



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AW-4-L54-840-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-L54-840-RA-DIM-UNV  
 [LAMPCAT] 22 INCH HLM LED ARRAYS

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5691
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	147
Total Luminaire Watts	38.8
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	9957	9126	9364
55	8490	7908	8326
65	6830	6551	7209
75	5298	5554	6229
85	2486	5007	5799

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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>	1837.657	1837.657	1837.657	1837.657	1837.657
<b>5</b>	1853.064	1828.768	1824.027	1824.027	1818.693
<b>10</b>	1819.286	1798.545	1799.730	1804.471	1798.545
<b>15</b>	1758.248	1742.248	1755.285	1769.507	1767.730
<b>20</b>	1679.432	1672.913	1694.247	1720.322	1721.507
<b>25</b>	1570.393	1577.505	1616.024	1650.395	1659.284
<b>30</b>	1455.429	1467.873	1522.985	1567.430	1584.616
<b>35</b>	1312.019	1341.057	1413.947	1472.022	1492.170
<b>40</b>	1175.128	1206.536	1294.241	1375.428	1394.391
<b>45</b>	1012.756	1058.386	1165.054	1252.759	1276.463
<b>50</b>	861.050	917.347	1034.089	1130.683	1156.758
<b>55</b>	711.122	766.233	900.161	1000.311	1031.126
<b>60</b>	568.897	631.120	768.604	861.050	896.013
<b>65</b>	432.006	497.785	632.306	750.233	775.715
<b>70</b>	318.819	376.894	517.934	632.306	662.528
<b>75</b>	216.299	280.893	423.710	526.230	548.749
<b>80</b>	120.298	199.114	338.968	432.006	464.007
<b>85</b>	42.667	134.520	269.041	355.561	382.228
<b>90</b>	0.000	88.890	209.781	294.523	311.708
<b>95</b>	0.000	56.890	165.336	241.189	267.263
<b>100</b>	0.000	37.926	126.817	199.707	220.448
<b>105</b>	0.000	25.482	100.150	161.188	184.299
<b>110</b>	0.000	11.852	79.409	132.150	154.076
<b>115</b>	0.000	7.704	63.408	111.409	126.817
<b>120</b>	0.000	0.000	50.371	91.261	107.261
<b>125</b>	0.000	0.000	39.112	72.890	85.335
<b>130</b>	0.000	0.000	30.815	57.482	68.149
<b>135</b>	0.000	0.000	24.889	44.445	54.519
<b>140</b>	0.000	0.000	13.037	33.778	41.482
<b>145</b>	0.000	0.000	4.741	26.074	30.223
<b>150</b>	0.000	0.000	0.000	22.519	25.482
<b>155</b>	0.000	0.000	0.000	21.334	22.519
<b>160</b>	0.000	0.000	0.000	12.445	20.741
<b>165</b>	0.000	0.000	0.000	4.148	7.111
<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	669.62	N.A.	11.80
0-30	1413.6	N.A.	24.80
0-40	2294.66	N.A.	40.30
0-60	3979.64	N.A.	69.90
0-80	5027.16	N.A.	88.30
0-90	5296.68	N.A.	93.10
10-90	5122.96	N.A.	90.00
20-40	1625.04	N.A.	28.60
20-50	2517.92	N.A.	44.20
40-70	2302.86	N.A.	40.50
60-80	1047.52	N.A.	18.40
70-80	429.64	N.A.	7.60
80-90	269.52	N.A.	4.70
90-110	266.45	N.A.	4.70
90-120	327.85	N.A.	5.80
90-130	363.13	N.A.	6.40
90-150	389.51	N.A.	6.80
90-180	393.85	N.A.	6.90
110-180	127.41	N.A.	2.20
0-180	5690.53	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	173.72
10-20	495.90
20-30	743.98
30-40	881.06
40-50	892.88
50-60	792.10
60-70	617.88
70-80	429.64
80-90	269.52
90-100	164.95
100-110	101.50
110-120	61.40
120-130	35.28
130-140	18.66
140-150	7.72
150-160	3.60
160-170	0.74
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	87	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**

