



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-L10-8TW-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-L10-8TW-S-SQ-xx-xx-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2075
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	122
Total Luminaire Watts	17
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	9733	7502	7719
55	7595	6230	6910
65	5854	5340	6222
75	4045	4404	5146
85	2266	3783	4357

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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	632.982	632.982	632.982	632.982	632.982
5	635.526	636.544	638.579	638.579	640.105
10	617.717	620.261	623.314	625.349	625.349
15	586.170	591.767	595.837	597.873	598.890
20	562.255	570.396	575.993	580.064	580.573
25	506.284	516.460	524.601	530.199	532.234
30	454.383	468.122	479.316	489.492	494.072
35	408.589	425.889	443.698	460.998	468.122
40	346.512	368.900	395.868	421.818	433.012
45	292.576	320.053	357.706	396.377	412.151
50	239.658	272.732	318.017	365.847	384.674
55	192.337	229.481	284.944	340.406	361.777
60	151.631	191.319	251.870	311.403	333.282
65	116.013	158.754	226.428	288.505	309.367
70	83.448	128.225	197.425	256.449	275.276
75	55.462	99.730	166.387	218.796	234.570
80	33.583	79.377	143.489	191.828	205.058
85	16.282	60.042	121.101	163.843	174.528
90	2.544	39.689	91.589	124.663	132.295
95	0.000	37.653	87.518	116.522	122.628
100	0.000	35.109	78.359	102.274	107.363
105	0.000	33.074	70.727	91.080	95.151
110	0.000	30.021	64.112	81.921	87.010
115	0.000	27.477	58.006	73.780	78.359
120	0.000	26.459	52.918	69.709	73.271
125	0.000	24.424	47.830	62.077	66.656
130	0.000	22.388	43.250	56.989	60.551
135	0.000	20.353	38.671	49.865	54.445
140	0.000	19.844	36.636	47.321	50.883
145	0.000	20.353	34.091	45.286	47.830
150	0.000	16.791	27.986	35.618	38.671
155	0.000	16.791	25.441	32.056	33.583
160	0.000	13.738	20.862	25.950	27.477
165	0.000	12.212	18.827	20.862	21.880
170	0.000	0.000	14.247	17.809	18.318
175	0.000	0.000	6.615	12.721	12.721
180	0.000	0.000	0.000	0.000	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : LLM-2-L10-8TW-X-SQ-XX-XX-DIM-UNV 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	228.82	N.A.	11.00
0-30	470.49	N.A.	22.70
0-40	745.51	N.A.	35.90
0-60	1274.18	N.A.	61.40
0-80	1661.74	N.A.	80.10
0-90	1780.21	N.A.	85.80
10-90	1719.93	N.A.	82.90
20-40	516.68	N.A.	24.90
20-50	791.84	N.A.	38.20
40-70	747.45	N.A.	36.00
60-80	387.56	N.A.	18.70
70-80	168.78	N.A.	8.10
80-90	118.47	N.A.	5.70
90-110	146.19	N.A.	7.00
90-120	196.00	N.A.	9.40
90-130	233.85	N.A.	11.30
90-150	279.50	N.A.	13.50
90-180	294.92	N.A.	14.20
110-180	148.72	N.A.	7.20
0-180	2075.13	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	60.28
10-20	168.54
20-30	241.67
30-40	275.01
40-50	275.15
50-60	253.52
60-70	218.78
70-80	168.78
80-90	118.47
90-100	81.76
100-110	64.43
110-120	49.81
120-130	37.85
130-140	26.88
140-150	18.77
150-160	10.37
160-170	4.37
170-180	0.68

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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	106	106	106	99	99	99	92	92	92	88
1	107	101	96	92	102	97	93	89	90	87	83	84	81	78	78	75	73	70
2	97	87	80	74	92	84	77	72	78	73	68	73	68	64	67	64	60	57
3	88	77	68	61	84	74	66	59	69	62	56	64	58	54	59	55	51	48
4	80	68	58	51	77	65	57	50	61	54	48	57	51	46	53	48	44	41
5	74	61	51	44	71	58	50	43	55	47	41	51	45	40	48	42	38	35
6	68	54	45	39	65	53	44	38	49	42	36	46	40	35	43	38	33	31
7	63	49	40	34	61	48	39	33	45	38	32	42	36	31	40	34	30	27
8	59	45	36	30	57	44	36	30	41	34	29	39	32	28	37	31	27	25
9	55	41	33	27	53	40	32	27	38	31	26	36	30	25	34	28	24	22
10	52	38	30	25	50	37	30	24	35	28	24	33	27	23	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

