



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-4-L10-8TW-X-SQ-XX-XX-DIM-UNV 4000K_.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] 9-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-L10-8TW-S-SQ-xx-xx-DIM-UNV 4000k

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4010
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	125
Total Luminaire Watts	32
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	10162	7641	7709
55	8068	6372	6902
65	6386	5487	6214
75	4645	4551	5140
85	3043	3939	4352

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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	1223.256	1223.256	1223.256	1223.256	1223.256
5	1228.173	1230.140	1234.073	1234.073	1237.023
10	1193.757	1198.673	1204.573	1208.507	1208.507
15	1132.791	1143.607	1151.474	1155.407	1157.374
20	1086.574	1102.307	1113.124	1120.991	1121.974
25	978.408	998.075	1013.808	1024.625	1028.558
30	878.109	904.659	926.292	945.959	954.809
35	789.610	823.043	857.460	890.893	904.659
40	669.644	712.911	765.027	815.177	836.810
45	565.412	618.512	691.278	766.010	796.493
50	463.146	527.062	614.578	707.011	743.394
55	371.697	443.480	550.662	657.845	699.144
60	293.031	369.730	486.746	601.795	644.078
65	224.198	306.797	437.580	557.545	597.862
70	161.265	247.798	381.530	495.596	531.979
75	107.182	192.732	321.547	422.830	453.313
80	64.899	153.399	277.298	370.714	396.280
85	31.466	116.032	234.031	316.631	337.281
90	4.917	76.699	176.999	240.915	255.665
95	0.000	72.766	169.132	225.181	236.981
100	0.000	67.849	151.432	197.648	207.482
105	0.000	63.916	136.682	176.015	183.882
110	0.000	58.016	123.899	158.315	168.149
115	0.000	53.100	112.099	142.582	151.432
120	0.000	51.133	102.266	134.716	141.599
125	0.000	47.200	92.433	119.966	128.816
130	0.000	43.266	83.583	110.132	117.016
135	0.000	39.333	74.733	96.366	105.216
140	0.000	38.350	70.799	91.449	98.333
145	0.000	39.333	65.883	87.516	92.433
150	0.000	32.450	54.083	68.833	74.733
155	0.000	32.450	49.166	61.949	64.899
160	0.000	26.550	40.316	50.150	53.100
165	0.000	23.600	36.383	40.316	42.283
170	0.000	0.000	27.533	34.416	35.400
175	0.000	0.000	12.783	24.583	24.583
180	0.000	0.000	0.000	0.000	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : LLM-4-L10-8TW-X-SQ-XX-XX-DIM-UNV 4000K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	442.21	N.A.	11.00
0-30	909.24	N.A.	22.70
0-40	1440.71	N.A.	35.90
0-60	2462.39	N.A.	61.40
0-80	3211.36	N.A.	80.10
0-90	3440.31	N.A.	85.80
10-90	3323.81	N.A.	82.90
20-40	998.51	N.A.	24.90
20-50	1530.25	N.A.	38.20
40-70	1444.47	N.A.	36.00
60-80	748.97	N.A.	18.70
70-80	326.18	N.A.	8.10
80-90	228.95	N.A.	5.70
90-110	282.52	N.A.	7.00
90-120	378.78	N.A.	9.40
90-130	451.92	N.A.	11.30
90-150	540.15	N.A.	13.50
90-180	569.94	N.A.	14.20
110-180	287.42	N.A.	7.20
0-180	4010.25	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	116.50
10-20	325.70
20-30	467.03
30-40	531.47
40-50	531.74
50-60	489.93
60-70	422.79
70-80	326.18
80-90	228.95
90-100	158.01
100-110	124.52
110-120	96.26
120-130	73.14
130-140	51.95
140-150	36.28
150-160	20.05
160-170	8.44
170-180	1.30

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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	119	119	119	119	115	115	115	115	106	106	106	99	99	99	92	92	92	88
1	107	101	96	91	102	97	93	89	90	86	83	84	81	78	78	75	73	70
2	97	87	80	73	92	84	77	71	78	72	68	73	68	64	67	64	60	57
3	88	76	68	61	84	74	66	59	69	62	56	64	58	53	59	55	51	48
4	80	68	58	51	77	65	57	50	61	54	48	57	51	46	53	48	44	41
5	74	60	51	44	71	58	50	43	55	47	41	51	45	40	48	42	38	35
6	68	54	45	38	65	53	44	38	49	42	36	46	40	35	43	38	33	31
7	63	49	40	34	61	48	39	33	45	38	32	42	36	31	40	34	30	27
8	59	45	36	30	56	44	35	30	41	34	29	39	32	28	36	31	27	25
9	55	41	33	27	53	40	32	27	38	31	26	36	30	25	34	28	24	22
10	52	38	30	25	50	37	29	24	35	28	24	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

X=2H	Y=2H	14.5	15.9	15.1	16.5	17.1	19.5	20.9	20.1	21.5	22.1
	3H	15.7	16.9	16.2	17.5	18.2	22.2	23.5	22.8	24.1	24.8
	4H	16.0	17.2	16.6	17.8	18.5	23.5	24.7	24.1	25.3	26.0
	6H	16.2	17.3	16.8	17.9	18.6	24.8	25.9	25.4	26.5	27.2
	8H	16.2	17.3	16.8	17.9	18.6	25.5	26.6	26.1	27.2	27.9
	12H	16.2	17.2	16.8	17.9	18.6	26.2	27.2	26.8	27.9	28.6

