



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L10-835-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-L10-835-S-SQ-xx-xx-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3920
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	159
Total Luminaire Watts	24.7
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	9922	7460	7527
55	7877	6221	6738
65	6236	5357	6067
75	4536	4443	5018
85	2973	3846	4248

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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>
<b>0</b>	1195.802	1195.802	1195.802	1195.802	1195.802
<b>5</b>	1200.608	1202.531	1206.376	1206.376	1209.259
<b>10</b>	1166.964	1171.770	1177.538	1181.383	1181.383
<b>15</b>	1107.366	1117.940	1125.630	1129.475	1131.398
<b>20</b>	1062.187	1077.567	1088.141	1095.831	1096.793
<b>25</b>	956.449	975.674	991.054	1001.628	1005.473
<b>30</b>	858.401	884.355	905.503	924.728	933.379
<b>35</b>	771.888	804.571	838.215	870.897	884.355
<b>40</b>	654.615	696.910	747.857	796.881	818.028
<b>45</b>	552.722	604.630	675.763	748.818	778.617
<b>50</b>	452.751	515.233	600.785	691.143	726.709
<b>55</b>	363.355	433.526	538.303	643.080	683.453
<b>60</b>	286.454	361.432	475.821	588.288	629.622
<b>65</b>	219.166	299.912	427.759	545.032	584.443
<b>70</b>	157.646	242.236	372.967	484.473	520.039
<b>75</b>	104.777	188.406	314.331	413.340	443.139
<b>80</b>	63.443	149.956	271.074	362.393	387.386
<b>85</b>	30.760	113.428	228.779	309.524	329.711
<b>90</b>	4.806	74.978	173.026	235.508	249.926
<b>95</b>	0.000	71.133	165.336	220.128	231.663
<b>100</b>	0.000	66.327	148.033	193.212	202.825
<b>105</b>	0.000	62.482	133.615	172.065	179.755
<b>110</b>	0.000	56.714	121.118	154.762	164.375
<b>115</b>	0.000	51.908	109.583	139.382	148.033
<b>120</b>	0.000	49.985	99.971	131.692	138.421
<b>125</b>	0.000	46.140	90.358	117.273	125.924
<b>130</b>	0.000	42.295	81.707	107.661	114.389
<b>135</b>	0.000	38.450	73.055	94.203	102.854
<b>140</b>	0.000	37.489	69.210	89.397	96.126
<b>145</b>	0.000	38.450	64.404	85.552	90.358
<b>150</b>	0.000	31.721	52.869	67.288	73.055
<b>155</b>	0.000	31.721	48.063	60.559	63.443
<b>160</b>	0.000	25.954	39.411	49.024	51.908
<b>165</b>	0.000	23.070	35.566	39.411	41.334
<b>170</b>	0.000	0.000	26.915	33.644	34.605
<b>175</b>	0.000	0.000	12.496	24.031	24.031
<b>180</b>	0.000	0.000	0.000	0.000	0.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : LLM-4-L10-835-X-SQ-XX-XX-DIM-UNV\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	432.28	N.A.	11.00
0-30	888.83	N.A.	22.70
0-40	1408.38	N.A.	35.90
0-60	2407.13	N.A.	61.40
0-80	3139.28	N.A.	80.10
0-90	3363.1	N.A.	85.80
10-90	3249.21	N.A.	82.90
20-40	976.10	N.A.	24.90
20-50	1495.91	N.A.	38.20
40-70	1412.05	N.A.	36.00
60-80	732.16	N.A.	18.70
70-80	318.85	N.A.	8.10
80-90	223.81	N.A.	5.70
90-110	276.18	N.A.	7.00
90-120	370.28	N.A.	9.40
90-130	441.78	N.A.	11.30
90-150	528.02	N.A.	13.50
90-180	557.15	N.A.	14.20
110-180	280.96	N.A.	7.20
0-180	3920.25	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	113.89
10-20	318.39
20-30	456.55
30-40	519.54
40-50	519.81
50-60	478.94
60-70	413.30
70-80	318.85
80-90	223.81
90-100	154.46
100-110	121.72
110-120	94.10
120-130	71.50
130-140	50.79
140-150	35.46
150-160	19.60
160-170	8.25
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	192	192	192	192	185	185	185	185	171	171	171	159	159	159	148	148	148	142
1	172	163	155	147	165	157	149	143	145	139	134	135	130	126	125	121	118	113
2	156	141	129	118	149	136	125	115	126	117	109	117	109	103	108	103	97	92
3	142	123	109	98	135	119	106	95	110	100	91	103	94	86	96	88	82	77
4	129	109	94	83	124	105	91	81	98	86	77	91	82	74	85	77	70	66
5	119	97	82	71	114	94	80	70	88	76	67	82	72	64	77	68	61	57
6	110	88	73	62	105	85	71	61	79	67	58	74	64	56	70	61	54	50
7	102	80	65	55	98	77	63	54	72	60	52	68	58	50	64	55	48	44
8	95	73	59	49	91	70	57	48	66	55	46	62	52	45	59	50	43	40
9	89	67	53	44	85	65	52	43	61	50	42	58	48	40	54	45	39	36
10	83	61	48	40	80	60	47	39	57	46	38	53	44	37	51	42	35	32

