



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-P9-8TW-X-RD-XX-XX-POE 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 17323.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 11-AUG-2021

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

[LUMINAIRE] 4' DIRECT/INDIRECT SURFACE LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS

[LUMCAT]LLM-4-P9-8TW-x-RD-xx-xx-PoE 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3457
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	133
Total Luminaire Watts	26
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.32
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.87 ft
Luminous Width (90-270)	0.21 ft
Luminous Height	0.17 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8663	7453	7828
55	7099	6290	6814
65	5752	5436	6028
75	4290	4609	5082
85	2988	4278	4686

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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	1004.826	1004.826	1004.826	1004.826	1004.826
5	1010.648	1009.817	1011.480	1013.144	1013.976
10	980.703	982.367	990.685	997.339	999.003
15	934.122	940.776	955.749	969.890	975.712
20	890.868	904.177	931.627	957.413	966.563
25	807.687	825.987	865.082	900.018	913.327
30	726.170	751.956	805.192	854.268	873.400
35	657.129	692.065	760.274	820.996	845.118
40	561.471	601.398	687.075	760.274	786.060
45	478.290	529.031	630.512	715.356	746.965
50	396.773	450.841	562.303	653.802	684.579
55	323.574	383.464	500.749	596.407	628.016
60	257.029	319.415	440.859	535.685	566.462
65	198.802	267.011	392.614	488.272	519.049
70	143.903	216.270	340.210	432.541	459.159
75	96.490	169.689	288.638	370.987	393.446
80	60.722	136.417	252.038	331.060	351.855
85	29.113	108.135	218.766	291.965	311.097
90	4.159	79.854	173.016	232.075	248.711
95	0.000	61.554	153.053	212.943	226.252
100	0.000	50.740	129.762	178.007	191.316
105	0.000	41.590	107.303	149.726	163.035
110	0.000	34.104	90.667	129.762	138.080
115	0.000	29.113	77.358	108.967	120.612
120	0.000	27.450	67.377	95.658	104.808
125	0.000	25.786	57.395	81.517	89.835
130	0.000	23.291	49.077	71.536	78.190
135	0.000	19.963	41.590	59.890	64.049
140	0.000	19.132	39.095	54.068	59.890
145	0.000	19.963	36.600	49.077	54.068
150	0.000	17.468	29.945	39.095	42.422
155	0.000	17.468	26.618	34.104	35.768
160	0.000	17.468	23.291	29.113	29.945
165	0.000	8.318	20.795	24.954	25.786
170	0.000	0.000	19.132	19.963	20.795
175	0.000	0.000	0.000	17.468	17.468
180	0.000	0.000	0.000	0.000	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	366.53	N.A.	10.60
0-30	765.42	N.A.	22.10
0-40	1234.69	N.A.	35.70
0-60	2151.13	N.A.	62.20
0-80	2811.9	N.A.	81.30
0-90	3024.24	N.A.	87.50
10-90	2928.53	N.A.	84.70
20-40	868.16	N.A.	25.10
20-50	1346.51	N.A.	38.90
40-70	1288.88	N.A.	37.30
60-80	660.77	N.A.	19.10
70-80	288.32	N.A.	8.30
80-90	212.34	N.A.	6.10
90-110	248.23	N.A.	7.20
90-120	317.69	N.A.	9.20
90-130	365.18	N.A.	10.60
90-150	416.19	N.A.	12.00
90-180	432.99	N.A.	12.50
110-180	184.75	N.A.	5.30
0-180	3457.23	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	95.72
10-20	270.82
20-30	398.89
30-40	469.27
40-50	478.35
50-60	438.09
60-70	372.44
70-80	288.32
80-90	212.34
90-100	146.44
100-110	101.79
110-120	69.46
120-130	47.49
130-140	30.69
140-150	20.32
150-160	11.19
160-170	4.85
170-180	0.76

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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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	91	91	91	88
1	104	98	93	89	100	95	90	86	88	85	81	82	79	76	77	74	72	69
2	94	85	78	71	90	82	75	69	76	71	66	71	67	62	66	63	59	56
3	85	74	66	59	82	72	64	57	67	60	55	62	57	52	58	54	50	47
4	78	66	56	50	75	63	55	48	59	52	46	55	49	44	52	47	43	40
5	72	59	49	42	69	57	48	42	53	46	40	50	43	38	47	41	37	34
6	66	53	44	37	63	51	43	36	48	41	35	45	39	34	42	37	32	30
7	61	48	39	33	59	46	38	32	44	36	31	41	35	30	39	33	29	27
8	57	44	35	29	55	42	34	29	40	33	28	38	31	27	36	30	26	24
9	53	40	32	26	51	39	31	26	37	30	25	35	29	24	33	27	23	21
10	50	37	29	24	48	36	28	23	34	27	23	32	26	22	31	25	21	19

