



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 96-4-L40-940-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] 30 AUGUST 2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4' SUSPENDED ENCLOSED & GASKETED LUMINAIRE
 [MORE] WHITE REFLECTOR w/FROSTED ACRYLIC LENS
 [LUMCAT] 96-4-L40-940-HIAFR-DIM-UNV
 [LAMPCAT] HLM 90 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3391
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	113
Total Luminaire Watts	30
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	5110	4029	3923
55	4348	3428	3386
65	3187	2785	3006
75	1954	2348	2593
85	720	1844	2212

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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	1197.962	1197.962	1197.962	1197.962	1197.962
5	1208.465	1192.986	1185.247	1179.719	1178.060
10	1192.433	1173.085	1160.923	1156.500	1152.078
15	1162.581	1140.468	1122.225	1111.722	1105.641
20	1119.461	1096.796	1069.707	1047.595	1047.042
25	1068.602	1044.278	1004.475	976.281	967.436
30	1004.475	973.517	919.893	911.601	912.706
35	925.421	893.910	843.051	867.928	881.196
40	835.312	806.565	781.688	809.329	820.385
45	740.226	713.138	717.008	723.089	738.568
50	633.532	607.550	630.768	641.272	651.222
55	519.651	506.383	541.211	562.218	574.933
60	403.559	417.379	449.996	487.035	505.278
65	288.572	329.481	370.390	424.013	439.492
70	197.357	242.135	306.262	362.097	371.495
75	114.987	168.610	244.347	296.312	306.262
80	54.176	112.223	182.984	232.737	242.135
85	18.243	71.314	132.677	181.325	191.276
90	7.739	43.120	96.744	135.994	145.945
95	6.081	29.852	77.395	107.247	116.645
100	5.528	18.243	63.574	89.557	94.532
105	4.423	11.056	48.095	71.867	76.842
110	2.764	3.317	33.722	55.835	61.363
115	1.658	1.658	22.113	41.462	48.095
120	0.000	0.000	11.056	29.852	35.933
125	0.000	0.000	3.317	18.243	23.771
130	0.000	0.000	0.000	9.398	13.268
135	0.000	0.000	0.000	2.211	4.975
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	430.15	N.A.	12.70
0-30	895.83	N.A.	26.40
0-40	1444.4	N.A.	42.60
0-60	2484.65	N.A.	73.30
0-80	3099.79	N.A.	91.40
0-90	3236.7	N.A.	95.40
10-90	3123.99	N.A.	92.10
20-40	1014.24	N.A.	29.90
20-50	1570.97	N.A.	46.30
40-70	1410.44	N.A.	41.60
60-80	615.14	N.A.	18.10
70-80	244.96	N.A.	7.20
80-90	136.91	N.A.	4.00
90-110	122.48	N.A.	3.60
90-120	145.15	N.A.	4.30
90-130	153.17	N.A.	4.50
90-150	154.44	N.A.	4.60
90-180	154.44	N.A.	4.60
110-180	31.96	N.A.	0.90
0-180	3391.14	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	112.71
10-20	317.44
20-30	465.67
30-40	548.57
40-50	556.73
50-60	483.53
60-70	370.19
70-80	244.96
80-90	136.91
90-100	76.81
100-110	45.67
110-120	22.67
120-130	8.02
130-140	1.26
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

