



IES INDOOR REPORT
PHOTOMETRIC FILENAME : AW-4-L93-840-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-L93-840-RA-DIM-UNV
[LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9518
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	136
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	16654	15263	15663
55	14201	13227	13927
65	11423	10957	12058
75	8861	9290	10419
85	4158	8375	9700

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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	3073.626	3073.626	3073.626	3073.626	3073.626
5	3099.397	3058.759	3050.829	3050.829	3041.909
10	3042.900	3008.209	3010.191	3018.121	3008.209
15	2940.809	2914.047	2935.853	2959.641	2956.668
20	2808.983	2798.080	2833.762	2877.374	2879.356
25	2626.607	2638.501	2702.928	2760.416	2775.283
30	2434.320	2455.135	2547.314	2621.652	2650.396
35	2194.456	2243.024	2364.938	2462.073	2495.773
40	1965.495	2018.027	2164.721	2300.512	2332.229
45	1693.914	1770.234	1948.645	2095.339	2134.986
50	1440.174	1534.335	1729.596	1891.157	1934.769
55	1189.407	1281.586	1505.591	1673.099	1724.640
60	951.526	1055.599	1285.551	1440.174	1498.653
65	722.565	832.585	1057.581	1254.825	1297.445
70	533.251	630.386	866.285	1057.581	1108.131
75	361.778	469.816	708.688	880.161	917.826
80	201.208	333.034	566.951	722.565	776.088
85	71.364	224.996	449.992	594.704	639.306
90	0.000	148.676	350.875	492.613	521.357
95	0.000	95.153	276.537	403.407	447.019
100	0.000	63.435	212.111	334.025	368.716
105	0.000	42.620	167.508	269.599	308.255
110	0.000	19.823	132.817	221.031	257.705
115	0.000	12.885	106.055	186.340	212.111
120	0.000	0.000	84.250	152.641	179.402
125	0.000	0.000	65.417	121.914	142.729
130	0.000	0.000	51.541	96.144	113.985
135	0.000	0.000	41.629	74.338	91.188
140	0.000	0.000	21.806	56.497	69.382
145	0.000	0.000	7.929	43.612	50.550
150	0.000	0.000	0.000	37.665	42.620
155	0.000	0.000	0.000	35.682	37.665
160	0.000	0.000	0.000	20.815	34.691
165	0.000	0.000	0.000	6.938	11.894
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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Zone	Lumens	%Lamp	%Fixt
0-20	1119.99	N.A.	11.80
0-30	2364.36	N.A.	24.80
0-40	3838.00	N.A.	40.30
0-60	6656.27	N.A.	69.90
0-80	8408.32	N.A.	88.30
0-90	8859.12	N.A.	93.10
10-90	8568.56	N.A.	90.00
20-40	2718.01	N.A.	28.60
20-50	4211.42	N.A.	44.20
40-70	3851.71	N.A.	40.50
60-80	1752.05	N.A.	18.40
70-80	718.61	N.A.	7.60
80-90	450.80	N.A.	4.70
90-110	445.65	N.A.	4.70
90-120	548.35	N.A.	5.80
90-130	607.36	N.A.	6.40
90-150	651.48	N.A.	6.80
90-180	658.75	N.A.	6.90
110-180	213.10	N.A.	2.20
0-180	9517.87	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	290.56
10-20	829.43
20-30	1244.36
30-40	1473.65
40-50	1493.42
50-60	1324.85
60-70	1033.45
70-80	718.61
80-90	450.80
90-100	275.88
100-110	169.77
110-120	102.70
120-130	59.01
130-140	31.21
140-150	12.92
150-160	6.02
160-170	1.24
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

