



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 96-4-L62-840-HIAFR-(L43)-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 19227.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 10-JAN-2024

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] 4' ENCLOSED & GASKETED LED LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC RIBBED DIFFUSER

[MORE] 0-10V DIMMING DRIVER

[LUMCAT] 96-4-L62-840-HIAFR-(L43)-DIM-UNV

[LAMPCAT] HLM 80 CRI 4000K LED ARRAYS

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4231
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	128
Total Luminaire Watts	33.1
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.30
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	4.23 ft
Luminous Width (90-270)	0.50 ft
Luminous Height	0.18 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	6376	5027	4895
55	5425	4278	4225
65	3976	3475	3751
75	2438	2930	3235
85	898	2300	2760

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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	1494.714	1494.714	1494.714	1494.714	1494.714
5	1507.819	1488.506	1478.849	1471.952	1469.883
10	1487.816	1463.675	1448.500	1442.982	1437.464
15	1450.569	1422.979	1400.217	1387.111	1379.524
20	1396.768	1368.488	1334.689	1307.099	1306.409
25	1333.310	1302.960	1253.297	1218.119	1207.083
30	1253.297	1214.671	1147.764	1137.417	1138.797
35	1154.661	1115.345	1051.887	1082.926	1099.480
40	1042.230	1006.363	975.323	1009.811	1023.607
45	923.591	889.793	894.621	902.209	921.522
50	790.467	758.048	787.018	800.124	812.539
55	648.376	631.822	675.277	701.488	717.352
60	503.526	520.770	561.466	607.680	630.442
65	360.056	411.098	462.140	529.047	548.361
70	246.245	302.116	382.128	451.794	463.520
75	143.470	210.377	304.875	369.712	382.128
80	67.597	140.022	228.311	290.390	302.116
85	22.762	88.979	165.543	226.242	238.658
90	9.657	53.801	120.708	169.681	182.097
95	7.587	37.247	96.567	133.814	145.540
100	6.898	22.762	79.323	111.741	117.949
105	5.518	13.795	60.009	89.669	95.877
110	3.449	4.139	42.075	69.666	76.564
115	2.069	2.069	27.590	51.732	60.009
120	0.000	0.000	13.795	37.247	44.835
125	0.000	0.000	4.139	22.762	29.660
130	0.000	0.000	0.000	11.726	16.554
135	0.000	0.000	0.000	2.759	6.208
140	0.000	0.000	0.000	0.000	0.000
145	0.000	0.000	0.000	0.000	0.000
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	536.71	N.A.	12.70
0-30	1117.74	N.A.	26.40
0-40	1802.19	N.A.	42.60
0-60	3100.13	N.A.	73.30
0-80	3867.66	N.A.	91.40
0-90	4038.48	N.A.	95.40
10-90	3897.85	N.A.	92.10
20-40	1265.49	N.A.	29.90
20-50	1960.12	N.A.	46.30
40-70	1759.83	N.A.	41.60
60-80	767.52	N.A.	18.10
70-80	305.63	N.A.	7.20
80-90	170.82	N.A.	4.00
90-110	152.82	N.A.	3.60
90-120	181.10	N.A.	4.30
90-130	191.11	N.A.	4.50
90-150	192.69	N.A.	4.60
90-180	192.69	N.A.	4.60
110-180	39.87	N.A.	0.90
0-180	4231.17	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	140.63
10-20	396.08
20-30	581.03
30-40	684.46
40-50	694.64
50-60	603.30
60-70	461.89
70-80	305.63
80-90	170.82
90-100	95.83
100-110	56.99
110-120	28.28
120-130	10.01
130-140	1.58
140-150	0.00
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	95
1	107	102	97	93	104	99	95	91	94	90	87	89	86	84	85	83	81	78
2	97	89	82	76	94	86	80	74	82	77	72	78	73	70	74	71	67	65
3	89	78	69	63	86	76	68	62	72	66	60	69	63	59	66	61	57	55
4	81	69	60	53	78	67	59	53	64	57	51	61	55	50	59	53	49	47
5	75	62	53	46	72	60	52	46	58	50	45	55	49	44	53	47	43	41
6	69	56	47	40	67	54	46	40	52	45	39	50	43	38	48	42	38	36
7	64	50	42	36	62	49	41	35	47	40	35	46	39	34	44	38	34	32
8	60	46	38	32	58	45	37	32	44	36	31	42	35	31	40	35	30	28
9	56	42	34	29	54	42	34	28	40	33	28	39	32	28	37	32	27	25
10	52	39	31	26	51	38	31	26	37	30	25	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

X=2H	Y=2H	15.7	17.2	16.1	17.6	18.1	17.4	18.9	17.8	19.3	19.8
	3H	16.8	18.2	17.3	18.6	19.1	19.7	21.0	20.1	21.5	22.0
	4H	17.1	18.4	17.6	18.9	19.4	20.7	22.0	21.2	22.5	22.9
	6H	17.2	18.4	17.7	18.9	19.4	21.7	22.9	22.2	23.4	23.9
	8H	17.2	18.4	17.7	18.9	19.4	22.2	23.3	22.7	23.8	24.3
	12H	17.2	18.3	17.7	18.8	19.4	22.7	23.8	23.2	24.3	24.8

