
AFX

Client:

LumCAT: ELZV3602LAJD4**

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.920

LampCAT:

Current(A): 0.166

Lamp flux(lm): 1837.4

Power (W): 19.610

Number of Lamps: 1

PF: 0.984

Length(mm): 890

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1837.41, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 93.70

Central intensity(cd): 461.114, Maximum intensity(cd): 523.317

Angle of maximum intensity: C=90.0 γ =25.0

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

[C90/270]Total=126.2

Field angle(10%Imax): [C0/180]Total=159.0

[C90/270]Total=236.3

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(%): 14.25%

Down flux rate of lamp(%): 85.75%

Up flux rate of LUM(%): 14.25%

Down flux rate of LUM(%): 85.75%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 58.232%

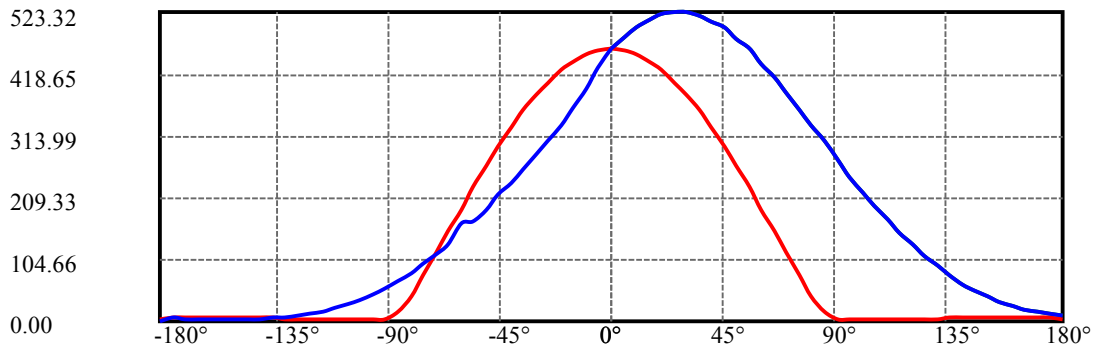
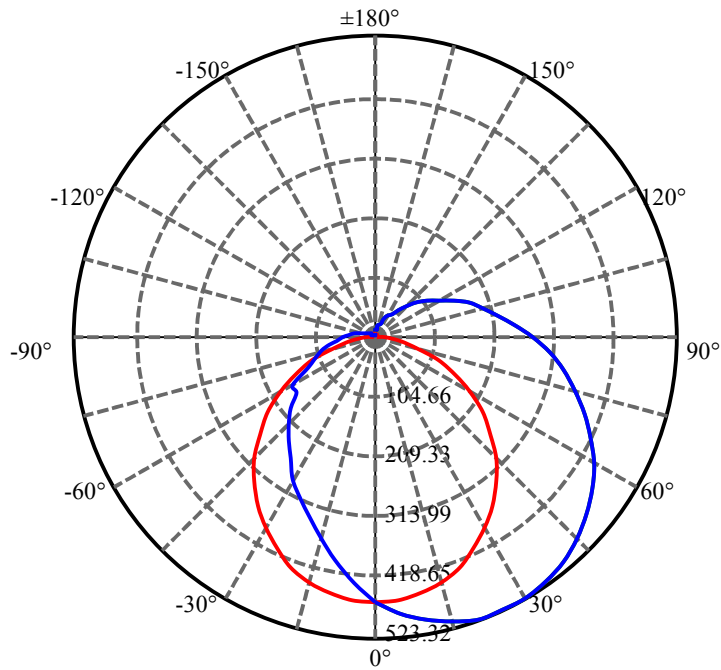
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	461.114	0.000	0	0.00%	0.00%
5.0	455.612	10.959	10.959	0.60%	0.60%
10.0	446.572	32.274	43.233	1.76%	2.35%
15.0	434.676	52.275	95.508	2.85%	5.20%
20.0	421.884	70.593	166.101	3.84%	9.04%
25.0	405.063	86.731	252.832	4.72%	13.76%
30.0	387.072	100.245	353.078	5.46%	19.22%
35.0	366.661	110.992	464.07	6.04%	25.26%
40.0	345.260	118.779	582.849	6.46%	31.72%
45.0	320.067	123.191	706.039	6.70%	38.43%
50.0	294.368	124.155	830.195	6.76%	45.18%
55.0	267.817	122.238	952.432	6.65%	51.84%
60.0	240.637	117.528	1069.96	6.40%	58.23%
65.0	213.009	110.282	1180.242	6.00%	64.23%
70.0	185.438	100.889	1281.131	5.49%	69.72%
