



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-L20-935-X-SQ-EM7WRM-DIM-UNV\_EM MODE.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN from BALLABS TEST NO. 17322.0  
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC  
 [ISSUEDATE] 11-09-2021  
 [MANUFAC] H.E. WILLIAMS, INC - CARTHAGE, MO  
 [LUMINAIRE] 2' DIRECT/INDIRECT SURFACE LUMINAIRE  
 [MORE] WHITE REFLECTOR w/FROSTED ACRYLIC SQUARE LENS  
 [LUMCAT] LLM-2-L20-935-S-SQ-EM7WRM-DIM-UNV

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	875
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	125
Total Luminaire Watts	7
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)	2.00 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	4104	3164	3255
55	3203	2627	2914
65	2468	2252	2624
75	1706	1857	2170
85	955	1595	1837

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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	266.920	266.920	266.920	266.920	266.920
5	267.993	268.422	269.280	269.280	269.924
10	260.483	261.556	262.843	263.702	263.702
15	247.180	249.540	251.257	252.115	252.544
20	237.095	240.528	242.889	244.605	244.820
25	213.493	217.784	221.218	223.578	224.436
30	191.607	197.401	202.121	206.412	208.344
35	172.297	179.592	187.102	194.397	197.401
40	146.119	155.560	166.932	177.875	182.596
45	123.375	134.962	150.840	167.147	173.798
50	101.061	115.007	134.104	154.273	162.212
55	81.106	96.769	120.157	143.545	152.556
60	63.941	80.677	106.210	131.314	140.541
65	48.921	66.945	95.482	121.659	130.456
70	35.189	54.071	83.252	108.141	116.080
75	23.388	42.055	70.163	92.263	98.915
80	14.161	33.472	60.508	80.891	86.470
85	6.866	25.319	51.067	69.090	73.596
90	1.073	16.736	38.622	52.569	55.787
95	0.000	15.878	36.905	49.136	51.710
100	0.000	14.805	33.043	43.128	45.273
105	0.000	13.947	29.825	38.407	40.124
110	0.000	12.659	27.035	34.545	36.691
115	0.000	11.587	24.461	31.112	33.043
120	0.000	11.157	22.315	29.396	30.898
125	0.000	10.299	20.169	26.177	28.108
130	0.000	9.441	18.238	24.031	25.533
135	0.000	8.583	16.307	21.027	22.959
140	0.000	8.368	15.449	19.955	21.457
145	0.000	8.583	14.376	19.096	20.169
150	0.000	7.081	11.801	15.020	16.307
155	0.000	7.081	10.728	13.518	14.161
160	0.000	5.793	8.797	10.943	11.587
165	0.000	5.150	7.939	8.797	9.226
170	0.000	0.000	6.008	7.510	7.724
175	0.000	0.000	2.789	5.364	5.364
180	0.000	0.000	0.000	0.000	0.000

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : LLM-2-L20-935-X-SQ-EM7WRM-DIM-UNV\_EM MODE.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	96.49	N.A.	11.00
0-30	198.40	N.A.	22.70
0-40	314.37	N.A.	35.90
0-60	537.30	N.A.	61.40
0-80	700.73	N.A.	80.10
0-90	750.69	N.A.	85.80
10-90	725.27	N.A.	82.90
20-40	217.88	N.A.	24.90
20-50	333.91	N.A.	38.20
40-70	315.19	N.A.	36.00
60-80	163.43	N.A.	18.70
70-80	71.17	N.A.	8.10
80-90	49.96	N.A.	5.70
90-110	61.65	N.A.	7.00
90-120	82.65	N.A.	9.40
90-130	98.61	N.A.	11.30
90-150	117.86	N.A.	13.50
90-180	124.36	N.A.	14.20
110-180	62.72	N.A.	7.20
0-180	875.06	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	25.42
10-20	71.07
20-30	101.91
30-40	115.97
40-50	116.03
50-60	106.91
60-70	92.26
70-80	71.17
80-90	49.96
90-100	34.48
100-110	27.17
110-120	21.00
120-130	15.96
130-140	11.34
140-150	7.92
150-160	4.37
160-170	1.84
170-180	0.28

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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	111	111	111	111	103	103	103	96	96	96	89	89	89	86
1	104	98	93	89	99	95	90	86	88	84	81	81	78	76	75	73	71	68
2	94	85	78	71	90	82	75	69	76	70	66	70	66	62	65	62	59	56
3	85	74	66	59	82	72	64	58	67	60	55	62	57	52	58	53	49	46
4	78	66	57	50	75	63	55	49	59	52	47	55	49	44	51	46	42	40
5	72	59	50	43	69	57	48	42	53	46	40	50	43	38	46	41	37	34
6	66	53	44	37	63	51	43	37	48	41	35	45	39	34	42	37	32	30
7	62	48	39	33	59	46	38	32	44	36	31	41	35	30	38	33	29	27
8	57	44	35	29	55	42	34	29	40	33	28	38	31	27	35	30	26	24
9	54	40	32	26	51	39	31	26	37	30	25	35	29	24	33	27	23	22
10	50	37	29	24	48	36	29	24	34	27	23	32	26	22	31	25	21	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

X=2H	Y=2H	11.6	13.0	12.2	13.5	14.2	16.4	17.8	17.0	18.4	19.0
	3H	12.7	14.0	13.3	14.6	15.2	19.1	20.4	19.7	21.0	21.7
	4H	13.1	14.2	13.7	14.8	15.5	20.4	21.5	21.0	22.1	22.8
	6H	13.2	14.4	13.8	15.0	15.7	21.6	22.7	22.2	23.3	24.0
	8H	13.3	14.3	13.9	15.0	15.7	22.2	23.3	22.9	23.9	24.6
	12H	13.3	14.3	13.9	14.9	15.7	22.9	23.9	23.5	24.5	25.3

