



IES INDOOR REPORT

PHOTOMETRIC FILENAME : CL-4-L94-840-FDMA-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18716.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 1-SEP-2020

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO. 64836

[LUMINAIRE] 4' CORNER MOUNT LUMINAIRE

[MORE] WITH SMOOTH MATTE ACRYLIC LENS

[LUMCAT] CL-4-L94/840-FDMA-DIM-UNV

[LAMPCAT] HLM 80 CRI, 4000K CCT

[_SEARCH_SOURCE] LED

[_SEARCH_APPLICATION] INDOOR, COMMERCIAL, EDUCATIONAL, OFFICE

[_SEARCH_MOUNTING] SURFACE

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9474
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	118
Total Luminaire Watts	80.5
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	2.72
Spacing Criterion (90-270)	1.14
Spacing Criterion (Diagonal)	1.66
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.48 ft
Luminous Width (90-270)	3.77 ft
Luminous Height	0.48 ft



LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	19208	15823	7271
55	18614	15008	6123
65	18151	14006	5208
75	16238	12055	4376
85	14729	10312	3029

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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>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>
0	1847.048	1847.048	1847.048	1847.048	1847.048	1847.048	1847.048	1847.048	1847.048
5	2290.014	2236.168	2132.538	1959.822	1806.409	1725.131	1602.197	1511.775	1480.280
10	2715.709	2616.143	2385.516	2064.467	1747.482	1511.775	1299.436	1168.375	1118.592
15	3196.267	3064.190	2724.853	2249.375	1769.834	1412.209	1140.943	995.658	941.812
20	3562.019	3362.887	2879.282	2182.321	1539.207	1091.160	814.814	669.529	624.826
25	3906.435	3712.384	3132.260	2308.302	1534.127	1004.802	711.185	569.964	529.325
30	4173.638	3924.723	3272.465	2285.950	1380.714	814.814	547.612	416.551	366.768
35	4309.779	4064.928	3340.536	2263.599	1285.212	715.248	457.190	311.905	258.058
40	4431.696	4169.574	3377.111	2177.241	1126.720	552.692	311.905	158.493	95.502
45	4562.757	4273.203	3377.111	2050.244	973.307	443.982	195.068	49.783	31.495
50	4499.766	4195.989	3277.545	1919.182	842.246	353.560	77.214	36.575	0.000
55	4354.482	4046.640	3091.621	1729.195	696.961	253.994	31.495	0.000	0.000
60	4164.494	3838.365	2883.346	1557.494	584.187	149.349	0.000	0.000	0.000
65	4051.720	3707.304	2693.358	1375.634	470.398	45.719	0.000	0.000	0.000
70	3770.294	3426.894	2426.155	1185.646	385.056	0.000	0.000	0.000	0.000
75	3340.536	3010.343	2082.755	986.515	280.410	0.000	0.000	0.000	0.000
80	3028.630	2697.422	1801.329	801.607	195.068	0.000	0.000	0.000	0.000
85	2680.150	2354.021	1525.999	652.258	108.710	0.000	0.000	0.000	0.000
90	2077.675	1810.473	1150.087	479.542	0.000	0.000	0.000	0.000	0.000
95	1760.690	1498.568	923.524	335.273	0.000	0.000	0.000	0.000	0.000
100	1349.219	1131.799	692.897	221.483	0.000	0.000	0.000	0.000	0.000
105	1018.010	860.533	506.973	112.774	0.000	0.000	0.000	0.000	0.000
110	787.383	665.466	375.912	0.000	0.000	0.000	0.000	0.000	0.000
115	588.251	497.829	253.994	0.000	0.000	0.000	0.000	0.000	0.000
120	438.902	361.688	131.061	0.000	0.000	0.000	0.000	0.000	0.000
125	294.634	217.419	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130	167.636	95.502	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	22.352	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	709.63	N.A.	7.50
0-30	1576.83	N.A.	16.60
0-40	2724.22	N.A.	28.80
0-60	5386.74	N.A.	56.90
0-80	7728.21	N.A.	81.60
0-90	8527.46	N.A.	90.00
10-90	8350.95	N.A.	88.10
20-40	2014.59	N.A.	21.30
20-50	3330.12	N.A.	35.20
40-70	3934.44	N.A.	41.50
60-80	2341.48	N.A.	24.70
70-80	1069.56	N.A.	11.30
80-90	799.24	N.A.	8.40
90-110	763.19	N.A.	8.10
90-120	895.14	N.A.	9.40
90-130	941.05	N.A.	9.90
90-150	946.12	N.A.	10.00
90-180	946.12	N.A.	10.00
110-180	182.93	N.A.	1.90
0-180	9473.57	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	176.51
10-20	533.12
20-30	867.20
30-40	1147.39
40-50	1315.53
50-60	1346.99
60-70	1271.92
70-80	1069.56
80-90	799.24
90-100	493.77
100-110	269.42
110-120	131.95
120-130	45.90
130-140	5.07
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	204	204	204	204	197	197	197	197	184	184	184	173	173	173	162	162	162	157
1	179	168	158	149	173	162	153	145	152	144	137	142	136	130	132	128	123	118
2	160	143	128	116	154	138	125	113	129	117	108	120	111	103	112	105	98	93
3	145	123	107	93	138	119	104	91	111	98	87	104	93	84	97	88	80	75
4	131	108	90	77	126	104	88	76	97	83	73	91	79	70	85	75	67	62
5	120	95	78	65	115	92	76	64	86	72	61	81	69	59	76	65	57	52
6	110	85	68	56	106	82	66	55	77	63	53	72	60	51	68	57	49	45
7	102	76	60	48	98	74	59	48	70	56	46	66	53	44	62	51	43	39
8	94	69	53	43	91	67	52	42	63	50	41	60	48	39	56	46	38	34
9	88	63	48	38	85	62	47	37	58	45	36	55	43	35	52	42	34	30
10	82	58	44	34	79	57	43	33	54	41	32	51	39	31	48	38	31	27

