



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-P9-835-X-SQ-XX-XX-POE_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 17322.0

[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 SQUARE LENS

[LUMCAT] LLM-4-P9-835-S-SQ-xx-xx-PoE

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3498
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	170
Total Luminaire Watts	20.6
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.28
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.87 ft
Luminous Width (90-270)	0.21 ft
Luminous Height	0.20 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8865	6665	6725
55	7038	5558	6020
65	5571	4786	5421
75	4052	3970	4483
85	2655	3436	3796

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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	1067.070	1067.070	1067.070	1067.070	1067.070
5	1071.359	1073.075	1076.506	1076.506	1079.079
10	1041.337	1045.626	1050.772	1054.204	1054.204
15	988.155	997.590	1004.453	1007.884	1009.599
20	947.840	961.564	971.000	977.862	978.719
25	853.485	870.640	884.364	893.800	897.231
30	765.992	789.152	808.023	825.178	832.898
35	688.792	717.956	747.978	777.143	789.152
40	584.144	621.886	667.348	711.094	729.965
45	493.220	539.539	603.015	668.205	694.796
50	404.011	459.767	536.108	616.739	648.477
55	324.238	386.856	480.353	573.850	609.877
60	255.616	322.523	424.598	524.957	561.842
65	195.572	267.625	381.709	486.358	521.526
70	140.675	216.159	332.816	432.318	464.055
75	93.497	168.124	280.492	368.843	395.434
80	56.613	133.813	241.892	323.381	345.683
85	27.449	101.217	204.150	276.203	294.216
90	4.289	66.906	154.399	210.154	223.021
95	0.000	63.475	147.537	196.430	206.723
100	0.000	59.186	132.097	172.412	180.990
105	0.000	55.755	119.231	153.541	160.404
110	0.000	50.609	108.079	138.102	146.679
115	0.000	46.320	97.786	124.377	132.097
120	0.000	44.604	89.208	117.515	123.519
125	0.000	41.173	80.631	104.648	112.368
130	0.000	37.742	72.911	96.071	102.075
135	0.000	34.311	65.191	84.062	91.782
140	0.000	33.453	61.760	79.773	85.777
145	0.000	34.311	57.471	76.342	80.631
150	0.000	28.307	47.178	60.044	65.191
155	0.000	28.307	42.889	54.040	56.613
160	0.000	23.160	35.169	43.746	46.320
165	0.000	20.587	31.738	35.169	36.884
170	0.000	0.000	24.018	30.022	30.880
175	0.000	0.000	11.151	21.444	21.444
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	385.75	N.A.	11.00
0-30	793.15	N.A.	22.70
0-40	1256.76	N.A.	35.90
0-60	2147.99	N.A.	61.40
0-80	2801.33	N.A.	80.10
0-90	3001.05	N.A.	85.80
10-90	2899.42	N.A.	82.90
20-40	871.02	N.A.	24.90
20-50	1334.87	N.A.	38.20
40-70	1260.04	N.A.	36.00
60-80	653.34	N.A.	18.70
70-80	284.53	N.A.	8.10
80-90	199.72	N.A.	5.70
90-110	246.45	N.A.	7.00
90-120	330.42	N.A.	9.40
90-130	394.22	N.A.	11.30
90-150	471.18	N.A.	13.50
90-180	497.17	N.A.	14.20
110-180	250.72	N.A.	7.20
0-180	3498.22	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	101.63
10-20	284.12
20-30	407.40
30-40	463.61
40-50	463.85
50-60	427.38
60-70	368.81
70-80	284.53
80-90	199.72
90-100	137.83
100-110	108.62
110-120	83.97
120-130	63.80
130-140	45.32
140-150	31.64
150-160	17.49
160-170	7.36
170-180	1.14

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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	105	105	105	98	98	98	91	91	91	88
1	106	100	95	91	101	96	92	88	89	86	82	83	80	77	77	75	72	69
2	96	87	79	73	92	83	77	71	77	72	67	72	67	63	67	63	60	57
3	87	76	67	60	83	73	65	59	68	61	56	63	58	53	59	54	50	47
4	80	67	58	51	76	65	56	50	60	53	47	56	50	45	52	47	43	40
5	73	60	51	44	70	58	49	43	54	47	41	51	44	39	47	42	38	35
6	68	54	45	38	65	52	44	37	49	41	36	46	39	35	43	37	33	31
7	63	49	40	34	60	47	39	33	45	37	32	42	35	31	39	34	29	27
8	58	45	36	30	56	43	35	30	41	34	28	38	32	27	36	31	26	24
9	55	41	33	27	52	40	32	27	38	31	26	35	29	25	33	28	24	22
10	51	38	30	25	49	37	29	24	35	28	23	33	27	23	31	26	22	20

