



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-24-L40-840-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] 11-04-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 2x4 'RECESSED LUMINAIRE

[MORE]WITH FROSTED ACRYLIC LENS

[LUMCAT] AT1-24-L40-840-D-DIM-UNV

[LAMPCAT] HLM 80 CRI, 4000K 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	4156
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	122
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	1898	2219	2408
55	1646	2015	2172
65	1463	1918	2074
75	1250	1858	1908
85	1053	1128	1153

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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>	1599.000	1599.000	1599.000	1599.000	1599.000
<b>5</b>	1600.349	1599.000	1603.048	1603.048	1604.397
<b>10</b>	1557.170	1558.519	1567.964	1576.061	1580.109
<b>15</b>	1503.195	1511.291	1528.833	1547.724	1558.519
<b>20</b>	1408.739	1428.980	1458.666	1495.099	1511.291
<b>25</b>	1296.742	1315.633	1364.210	1416.835	1439.775
<b>30</b>	1186.094	1211.732	1279.200	1346.668	1372.306
<b>35</b>	1088.939	1119.975	1200.937	1275.152	1302.139
<b>40</b>	945.906	982.339	1072.747	1145.613	1165.853
<b>45</b>	828.511	867.643	968.846	1030.916	1051.157
<b>50</b>	701.671	746.200	837.957	891.932	906.775
<b>55</b>	582.927	628.805	713.815	756.995	769.139
<b>60</b>	479.025	524.904	601.818	638.251	649.046
<b>65</b>	381.871	431.797	500.615	531.651	541.096
<b>70</b>	288.765	341.390	400.762	423.701	427.749
<b>75</b>	199.706	253.681	296.861	307.656	304.957
<b>80</b>	125.491	174.068	190.261	145.732	132.238
<b>85</b>	56.673	79.613	60.722	60.722	62.071
<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	581.84	N.A.	14.00
0-30	1213.12	N.A.	29.20
0-40	1955.29	N.A.	47.00
0-60	3310.77	N.A.	79.70
0-80	4076.9	N.A.	98.10
0-90	4155.82	N.A.	100.00
10-90	4004.17	N.A.	96.40
20-40	1373.45	N.A.	33.00
20-50	2104.76	N.A.	50.60
40-70	1832.42	N.A.	44.10
60-80	766.13	N.A.	18.40
70-80	289.19	N.A.	7.00
80-90	78.92	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	4155.82	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	151.65
10-20	430.19
20-30	631.27
30-40	742.18
40-50	731.31
50-60	624.17
60-70	476.94
70-80	289.19
80-90	78.92
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**

