



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 96-4-L110-850-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] 15 JULY 2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 4'SUSPENDED ENCLOSED & GASKETED LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC RIBBED DIFFUSER

[LUMCAT] 96-4-L110-850-HIAFR-DIM-UNV

[LAMPCAT] HLM 80 CRI 5000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	11408
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	130
Total Luminaire Watts	88
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	17190	13554	13198
55	14626	11533	11390
65	10720	9370	10114
75	6574	7900	8722
85	2422	6202	7441

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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	4029.918	4029.918	4029.918	4029.918	4029.918
5	4065.252	4013.181	3987.145	3968.549	3962.970
10	4011.321	3946.232	3905.320	3890.442	3875.565
15	3910.899	3836.512	3775.142	3739.808	3719.352
20	3765.844	3689.597	3598.473	3524.086	3522.226
25	3594.754	3512.928	3379.031	3284.188	3254.433
30	3379.031	3274.889	3094.501	3066.606	3070.325
35	3113.098	3007.096	2836.006	2919.691	2964.324
40	2809.970	2713.267	2629.582	2722.566	2759.759
45	2490.106	2398.982	2412.000	2432.456	2484.527
50	2131.189	2043.784	2121.890	2157.224	2190.698
55	1748.095	1703.463	1820.623	1891.290	1934.063
60	1357.563	1404.055	1513.776	1638.375	1699.744
65	970.751	1108.367	1245.983	1426.371	1478.442
70	663.904	814.538	1030.261	1218.088	1249.702
75	386.813	567.201	821.977	996.786	1030.261
80	182.248	377.514	615.553	782.924	814.538
85	61.369	239.898	446.322	609.974	643.448
90	26.035	145.055	325.443	457.480	490.954
95	20.456	100.423	260.355	360.777	392.392
100	18.597	61.369	213.863	301.268	318.005
105	14.877	37.194	161.792	241.758	258.495
110	9.298	11.158	113.440	187.827	206.424
115	5.579	5.579	74.387	139.476	161.792
120	0.000	0.000	37.194	100.423	120.879
125	0.000	0.000	11.158	61.369	79.966
130	0.000	0.000	0.000	31.614	44.632
135	0.000	0.000	0.000	7.439	16.737
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	1447.03	N.A.	12.70
0-30	3013.54	N.A.	26.40
0-40	4858.92	N.A.	42.60
0-60	8358.3	N.A.	73.30
0-80	10427.64	N.A.	91.40
0-90	10888.2	N.A.	95.40
10-90	10509.03	N.A.	92.10
20-40	3411.89	N.A.	29.90
20-50	5284.71	N.A.	46.30
40-70	4744.69	N.A.	41.60
60-80	2069.33	N.A.	18.10
70-80	824.02	N.A.	7.20
80-90	460.56	N.A.	4.00
90-110	412.02	N.A.	3.60
90-120	488.27	N.A.	4.30
90-130	515.26	N.A.	4.50
90-150	519.52	N.A.	4.60
90-180	519.52	N.A.	4.60
110-180	107.50	N.A.	0.90
0-180	11407.72	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	379.16
10-20	1067.86
20-30	1566.51
30-40	1845.38
40-50	1872.82
50-60	1626.57
60-70	1245.31
70-80	824.03
80-90	460.56
90-100	258.37
100-110	153.64
110-120	76.25
120-130	26.99
130-140	4.25
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	81	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

