



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] 20-DEC-2019

[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/SHALLOW ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT1-24-L40-835-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	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>
0	1552.427	1552.427	1552.427	1552.427	1552.427
5	1553.737	1552.427	1556.357	1556.357	1557.667
10	1511.815	1513.125	1522.296	1530.156	1534.086
15	1459.412	1467.273	1484.304	1502.645	1513.125
20	1367.708	1387.359	1416.180	1451.552	1467.273
25	1258.972	1277.313	1324.476	1375.568	1397.839
30	1151.547	1176.438	1241.942	1307.445	1332.336
35	1057.222	1087.354	1165.958	1238.011	1264.213
40	918.356	953.727	1041.502	1112.245	1131.896
45	804.380	842.372	940.627	1000.890	1020.541
50	681.234	724.466	813.550	865.953	880.364
55	565.948	610.490	693.024	734.946	746.737
60	465.073	509.615	584.289	619.661	630.141
65	370.748	419.221	486.034	516.166	525.336
70	280.354	331.446	389.089	411.360	415.291
75	193.890	246.292	288.214	298.695	296.075
80	121.836	168.998	184.719	141.487	128.386
85	55.023	77.294	58.953	58.953	60.263
90	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	156	156	156	156	152	152	152	152	146	146	146	139	139	139	134	134	134	131
1	143	136	131	126	139	133	128	124	128	124	120	123	119	116	118	115	113	110
2	130	119	110	103	126	117	109	102	112	105	99	108	102	97	104	99	95	92
3	119	105	94	86	115	103	93	85	99	91	84	95	88	82	92	86	81	78
4	109	93	82	73	106	91	81	73	88	79	72	85	77	71	82	75	70	67
5	100	84	72	63	97	82	71	63	79	70	62	77	68	62	74	67	61	58
6	93	75	64	55	90	74	63	55	72	62	55	70	61	54	67	60	54	51
7	86	68	57	49	84	67	57	49	65	56	49	64	55	48	62	54	48	45
8	80	63	52	44	78	62	51	44	60	50	44	58	50	43	57	49	43	41
9	75	58	47	40	73	57	47	40	55	46	39	54	45	39	53	45	39	37
10	70	53	43	36	69	53	43	36	51	42	36	50	42	36	49	41	36	33

