



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AW-4-L93-835-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-L93-835-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9241
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	132
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	16169	14819	15206
55	13787	12842	13521
65	11091	10638	11707
75	8603	9019	10115
85	4036	8131	9417

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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	2984.103	2984.103	2984.103	2984.103	2984.103
5	3009.123	2969.669	2961.970	2961.970	2953.310
10	2954.272	2920.591	2922.516	2930.214	2920.591
15	2855.155	2829.172	2850.343	2873.438	2870.551
20	2727.168	2716.583	2751.226	2793.567	2795.492
25	2550.104	2561.652	2624.202	2680.015	2694.450
30	2363.417	2383.626	2473.120	2545.293	2573.200
35	2130.540	2177.693	2296.056	2390.362	2423.080
40	1908.248	1959.250	2101.671	2233.506	2264.300
45	1644.577	1718.674	1891.889	2034.310	2072.802
50	1398.227	1489.646	1679.220	1836.075	1878.416
55	1154.764	1244.258	1461.739	1624.368	1674.408
60	923.811	1024.853	1248.108	1398.227	1455.003
65	701.519	808.335	1026.778	1218.276	1259.655
70	517.719	612.025	841.053	1026.778	1075.855
75	351.241	456.132	688.047	854.526	891.093
80	195.348	323.334	550.438	701.519	753.484
85	69.286	218.443	436.886	577.382	620.686
90	0.000	144.346	340.655	478.265	506.172
95	0.000	92.381	268.483	391.658	433.999
100	0.000	61.587	205.933	324.296	357.977
105	0.000	41.379	162.629	261.747	299.276
110	0.000	19.246	128.949	214.594	250.199
115	0.000	12.510	102.966	180.913	205.933
120	0.000	0.000	81.796	148.195	174.177
125	0.000	0.000	63.512	118.363	138.572
130	0.000	0.000	50.040	93.343	110.665
135	0.000	0.000	40.417	72.173	88.532
140	0.000	0.000	21.171	54.851	67.361
145	0.000	0.000	7.698	42.341	49.077
150	0.000	0.000	0.000	36.568	41.379
155	0.000	0.000	0.000	34.643	36.568
160	0.000	0.000	0.000	20.208	33.681
165	0.000	0.000	0.000	6.736	11.548
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	1087.37	N.A.	11.80
0-30	2295.49	N.A.	24.80
0-40	3726.21	N.A.	40.30
0-60	6462.4	N.A.	69.90
0-80	8163.42	N.A.	88.30
0-90	8601.09	N.A.	93.10
10-90	8318.99	N.A.	90.00
20-40	2638.84	N.A.	28.60
20-50	4088.76	N.A.	44.20
40-70	3739.53	N.A.	40.50
60-80	1701.02	N.A.	18.40
70-80	697.68	N.A.	7.60
80-90	437.67	N.A.	4.70
90-110	432.67	N.A.	4.70
90-120	532.38	N.A.	5.80
90-130	589.67	N.A.	6.40
90-150	632.51	N.A.	6.80
90-180	639.56	N.A.	6.90
110-180	206.89	N.A.	2.20
0-180	9240.65	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	282.10
10-20	805.28
20-30	1208.12
30-40	1430.72
40-50	1449.92
50-60	1286.26
60-70	1003.35
70-80	697.68
80-90	437.67
90-100	267.85
100-110	164.82
110-120	99.71
120-130	57.29
130-140	30.30
140-150	12.54
150-160	5.85
160-170	1.21
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

