



IES INDOOR REPORT

PHOTOMETRIC FILENAME : NW-4-L34-950-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-L34-950-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3048
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	130
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	5333	4888	5016
55	4548	4236	4460
65	3658	3509	3862
75	2838	2975	3337
85	1331	2682	3106

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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	984.341	984.341	984.341	984.341	984.341
5	992.594	979.579	977.040	977.040	974.183
10	974.501	963.391	964.025	966.565	963.391
15	941.806	933.235	940.218	947.837	946.884
20	899.588	896.096	907.523	921.490	922.125
25	841.181	844.990	865.623	884.034	888.795
30	779.600	786.266	815.787	839.594	848.800
35	702.783	718.337	757.381	788.488	799.281
40	629.458	646.281	693.260	736.748	746.905
45	542.483	566.924	624.061	671.040	683.738
50	461.221	491.377	553.910	605.651	619.617
55	380.912	410.433	482.171	535.817	552.323
60	304.730	338.060	411.703	461.221	479.949
65	231.404	266.639	338.694	401.862	415.512
70	170.776	201.884	277.431	338.694	354.883
75	115.861	150.460	226.960	281.875	293.937
80	64.438	106.655	181.568	231.404	248.545
85	22.855	72.056	144.112	190.456	204.740
90	0.000	47.614	112.369	157.761	166.967
95	0.000	30.473	88.562	129.193	143.160
100	0.000	20.315	67.929	106.973	118.083
105	0.000	13.649	53.645	86.340	98.720
110	0.000	6.349	42.535	70.786	82.531
115	0.000	4.127	33.965	59.676	67.929
120	0.000	0.000	26.981	48.884	57.454
125	0.000	0.000	20.950	39.044	45.709
130	0.000	0.000	16.506	30.790	36.504
135	0.000	0.000	13.332	23.807	29.203
140	0.000	0.000	6.983	18.093	22.220
145	0.000	0.000	2.539	13.967	16.189
150	0.000	0.000	0.000	12.062	13.649
155	0.000	0.000	0.000	11.427	12.062
160	0.000	0.000	0.000	6.666	11.110
165	0.000	0.000	0.000	2.222	3.809
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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Zone	Lumens	%Lamp	%Fixt
0-20	358.68	N.A.	11.80
0-30	757.19	N.A.	24.80
0-40	1229.13	N.A.	40.30
0-60	2131.7	N.A.	69.90
0-80	2692.8	N.A.	88.30
0-90	2837.17	N.A.	93.10
10-90	2744.11	N.A.	90.00
20-40	870.45	N.A.	28.60
20-50	1348.72	N.A.	44.20
40-70	1233.53	N.A.	40.50
60-80	561.10	N.A.	18.40
70-80	230.14	N.A.	7.60
80-90	144.37	N.A.	4.70
90-110	142.72	N.A.	4.70
90-120	175.61	N.A.	5.80
90-130	194.51	N.A.	6.40
90-150	208.64	N.A.	6.80
90-180	210.97	N.A.	6.90
110-180	68.24	N.A.	2.20
0-180	3048.13	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	93.05
10-20	265.63
20-30	398.51
30-40	471.94
40-50	478.27
50-60	424.29
60-70	330.97
70-80	230.14
80-90	144.37
90-100	88.35
100-110	54.37
110-120	32.89
120-130	18.90
130-140	10.00
140-150	4.14
150-160	1.93
160-170	0.40
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

