



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : NW-4-L34-927-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] NW-4-L34-927-RA-DIM-UNV  
[LAMPCAT] 22 INCH HLM LED ARRAYS

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2740
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	117
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	4794	4394	4509
55	4088	3808	4009
65	3288	3154	3471
75	2551	2674	2999
85	1197	2411	2792

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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	884.801	884.801	884.801	884.801	884.801
5	892.219	880.521	878.238	878.238	875.670
10	875.955	865.969	866.540	868.822	865.969
15	846.567	838.863	845.140	851.988	851.132
20	808.618	805.480	815.751	828.306	828.876
25	756.118	759.542	778.088	794.637	798.917
30	700.764	706.756	733.292	754.691	762.966
35	631.715	645.696	680.791	708.753	718.455
40	565.804	580.927	623.155	662.245	671.376
45	487.625	509.595	560.954	603.182	614.595
50	414.581	441.687	497.896	544.405	556.959
55	342.393	368.928	433.412	481.633	496.470
60	273.914	303.874	370.070	414.581	431.415
65	208.004	239.675	304.444	361.225	373.494
70	153.506	181.468	249.376	304.444	318.996
75	104.145	135.245	204.009	253.371	264.213
80	57.921	95.870	163.207	208.004	223.411
85	20.544	64.769	129.539	171.196	184.036
90	0.000	42.799	101.006	141.808	150.082
95	0.000	27.391	79.606	116.128	128.683
100	0.000	18.261	61.060	96.155	106.142
105	0.000	12.269	48.220	77.609	88.737
110	0.000	5.707	38.234	63.628	74.185
115	0.000	3.709	30.530	53.642	61.060
120	0.000	0.000	24.253	43.940	51.644
125	0.000	0.000	18.832	35.095	41.087
130	0.000	0.000	14.837	27.677	32.813
135	0.000	0.000	11.984	21.400	26.250
140	0.000	0.000	6.277	16.264	19.973
145	0.000	0.000	2.283	12.554	14.552
150	0.000	0.000	0.000	10.842	12.269
155	0.000	0.000	0.000	10.272	10.842
160	0.000	0.000	0.000	5.992	9.986
165	0.000	0.000	0.000	1.997	3.424
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	322.41	N.A.	11.80
0-30	680.62	N.A.	24.80
0-40	1104.84	N.A.	40.30
0-60	1916.13	N.A.	69.90
0-80	2420.49	N.A.	88.30
0-90	2550.26	N.A.	93.10
10-90	2466.62	N.A.	90.00
20-40	782.43	N.A.	28.60
20-50	1212.34	N.A.	44.20
40-70	1108.79	N.A.	40.50
60-80	504.36	N.A.	18.40
70-80	206.86	N.A.	7.50
80-90	129.77	N.A.	4.70
90-110	128.29	N.A.	4.70
90-120	157.85	N.A.	5.80
90-130	174.84	N.A.	6.40
90-150	187.54	N.A.	6.80
90-180	189.63	N.A.	6.90
110-180	61.34	N.A.	2.20
0-180	2739.9	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	83.64
10-20	238.77
20-30	358.21
30-40	424.22
40-50	429.91
50-60	381.38
60-70	297.50
70-80	206.86
80-90	129.77
90-100	79.42
100-110	48.87
110-120	29.56
120-130	16.99
130-140	8.98
140-150	3.72
150-160	1.73
160-170	0.36
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**

