



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-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

[ISSUEDATE] 9-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-L15-8TW-S-SQ-xx-xx-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5896
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	124
Total Luminaire Watts	47.4
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	14942	11235	11335
55	11862	9368	10148
65	9390	8067	9137
75	6830	6691	7557
85	4475	5792	6398

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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	1798.584	1798.584	1798.584	1798.584	1798.584
5	1805.813	1808.705	1814.488	1814.488	1818.825
10	1755.210	1762.439	1771.114	1776.897	1776.897
15	1665.570	1681.474	1693.040	1698.823	1701.715
20	1597.617	1620.750	1636.654	1648.220	1649.666
25	1438.578	1467.494	1490.627	1506.531	1512.314
30	1291.106	1330.142	1361.950	1390.866	1403.879
35	1160.983	1210.140	1260.744	1309.901	1330.142
40	984.595	1048.210	1124.838	1198.574	1230.382
45	831.339	909.413	1016.402	1126.284	1171.104
50	680.975	774.953	903.629	1039.535	1093.030
55	546.515	652.059	809.652	967.245	1027.969
60	430.850	543.623	715.674	884.834	947.004
65	329.644	451.092	643.384	819.773	879.051
70	237.112	364.343	560.973	728.687	782.182
75	157.593	283.378	472.779	621.697	666.517
80	95.423	225.546	407.718	545.069	582.660
85	46.266	170.605	344.102	465.550	495.912
90	7.229	112.773	260.245	354.223	375.910
95	0.000	106.990	248.679	331.090	348.439
100	0.000	99.761	222.654	290.607	305.065
105	0.000	93.977	200.967	258.799	270.366
110	0.000	85.303	182.172	232.775	247.233
115	0.000	78.074	164.822	209.642	222.654
120	0.000	75.182	150.364	198.076	208.196
125	0.000	69.399	135.906	176.388	189.401
130	0.000	63.616	122.894	161.930	172.051
135	0.000	57.832	109.881	141.689	154.701
140	0.000	56.386	104.098	134.460	144.581
145	0.000	57.832	96.869	128.677	135.906
150	0.000	47.712	79.519	101.206	109.881
155	0.000	47.712	72.290	91.086	95.423
160	0.000	39.037	59.278	73.736	78.074
165	0.000	34.699	53.495	59.278	62.170
170	0.000	0.000	40.483	50.603	52.049
175	0.000	0.000	18.795	36.145	36.145
180	0.000	0.000	0.000	0.000	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : LLM-4-L15-8TW-X-SQ-XX-XX-DIM-UNV 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	650.19	N.A.	11.00
0-30	1336.88	N.A.	22.70
0-40	2118.31	N.A.	35.90
0-60	3620.51	N.A.	61.40
0-80	4721.74	N.A.	80.10
0-90	5058.37	N.A.	85.80
10-90	4887.08	N.A.	82.90
20-40	1468.13	N.A.	24.90
20-50	2249.96	N.A.	38.20
40-70	2123.84	N.A.	36.00
60-80	1101.23	N.A.	18.70
70-80	479.58	N.A.	8.10
80-90	336.63	N.A.	5.70
90-110	415.40	N.A.	7.00
90-120	556.93	N.A.	9.40
90-130	664.47	N.A.	11.30
90-150	794.19	N.A.	13.50
90-180	838.00	N.A.	14.20
110-180	422.59	N.A.	7.20
0-180	5896.37	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	171.30
10-20	478.89
20-30	686.69
30-40	781.44
40-50	781.84
50-60	720.36
60-70	621.64
70-80	479.58
80-90	336.63
90-100	232.32
100-110	183.08
110-120	141.53
120-130	107.54
130-140	76.39
140-150	53.34
150-160	29.47
160-170	12.41
170-180	1.92

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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	170	170	170	170	164	164	164	164	152	152	152	141	141	141	131	131	131	126
1	152	144	137	131	146	139	132	127	129	124	119	119	115	111	111	108	104	100
2	138	125	114	105	132	120	110	102	112	104	97	104	97	91	96	91	86	82
3	126	109	97	87	120	105	94	85	98	88	80	91	83	76	85	78	73	68
4	115	97	83	73	110	93	81	72	87	77	68	81	72	65	76	68	62	58
5	106	86	73	63	101	83	71	62	78	67	59	73	64	57	68	60	54	50
6	98	78	65	55	93	75	63	54	70	60	52	66	57	50	62	54	48	44
7	90	71	58	49	87	68	56	48	64	54	46	60	51	44	57	49	42	39
8	84	64	52	43	81	62	51	43	59	48	41	55	46	40	52	44	38	35
9	79	59	47	39	76	57	46	38	54	44	37	51	42	36	48	40	35	32
10	74	55	43	35	71	53	42	35	50	40	34	47	39	33	45	37	31	29

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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

