



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AW-4-L34-840-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-L34-840-RA-DIM-UNV
 [LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3528
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	150
Total Luminaire Watts	23.5
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	6172	5657	5805
55	5263	4902	5162
65	4234	4061	4469
75	3284	3443	3862
85	1541	3104	3595

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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	1139.181	1139.181	1139.181	1139.181	1139.181
5	1148.732	1133.670	1130.732	1130.732	1127.425
10	1127.793	1114.935	1115.670	1118.609	1114.935
15	1089.955	1080.036	1088.118	1096.935	1095.832
20	1041.096	1037.055	1050.280	1066.444	1067.178
25	973.502	977.910	1001.789	1023.095	1028.606
30	902.234	909.949	944.113	971.665	982.318
35	813.333	831.334	876.519	912.520	925.010
40	728.473	747.943	802.312	852.641	864.396
45	627.817	656.104	722.228	776.597	791.292
50	533.773	568.672	641.042	700.921	717.085
55	440.831	474.995	558.019	620.102	639.205
60	352.665	391.238	476.465	533.773	555.447
65	267.805	308.582	391.972	465.077	480.873
70	197.639	233.640	321.072	391.972	410.708
75	134.086	174.128	262.662	326.215	340.175
80	74.574	123.433	210.129	267.805	287.642
85	26.450	83.391	166.781	220.416	236.947
90	0.000	55.104	130.045	182.578	193.231
95	0.000	35.266	102.493	149.515	165.679
100	0.000	23.511	78.615	123.800	136.658
105	0.000	15.796	62.084	99.922	114.249
110	0.000	7.347	49.226	81.921	95.513
115	0.000	4.776	39.307	69.064	78.615
120	0.000	0.000	31.226	56.573	66.492
125	0.000	0.000	24.246	45.185	52.900
130	0.000	0.000	19.103	35.634	42.246
135	0.000	0.000	15.429	27.552	33.797
140	0.000	0.000	8.082	20.939	25.715
145	0.000	0.000	2.939	16.164	18.735
150	0.000	0.000	0.000	13.960	15.796
155	0.000	0.000	0.000	13.225	13.960
160	0.000	0.000	0.000	7.715	12.858
165	0.000	0.000	0.000	2.572	4.408
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	415.10	N.A.	11.80
0-30	876.30	N.A.	24.80
0-40	1422.48	N.A.	40.30
0-60	2467.02	N.A.	69.90
0-80	3116.38	N.A.	88.30
0-90	3283.46	N.A.	93.10
10-90	3175.77	N.A.	90.00
20-40	1007.38	N.A.	28.60
20-50	1560.88	N.A.	44.20
40-70	1427.56	N.A.	40.50
60-80	649.36	N.A.	18.40
70-80	266.34	N.A.	7.60
80-90	167.08	N.A.	4.70
90-110	165.17	N.A.	4.70
90-120	203.23	N.A.	5.80
90-130	225.11	N.A.	6.40
90-150	241.46	N.A.	6.80
90-180	244.15	N.A.	6.90
110-180	78.98	N.A.	2.20
0-180	3527.62	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	107.69
10-20	307.41
20-30	461.20
30-40	546.18
40-50	553.51
50-60	491.03
60-70	383.03
70-80	266.34
80-90	167.08
90-100	102.25
100-110	62.92
110-120	38.06
120-130	21.87
130-140	11.57
140-150	4.79
150-160	2.23
160-170	0.46
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