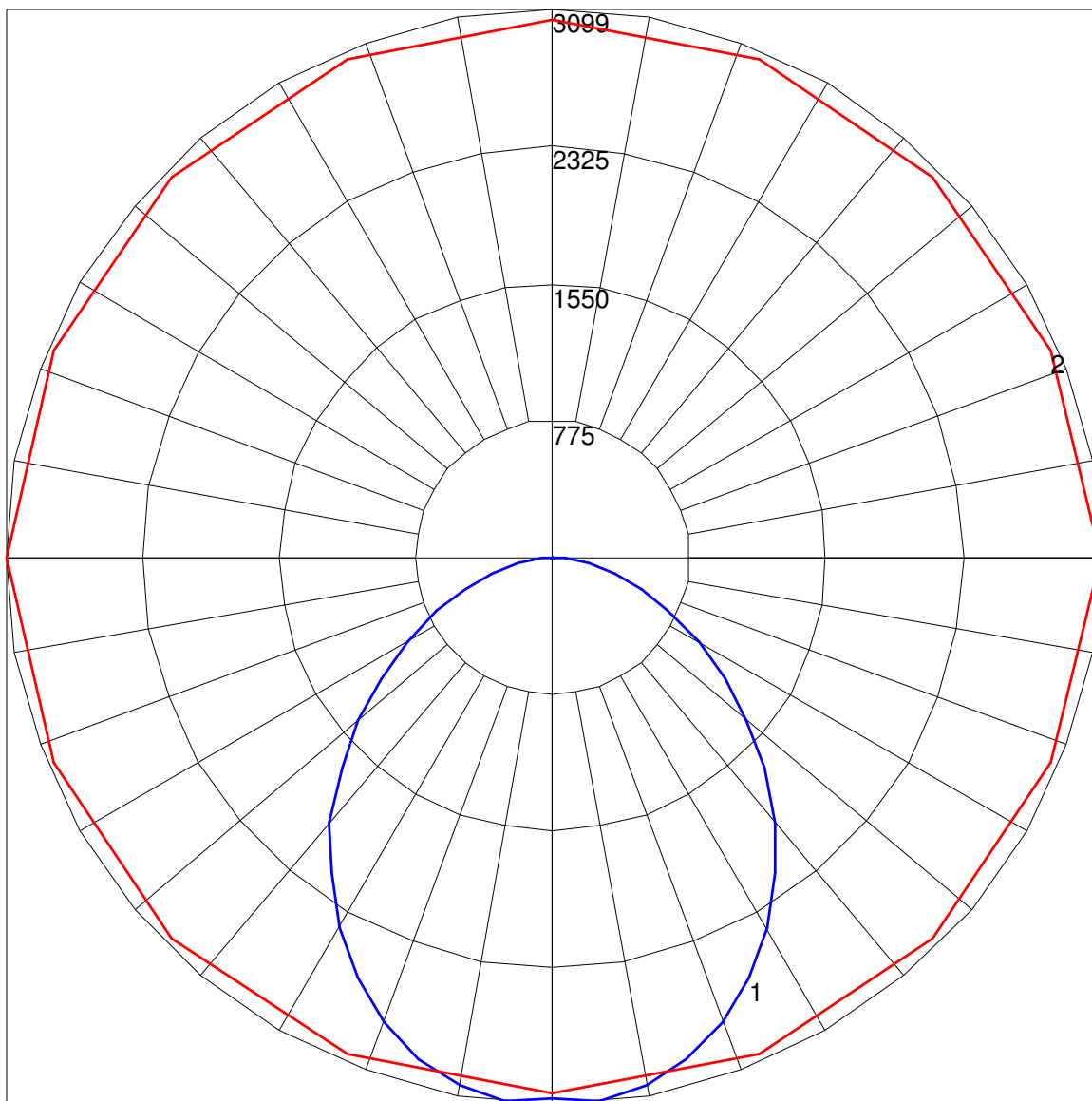
Reflectances

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	18.7	20.2	19.1	20.6	21.1	21.7	23.2	22.2	23.6	24.1
	3H	19.9	21.2	20.4	21.7	22.2	23.9	25.3	24.4	25.8	26.3
	4H	20.3	21.6	20.8	22.0	22.6	25.0	26.3	25.5	26.8	27.3
	6H	20.5	21.7	21.0	22.2	22.7	26.1	27.3	26.6	27.8	28.3
	8H	20.5	21.7	21.1	22.2	22.8	26.7	27.8	27.2	28.3	28.9
	12H	20.5	21.6	21.1	22.2	22.8	27.3	28.4	27.8	28.9	29.5
4H	2H	19.6	20.9	20.1	21.4	21.9	22.0	23.3	22.5	23.8	24.3
	3H	21.1	22.2	21.6	22.7	23.3	24.5	25.6	25.0	26.1	26.7
	4H	21.6	22.6	22.1	23.1	23.7	25.7	26.7	26.2	27.3	27.9
	6H	21.9	22.8	22.4	23.3	24.0	27.0	27.9	27.6	28.5	29.1
	8H	22.0	22.8	22.5	23.4	24.0	27.7	28.5	28.2	29.1	29.7
	12H	22.0	22.8	22.6	23.4	24.0	28.4	29.2	29.0	29.8	30.4
8H	4H	22.3	23.1	22.9	23.7	24.3	25.9	26.7	26.4	27.3	27.9
	6H	22.8	23.5	23.4	24.1	24.8	27.3	28.0	27.9	28.6	29.3
	8H	23.0	23.6	23.6	24.2	24.9	28.1	28.8	28.7	29.4	30.0
	12H	23.1	23.7	23.7	24.3	25.0	29.1	29.6	29.7	30.2	30.9
12H	4H	22.5	23.3	23.1	23.9	24.5	25.9	26.6	26.5	27.2	27.9
	6H	23.1	23.8	23.8	24.4	25.0	27.4	28.0	28.0	28.6	29.3
	8H	23.4	24.0	24.0	24.6	25.3	28.2	28.8	28.8	29.4	30.1

Maximum UGR = 30.9

POLAR GRAPH



Maximum Candela = 3099.397 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.)