



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : CLRM4-FS1-UNV-20W-3500K.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] LED-13301  
[TESTLAB] LSI INDUSTRIES, INC.  
[ISSUEDATE] 04/06/22  
[TESTDATE] 03/11/22  
[MANUFAC] LSI INDUSTRIES, INC.  
[LUMCAT] CLRM4-FS1-UNV-20W-3500K  
[OTHER] TEST PROCEDURE: IESNA LM-79-19  
[ABSOLUTE] NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED  
[OTHER] SCALED FROM ORIGINAL TEST DATA  
[SEARCH\_SOURCETYPE] LED  
[SEARCH\_APPLICATION] Indoor  
[SEARCH\_COLORTEMP] 3500

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2396
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	120
Total Luminaire Watts	20
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.18
Spacing Criterion (90-270)	3.04
Spacing Criterion (Diagonal)	2.62
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.83 ft
Luminous Width (90-270)	0.02 ft
Luminous Height	0.33 ft



**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	16352	5127	4570
55	14201	4481	3750
65	11458	3857	3008
75	7856	3304	2461
85	4133	2922	2095

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CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
0.0	123	123	123	123	123	123	123	123	123	123
2.5	120	108	98	91	89	93	97	108	121	133
5.0	120	88	73	77	83	78	73	87	121	161
7.5	118	77	98	107	114	112	102	76	120	161
10.0	117	77	115	148	160	157	117	78	119	146
12.5	115	96	145	176	191	180	153	101	117	161
15.0	113	106	161	197	218	199	165	108	115	208
17.5	111	112	189	231	245	235	194	114	114	214
20.0	108	123	203	261	270	266	209	130	111	203
22.5	106	144	227	284	302	289	231	149	108	241
25.0	102	150	247	305	328	310	254	153	106	244
27.5	99	158	257	325	350	331	264	167	103	226
30.0	96	172	280	347	367	353	288	177	99	243
32.5	92	174	289	360	380	367	301	178	95	253
35.0	88	177	302	371	391	378	310	186	92	241
37.5	84	188	311	380	399	386	320	195	86	246
40.0	79	190	318	386	403	391	326	195	82	249
42.5	74	192	323	389	404	393	330	200	78	239
45.0	70	198	326	389	402	394	332	205	72	237
47.5	66	198	329	387	398	391	334	203	67	239
50.0	61	199	328	383	393	386	334	205	62	231
52.5	56	201	327	377	386	381	331	207	57	227
55.0	51	200	324	368	377	371	327	206	52	223
57.5	46	199	320	360	367	362	323	205	48	219
60.0	42	198	315	351	357	352	318	204	43	215
62.5	37	197	309	342	343	341	311	201	38	210
65.0	32	194	304	331	331	330	306	199	34	207
67.5	28	192	297	319	319	319	298	196	29	202
70.0	24	189	288	308	308	307	291	193	24	197
72.5	19	185	281	299	296	297	283	189	20	191
75.0	15	181	274	288	286	287	275	185	16	189
77.5	12	178	267	280	276	278	268	180	12	185
80.0	9	173	261	271	267	270	260	176	9	179
82.5	6	171	254	262	258	260	253	172	6	177
85.0	4	167	247	253	249	251	246	168	4	176
87.5	3	164	242	246	242	245	240	165	3	169
90.0	1	160	236	240	235	239	233	160	2	162
92.5	1	158	232	235	230	235	230	157	1	163
95.0	1	157	229	230	224	228	223	155	1	165
97.5	1	154	224	226	221	224	219	152	1	162
100.0	1	154	222	223	218	221	215	149	1	160
102.5	1	156	229	231	227	230	222	152	1	163
105.0	1	156	229	233	229	230	222	151	1	161
107.5	1	155	230	234	230	231	222	150	1	159
110.0	0	151	229	236	231	233	223	146	1	155
112.5	1	148	228	237	233	234	222	144	1	154
115.0	0	144	227	238	235	234	221	140	1	149
117.5	0	141	226	239	237	235	221	137	1	144
120.0	0	137	223	240	239	236	218	133	1	140
122.5	0	133	220	241	240	237	217	130	1	136
125.0	0	129	217	242	242	238	214	126	1	130
127.5	0	125	213	241	243	238	211	121	1	123
130.0	0	120	209	240	242	236	207	117	1	113
132.5	0	114	205	238	242	235	202	111	1	102

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**CANDELA TABULATION - (Cont.)**

135.0	0	107	199	235	240	232	197	104	1	97
137.5	1	99	193	231	238	227	191	97	1	89
140.0	0	89	186	226	233	222	184	88	1	78
142.5	0	77	178	219	228	215	176	76	1	65
145.0	0	64	169	212	221	208	167	63	1	54
147.5	0	54	158	202	213	199	157	53	1	45
150.0	1	46	140	191	203	188	145	45	1	35
152.5	1	37	125	178	190	177	132	39	1	25
155.0	1	29	105	164	176	163	115	32	1	15
157.5	1	21	82	147	161	144	91	24	1	1
160.0	0	14	56	127	141	123	69	17	1	1
162.5	0	7	43	99	116	92	54	3	1	1
165.0	0	0	34	67	78	66	41	1	1	1
167.5	0	1	23	45	56	49	28	1	1	0
170.0	0	0	12	33	39	32	11	1	1	0
172.5	0	1	0	12	19	12	1	1	1	1
175.0	0	0	0	0	0	0	1	1	1	1
177.5	0	0	0	0	0	0	1	1	1	1
180.0	0	0	0	0	0	0	0	0	0	0

