



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L10-835-X-SQ-(L8)-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 17322.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 02-09-2024

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 4' LINEAR ARCHITECTURAL LED LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC SQUARE LENS

[MORE] 0-10V DIMMING DRIVER

[LUMCAT] LLMS-4-L10-835-x-SQ-(L8)-DIM-UNV

[LAMP] LED

[LAMPCAT] HLM 80 CRI 3500K CCT

[_SEARCH_SOURCETYPE]LED

[_SEARCH_APPLICATION]INDOOR,ARCHITECTURAL,DIRECT,LINEAR

[_SEARCH_MOUNTING]CEILING,SURFACE,WALL

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3115
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	150
Total Luminaire Watts	20.7
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)	3.88 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	7885	5928	5981
55	6260	4943	5354
65	4955	4257	4821
75	3605	3531	3987
85	2362	3056	3376

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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	950.235	950.235	950.235	950.235	950.235
5	954.055	955.582	958.638	958.638	960.929
10	927.320	931.139	935.722	938.778	938.778
15	879.961	888.363	894.474	897.529	899.057
20	844.060	856.281	864.684	870.794	871.558
25	760.036	775.313	787.534	795.937	798.992
30	682.122	702.746	719.551	734.828	741.703
35	613.375	639.346	666.081	692.052	702.746
40	520.185	553.795	594.279	633.236	650.040
45	439.217	480.465	536.990	595.043	618.722
50	359.776	409.426	477.409	549.212	577.474
55	288.737	344.499	427.759	511.019	543.101
60	227.629	287.209	378.108	467.479	500.325
65	174.159	238.323	339.915	433.106	464.424
70	125.272	192.491	296.376	384.983	413.245
75	83.260	149.716	249.781	328.458	352.137
80	50.414	119.161	215.407	287.973	307.833
85	24.443	90.135	181.797	245.961	262.002
90	3.819	59.581	137.494	187.144	198.602
95	0.000	56.525	131.383	174.923	184.089
100	0.000	52.706	117.634	153.535	161.173
105	0.000	49.651	106.176	136.730	142.841
110	0.000	45.067	96.246	122.981	130.619
115	0.000	41.248	87.079	110.759	117.634
120	0.000	39.720	79.441	104.648	109.995
125	0.000	36.665	71.802	93.190	100.065
130	0.000	33.610	64.928	85.552	90.899
135	0.000	30.554	58.053	74.858	81.732
140	0.000	29.790	54.998	71.038	76.385
145	0.000	30.554	51.178	67.983	71.802
150	0.000	25.207	42.012	53.470	58.053
155	0.000	25.207	38.193	48.123	50.414
160	0.000	20.624	31.318	38.957	41.248
165	0.000	18.333	28.263	31.318	32.846
170	0.000	0.000	21.388	26.735	27.499
175	0.000	0.000	9.930	19.096	19.096
180	0.000	0.000	0.000	0.000	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : LLM-4-L10-835-X-SQ-(L8)-DIM-UNV_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	343.51	N.A.	11.00
0-30	706.30	N.A.	22.70
0-40	1119.16	N.A.	35.90
0-60	1912.81	N.A.	61.40
0-80	2494.61	N.A.	80.10
0-90	2672.46	N.A.	85.80
10-90	2581.96	N.A.	82.90
20-40	775.65	N.A.	24.90
20-50	1188.71	N.A.	38.20
40-70	1122.08	N.A.	36.00
60-80	581.80	N.A.	18.70
70-80	253.38	N.A.	8.10
80-90	177.85	N.A.	5.70
90-110	219.47	N.A.	7.00
90-120	294.24	N.A.	9.40
90-130	351.05	N.A.	11.30
90-150	419.59	N.A.	13.50
90-180	442.73	N.A.	14.20
110-180	223.27	N.A.	7.20
0-180	3115.19	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	90.50
10-20	253.01
20-30	362.79
30-40	412.85
40-50	413.06
50-60	380.59
60-70	328.43
70-80	253.38
80-90	177.85
90-100	122.74
100-110	96.73
110-120	74.77
120-130	56.81
130-140	40.36
140-150	28.18
150-160	15.57
160-170	6.56
170-180	1.01

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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	111	111	111	111	103	103	103	96	96	96	89	89	89	86
1	104	98	93	89	99	95	90	86	88	84	81	81	78	76	75	73	71	68
2	94	85	78	71	90	82	75	69	76	70	66	70	66	62	65	62	59	56
3	85	74	66	59	82	72	64	58	67	60	55	62	57	52	58	53	49	46
4	78	66	57	50	75	63	55	49	59	52	47	55	49	44	51	46	42	40
5	72	59	50	43	69	57	48	42	53	46	40	50	43	38	46	41	37	34
6	66	53	44	37	63	51	43	37	48	41	35	45	39	34	42	37	32	30
7	62	48	39	33	59	46	38	32	44	36	31	41	35	30	38	33	29	27
8	57	44	35	29	55	42	34	29	40	33	28	38	31	27	35	30	26	24
9	54	40	32	26	51	39	31	26	37	30	25	35	29	24	33	27	23	22
10	50	37	29	24	48	36	29	24	34	27	23	32	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	13.7	15.1	14.3	15.7	16.3	18.7	20.1	19.3	20.7	21.3
	3H	14.9	16.1	15.4	16.7	17.4	21.4	22.7	22.0	23.3	24.0
	4H	15.2	16.4	15.8	17.0	17.7	22.7	23.9	23.3	24.5	25.2
	6H	15.4	16.5	16.0	17.1	17.8	24.0	25.1	24.6	25.7	26.4
	8H	15.4	16.5	16.0	17.1	17.8	24.7	25.8	25.3	26.4	27.1
	12H	15.4	16.4	16.0	17.1	17.8	25.4	26.4	26.0	27.1	27.8

