



IES INDOOR REPORT
PHOTOMETRIC FILENAME : 96-4-L110-840-HIAFR-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]GEN FROM BALLABS TEST NO. 20008.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUE DATE] 10-25-2023
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836
[LUMINAIRE] 4' VAPORTITE LED LUMINAIRE
[MORE] WHITE FLAT REFLECTOR w/FROSTED LENS
[LUMCAT] 96-4-L110-840-HIAFR-DIM-UNV
[LAMPCAT] HLM 80 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	11075
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	126
Total Luminaire Watts	88
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	4.25 ft
Luminous Width (90-270)	0.50 ft
Luminous Height	0.17 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	16239	13440	12827
55	13560	11107	10920
65	10379	9147	9944
75	6780	7613	8974
85	2621	6245	7489

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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	3990.029	3990.029	3990.029	3990.029	3990.029
5	4048.554	3969.373	3955.602	3940.111	3929.783
10	3988.308	3910.848	3867.815	3831.667	3807.569
15	3888.471	3795.519	3733.552	3681.912	3649.207
20	3740.437	3631.994	3563.141	3461.582	3418.549
25	3556.255	3427.156	3344.532	3224.040	3210.269
30	3327.319	3189.613	3106.990	3048.465	3067.399
35	3063.957	2922.808	2867.726	2888.382	2933.136
40	2740.348	2602.642	2637.068	2643.954	2686.987
45	2358.214	2266.984	2373.706	2365.099	2390.919
50	1981.244	1943.375	2050.097	2079.359	2084.523
55	1623.209	1642.143	1733.373	1812.554	1828.046
60	1282.386	1349.518	1447.633	1597.389	1619.766
65	939.843	1032.794	1196.320	1380.502	1425.256
70	647.218	747.055	979.433	1170.500	1235.911
75	397.626	509.512	772.874	975.991	1031.073
80	196.231	328.773	590.414	786.645	814.186
85	65.410	204.838	432.052	609.349	621.398
90	25.820	132.542	318.445	454.430	468.200
95	24.099	91.230	258.199	356.314	373.527
100	20.656	56.804	196.231	277.133	296.068
105	13.771	32.705	144.591	215.165	237.543
110	8.607	12.049	103.279	166.968	185.903
115	6.885	3.443	67.132	123.935	146.313
120	3.443	1.721	41.312	89.509	105.001
125	0.000	0.000	13.771	55.082	72.296
130	0.000	0.000	0.000	25.820	41.312
135	0.000	0.000	0.000	8.607	15.492
140	0.000	0.000	0.000	6.885	6.885
145	0.000	0.000	0.000	3.443	3.443
150	0.000	0.000	0.000	0.000	0.000
155	0.000	0.000	0.000	0.000	0.000
160	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.000
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	1429.65	N.A.	12.90
0-30	2973.83	N.A.	26.90
0-40	4794.56	N.A.	43.30
0-60	8156.4	N.A.	73.60
0-80	10141.1	N.A.	91.60
0-90	10586.98	N.A.	95.60
10-90	10211.42	N.A.	92.20
20-40	3364.91	N.A.	30.40
20-50	5172.99	N.A.	46.70
40-70	4554.69	N.A.	41.10
60-80	1984.7	N.A.	17.90
70-80	791.85	N.A.	7.20
80-90	445.88	N.A.	4.00
90-110	388.40	N.A.	3.50
90-120	457.42	N.A.	4.10
90-130	482.51	N.A.	4.40
90-150	487.75	N.A.	4.40
90-180	487.75	N.A.	4.40
110-180	99.35	N.A.	0.90
0-180	11074.74	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	375.57
10-20	1054.09
20-30	1544.18
30-40	1820.73
40-50	1808.09
50-60	1553.75
60-70	1192.85
70-80	791.85
80-90	445.88
90-100	249.02
100-110	139.38
110-120	69.02
120-130	25.09
130-140	4.41
140-150	0.84
150-160	0.00
160-170	0.00
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	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	96
1	107	102	97	93	104	99	95	91	94	91	88	89	87	84	85	83	81	78
2	97	89	82	76	94	86	80	75	82	77	72	78	74	70	75	71	68	65
3	89	78	70	63	86	76	68	62	72	66	61	69	64	59	66	61	57	55
4	81	69	60	54	79	68	59	53	65	57	52	62	56	51	59	54	49	47
5	75	62	53	46	72	61	52	46	58	51	45	56	49	44	53	48	43	41
6	69	56	47	41	67	55	46	40	52	45	39	50	44	39	48	43	38	36
7	64	51	42	36	62	50	41	36	48	40	35	46	39	34	44	38	34	32
8	60	46	38	32	58	45	37	32	44	37	31	42	36	31	41	35	30	29
9	56	43	34	29	54	42	34	29	40	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	39	31	26	37	31	26	36	30	25	35	29	25	23

