



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : CLRM2-FS1-UNV-20W-4000K.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] LED-13297  
[TESTLAB] LSI INDUSTRIES, INC.  
[ISSUEDATE] 04/06/22  
[TESTDATE] 03/09/22  
[MANUFAC] LSI INDUSTRIES, INC.  
[LUMCAT] CLRM2-FS1-UNV-20W-4000K  
[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] 4000

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2206
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	110
Total Luminaire Watts	20
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.34
Spacing Criterion (90-270)	3.26
Spacing Criterion (Diagonal)	2.78
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	1.88 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	28649	9735	8902
55	24498	8449	7281
65	20751	7285	5908
75	17051	6285	4785
85	12501	5540	4060

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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	99	99	99	99	99	99	99	99	99	99
2.5	105	91	80	68	66	69	78	89	103	115
5.0	106	71	70	93	92	94	76	67	101	119
7.5	106	67	97	112	124	116	100	72	99	122
10.0	106	86	120	142	151	145	129	96	98	144
12.5	106	95	142	173	179	175	146	101	94	144
15.0	105	101	165	200	208	204	173	113	92	139
17.5	104	114	178	223	241	232	189	132	89	161
20.0	102	129	200	246	268	254	210	140	86	183
22.5	101	134	215	271	293	279	236	149	83	181
25.0	98	141	234	294	315	302	248	161	79	180
27.5	95	153	250	311	335	322	266	166	76	202
30.0	92	159	260	326	351	338	281	176	72	210
32.5	88	160	275	341	365	351	292	184	69	197
35.0	84	167	282	352	375	360	302	187	64	207
37.5	79	172	291	359	382	367	310	193	61	208
40.0	74	173	298	364	386	373	316	199	57	201
42.5	69	178	301	366	386	374	320	198	53	200
45.0	65	180	304	365	383	373	322	202	50	203
47.5	60	180	305	363	380	371	323	204	47	197
50.0	56	180	304	360	374	367	322	203	44	194
52.5	52	180	303	354	367	359	318	204	41	193
55.0	48	179	300	348	358	352	315	203	39	188
57.5	44	178	296	339	348	343	309	201	36	187
60.0	40	177	292	331	339	335	304	200	33	185
62.5	37	175	287	323	328	326	299	197	30	180
65.0	33	172	282	314	318	316	292	194	27	178
67.5	30	169	276	304	306	306	286	191	24	175
70.0	27	166	269	293	295	295	278	187	22	171
72.5	24	163	262	283	283	283	269	184	19	167
75.0	20	160	256	273	272	273	262	180	16	164
77.5	17	156	249	265	262	263	254	176	14	160
80.0	14	153	242	255	253	255	247	170	11	156
82.5	12	149	236	247	244	246	240	166	9	155
85.0	9	147	230	239	236	239	234	163	7	154
87.5	8	143	225	233	228	232	228	159	6	149
90.0	6	139	220	227	222	227	220	155	5	141
92.5	5	137	215	222	217	219	215	151	4	140
95.0	5	135	211	217	212	215	211	148	3	142
97.5	4	133	208	214	208	211	207	145	3	142
100.0	2	130	205	211	206	208	204	142	2	139
102.5	1	132	209	217	212	213	207	142	1	138
105.0	1	131	209	217	214	214	207	141	1	138
107.5	0	128	208	217	214	215	206	140	1	136
110.0	0	125	207	218	215	215	205	136	1	133
112.5	0	122	206	218	216	215	204	133	0	130
115.0	0	119	204	219	217	216	203	129	1	128
117.5	0	115	203	220	218	216	201	125	0	124
120.0	0	110	200	219	219	217	199	121	1	120
122.5	0	107	196	219	219	216	196	116	0	116
125.0	0	102	193	218	219	215	193	112	1	111
127.5	0	97	189	216	220	215	189	107	0	106
130.0	0	93	184	215	219	213	185	102	1	102
132.5	0	88	179	212	217	210	180	97	0	98