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**UGR TABLE - CORRECTED**

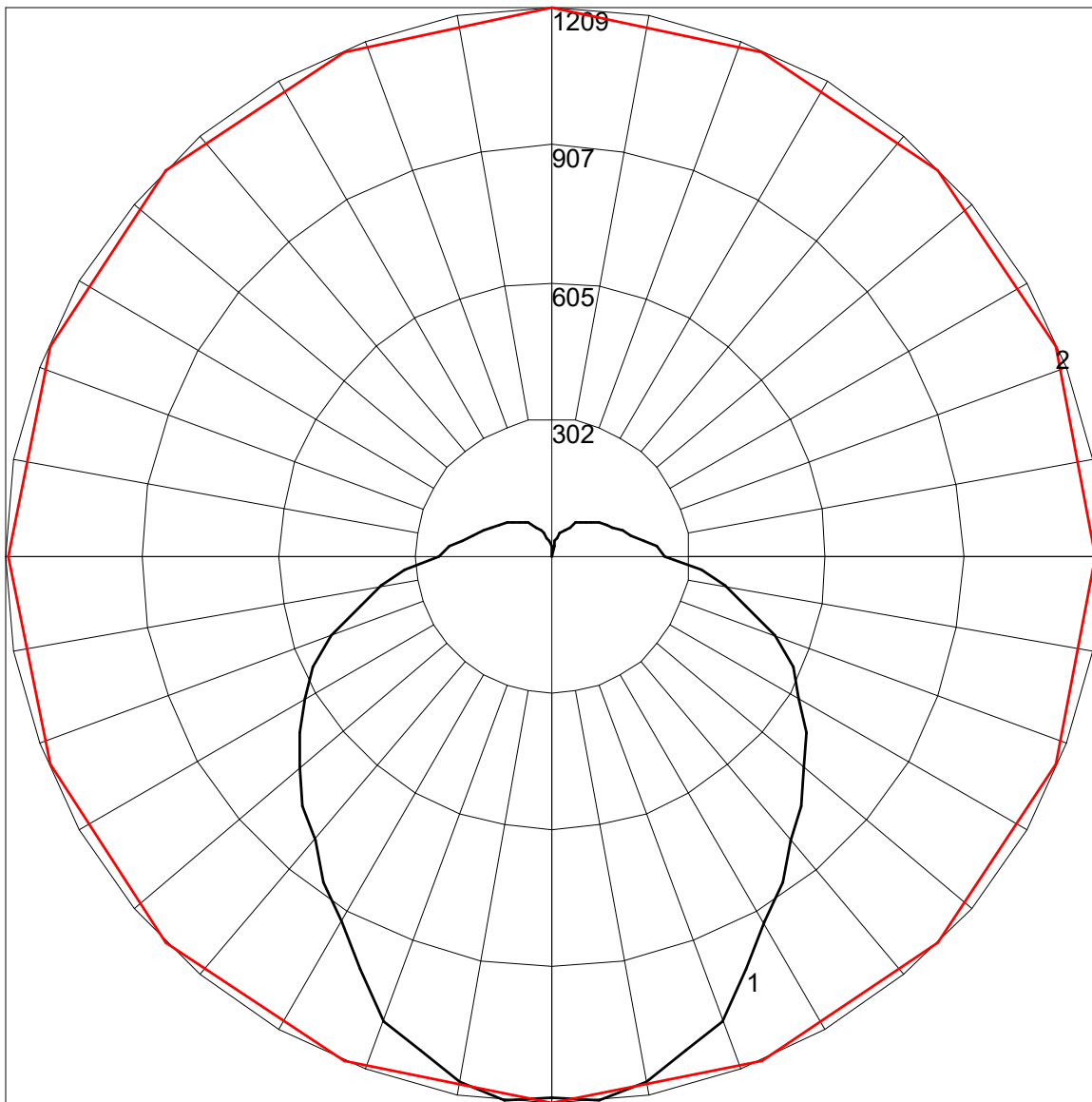
Reflectances

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 = 1209.259 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.)