
AFX

Client:

LumCAT: ELZV3602LAJD4LB

Luminaire: LED Lamp

Report No:

Ballast type:

Test No:

Voltage(V): 119.960

LampCAT:

Current(A): 0.165

Lamp flux(lm): 1818.2

Power (W): 19.440

Number of Lamps: 1

PF: 0.982

Length(mm): 900

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1818.19, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 93.53

Central intensity(cd): 389.153, Maximum intensity(cd): 510.364

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=236.5

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(%): 19.64%

Down flux rate of lamp(%): 80.36%

Up flux rate of LUM(%): 19.64%

Down flux rate of LUM(%): 80.36%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 52.077%

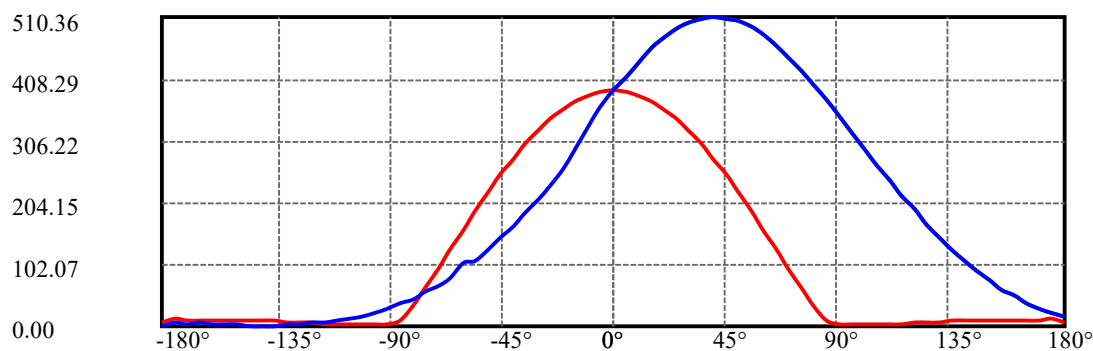
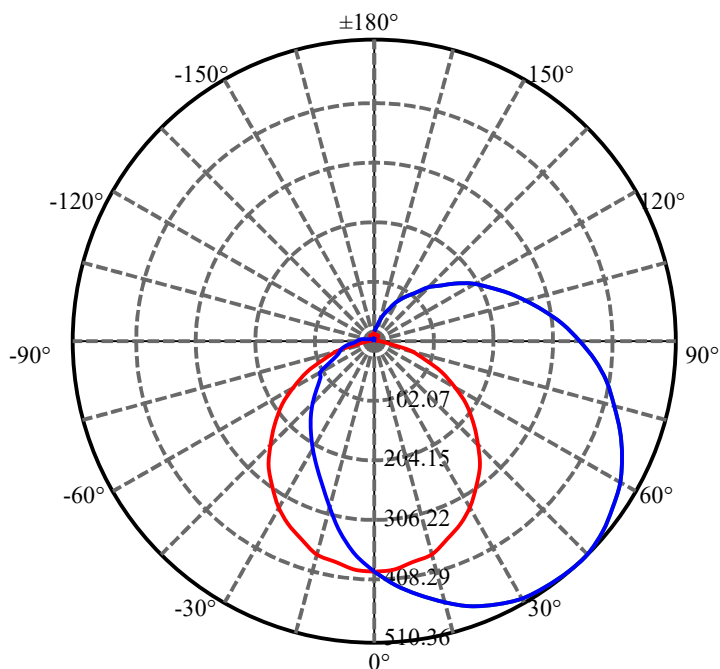
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	389.153	0.000	0	0.00%	0.00%
5.0	386.281	9.270	9.27	0.51%	0.51%
10.0	381.199	27.455	36.725	1.51%	2.02%
15.0	372.682	44.720	81.445	2.46%	4.48%
20.0	362.945	60.626	142.071	3.33%	7.81%
25.0	349.395	74.711	216.782	4.11%	11.92%
30.0	335.856	86.719	303.501	4.77%	16.69%
35.0	320.672	96.678	400.18	5.32%	22.01%
40.0	304.861	104.365	504.545	5.74%	27.75%
45.0	286.164	109.433	613.978	6.02%	33.77%
50.0	267.135	111.802	725.78	6.15%	39.92%
55.0	246.650	111.714	837.494	6.14%	46.06%
60.0	226.465	109.359	946.854	6.01%	52.08%
65.0	204.696	104.816	1051.67	5.76%	57.84%
70.0	183.643	98.330	1149.999	5.41%	63.25%
75.0	163.181	90.654	1240.654	4.99%	68.24%
