



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AW-4-L54-940-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-L54-940-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4751
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	122
Total Luminaire Watts	38.8
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	8314	7619	7819
55	7089	6603	6952
65	5702	5470	6019
75	4423	4637	5201
85	2075	4181	4842

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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	1534.354	1534.354	1534.354	1534.354	1534.354
5	1547.219	1526.932	1522.974	1522.974	1518.521
10	1519.015	1501.698	1502.687	1506.646	1501.698
15	1468.052	1454.692	1465.578	1477.453	1475.968
20	1402.244	1396.801	1414.614	1436.385	1437.375
25	1311.202	1317.140	1349.301	1377.999	1385.421
30	1215.212	1225.603	1271.619	1308.728	1323.077
35	1095.472	1119.717	1180.577	1229.067	1245.890
40	981.175	1007.399	1080.629	1148.415	1164.249
45	845.602	883.701	972.764	1045.993	1065.785
50	718.935	765.940	863.414	944.066	965.837
55	593.752	639.768	751.591	835.211	860.940
60	475.002	526.955	641.747	718.935	748.127
65	360.704	415.626	527.944	626.408	647.684
70	266.199	314.689	432.449	527.944	553.179
75	180.600	234.532	353.777	439.376	458.179
80	100.443	166.251	283.022	360.704	387.423
85	35.625	112.318	224.636	296.876	319.142
90	0.000	74.219	175.157	245.912	260.261
95	0.000	47.500	138.047	201.381	223.152
100	0.000	31.667	105.886	166.745	184.063
105	0.000	21.276	83.620	134.584	153.881
110	0.000	9.896	66.302	110.339	128.646
115	0.000	6.432	52.943	93.021	105.886
120	0.000	0.000	42.057	76.198	89.558
125	0.000	0.000	32.656	60.860	71.250
130	0.000	0.000	25.729	47.995	56.901
135	0.000	0.000	20.781	37.109	45.521
140	0.000	0.000	10.885	28.203	34.636
145	0.000	0.000	3.958	21.771	25.234
150	0.000	0.000	0.000	18.802	21.276
155	0.000	0.000	0.000	17.813	18.802
160	0.000	0.000	0.000	10.391	17.318
165	0.000	0.000	0.000	3.464	5.938
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	559.10	N.A.	11.80
0-30	1180.29	N.A.	24.80
0-40	1915.93	N.A.	40.30
0-60	3322.81	N.A.	69.90
0-80	4197.43	N.A.	88.30
0-90	4422.47	N.A.	93.10
10-90	4277.43	N.A.	90.00
20-40	1356.83	N.A.	28.60
20-50	2102.34	N.A.	44.20
40-70	1922.77	N.A.	40.50
60-80	874.62	N.A.	18.40
70-80	358.73	N.A.	7.60
80-90	225.04	N.A.	4.70
90-110	222.47	N.A.	4.70
90-120	273.74	N.A.	5.80
90-130	303.19	N.A.	6.40
90-150	325.22	N.A.	6.80
90-180	328.85	N.A.	6.90
110-180	106.38	N.A.	2.20
0-180	4751.32	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	145.05
10-20	414.05
20-30	621.19
30-40	735.64
40-50	745.51
50-60	661.37
60-70	515.90
70-80	358.73
80-90	225.04
90-100	137.72
100-110	84.75
110-120	51.27
120-130	29.46
130-140	15.58
140-150	6.45
150-160	3.01
160-170	0.62
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**

