



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : NW-4-L34-940-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] NW-4-L34-940-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2945
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	125
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	5154	4723	4847
55	4395	4093	4310
65	3535	3391	3731
75	2742	2875	3224
85	1287	2592	3002

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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	951.161	951.161	951.161	951.161	951.161
5	959.136	946.560	944.106	944.106	941.346
10	941.652	930.917	931.530	933.984	930.917
15	910.059	901.778	908.526	915.887	914.967
20	869.265	865.891	876.933	890.429	891.042
25	812.827	816.508	836.445	854.235	858.836
30	753.322	759.763	788.289	811.293	820.188
35	679.094	694.123	731.851	761.910	772.339
40	608.240	624.496	669.892	711.914	721.729
45	524.197	547.815	603.026	648.421	660.690
50	445.674	474.814	535.239	585.235	598.731
55	368.073	396.598	465.918	517.755	533.705
60	294.458	326.664	397.825	445.674	463.771
65	223.604	257.651	327.278	388.317	401.506
70	165.019	195.078	268.079	327.278	342.921
75	111.955	145.389	219.310	272.374	284.029
80	62.266	103.060	175.448	223.604	240.167
85	22.084	69.627	139.254	184.036	197.839
90	0.000	46.009	108.581	152.443	161.338
95	0.000	29.446	85.577	124.838	138.334
100	0.000	19.631	65.640	103.367	114.102
105	0.000	13.189	51.837	83.430	95.392
110	0.000	6.135	41.101	68.400	79.749
115	0.000	3.987	32.820	57.665	65.640
120	0.000	0.000	26.072	47.236	55.518
125	0.000	0.000	20.244	37.727	44.169
130	0.000	0.000	15.950	29.753	35.274
135	0.000	0.000	12.883	23.005	28.219
140	0.000	0.000	6.748	17.483	21.471
145	0.000	0.000	2.454	13.496	15.643
150	0.000	0.000	0.000	11.656	13.189
155	0.000	0.000	0.000	11.042	11.656
160	0.000	0.000	0.000	6.441	10.735
165	0.000	0.000	0.000	2.147	3.681
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	346.59	N.A.	11.80
0-30	731.67	N.A.	24.80
0-40	1187.7	N.A.	40.30
0-60	2059.84	N.A.	69.90
0-80	2602.03	N.A.	88.30
0-90	2741.53	N.A.	93.10
10-90	2651.62	N.A.	90.00
20-40	841.11	N.A.	28.60
20-50	1303.26	N.A.	44.20
40-70	1191.95	N.A.	40.50
60-80	542.19	N.A.	18.40
70-80	222.38	N.A.	7.60
80-90	139.50	N.A.	4.70
90-110	137.91	N.A.	4.70
90-120	169.69	N.A.	5.80
90-130	187.95	N.A.	6.40
90-150	201.61	N.A.	6.80
90-180	203.86	N.A.	6.90
110-180	65.94	N.A.	2.20
0-180	2945.39	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	89.92
10-20	256.68
20-30	385.08
30-40	456.03
40-50	462.15
50-60	409.99
60-70	319.81
70-80	222.38
80-90	139.50
90-100	85.38
100-110	52.54
110-120	31.78
120-130	18.26
130-140	9.66
140-150	4.00
150-160	1.86
160-170	0.38
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**