UGR Viewed Endwise

4H	2H	15.1	16.3	15.7	16.9	17.6	18.9	20.1	19.5	20.7	21.4
	3H	16.5	17.5	17.1	18.2	18.9	21.9	22.9	22.5	23.5	24.2
	4H	16.9	17.9	17.6	18.5	19.3	23.3	24.2	23.9	24.9	25.6
	6H	17.2	18.1	17.9	18.7	19.5	24.8	25.6	25.4	26.3	27.0
	8H	17.3	18.1	18.0	18.8	19.5	25.6	26.4	26.2	27.0	27.8
	12H	17.4	18.1	18.0	18.8	19.5	26.4	27.1	27.1	27.8	28.6

8H	4H	18.0	18.8	18.7	19.5	20.3	23.4	24.2	24.0	24.8	25.6
	6H	18.6	19.2	19.3	20.0	20.7	25.0	25.7	25.7	26.4	27.2
	8H	18.8	19.4	19.5	20.1	20.8	25.9	26.5	26.6	27.3	28.0
	12H	18.9	19.4	19.6	20.1	21.0	27.0	27.5	27.7	28.2	29.0

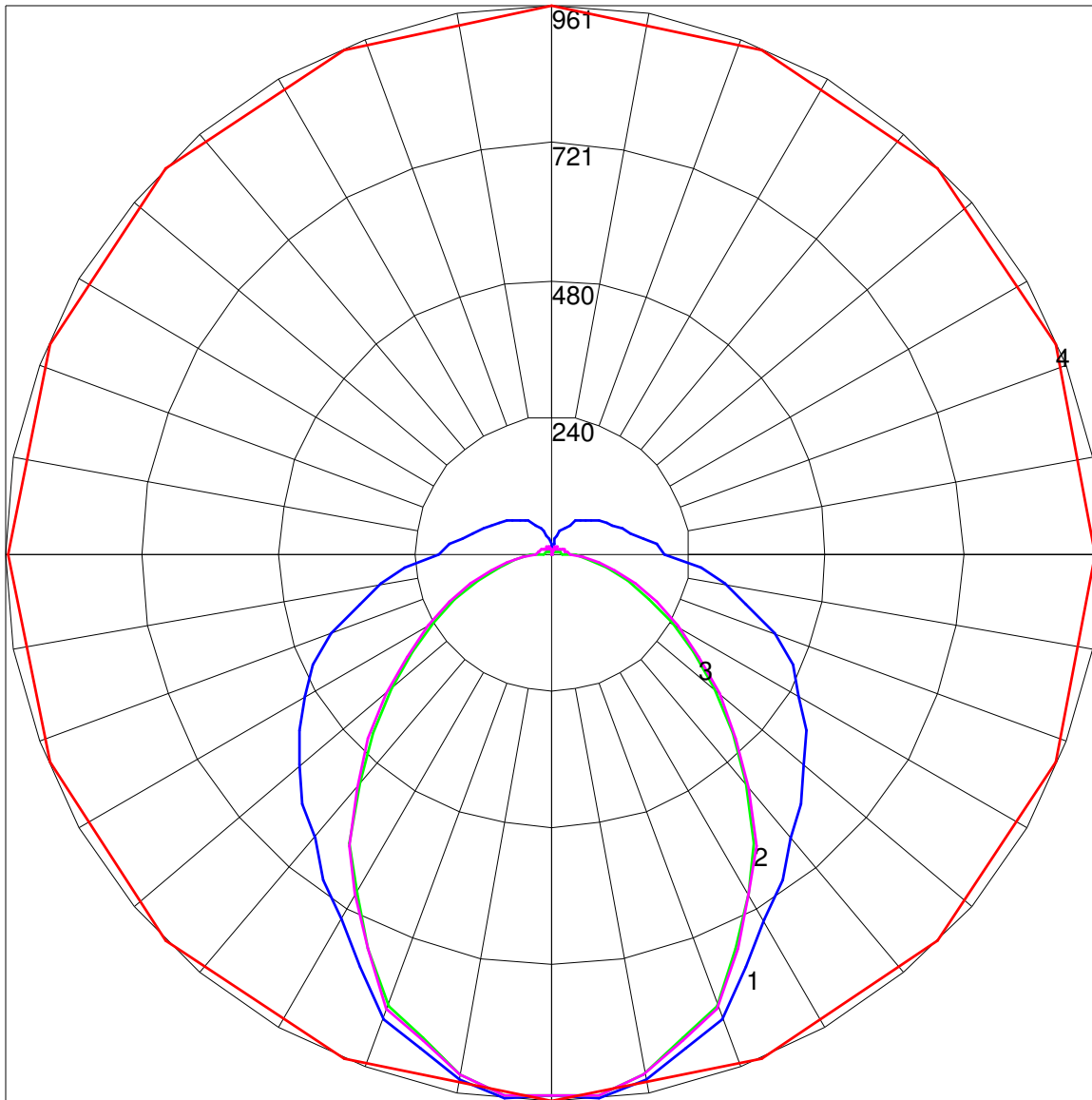
12H	4H	18.4	19.1	19.0	19.8	20.6	23.4	24.1	24.0	24.8	25.5
	6H	19.1	19.7	19.8	20.3	21.2	25.1	25.7	25.8	26.3	27.2
	8H	19.4	19.9	20.1	20.6	21.4	26.0	26.5	26.7	27.2	28.1

Maximum UGR = 29.0

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POLAR GRAPH



Maximum Candela = 960.929 Located At Horizontal Angle = 90, Vertical Angle = 5

1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)

2 - Vertical Plane Through Horizontal Angles (5 - 185)

3 - Vertical Plane Through Horizontal Angles (10 - 190)

4 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)