
AFX

Client:

LumCAT: PTHW0618LAJUDBK-2700K

Luminaire: LED Lamp

Report No:

Ballast type:

Test No: LCZP25080180

Voltage(V): 120.050

LampCAT:

Current(A): 0.181

Lamp flux(lm): 1379.7

Power (W): 21.550

Number of Lamps: 1

PF: 0.991

Length(mm): 60

Width(mm): 40

Phm Type: C

Height(mm): 420

Photometric Results

Lumens(lm): 1379.70, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 64.02

Central intensity(cd): 5.652, Maximum intensity(cd): 271.398

Angle of maximum intensity: C=90.0 γ =90.0

Beam Angle(50%Imax): [C0/180]Total=291.4

[C90/270]Total=111.0

Field angle(10%Imax): [C0/180]Total=343.0

[C90/270]Total=163.2

Maximum s/h(1/2): C0_180=7.35 C90_270=20.54

Maximum s/h(1/4): C0_180=6.90 C90_270=18.37

Up flux rate of lamp(%): 50.33%

Down flux rate of lamp(%): 49.67%

Up flux rate of LUM(%): 50.33%

Down flux rate of LUM(%): 49.67%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 18.448%

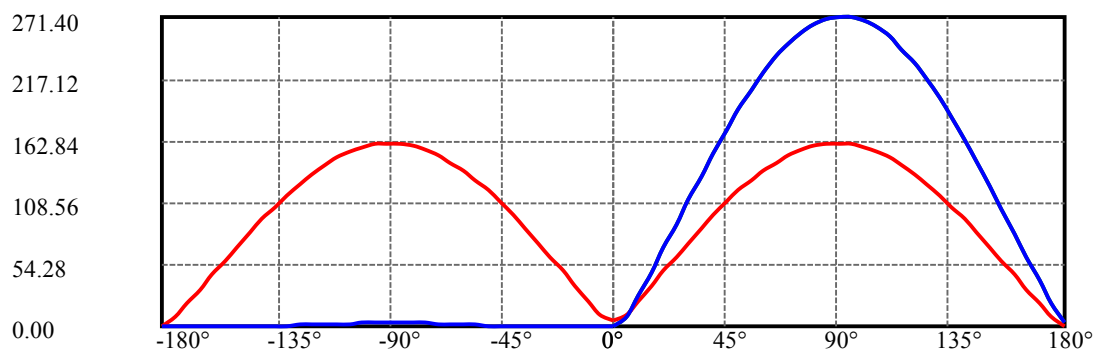
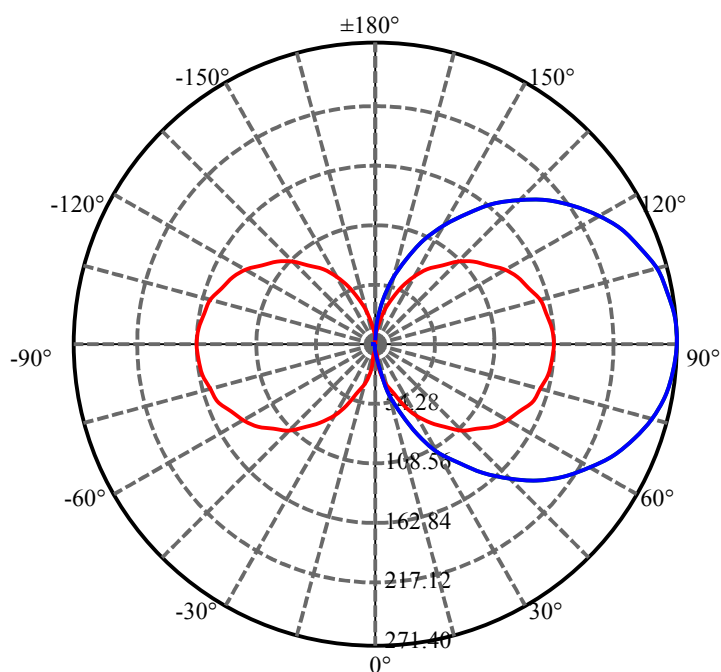
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2.370	0.000	0	0.00%	0.00%
5.0	6.804	0.110	0.11	0.01%	0.01%
10.0	17.159	0.857	0.967	0.06%	0.07%
15.0	28.441	2.705	3.672	0.20%	0.27%
20.0	40.355	5.670	9.341	0.41%	0.68%
25.0	51.270	9.610	18.951	0.70%	1.37%
30.0	62.578	14.408	33.359	1.04%	2.42%
35.0	73.718	20.071	53.43	1.45%	3.87%
40.0	84.447	26.389	79.818	1.91%	5.79%
45.0	94.671	33.165	112.984	2.40%	8.19%
50.0	104.241	40.193	153.177	2.91%	11.10%
55.0	113.045	47.245	200.422	3.42%	14.53%
60.0	120.996	54.098	254.52	3.92%	18.45%
65.0	128.043	60.542	315.062	4.39%	22.84%
