



IES INDOOR REPORT
PHOTOMETRIC FILENAME : CLRM4-FS1-UNV-20W-3000K.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-3000K
[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] 3000

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2198
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)	1.18
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	15184	4702	4184
55	13087	4108	3432
65	10742	3540	2763
75	7332	3027	2254
85	4133	2674	1918

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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	113	113	113	113	113	113	113	113	113	113
2.5	110	99	90	83	81	85	89	99	111	122
5.0	110	80	67	70	76	71	67	79	111	148
7.5	108	70	90	98	104	102	93	69	110	148
10.0	107	70	105	136	147	144	107	71	109	134
12.5	105	88	133	162	175	165	140	92	107	148
15.0	103	97	148	181	200	183	151	99	105	191
17.5	102	102	174	211	224	215	178	104	104	197
20.0	99	113	186	239	247	244	192	119	102	186
22.5	97	132	208	260	277	265	211	137	99	221
25.0	93	138	226	280	301	284	233	140	97	223
27.5	90	145	235	298	321	304	242	153	94	207
30.0	88	158	257	318	337	324	264	162	90	222
32.5	84	160	265	330	348	337	276	163	87	232
35.0	80	162	277	341	358	346	284	171	84	221
37.5	77	173	285	348	366	354	294	179	78	225
40.0	72	174	292	354	369	358	299	179	75	228
42.5	68	176	296	356	370	360	303	184	71	219
45.0	65	182	299	356	368	361	305	188	66	217
47.5	61	182	302	354	365	358	306	186	62	219
50.0	56	183	301	351	360	354	306	188	57	211
52.5	52	185	300	345	354	349	304	190	53	208
55.0	47	184	297	338	345	341	300	189	48	205
57.5	42	183	294	330	337	332	296	188	44	201
60.0	39	182	289	322	328	323	292	187	40	198
62.5	34	181	283	314	315	313	285	185	35	193
65.0	30	178	279	304	304	303	281	183	31	190
67.5	26	176	272	293	293	293	273	180	27	186
70.0	22	174	264	282	282	282	267	177	22	181
72.5	18	170	258	274	271	272	259	174	18	175
75.0	14	166	251	264	262	263	252	170	15	174
77.5	11	163	245	257	253	255	246	165	11	170
80.0	8	159	239	248	245	247	238	162	8	164
82.5	6	157	233	240	236	238	232	158	6	162
85.0	4	153	226	232	228	230	225	154	4	162
87.5	3	150	222	225	222	224	220	151	3	155
90.0	1	147	216	220	215	219	213	147	2	149
92.5	1	145	212	215	210	215	210	144	1	150
95.0	1	144	210	210	206	209	205	142	1	151
97.5	1	141	206	207	203	206	201	139	1	149
100.0	1	141	204	205	200	203	198	137	1	147
102.5	1	143	210	211	208	210	204	139	1	150
105.0	1	143	210	213	210	210	204	138	1	148
107.5	1	142	210	214	210	211	204	138	1	146
110.0	0	138	210	216	211	213	205	134	1	142
112.5	1	136	209	217	213	214	204	132	1	141
115.0	0	132	208	218	215	214	203	128	1	137
117.5	0	129	207	219	217	215	203	126	1	132
120.0	0	126	205	220	219	216	200	122	1	128
122.5	0	122	202	221	220	217	199	119	1	125
125.0	0	118	199	222	222	218	197	115	1	119
127.5	0	114	196	221	222	218	194	111	1	113
130.0	0	110	192	220	222	216	190	107	1	103
132.5	0	104	188	218	222	215	186	102	1	93

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CANDELA TABULATION - (Cont.)

