



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT3-22-L40-940-D-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 19435.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 09-30-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 2x2' RECESSED LED LUMINAIRE

[MORE] WITH FROSTED ACRYLIC LENS

[LUMCAT] AT3-22-L40-940-D-DIM-UNV

[LAMPCAT] HLM 90 CRI 4000K CCT

[\_SEARCH\_SOURCETYPE] LED

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

[\_SEARCH\_MOUNTING] Ceiling, Recessed

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3531
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	94
Total Luminaire Watts	37.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.16
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.30
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.76 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	3646	3969	4287
55	3206	3621	3892
65	2834	3314	3640
75	2352	2982	3446
85	1265	1121	1064

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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>	1389.661	1389.661	1389.661	1389.661	1389.661
<b>5</b>	1386.765	1382.420	1381.696	1380.971	1379.523
<b>10</b>	1355.626	1354.902	1352.005	1360.695	1362.867
<b>15</b>	1309.280	1307.831	1312.900	1331.004	1336.798
<b>20</b>	1239.036	1242.657	1262.934	1289.003	1301.314
<b>25</b>	1152.861	1165.172	1197.759	1233.967	1252.795
<b>30</b>	1063.790	1079.721	1121.722	1169.517	1187.621
<b>35</b>	966.752	984.132	1031.927	1084.790	1102.170
<b>40</b>	858.129	874.060	925.475	975.442	997.167
<b>45</b>	745.160	763.988	811.058	858.129	876.233
<b>50</b>	637.260	655.364	702.434	748.056	760.367
<b>55</b>	531.533	548.188	600.328	638.708	645.226
<b>60</b>	433.771	450.427	499.670	535.878	538.774
<b>65</b>	346.148	359.907	404.805	436.668	444.634
<b>70</b>	258.525	271.560	314.285	342.527	353.390
<b>75</b>	175.971	189.730	223.041	244.042	257.801
<b>80</b>	97.761	115.141	117.314	116.590	115.141
<b>85</b>	31.863	37.656	28.242	27.518	26.794
<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	502.84	N.A.	14.20
0-30	1055.61	N.A.	29.90
0-40	1700.32	N.A.	48.20
0-60	2860.25	N.A.	81.00
0-80	3483.04	N.A.	98.60
0-90	3530.72	N.A.	100.00
10-90	3399.61	N.A.	96.30
20-40	1197.47	N.A.	33.90
20-50	1824.57	N.A.	51.70
40-70	1556.06	N.A.	44.10
60-80	622.79	N.A.	17.60
70-80	226.67	N.A.	6.40
80-90	47.68	N.A.	1.40
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	3530.72	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	131.11
10-20	371.73
20-30	552.77
30-40	644.70
40-50	627.10
50-60	532.84
60-70	396.12
70-80	226.67
80-90	47.68
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	100	97	106	102	99	95	98	95	92	94	92	89	91	89	87	85
2	100	92	85	79	97	90	84	78	86	81	77	83	79	75	80	76	73	71
3	91	81	73	66	89	79	72	66	76	70	65	73	68	64	71	66	63	60
4	84	72	63	57	81	70	62	56	68	61	56	66	60	55	64	58	54	52
5	77	64	56	49	75	63	55	49	61	54	48	59	53	48	57	52	47	45
6	71	58	49	43	69	57	49	43	55	48	42	54	47	42	52	46	42	40
7	66	53	44	38	64	52	44	38	50	43	38	49	42	37	48	42	37	35
8	62	48	40	34	60	48	40	34	46	39	34	45	38	34	44	38	33	32
9	58	44	36	31	56	44	36	31	43	36	31	42	35	30	41	35	30	28
10	54	41	33	28	53	41	33	28	40	33	28	39	32	28	38	32	28	26

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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	15.7	17.3	16.1	17.6	17.9	16.9	18.5	17.3	18.8	19.1
	3H	17.4	18.8	17.7	19.1	19.5	18.8	20.2	19.2	20.6	20.9
	4H	18.0	19.3	18.4	19.7	20.0	19.5	20.9	19.9	21.2	21.6
	6H	18.4	19.6	18.8	20.0	20.4	19.9	21.2	20.4	21.6	22.0
	8H	18.5	19.7	18.9	20.1	20.5	20.0	21.2	20.5	21.6	22.0
	12H	18.5	19.7	18.9	20.0	20.5	20.0	21.2	20.5	21.6	22.0

