



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 96-4-L81-840-HIAFR-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] 31-MAR-2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4' LED ENCLOSED & GASKETED LUMINAIRE
 [MORE] WHITE REFLECTOR w/FROSTED
 [MORE] LINEAR RIBBED ACRYLIC DIFFUSER
 [LUMCAT] 96-4-L81-840-HIAFR-DIM-UNV
 [LAMP] LED
 [LAMPCAT] HLM 80 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	8121
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	125
Total Luminaire Watts	65
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	12238	9649	9396
55	10412	8210	8109
65	7632	6670	7200
75	4680	5624	6209
85	1724	4415	5297

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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	2868.961	2868.961	2868.961	2868.961	2868.961
5	2894.115	2857.045	2838.510	2825.271	2821.299
10	2855.721	2809.384	2780.257	2769.666	2759.074
15	2784.229	2731.272	2687.582	2662.427	2647.864
20	2680.962	2626.681	2561.809	2508.851	2507.527
25	2559.161	2500.908	2405.585	2338.064	2316.881
30	2405.585	2331.444	2203.023	2183.164	2185.812
35	2216.262	2140.798	2018.996	2078.573	2110.348
40	2000.461	1931.617	1872.040	1938.237	1964.715
45	1772.745	1707.872	1717.140	1731.703	1768.773
50	1517.226	1455.001	1510.606	1535.761	1559.592
55	1244.496	1212.722	1296.129	1346.439	1376.889
60	966.470	999.569	1077.681	1166.384	1210.074
65	691.093	789.064	887.034	1015.456	1052.526
70	472.644	579.882	733.458	867.175	889.682
75	275.378	403.799	585.178	709.628	733.458
80	129.745	268.758	438.222	557.375	579.882
85	43.690	170.787	317.744	434.250	458.080
90	18.535	103.267	231.688	325.687	349.518
95	14.563	71.492	185.350	256.843	279.350
100	13.239	43.690	152.252	214.477	226.392
105	10.591	26.479	115.182	172.111	184.027
110	6.620	7.944	80.760	133.717	146.956
115	3.972	3.972	52.957	99.295	115.182
120	0.000	0.000	26.479	71.492	86.056
125	0.000	0.000	7.944	43.690	56.929
130	0.000	0.000	0.000	22.507	31.774
135	0.000	0.000	0.000	5.296	11.915
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	1030.16	N.A.	12.70
0-30	2145.39	N.A.	26.40
0-40	3459.14	N.A.	42.60
0-60	5950.41	N.A.	73.30
0-80	7423.6	N.A.	91.40
0-90	7751.48	N.A.	95.40
10-90	7481.54	N.A.	92.10
20-40	2428.98	N.A.	29.90
20-50	3762.27	N.A.	46.30
40-70	3377.82	N.A.	41.60
60-80	1473.19	N.A.	18.10
70-80	586.64	N.A.	7.20
80-90	327.88	N.A.	4.00
90-110	293.32	N.A.	3.60
90-120	347.61	N.A.	4.30
90-130	366.82	N.A.	4.50
90-150	369.85	N.A.	4.60
90-180	369.85	N.A.	4.60
110-180	76.53	N.A.	0.90
0-180	8121.33	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	269.93
10-20	760.23
20-30	1115.23
30-40	1313.75
40-50	1333.29
50-60	1157.98
60-70	886.55
70-80	586.64
80-90	327.88
90-100	183.94
100-110	109.38
110-120	54.29
120-130	19.22
130-140	3.03
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

