IES INDOOR REPORT
PHOTOMETRIC FILENAME : LLM-4-P9-835-X-RD-XX-XX-POE_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN from BALLABS TEST NO. 17323.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 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-P9-835-x-RD-xx-xx-PoE

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3428
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	166
Total Luminaire Watts	20.6
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	8590	7391	7762
55	7039	6237	6757
65	5704	5391	5978
75	4254	4570	5039
85	2963	4242	4646

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CANDELA TABULATION

	0.0	22.5	45.0	67.5	90.0
0	996.396	996.396	996.396	996.396	996.396
5	1002.170	1001.345	1002.995	1004.645	1005.470
10	972.476	974.126	982.374	988.973	990.623
15	926.286	932.884	947.731	961.754	967.527
20	883.395	896.592	923.811	949.381	958.454
25	800.911	819.058	857.825	892.468	905.665
30	720.078	745.648	798.437	847.102	866.073
35	651.617	686.260	753.896	814.109	838.029
40	556.761	596.353	681.311	753.896	779.466
45	474.278	524.593	625.222	709.355	740.699
50	393.445	447.059	557.586	648.318	678.836
55	320.859	380.247	496.549	591.404	622.748
60	254.873	316.735	437.161	531.191	561.710
65	197.135	264.771	389.320	484.176	514.695
70	142.696	214.456	337.356	428.912	455.307
75	95.680	168.266	286.217	367.875	390.145
80	60.213	135.272	249.924	328.283	348.904
85	28.869	107.228	216.931	289.516	308.487
90	4.124	79.184	171.565	230.128	246.625
95	0.000	61.038	151.769	211.157	224.354
100	0.000	50.315	128.674	176.514	189.711
105	0.000	41.242	106.403	148.470	161.667
110	0.000	33.818	89.907	128.674	136.922
115	0.000	28.869	76.709	108.053	119.601
120	0.000	27.219	66.811	94.856	103.929
125	0.000	25.570	56.913	80.833	89.082
130	0.000	23.095	48.665	70.936	77.534
135	0.000	19.796	41.242	59.388	63.512
140	0.000	18.971	38.767	53.614	59.388
145	0.000	19.796	36.293	48.665	53.614
150	0.000	17.321	29.694	38.767	42.066
155	0.000	17.321	26.395	33.818	35.468
160	0.000	17.321	23.095	28.869	29.694
165	0.000	8.248	20.621	24.745	25.570
170	0.000	0.000	18.971	19.796	20.621
175	0.000	0.000	0.000	17.321	17.321
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	363.46	N.A.	10.60
0-30	759.00	N.A.	22.10
0-40	1224.33	N.A.	35.70
0-60	2133.09	N.A.	62.20
0-80	2788.31	N.A.	81.30
0-90	2998.87	N.A.	87.50
10-90	2903.96	N.A.	84.70
20-40	860.88	N.A.	25.10
20-50	1335.21	N.A.	38.90
40-70	1278.07	N.A.	37.30
60-80	655.22	N.A.	19.10
70-80	285.91	N.A.	8.30
80-90	210.56	N.A.	6.10
90-110	246.15	N.A.	7.20
90-120	315.03	N.A.	9.20
90-130	362.12	N.A.	10.60
90-150	412.69	N.A.	12.00
90-180	429.35	N.A.	12.50
110-180	183.20	N.A.	5.30
0-180	3428.23	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	94.91
10-20	268.55
20-30	395.54
30-40	465.33
40-50	474.34
50-60	434.41
60-70	369.32
70-80	285.91
80-90	210.56
90-100	145.21
100-110	100.94
110-120	68.88
120-130	47.09
130-140	30.43
140-150	20.15
150-160	11.10
160-170	4.81
170-180	0.75

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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	77	71	90	82	75	69	76	71	66	71	66	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	49	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	42	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	43	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

