
Lotus LED Lights

Client:

LumCAT: LFR-4R-FE-9W-5CCT-4000K

Luminaire: Fire rated slim panel

Report No:

Ballast type:

Test No: LCZP23080240

Voltage(V): 120.000

LampCAT:

Current(A): 0.080

Lamp flux(lm): 862.3

Power (W): 9.220

Number of Lamps: 1

PF: 0.965

Length(mm): -75

Width(mm): -75

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 862.27, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 93.52

Central intensity(cd): 303.667, Maximum intensity(cd): 304.117

Angle of maximum intensity: C=90.0 γ =5.0

Beam Angle(50%Imax): [C0/180]Total=111.0

[C90/270]Total=111.2

Field angle(10%Imax): [C0/180]Total=163.6

[C90/270]Total=162.6

Maximum s/h(1/2): C0_180=1.24 C90_270=1.25

Maximum s/h(1/4): C0_180=1.36 C90_270=1.37

Up flux rate of lamp(%): 0.23%

Down flux rate of lamp(%): 99.77%

Up flux rate of LUM(%): 0.23%

Down flux rate of LUM(%): 99.77%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 78.098%

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Zonal flux distribution table

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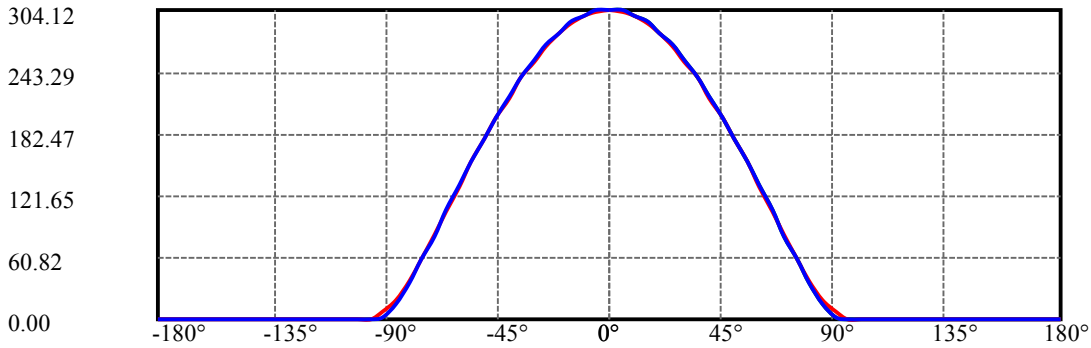
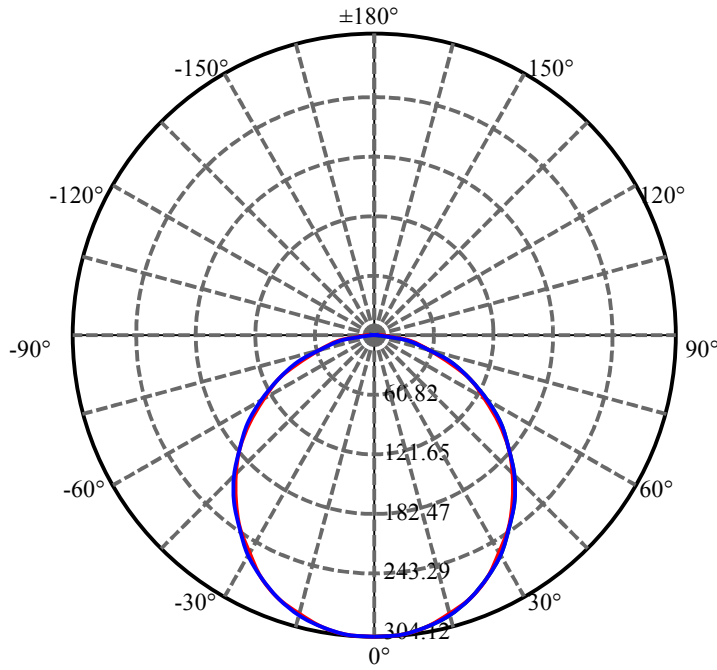
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	303.667	0.000	0	0.00%	0.00%
5.0	302.470	7.246	7.246	0.84%	0.84%
10.0	297.904	21.477	28.723	2.49%	3.33%
15.0	290.755	34.919	63.642	4.05%	7.38%
20.0	280.838	47.107	110.75	5.46%	12.84%
25.0	268.226	57.587	168.336	6.68%	19.52%
30.0	253.891	66.074	234.411	7.66%	27.19%
35.0	236.901	72.272	306.683	8.38%	35.57%
40.0	218.150	75.922	382.605	8.80%	44.37%
45.0	198.651	77.174	459.779	8.95%	53.32%
50.0	176.459	75.796	535.575	8.79%	62.11%
