



IES INDOOR REPORT

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

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC SQUARE LENS

[LUMCAT] LLM-4-P9-8TW-S-SQ-xx-xx-PoE 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3528
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	136
Total Luminaire Watts	26
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)	3.87 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	8941	6722	6783
55	7098	5606	6072
65	5619	4827	5467
75	4087	4004	4522
85	2678	3466	3829

IES INDOOR REPORT
 PHOTOMETRIC FILENAME : LLM-4-P9-8TW-X-SQ-XX-XX-POE 4000K_.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	1076.222	1076.222	1076.222	1076.222	1076.222
5	1080.547	1082.277	1085.738	1085.738	1088.333
10	1050.268	1054.593	1059.784	1063.245	1063.245
15	996.630	1006.146	1013.067	1016.528	1018.258
20	955.969	969.811	979.327	986.248	987.113
25	860.804	878.107	891.949	901.465	904.926
30	772.561	795.919	814.952	832.255	840.041
35	694.699	724.114	754.393	783.808	795.919
40	589.153	627.219	673.071	717.193	736.226
45	497.450	544.167	608.186	673.936	700.755
50	407.476	463.710	540.706	622.028	654.038
55	327.019	390.174	484.473	578.772	615.107
60	257.809	325.289	428.239	529.459	566.660
65	197.250	269.921	384.983	490.529	525.999
70	141.881	218.013	335.670	436.025	468.035
75	94.299	169.565	282.897	372.006	398.825
80	57.099	134.960	243.967	326.154	348.647
85	27.684	102.085	205.901	278.572	296.740
90	4.326	67.480	155.723	211.957	224.934
95	0.000	64.020	148.802	198.115	208.496
100	0.000	59.694	133.230	173.891	182.542
105	0.000	56.233	120.253	154.858	161.779
110	0.000	51.043	109.006	139.286	147.937
115	0.000	46.717	98.625	125.444	133.230
120	0.000	44.987	89.974	118.523	124.579
125	0.000	41.526	81.322	105.546	113.332
130	0.000	38.066	73.536	96.895	102.950
135	0.000	34.605	65.750	84.783	92.569
140	0.000	33.740	62.289	80.457	86.513
145	0.000	34.605	57.964	76.997	81.322
150	0.000	28.549	47.582	60.559	65.750
155	0.000	28.549	43.256	54.503	57.099
160	0.000	23.359	35.470	44.122	46.717
165	0.000	20.763	32.010	35.470	37.201
170	0.000	0.000	24.224	30.280	31.145
175	0.000	0.000	11.247	21.628	21.628
180	0.000	0.000	0.000	0.000	0.000

IES INDOOR REPORT
PHOTOMETRIC FILENAME : LLM-4-P9-8TW-X-SQ-XX-XX-POE 4000K_.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	389.05	N.A.	11.00
0-30	799.95	N.A.	22.70
0-40	1267.54	N.A.	35.90
0-60	2166.41	N.A.	61.40
0-80	2825.36	N.A.	80.10
0-90	3026.79	N.A.	85.80
10-90	2924.29	N.A.	82.90
20-40	878.49	N.A.	24.90
20-50	1346.31	N.A.	38.20
40-70	1270.85	N.A.	36.00
60-80	658.94	N.A.	18.70
70-80	286.97	N.A.	8.10
80-90	201.43	N.A.	5.70
90-110	248.56	N.A.	7.00
90-120	333.25	N.A.	9.40
90-130	397.60	N.A.	11.30
90-150	475.22	N.A.	13.50
90-180	501.43	N.A.	14.20
110-180	252.87	N.A.	7.20
0-180	3528.22	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	102.50
10-20	286.56
20-30	410.90
30-40	467.59
40-50	467.83
50-60	431.04
60-70	371.97
70-80	286.97
80-90	201.43
90-100	139.01
100-110	109.55
110-120	84.69
120-130	64.35
130-140	45.71
140-150	31.92
150-160	17.64
160-170	7.43
170-180	1.15

IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-P9-8TW-X-SQ-XX-XX-POE 4000K_.IES

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	47
4	78	66	57	50	75	64	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	39	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	39	33	29	27
8	57	44	35	29	55	42	35	29	40	33	28	38	31	27	35	30	26	24
9	54	40	32	27	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

