



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-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

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

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3930
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	123
Total Luminaire Watts	32
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	9848	8473	8899
55	8070	7150	7746
65	6539	6180	6853
75	4877	5239	5777
85	3397	4864	5327

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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	1142.310	1142.310	1142.310	1142.310	1142.310
5	1148.929	1147.984	1149.875	1151.766	1152.712
10	1114.887	1116.778	1126.234	1133.799	1135.690
15	1061.932	1069.497	1086.518	1102.594	1109.213
20	1012.760	1027.890	1059.095	1088.409	1098.811
25	918.198	939.001	983.446	1023.162	1038.292
30	825.527	854.841	915.361	971.152	992.902
35	747.040	786.756	864.297	933.328	960.751
40	638.294	683.684	781.083	864.297	893.612
45	543.732	601.415	716.781	813.234	849.167
50	451.061	512.526	639.240	743.258	778.246
55	367.846	435.931	569.264	678.010	713.944
60	292.197	363.118	501.179	608.980	643.968
65	226.003	303.544	446.333	555.079	590.067
70	163.592	245.861	386.759	491.723	521.983
75	109.692	192.907	328.130	421.747	447.279
80	69.030	155.082	286.523	376.357	399.998
85	33.097	122.931	248.698	331.913	353.662
90	4.728	90.780	196.689	263.828	282.741
95	0.000	69.976	173.994	242.079	257.209
100	0.000	57.683	147.517	202.363	217.493
105	0.000	47.281	121.985	170.212	185.342
110	0.000	38.770	103.073	147.517	156.973
115	0.000	33.097	87.943	123.876	137.115
120	0.000	31.205	76.595	108.746	119.148
125	0.000	29.314	65.248	92.671	102.127
130	0.000	26.477	55.792	81.323	88.888
135	0.000	22.695	47.281	68.085	72.813
140	0.000	21.749	44.444	61.465	68.085
145	0.000	22.695	41.607	55.792	61.465
150	0.000	19.858	34.042	44.444	48.227
155	0.000	19.858	30.260	38.770	40.662
160	0.000	19.858	26.477	33.097	34.042
165	0.000	9.456	23.641	28.369	29.314
170	0.000	0.000	21.749	22.695	23.641
175	0.000	0.000	0.000	19.858	19.858
180	0.000	0.000	0.000	0.000	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : LLM-4-L10-8TW-X-RD-XX-XX-DIM-UNV 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	416.68	N.A.	10.60
0-30	870.15	N.A.	22.10
0-40	1403.63	N.A.	35.70
0-60	2445.46	N.A.	62.20
0-80	3196.63	N.A.	81.30
0-90	3438.03	N.A.	87.50
10-90	3329.22	N.A.	84.70
20-40	986.94	N.A.	25.10
20-50	1530.74	N.A.	38.90
40-70	1465.23	N.A.	37.30
60-80	751.18	N.A.	19.10
70-80	327.77	N.A.	8.30
80-90	241.40	N.A.	6.10
90-110	282.20	N.A.	7.20
90-120	361.16	N.A.	9.20
90-130	415.15	N.A.	10.60
90-150	473.13	N.A.	12.00
90-180	492.23	N.A.	12.50
110-180	210.03	N.A.	5.30
0-180	3930.26	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	108.81
10-20	307.87
20-30	453.47
30-40	533.48
40-50	543.80
50-60	498.03
60-70	423.40
70-80	327.77
80-90	241.40
90-100	166.48
100-110	115.72
110-120	78.96
120-130	53.99
130-140	34.88
140-150	23.10
150-160	12.72
160-170	5.52
170-180	0.86

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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	15.0	16.5	15.6	17.0	17.6	20.1	21.5	20.7	22.1	22.7
	3H	16.2	17.5	16.8	18.1	18.7	22.7	24.1	23.3	24.6	25.2
	4H	16.6	17.8	17.1	18.4	19.0	24.0	25.2	24.6	25.8	26.4
	6H	16.8	18.0	17.4	18.5	19.2	25.3	26.5	25.9	27.1	27.7
	8H	16.8	18.0	17.4	18.6	19.2	26.0	27.1	26.6	27.7	28.4
	12H	16.9	17.9	17.5	18.5	19.2	26.8	27.9	27.4	28.5	29.2

