
AFX

Client:

LumCAT: ELZV3602LAJD4SN

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.980

LampCAT:

Current(A): 0.166

Lamp flux(lm): 1885.0

Power (W): 19.580

Number of Lamps: 1

PF: 0.984

Length(mm): 890

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1884.98, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 96.27

Central intensity(cd): 473.039, Maximum intensity(cd): 536.596

Angle of maximum intensity: C=90.0 γ =25.0

Beam Angle(50%Imax): [C0/180]Total=109.4

[C90/270]Total=126.1

Field angle(10%Imax): [C0/180]Total=158.8

[C90/270]Total=236.2

Maximum s/h(1/2): C0_180=1.24 C90_270=1.67

Maximum s/h(1/4): C0_180=1.35 C90_270=1.78

Up flux rate of lamp(%): 14.24%

Down flux rate of lamp(%): 85.76%

Up flux rate of LUM(%): 14.24%

Down flux rate of LUM(%): 85.76%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 58.238%

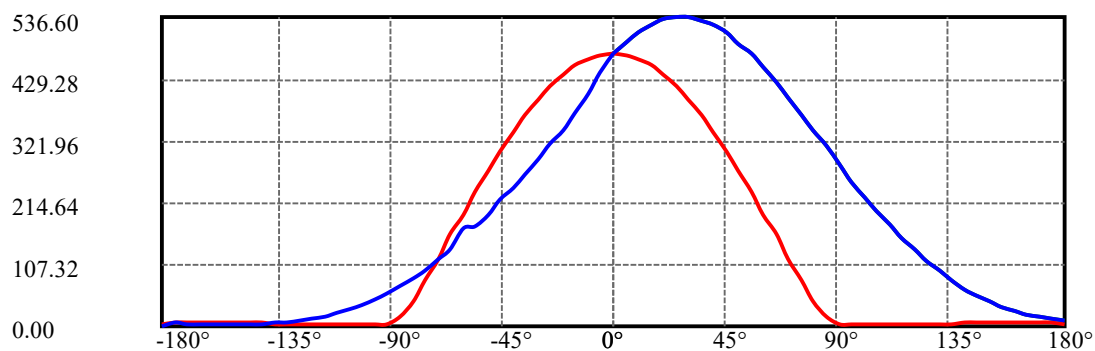
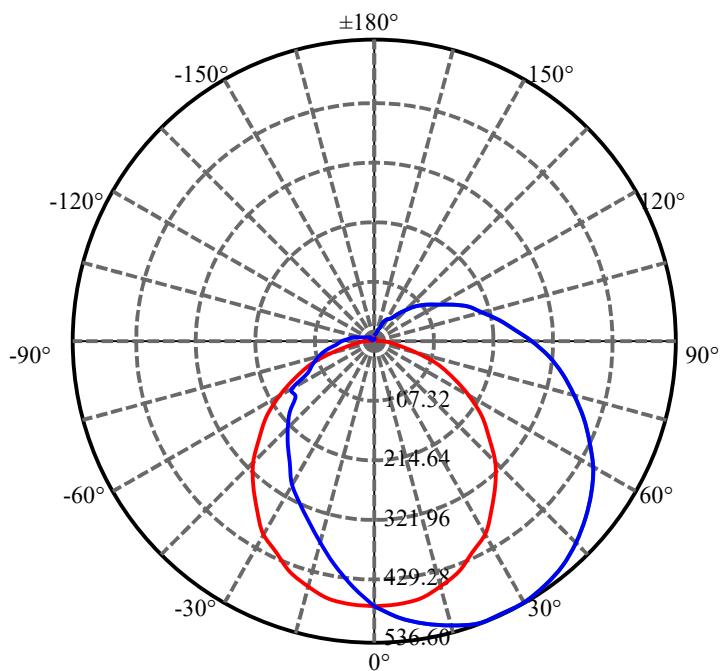
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	473.039	0.000	0	0.00%	0.00%
5.0	467.376	11.242	11.242	0.60%	0.60%
10.0	458.216	33.111	44.354	1.76%	2.35%
15.0	445.995	53.637	97.991	2.85%	5.20%
20.0	432.770	72.423	170.414	3.84%	9.04%
25.0	415.661	88.985	259.398	4.72%	13.76%
30.0	397.131	102.860	362.258	5.46%	19.22%
35.0	376.166	113.873	476.131	6.04%	25.26%
40.0	354.200	121.856	597.988	6.46%	31.72%
45.0	328.420	126.393	724.38	6.71%	38.43%
50.0	301.999	127.385	851.766	6.76%	45.19%
55.0	274.802	125.416	977.181	6.65%	51.84%
60.0	246.899	120.590	1097.771	6.40%	58.24%
65.0	218.563	113.155	1210.926	6.00%	64.24%
