



IES INDOOR REPORT

PHOTOMETRIC FILENAME : NW-4-L34-830-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-L34-830-RA-DIM-UNV

[LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3391
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	144
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	5933	5437	5580
55	5059	4712	4961
65	4069	3903	4296
75	3157	3309	3712
85	1481	2983	3455

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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	1094.941	1094.941	1094.941	1094.941	1094.941
5	1104.121	1089.644	1086.820	1086.820	1083.642
10	1083.995	1071.637	1072.343	1075.168	1071.637
15	1047.626	1038.093	1045.861	1054.335	1053.276
20	1000.665	996.781	1009.492	1025.028	1025.735
25	935.696	939.933	962.884	983.363	988.660
30	867.196	874.611	907.448	933.930	944.170
35	781.747	799.049	842.479	877.082	889.088
40	700.183	718.897	771.155	819.528	830.827
45	603.436	630.624	694.180	746.438	760.562
50	513.044	546.588	616.147	673.701	689.237
55	423.711	456.549	536.348	596.021	614.381
60	338.969	376.044	457.961	513.044	533.876
65	257.405	296.598	376.750	447.015	462.198
70	189.964	224.567	308.603	376.750	394.758
75	128.879	167.366	252.461	313.546	326.964
80	71.678	118.639	201.969	257.405	276.472
85	25.423	80.152	160.304	211.856	227.745
90	0.000	52.964	124.995	175.487	185.727
95	0.000	33.897	98.513	143.709	159.245
100	0.000	22.598	75.562	118.992	131.351
105	0.000	15.183	59.673	96.041	109.812
110	0.000	7.062	47.314	78.740	91.804
115	0.000	4.590	37.781	66.381	75.562
120	0.000	0.000	30.013	54.376	63.910
125	0.000	0.000	23.304	43.430	50.845
130	0.000	0.000	18.361	34.250	40.606
135	0.000	0.000	14.830	26.482	32.485
140	0.000	0.000	7.768	20.126	24.716
145	0.000	0.000	2.825	15.536	18.008
150	0.000	0.000	0.000	13.418	15.183
155	0.000	0.000	0.000	12.711	13.418
160	0.000	0.000	0.000	7.415	12.358
165	0.000	0.000	0.000	2.472	4.237
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	398.98	N.A.	11.80
0-30	842.27	N.A.	24.80
0-40	1367.24	N.A.	40.30
0-60	2371.21	N.A.	69.90
0-80	2995.36	N.A.	88.30
0-90	3155.95	N.A.	93.10
10-90	3052.44	N.A.	90.00
20-40	968.26	N.A.	28.60
20-50	1500.27	N.A.	44.20
40-70	1372.12	N.A.	40.50
60-80	624.15	N.A.	18.40
70-80	255.99	N.A.	7.50
80-90	160.59	N.A.	4.70
90-110	158.76	N.A.	4.70
90-120	195.34	N.A.	5.80
90-130	216.36	N.A.	6.40
90-150	232.08	N.A.	6.80
90-180	234.67	N.A.	6.90
110-180	75.91	N.A.	2.20
0-180	3390.62	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	103.51
10-20	295.48
20-30	443.29
30-40	524.97
40-50	532.01
50-60	471.96
60-70	368.15
70-80	255.99
80-90	160.59
90-100	98.28
100-110	60.48
110-120	36.58
120-130	21.02
130-140	11.12
140-150	4.60
150-160	2.14
160-170	0.44
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

