



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AW-4-L93-927-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-L93-927-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	7393
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	105
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	12935	11855	12165
55	11030	10274	10817
65	8872	8510	9366
75	6882	7215	8092
85	3229	6505	7534

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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	2387.282	2387.282	2387.282	2387.282	2387.282
5	2407.298	2375.735	2369.576	2369.576	2362.647
10	2363.417	2336.473	2338.012	2344.171	2336.473
15	2284.123	2263.337	2280.274	2298.750	2296.441
20	2181.734	2173.266	2200.980	2234.853	2236.393
25	2040.083	2049.321	2099.361	2144.012	2155.560
30	1890.734	1906.900	1978.496	2036.234	2058.559
35	1704.432	1742.154	1836.845	1912.289	1938.464
40	1526.598	1567.400	1681.336	1786.805	1811.440
45	1315.661	1374.939	1513.511	1627.447	1658.241
50	1118.581	1191.716	1343.375	1468.860	1502.733
55	923.811	995.407	1169.391	1299.494	1339.526
60	739.049	819.882	998.486	1118.581	1164.002
65	561.215	646.668	821.422	974.621	1007.724
70	414.175	489.620	672.843	821.422	860.684
75	280.993	364.905	550.438	683.620	712.874
80	156.278	258.667	440.350	561.215	602.787
85	55.429	174.754	349.509	461.906	496.549
90	0.000	115.476	272.524	382.612	404.937
95	0.000	73.905	214.786	313.326	347.199
100	0.000	49.270	164.746	259.437	286.381
105	0.000	33.103	130.103	209.397	239.421
110	0.000	15.397	103.159	171.675	200.159
115	0.000	10.008	82.373	144.730	164.746
120	0.000	0.000	65.437	118.556	139.342
125	0.000	0.000	50.810	94.691	110.857
130	0.000	0.000	40.032	74.675	88.532
135	0.000	0.000	32.333	57.738	70.826
140	0.000	0.000	16.937	43.881	53.889
145	0.000	0.000	6.159	33.873	39.262
150	0.000	0.000	0.000	29.254	33.103
155	0.000	0.000	0.000	27.714	29.254
160	0.000	0.000	0.000	16.167	26.944
165	0.000	0.000	0.000	5.389	9.238
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	869.90	N.A.	11.80
0-30	1836.39	N.A.	24.80
0-40	2980.97	N.A.	40.30
0-60	5169.92	N.A.	69.90
0-80	6530.73	N.A.	88.30
0-90	6880.87	N.A.	93.10
10-90	6655.19	N.A.	90.00
20-40	2111.07	N.A.	28.60
20-50	3271.01	N.A.	44.20
40-70	2991.62	N.A.	40.50
60-80	1360.82	N.A.	18.40
70-80	558.14	N.A.	7.60
80-90	350.14	N.A.	4.70
90-110	346.14	N.A.	4.70
90-120	425.90	N.A.	5.80
90-130	471.73	N.A.	6.40
90-150	506.01	N.A.	6.80
90-180	511.65	N.A.	6.90
110-180	165.51	N.A.	2.20
0-180	7392.52	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	225.68
10-20	644.22
20-30	966.50
30-40	1144.58
40-50	1159.93
50-60	1029.01
60-70	802.68
70-80	558.14
80-90	350.14
90-100	214.28
100-110	131.86
110-120	79.76
120-130	45.83
130-140	24.24
140-150	10.03
150-160	4.68
160-170	0.97
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

