
Client:

LumCAT: LRS-E

Luminaire: LED outdoor fixture

Report No:

Ballast type:

Test No: LCZP20120151

Voltage(V): 119.990

LampCAT:

Current(A): 0.109

Lamp flux(lm): 877.0

Power (W): 11.730

Number of Lamps: 1

PF: 0.901

Length(mm): 125

Width(mm): 60

Phm Type: C

Height(mm): 125

Photometric Results

Lumens(lm): 876.97, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 74.76

Central intensity(cd): 62.844, Maximum intensity(cd): 151.340

Angle of maximum intensity: C=75.0 γ =115.0

Beam Angle(50% I_{max}): [C0/180]Total=337.0
[C90/270]Total=175.6

Field angle(10% I_{max}): [C0/180]Total=356.0
[C90/270]Total=224.5

Maximum s/h(1/2): C0_180=1.53 C90_270=2.69

Maximum s/h(1/4): C0_180=1.74 C90_270=2.66

Up flux rate of lamp(%): 47.94%

Down flux rate of lamp(%): 52.06%

Up flux rate of LUM(%): 47.94%

Down flux rate of LUM(%): 52.06%

CIE Type : General diffuse lighting

Output flux ratio in π solid angle : 25.830%

Zonal flux distribution table

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$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	62.844	0.000	0	0.00%	0.00%
5.0	63.633	1.512	1.512	0.17%	0.17%
10.0	64.998	4.602	6.114	0.52%	0.70%
15.0	66.593	7.806	13.919	0.89%	1.59%
20.0	68.346	11.121	25.04	1.27%	2.86%
25.0	70.048	14.515	39.555	1.66%	4.51%
30.0	71.506	17.914	57.469	2.04%	6.55%
35.0	72.529	21.210	78.679	2.42%	8.97%
40.0	73.251	24.322	103.001	2.77%	11.75%
45.0	73.774	27.223	130.224	3.10%	14.85%
50.0	73.996	29.859	160.083	3.40%	18.25%
55.0	74.084	32.198	192.281	3.67%	21.93%
60.0	74.036	34.238	226.518	3.90%	25.83%
65.0	73.786	35.936	262.454	4.10%	29.93%
70.0	73.590	37.317	299.771	4.26%	34.18%
75.0	73.254	38.383	338.154	4.38%	38.56%
80.0	72.889	39.104	377.257	4.46%	43.02%
85.0	72.627	39.540	416.798	4.51%	47.53%
90.0	72.492	39.735	456.532	4.53%	52.06%
95.0	72.477	39.694	496.226	4.53%	56.58%
100.0	72.501	39.394	535.62	4.49%	61.08%
105.0	72.553	38.812	574.432	4.43%	65.50%
110.0	72.433	37.897	612.329	4.32%	69.82%
115.0	72.141	36.607	648.936	4.17%	74.00%
120.0	71.571	34.937	683.873	3.98%	77.98%
125.0	70.596	32.861	716.735	3.75%	81.73%
130.0	69.124	30.380	747.114	3.46%	85.19%
135.0	67.147	27.536	774.65	3.14%	88.33%
140.0	64.773	24.426	799.076	2.79%	91.12%
145.0	61.985	21.149	820.224	2.41%	93.53%
150.0	58.720	17.775	837.999	2.03%	95.56%
155.0	54.599	14.341	852.34	1.64%	97.19%
160.0	48.565	10.820	863.16	1.23%	98.42%
165.0	41.331	7.409	870.568	0.84%	99.27%
170.0	31.758	4.336	874.904	0.49%	99.76%
175.0	18.316	1.791	876.695	0.20%	99.97%
180.0	4.936	0.278	876.973	0.03%	100.00%

