



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-2-L20-935-X-SQ-XX-XX-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] 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-xx-xx-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3365
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	125
Total Luminaire Watts	27
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	15783	12166	12518
55	12316	10103	11206
65	9493	8660	10090
75	6560	7142	8345
85	3674	6135	7066

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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	1026.498	1026.498	1026.498	1026.498	1026.498
5	1030.624	1032.274	1035.575	1035.575	1038.050
10	1001.743	1005.869	1010.820	1014.121	1014.121
15	950.584	959.660	966.262	969.562	971.213
20	911.801	925.004	934.080	940.682	941.507
25	821.034	837.537	850.739	859.816	863.117
30	736.867	759.147	777.300	793.803	801.230
35	662.603	690.658	719.539	747.594	759.147
40	561.934	598.241	641.974	684.057	702.211
45	474.467	519.025	580.087	642.799	668.379
50	388.650	442.285	515.725	593.290	623.820
55	311.910	372.147	462.089	552.032	586.688
60	245.897	310.260	408.454	504.998	540.479
65	188.136	257.450	367.196	467.865	501.697
70	135.326	207.940	320.162	415.880	446.411
75	89.942	161.731	269.827	354.819	380.398
80	54.461	128.725	232.695	311.085	332.539
85	26.405	97.369	196.388	265.701	283.030
90	4.126	64.362	148.529	202.164	214.541
95	0.000	61.062	141.927	188.961	198.863
100	0.000	56.936	127.075	165.857	174.109
105	0.000	53.635	114.697	147.704	154.305
110	0.000	48.684	103.970	132.851	141.102
115	0.000	44.559	94.068	119.648	127.075
120	0.000	42.908	85.817	113.047	118.823
125	0.000	39.608	77.565	100.669	108.096
130	0.000	36.307	70.139	92.418	98.194
135	0.000	33.006	62.712	80.866	88.292
140	0.000	32.181	59.411	76.740	82.516
145	0.000	33.006	55.286	73.439	77.565
150	0.000	27.230	45.384	57.761	62.712
155	0.000	27.230	41.258	51.985	54.461
160	0.000	22.279	33.832	42.083	44.559
165	0.000	19.804	30.531	33.832	35.482
170	0.000	0.000	23.104	28.881	29.706
175	0.000	0.000	10.727	20.629	20.629
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	371.08	N.A.	11.00
0-30	762.99	N.A.	22.70
0-40	1208.98	N.A.	35.90
0-60	2066.32	N.A.	61.40
0-80	2694.82	N.A.	80.10
0-90	2886.94	N.A.	85.80
10-90	2789.18	N.A.	82.90
20-40	837.90	N.A.	24.90
20-50	1284.11	N.A.	38.20
40-70	1212.13	N.A.	36.00
60-80	628.50	N.A.	18.70
70-80	273.71	N.A.	8.10
80-90	192.13	N.A.	5.70
90-110	237.08	N.A.	7.00
90-120	317.85	N.A.	9.40
90-130	379.23	N.A.	11.30
90-150	453.27	N.A.	13.50
90-180	478.27	N.A.	14.20
110-180	241.19	N.A.	7.20
0-180	3365.21	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	97.76
10-20	273.32
20-30	391.91
30-40	445.99
40-50	446.21
50-60	411.13
60-70	354.79
70-80	273.71
80-90	192.13
90-100	132.59
100-110	104.49
110-120	80.77
120-130	61.37
130-140	43.60
140-150	30.44
150-160	16.82
160-170	7.08
170-180	1.09

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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	16.3	17.7	16.9	18.2	18.9	21.1	22.5	21.7	23.1	23.7
	3H	17.4	18.7	18.0	19.3	19.9	23.8	25.1	24.4	25.7	26.4
	4H	17.8	18.9	18.3	19.5	20.2	25.1	26.2	25.6	26.8	27.5
	6H	17.9	19.1	18.5	19.7	20.4	26.3	27.4	26.9	28.0	28.7
	8H	18.0	19.0	18.6	19.7	20.4	26.9	28.0	27.6	28.6	29.3
	12H	18.0	19.0	18.6	19.6	20.4	27.6	28.6	28.2	29.2	30.0

