



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L15-8TW-X-RD-XX-XX-DIM-UNV 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 17323.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 9-AUG-2021

[MANUFAC] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] 4' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS

[LUMCAT]LLM-4-L15-8TW-x-RD-xx-xx-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5778
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	122
Total Luminaire Watts	47.4
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.32
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.87 ft
Luminous Width (90-270)	0.21 ft
Luminous Height	0.17 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	14479	12458	13083
55	11865	10512	11389
65	9614	9086	10076
75	7170	7703	8493
85	4995	7151	7832

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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	1679.457	1679.457	1679.457	1679.457	1679.457
5	1689.189	1687.799	1690.579	1693.360	1694.750
10	1639.139	1641.920	1655.822	1666.945	1669.725
15	1561.283	1572.406	1597.431	1621.065	1630.797
20	1488.989	1511.233	1557.113	1600.211	1615.504
25	1349.961	1380.547	1445.890	1504.282	1526.526
30	1213.714	1256.812	1345.790	1427.817	1459.793
35	1098.320	1156.712	1270.715	1372.205	1412.524
40	938.438	1005.172	1148.370	1270.715	1313.814
45	799.410	884.217	1053.832	1195.640	1248.471
50	663.163	753.531	939.829	1092.759	1144.200
55	540.819	640.919	836.948	996.830	1049.661
60	429.596	533.867	736.848	895.340	946.780
65	332.277	446.280	656.212	816.094	867.534
70	240.518	361.473	568.624	722.945	767.434
75	161.272	283.617	482.427	620.064	657.602
80	101.490	228.006	421.255	553.331	588.088
85	48.660	180.736	365.643	487.988	519.964
90	6.951	133.467	289.178	387.888	415.693
95	0.000	102.881	255.811	355.911	378.156
100	0.000	84.807	216.884	297.520	319.764
105	0.000	69.514	179.346	250.250	272.495
110	0.000	57.001	151.540	216.884	230.786
115	0.000	48.660	129.296	182.127	201.590
120	0.000	45.879	112.613	159.882	175.175
125	0.000	43.099	95.929	136.247	150.150
130	0.000	38.928	82.026	119.564	130.686
135	0.000	33.367	69.514	100.100	107.051
140	0.000	31.976	65.343	90.368	100.100
145	0.000	33.367	61.172	82.026	90.368
150	0.000	29.196	50.050	65.343	70.904
155	0.000	29.196	44.489	57.001	59.782
160	0.000	29.196	38.928	48.660	50.050
165	0.000	13.903	34.757	41.708	43.099
170	0.000	0.000	31.976	33.367	34.757
175	0.000	0.000	0.000	29.196	29.196
180	0.000	0.000	0.000	0.000	0.000

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

Zone	Lumens	%Lamp	%Fixt
0-20	612.62	N.A.	10.60
0-30	1279.32	N.A.	22.10
0-40	2063.65	N.A.	35.70
0-60	3595.38	N.A.	62.20
0-80	4699.78	N.A.	81.30
0-90	5054.69	N.A.	87.50
10-90	4894.71	N.A.	84.70
20-40	1451.03	N.A.	25.10
20-50	2250.55	N.A.	38.90
40-70	2154.23	N.A.	37.30
60-80	1104.4	N.A.	19.10
70-80	481.90	N.A.	8.30
80-90	354.91	N.A.	6.10
90-110	414.90	N.A.	7.20
90-120	530.99	N.A.	9.20
90-130	610.36	N.A.	10.60
90-150	695.61	N.A.	12.00
90-180	723.69	N.A.	12.50
110-180	308.79	N.A.	5.30
0-180	5778.38	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	159.98
10-20	452.64
20-30	666.70
30-40	784.34
40-50	799.51
50-60	732.22
60-70	622.50
70-80	481.90
80-90	354.91
90-100	244.76
100-110	170.14
110-120	116.09
120-130	79.38
130-140	51.29
140-150	33.96
150-160	18.71
160-170	8.11
170-180	1.26

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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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	91	91	91	87
1	104	98	93	89	100	95	90	86	88	84	81	82	79	76	76	74	72	69
2	94	85	77	71	90	82	75	69	76	71	66	71	66	62	66	62	59	56
3	85	74	66	59	82	72	64	57	67	60	55	62	57	52	58	54	50	47
4	78	66	56	49	75	63	55	48	59	52	46	55	49	44	52	47	43	40
5	72	58	49	42	69	57	48	42	53	46	40	50	43	38	47	41	37	34
6	66	53	43	37	63	51	42	36	48	40	35	45	39	34	42	37	32	30
7	61	48	39	33	59	46	38	32	44	36	31	41	35	30	39	33	29	27
8	57	43	35	29	55	42	34	29	40	33	28	38	31	27	36	30	26	24
9	53	40	32	26	51	39	31	26	37	30	25	35	29	24	33	27	23	21
10	50	37	29	24	48	36	28	23	34	27	23	32	26	22	31	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

X=2H	Y=2H	16.3	17.8	16.9	18.3	18.9	21.4	22.8	22.0	23.4	24.0
	3H	17.5	18.8	18.1	19.4	20.0	24.0	25.4	24.6	25.9	26.5
	4H	17.9	19.1	18.4	19.7	20.3	25.3	26.5	25.8	27.1	27.7
	6H	18.1	19.3	18.7	19.8	20.5	26.6	27.8	27.2	28.4	29.0
	8H	18.1	19.3	18.7	19.9	20.5	27.3	28.4	27.9	29.0	29.7
	12H	18.2	19.2	18.8	19.8	20.5	28.1	29.2	28.7	29.8	30.5

