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## Lotus LED Lights

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Client:

LumCAT: LFR-6R-FE-12W-5CCT-5000K

Luminaire: Fire rated slim panel

Report No:

Ballast type:

Test No: LCZP23080240

Voltage(V): 120.000

LampCAT:

Current(A): 0.106

Lamp flux(lm): 1180.2

Power (W): 12.460

Number of Lamps: 1

PF: 0.976

Length(mm): -120

Width(mm): -120

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1180.18, Efficiency(%): 100.00% , Luminous Efficacy(lm/W): 94.72

Central intensity(cd): 475.822, Maximum intensity(cd): 475.822

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=101.0

[C90/270]Total=100.2

Field angle(10%Imax): [C0/180]Total=153.2

[C90/270]Total=152.8

Maximum s/h(1/2): C0\_180=1.20 C90\_270=1.20

Maximum s/h(1/4): C0\_180=1.31 C90\_270=1.30

Up flux rate of lamp(%): 0.39%

Down flux rate of lamp(%): 99.61%

Up flux rate of LUM(%): 0.39%

Down flux rate of LUM(%): 99.61%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 82.890%

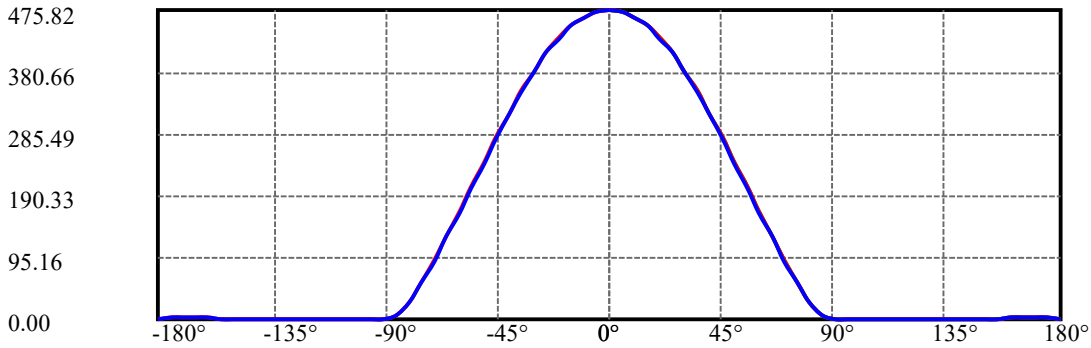
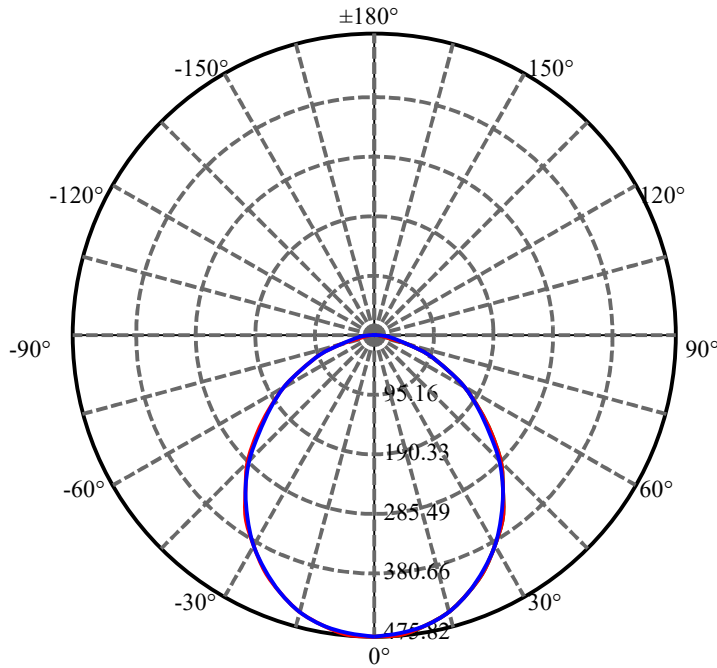
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	475.822	0.000	0	0.00%	0.00%
5.0	473.165	11.345	11.345	0.96%	0.96%
10.0	464.670	33.549	44.894	2.84%	3.80%
15.0	451.870	54.369	99.263	4.61%	8.41%
20.0	433.120	72.936	172.198	6.18%	14.59%
25.0	410.291	88.458	260.657	7.50%	22.09%
30.0	382.934	100.383	361.04	8.51%	30.59%
35.0	350.972	108.073	469.113	9.16%	39.75%
40.0	316.466	111.357	580.47	9.44%	49.18%
45.0	280.240	110.485	690.955	9.36%	58.55%
50.0	241.242	105.373	796.327	8.93%	67.47%
55.0	203.255	96.648	892.976	8.19%	75.66%
