



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L15-835-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] 4' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS

[LUMCAT] LLM-4-L15-835-x-RD-xx-xx-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5840
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	147
Total Luminaire Watts	39.8
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)	3.88 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	14616	12575	13207
55	11978	10612	11496
65	9706	9172	10171
75	7239	7776	8574
85	5044	7219	7905

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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	1697.478	1697.478	1697.478	1697.478	1697.478
5	1707.314	1705.909	1708.720	1711.530	1712.935
10	1656.727	1659.538	1673.590	1684.831	1687.642
15	1578.036	1589.278	1614.571	1638.460	1648.296
20	1504.966	1527.449	1573.821	1617.382	1632.839
25	1364.446	1395.361	1461.405	1520.423	1542.906
30	1226.737	1270.298	1360.231	1443.137	1475.457
35	1110.106	1169.124	1284.350	1386.929	1427.680
40	948.508	1015.957	1160.693	1284.350	1327.911
45	807.988	893.705	1065.139	1208.469	1261.867
50	670.279	761.617	949.913	1104.485	1156.477
55	546.622	647.796	845.929	1007.526	1060.924
60	434.206	539.596	744.754	904.947	956.939
65	335.842	451.068	663.253	824.851	876.843
70	243.099	365.351	574.726	730.702	775.669
75	163.003	286.660	487.603	626.718	664.658
80	102.579	230.452	425.775	559.268	594.398
85	49.182	182.676	369.567	493.224	525.544
90	7.026	134.899	292.281	392.050	420.154
95	0.000	103.985	258.556	359.730	382.214
100	0.000	85.717	219.211	300.712	323.195
105	0.000	70.260	181.270	252.935	275.419
110	0.000	57.613	153.166	219.211	233.263
115	0.000	49.182	130.683	184.081	203.754
120	0.000	46.372	113.821	161.598	177.055
125	0.000	43.561	96.959	137.709	151.761
130	0.000	39.346	82.907	120.847	132.089
135	0.000	33.725	70.260	101.174	108.200
140	0.000	32.320	66.044	91.338	101.174
145	0.000	33.725	61.829	82.907	91.338
150	0.000	29.509	50.587	66.044	71.665
155	0.000	29.509	44.966	57.613	60.423
160	0.000	29.509	39.346	49.182	50.587
165	0.000	14.052	35.130	42.156	43.561
170	0.000	0.000	32.320	33.725	35.130
175	0.000	0.000	0.000	29.509	29.509
180	0.000	0.000	0.000	0.000	0.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : LLM-4-L15-835-X-RD-XX-XX-DIM-UNV\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	619.19	N.A.	10.60
0-30	1293.05	N.A.	22.10
0-40	2085.8	N.A.	35.70
0-60	3633.96	N.A.	62.20
0-80	4750.21	N.A.	81.30
0-90	5108.93	N.A.	87.50
10-90	4947.23	N.A.	84.70
20-40	1466.6	N.A.	25.10
20-50	2274.69	N.A.	38.90
40-70	2177.34	N.A.	37.30
60-80	1116.25	N.A.	19.10
70-80	487.07	N.A.	8.30
80-90	358.72	N.A.	6.10
90-110	419.35	N.A.	7.20
90-120	536.69	N.A.	9.20
90-130	616.91	N.A.	10.60
90-150	703.07	N.A.	12.00
90-180	731.46	N.A.	12.50
110-180	312.11	N.A.	5.30
0-180	5840.38	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	161.70
10-20	457.50
20-30	673.85
30-40	792.75
40-50	808.09
50-60	740.07
60-70	629.18
70-80	487.07
80-90	358.72
90-100	247.39
100-110	171.96
110-120	117.34
120-130	80.23
130-140	51.84
140-150	34.32
150-160	18.91
160-170	8.20
170-180	1.28

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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	293	293	293	293	282	282	282	282	263	263	263	245	245	245	228	228	228	220
1	262	248	235	224	251	239	227	217	222	213	204	207	199	193	193	187	181	174
2	237	214	195	179	227	206	189	175	192	178	166	179	167	157	167	158	149	142
3	215	187	165	148	206	180	161	144	168	152	138	157	143	131	147	135	125	118
4	197	165	142	125	188	160	138	122	149	131	117	140	124	112	131	118	107	100
5	181	147	124	107	173	143	121	105	134	115	101	125	109	97	118	104	93	87
6	167	133	110	93	160	128	107	91	121	102	88	113	97	85	107	93	82	76
7	155	120	98	82	148	117	96	81	110	91	78	103	87	75	97	83	73	67
8	144	110	88	73	138	106	86	72	100	82	70	95	79	67	90	76	65	60
9	134	100	80	66	129	98	78	65	92	75	63	88	72	61	83	69	59	54
10	126	93	73	59	121	90	71	59	86	69	57	81	66	55	77	63	53	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

X=2H	Y=2H	13.1	14.6	13.7	15.1	15.7	18.2	19.6	18.7	20.2	20.8
	3H	14.3	15.6	14.9	16.2	16.8	20.8	22.2	21.4	22.7	23.3
	4H	14.7	15.9	15.2	16.5	17.1	22.1	23.3	22.6	23.9	24.5
	6H	14.9	16.1	15.5	16.6	17.3	23.4	24.6	24.0	25.2	25.8
	8H	14.9	16.1	15.5	16.7	17.3	24.1	25.2	24.7	25.8	26.5
	12H	15.0	16.0	15.6	16.6	17.3	24.9	26.0	25.5	26.6	27.3

