9.42
160-170	4.45
170-180	0.96



C90(Max): —————

C0/C180: —————

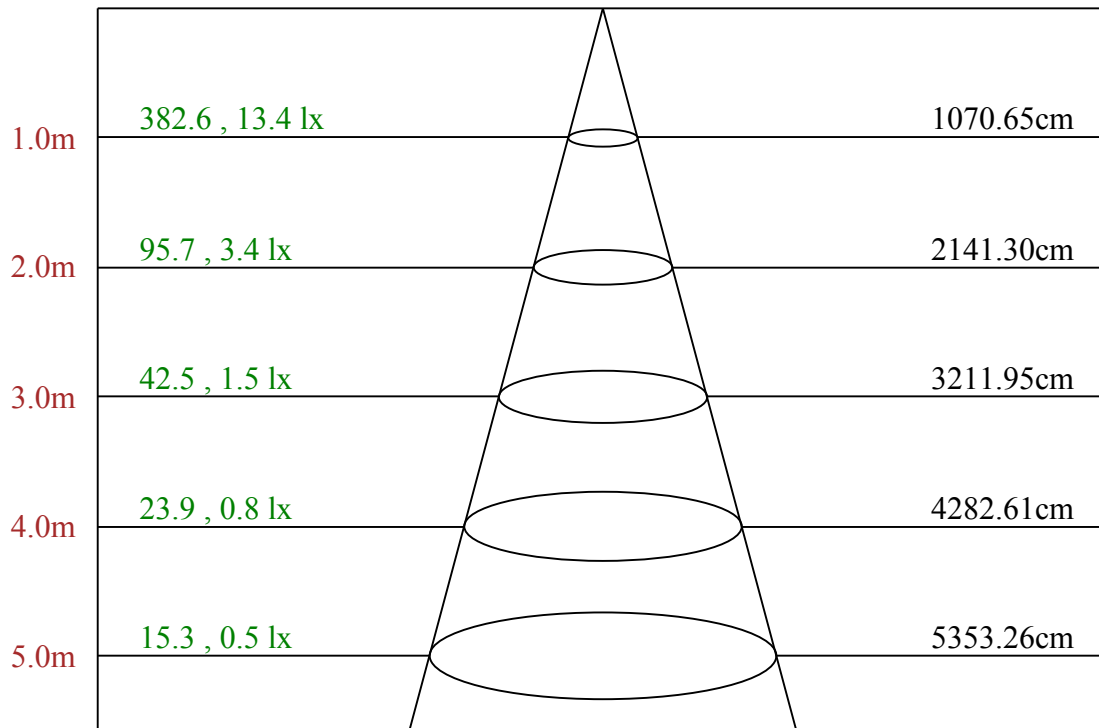
C90/C270: —————

Field angle(10%Imax):C0/180Left:79.2 Right:79.2

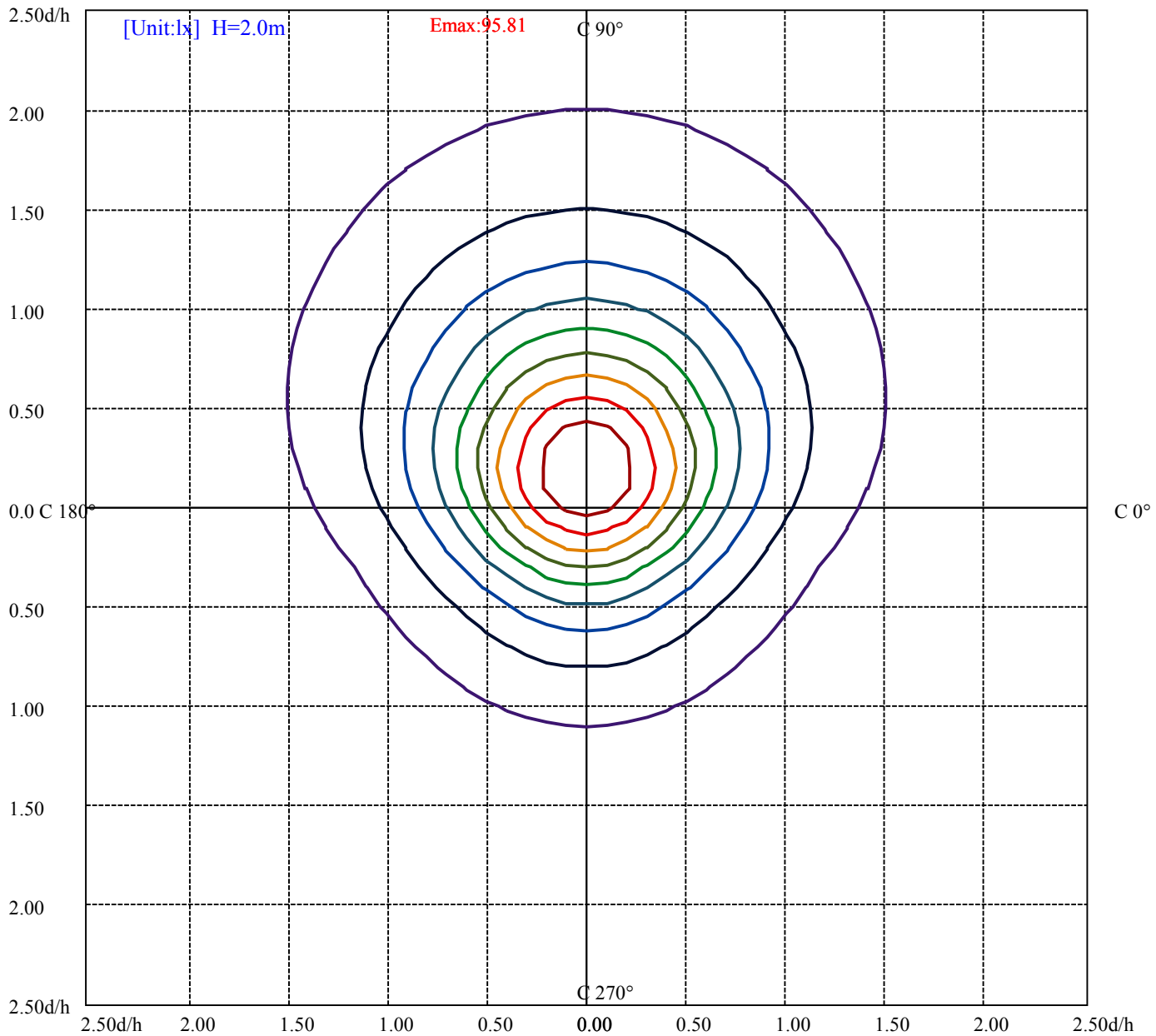
:C90/270Left:117.2 Right:119.2

Beam Angle(50%Imax):C0/180Left:54.2 Right:54.2

