



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L10-830-X-RD-XX-XX-DIM-UNV_.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] 05-22-2023
 [MANUFAC] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4' DIRECT/INDIRECT SURFACE LUMINAIRE
 [MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS
 [LUMCAT] LLM-4-L10-830-x-RD-xx-xx-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3920
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	146
Total Luminaire Watts	26.8
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)	3.88 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	9811	8441	8865
55	8040	7123	7717
65	6515	6157	6827
75	4859	5220	5755
85	3386	4845	5306

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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	1139.403	1139.403	1139.403	1139.403	1139.403
5	1146.006	1145.063	1146.949	1148.836	1149.779
10	1112.050	1113.937	1123.369	1130.914	1132.801
15	1059.230	1066.776	1083.754	1099.788	1106.391
20	1010.183	1025.274	1056.400	1085.640	1096.015
25	915.861	936.612	980.943	1020.558	1035.650
30	823.426	852.666	913.032	968.682	990.375
35	745.140	784.755	862.098	930.953	958.306
40	636.670	681.944	779.095	862.098	891.338
45	542.348	599.885	714.957	811.165	847.007
50	449.913	511.222	637.613	741.367	776.266
55	366.911	434.822	567.815	676.285	712.127
60	291.453	362.194	499.904	607.430	642.329
65	225.428	302.772	445.197	553.667	588.566
70	163.176	245.236	385.775	490.472	520.655
75	109.413	192.416	327.296	420.674	446.141
80	68.855	154.687	285.794	375.399	398.980
85	33.013	122.618	248.065	331.068	352.762
90	4.716	90.549	196.189	263.157	282.021
95	0.000	69.798	173.552	241.463	256.554
100	0.000	57.536	147.141	201.848	216.939
105	0.000	47.161	121.675	169.779	184.870
110	0.000	38.672	102.810	147.141	156.574
115	0.000	33.013	87.719	123.561	136.766
120	0.000	31.126	76.400	108.470	118.845
125	0.000	29.240	65.082	92.435	101.867
130	0.000	26.410	55.650	81.116	88.662
135	0.000	22.637	47.161	67.911	72.628
140	0.000	21.694	44.331	61.309	67.911
145	0.000	22.637	41.501	55.650	61.309
150	0.000	19.808	33.956	44.331	48.104
155	0.000	19.808	30.183	38.672	40.558
160	0.000	19.808	26.410	33.013	33.956
165	0.000	9.432	23.580	28.296	29.240
170	0.000	0.000	21.694	22.637	23.580
175	0.000	0.000	0.000	19.808	19.808
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	415.62	N.A.	10.60
0-30	867.93	N.A.	22.10
0-40	1400.06	N.A.	35.70
0-60	2439.23	N.A.	62.20
0-80	3188.5	N.A.	81.30
0-90	3429.28	N.A.	87.50
10-90	3320.75	N.A.	84.70
20-40	984.43	N.A.	25.10
20-50	1526.85	N.A.	38.90
40-70	1461.5	N.A.	37.30
60-80	749.26	N.A.	19.10
70-80	326.94	N.A.	8.30
80-90	240.78	N.A.	6.10
90-110	281.48	N.A.	7.20
90-120	360.24	N.A.	9.20
90-130	414.09	N.A.	10.60
90-150	471.93	N.A.	12.00
90-180	490.98	N.A.	12.50
110-180	209.50	N.A.	5.30
0-180	3920.26	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	108.54
10-20	307.09
20-30	452.31
30-40	532.12
40-50	542.42
50-60	496.76
60-70	422.32
70-80	326.94
80-90	240.78
90-100	166.05
100-110	115.43
110-120	78.76
120-130	53.85
130-140	34.79
140-150	23.04
150-160	12.69
160-170	5.50
170-180	0.86

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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	87
1	104	98	93	89	100	95	90	86	88	84	81	82	79	76	76	74	72	69
2	94	85	77	71	90	82	75	69	76	71	66	71	66	62	66	62	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	58	49	42	69	57	48	42	53	46	40	50	43	38	47	41	37	34
6	66	53	43	37	63	51	42	36	48	40	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

