



IES INDOOR REPORT
PHOTOMETRIC FILENAME : 96-4-L62-840-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
 [ISSUE DATE] 12-14-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO.64836
 [LUMINAIRE] 4' SUSPENDED ENCLOSED & GASKETED LUMINAIRE
 [MORE] WHITE REFLECTOR w/FROSTED ACRYLIC RIBBED DIFFUSER
 [LUMCAT] 96-4-L62-840-HIAFR-DIM-UNV
 [LAMPCAT] HLM 80 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6434
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	134
Total Luminaire Watts	48
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	9696	7645	7444
55	8249	6505	6424
65	6046	5285	5704
75	3708	4456	4919
85	1366	3498	4197

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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	2272.984	2272.984	2272.984	2272.984	2272.984
5	2292.913	2263.543	2248.859	2238.370	2235.223
10	2262.495	2225.783	2202.707	2194.316	2185.924
15	2205.854	2163.897	2129.283	2109.354	2097.816
20	2124.039	2081.033	2029.637	1987.681	1986.632
25	2027.539	1981.387	1905.866	1852.372	1835.589
30	1905.866	1847.127	1745.383	1729.649	1731.747
35	1755.872	1696.084	1599.585	1646.786	1671.959
40	1584.900	1530.357	1483.156	1535.601	1556.579
45	1404.488	1353.091	1360.434	1371.972	1401.341
50	1202.049	1152.750	1196.804	1216.733	1235.614
55	985.974	960.800	1026.881	1066.739	1090.864
60	765.703	791.926	853.811	924.088	958.702
65	547.530	625.149	702.768	804.512	833.882
70	374.460	459.422	581.095	687.035	704.866
75	218.173	319.917	463.617	562.215	581.095
80	102.793	212.928	347.189	441.590	459.422
85	34.614	135.309	251.738	344.042	362.922
90	14.685	81.815	183.559	258.031	276.912
95	11.538	56.641	146.847	203.488	221.320
100	10.489	34.614	120.624	169.923	179.363
105	8.391	20.978	91.255	136.358	145.798
110	5.245	6.293	63.983	105.940	116.429
115	3.147	3.147	41.956	78.668	91.255
120	0.000	0.000	20.978	56.641	68.179
125	0.000	0.000	6.293	34.614	45.103
130	0.000	0.000	0.000	17.831	25.174
135	0.000	0.000	0.000	4.196	9.440
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	816.16	N.A.	12.70
0-30	1699.72	N.A.	26.40
0-40	2740.56	N.A.	42.60
0-60	4714.31	N.A.	73.30
0-80	5881.47	N.A.	91.40
0-90	6141.24	N.A.	95.40
10-90	5927.38	N.A.	92.10
20-40	1924.4	N.A.	29.90
20-50	2980.72	N.A.	46.30
40-70	2676.14	N.A.	41.60
60-80	1167.16	N.A.	18.10
70-80	464.77	N.A.	7.20
80-90	259.77	N.A.	4.00
90-110	232.39	N.A.	3.60
90-120	275.40	N.A.	4.30
90-130	290.62	N.A.	4.50
90-150	293.02	N.A.	4.60
90-180	293.02	N.A.	4.60
110-180	60.63	N.A.	0.90
0-180	6434.26	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	213.86
10-20	602.30
20-30	883.56
30-40	1040.84
40-50	1056.32
50-60	917.43
60-70	702.39
70-80	464.77
80-90	259.77
90-100	145.73
100-110	86.66
110-120	43.01
120-130	15.23
130-140	2.40
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

