



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-L15-827-X-RD-XX-XX-DRV-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

[ISSUEDATE] 05-30-2023

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

[LUMINAIRE] 2' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS

[LUMCAT]LLM-2-L15-927-x-RD-xx-xx-DRV-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2408
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	116
Total Luminaire Watts	20.8
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)	2.03 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	11088	9729	10395
55	8956	8178	9049
65	7094	7036	8005
75	5060	5931	6748
85	3054	5461	6222

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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>
<b>0</b>	699.919	699.919	699.919	699.919	699.919
<b>5</b>	703.975	703.396	704.554	705.713	706.293
<b>10</b>	683.116	684.275	690.069	694.705	695.863
<b>15</b>	650.670	655.305	665.734	675.584	679.640
<b>20</b>	620.541	629.811	648.932	666.893	673.267
<b>25</b>	562.601	575.347	602.579	626.914	636.185
<b>30</b>	505.819	523.781	560.862	595.047	608.373
<b>35</b>	457.729	482.064	529.575	571.871	588.674
<b>40</b>	391.097	418.909	478.587	529.575	547.536
<b>45</b>	333.157	368.500	439.188	498.287	520.304
<b>50</b>	276.375	314.037	391.677	455.411	476.849
<b>55</b>	225.388	267.105	348.801	415.432	437.449
<b>60</b>	179.036	222.491	307.084	373.136	394.574
<b>65</b>	138.477	185.988	273.478	340.110	361.548
<b>70</b>	100.237	150.645	236.976	301.290	319.831
<b>75</b>	67.211	118.198	201.053	258.414	274.058
<b>80</b>	42.296	95.022	175.559	230.603	245.088
<b>85</b>	20.279	75.322	152.383	203.371	216.697
<b>90</b>	2.897	55.623	120.516	161.654	173.242
<b>95</b>	0.000	42.876	106.610	148.327	157.598
<b>100</b>	0.000	35.344	90.387	123.992	133.263
<b>105</b>	0.000	28.970	74.743	104.293	113.563
<b>110</b>	0.000	23.756	63.155	90.387	96.181
<b>115</b>	0.000	20.279	53.885	75.902	84.013
<b>120</b>	0.000	19.120	46.932	66.631	73.005
<b>125</b>	0.000	17.962	39.979	56.782	62.576
<b>130</b>	0.000	16.223	34.185	49.829	54.464
<b>135</b>	0.000	13.906	28.970	41.717	44.614
<b>140</b>	0.000	13.326	27.232	37.661	41.717
<b>145</b>	0.000	13.906	25.494	34.185	37.661
<b>150</b>	0.000	12.167	20.859	27.232	29.550
<b>155</b>	0.000	12.167	18.541	23.756	24.914
<b>160</b>	0.000	12.167	16.223	20.279	20.859
<b>165</b>	0.000	5.794	14.485	17.382	17.962
<b>170</b>	0.000	0.000	13.326	13.906	14.485
<b>175</b>	0.000	0.000	0.000	12.167	12.167
<b>180</b>	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	255.31	N.A.	10.60
0-30	533.16	N.A.	22.10
0-40	860.03	N.A.	35.70
0-60	1498.39	N.A.	62.20
0-80	1958.65	N.A.	81.30
0-90	2106.56	N.A.	87.50
10-90	2039.89	N.A.	84.70
20-40	604.72	N.A.	25.10
20-50	937.92	N.A.	38.90
40-70	897.78	N.A.	37.30
60-80	460.26	N.A.	19.10
70-80	200.83	N.A.	8.30
80-90	147.91	N.A.	6.10
90-110	172.91	N.A.	7.20
90-120	221.29	N.A.	9.20
90-130	254.37	N.A.	10.60
90-150	289.90	N.A.	12.00
90-180	301.60	N.A.	12.50
110-180	128.69	N.A.	5.30
0-180	2408.16	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	66.67
10-20	188.64
20-30	277.85
30-40	326.87
40-50	333.20
50-60	305.15
60-70	259.43
70-80	200.83
80-90	147.91
90-100	102.00
100-110	70.91
110-120	48.38
120-130	33.08
130-140	21.37
140-150	14.15
150-160	7.80
160-170	3.38
170-180	0.53

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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	15.5	17.0	16.1	17.5	18.1	20.5	22.0	21.1	22.5	23.1
	3H	16.7	18.0	17.3	18.6	19.2	23.1	24.4	23.6	25.0	25.6
	4H	17.1	18.3	17.7	18.9	19.6	24.3	25.6	24.9	26.1	26.8
	6H	17.3	18.5	17.9	19.1	19.7	25.6	26.7	26.2	27.3	28.0
	8H	17.4	18.5	18.0	19.1	19.7	26.3	27.4	26.8	28.0	28.6
	12H	17.4	18.5	18.0	19.0	19.7	27.0	28.0	27.6	28.6	29.3