80.0	144.103	82.220	1322.874	4.52%	72.76%
85.0	126.051	73.407	1396.281	4.04%	76.80%
90.0	110.780	64.846	1461.128	3.57%	80.36%
95.0	97.966	57.156	1518.284	3.14%	83.51%
100.0	87.313	50.345	1568.628	2.77%	86.27%
105.0	77.669	44.144	1612.773	2.43%	88.70%
110.0	69.152	38.377	1651.15	2.11%	90.81%
115.0	61.267	33.023	1684.172	1.82%	92.63%
120.0	54.397	28.118	1712.291	1.55%	94.18%
125.0	47.786	23.619	1735.91	1.30%	95.47%
130.0	41.923	19.506	1755.416	1.07%	96.55%
135.0	36.550	15.857	1771.272	0.87%	97.42%
140.0	32.000	12.693	1783.965	0.70%	98.12%
145.0	28.240	10.051	1794.015	0.55%	98.67%
150.0	24.967	7.835	1801.851	0.43%	99.10%
155.0	21.888	5.930	1807.78	0.33%	99.43%
160.0	18.961	4.284	1812.064	0.24%	99.66%
165.0	16.778	2.945	1815.01	0.16%	99.83%
170.0	14.968	1.883	1816.893	0.10%	99.93%
175.0	14.135	1.041	1817.934	0.06%	99.99%
180.0	7.104	0.254	1818.188	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	303.50	16.69%	16.69%
0-40	504.55	27.75%	27.75%
0-60	946.85	52.08%	52.08%
0-90	1461.13	80.36%	80.36%
0-120	1712.29	94.18%	94.18%
0-180	1818.19	100.00%	100.00%
60-90	514.27	28.28%	28.28%
90-120	251.16	13.81%	13.81%
90-130	294.29	16.19%	16.19%
90-150	340.72	18.74%	18.74%
90-180	356.81	19.62%	19.62%
0-89.49	1454.55	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	36.73
10-20	105.35
20-30	161.43
30-40	201.04
40-50	221.24
50-60	221.07
60-70	203.15
70-80	172.87
80-90	138.25
90-100	107.50
100-110	82.52
110-120	61.14
120-130	43.12
130-140	28.55
140-150	17.89
150-160	10.21
160-170	4.83
170-180	1.04