70.0	134.013	66.354	381.416	4.81%	27.64%
75.0	138.790	71.306	452.722	5.17%	32.81%
80.0	142.379	75.233	527.956	5.45%	38.27%
85.0	144.618	77.984	605.94	5.65%	43.92%
90.0	145.441	79.420	685.36	5.76%	49.67%
95.0	144.794	79.469	764.829	5.76%	55.43%
100.0	142.846	78.159	842.987	5.66%	61.10%
105.0	139.486	75.544	918.532	5.48%	66.57%
110.0	134.884	71.716	990.247	5.20%	71.77%
115.0	129.146	66.854	1057.101	4.85%	76.62%
120.0	122.525	61.182	1118.283	4.43%	81.05%
125.0	114.611	54.813	1173.096	3.97%	85.03%
130.0	105.961	47.960	1221.056	3.48%	88.50%
135.0	96.615	40.933	1261.99	2.97%	91.47%
140.0	86.814	33.963	1295.953	2.46%	93.93%
145.0	76.268	27.209	1323.162	1.97%	95.90%
150.0	65.307	20.848	1344.01	1.51%	97.41%
155.0	54.096	15.111	1359.12	1.10%	98.51%
160.0	42.986	10.182	1369.303	0.74%	99.25%
165.0	31.390	6.130	1375.432	0.44%	99.69%
170.0	20.217	3.061	1378.494	0.22%	99.91%
175.0	9.701	1.070	1379.564	0.08%	99.99%
180.0	1.443	0.133	1379.697	0.01%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	33.36	2.42%	2.42%
0-40	79.82	5.79%	5.79%
0-60	254.52	18.45%	18.45%
0-90	685.36	49.67%	49.67%
0-120	1118.28	81.05%	81.05%
0-180	1379.70	100.00%	100.00%
60-90	430.84	31.23%	31.23%
90-120	432.92	31.38%	31.38%
90-130	535.70	38.83%	38.83%
90-150	658.65	47.74%	47.74%
90-180	694.20	50.32%	50.32%
0-118.81	1103.76	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	0.97
10-20	8.37
20-30	24.02
30-40	46.46
40-50	73.36
50-60	101.34
60-70	126.90
70-80	146.54
80-90	157.40
90-100	157.63
100-110	147.26
110-120	128.04
120-130	102.77
130-140	74.90
140-150	48.06
150-160	25.29
160-170	9.19
170-180	1.07



C90(Max):

C0/C180:

