



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-22-L30-830-D-DIM-UNV.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18872.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 19-DEC-2019

[MANUFAC] WILLIAMS LINEAR

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

[LUMINAIRE] 2-56 LED 22" ARRAYS-SERIES 2x2 'RECESSED LUMINAIRE w/WHITE

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

[MORE] DIFFUSER

[LUMCAT] AT1-22-L30-835-D-DIM-UNV

[\_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	3028
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	103
Total Luminaire Watts	29.5
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.16
Spacing Criterion (90-270)	1.30
Spacing Criterion (Diagonal)	1.32
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	3021	3411	3791
55	2662	3206	3518
65	2298	2977	3392
75	1939	2853	3171
85	1275	1563	1398

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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>	1143.658	1143.658	1143.658	1143.658	1143.658
<b>5</b>	1144.694	1140.550	1139.514	1138.478	1138.478
<b>10</b>	1120.868	1119.832	1118.796	1123.975	1129.155
<b>15</b>	1079.431	1082.539	1091.862	1100.149	1110.508
<b>20</b>	1022.455	1031.778	1050.425	1069.072	1087.718
<b>25</b>	952.012	966.515	994.485	1025.563	1050.425
<b>30</b>	879.498	897.108	931.294	977.910	1003.808
<b>35</b>	800.768	813.199	860.851	919.899	942.689
<b>40</b>	710.643	727.217	780.049	848.420	866.031
<b>45</b>	617.410	638.128	697.176	761.403	774.870
<b>50</b>	526.248	549.039	614.302	667.134	679.565
<b>55</b>	441.303	465.129	531.428	573.901	583.224
<b>60</b>	356.357	387.435	447.518	484.812	498.279
<b>65</b>	280.735	311.813	363.609	394.686	414.369
<b>70</b>	212.364	235.154	291.094	310.777	328.387
<b>75</b>	145.029	166.783	213.400	219.615	237.226
<b>80</b>	82.874	100.484	128.454	102.556	103.592
<b>85</b>	32.114	35.221	39.365	33.150	35.221
<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	416.26	N.A.	13.70
0-30	875.86	N.A.	28.90
0-40	1417.11	N.A.	46.80
0-60	2422.74	N.A.	80.00
0-80	2980.28	N.A.	98.40
0-90	3028.42	N.A.	100.00
10-90	2920.2	N.A.	96.40
20-40	1000.85	N.A.	33.00
20-50	1539.68	N.A.	50.80
40-70	1357.8	N.A.	44.80
60-80	557.55	N.A.	18.40
70-80	205.37	N.A.	6.80
80-90	48.14	N.A.	1.60
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	3028.42	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	108.22
10-20	308.04
20-30	459.59
30-40	541.26
40-50	538.82
50-60	466.80
60-70	352.18
70-80	205.37
80-90	48.14
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	123	123	123	123	120	120	120	120	115	115	115	110	110	110	106	106	106	104
1	113	108	104	100	110	106	102	98	101	98	95	97	95	92	94	91	89	87
2	103	94	87	82	100	92	86	81	89	83	79	85	81	77	82	79	75	73
3	94	83	75	68	91	81	74	67	78	72	66	75	70	65	73	68	64	62
4	86	74	65	58	84	72	64	57	70	62	57	67	61	56	65	60	55	53
5	79	66	57	50	77	65	56	50	63	55	49	61	54	49	59	53	48	46
6	73	60	50	44	71	59	50	44	57	49	43	55	48	43	53	47	42	40
7	68	54	45	39	66	53	45	39	52	44	38	50	43	38	49	43	38	36
8	63	49	41	35	62	49	40	35	47	40	34	46	39	34	45	39	34	32
9	59	45	37	31	58	45	37	31	44	36	31	42	36	31	41	35	31	29
10	56	42	34	28	54	41	34	28	40	33	28	39	33	28	38	32	28	26