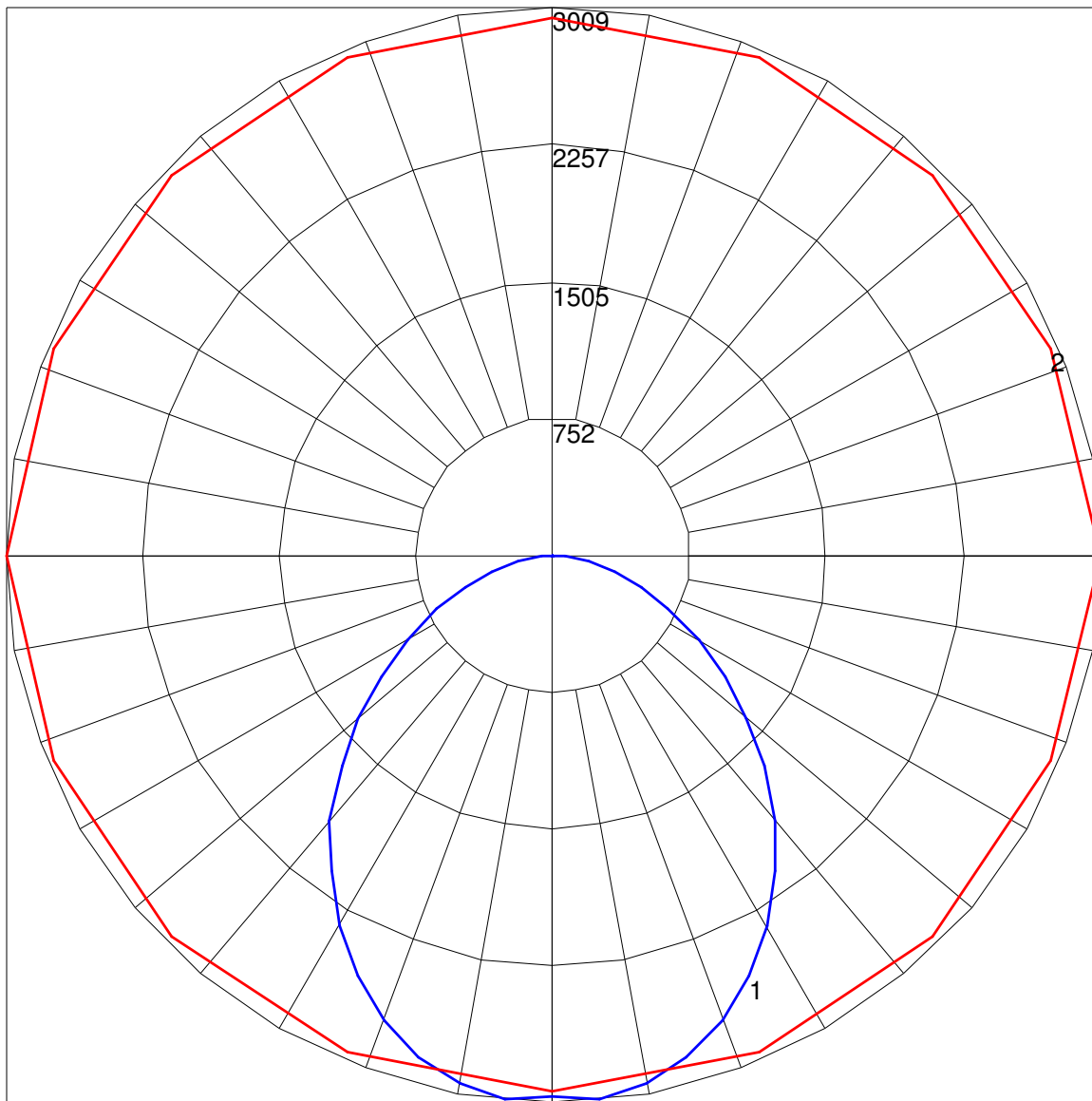
Reflectances

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	18.6	20.1	19.0	20.5	21.0	21.6	23.1	22.1	23.5	24.0
	3H	19.8	21.1	20.3	21.6	22.1	23.8	25.2	24.3	25.7	26.2
	4H	20.2	21.5	20.7	21.9	22.5	24.9	26.2	25.4	26.7	27.2
	6H	20.4	21.6	20.9	22.1	22.6	26.0	27.2	26.5	27.7	28.2
	8H	20.4	21.6	21.0	22.1	22.7	26.6	27.7	27.1	28.2	28.8
	12H	20.4	21.5	21.0	22.1	22.7	27.2	28.3	27.7	28.8	29.4
4H	2H	19.5	20.8	20.0	21.3	21.8	21.9	23.2	22.4	23.7	24.2
	3H	21.0	22.1	21.5	22.6	23.2	24.4	25.5	24.9	26.0	26.6
	4H	21.5	22.5	22.0	23.0	23.6	25.6	26.6	26.1	27.2	27.8
	6H	21.8	22.7	22.3	23.2	23.9	26.9	27.8	27.5	28.4	29.0
	8H	21.9	22.7	22.4	23.3	23.9	27.6	28.4	28.1	29.0	29.6
	12H	21.9	22.7	22.5	23.3	23.9	28.3	29.1	28.9	29.7	30.3
8H	4H	22.2	23.0	22.8	23.6	24.2	25.8	26.6	26.3	27.2	27.8
	6H	22.7	23.4	23.3	24.0	24.7	27.2	27.9	27.8	28.5	29.2
	8H	22.9	23.5	23.5	24.1	24.8	28.0	28.7	28.6	29.3	29.9
	12H	23.0	23.6	23.6	24.2	24.9	29.0	29.5	29.6	30.1	30.8
12H	4H	22.4	23.2	23.0	23.8	24.4	25.8	26.5	26.4	27.1	27.8
	6H	23.0	23.7	23.7	24.3	24.9	27.3	27.9	27.9	28.5	29.2
	8H	23.3	23.9	23.9	24.5	25.2	28.1	28.7	28.7	29.3	30.0

Maximum UGR = 30.8

POLAR GRAPH



Maximum Candela = 3009.123 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.)