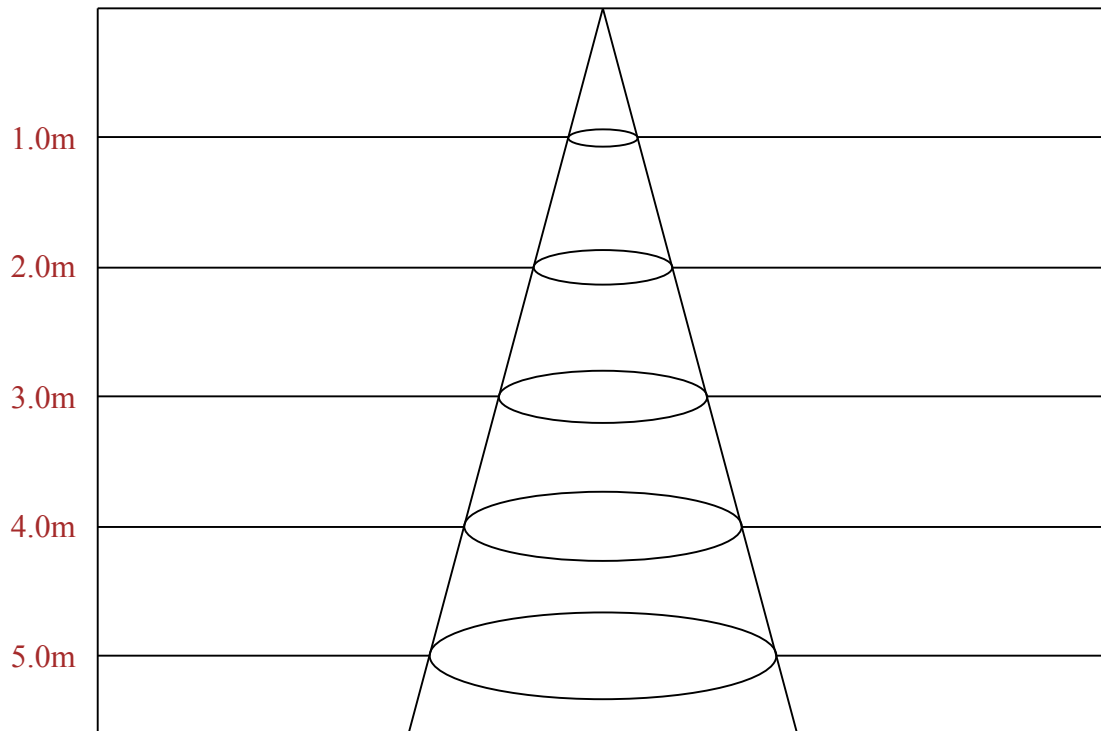
C90/C270:

Field angle(10%Imax):C0/180Left:261.5 Right:81.5

:C90/270Left:79.8 Right:83.4

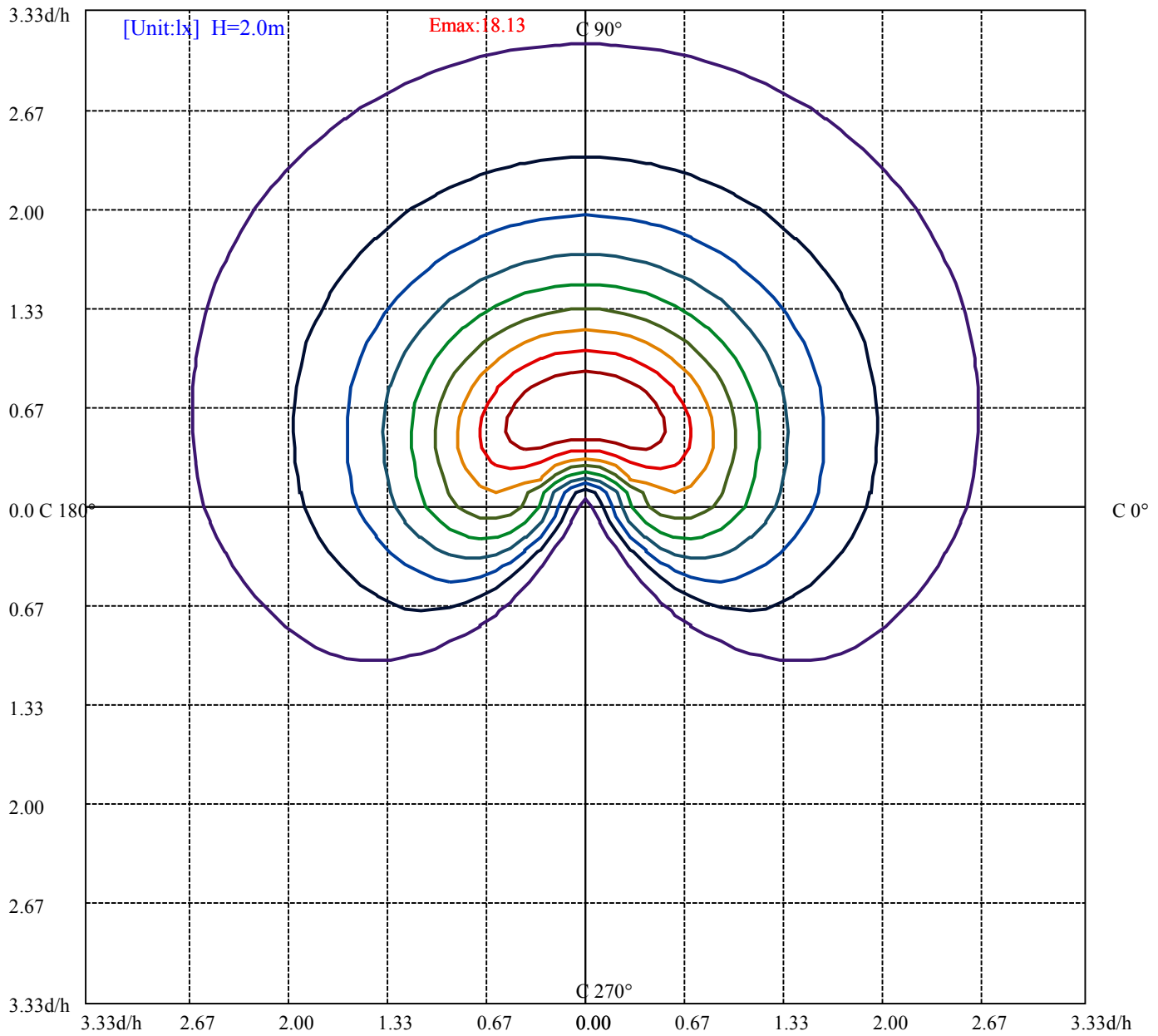
Beam Angle(50%Imax):C0/180Left:235.7 Right:55.7

