
AFX

Client:

LumCAT: EMAF06LAJD1BK

Luminaire: LED lamp

Report No:

Ballast type:

Test No:

Voltage(V): 120.000

LampCAT:

Current(A): 0.134

Lamp flux(lm): 1086.1

Power (W): 15.200

Number of Lamps: 1

PF: 0.944

Length(mm): -140

Width(mm): -140

Phm Type: C

Height(mm): 20

Photometric Results

Lumens(lm): 1086.05, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 71.45

Central intensity(cd): 361.155, Maximum intensity(cd): 361.167

Angle of maximum intensity: C=45.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=106.4

[C90/270]Total=105.2

Field angle(10%Imax): [C0/180]Total=163.4

[C90/270]Total=163.0

Maximum s/h(1/2): C0_180=1.20 C90_270=1.19

Maximum s/h(1/4): C0_180=1.31 C90_270=1.30

Up flux rate of lamp(%): 10.05%

Down flux rate of lamp(%): 89.95%

Up flux rate of LUM(%): 10.05%

Down flux rate of LUM(%): 89.95%

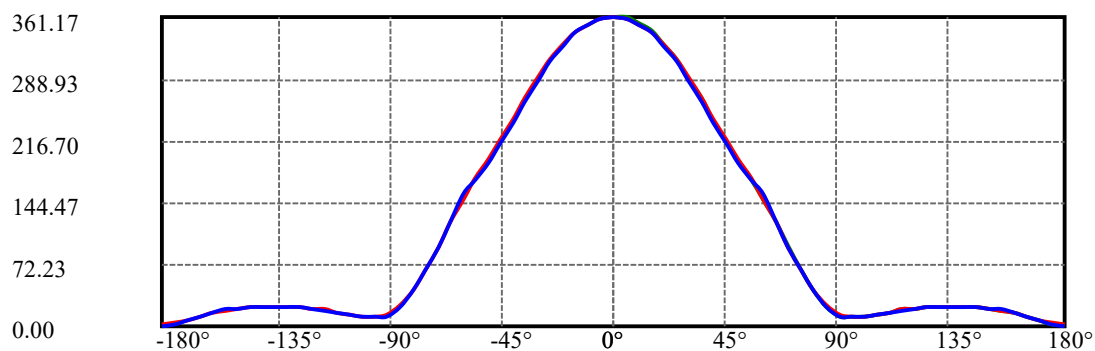
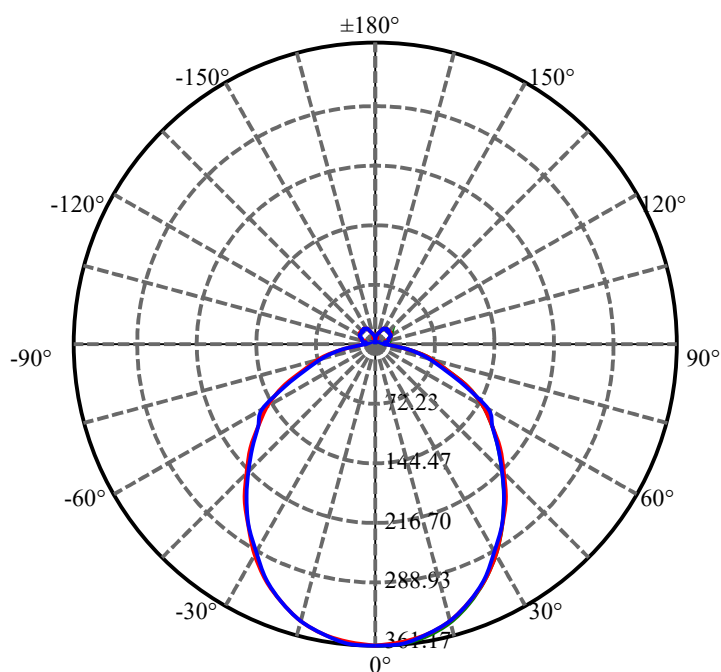
CIE Type : Semidirect lighting