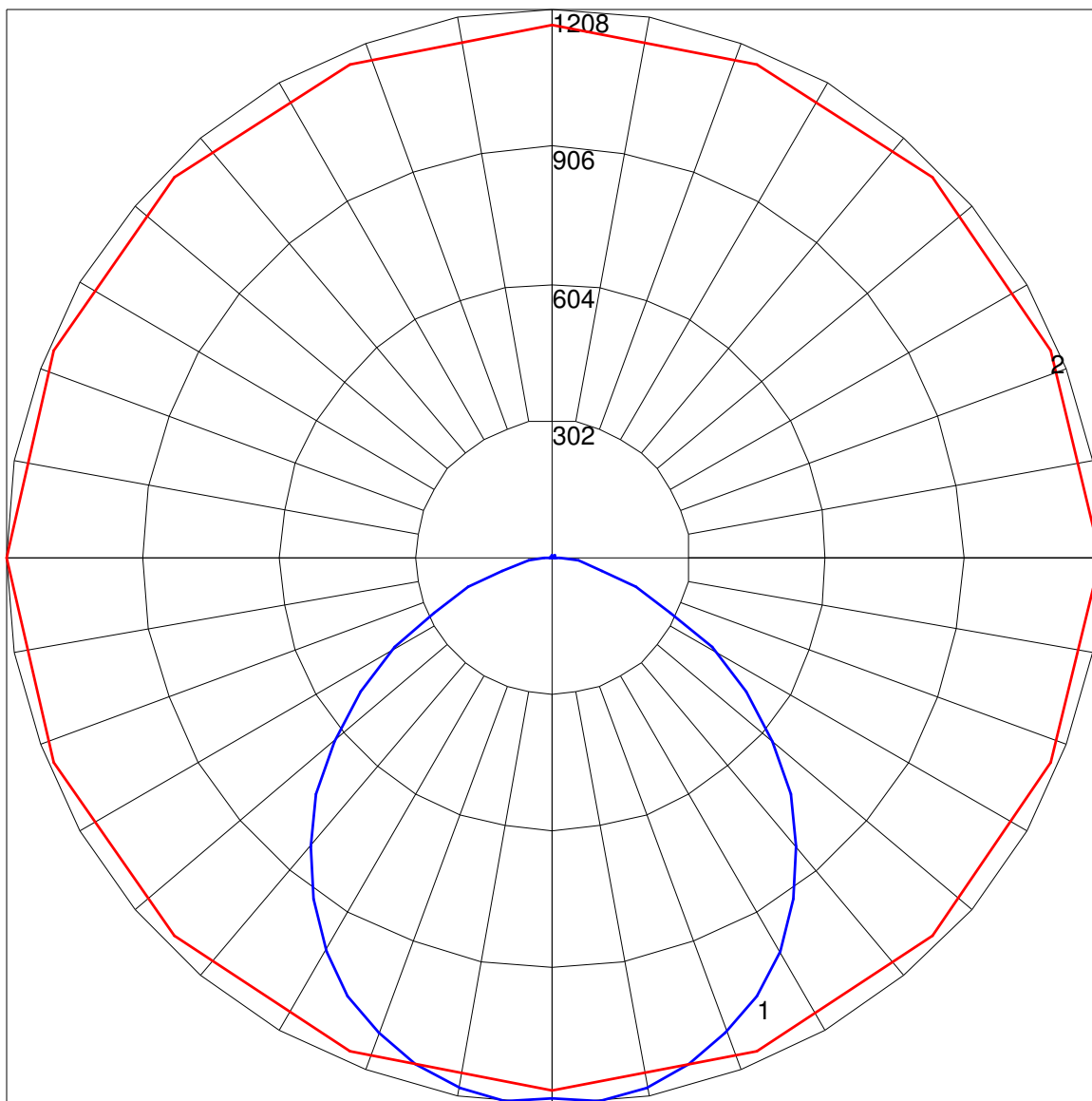
Reflectances

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	14.9	16.4	15.3	16.8	17.3	16.6	18.1	17.0	18.5	19.0
	3H	16.0	17.4	16.5	17.8	18.3	18.9	20.2	19.3	20.7	21.2
	4H	16.3	17.6	16.8	18.1	18.6	19.9	21.2	20.4	21.7	22.1
	6H	16.4	17.6	16.9	18.1	18.6	20.9	22.1	21.4	22.6	23.1
	8H	16.4	17.6	16.9	18.1	18.6	21.4	22.5	21.9	23.0	23.5
	12H	16.4	17.5	16.9	18.0	18.6	21.9	23.0	22.4	23.5	24.0
4H	2H	15.6	16.9	16.1	17.3	17.8	17.0	18.3	17.4	18.7	19.2
	3H	17.0	18.1	17.5	18.6	19.1	19.5	20.6	20.0	21.1	21.6
	4H	17.4	18.4	17.9	18.9	19.5	20.7	21.7	21.2	22.2	22.7
	6H	17.6	18.5	18.2	19.1	19.6	21.9	22.7	22.4	23.3	23.8
	8H	17.7	18.5	18.2	19.1	19.6	22.4	23.3	23.0	23.8	24.4
	12H	17.7	18.5	18.3	19.0	19.6	23.1	23.8	23.6	24.4	25.0
8H	4H	18.0	18.8	18.5	19.4	20.0	20.9	21.7	21.4	22.2	22.8
	6H	18.4	19.1	19.0	19.7	20.3	22.2	22.9	22.8	23.5	24.1
	8H	18.5	19.2	19.1	19.7	20.3	22.9	23.5	23.5	24.1	24.7
	12H	18.6	19.2	19.2	19.7	20.4	23.7	24.3	24.3	24.8	25.5
12H	4H	18.2	18.9	18.7	19.5	20.1	20.9	21.6	21.4	22.2	22.8
	6H	18.7	19.3	19.2	19.8	20.5	22.2	22.9	22.8	23.4	24.1
	8H	18.9	19.4	19.4	20.0	20.6	23.0	23.5	23.6	24.1	24.8

Maximum UGR = 25.5

POLAR GRAPH



Maximum Candela = 1208.465 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.)