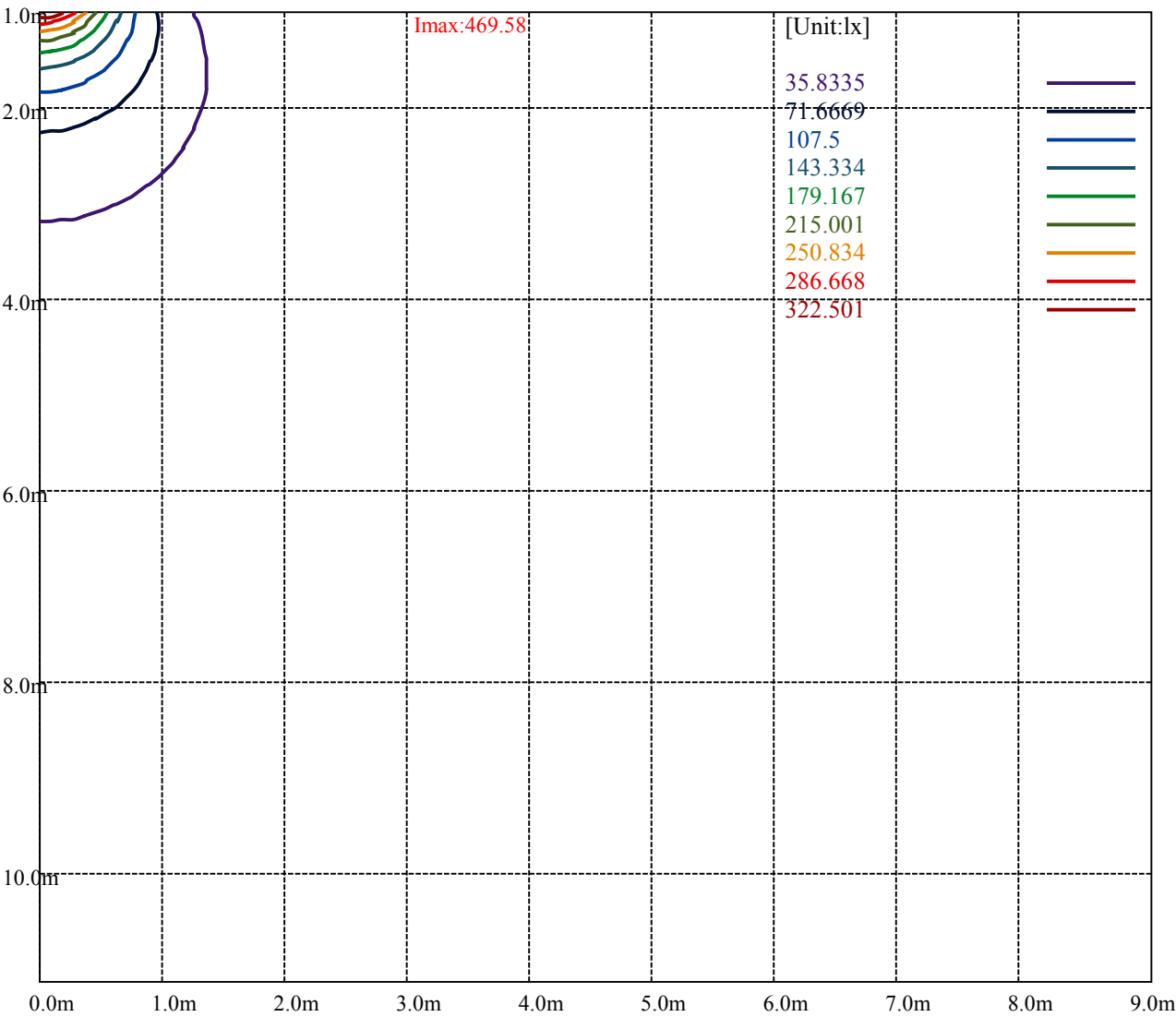
:C90/270Left:61.0 Right:67.1



Max , Ave Beam angle of C90 plane 158.84



(10%Emax)	9.580875	—
(20%Emax)	19.16172	—
(30%Emax)	28.7425	—
(40%Emax)	38.3235	—
(50%Emax)	47.90425	—
(60%Emax)	57.48525	—
(70%Emax)	67.066	—
(80%Emax)	76.647	—
