



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-L15-8TW-X-SQ-XX-XX-DIM-UNV 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] 9-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-L15-8TW-S-SQ-xx-xx-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3012
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	117
Total Luminaire Watts	25.8
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	14127	10890	11205
55	11024	9044	10031
65	8497	7751	9031
75	5872	6393	7470
85	3289	5492	6325

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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	918.815	918.815	918.815	918.815	918.815
5	922.508	923.985	926.940	926.940	929.155
10	896.657	900.350	904.782	907.736	907.736
15	850.864	858.989	864.897	867.852	869.329
20	816.150	827.968	836.092	842.001	842.739
25	734.904	749.676	761.494	769.618	772.573
30	659.567	679.509	695.759	710.531	717.178
35	593.094	618.206	644.057	669.169	679.509
40	502.985	535.483	574.629	612.297	628.546
45	424.693	464.578	519.234	575.367	598.264
50	347.879	395.888	461.623	531.051	558.380
55	279.190	333.107	413.614	494.122	525.143
60	220.102	277.713	365.606	452.022	483.781
65	168.400	230.442	328.676	418.785	449.067
70	121.130	186.127	286.576	372.253	399.581
75	80.507	144.765	241.521	317.597	340.493
80	48.747	115.221	208.284	278.451	297.655
85	23.635	87.154	175.786	237.828	253.339
90	3.693	57.611	132.948	180.956	192.035
95	0.000	54.656	127.039	169.139	178.002
100	0.000	50.963	113.744	148.458	155.844
105	0.000	48.009	102.665	132.209	138.118
110	0.000	43.577	93.063	118.914	126.300
115	0.000	39.884	84.200	107.097	113.744
120	0.000	38.407	76.814	101.188	106.358
125	0.000	35.453	69.428	90.109	96.756
130	0.000	32.498	62.781	82.723	87.893
135	0.000	29.544	56.133	72.383	79.030
140	0.000	28.805	53.179	68.690	73.860
145	0.000	29.544	49.486	65.735	69.428
150	0.000	24.374	40.623	51.702	56.133
155	0.000	24.374	36.930	46.532	48.747
160	0.000	19.942	30.282	37.668	39.884
165	0.000	17.726	27.328	30.282	31.760
170	0.000	0.000	20.681	25.851	26.590
175	0.000	0.000	9.602	18.465	18.465
180	0.000	0.000	0.000	0.000	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : LLM-2-L15-8TW-X-SQ-XX-XX-DIM-UNV 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	332.15	N.A.	11.00
0-30	682.95	N.A.	22.70
0-40	1082.15	N.A.	35.90
0-60	1849.56	N.A.	61.40
0-80	2412.12	N.A.	80.10
0-90	2584.09	N.A.	85.80
10-90	2496.59	N.A.	82.90
20-40	750.00	N.A.	24.90
20-50	1149.4	N.A.	38.20
40-70	1084.98	N.A.	36.00
60-80	562.57	N.A.	18.70
70-80	245.00	N.A.	8.10
80-90	171.97	N.A.	5.70
90-110	212.21	N.A.	7.00
90-120	284.51	N.A.	9.40
90-130	339.45	N.A.	11.30
90-150	405.72	N.A.	13.50
90-180	428.09	N.A.	14.20
110-180	215.88	N.A.	7.20
0-180	3012.19	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	87.51
10-20	244.64
20-30	350.80
30-40	399.20
40-50	399.41
50-60	368.00
60-70	317.57
70-80	245.00
80-90	171.97
90-100	118.68
100-110	93.53
110-120	72.30
120-130	54.94
130-140	39.02
140-150	27.25
150-160	15.06
160-170	6.34
170-180	0.98

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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	168	168	168	168	162	162	162	162	150	150	150	139	139	139	129	129	129	125
1	151	143	135	129	144	137	131	125	127	122	117	118	114	110	109	106	103	99
2	136	123	113	104	130	119	109	101	110	102	95	102	96	90	95	90	85	81
3	124	108	96	86	118	104	93	84	97	87	79	90	82	75	84	77	72	67
4	113	95	82	72	108	92	80	71	86	76	68	80	71	64	75	67	61	58
5	104	85	72	62	100	82	70	61	77	66	58	72	63	56	67	60	53	50
6	96	77	64	54	92	74	62	53	70	59	51	65	56	49	61	53	47	44
7	89	70	57	48	86	67	56	47	63	53	45	59	50	44	56	48	42	39
8	83	64	51	43	80	62	50	42	58	48	41	55	46	39	51	44	38	35
9	78	58	46	38	75	57	45	38	53	44	37	50	42	35	48	40	34	31
10	73	54	42	35	70	52	42	34	50	40	33	47	38	32	44	37	31	28

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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	14.6	16.0	15.2	16.5	17.2	19.4	20.8	20.0	21.4	22.0
	3H	15.7	17.0	16.3	17.6	18.2	22.1	23.4	22.7	24.0	24.7
	4H	16.1	17.2	16.6	17.8	18.5	23.4	24.5	23.9	25.1	25.8
	6H	16.2	17.4	16.8	18.0	18.7	24.6	25.7	25.2	26.3	27.0
	8H	16.3	17.3	16.9	18.0	18.7	25.2	26.3	25.9	26.9	27.6
	12H	16.3	17.3	16.9	17.9	18.7	25.9	26.9	26.5	27.5	28.3