:C90/270Left:53.9 Right:57.1

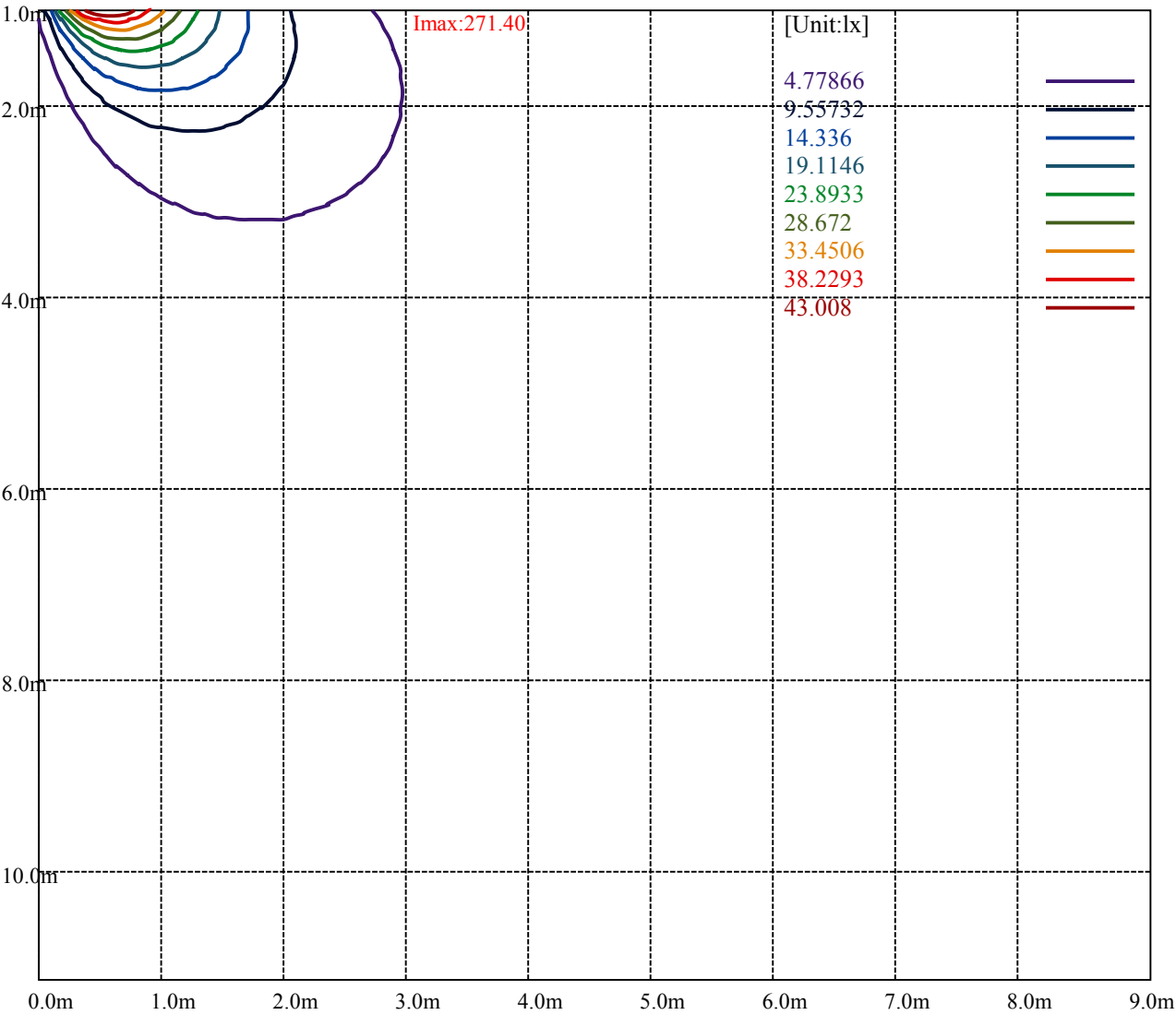


Max , Ave

Beam angle of C90 plane 202.50



(10%Emax) 1.812992	—
(20%Emax) 3.625975	—
(30%Emax) 5.438975	—
(40%Emax) 7.251975	—
(50%Emax) 9.064975	—
(60%Emax) 10.87795	—
(70%Emax) 12.69095	—
(80%Emax) 14.50395	—