(90%Emax)	86.22775	—



Luminance Table

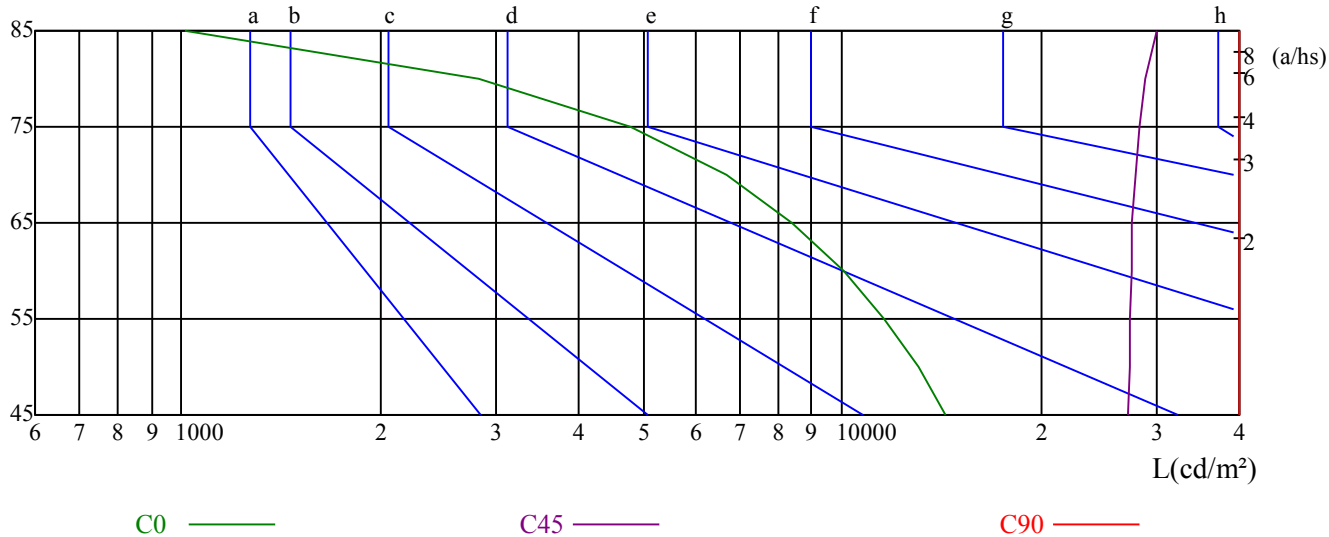
γ	45	50	55	60	65	70	75	80	85
C0	14400	13081	11552	10086	8428	6678	4800	2815	1009
C45	27212	27344	27379	27443	27555	27824	28225	28898	29966
C90	48472	52671	57716	64228	73043	85744	106434	147598	260543

