



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-L20-835-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] 2' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC SQUARE LENS

[LUMCAT] LLM-2-L20-835-S-SQ-xx-xx-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3932
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	143
Total Luminaire Watts	27.5
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)	2.00 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	18443	14216	14628
55	14391	11806	13095
65	11092	10119	11790
75	7665	8346	9752
85	4293	7169	8257

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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	1199.462	1199.462	1199.462	1199.462	1199.462
5	1204.283	1206.212	1210.069	1210.069	1212.961
10	1170.537	1175.357	1181.143	1184.999	1184.999
15	1110.756	1121.362	1129.076	1132.933	1134.861
20	1065.439	1080.866	1091.472	1099.186	1100.150
25	959.377	978.661	994.088	1004.694	1008.551
30	861.029	887.062	908.275	927.559	936.236
35	774.251	807.034	840.781	873.563	887.062
40	656.619	699.044	750.146	799.320	820.533
45	554.414	606.481	677.831	751.110	781.000
50	454.137	516.810	602.624	693.258	728.934
55	364.467	434.853	539.951	645.049	685.545
60	287.331	362.538	477.278	590.089	631.550
65	219.837	300.830	429.068	546.700	586.232
70	158.128	242.978	374.109	485.956	521.631
75	105.098	188.983	315.293	414.605	444.495
80	63.637	150.415	271.904	363.503	388.572
85	30.854	113.775	229.479	310.472	330.720
90	4.821	75.207	173.556	236.229	250.692
95	0.000	71.351	165.842	220.801	232.372
100	0.000	66.530	148.487	193.804	203.446
105	0.000	62.673	134.024	172.591	180.305
110	0.000	56.888	121.489	155.236	164.878
115	0.000	52.067	109.919	139.809	148.487
120	0.000	50.138	100.277	132.095	138.845
125	0.000	46.282	90.635	117.632	126.310
130	0.000	42.425	81.957	107.990	114.740
135	0.000	38.568	73.279	94.491	103.169
140	0.000	37.604	69.422	89.670	96.420
145	0.000	38.568	64.601	85.814	90.635
150	0.000	31.819	53.031	67.494	73.279
155	0.000	31.819	48.210	60.744	63.637
160	0.000	26.033	39.532	49.174	52.067
165	0.000	23.141	35.675	39.532	41.461
170	0.000	0.000	26.998	33.747	34.711
175	0.000	0.000	12.535	24.105	24.105
180	0.000	0.000	0.000	0.000	0.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : LLM-2-L20-835-X-SQ-XX-XX-DIM-UNV\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	433.60	N.A.	11.00
0-30	891.55	N.A.	22.70
0-40	1412.69	N.A.	35.90
0-60	2414.49	N.A.	61.40
0-80	3148.89	N.A.	80.10
0-90	3373.39	N.A.	85.80
10-90	3259.16	N.A.	82.90
20-40	979.08	N.A.	24.90
20-50	1500.48	N.A.	38.20
40-70	1416.38	N.A.	36.00
60-80	734.40	N.A.	18.70
70-80	319.83	N.A.	8.10
80-90	224.50	N.A.	5.70
90-110	277.03	N.A.	7.00
90-120	371.41	N.A.	9.40
90-130	443.13	N.A.	11.30
90-150	529.64	N.A.	13.50
90-180	558.85	N.A.	14.20
110-180	281.83	N.A.	7.20
0-180	3932.25	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	114.24
10-20	319.37
20-30	457.95
30-40	521.14
40-50	521.40
50-60	480.40
60-70	414.57
70-80	319.83
80-90	224.50
90-100	154.93
100-110	122.10
110-120	94.38
120-130	71.72
130-140	50.94
140-150	35.57
150-160	19.66
160-170	8.28
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	116	116	116	116	111	111	111	111	103	103	103	96	96	96	89	89	89	86
1	104	98	93	89	99	95	90	86	88	84	81	81	78	76	75	73	71	68
2	94	85	78	71	90	82	75	69	76	70	66	70	66	62	65	62	59	56
3	85	74	66	59	82	72	64	58	67	60	55	62	57	52	58	53	49	46
4	78	66	57	50	75	63	55	49	59	52	47	55	49	44	51	46	42	40
5	72	59	50	43	69	57	48	42	53	46	40	50	43	38	46	41	37	34
6	66	53	44	37	63	51	43	37	48	41	35	45	39	34	42	37	32	30
7	62	48	39	33	59	46	38	32	44	36	31	41	35	30	38	33	29	27
8	57	44	35	29	55	42	34	29	40	33	28	38	31	27	35	30	26	24
9	54	40	32	26	51	39	31	26	37	30	25	35	29	24	33	27	23	22
10	50	37	29	24	48	36	29	24	34	27	23	32	26	22	31	25	21	20

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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