UGR Viewed Endwise

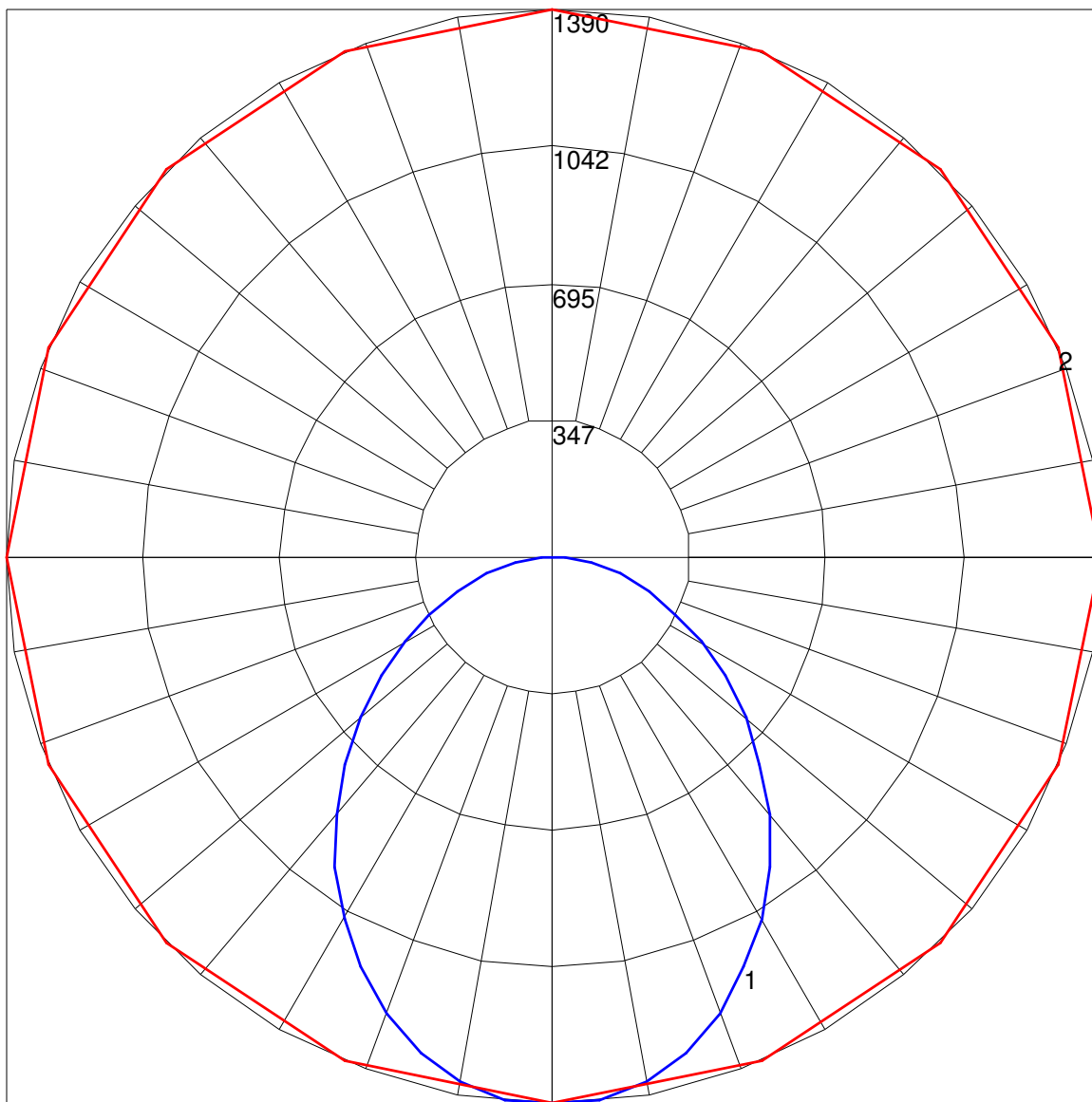
4H	2H	16.5	17.8	16.9	18.2	18.6	17.4	18.8	17.8	19.1	19.5
	3H	18.4	19.5	18.8	19.9	20.3	19.6	20.7	20.0	21.1	21.5
	4H	19.1	20.1	19.5	20.5	20.9	20.4	21.5	20.9	21.9	22.3
	6H	19.6	20.5	20.0	20.9	21.4	21.0	21.8	21.4	22.3	22.7
	8H	19.7	20.6	20.2	21.0	21.5	21.1	21.9	21.5	22.3	22.8
	12H	19.8	20.6	20.3	21.0	21.5	21.1	21.8	21.6	22.3	22.8

8H	4H	19.5	20.3	19.9	20.7	21.2	20.7	21.5	21.1	22.0	22.4
	6H	20.1	20.8	20.6	21.3	21.8	21.3	22.0	21.8	22.5	22.9
	8H	20.3	20.9	20.8	21.4	21.9	21.4	22.0	21.9	22.5	23.0
	12H	20.4	21.0	21.0	21.5	22.0	21.5	22.0	22.0	22.5	23.1

12H	4H	19.5	20.3	20.0	20.7	21.2	20.7	21.4	21.2	21.9	22.4
	6H	20.2	20.8	20.7	21.3	21.8	21.3	21.9	21.8	22.4	22.9
	8H	20.4	21.0	20.9	21.5	22.0	21.5	22.0	22.0	22.5	23.1

Maximum UGR = 23.1

POLAR GRAPH



Maximum Candela = 1389.661 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)