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
20477	43795	33407	16743	62699	44783	8699	161103	106046

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

 $\gamma(^{\circ})$ 

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	1.14	1.14	1.14	1.09	1.09	1.09	1.00	1.00	1.00	0.92	0.92	0.92	0.84	0.84	0.84	0.80
1	0.95	0.90	0.85	0.91	0.86	0.82	0.83	0.79	0.75	0.76	0.73	0.70	0.69	0.66	0.64	0.61
2	0.81	0.73	0.67	0.78	0.71	0.64	0.71	0.65	0.60	0.65	0.60	0.56	0.59	0.55	0.52	0.48
3	0.70	0.61	0.54	0.67	0.59	0.53	0.62	0.55	0.49	0.56	0.50	0.46	0.51	0.46	0.43	0.39
4	0.62	0.52	0.45	0.59	0.51	0.44	0.54	0.47	0.41	0.49	0.43	0.38	0.45	0.40	0.36	0.33
5	0.55	0.45	0.38	0.53	0.44	0.37	0.48	0.41	0.35	0.44	0.38	0.33	0.40	0.35	0.31	0.28
6	0.49	0.40	0.33	0.47	0.38	0.32	0.43	0.36	0.30	0.40	0.33	0.29	0.36	0.31	0.27	0.24
7	0.44	0.35	0.29	0.43	0.34	0.28	0.39	0.32	0.27	0.36	0.30	0.25	0.33	0.28	0.24	0.21
8	0.40	0.32	0.26	0.39	0.31	0.25	0.36	0.29	0.24	0.33	0.27	0.22	0.30	0.25	0.21	0.19
9	0.37	0.28	0.23	0.35	0.28	0.22	0.33	0.26	0.21	0.30	0.24	0.20	0.28	0.23	0.19	0.17
10	0.34	0.26	0.20	0.33	0.25	0.20	0.30	0.24	0.19	0.28	0.22	0.18	0.26	0.21	0.17	0.15

Intensity data(cd)

