



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-24-L70-835-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] 05-18-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 2x4 'RECESSED LUMINAIRE

[MORE] WITH FROST CONCAVE ACRYLIC LENS w/SHALLOW ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT1-24-L70-835-D-DIM-UNV

[LAMPCAT] HLM 80 CRI, 3500K 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	7002
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	111
Total Luminaire Watts	63.3
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	3197	3738	4056
55	2773	3396	3659
65	2465	3232	3493
75	2105	3130	3215
85	1774	1901	1943

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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	2693.952	2693.952	2693.952	2693.952	2693.952
5	2696.225	2693.952	2700.772	2700.772	2703.045
10	2623.477	2625.750	2641.664	2655.304	2662.124
15	2532.542	2546.182	2575.736	2607.563	2625.750
20	2373.406	2407.506	2457.520	2518.902	2546.182
25	2184.715	2216.543	2298.384	2387.046	2425.693
30	1998.298	2041.492	2155.161	2268.830	2312.024
35	1834.615	1886.903	2023.305	2148.341	2193.809
40	1593.637	1655.018	1807.335	1930.097	1964.198
45	1395.853	1461.781	1632.285	1736.860	1770.961
50	1182.156	1257.177	1411.767	1502.702	1527.709
55	982.099	1059.394	1202.616	1275.364	1295.825
60	807.049	884.344	1013.926	1075.307	1093.494
65	643.366	727.481	843.423	895.711	911.624
70	486.503	575.164	675.193	713.840	720.660
75	336.460	427.395	500.143	518.330	513.783
80	211.424	293.266	320.546	245.525	222.791
85	95.482	134.129	102.302	102.302	104.575
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	980.27	N.A.	14.00
0-30	2043.83	N.A.	29.20
0-40	3294.22	N.A.	47.00
0-60	5577.9	N.A.	79.70
0-80	6868.65	N.A.	98.10
0-90	7001.62	N.A.	100.00
10-90	6746.11	N.A.	96.40
20-40	2313.95	N.A.	33.00
20-50	3546.04	N.A.	50.60
40-70	3087.21	N.A.	44.10
60-80	1290.76	N.A.	18.40
70-80	487.22	N.A.	7.00
80-90	132.96	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	7001.62	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	255.50
10-20	724.77
20-30	1063.55
30-40	1250.4
40-50	1232.08
50-60	1051.59
60-70	803.54
70-80	487.22
80-90	132.96
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