55.0	154.266	71.911	607.486	8.34%	70.45%
60.0	130.948	65.926	673.412	7.65%	78.10%
65.0	106.287	57.672	731.085	6.69%	84.79%
70.0	82.073	47.694	778.779	5.53%	90.32%
75.0	58.867	36.839	815.618	4.27%	94.59%
80.0	36.041	25.395	841.013	2.95%	97.53%
85.0	16.132	14.177	855.189	1.64%	99.18%
90.0	2.478	5.095	860.285	0.59%	99.77%
95.0	0.000	0.678	860.963	0.08%	99.85%
100.0	0.038	0.010	860.973	0.00%	99.85%
105.0	0.075	0.030	861.004	0.00%	99.85%
110.0	0.037	0.029	861.033	0.00%	99.86%
115.0	0.000	0.009	861.043	0.00%	99.86%
120.0	0.037	0.009	861.052	0.00%	99.86%
125.0	0.000	0.009	861.06	0.00%	99.86%
130.0	0.000	0.000	861.06	0.00%	99.86%
135.0	0.000	0.000	861.06	0.00%	99.86%
140.0	0.187	0.035	861.095	0.00%	99.86%
145.0	0.823	0.169	861.263	0.02%	99.88%
150.0	0.898	0.254	861.517	0.03%	99.91%
155.0	0.898	0.227	861.744	0.03%	99.94%
160.0	0.898	0.188	861.933	0.02%	99.96%
165.0	0.898	0.148	862.081	0.02%	99.98%
170.0	0.898	0.107	862.187	0.01%	99.99%
175.0	0.936	0.066	862.253	0.01%	100.00%
180.0	0.449	0.017	862.269	0.00%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	234.41	27.19%	27.19%
0-40	382.60	44.37%	44.37%
0-60	673.41	78.10%	78.10%
0-90	860.28	99.77%	99.77%
0-120	861.05	99.86%	99.86%
0-180	862.27	100.00%	100.00%
60-90	186.87	21.67%	21.67%
90-120	0.77	0.09%	0.09%
90-130	0.78	0.09%	0.09%
90-150	1.23	0.14%	0.14%
90-180	1.97	0.23%	0.23%
0-61.42	689.82	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	28.72
10-20	82.03
20-30	123.66
30-40	148.19
40-50	152.97
50-60	137.84
60-70	105.37
70-80	62.23
80-90	19.27
90-100	0.69
100-110	0.06
110-120	0.02
120-130	0.01
130-140	0.03
140-150	0.42
150-160	0.42
160-170	0.25
170-180	0.07