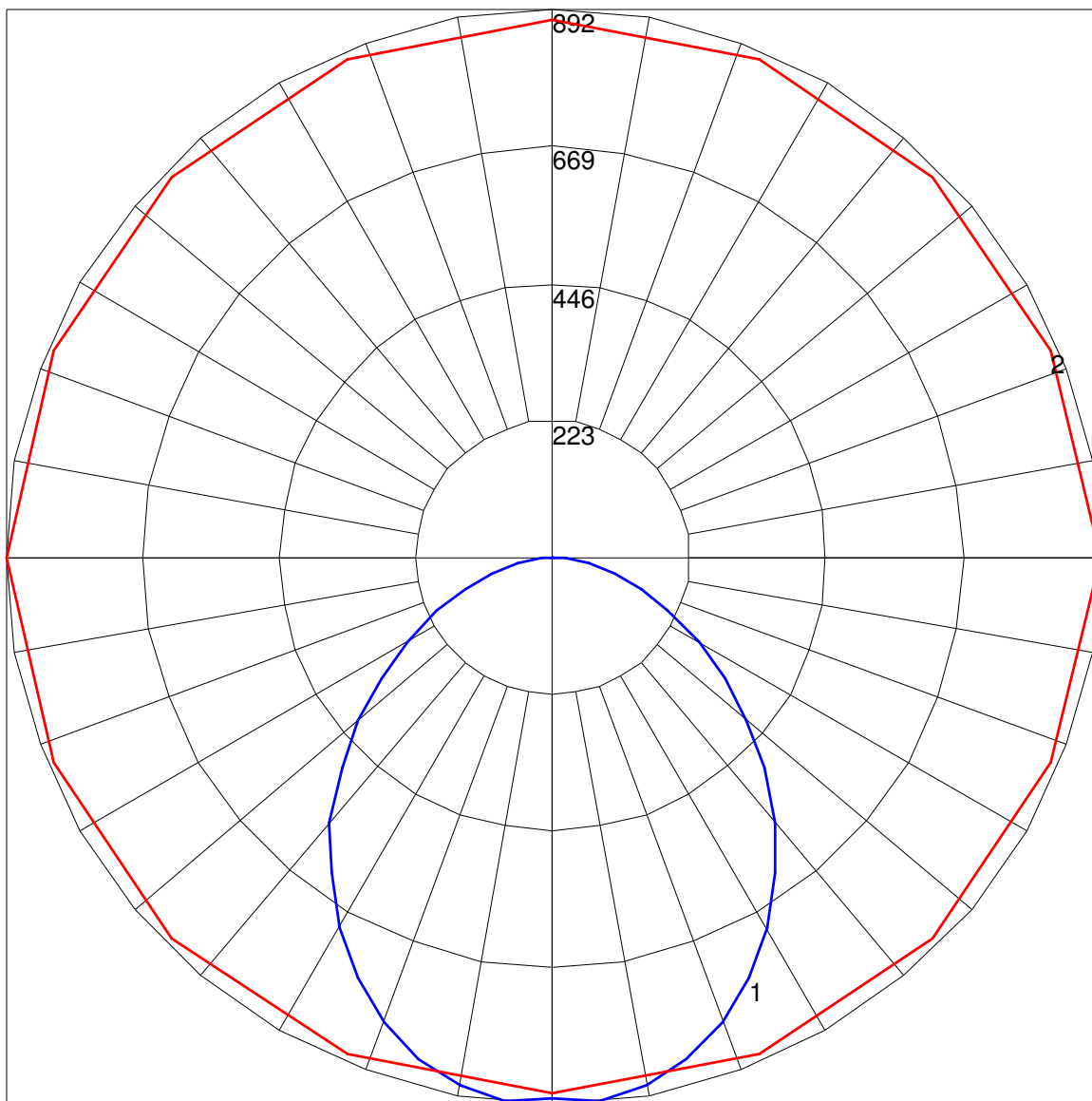
Reflectances

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	14.4	15.9	14.8	16.3	16.8	17.4	18.9	17.9	19.3	19.8
	3H	15.6	16.9	16.1	17.4	17.9	19.6	21.0	20.1	21.5	22.0
	4H	16.0	17.3	16.5	17.7	18.3	20.7	22.0	21.2	22.5	23.0
	6H	16.2	17.4	16.7	17.9	18.4	21.8	23.0	22.3	23.5	24.0
	8H	16.2	17.4	16.8	17.9	18.5	22.4	23.5	22.9	24.0	24.6
	12H	16.2	17.3	16.8	17.9	18.5	23.0	24.1	23.5	24.6	25.2
4H	2H	15.3	16.6	15.8	17.1	17.6	17.7	19.0	18.2	19.5	20.0
	3H	16.8	17.9	17.3	18.4	19.0	20.2	21.3	20.7	21.8	22.4
	4H	17.3	18.3	17.8	18.8	19.4	21.4	22.4	21.9	23.0	23.6
	6H	17.6	18.5	18.1	19.0	19.7	22.7	23.6	23.3	24.2	24.8
	8H	17.7	18.5	18.2	19.1	19.7	23.4	24.2	23.9	24.8	25.4
	12H	17.7	18.5	18.3	19.1	19.7	24.1	24.9	24.7	25.5	26.1
8H	4H	18.0	18.8	18.6	19.4	20.0	21.6	22.4	22.1	23.0	23.6
	6H	18.5	19.2	19.1	19.8	20.5	23.0	23.7	23.6	24.3	25.0
	8H	18.7	19.3	19.3	19.9	20.6	23.8	24.5	24.4	25.1	25.7
	12H	18.8	19.4	19.4	20.0	20.7	24.8	25.3	25.4	25.9	26.6
12H	4H	18.2	19.0	18.8	19.6	20.2	21.6	22.3	22.2	22.9	23.6
	6H	18.8	19.5	19.5	20.1	20.7	23.1	23.7	23.7	24.3	25.0
	8H	19.1	19.7	19.7	20.3	21.0	23.9	24.5	24.5	25.1	25.8

Maximum UGR = 26.6

POLAR GRAPH



Maximum Candela = 892.219 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.)