



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-24-L70-840-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] 11-04-2021

[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-L70-840-D-DIM-UNV

[LAMPCAT] HLM 80 CRI, 4000K 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	7212
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	114
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	3293	3851	4178
55	2856	3498	3769
65	2539	3329	3598
75	2169	3223	3311
85	1827	1958	2002

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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	2774.770	2774.770	2774.770	2774.770	2774.770
5	2777.112	2774.770	2781.795	2781.795	2784.136
10	2702.181	2704.523	2720.914	2734.963	2741.988
15	2608.518	2622.567	2653.008	2685.790	2704.523
20	2444.607	2479.731	2531.246	2594.468	2622.567
25	2250.256	2283.039	2367.335	2458.657	2498.464
30	2058.247	2102.737	2219.816	2336.895	2381.385
35	1889.653	1943.510	2084.004	2212.791	2259.623
40	1641.446	1704.669	1861.555	1988.000	2023.123
45	1437.729	1505.635	1681.253	1788.966	1824.089
50	1217.621	1294.893	1454.120	1547.783	1573.540
55	1011.562	1091.175	1238.695	1313.625	1334.699
60	831.260	910.874	1044.344	1107.566	1126.299
65	662.667	749.305	868.725	922.582	938.973
70	501.098	592.419	695.449	735.255	742.280
75	346.554	440.217	515.147	533.880	529.197
80	217.767	302.064	330.162	252.890	229.475
85	98.346	138.153	105.371	105.371	107.713
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1009.68	N.A.	14.00
0-30	2105.14	N.A.	29.20
0-40	3393.05	N.A.	47.00
0-60	5745.23	N.A.	79.70
0-80	7074.71	N.A.	98.10
0-90	7211.67	N.A.	100.00
10-90	6948.5	N.A.	96.40
20-40	2383.37	N.A.	33.00
20-50	3652.42	N.A.	50.60
40-70	3179.83	N.A.	44.10
60-80	1329.48	N.A.	18.40
70-80	501.84	N.A.	7.00
80-90	136.95	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	7211.67	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	263.17
10-20	746.51
20-30	1095.46
30-40	1287.91
40-50	1269.05
50-60	1083.14
60-70	827.64
70-80	501.84
80-90	136.95
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

X=2H	Y=2H	15.4	17.0	15.7	17.3	17.6	16.8	18.4	17.2	18.7	19.1
	3H	17.1	18.5	17.5	18.9	19.2	18.8	20.2	19.2	20.6	20.9
	4H	17.7	19.1	18.1	19.4	19.8	19.5	20.9	19.9	21.3	21.6
	6H	18.2	19.5	18.6	19.9	20.3	19.9	21.2	20.4	21.6	22.0
	8H	18.4	19.6	18.8	20.0	20.4	20.0	21.3	20.5	21.6	22.0
	12H	18.5	19.7	18.9	20.1	20.5	20.1	21.3	20.5	21.6	22.1

