



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AW-4-L93-940-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-L93-940-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7947
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	113
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	13905	12744	13077
55	11857	11044	11628
65	9538	9148	10068
75	7398	7757	8699
85	3471	6992	8099

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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	2566.329	2566.329	2566.329	2566.329	2566.329
5	2587.846	2553.915	2547.294	2547.294	2539.846
10	2540.674	2511.708	2513.363	2519.984	2511.708
15	2455.433	2433.088	2451.295	2471.157	2468.674
20	2345.365	2336.261	2366.054	2402.468	2404.123
25	2193.090	2203.021	2256.813	2304.813	2317.227
30	2032.539	2049.918	2126.883	2188.952	2212.952
35	1832.264	1872.816	1974.608	2055.711	2083.849
40	1641.093	1684.955	1807.437	1920.815	1947.298
45	1414.336	1478.060	1627.024	1749.506	1782.609
50	1202.475	1281.095	1444.129	1579.025	1615.438
55	993.097	1070.062	1257.096	1396.957	1439.991
60	794.478	881.374	1073.373	1202.475	1251.302
65	603.307	695.168	883.029	1047.718	1083.304
70	445.239	526.342	723.306	883.029	925.236
75	302.067	392.273	591.720	734.892	766.340
80	167.999	278.067	473.376	603.307	647.996
85	59.586	187.861	375.722	496.549	533.790
90	0.000	124.137	292.964	411.308	435.308
95	0.000	79.448	230.895	336.825	373.239
100	0.000	52.965	177.102	278.895	307.860
105	0.000	35.586	139.861	225.102	257.378
110	0.000	16.552	110.896	184.551	215.171
115	0.000	10.759	88.551	155.585	177.102
120	0.000	0.000	70.344	127.447	149.792
125	0.000	0.000	54.620	101.792	119.172
130	0.000	0.000	43.034	80.275	95.172
135	0.000	0.000	34.758	62.069	76.137
140	0.000	0.000	18.207	47.172	57.931
145	0.000	0.000	6.621	36.414	42.207
150	0.000	0.000	0.000	31.448	35.586
155	0.000	0.000	0.000	29.793	31.448
160	0.000	0.000	0.000	17.379	28.965
165	0.000	0.000	0.000	5.793	9.931
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	935.14	N.A.	11.80
0-30	1974.12	N.A.	24.80
0-40	3204.54	N.A.	40.30
0-60	5557.66	N.A.	69.90
0-80	7020.54	N.A.	88.30
0-90	7396.94	N.A.	93.10
10-90	7154.33	N.A.	90.00
20-40	2269.4	N.A.	28.60
20-50	3516.33	N.A.	44.20
40-70	3215.99	N.A.	40.50
60-80	1462.88	N.A.	18.40
70-80	600.00	N.A.	7.60
80-90	376.40	N.A.	4.70
90-110	372.10	N.A.	4.70
90-120	457.84	N.A.	5.80
90-130	507.11	N.A.	6.40
90-150	543.96	N.A.	6.80
90-180	550.02	N.A.	6.90
110-180	177.92	N.A.	2.20
0-180	7946.96	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	242.60
10-20	692.54
20-30	1038.98
30-40	1230.42
40-50	1246.93
50-60	1106.19
60-70	862.88
70-80	600.00
80-90	376.40
90-100	230.35
100-110	141.75
110-120	85.75
120-130	49.27
130-140	26.06
140-150	10.78
150-160	5.03
160-170	1.04
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**