60.0	165.681	85.279	978.254	7.23%	82.89%
65.0	126.946	71.138	1049.393	6.03%	88.92%
70.0	90.793	55.133	1104.525	4.67%	93.59%
75.0	57.222	38.689	1143.214	3.28%	96.87%
80.0	25.561	22.150	1165.365	1.88%	98.74%
85.0	5.725	8.501	1173.866	0.72%	99.46%
90.0	0.674	1.752	1175.618	0.15%	99.61%
95.0	0.224	0.246	1175.864	0.02%	99.63%
100.0	0.449	0.183	1176.047	0.02%	99.65%
105.0	0.449	0.240	1176.287	0.02%	99.67%
110.0	0.449	0.235	1176.522	0.02%	99.69%
115.0	0.449	0.227	1176.749	0.02%	99.71%
120.0	0.449	0.218	1176.968	0.02%	99.73%
125.0	0.599	0.242	1177.21	0.02%	99.75%
130.0	0.898	0.326	1177.535	0.03%	99.78%
135.0	0.898	0.363	1177.898	0.03%	99.81%
140.0	0.898	0.333	1178.231	0.03%	99.83%
145.0	0.898	0.300	1178.531	0.03%	99.86%
150.0	0.898	0.265	1178.795	0.02%	99.88%
155.0	1.347	0.284	1179.08	0.02%	99.91%
160.0	1.796	0.330	1179.409	0.03%	99.93%
165.0	1.984	0.312	1179.721	0.03%	99.96%
170.0	2.246	0.251	1179.972	0.02%	99.98%
175.0	2.395	0.166	1180.138	0.01%	100.00%
180.0	1.347	0.045	1180.182	0.00%	100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	361.04	30.59%	30.59%
0-40	580.47	49.18%	49.18%
0-60	978.25	82.89%	82.89%
0-90	1175.62	99.61%	99.61%
0-120	1176.97	99.73%	99.73%
0-180	1180.18	100.00%	100.00%
60-90	197.36	16.72%	16.72%
90-120	1.35	0.11%	0.11%
90-130	1.92	0.16%	0.16%
90-150	3.18	0.27%	0.27%
90-180	4.52	0.38%	0.38%
0-58.00	944.15	80.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	44.89
10-20	127.30
20-30	188.84
30-40	219.43
40-50	215.86
50-60	181.93
60-70	126.27
70-80	60.84
80-90	10.25
90-100	0.43
100-110	0.48
110-120	0.45
120-130	0.57
130-140	0.70
140-150	0.56
150-160	0.61
160-170	0.56
170-180	0.17



