



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT2-24-L70-835-D-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18887.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 03-JAN-2020

[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/DEEP ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT2-24-L70-835-D-DIM-UNV

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Architectural, Classroom, Commercial, Office, Direct

[_SEARCH_MOUNTING] Ceiling, Recessed

[_SEARCH_CERTIFICATION] DLC

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7143
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	113
Total Luminaire Watts	63.34
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.12
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.26
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	3527	3754	3912
55	3038	3278	3401
65	2643	2925	3065
75	2186	2618	2747
85	1666	2093	1922

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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	2999.777	2999.777	2999.777	2999.777	2999.777
5	2999.777	2999.777	2999.777	3004.375	3004.375
10	2912.428	2914.726	2923.921	2935.414	2944.609
15	2806.688	2815.883	2838.870	2859.558	2873.350
20	2645.781	2661.872	2698.650	2735.429	2753.819
25	2425.107	2443.497	2496.367	2540.041	2556.132
30	2215.928	2243.512	2300.979	2353.848	2374.537
35	2032.033	2059.617	2126.279	2183.746	2199.837
40	1758.490	1792.970	1861.931	1912.502	1935.489
45	1540.116	1572.297	1638.959	1684.932	1707.919
50	1301.053	1333.234	1393.000	1438.974	1450.467
55	1075.782	1103.366	1160.833	1199.911	1204.508
60	875.797	903.381	951.654	981.536	995.328
65	689.604	717.188	763.162	788.447	799.941
70	517.203	537.891	583.865	609.150	618.345
75	349.399	374.685	418.360	439.048	439.048
80	206.881	232.167	271.244	262.050	255.153
85	89.649	112.635	112.635	103.441	103.441
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1082.08	N.A.	15.10
0-30	2232.88	N.A.	31.30
0-40	3546.93	N.A.	49.70
0-60	5836.76	N.A.	81.70
0-80	7017.37	N.A.	98.20
0-90	7143.06	N.A.	100.00
10-90	6859.28	N.A.	96.00
20-40	2464.85	N.A.	34.50
20-50	3719.16	N.A.	52.10
40-70	3038.51	N.A.	42.50
60-80	1180.61	N.A.	16.50
70-80	431.93	N.A.	6.00
80-90	125.69	N.A.	1.80
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	7143.06	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	283.78
10-20	798.30
20-30	1150.81
30-40	1314.04
40-50	1254.31
50-60	1035.52
60-70	748.68
70-80	431.93
80-90	125.69
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	207	207	207	207	202	202	202	202	193	193	193	185	185	185	177	177	177	174
1	190	182	174	168	185	178	171	165	170	165	160	164	159	155	157	154	151	147
2	173	159	148	139	169	156	146	137	150	141	134	144	137	131	139	133	128	124
3	159	141	127	116	154	138	126	115	133	122	113	128	119	111	124	116	110	106
4	146	126	111	100	142	123	110	99	119	107	98	115	105	96	111	102	95	91
5	134	113	98	87	131	111	97	86	107	95	85	104	93	84	101	91	83	80
6	125	102	87	76	121	100	86	76	97	85	75	95	83	75	92	82	74	70
7	116	93	78	68	113	92	78	68	89	76	67	86	75	67	84	74	66	63
8	108	85	71	61	105	84	70	61	82	69	60	80	68	60	78	67	60	56
9	101	78	64	55	99	77	64	55	75	63	55	74	62	54	72	62	54	51
10	95	73	59	50	93	72	59	50	70	58	50	68	57	50	67	57	49	46