70.0	190.234	103.510	1314.436	5.49%	69.73%
75.0	163.662	92.503	1406.939	4.91%	74.64%
80.0	139.261	81.054	1487.993	4.30%	78.94%
85.0	116.831	69.586	1557.579	3.69%	82.63%
90.0	98.356	58.920	1616.499	3.13%	85.76%
95.0	83.689	49.845	1666.344	2.64%	88.40%
100.0	71.639	42.207	1708.551	2.24%	90.64%
105.0	61.269	35.563	1744.113	1.89%	92.53%
110.0	52.436	29.721	1773.834	1.58%	94.10%
115.0	44.795	24.619	1798.453	1.31%	95.41%
120.0	37.979	20.122	1818.576	1.07%	96.48%
125.0	32.212	16.224	1834.8	0.86%	97.34%
130.0	27.041	12.883	1847.684	0.68%	98.02%
135.0	22.769	10.065	1857.748	0.53%	98.56%
140.0	19.135	7.759	1865.507	0.41%	98.97%
145.0	16.063	5.873	1871.38	0.31%	99.28%
150.0	13.812	4.399	1875.779	0.23%	99.51%
155.0	11.863	3.249	1879.028	0.17%	99.68%
160.0	10.626	2.359	1881.387	0.13%	99.81%
165.0	9.800	1.683	1883.071	0.09%	99.90%
170.0	9.049	1.118	1884.189	0.06%	99.96%
175.0	8.785	0.638	1884.827	0.03%	99.99%
180.0	4.449	0.158	1884.985	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	362.26	19.22%	19.22%
0-40	597.99	31.72%	31.72%
0-60	1097.77	58.24%	58.24%
0-90	1616.50	85.76%	85.76%
0-120	1818.58	96.48%	96.48%
0-180	1884.98	100.00%	100.00%
60-90	518.73	27.52%	27.52%
90-120	202.08	10.72%	10.72%
90-130	231.18	12.26%	12.26%
90-150	259.28	13.76%	13.76%
90-180	268.33	14.24%	14.24%
0-81.44	1507.99	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	44.35
10-20	126.06
20-30	191.84
30-40	235.73
40-50	253.78
50-60	246.01
60-70	216.66
70-80	173.56
80-90	128.51
90-100	92.05
100-110	65.28
110-120	44.74
120-130	29.11
130-140	17.82
140-150	10.27
150-160	5.61
160-170	2.80
170-180	0.64