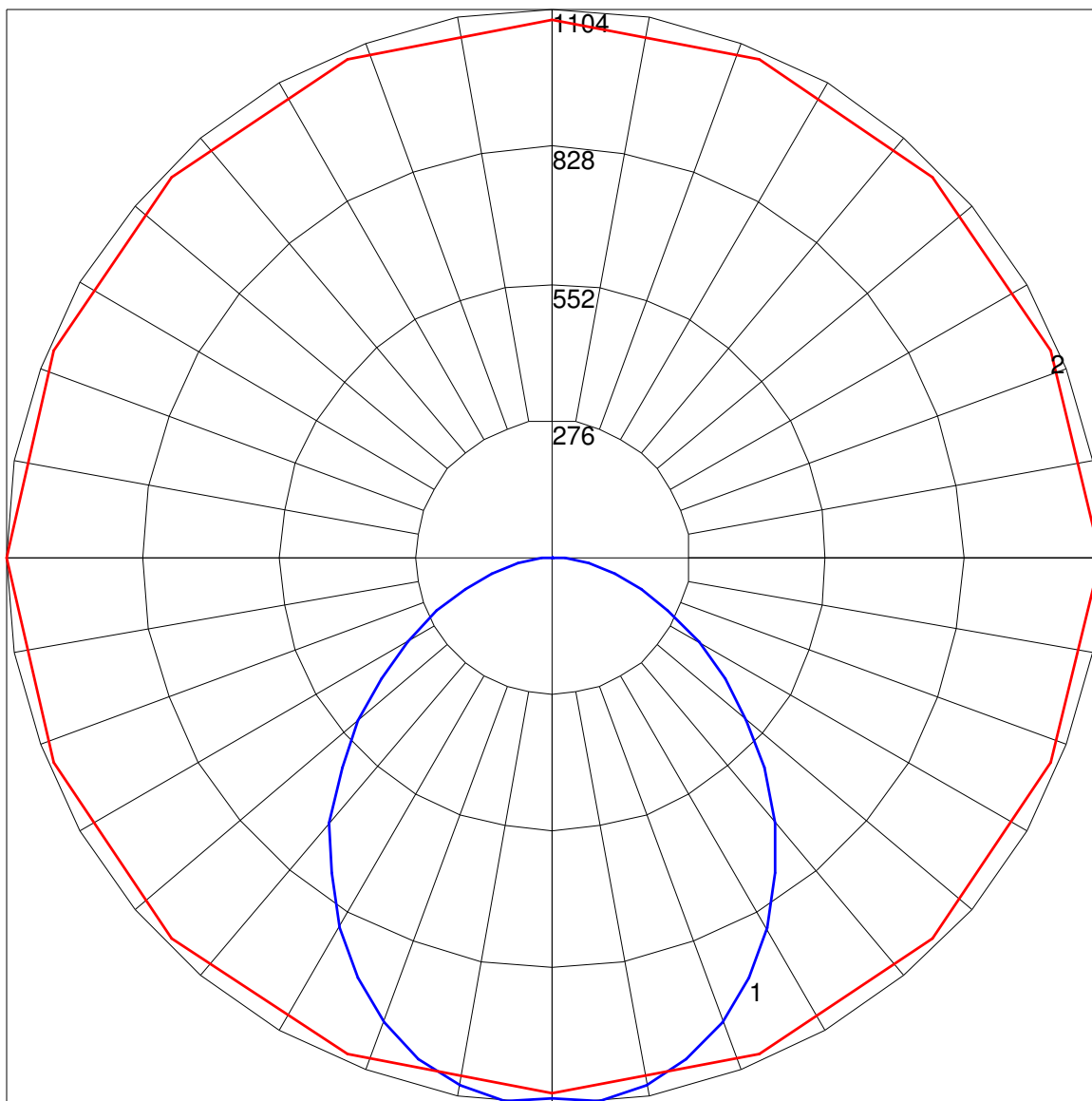
Reflectances

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	15.1	16.6	15.5	17.0	17.5	18.1	19.6	18.6	20.0	20.5
	3H	16.3	17.6	16.8	18.1	18.6	20.3	21.7	20.8	22.2	22.7
	4H	16.7	18.0	17.2	18.4	19.0	21.4	22.7	21.9	23.2	23.7
	6H	16.9	18.1	17.4	18.6	19.1	22.5	23.7	23.0	24.2	24.7
	8H	16.9	18.1	17.5	18.6	19.2	23.0	24.2	23.6	24.7	25.3
	12H	16.9	18.0	17.5	18.6	19.2	23.7	24.8	24.2	25.3	25.9
4H	2H	16.0	17.3	16.5	17.8	18.3	18.4	19.7	18.9	20.2	20.7
	3H	17.5	18.6	18.0	19.1	19.7	20.9	22.0	21.4	22.5	23.1
	4H	18.0	19.0	18.5	19.5	20.1	22.1	23.1	22.6	23.7	24.3
	6H	18.3	19.2	18.8	19.7	20.4	23.4	24.3	24.0	24.9	25.5
	8H	18.4	19.2	18.9	19.8	20.4	24.1	24.9	24.6	25.5	26.1
	12H	18.4	19.2	19.0	19.8	20.4	24.8	25.6	25.4	26.2	26.8
8H	4H	18.7	19.5	19.3	20.1	20.7	22.3	23.1	22.8	23.7	24.3
	6H	19.2	19.9	19.8	20.5	21.2	23.7	24.4	24.3	25.0	25.7
	8H	19.4	20.0	20.0	20.6	21.3	24.5	25.2	25.1	25.8	26.4
	12H	19.5	20.1	20.1	20.7	21.4	25.5	26.0	26.1	26.6	27.3
12H	4H	18.9	19.7	19.5	20.3	20.9	22.3	23.0	22.9	23.6	24.3
	6H	19.5	20.2	20.2	20.8	21.4	23.8	24.4	24.4	25.0	25.7
	8H	19.8	20.4	20.4	21.0	21.7	24.6	25.2	25.2	25.8	26.5

Maximum UGR = 27.3

POLAR GRAPH



Maximum Candela = 1104.121 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.)