



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-P9-8TW-X-SQ-XX-XX-POE 4000K_.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] 11-AUG-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-P9-8TW-S-SQ-xx-xx-PoE 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1792
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	136
Total Luminaire Watts	13.2
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	8405	6479	6666
55	6559	5380	5968
65	5055	4612	5373
75	3493	3804	4444
85	1957	3267	3763

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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	546.652	546.652	546.652	546.652	546.652
5	548.849	549.728	551.486	551.486	552.804
10	533.469	535.666	538.303	540.061	540.061
15	506.225	511.058	514.574	516.331	517.210
20	485.571	492.602	497.436	500.951	501.391
25	437.234	446.022	453.053	457.887	459.645
30	392.412	404.277	413.944	422.733	426.688
35	352.863	367.804	383.184	398.124	404.277
40	299.253	318.587	341.877	364.288	373.956
45	252.673	276.402	308.920	342.317	355.939
50	206.972	235.535	274.644	315.951	332.210
55	166.105	198.183	246.081	293.979	312.435
60	130.950	165.226	217.518	268.932	287.827
65	100.190	137.102	195.547	249.157	267.174
70	72.067	110.737	170.499	221.473	237.732
75	47.898	86.128	143.694	188.955	202.578
80	29.002	68.551	123.920	165.665	177.091
85	14.062	51.853	104.585	141.497	150.725
90	2.197	34.276	79.098	107.661	114.252
95	0.000	32.518	75.582	100.630	105.903
100	0.000	30.321	67.672	88.326	92.720
105	0.000	28.563	61.081	78.658	82.174
110	0.000	25.926	55.368	70.748	75.143
115	0.000	23.729	50.095	63.717	67.672
120	0.000	22.850	45.701	60.202	63.278
125	0.000	21.093	41.307	53.611	57.565
130	0.000	19.335	37.352	49.216	52.292
135	0.000	17.577	33.397	43.064	47.019
140	0.000	17.138	31.639	40.867	43.943
145	0.000	17.577	29.442	39.109	41.307
150	0.000	14.501	24.169	30.760	33.397
155	0.000	14.501	21.972	27.684	29.002
160	0.000	11.865	18.017	22.411	23.729
165	0.000	10.546	16.259	18.017	18.896
170	0.000	0.000	12.304	15.380	15.820
175	0.000	0.000	5.713	10.986	10.986
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	197.61	N.A.	11.00
0-30	406.32	N.A.	22.70
0-40	643.83	N.A.	35.90
0-60	1100.4	N.A.	61.40
0-80	1435.1	N.A.	80.10
0-90	1537.42	N.A.	85.80
10-90	1485.35	N.A.	82.90
20-40	446.21	N.A.	24.90
20-50	683.84	N.A.	38.20
40-70	645.51	N.A.	36.00
60-80	334.70	N.A.	18.70
70-80	145.76	N.A.	8.10
80-90	102.31	N.A.	5.70
90-110	126.26	N.A.	7.00
90-120	169.27	N.A.	9.40
90-130	201.95	N.A.	11.30
90-150	241.38	N.A.	13.50
90-180	254.70	N.A.	14.20
110-180	128.44	N.A.	7.20
0-180	1792.11	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	52.06
10-20	145.55
20-30	208.71
30-40	237.51
40-50	237.63
50-60	218.94
60-70	188.94
70-80	145.76
80-90	102.31
90-100	70.61
100-110	55.64
110-120	43.01
120-130	32.68
130-140	23.22
140-150	16.21
150-160	8.96
160-170	3.77
170-180	0.58

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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	114	114	114	114	109	109	109	109	102	102	102	94	94	94	88	88	88	84
1	102	97	92	87	98	93	89	85	86	83	79	80	77	75	74	72	70	67
2	92	84	76	70	88	80	74	68	75	69	65	69	65	61	64	61	58	55
3	84	73	65	58	80	70	63	57	66	59	54	61	56	51	57	52	49	46
4	77	65	56	49	73	62	54	48	58	51	46	54	48	44	51	46	42	39
5	71	58	49	42	68	56	48	41	52	45	40	49	43	38	46	40	36	34
6	65	52	43	37	62	50	42	36	47	40	35	44	38	33	41	36	32	30
7	60	47	39	32	58	46	38	32	43	36	31	40	34	30	38	32	28	26
8	56	43	35	29	54	42	34	28	39	32	27	37	31	26	35	30	26	23
9	53	40	31	26	51	38	31	26	36	29	25	34	28	24	32	27	23	21
10	49	36	29	24	47	35	28	23	34	27	23	32	26	22	30	25	21	19