**Vert. Angles**      **Horizontal Angles**

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	123	123	123	123	123	123	123
2.5	146	151	152	156	150	137	120
5.0	149	147	152	150	146	163	120
7.5	173	224	211	226	184	153	118
10.0	219	257	268	264	215	147	117
12.5	249	269	301	270	257	174	115
15.0	253	303	324	304	253	215	113
17.5	296	339	343	342	298	207	111
20.0	298	364	370	366	300	212	108
22.5	327	374	390	378	324	249	106
25.0	332	383	401	386	338	235	102
27.5	340	391	402	391	342	235	99
30.0	350	391	398	390	348	256	96
32.5	344	386	390	387	348	250	92
35.0	346	377	380	378	345	247	88
37.5	341	365	362	365	341	253	84
40.0	335	351	346	351	333	246	79
42.5	328	336	329	335	327	243	74
45.0	318	321	312	321	317	243	70
47.5	309	308	299	307	307	239	66
50.0	300	294	285	293	297	234	61
52.5	291	279	271	279	288	230	56
55.0	281	267	259	266	277	226	51
57.5	271	256	249	254	267	223	46
60.0	262	247	241	246	260	218	42
62.5	254	239	231	236	252	213	37
65.0	247	229	222	228	244	210	32
67.5	238	221	216	219	236	205	28
70.0	232	215	211	214	230	200	24
72.5	226	211	206	209	222	195	19
75.0	219	204	200	203	218	192	15
77.5	213	198	197	197	211	188	12
80.0	208	194	193	192	206	181	9

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**CANDELA TABULATION - (Cont.)**

82.5	204	190	189	189	201	178	6
85.0	200	187	185	186	198	176	4
87.5	197	183	181	182	194	170	3
90.0	193	180	177	180	189	163	1
92.5	192	179	177	178	188	164	1
95.0	190	177	175	176	187	163	1
97.5	188	174	174	173	183	158	1
100.0	188	175	174	173	184	157	1
102.5	197	184	183	184	194	161	1
105.0	200	188	185	186	196	160	1
107.5	202	190	187	188	197	156	1
110.0	203	191	188	189	198	153	0
112.5	205	193	190	191	201	150	1
115.0	206	196	192	193	201	146	0
117.5	206	199	194	196	202	142	0
120.0	205	201	196	198	202	138	0
122.5	205	203	198	200	202	132	0
125.0	205	205	200	202	201	125	0
127.5	204	207	203	205	199	117	0
130.0	202	210	206	207	198	109	0
132.5	199	211	208	208	195	100	0
135.0	195	212	209	208	191	95	0
137.5	190	212	212	209	186	86	1
140.0	184	211	212	207	179	74	0
142.5	175	208	212	205	170	62	0
145.0	164	203	209	199	158	52	0
147.5	149	196	203	192	144	39	0
150.0	127	186	195	182	130	32	1
152.5	116	171	182	167	117	22	1
155.0	96	150	166	149	100	11	1
157.5	73	133	144	130	77	1	1
160.0	52	115	128	110	57	1	0
162.5	39	86	99	80	40	0	0
165.0	24	53	68	55	22	1	0
167.5	0	34	45	34	0	1	0
170.0	0	7	18	3	1	0	0
172.5	0	0	0	0	0	0	0
175.0	0	0	0	0	0	0	0
177.5	0	0	0	0	0	1	0
180.0	0	0	0	0	0	0	0

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	71.64	N.A.	3.00
0-30	194.81	N.A.	8.10
0-40	375.37	N.A.	15.70
0-60	818.86	N.A.	34.20
0-80	1258.73	N.A.	52.50
0-90	1456.34	N.A.	60.80
10-90	1443.29	N.A.	60.20
20-40	303.73	N.A.	12.70
20-50	518.83	N.A.	21.60
40-70	669.54	N.A.	27.90
60-80	439.87	N.A.	18.40
70-80	213.82	N.A.	8.90
80-90	197.60	N.A.	8.20
90-110	362.00	N.A.	15.10
90-120	530.94	N.A.	22.20
90-130	680.77	N.A.	28.40
90-150	886.64	N.A.	37.00
90-180	940.15	N.A.	39.20
110-180	578.15	N.A.	24.10
0-180	2396.49	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	13.05
10-20	58.59
20-30	123.17
30-40	180.57
40-50	215.09
50-60	228.39
60-70	226.05
70-80	213.82
80-90	197.60
90-100	182.72
100-110	179.28
110-120	168.94
120-130	149.83
130-140	121.77
140-150	84.10
150-160	42.77
160-170	10.41
170-180	0.32

