
AFX

Client:

LumCAT: ELZV3602LAJD4BK

Luminaire: LED Lamp

Report No:

Ballast type:

Test No: LCZP25070006

Voltage(V): 120.050

LampCAT:

Current(A): 0.167

Lamp flux(lm): 1614.7

Power (W): 19.660

Number of Lamps: 1

PF: 0.984

Length(mm): 900

Width(mm): 15

Phm Type: C

Height(mm): 10

Photometric Results

Lumens(lm): 1614.71, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 82.13

Central intensity(cd): 420.487, Maximum intensity(cd): 455.316

Angle of maximum intensity: C=90.0 γ =20.0

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

[C90/270]Total=128.8

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

[C90/270]Total=237.1

Maximum s/h(1/2): C0_180=1.23 C90_270=1.59

Maximum s/h(1/4): C0_180=1.35 C90_270=1.71

Up flux rate of lamp(%): 13.13%

Down flux rate of lamp(%): 86.87%

Up flux rate of LUM(%): 13.13%

Down flux rate of LUM(%): 86.87%

CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 59.480%

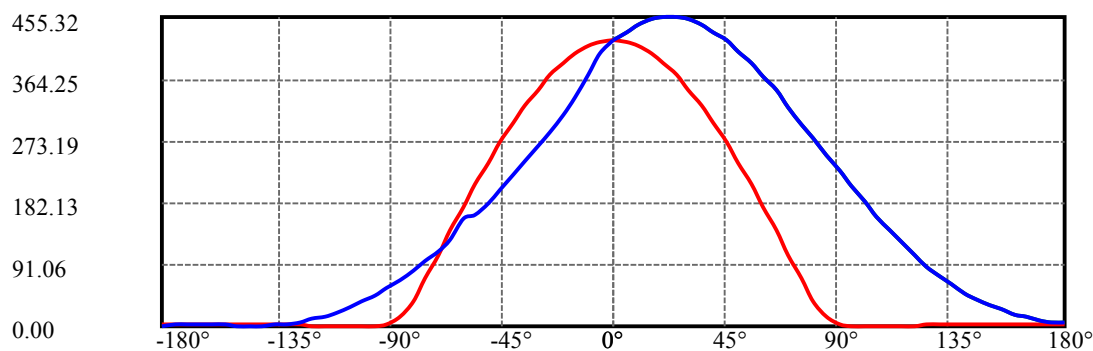
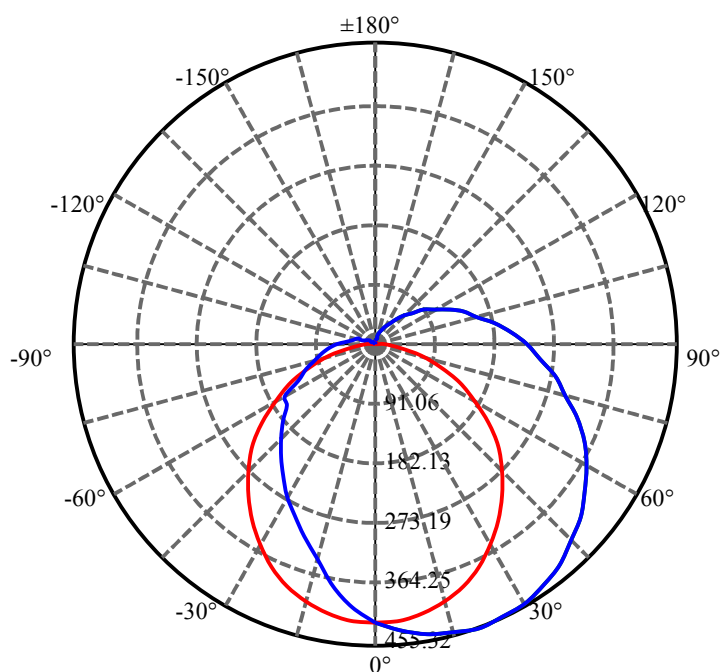
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	420.487	0.000	0	0.00%	0.00%
5.0	417.251	10.015	10.015	0.62%	0.62%
10.0	408.769	29.549	39.564	1.83%	2.45%
15.0	396.666	47.778	87.342	2.96%	5.41%
20.0	383.257	64.277	151.619	3.98%	9.39%
25.0	366.311	78.616	230.235	4.87%	14.26%
30.0	348.801	90.498	320.733	5.60%	19.86%
35.0	329.351	99.863	420.595	6.18%	26.05%
40.0	308.979	106.501	527.096	6.60%	32.64%
45.0	285.466	110.066	637.162	6.82%	39.46%
50.0	261.955	110.615	747.777	6.85%	46.31%
55.0	237.416	108.580	856.357	6.72%	53.03%
60.0	212.813	104.069	960.426	6.45%	59.48%