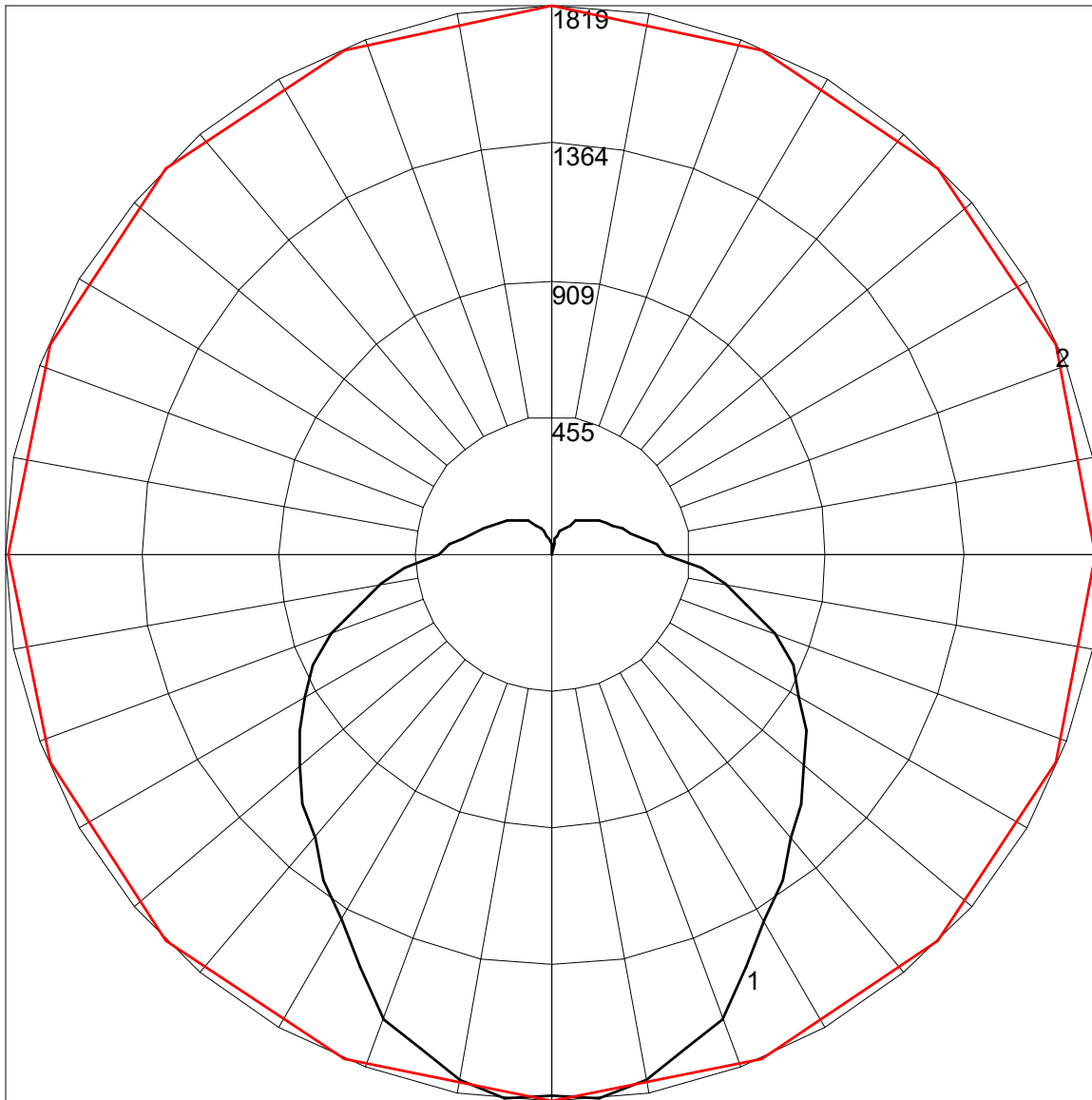
X=2H	Y=2H	14.6	16.0	15.2	16.6	17.2	19.6	21.0	20.2	21.6	22.2
	3H	15.8	17.0	16.3	17.6	18.3	22.3	23.6	22.9	24.2	24.9
	4H	16.1	17.3	16.7	17.9	18.6	23.6	24.8	24.2	25.4	26.1
	6H	16.3	17.4	16.9	18.0	18.7	24.9	26.0	25.5	26.6	27.3
	8H	16.3	17.4	16.9	18.0	18.7	25.6	26.7	26.2	27.3	28.0
	12H	16.3	17.3	16.9	18.0	18.7	26.3	27.3	26.9	28.0	28.7

UGR Viewed Endwise

4H	2H	16.0	17.2	16.6	17.8	18.5	19.8	21.0	20.4	21.6	22.3
	3H	17.4	18.4	18.0	19.1	19.8	22.8	23.8	23.4	24.4	25.1
	4H	17.8	18.8	18.5	19.4	20.2	24.2	25.1	24.8	25.8	26.5
	6H	18.1	19.0	18.8	19.7	20.4	25.7	26.5	26.3	27.2	27.9
	8H	18.2	19.0	18.9	19.7	20.4	26.5	27.3	27.1	27.9	28.7
	12H	18.3	19.0	18.9	19.7	20.4	27.3	28.0	28.0	28.7	29.5
8H	4H	18.9	19.7	19.6	20.4	21.2	24.3	25.1	24.9	25.7	26.5
	6H	19.5	20.1	20.2	20.9	21.6	25.9	26.6	26.6	27.3	28.1
	8H	19.7	20.3	20.4	21.0	21.8	26.8	27.4	27.5	28.2	28.9
	12H	19.8	20.3	20.5	21.0	21.9	27.9	28.4	28.6	29.1	29.9
12H	4H	19.3	20.0	20.0	20.7	21.5	24.3	25.0	24.9	25.7	26.4
	6H	20.0	20.6	20.7	21.3	22.1	26.0	26.6	26.7	27.2	28.1
	8H	20.3	20.8	21.0	21.5	22.3	26.9	27.4	27.6	28.1	29.0

Maximum UGR = 29.9

POLAR GRAPH



Maximum Candela = 1818.825 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.)