



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L6-835-X-RD-XX-XX-DIM-UNV_.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] 26-JUL-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-L6-835-x-RD-xx-xx-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2317
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	156
Total Luminaire Watts	14.9
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)	3.88 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	5799	4989	5240
55	4752	4210	4561
65	3851	3639	4035
75	2872	3085	3402
85	2001	2864	3136

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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	673.469	673.469	673.469	673.469	673.469
5	677.371	676.814	677.929	679.044	679.601
10	657.301	658.416	663.991	668.451	669.566
15	626.081	630.541	640.576	650.053	653.956
20	597.090	606.010	624.408	641.691	647.823
25	541.340	553.605	579.808	603.223	612.143
30	486.704	503.987	539.667	572.560	585.383
35	440.431	463.846	509.562	550.260	566.427
40	376.317	403.078	460.501	509.562	526.844
45	320.567	354.575	422.590	479.456	500.641
50	265.931	302.169	376.875	438.201	458.828
55	216.870	257.011	335.619	399.733	420.918
60	172.270	214.083	295.479	359.035	379.662
65	133.244	178.960	263.143	327.257	347.885
70	96.449	144.952	228.020	289.904	307.744
75	64.671	113.731	193.455	248.648	263.701
80	40.698	91.431	168.925	221.888	235.826
85	19.513	72.476	146.624	195.685	208.508
90	2.788	53.521	115.962	155.545	166.695
95	0.000	41.256	102.581	142.722	151.642
100	0.000	34.008	86.971	119.307	128.227
105	0.000	27.875	71.918	100.351	109.271
110	0.000	22.858	60.768	86.971	92.546
115	0.000	19.513	51.848	73.033	80.839
120	0.000	18.398	45.158	64.113	70.246
125	0.000	17.283	38.468	54.636	60.211
130	0.000	15.610	32.893	47.946	52.406
135	0.000	13.380	27.875	40.141	42.928
140	0.000	12.823	26.203	36.238	40.141
145	0.000	13.380	24.530	32.893	36.238
150	0.000	11.708	20.070	26.203	28.433
155	0.000	11.708	17.840	22.858	23.973
160	0.000	11.708	15.610	19.513	20.070
165	0.000	5.575	13.938	16.725	17.283
170	0.000	0.000	12.823	13.380	13.938
175	0.000	0.000	0.000	11.708	11.708
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	245.66	N.A.	10.60
0-30	513.01	N.A.	22.10
0-40	827.53	N.A.	35.70
0-60	1441.76	N.A.	62.20
0-80	1884.63	N.A.	81.30
0-90	2026.95	N.A.	87.50
10-90	1962.8	N.A.	84.70
20-40	581.87	N.A.	25.10
20-50	902.48	N.A.	38.90
40-70	863.85	N.A.	37.30
60-80	442.87	N.A.	19.10
70-80	193.24	N.A.	8.30
80-90	142.32	N.A.	6.10
90-110	166.38	N.A.	7.20
90-120	212.93	N.A.	9.20
90-130	244.76	N.A.	10.60
90-150	278.94	N.A.	12.00
90-180	290.20	N.A.	12.50
110-180	123.83	N.A.	5.30
0-180	2317.15	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	64.15
10-20	181.51
20-30	267.35
30-40	314.52
40-50	320.61
50-60	293.62
60-70	249.62
70-80	193.24
80-90	142.32
90-100	98.15
100-110	68.23
110-120	46.55
120-130	31.83
130-140	20.57
140-150	13.62
150-160	7.50
160-170	3.25
170-180	0.51

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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	118	118	118	118	113	113	113	113	106	106	106	98	98	98	92	92	92	89
1	105	100	94	90	101	96	91	87	89	86	82	83	80	77	77	75	73	70
2	95	86	78	72	91	83	76	70	77	72	67	72	67	63	67	63	60	57
3	86	75	66	59	83	73	65	58	68	61	55	63	58	53	59	54	50	48
4	79	66	57	50	76	64	56	49	60	53	47	56	50	45	53	47	43	40
5	73	59	50	43	70	57	49	42	54	46	41	50	44	39	47	42	37	35
6	67	53	44	37	64	52	43	37	49	41	35	46	39	34	43	37	33	30
7	62	48	39	33	60	47	38	32	44	37	31	42	35	30	39	33	29	27
8	58	44	35	29	56	43	35	29	40	33	28	38	32	27	36	30	26	24
9	54	40	32	26	52	39	31	26	37	30	25	35	29	24	33	28	24	22
10	51	37	29	24	49	36	29	24	34	28	23	33	26	22	31	25	21	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	13.1	14.6	13.7	15.1	15.7	18.2	19.6	18.7	20.2	20.8
	3H	14.3	15.6	14.9	16.2	16.8	20.8	22.2	21.4	22.7	23.3
	4H	14.7	15.9	15.2	16.5	17.1	22.1	23.3	22.6	23.9	24.5
	6H	14.9	16.1	15.5	16.6	17.3	23.4	24.6	24.0	25.2	25.8
	8H	14.9	16.1	15.5	16.7	17.3	24.1	25.2	24.7	25.8	26.5
	12H	15.0	16.0	15.6	16.6	17.3	24.9	26.0	25.5	26.6	27.3