65.0	187.474	97.311	1057.737	6.03%	65.51%
70.0	162.639	88.651	1146.388	5.49%	71.00%
75.0	139.364	78.939	1225.327	4.89%	75.89%
80.0	118.164	68.907	1294.234	4.27%	80.15%
85.0	98.550	58.886	1353.12	3.65%	83.80%
90.0	82.366	49.536	1402.657	3.07%	86.87%
95.0	69.454	41.569	1444.226	2.57%	89.44%
100.0	59.000	34.904	1479.13	2.16%	91.60%
105.0	49.573	29.051	1508.181	1.80%	93.40%
110.0	41.725	23.864	1532.045	1.48%	94.88%
115.0	34.901	19.402	1551.448	1.20%	96.08%
120.0	29.176	15.577	1567.025	0.96%	97.05%
125.0	24.082	12.310	1579.335	0.76%	97.81%
130.0	19.878	9.558	1588.894	0.59%	98.40%
135.0	16.276	7.306	1596.199	0.45%	98.85%
140.0	13.430	5.500	1601.7	0.34%	99.19%
145.0	11.294	4.125	1605.824	0.26%	99.45%
150.0	9.521	3.065	1608.89	0.19%	99.64%
155.0	7.987	2.216	1611.105	0.14%	99.78%
160.0	6.652	1.535	1612.641	0.10%	99.87%
165.0	5.664	1.015	1613.656	0.06%	99.93%
170.0	4.950	0.630	1614.285	0.04%	99.97%
175.0	4.561	0.340	1614.626	0.02%	99.99%
180.0	2.243	0.081	1614.707	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	320.73	19.86%	19.86%
0-40	527.10	32.64%	32.64%
0-60	960.43	59.48%	59.48%
0-90	1402.66	86.87%	86.87%
0-120	1567.02	97.05%	97.05%
0-180	1614.71	100.00%	100.00%
60-90	442.23	27.39%	27.39%
90-120	164.37	10.18%	10.18%
90-130	186.24	11.53%	11.53%
90-150	206.23	12.77%	12.77%
90-180	211.97	13.13%	13.13%
0-79.82	1291.77	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	39.56
10-20	112.05
20-30	169.11
30-40	206.36
40-50	220.68
50-60	212.65
60-70	185.96
70-80	147.85
80-90	108.42
90-100	76.47
100-110	52.92
110-120	34.98
120-130	21.87
130-140	12.81
140-150	7.19
150-160	3.75
160-170	1.64
170-180	0.34