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UGR TABLE - CORRECTED

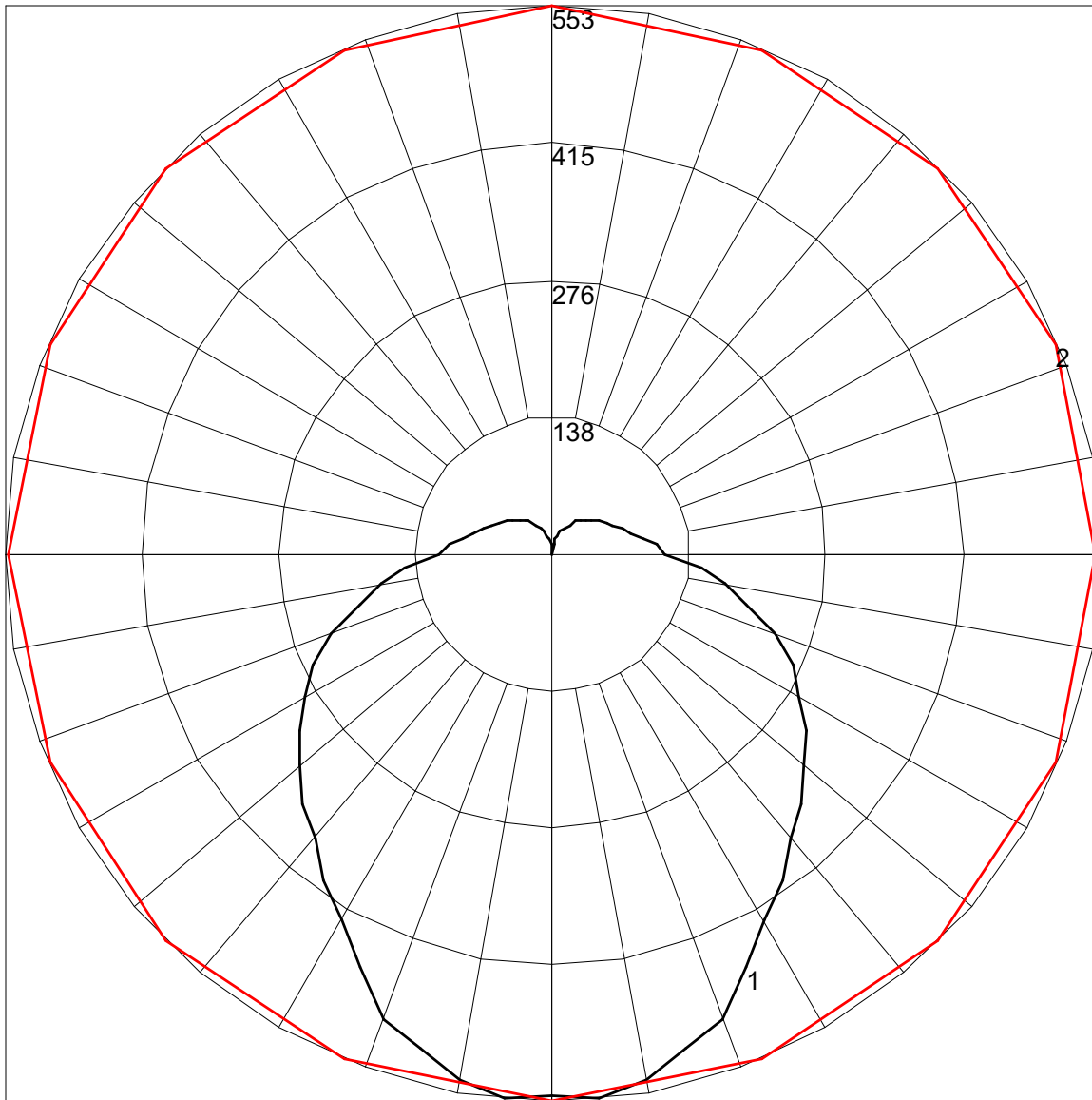
Reflectances

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	14.2	15.6	14.8	16.1	16.8	19.0	20.4	19.6	21.0	21.6
	3H	15.3	16.6	15.9	17.2	17.8	21.7	23.0	22.3	23.6	24.3
	4H	15.7	16.8	16.3	17.4	18.1	23.0	24.1	23.6	24.7	25.4
	6H	15.8	17.0	16.4	17.6	18.3	24.2	25.3	24.8	25.9	26.6
	8H	15.9	16.9	16.5	17.6	18.3	24.8	25.9	25.5	26.5	27.2
	12H	15.9	16.9	16.5	17.5	18.3	25.5	26.5	26.1	27.1	27.9
4H	2H	15.5	16.7	16.1	17.3	18.0	19.3	20.5	19.9	21.1	21.8
	3H	16.9	18.0	17.6	18.6	19.3	22.2	23.2	22.8	23.8	24.5
	4H	17.4	18.3	18.0	19.0	19.7	23.6	24.5	24.2	25.1	25.9
	6H	17.7	18.5	18.3	19.2	19.9	25.0	25.8	25.6	26.5	27.2
	8H	17.8	18.6	18.4	19.2	20.0	25.7	26.5	26.4	27.2	27.9
	12H	17.8	18.5	18.5	19.2	20.0	26.5	27.2	27.2	27.9	28.7
8H	4H	18.5	19.3	19.1	19.9	20.7	23.7	24.4	24.3	25.1	25.9
	6H	19.0	19.7	19.7	20.4	21.1	25.3	25.9	25.9	26.6	27.4
	8H	19.2	19.8	19.9	20.5	21.3	26.1	26.7	26.8	27.4	28.2
	12H	19.3	19.8	20.0	20.5	21.4	27.1	27.6	27.8	28.3	29.1
12H	4H	18.8	19.5	19.5	20.2	21.0	23.6	24.4	24.3	25.0	25.8
	6H	19.5	20.1	20.2	20.8	21.6	25.3	25.9	26.0	26.6	27.4
	8H	19.8	20.3	20.5	21.0	21.8	26.2	26.7	26.9	27.4	28.3

Maximum UGR = 29.1

POLAR GRAPH



Maximum Candela = 552.804 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.)