75.0	159.585	90.184	1371.315	4.91%	74.63%
80.0	135.757	79.025	1450.34	4.30%	78.93%
85.0	113.875	67.831	1518.171	3.69%	82.63%
90.0	95.927	57.445	1575.617	3.13%	85.75%
95.0	81.465	48.571	1624.188	2.64%	88.40%
100.0	69.904	41.131	1665.319	2.24%	90.63%
105.0	59.770	34.697	1700.016	1.89%	92.52%
110.0	51.179	29.000	1729.016	1.58%	94.10%
115.0	43.605	24.000	1753.016	1.31%	95.41%
120.0	37.039	19.605	1772.621	1.07%	96.47%
125.0	31.323	15.802	1788.422	0.86%	97.33%
130.0	26.414	12.554	1800.976	0.68%	98.02%
135.0	22.172	9.818	1810.794	0.53%	98.55%
140.0	18.635	7.556	1818.35	0.41%	98.96%
145.0	15.813	5.747	1824.097	0.31%	99.28%
150.0	13.428	4.306	1828.403	0.23%	99.51%
155.0	11.720	3.183	1831.586	0.17%	99.68%
160.0	10.357	2.315	1833.901	0.13%	99.81%
165.0	9.550	1.641	1835.542	0.09%	99.90%
170.0	8.840	1.091	1836.633	0.06%	99.96%
175.0	8.598	0.624	1837.256	0.03%	99.99%
180.0	4.355	0.155	1837.411	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	353.08	19.22%	19.22%
0-40	582.85	31.72%	31.72%
0-60	1069.96	58.23%	58.23%
0-90	1575.62	85.75%	85.75%
0-120	1772.62	96.47%	96.47%
0-180	1837.41	100.00%	100.00%
60-90	505.66	27.52%	27.52%
90-120	197.00	10.72%	10.72%
90-130	225.36	12.27%	12.27%
90-150	252.79	13.76%	13.76%
90-180	261.64	14.24%	14.24%
0-81.44	1469.93	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	43.23
10-20	122.87
20-30	186.98
30-40	229.77
40-50	247.35
50-60	239.77
60-70	211.17
70-80	169.21
80-90	125.28
90-100	89.70
100-110	63.70
110-120	43.60
120-130	28.36
130-140	17.37
140-150	10.05
150-160	5.50
160-170	2.73
170-180	0.62