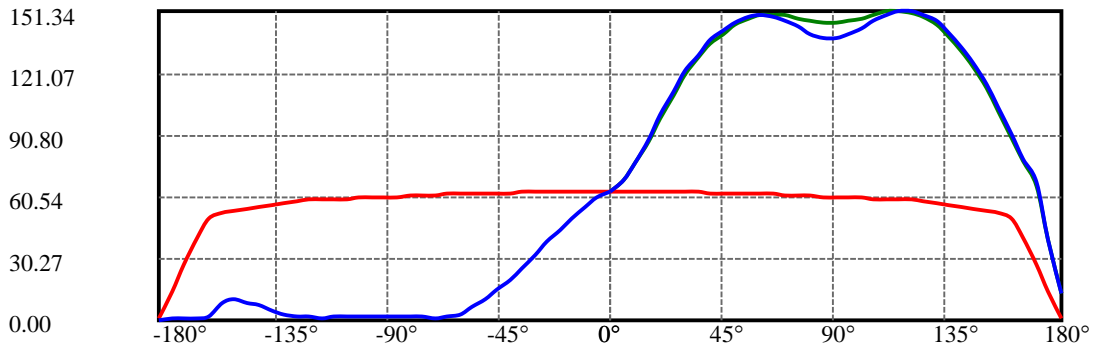
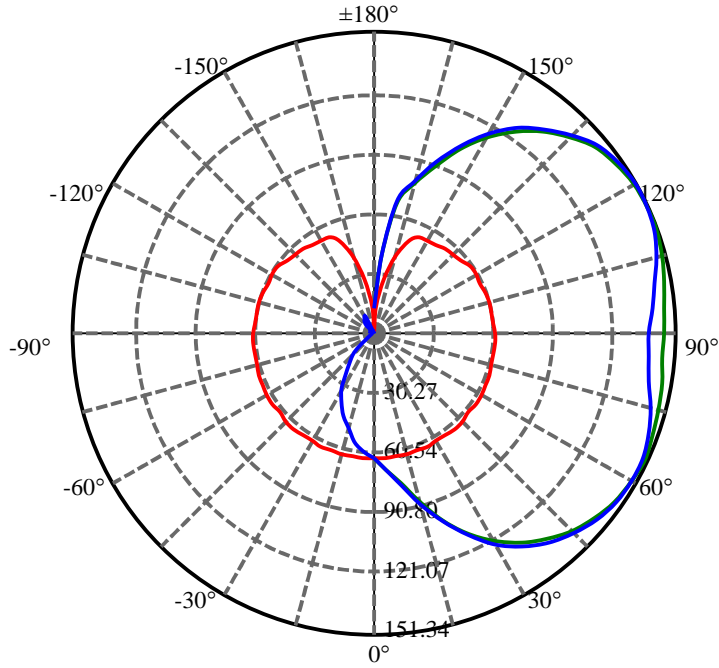
Zonal flux distribution table

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ZONAL LUMEN SUMMARY			
Zone	Lumens	%Lamp	%Fixt
0-30	57.47	6.55%	6.55%
0-40	103.00	11.75%	11.75%
0-60	226.52	25.83%	25.83%
0-90	456.53	52.06%	52.06%
0-120	683.87	77.98%	77.98%
0-180	876.97	100.00%	100.00%
60-90	230.01	26.23%	26.23%
90-120	227.34	25.92%	25.92%
90-130	290.58	33.13%	33.13%
90-150	381.47	43.50%	43.50%
90-180	420.16	47.91%	47.91%
0-122.69	701.58	80.00%	80.00%

