



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT2-24-L40-835-D-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

[ISSUE DATE] 03-JAN-2020

[MANUFAC] WILLIAMS LINEAR

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

[LUMINAIRE] 4-32 LED 22"ARRAYS-SERIES 2x4' RECESSED LUMINAIRE w/WHITE

[MORE] REFL, FROST CONCAVE ACRYLIC LENS w/DEEP ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT2-24-L40-835-D-DIM-UNV

[\_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	4117
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	120
Total Luminaire Watts	34.17
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	2033	2163	2254
55	1751	1889	1960
65	1523	1685	1767
75	1260	1509	1583
85	960	1206	1108

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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>	1728.800	1728.800	1728.800	1728.800	1728.800
<b>5</b>	1728.800	1728.800	1728.800	1731.450	1731.450
<b>10</b>	1678.460	1679.784	1685.083	1691.707	1697.006
<b>15</b>	1617.521	1622.820	1636.068	1647.990	1655.939
<b>20</b>	1524.788	1534.062	1555.258	1576.454	1587.052
<b>25</b>	1397.612	1408.210	1438.680	1463.850	1473.123
<b>30</b>	1277.060	1292.957	1326.076	1356.545	1368.468
<b>35</b>	1171.080	1186.977	1225.395	1258.513	1267.787
<b>40</b>	1013.435	1033.306	1073.048	1102.193	1115.440
<b>45</b>	887.583	906.130	944.547	971.042	984.290
<b>50</b>	749.809	768.356	802.799	829.294	835.918
<b>55</b>	619.983	635.880	668.999	691.520	694.170
<b>60</b>	504.730	520.627	548.447	565.669	573.617
<b>65</b>	397.425	413.322	439.817	454.390	461.013
<b>70</b>	298.069	309.992	336.487	351.059	356.358
<b>75</b>	201.362	215.934	241.105	253.027	253.027
<b>80</b>	119.228	133.800	156.321	151.022	147.047
<b>85</b>	51.665	64.913	64.913	59.614	59.614
<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	623.61	N.A.	15.10
0-30	1286.83	N.A.	31.30
0-40	2044.13	N.A.	49.70
0-60	3363.78	N.A.	81.70
0-80	4044.17	N.A.	98.20
0-90	4116.61	N.A.	100.00
10-90	3953.07	N.A.	96.00
20-40	1420.52	N.A.	34.50
20-50	2143.39	N.A.	52.10
40-70	1751.12	N.A.	42.50
60-80	680.40	N.A.	16.50
70-80	248.92	N.A.	6.00
80-90	72.44	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	4116.61	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	163.54
10-20	460.07
20-30	663.22
30-40	757.29
40-50	722.87
50-60	596.78
60-70	431.47
70-80	248.92
80-90	72.44
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	86	81	77	83	79	75	80	77	74	72
3	91	81	73	67	89	80	72	67	77	70	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	48	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	28	27