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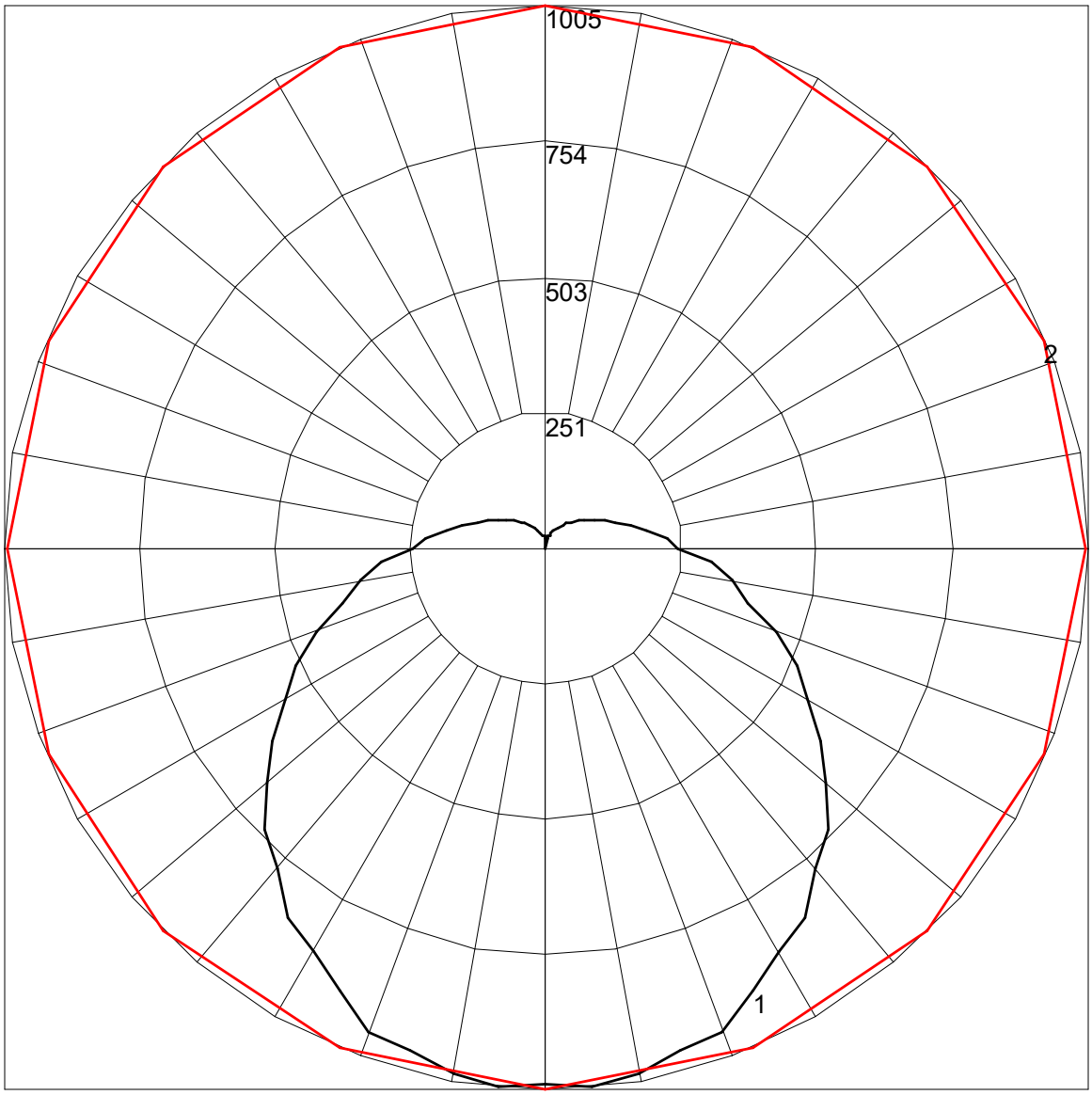
POLAR GRAPH



Maximum Candela = 1005.47 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.)

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