Appendix Page: 10 Total:12

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	358.33	356.57	351.36	343.33	330.89	316.42	298.33	278.83	256.07
15.0	358.33	361.54	362.43	358.96	352.37	342.76	330.39	314.81	297.46
30.0	358.33	368.17	373.62	377.02	376.66	374.07	368.88	360.12	347.07
45.0	358.33	371.57	384.62	394.44	401.28	404.52	403.53	399.39	390.93
60.0	358.33	376.84	393.99	408.95	420.57	428.82	432.63	433.72	430.91
75.0	358.33	378.50	398.95	417.75	432.75	443.65	451.37	455.91	456.55
90.0	358.33	379.75	400.61	422.93	438.51	451.72	462.02	466.66	469.58
105.0	358.33	379.81	401.46	421.21	437.88	450.39	458.72	463.07	465.79
120.0	358.33	377.69	396.78	413.26	427.57	436.30	442.79	445.13	444.32
135.0	358.33	361.54	376.08	388.38	397.64	402.57	404.31	402.23	397.90
150.0	358.33	370.35	380.84	387.16	391.86	391.50	388.79	381.65	372.16
165.0	358.33	364.63	368.76	368.76	366.15	359.50	350.87	338.92	321.49
180.0	358.33	355.95	350.30	340.95	328.33	314.30	295.07	275.21	252.63
195.0	358.33	350.15	340.18	324.96	308.76	288.38	263.99	239.42	212.28
210.0	358.33	345.73	329.81	309.70	286.36	259.72	232.72	201.52	176.84
225.0	358.33	339.61	318.18	293.51	264.88	234.63	208.43	184.84	161.97
240.0	358.33	337.92	311.71	280.68	247.93	221.62	198.94	176.63	155.49
255.0	358.33	334.35	306.09	272.39	240.95	216.05	193.43	172.63	152.18
270.0	358.33	333.64	302.39	268.59	240.17	213.56	192.79	172.93	153.06
285.0	358.33	335.77	303.61	271.08	239.92	215.73	192.89	170.79	166.35
300.0	358.33	336.28	308.28	276.22	268.12	217.25	194.02	171.69	151.35
315.0	358.33	327.34	303.53	275.66	245.27	217.30	193.41	170.81	149.08
330.0	358.33	343.33	324.72	301.85	276.00	247.08	215.54	188.70	163.76
345.0	358.33	346.65	334.61	316.18	297.76	273.76	248.60	221.00	191.08
360.0	358.33	356.57	351.36	343.33	330.89	316.42	298.33	278.83	256.07
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	230.65	206.30	176.65	149.56	119.74	90.71	60.88	33.27	10.94
15.0	278.23	255.71	231.68	205.51	178.37	148.91	121.22	91.85	65.24
30.0	331.42	313.63	294.14	271.25	245.95	221.19	195.08	170.14	144.66
45.0	380.48	368.24	351.22	332.22	311.88	290.00	266.14	242.73	219.32
60.0	425.19	415.67	403.24	386.09	368.59	348.54	328.31	303.90	281.41
75.0	453.19	446.56	436.29	423.57	407.12	388.95	368.78	346.34	323.63
90.0	467.85	463.11	454.00	441.88	426.67	407.99	387.31	367.81	345.49
105.0	463.16	457.54	447.67	434.44	418.95	402.82	379.63	357.97	334.14
120.0	439.00	431.53	419.47	405.78	387.78	368.42	347.44	324.39	299.45
135.0	388.03	377.38	363.01	345.78	325.70	305.26	283.88	261.02	237.48
150.0	358.15	341.98	323.72	303.03	279.71	254.40	228.65	204.52	177.59
165.0	305.40	285.45	262.08	237.27	211.48	182.27	155.31	126.63	99.04
180.0	227.57	201.09	172.59	143.83	113.92	83.91	56.12	29.82	9.53
195.0	185.49	153.71	124.61	97.02	70.94	47.26	27.41	13.97	6.32
210.0	151.45	127.22	103.98	81.81	63.03	45.42	32.01	21.73	13.86
225.0	139.46	119.29	98.23	81.21	65.00	50.96	39.16	29.26	21.61
240.0	135.62	116.66	99.25	83.19	68.76	56.70	45.00	35.92	27.85
255.0	133.74	117.11	100.03	85.95	72.23	59.96	49.33	47.15	31.89
270.0	134.75	117.26	100.95	97.67	73.07	61.68	50.84	41.91	33.62
285.0	132.73	115.16	99.75	84.80	72.03	59.44	49.29	39.41	31.98
300.0	132.44	113.80	96.97	81.12	67.08	54.83	44.21	35.11	27.91
315.0	127.96	108.48	90.38	73.94	59.82	46.84	36.71	27.79	20.69
330.0	139.54	117.58	95.71	75.46	56.21	42.39	30.37	21.06	14.28
345.0	160.34	131.67	104.97	80.26	58.69	38.65	23.10	12.76	6.56
360.0	230.65	206.30	176.65	149.56	119.74	90.71	60.88	33.27	10.94