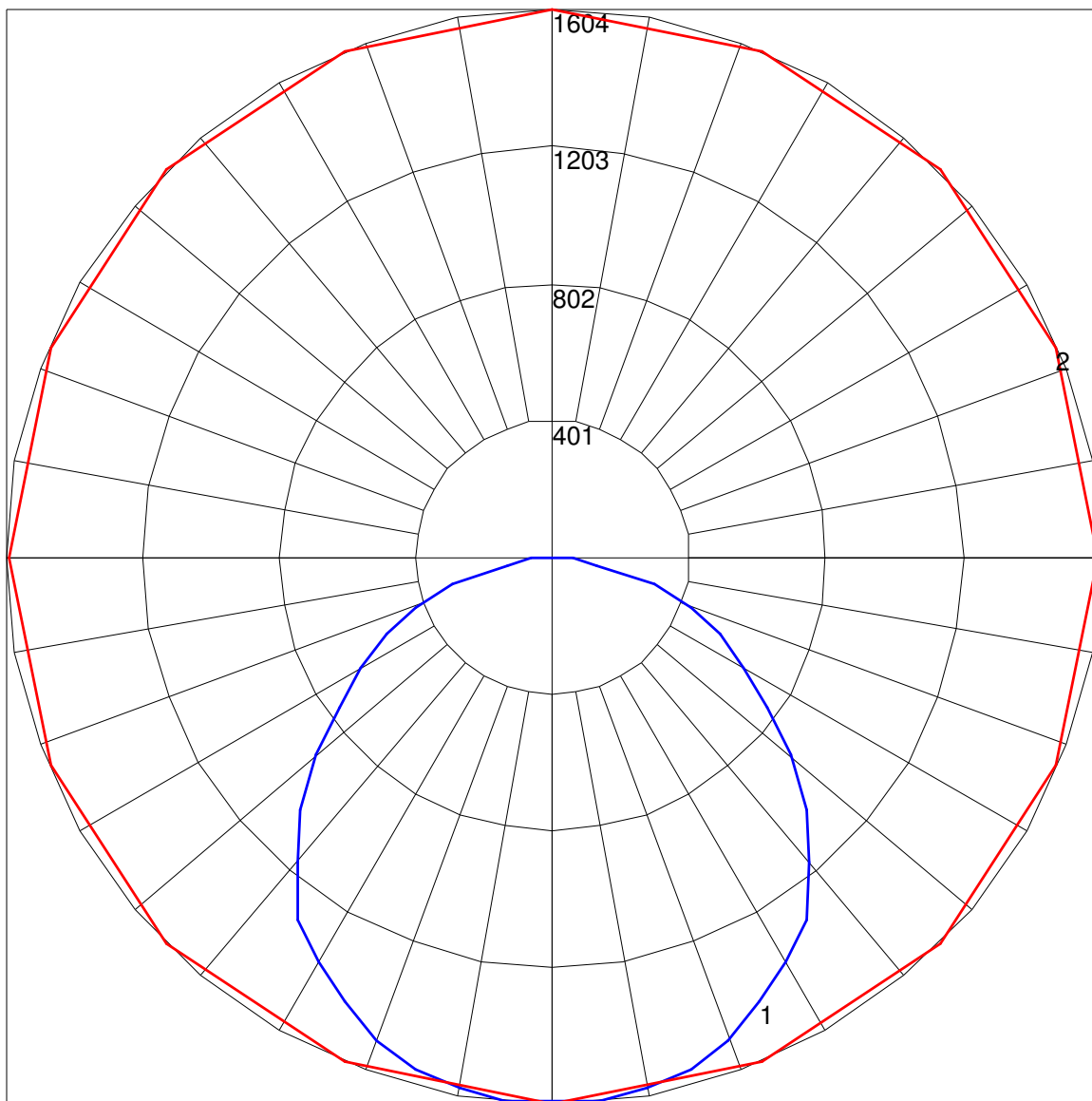
Reflectances

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	13.4	15.0	13.7	15.3	15.6	14.8	16.4	15.2	16.7	17.1
	3H	15.1	16.5	15.5	16.9	17.2	16.8	18.2	17.2	18.6	18.9
	4H	15.7	17.1	16.1	17.4	17.8	17.5	18.9	17.9	19.3	19.6
	6H	16.2	17.5	16.6	17.9	18.3	17.9	19.2	18.4	19.6	20.0
	8H	16.4	17.6	16.8	18.0	18.4	18.0	19.3	18.5	19.6	20.0
	12H	16.5	17.7	16.9	18.1	18.5	18.1	19.3	18.5	19.6	20.1
4H	2H	14.3	15.7	14.7	16.0	16.4	15.4	16.8	15.8	17.1	17.5
	3H	16.3	17.4	16.7	17.8	18.2	17.6	18.8	18.0	19.2	19.6
	4H	17.1	18.1	17.5	18.5	18.9	18.5	19.6	19.0	20.0	20.4
	6H	17.7	18.6	18.2	19.1	19.5	19.0	19.9	19.5	20.4	20.8
	8H	17.9	18.8	18.4	19.2	19.7	19.2	20.0	19.6	20.4	20.9
	12H	18.1	18.9	18.6	19.3	19.8	19.2	20.0	19.7	20.5	21.0
8H	4H	17.6	18.4	18.0	18.9	19.3	18.8	19.7	19.3	20.1	20.6
	6H	18.4	19.1	18.9	19.6	20.1	19.5	20.2	19.9	20.6	21.1
	8H	18.7	19.4	19.2	19.9	20.4	19.6	20.3	20.1	20.8	21.3
	12H	19.0	19.6	19.5	20.0	20.6	19.8	20.4	20.3	20.8	21.4
12H	4H	17.6	18.4	18.1	18.9	19.3	18.9	19.6	19.3	20.1	20.6
	6H	18.5	19.2	19.0	19.6	20.2	19.5	20.2	20.0	20.6	21.2
	8H	18.9	19.5	19.4	20.0	20.5	19.8	20.3	20.3	20.8	21.4

Maximum UGR = 21.4

POLAR GRAPH



Maximum Candela = 1604.397 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.)