UGR Viewed Endwise

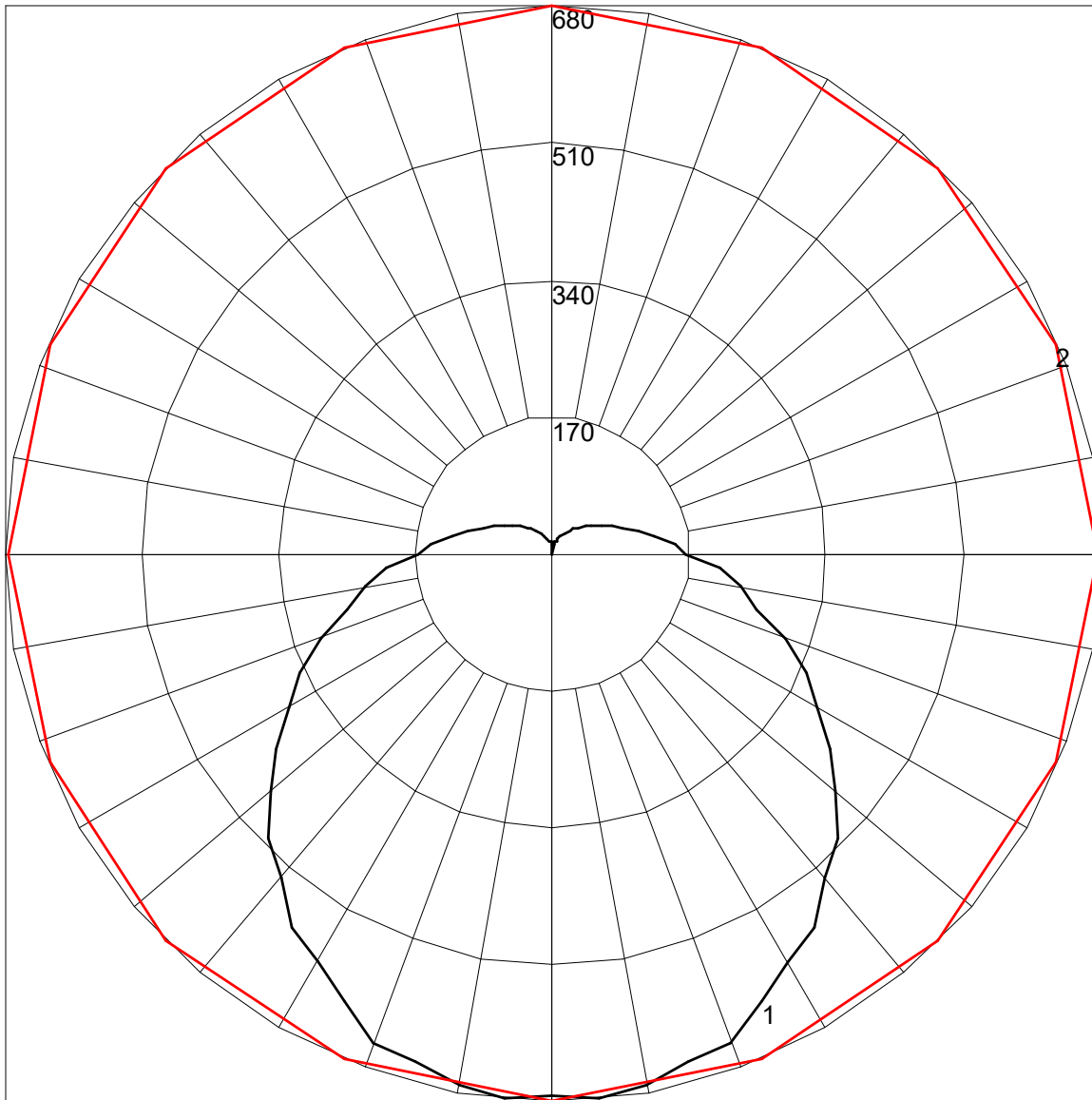
4H	2H	14.6	15.8	15.2	16.4	17.1	18.4	19.7	19.0	20.3	20.9
	3H	16.0	17.1	16.6	17.7	18.4	21.3	22.4	21.9	23.0	23.6
	4H	16.5	17.5	17.1	18.1	18.8	22.7	23.7	23.3	24.3	25.0
	6H	16.8	17.7	17.5	18.3	19.1	24.2	25.1	24.9	25.8	26.5
	8H	16.9	17.8	17.6	18.4	19.1	25.1	25.9	25.7	26.5	27.2
	12H	17.0	17.7	17.6	18.4	19.1	26.0	26.7	26.6	27.4	28.1

8H	4H	17.7	18.5	18.3	19.1	19.8	22.8	23.6	23.5	24.3	25.0
	6H	18.2	18.9	18.9	19.6	20.3	24.5	25.2	25.2	25.9	26.6
	8H	18.4	19.0	19.1	19.7	20.5	25.5	26.1	26.2	26.8	27.5
	12H	18.5	19.1	19.2	19.8	20.6	26.6	27.1	27.2	27.8	28.6

12H	4H	18.0	18.7	18.6	19.4	20.1	22.8	23.6	23.5	24.2	25.0
	6H	18.7	19.4	19.4	20.0	20.8	24.6	25.2	25.2	25.8	26.6
	8H	19.0	19.6	19.7	20.3	21.1	25.5	26.1	26.2	26.8	27.6

Maximum UGR = 28.6

POLAR GRAPH



Maximum Candela = 679.601 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.)