C90(Max): —————

C0/C180: —————

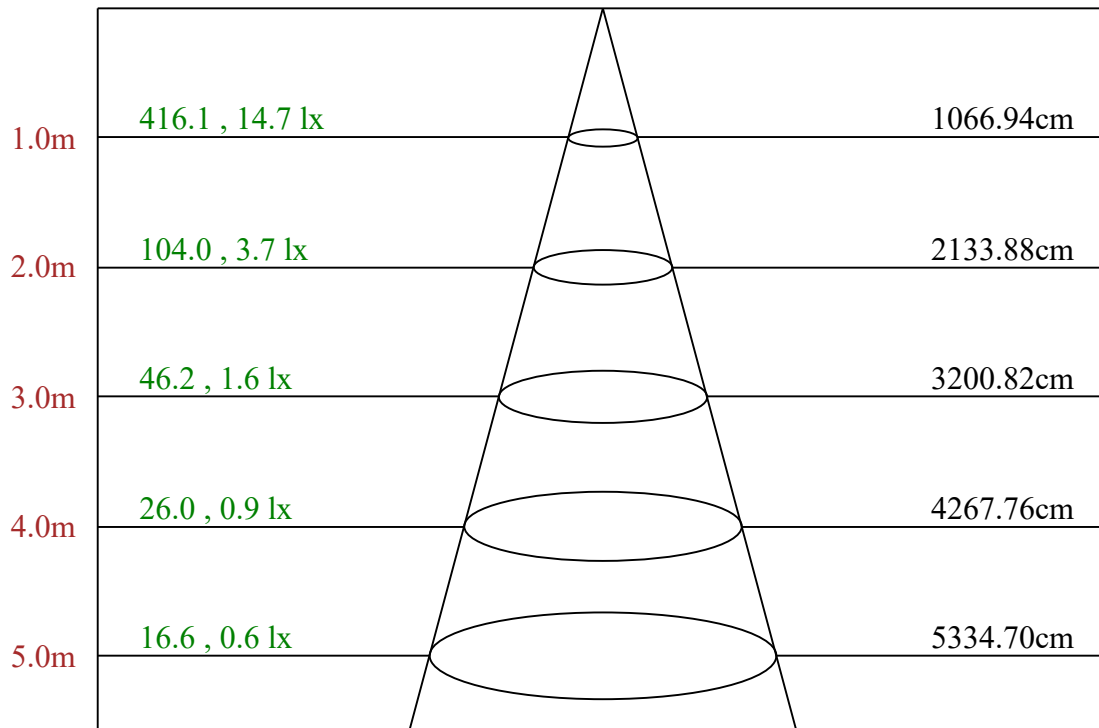
C90/C270: —————

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