Output flux ratio in π solid angle : 69.972%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	361.155	0.000	0	0.00%	0.00%
5.0	359.557	8.616	8.616	0.79%	0.79%
10.0	353.568	25.511	34.127	2.35%	3.14%
15.0	343.304	41.338	75.465	3.81%	6.95%
20.0	329.146	55.419	130.884	5.10%	12.05%
25.0	311.099	67.150	198.034	6.18%	18.23%
30.0	289.195	75.968	274.002	6.99%	25.23%
35.0	265.081	81.621	355.623	7.52%	32.74%
40.0	240.738	84.392	440.015	7.77%	40.52%
45.0	215.403	84.458	524.473	7.78%	48.29%
50.0	192.626	82.448	606.921	7.59%	55.88%
55.0	171.149	79.097	686.018	7.28%	63.17%
60.0	148.643	73.919	759.937	6.81%	69.97%
65.0	121.515	65.676	825.613	6.05%	76.02%
70.0	92.443	54.176	879.788	4.99%	81.01%
75.0	65.010	41.156	920.944	3.79%	84.80%
80.0	42.424	28.746	949.69	2.65%	87.44%
85.0	22.698	17.695	967.385	1.63%	89.07%
90.0	12.015	9.505	976.89	0.88%	89.95%
95.0	11.292	6.382	983.272	0.59%	90.54%
100.0	11.788	6.271	989.543	0.58%	91.11%
105.0	13.544	6.778	996.321	0.62%	91.74%
110.0	16.558	7.868	1004.189	0.72%	92.46%
115.0	18.922	8.984	1013.173	0.83%	93.29%
120.0	20.754	9.645	1022.818	0.89%	94.18%
125.0	21.899	9.859	1032.678	0.91%	95.09%
130.0	22.472	9.648	1042.325	0.89%	95.97%
135.0	22.776	9.143	1051.468	0.84%	96.82%
140.0	22.738	8.427	1059.896	0.78%	97.59%
145.0	22.244	7.505	1067.401	0.69%	98.28%
150.0	21.022	6.371	1073.772	0.59%	98.87%
155.0	18.655	5.021	1078.793	0.46%	99.33%
160.0	15.411	3.573	1082.366	0.33%	99.66%
165.0	11.290	2.201	1084.566	0.20%	99.86%
170.0	6.750	1.070	1085.637	0.10%	99.96%
175.0	3.394	0.363	1085.999	0.03%	100.00%
180.0	1.067	0.053	1086.053	0.00%	100.00%

ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	274.00	25.23%	25.23%
0-40	440.01	40.52%	40.52%
0-60	759.94	69.97%	69.97%
0-90	976.89	89.95%	89.95%
0-120	1022.82	94.18%	94.18%
0-180	1086.05	100.00%	100.00%
60-90	216.95	19.98%	19.98%
90-120	45.93	4.23%	4.23%
90-130	65.44	6.03%	6.03%
90-150	96.88	8.92%	8.92%
90-180	109.11	10.05%	10.05%
0-68.99	868.84	80.00%	80.00%

ZONAL LUMEN SUMMARY	
0-10	34.13
10-20	96.76
20-30	143.12
30-40	166.01
40-50	166.91
50-60	153.02
60-70	119.85
70-80	69.90
80-90	27.20
90-100	12.65
100-110	14.65
110-120	18.63
120-130	19.51
130-140	17.57
140-150	13.88
150-160	8.59
160-170	3.27
170-180	0.36



C45(Max):

C0/C180:

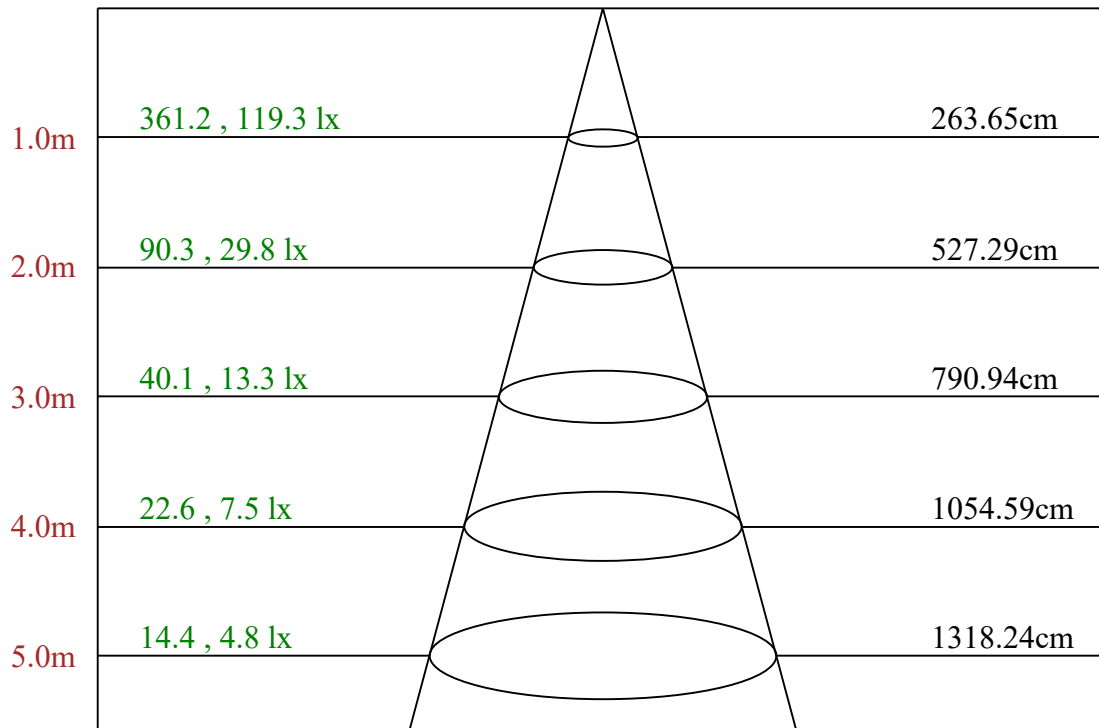
C90/C270:

Field angle(10%Imax):C0/180Left:81.7 Right:81.7

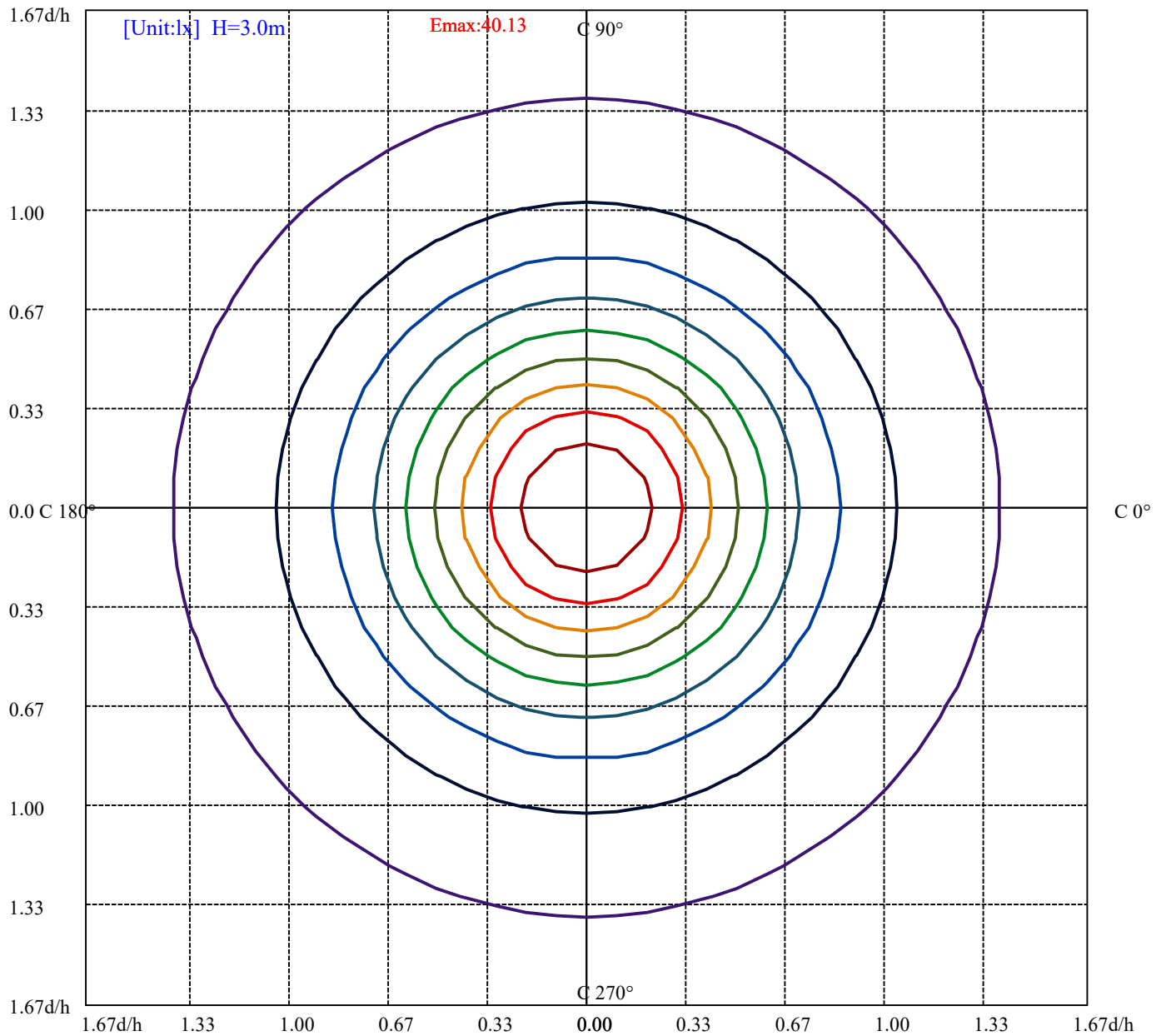
:C90/270Left:81.5 Right:81.5

Beam Angle(50%Imax):C0/180Left:53.2 Right:53.2

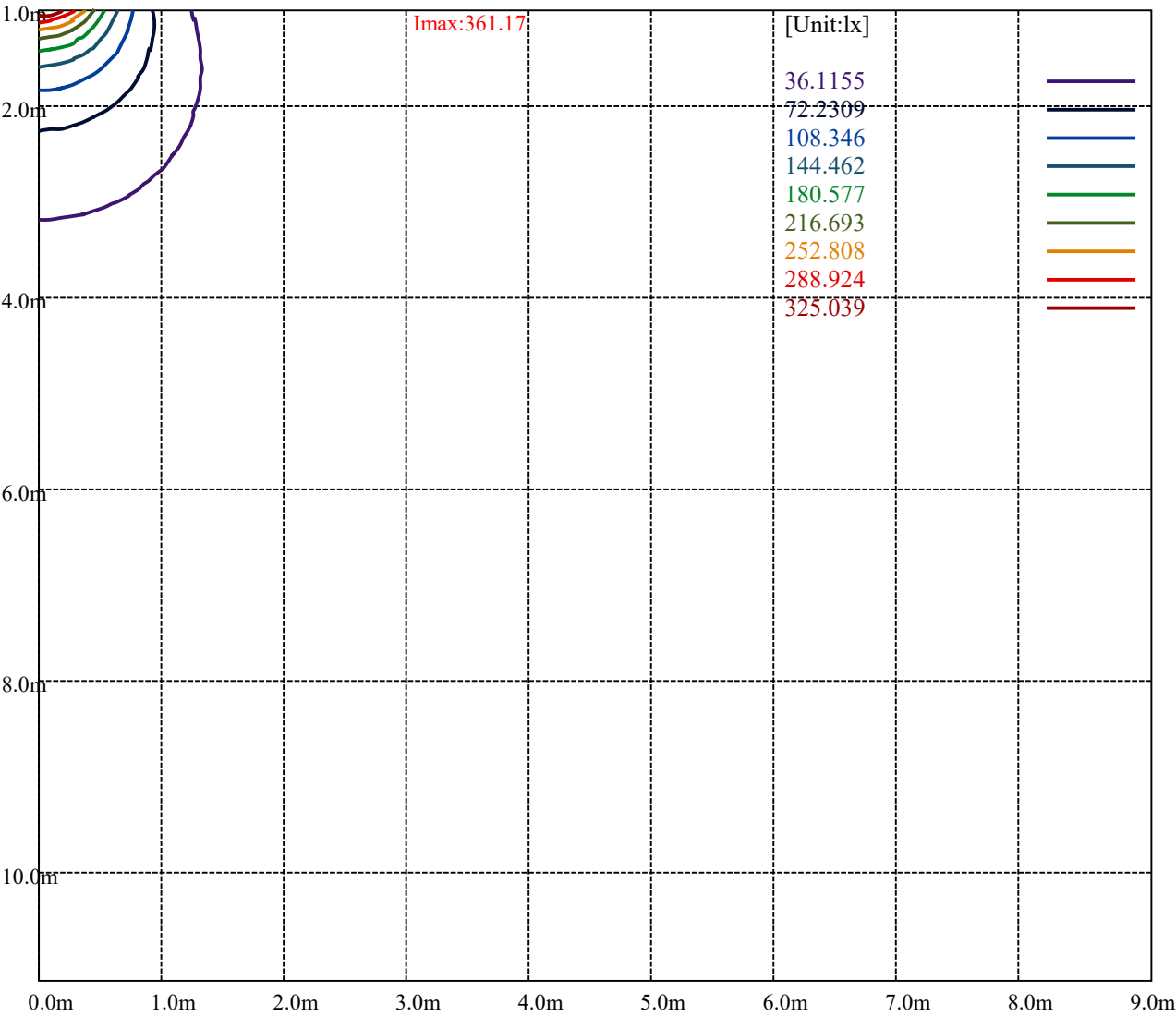
:C90/270Left:52.6 Right:52.6



Max , Ave Beam angle of C45 plane 105.63



(10%Emax) 4.012834	—
(20%Emax) 8.025656	—
(30%Emax) 12.03844	—
(40%Emax) 16.05133	—