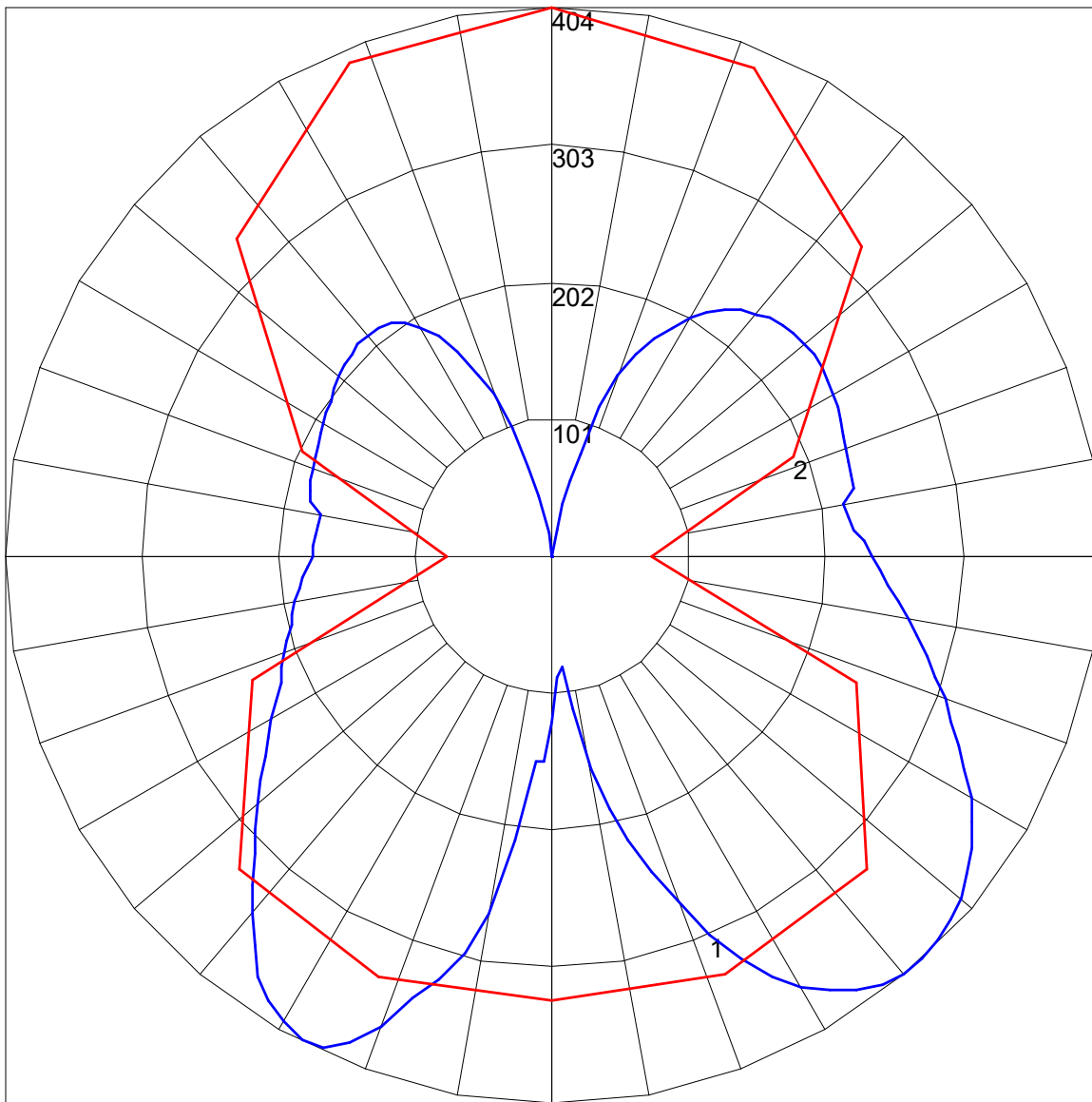
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	96	90	85	80	89	84	79	75	72	69	65	62	59	56	52	50	48	43
2	86	76	68	62	79	71	64	58	61	55	51	52	47	44	43	40	37	33
3	77	66	57	49	71	61	53	46	52	46	41	44	39	35	37	33	30	26
4	70	57	48	41	65	53	45	38	46	39	33	39	33	29	32	28	24	21
5	64	50	41	34	59	47	38	32	40	33	28	34	29	24	28	24	20	17
6	59	45	35	29	54	42	33	27	36	29	24	31	25	21	25	21	17	14
7	54	40	31	25	50	37	29	23	32	25	21	27	22	18	23	18	15	12
8	50	36	27	22	46	34	26	20	29	23	18	25	19	15	21	16	13	11
9	46	33	24	19	43	31	23	18	27	20	16	23	17	14	19	15	12	9
10	43	30	22	17	40	28	21	16	24	18	14	21	16	12	18	13	10	8

POLAR GRAPH



Maximum Candela = 404 Located At Horizontal Angle = 90, Vertical Angle = 42.5  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (42.5) (Through Max. Cd.)