



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L10-940-S-SQ-(L8)-DIM-UNV_.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] 08-25-2023
 [MANUFAC] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4' DIRECT/INDIRECT SURFACE LUMINAIRE
 [MORE] WHITE REFLECTOR w/FROSTED ACRYLIC SQUARE LENS
 [LUMCAT] LLM-4-L10-940-S-SQ-(L8)-xx-xx-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2728
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	132
Total Luminaire Watts	20.7
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)	3.88 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	6905	5191	5238
55	5482	4329	4689
65	4340	3728	4222
75	3157	3092	3492
85	2069	2676	2957

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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	832.180	832.180	832.180	832.180	832.180
5	835.525	836.863	839.539	839.539	841.546
10	812.112	815.457	819.470	822.146	822.146
15	770.637	777.995	783.347	786.023	787.360
20	739.196	749.899	757.257	762.609	763.278
25	665.611	678.990	689.693	697.052	699.727
30	597.377	615.439	630.156	643.535	649.556
35	537.171	559.916	583.329	606.074	615.439
40	455.559	484.993	520.447	554.564	569.281
45	384.649	420.773	470.276	521.116	541.854
50	315.078	358.560	418.097	480.979	505.730
55	252.865	301.699	374.615	447.531	475.627
60	199.349	251.527	331.133	409.401	438.166
65	152.522	208.714	297.685	379.298	406.725
70	109.709	168.577	259.555	337.154	361.905
75	72.916	131.115	218.748	287.651	308.388
80	44.151	104.357	188.645	252.196	269.589
85	21.407	78.937	159.211	215.404	229.452
90	3.345	52.179	120.412	163.894	173.928
95	0.000	49.503	115.060	153.191	161.218
100	0.000	46.158	103.019	134.460	141.150
105	0.000	43.482	92.985	119.743	125.095
110	0.000	39.468	84.288	107.702	114.391
115	0.000	36.124	76.261	96.999	103.019
120	0.000	34.786	69.571	91.647	96.330
125	0.000	32.110	62.882	81.613	87.633
130	0.000	29.434	56.861	74.923	79.606
135	0.000	26.758	50.841	65.558	71.578
140	0.000	26.089	48.165	62.213	66.896
145	0.000	26.758	44.820	59.537	62.882
150	0.000	22.076	36.793	46.827	50.841
155	0.000	22.076	33.448	42.144	44.151
160	0.000	18.062	27.427	34.117	36.124
165	0.000	16.055	24.751	27.427	28.765
170	0.000	0.000	18.731	23.413	24.082
175	0.000	0.000	8.696	16.724	16.724
180	0.000	0.000	0.000	0.000	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	300.83	N.A.	11.00
0-30	618.55	N.A.	22.70
0-40	980.12	N.A.	35.90
0-60	1675.16	N.A.	61.40
0-80	2184.69	N.A.	80.10
0-90	2340.44	N.A.	85.80
10-90	2261.19	N.A.	82.90
20-40	679.28	N.A.	24.90
20-50	1041.03	N.A.	38.20
40-70	982.67	N.A.	36.00
60-80	509.52	N.A.	18.70
70-80	221.90	N.A.	8.10
80-90	155.76	N.A.	5.70
90-110	192.20	N.A.	7.00
90-120	257.68	N.A.	9.40
90-130	307.44	N.A.	11.30
90-150	367.46	N.A.	13.50
90-180	387.73	N.A.	14.20
110-180	195.53	N.A.	7.20
0-180	2728.17	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	79.26
10-20	221.58
20-30	317.72
30-40	361.56
40-50	361.75
50-60	333.30
60-70	287.63
70-80	221.90
80-90	155.76
90-100	107.49
100-110	84.71
110-120	65.48
120-130	49.76
130-140	35.34
140-150	24.68
150-160	13.64
160-170	5.74
170-180	0.89

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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	13.3	14.7	13.9	15.3	15.9	18.3	19.7	18.9	20.3	20.9
	3H	14.5	15.7	15.0	16.3	17.0	21.0	22.3	21.6	22.9	23.6
	4H	14.8	16.0	15.4	16.6	17.3	22.3	23.5	22.9	24.1	24.8
	6H	15.0	16.1	15.6	16.7	17.4	23.6	24.7	24.2	25.3	26.0
	8H	15.0	16.1	15.6	16.7	17.4	24.3	25.4	24.9	26.0	26.7
	12H	15.0	16.0	15.6	16.7	17.4	25.0	26.0	25.6	26.7	27.4