(50%Emax) 20.06411	—
(60%Emax) 24.077	—
(70%Emax) 28.08978	—
(80%Emax) 32.10267	—
(90%Emax) 36.11544	—



Luminance Table

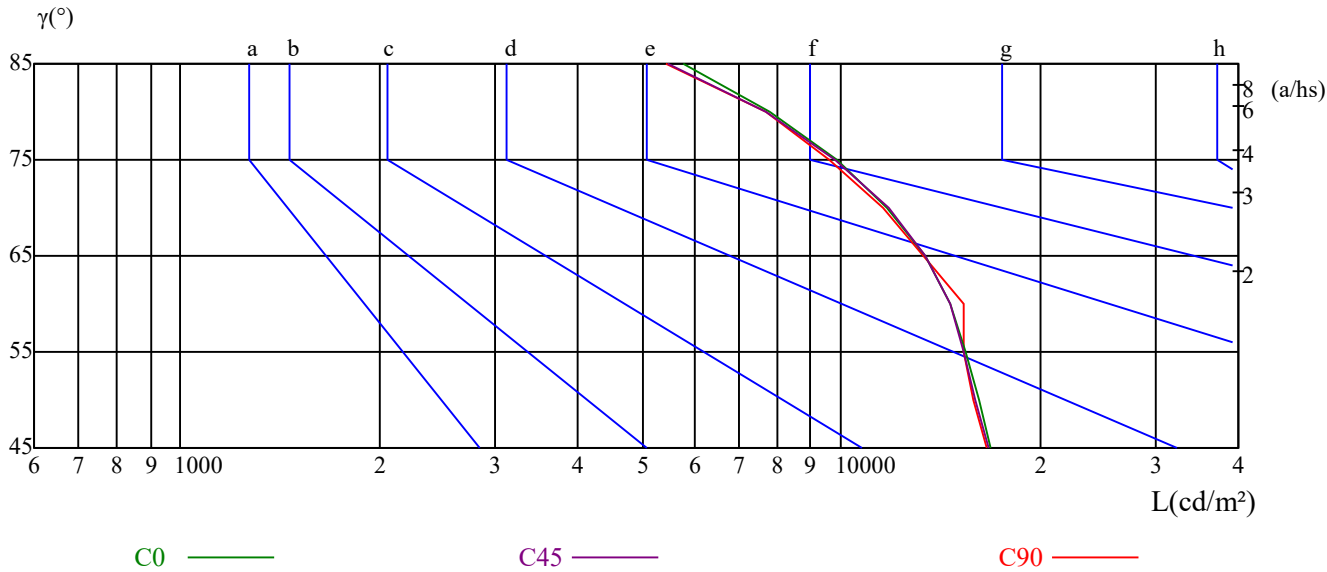
γ	45	50	55	60	65	70	75	80	85
C0	16914	16161	15504	14674	13428	11720	9854	7814	5792
C45	16790	16010	15386	14658	13430	11798	9801	7709	5457
C90	16601	15912	15328	15395	13329	11609	9593	7680	5436

