



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AW-4-L93-935-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-L93-935-RA-DIM-UNV  
 [LAMPCAT] 22 INCH HLM LED ARRAYS

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7670
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	109
Total Luminaire Watts	70.1
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	13420	12299	12621
55	11443	10659	11222
65	9205	8829	9717
75	7140	7486	8396
85	3350	6748	7816

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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	2476.805	2476.805	2476.805	2476.805	2476.805
5	2497.572	2464.825	2458.435	2458.435	2451.246
10	2452.045	2424.090	2425.688	2432.077	2424.090
15	2369.778	2348.213	2365.784	2384.953	2382.557
20	2263.549	2254.763	2283.517	2318.660	2320.258
25	2116.586	2126.171	2178.087	2224.412	2236.393
30	1961.636	1978.409	2052.689	2112.593	2135.755
35	1768.348	1807.485	1905.726	1984.000	2011.156
40	1583.845	1626.177	1744.387	1853.810	1879.369
45	1364.998	1426.499	1570.267	1688.477	1720.425
50	1160.528	1236.406	1393.752	1523.942	1559.085
55	958.454	1032.734	1213.243	1348.225	1389.758
60	766.763	850.628	1035.929	1160.528	1207.652
65	582.261	670.918	852.225	1011.169	1045.514
70	429.707	507.981	698.074	852.225	892.960
75	291.530	378.589	571.079	709.256	739.607
80	162.138	268.367	456.863	582.261	625.391
85	57.507	181.308	362.615	479.227	515.169
90	0.000	119.807	282.744	396.960	420.122
95	0.000	76.676	222.841	325.076	360.219
100	0.000	51.118	170.924	269.166	297.121
105	0.000	34.345	134.982	217.250	248.399
110	0.000	15.974	107.027	178.113	207.665
115	0.000	10.383	85.462	150.158	170.924
120	0.000	0.000	67.891	123.002	144.567
125	0.000	0.000	52.715	98.242	115.014
130	0.000	0.000	41.533	77.475	91.852
135	0.000	0.000	33.546	59.903	73.481
140	0.000	0.000	17.572	45.527	55.910
145	0.000	0.000	6.390	35.143	40.734
150	0.000	0.000	0.000	30.351	34.345
155	0.000	0.000	0.000	28.754	30.351
160	0.000	0.000	0.000	16.773	27.955
165	0.000	0.000	0.000	5.591	9.585
170	0.000	0.000	0.000	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000
180	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	902.52	N.A.	11.80
0-30	1905.26	N.A.	24.80
0-40	3092.76	N.A.	40.30
0-60	5363.79	N.A.	69.90
0-80	6775.63	N.A.	88.30
0-90	7138.9	N.A.	93.10
10-90	6904.76	N.A.	90.00
20-40	2190.24	N.A.	28.60
20-50	3393.67	N.A.	44.20
40-70	3103.81	N.A.	40.50
60-80	1411.85	N.A.	18.40
70-80	579.07	N.A.	7.60
80-90	363.27	N.A.	4.70
90-110	359.12	N.A.	4.70
90-120	441.87	N.A.	5.80
90-130	489.42	N.A.	6.40
90-150	524.98	N.A.	6.80
90-180	530.84	N.A.	6.90
110-180	171.72	N.A.	2.20
0-180	7669.74	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	234.14
10-20	668.38
20-30	1002.74
30-40	1187.5
40-50	1203.43
50-60	1067.6
60-70	832.78
70-80	579.07
80-90	363.27
90-100	222.31
100-110	136.80
110-120	82.76
120-130	47.55
130-140	25.15
140-150	10.41
150-160	4.85
160-170	1.00
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	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**