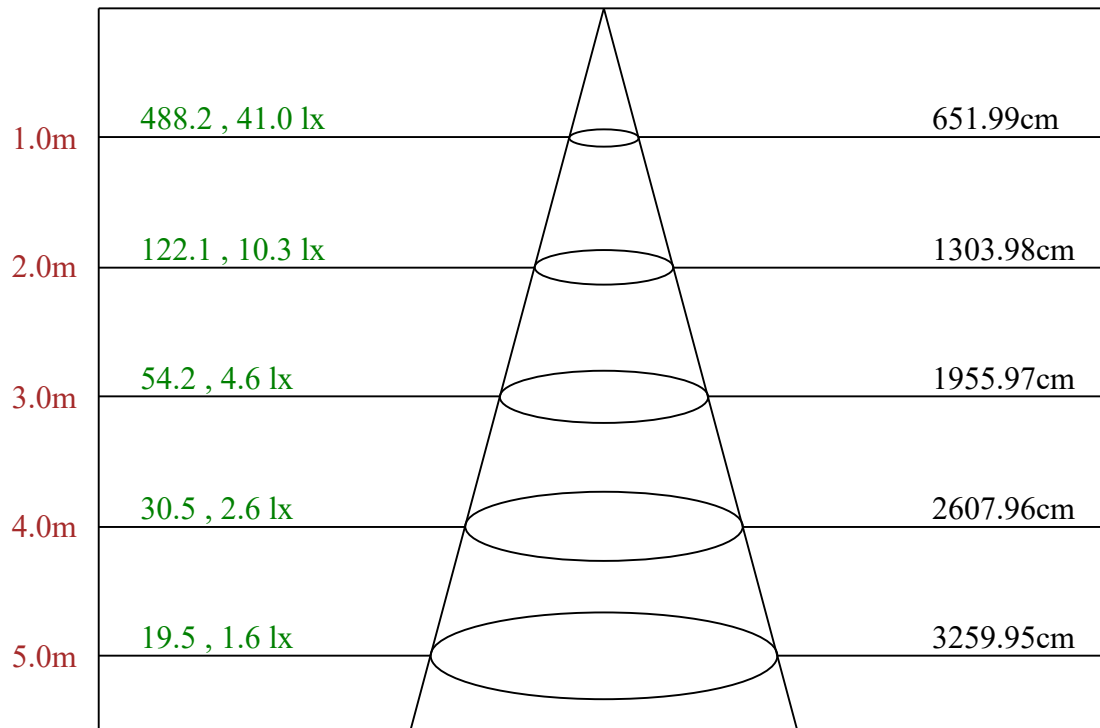
C90(Max): —————C0/C180: —————C90/C270: —————