C90(Max): —————

C0/C180: —————

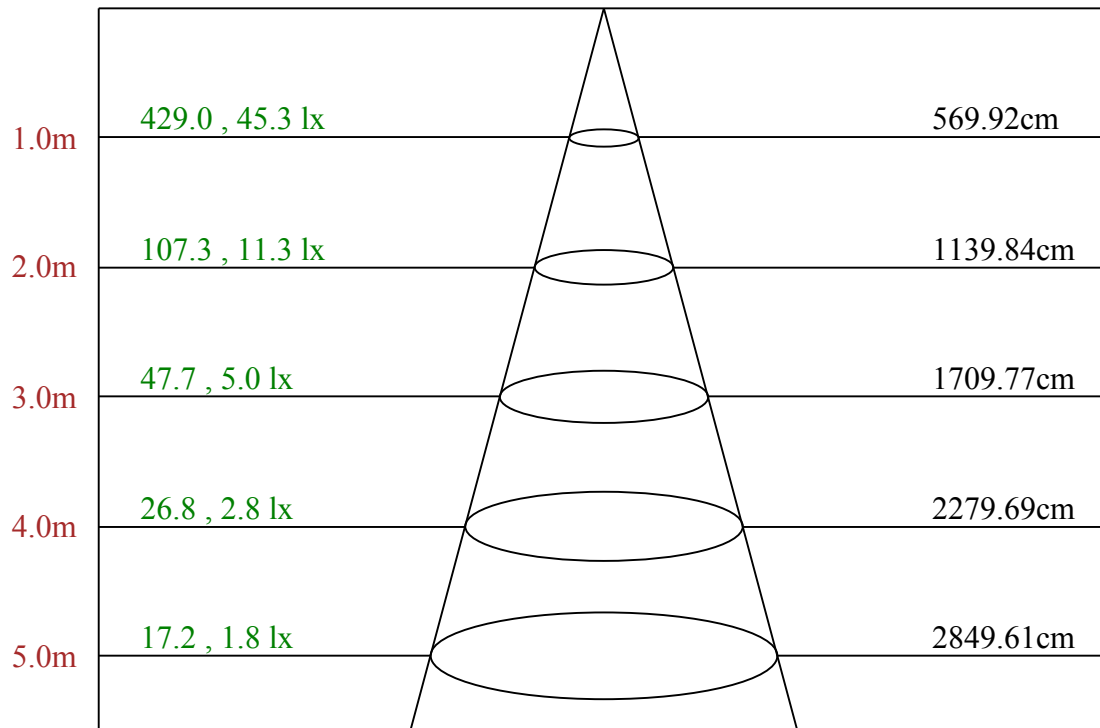
C90/C270: —————

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

:C90/270Left:115.4 Right:121.7

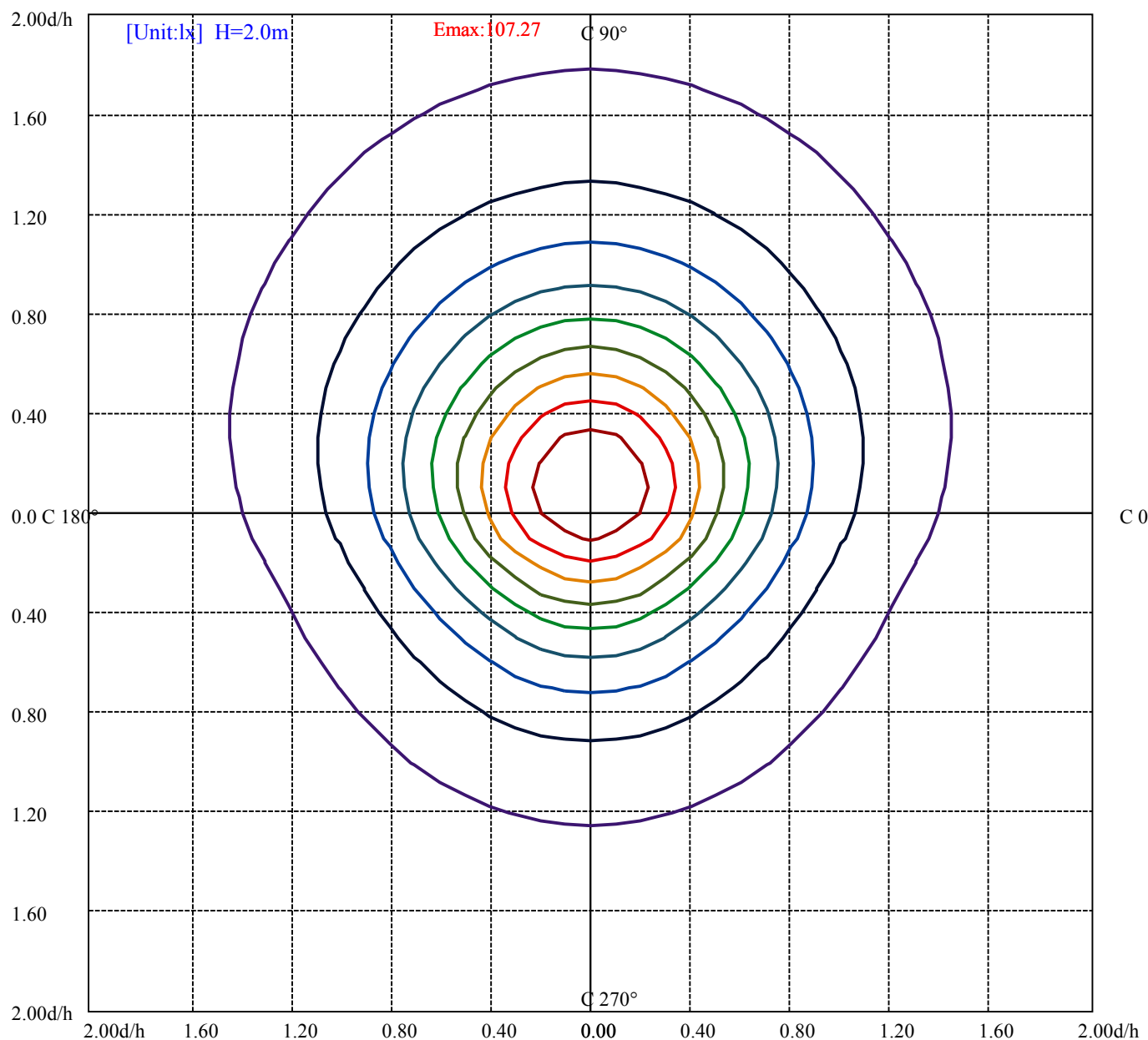
Beam Angle(50%Imax):C0/180Left:54.7 Right:54.7

