



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 96-4-L40-840-HIAFR-(L38)-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] 06-07-2021

[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-L40-840-HIAFR-(L38)-DIM-UNV

[LAMPCAT] HLM 80 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3860
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	143
Total Luminaire Watts	27
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	5817	4586	4466
55	4949	3902	3854
65	3627	3171	3422
75	2225	2673	2951
85	820	2099	2518

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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	1363.648	1363.648	1363.648	1363.648	1363.648
5	1375.605	1357.985	1349.175	1342.882	1340.994
10	1357.356	1335.331	1321.487	1316.452	1311.418
15	1323.375	1298.203	1277.437	1265.481	1258.559
20	1274.291	1248.490	1217.656	1192.484	1191.855
25	1216.397	1188.709	1143.401	1111.307	1101.239
30	1143.401	1108.161	1047.121	1037.682	1038.940
35	1053.414	1017.545	959.651	987.969	1003.071
40	950.841	918.119	889.801	921.265	933.851
45	842.605	811.770	816.175	823.097	840.717
50	721.154	691.578	718.008	729.964	741.291
55	591.523	576.420	616.065	639.977	654.451
60	459.374	475.106	512.233	554.395	575.161
65	328.484	375.051	421.617	482.657	500.277
70	224.653	275.624	348.621	412.178	422.876
75	130.890	191.930	278.141	337.294	348.621
80	61.669	127.744	208.291	264.927	275.624
85	20.766	81.177	151.027	206.404	217.731
90	8.810	49.084	110.124	154.803	166.130
95	6.922	33.981	88.099	122.080	132.778
100	6.293	20.766	72.367	101.943	107.607
105	5.034	12.586	54.747	81.806	87.470
110	3.146	3.776	38.386	63.557	69.850
115	1.888	1.888	25.171	47.196	54.747
120	0.000	0.000	12.586	33.981	40.903
125	0.000	0.000	3.776	20.766	27.059
130	0.000	0.000	0.000	10.698	15.103
135	0.000	0.000	0.000	2.517	5.664
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	489.65	N.A.	12.70
0-30	1019.73	N.A.	26.40
0-40	1644.17	N.A.	42.60
0-60	2828.29	N.A.	73.30
0-80	3528.52	N.A.	91.40
0-90	3684.36	N.A.	95.40
10-90	3556.06	N.A.	92.10
20-40	1154.52	N.A.	29.90
20-50	1788.25	N.A.	46.30
40-70	1605.52	N.A.	41.60
60-80	700.22	N.A.	18.10
70-80	278.83	N.A.	7.20
80-90	155.84	N.A.	4.00
90-110	139.42	N.A.	3.60
90-120	165.22	N.A.	4.30
90-130	174.36	N.A.	4.50
90-150	175.80	N.A.	4.60
90-180	175.80	N.A.	4.60
110-180	36.38	N.A.	0.90
0-180	3860.16	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	128.30
10-20	361.34
20-30	530.08
30-40	624.44
40-50	633.73
50-60	550.40
60-70	421.39
70-80	278.83
80-90	155.84
90-100	87.43
100-110	51.99
110-120	25.80
120-130	9.13
130-140	1.44
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	15.4	16.9	15.8	17.3	17.8	17.1	18.6	17.5	19.0	19.5
	3H	16.5	17.9	17.0	18.3	18.8	19.4	20.7	19.8	21.2	21.7
	4H	16.8	18.1	17.3	18.6	19.1	20.4	21.7	20.9	22.2	22.6
	6H	16.9	18.1	17.4	18.6	19.1	21.4	22.6	21.9	23.1	23.6
	8H	16.9	18.1	17.4	18.6	19.1	21.9	23.0	22.4	23.5	24.0
	12H	16.9	18.0	17.4	18.5	19.1	22.4	23.5	22.9	24.0	24.5