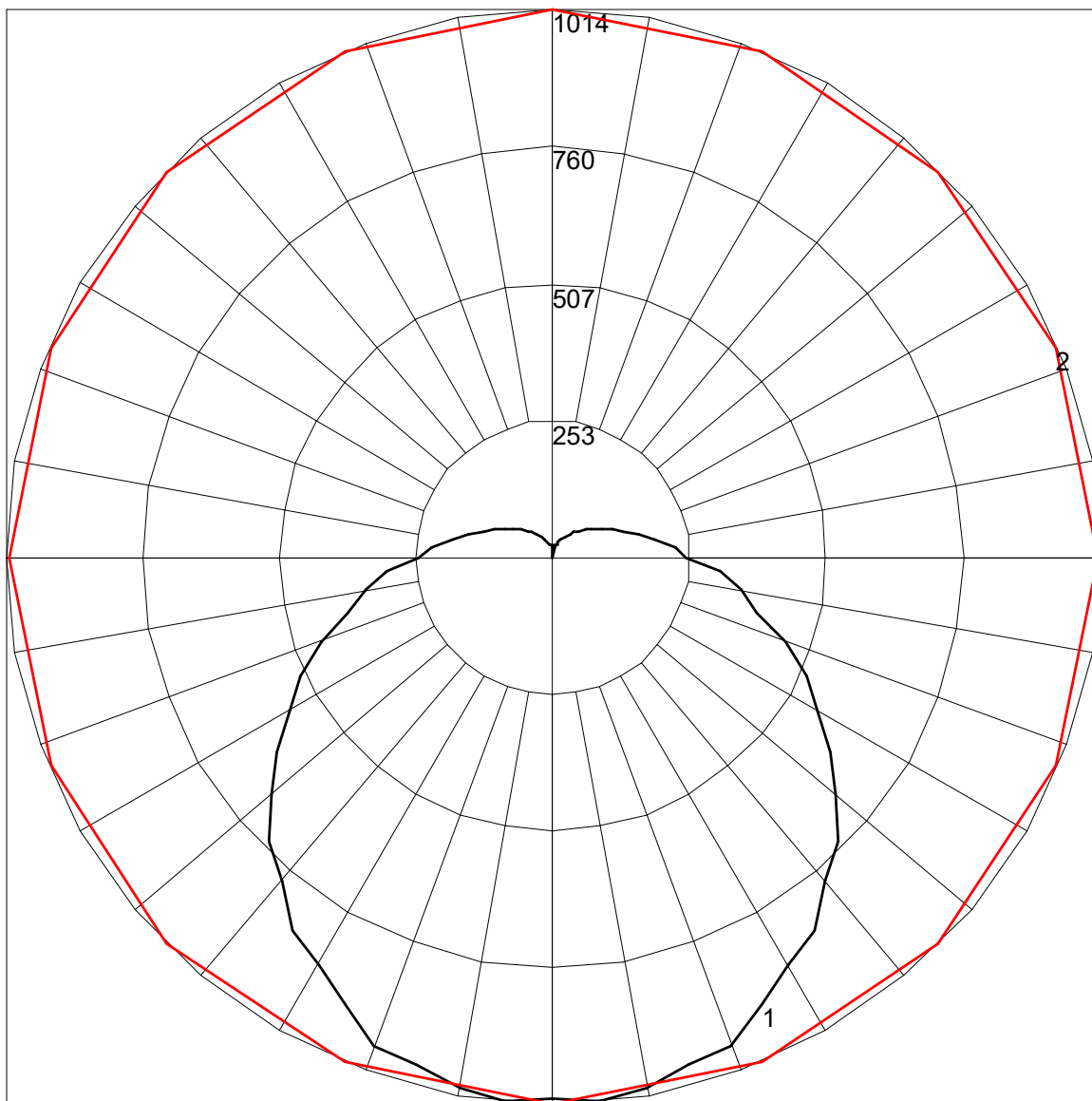
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UGR TABLE - CORRECTED

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	14.5	16.0	15.1	16.5	17.1	19.6	21.0	20.2	21.6	22.2
	3H	15.7	17.0	16.3	17.6	18.2	22.2	23.6	22.8	24.1	24.7
	4H	16.1	17.3	16.6	17.9	18.5	23.5	24.7	24.0	25.3	25.9
	6H	16.3	17.5	16.9	18.0	18.7	24.8	26.0	25.4	26.6	27.2
	8H	16.3	17.5	16.9	18.1	18.7	25.5	26.6	26.1	27.2	27.9
	12H	16.4	17.4	17.0	18.0	18.7	26.3	27.4	26.9	28.0	28.7
4H	2H	16.0	17.2	16.6	17.8	18.5	19.9	21.1	20.4	21.7	22.3
	3H	17.4	18.5	18.0	19.1	19.8	22.7	23.8	23.3	24.4	25.0
	4H	17.9	18.9	18.5	19.5	20.2	24.1	25.1	24.7	25.7	26.4
	6H	18.2	19.1	18.9	19.8	20.5	25.6	26.5	26.3	27.2	27.9
	8H	18.3	19.2	19.0	19.8	20.5	26.5	27.3	27.1	27.9	28.7
	12H	18.4	19.1	19.0	19.8	20.5	27.4	28.1	28.0	28.8	29.5
8H	4H	19.1	19.9	19.7	20.5	21.2	24.2	25.0	24.9	25.7	26.4
	6H	19.6	20.3	20.3	21.0	21.7	25.9	26.6	26.6	27.3	28.0
	8H	19.8	20.5	20.5	21.1	21.9	26.9	27.5	27.6	28.2	28.9
	12H	19.9	20.5	20.6	21.2	22.0	28.0	28.5	28.6	29.2	30.0
12H	4H	19.4	20.1	20.1	20.8	21.5	24.2	25.0	24.9	25.6	26.4
	6H	20.1	20.8	20.8	21.4	22.2	26.0	26.6	26.6	27.2	28.0
	8H	20.4	21.0	21.1	21.7	22.5	26.9	27.5	27.6	28.2	29.0

Maximum UGR = 30.0

POLAR GRAPH



Maximum Candela = 1013.976 Located At Horizontal Angle = 90, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)