:C90/270Left:58.7 Right:70.1

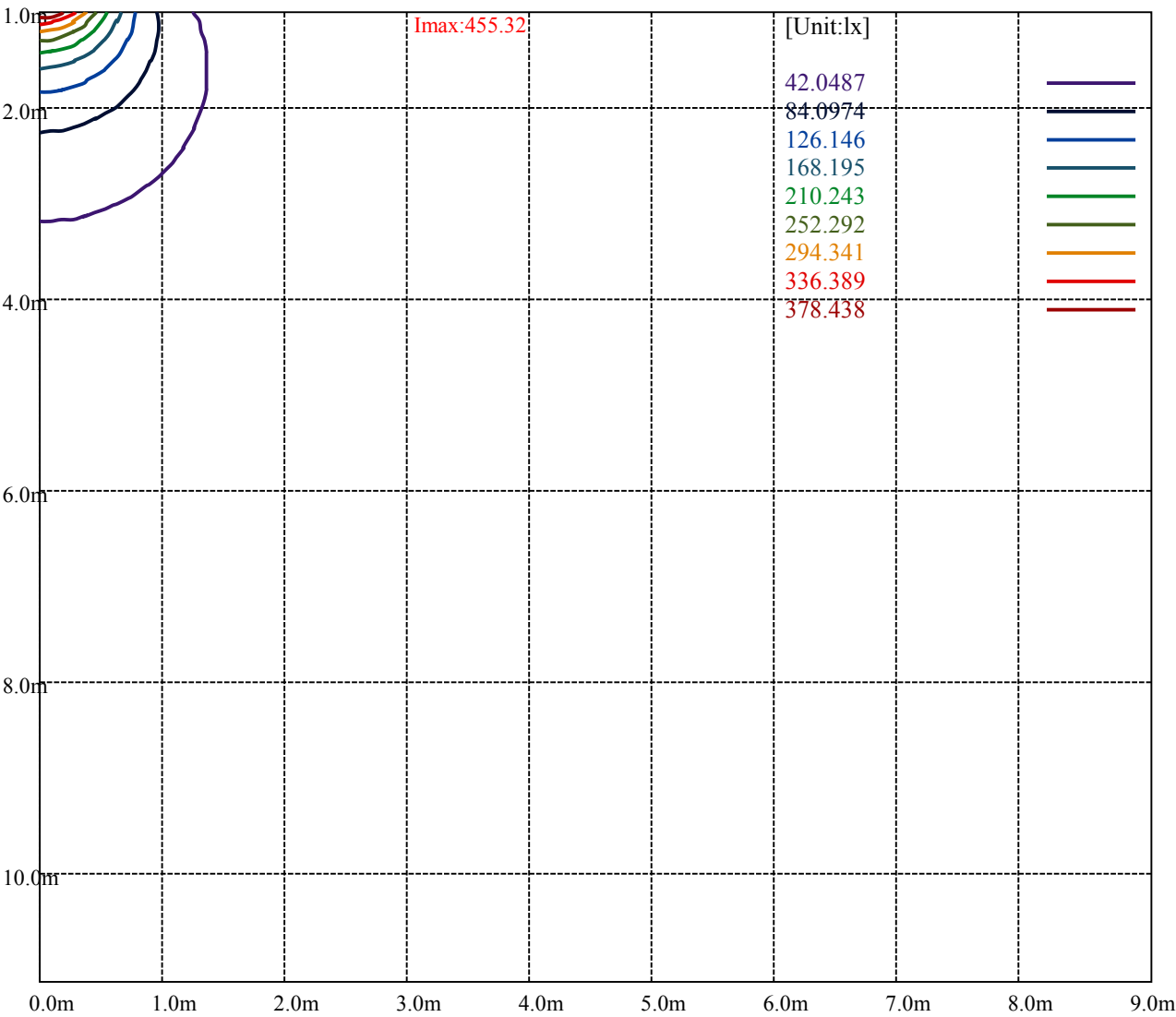


Max , Ave

Beam angle of C90 plane 141.33



(10%Emax) 10.72672	—
(20%Emax) 21.45348	—
(30%Emax) 32.18025	—
(40%Emax) 42.907	—
(50%Emax) 53.63375	—
(60%Emax) 64.3605	—
(70%Emax) 75.08725	—
(80%Emax) 85.814	—