UGR Viewed Endwise

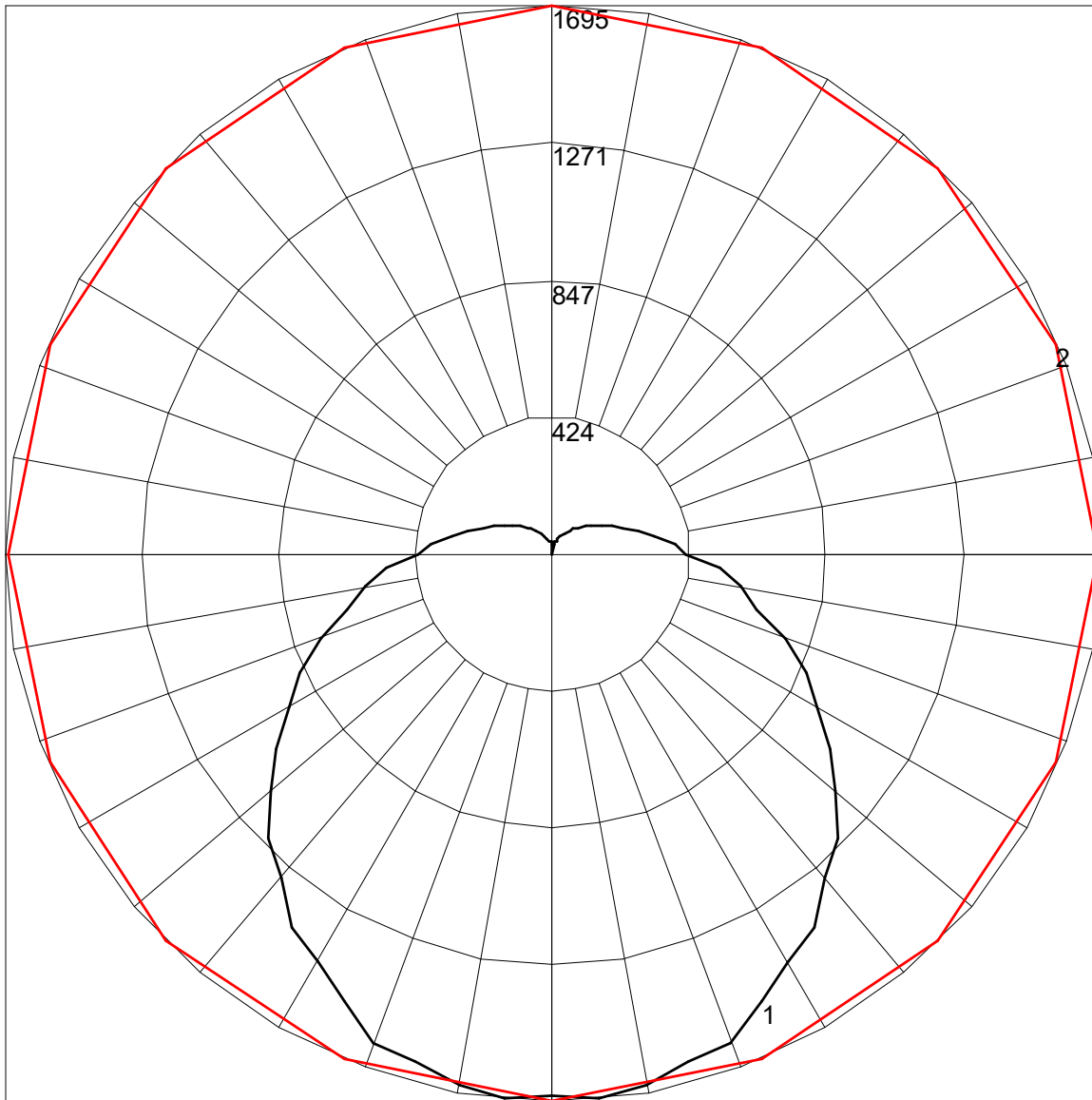
4H	2H	17.8	19.0	18.4	19.6	20.3	21.7	22.9	22.2	23.5	24.1
	3H	19.2	20.3	19.8	20.9	21.6	24.5	25.6	25.1	26.2	26.8
	4H	19.7	20.7	20.3	21.3	22.0	25.9	26.9	26.5	27.5	28.2
	6H	20.0	20.9	20.7	21.6	22.3	27.4	28.3	28.1	29.0	29.7
	8H	20.1	21.0	20.8	21.6	22.3	28.3	29.1	28.9	29.7	30.5
	12H	20.2	20.9	20.8	21.6	22.3	29.2	29.9	29.8	30.6	31.3

8H	4H	20.9	21.7	21.5	22.3	23.0	26.0	26.8	26.7	27.5	28.2
	6H	21.4	22.1	22.1	22.8	23.5	27.7	28.4	28.4	29.1	29.8
	8H	21.6	22.3	22.3	22.9	23.7	28.7	29.3	29.4	30.0	30.7
	12H	21.7	22.3	22.4	23.0	23.8	29.8	30.3	30.4	31.0	31.8

12H	4H	21.2	21.9	21.9	22.6	23.3	26.0	26.8	26.7	27.4	28.2
	6H	21.9	22.6	22.6	23.2	24.0	27.8	28.4	28.4	29.0	29.8
	8H	22.2	22.8	22.9	23.5	24.3	28.7	29.3	29.4	30.0	30.8

Maximum UGR = 31.8

POLAR GRAPH



Maximum Candela = 1694.75 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.)