C90(Max): —————

C0/C180: —————

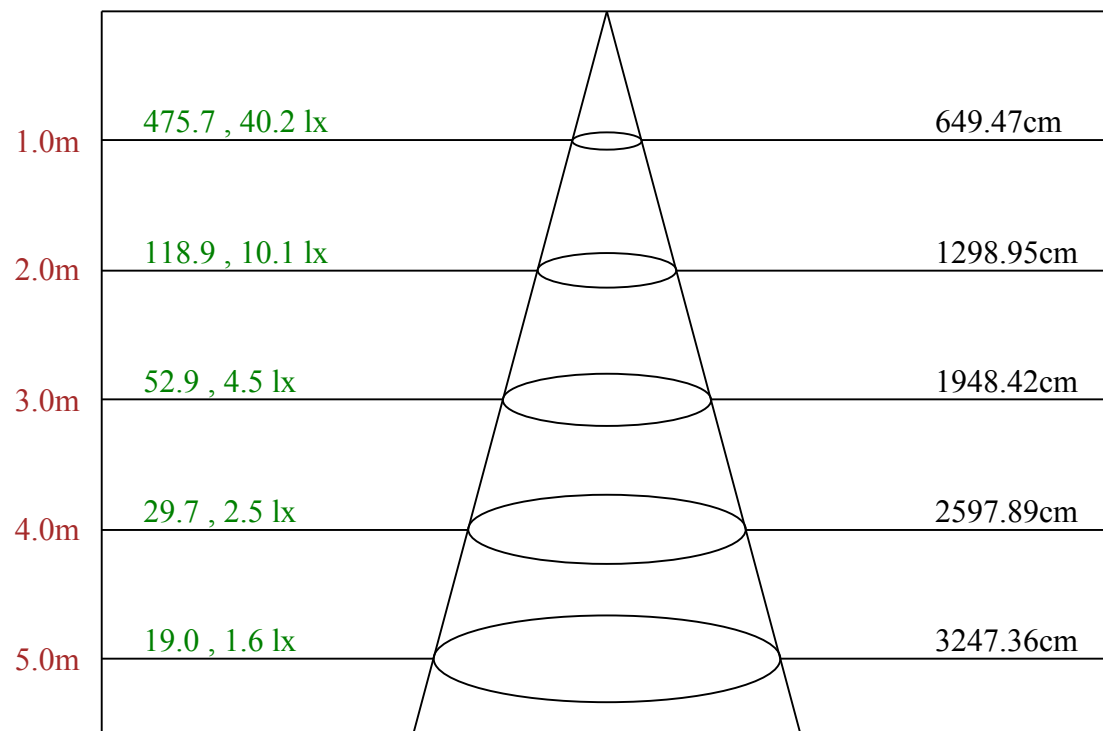
C90/C270: —————

Field angle(10%Imax):C0/180Left:79.5 Right:79.5