(90%Emax) 96.54075	—



Luminance Table

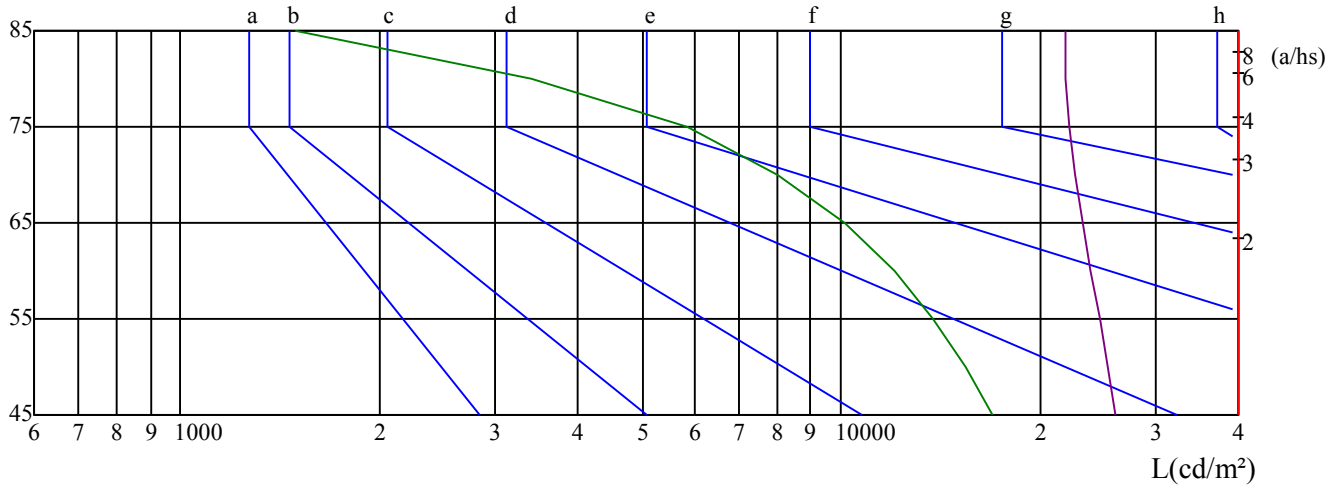
γ	45	50	55	60	65	70	75	80	85
C0	16984	15458	13796	12040	10131	8040	5846	3398	1496
C45	26039	25342	24644	23894	23265	22627	22154	21827	21886
C90	43518	46105	49269	53597	59471	67837	81940	110797	189797