(90%Emax) 16.31693	—



Luminance Table

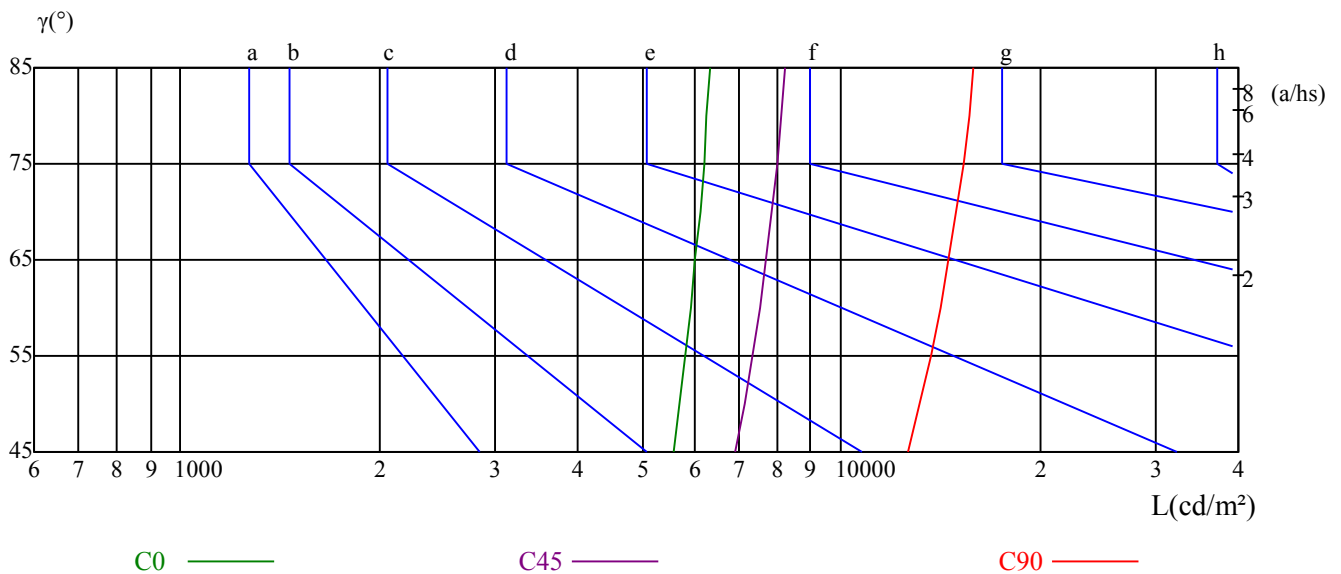
γ	45	50	55	60	65	70	75	80	85
C0	5579	5713	5831	5935	6029	6123	6196	6261	6321
C45	6933	7172	7363	7542	7709	7864	8001	8131	8224
C90	12635	13179	13684	14156	14590	14937	15330	15636	15900