ZONAL LUMEN SUMMARY

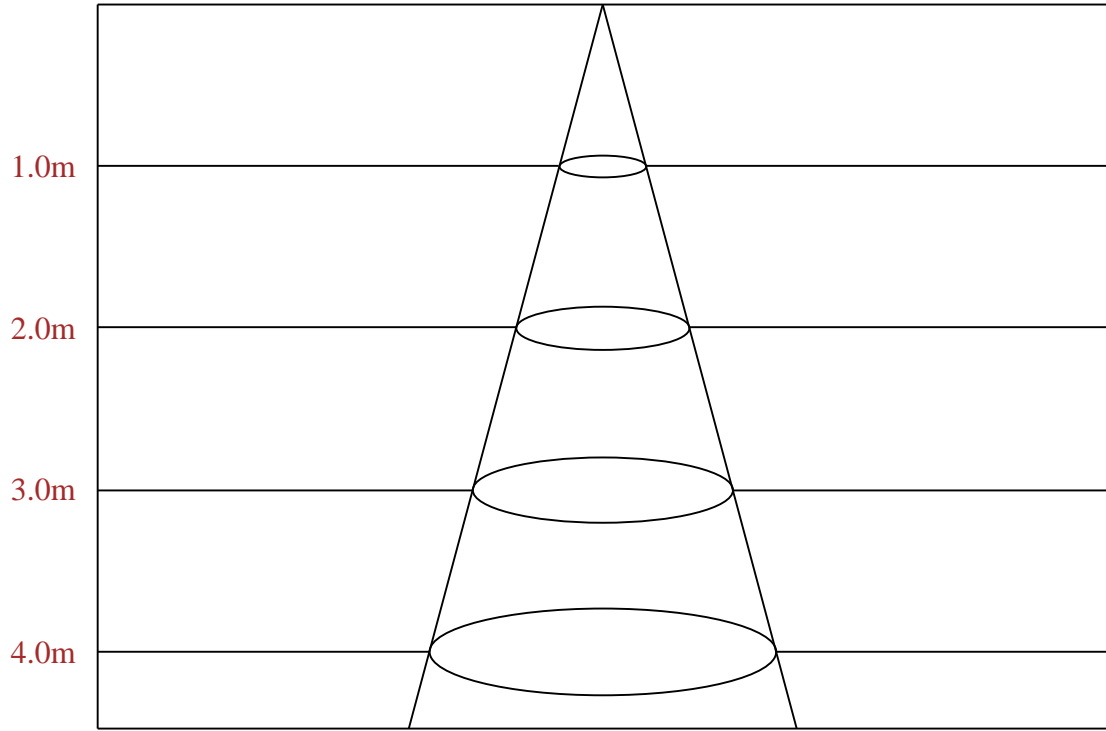
0-10	6.11
10-20	18.93
20-30	32.43
30-40	45.53
40-50	57.08
50-60	66.44
60-70	73.25
70-80	77.49
80-90	79.27
90-100	79.09
100-110	76.71
110-120	71.54
120-130	63.24
130-140	51.96
140-150	38.92
150-160	25.16
160-170	11.74
170-180	1.79



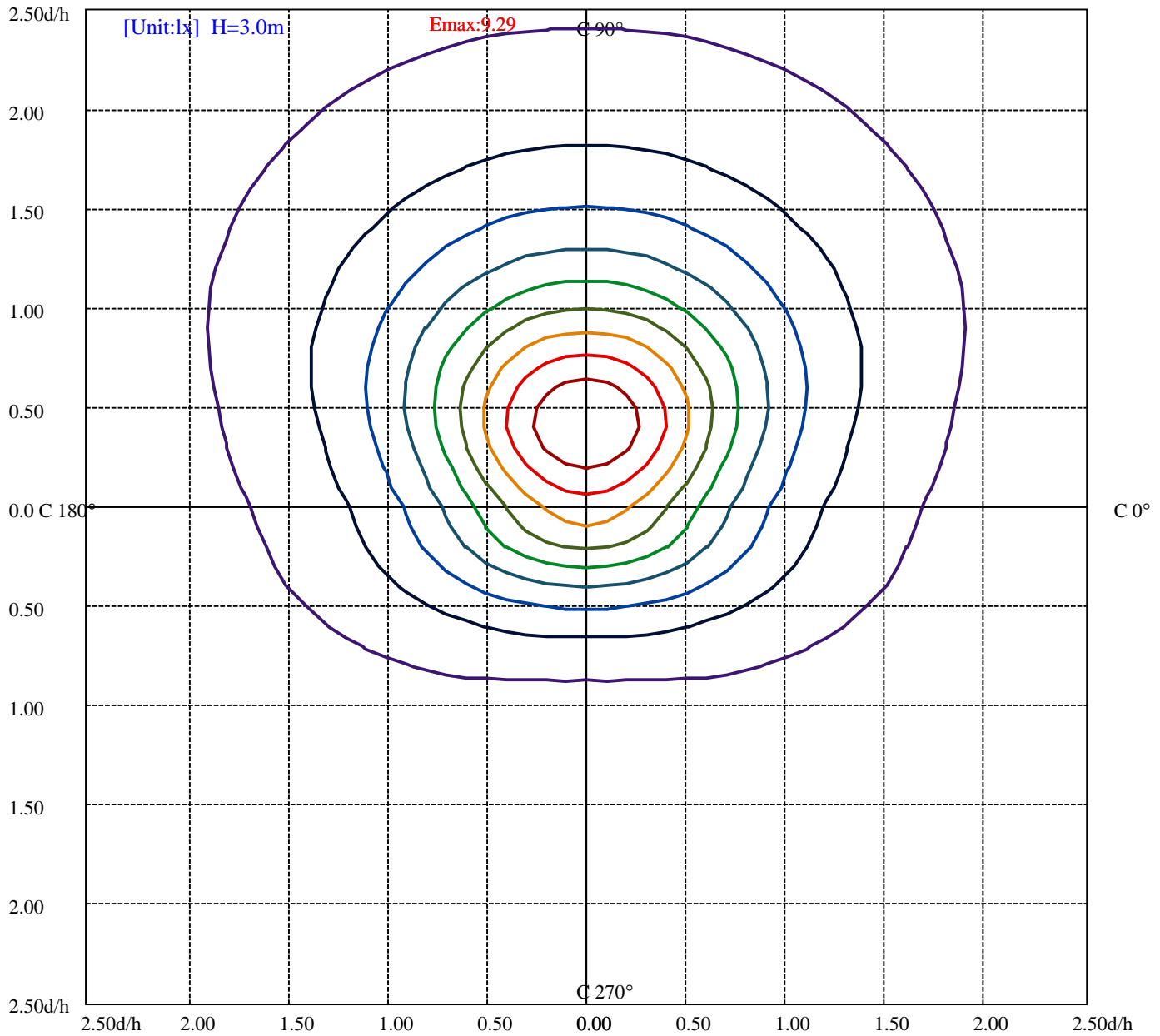
C75(Max): ———
 C0/C180: ———
 C90/C270: ———