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UGR TABLE - CORRECTED

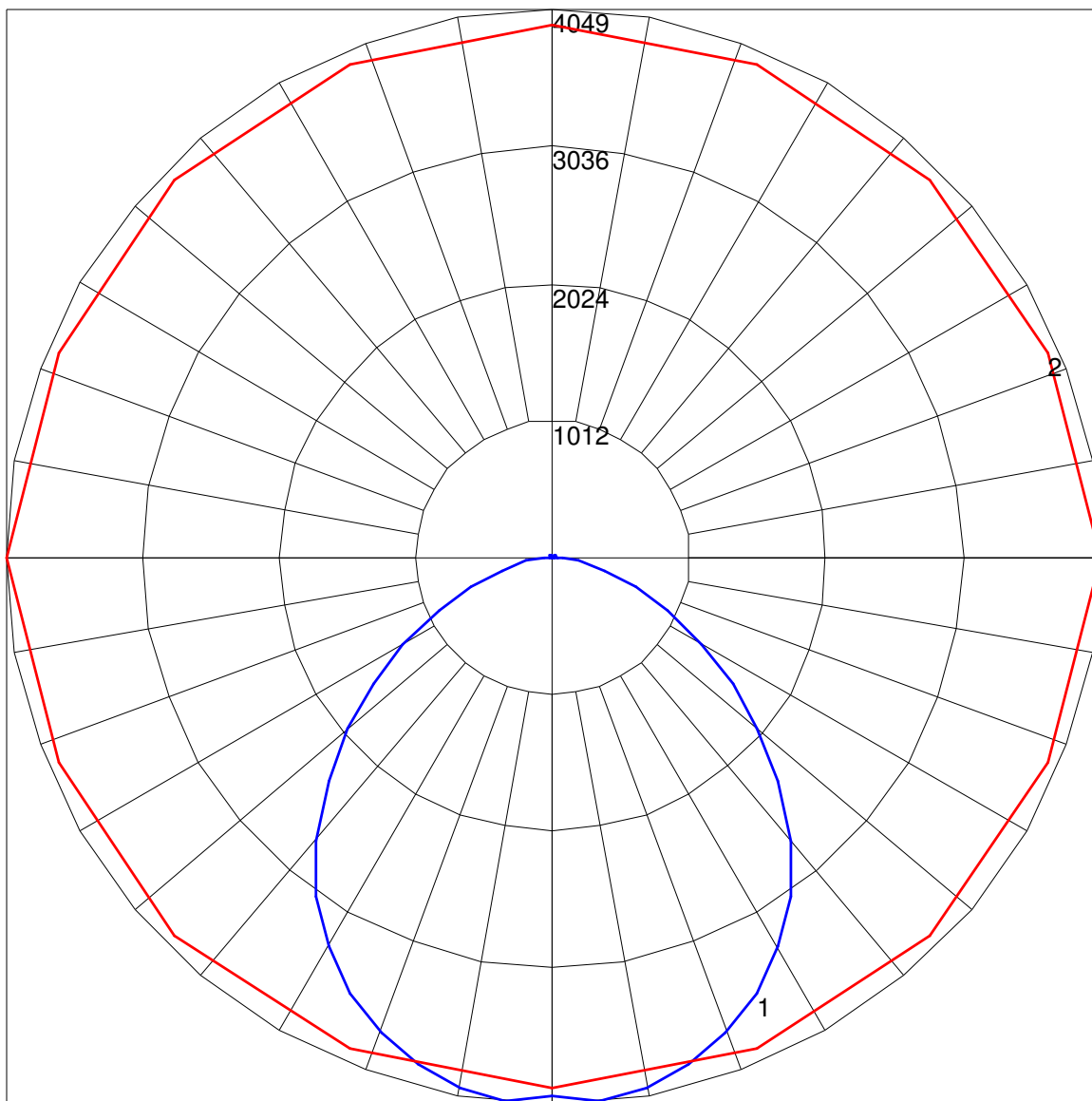
Reflectances

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	19.1	20.6	19.5	21.0	21.4	20.8	22.3	21.2	22.7	23.1
	3H	20.2	21.6	20.6	22.0	22.5	23.1	24.5	23.5	24.9	25.4
	4H	20.5	21.8	20.9	22.2	22.7	24.2	25.5	24.6	25.9	26.4
	6H	20.6	21.9	21.1	22.3	22.8	25.2	26.5	25.7	26.9	27.4
	8H	20.6	21.8	21.1	22.3	22.8	25.7	26.9	26.2	27.4	27.9
	12H	20.6	21.8	21.1	22.2	22.8	26.2	27.4	26.7	27.8	28.4
4H	2H	19.8	21.1	20.2	21.5	22.0	21.2	22.5	21.6	22.9	23.4
	3H	21.1	22.3	21.6	22.7	23.2	23.7	24.8	24.2	25.3	25.8
	4H	21.6	22.6	22.1	23.1	23.6	25.0	26.0	25.5	26.5	27.0
	6H	21.8	22.7	22.3	23.2	23.7	26.2	27.1	26.7	27.6	28.2
	8H	21.8	22.7	22.3	23.2	23.7	26.8	27.6	27.3	28.2	28.7
	12H	21.9	22.6	22.4	23.2	23.7	27.4	28.2	28.0	28.7	29.3
8H	4H	22.1	23.0	22.7	23.5	24.1	25.1	26.0	25.6	26.5	27.0
	6H	22.5	23.2	23.1	23.8	24.4	26.5	27.2	27.1	27.8	28.4
	8H	22.6	23.3	23.2	23.9	24.4	27.3	27.9	27.8	28.5	29.1
	12H	22.7	23.3	23.3	23.8	24.5	28.1	28.6	28.6	29.2	29.8
12H	4H	22.3	23.1	22.9	23.6	24.2	25.1	25.9	25.7	26.4	27.0
	6H	22.8	23.4	23.4	24.0	24.6	26.5	27.2	27.1	27.7	28.4
	8H	23.0	23.6	23.5	24.1	24.8	27.3	27.9	27.9	28.5	29.1

Maximum UGR = 29.8

POLAR GRAPH



Maximum Candela = 4048.554 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.)