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UGR TABLE - CORRECTED

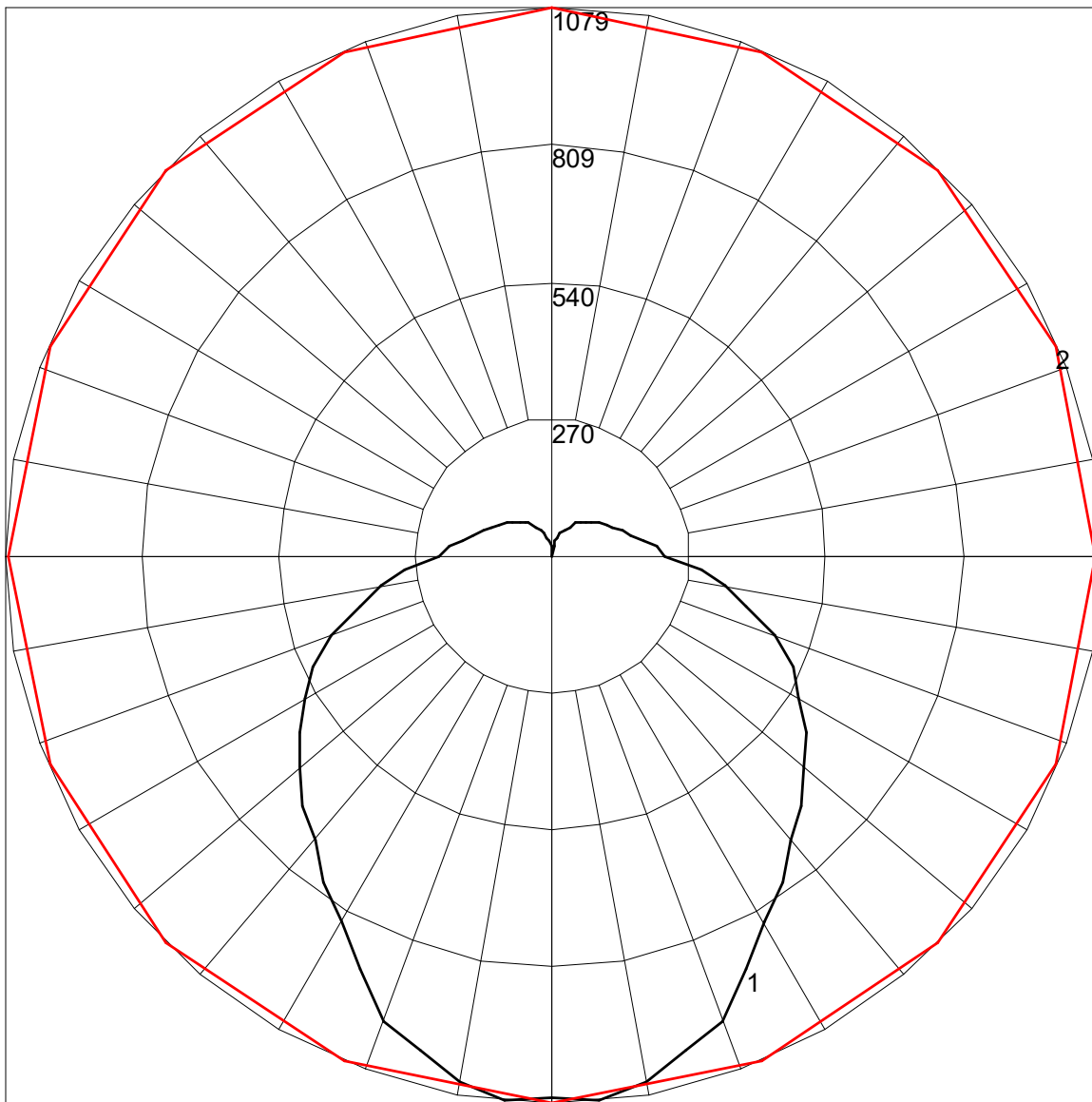
Reflectances

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	14.1	15.5	14.7	16.1	16.7	19.1	20.5	19.7	21.1	21.7
	3H	15.3	16.5	15.8	17.1	17.8	21.8	23.1	22.4	23.7	24.4
	4H	15.6	16.8	16.2	17.4	18.1	23.1	24.3	23.7	24.9	25.6
	6H	15.8	16.9	16.4	17.5	18.2	24.4	25.5	25.0	26.1	26.8
	8H	15.8	16.9	16.4	17.5	18.2	25.1	26.2	25.7	26.8	27.5
	12H	15.8	16.8	16.4	17.5	18.2	25.8	26.8	26.4	27.5	28.2
4H	2H	15.5	16.7	16.1	17.3	18.0	19.3	20.5	19.9	21.1	21.8
	3H	16.9	17.9	17.5	18.6	19.3	22.3	23.3	22.9	23.9	24.6
	4H	17.3	18.3	18.0	18.9	19.7	23.7	24.6	24.3	25.3	26.0
	6H	17.6	18.5	18.3	19.1	19.9	25.2	26.0	25.8	26.7	27.4
	8H	17.7	18.5	18.4	19.2	19.9	26.0	26.8	26.6	27.4	28.2
	12H	17.8	18.5	18.4	19.2	19.9	26.8	27.5	27.5	28.2	29.0
8H	4H	18.4	19.2	19.1	19.9	20.7	23.8	24.6	24.4	25.2	26.0
	6H	19.0	19.6	19.7	20.4	21.1	25.4	26.1	26.1	26.8	27.6
	8H	19.2	19.8	19.9	20.5	21.3	26.3	26.9	27.0	27.7	28.4
	12H	19.3	19.8	20.0	20.5	21.4	27.4	27.9	28.1	28.6	29.4
12H	4H	18.8	19.5	19.5	20.2	21.0	23.8	24.5	24.4	25.2	25.9
	6H	19.5	20.1	20.2	20.8	21.6	25.5	26.1	26.2	26.7	27.6
	8H	19.8	20.3	20.5	21.0	21.8	26.4	26.9	27.1	27.6	28.5

Maximum UGR = 29.4

POLAR GRAPH



Maximum Candela = 1079.079 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.)