UGR Viewed Endwise

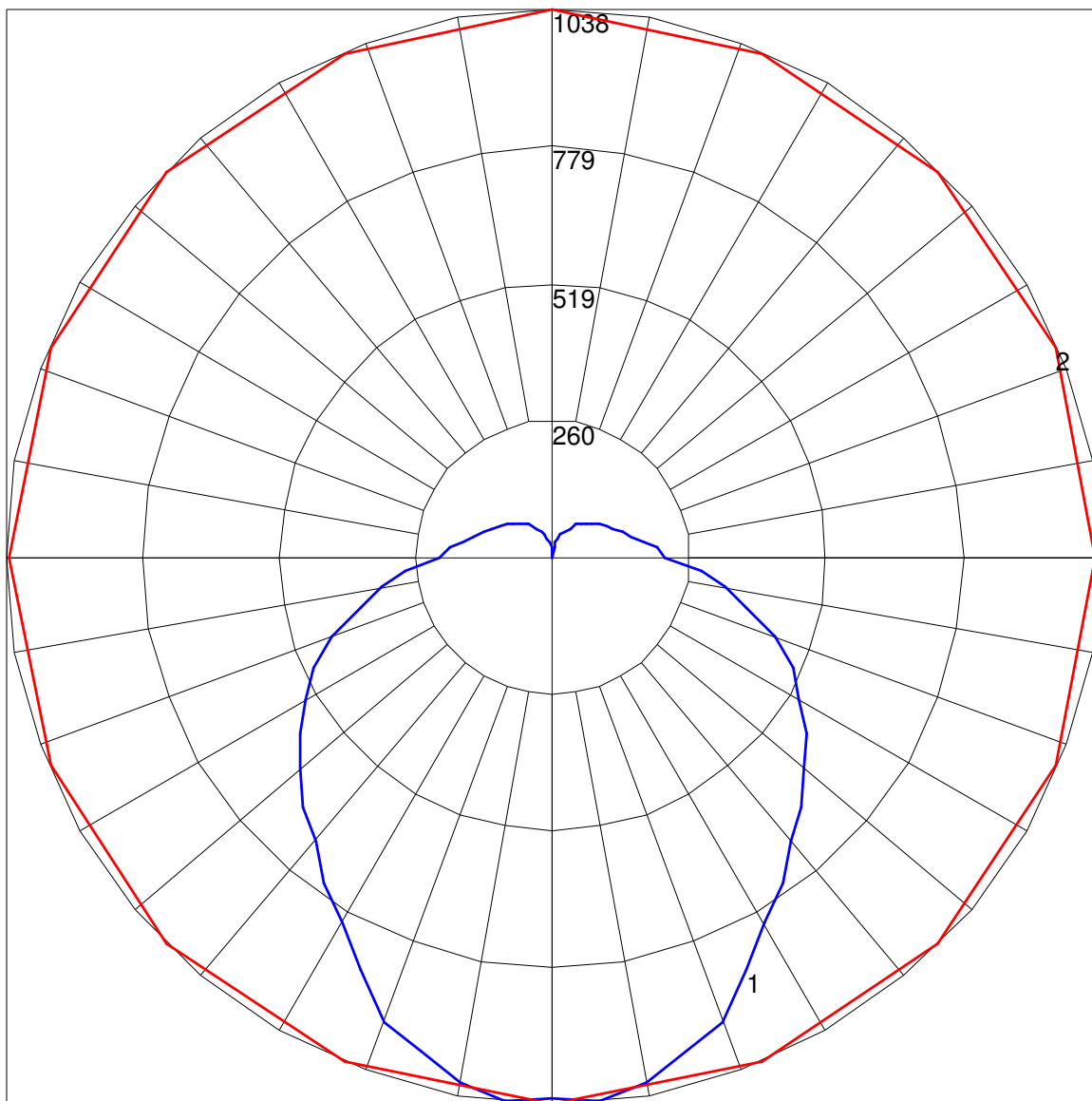
4H	2H	17.6	18.8	18.2	19.4	20.1	21.4	22.6	22.0	23.2	23.9
	3H	19.0	20.1	19.7	20.7	21.4	24.3	25.3	24.9	25.9	26.6
	4H	19.5	20.4	20.1	21.1	21.8	25.7	26.6	26.3	27.2	28.0
	6H	19.8	20.6	20.4	21.3	22.0	27.1	27.9	27.7	28.6	29.3
	8H	19.9	20.7	20.5	21.3	22.1	27.8	28.6	28.5	29.3	30.0
	12H	19.9	20.6	20.6	21.3	22.1	28.6	29.3	29.3	30.0	30.8

8H	4H	20.6	21.3	21.2	22.0	22.8	25.7	26.5	26.4	27.2	28.0
	6H	21.1	21.8	21.8	22.5	23.2	27.4	28.0	28.0	28.7	29.5
	8H	21.3	21.9	22.0	22.6	23.4	28.2	28.8	28.9	29.5	30.3
	12H	21.4	21.9	22.1	22.6	23.5	29.2	29.7	29.9	30.4	31.2

12H	4H	20.9	21.6	21.6	22.3	23.1	25.7	26.5	26.4	27.1	27.9
	6H	21.6	22.2	22.3	22.9	23.7	27.4	28.0	28.1	28.7	29.5
	8H	21.9	22.4	22.6	23.1	23.9	28.3	28.8	29.0	29.5	30.4

Maximum UGR = 31.2

POLAR GRAPH



Maximum Candela = 1038.05 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.)