IES INDOOR REPORT
PHOTOMETRIC FILENAME : LLM-4-P9-8TW-X-SQ-XX-XX-POE 4000K_.IES

UGR TABLE - CORRECTED

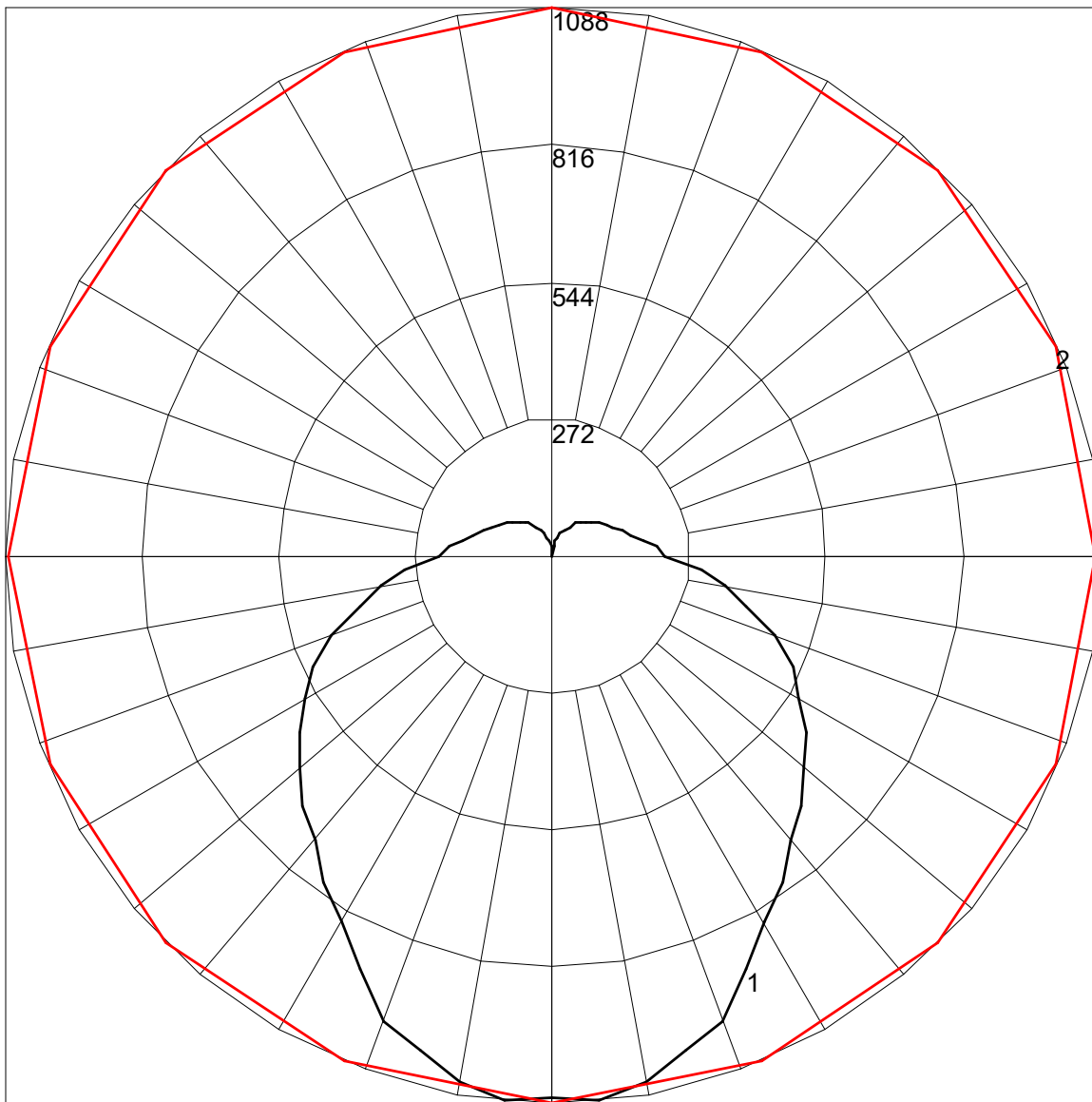
Reflectances

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	16.2	16.8	19.2	20.6	19.8	21.2	21.8
	3H	15.4	16.6	15.9	17.2	17.9	21.9	23.2	22.5	23.8	24.5
	4H	15.7	16.9	16.3	17.5	18.2	23.2	24.4	23.8	25.0	25.7
	6H	15.9	17.0	16.5	17.6	18.3	24.5	25.6	25.1	26.2	26.9
	8H	15.9	17.0	16.5	17.6	18.3	25.2	26.3	25.8	26.9	27.6
	12H	15.9	16.9	16.5	17.6	18.3	25.9	26.9	26.5	27.6	28.3
4H	2H	15.6	16.8	16.2	17.4	18.1	19.4	20.6	20.0	21.2	21.9
	3H	17.0	18.0	17.6	18.7	19.4	22.4	23.4	23.0	24.0	24.7
	4H	17.4	18.4	18.1	19.0	19.8	23.8	24.7	24.4	25.4	26.1
	6H	17.7	18.6	18.4	19.2	20.0	25.3	26.1	25.9	26.8	27.5
	8H	17.8	18.6	18.5	19.3	20.0	26.1	26.9	26.7	27.5	28.3
	12H	17.9	18.6	18.5	19.3	20.0	26.9	27.6	27.6	28.3	29.1
8H	4H	18.5	19.3	19.2	20.0	20.8	23.9	24.7	24.5	25.3	26.1
	6H	19.1	19.7	19.8	20.5	21.2	25.5	26.2	26.2	26.9	27.7
	8H	19.3	19.9	20.0	20.6	21.4	26.4	27.0	27.1	27.8	28.5
	12H	19.4	19.9	20.1	20.6	21.5	27.5	28.0	28.2	28.7	29.5
12H	4H	18.9	19.6	19.6	20.3	21.1	23.9	24.6	24.5	25.3	26.0
	6H	19.6	20.2	20.3	20.9	21.7	25.6	26.2	26.3	26.8	27.7
	8H	19.9	20.4	20.6	21.1	21.9	26.5	27.0	27.2	27.7	28.6

Maximum UGR = 29.5

POLAR GRAPH



Maximum Candela = 1088.333 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.)