



IES INDOOR REPORT
PHOTOMETRIC FILENAME : NW-4-L34-835-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-L34-835-RA-DIM-UNV
[LAMPCAT] 22 INCH HLM LED ARRAYS

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3425
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	146
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	5993	5492	5636
55	5110	4760	5011
65	4111	3943	4339
75	3188	3343	3749
85	1496	3013	3490

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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	1106.001	1106.001	1106.001	1106.001	1106.001
5	1115.274	1100.651	1097.798	1097.798	1094.588
10	1094.944	1082.461	1083.175	1086.028	1082.461
15	1058.208	1048.579	1056.425	1064.985	1063.915
20	1010.773	1006.850	1019.689	1035.382	1036.096
25	945.147	949.427	972.610	993.296	998.646
30	875.956	883.445	916.615	943.364	953.707
35	789.644	807.120	850.989	885.942	898.068
40	707.256	726.159	778.944	827.806	839.220
45	609.531	636.994	701.192	753.978	768.244
50	518.226	552.109	622.371	680.506	696.199
55	427.991	461.161	541.766	602.041	620.587
60	342.393	379.842	462.587	518.226	539.269
65	260.005	299.594	380.556	451.531	466.867
70	191.883	226.835	311.720	380.556	398.745
75	130.181	169.057	255.011	316.714	330.267
80	72.402	119.838	204.009	260.005	279.264
85	25.679	80.962	161.923	213.996	230.045
90	0.000	53.499	126.257	177.260	187.603
95	0.000	34.239	99.508	145.160	160.853
100	0.000	22.826	76.325	120.194	132.677
105	0.000	15.336	60.275	97.011	110.921
110	0.000	7.133	47.792	79.535	92.731
115	0.000	4.637	38.163	67.052	76.325
120	0.000	0.000	30.316	54.926	64.555
125	0.000	0.000	23.540	43.869	51.359
130	0.000	0.000	18.546	34.596	41.016
135	0.000	0.000	14.980	26.749	32.813
140	0.000	0.000	7.847	20.330	24.966
145	0.000	0.000	2.853	15.693	18.190
150	0.000	0.000	0.000	13.553	15.336
155	0.000	0.000	0.000	12.840	13.553
160	0.000	0.000	0.000	7.490	12.483
165	0.000	0.000	0.000	2.497	4.280
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	403.01	N.A.	11.80
0-30	850.78	N.A.	24.80
0-40	1381.05	N.A.	40.30
0-60	2395.16	N.A.	69.90
0-80	3025.61	N.A.	88.30
0-90	3187.83	N.A.	93.10
10-90	3083.28	N.A.	90.00
20-40	978.04	N.A.	28.60
20-50	1515.42	N.A.	44.20
40-70	1385.98	N.A.	40.50
60-80	630.45	N.A.	18.40
70-80	258.58	N.A.	7.60
80-90	162.21	N.A.	4.70
90-110	160.36	N.A.	4.70
90-120	197.31	N.A.	5.80
90-130	218.55	N.A.	6.40
90-150	234.43	N.A.	6.80
90-180	237.04	N.A.	6.90
110-180	76.68	N.A.	2.20
0-180	3424.87	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	104.55
10-20	298.46
20-30	447.77
30-40	530.27
40-50	537.38
50-60	476.73
60-70	371.87
70-80	258.58
80-90	162.21
90-100	99.27
100-110	61.09
110-120	36.95
120-130	21.23
130-140	11.23
140-150	4.65
150-160	2.17
160-170	0.45
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