UGR Viewed Endwise

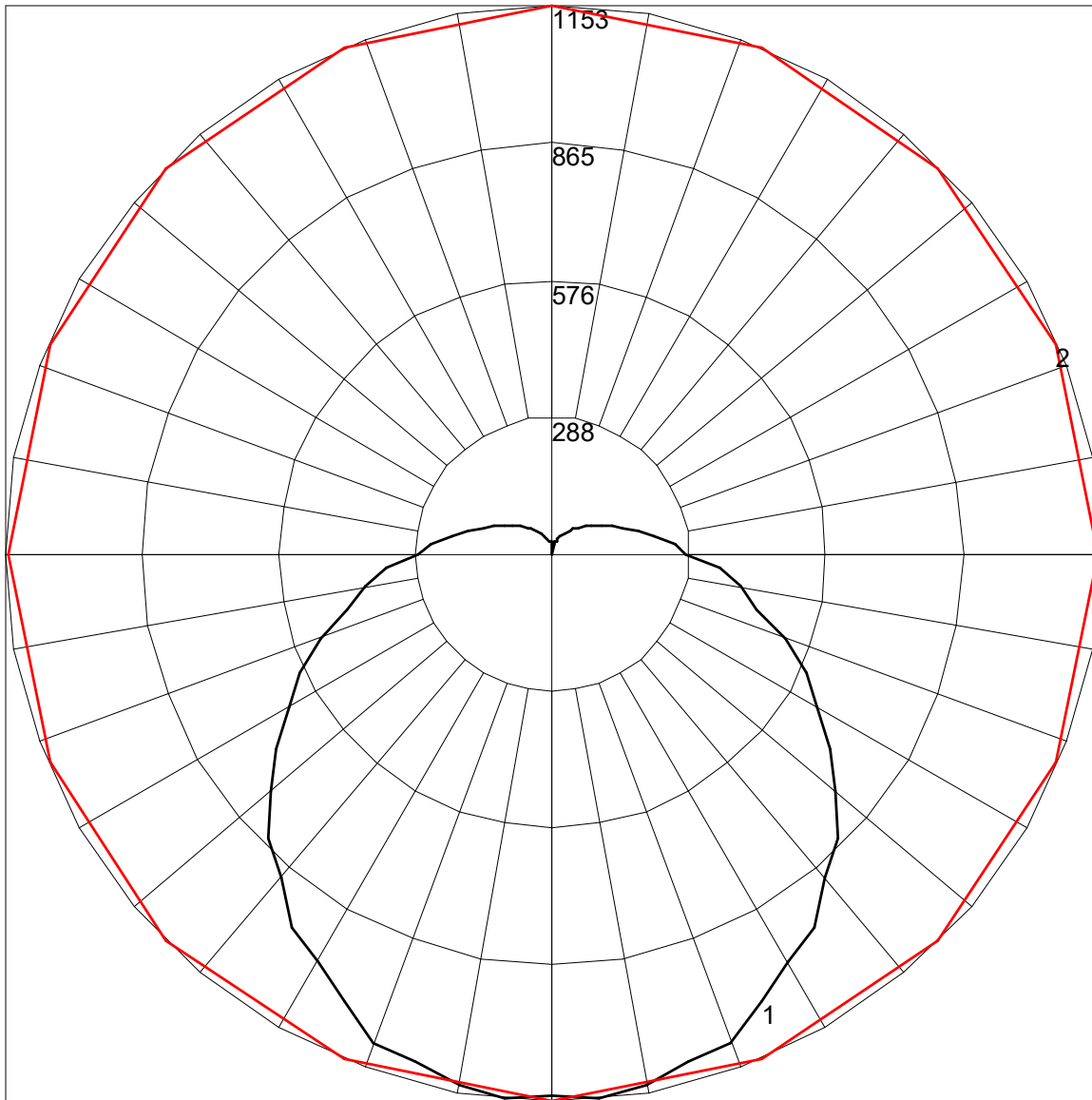
4H	2H	16.5	17.7	17.1	18.3	19.0	20.4	21.6	20.9	22.2	22.8
	3H	17.9	19.0	18.5	19.6	20.3	23.2	24.3	23.8	24.9	25.5
	4H	18.4	19.4	19.0	20.0	20.7	24.6	25.6	25.2	26.2	26.9
	6H	18.7	19.6	19.4	20.3	21.0	26.1	27.0	26.8	27.7	28.4
	8H	18.8	19.7	19.5	20.3	21.0	27.0	27.8	27.6	28.4	29.2
	12H	18.9	19.6	19.5	20.3	21.0	27.9	28.6	28.5	29.3	30.0

8H	4H	19.6	20.4	20.2	21.0	21.7	24.7	25.6	25.4	26.2	26.9
	6H	20.1	20.8	20.8	21.5	22.2	26.4	27.1	27.1	27.8	28.5
	8H	20.3	21.0	21.0	21.6	22.4	27.4	28.0	28.1	28.7	29.4
	12H	20.4	21.0	21.1	21.7	22.5	28.5	29.0	29.1	29.7	30.5

12H	4H	19.9	20.7	20.6	21.3	22.0	24.7	25.5	25.4	26.1	26.9
	6H	20.6	21.3	21.3	21.9	22.7	26.5	27.1	27.1	27.7	28.5
	8H	20.9	21.5	21.6	22.2	23.0	27.4	28.0	28.1	28.7	29.5

Maximum UGR = 30.5

POLAR GRAPH



Maximum Candela = 1152.712 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.)