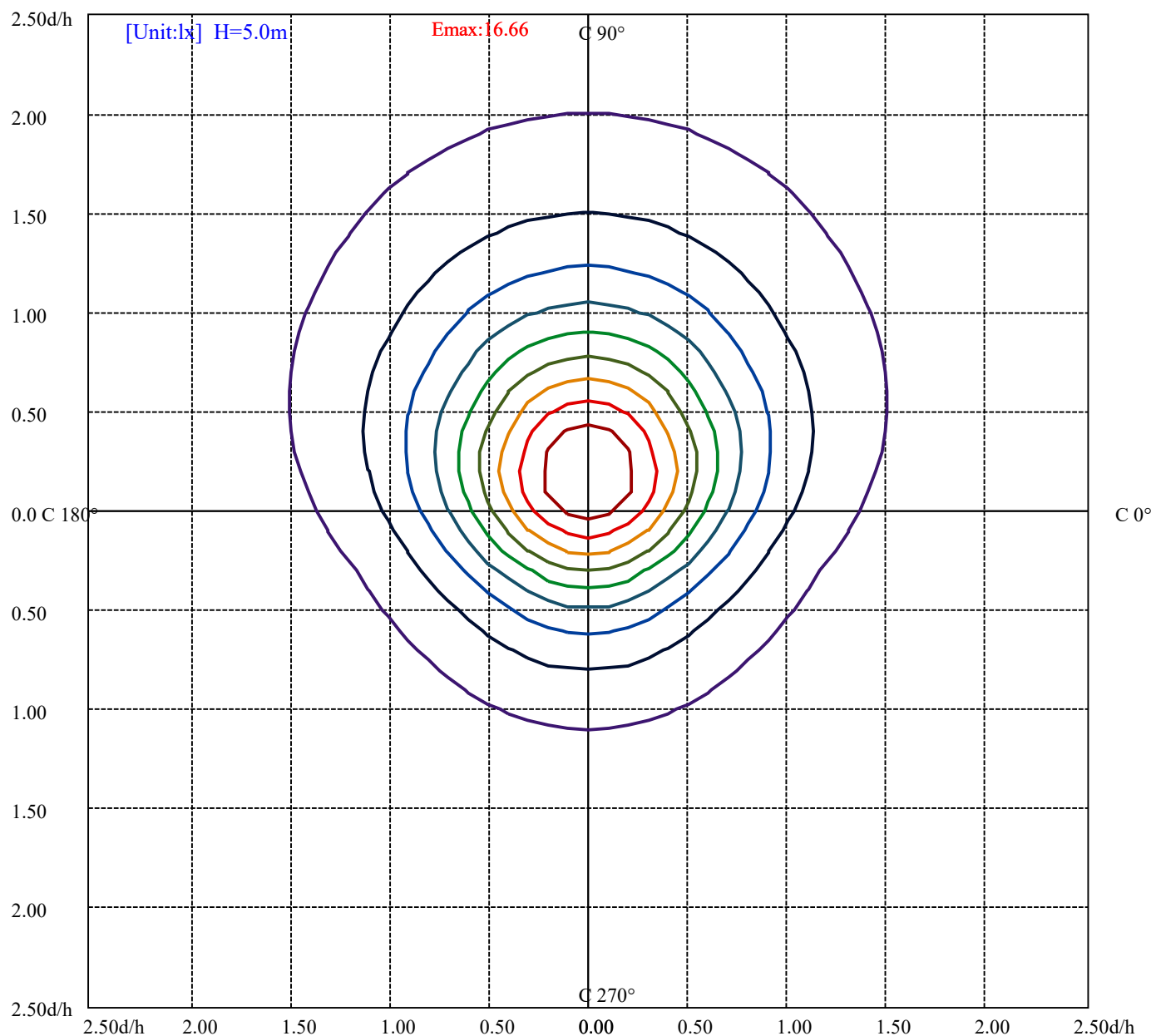
:C90/270Left:117.3 Right:119.2

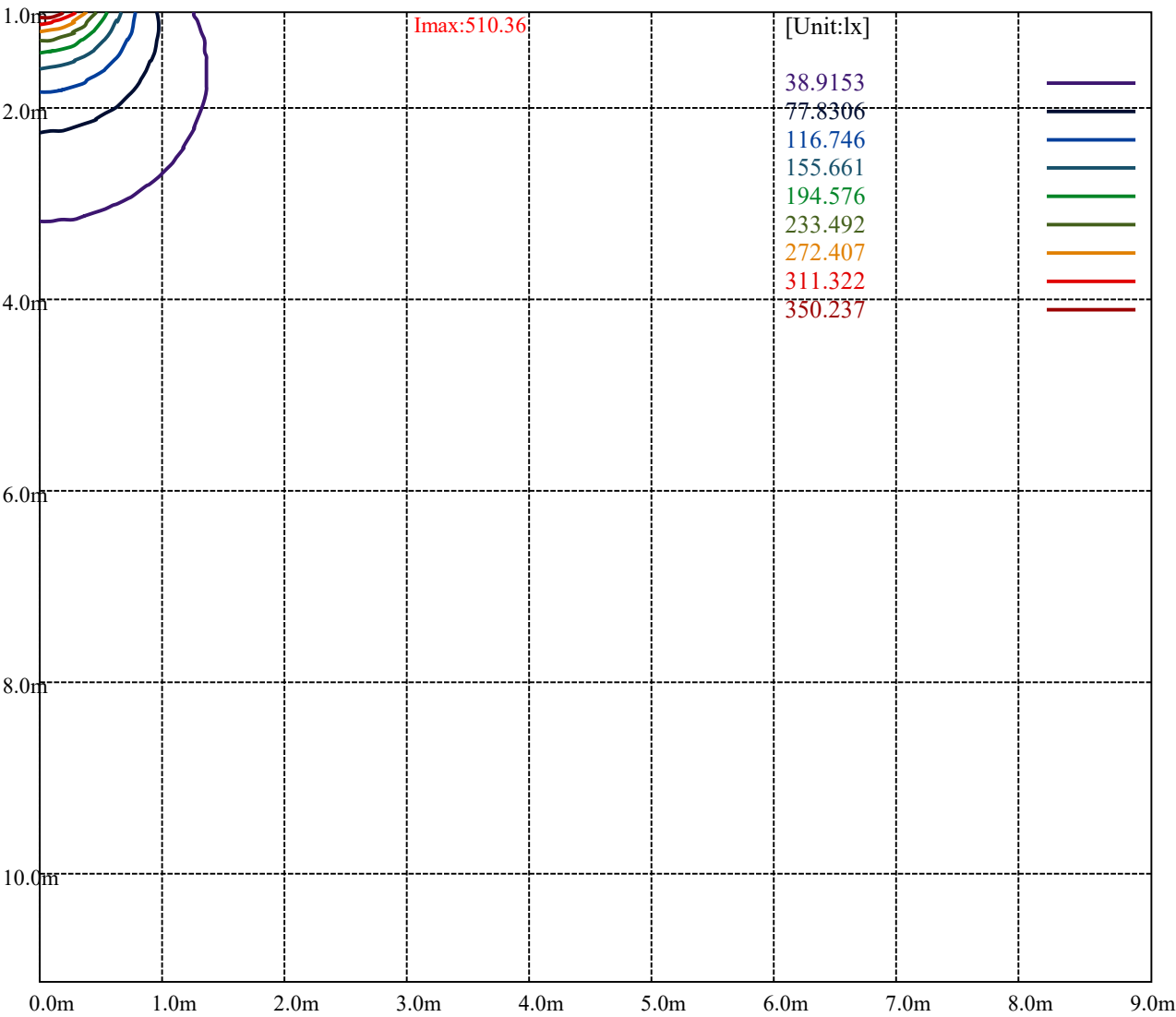
Beam Angle(50%Imax):C0/180Left:54.2 Right:54.2