UGR Viewed Endwise

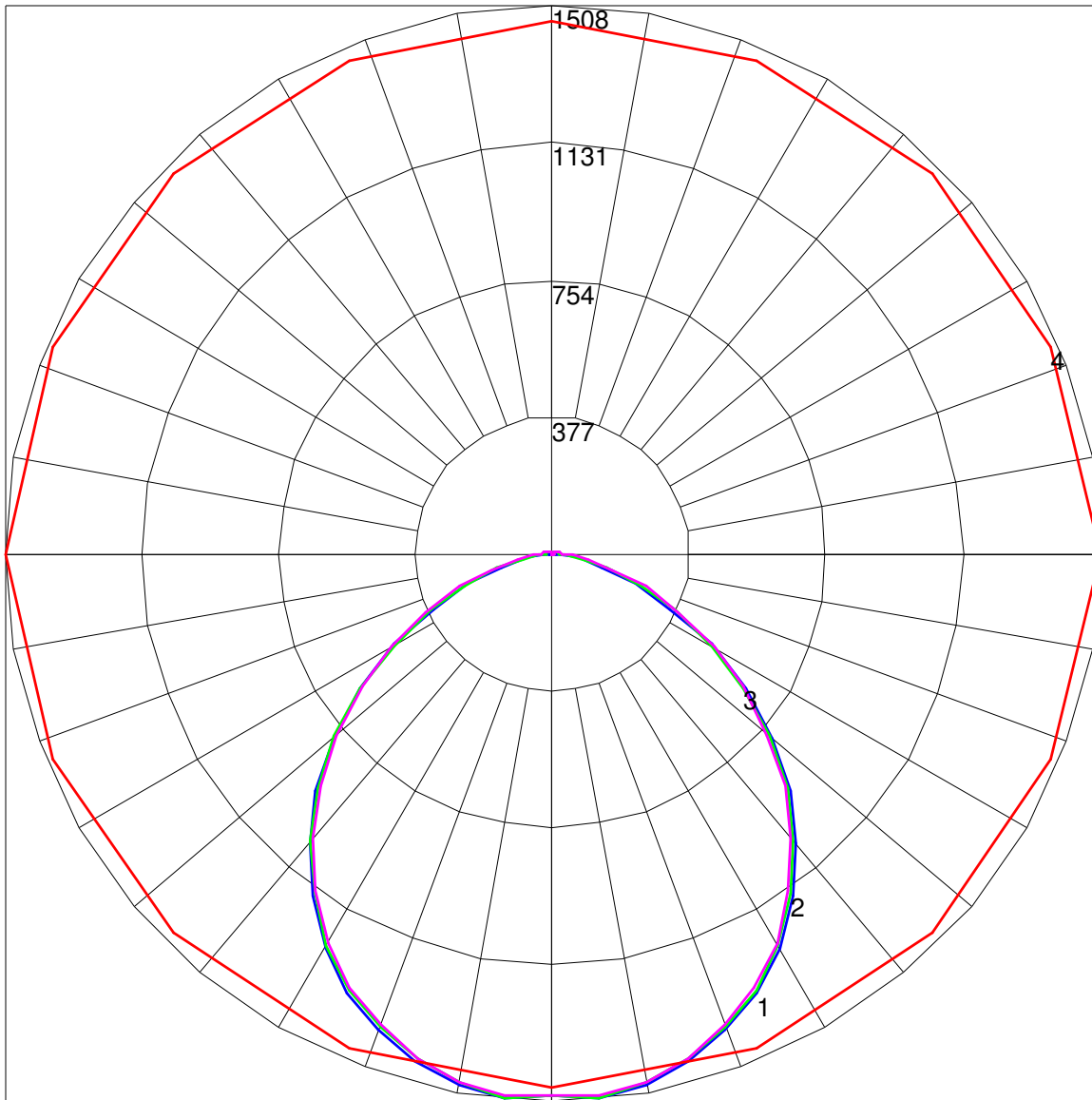
4H	2H	16.4	17.7	16.9	18.1	18.6	17.8	19.1	18.2	19.5	20.0
	3H	17.8	18.9	18.3	19.4	19.9	20.3	21.4	20.8	21.9	22.4
	4H	18.2	19.2	18.7	19.7	20.3	21.5	22.5	22.0	23.0	23.5
	6H	18.4	19.3	19.0	19.9	20.4	22.7	23.5	23.2	24.1	24.6
	8H	18.5	19.3	19.0	19.9	20.4	23.2	24.1	23.8	24.6	25.2
	12H	18.5	19.3	19.1	19.8	20.4	23.9	24.6	24.4	25.2	25.8

8H	4H	18.8	19.6	19.3	20.2	20.8	21.7	22.5	22.2	23.0	23.6
	6H	19.2	19.9	19.8	20.5	21.1	23.0	23.7	23.6	24.3	24.9
	8H	19.3	20.0	19.9	20.5	21.1	23.7	24.3	24.3	24.9	25.5
	12H	19.4	20.0	20.0	20.5	21.2	24.5	25.1	25.1	25.6	26.3

12H	4H	19.0	19.7	19.5	20.3	20.9	21.7	22.4	22.2	23.0	23.6
	6H	19.5	20.1	20.0	20.6	21.3	23.0	23.7	23.6	24.2	24.9
	8H	19.7	20.2	20.2	20.8	21.4	23.8	24.3	24.4	24.9	25.6

Maximum UGR = 26.3

POLAR GRAPH



Maximum Candela = 1507.819 Located At Horizontal Angle = 0, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Vertical Plane Through Horizontal Angles (5 - 185)  
# 3 - Vertical Plane Through Horizontal Angles (10 - 190)  
# 4 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)