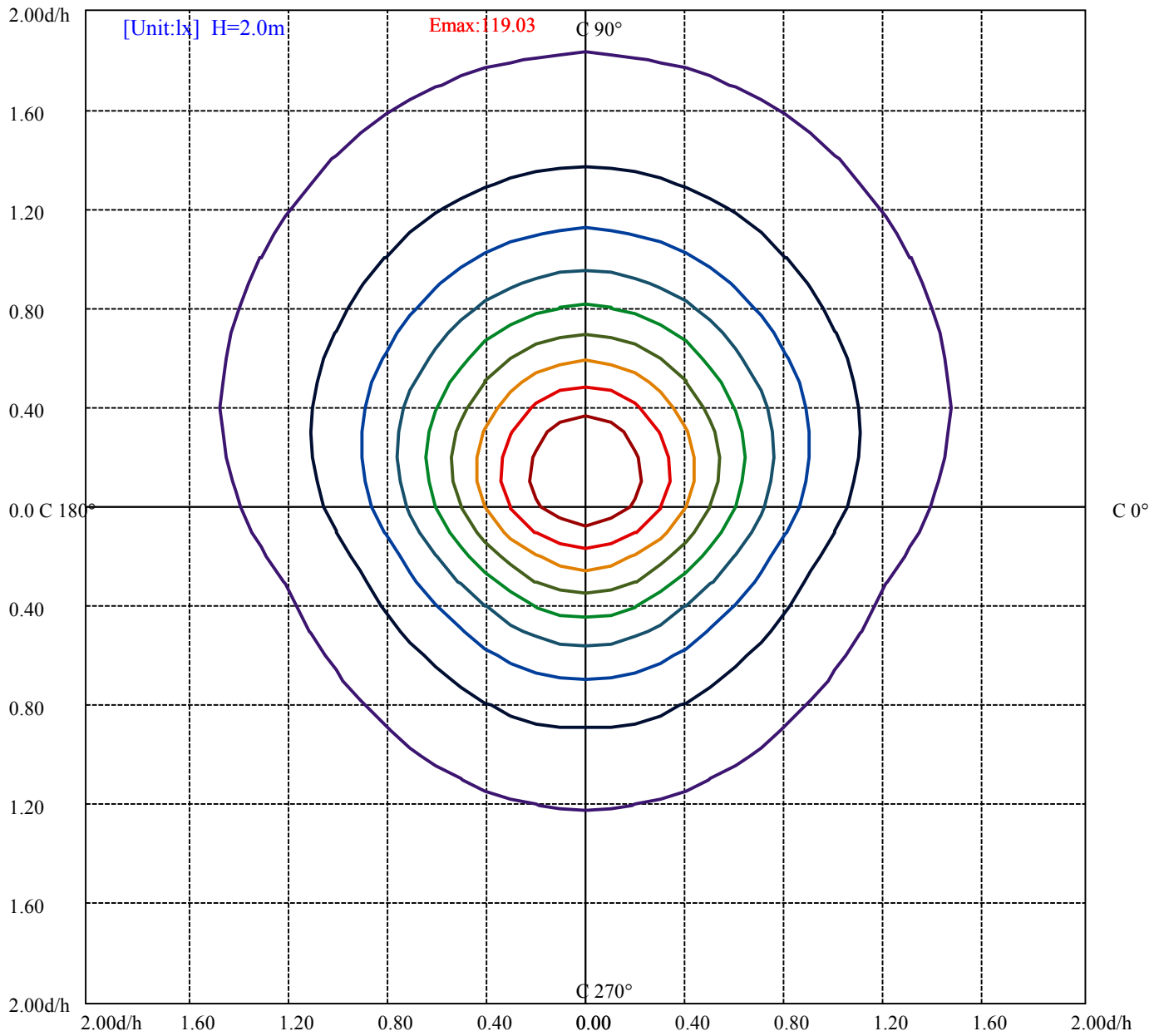
:C90/270Left:117.0 Right:119.3

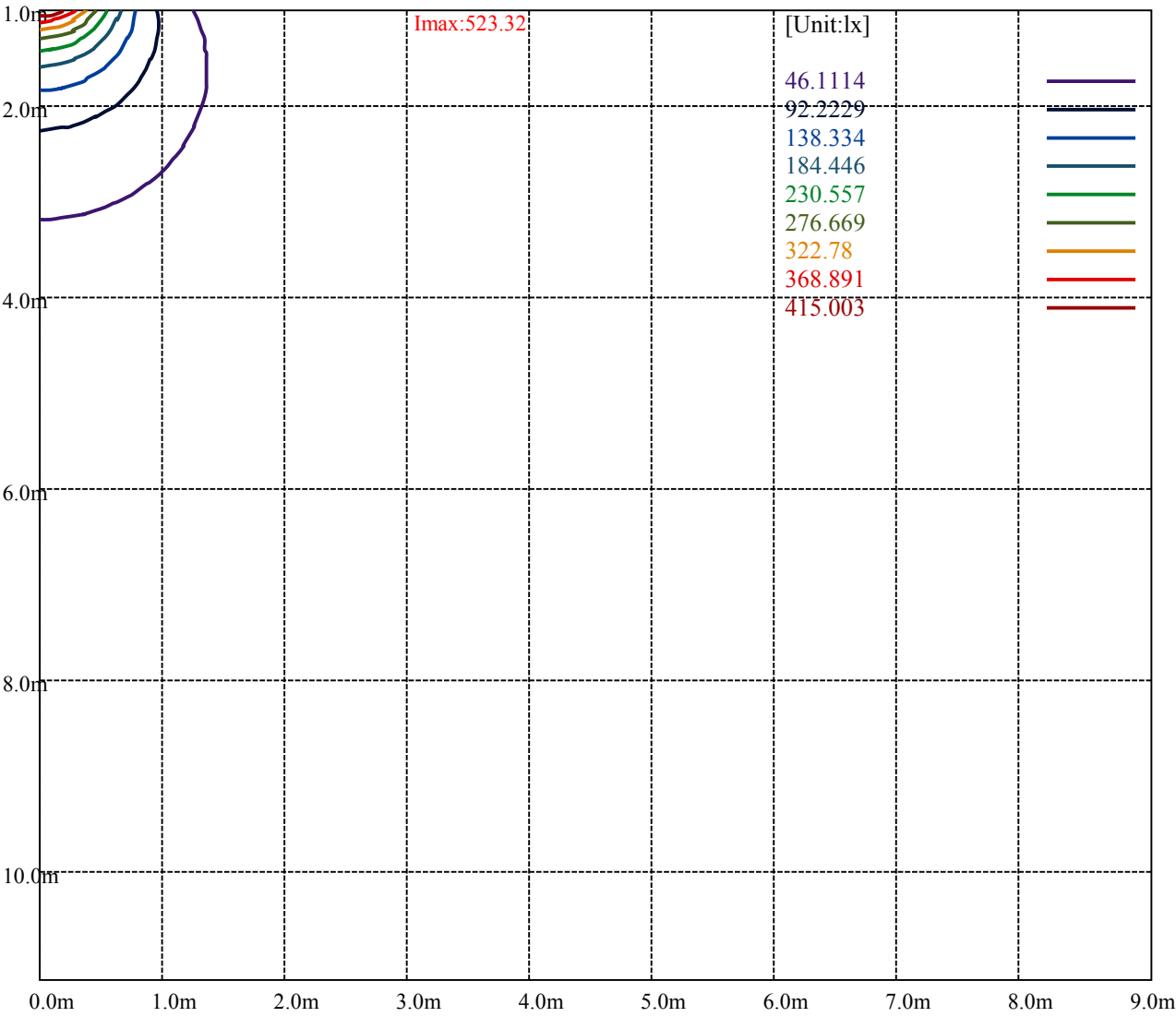
Beam Angle(50%Imax):C0/180Left:54.7 Right:54.7

:C90/270Left:59.3 Right:66.9