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**UGR TABLE - CORRECTED**

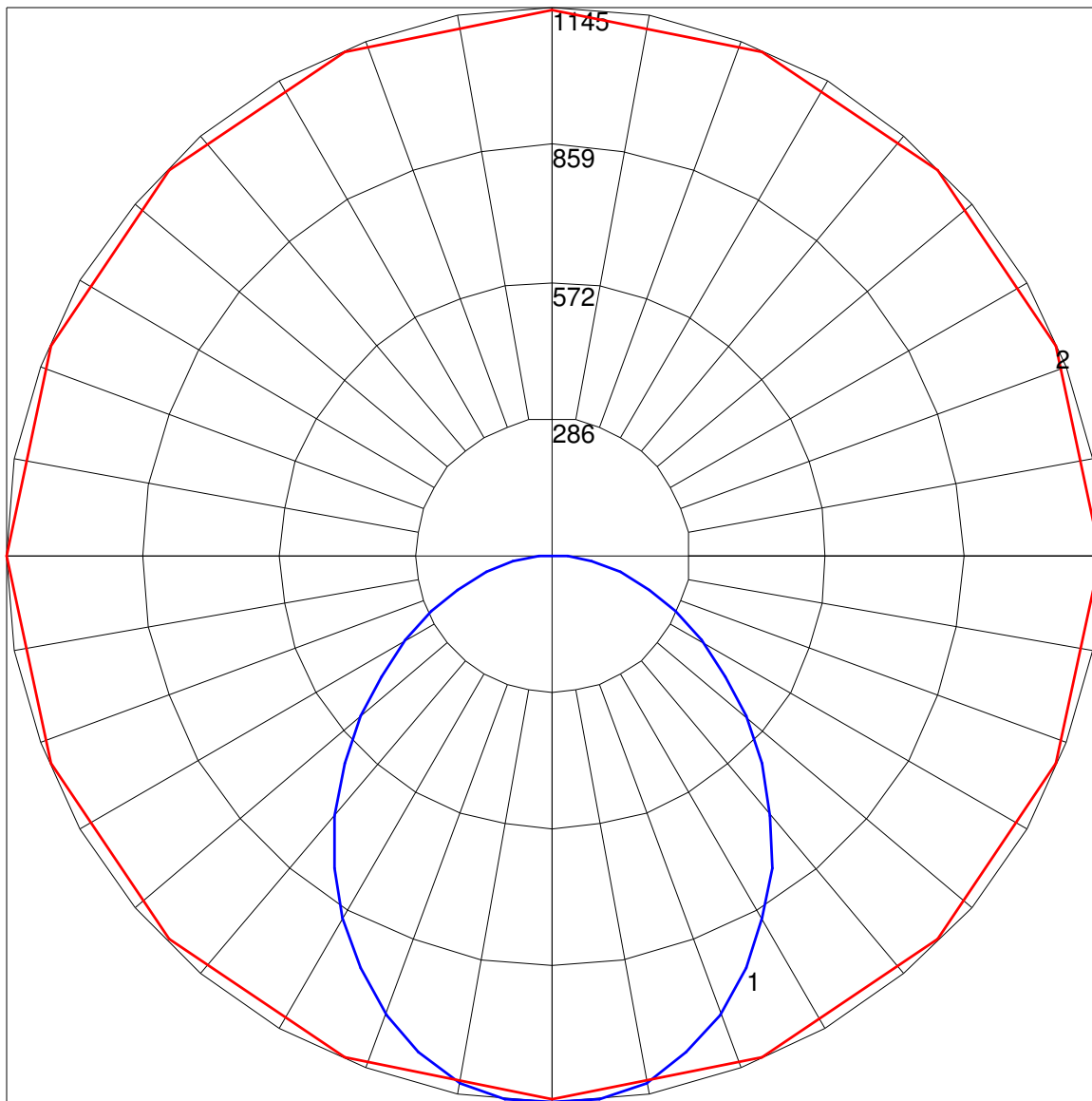
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	14.9	16.5	15.3	16.8	17.2	16.5	18.1	16.9	18.5	18.8
	3H	16.5	18.0	16.9	18.3	18.7	18.5	19.9	18.9	20.3	20.6
	4H	17.1	18.5	17.5	18.9	19.2	19.2	20.6	19.6	21.0	21.3
	6H	17.5	18.8	18.0	19.2	19.6	19.6	20.9	20.0	21.3	21.7
	8H	17.7	18.9	18.1	19.3	19.7	19.7	20.9	20.2	21.3	21.7
	12H	17.7	18.9	18.1	19.3	19.7	19.7	20.9	20.2	21.3	21.7
4H	2H	15.8	17.2	16.2	17.5	17.9	17.1	18.4	17.5	18.8	19.2
	3H	17.7	18.8	18.1	19.2	19.6	19.2	20.4	19.7	20.8	21.2
	4H	18.4	19.4	18.8	19.8	20.3	20.1	21.2	20.6	21.6	22.0
	6H	18.9	19.8	19.3	20.2	20.7	20.6	21.5	21.1	22.0	22.4
	8H	19.0	19.9	19.5	20.3	20.8	20.7	21.6	21.2	22.0	22.5
	12H	19.1	19.9	19.6	20.4	20.8	20.8	21.6	21.3	22.0	22.5
8H	4H	18.9	19.7	19.3	20.2	20.6	20.4	21.2	20.9	21.7	22.2
	6H	19.5	20.2	20.0	20.7	21.2	21.0	21.7	21.5	22.2	22.7
	8H	19.7	20.4	20.2	20.9	21.4	21.1	21.8	21.7	22.3	22.8
	12H	19.9	20.4	20.4	20.9	21.5	21.3	21.8	21.8	22.3	22.9
12H	4H	18.9	19.7	19.4	20.2	20.6	20.4	21.2	20.9	21.7	22.1
	6H	19.6	20.3	20.1	20.7	21.3	21.0	21.7	21.6	22.1	22.7
	8H	19.9	20.5	20.4	20.9	21.5	21.2	21.8	21.7	22.3	22.9

Maximum UGR = 22.9

POLAR GRAPH



Maximum Candela = 1144.694 Located At Horizontal Angle = 0, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)