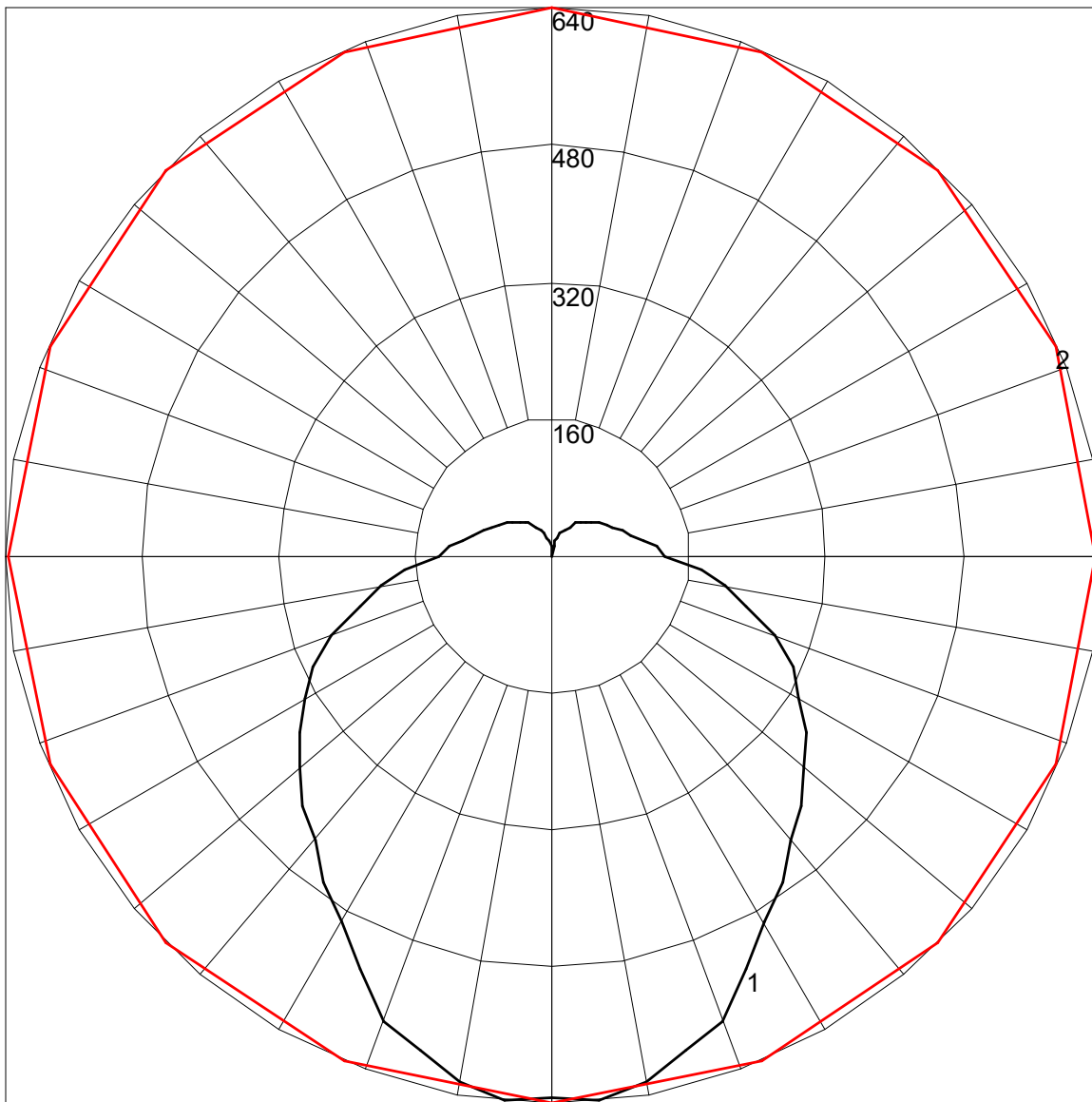
X=2H	Y=2H	14.5	15.9	15.1	16.4	17.1	19.3	20.7	19.9	21.3	21.9
	3H	15.6	16.9	16.2	17.5	18.1	22.0	23.3	22.6	23.9	24.6
	4H	16.0	17.1	16.6	17.7	18.4	23.3	24.4	23.8	25.0	25.7
	6H	16.1	17.3	16.7	17.9	18.6	24.5	25.6	25.1	26.2	26.9
	8H	16.2	17.2	16.8	17.9	18.6	25.1	26.2	25.8	26.8	27.5
	12H	16.2	17.2	16.8	17.8	18.6	25.8	26.8	26.4	27.4	28.2

UGR Viewed Endwise

4H	2H	15.8	17.0	16.4	17.6	18.3	19.6	20.8	20.2	21.4	22.1
	3H	17.2	18.3	17.9	18.9	19.6	22.5	23.5	23.1	24.1	24.8
	4H	17.7	18.6	18.3	19.3	20.0	23.9	24.8	24.5	25.4	26.2
	6H	18.0	18.8	18.6	19.5	20.2	25.3	26.1	25.9	26.8	27.5
	8H	18.1	18.9	18.7	19.5	20.3	26.0	26.8	26.7	27.5	28.2
	12H	18.1	18.8	18.8	19.5	20.3	26.8	27.5	27.5	28.2	29.0
8H	4H	18.8	19.5	19.4	20.2	21.0	24.0	24.7	24.6	25.4	26.2
	6H	19.3	20.0	20.0	20.7	21.4	25.6	26.2	26.2	26.9	27.7
	8H	19.5	20.1	20.2	20.8	21.6	26.4	27.0	27.1	27.7	28.5
	12H	19.6	20.1	20.3	20.8	21.7	27.4	27.9	28.1	28.6	29.4
12H	4H	19.1	19.8	19.8	20.5	21.3	23.9	24.7	24.6	25.3	26.1
	6H	19.8	20.4	20.5	21.1	21.9	25.6	26.2	26.3	26.9	27.7
	8H	20.1	20.6	20.8	21.3	22.1	26.5	27.0	27.2	27.7	28.6

Maximum UGR = 29.4

POLAR GRAPH



Maximum Candela = 640.105 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.)