Field angle(10%Imax):C0/180Left:79.4 Right:79.4

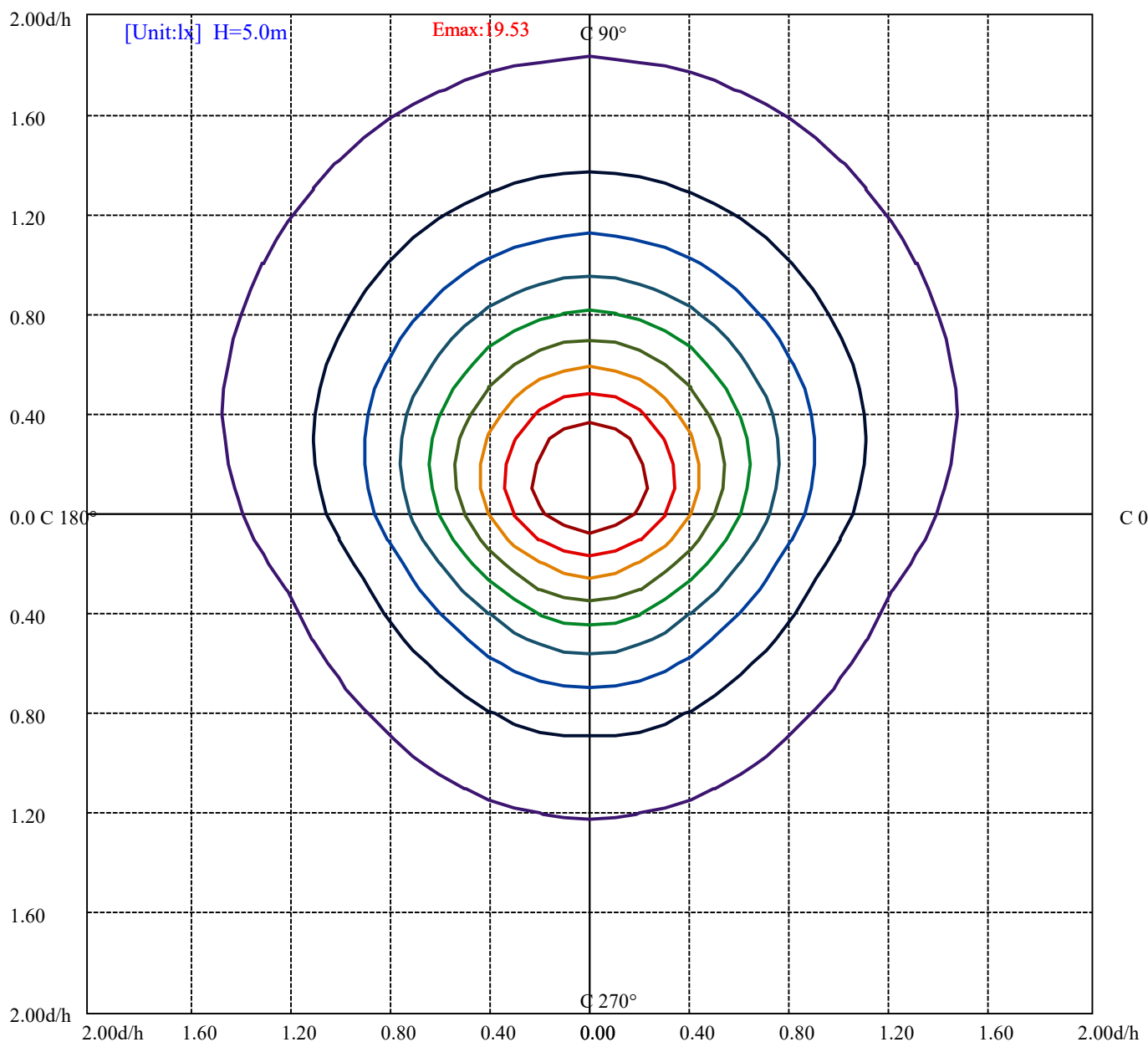
:C90/270Left:117.0 Right:119.3

Beam Angle(50%Imax):C0/180Left:54.7 Right:54.7

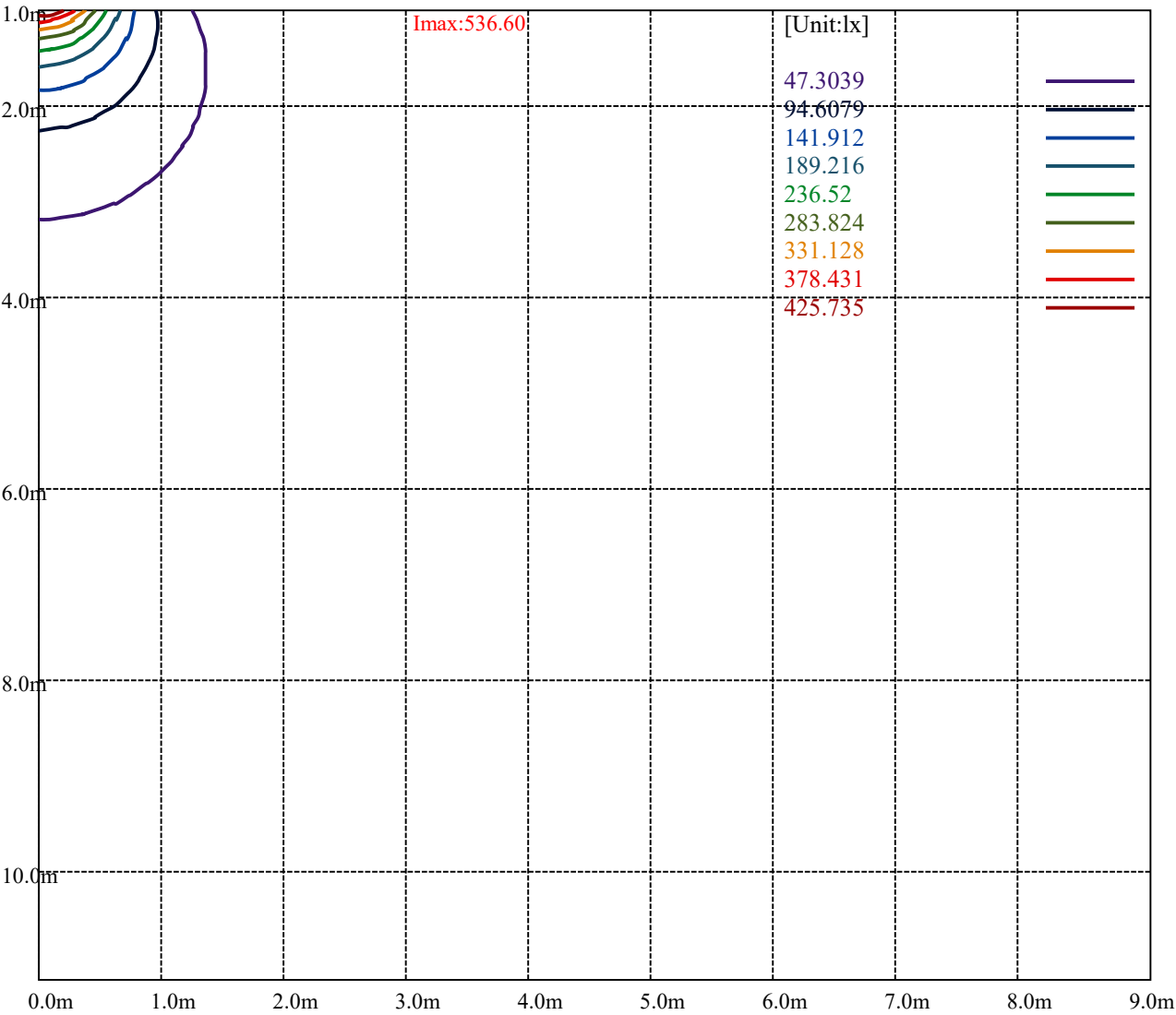
:C90/270Left:59.2 Right:66.9