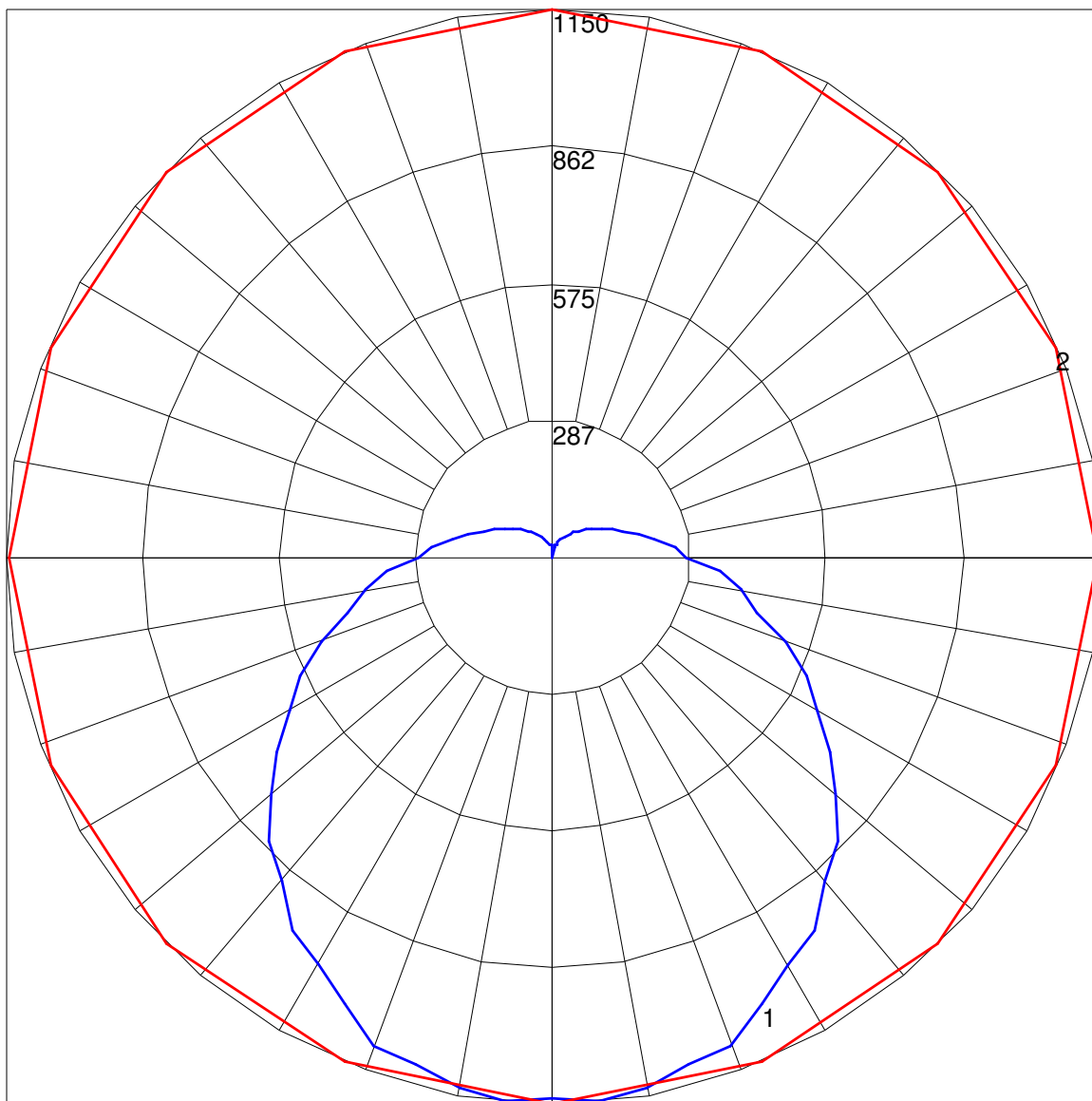
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UGR TABLE - CORRECTED

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	14.9	16.4	15.5	16.9	17.5	20.0	21.4	20.5	22.0	22.6
	3H	16.1	17.4	16.7	18.0	18.6	22.6	24.0	23.2	24.5	25.1
	4H	16.5	17.7	17.0	18.3	18.9	23.9	25.1	24.4	25.7	26.3
	6H	16.7	17.9	17.3	18.4	19.1	25.2	26.4	25.8	27.0	27.6
	8H	16.7	17.9	17.3	18.5	19.1	25.9	27.0	26.5	27.6	28.3
	12H	16.8	17.8	17.4	18.4	19.1	26.7	27.8	27.3	28.4	29.1
4H	2H	16.4	17.6	17.0	18.2	18.9	20.2	21.5	20.8	22.1	22.7
	3H	17.8	18.9	18.4	19.5	20.2	23.1	24.2	23.7	24.8	25.4
	4H	18.3	19.3	18.9	19.9	20.6	24.5	25.5	25.1	26.1	26.8
	6H	18.6	19.5	19.3	20.1	20.9	26.0	26.9	26.7	27.6	28.3
	8H	18.7	19.6	19.4	20.2	20.9	26.9	27.7	27.5	28.3	29.0
	12H	18.8	19.5	19.4	20.2	20.9	27.8	28.5	28.4	29.2	29.9
8H	4H	19.5	20.3	20.1	20.9	21.6	24.6	25.4	25.3	26.1	26.8
	6H	20.0	20.7	20.7	21.4	22.1	26.3	27.0	27.0	27.7	28.4
	8H	20.2	20.8	20.9	21.5	22.3	27.3	27.9	28.0	28.6	29.3
	12H	20.3	20.9	21.0	21.6	22.4	28.4	28.9	29.0	29.6	30.4
12H	4H	19.8	20.5	20.5	21.2	21.9	24.6	25.4	25.3	26.0	26.8
	6H	20.5	21.2	21.2	21.8	22.6	26.4	27.0	27.0	27.6	28.4
	8H	20.8	21.4	21.5	22.1	22.9	27.3	27.9	28.0	28.6	29.4

Maximum UGR = 30.4

POLAR GRAPH



Maximum Candela = 1149.779 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.)