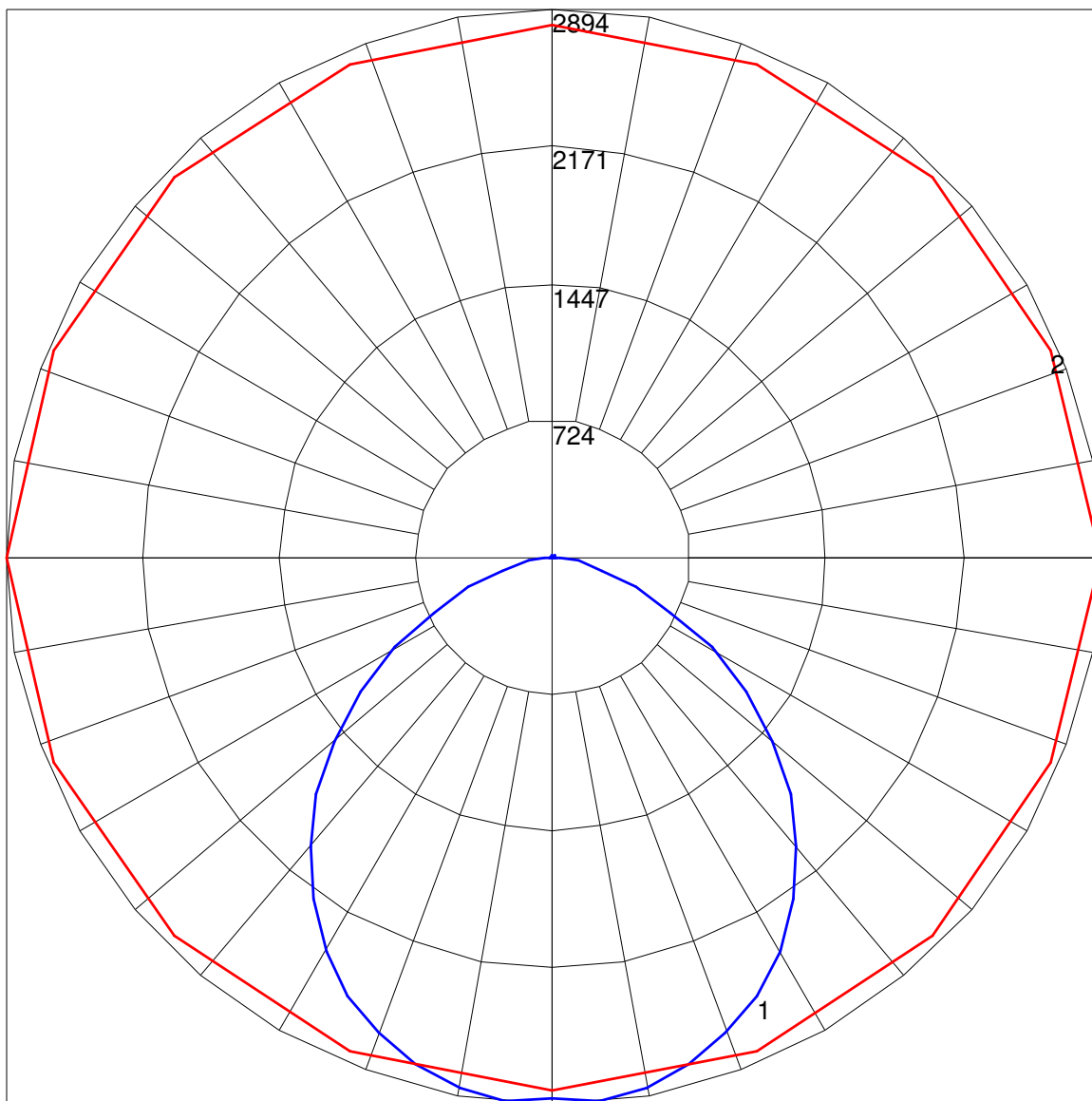
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	18.0	19.5	18.4	19.9	20.4	19.7	21.2	20.1	21.6	22.1
	3H	19.1	20.5	19.6	20.9	21.4	22.0	23.3	22.4	23.8	24.3
	4H	19.4	20.7	19.9	21.2	21.7	23.0	24.3	23.5	24.8	25.2
	6H	19.5	20.7	20.0	21.2	21.7	24.0	25.2	24.5	25.7	26.2
	8H	19.5	20.7	20.0	21.2	21.7	24.5	25.6	25.0	26.1	26.6
	12H	19.5	20.6	20.0	21.1	21.7	25.0	26.1	25.5	26.6	27.1
4H	2H	18.7	20.0	19.2	20.4	20.9	20.1	21.4	20.5	21.8	22.3
	3H	20.1	21.2	20.6	21.7	22.2	22.6	23.7	23.1	24.2	24.7
	4H	20.5	21.5	21.0	22.0	22.6	23.8	24.8	24.3	25.3	25.8
	6H	20.7	21.6	21.3	22.2	22.7	25.0	25.8	25.5	26.4	26.9
	8H	20.8	21.6	21.3	22.2	22.7	25.5	26.4	26.1	26.9	27.5
	12H	20.8	21.6	21.4	22.1	22.7	26.2	26.9	26.7	27.5	28.1
8H	4H	21.1	21.9	21.6	22.5	23.1	24.0	24.8	24.5	25.3	25.9
	6H	21.5	22.2	22.1	22.8	23.4	25.3	26.0	25.9	26.6	27.2
	8H	21.6	22.3	22.2	22.8	23.4	26.0	26.6	26.6	27.2	27.8
	12H	21.7	22.3	22.3	22.8	23.5	26.8	27.4	27.4	27.9	28.6
12H	4H	21.3	22.0	21.8	22.6	23.2	24.0	24.7	24.5	25.3	25.9
	6H	21.8	22.4	22.3	22.9	23.6	25.3	26.0	25.9	26.5	27.2
	8H	22.0	22.5	22.5	23.1	23.7	26.1	26.6	26.7	27.2	27.9

Maximum UGR = 28.6

POLAR GRAPH



Maximum Candela = 2894.115 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.)