



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L15-835-X-SQ-XX-XX-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 17322.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 26-JUL-2021

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

[LUMINAIRE] 4' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC SQUARE LENS

[LUMCAT] LLM-4-L15-835-S-SQ-xx-xx-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5959
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	150
Total Luminaire Watts	39.8
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.28
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.88 ft
Luminous Width (90-270)	0.21 ft
Luminous Height	0.20 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	15083	11340	11442
55	11975	9456	10243
65	9479	8143	9222
75	6896	6754	7628
85	4519	5846	6458

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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	1817.802	1817.802	1817.802	1817.802	1817.802
5	1825.109	1828.031	1833.876	1833.876	1838.260
10	1773.965	1781.271	1790.039	1795.884	1795.884
15	1683.367	1699.441	1711.131	1716.976	1719.898
20	1614.688	1638.068	1654.142	1665.832	1667.293
25	1453.950	1483.175	1506.555	1522.629	1528.474
30	1304.902	1344.356	1376.503	1405.728	1418.880
35	1173.389	1223.071	1274.215	1323.898	1344.356
40	995.115	1059.411	1136.857	1211.381	1243.529
45	840.222	919.130	1027.263	1138.318	1183.617
50	688.252	783.233	913.285	1050.643	1104.710
55	552.355	659.026	818.303	977.580	1038.953
60	435.454	549.432	723.322	894.289	957.123
65	333.166	455.912	650.259	828.532	888.444
70	239.646	368.237	566.967	736.473	790.540
75	159.277	286.406	477.831	628.340	673.639
80	96.443	227.956	412.074	550.894	588.886
85	46.760	172.428	347.779	470.524	501.211
90	7.306	113.978	263.026	358.008	379.927
95	0.000	108.133	251.336	334.628	352.163
100	0.000	100.827	225.033	293.712	308.325
105	0.000	94.982	203.115	261.565	273.255
110	0.000	86.214	184.118	235.262	249.875
115	0.000	78.908	166.583	211.882	225.033
120	0.000	75.985	151.971	200.192	210.421
125	0.000	70.140	137.358	178.273	191.425
130	0.000	64.295	124.207	163.661	173.889
135	0.000	58.450	111.055	143.203	156.354
140	0.000	56.989	105.210	135.897	146.126
145	0.000	58.450	97.904	130.052	137.358
150	0.000	48.221	80.369	102.288	111.055
155	0.000	48.221	73.063	92.059	96.443
160	0.000	39.454	59.911	74.524	78.908
165	0.000	35.070	54.066	59.911	62.834
170	0.000	0.000	40.915	51.144	52.605
175	0.000	0.000	18.996	36.531	36.531
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	657.13	N.A.	11.00
0-30	1351.16	N.A.	22.70
0-40	2140.95	N.A.	35.90
0-60	3659.2	N.A.	61.40
0-80	4772.19	N.A.	80.10
0-90	5112.42	N.A.	85.80
10-90	4939.3	N.A.	82.90
20-40	1483.81	N.A.	24.90
20-50	2274.01	N.A.	38.20
40-70	2146.54	N.A.	36.00
60-80	1112.99	N.A.	18.70
70-80	484.71	N.A.	8.10
80-90	340.23	N.A.	5.70
90-110	419.84	N.A.	7.00
90-120	562.88	N.A.	9.40
90-130	671.57	N.A.	11.30
90-150	802.68	N.A.	13.50
90-180	846.95	N.A.	14.20
110-180	427.11	N.A.	7.20
0-180	5959.38	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	173.13
10-20	484.01
20-30	694.03
30-40	789.79
40-50	790.19
50-60	728.06
60-70	628.29
70-80	484.71
80-90	340.23
90-100	234.80
100-110	185.04
110-120	143.04
120-130	108.69
130-140	77.20
140-150	53.91
150-160	29.79
160-170	12.55
170-180	1.94

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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	292	292	292	292	281	281	281	281	260	260	260	241	241	241	224	224	224	216
1	261	248	235	224	251	238	227	217	221	212	204	205	198	191	190	184	179	171
2	236	214	196	180	226	206	189	175	191	177	166	178	166	156	165	156	148	140
3	215	187	166	149	206	181	161	145	168	151	138	156	143	131	145	134	124	117
4	197	166	143	126	188	160	139	123	149	131	117	139	124	112	130	117	107	100
5	181	148	125	108	173	143	122	106	134	115	101	125	109	97	117	103	93	86
6	167	133	111	94	160	129	108	92	121	102	89	113	97	85	106	92	82	76
7	155	121	99	83	148	117	96	82	110	92	79	103	87	76	97	83	73	67
8	144	110	89	74	138	107	87	73	101	83	70	95	79	68	89	76	65	60
9	135	101	81	67	129	98	79	66	93	76	63	88	72	61	83	69	59	54
10	127	93	74	61	122	91	72	60	86	69	58	81	66	56	77	64	54	49