UGR Viewed Endwise

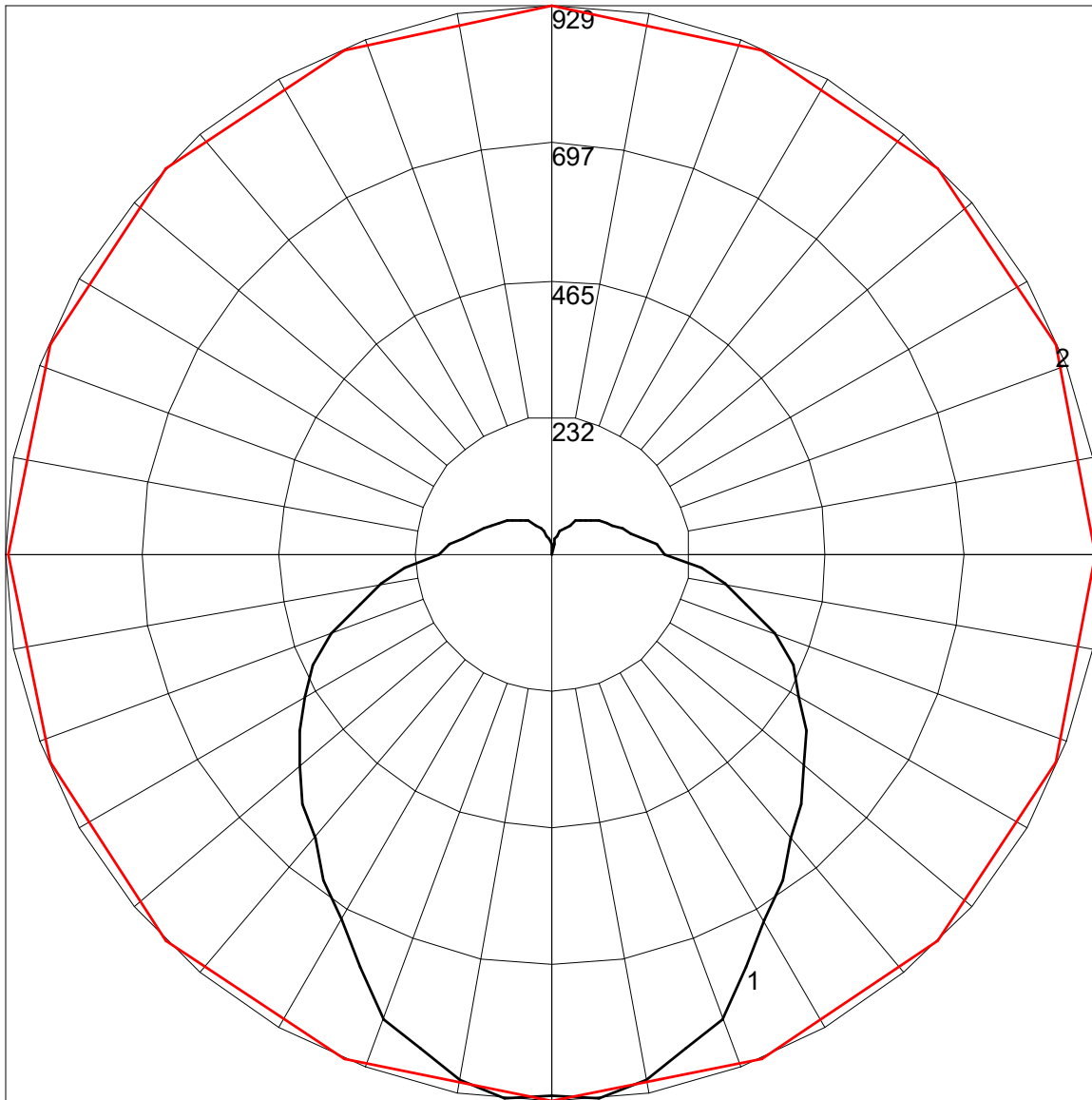
4H	2H	15.9	17.1	16.5	17.7	18.4	19.7	20.9	20.3	21.5	22.2
	3H	17.3	18.4	18.0	19.0	19.7	22.6	23.6	23.2	24.2	24.9
	4H	17.8	18.7	18.4	19.4	20.1	24.0	24.9	24.6	25.5	26.3
	6H	18.1	18.9	18.7	19.6	20.3	25.4	26.2	26.0	26.9	27.6
	8H	18.2	19.0	18.8	19.6	20.4	26.1	26.9	26.8	27.6	28.3
	12H	18.2	18.9	18.9	19.6	20.4	26.9	27.6	27.6	28.3	29.1

8H	4H	18.9	19.6	19.5	20.3	21.1	24.1	24.8	24.7	25.5	26.3
	6H	19.4	20.1	20.1	20.8	21.5	25.7	26.3	26.3	27.0	27.8
	8H	19.6	20.2	20.3	20.9	21.7	26.5	27.1	27.2	27.8	28.6
	12H	19.7	20.2	20.4	20.9	21.8	27.5	28.0	28.2	28.7	29.5

12H	4H	19.2	19.9	19.9	20.6	21.4	24.0	24.8	24.7	25.4	26.2
	6H	19.9	20.5	20.6	21.2	22.0	25.7	26.3	26.4	27.0	27.8
	8H	20.2	20.7	20.9	21.4	22.2	26.6	27.1	27.3	27.8	28.7

Maximum UGR = 29.5

POLAR GRAPH



Maximum Candela = 929.155 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.)