UGR Viewed Endwise

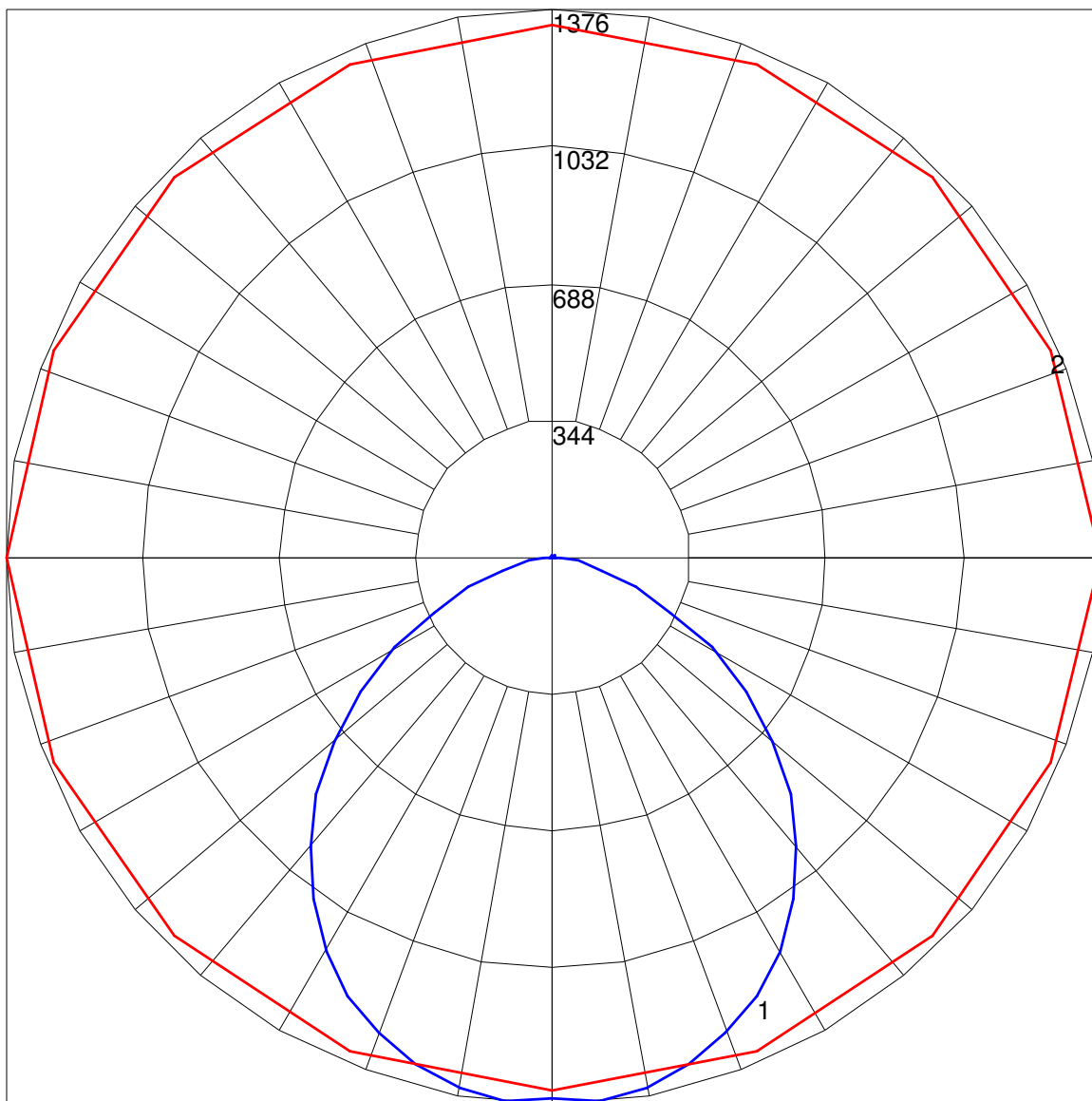
4H	2H	16.1	17.4	16.6	17.8	18.3	17.5	18.8	17.9	19.2	19.7
	3H	17.5	18.6	18.0	19.1	19.6	20.0	21.1	20.5	21.6	22.1
	4H	17.9	18.9	18.4	19.4	20.0	21.2	22.2	21.7	22.7	23.2
	6H	18.1	19.0	18.7	19.6	20.1	22.4	23.2	22.9	23.8	24.3
	8H	18.2	19.0	18.7	19.6	20.1	22.9	23.8	23.5	24.3	24.9
	12H	18.2	19.0	18.8	19.5	20.1	23.6	24.3	24.1	24.9	25.5

8H	4H	18.5	19.3	19.0	19.9	20.5	21.4	22.2	21.9	22.7	23.3
	6H	18.9	19.6	19.5	20.2	20.8	22.7	23.4	23.3	24.0	24.6
	8H	19.0	19.7	19.6	20.2	20.8	23.4	24.0	24.0	24.6	25.2
	12H	19.1	19.7	19.7	20.2	20.9	24.2	24.8	24.8	25.3	26.0

12H	4H	18.7	19.4	19.2	20.0	20.6	21.4	22.1	21.9	22.7	23.3
	6H	19.2	19.8	19.7	20.3	21.0	22.7	23.4	23.3	23.9	24.6
	8H	19.4	19.9	19.9	20.5	21.1	23.5	24.0	24.1	24.6	25.3

Maximum UGR = 26.0

POLAR GRAPH



Maximum Candela = 1375.605 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.)