



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-L20-835-X-RD-XX-XX-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 17323.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 26-JUL-2021

[MANUFAC] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] 2' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS

[LUMCAT] LLM-2-L20-835-x-RD-xx-xx-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3853
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	140
Total Luminaire Watts	27.5
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.32
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	2.03 ft
Luminous Width (90-270)	0.21 ft
Luminous Height	0.17 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	17741	15568	16632
55	14330	13085	14479
65	11350	11259	12809
75	8097	9490	10797
85	4887	8738	9956

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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>
0	1119.929	1119.929	1119.929	1119.929	1119.929
5	1126.418	1125.491	1127.345	1129.200	1130.127
10	1093.043	1094.897	1104.168	1111.585	1113.439
15	1041.126	1048.543	1065.230	1080.991	1087.480
20	992.917	1007.750	1038.345	1067.084	1077.282
25	900.208	920.604	964.177	1003.115	1017.948
30	809.352	838.092	897.426	952.125	973.448
35	732.404	771.342	847.363	915.041	941.927
40	625.788	670.288	765.779	847.363	876.103
45	533.079	589.631	702.737	797.300	832.530
50	442.224	502.485	626.715	728.695	762.998
55	360.639	427.390	558.110	664.726	699.955
60	286.472	356.004	491.359	597.048	631.351
65	221.575	297.597	437.588	544.204	578.506
70	160.387	241.044	379.181	482.089	511.756
75	107.543	189.127	321.701	413.484	438.515
80	67.678	152.043	280.909	368.983	392.160
85	32.448	120.522	243.826	325.410	346.733
90	4.635	89.001	192.835	258.659	277.201
95	0.000	68.605	170.585	237.336	252.169
100	0.000	56.553	144.627	198.398	213.231
105	0.000	46.355	119.595	166.877	181.710
110	0.000	38.011	101.053	144.627	153.897
115	0.000	32.448	86.220	121.449	134.429
120	0.000	30.594	75.095	106.616	116.814
125	0.000	28.740	63.969	90.855	100.126
130	0.000	25.959	54.699	79.730	87.147
135	0.000	22.250	46.355	66.751	71.386
140	0.000	21.323	43.573	60.261	66.751
145	0.000	22.250	40.792	54.699	60.261
150	0.000	19.469	33.375	43.573	47.282
155	0.000	19.469	29.667	38.011	39.865
160	0.000	19.469	25.959	32.448	33.375
165	0.000	9.271	23.177	27.813	28.740
170	0.000	0.000	21.323	22.250	23.177
175	0.000	0.000	0.000	19.469	19.469
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	408.52	N.A.	10.60
0-30	853.10	N.A.	22.10
0-40	1376.13	N.A.	35.70
0-60	2397.54	N.A.	62.20
0-80	3134.00	N.A.	81.30
0-90	3370.67	N.A.	87.50
10-90	3263.99	N.A.	84.70
20-40	967.61	N.A.	25.10
20-50	1500.75	N.A.	38.90
40-70	1436.52	N.A.	37.30
60-80	736.46	N.A.	19.10
70-80	321.35	N.A.	8.30
80-90	236.67	N.A.	6.10
90-110	276.67	N.A.	7.20
90-120	354.09	N.A.	9.20
90-130	407.02	N.A.	10.60
90-150	463.86	N.A.	12.00
90-180	482.59	N.A.	12.50
110-180	205.92	N.A.	5.30
0-180	3853.25	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	106.68
10-20	301.84
20-30	444.58
30-40	523.03
40-50	533.15
50-60	488.27
60-70	415.11
70-80	321.35
80-90	236.67
90-100	163.22
100-110	113.45
110-120	77.41
120-130	52.93
130-140	34.20
140-150	22.64
150-160	12.47
160-170	5.41
170-180	0.84

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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	386	386	386	386	372	372	372	372	347	347	347	323	323	323	301	301	301	291
1	346	327	310	295	332	315	300	287	293	281	270	273	263	254	254	247	239	229
2	312	282	258	237	299	272	250	231	254	235	219	236	221	208	220	208	197	187
3	284	247	218	195	272	238	212	191	222	200	182	207	189	173	194	178	165	156
4	260	218	188	164	249	211	183	161	197	173	154	184	164	148	172	155	141	133
5	239	195	164	141	228	188	160	138	176	152	133	165	144	128	155	137	123	114
6	220	175	145	123	211	170	141	121	159	135	116	150	128	112	141	122	108	100
7	204	159	129	108	196	154	126	106	145	121	103	136	115	99	129	110	96	88
8	190	145	116	96	182	140	114	95	133	109	92	125	104	89	118	100	86	79
9	177	133	105	87	170	129	103	85	122	99	83	116	95	80	109	91	78	71
10	166	122	96	78	160	119	94	77	113	90	75	107	87	73	102	84	71	64

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UGR TABLE - CORRECTED

Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size UGR Viewed Crosswise

X=2H	Y=2H	12.9	14.3	13.5	14.9	15.5	17.9	19.3	18.4	19.9	20.5
	3H	14.1	15.4	14.7	16.0	16.6	20.5	21.8	21.0	22.3	23.0
	4H	14.5	15.7	15.1	16.3	16.9	21.7	22.9	22.3	23.5	24.2
	6H	14.7	15.8	15.3	16.4	17.1	23.0	24.1	23.6	24.7	25.4
	8H	14.7	15.8	15.3	16.4	17.1	23.6	24.7	24.2	25.3	26.0
	12H	14.8	15.8	15.4	16.4	17.1	24.4	25.4	25.0	26.0	26.7