C0(Max): —————

C0/C180: —————

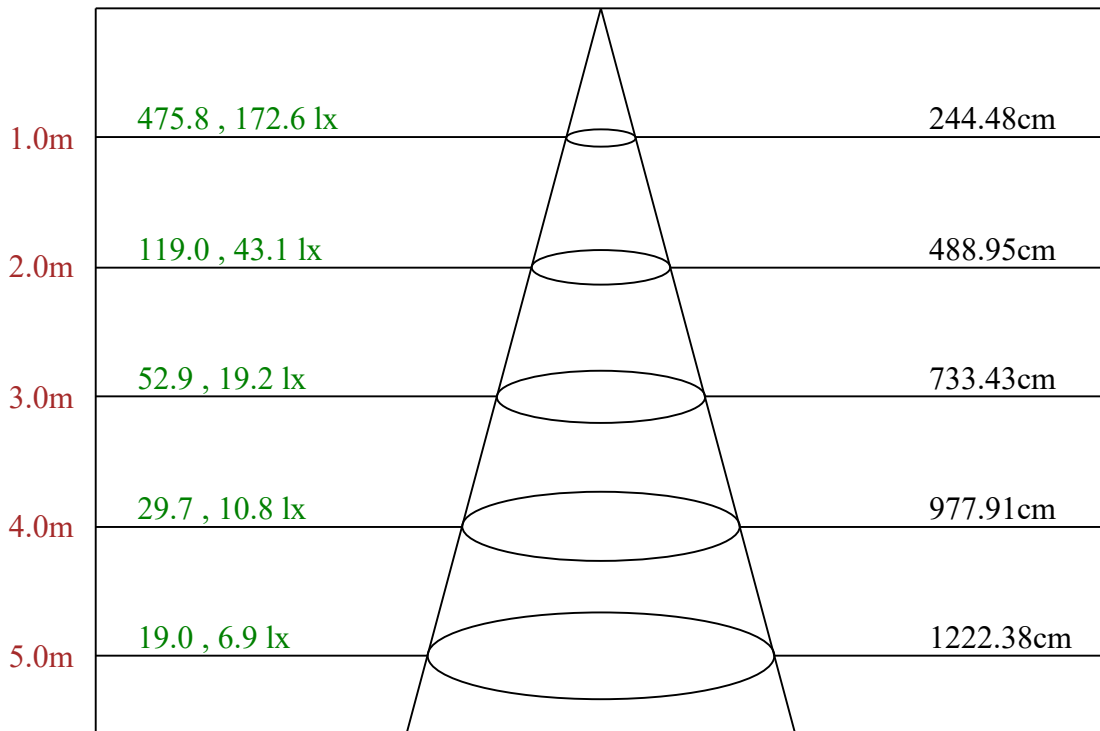
C90/C270: —————

Field angle(10%Imax):C0/180Left:76.6 Right:76.6

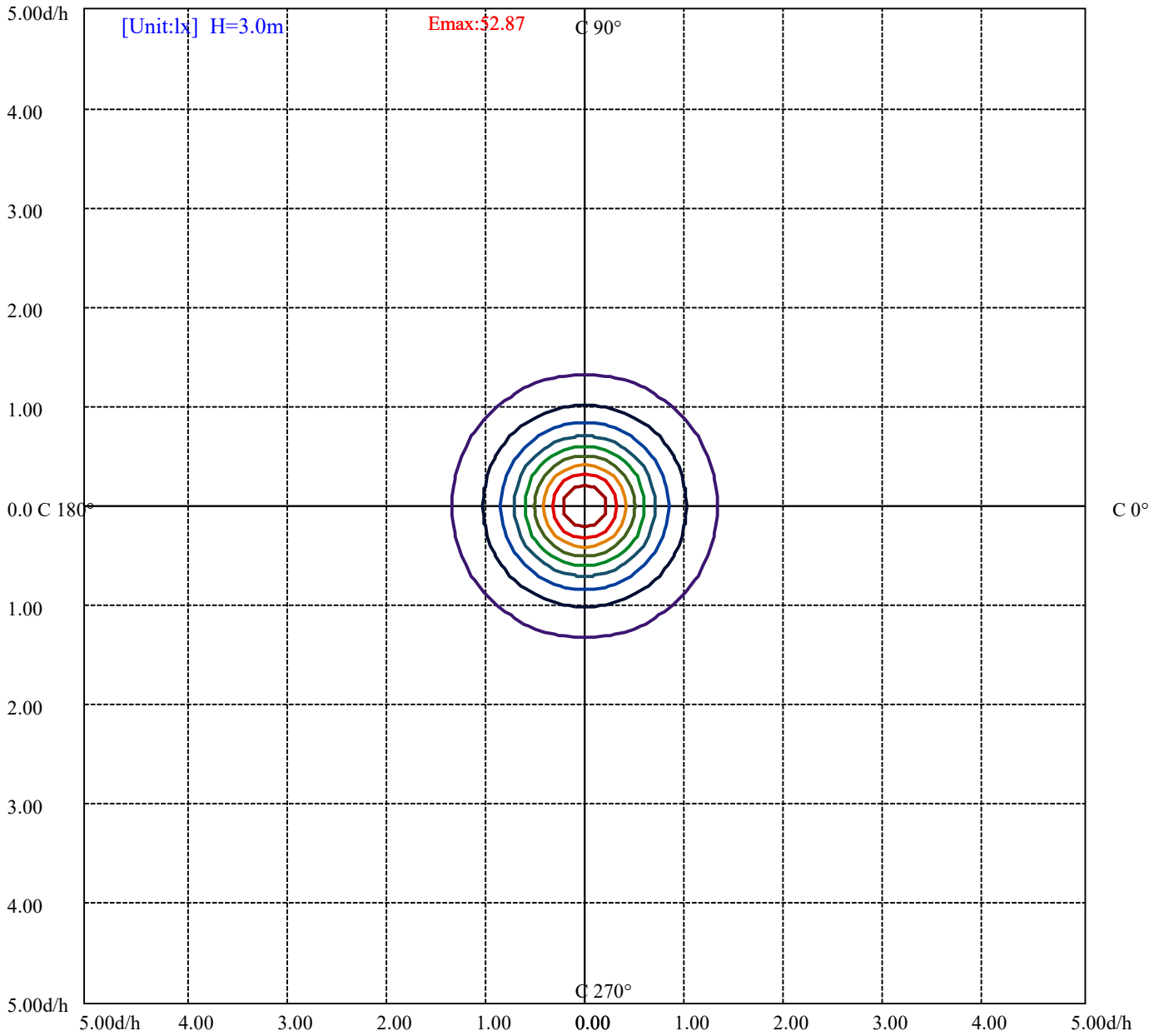
:C90/270Left:76.4 Right:76.4