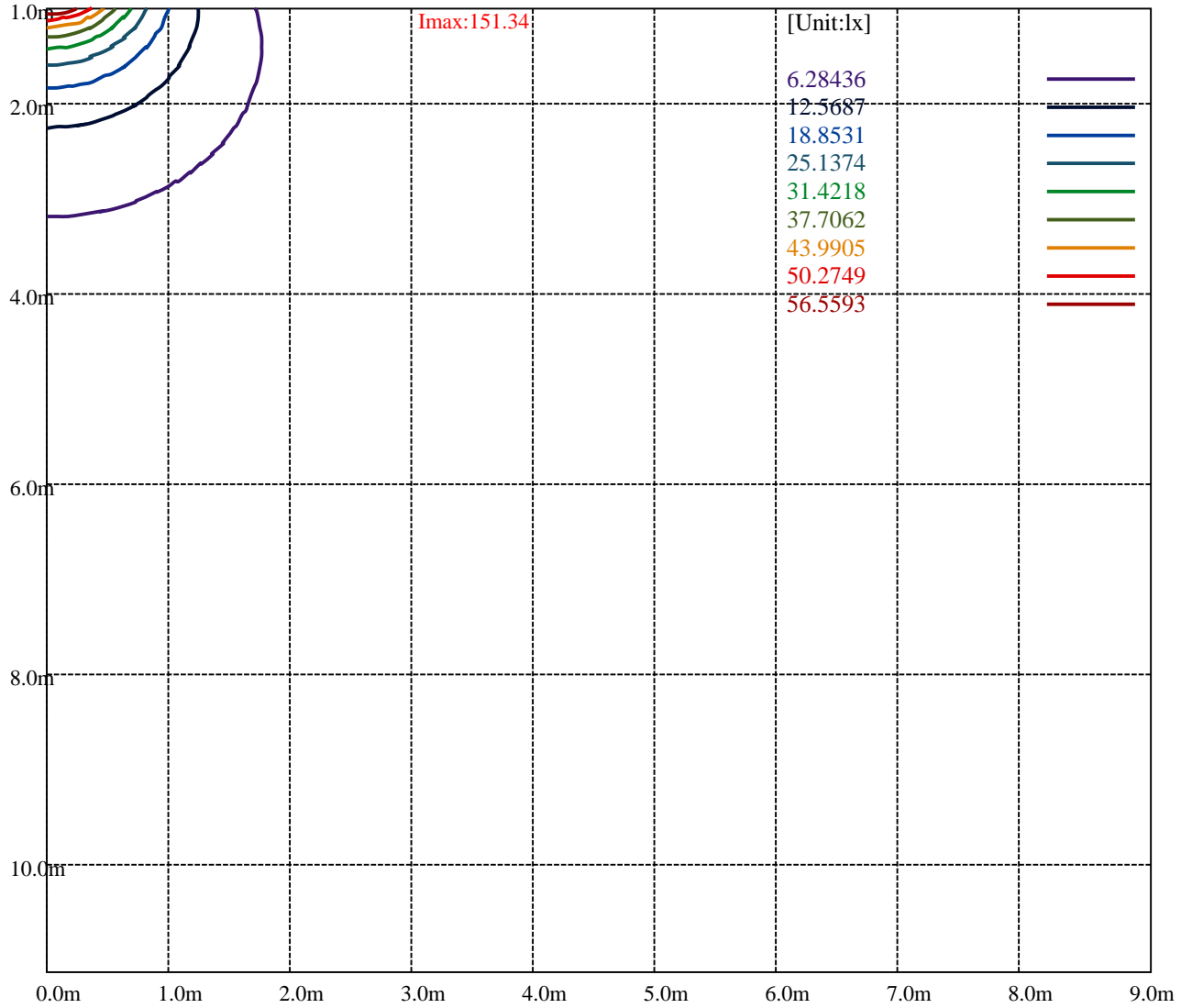
Field angle(10% I_{max}):C0/180Left:178.0 Right:178.0
 :C90/270Left:44.9 Right:179.6

