



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-24-L40-835-D-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18876.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 05-18-2020

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836

[LUMINAIRE] 2x4 'RECESSED LUMINAIRE

[MORE] WITH FROSTCONCAVE ACRYLIC LENS w/SHALLOW ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT1-24-L40-835-D-DIM-UNV

[LAMPCAT] HLM 80 CRI, 3500K CCT

[\_SEARCH\_SOURCETYPE] LED

[\_SEARCH\_APPLICATION] Indoor, Architectural, Classroom, Commercial, Educational, Office, Direct

[\_SEARCH\_MOUNTING] Ceiling, Recessed

[\_SEARCH\_CERTIFICATION] DLC

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4035
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	118
Total Luminaire Watts	34.2
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.12
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.32
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	1842	2154	2337
55	1598	1957	2108
65	1421	1863	2013
75	1213	1803	1853
85	1022	1095	1120

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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>	1552.427	1552.427	1552.427	1552.427	1552.427
<b>5</b>	1553.737	1552.427	1556.357	1556.357	1557.667
<b>10</b>	1511.815	1513.125	1522.296	1530.156	1534.086
<b>15</b>	1459.412	1467.273	1484.304	1502.645	1513.125
<b>20</b>	1367.708	1387.359	1416.180	1451.552	1467.273
<b>25</b>	1258.972	1277.313	1324.476	1375.568	1397.839
<b>30</b>	1151.547	1176.438	1241.942	1307.445	1332.336
<b>35</b>	1057.222	1087.354	1165.958	1238.011	1264.213
<b>40</b>	918.356	953.727	1041.502	1112.245	1131.896
<b>45</b>	804.380	842.372	940.627	1000.890	1020.541
<b>50</b>	681.234	724.466	813.550	865.953	880.364
<b>55</b>	565.948	610.490	693.024	734.946	746.737
<b>60</b>	465.073	509.615	584.289	619.661	630.141
<b>65</b>	370.748	419.221	486.034	516.166	525.336
<b>70</b>	280.354	331.446	389.089	411.360	415.291
<b>75</b>	193.890	246.292	288.214	298.695	296.075
<b>80</b>	121.836	168.998	184.719	141.487	128.386
<b>85</b>	55.023	77.294	58.953	58.953	60.263
<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	564.90	N.A.	14.00
0-30	1177.78	N.A.	29.20
0-40	1898.34	N.A.	47.00
0-60	3214.34	N.A.	79.70
0-80	3958.16	N.A.	98.10
0-90	4034.78	N.A.	100.00
10-90	3887.54	N.A.	96.40
20-40	1333.45	N.A.	33.00
20-50	2043.45	N.A.	50.60
40-70	1779.05	N.A.	44.10
60-80	743.82	N.A.	18.40
70-80	280.77	N.A.	7.00
80-90	76.62	N.A.	1.90
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	4034.78	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	147.24
10-20	417.66
20-30	612.89
30-40	720.56
40-50	710.01
50-60	605.99
60-70	463.05
70-80	280.77
80-90	76.62
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	104	100	96	106	102	98	94	98	94	91	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	59
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	63	54	48	61	53	47	59	52	47	57	51	46	44
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	52	46	41	39
7	66	52	44	38	64	51	43	37	50	42	37	48	42	37	47	41	37	35
8	61	48	39	34	60	47	39	33	46	38	33	45	38	33	43	37	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	28
10	54	41	33	28	52	40	33	27	39	32	27	38	32	27	37	31	27	25