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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

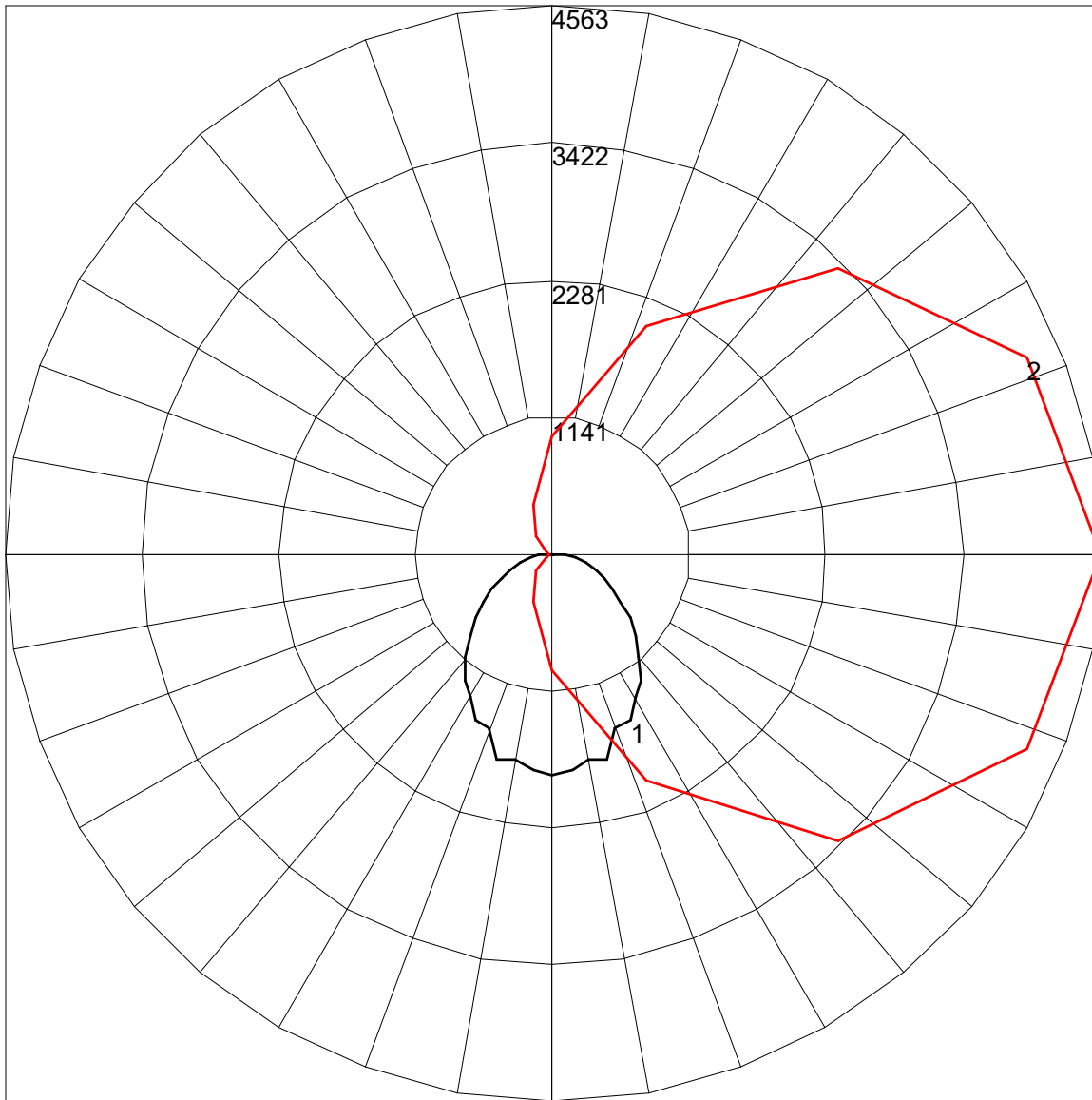
X=2H	Y=2H	24.4	25.9	24.9	26.4	27.0	13.6	15.2	14.1	15.7	16.3
	3H	27.4	28.9	27.9	29.4	30.0	14.8	16.2	15.3	16.8	17.3
	4H	28.8	30.2	29.4	30.7	31.3	15.2	16.5	15.7	17.1	17.7
	6H	30.3	31.6	30.8	32.1	32.7	15.4	16.7	16.0	17.2	17.9
	8H	31.0	32.2	31.6	32.8	33.4	15.5	16.7	16.0	17.3	17.9
	12H	31.7	32.9	32.3	33.5	34.1	15.5	16.7	16.1	17.3	17.9

UGR Viewed Endwise

4H	2H	24.6	26.0	25.1	26.5	27.1	16.6	18.0	17.1	18.5	19.1
	3H	27.9	29.1	28.4	29.6	30.3	18.0	19.2	18.5	19.8	20.4
	4H	29.4	30.5	30.0	31.1	31.8	18.4	19.5	19.0	20.1	20.8
	6H	31.1	32.1	31.7	32.7	33.3	18.7	19.7	19.3	20.3	21.0
	8H	31.9	32.8	32.5	33.5	34.1	18.8	19.7	19.4	20.3	21.0
	12H	32.8	33.7	33.4	34.3	35.0	18.9	19.7	19.5	20.3	21.0
8H	4H	29.6	30.5	30.2	31.1	31.8	20.3	21.2	20.9	21.9	22.5
	6H	31.4	32.1	32.0	32.8	33.5	20.9	21.7	21.5	22.3	23.0
	8H	32.3	33.0	33.0	33.7	34.4	21.0	21.8	21.7	22.4	23.1
	12H	33.4	34.0	34.0	34.7	35.4	21.2	21.8	21.8	22.5	23.2
12H	4H	29.5	30.4	30.2	31.0	31.7	20.9	21.7	21.5	22.4	23.0
	6H	31.4	32.1	32.0	32.7	33.5	21.6	22.3	22.3	23.0	23.7
	8H	32.4	33.0	33.0	33.7	34.4	21.9	22.6	22.6	23.2	24.0

Maximum UGR = 35.4

POLAR GRAPH



Maximum Candela = 4562.757 Located At Horizontal Angle = 0, Vertical Angle = 45
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (45) (Through Max. Cd.)