### UGR Viewed Endwise

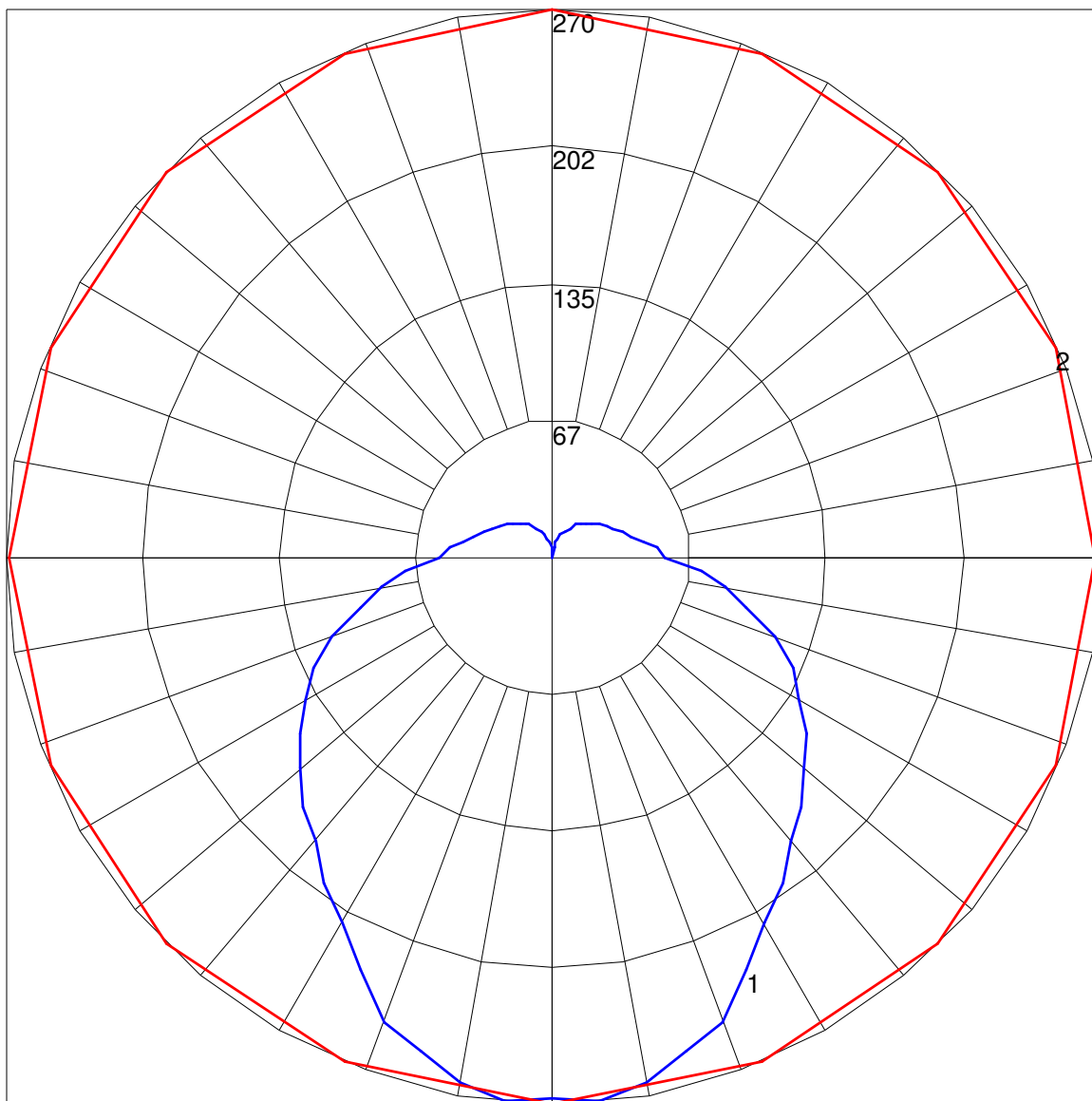
4H	2H	12.9	14.1	13.5	14.7	15.4	16.7	17.9	17.3	18.5	19.2
	3H	14.3	15.4	15.0	16.0	16.7	19.6	20.6	20.2	21.2	21.9
	4H	14.8	15.7	15.4	16.4	17.1	21.0	21.9	21.6	22.5	23.3
	6H	15.1	15.9	15.7	16.6	17.3	22.4	23.2	23.0	23.9	24.6
	8H	15.2	16.0	15.8	16.6	17.4	23.1	23.9	23.8	24.6	25.3
	12H	15.2	15.9	15.9	16.6	17.4	23.9	24.6	24.6	25.3	26.1

8H	4H	15.9	16.7	16.5	17.3	18.1	21.1	21.8	21.7	22.5	23.3
	6H	16.4	17.1	17.1	17.8	18.5	22.7	23.3	23.3	24.0	24.8
	8H	16.6	17.2	17.3	17.9	18.7	23.5	24.1	24.2	24.8	25.6
	12H	16.7	17.2	17.4	17.9	18.8	24.5	25.0	25.2	25.7	26.5

12H	4H	16.2	16.9	16.9	17.6	18.4	21.0	21.8	21.7	22.4	23.2
	6H	16.9	17.5	17.6	18.2	19.0	22.7	23.3	23.4	24.0	24.8
	8H	17.2	17.7	17.9	18.4	19.2	23.6	24.1	24.3	24.8	25.7

Maximum UGR = 26.5

POLAR GRAPH



Maximum Candela = 269.924 Located At Horizontal Angle = 90, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)