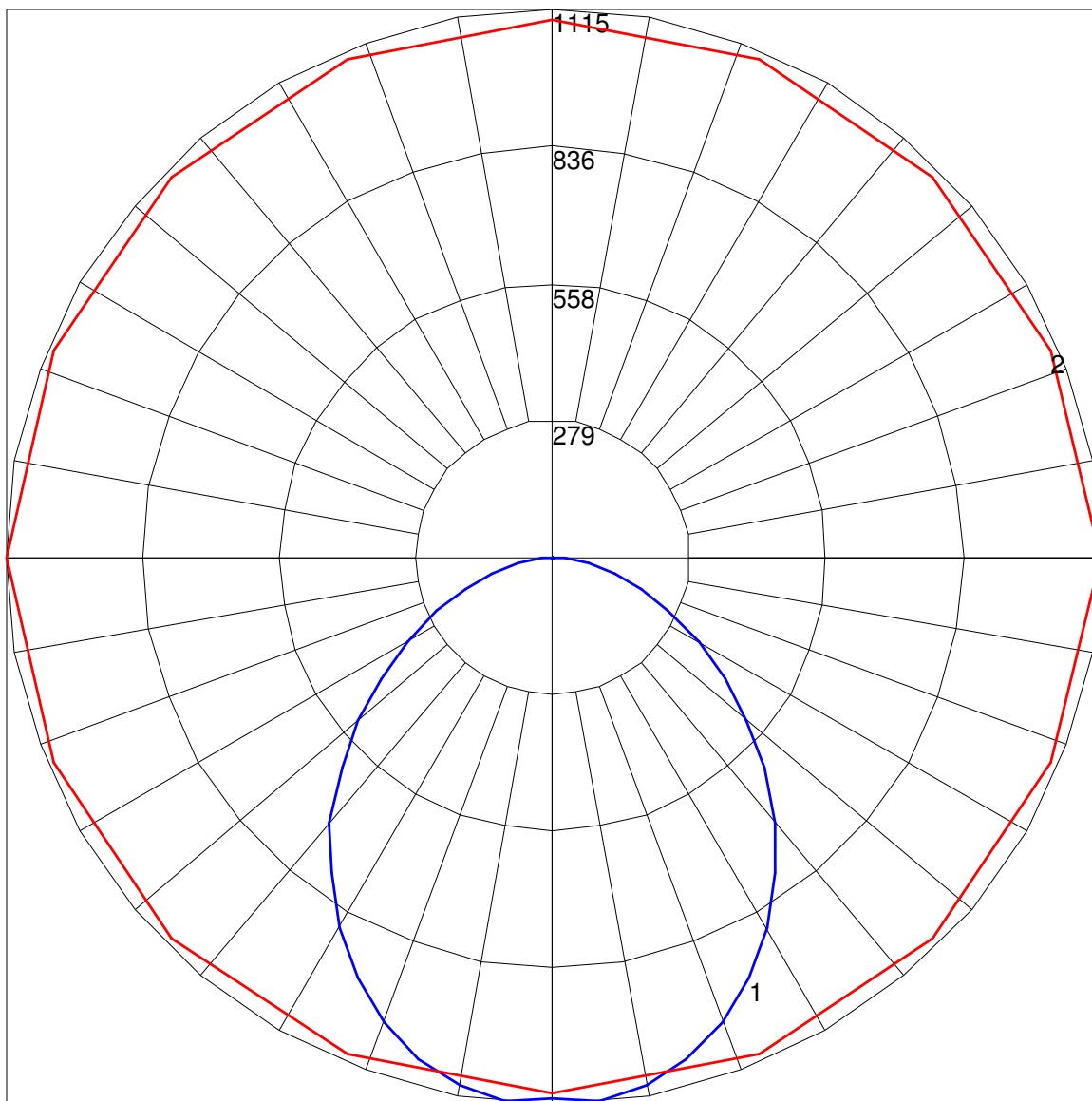
Reflectances

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	15.2	16.7	15.6	17.1	17.6	18.2	19.7	18.7	20.1	20.6
	3H	16.4	17.7	16.9	18.2	18.7	20.4	21.8	20.9	22.3	22.8
	4H	16.8	18.1	17.3	18.5	19.1	21.5	22.8	22.0	23.3	23.8
	6H	17.0	18.2	17.5	18.7	19.2	22.6	23.8	23.1	24.3	24.8
	8H	17.0	18.2	17.6	18.7	19.3	23.2	24.3	23.7	24.8	25.4
	12H	17.0	18.1	17.6	18.7	19.3	23.8	24.9	24.3	25.4	26.0
4H	2H	16.1	17.4	16.6	17.9	18.4	18.5	19.8	19.0	20.3	20.8
	3H	17.6	18.7	18.1	19.2	19.8	21.0	22.1	21.5	22.6	23.2
	4H	18.1	19.1	18.6	19.6	20.2	22.2	23.2	22.7	23.8	24.4
	6H	18.4	19.3	18.9	19.8	20.5	23.5	24.4	24.1	25.0	25.6
	8H	18.5	19.3	19.0	19.9	20.5	24.2	25.0	24.7	25.6	26.2
	12H	18.5	19.3	19.1	19.9	20.5	24.9	25.7	25.5	26.3	26.9
8H	4H	18.8	19.6	19.4	20.2	20.8	22.4	23.2	22.9	23.8	24.4
	6H	19.3	20.0	19.9	20.6	21.3	23.8	24.5	24.4	25.1	25.8
	8H	19.5	20.1	20.1	20.7	21.4	24.6	25.3	25.2	25.9	26.5
	12H	19.6	20.2	20.2	20.8	21.5	25.6	26.1	26.2	26.7	27.4
12H	4H	19.0	19.8	19.6	20.4	21.0	22.4	23.1	23.0	23.7	24.4
	6H	19.6	20.3	20.3	20.9	21.5	23.9	24.5	24.5	25.1	25.8
	8H	19.9	20.5	20.5	21.1	21.8	24.7	25.3	25.3	25.9	26.6

Maximum UGR = 27.4

POLAR GRAPH



Maximum Candela = 1115.274 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.)