



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-8-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] 8' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC SQUARE LENS

[LUMCAT] LLM-8-L20-835-S-SQ-xx-xx-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	15727
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	144
Total Luminaire Watts	108.9
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)	7.75 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	20398	15123	15098
55	16357	12640	13515
65	13158	10913	12169
75	9891	9080	10065
85	7311	7893	8522

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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	4797.240	4797.240	4797.240	4797.240	4797.240
5	4816.521	4824.234	4839.659	4839.659	4851.228
10	4681.551	4700.832	4723.970	4739.395	4739.395
15	4442.460	4484.879	4515.730	4531.155	4538.867
20	4261.214	4322.915	4365.334	4396.184	4400.041
25	3837.021	3914.147	3975.847	4018.267	4033.692
30	3443.678	3547.798	3632.637	3709.763	3744.469
35	3096.611	3227.725	3362.695	3493.810	3547.798
40	2626.142	2795.819	3000.203	3196.874	3281.713
45	2217.374	2425.614	2710.980	3004.059	3123.605
50	1816.318	2066.978	2410.189	2772.681	2915.364
55	1457.682	1739.192	2159.529	2579.866	2741.831
60	1149.178	1449.970	1908.870	2360.057	2525.878
65	879.237	1203.166	1716.054	2186.523	2344.632
70	632.434	971.788	1496.245	1943.576	2086.259
75	420.337	755.835	1261.011	1658.210	1777.755
80	254.516	601.583	1087.477	1453.826	1554.090
85	123.402	455.044	917.800	1241.729	1322.712
90	19.282	300.792	694.134	944.794	1002.639
95	0.000	285.366	663.284	883.093	929.369
100	0.000	266.085	593.871	775.117	813.680
105	0.000	250.660	536.026	690.278	721.128
110	0.000	227.522	485.894	620.865	659.428
115	0.000	208.240	439.618	559.164	593.871
120	0.000	200.528	401.055	528.313	555.307
125	0.000	185.102	362.492	470.469	505.176
130	0.000	169.677	327.786	431.906	458.900
135	0.000	154.252	293.079	377.918	412.624
140	0.000	150.396	277.654	358.636	385.630
145	0.000	154.252	258.372	343.211	362.492
150	0.000	127.258	212.097	269.941	293.079
155	0.000	127.258	192.815	242.947	254.516
160	0.000	104.120	158.108	196.671	208.240
165	0.000	92.551	142.683	158.108	165.821
170	0.000	0.000	107.976	134.971	138.827
175	0.000	0.000	50.132	96.408	96.408
180	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1734.2	N.A.	11.00
0-30	3565.76	N.A.	22.70
0-40	5650.03	N.A.	35.90
0-60	9656.75	N.A.	61.40
0-80	12593.98	N.A.	80.10
0-90	13491.85	N.A.	85.80
10-90	13034.97	N.A.	82.90
20-40	3915.84	N.A.	24.90
20-50	6001.18	N.A.	38.20
40-70	5664.78	N.A.	36.00
60-80	2937.23	N.A.	18.70
70-80	1279.16	N.A.	8.10
80-90	897.88	N.A.	5.70
90-110	1107.97	N.A.	7.00
90-120	1485.46	N.A.	9.40
90-130	1772.29	N.A.	11.30
90-150	2118.29	N.A.	13.50
90-180	2235.13	N.A.	14.20
110-180	1127.16	N.A.	7.20
0-180	15726.99	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	456.88
10-20	1277.31
20-30	1831.56
30-40	2084.28
40-50	2085.34
50-60	1921.37
60-70	1658.07
70-80	1279.16
80-90	897.88
90-100	619.66
100-110	488.32
110-120	377.48
120-130	286.83
130-140	203.74
140-150	142.27
150-160	78.61
160-170	33.11
170-180	5.12

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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	385	385	385	385	370	370	370	370	343	343	343	319	319	319	296	296	296	285
1	345	327	310	296	331	314	300	286	291	279	269	270	261	252	251	243	236	226
2	312	282	258	237	299	272	250	231	252	234	218	234	219	206	218	206	195	185
3	284	247	219	196	271	238	212	191	222	200	182	206	188	173	192	177	164	155
4	260	219	189	166	248	211	183	162	197	173	155	183	164	148	171	154	141	132
5	239	195	165	143	228	189	161	140	176	152	134	165	144	128	154	136	122	114
6	221	176	146	124	211	170	142	122	159	135	117	149	128	112	140	122	108	100
7	205	160	130	110	196	155	127	108	145	121	104	136	115	100	128	110	96	89
8	190	146	117	98	183	141	115	96	133	110	93	125	105	90	118	100	86	79
9	178	134	106	88	171	130	104	87	123	100	84	116	95	81	109	91	78	72
10	167	123	97	80	160	120	95	79	113	91	76	107	88	74	101	84	71	65