Beam Angle(50% I_{max}):C0/180Left:168.5 Right:168.5
 :C90/270Left:9.1 Right:166.5



Max , Ave Beam angle of C75 plane 209.62





Luminance Limiting Curve(no luminous side)

Luminance Table

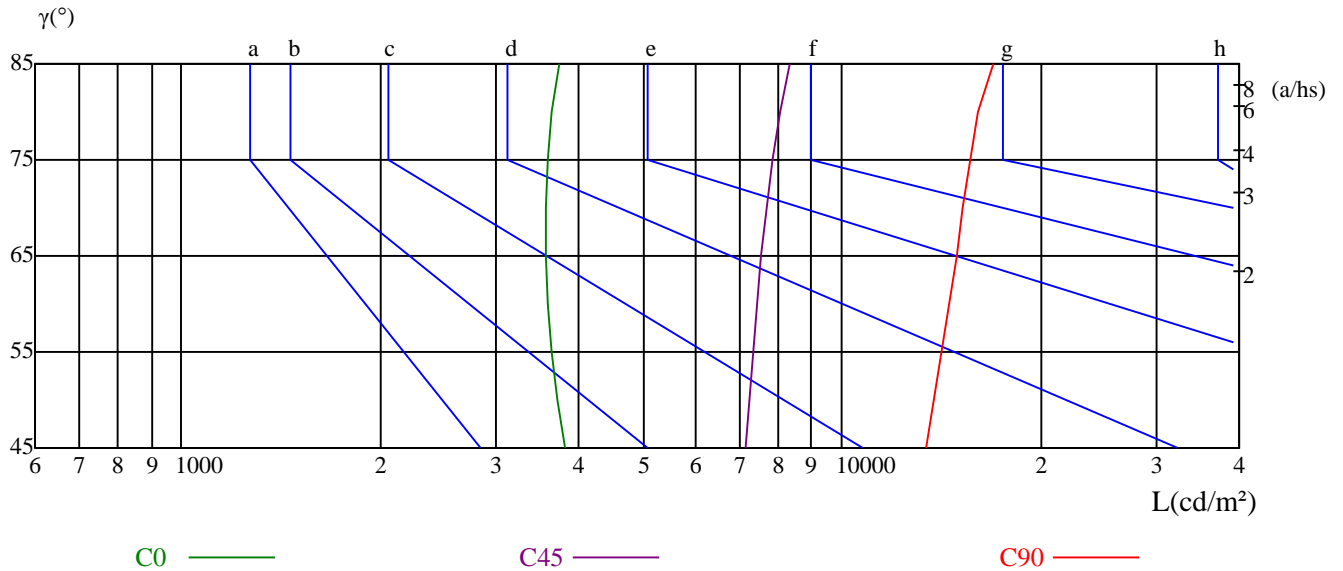
γ	45	50	55	60	65	70	75	80	85
C0	3805	3701	3626	3580	3555	3562	3591	3644	3733
C45	7164	7238	7324	7431	7553	7705	7874	8089	8350
C90	13381	13797	14193	14569	14912	15241	15621	16124	17005