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135.0	0	80	173	208	215	207	174	90	0	91
137.5	0	70	167	204	212	203	168	81	1	82
140.0	0	57	160	199	207	198	161	70	0	70
142.5	0	39	151	192	202	191	154	56	1	53
145.0	0	29	142	184	196	184	145	40	0	38
147.5	0	25	133	175	187	175	135	32	1	35
150.0	0	21	120	164	177	163	123	26	1	28
152.5	0	17	103	152	164	150	107	21	1	22
155.0	1	13	80	137	149	137	86	16	1	16
157.5	1	9	47	120	135	119	55	11	1	8
160.0	0	4	28	91	112	94	32	4	1	1
162.5	0	1	24	51	78	51	25	1	1	1
165.0	0	0	17	26	37	30	17	1	0	0
167.5	0	0	9	19	25	21	10	1	1	0
170.0	0	0	0	12	15	12	0	1	0	0
172.5	0	0	0	0	2	0	0	1	0	0
175.0	0	0	0	0	0	0	0	1	1	0
177.5	0	0	0	0	0	0	1	1	1	0
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	99	99	99	99	99	99	99
2.5	119	116	114	117	120	116	105
5.0	133	148	145	149	137	117	106
7.5	140	161	180	166	141	133	106
10.0	175	191	203	193	187	150	106
12.5	192	242	236	243	195	139	106
15.0	226	269	272	275	241	160	105
17.5	232	285	309	299	251	188	104
20.0	264	308	332	317	268	186	102
22.5	269	331	351	335	294	192	101
25.0	291	345	362	350	300	219	98
27.5	299	352	367	359	313	213	95
30.0	302	353	368	360	318	220	92
32.5	309	354	365	359	319	228	88
35.0	306	350	358	354	322	219	84
37.5	307	341	345	344	318	224	79
40.0	302	328	329	331	313	227	74
42.5	296	315	312	316	305	221	69
45.0	291	303	298	302	298	221	65
47.5	283	291	284	289	291	218	60
50.0	274	278	272	276	282	214	56
52.5	267	264	258	263	271	212	52
55.0	259	250	246	251	261	210	48
57.5	251	241	236	241	252	208	44
60.0	243	233	229	233	246	204	40
62.5	236	225	221	225	238	199	37
65.0	229	217	213	217	230	196	33
67.5	222	210	206	210	223	192	30
70.0	216	204	201	204	216	187	27
72.5	210	200	196	200	210	184	24
75.0	206	194	192	194	205	182	20
77.5	200	187	187	187	200	178	17
80.0	193	182	183	181	195	172	14

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**CANDELA TABULATION - (Cont.)**

82.5	188	179	180	177	191	167	12
85.0	186	176	176	176	187	165	9
87.5	184	172	171	173	181	163	8
90.0	180	169	166	171	176	159	6
92.5	178	166	165	168	174	157	5
95.0	176	165	164	165	174	155	5
97.5	172	163	163	161	173	150	4
100.0	171	161	160	159	171	148	2
102.5	176	165	165	166	176	153	1
105.0	181	171	169	171	178	153	1
107.5	183	173	170	174	180	150	0
110.0	183	175	172	174	182	146	0
112.5	184	176	174	175	182	144	0
115.0	184	177	175	176	183	141	0
117.5	184	179	176	178	183	137	0
120.0	183	180	177	179	183	134	0
122.5	183	181	178	180	183	131	0
125.0	183	182	179	181	182	125	0
127.5	182	184	182	183	181	120	0
130.0	180	186	184	185	181	116	0
132.5	177	188	186	186	179	110	0
135.0	173	188	187	186	176	103	0
137.5	169	188	188	187	172	93	0
140.0	163	187	189	187	168	77	0
142.5	158	185	189	185	161	60	0
145.0	150	182	188	182	154	41	0
147.5	142	177	184	177	145	31	0
150.0	130	169	178	168	134	26	0
152.5	112	159	169	158	118	21	0
155.0	85	145	156	146	93	14	1
157.5	59	128	144	129	64	7	1
160.0	35	97	122	100	37	1	0
162.5	28	65	87	61	28	0	0
165.0	19	32	47	36	18	0	0
167.5	9	21	29	24	7	0	0
170.0	0	12	16	12	0	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	0	0
180.0	0	0	0	0	0	0	0

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	64.18	N.A.	2.90
0-30	177.26	N.A.	8.00
0-40	344.92	N.A.	15.60
0-60	758.88	N.A.	34.40
0-80	1172.75	N.A.	53.20
0-90	1358.34	N.A.	61.60
10-90	1346.96	N.A.	61.10
20-40	280.74	N.A.	12.70
20-50	481.33	N.A.	21.80
40-70	626.46	N.A.	28.40
60-80	413.87	N.A.	18.80
70-80	201.37	N.A.	9.10
80-90	185.59	N.A.	8.40
90-110	334.22	N.A.	15.20
90-120	487.38	N.A.	22.10
90-130	621.76	N.A.	28.20
90-150	803.82	N.A.	36.40
90-180	847.39	N.A.	38.40
110-180	513.17	N.A.	23.30
0-180	2205.73	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	11.38
10-20	52.81
20-30	113.07
30-40	167.66
40-50	200.60
50-60	213.36
60-70	212.51
70-80	201.37
80-90	185.59
90-100	170.30
100-110	163.91
110-120	153.17
120-130	134.37
130-140	108.62
140-150	73.44
150-160	36.75
160-170	6.70
170-180	0.12