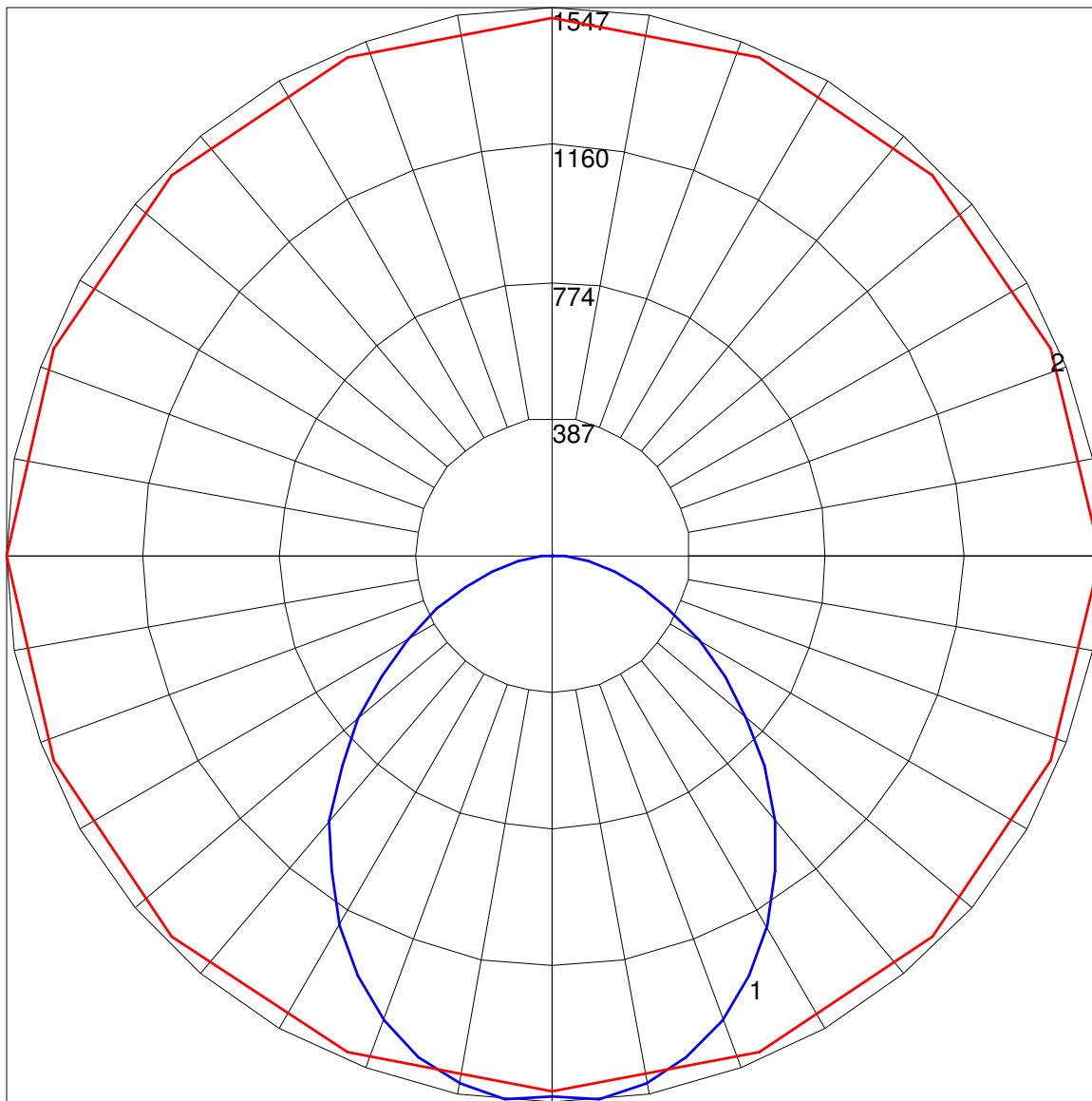
Reflectances

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	16.3	17.8	16.7	18.2	18.7	19.3	20.8	19.8	21.2	21.7
	3H	17.5	18.8	18.0	19.3	19.8	21.5	22.9	22.0	23.4	23.9
	4H	17.9	19.2	18.4	19.6	20.2	22.6	23.9	23.1	24.4	24.9
	6H	18.1	19.3	18.6	19.8	20.3	23.7	24.9	24.2	25.4	25.9
	8H	18.1	19.3	18.7	19.8	20.4	24.2	25.4	24.8	25.9	26.5
	12H	18.1	19.2	18.7	19.8	20.4	24.9	26.0	25.4	26.5	27.1
4H	2H	17.2	18.5	17.7	19.0	19.5	19.6	20.9	20.1	21.4	21.9
	3H	18.7	19.8	19.2	20.3	20.9	22.1	23.2	22.6	23.7	24.3
	4H	19.2	20.2	19.7	20.7	21.3	23.3	24.3	23.8	24.9	25.5
	6H	19.5	20.4	20.0	20.9	21.6	24.6	25.5	25.2	26.1	26.7
	8H	19.6	20.4	20.1	21.0	21.6	25.3	26.1	25.8	26.7	27.3
	12H	19.6	20.4	20.2	21.0	21.6	26.0	26.8	26.6	27.4	28.0
8H	4H	19.9	20.7	20.5	21.3	21.9	23.5	24.3	24.0	24.9	25.5
	6H	20.4	21.1	21.0	21.7	22.4	24.9	25.6	25.5	26.2	26.9
	8H	20.6	21.2	21.2	21.8	22.5	25.7	26.4	26.3	27.0	27.6
	12H	20.7	21.2	21.3	21.9	22.6	26.7	27.2	27.3	27.8	28.5
12H	4H	20.1	20.9	20.7	21.5	22.1	23.5	24.2	24.1	24.8	25.5
	6H	20.7	21.4	21.4	22.0	22.6	25.0	25.6	25.6	26.2	26.9
	8H	21.0	21.6	21.6	22.2	22.9	25.8	26.4	26.4	27.0	27.7

Maximum UGR = 28.5

POLAR GRAPH



Maximum Candela = 1547.219 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.)