Max , Ave Beam angle of C90 plane 145.89



(10%Emax) 1.953008	—
(20%Emax) 3.90602	—
(30%Emax) 5.85904	—
(40%Emax) 7.81204	—
(50%Emax) 9.76504	—
(60%Emax) 11.71804	—
(70%Emax) 13.67108	—
(80%Emax) 15.62408	—
(90%Emax) 17.57708	—



Luminance Table

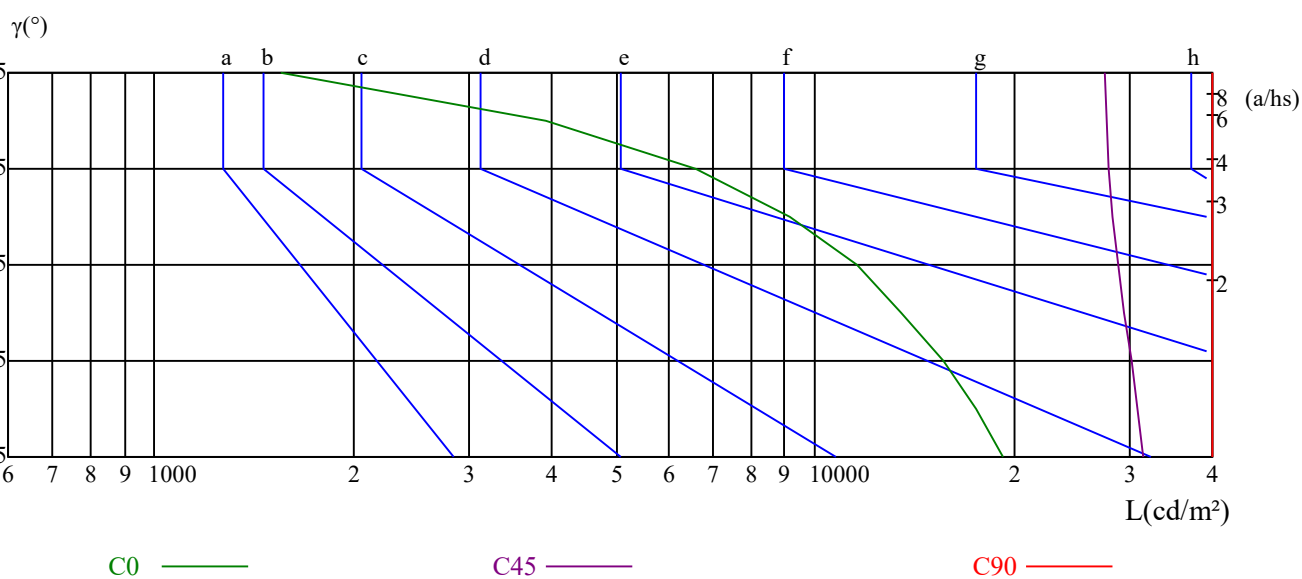
γ	45	50	55	60	65	70	75	80	85
C0	19288	17504	15674	13497	11557	9147	6591	3906	1557
C45	31407	30786	30123	29446	28770	28141	27815	27598	27563
C90	53359	56485	60684	65912	73385	84102	101888	138074	237885