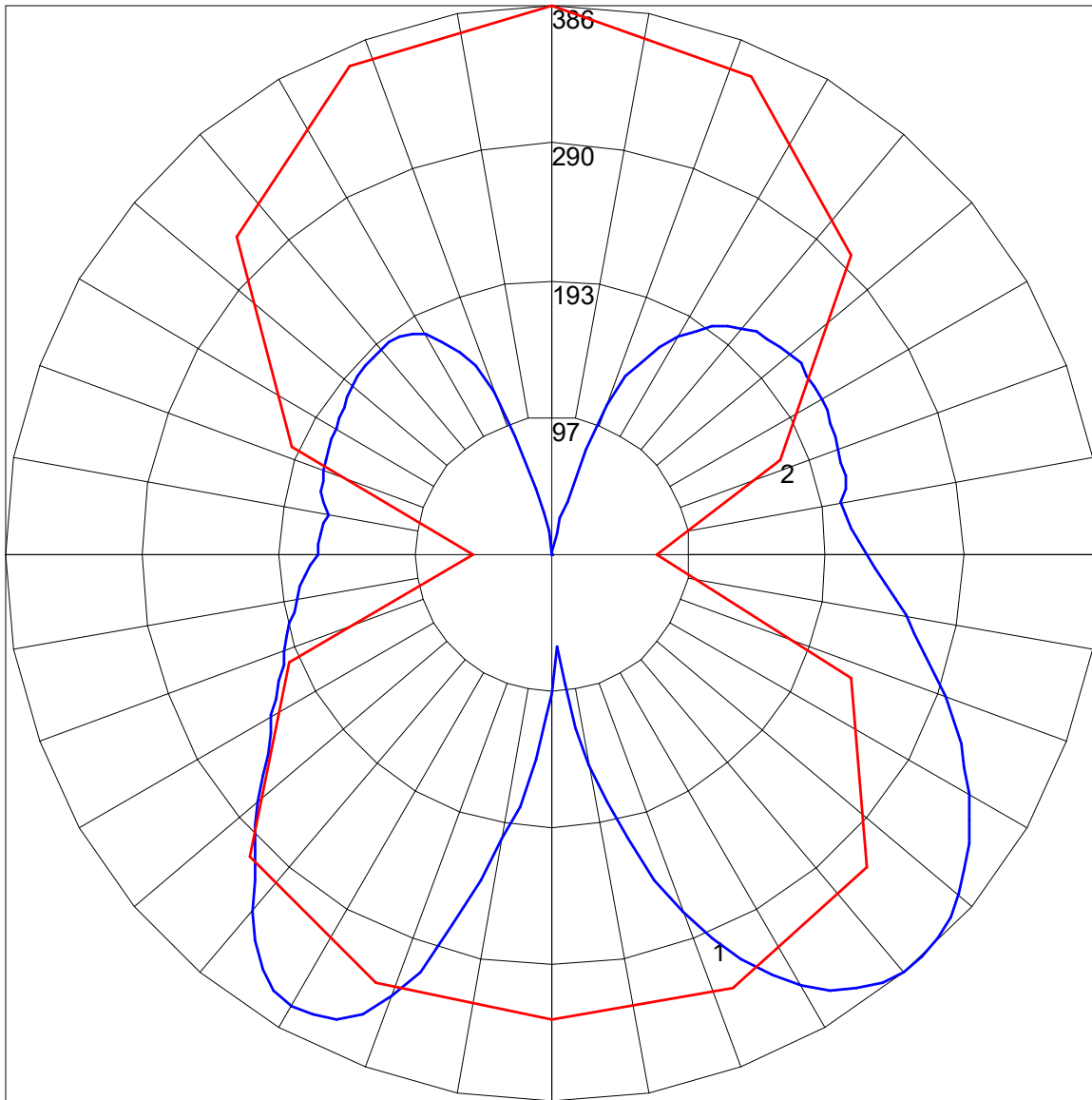
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	90	90	90	78	78	78	67	67	67	62
1	96	90	84	79	89	84	79	75	73	69	65	62	59	56	52	50	48	43
2	86	76	68	62	80	71	64	58	61	56	51	52	48	44	44	40	37	33
3	77	66	56	49	71	61	53	46	52	46	41	45	39	35	37	33	30	26
4	70	57	48	40	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	29	24	20	17
6	59	45	35	29	54	42	33	27	36	29	24	31	25	21	26	21	17	14
7	54	40	31	25	50	37	29	23	32	25	20	28	22	18	23	18	15	12
8	50	36	27	21	46	34	26	20	29	22	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	11	9
10	43	30	22	17	40	28	21	16	24	18	14	21	16	12	18	13	10	8

POLAR GRAPH



Maximum Candela = 386 Located At Horizontal Angle = 90, Vertical Angle = 40  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (40) (Through Max. Cd.)