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
141793	117778	123306	249006	210009	218350	764974	651096	675544

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	1.07	1.07	1.07	0.99	0.99	0.99	0.83	0.83	0.83	0.69	0.69	0.69	0.56	0.56	0.56	0.50
1	0.85	0.79	0.73	0.78	0.72	0.67	0.64	0.60	0.56	0.52	0.48	0.45	0.40	0.38	0.35	0.30
2	0.71	0.62	0.55	0.65	0.57	0.51	0.53	0.47	0.42	0.42	0.37	0.34	0.32	0.29	0.25	0.20
3	0.61	0.51	0.43	0.55	0.47	0.40	0.45	0.38	0.33	0.35	0.30	0.26	0.26	0.23	0.19	0.15
4	0.52	0.43	0.35	0.48	0.39	0.32	0.39	0.32	0.26	0.30	0.25	0.21	0.23	0.18	0.15	0.11
5	0.46	0.36	0.29	0.42	0.33	0.26	0.34	0.27	0.22	0.27	0.21	0.17	0.20	0.16	0.12	0.09
6	0.41	0.31	0.24	0.37	0.28	0.22	0.30	0.23	0.18	0.24	0.18	0.14	0.17	0.13	0.10	0.07
7	0.36	0.27	0.21	0.33	0.25	0.19	0.27	0.20	0.15	0.21	0.16	0.12	0.16	0.12	0.08	0.05
8	0.32	0.24	0.18	0.30	0.22	0.16	0.24	0.18	0.13	0.19	0.14	0.10	0.14	0.10	0.07	0.05
9	0.29	0.21	0.15	0.27	0.19	0.14	0.22	0.16	0.11	0.17	0.12	0.09	0.13	0.09	0.06	0.04
10	0.27	0.19	0.13	0.24	0.17	0.12	0.20	0.14	0.10	0.16	0.11	0.08	0.12	0.08	0.05	0.03