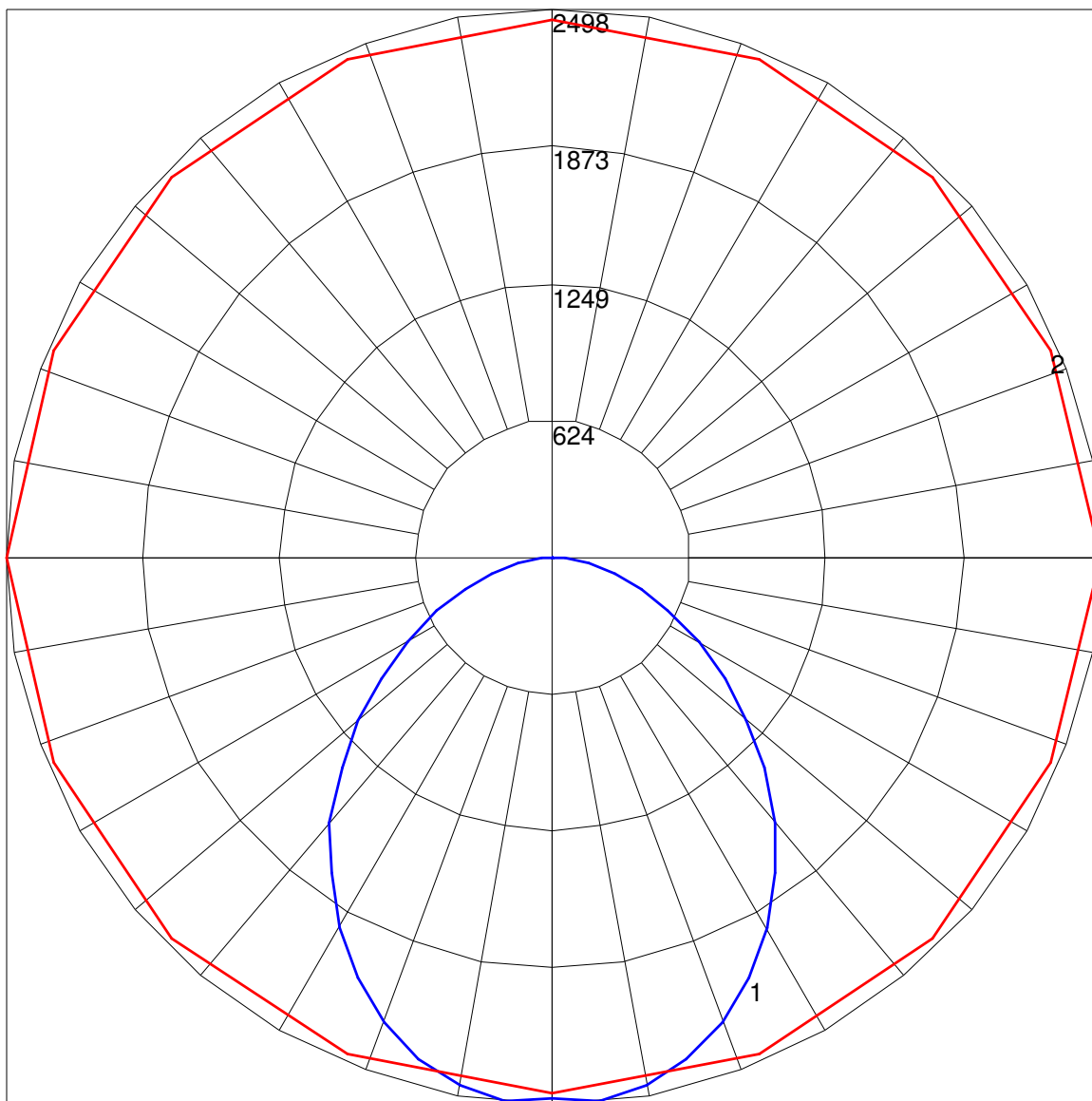
Reflectances

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	18.0	19.5	18.4	19.9	20.4	21.0	22.5	21.5	22.9	23.4
	3H	19.2	20.5	19.7	21.0	21.5	23.2	24.6	23.7	25.1	25.6
	4H	19.6	20.9	20.1	21.3	21.9	24.3	25.6	24.8	26.1	26.6
	6H	19.8	21.0	20.3	21.5	22.0	25.4	26.6	25.9	27.1	27.6
	8H	19.8	21.0	20.4	21.5	22.1	26.0	27.1	26.5	27.6	28.2
	12H	19.8	20.9	20.4	21.5	22.1	26.6	27.7	27.1	28.2	28.8
4H	2H	18.9	20.2	19.4	20.7	21.2	21.3	22.6	21.8	23.1	23.6
	3H	20.4	21.5	20.9	22.0	22.6	23.8	24.9	24.3	25.4	26.0
	4H	20.9	21.9	21.4	22.4	23.0	25.0	26.0	25.5	26.6	27.2
	6H	21.2	22.1	21.7	22.6	23.3	26.3	27.2	26.9	27.8	28.4
	8H	21.3	22.1	21.8	22.7	23.3	27.0	27.8	27.5	28.4	29.0
	12H	21.3	22.1	21.9	22.7	23.3	27.7	28.5	28.3	29.1	29.7
8H	4H	21.6	22.4	22.2	23.0	23.6	25.2	26.0	25.7	26.6	27.2
	6H	22.1	22.8	22.7	23.4	24.1	26.6	27.3	27.2	27.9	28.6
	8H	22.3	22.9	22.9	23.5	24.2	27.4	28.1	28.0	28.7	29.3
	12H	22.4	23.0	23.0	23.6	24.3	28.4	28.9	29.0	29.5	30.2
12H	4H	21.8	22.6	22.4	23.2	23.8	25.2	25.9	25.8	26.5	27.2
	6H	22.4	23.1	23.1	23.7	24.3	26.7	27.3	27.3	27.9	28.6
	8H	22.7	23.3	23.3	23.9	24.6	27.5	28.1	28.1	28.7	29.4

Maximum UGR = 30.2

POLAR GRAPH



Maximum Candela = 2497.572 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.)