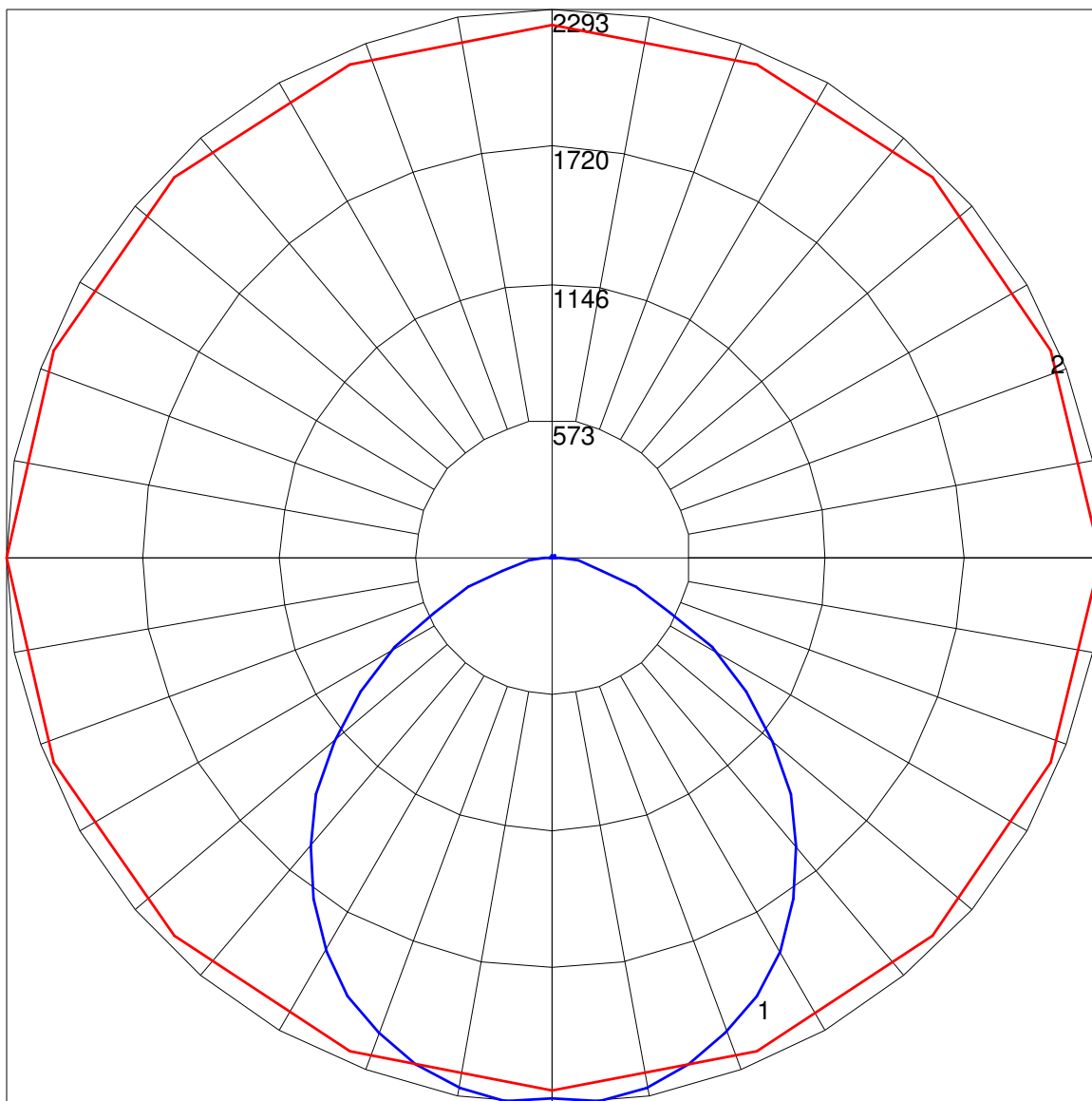
Reflectances

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	17.2	18.7	17.6	19.1	19.6	18.9	20.4	19.3	20.8	21.3
	3H	18.3	19.7	18.8	20.1	20.6	21.2	22.5	21.6	23.0	23.5
	4H	18.6	19.9	19.1	20.4	20.9	22.2	23.5	22.7	24.0	24.4
	6H	18.7	19.9	19.2	20.4	20.9	23.2	24.4	23.7	24.9	25.4
	8H	18.7	19.9	19.2	20.4	20.9	23.7	24.8	24.2	25.3	25.8
	12H	18.7	19.8	19.2	20.3	20.9	24.2	25.3	24.7	25.8	26.3
4H	2H	17.9	19.2	18.4	19.6	20.1	19.3	20.6	19.7	21.0	21.5
	3H	19.3	20.4	19.8	20.9	21.4	21.8	22.9	22.3	23.4	23.9
	4H	19.7	20.7	20.2	21.2	21.8	23.0	24.0	23.5	24.5	25.0
	6H	19.9	20.8	20.5	21.4	21.9	24.2	25.0	24.7	25.6	26.1
	8H	20.0	20.8	20.5	21.4	21.9	24.7	25.6	25.3	26.1	26.7
	12H	20.0	20.8	20.6	21.3	21.9	25.4	26.1	25.9	26.7	27.3
8H	4H	20.3	21.1	20.8	21.7	22.3	23.2	24.0	23.7	24.5	25.1
	6H	20.7	21.4	21.3	22.0	22.6	24.5	25.2	25.1	25.8	26.4
	8H	20.8	21.5	21.4	22.0	22.6	25.2	25.8	25.8	26.4	27.0
	12H	20.9	21.5	21.5	22.0	22.7	26.0	26.6	26.6	27.1	27.8
12H	4H	20.5	21.2	21.0	21.8	22.4	23.2	23.9	23.7	24.5	25.1
	6H	21.0	21.6	21.5	22.1	22.8	24.5	25.2	25.1	25.7	26.4
	8H	21.2	21.7	21.7	22.3	22.9	25.3	25.8	25.9	26.4	27.1

Maximum UGR = 27.8

POLAR GRAPH



Maximum Candela = 2292.913 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.)