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
19437	23705	24716	31511	37361	40404	92629	107017	119916

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



RHOCC	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	1.08	1.08	1.08	1.00	1.00	1.00	0.84	0.84	0.84	0.71	0.71	0.71	0.58	0.58	0.58	0.52
1	0.88	0.82	0.77	0.81	0.76	0.71	0.67	0.64	0.60	0.55	0.53	0.50	0.44	0.42	0.40	0.35
2	0.74	0.66	0.60	0.68	0.61	0.55	0.57	0.51	0.47	0.46	0.42	0.38	0.37	0.33	0.31	0.26
3	0.64	0.55	0.48	0.59	0.51	0.44	0.49	0.42	0.37	0.40	0.35	0.31	0.31	0.27	0.24	0.20
4	0.56	0.46	0.39	0.51	0.43	0.36	0.42	0.36	0.31	0.35	0.29	0.25	0.27	0.23	0.20	0.16
5	0.49	0.40	0.33	0.45	0.37	0.30	0.38	0.31	0.26	0.31	0.25	0.21	0.24	0.20	0.17	0.13
6	0.44	0.34	0.28	0.40	0.32	0.26	0.33	0.27	0.22	0.27	0.22	0.18	0.21	0.17	0.14	0.11
7	0.39	0.30	0.24	0.36	0.28	0.22	0.30	0.24	0.19	0.25	0.19	0.16	0.19	0.15	0.12	0.10
8	0.35	0.27	0.21	0.33	0.25	0.19	0.27	0.21	0.17	0.22	0.17	0.14	0.18	0.14	0.11	0.08
9	0.32	0.24	0.18	0.30	0.22	0.17	0.25	0.19	0.15	0.20	0.16	0.12	0.16	0.12	0.10	0.07
10	0.29	0.21	0.16	0.27	0.20	0.15	0.23	0.17	0.13	0.19	0.14	0.11	0.15	0.11	0.09	0.06