Max , Ave Beam angle of C90 plane 145.77





Luminance Table

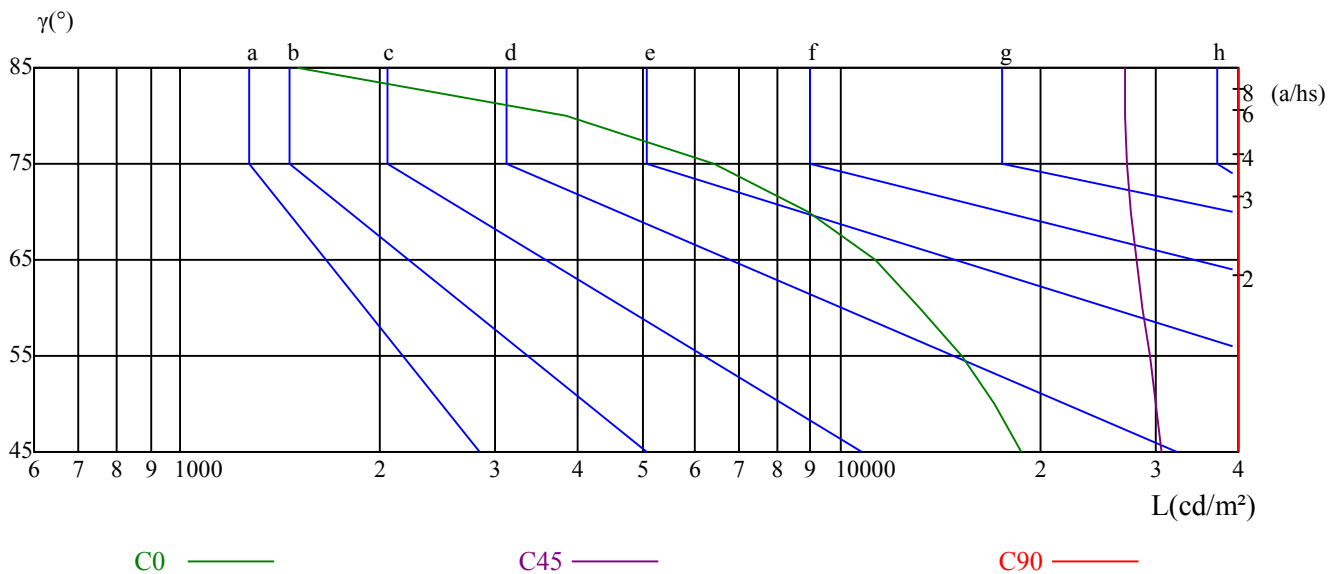
γ	45	50	55	60	65	70	75	80	85
C0	18802	17055	15269	13168	11245	8925	6429	3831	1503
C45	30623	29996	29348	28707	28023	27425	27097	26912	26882
C90	52024	55103	59117	64226	71603	82068	99404	134630	231622