UGR Viewed Endwise

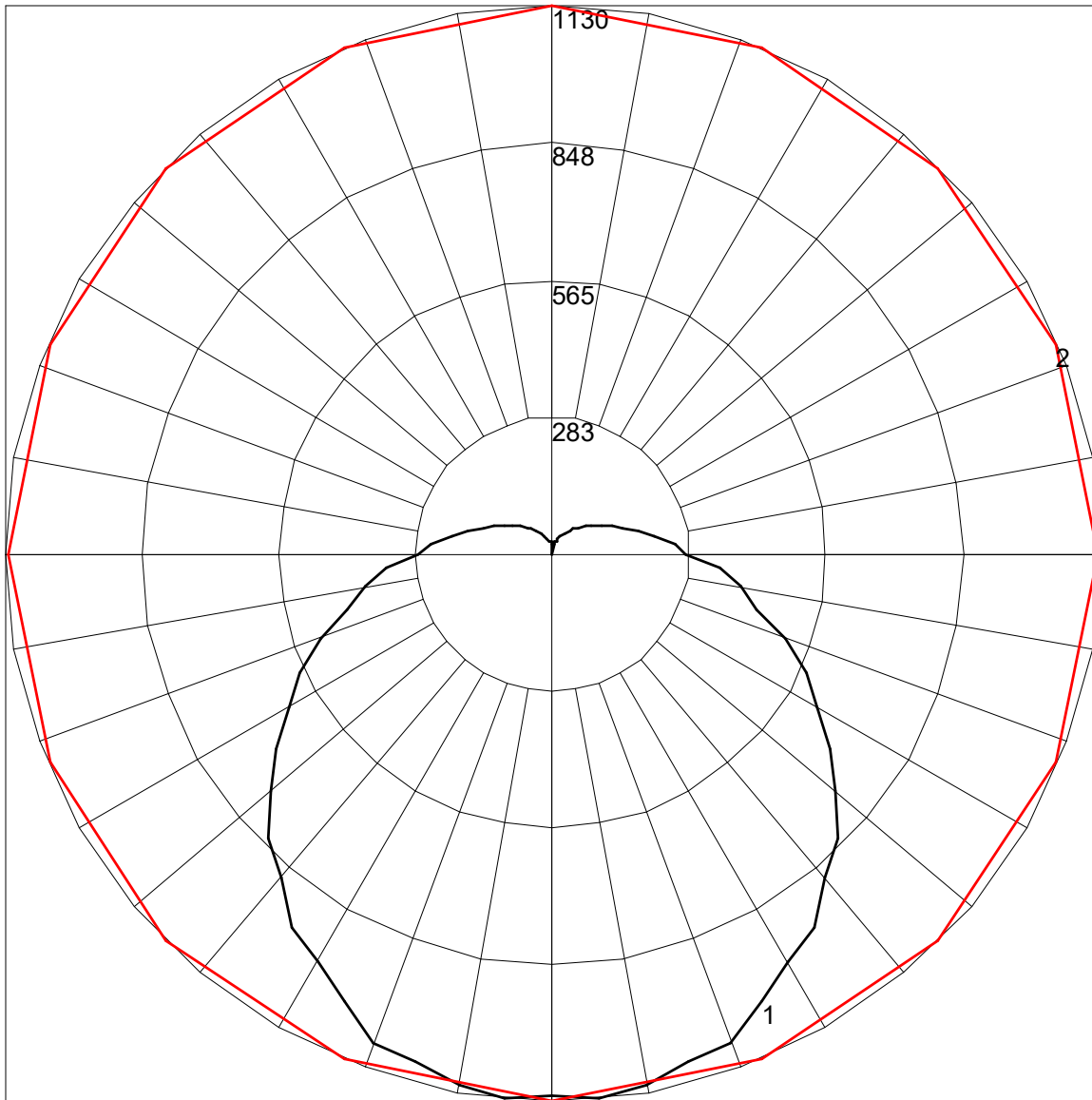
4H	2H	14.4	15.6	15.0	16.2	16.8	18.1	19.4	18.7	19.9	20.6
	3H	15.8	16.9	16.4	17.5	18.2	21.0	22.0	21.6	22.6	23.3
	4H	16.3	17.2	16.9	17.9	18.6	22.3	23.3	22.9	23.9	24.6
	6H	16.6	17.5	17.3	18.1	18.8	23.8	24.7	24.4	25.3	26.0
	8H	16.7	17.5	17.4	18.2	18.9	24.6	25.4	25.2	26.0	26.8
	12H	16.8	17.5	17.4	18.2	18.9	25.4	26.2	26.1	26.8	27.6

8H	4H	17.4	18.2	18.0	18.9	19.6	22.5	23.2	23.1	23.9	24.6
	6H	18.0	18.6	18.6	19.3	20.1	24.1	24.8	24.8	25.5	26.2
	8H	18.2	18.8	18.9	19.5	20.2	25.0	25.6	25.7	26.3	27.1
	12H	18.3	18.9	19.0	19.5	20.4	26.0	26.6	26.7	27.3	28.1

12H	4H	17.7	18.5	18.4	19.1	19.9	22.4	23.2	23.1	23.8	24.6
	6H	18.5	19.1	19.2	19.8	20.6	24.1	24.7	24.8	25.4	26.2
	8H	18.8	19.3	19.5	20.0	20.8	25.1	25.6	25.8	26.3	27.1

Maximum UGR = 28.1

POLAR GRAPH



Maximum Candela = 1130.127 Located At Horizontal Angle = 90, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)