C90(Max): ———

C0/C180: ———

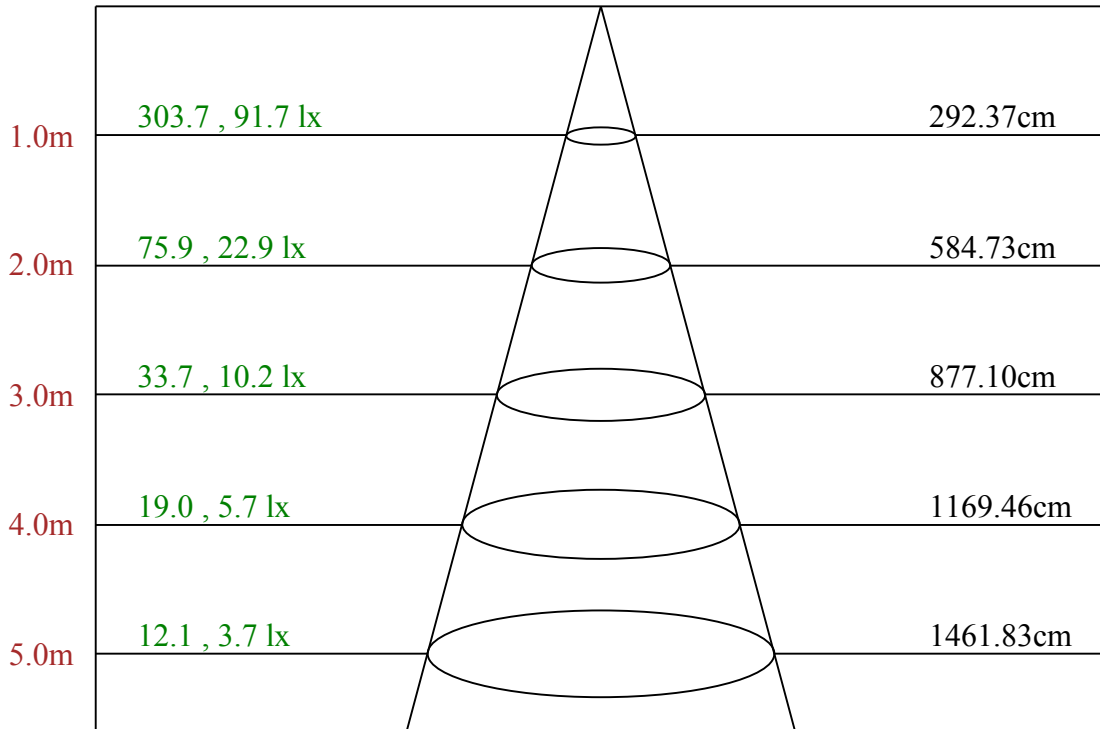
C90/C270: ———

Field angle(10%Imax):C0/180Left:81.8 Right:81.8

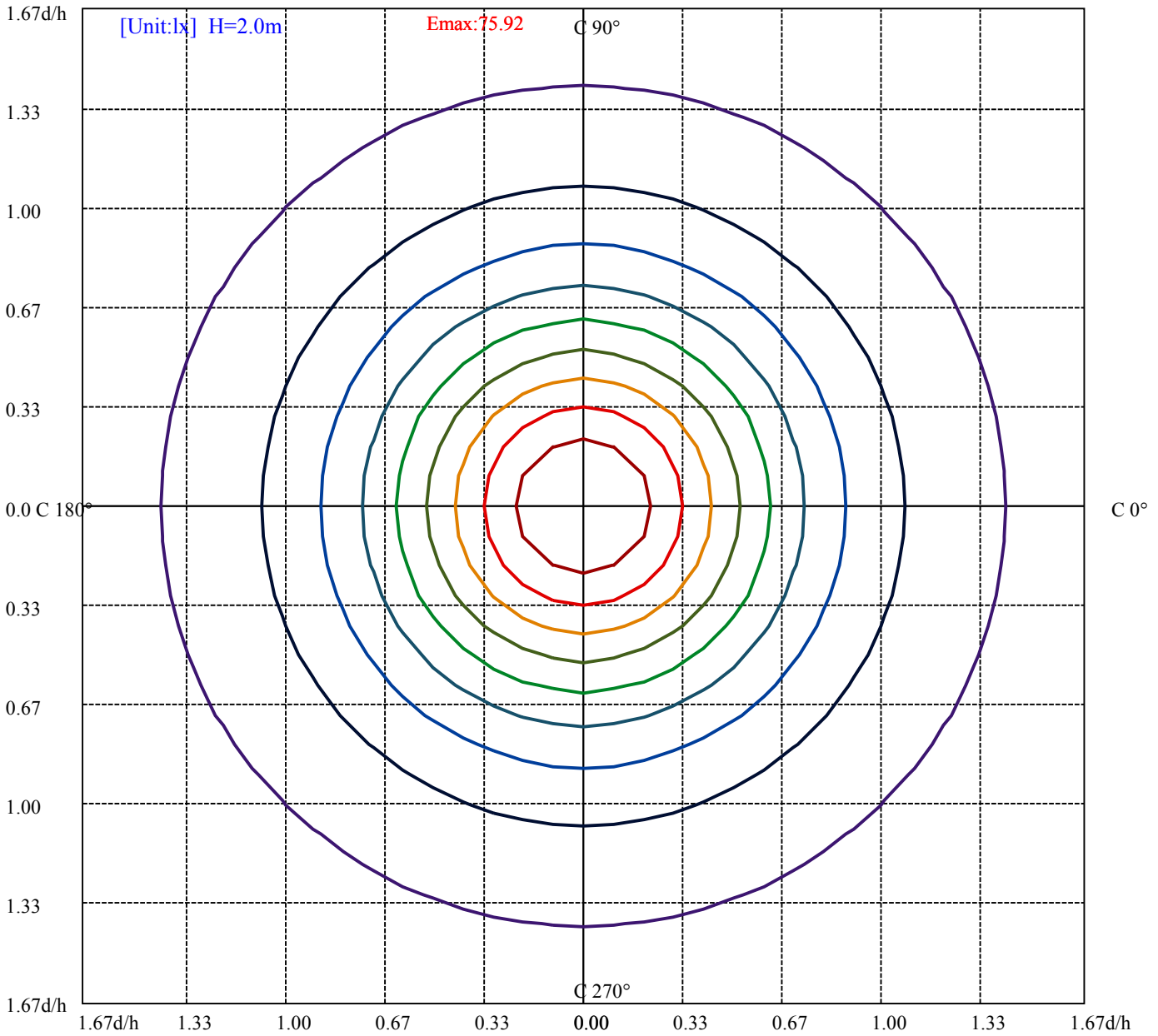
:C90/270Left:86.3 Right:76.3

Beam Angle(50%Imax):C0/180Left:55.5 Right:55.5

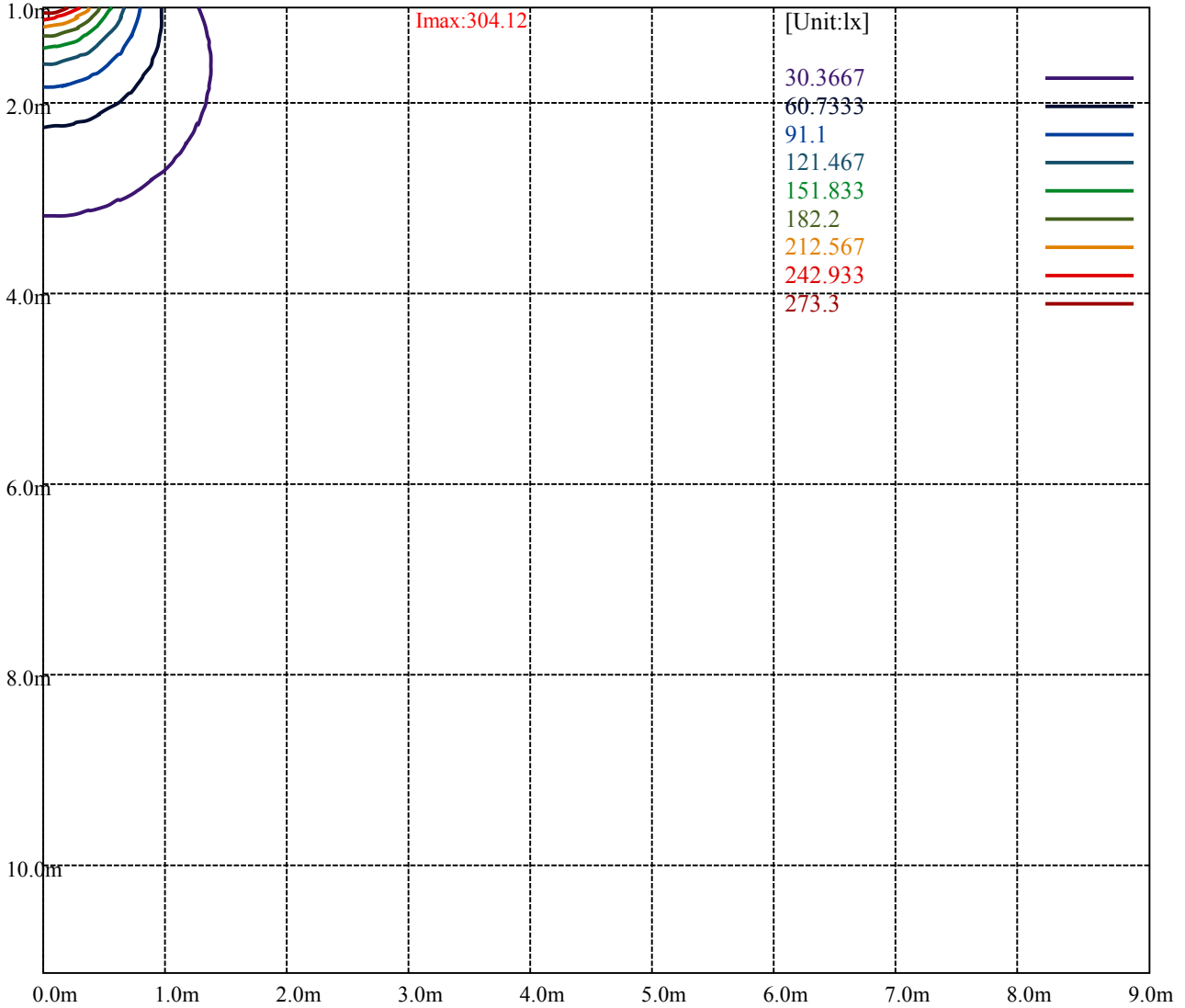