135.0	0	98	183	215	220	212	181	95	1	89
137.5	1	90	177	211	218	208	175	89	1	81
140.0	0	81	171	207	213	204	169	80	1	71
142.5	0	70	163	201	209	198	162	69	1	60
145.0	0	59	155	195	203	191	153	58	1	50
147.5	0	50	145	186	196	183	144	49	1	42
150.0	1	42	128	175	186	173	133	42	1	32
152.5	1	34	114	163	174	162	121	36	1	23
155.0	1	27	96	150	162	150	105	30	1	14
157.5	1	19	75	135	148	132	83	22	1	1
160.0	0	13	52	116	129	113	64	16	1	1
162.5	0	6	40	90	106	84	50	3	1	1
165.0	0	0	31	62	71	61	38	1	1	1
167.5	0	1	21	42	52	45	26	1	1	0
170.0	0	0	11	30	36	30	10	1	1	0
172.5	0	1	0	11	18	11	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	113	113	113	113	113	113	113
2.5	134	138	139	143	138	126	110
5.0	137	135	139	138	134	150	110
7.5	159	206	194	207	169	140	108
10.0	201	235	246	242	198	135	107
12.5	228	246	276	247	235	160	105
15.0	232	278	297	279	232	198	103
17.5	271	311	315	314	273	190	102
20.0	273	334	340	336	275	195	99
22.5	300	343	357	346	297	228	97
25.0	305	351	367	354	310	215	93
27.5	312	358	368	358	314	215	90
30.0	321	358	365	357	319	234	88
32.5	316	354	357	354	319	229	84
35.0	318	345	348	346	317	226	80
37.5	313	335	332	335	313	232	77
40.0	307	322	318	322	306	225	72
42.5	301	308	302	307	300	222	68
45.0	292	294	286	294	291	222	65
47.5	283	282	274	282	282	219	61
50.0	275	270	261	269	272	214	56
52.5	267	256	248	256	264	210	52
55.0	258	245	237	244	254	207	47
57.5	248	234	228	233	245	205	42
60.0	240	226	221	225	238	200	39
62.5	233	219	211	216	231	196	34
65.0	226	210	204	209	223	193	30
67.5	218	203	198	201	216	188	26
70.0	212	198	194	197	210	184	22
72.5	207	194	189	192	204	179	18
75.0	201	187	184	186	200	176	14
77.5	196	182	181	181	194	173	11
80.0	191	178	177	176	189	166	8

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CANDELA TABULATION - (Cont.)

82.5	187	174	174	174	185	163	6
85.0	184	172	170	171	182	162	4
87.5	181	168	166	167	178	156	3
90.0	177	165	162	165	174	150	1
92.5	176	164	162	163	173	150	1
95.0	174	162	161	162	172	150	1
97.5	173	160	160	159	168	145	1
100.0	173	161	160	159	169	144	1
102.5	181	169	168	169	178	148	1
105.0	184	173	170	171	180	147	1
107.5	186	174	172	173	181	143	1
110.0	186	175	173	174	182	140	0
112.5	188	177	174	175	185	138	1
115.0	189	180	176	177	185	134	0
117.5	189	183	178	180	186	130	0
120.0	188	185	180	182	186	126	0
122.5	188	186	182	184	186	121	0
125.0	188	188	184	186	185	114	0
127.5	187	190	186	188	183	107	0
130.0	186	193	189	190	182	100	0
132.5	183	194	191	191	179	91	0
135.0	179	195	192	191	175	87	0
137.5	174	195	195	192	171	78	1
140.0	169	194	195	190	164	68	0
142.5	161	191	195	188	156	57	0
145.0	150	186	192	183	145	48	0
147.5	137	180	186	176	132	36	0
150.0	116	171	179	167	119	30	1
152.5	106	157	167	153	107	20	1
155.0	88	138	152	137	91	10	1
157.5	67	122	132	119	70	1	1
160.0	48	105	117	101	53	1	0
162.5	36	78	90	73	37	0	0
165.0	22	49	63	51	20	1	0
167.5	0	31	42	31	0	1	0
170.0	0	6	17	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	65.67	N.A.	3.00
0-30	178.55	N.A.	8.10
0-40	344.08	N.A.	15.70
0-60	750.76	N.A.	34.20
0-80	1154.36	N.A.	52.50
0-90	1335.62	N.A.	60.80
10-90	1323.66	N.A.	60.20
20-40	278.40	N.A.	12.70
20-50	475.59	N.A.	21.60
40-70	614.10	N.A.	27.90
60-80	403.61	N.A.	18.40
70-80	196.18	N.A.	8.90
80-90	181.26	N.A.	8.20
90-110	332.10	N.A.	15.10
90-120	487.03	N.A.	22.20
90-130	624.49	N.A.	28.40
90-150	813.36	N.A.	37.00
90-180	862.46	N.A.	39.20
110-180	530.36	N.A.	24.10
0-180	2198.08	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	11.96
10-20	53.71
20-30	112.87
30-40	165.53
40-50	197.19
50-60	209.49
60-70	207.42
70-80	196.18
80-90	181.26
90-100	167.63
100-110	164.46
110-120	154.93
120-130	137.46
130-140	111.66
140-150	77.21
150-160	39.23
160-170	9.57
170-180	0.30

