



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : NW-4-L34-930-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-L34-930-RA-DIM-UNV  
[LAMPCAT] 22 INCH HLM LED ARRAYS

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2808
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	120
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	4914	4504	4621
55	4190	3903	4109
65	3371	3233	3558
75	2614	2741	3074
85	1227	2471	2862

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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	906.921	906.921	906.921	906.921	906.921
5	914.525	902.534	900.194	900.194	897.562
10	897.854	887.618	888.203	890.543	887.618
15	867.731	859.834	866.269	873.288	872.410
20	828.834	825.617	836.145	849.013	849.598
25	775.021	778.530	797.540	814.503	818.890
30	718.284	724.425	751.624	773.559	782.040
35	647.508	661.839	697.811	726.472	736.416
40	579.950	595.450	638.734	678.801	688.160
45	499.815	522.335	574.978	618.262	629.960
50	424.945	452.729	510.344	558.015	570.883
55	350.953	378.152	444.248	493.674	508.882
60	280.762	311.471	379.322	424.945	442.201
65	213.204	245.667	312.056	370.255	382.831
70	157.344	186.005	255.611	312.056	326.971
75	106.748	138.626	209.109	259.705	270.819
80	59.370	98.267	167.288	213.204	228.997
85	21.057	66.389	132.777	175.476	188.637
90	0.000	43.869	103.531	145.353	153.834
95	0.000	28.076	81.597	119.032	131.900
100	0.000	18.717	62.587	98.559	108.795
105	0.000	12.576	49.426	79.549	90.955
110	0.000	5.849	39.190	65.219	76.040
115	0.000	3.802	31.293	54.983	62.587
120	0.000	0.000	24.859	45.039	52.935
125	0.000	0.000	19.302	35.973	42.114
130	0.000	0.000	15.208	28.369	33.633
135	0.000	0.000	12.283	21.935	26.906
140	0.000	0.000	6.434	16.670	20.472
145	0.000	0.000	2.340	12.868	14.915
150	0.000	0.000	0.000	11.114	12.576
155	0.000	0.000	0.000	10.529	11.114
160	0.000	0.000	0.000	6.142	10.236
165	0.000	0.000	0.000	2.047	3.510
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	330.47	N.A.	11.80
0-30	697.64	N.A.	24.80
0-40	1132.46	N.A.	40.30
0-60	1964.03	N.A.	69.90
0-80	2481.00	N.A.	88.30
0-90	2614.02	N.A.	93.10
10-90	2528.29	N.A.	90.00
20-40	801.99	N.A.	28.60
20-50	1242.65	N.A.	44.20
40-70	1136.51	N.A.	40.50
60-80	516.97	N.A.	18.40
70-80	212.04	N.A.	7.60
80-90	133.02	N.A.	4.70
90-110	131.50	N.A.	4.70
90-120	161.80	N.A.	5.80
90-130	179.21	N.A.	6.40
90-150	192.23	N.A.	6.80
90-180	194.37	N.A.	6.90
110-180	62.88	N.A.	2.20
0-180	2808.39	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	85.73
10-20	244.74
20-30	367.17
30-40	434.82
40-50	440.66
50-60	390.92
60-70	304.93
70-80	212.04
80-90	133.02
90-100	81.40
100-110	50.09
110-120	30.30
120-130	17.41
130-140	9.21
140-150	3.81
150-160	1.78
160-170	0.37
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**