UGR Viewed Endwise

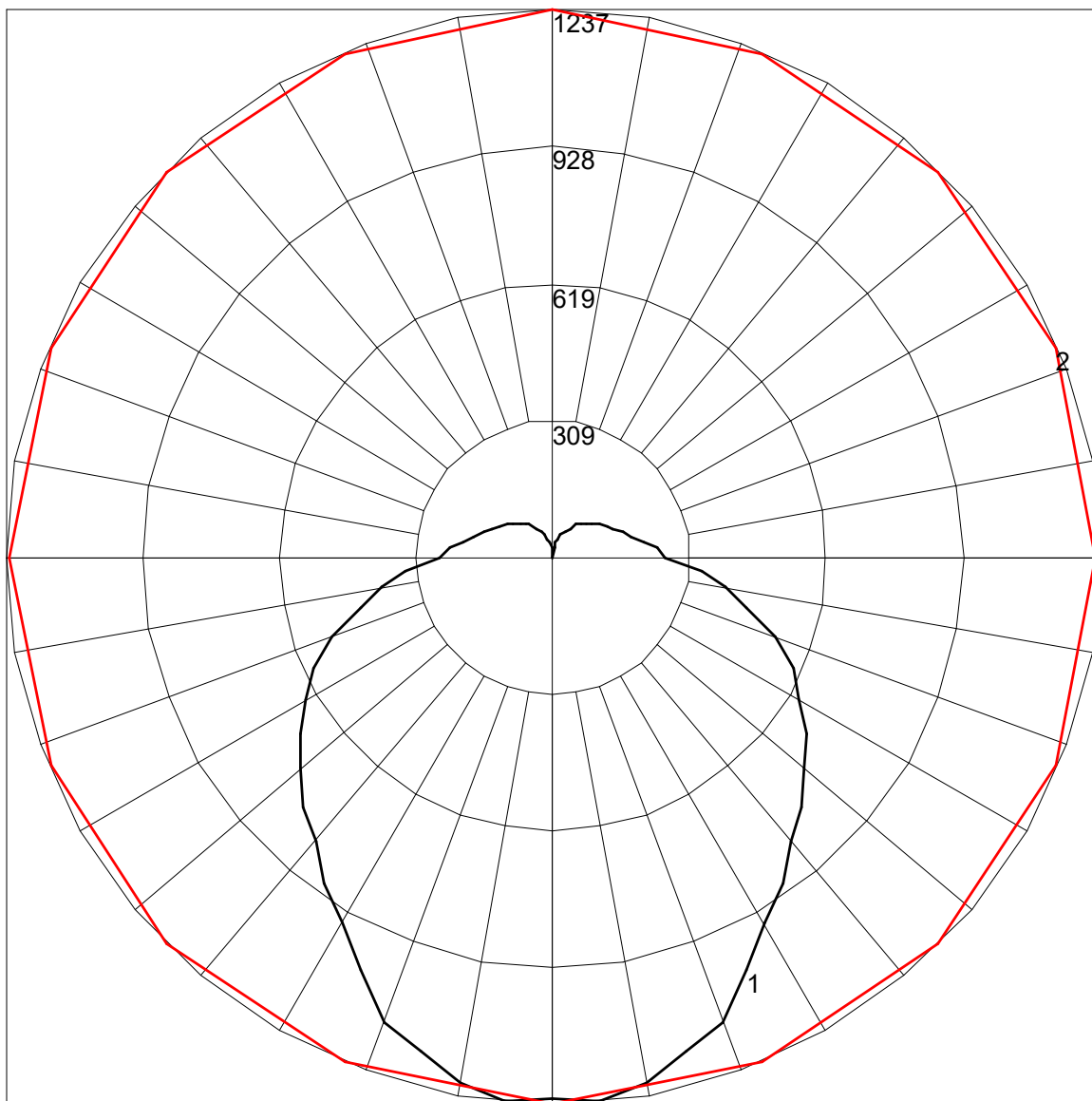
4H	2H	15.9	17.1	16.5	17.7	18.4	19.7	20.9	20.3	21.5	22.2
	3H	17.3	18.3	17.9	19.0	19.7	22.7	23.7	23.3	24.3	25.0
	4H	17.7	18.7	18.4	19.3	20.1	24.1	25.0	24.7	25.7	26.4
	6H	18.0	18.9	18.7	19.6	20.3	25.6	26.4	26.2	27.1	27.8
	8H	18.1	18.9	18.8	19.6	20.3	26.4	27.2	27.0	27.8	28.6
	12H	18.2	18.9	18.8	19.6	20.3	27.2	27.9	27.9	28.6	29.4

8H	4H	18.8	19.6	19.5	20.3	21.1	24.2	25.0	24.8	25.6	26.4
	6H	19.4	20.0	20.1	20.8	21.5	25.8	26.5	26.5	27.2	28.0
	8H	19.6	20.2	20.3	20.9	21.7	26.7	27.3	27.4	28.1	28.8
	12H	19.7	20.2	20.4	20.9	21.8	27.8	28.3	28.5	29.0	29.8

12H	4H	19.2	19.9	19.9	20.6	21.4	24.2	24.9	24.8	25.6	26.4
	6H	19.9	20.5	20.6	21.2	22.0	25.9	26.5	26.6	27.1	28.0
	8H	20.2	20.7	20.9	21.4	22.2	26.8	27.3	27.5	28.0	28.9

Maximum UGR = 29.8

POLAR GRAPH



Maximum Candela = 1237.023 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.)