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
27322	48180	37698	22423	65676	47769	12957	159912	105154

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	461.11	460.13	455.32	447.11	433.10	415.17	395.37	371.01	342.82
15.0	461.11	466.12	465.49	461.74	452.35	440.82	424.01	405.06	382.35
30.0	461.11	469.61	474.53	476.85	474.26	467.91	456.82	439.92	422.04
45.0	461.11	474.41	482.76	490.85	493.36	490.94	482.76	469.74	455.01
60.0	461.11	477.43	490.58	501.94	508.06	507.61	503.56	495.45	483.37
75.0	461.11	478.85	495.22	507.07	516.39	519.19	516.75	510.51	501.01
90.0	461.11	480.82	498.07	511.88	521.41	523.32	522.32	516.78	508.61
105.0	461.11	479.02	495.03	508.07	515.90	517.52	515.09	509.87	499.80
120.0	461.11	477.32	489.68	499.62	506.07	505.35	499.98	490.94	477.59
135.0	461.11	465.40	471.87	477.99	481.13	477.37	467.41	456.74	440.66
150.0	461.11	470.99	475.43	476.79	469.63	466.28	456.49	438.28	418.70
165.0	461.11	464.62	463.90	457.16	448.44	436.03	418.94	400.51	374.79
180.0	461.11	455.85	447.38	433.55	415.44	393.49	370.03	342.47	312.23
195.0	461.11	450.65	435.19	415.25	391.29	363.67	332.20	299.21	264.89
210.0	461.11	443.95	421.32	393.87	363.74	332.45	300.70	270.75	240.62
225.0	461.11	438.03	408.74	377.03	344.33	314.87	287.74	260.43	233.75
240.0	461.11	433.09	399.75	363.43	334.86	307.47	281.43	255.47	230.51
255.0	461.11	430.99	394.89	360.15	331.75	306.60	280.81	257.02	232.77
270.0	461.11	428.42	394.19	362.41	331.72	307.11	284.13	257.98	234.92
285.0	461.11	431.70	395.09	359.55	333.29	308.19	283.54	259.34	252.33
300.0	461.11	432.82	401.74	366.19	359.11	310.13	284.78	258.27	234.45
315.0	461.11	427.98	402.02	370.81	337.51	309.27	283.14	256.65	229.38
330.0	461.11	446.16	423.50	395.23	367.50	334.78	305.23	274.69	244.06
345.0	461.11	450.32	436.03	417.68	394.57	365.98	336.48	302.76	269.58
360.0	461.11	460.13	455.32	447.11	433.10	415.17	395.37	371.01	342.82
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	312.41	280.02	245.05	207.94	172.08	133.01	94.20	56.83	24.18
15.0	355.98	327.46	295.37	260.15	223.05	187.29	146.70	110.23	76.70
30.0	398.88	371.52	342.01	309.02	276.29	241.69	207.62	174.00	145.12
45.0	435.96	411.08	387.63	357.36	327.26	296.00	266.80	236.62	206.44
60.0	466.34	447.24	423.81	399.39	371.36	344.15	314.68	284.94	255.83
75.0	486.63	469.53	449.53	425.74	400.68	374.54	345.77	319.35	291.03
90.0	496.62	479.18	459.93	437.05	413.71	386.29	357.87	331.99	304.11
105.0	485.31	466.51	447.44	424.59	400.30	372.96	345.07	314.76	288.04
120.0	461.38	441.14	418.04	393.86	367.26	339.68	310.66	280.75	253.08
135.0	419.33	397.83	369.50	344.07	313.99	284.27	255.43	227.37	198.87
150.0	394.59	367.68	339.76	306.78	275.06	237.90	205.09	174.46	142.65
165.0	349.61	321.47	290.98	256.63	220.04	181.01	142.97	106.11	75.08
180.0	279.22	245.23	211.42	170.83	136.22	97.77	60.75	28.10	5.98
195.0	228.59	195.07	161.54	127.84	95.03	64.81	40.23	19.58	9.83
210.0	209.32	179.90	150.04	123.48	96.21	67.78	53.29	37.29	25.48
225.0	205.63	176.97	152.45	125.50	105.82	87.68	69.62	55.25	42.13
240.0	205.28	181.04	158.06	137.06	118.59	99.49	83.72	69.12	55.96
255.0	209.07	186.09	164.92	145.02	126.20	107.39	92.37	88.30	64.77
270.0	213.94	189.42	168.08	164.18	129.94	112.87	95.98	81.54	68.01
285.0	209.69	187.11	165.16	144.20	126.21	108.67	92.83	77.36	64.59
300.0	207.86	184.75	156.09	134.87	116.33	99.14	83.02	68.33	55.79
315.0	202.72	176.32	150.97	122.56	103.67	85.58	68.36	54.11	41.96
330.0	215.69	185.24	155.25	126.70	98.69	72.23	55.46	37.88	26.64
345.0	231.55	197.02	164.56	130.48	98.19	68.34	41.54	23.92	10.70
360.0	312.41	280.02	245.05	207.94	172.08	133.01	94.20	56.83	24.18