Beam Angle(50%Imax):C0/180Left:50.5 Right:50.5

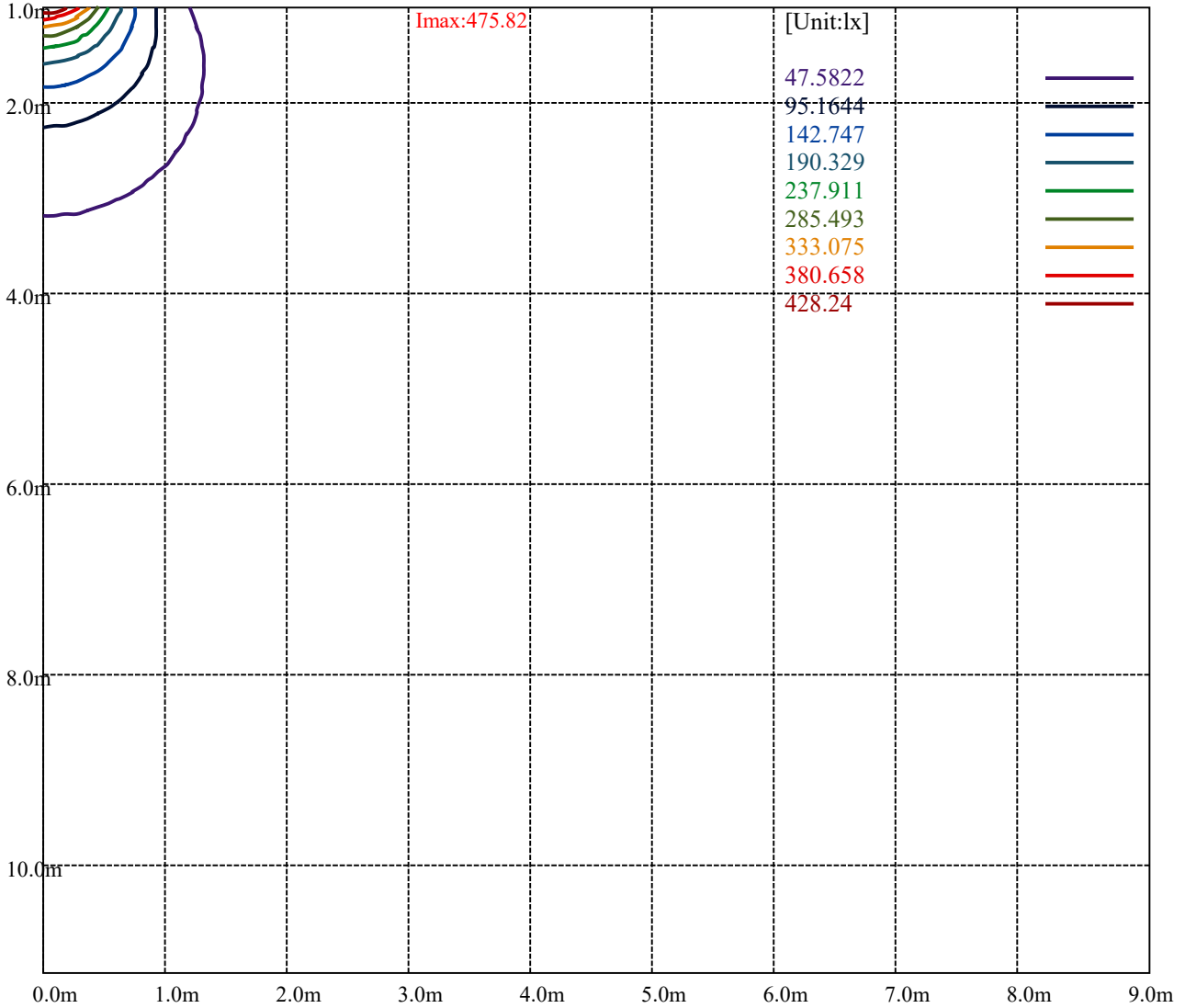
:C90/270Left:50.1 Right:50.1



Max , Ave      Beam angle of C0 plane 101.43



- (10%Emax) 5.286911
- (20%Emax) 10.57382
- (30%Emax) 15.86078
- (40%Emax) 21.14767
- (50%Emax) 26.43456
- (60%Emax) 31.72145
- (70%Emax) 37.00834
- (80%Emax) 42.29533
- (90%Emax) 47.58222



Lotus LED Lights LFR-6R-FE-12W-5CCT-5000K

Luminance Limiting Curve(no luminous side)