:C90/270Left:60.6 Right:50.6



Max , Ave Beam angle of C90 plane 111.25



- (10%Emax) 7.591675
- (20%Emax) 15.18332
- (30%Emax) 22.775
- (40%Emax) 30.36675
- (50%Emax) 37.95825
- (60%Emax) 45.55
- (70%Emax) 53.14175
- (80%Emax) 60.73325
- (90%Emax) 68.325



Lotus LED Lights LFR-4R-FE-9W-5CCT-4000K

Luminance Limiting Curve(no luminous side)

Luminance Table

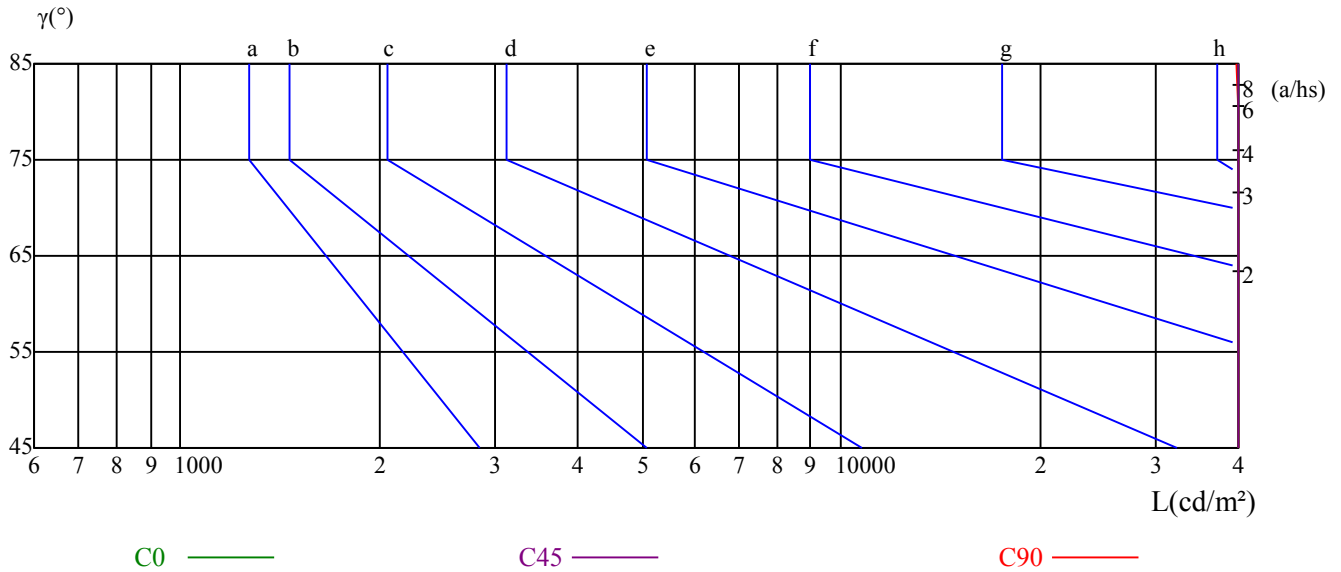
γ	45	50	55	60	65	70	75	80	85
C0	63503	62219	60811	58917	57119	54430	51376	48301	46944
C45	64203	62088	60805	58974	56901	54404	51267	47137	42000
C90	63603	62511	61163	59558	57432	54268	51224	46396	39784

