



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AW-4-L34-827-RA-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20990.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 2023-08-09

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 48 INCH LINEAR LED SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/RADIAL RIBBED FROST ACRYLIC LENS

[MORE] 0-10V DIMMING DRIVER

[LUMCAT] AW-4-L34-827-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3322
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	141
Total Luminaire Watts	23.5
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.36
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.98 ft
Luminous Width (90-270)	0.38 ft
Luminous Height	0.15 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	5813	5327	5467
55	4957	4617	4861
65	3987	3824	4209
75	3093	3243	3637
85	1451	2923	3386

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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>
<b>0</b>	1072.821	1072.821	1072.821	1072.821	1072.821
<b>5</b>	1081.816	1067.631	1064.864	1064.864	1061.750
<b>10</b>	1062.096	1049.987	1050.679	1053.447	1049.987
<b>15</b>	1026.462	1017.121	1024.732	1033.035	1031.997
<b>20</b>	980.450	976.644	989.099	1004.321	1005.013
<b>25</b>	916.793	920.944	943.432	963.497	968.687
<b>30</b>	849.677	856.942	889.116	915.063	925.096
<b>35</b>	765.955	782.907	825.460	859.364	871.126
<b>40</b>	686.038	704.374	755.576	802.972	814.043
<b>45</b>	591.245	617.884	680.157	731.359	745.197
<b>50</b>	502.679	535.545	603.700	660.091	675.313
<b>55</b>	415.152	447.326	525.513	583.980	601.970
<b>60</b>	332.121	368.447	448.710	502.679	523.091
<b>65</b>	252.205	290.606	369.139	437.985	452.861
<b>70</b>	186.126	220.030	302.369	369.139	386.783
<b>75</b>	126.275	163.985	247.361	307.212	320.359
<b>80</b>	70.230	116.242	197.889	252.205	270.886
<b>85</b>	24.909	78.533	157.066	207.576	223.144
<b>90</b>	0.000	51.894	122.470	171.942	181.975
<b>95</b>	0.000	33.212	96.523	140.806	156.028
<b>100</b>	0.000	22.141	74.035	116.588	128.697
<b>105</b>	0.000	14.876	58.467	94.101	107.593
<b>110</b>	0.000	6.919	46.359	77.149	89.949
<b>115</b>	0.000	4.497	37.018	65.040	74.035
<b>120</b>	0.000	0.000	29.407	53.278	62.619
<b>125</b>	0.000	0.000	22.833	42.553	49.818
<b>130</b>	0.000	0.000	17.990	33.558	39.785
<b>135</b>	0.000	0.000	14.530	25.947	31.828
<b>140</b>	0.000	0.000	7.611	19.720	24.217
<b>145</b>	0.000	0.000	2.768	15.222	17.644
<b>150</b>	0.000	0.000	0.000	13.146	14.876
<b>155</b>	0.000	0.000	0.000	12.455	13.146
<b>160</b>	0.000	0.000	0.000	7.265	12.109
<b>165</b>	0.000	0.000	0.000	2.422	4.152
<b>170</b>	0.000	0.000	0.000	0.000	0.000
<b>175</b>	0.000	0.000	0.000	0.000	0.000
<b>180</b>	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	390.92	N.A.	11.80
0-30	825.26	N.A.	24.80
0-40	1339.62	N.A.	40.30
0-60	2323.31	N.A.	69.90
0-80	2934.85	N.A.	88.30
0-90	3092.19	N.A.	93.10
10-90	2990.78	N.A.	90.00
20-40	948.70	N.A.	28.60
20-50	1469.96	N.A.	44.20
40-70	1344.41	N.A.	40.50
60-80	611.54	N.A.	18.40
70-80	250.82	N.A.	7.50
80-90	157.35	N.A.	4.70
90-110	155.55	N.A.	4.70
90-120	191.40	N.A.	5.80
90-130	211.99	N.A.	6.40
90-150	227.39	N.A.	6.80
90-180	229.93	N.A.	6.90
110-180	74.38	N.A.	2.20
0-180	3322.12	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	101.42
10-20	289.51
20-30	434.33
30-40	514.36
40-50	521.26
50-60	462.43
60-70	360.71
70-80	250.82
80-90	157.35
90-100	96.30
100-110	59.26
110-120	35.85
120-130	20.60
130-140	10.89
140-150	4.51
150-160	2.10
160-170	0.43
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	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	93
1	106	101	96	92	102	98	93	90	92	89	85	87	84	82	82	80	78	75
2	96	87	80	74	93	85	78	73	80	75	70	76	71	67	72	68	65	62
3	88	77	68	61	84	74	67	60	70	64	58	67	61	57	63	59	55	52
4	80	68	59	52	77	66	58	51	63	55	50	59	53	48	57	51	47	45
5	74	61	51	45	71	59	51	44	56	49	43	53	47	42	51	45	41	39
6	68	55	46	39	66	53	45	39	51	43	38	48	42	37	46	40	36	34
7	63	49	41	34	61	48	40	34	46	39	33	44	38	33	42	36	32	30
8	59	45	37	31	57	44	36	30	42	35	30	40	34	29	39	33	29	27
9	55	41	33	28	53	41	33	27	39	32	27	37	31	26	36	30	26	24
10	51	38	30	25	50	37	30	25	36	29	24	35	28	24	33	28	24	22