Luminance Table

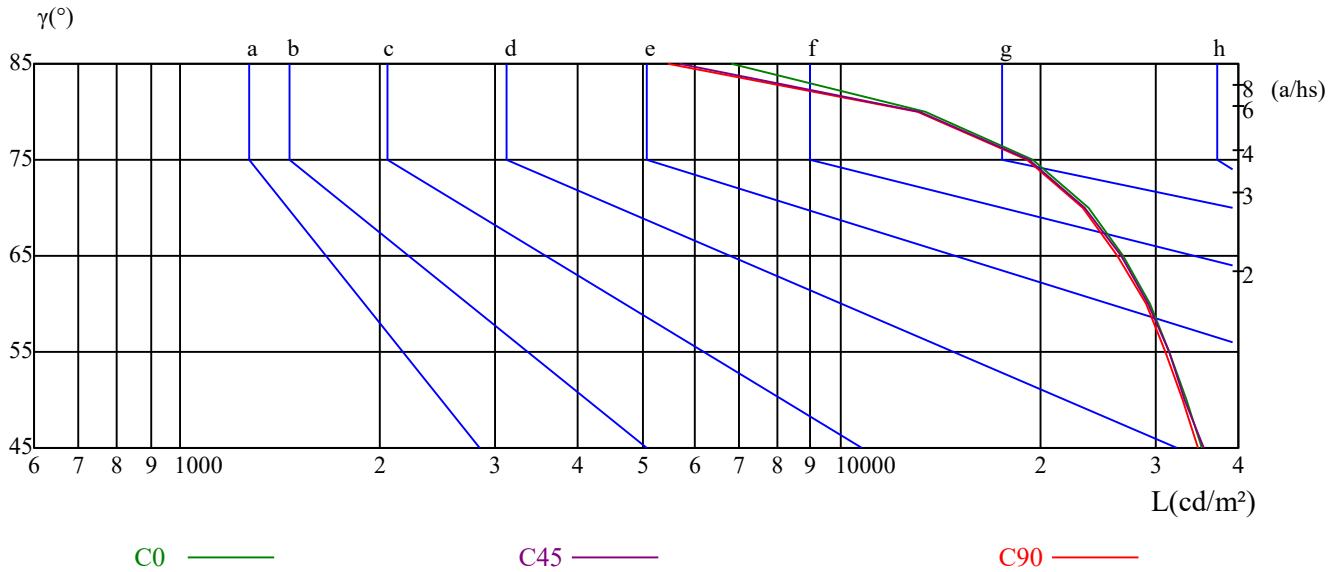
$\gamma$	45	50	55	60	65	70	75	80	85
C0	35118	33280	31505	29340	26759	23700	19555	13435	6805
C45	35457	33252	31406	29188	26581	23428	19282	13168	5703
C90	34689	32850	31070	28974	26296	23209	19169	13028	5465

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
26759	26296	26581	19555	19169	19282	6805	5465	5703

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	1.05	1.01	0.98	1.03	0.99	0.96	0.99	0.96	0.93	0.95	0.92	0.90	0.91	0.89	0.87	0.85
2	0.92	0.86	0.81	0.91	0.85	0.80	0.87	0.82	0.78	0.84	0.80	0.76	0.81	0.77	0.74	0.72
3	0.82	0.74	0.68	0.80	0.73	0.67	0.77	0.71	0.66	0.74	0.69	0.65	0.72	0.67	0.64	0.61
4	0.73	0.64	0.58	0.71	0.64	0.57	0.69	0.62	0.57	0.67	0.61	0.56	0.64	0.59	0.55	0.53
5	0.65	0.57	0.50	0.64	0.56	0.50	0.62	0.55	0.49	0.60	0.54	0.49	0.58	0.53	0.48	0.46
6	0.59	0.50	0.44	0.58	0.50	0.44	0.56	0.49	0.43	0.54	0.48	0.43	0.53	0.47	0.43	0.41
7	0.54	0.45	0.39	0.53	0.45	0.39	0.51	0.44	0.39	0.50	0.43	0.38	0.48	0.42	0.38	0.36
8	0.49	0.41	0.35	0.48	0.40	0.35	0.47	0.40	0.35	0.46	0.39	0.34	0.44	0.39	0.34	0.32
9	0.45	0.37	0.32	0.44	0.37	0.31	0.43	0.36	0.31	0.42	0.36	0.31	0.41	0.35	0.31	0.29
10	0.42	0.34	0.29	0.41	0.34	0.29	0.40	0.33	0.28	0.39	0.33	0.28	0.38	0.32	0.28	0.26

