



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT2-24-L40-835-D-(L30)-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN from BALLABS TEST NO. 18887.0  
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC  
 [ISSUEDATE] 08-03-2023  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836  
 [LUMINAIRE] 2x4' RECESSED LUMINAIRE  
 [MORE] WITH FROST CONCAVE ACRYLIC LENS w/DEEP ACRYLIC CENTER  
 [MORE] DIFFUSER  
 [LUMCAT] AT2-24-L40-835-D-(L30)-DIM-UNV  
 [LAMPCAT] HLM 80 CRI, 3500K CCT  
 [ \_SEARCH\_SOURCETYPE] LED  
 [ \_SEARCH\_APPLICATION] Indoor, Architectural, Classroom, Commercial, Office, Direct  
 [ \_SEARCH\_MOUNTING] Ceiling, Recessed  
 [ \_SEARCH\_CERTIFICATION] DLC

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2958
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	129
Total Luminaire Watts	23
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.12
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.26
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.76 ft
Luminous Width (90-270)	1.77 ft
Luminous Height	0.00 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1461	1555	1620
55	1258	1358	1409
65	1094	1211	1270
75	906	1084	1138
85	690	867	796

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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>	1242.417	1242.417	1242.417	1242.417	1242.417
<b>5</b>	1242.417	1242.417	1242.417	1244.321	1244.321
<b>10</b>	1206.239	1207.192	1211.000	1215.760	1219.568
<b>15</b>	1162.445	1166.254	1175.774	1184.342	1190.055
<b>20</b>	1095.802	1102.467	1117.699	1132.932	1140.548
<b>25</b>	1004.406	1012.023	1033.920	1052.008	1058.673
<b>30</b>	917.770	929.195	952.996	974.893	983.461
<b>35</b>	841.607	853.031	880.640	904.442	911.106
<b>40</b>	728.313	742.594	771.155	792.100	801.621
<b>45</b>	637.869	651.198	678.807	697.848	707.369
<b>50</b>	538.857	552.185	576.939	595.979	600.740
<b>55</b>	445.556	456.981	480.782	496.967	498.871
<b>60</b>	362.729	374.153	394.146	406.523	412.235
<b>65</b>	285.613	297.038	316.079	326.551	331.311
<b>70</b>	214.210	222.778	241.819	252.292	256.100
<b>75</b>	144.711	155.183	173.272	181.840	181.840
<b>80</b>	85.684	96.156	112.341	108.533	105.677
<b>85</b>	37.130	46.650	46.650	42.842	42.842
<b>90</b>	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	448.16	N.A.	15.10
0-30	924.79	N.A.	31.30
0-40	1469.03	N.A.	49.70
0-60	2417.41	N.A.	81.70
0-80	2906.38	N.A.	98.20
0-90	2958.44	N.A.	100.00
10-90	2840.91	N.A.	96.00
20-40	1020.87	N.A.	34.50
20-50	1540.36	N.A.	52.10
40-70	1258.46	N.A.	42.50
60-80	488.97	N.A.	16.50
70-80	178.89	N.A.	6.00
80-90	52.06	N.A.	1.80
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2958.44	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	117.53
10-20	330.63
20-30	476.63
30-40	544.24
40-50	519.50
50-60	428.88
60-70	310.08
70-80	178.89
80-90	52.06
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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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	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	102	99	95	98	95	92	94	92	89	91	89	87	85
2	100	92	85	80	97	90	84	79	87	81	77	83	79	75	80	77	74	72
3	91	81	73	67	89	80	72	67	77	71	65	74	69	64	71	67	63	61
4	84	72	64	57	82	71	63	57	69	62	56	66	60	56	64	59	55	53
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	54	45	39	65	53	45	39	51	44	39	50	43	38	49	43	38	36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	35	45	39	34	33
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	39	33	29	27