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
18666	18528	18669	16543	16105	16455	17834	16739	16801

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	1.17	1.17	1.17	1.13	1.13	1.13	1.06	1.06	1.06	0.99	0.99	0.99	0.93	0.93	0.93	0.90
1	1.01	0.97	0.93	0.98	0.94	0.91	0.92	0.89	0.86	0.86	0.84	0.82	0.81	0.79	0.77	0.75
2	0.88	0.81	0.76	0.86	0.79	0.74	0.80	0.75	0.71	0.76	0.71	0.68	0.71	0.68	0.65	0.62
3	0.77	0.69	0.63	0.75	0.68	0.62	0.71	0.64	0.59	0.67	0.61	0.57	0.63	0.59	0.55	0.52
4	0.69	0.60	0.53	0.67	0.59	0.52	0.63	0.56	0.51	0.59	0.54	0.49	0.56	0.51	0.47	0.45
5	0.61	0.52	0.46	0.60	0.51	0.45	0.56	0.49	0.44	0.53	0.47	0.42	0.51	0.45	0.41	0.39
6	0.55	0.46	0.40	0.54	0.45	0.39	0.51	0.44	0.38	0.48	0.42	0.37	0.46	0.40	0.36	0.34
7	0.50	0.41	0.35	0.49	0.41	0.35	0.46	0.39	0.34	0.44	0.38	0.33	0.42	0.36	0.32	0.30
8	0.46	0.37	0.32	0.45	0.37	0.31	0.42	0.35	0.30	0.40	0.34	0.30	0.39	0.33	0.29	0.27
9	0.42	0.34	0.28	0.41	0.33	0.28	0.39	0.32	0.27	0.37	0.31	0.27	0.36	0.30	0.26	0.24
10	0.39	0.31	0.26	0.38	0.30	0.25	0.36	0.29	0.25	0.35	0.29	0.24	0.33	0.28	0.24	0.22

