



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-8-L10-8TW-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] 2' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS

[LUMCAT] LLM-8-L10-8TW-x-RD-xx-xx-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7860
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	123
Total Luminaire Watts	63.9
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)	7.75 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	10042	8543	8886
55	8300	7225	7735
65	6819	6261	6843
75	5233	5326	5769
85	4065	4967	5319

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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	2284.329	2284.329	2284.329	2284.329	2284.329
5	2297.566	2295.675	2299.457	2303.239	2305.130
10	2229.490	2233.272	2252.182	2267.310	2271.092
15	2123.594	2138.722	2172.760	2204.907	2218.144
20	2025.262	2055.518	2117.921	2176.542	2197.343
25	1836.162	1877.764	1966.641	2046.063	2076.319
30	1650.844	1709.465	1830.489	1942.058	1985.551
35	1493.891	1573.313	1728.375	1866.418	1921.257
40	1276.426	1367.194	1561.967	1728.375	1786.996
45	1087.326	1202.677	1433.379	1626.261	1698.119
50	902.007	1024.923	1278.317	1486.327	1556.294
55	735.599	871.751	1138.383	1355.848	1427.706
60	584.319	726.144	1002.231	1217.805	1287.772
65	451.949	607.011	892.552	1110.018	1179.985
70	327.143	491.660	773.419	983.321	1043.833
75	219.356	385.764	656.177	843.386	894.443
80	138.043	310.124	572.973	752.618	799.893
85	66.185	245.830	497.333	663.741	707.234
90	9.455	181.536	393.328	527.589	565.409
95	0.000	139.934	347.944	484.096	514.352
100	0.000	115.351	294.996	404.674	434.930
105	0.000	94.550	243.939	340.380	370.636
110	0.000	77.531	206.119	294.996	313.906
115	0.000	66.185	175.863	247.721	274.195
120	0.000	62.403	153.171	217.465	238.266
125	0.000	58.621	130.479	185.318	204.228
130	0.000	52.948	111.569	162.626	177.754
135	0.000	45.384	94.550	136.152	145.607
140	0.000	43.493	88.877	122.915	136.152
145	0.000	45.384	83.204	111.569	122.915
150	0.000	39.711	68.076	88.877	96.441
155	0.000	39.711	60.512	77.531	81.313
160	0.000	39.711	52.948	66.185	68.076
165	0.000	18.910	47.275	56.730	58.621
170	0.000	0.000	43.493	45.384	47.275
175	0.000	0.000	0.000	39.711	39.711
180	0.000	0.000	0.000	0.000	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : LLM-8-L10-8TW-X-RD-XX-XX-DIM-UNV 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	833.26	N.A.	10.60
0-30	1740.08	N.A.	22.10
0-40	2806.9	N.A.	35.70
0-60	4890.29	N.A.	62.20
0-80	6392.45	N.A.	81.30
0-90	6875.18	N.A.	87.50
10-90	6657.59	N.A.	84.70
20-40	1973.64	N.A.	25.10
20-50	3061.1	N.A.	38.90
40-70	2930.09	N.A.	37.30
60-80	1502.16	N.A.	19.10
70-80	655.46	N.A.	8.30
80-90	482.73	N.A.	6.10
90-110	564.33	N.A.	7.20
90-120	722.23	N.A.	9.20
90-130	830.19	N.A.	10.60
90-150	946.14	N.A.	12.00
90-180	984.33	N.A.	12.50
110-180	420.01	N.A.	5.30
0-180	7859.52	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	217.60
10-20	615.66
20-30	906.82
30-40	1066.82
40-50	1087.46
50-60	995.93
60-70	846.70
70-80	655.46
80-90	482.73
90-100	332.91
100-110	231.41
110-120	157.90
120-130	107.96
130-140	69.76
140-150	46.19
150-160	25.44
160-170	11.04
170-180	1.72

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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	119	119	119	119	115	115	115	115	107	107	107	100	100	100	93	93	93	90
1	107	101	96	91	102	97	93	88	91	87	83	84	81	78	79	76	74	71
2	96	87	80	73	92	84	77	71	78	73	68	73	68	64	68	64	61	58
3	88	76	67	60	84	74	65	59	69	62	56	64	58	54	60	55	51	48
4	80	67	58	51	77	65	56	50	61	53	48	57	51	46	53	48	44	41
5	74	60	51	44	71	58	49	43	54	47	41	51	45	39	48	42	38	35
6	68	54	45	38	65	52	44	37	49	42	36	46	40	35	43	38	33	31
7	63	49	40	33	60	47	39	33	45	37	32	42	36	31	40	34	30	27
8	59	45	36	30	56	43	35	29	41	34	28	39	32	27	37	31	27	24
9	55	41	32	27	53	40	32	26	38	31	26	36	29	25	34	28	24	22
10	51	38	30	24	49	37	29	24	35	28	23	33	27	22	31	26	22	20

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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