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**UGR TABLE - CORRECTED**

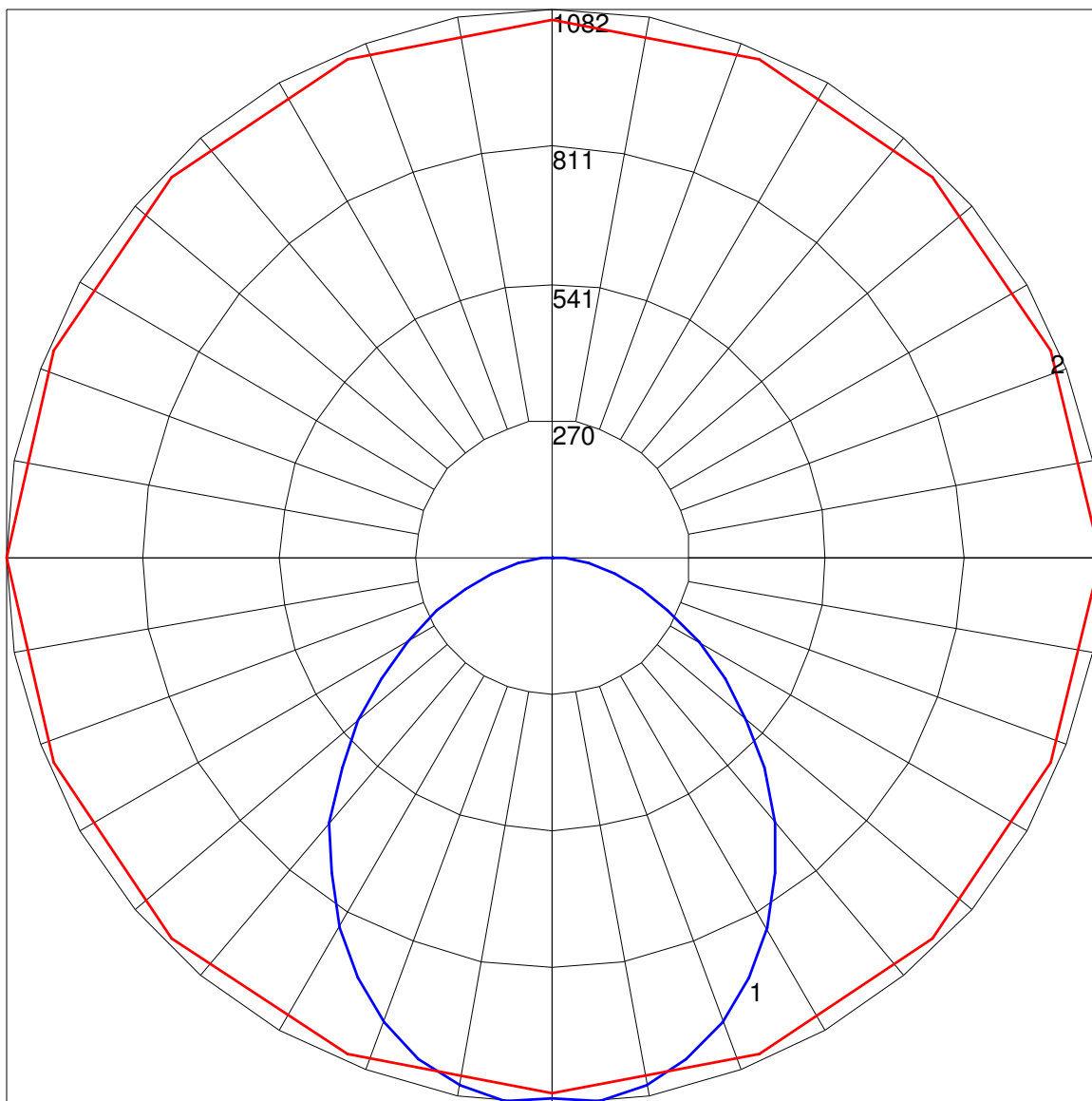
Reflectances

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	15.1	16.6	15.5	17.0	17.5	18.1	19.6	18.6	20.0	20.5
	3H	16.3	17.6	16.8	18.1	18.6	20.3	21.7	20.8	22.2	22.7
	4H	16.7	18.0	17.2	18.4	19.0	21.4	22.7	21.9	23.2	23.7
	6H	16.9	18.1	17.4	18.6	19.2	22.5	23.7	23.0	24.2	24.7
	8H	16.9	18.1	17.5	18.6	19.2	23.1	24.2	23.6	24.7	25.3
	12H	16.9	18.0	17.5	18.6	19.2	23.7	24.8	24.2	25.3	25.9
4H	2H	16.0	17.3	16.5	17.8	18.3	18.4	19.7	18.9	20.2	20.7
	3H	17.5	18.6	18.0	19.1	19.7	20.9	22.0	21.4	22.5	23.1
	4H	18.0	19.0	18.5	19.5	20.1	22.1	23.1	22.6	23.7	24.3
	6H	18.3	19.2	18.8	19.7	20.4	23.4	24.3	24.0	24.9	25.5
	8H	18.4	19.2	18.9	19.8	20.4	24.1	24.9	24.6	25.5	26.1
	12H	18.4	19.2	19.0	19.8	20.4	24.8	25.6	25.4	26.2	26.8
8H	4H	18.7	19.5	19.3	20.1	20.7	22.3	23.1	22.8	23.7	24.3
	6H	19.2	19.9	19.8	20.5	21.2	23.7	24.4	24.3	25.0	25.7
	8H	19.4	20.0	20.0	20.6	21.3	24.5	25.2	25.1	25.8	26.4
	12H	19.5	20.1	20.1	20.7	21.4	25.5	26.0	26.1	26.6	27.3
12H	4H	18.9	19.7	19.5	20.3	20.9	22.3	23.0	22.9	23.6	24.3
	6H	19.5	20.2	20.2	20.8	21.4	23.8	24.4	24.4	25.0	25.7
	8H	19.8	20.4	20.4	21.0	21.7	24.6	25.2	25.2	25.8	26.5

Maximum UGR = 27.3

POLAR GRAPH



Maximum Candela = 1081.816 Located At Horizontal Angle = 0, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)