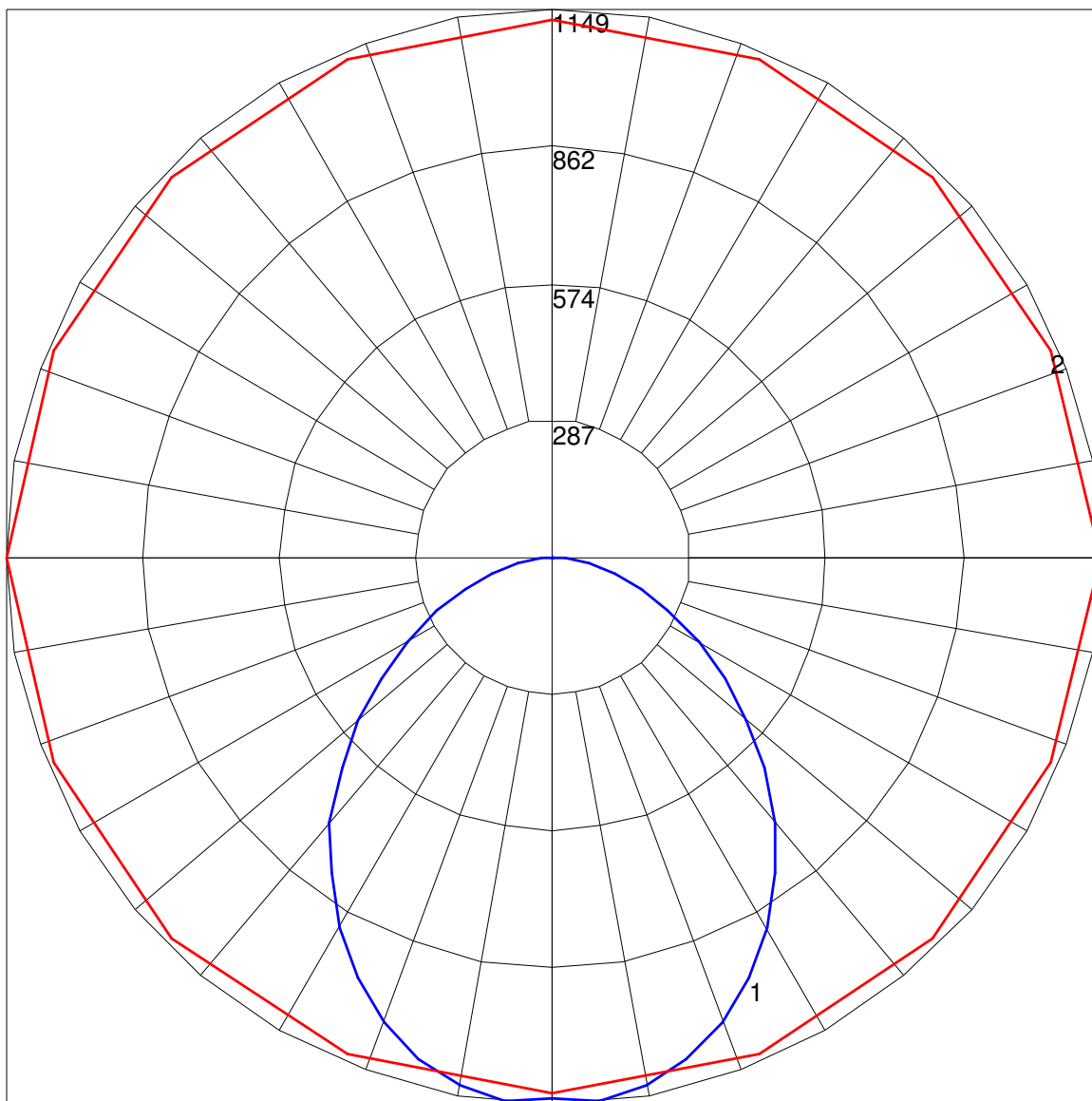
Reflectances

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	15.3	16.8	15.7	17.2	17.7	18.3	19.8	18.8	20.2	20.7
	3H	16.5	17.8	17.0	18.3	18.8	20.5	21.9	21.0	22.4	22.9
	4H	16.9	18.2	17.4	18.6	19.2	21.6	22.9	22.1	23.4	23.9
	6H	17.1	18.3	17.6	18.8	19.3	22.7	23.9	23.2	24.4	24.9
	8H	17.1	18.3	17.7	18.8	19.4	23.2	24.4	23.8	24.9	25.5
	12H	17.1	18.2	17.7	18.8	19.4	23.9	25.0	24.4	25.5	26.1
4H	2H	16.2	17.5	16.7	18.0	18.5	18.6	19.9	19.1	20.4	20.9
	3H	17.7	18.8	18.2	19.3	19.9	21.1	22.2	21.6	22.7	23.3
	4H	18.2	19.2	18.7	19.7	20.3	22.3	23.3	22.8	23.9	24.5
	6H	18.5	19.4	19.0	19.9	20.6	23.6	24.5	24.2	25.1	25.7
	8H	18.6	19.4	19.1	20.0	20.6	24.3	25.1	24.8	25.7	26.3
	12H	18.6	19.4	19.2	20.0	20.6	25.0	25.8	25.6	26.4	27.0
8H	4H	18.9	19.7	19.5	20.3	20.9	22.5	23.3	23.0	23.9	24.5
	6H	19.4	20.1	20.0	20.7	21.4	23.9	24.6	24.5	25.2	25.9
	8H	19.6	20.2	20.2	20.8	21.5	24.7	25.4	25.3	26.0	26.6
	12H	19.7	20.3	20.3	20.9	21.6	25.7	26.2	26.3	26.8	27.5
12H	4H	19.1	19.9	19.7	20.5	21.1	22.5	23.2	23.1	23.8	24.5
	6H	19.7	20.4	20.4	21.0	21.6	24.0	24.6	24.6	25.2	25.9
	8H	20.0	20.6	20.6	21.2	21.9	24.8	25.4	25.4	26.0	26.7

Maximum UGR = 27.5

POLAR GRAPH



Maximum Candela = 1148.732 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.)