:C90/270Left:61.0 Right:67.1



Max , Ave Beam angle of C90 plane 158.77





Luminance Table

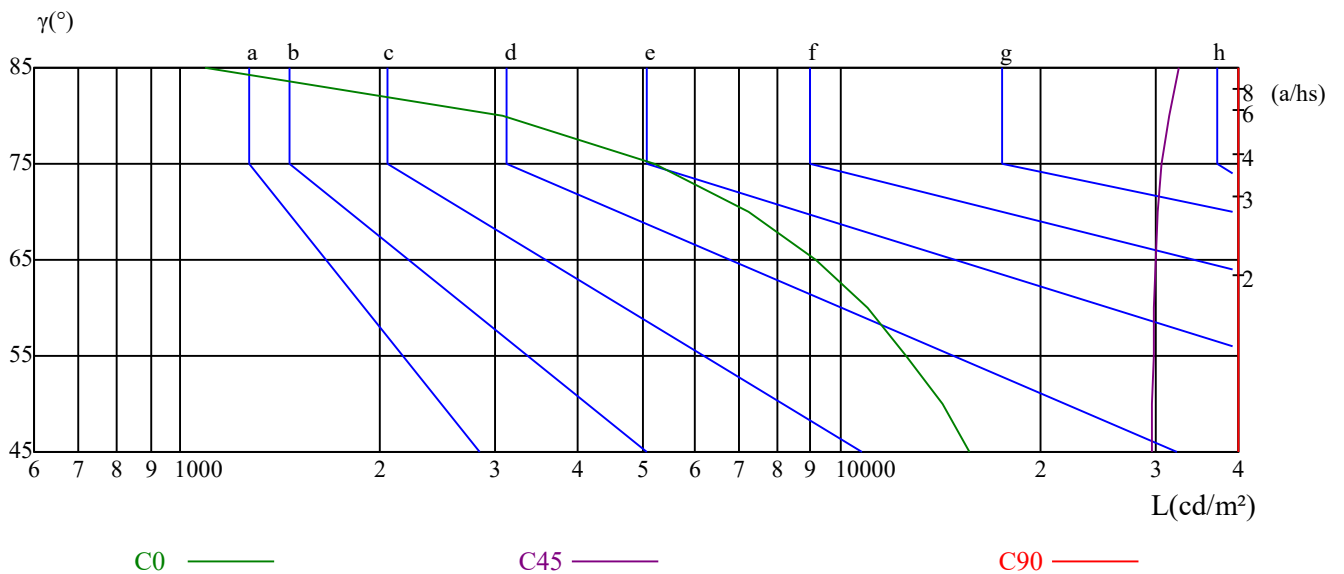
γ	45	50	55	60	65	70	75	80	85
C0	15641	14224	12522	10951	9135	7255	5213	3071	1088
C45	29553	29669	29725	29812	29924	30218	30637	31363	32565
C90	52688	57216	62680	69810	79415	93086	115707	160186	283162