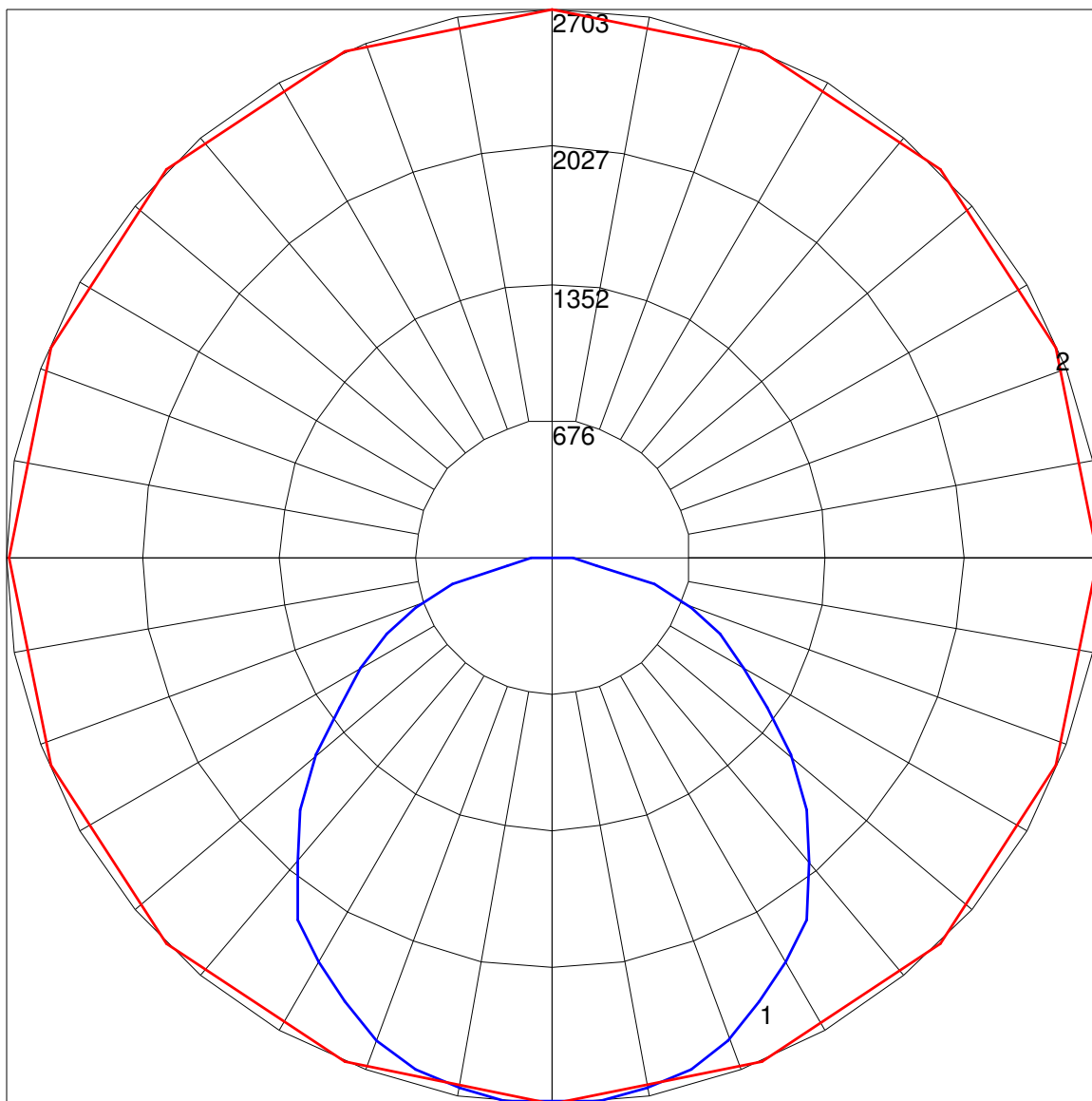
Reflectances

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	15.3	16.9	15.6	17.2	17.5	16.7	18.3	17.1	18.6	19.0
	3H	17.0	18.4	17.4	18.8	19.1	18.7	20.1	19.1	20.5	20.8
	4H	17.6	19.0	18.0	19.3	19.7	19.4	20.8	19.8	21.2	21.5
	6H	18.1	19.4	18.5	19.8	20.2	19.8	21.1	20.3	21.5	21.9
	8H	18.3	19.5	18.7	19.9	20.3	19.9	21.2	20.4	21.5	21.9
	12H	18.4	19.6	18.8	20.0	20.4	20.0	21.2	20.4	21.5	22.0
4H	2H	16.2	17.6	16.6	17.9	18.3	17.3	18.7	17.7	19.0	19.4
	3H	18.2	19.3	18.6	19.7	20.1	19.5	20.7	19.9	21.1	21.5
	4H	19.0	20.0	19.4	20.4	20.8	20.4	21.5	20.9	21.9	22.3
	6H	19.6	20.5	20.1	21.0	21.4	20.9	21.8	21.4	22.3	22.7
	8H	19.8	20.7	20.3	21.1	21.6	21.1	21.9	21.5	22.3	22.8
	12H	20.0	20.8	20.5	21.2	21.7	21.1	21.9	21.6	22.4	22.9
8H	4H	19.5	20.3	19.9	20.8	21.2	20.7	21.6	21.2	22.0	22.5
	6H	20.3	21.0	20.8	21.5	22.0	21.4	22.1	21.8	22.5	23.0
	8H	20.6	21.3	21.1	21.8	22.3	21.5	22.2	22.0	22.7	23.2
	12H	20.9	21.5	21.4	21.9	22.5	21.7	22.3	22.2	22.7	23.3
12H	4H	19.5	20.3	20.0	20.8	21.2	20.8	21.5	21.2	22.0	22.5
	6H	20.4	21.1	20.9	21.5	22.1	21.4	22.1	21.9	22.5	23.1
	8H	20.8	21.4	21.3	21.9	22.4	21.7	22.2	22.2	22.7	23.3

Maximum UGR = 23.3

POLAR GRAPH



Maximum Candela = 2703.045 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.)