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**UGR TABLE - CORRECTED**

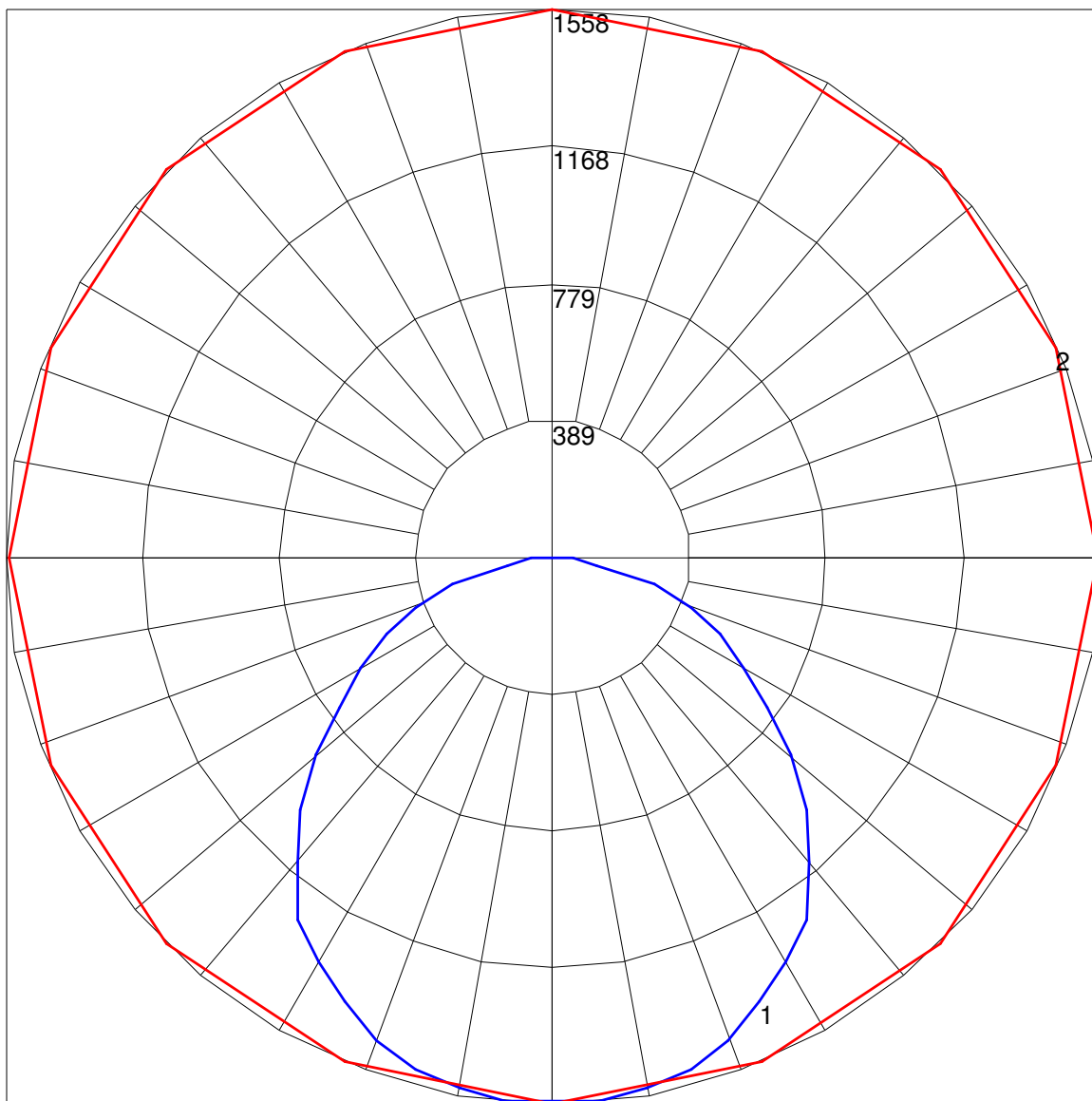
Reflectances

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	13.3	14.9	13.6	15.2	15.5	14.7	16.3	15.1	16.6	17.0
	3H	15.0	16.4	15.4	16.8	17.1	16.7	18.1	17.1	18.5	18.8
	4H	15.6	17.0	16.0	17.3	17.7	17.4	18.8	17.8	19.2	19.5
	6H	16.1	17.4	16.5	17.8	18.2	17.8	19.1	18.3	19.5	19.9
	8H	16.3	17.5	16.7	17.9	18.3	17.9	19.2	18.4	19.5	19.9
	12H	16.4	17.6	16.8	18.0	18.4	18.0	19.2	18.4	19.5	20.0
4H	2H	14.2	15.6	14.6	15.9	16.3	15.3	16.7	15.7	17.0	17.4
	3H	16.2	17.3	16.6	17.7	18.1	17.5	18.7	17.9	19.1	19.5
	4H	17.0	18.0	17.4	18.4	18.8	18.4	19.5	18.9	19.9	20.3
	6H	17.6	18.5	18.1	19.0	19.4	18.9	19.8	19.4	20.3	20.7
	8H	17.8	18.7	18.3	19.1	19.6	19.1	19.9	19.5	20.3	20.8
	12H	18.0	18.8	18.5	19.2	19.7	19.1	19.9	19.6	20.4	20.9
8H	4H	17.5	18.3	17.9	18.8	19.2	18.7	19.6	19.2	20.0	20.5
	6H	18.3	19.0	18.8	19.5	20.0	19.4	20.1	19.8	20.5	21.0
	8H	18.6	19.3	19.1	19.8	20.3	19.5	20.2	20.0	20.7	21.2
	12H	18.9	19.5	19.4	19.9	20.5	19.7	20.3	20.2	20.7	21.3
12H	4H	17.5	18.3	18.0	18.8	19.2	18.8	19.5	19.2	20.0	20.5
	6H	18.4	19.1	18.9	19.5	20.1	19.4	20.1	19.9	20.5	21.1
	8H	18.8	19.4	19.3	19.9	20.4	19.7	20.2	20.2	20.7	21.3

Maximum UGR = 21.3

POLAR GRAPH



Maximum Candela = 1557.667 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.)