



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 96-2-L21-840-HIAFR-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST]GEN FROM BALLABS TEST NO. 18128.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 11-18-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 1-22" LED BOARD 2' SUSPENDED ENCLOSED/GASKETED LUMINAIRE

[MORE] WHITE FLAT REFL w/WHITE FROSTED RIBBED ACRYLIC LENS

[LUMCAT] 96-2-L21-840-HIAFR-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2201
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	122
Total Luminaire Watts	18
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.24
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	2.25 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	5343	4521	4607
55	4687	4044	4372
65	3945	3610	4070
75	2984	3000	3516
85	1811	2385	2953

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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	713.010	713.010	713.010	713.010	713.010
5	715.997	709.277	707.038	704.798	706.291
10	704.798	698.078	695.838	695.092	693.599
15	684.639	680.906	674.933	677.173	675.680
20	657.015	651.042	648.056	651.789	651.789
25	621.178	616.698	618.938	618.938	619.684
30	583.101	579.368	580.861	584.594	586.087
35	534.571	533.825	536.064	542.037	544.277
40	481.562	483.055	486.788	497.987	500.974
45	426.313	427.806	436.766	456.177	461.404
50	370.317	375.544	390.476	418.100	427.806
55	312.829	322.535	348.666	380.770	394.956
60	255.340	270.272	306.856	343.440	359.118
65	203.824	219.503	264.299	301.630	316.562
70	153.801	173.213	219.503	254.593	270.272
75	104.525	129.910	173.960	207.557	220.996
80	62.715	92.579	132.150	162.760	176.199
85	31.358	60.475	97.806	128.417	135.883
90	14.932	38.077	70.181	98.552	104.525
95	11.946	30.611	56.742	79.887	85.860
100	11.199	21.652	46.290	64.955	70.928
105	7.466	13.439	33.597	50.023	58.235
110	5.226	8.213	26.878	39.570	46.290
115	3.733	4.480	18.665	31.358	36.584
120	3.733	2.986	11.946	23.891	29.118
125	2.240	1.493	5.973	17.172	20.905
130	0.000	0.000	1.493	9.706	12.692
135	0.000	0.000	0.000	2.986	5.973
140	0.000	0.000	0.000	0.000	1.493
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	258.42	N.A.	11.70
0-30	543.63	N.A.	24.70
0-40	880.03	N.A.	40.00
0-60	1536.19	N.A.	69.80
0-80	1974.16	N.A.	89.70
0-90	2077.35	N.A.	94.40
10-90	2010.1	N.A.	91.30
20-40	621.61	N.A.	28.20
20-50	963.10	N.A.	43.80
40-70	914.91	N.A.	41.60
60-80	437.98	N.A.	19.90
70-80	179.22	N.A.	8.10
80-90	103.19	N.A.	4.70
90-110	94.92	N.A.	4.30
90-120	113.90	N.A.	5.20
90-130	122.10	N.A.	5.50
90-150	123.63	N.A.	5.60
90-180	123.63	N.A.	5.60
110-180	28.72	N.A.	1.30
0-180	2200.98	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	67.25
10-20	191.16
20-30	285.21
30-40	336.41
40-50	341.49
50-60	314.67
60-70	258.76
70-80	179.22
80-90	103.19
90-100	59.54
100-110	35.38
110-120	18.98
120-130	8.21
130-140	1.50
140-150	0.03
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	114	114	114	114	108	108	108	102	102	102	97	97	97	94
1	106	101	96	92	103	98	94	90	93	89	86	88	85	82	83	81	79	76
2	96	87	80	74	93	85	78	72	80	75	70	76	72	67	72	69	65	63
3	87	76	68	61	84	74	66	60	70	64	58	67	61	57	64	59	55	52
4	80	68	58	51	77	66	57	51	63	55	49	60	53	48	57	51	47	45
5	73	60	51	44	71	59	50	44	56	48	43	53	47	42	51	45	41	38
6	68	54	45	39	65	53	44	38	51	43	37	48	42	37	46	40	36	34
7	63	49	40	34	61	48	40	34	46	39	33	44	37	32	42	36	32	30
8	59	45	36	30	57	44	36	30	42	35	30	40	34	29	39	33	29	27
9	55	41	33	27	53	40	32	27	39	32	27	37	31	26	36	30	26	24
10	51	38	30	25	50	37	30	25	36	29	24	35	28	24	33	28	23	22