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	1.76	0.71	0.97	1.15	1.94	2.47	3.09	4.06	5.12
15.0	44.77	31.86	25.10	21.45	19.31	18.42	17.80	17.45	16.91
30.0	123.74	104.69	89.32	76.62	67.05	58.83	52.30	46.76	42.02
45.0	196.63	175.93	155.76	138.92	122.72	107.95	94.99	83.82	72.93
60.0	257.64	234.78	213.10	191.50	172.36	153.40	135.71	118.84	103.33
75.0	298.64	275.11	250.49	228.77	205.06	183.71	162.72	143.92	125.20
90.0	318.61	293.56	268.68	243.81	222.13	197.43	176.84	155.07	134.75
105.0	309.41	283.50	261.30	237.56	213.91	190.81	170.15	149.77	129.92
120.0	277.12	251.64	228.69	206.81	185.29	165.30	146.21	128.12	111.28
135.0	215.05	192.20	172.63	154.54	136.62	120.60	106.31	92.64	81.21
150.0	155.44	133.93	116.04	100.86	87.75	77.09	67.51	59.38	52.24
165.0	75.50	58.15	46.29	38.74	33.52	29.84	27.50	25.70	24.18
180.0	2.56	2.56	2.91	3.79	4.59	5.47	6.26	7.06	7.85
195.0	2.67	2.05	1.51	1.34	1.25	1.51	2.05	2.14	2.40
210.0	8.23	5.10	3.67	2.77	2.15	1.43	1.16	0.98	1.34
225.0	14.59	10.35	7.47	5.49	4.14	3.24	2.97	1.17	0.99
240.0	21.05	15.69	14.42	8.71	6.44	4.99	3.72	2.45	1.18
255.0	24.99	19.08	14.54	10.99	8.18	6.27	4.72	3.27	2.00
270.0	26.88	20.86	15.85	11.94	9.02	6.92	5.19	3.64	2.37
285.0	25.10	19.30	14.86	11.23	8.43	6.43	4.80	3.53	2.08
300.0	20.98	15.76	12.06	9.09	6.84	5.31	3.96	2.70	1.44
315.0	14.98	10.65	8.05	6.06	4.59	3.72	2.68	1.39	1.04
330.0	8.95	6.06	4.43	3.43	2.80	1.99	1.45	1.08	1.27
345.0	3.24	2.43	2.07	1.53	1.35	1.44	1.62	2.07	2.25
360.0	1.76	0.71	0.97	1.15	1.94	2.47	3.09	4.06	5.12
C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	6.00	7.15	8.29	9.26	9.53	9.18	9.53	9.97	10.50
15.0	16.73	16.55	16.73	16.82	15.49	13.88	12.82	12.46	11.84
30.0	37.82	34.15	31.29	28.25	25.39	20.74	16.72	14.84	13.14
45.0	64.01	55.73	48.44	41.96	36.28	30.61	22.96	17.02	14.23
60.0	89.27	77.11	65.68	55.34	45.99	38.19	30.30	22.50	14.88
75.0	107.75	91.95	77.77	65.23	53.70	43.34	34.25	26.26	19.72
90.0	116.44	99.40	84.19	68.97	56.58	45.10	35.53	27.33	20.32
105.0	112.08	95.40	80.18	66.59	54.91	44.12	34.70	26.64	20.02
120.0	96.52	81.84	69.69	58.34	48.26	39.34	31.96	24.67	19.18
135.0	70.30	60.60	52.03	44.59	37.75	31.69	26.23	21.21	17.23
150.0	46.36	41.12	36.69	32.53	28.83	25.21	22.14	18.98	16.54
165.0	22.74	21.75	20.85	19.86	18.69	17.71	16.99	15.82	14.83
180.0	8.56	9.26	10.06	9.97	9.62	9.26	9.97	10.59	11.38
195.0	2.85	3.38	4.09	4.90	6.05	6.14	8.10	9.61	11.04
210.0	1.79	2.06	3.13	3.76	4.65	5.45	6.62	8.76	10.55
225.0	0.81	1.44	2.16	3.24	4.23	5.22	6.39	7.92	9.81
240.0	0.82	0.73	1.54	2.63	3.72	4.81	5.99	7.80	9.07
255.0	0.91	0.82	1.00	2.18	3.27	4.54	5.81	7.00	7.36
270.0	1.09	0.82	0.91	2.10	3.10	4.28	5.83	4.46	5.92
285.0	1.00	0.82	1.00	2.17	3.26	4.35	4.53	4.80	9.51
300.0	0.81	0.81	1.44	2.43	3.51	3.96	4.14	6.48	10.44
315.0	0.69	1.21	2.08	2.94	3.38	3.55	4.85	7.10	10.39
330.0	1.54	2.17	2.89	3.43	3.61	4.34	5.96	8.31	11.30
345.0	2.52	2.88	3.42	3.86	4.49	5.93	7.55	9.44	12.04
360.0	6.00	7.15	8.29	9.26	9.53	9.18	9.53	9.97	10.50

Intensity data(cd)

C/ γ (°)	180.0
0.0	11.38
15.0	11.57
30.0	11.71
45.0	11.97
60.0	11.34
75.0	11.72
90.0	15.12
105.0	15.31
120.0	14.77
135.0	14.11
150.0	14.19
165.0	13.66
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	11.38