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	5.65	4.04	15.16	27.36	39.92	52.31	63.61	76.98	88.19
15.0	4.40	5.29	18.03	33.29	47.82	62.98	78.05	92.95	107.12
30.0	3.50	5.74	21.17	37.95	55.63	73.30	90.97	107.21	123.72
45.0	2.42	6.82	23.95	42.71	61.10	80.66	100.04	119.15	137.54
60.0	1.70	7.81	25.03	44.68	65.23	86.22	106.94	125.96	145.79
75.0	0.99	7.81	26.38	45.67	67.83	88.10	109.28	130.45	150.82
90.0	0.63	7.72	26.38	46.92	68.28	89.63	111.16	131.17	151.89
105.0	0.54	8.16	26.92	47.46	66.39	88.82	109.99	131.17	151.62
120.0	0.81	8.43	26.11	46.29	67.11	88.28	109.19	130.00	148.84
135.0	3.59	7.72	25.39	44.77	64.60	83.62	103.71	123.18	141.75
150.0	1.61	7.09	23.42	41.09	72.94	77.16	94.20	112.51	128.48
165.0	2.60	6.55	20.19	35.62	51.23	67.02	82.54	97.08	113.13
180.0	5.65	17.76	30.15	44.32	57.06	70.34	82.99	95.46	107.30
195.0	4.40	13.64	23.69	34.09	44.41	54.46	63.88	73.75	82.45
210.0	3.50	9.78	17.58	24.58	31.94	39.12	46.20	53.02	59.48
225.0	2.42	6.73	10.68	14.35	17.94	20.99	24.40	27.09	29.88
240.0	1.70	3.77	4.13	4.22	4.22	4.04	4.04	3.95	3.95
255.0	0.99	1.70	1.53	1.53	1.44	1.44	1.44	1.35	1.53
270.0	0.63	0.45	0.27	0.27	0.27	0.18	0.09	0.09	0.36
285.0	0.54	0.90	0.99	1.08	0.99	0.99	1.08	0.99	1.17
300.0	0.81	2.51	2.96	3.32	3.23	3.32	3.32	3.32	3.41
315.0	3.59	4.76	7.72	10.32	12.83	15.25	17.41	19.65	21.71
330.0	1.61	7.63	14.27	21.44	27.54	34.27	40.73	47.01	52.93
345.0	2.60	10.50	19.74	29.25	38.58	48.00	56.61	65.76	73.66
360.0	5.65	4.04	15.16	27.36	39.92	52.31	63.61	76.98	88.19
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	99.14	109.55	119.06	127.85	135.21	142.20	147.14	151.09	153.87
15.0	120.04	132.51	144.36	155.03	164.63	172.62	179.35	184.19	187.42
30.0	139.51	154.23	168.13	180.06	191.64	200.61	208.33	214.34	218.10
45.0	155.12	171.90	186.43	200.43	212.81	223.31	232.01	238.74	242.87
60.0	164.54	182.31	198.73	213.71	226.36	238.20	246.55	253.81	258.48
75.0	170.29	188.77	204.47	220.26	233.63	245.47	254.98	262.07	267.09
90.0	171.54	189.93	207.16	222.95	236.95	248.07	258.30	265.21	269.42
105.0	171.27	189.57	206.62	221.25	235.15	246.73	255.88	263.14	268.17
120.0	167.77	185.18	201.96	217.21	230.13	241.52	250.22	257.40	261.71
135.0	159.61	176.57	192.09	205.63	217.84	228.51	236.95	243.67	247.17
150.0	145.61	159.88	173.52	186.08	197.29	206.44	213.98	219.63	223.58
165.0	125.78	138.44	149.65	160.42	170.02	178.09	184.37	189.04	192.54
180.0	118.61	128.66	137.72	145.43	152.43	157.81	162.21	164.90	166.16
195.0	90.88	98.51	105.78	111.70	116.81	121.21	124.26	126.41	127.22
210.0	65.40	70.97	75.99	80.12	83.98	87.12	89.36	90.79	91.42
225.0	32.30	34.63	36.69	38.49	39.92	41.09	41.99	42.53	42.71
240.0	3.95	4.13	4.22	4.40	4.58	4.76	4.93	5.11	5.29
255.0	1.61	1.97	2.24	2.51	2.69	3.05	3.32	3.41	3.68
270.0	0.45	0.81	1.17	1.35	1.97	2.24	2.60	2.78	2.96
285.0	1.35	1.61	2.06	2.33	2.60	2.96	3.32	3.59	3.68
300.0	3.50	3.68	3.77	4.04	4.22	4.22	4.49	4.58	4.49
315.0	23.78	25.48	27.18	28.62	29.70	30.77	31.58	32.30	32.48
330.0	58.50	63.79	68.63	72.76	76.26	79.04	81.46	82.99	83.89
345.0	81.55	88.73	95.46	101.29	106.23	110.26	113.40	115.38	116.45
360.0	99.14	109.55	119.06	127.85	135.21	142.20	147.14	151.09	153.87