Lotus LED Lights LFR-6R-FE-12W-5CCT-5000K

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	475.82	475.82	469.56	458.83	442.73	421.26	395.33	366.70	333.61
15.0	475.82	474.93	468.65	458.80	440.87	420.26	393.38	363.81	331.55
30.0	475.82	474.92	469.54	457.87	439.91	420.16	393.23	362.70	329.48
45.0	475.82	475.82	468.63	456.93	439.84	418.26	391.27	361.59	328.31
60.0	475.82	474.92	467.73	456.03	439.84	417.36	391.27	359.79	327.41
75.0	475.82	474.92	467.73	456.93	439.84	417.36	389.47	358.89	324.71
90.0	475.82	474.03	466.84	455.17	438.12	416.57	387.84	359.11	325.00
105.0	475.82	474.03	466.84	455.17	439.01	416.57	389.64	359.11	325.00
120.0	475.82	474.92	467.73	456.03	438.94	417.36	390.37	359.79	325.61
135.0	475.82	474.92	467.73	456.03	438.94	417.36	390.37	361.59	328.31
150.0	475.82	474.92	467.73	456.03	439.84	418.26	392.17	361.59	328.31
165.0	475.82	474.03	467.74	456.97	439.91	419.26	392.33	360.91	327.69
180.0	475.82	470.46	459.72	445.41	424.84	399.80	369.39	337.19	300.52
195.0	475.82	470.45	459.69	444.46	423.85	399.65	370.08	337.82	301.09
210.0	475.82	471.33	460.56	446.20	424.65	400.41	370.78	337.56	301.65
225.0	475.82	471.32	461.43	447.04	425.45	402.07	371.48	339.10	302.22
240.0	475.82	471.32	461.43	447.04	426.35	402.07	371.48	339.10	302.22
255.0	475.82	472.22	462.33	447.94	426.35	402.07	373.28	340.90	304.92
270.0	475.82	471.33	461.46	447.09	426.44	402.20	374.37	341.16	305.24
285.0	475.82	471.33	461.46	447.09	427.34	403.10	374.37	341.16	307.04
300.0	475.82	472.22	462.33	447.94	428.15	403.86	375.98	343.60	309.42
315.0	475.82	473.12	462.33	447.94	428.15	404.76	376.88	344.50	309.42
330.0	475.82	472.22	462.33	447.94	428.15	404.76	391.27	343.60	309.42
345.0	475.82	470.44	460.56	447.99	427.34	402.20	374.37	342.05	307.04
360.0	475.82	475.82	469.56	458.83	442.73	421.26	395.33	366.70	333.61
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	298.73	259.38	221.81	183.35	145.79	108.22	72.45	40.25	11.63
15.0	293.92	258.07	220.44	181.91	142.48	107.53	72.58	38.53	11.65
30.0	294.47	254.97	217.26	178.66	141.85	104.14	70.03	35.91	10.77
45.0	291.43	254.55	215.87	178.10	140.32	103.44	68.36	35.98	9.89
60.0	290.53	251.85	213.18	175.40	138.52	102.54	67.46	34.18	8.99
75.0	288.73	250.05	213.18	174.50	136.72	100.74	65.66	33.28	8.10
90.0	288.19	248.68	211.88	174.17	135.56	98.76	64.64	33.22	7.18
105.0	288.19	250.48	211.88	174.17	136.46	98.76	63.74	32.32	7.18
120.0	289.63	251.85	214.07	175.40	136.72	99.84	64.76	31.48	7.20
135.0	290.53	252.75	214.97	176.30	137.62	99.84	64.76	32.38	6.30
150.0	293.23	252.75	214.97	177.20	139.42	101.64	65.66	32.38	7.20
165.0	291.78	254.07	215.47	176.86	140.05	102.35	66.44	33.22	7.18
180.0	262.95	224.49	186.93	148.47	110.01	75.13	42.04	12.52	1.79
195.0	263.45	224.92	186.39	148.75	110.22	75.27	42.12	13.44	2.69
210.0	263.95	225.34	187.64	149.03	111.32	75.41	42.20	14.36	2.69
225.0	263.55	225.77	187.99	149.31	111.53	76.46	43.17	16.19	2.70
240.0	266.24	226.67	188.89	150.21	113.33	78.25	45.87	17.09	2.70
255.0	267.14	229.37	189.79	152.91	115.13	80.05	45.87	17.09	2.70
270.0	266.64	228.93	191.23	153.52	115.81	80.80	47.58	17.96	3.59
285.0	270.23	231.63	193.92	155.32	116.71	81.70	62.84	17.96	2.69
300.0	271.64	233.86	195.19	172.70	117.83	81.85	49.47	18.89	3.60
315.0	288.73	233.86	196.09	156.51	118.73	82.75	49.47	18.89	3.60
330.0	271.64	233.86	195.19	157.41	118.73	82.75	48.57	17.99	2.70
345.0	270.23	231.63	193.92	156.21	115.81	80.80	47.58	17.96	2.69
360.0	298.73	259.38	221.81	183.35	145.79	108.22	72.45	40.25	11.63