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
24614	41702	32857	20390	56392	41256	12894	136360	89870

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

 $\gamma(^{\circ})$ 

C0 ———

C45 ———

C90 ———

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	1.12	1.12	1.12	1.04	1.04	1.04	0.97	0.97	0.97	0.90	0.90	0.90	0.87
1	0.97	0.92	0.88	0.94	0.89	0.85	0.87	0.83	0.80	0.81	0.78	0.75	0.75	0.73	0.70	0.67
2	0.84	0.76	0.69	0.81	0.74	0.68	0.75	0.69	0.64	0.69	0.65	0.61	0.65	0.61	0.57	0.54
3	0.73	0.64	0.57	0.70	0.62	0.55	0.65	0.58	0.53	0.61	0.55	0.50	0.56	0.52	0.48	0.45
4	0.64	0.55	0.48	0.62	0.53	0.46	0.58	0.50	0.44	0.54	0.47	0.42	0.50	0.45	0.40	0.38
5	0.57	0.48	0.41	0.55	0.46	0.40	0.51	0.44	0.38	0.48	0.42	0.36	0.45	0.39	0.35	0.32
6	0.51	0.42	0.35	0.49	0.41	0.34	0.46	0.39	0.33	0.43	0.37	0.32	0.41	0.35	0.30	0.28
7	0.46	0.37	0.31	0.45	0.36	0.30	0.42	0.35	0.29	0.39	0.33	0.28	0.37	0.31	0.27	0.25
8	0.42	0.33	0.27	0.41	0.33	0.27	0.38	0.31	0.26	0.36	0.30	0.25	0.34	0.28	0.24	0.22
9	0.38	0.30	0.24	0.37	0.29	0.24	0.35	0.28	0.23	0.33	0.27	0.22	0.31	0.26	0.22	0.20
10	0.35	0.27	0.22	0.34	0.27	0.22	0.33	0.26	0.21	0.31	0.25	0.20	0.29	0.24	0.20	0.18