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	361.15	362.06	359.35	351.22	341.29	326.84	306.08	282.60	257.32
15.0	361.15	362.06	358.43	350.27	338.47	323.04	303.99	281.30	255.89
30.0	361.15	361.15	356.61	348.42	335.68	320.22	300.20	276.55	251.08
45.0	361.15	360.24	355.68	345.65	333.79	316.47	295.49	272.69	247.15
60.0	361.15	358.42	352.95	342.91	330.15	311.91	290.93	266.31	241.68
75.0	361.15	359.32	352.90	342.82	328.16	308.91	286.91	263.07	237.41
90.0	361.15	358.40	351.07	340.07	324.49	305.24	283.24	258.49	233.74
105.0	361.15	357.48	350.13	339.10	323.48	303.26	279.37	255.47	231.58
120.0	361.15	356.56	350.13	338.18	322.56	301.42	279.37	254.55	230.66
135.0	361.15	361.15	352.80	340.73	324.95	304.52	281.31	258.10	232.10
150.0	361.15	356.55	350.10	338.12	308.64	304.03	280.08	257.05	233.09
165.0	361.15	358.38	351.92	339.91	325.13	306.66	284.49	260.47	233.69
180.0	361.15	355.74	346.71	334.07	316.91	297.05	275.38	250.10	227.53
195.0	361.15	357.52	348.45	335.75	320.32	300.36	278.58	254.08	229.58
210.0	361.15	356.61	349.33	337.50	322.04	302.02	281.10	257.45	232.89
225.0	361.15	359.33	350.21	340.18	325.59	306.43	283.63	259.01	235.30
240.0	361.15	357.51	352.03	341.09	326.50	308.26	285.46	262.66	237.12
255.0	361.15	360.24	353.82	344.66	329.99	312.57	289.66	265.82	241.08
270.0	361.15	361.15	354.74	345.57	331.82	315.32	291.49	268.57	242.91
285.0	361.15	361.15	357.48	347.37	334.50	317.04	294.99	270.18	263.74
300.0	361.15	362.07	356.56	348.29	345.53	317.96	296.83	270.18	245.36
315.0	361.15	363.94	360.23	351.87	338.87	322.16	299.88	274.81	247.89
330.0	361.15	361.15	356.55	348.26	335.36	317.85	295.74	271.79	244.15
345.0	361.15	361.15	357.46	347.30	335.29	316.82	296.50	270.64	244.77
360.0	361.15	362.06	359.35	351.22	341.29	326.84	306.08	282.60	257.32
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	231.14	205.86	183.29	159.81	134.53	106.54	78.55	52.37	31.60
15.0	229.58	204.17	181.48	157.89	133.39	103.45	75.32	50.82	29.04
30.0	225.61	202.87	180.12	156.47	130.09	100.98	71.87	48.21	26.38
45.0	222.53	198.82	176.93	154.13	126.77	98.50	69.31	44.69	24.62
60.0	217.06	194.26	173.28	151.39	124.94	93.94	64.75	41.04	22.80
75.0	214.49	192.49	171.41	148.50	121.00	91.66	63.25	40.33	21.08
90.0	209.91	188.83	168.66	144.83	117.33	88.00	60.50	39.42	19.25
105.0	208.61	186.55	165.41	141.52	114.87	86.38	59.73	37.68	19.30
120.0	206.77	184.71	165.41	140.60	113.95	85.46	58.81	36.76	19.30
135.0	209.82	187.54	167.12	143.90	116.05	87.27	61.28	38.07	19.50
150.0	209.14	188.87	167.68	146.49	118.85	89.37	61.73	38.70	20.27
165.0	212.44	192.12	171.80	148.71	121.92	91.44	64.66	39.72	22.17
180.0	204.05	183.29	161.62	137.24	108.35	78.55	53.27	32.50	16.25
195.0	205.99	184.21	163.34	137.93	111.61	82.58	56.26	34.48	17.24
210.0	209.23	186.49	164.66	140.10	113.71	84.60	60.04	36.39	19.10
225.0	210.67	188.79	165.99	143.19	116.74	88.46	62.02	39.22	20.98
240.0	213.41	190.61	168.72	145.01	118.56	91.20	64.75	41.95	22.80
255.0	215.41	194.33	172.33	148.50	122.83	93.50	66.00	60.50	23.83
270.0	217.24	194.33	172.33	166.83	123.75	95.33	67.83	44.00	25.67
285.0	218.71	194.82	173.69	152.55	126.82	97.41	68.92	45.03	25.73
300.0	219.63	194.82	173.69	151.63	126.82	97.41	68.92	45.03	25.73
315.0	220.96	195.90	174.54	152.26	126.26	98.41	69.63	45.49	25.07
330.0	219.27	194.40	172.29	150.17	124.38	94.90	67.26	43.30	23.95
345.0	217.99	193.97	171.80	147.79	122.85	93.29	65.58	42.49	23.09
360.0	231.14	205.86	183.29	159.81	134.53	106.54	78.55	52.37	31.60