### UGR Viewed Endwise

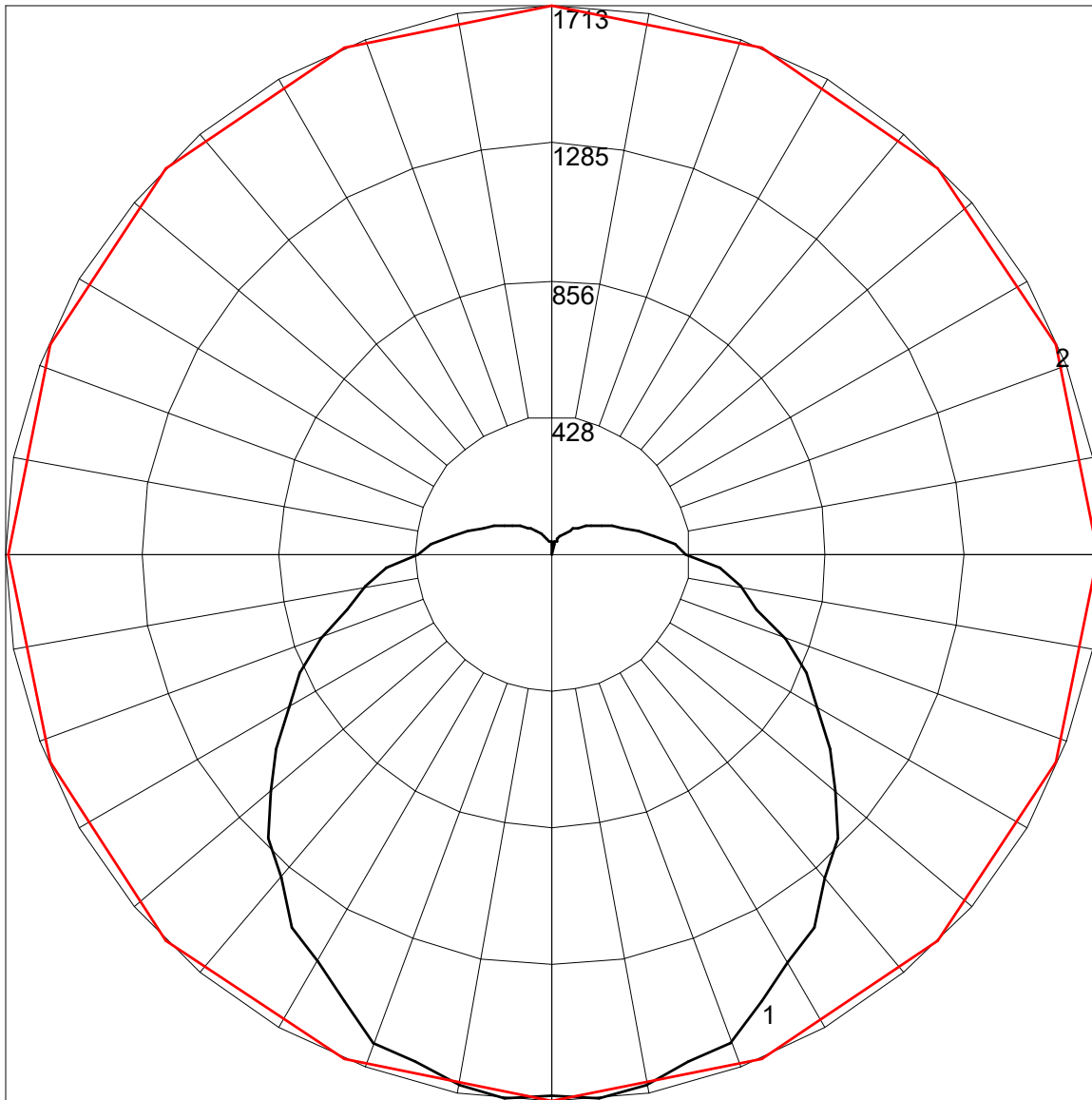
4H	2H	14.6	15.8	15.2	16.4	17.1	18.4	19.7	19.0	20.3	20.9
	3H	16.0	17.1	16.6	17.7	18.4	21.3	22.4	21.9	23.0	23.6
	4H	16.5	17.5	17.1	18.1	18.8	22.7	23.7	23.3	24.3	25.0
	6H	16.8	17.7	17.5	18.3	19.1	24.2	25.1	24.9	25.8	26.5
	8H	16.9	17.8	17.6	18.4	19.1	25.1	25.9	25.7	26.5	27.2
	12H	17.0	17.7	17.6	18.4	19.1	26.0	26.7	26.6	27.4	28.1

8H	4H	17.7	18.5	18.3	19.1	19.8	22.8	23.6	23.5	24.3	25.0
	6H	18.2	18.9	18.9	19.6	20.3	24.5	25.2	25.2	25.9	26.6
	8H	18.4	19.0	19.1	19.7	20.5	25.5	26.1	26.2	26.8	27.5
	12H	18.5	19.1	19.2	19.8	20.6	26.6	27.1	27.2	27.8	28.6

12H	4H	18.0	18.7	18.6	19.4	20.1	22.8	23.6	23.5	24.2	25.0
	6H	18.7	19.4	19.4	20.0	20.8	24.6	25.2	25.2	25.8	26.6
	8H	19.0	19.6	19.7	20.3	21.1	25.5	26.1	26.2	26.8	27.6

Maximum UGR = 28.6

POLAR GRAPH



Maximum Candela = 1712.935 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.)