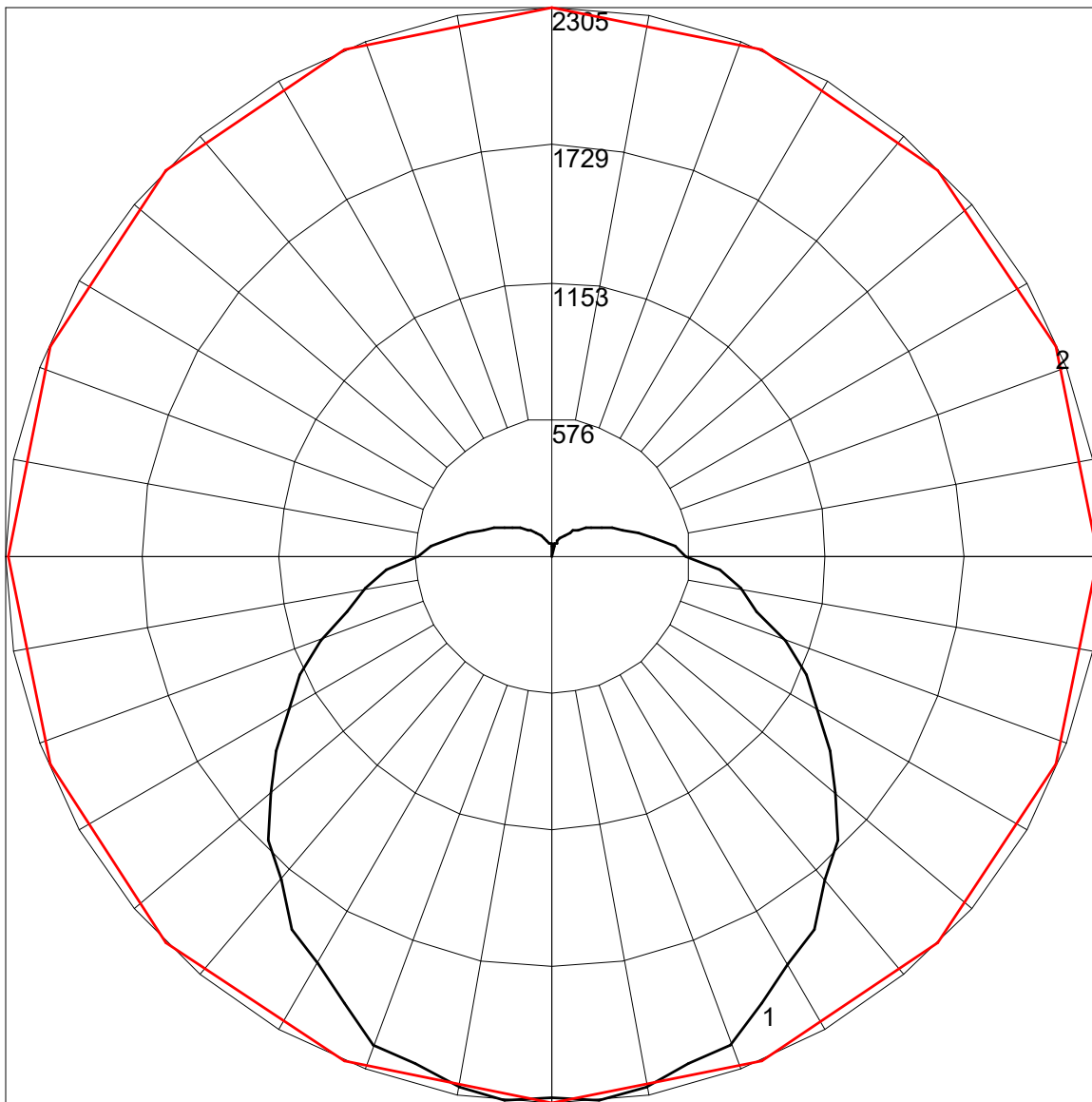
X=2H	Y=2H	14.9	16.4	15.5	16.9	17.5	20.1	21.5	20.6	22.1	22.7
	3H	16.1	17.4	16.7	18.0	18.6	22.7	24.0	23.3	24.6	25.2
	4H	16.5	17.7	17.0	18.3	18.9	24.0	25.2	24.6	25.8	26.5
	6H	16.7	17.9	17.3	18.4	19.1	25.4	26.5	26.0	27.1	27.8
	8H	16.7	17.9	17.3	18.5	19.1	26.1	27.2	26.7	27.8	28.5
	12H	16.8	17.8	17.4	18.4	19.1	27.0	28.0	27.6	28.6	29.3

UGR Viewed Endwise

4H	2H	16.4	17.7	17.0	18.2	18.9	20.3	21.6	20.9	22.1	22.8
	3H	17.9	18.9	18.4	19.5	20.2	23.2	24.3	23.8	24.9	25.5
	4H	18.3	19.3	18.9	19.9	20.6	24.6	25.6	25.2	26.2	26.9
	6H	18.7	19.5	19.3	20.2	20.9	26.2	27.1	26.8	27.7	28.4
	8H	18.7	19.6	19.4	20.2	20.9	27.0	27.9	27.7	28.5	29.2
	12H	18.8	19.5	19.5	20.2	20.9	28.0	28.7	28.7	29.4	30.1
8H	4H	19.5	20.3	20.1	20.9	21.7	24.7	25.6	25.4	26.2	26.9
	6H	20.0	20.7	20.7	21.4	22.2	26.5	27.2	27.1	27.8	28.6
	8H	20.2	20.9	20.9	21.6	22.3	27.4	28.1	28.1	28.8	29.5
	12H	20.4	20.9	21.0	21.6	22.4	28.6	29.1	29.2	29.8	30.6
12H	4H	19.8	20.6	20.5	21.2	22.0	24.7	25.5	25.4	26.1	26.9
	6H	20.6	21.2	21.3	21.9	22.6	26.5	27.1	27.2	27.8	28.6
	8H	20.9	21.4	21.5	22.1	22.9	27.5	28.1	28.2	28.8	29.6

Maximum UGR = 30.6

POLAR GRAPH



Maximum Candela = 2305.13 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.)