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
28080	49405	38712	22990	67270	49045	13424	164261	107753

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	1.16	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	0.89	0.84	0.86	0.83	0.79	0.80	0.77	0.74	0.74	0.72	0.69	0.66
2	0.83	0.76	0.69	0.80	0.73	0.67	0.74	0.68	0.63	0.69	0.64	0.60	0.64	0.60	0.56	0.53
3	0.72	0.63	0.56	0.70	0.61	0.55	0.65	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	0.40	0.37
5	0.57	0.47	0.40	0.55	0.46	0.39	0.51	0.43	0.38	0.47	0.41	0.36	0.44	0.39	0.34	0.32
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)

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	473.04	472.15	467.68	458.76	444.48	426.63	406.10	381.11	351.66
15.0	473.04	478.40	477.51	473.93	464.10	452.47	435.48	415.81	392.56
30.0	473.04	481.98	487.35	489.14	486.45	480.19	468.57	451.58	432.80
45.0	473.04	486.50	494.58	503.56	505.35	503.56	494.58	482.02	466.76
60.0	473.04	490.16	503.67	514.49	520.79	520.79	516.29	508.18	495.56
75.0	473.04	491.13	508.31	520.07	530.02	532.73	530.02	523.69	513.74
90.0	473.04	493.01	511.17	524.79	534.78	536.60	535.69	530.24	522.07
105.0	473.04	491.03	508.11	521.60	528.80	530.60	528.80	523.40	512.61
120.0	473.04	490.06	502.60	512.46	519.63	518.73	513.36	503.50	490.06
135.0	473.04	477.41	484.41	490.53	494.02	489.65	480.03	468.67	452.05
150.0	473.04	483.01	487.54	489.35	482.10	478.48	468.51	449.48	429.54
165.0	473.04	476.64	475.74	469.44	460.45	447.86	429.87	410.99	384.91
180.0	473.04	467.68	459.65	445.37	426.63	404.31	380.22	351.66	320.42
195.0	473.04	462.31	446.21	426.54	401.50	372.89	340.70	306.72	271.84
210.0	473.04	455.16	431.91	404.18	372.89	340.70	308.50	278.10	246.80
225.0	473.04	448.80	419.18	386.87	352.76	323.14	295.31	266.59	239.66
240.0	473.04	444.21	409.97	373.03	343.29	315.36	288.33	262.20	236.07
255.0	473.04	442.29	405.20	369.02	340.08	314.76	287.62	263.20	238.78
270.0	473.04	439.45	404.04	371.35	340.48	315.06	291.45	264.21	240.61
285.0	473.04	442.46	405.59	368.72	341.74	316.56	290.48	266.20	259.00
300.0	473.04	444.37	412.12	376.28	368.22	318.05	292.07	265.19	241.00
315.0	473.04	438.94	412.71	380.36	346.25	317.40	290.29	263.19	235.21
330.0	473.04	457.63	434.07	405.07	376.98	343.45	313.55	281.83	250.11
345.0	473.04	462.25	447.86	428.97	404.69	375.91	345.34	310.26	276.99
360.0	473.04	472.15	467.68	458.76	444.48	426.63	406.10	381.11	351.66
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	320.42	287.39	251.69	213.31	176.72	136.56	96.39	58.01	24.99
15.0	365.73	336.22	303.14	267.37	228.92	192.26	150.23	113.57	78.69
30.0	409.55	380.94	350.53	317.45	283.47	247.70	212.82	178.84	149.33
45.0	447.01	421.88	397.64	366.22	335.71	303.39	273.77	242.35	211.84
60.0	478.45	458.62	435.20	409.97	381.13	353.20	322.57	291.93	262.20
75.0	499.27	482.08	461.28	436.86	410.63	384.40	354.55	327.42	298.48
90.0	509.36	491.20	472.13	448.52	424.01	395.86	366.81	340.48	312.33
105.0	498.22	478.44	458.65	435.27	410.99	382.21	354.33	322.85	295.87
120.0	473.94	452.43	429.14	404.05	377.18	348.51	318.94	288.48	259.81
135.0	430.19	408.34	379.48	353.25	322.65	292.04	262.31	233.46	203.73
150.0	405.07	376.98	348.89	314.45	281.83	243.77	210.24	179.43	145.90
165.0	358.83	330.05	298.57	263.50	225.73	186.16	146.59	108.82	77.34
180.0	286.50	251.69	216.88	174.94	140.13	99.96	62.48	28.56	6.25
195.0	234.28	200.30	165.43	131.45	97.47	66.17	41.13	19.67	9.84
210.0	214.61	184.21	153.80	126.98	98.36	69.75	54.55	38.45	25.93
225.0	210.94	181.32	156.18	128.36	108.61	89.76	71.81	56.55	43.09
240.0	210.84	185.61	162.18	140.56	121.64	101.82	85.60	71.18	57.67
255.0	214.36	190.84	169.14	148.33	129.34	110.35	94.97	90.45	66.03
270.0	219.72	194.30	172.51	168.88	133.47	116.22	98.06	83.53	69.91
285.0	214.94	191.55	169.07	147.49	129.50	111.51	95.33	79.14	66.55
300.0	213.23	189.93	160.37	138.87	119.16	102.13	85.11	69.88	57.34
315.0	208.10	181.00	154.77	125.91	106.67	87.44	69.95	55.96	42.84
330.0	221.11	190.30	159.49	129.59	101.50	74.31	57.09	38.97	27.19
345.0	237.42	202.35	169.07	134.00	100.72	70.15	42.27	24.28	10.79
360.0	320.42	287.39	251.69	213.31	176.72	136.56	96.39	58.01	24.99