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
57119	57432	56901	51376	51224	51267	46944	39784	42000

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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1	1.04	0.99	0.95	1.01	0.97	0.94	0.97	0.94	0.91	0.93	0.90	0.88	0.89	0.87	0.85	0.83
2	0.90	0.83	0.77	0.88	0.82	0.76	0.85	0.79	0.75	0.81	0.77	0.73	0.78	0.75	0.71	0.69
3	0.79	0.71	0.64	0.77	0.70	0.64	0.74	0.68	0.62	0.72	0.66	0.61	0.69	0.64	0.60	0.58
4	0.70	0.61	0.54	0.69	0.60	0.54	0.66	0.59	0.53	0.64	0.57	0.52	0.62	0.56	0.52	0.49
5	0.63	0.53	0.47	0.61	0.53	0.47	0.59	0.52	0.46	0.57	0.51	0.45	0.55	0.50	0.45	0.43
6	0.56	0.47	0.41	0.55	0.47	0.41	0.53	0.46	0.40	0.52	0.45	0.40	0.50	0.44	0.39	0.37
7	0.51	0.42	0.36	0.50	0.42	0.36	0.49	0.41	0.36	0.47	0.40	0.35	0.46	0.40	0.35	0.33
8	0.47	0.38	0.32	0.46	0.38	0.32	0.45	0.37	0.32	0.43	0.37	0.32	0.42	0.36	0.31	0.29
9	0.43	0.34	0.29	0.42	0.34	0.29	0.41	0.34	0.29	0.40	0.33	0.28	0.39	0.33	0.28	0.26
10	0.39	0.31	0.26	0.39	0.31	0.26	0.38	0.31	0.26	0.37	0.30	0.26	0.36	0.30	0.26	0.24