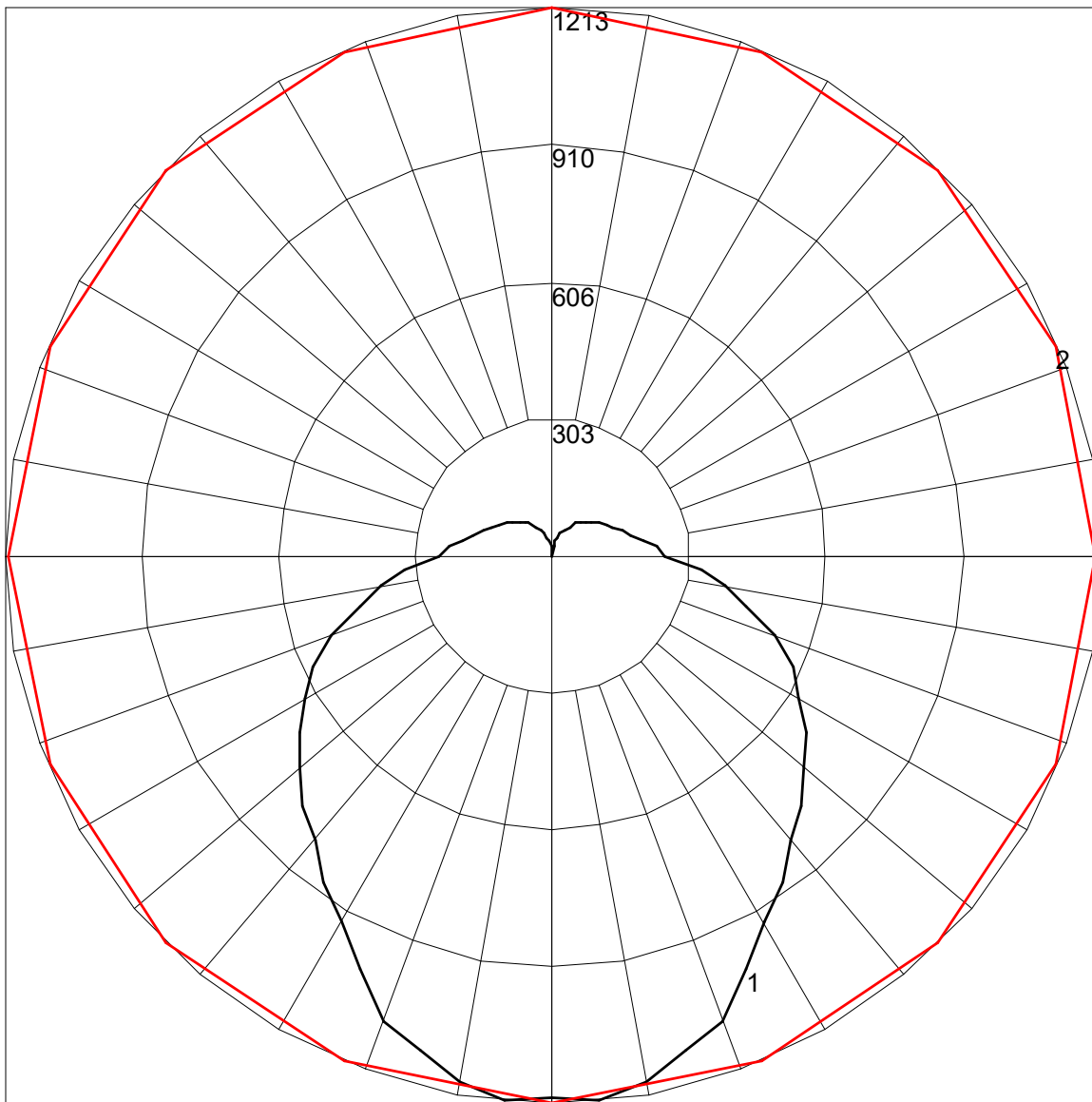
X=2H	Y=2H	16.9	18.3	17.5	18.8	19.5	21.7	23.1	22.3	23.7	24.3
	3H	18.0	19.3	18.6	19.9	20.5	24.4	25.7	25.0	26.3	27.0
	4H	18.4	19.5	19.0	20.1	20.8	25.7	26.8	26.3	27.4	28.1
	6H	18.5	19.7	19.1	20.3	21.0	26.9	28.0	27.5	28.6	29.3
	8H	18.6	19.6	19.2	20.3	21.0	27.5	28.6	28.2	29.2	29.9
	12H	18.6	19.6	19.2	20.2	21.0	28.2	29.2	28.8	29.8	30.6

### UGR Viewed Endwise

4H	2H	18.2	19.4	18.8	20.0	20.7	22.0	23.2	22.6	23.8	24.5
	3H	19.6	20.7	20.3	21.3	22.0	24.9	25.9	25.5	26.5	27.2
	4H	20.1	21.0	20.7	21.7	22.4	26.3	27.2	26.9	27.8	28.6
	6H	20.4	21.2	21.0	21.9	22.6	27.7	28.5	28.3	29.2	29.9
	8H	20.5	21.3	21.1	21.9	22.7	28.4	29.2	29.1	29.9	30.6
	12H	20.5	21.2	21.2	21.9	22.7	29.2	29.9	29.9	30.6	31.4
8H	4H	21.2	21.9	21.8	22.6	23.4	26.4	27.1	27.0	27.8	28.6
	6H	21.7	22.4	22.4	23.1	23.8	28.0	28.6	28.6	29.3	30.1
	8H	21.9	22.5	22.6	23.2	24.0	28.8	29.4	29.5	30.1	30.9
	12H	22.0	22.5	22.7	23.2	24.1	29.8	30.3	30.5	31.0	31.8
12H	4H	21.5	22.2	22.2	22.9	23.7	26.3	27.1	27.0	27.7	28.5
	6H	22.2	22.8	22.9	23.5	24.3	28.0	28.6	28.7	29.3	30.1
	8H	22.5	23.0	23.2	23.7	24.5	28.9	29.4	29.6	30.1	31.0

Maximum UGR = 31.8

POLAR GRAPH



Maximum Candela = 1212.961 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.)