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	420.49	420.76	416.91	408.40	397.13	381.55	361.86	339.75	315.95
15.0	420.49	425.34	425.61	421.39	412.76	401.07	385.96	367.17	344.52
30.0	420.49	428.75	432.07	431.90	427.49	419.23	407.37	390.75	371.44
45.0	420.49	430.01	437.12	440.08	438.64	434.78	425.34	412.58	397.03
60.0	420.49	433.81	442.90	448.03	449.74	447.04	441.19	431.47	417.97
75.0	420.49	434.00	444.27	451.29	453.82	453.55	448.41	441.20	430.67
90.0	420.49	433.97	444.91	451.61	455.32	455.14	451.34	443.37	433.51
105.0	420.49	432.40	441.89	449.32	451.65	450.57	444.48	437.59	425.41
120.0	420.49	432.19	439.60	444.24	443.53	439.60	432.54	421.29	407.72
135.0	420.49	423.74	428.22	429.37	426.55	419.70	409.23	395.51	377.40
150.0	420.49	425.55	427.17	424.19	418.50	408.65	395.28	378.20	358.15
165.0	420.49	422.46	419.32	413.93	403.23	389.66	372.23	351.38	326.85
180.0	420.49	415.39	406.88	394.17	377.70	358.01	335.28	310.22	281.85
195.0	420.49	412.76	399.81	382.82	362.95	336.16	309.36	280.05	247.69
210.0	420.49	408.99	390.84	366.86	339.19	308.83	278.74	250.17	224.21
225.0	420.49	404.22	378.69	351.00	321.16	292.13	267.86	242.87	217.79
240.0	420.49	400.78	372.34	339.76	309.61	284.31	261.81	238.50	216.99
255.0	420.49	398.96	367.61	334.82	308.34	284.83	262.40	240.87	218.89
270.0	420.49	400.22	369.92	337.53	309.94	285.78	264.70	242.45	222.28
285.0	420.49	398.73	370.34	338.38	310.80	288.06	265.76	243.64	239.52
300.0	420.49	403.70	375.29	345.91	338.41	292.50	268.39	244.81	222.39
315.0	420.49	401.32	379.34	351.02	321.39	293.51	269.95	245.94	221.85
330.0	420.49	411.18	395.46	373.41	347.94	319.02	289.48	261.11	233.37
345.0	420.49	414.83	403.95	390.56	372.41	347.78	322.26	293.51	262.05
360.0	420.49	420.76	416.91	408.40	397.13	381.55	361.86	339.75	315.95
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	286.77	259.20	227.61	194.94	160.48	125.04	91.29	54.87	25.96
15.0	319.70	291.74	261.89	229.71	197.97	163.81	129.28	96.29	67.52
30.0	349.16	326.44	298.68	269.49	238.31	207.50	177.32	149.83	123.42
45.0	377.52	355.14	332.13	305.25	278.83	251.59	225.34	198.47	175.10
60.0	402.04	380.98	361.54	339.22	314.92	290.07	265.50	241.02	216.09
75.0	416.97	400.76	381.39	360.31	338.06	315.64	290.95	267.17	242.85
90.0	420.03	405.38	387.56	368.74	347.39	322.78	298.18	276.10	251.68
105.0	410.64	393.71	374.10	353.33	332.02	309.01	284.47	260.39	237.28
120.0	391.10	370.38	349.84	325.37	302.06	277.32	253.11	229.71	206.05
135.0	357.88	335.90	310.75	285.07	259.48	232.49	206.37	182.02	158.54
150.0	335.20	310.89	281.26	253.16	221.72	190.46	161.18	134.44	109.96
165.0	301.14	273.64	243.09	210.92	178.66	143.25	111.52	79.26	52.66
180.0	253.65	222.24	189.48	155.29	120.38	85.21	51.20	21.30	4.39
195.0	213.44	180.71	150.59	118.32	90.00	62.03	40.10	24.09	12.86
210.0	195.56	169.96	143.64	117.41	93.78	73.12	56.50	40.96	29.01
225.0	193.25	168.90	145.53	124.40	103.82	86.92	71.37	56.90	44.04
240.0	194.13	173.25	152.37	132.84	114.93	98.19	83.34	70.02	57.15
255.0	197.90	178.09	159.26	140.16	123.95	107.37	92.51	89.36	65.67
270.0	200.29	182.11	162.93	158.59	128.46	111.36	95.89	82.60	69.21
285.0	201.47	180.52	160.91	142.28	124.10	107.90	92.41	78.98	66.26
300.0	200.24	177.91	157.73	136.29	118.52	101.55	85.74	71.27	58.14
315.0	197.67	174.02	150.01	128.56	107.72	89.51	73.51	58.39	45.28
330.0	206.27	179.52	153.59	127.12	102.19	80.05	60.81	44.63	31.44
345.0	229.16	195.55	162.12	130.76	101.64	71.17	46.82	27.86	14.65
360.0	286.77	259.20	227.61	194.94	160.48	125.04	91.29	54.87	25.96