UGR Viewed Endwise

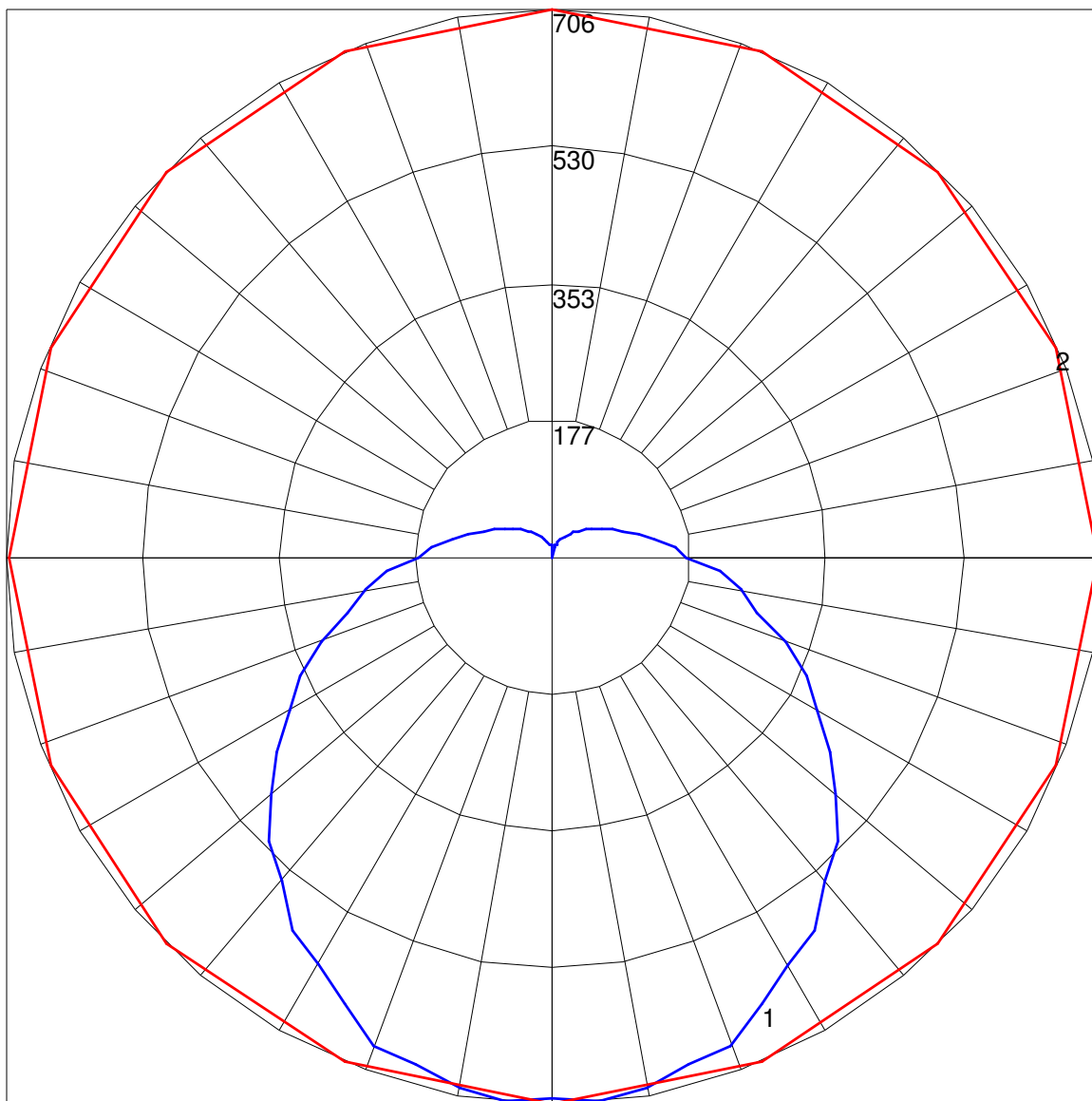
4H	2H	17.0	18.2	17.6	18.8	19.5	20.8	22.0	21.3	22.6	23.2
	3H	18.4	19.5	19.0	20.1	20.8	23.6	24.6	24.2	25.2	25.9
	4H	18.9	19.9	19.5	20.5	21.2	24.9	25.9	25.5	26.5	27.2
	6H	19.2	20.1	19.9	20.7	21.5	26.4	27.3	27.1	27.9	28.7
	8H	19.3	20.2	20.0	20.8	21.5	27.2	28.0	27.8	28.7	29.4
	12H	19.4	20.1	20.0	20.8	21.5	28.1	28.8	28.7	29.5	30.2

8H	4H	20.0	20.8	20.7	21.5	22.2	25.1	25.9	25.7	26.5	27.3
	6H	20.6	21.3	21.2	22.0	22.7	26.7	27.4	27.4	28.1	28.8
	8H	20.8	21.4	21.5	22.1	22.9	27.6	28.3	28.3	29.0	29.7
	12H	20.9	21.5	21.6	22.2	23.0	28.7	29.2	29.3	29.9	30.7

12H	4H	20.4	21.1	21.0	21.8	22.5	25.1	25.8	25.7	26.5	27.2
	6H	21.1	21.7	21.8	22.4	23.2	26.8	27.4	27.4	28.0	28.8
	8H	21.4	22.0	22.1	22.6	23.5	27.7	28.3	28.4	29.0	29.8

Maximum UGR = 30.7

POLAR GRAPH



Maximum Candela = 706.293 Located At Horizontal Angle = 90, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)