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	62.84	62.76	62.84	62.93	63.02	63.11	62.84	62.76	62.67
15.0	62.84	64.27	65.87	67.56	69.34	71.12	72.81	74.59	76.37
30.0	62.84	65.54	68.95	72.90	77.30	82.06	87.08	91.84	96.42
45.0	62.84	66.65	72.09	78.80	86.15	94.13	101.66	108.64	114.71
60.0	62.84	67.88	74.94	83.82	93.72	103.98	113.41	121.38	128.25
75.0	62.84	68.55	76.83	87.23	99.10	110.41	120.26	128.72	135.26
90.0	62.84	68.72	77.06	88.35	100.18	112.02	122.02	130.09	136.88
105.0	62.84	68.54	76.63	87.01	98.95	110.16	120.27	128.54	135.24
120.0	62.84	67.70	74.84	83.82	93.90	103.88	113.23	121.66	128.25
135.0	62.84	66.77	72.25	78.92	86.32	94.27	102.03	109.43	115.82
150.0	62.84	65.48	68.95	73.04	77.51	82.15	87.34	92.26	97.00
165.0	62.84	64.20	65.92	67.46	69.09	70.81	72.71	74.43	76.15
180.0	62.84	62.76	62.93	62.93	62.67	62.67	62.40	62.31	62.05
195.0	62.84	61.86	60.97	60.26	59.64	58.66	57.59	56.43	55.28
210.0	62.84	61.05	59.88	58.09	55.75	53.24	50.36	47.67	44.98
225.0	62.84	60.58	58.40	55.04	51.33	47.34	43.17	39.08	35.00
240.0	62.84	60.46	56.98	52.49	47.64	42.32	37.19	31.97	27.30
255.0	62.84	59.99	56.13	50.79	44.99	39.20	33.22	27.51	21.99
270.0	62.84	59.82	55.41	49.82	43.94	38.07	31.83	25.78	20.18
285.0	62.84	60.00	55.86	50.53	44.84	38.86	33.26	27.56	22.23
300.0	62.84	60.10	56.89	52.40	47.36	42.23	37.38	32.52	27.67
315.0	62.84	60.47	58.37	55.26	51.52	47.50	43.48	39.64	35.99
330.0	62.84	61.20	59.93	58.20	56.29	53.83	52.28	48.64	46.09
345.0	62.84	61.85	61.03	60.58	59.76	59.13	58.32	57.23	56.23
360.0	62.84	62.76	62.84	62.93	63.02	63.11	62.84	62.76	62.67
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	62.58	62.40	62.31	62.31	62.14	61.96	61.78	61.43	61.25
15.0	78.15	79.85	81.45	82.96	84.03	85.10	85.72	85.90	85.99
30.0	100.73	104.68	108.45	111.68	114.55	116.89	118.42	119.49	120.12
45.0	120.43	125.42	129.59	133.30	136.21	138.47	140.02	141.19	142.01
60.0	133.84	138.60	142.36	145.29	147.31	148.59	149.32	149.69	149.87
75.0	140.59	144.73	147.68	149.33	149.70	149.06	147.77	146.39	145.38
90.0	141.93	145.78	148.26	149.27	148.62	146.51	143.49	140.09	138.16
105.0	140.39	144.61	147.55	149.21	149.67	149.12	147.83	146.45	145.35
120.0	133.75	138.51	142.18	144.93	146.76	148.13	148.77	149.05	149.32
135.0	121.21	125.69	129.61	132.90	135.55	137.84	139.30	140.39	140.94
150.0	101.28	105.01	108.20	110.93	113.48	115.40	116.94	118.04	118.49
165.0	77.69	79.32	80.59	81.59	82.58	83.22	83.67	83.94	83.94
180.0	61.87	61.87	61.70	61.43	61.08	60.90	60.55	60.20	59.84
195.0	54.03	52.87	51.81	50.65	49.67	48.87	48.07	47.44	46.82
210.0	42.37	40.04	37.98	35.91	34.12	32.77	31.42	30.52	29.81
225.0	31.56	28.11	25.12	22.22	19.77	17.86	16.14	14.96	14.06
240.0	22.72	18.60	14.75	11.36	8.61	6.41	4.67	3.66	3.11
255.0	16.75	12.24	8.19	4.78	2.39	1.66	1.56	1.56	1.66
270.0	14.95	10.28	6.15	3.03	1.65	1.38	1.56	1.65	1.74
285.0	17.18	12.59	8.45	5.15	2.76	1.75	1.65	1.47	1.65
300.0	23.27	19.24	15.67	13.74	9.62	7.42	5.77	4.67	4.03
315.0	34.07	29.41	26.58	24.02	21.83	19.91	18.27	17.17	16.53
330.0	43.90	41.71	39.89	38.16	36.70	35.43	34.43	33.61	32.97
345.0	55.33	54.33	53.52	52.70	52.07	51.52	50.98	50.35	49.99
360.0	62.58	62.40	62.31	62.31	62.14	61.96	61.78	61.43	61.25