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	4.46	1.79	1.79	1.79	1.79	2.68	2.68	3.57	4.46
15.0	51.86	33.98	23.25	17.88	15.20	13.41	11.62	11.62	10.73
30.0	118.93	96.58	79.59	65.28	52.76	43.82	37.56	32.19	26.83
45.0	183.11	157.08	135.54	116.69	99.63	84.38	70.91	60.14	50.27
60.0	236.07	207.24	183.81	160.38	139.66	120.74	102.72	87.40	72.98
75.0	267.72	239.69	213.46	189.03	165.52	145.62	125.72	105.82	88.64
90.0	278.74	251.50	224.26	198.84	177.96	154.35	131.65	113.49	95.33
105.0	264.40	238.32	211.34	187.96	166.37	144.79	124.11	105.22	88.13
120.0	232.04	203.37	180.97	160.37	138.87	119.16	103.03	86.01	73.46
135.0	176.62	152.14	131.16	113.67	97.06	83.07	69.95	58.58	49.84
150.0	119.62	97.87	79.75	66.15	54.37	45.31	38.06	32.62	28.09
165.0	51.26	34.17	24.28	18.89	16.19	13.49	12.59	11.69	10.79
180.0	1.79	2.68	2.68	2.68	3.57	3.57	4.46	4.46	4.46
195.0	5.37	3.58	2.68	2.68	1.79	1.79	0.89	1.79	1.79
210.0	17.88	12.52	8.05	6.26	4.47	4.47	2.68	2.68	1.79
225.0	33.21	25.13	17.95	13.46	9.87	8.08	7.18	4.49	3.59
240.0	45.95	36.04	33.34	21.62	16.22	11.71	9.01	7.21	5.41
255.0	54.27	44.32	34.37	27.13	20.80	15.38	11.76	9.04	6.33
270.0	58.11	47.21	37.23	29.05	22.70	17.25	12.71	9.99	7.26
285.0	54.86	44.07	35.07	26.98	20.68	15.29	11.69	8.99	6.30
300.0	46.59	36.73	28.67	21.50	16.13	12.54	8.96	7.17	5.38
315.0	32.35	25.36	18.36	13.12	9.62	7.87	6.12	4.37	3.50
330.0	19.03	13.59	9.06	6.34	5.44	4.53	3.62	2.72	1.81
345.0	6.30	3.60	2.70	2.70	1.80	1.80	1.80	1.80	1.80
360.0	4.46	1.79	1.79	1.79	1.79	2.68	2.68	3.57	4.46
C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	4.46	5.36	6.25	7.14	7.14	7.14	8.03	8.03	8.03
15.0	10.73	10.73	10.73	10.73	9.84	8.94	8.94	8.94	8.94
30.0	23.25	20.57	18.78	16.99	15.20	12.52	10.73	9.84	8.94
45.0	42.19	35.01	29.62	24.24	20.64	17.95	13.46	10.77	8.98
60.0	60.37	49.56	41.45	33.34	27.03	21.62	17.12	13.52	9.91
75.0	74.17	60.60	48.84	39.80	31.66	24.42	18.99	14.47	11.76
90.0	78.99	64.46	51.75	41.77	32.69	25.42	19.97	15.44	11.80
105.0	73.74	61.15	49.46	39.57	30.58	24.28	18.89	15.29	11.69
120.0	60.92	50.17	40.32	33.15	26.88	21.50	17.02	14.33	11.65
135.0	41.97	34.98	28.85	24.48	20.11	16.61	14.86	12.24	10.49
150.0	24.47	21.75	19.03	17.22	15.41	13.59	12.69	11.78	10.87
165.0	10.79	10.79	10.79	10.79	10.79	9.89	10.79	9.89	9.89
180.0	5.36	5.36	6.25	6.25	6.25	6.25	7.14	7.14	8.03
195.0	1.79	2.68	2.68	3.58	4.47	5.37	6.26	7.15	8.05
210.0	0.89	0.89	1.79	2.68	3.58	4.47	5.37	6.26	7.15
225.0	2.69	1.80	0.90	1.80	2.69	4.49	5.39	6.28	7.18
240.0	3.60	2.70	1.80	1.80	1.80	3.60	5.41	6.31	6.31
255.0	5.43	3.62	2.71	1.81	1.81	3.62	4.52	5.43	5.43
270.0	5.45	4.54	3.63	1.82	1.82	2.72	4.54	4.54	5.45
285.0	5.40	4.50	2.70	1.80	1.80	3.60	4.50	4.50	7.19
300.0	4.48	2.69	1.79	1.79	1.79	3.58	4.48	5.38	8.06
315.0	2.62	1.75	0.87	1.75	2.62	3.50	4.37	6.12	7.87
330.0	0.91	0.91	1.81	2.72	3.62	4.53	5.44	6.34	8.16
345.0	1.80	2.70	2.70	4.50	4.50	5.40	6.30	7.19	8.99
360.0	4.46	5.36	6.25	7.14	7.14	7.14	8.03	8.03	8.03

Intensity data(cd)

C/ γ (°)	180.0
0.0	8.03
15.0	8.05
30.0	8.05
45.0	8.08
60.0	8.11
75.0	8.14
90.0	9.99
105.0	9.89
120.0	9.85
135.0	9.62
150.0	9.97
165.0	8.99
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	8.03