UGR Viewed Endwise

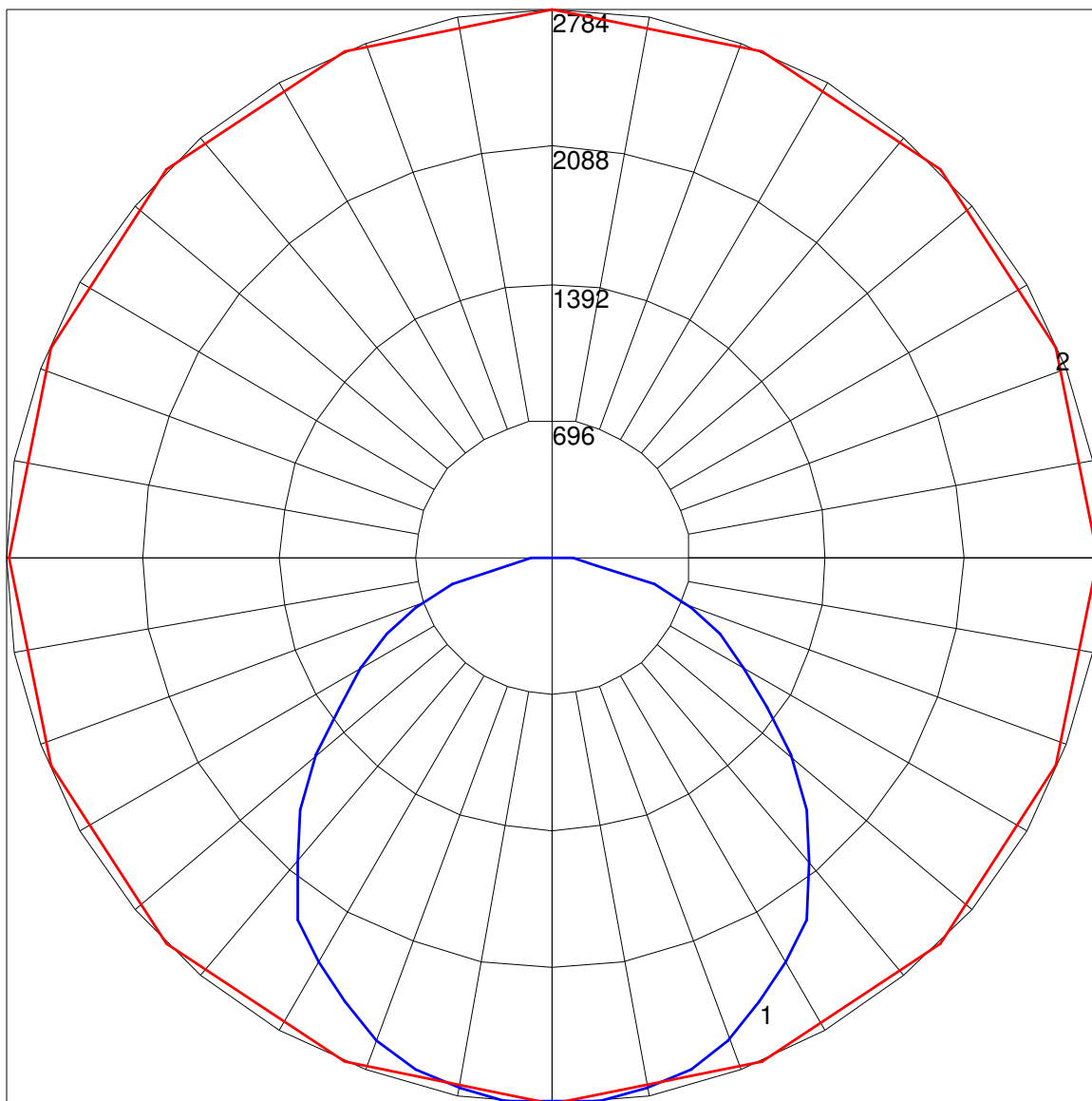
4H	2H	16.3	17.7	16.7	18.0	18.4	17.4	18.8	17.8	19.1	19.5
	3H	18.3	19.4	18.7	19.8	20.2	19.6	20.8	20.0	21.2	21.6
	4H	19.1	20.1	19.5	20.5	20.9	20.5	21.6	21.0	22.0	22.4
	6H	19.7	20.6	20.2	21.1	21.5	21.0	21.9	21.5	22.4	22.8
	8H	19.9	20.8	20.4	21.2	21.7	21.2	22.0	21.6	22.4	22.9
	12H	20.1	20.9	20.6	21.3	21.8	21.2	22.0	21.7	22.5	23.0

8H	4H	19.6	20.4	20.0	20.9	21.3	20.8	21.7	21.3	22.1	22.6
	6H	20.4	21.1	20.9	21.6	22.1	21.5	22.2	21.9	22.6	23.1
	8H	20.7	21.4	21.2	21.9	22.4	21.6	22.3	22.1	22.8	23.3
	12H	21.0	21.6	21.5	22.0	22.6	21.8	22.4	22.3	22.8	23.4

12H	4H	19.6	20.4	20.1	20.9	21.3	20.9	21.6	21.3	22.1	22.6
	6H	20.5	21.2	21.0	21.6	22.2	21.5	22.2	22.0	22.6	23.2
	8H	20.9	21.5	21.4	22.0	22.5	21.8	22.3	22.3	22.8	23.4

Maximum UGR = 23.4

POLAR GRAPH



Maximum Candela = 2784.136 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.)