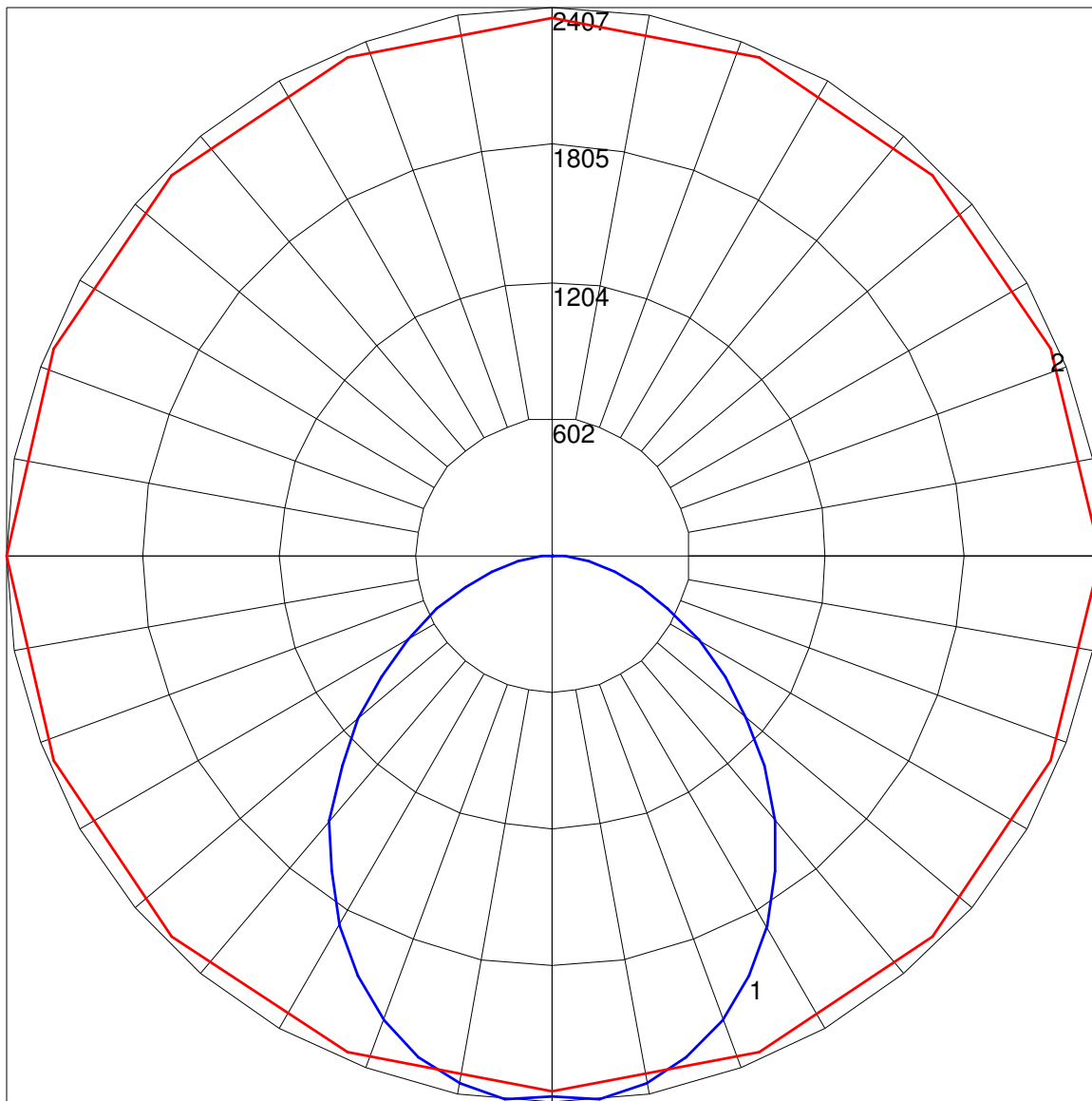
Reflectances

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	17.9	19.4	18.3	19.8	20.3	20.9	22.4	21.4	22.8	23.3
	3H	19.1	20.4	19.6	20.9	21.4	23.1	24.5	23.6	25.0	25.5
	4H	19.5	20.8	20.0	21.2	21.8	24.2	25.5	24.7	26.0	26.5
	6H	19.7	20.9	20.2	21.4	21.9	25.3	26.5	25.8	27.0	27.5
	8H	19.7	20.9	20.3	21.4	22.0	25.9	27.0	26.4	27.5	28.1
	12H	19.7	20.8	20.3	21.4	22.0	26.5	27.6	27.0	28.1	28.7
4H	2H	18.8	20.1	19.3	20.6	21.1	21.2	22.5	21.7	23.0	23.5
	3H	20.3	21.4	20.8	21.9	22.5	23.7	24.8	24.2	25.3	25.9
	4H	20.8	21.8	21.3	22.3	22.9	24.9	25.9	25.4	26.5	27.1
	6H	21.1	22.0	21.6	22.5	23.2	26.2	27.1	26.8	27.7	28.3
	8H	21.2	22.0	21.7	22.6	23.2	26.9	27.7	27.4	28.3	28.9
	12H	21.2	22.0	21.8	22.6	23.2	27.6	28.4	28.2	29.0	29.6
8H	4H	21.5	22.3	22.1	22.9	23.5	25.1	25.9	25.6	26.5	27.1
	6H	22.0	22.7	22.6	23.3	24.0	26.5	27.2	27.1	27.8	28.5
	8H	22.2	22.8	22.8	23.4	24.1	27.3	28.0	27.9	28.6	29.2
	12H	22.3	22.9	22.9	23.5	24.2	28.3	28.8	28.9	29.4	30.1
12H	4H	21.7	22.5	22.3	23.1	23.7	25.1	25.8	25.7	26.4	27.1
	6H	22.3	23.0	23.0	23.6	24.2	26.6	27.2	27.2	27.8	28.5
	8H	22.6	23.2	23.2	23.8	24.5	27.4	28.0	28.0	28.6	29.3

Maximum UGR = 30.1

POLAR GRAPH



Maximum Candela = 2407.298 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.)