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UGR TABLE - CORRECTED

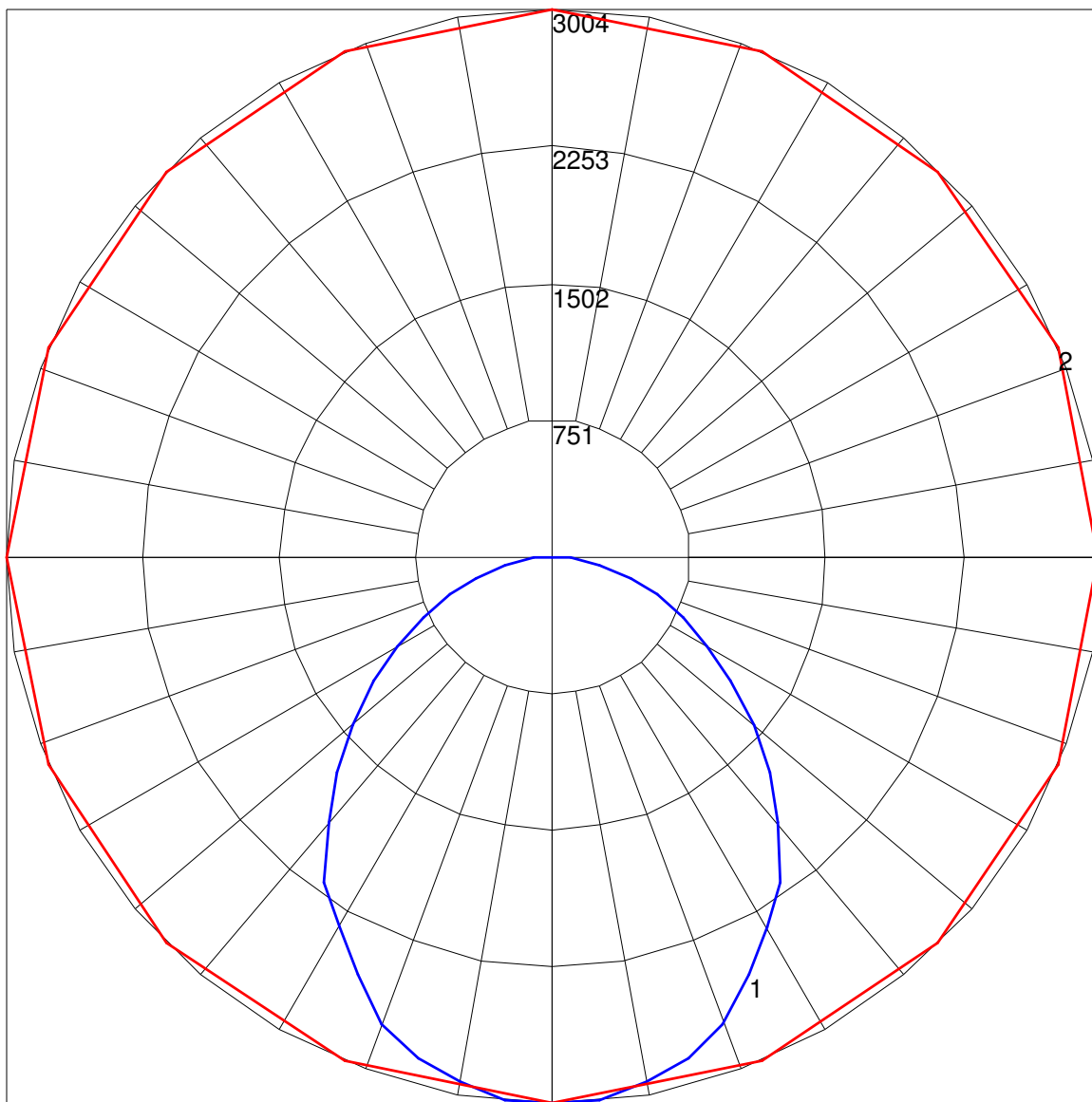
Reflectances

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	13.5	15.1	13.9	15.4	15.8	14.2	15.8	14.5	16.1	16.4
	3H	15.2	16.6	15.6	16.9	17.3	15.9	17.4	16.3	17.7	18.1
	4H	15.8	17.1	16.2	17.4	17.8	16.6	18.0	17.0	18.3	18.7
	6H	16.2	17.4	16.6	17.8	18.2	17.1	18.4	17.5	18.7	19.1
	8H	16.3	17.5	16.7	17.9	18.3	17.3	18.5	17.7	18.8	19.2
	12H	16.4	17.5	16.8	17.9	18.3	17.4	18.5	17.8	18.9	19.3
4H	2H	14.2	15.6	14.6	15.9	16.3	14.7	16.1	15.1	16.4	16.8
	3H	16.1	17.2	16.5	17.6	18.0	16.7	17.8	17.1	18.2	18.6
	4H	16.8	17.8	17.2	18.2	18.6	17.5	18.6	18.0	19.0	19.4
	6H	17.3	18.2	17.8	18.7	19.1	18.2	19.1	18.6	19.5	20.0
	8H	17.5	18.3	18.0	18.8	19.3	18.4	19.2	18.8	19.7	20.1
	12H	17.6	18.4	18.1	18.9	19.3	18.5	19.3	19.0	19.7	20.2
8H	4H	17.1	18.0	17.6	18.4	18.9	17.8	18.7	18.3	19.1	19.6
	6H	17.9	18.5	18.4	19.0	19.5	18.6	19.3	19.1	19.8	20.3
	8H	18.1	18.7	18.6	19.2	19.7	18.9	19.5	19.4	20.0	20.5
	12H	18.3	18.9	18.9	19.4	19.9	19.1	19.6	19.6	20.1	20.7
12H	4H	17.2	17.9	17.7	18.4	18.9	17.9	18.6	18.3	19.1	19.5
	6H	17.9	18.6	18.5	19.0	19.6	18.7	19.3	19.2	19.7	20.3
	8H	18.3	18.8	18.8	19.3	19.9	19.0	19.5	19.5	20.0	20.6

Maximum UGR = 20.7

POLAR GRAPH



Maximum Candela = 3004.375 Located At Horizontal Angle = 67.5, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (67.5 - 247.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)