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	155.03	154.85	153.42	150.37	145.70	140.14	133.59	125.52	116.90
15.0	188.95	188.95	186.79	182.76	177.64	170.02	162.39	152.52	141.31
30.0	219.81	219.54	217.30	212.72	206.17	197.74	187.87	176.74	164.09
45.0	244.66	244.39	241.61	236.32	229.23	220.26	209.13	196.12	181.95
60.0	260.63	260.00	257.40	251.75	243.85	233.99	222.77	208.15	193.52
75.0	269.24	268.35	265.03	259.55	251.21	241.43	228.96	214.52	198.73
90.0	271.40	270.95	267.63	262.34	253.90	243.50	230.67	216.94	200.79
105.0	270.05	269.51	265.92	260.27	252.02	242.24	229.77	215.23	199.08
120.0	263.59	263.05	260.18	253.99	246.55	235.96	224.12	209.76	194.87
135.0	249.60	248.70	245.74	240.44	232.82	223.22	212.00	199.26	184.28
150.0	225.10	224.47	221.60	217.30	210.39	202.22	191.64	179.97	166.79
165.0	193.52	193.16	190.83	186.61	181.23	173.96	165.53	155.48	144.00
180.0	165.98	163.92	160.69	155.93	149.74	142.20	133.68	124.44	113.49
195.0	127.04	125.25	122.56	118.70	113.94	108.20	101.65	94.38	86.13
210.0	91.33	89.99	88.46	85.41	81.91	77.79	73.12	67.56	61.82
225.0	42.44	41.72	40.64	39.03	37.05	34.99	34.54	29.97	27.09
240.0	5.29	5.02	4.93	4.58	4.22	3.86	3.68	3.32	3.14
255.0	3.68	3.59	3.32	2.96	2.60	2.33	1.97	1.61	1.35
270.0	2.96	2.87	2.60	2.42	1.97	1.70	1.35	0.90	0.54
285.0	3.59	3.32	3.23	2.96	2.60	2.24	1.88	1.35	0.90
300.0	4.40	4.04	3.68	3.32	2.96	2.78	2.69	2.51	2.33
315.0	32.39	32.03	31.40	30.32	29.07	27.54	26.20	24.40	22.61
330.0	83.71	82.63	80.84	78.59	75.45	71.68	67.47	62.71	57.51
345.0	116.19	114.75	112.51	109.01	104.97	99.50	93.93	87.30	79.85
360.0	155.03	154.85	153.42	150.37	145.70	140.14	133.59	125.52	116.90
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	107.12	96.45	85.59	74.47	62.62	50.33	37.77	25.84	13.55
15.0	129.19	117.17	103.71	89.36	74.91	59.84	45.58	30.59	16.15
30.0	150.01	135.03	119.95	102.55	86.31	68.99	51.68	34.45	18.75
45.0	166.07	149.92	132.24	113.85	94.65	76.26	55.98	38.04	19.74
60.0	176.66	158.71	139.51	119.86	100.30	79.85	59.39	39.21	20.01
75.0	182.13	162.30	143.91	124.35	102.28	81.11	60.74	39.30	20.64
90.0	183.03	164.09	144.36	123.36	103.27	80.84	60.65	39.83	20.90
105.0	181.59	162.75	144.00	123.63	102.10	80.93	59.75	39.75	20.01
120.0	177.19	159.79	140.68	120.49	99.59	79.76	58.86	38.58	18.93
135.0	168.58	151.26	133.95	115.02	95.55	75.81	56.79	36.43	18.84
150.0	153.24	137.54	121.30	104.25	86.58	69.53	51.50	33.73	16.87
165.0	131.89	119.15	104.79	90.88	75.63	60.11	44.50	29.88	15.16
180.0	102.73	90.79	78.14	64.96	52.31	39.03	25.93	13.10	2.06
195.0	77.52	68.10	58.94	48.90	39.12	35.89	19.47	10.05	0.63
210.0	55.45	53.74	41.90	34.81	27.63	20.72	13.73	7.27	0.63
225.0	24.22	21.26	18.39	15.16	12.02	9.33	6.19	2.42	0.54
240.0	2.96	2.87	2.87	2.78	2.60	1.53	0.63	0.54	0.45
255.0	1.17	0.81	0.81	0.72	0.54	0.27	0.45	0.45	0.45
270.0	0.36	0.27	0.27	0.18	0.27	0.27	0.36	0.36	0.54
285.0	0.63	0.54	0.63	0.54	0.27	0.18	0.27	0.36	0.45
300.0	2.24	2.33	2.51	2.60	2.87	2.33	1.26	0.54	0.63
315.0	20.64	18.75	16.51	14.44	12.11	9.87	7.36	5.11	1.35
330.0	52.13	46.12	39.92	33.73	27.45	20.72	14.35	8.34	2.42
345.0	72.04	63.79	55.54	46.47	37.32	28.17	20.19	11.04	3.14
360.0	107.12	96.45	85.59	74.47	62.62	50.33	37.77	25.84	13.55

Intensity data(cd)

C/ γ (°)	180.0
0.0	0.99
15.0	3.59
30.0	4.13
45.0	3.86
60.0	4.04
75.0	3.32
90.0	2.60
105.0	2.69
120.0	2.15
135.0	2.60
150.0	2.24
165.0	2.42
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	0.99