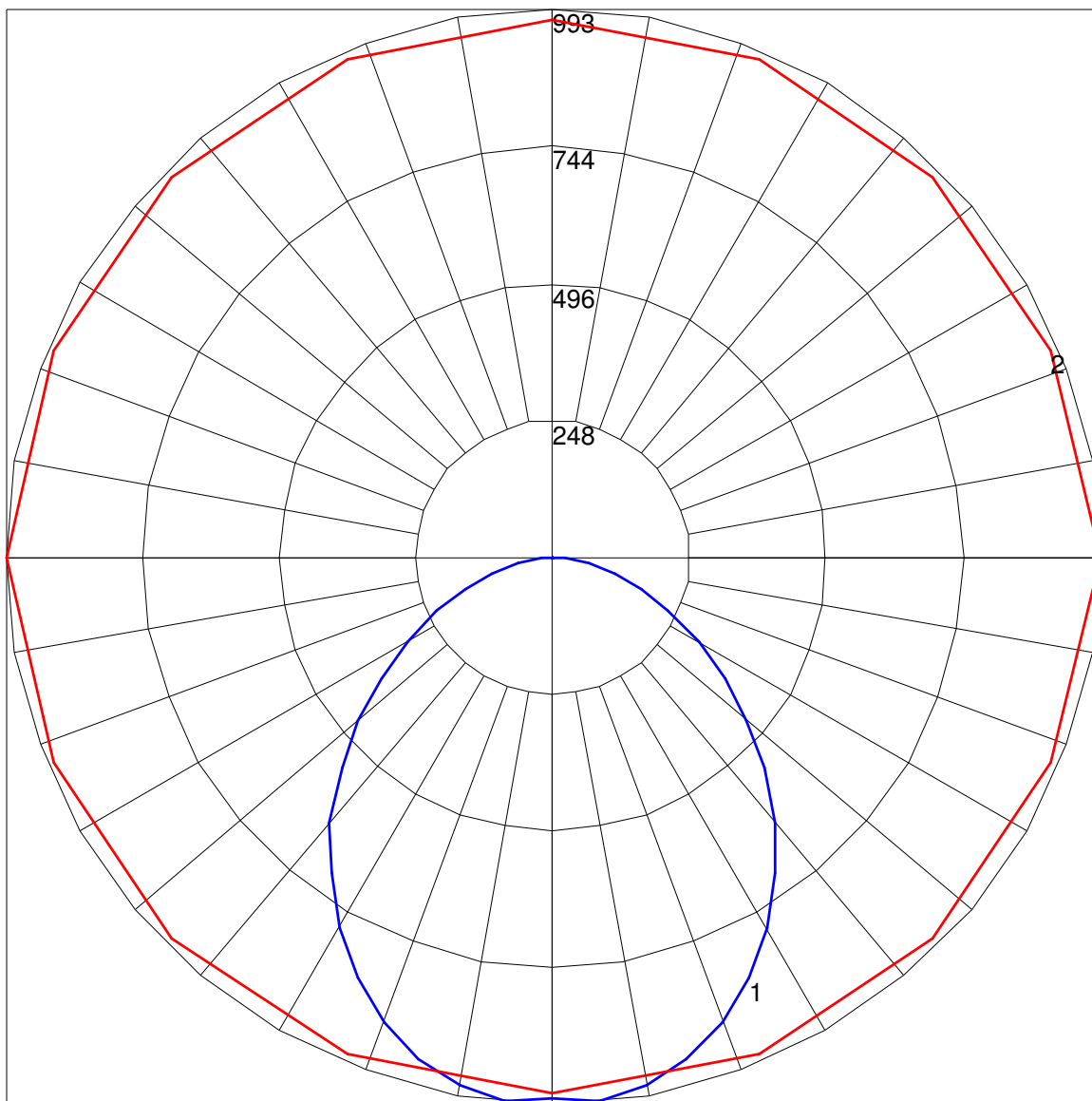
Reflectances

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	14.8	16.3	15.2	16.7	17.2	17.8	19.3	18.3	19.7	20.2
	3H	16.0	17.3	16.5	17.8	18.3	20.0	21.4	20.5	21.9	22.4
	4H	16.4	17.7	16.9	18.1	18.7	21.1	22.4	21.6	22.9	23.4
	6H	16.6	17.8	17.1	18.3	18.9	22.2	23.4	22.7	23.9	24.4
	8H	16.6	17.8	17.2	18.3	18.9	22.8	23.9	23.3	24.4	25.0
	12H	16.6	17.7	17.2	18.3	18.9	23.4	24.5	23.9	25.0	25.6
4H	2H	15.7	17.0	16.2	17.5	18.0	18.1	19.4	18.6	19.9	20.4
	3H	17.2	18.3	17.7	18.8	19.4	20.6	21.7	21.1	22.2	22.8
	4H	17.7	18.7	18.2	19.2	19.8	21.8	22.8	22.3	23.4	24.0
	6H	18.0	18.9	18.5	19.4	20.1	23.1	24.0	23.7	24.6	25.2
	8H	18.1	18.9	18.6	19.5	20.1	23.8	24.6	24.3	25.2	25.8
	12H	18.1	18.9	18.7	19.5	20.1	24.5	25.3	25.1	25.9	26.5
8H	4H	18.4	19.2	19.0	19.8	20.4	22.0	22.8	22.5	23.4	24.0
	6H	18.9	19.6	19.5	20.2	20.9	23.4	24.1	24.0	24.7	25.4
	8H	19.1	19.7	19.7	20.3	21.0	24.2	24.9	24.8	25.5	26.1
	12H	19.2	19.8	19.8	20.4	21.1	25.2	25.7	25.8	26.3	27.0
12H	4H	18.6	19.4	19.2	20.0	20.6	22.0	22.7	22.6	23.3	24.0
	6H	19.2	19.9	19.9	20.5	21.1	23.5	24.1	24.1	24.7	25.4
	8H	19.5	20.1	20.1	20.7	21.4	24.3	24.9	24.9	25.5	26.2

Maximum UGR = 27.0

POLAR GRAPH



Maximum Candela = 992.594 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.)