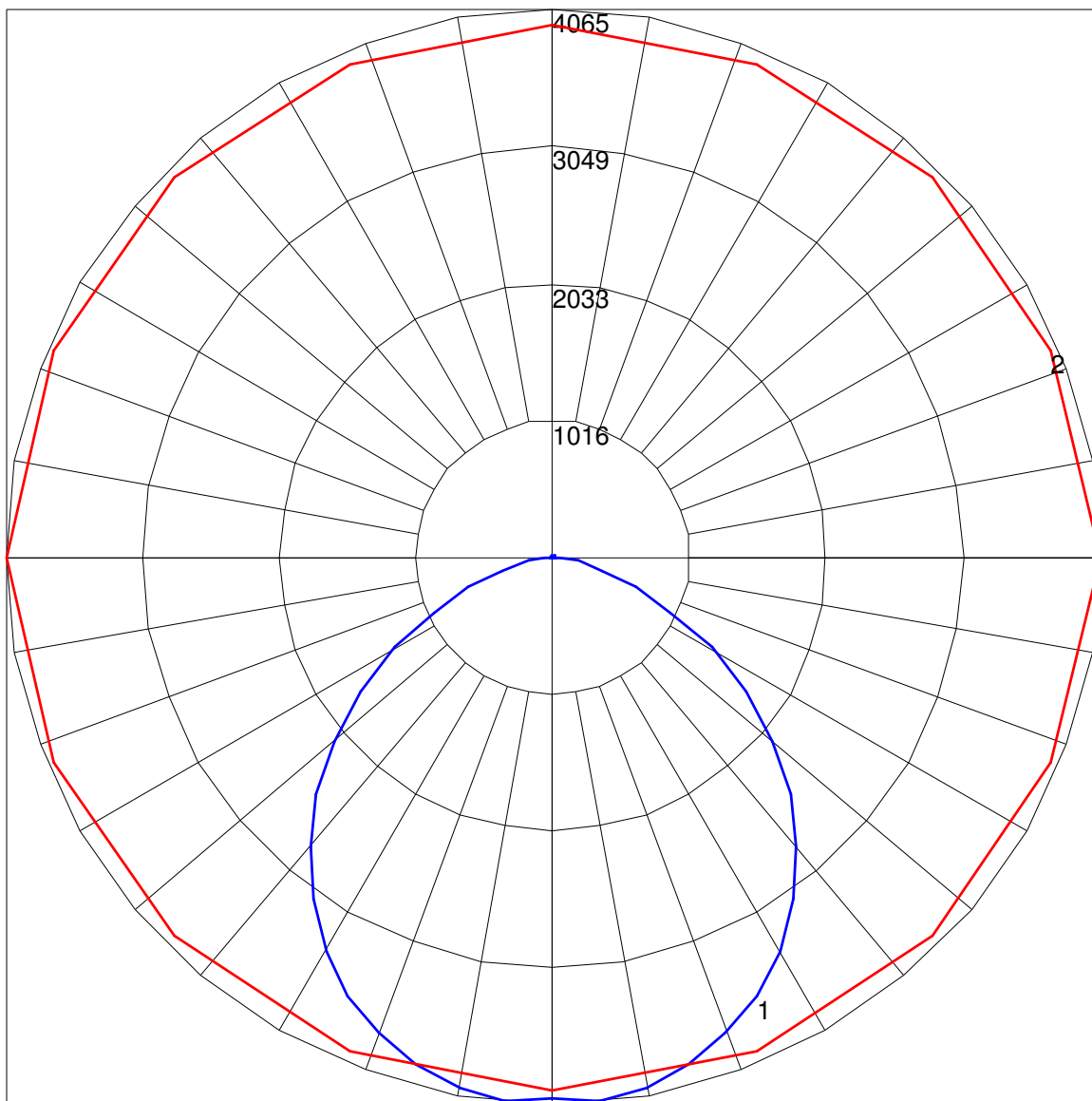
Reflectances

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	19.2	20.7	19.6	21.1	21.6	20.9	22.4	21.3	22.8	23.3
	3H	20.3	21.7	20.8	22.1	22.6	23.2	24.5	23.6	25.0	25.5
	4H	20.6	21.9	21.1	22.4	22.9	24.2	25.5	24.7	26.0	26.4
	6H	20.7	21.9	21.2	22.4	22.9	25.2	26.4	25.7	26.9	27.4
	8H	20.7	21.9	21.2	22.4	22.9	25.7	26.8	26.2	27.3	27.8
	12H	20.7	21.8	21.2	22.3	22.9	26.2	27.3	26.7	27.8	28.3
4H	2H	19.9	21.2	20.4	21.6	22.1	21.3	22.6	21.7	23.0	23.5
	3H	21.3	22.4	21.8	22.9	23.4	23.8	24.9	24.3	25.4	25.9
	4H	21.7	22.7	22.2	23.2	23.8	25.0	26.0	25.5	26.5	27.0
	6H	21.9	22.8	22.5	23.4	23.9	26.2	27.0	26.7	27.6	28.1
	8H	22.0	22.8	22.5	23.4	23.9	26.7	27.6	27.3	28.1	28.7
	12H	22.0	22.8	22.6	23.3	23.9	27.4	28.1	27.9	28.7	29.3
8H	4H	22.3	23.1	22.8	23.7	24.3	25.2	26.0	25.7	26.5	27.1
	6H	22.7	23.4	23.3	24.0	24.6	26.5	27.2	27.1	27.8	28.4
	8H	22.8	23.5	23.4	24.0	24.6	27.2	27.8	27.8	28.4	29.0
	12H	22.9	23.5	23.5	24.0	24.7	28.0	28.6	28.6	29.1	29.8
12H	4H	22.5	23.2	23.0	23.8	24.4	25.2	25.9	25.7	26.5	27.1
	6H	23.0	23.6	23.5	24.1	24.8	26.5	27.2	27.1	27.7	28.4
	8H	23.2	23.7	23.7	24.3	24.9	27.3	27.8	27.9	28.4	29.1

Maximum UGR = 29.8

POLAR GRAPH



Maximum Candela = 4065.252 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.)