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**UGR TABLE - CORRECTED**

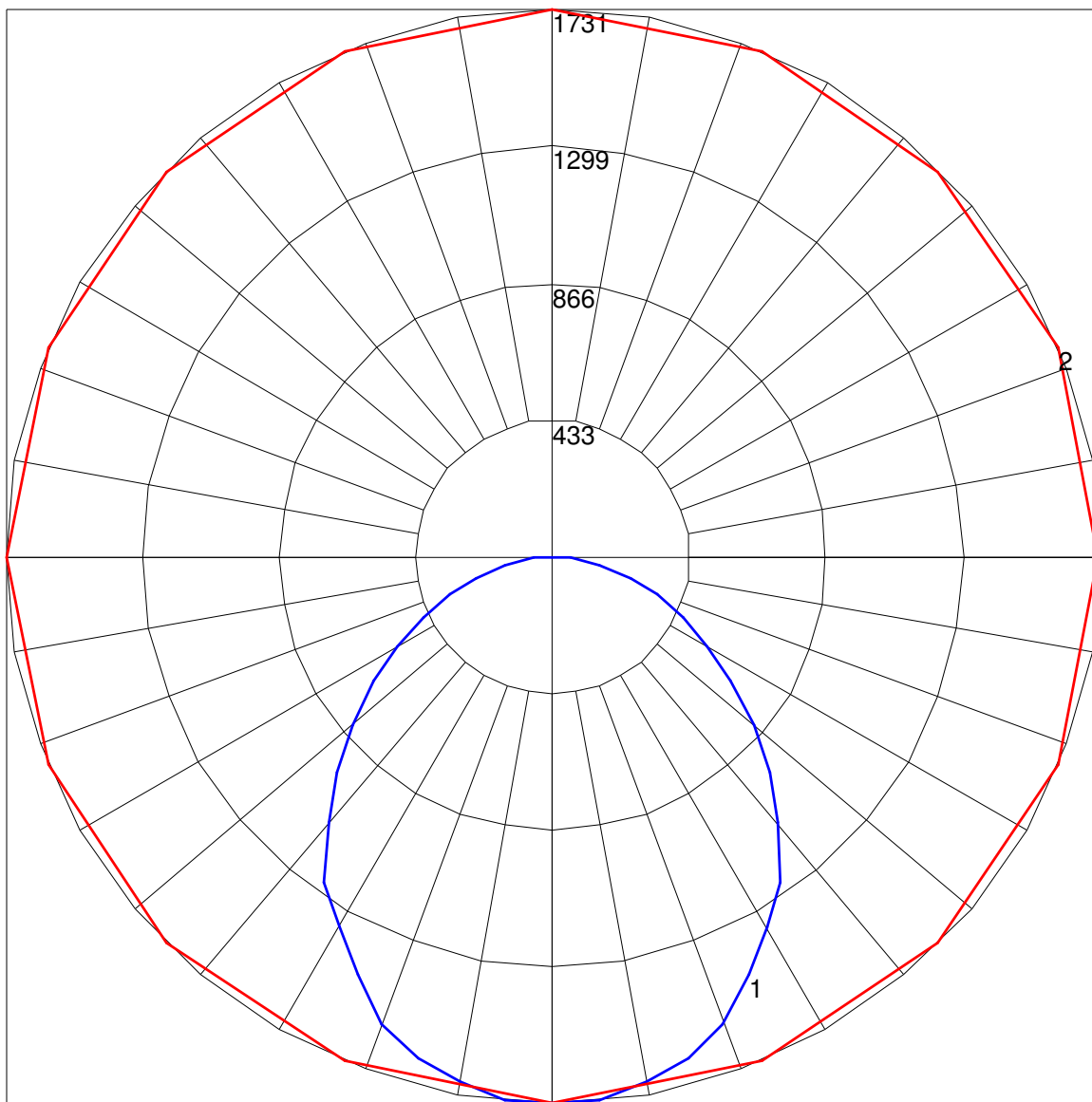
Reflectances

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	13.5	15.1	13.9	15.4	15.8	14.2	15.8	14.5	16.1	16.4
	3H	15.2	16.6	15.6	16.9	17.3	15.9	17.4	16.3	17.7	18.1
	4H	15.8	17.1	16.2	17.4	17.8	16.6	18.0	17.0	18.3	18.7
	6H	16.2	17.4	16.6	17.8	18.2	17.1	18.4	17.5	18.7	19.1
	8H	16.3	17.5	16.7	17.9	18.3	17.3	18.5	17.7	18.8	19.2
	12H	16.4	17.5	16.8	17.9	18.3	17.4	18.5	17.8	18.9	19.3
4H	2H	14.2	15.6	14.6	15.9	16.3	14.7	16.1	15.1	16.4	16.8
	3H	16.1	17.2	16.5	17.6	18.0	16.7	17.8	17.1	18.2	18.6
	4H	16.8	17.8	17.2	18.2	18.6	17.5	18.6	18.0	19.0	19.4
	6H	17.3	18.2	17.8	18.7	19.1	18.2	19.1	18.6	19.5	20.0
	8H	17.5	18.3	18.0	18.8	19.3	18.4	19.2	18.8	19.7	20.1
	12H	17.6	18.4	18.1	18.9	19.3	18.5	19.3	19.0	19.7	20.2
8H	4H	17.1	18.0	17.6	18.4	18.9	17.8	18.7	18.3	19.1	19.6
	6H	17.9	18.5	18.4	19.0	19.5	18.6	19.3	19.1	19.8	20.3
	8H	18.1	18.7	18.6	19.2	19.7	18.9	19.5	19.4	20.0	20.5
	12H	18.3	18.9	18.9	19.4	19.9	19.1	19.6	19.6	20.1	20.7
12H	4H	17.2	17.9	17.7	18.4	18.9	17.9	18.6	18.3	19.1	19.5
	6H	17.9	18.6	18.5	19.0	19.6	18.7	19.3	19.2	19.7	20.3
	8H	18.3	18.8	18.8	19.3	19.9	19.0	19.5	19.5	20.0	20.6

Maximum UGR = 20.7

POLAR GRAPH



Maximum Candela = 1731.45 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.)