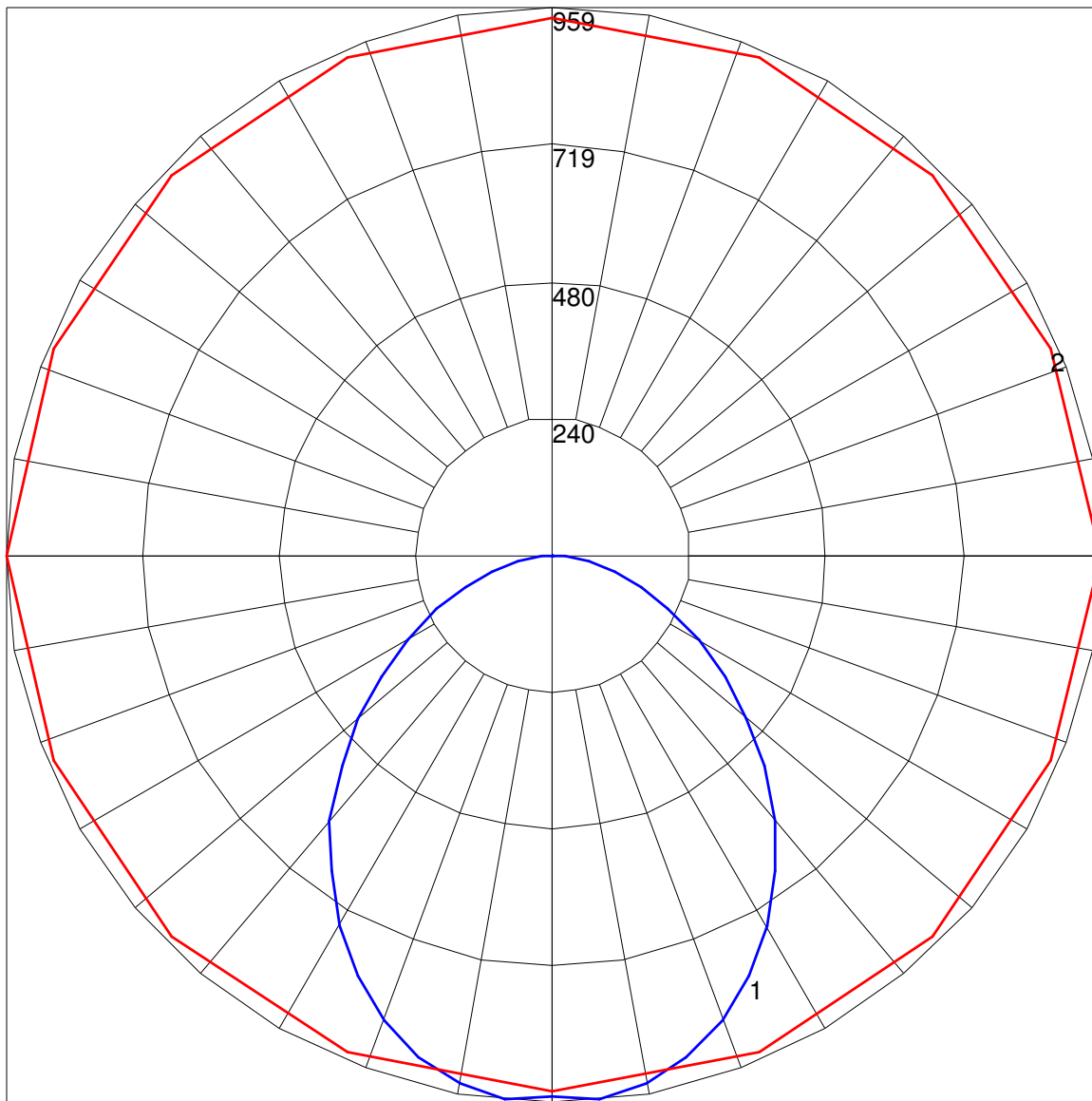
Reflectances

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	14.7	16.2	15.1	16.6	17.1	17.7	19.2	18.2	19.6	20.1
	3H	15.9	17.2	16.4	17.7	18.2	19.9	21.3	20.4	21.8	22.3
	4H	16.3	17.6	16.8	18.0	18.6	21.0	22.3	21.5	22.8	23.3
	6H	16.5	17.7	17.0	18.2	18.7	22.1	23.3	22.6	23.8	24.3
	8H	16.5	17.7	17.1	18.2	18.8	22.6	23.8	23.2	24.3	24.9
	12H	16.5	17.6	17.1	18.2	18.8	23.3	24.4	23.8	24.9	25.5
4H	2H	15.6	16.9	16.1	17.4	17.9	18.0	19.3	18.5	19.8	20.3
	3H	17.1	18.2	17.6	18.7	19.3	20.5	21.6	21.0	22.1	22.7
	4H	17.6	18.6	18.1	19.1	19.7	21.7	22.7	22.2	23.3	23.9
	6H	17.9	18.8	18.4	19.3	20.0	23.0	23.9	23.6	24.5	25.1
	8H	18.0	18.8	18.5	19.4	20.0	23.7	24.5	24.2	25.1	25.7
	12H	18.0	18.8	18.6	19.4	20.0	24.4	25.2	25.0	25.8	26.4
8H	4H	18.3	19.1	18.9	19.7	20.3	21.9	22.7	22.4	23.3	23.9
	6H	18.8	19.5	19.4	20.1	20.8	23.3	24.0	23.9	24.6	25.3
	8H	19.0	19.6	19.6	20.2	20.9	24.1	24.8	24.7	25.4	26.0
	12H	19.1	19.6	19.7	20.3	21.0	25.1	25.6	25.7	26.2	26.9
12H	4H	18.5	19.3	19.1	19.9	20.5	21.9	22.6	22.5	23.2	23.9
	6H	19.1	19.8	19.8	20.4	21.0	23.4	24.0	24.0	24.6	25.3
	8H	19.4	20.0	20.0	20.6	21.3	24.2	24.8	24.8	25.4	26.1

Maximum UGR = 26.9

POLAR GRAPH



Maximum Candela = 959.136 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.)