UGR Viewed Endwise

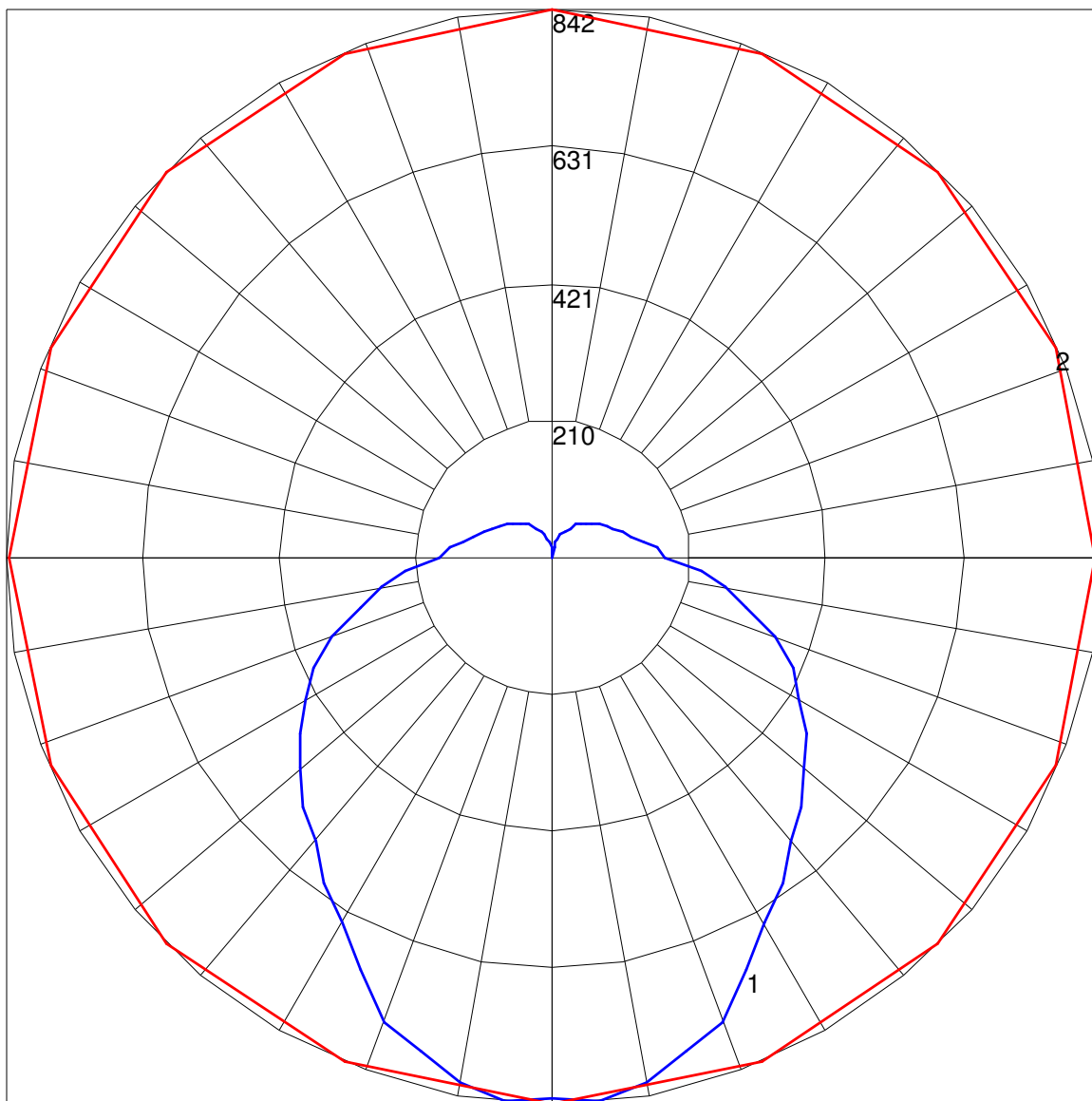
4H	2H	14.7	15.9	15.3	16.5	17.2	18.5	19.7	19.1	20.3	21.0
	3H	16.1	17.1	16.7	17.8	18.5	21.5	22.5	22.1	23.1	23.8
	4H	16.5	17.5	17.2	18.1	18.9	22.9	23.8	23.5	24.5	25.2
	6H	16.8	17.7	17.5	18.3	19.1	24.4	25.2	25.0	25.9	26.6
	8H	16.9	17.7	17.6	18.4	19.1	25.2	26.0	25.8	26.6	27.4
	12H	17.0	17.7	17.6	18.4	19.1	26.0	26.7	26.7	27.4	28.2

8H	4H	17.6	18.4	18.3	19.1	19.9	23.0	23.8	23.6	24.4	25.2
	6H	18.2	18.8	18.9	19.6	20.3	24.6	25.3	25.3	26.0	26.8
	8H	18.4	19.0	19.1	19.7	20.4	25.5	26.1	26.2	26.9	27.6
	12H	18.5	19.0	19.2	19.7	20.6	26.6	27.1	27.3	27.8	28.6

12H	4H	18.0	18.7	18.7	19.4	20.2	23.0	23.7	23.6	24.4	25.1
	6H	18.7	19.3	19.4	19.9	20.8	24.7	25.3	25.4	25.9	26.8
	8H	19.0	19.5	19.7	20.2	21.0	25.6	26.1	26.3	26.8	27.7

Maximum UGR = 28.6

POLAR GRAPH



Maximum Candela = 841.546 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.)