



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-24-L100-835-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

[ISSUE DATE] 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-L100-835-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	10124
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	87
Total Luminaire Watts	116.5
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	4623	5406	5865
55	4010	4910	5291
65	3565	4674	5052
75	3044	4525	4649
85	2566	2749	2810

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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	3895.496	3895.496	3895.496	3895.496	3895.496
5	3898.783	3895.496	3905.358	3905.358	3908.645
10	3793.588	3796.875	3819.887	3839.611	3849.473
15	3662.095	3681.819	3724.554	3770.577	3796.875
20	3431.981	3481.291	3553.612	3642.371	3681.819
25	3159.132	3205.155	3323.499	3451.705	3507.590
30	2889.570	2952.030	3116.396	3280.763	3343.223
35	2652.882	2728.491	2925.731	3106.534	3172.281
40	2304.424	2393.182	2613.434	2790.950	2840.260
45	2018.426	2113.758	2360.309	2511.526	2560.836
50	1709.416	1817.898	2041.437	2172.930	2209.091
55	1420.130	1531.900	1739.002	1844.197	1873.783
60	1167.005	1278.774	1466.153	1554.911	1581.210
65	930.317	1051.948	1219.602	1295.211	1318.223
70	703.490	831.697	976.339	1032.224	1042.086
75	486.526	618.020	723.214	749.513	742.938
80	305.722	424.067	463.515	355.033	322.159
85	138.068	193.953	147.930	147.930	151.218
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1417.49	N.A.	14.00
0-30	2955.4	N.A.	29.20
0-40	4763.5	N.A.	47.00
0-60	8065.73	N.A.	79.70
0-80	9932.18	N.A.	98.10
0-90	10124.45	N.A.	100.00
10-90	9754.99	N.A.	96.40
20-40	3346.01	N.A.	33.00
20-50	5127.62	N.A.	50.60
40-70	4464.16	N.A.	44.10
60-80	1866.45	N.A.	18.40
70-80	704.53	N.A.	7.00
80-90	192.27	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	10124.45	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	369.46
10-20	1048.03
20-30	1537.91
30-40	1808.09
40-50	1781.61
50-60	1520.62
60-70	1161.93
70-80	704.53
80-90	192.27
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	299	299	299	299	292	292	292	292	279	279	279	267	267	267	256	256	256	251
1	273	261	251	241	266	256	246	237	245	237	230	235	229	223	226	221	216	211
2	249	228	211	197	242	224	208	195	215	201	190	206	195	186	199	190	182	176
3	227	201	181	165	221	197	178	163	190	173	160	183	169	157	176	165	155	149
4	208	179	157	140	203	175	155	139	169	151	137	163	148	135	158	144	133	128
5	192	160	138	121	187	157	136	120	152	133	119	147	131	118	142	128	117	111
6	177	144	122	106	173	142	121	106	137	119	105	133	117	104	129	114	103	98
7	165	131	109	94	160	129	108	94	125	107	93	122	105	92	118	103	92	87
8	154	120	99	84	150	118	98	84	115	97	83	112	95	83	109	94	82	78
9	144	110	90	76	140	109	89	76	106	88	75	103	87	75	101	86	75	70
10	135	102	82	69	132	101	82	69	98	81	69	96	80	68	94	79	68	64