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	15.35	10.83	11.74	12.64	15.35	18.96	20.77	21.67	22.57
15.0	13.61	11.80	11.80	12.70	16.33	19.06	20.87	22.69	22.69
30.0	12.74	11.83	11.83	13.65	16.37	19.10	21.83	22.74	22.74
45.0	11.86	11.86	11.86	13.68	17.33	20.06	21.89	22.80	22.80
60.0	11.86	10.94	11.86	13.68	17.33	19.15	21.89	22.80	22.80
75.0	11.00	11.00	11.92	13.75	17.42	19.25	21.08	22.92	22.92
90.0	11.00	11.00	11.92	13.75	16.50	19.25	21.08	22.00	22.92
105.0	11.03	11.03	11.95	13.78	16.54	19.30	21.14	22.06	22.97
120.0	11.03	11.03	11.03	13.78	16.54	18.38	20.22	22.06	22.97
135.0	11.14	11.14	11.14	13.93	15.78	18.57	20.43	22.28	23.21
150.0	11.06	11.06	11.06	12.90	15.66	18.43	20.27	21.19	22.11
165.0	12.01	11.08	11.08	12.93	15.70	17.55	20.32	21.24	22.17
180.0	11.74	11.74	12.64	14.45	17.15	19.86	21.67	21.67	22.57
195.0	11.80	11.80	11.80	14.52	17.24	19.06	20.87	21.78	22.69
210.0	11.83	11.83	11.83	13.65	16.37	19.10	20.92	21.83	22.74
225.0	11.86	11.86	11.86	13.68	16.42	19.15	19.15	21.89	21.89
240.0	11.86	11.86	11.86	13.68	16.42	18.24	20.06	20.98	21.89
255.0	11.92	11.00	11.92	13.75	16.50	18.33	20.17	21.08	22.00
270.0	11.92	11.00	11.92	12.83	16.50	18.33	20.17	21.08	22.00
285.0	12.87	11.03	11.95	12.87	16.54	18.38	20.22	21.14	22.06
300.0	12.87	11.03	11.95	12.87	16.54	18.38	20.22	21.14	22.06
315.0	12.07	11.14	12.07	13.93	16.71	19.50	20.43	22.28	22.28
330.0	11.98	11.06	11.98	13.82	16.58	19.35	21.19	22.11	22.11
345.0	12.01	11.08	12.01	13.86	17.55	19.40	21.24	22.17	22.17
360.0	15.35	10.83	11.74	12.64	15.35	18.96	20.77	21.67	22.57
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	23.48	23.48	22.57	21.67	19.86	17.15	14.45	9.93	5.42
15.0	23.59	23.59	22.69	21.78	19.96	17.24	13.61	9.07	4.54
30.0	23.65	23.65	22.74	21.83	20.01	16.37	12.74	8.19	4.55
45.0	23.71	23.71	22.80	21.89	20.06	16.42	12.77	7.30	3.65
60.0	22.80	22.80	22.80	21.89	19.15	16.42	11.86	7.30	3.65
75.0	22.92	22.92	22.92	22.00	19.25	15.58	11.00	6.42	2.75
90.0	22.92	22.92	22.92	21.08	19.25	15.58	11.00	5.50	2.75
105.0	22.97	22.97	22.06	20.22	18.38	14.70	10.11	5.51	2.76
120.0	22.97	22.97	22.06	20.22	17.46	13.78	9.19	5.51	2.76
135.0	23.21	23.21	22.28	20.43	17.64	13.93	9.28	4.64	2.79
150.0	23.03	23.03	23.03	21.19	17.50	13.82	10.13	5.53	2.76
165.0	23.09	23.09	22.17	20.32	17.55	14.78	10.16	6.47	2.77
180.0	22.57	22.57	20.77	18.96	16.25	12.64	9.03	4.51	2.71
195.0	22.69	21.78	21.78	19.96	17.24	16.33	9.98	5.44	2.72
210.0	22.74	22.74	21.83	20.92	18.19	15.47	10.92	6.37	2.73
225.0	22.80	22.80	21.89	20.98	19.15	15.50	10.94	6.38	2.74
240.0	21.89	21.89	21.89	20.98	19.15	15.50	11.86	7.30	3.65
255.0	22.00	22.92	22.00	21.08	19.25	15.58	11.92	7.33	3.67
270.0	22.00	22.00	22.00	21.08	19.25	15.58	11.92	7.33	3.67
285.0	22.06	22.06	22.06	21.14	19.30	15.62	11.95	7.35	3.68
300.0	22.06	22.06	22.06	21.14	18.38	15.62	11.95	7.35	3.68
315.0	22.28	22.28	22.28	21.35	18.57	15.78	12.07	7.43	3.71
330.0	22.11	22.11	22.11	21.19	18.43	15.66	11.06	7.37	3.69
345.0	23.09	22.17	22.17	21.24	18.47	14.78	11.08	6.47	3.69
360.0	23.48	23.48	22.57	21.67	19.86	17.15	14.45	9.93	5.42

Intensity data(cd)

C/ γ (°)	180.0
0.0	2.71
15.0	2.72
30.0	2.73
45.0	2.74
60.0	1.82
75.0	1.83
90.0	1.83
105.0	1.84
120.0	1.84
135.0	1.86
150.0	1.84
165.0	1.85
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	2.71