



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : NW-4-L34-935-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-L34-935-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2843
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	121
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	4974	4559	4678
55	4241	3950	4159
65	3412	3272	3601
75	2646	2775	3112
85	1242	2501	2897

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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	917.981	917.981	917.981	917.981	917.981
5	925.677	913.540	911.172	911.172	908.508
10	908.804	898.443	899.035	901.403	898.443
15	878.313	870.320	876.833	883.938	883.049
20	838.941	835.685	846.342	859.367	859.959
25	784.472	788.025	807.266	824.436	828.876
30	727.043	733.260	760.790	782.992	791.577
35	655.404	669.910	706.321	735.332	745.397
40	587.022	602.712	646.524	687.079	696.552
45	505.911	528.705	581.990	625.802	637.643
50	430.128	458.250	516.568	564.820	577.845
55	355.233	382.763	449.665	499.694	515.088
60	284.186	315.269	383.947	430.128	447.593
65	215.804	248.663	315.861	374.771	387.500
70	159.263	188.273	258.728	315.861	330.959
75	108.050	140.317	211.660	262.872	274.121
80	60.094	99.465	169.328	215.804	231.789
85	21.314	67.198	134.396	177.616	190.938
90	0.000	44.404	104.794	147.126	155.710
95	0.000	28.419	82.592	120.483	133.508
100	0.000	18.946	63.350	99.761	110.122
105	0.000	12.729	50.029	80.519	92.064
110	0.000	5.921	39.668	66.014	76.967
115	0.000	3.848	31.675	55.653	63.350
120	0.000	0.000	25.162	45.588	53.581
125	0.000	0.000	19.538	36.411	42.628
130	0.000	0.000	15.393	28.715	34.043
135	0.000	0.000	12.433	22.202	27.235
140	0.000	0.000	6.513	16.874	20.722
145	0.000	0.000	2.368	13.025	15.097
150	0.000	0.000	0.000	11.249	12.729
155	0.000	0.000	0.000	10.657	11.249
160	0.000	0.000	0.000	6.217	10.361
165	0.000	0.000	0.000	2.072	3.552
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	334.50	N.A.	11.80
0-30	706.15	N.A.	24.80
0-40	1146.27	N.A.	40.30
0-60	1987.99	N.A.	69.90
0-80	2511.26	N.A.	88.30
0-90	2645.9	N.A.	93.10
10-90	2559.12	N.A.	90.00
20-40	811.77	N.A.	28.60
20-50	1257.8	N.A.	44.20
40-70	1150.37	N.A.	40.50
60-80	523.27	N.A.	18.40
70-80	214.62	N.A.	7.60
80-90	134.64	N.A.	4.70
90-110	133.10	N.A.	4.70
90-120	163.77	N.A.	5.80
90-130	181.40	N.A.	6.40
90-150	194.57	N.A.	6.80
90-180	196.74	N.A.	6.90
110-180	63.64	N.A.	2.20
0-180	2842.64	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	86.78
10-20	247.72
20-30	371.65
30-40	440.12
40-50	446.03
50-60	395.68
60-70	308.65
70-80	214.62
80-90	134.64
90-100	82.40
100-110	50.70
110-120	30.67
120-130	17.62
130-140	9.32
140-150	3.86
150-160	1.80
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	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**

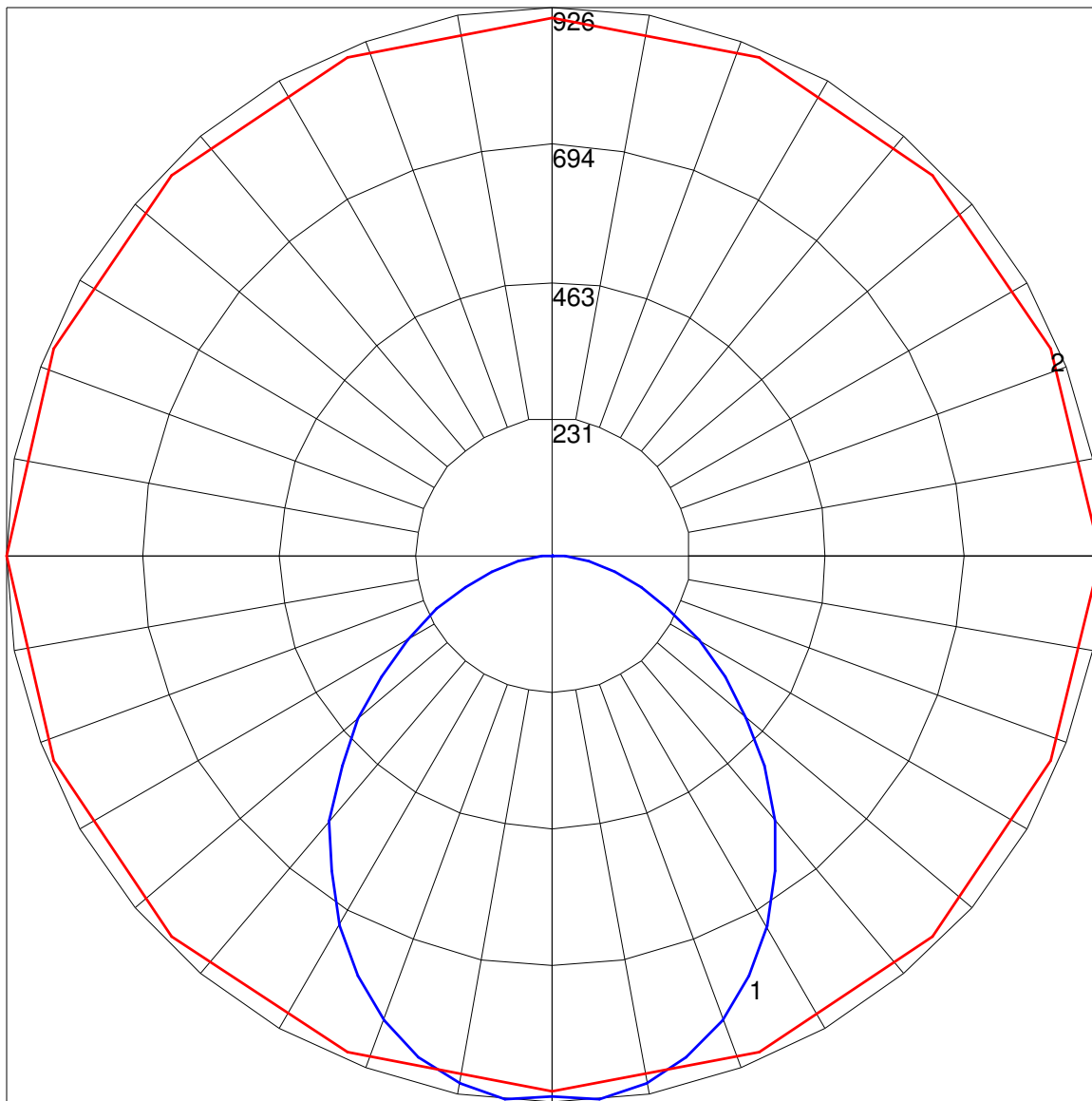
Reflectances

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	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	19.5	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 = 925.677 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.)