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UGR TABLE - CORRECTED

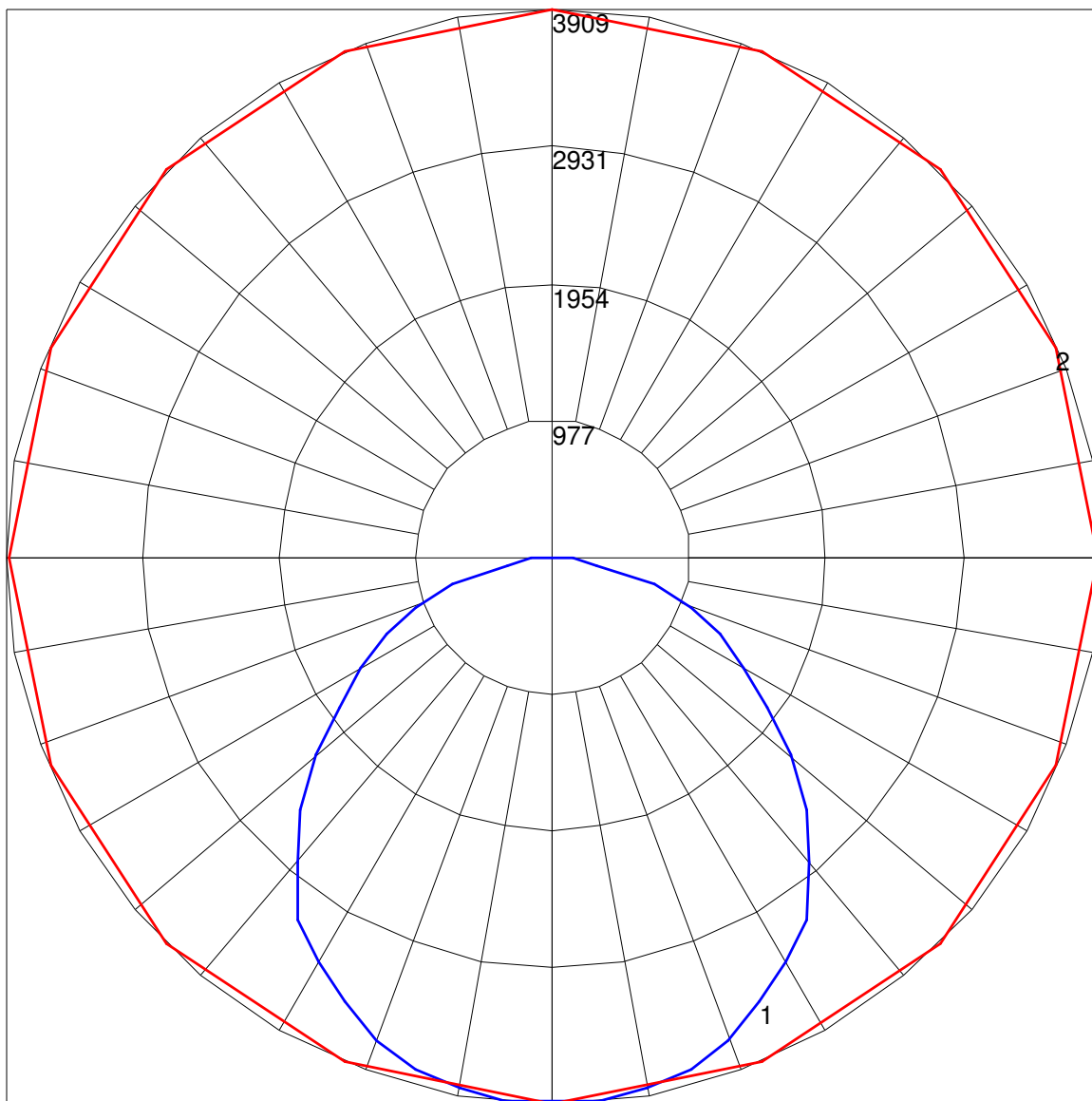
Reflectances

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	13.3	14.9	13.6	15.2	15.5	14.7	16.3	15.1	16.6	17.0
	3H	15.0	16.4	15.4	16.8	17.1	16.7	18.1	17.1	18.5	18.8
	4H	15.6	17.0	16.0	17.3	17.7	17.4	18.8	17.8	19.2	19.5
	6H	16.1	17.4	16.5	17.8	18.2	17.8	19.1	18.3	19.5	19.9
	8H	16.3	17.5	16.7	17.9	18.3	17.9	19.2	18.4	19.5	19.9
	12H	16.4	17.6	16.8	18.0	18.4	18.0	19.2	18.4	19.5	20.0
4H	2H	14.2	15.6	14.6	15.9	16.3	15.3	16.7	15.7	17.0	17.4
	3H	16.2	17.3	16.6	17.7	18.1	17.5	18.7	17.9	19.1	19.5
	4H	17.0	18.0	17.4	18.4	18.8	18.4	19.5	18.9	19.9	20.3
	6H	17.6	18.5	18.1	19.0	19.4	18.9	19.8	19.4	20.3	20.7
	8H	17.8	18.7	18.3	19.1	19.6	19.1	19.9	19.5	20.3	20.8
	12H	18.0	18.8	18.5	19.2	19.7	19.1	19.9	19.6	20.4	20.9
8H	4H	17.5	18.3	17.9	18.8	19.2	18.7	19.6	19.2	20.0	20.5
	6H	18.3	19.0	18.8	19.5	20.0	19.4	20.1	19.8	20.5	21.0
	8H	18.6	19.3	19.1	19.8	20.3	19.5	20.2	20.0	20.7	21.2
	12H	18.9	19.5	19.4	19.9	20.5	19.7	20.3	20.2	20.7	21.3
12H	4H	17.5	18.3	18.0	18.8	19.2	18.8	19.5	19.2	20.0	20.5
	6H	18.4	19.1	18.9	19.5	20.1	19.4	20.1	19.9	20.5	21.1
	8H	18.8	19.4	19.3	19.9	20.4	19.7	20.2	20.2	20.7	21.3

Maximum UGR = 21.3

POLAR GRAPH



Maximum Candela = 3908.645 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.)