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	61.25	61.08	60.73	60.55	60.28	60.02	59.84	59.49	58.70
15.0	85.81	85.28	84.21	83.05	81.71	80.20	78.51	76.82	74.95
30.0	120.03	119.40	118.33	116.62	114.47	111.77	108.72	105.31	101.09
45.0	142.10	141.92	141.19	139.92	138.20	135.93	132.85	128.95	124.51
60.0	150.33	150.51	150.60	150.51	149.78	148.59	146.30	143.28	139.43
75.0	145.47	146.48	148.14	150.07	151.36	152.00	151.17	149.15	145.75
90.0	137.89	140.00	143.12	146.70	149.54	151.01	151.10	149.63	146.24
105.0	145.44	146.27	147.83	149.39	150.59	150.68	149.85	147.55	143.79
120.0	149.32	149.51	149.23	149.05	148.22	146.67	144.01	140.44	135.86
135.0	140.94	140.76	139.85	138.57	136.74	134.27	130.80	126.05	120.66
150.0	118.58	118.04	116.94	115.30	113.12	110.20	107.02	102.92	97.73
165.0	83.58	83.04	82.31	81.04	79.60	78.15	76.61	74.80	71.90
180.0	59.49	59.14	58.87	58.61	58.25	57.99	57.90	57.02	55.69
195.0	46.29	45.84	45.49	45.49	45.40	45.49	45.75	45.57	44.77
210.0	29.36	29.00	28.82	29.18	29.72	30.43	31.42	32.05	32.59
225.0	13.69	13.60	13.97	14.60	15.69	16.96	18.32	19.77	21.22
240.0	2.84	2.93	3.21	3.94	4.86	6.23	7.05	9.44	11.08
255.0	1.66	1.66	1.47	1.56	1.47	1.66	2.48	3.31	4.60
270.0	1.74	1.83	1.74	1.56	1.47	1.38	1.56	1.93	2.84
285.0	1.75	1.75	1.84	1.75	1.84	2.11	2.94	3.86	5.24
300.0	3.66	3.76	4.21	5.04	6.14	7.51	9.07	10.72	12.37
315.0	16.08	15.98	16.44	16.99	17.99	19.36	20.73	22.20	23.66
330.0	32.70	32.42	32.42	32.70	33.06	33.79	34.61	35.16	35.79
345.0	49.80	49.26	49.08	49.08	48.90	48.99	49.08	48.90	48.54
360.0	61.25	61.08	60.73	60.55	60.28	60.02	59.84	59.49	58.70
C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	57.72	56.49	55.61	54.99	54.19	52.52	45.10	32.30	18.54
15.0	72.19	69.34	66.67	64.18	62.13	59.91	53.68	40.59	23.68
30.0	95.79	89.96	83.85	77.84	72.54	67.87	61.95	48.93	28.55
45.0	118.70	111.27	102.65	94.04	85.06	77.08	69.74	56.31	33.92
60.0	133.47	125.78	117.17	107.37	96.74	85.84	75.12	62.20	37.28
75.0	139.95	132.96	124.58	114.09	102.59	89.71	77.75	66.25	39.29
90.0	140.82	133.85	125.69	115.87	103.94	91.38	78.99	67.25	39.82
105.0	138.18	131.11	122.84	113.01	101.98	89.40	77.64	65.97	39.69
120.0	129.90	122.66	114.51	104.80	94.54	83.64	73.65	61.47	37.10
135.0	114.73	108.33	100.84	92.44	84.22	76.27	68.87	55.35	33.16
150.0	92.72	87.62	83.06	77.87	72.68	68.04	61.66	47.91	28.96
165.0	69.64	67.55	65.56	64.02	62.30	60.04	52.79	39.21	23.36
180.0	54.64	53.66	52.96	52.52	51.37	46.43	35.39	22.77	9.09
195.0	44.24	43.71	43.53	43.44	42.37	36.23	31.33	16.82	6.59
210.0	33.04	33.40	33.85	33.76	31.96	26.75	19.39	11.76	3.50
225.0	21.95	23.67	23.58	24.03	23.03	18.77	12.42	6.62	0.82
240.0	12.37	13.65	14.84	15.21	14.02	10.90	6.50	3.30	0.55
255.0	6.26	7.27	7.73	8.56	7.82	4.14	1.75	0.46	0.55
270.0	5.05	7.16	8.72	10.00	8.72	2.29	0.55	0.55	0.64
285.0	6.62	7.81	9.00	9.65	9.28	6.43	3.77	1.56	2.11
300.0	13.92	15.67	17.04	17.96	17.86	14.75	10.44	6.23	4.12
315.0	25.12	26.58	27.68	28.32	27.68	23.57	16.99	11.33	6.94
330.0	36.43	37.34	38.07	38.07	36.89	32.33	24.32	15.85	9.47
345.0	48.08	47.72	47.63	47.27	46.45	41.29	32.15	21.19	11.86
360.0	57.72	56.49	55.61	54.99	54.19	52.52	45.10	32.30	18.54

Intensity data(cd)

C/γ(°)	180.0
0.0	2.21
15.0	7.03
30.0	8.53
45.0	9.16
60.0	9.99
75.0	11.87
90.0	12.94
105.0	13.69
120.0	12.64
135.0	11.87
150.0	10.29
165.0	8.24
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	2.21