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UGR TABLE - CORRECTED

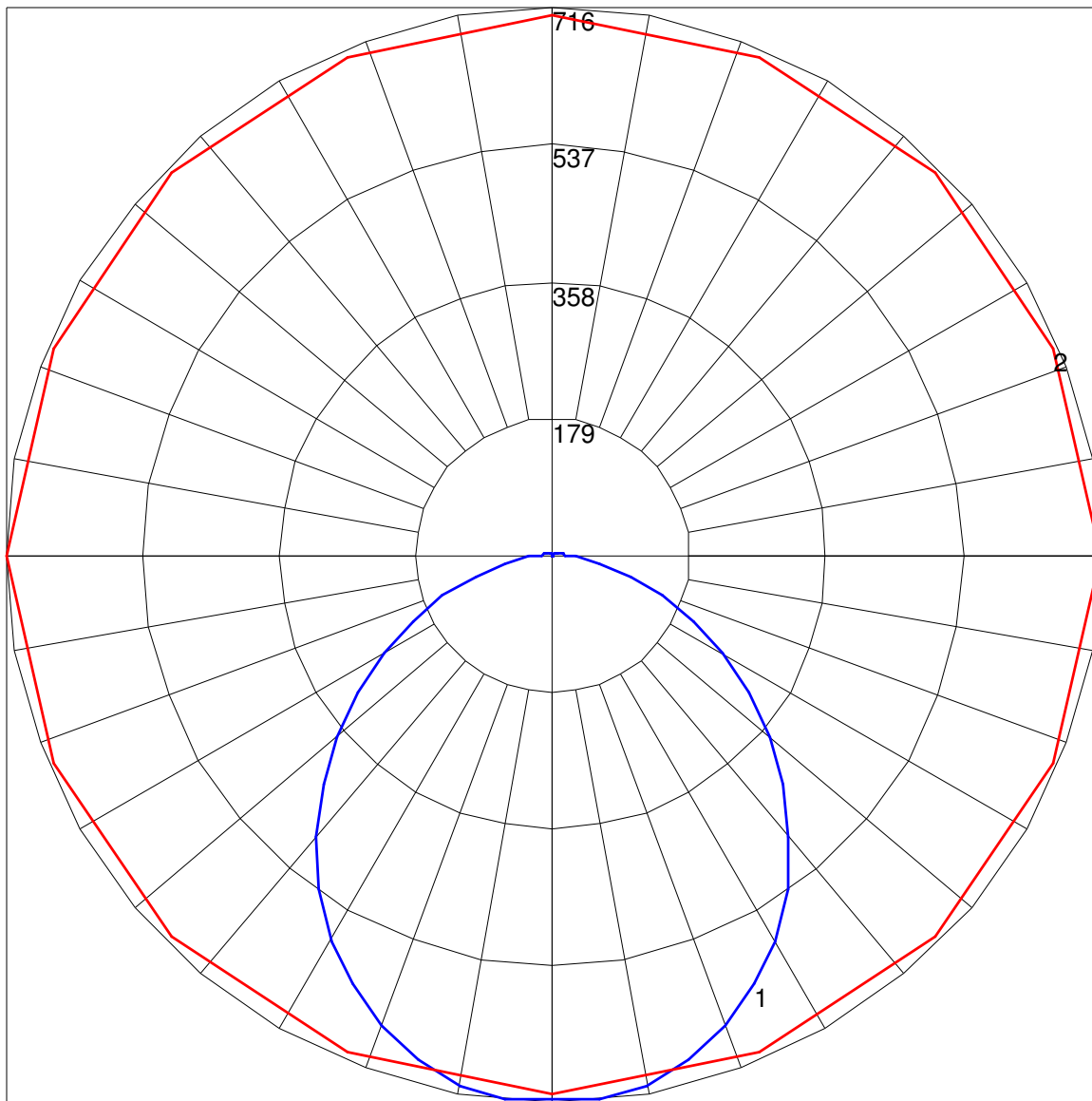
Reflectances

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	15.3	16.9	15.8	17.3	17.8	17.5	19.0	18.0	19.5	19.9
	3H	16.8	18.2	17.2	18.6	19.1	19.8	21.2	20.3	21.7	22.2
	4H	17.2	18.6	17.7	19.0	19.5	20.9	22.2	21.4	22.7	23.2
	6H	17.5	18.8	18.0	19.2	19.8	21.8	23.1	22.3	23.6	24.1
	8H	17.6	18.8	18.1	19.3	19.8	22.3	23.5	22.8	24.0	24.5
	12H	17.7	18.8	18.2	19.3	19.9	22.8	23.9	23.3	24.4	25.0
4H	2H	16.2	17.5	16.7	18.0	18.5	17.9	19.2	18.4	19.7	20.2
	3H	17.9	19.0	18.4	19.5	20.0	20.5	21.6	21.0	22.1	22.7
	4H	18.5	19.5	19.0	20.0	20.6	21.7	22.7	22.2	23.2	23.8
	6H	18.9	19.8	19.4	20.3	20.9	22.8	23.7	23.4	24.3	24.9
	8H	19.0	19.8	19.6	20.4	21.0	23.4	24.2	23.9	24.8	25.4
	12H	19.1	19.8	19.7	20.4	21.0	23.9	24.7	24.5	25.3	25.9
8H	4H	19.1	19.9	19.6	20.5	21.1	21.9	22.7	22.4	23.3	23.9
	6H	19.6	20.4	20.2	21.0	21.6	23.1	23.9	23.7	24.5	25.1
	8H	19.9	20.5	20.5	21.1	21.7	23.8	24.5	24.4	25.1	25.7
	12H	20.0	20.6	20.6	21.2	21.9	24.6	25.1	25.2	25.7	26.4
12H	4H	19.2	20.0	19.8	20.6	21.2	21.9	22.6	22.4	23.2	23.8
	6H	19.9	20.5	20.5	21.1	21.8	23.2	23.8	23.8	24.4	25.1
	8H	20.2	20.7	20.8	21.3	22.0	23.9	24.5	24.5	25.1	25.8

Maximum UGR = 26.4

POLAR GRAPH



Maximum Candela = 715.997 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.)