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UGR TABLE - CORRECTED

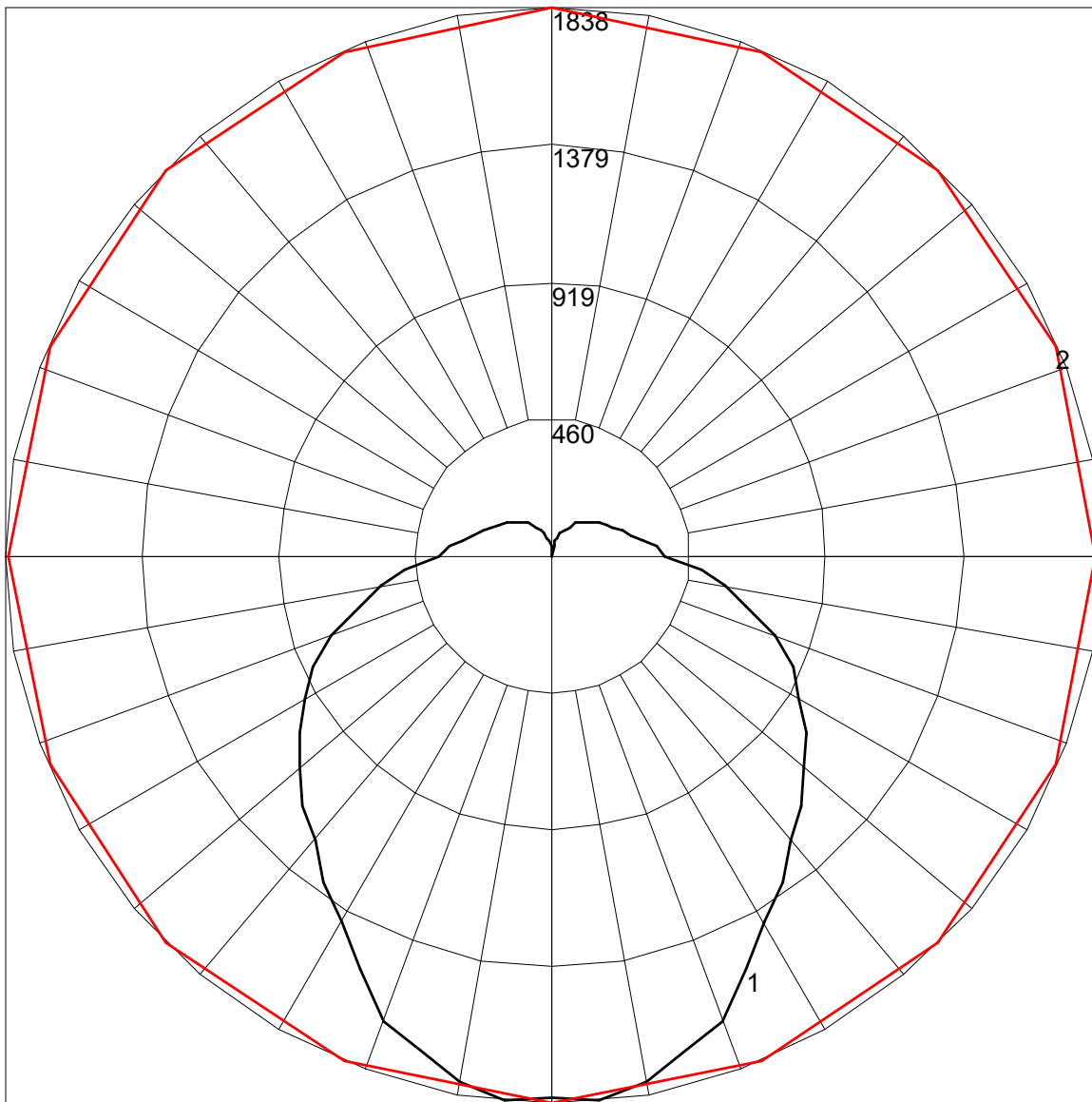
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	12.8	14.2	13.4	14.8	15.4	17.8	19.2	18.4	19.8	20.4
	3H	14.0	15.2	14.5	15.8	16.5	20.5	21.8	21.1	22.4	23.1
	4H	14.3	15.5	14.9	16.1	16.8	21.8	23.0	22.4	23.6	24.3
	6H	14.5	15.6	15.1	16.2	16.9	23.1	24.2	23.7	24.8	25.5
	8H	14.5	15.6	15.1	16.2	16.9	23.8	24.9	24.4	25.5	26.2
	12H	14.5	15.5	15.1	16.2	16.9	24.5	25.5	25.1	26.2	26.9
4H	2H	14.2	15.4	14.8	16.0	16.7	18.0	19.2	18.6	19.8	20.5
	3H	15.6	16.6	16.2	17.3	18.0	21.0	22.0	21.6	22.6	23.3
	4H	16.0	17.0	16.7	17.6	18.4	22.4	23.3	23.0	24.0	24.7
	6H	16.3	17.2	17.0	17.8	18.6	23.9	24.7	24.5	25.4	26.1
	8H	16.4	17.2	17.1	17.9	18.6	24.7	25.5	25.3	26.1	26.9
	12H	16.5	17.2	17.1	17.9	18.6	25.5	26.2	26.2	26.9	27.7
8H	4H	17.1	17.9	17.8	18.6	19.4	22.5	23.3	23.1	23.9	24.7
	6H	17.7	18.3	18.4	19.0	19.8	24.1	24.8	24.8	25.5	26.3
	8H	17.9	18.5	18.5	19.2	19.9	25.0	25.6	25.7	26.4	27.1
	12H	18.0	18.5	18.7	19.2	20.1	26.1	26.6	26.8	27.3	28.1
12H	4H	17.5	18.2	18.1	18.9	19.7	22.5	23.2	23.1	23.9	24.6
	6H	18.2	18.8	18.9	19.4	20.3	24.2	24.8	24.9	25.4	26.3
	8H	18.5	19.0	19.2	19.7	20.5	25.1	25.6	25.8	26.3	27.2

Maximum UGR = 28.1

POLAR GRAPH



Maximum Candela = 1838.26 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.)