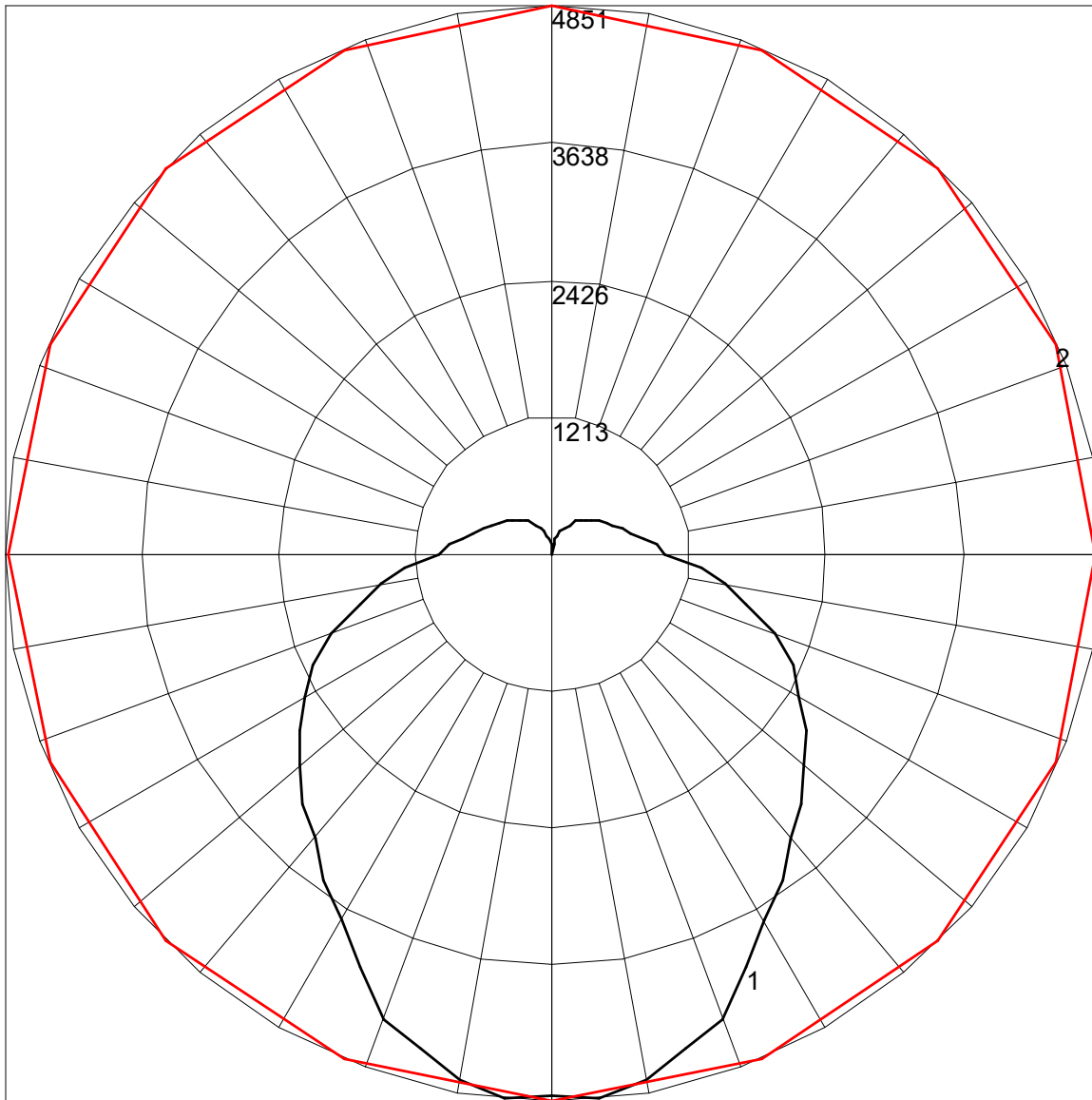
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**UGR TABLE - CORRECTED**

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	17.9	19.3	18.4	19.8	20.5
	3H	14.0	15.2	14.5	15.8	16.5	20.6	21.9	21.2	22.5	23.2
	4H	14.3	15.5	14.9	16.1	16.8	21.9	23.1	22.5	23.7	24.4
	6H	14.5	15.6	15.1	16.2	16.9	23.3	24.4	23.9	25.0	25.7
	8H	14.5	15.6	15.1	16.2	16.9	24.0	25.1	24.6	25.7	26.4
	12H	14.5	15.5	15.1	16.2	16.9	24.8	25.8	25.4	26.4	27.2
4H	2H	14.2	15.4	14.8	16.0	16.7	18.1	19.3	18.7	19.9	20.6
	3H	15.6	16.6	16.2	17.3	18.0	21.1	22.1	21.7	22.7	23.4
	4H	16.1	17.0	16.7	17.6	18.4	22.5	23.5	23.1	24.1	24.8
	6H	16.4	17.2	17.0	17.9	18.6	24.0	24.9	24.7	25.6	26.3
	8H	16.4	17.2	17.1	17.9	18.7	24.9	25.6	25.5	26.3	27.1
	12H	16.5	17.2	17.2	17.9	18.7	25.7	26.5	26.4	27.2	27.9
8H	4H	17.2	18.0	17.8	18.6	19.4	22.6	23.4	23.3	24.1	24.8
	6H	17.7	18.4	18.4	19.1	19.9	24.3	25.0	25.0	25.7	26.4
	8H	17.9	18.5	18.6	19.2	20.0	25.2	25.8	25.9	26.5	27.3
	12H	18.0	18.5	18.7	19.2	20.1	26.3	26.8	27.0	27.5	28.4
12H	4H	17.5	18.2	18.2	18.9	19.7	22.6	23.3	23.3	24.0	24.8
	6H	18.2	18.8	18.9	19.5	20.3	24.3	24.9	25.0	25.6	26.4
	8H	18.5	19.0	19.2	19.7	20.6	25.3	25.8	26.0	26.5	27.4

Maximum UGR = 28.4

POLAR GRAPH



Maximum Candela = 4851.228 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.)