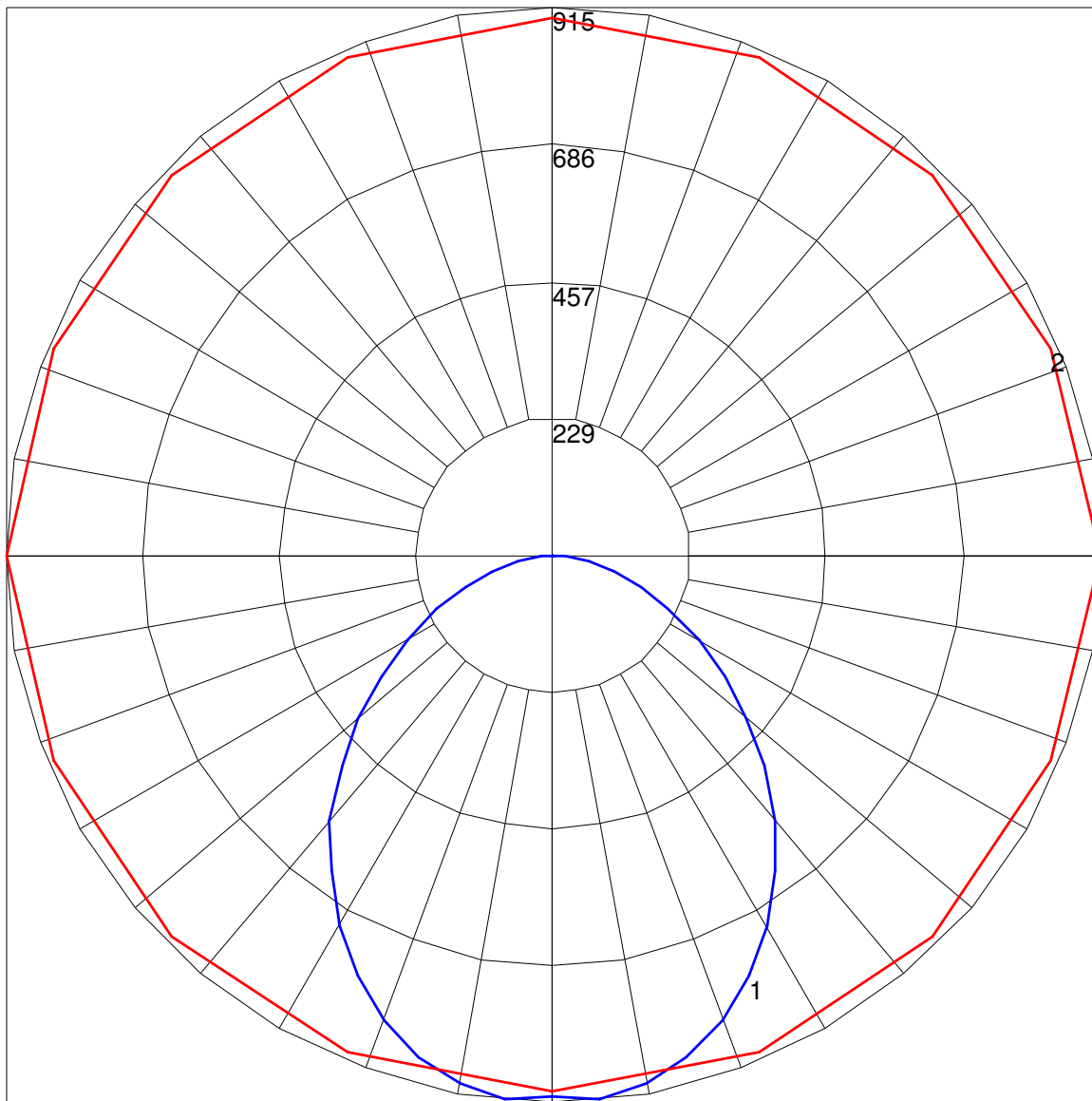
Reflectances

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	14.5	16.0	14.9	16.4	16.9	17.5	19.0	18.0	19.4	19.9
	3H	15.7	17.0	16.2	17.5	18.0	19.7	21.1	20.2	21.6	22.1
	4H	16.1	17.4	16.6	17.8	18.4	20.8	22.1	21.3	22.6	23.1
	6H	16.3	17.5	16.8	18.0	18.5	21.9	23.1	22.4	23.6	24.1
	8H	16.3	17.5	16.9	18.0	18.6	22.4	23.6	23.0	24.1	24.7
	12H	16.3	17.4	16.9	18.0	18.6	23.1	24.2	23.6	24.7	25.3
4H	2H	15.4	16.7	15.9	17.2	17.7	17.8	19.1	18.3	19.6	20.1
	3H	16.9	18.0	17.4	18.5	19.1	20.3	21.4	20.8	21.9	22.5
	4H	17.4	18.4	17.9	18.9	19.5	21.5	22.5	22.0	23.1	23.7
	6H	17.7	18.6	18.2	19.1	19.8	22.8	23.7	23.4	24.3	24.9
	8H	17.8	18.6	18.3	19.2	19.8	23.5	24.3	24.0	24.9	25.5
	12H	17.8	18.6	18.4	19.2	19.8	24.2	25.0	24.8	25.6	26.2
8H	4H	18.1	18.9	18.7	19.5	20.1	21.7	22.5	22.2	23.1	23.7
	6H	18.6	19.3	19.2	19.9	20.6	23.1	23.8	23.7	24.4	25.1
	8H	18.8	19.4	19.4	20.0	20.7	23.9	24.6	24.5	25.2	25.8
	12H	18.9	19.4	19.5	20.1	20.8	24.9	25.4	25.5	26.0	26.7
12H	4H	18.3	19.1	18.9	19.7	20.3	21.7	22.4	22.3	23.0	23.7
	6H	18.9	19.6	19.6	20.2	20.8	23.2	23.8	23.8	24.4	25.1
	8H	19.2	19.8	19.8	20.4	21.1	24.0	24.6	24.6	25.2	25.9

Maximum UGR = 26.7

POLAR GRAPH



Maximum Candela = 914.525 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.)