Lotus LED Lights LFR-4R-FE-9W-5CCT-4000K

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	303.67	305.47	303.67	299.15	291.92	281.07	268.42	253.96	235.88
15.0	303.67	304.57	301.86	297.36	289.25	278.44	266.72	251.40	234.28
30.0	303.67	303.67	301.86	296.46	288.35	277.54	264.92	248.70	231.58
45.0	303.67	303.67	301.86	296.46	287.45	276.63	262.22	246.90	228.88
60.0	303.67	303.67	299.17	293.78	285.70	274.02	260.54	244.37	226.40
75.0	303.67	303.67	299.17	293.78	283.90	273.12	258.75	242.57	224.61
90.0	303.67	304.57	300.06	293.75	284.74	273.03	258.61	242.39	224.37
105.0	303.67	301.88	297.41	291.16	281.34	269.73	255.44	238.47	220.60
120.0	303.67	302.77	298.29	292.02	282.17	269.63	255.30	240.07	221.26
135.0	303.67	302.77	298.29	291.13	282.17	269.63	255.30	239.17	221.26
150.0	303.67	303.67	299.19	292.02	283.06	270.52	256.19	240.07	220.36
165.0	303.67	302.77	298.31	292.06	282.23	270.62	256.33	239.36	221.50
180.0	303.67	300.05	293.73	282.88	271.13	255.77	238.60	220.52	199.73
195.0	303.67	300.06	292.85	282.94	270.33	256.81	238.79	221.67	200.94
210.0	303.67	299.16	292.85	283.84	273.03	258.61	242.39	223.47	203.65
225.0	303.67	300.96	294.66	286.55	274.83	259.51	244.19	226.17	206.35
240.0	303.67	300.07	295.58	285.70	274.92	261.44	245.27	228.20	208.43
255.0	303.67	301.87	295.58	287.50	276.71	263.24	247.96	230.89	212.03
270.0	303.67	303.67	298.26	290.15	279.34	265.82	251.40	233.38	213.56
285.0	303.67	300.99	296.52	288.48	277.77	264.37	250.08	234.00	213.46
300.0	303.67	301.88	297.40	290.23	279.48	266.94	252.61	235.59	216.78
315.0	303.67	302.77	297.40	290.23	280.38	267.84	252.61	235.59	217.67
330.0	303.67	302.77	298.29	290.23	280.38	266.94	259.77	235.59	216.78
345.0	303.67	301.88	297.41	290.27	279.55	266.15	250.97	233.11	215.25
360.0	303.67	305.47	303.67	299.15	291.92	281.07	268.42	253.96	235.88
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	218.71	197.93	176.24	152.74	130.14	104.84	81.34	57.84	35.25
15.0	215.36	195.54	173.01	150.48	127.05	101.82	78.39	54.07	32.44
30.0	212.66	191.93	171.21	147.78	124.35	100.02	75.69	51.36	29.74
45.0	209.95	190.13	167.60	144.17	120.75	96.42	72.09	48.66	27.03
60.0	207.54	186.87	164.41	141.05	117.69	92.54	69.18	45.82	24.26
75.0	205.74	184.18	162.61	138.36	115.00	90.74	66.48	43.12	21.56
90.0	203.65	182.92	160.39	137.87	113.54	88.31	64.88	40.55	18.92
105.0	200.96	179.52	158.09	133.97	109.86	85.74	61.63	39.30	18.76
120.0	201.55	179.15	157.66	133.47	110.18	85.10	61.81	38.52	17.92
135.0	200.65	178.26	156.76	133.47	109.28	85.10	61.81	38.52	17.92
150.0	201.55	180.05	157.66	134.37	110.18	85.10	61.81	38.52	17.92
165.0	202.74	180.41	158.09	134.86	110.75	86.63	62.52	39.30	18.76
180.0	178.04	155.45	131.95	107.55	83.15	59.65	36.15	16.27	0.90
195.0	179.32	156.79	134.26	109.93	84.70	61.27	37.85	18.92	0.90
210.0	182.02	159.49	137.87	112.64	87.41	63.98	41.45	20.73	2.70
225.0	185.62	162.20	139.67	115.34	91.01	67.58	44.15	23.43	5.41
240.0	187.77	165.31	141.95	118.59	94.33	70.08	46.72	26.05	8.09
255.0	193.16	168.90	146.44	122.19	97.03	73.67	50.31	27.85	9.88
270.0	193.73	172.11	149.58	125.25	100.92	75.69	52.26	30.64	11.71
285.0	193.81	172.38	150.05	125.93	100.92	78.60	65.20	32.15	13.40
300.0	196.17	173.78	152.28	139.74	103.91	79.72	55.54	33.14	13.44
315.0	206.03	174.68	152.28	128.10	103.91	79.72	56.43	34.04	14.33
330.0	197.07	174.68	152.28	128.10	103.01	79.72	55.54	34.04	13.44
345.0	193.81	172.38	150.05	126.83	101.82	77.70	53.59	32.15	12.50
360.0	218.71	197.93	176.24	152.74	130.14	104.84	81.34	57.84	35.25

Lotus LED Lights LFR-4R-FE-9W-5CCT-4000K

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	13.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0	12.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.0	9.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45.0	8.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.0	6.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.0	3.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90.0	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.90	0.00	0.90	0.90	0.00	0.00	0.00	0.00	0.00
195.0	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.00
210.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
240.0	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00
255.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
270.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
285.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
330.0	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00
345.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
360.0	13.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
15.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
30.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
45.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	1.80
60.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
75.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
90.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
105.0	0.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
120.0	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
135.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
150.0	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
165.0	0.00	0.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89
180.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
195.0	0.00	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90
210.0	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
225.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
240.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
255.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
270.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
285.0	0.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
300.0	0.00	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90
315.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
330.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
345.0	0.00	0.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89
360.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90

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Intensity data(cd)

C/γ(°)	180.0
0.0	0.90
15.0	0.90
30.0	0.90
45.0	0.90
60.0	0.90
75.0	0.90
90.0	0.90
105.0	0.89
120.0	0.90
135.0	0.90
150.0	0.90
165.0	0.89
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	0.90