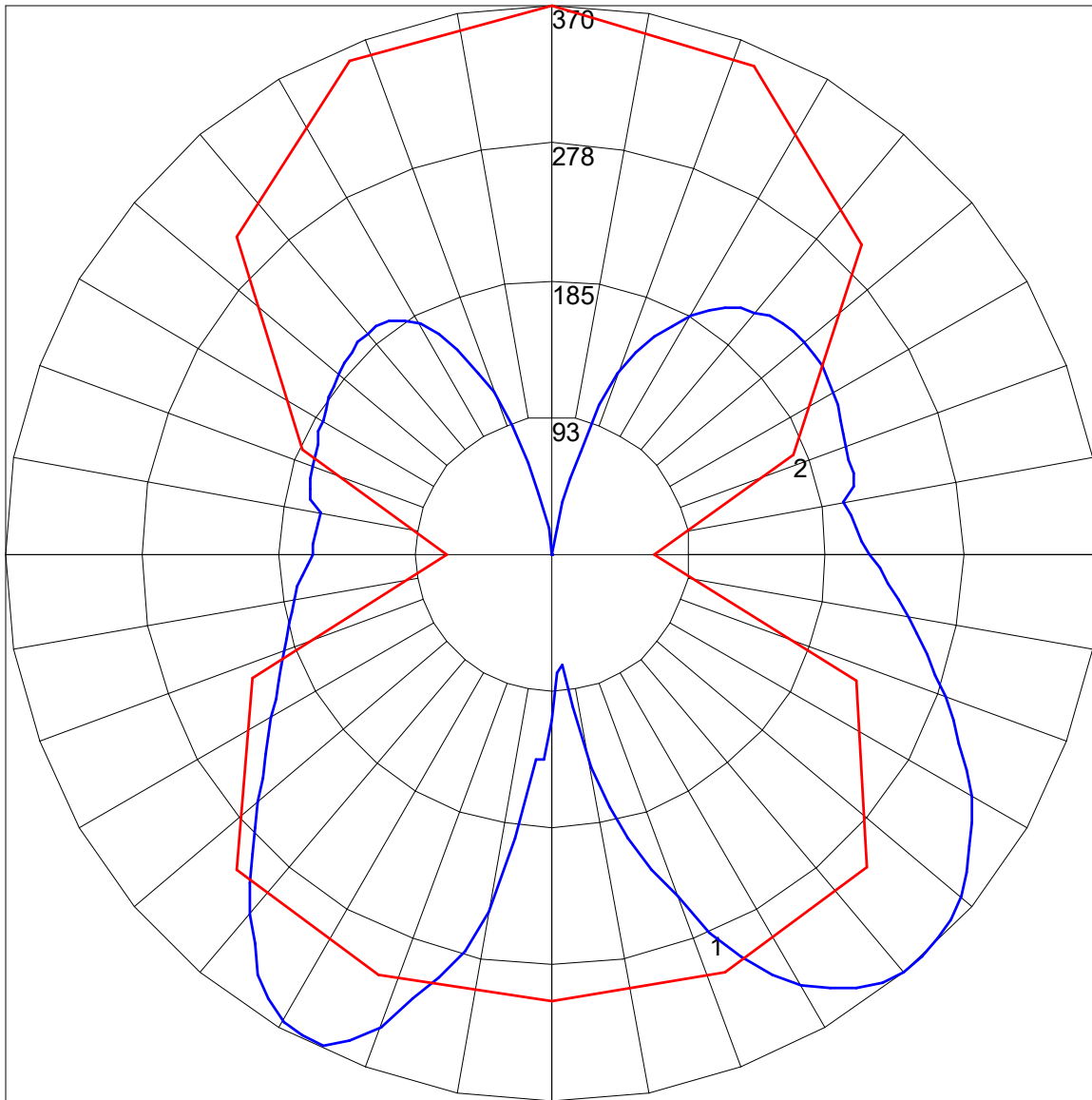
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	84	80	89	84	79	75	72	68	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	20	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 = 370 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.)