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
22195	47602	36261	18184	68208	48593	9375	175054	115232

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	1.14	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	0.65	0.71	0.65	0.60	0.65	0.60	0.56	0.59	0.55	0.52	0.48
3	0.71	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)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	389.15	387.39	381.21	373.27	359.15	343.27	323.85	302.67	277.97
15.0	389.15	392.71	393.61	390.04	382.92	372.23	358.88	341.96	323.26
30.0	389.15	399.89	406.15	409.73	409.73	406.15	400.78	390.94	377.52
45.0	389.15	403.57	417.98	428.79	436.00	439.60	438.70	434.19	425.19
60.0	389.15	409.11	428.16	444.49	457.19	465.35	469.89	470.79	468.07
75.0	389.15	410.97	433.71	453.71	470.07	481.89	490.99	495.53	496.44
90.0	389.15	412.85	435.63	459.33	476.64	490.31	502.16	506.72	510.36
105.0	389.15	411.78	435.31	457.03	475.13	488.70	497.75	502.28	504.99
120.0	389.15	410.77	431.49	449.51	464.82	473.83	481.04	483.74	482.84
135.0	389.15	392.61	408.18	421.15	431.53	436.72	438.45	436.72	431.53
150.0	389.15	401.79	413.53	419.85	425.27	425.27	421.66	414.43	403.60
165.0	389.15	396.34	400.84	400.84	397.24	390.05	381.06	368.48	349.61
180.0	389.15	386.51	380.33	370.62	356.50	341.50	320.32	299.14	274.44
195.0	389.15	380.25	369.56	353.53	335.72	313.46	286.74	260.03	230.64
210.0	389.15	375.73	358.74	336.37	311.32	282.69	253.17	219.18	192.34
225.0	389.15	369.33	345.91	318.89	288.26	254.93	226.10	200.88	175.66
240.0	389.15	367.38	338.35	304.79	269.41	240.39	215.89	191.40	168.72
255.0	389.15	363.69	332.78	296.41	261.86	234.58	210.03	187.30	165.48
270.0	389.15	362.72	328.09	291.64	260.65	232.40	209.61	187.74	165.87
285.0	389.15	364.72	329.42	294.13	260.64	234.40	209.06	185.53	180.10
300.0	389.15	365.73	335.10	299.97	290.96	236.01	210.79	186.47	164.85
315.0	389.15	355.43	329.48	299.22	266.35	236.09	210.14	185.06	161.71
330.0	389.15	372.90	352.13	327.76	299.77	268.16	233.85	204.96	177.87
345.0	389.15	376.57	363.09	343.32	323.55	297.48	269.62	239.96	207.61
360.0	389.15	387.39	381.21	373.27	359.15	343.27	323.85	302.67	277.97
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	250.61	224.14	191.49	162.37	129.72	98.83	66.18	36.18	11.47
15.0	302.77	277.84	252.01	223.52	194.13	162.07	131.80	99.74	71.24
30.0	360.53	340.84	319.37	295.22	267.49	240.65	212.02	185.18	157.45
45.0	413.47	399.96	381.95	361.23	338.71	315.29	289.16	263.94	238.72
60.0	461.72	451.74	438.14	419.09	400.04	378.27	356.50	330.19	305.70
75.0	492.81	485.53	474.62	460.07	442.80	422.79	400.97	376.42	351.87
90.0	508.54	503.07	493.05	480.29	463.88	442.92	421.05	399.18	375.48
105.0	502.28	495.94	485.99	471.51	454.31	437.12	411.78	388.25	362.91
120.0	477.43	469.33	455.81	441.40	421.58	399.96	377.44	352.22	325.19
135.0	421.15	409.04	393.48	375.32	353.70	331.21	307.86	282.78	257.71
150.0	388.25	371.09	351.23	328.66	303.38	276.29	248.30	222.12	192.32
165.0	331.63	310.06	284.90	257.94	230.08	197.72	168.96	137.51	107.85
180.0	247.08	218.84	187.08	156.19	123.54	90.89	60.89	32.65	10.59
195.0	201.26	167.42	135.36	105.08	77.47	51.65	29.39	15.14	7.12
210.0	164.61	138.66	112.72	88.57	68.88	49.20	34.89	23.26	15.21
225.0	151.34	129.72	106.30	88.28	70.26	54.95	42.34	31.53	23.42
240.0	146.95	127.00	107.95	90.71	74.38	61.68	48.98	39.01	29.93
255.0	145.48	127.29	109.11	93.65	78.19	65.46	53.64	50.92	34.55
270.0	146.73	127.59	109.36	105.72	79.29	67.44	55.59	45.57	36.45
285.0	143.90	124.89	108.60	92.31	77.83	64.26	53.40	42.54	34.39
300.0	144.13	123.41	105.40	88.28	72.97	59.45	47.74	37.83	30.63
315.0	139.23	117.61	97.72	80.42	64.86	51.02	39.78	30.27	22.48
330.0	151.69	127.31	103.83	82.16	61.40	46.05	32.50	22.57	15.35
345.0	174.35	142.90	114.14	87.18	63.81	42.24	25.16	13.48	7.19
360.0	250.61	224.14	191.49	162.37	129.72	98.83	66.18	36.18	11.47