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	4.73	1.34	1.34	1.78	1.96	2.59	2.94	3.57	4.19
15.0	50.15	32.81	23.06	17.79	14.66	12.78	11.71	11.00	10.46
30.0	115.97	94.33	77.34	63.31	51.77	42.92	36.21	31.12	26.47
45.0	178.86	153.61	132.14	113.64	97.56	82.38	69.44	58.39	49.32
60.0	229.88	202.04	178.88	156.53	136.34	117.33	100.39	85.16	71.28
75.0	261.27	233.32	208.17	184.55	161.67	141.94	122.49	103.13	86.76
90.0	271.78	245.09	218.21	194.23	173.80	150.28	128.40	111.06	93.17
105.0	257.81	231.91	206.45	183.06	162.10	140.96	120.63	102.91	86.27
120.0	226.21	198.09	176.69	156.36	135.32	116.24	99.94	83.82	71.29
135.0	172.47	148.52	128.15	110.41	94.15	80.60	68.27	57.34	48.17
150.0	116.46	95.61	77.58	64.44	53.11	44.23	37.43	31.90	27.46
165.0	49.82	33.36	23.83	18.79	15.47	13.49	12.23	11.51	10.88
180.0	2.05	2.23	2.59	2.77	3.21	3.66	4.01	4.28	4.64
195.0	5.27	3.58	2.68	2.32	1.97	1.43	1.25	1.34	1.70
210.0	17.17	11.89	8.05	5.90	4.65	3.93	3.04	2.32	1.52
225.0	32.25	24.17	17.79	13.03	9.61	7.46	6.83	4.49	3.41
240.0	44.79	34.87	32.89	21.00	15.68	11.62	8.83	6.67	5.05
255.0	53.01	42.97	33.83	26.33	20.26	15.38	11.40	8.50	6.60
270.0	56.75	45.58	36.41	28.42	22.07	16.98	12.44	9.35	6.99
285.0	53.79	42.91	34.36	26.54	20.15	15.29	11.42	8.64	6.39
300.0	45.14	35.73	27.58	20.96	15.94	11.91	8.96	6.72	5.10
315.0	31.82	24.65	18.01	13.20	9.79	7.43	5.77	4.55	3.41
330.0	18.85	12.87	8.70	6.53	4.98	4.08	3.44	2.54	1.63
345.0	5.93	3.69	2.97	2.61	2.07	1.62	1.44	1.44	1.80
360.0	4.73	1.34	1.34	1.78	1.96	2.59	2.94	3.57	4.19
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	4.73	5.53	6.42	7.05	7.32	7.14	7.40	7.49	7.76
15.0	10.10	10.19	10.28	10.37	10.01	9.03	8.76	8.40	8.31
30.0	22.89	20.12	17.97	16.18	14.75	12.34	10.55	9.39	8.67
45.0	40.78	34.41	28.84	24.08	20.21	17.16	13.56	10.42	9.07
60.0	59.02	48.66	40.19	32.17	25.95	20.73	17.03	13.07	9.64
75.0	72.19	58.71	48.04	38.45	30.58	23.61	18.73	14.47	11.67
90.0	77.28	62.84	50.76	41.14	32.15	24.61	19.07	15.07	11.80
105.0	71.60	59.28	48.04	38.23	30.14	23.75	18.62	14.57	11.69
120.0	59.02	48.45	39.58	32.33	26.15	20.87	16.84	13.61	11.37
135.0	40.74	33.74	28.41	23.69	19.84	16.52	14.42	12.15	10.49
150.0	23.65	20.84	18.40	16.40	14.86	13.41	12.42	11.24	10.24
165.0	10.52	10.43	10.34	10.34	10.34	10.07	10.16	9.80	9.53
180.0	5.08	5.53	5.98	6.24	6.16	6.33	6.87	7.32	7.76
195.0	2.06	2.59	3.04	3.84	4.74	5.01	5.99	6.79	7.69
210.0	0.98	0.89	2.06	2.86	3.84	4.38	5.36	6.35	7.33
225.0	2.61	1.62	1.26	1.71	3.05	4.22	5.03	6.02	7.10
240.0	3.87	2.97	2.07	1.62	2.07	3.69	4.87	5.86	6.58
255.0	5.07	3.89	2.99	1.90	2.08	3.17	4.79	5.70	5.61
270.0	5.36	4.27	3.36	2.09	2.09	3.09	4.72	4.36	5.18
285.0	4.95	3.96	2.97	1.80	1.98	3.24	4.05	4.68	7.20
300.0	3.94	2.96	2.15	1.52	2.06	3.40	4.03	5.46	7.52
315.0	2.62	1.66	1.22	1.49	2.88	3.41	4.46	6.12	7.52
330.0	1.00	1.09	2.08	2.81	3.44	4.08	5.26	6.62	8.07
345.0	2.07	2.61	3.06	3.96	4.59	5.31	6.20	7.19	8.54
360.0	4.73	5.53	6.42	7.05	7.32	7.14	7.40	7.49	7.76

Intensity data(cd)

C/ γ (°)	180.0
0.0	7.76
15.0	7.96
30.0	8.05
45.0	8.17
60.0	7.75
75.0	8.23
90.0	9.72
105.0	9.72
120.0	9.58
135.0	9.18
150.0	9.33
165.0	9.08
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	7.76