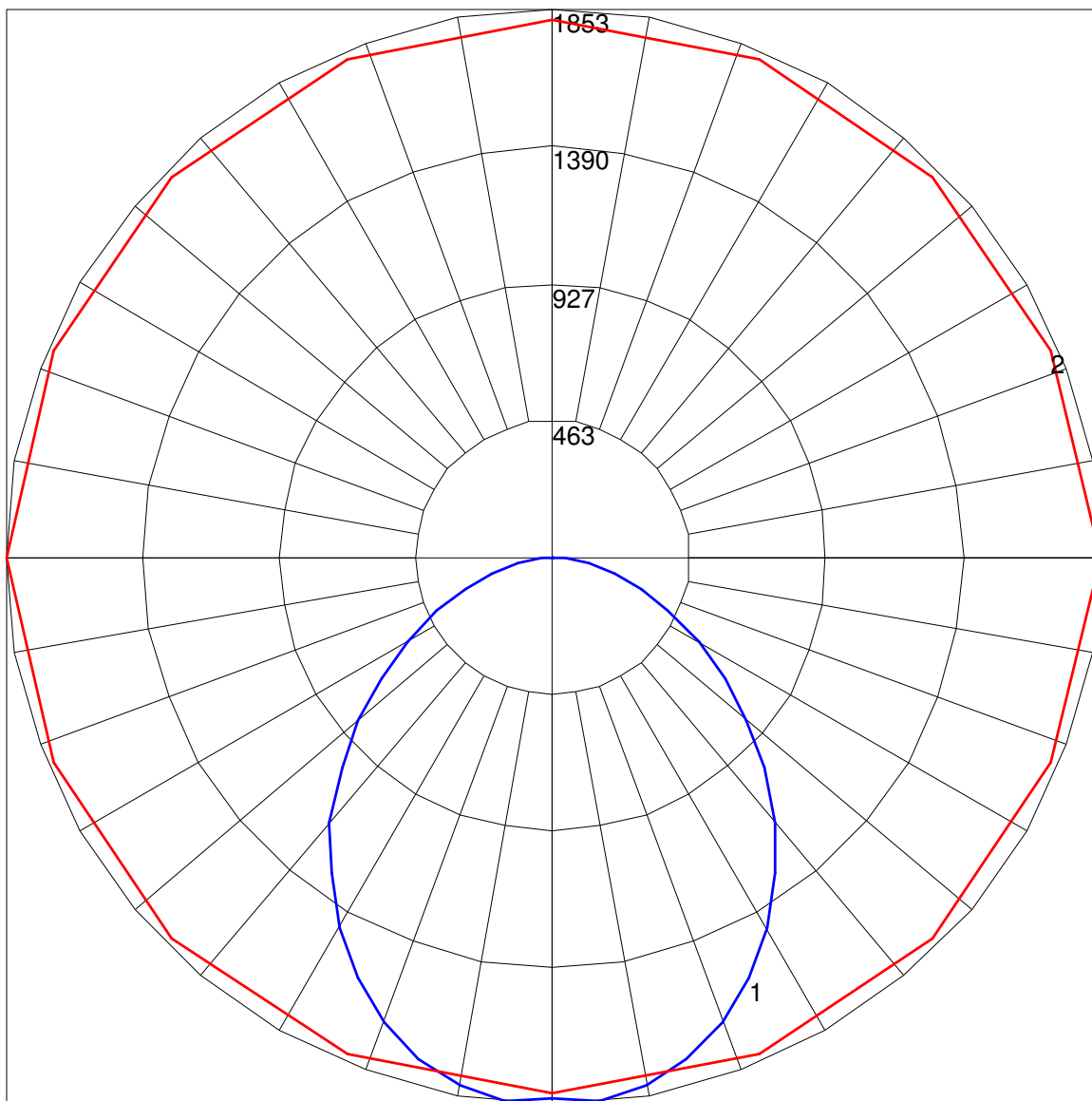
Reflectances

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	16.9	18.4	17.3	18.8	19.3	19.9	21.4	20.4	21.8	22.3
	3H	18.1	19.4	18.6	19.9	20.4	22.1	23.5	22.6	24.0	24.5
	4H	18.5	19.8	19.0	20.2	20.8	23.2	24.5	23.7	25.0	25.5
	6H	18.7	19.9	19.2	20.4	20.9	24.3	25.5	24.8	26.0	26.5
	8H	18.7	19.9	19.3	20.4	21.0	24.9	26.0	25.4	26.5	27.1
	12H	18.7	19.8	19.3	20.4	21.0	25.5	26.6	26.0	27.1	27.7
4H	2H	17.8	19.1	18.3	19.6	20.1	20.2	21.5	20.7	22.0	22.5
	3H	19.3	20.4	19.8	20.9	21.5	22.7	23.8	23.2	24.3	24.9
	4H	19.8	20.8	20.3	21.3	21.9	23.9	24.9	24.4	25.5	26.1
	6H	20.1	21.0	20.6	21.5	22.2	25.2	26.1	25.8	26.7	27.3
	8H	20.2	21.0	20.7	21.6	22.2	25.9	26.7	26.4	27.3	27.9
	12H	20.2	21.0	20.8	21.6	22.2	26.6	27.4	27.2	28.0	28.6
8H	4H	20.5	21.3	21.1	21.9	22.5	24.1	24.9	24.6	25.5	26.1
	6H	21.0	21.7	21.6	22.3	23.0	25.5	26.2	26.1	26.8	27.5
	8H	21.2	21.8	21.8	22.4	23.1	26.3	27.0	26.9	27.6	28.2
	12H	21.3	21.9	21.9	22.5	23.2	27.3	27.8	27.9	28.4	29.1
12H	4H	20.7	21.5	21.3	22.1	22.7	24.1	24.8	24.7	25.4	26.1
	6H	21.3	22.0	22.0	22.6	23.2	25.6	26.2	26.2	26.8	27.5
	8H	21.6	22.2	22.2	22.8	23.5	26.4	27.0	27.0	27.6	28.3

Maximum UGR = 29.1

POLAR GRAPH



Maximum Candela = 1853.064 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.)