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**UGR TABLE - CORRECTED**

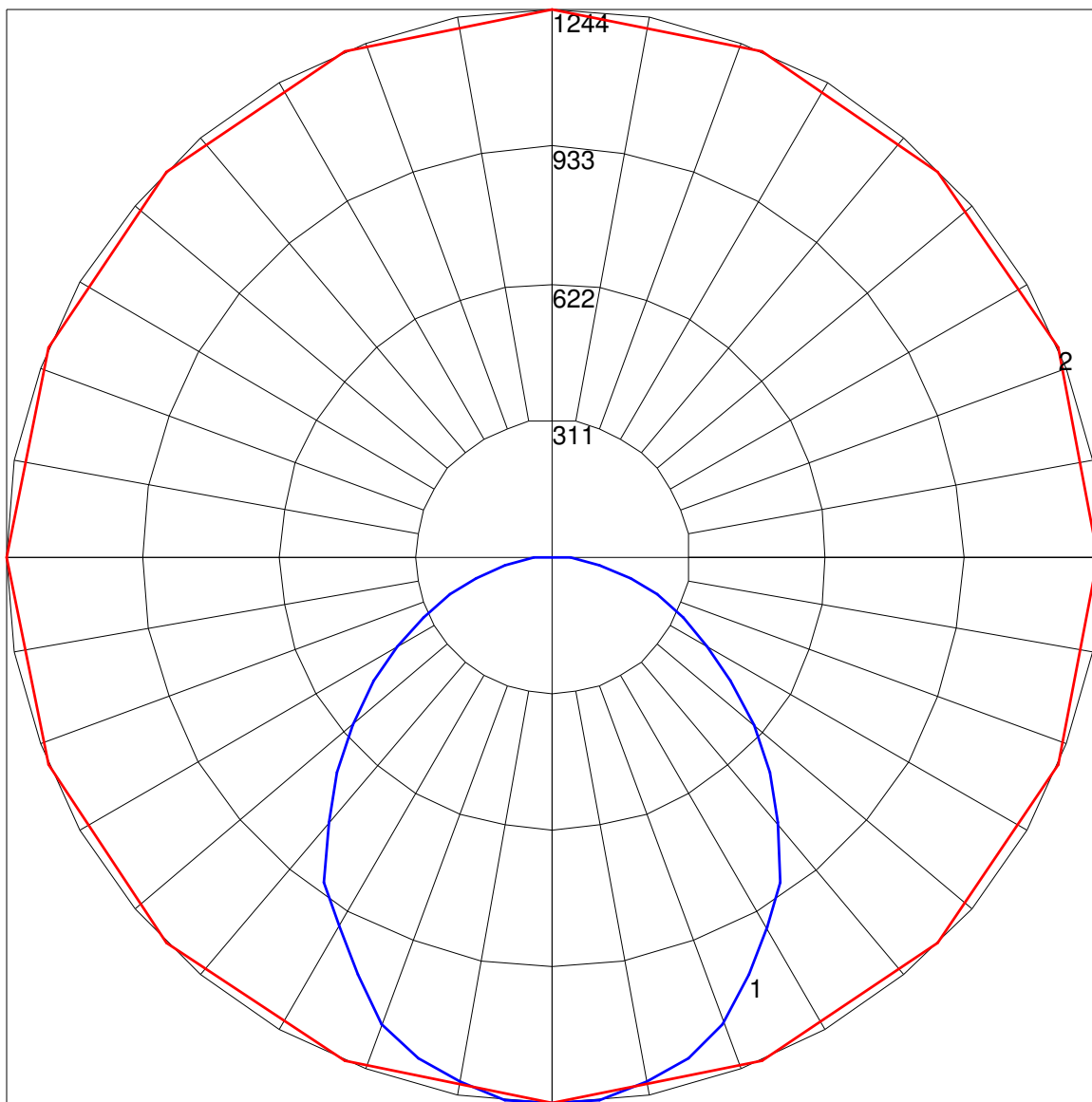
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	12.4	14.0	12.8	14.3	14.7	13.1	14.7	13.4	15.0	15.3
	3H	14.1	15.5	14.5	15.8	16.2	14.8	16.3	15.2	16.6	17.0
	4H	14.7	16.0	15.1	16.3	16.7	15.5	16.9	15.9	17.2	17.6
	6H	15.1	16.3	15.5	16.7	17.1	16.0	17.3	16.4	17.6	18.0
	8H	15.2	16.4	15.6	16.8	17.2	16.2	17.4	16.6	17.7	18.1
	12H	15.3	16.4	15.7	16.8	17.2	16.3	17.4	16.7	17.8	18.2
4H	2H	13.1	14.5	13.5	14.8	15.2	13.6	15.0	14.0	15.3	15.7
	3H	15.0	16.1	15.4	16.5	16.9	15.6	16.7	16.0	17.1	17.5
	4H	15.7	16.7	16.1	17.1	17.5	16.4	17.5	16.9	17.9	18.3
	6H	16.2	17.1	16.7	17.6	18.0	17.1	18.0	17.5	18.4	18.9
	8H	16.4	17.2	16.9	17.7	18.2	17.3	18.1	17.7	18.6	19.0
	12H	16.5	17.3	17.0	17.8	18.2	17.4	18.2	17.9	18.6	19.1
8H	4H	16.0	16.9	16.5	17.3	17.8	16.7	17.6	17.2	18.0	18.5
	6H	16.8	17.4	17.2	17.9	18.4	17.5	18.2	18.0	18.7	19.2
	8H	17.0	17.6	17.5	18.1	18.6	17.8	18.4	18.3	18.9	19.4
	12H	17.2	17.8	17.8	18.3	18.8	18.0	18.5	18.5	19.0	19.6
12H	4H	16.1	16.8	16.6	17.3	17.8	16.8	17.5	17.2	18.0	18.4
	6H	16.8	17.5	17.4	17.9	18.5	17.6	18.2	18.1	18.6	19.2
	8H	17.2	17.7	17.7	18.2	18.8	17.9	18.4	18.4	18.9	19.5

Maximum UGR = 19.6

POLAR GRAPH



Maximum Candela = 1244.321 Located At Horizontal Angle = 67.5, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (67.5 - 247.5) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)