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	0.88	0.88	0.88	1.76	2.65	3.53	4.41	5.29
15.0	48.98	34.73	27.61	23.15	21.37	19.59	19.59	18.70	18.70
30.0	134.19	113.61	97.51	83.20	72.46	63.52	57.25	50.99	45.62
45.0	213.49	190.97	169.35	151.34	133.32	117.11	103.59	90.98	79.27
60.0	279.39	254.90	231.31	207.73	186.87	166.91	146.95	128.81	112.48
75.0	324.60	299.14	271.86	248.22	222.76	200.03	177.30	156.39	136.39
90.0	346.32	318.98	291.64	265.21	241.51	214.17	192.30	168.60	146.73
105.0	335.76	307.70	283.27	257.93	231.68	207.25	184.62	162.90	141.18
120.0	300.87	273.85	248.63	224.30	201.78	179.26	158.54	139.63	120.71
135.0	233.49	208.41	187.66	167.77	147.88	130.58	115.02	100.31	88.21
150.0	168.84	145.37	125.50	109.25	94.81	83.97	73.14	64.11	56.88
165.0	81.78	62.91	50.33	42.24	36.85	32.35	29.66	27.86	26.06
180.0	2.65	2.65	3.53	4.41	5.29	6.18	7.06	7.94	8.82
195.0	2.67	1.78	1.78	1.78	1.78	1.78	1.78	2.67	2.67
210.0	8.95	5.37	3.58	2.68	2.68	1.79	0.89	0.89	1.79
225.0	16.21	10.81	8.11	6.31	4.50	3.60	3.60	0.90	0.90
240.0	22.68	17.24	15.42	9.07	7.26	5.44	3.63	2.72	0.91
255.0	27.28	20.91	15.46	11.82	9.09	6.36	5.46	3.64	1.82
270.0	29.16	22.78	17.32	12.76	10.03	7.29	5.47	3.65	2.73
285.0	27.15	20.82	16.29	11.77	9.05	7.24	5.43	3.62	1.81
300.0	22.52	17.12	13.51	9.91	7.21	5.40	4.50	2.70	1.80
315.0	16.43	11.24	8.65	6.92	5.19	4.32	2.59	1.73	0.86
330.0	9.93	6.32	4.51	3.61	2.71	1.81	1.81	0.90	1.81
345.0	3.59	2.70	1.80	1.80	1.80	1.80	1.80	1.80	2.70
360.0	1.76	0.88	0.88	0.88	1.76	2.65	3.53	4.41	5.29
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	6.18	7.94	8.82	9.71	10.59	9.71	10.59	10.59	11.47
15.0	17.81	17.81	17.81	18.70	16.92	15.14	14.25	13.36	12.47
30.0	41.15	36.68	33.99	30.42	27.73	22.37	17.89	16.10	14.31
45.0	69.36	60.35	52.25	45.94	39.64	33.33	25.22	18.92	15.31
60.0	97.06	83.45	71.66	59.87	49.89	41.73	32.66	24.49	16.33
75.0	117.29	100.02	84.56	70.92	58.19	47.28	37.28	28.19	21.82
90.0	126.68	107.54	91.14	74.73	61.06	49.21	38.28	30.08	21.87
105.0	121.27	103.17	86.88	72.40	59.73	47.97	38.01	28.96	21.72
120.0	104.49	89.18	75.67	63.06	52.25	42.34	35.13	27.02	20.72
135.0	76.10	65.72	56.21	48.43	40.64	34.59	28.54	23.35	19.03
150.0	50.56	44.24	39.73	35.21	31.60	27.09	24.38	20.77	18.06
165.0	24.27	23.37	22.47	21.57	20.67	18.87	18.87	17.08	16.18
180.0	9.71	9.71	10.59	10.59	10.59	9.71	10.59	11.47	12.35
195.0	2.67	3.56	4.45	5.34	6.23	6.23	8.91	10.69	11.58
210.0	1.79	1.79	3.58	4.47	5.37	6.26	7.16	9.84	11.63
225.0	0.90	1.80	2.70	3.60	4.50	5.40	7.21	9.01	10.81
240.0	0.91	0.91	1.81	2.72	3.63	5.44	6.35	8.16	9.98
255.0	0.91	0.91	0.91	2.73	3.64	4.55	6.36	7.27	8.18
270.0	0.91	0.91	0.91	1.82	3.65	4.56	6.38	4.56	6.38
285.0	0.91	0.91	0.91	2.72	3.62	4.53	4.53	5.43	9.96
300.0	0.90	0.90	1.80	2.70	3.60	4.50	4.50	7.21	11.71
315.0	0.86	1.73	2.59	3.46	3.46	3.46	5.19	7.78	11.24
330.0	1.81	2.71	2.71	3.61	3.61	4.51	6.32	9.03	12.64
345.0	2.70	2.70	3.59	4.49	4.49	6.29	8.09	9.89	13.48
360.0	6.18	7.94	8.82	9.71	10.59	9.71	10.59	10.59	11.47

Intensity data(cd)

C/ γ (°)	180.0
0.0	12.35
15.0	12.47
30.0	12.52
45.0	12.61
60.0	12.70
75.0	12.73
90.0	16.40
105.0	16.29
120.0	16.21
135.0	15.57
150.0	15.35
165.0	15.28
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	12.35