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UGR TABLE - CORRECTED

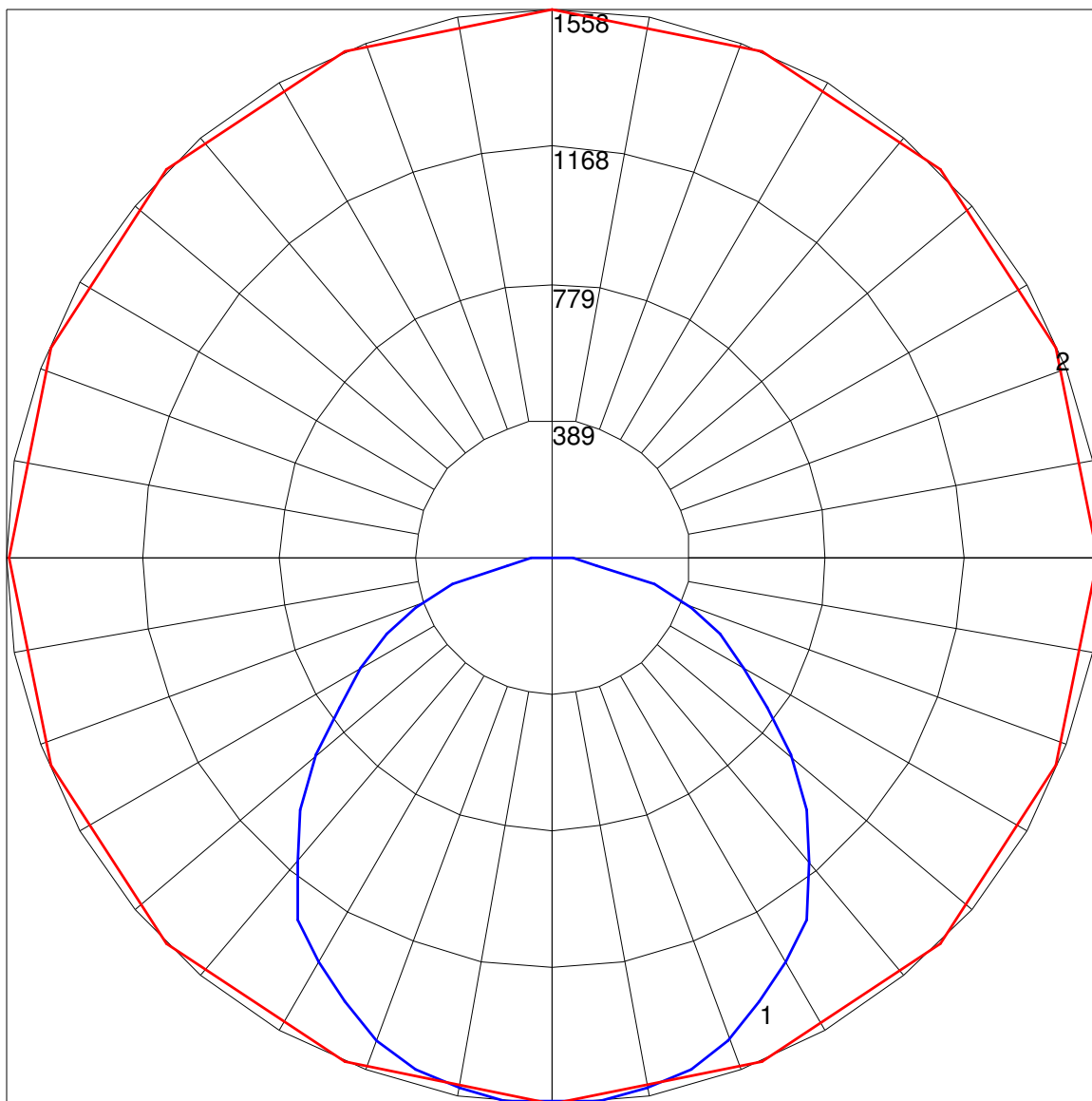
Reflectances

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	12.4	14.0	12.7	14.3	14.6	13.8	15.4	14.2	15.7	16.1
	3H	14.1	15.5	14.5	15.9	16.2	15.8	17.2	16.2	17.6	17.9
	4H	14.7	16.1	15.1	16.4	16.8	16.5	17.9	16.9	18.3	18.6
	6H	15.2	16.5	15.6	16.9	17.3	16.9	18.2	17.4	18.6	19.0
	8H	15.4	16.6	15.8	17.0	17.4	17.0	18.2	17.5	18.6	19.0
	12H	15.5	16.7	15.9	17.1	17.5	17.1	18.3	17.5	18.6	19.1
4H	2H	13.3	14.7	13.7	15.0	15.4	14.4	15.8	14.8	16.1	16.5
	3H	15.3	16.4	15.7	16.8	17.2	16.6	17.8	17.0	18.2	18.6
	4H	16.1	17.1	16.5	17.5	17.9	17.5	18.6	18.0	19.0	19.4
	6H	16.7	17.6	17.2	18.1	18.5	18.0	18.9	18.5	19.4	19.8
	8H	16.9	17.8	17.4	18.2	18.7	18.2	19.0	18.6	19.4	19.9
	12H	17.1	17.9	17.6	18.3	18.8	18.2	19.0	18.7	19.5	20.0
8H	4H	16.6	17.4	17.0	17.9	18.3	17.8	18.7	18.3	19.1	19.6
	6H	17.4	18.1	17.9	18.6	19.1	18.5	19.2	18.9	19.6	20.1
	8H	17.7	18.4	18.2	18.9	19.4	18.6	19.3	19.1	19.8	20.3
	12H	18.0	18.6	18.5	19.0	19.6	18.8	19.4	19.3	19.8	20.4
12H	4H	16.6	17.4	17.1	17.9	18.3	17.9	18.6	18.3	19.1	19.6
	6H	17.5	18.2	18.0	18.6	19.2	18.5	19.2	19.0	19.6	20.2
	8H	17.9	18.5	18.4	19.0	19.5	18.8	19.3	19.3	19.8	20.4

Maximum UGR = 20.4

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.)