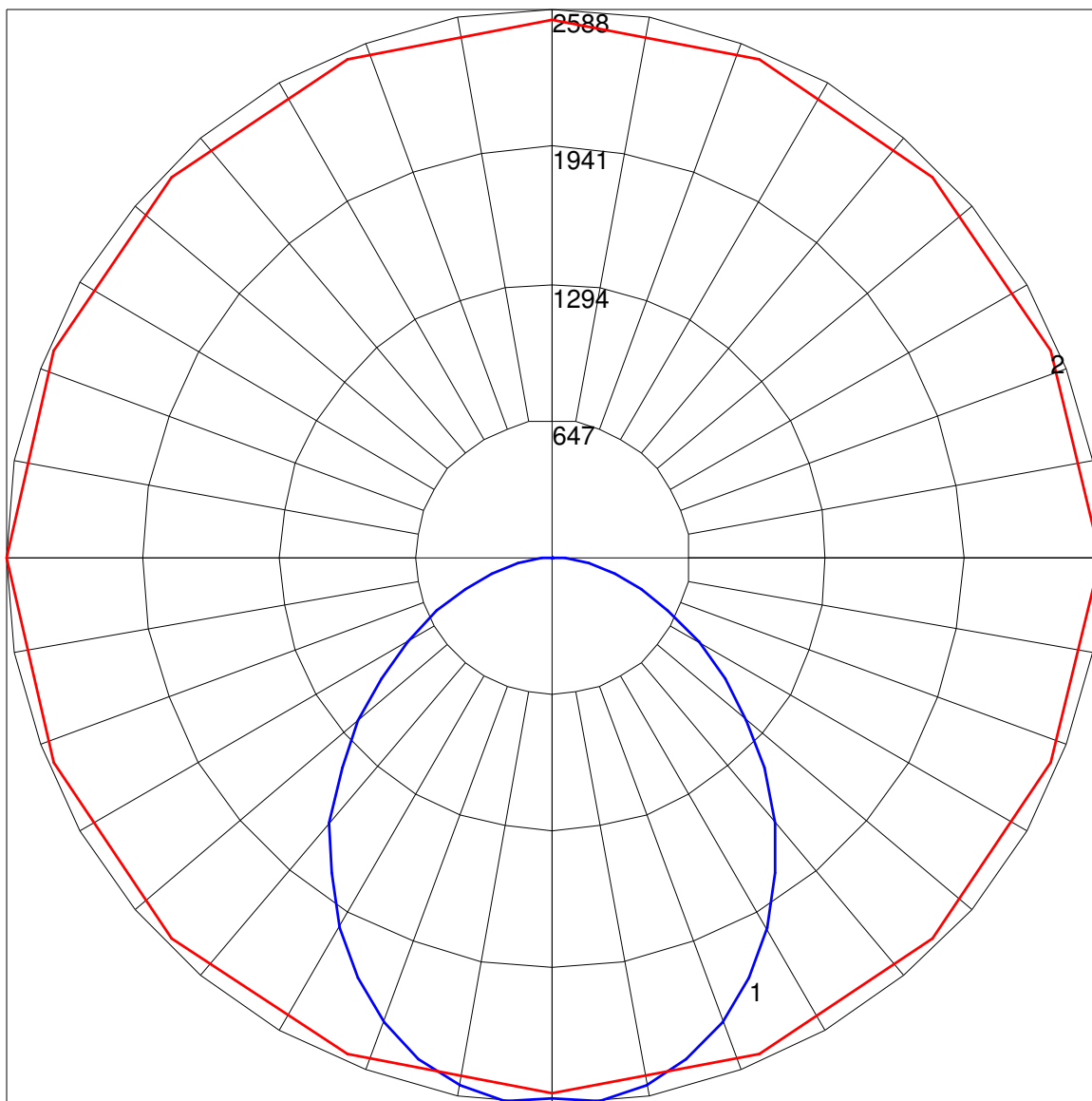
Reflectances

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	18.1	19.6	18.5	20.0	20.5	21.1	22.6	21.6	23.0	23.5
	3H	19.3	20.6	19.8	21.1	21.6	23.3	24.7	23.8	25.2	25.7
	4H	19.7	21.0	20.2	21.4	22.0	24.4	25.7	24.9	26.2	26.7
	6H	19.9	21.1	20.4	21.6	22.1	25.5	26.7	26.0	27.2	27.7
	8H	19.9	21.1	20.5	21.6	22.2	26.1	27.2	26.6	27.7	28.3
	12H	19.9	21.0	20.5	21.6	22.2	26.7	27.8	27.2	28.3	28.9
4H	2H	19.0	20.3	19.5	20.8	21.3	21.4	22.7	21.9	23.2	23.7
	3H	20.5	21.6	21.0	22.1	22.7	23.9	25.0	24.4	25.5	26.1
	4H	21.0	22.0	21.5	22.5	23.1	25.1	26.1	25.6	26.7	27.3
	6H	21.3	22.2	21.8	22.7	23.4	26.4	27.3	27.0	27.9	28.5
	8H	21.4	22.2	21.9	22.8	23.4	27.1	27.9	27.6	28.5	29.1
	12H	21.4	22.2	22.0	22.8	23.4	27.8	28.6	28.4	29.2	29.8
8H	4H	21.7	22.5	22.3	23.1	23.7	25.3	26.1	25.8	26.7	27.3
	6H	22.2	22.9	22.8	23.5	24.2	26.7	27.4	27.3	28.0	28.7
	8H	22.4	23.0	23.0	23.6	24.3	27.5	28.2	28.1	28.8	29.4
	12H	22.5	23.1	23.1	23.7	24.4	28.5	29.0	29.1	29.6	30.3
12H	4H	21.9	22.7	22.5	23.3	23.9	25.3	26.0	25.9	26.6	27.3
	6H	22.5	23.2	23.2	23.8	24.4	26.8	27.4	27.4	28.0	28.7
	8H	22.8	23.4	23.4	24.0	24.7	27.6	28.2	28.2	28.8	29.5

Maximum UGR = 30.3

POLAR GRAPH



Maximum Candela = 2587.846 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.)