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	4.92	0.81	0.63	0.72	0.72	0.81	1.07	1.34	1.61
15.0	45.94	29.94	21.40	15.91	12.59	10.52	9.17	8.18	7.37
30.0	100.97	81.56	66.20	54.08	44.29	36.38	30.18	25.15	21.02
45.0	152.27	131.50	112.45	95.91	80.99	67.95	56.99	48.00	39.64
60.0	193.77	171.81	149.94	130.68	113.49	96.93	82.17	68.94	57.69
75.0	220.33	197.54	175.47	154.39	134.22	115.39	99.45	82.87	69.72
90.0	227.97	205.72	183.74	160.49	141.22	123.31	104.49	88.57	73.46
105.0	213.38	192.51	169.59	149.89	130.19	112.37	96.08	81.66	68.05
120.0	183.36	162.28	142.19	123.79	107.35	91.28	78.15	65.56	55.11
135.0	137.88	117.92	101.65	86.52	73.42	61.99	52.41	43.26	36.49
150.0	88.36	71.20	57.82	47.16	38.85	32.44	27.01	22.86	19.33
165.0	33.43	22.38	15.64	12.13	9.98	8.54	7.64	7.01	6.47
180.0	1.52	1.34	1.34	1.34	1.34	1.34	1.43	1.52	1.52
195.0	5.39	2.79	1.98	1.35	1.17	1.08	0.99	0.90	0.72
210.0	18.68	11.86	7.82	4.94	3.14	1.98	1.35	0.99	0.81
225.0	33.71	24.81	17.53	12.58	8.45	5.48	4.94	1.98	1.17
240.0	45.81	35.64	33.30	20.52	14.67	10.08	6.57	3.87	2.07
255.0	53.60	43.60	34.05	26.03	19.46	13.60	9.46	5.77	3.33
270.0	57.08	46.32	36.28	28.41	21.17	14.93	10.04	6.33	3.71
285.0	53.81	41.82	33.58	25.61	18.71	13.43	8.86	5.64	3.13
300.0	46.35	34.83	26.88	19.74	14.02	9.74	6.34	3.84	2.05
315.0	33.68	23.92	17.32	11.61	7.91	5.10	3.17	2.02	1.14
330.0	18.97	12.11	7.50	4.79	2.98	1.99	1.36	0.99	0.81
345.0	5.57	2.70	1.71	1.17	1.08	0.99	0.90	0.72	0.63
360.0	4.92	0.81	0.63	0.72	0.72	0.81	1.07	1.34	1.61
C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	1.97	2.24	3.04	3.67	4.12	4.21	4.12	4.03	4.03
15.0	6.74	6.47	6.56	6.56	6.29	5.66	5.21	4.76	4.50
30.0	17.79	15.18	13.20	11.50	10.15	8.26	6.74	5.57	4.85
45.0	32.54	26.70	22.02	18.16	14.74	11.78	8.99	6.56	5.12
60.0	46.71	38.43	31.05	24.66	19.35	14.94	11.43	8.19	5.49
75.0	57.20	46.21	37.11	29.46	22.70	17.11	12.70	9.10	6.67
90.0	61.06	48.67	39.44	31.03	24.06	17.55	13.12	9.41	6.69
105.0	55.78	45.31	36.35	28.74	22.30	16.83	12.45	9.13	6.54
120.0	44.84	36.89	29.83	23.76	18.67	14.38	11.16	8.40	6.25
135.0	30.16	24.80	20.58	16.97	13.81	11.26	8.97	7.12	5.72
150.0	16.53	14.09	12.38	10.84	9.49	8.31	7.32	6.23	5.33
165.0	6.11	5.84	6.02	5.93	5.93	5.75	5.57	5.12	4.76
180.0	1.70	2.06	2.24	2.60	2.60	2.77	3.13	3.58	4.03
195.0	0.63	0.72	0.99	1.26	1.53	1.71	2.61	3.33	3.87
210.0	0.72	0.72	0.99	1.26	1.53	1.89	2.25	2.96	3.68
225.0	0.81	0.81	0.99	1.35	1.53	1.80	2.16	2.79	3.51
240.0	1.17	0.90	1.08	1.35	1.53	1.89	2.07	2.70	3.42
255.0	1.53	0.99	1.08	1.35	1.62	1.80	2.07	2.61	3.24
270.0	1.99	1.09	1.09	1.36	1.63	1.90	2.08	2.62	3.17
285.0	1.52	1.07	1.07	1.34	1.52	1.88	2.06	2.60	3.31
300.0	1.07	0.89	0.98	1.34	1.43	1.88	2.14	2.68	3.57
315.0	0.79	0.79	0.97	1.32	1.58	1.76	2.20	2.73	3.61
330.0	0.72	0.72	0.99	1.26	1.54	2.08	2.53	3.16	3.98
345.0	0.54	0.72	0.99	1.44	2.07	2.25	2.88	3.41	4.13
360.0	1.97	2.24	3.04	3.67	4.12	4.21	4.12	4.03	4.03

Intensity data(cd)

C/ γ (°)	180.0
0.0	4.03
15.0	4.23
30.0	4.22
45.0	4.31
60.0	4.23
75.0	4.41
90.0	4.89
105.0	4.84
120.0	4.82
135.0	4.66
150.0	4.61
165.0	4.58
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	4.03