Lotus LED Lights LFR-6R-FE-12W-5CCT-5000K

Appendix Page: 11 Total:12

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	1.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
15.0	1.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
30.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
45.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.90
60.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.90
75.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
90.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
105.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
120.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.90
135.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.90
150.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
165.0	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
180.0	0.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
195.0	0.00	0.90	0.90	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	0.90	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	0.90	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
285.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
300.0	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
315.0	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
330.0	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
345.0	0.00	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90
360.0	1.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	0.89	0.89	0.89	0.89	1.79	1.79	1.79	2.68	2.68
15.0	0.90	0.90	0.90	0.90	1.79	1.79	1.79	2.69	2.69
30.0	0.90	0.90	0.90	0.90	1.80	1.80	2.69	2.69	2.69
45.0	0.90	0.90	0.90	0.90	1.80	1.80	1.80	2.70	2.70
60.0	0.90	0.90	0.90	0.90	1.80	1.80	2.70	2.70	2.70
75.0	0.90	0.90	0.90	0.90	1.80	1.80	1.80	2.70	2.70
90.0	0.90	0.90	0.90	0.90	1.80	1.80	1.80	2.69	2.69
105.0	0.90	0.90	0.90	0.90	1.80	1.80	1.80	2.69	2.69
120.0	0.90	0.90	0.90	0.90	1.80	1.80	1.80	2.70	2.70
135.0	0.90	0.90	0.90	0.90	1.80	1.80	2.70	2.70	2.70
150.0	0.90	0.90	0.90	0.90	1.80	1.80	2.70	2.70	2.70
165.0	0.90	0.90	0.90	0.90	1.80	1.80	2.69	2.69	2.69
180.0	0.89	0.89	0.89	0.89	0.89	1.79	1.79	1.79	1.79
195.0	0.90	0.90	0.90	0.90	0.90	1.79	1.79	1.79	2.69
210.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	1.80
225.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	1.80
240.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	2.70
255.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	1.80
270.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	1.80
285.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	2.69
300.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	1.80
315.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	1.80
330.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	1.80
345.0	0.90	0.90	0.90	0.90	0.90	1.80	1.80	1.80	2.69
360.0	0.89	0.89	0.89	0.89	1.79	1.79	1.79	2.68	2.68

Lotus LED Lights LFR-6R-FE-12W-5CCT-5000K

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Intensity data(cd)

C/γ(°)	180.0
0.0	2.68
15.0	2.69
30.0	2.69
45.0	2.70
60.0	2.70
75.0	2.70
90.0	2.69
105.0	2.69
120.0	2.70
135.0	2.70
150.0	2.70
165.0	2.69
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	2.68