



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-8-L10-935-X-SQ-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] 03-SEP-2021

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.

[LUMINAIRE] 8' DIRECT/INDIRECT LED LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC SQUARE LENS

[LUMCAT] LLMS-8-L10-935-x-SQ-DIM-UNV

[LAMPCAT] HLM 90 CRI 3500K CCT

[_SEARCH_SOURCETYPE]LED

[_SEARCH_APPLICATION]INDOOR,ARCHITECTURAL,DIRECT,LINEAR

[_SEARCH_MOUNTING]CEILING,SURFACE,WALL

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6759
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	117
Total Luminaire Watts	57.6
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)	7.75 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	8767	6500	6489
55	7030	5433	5809
65	5655	4690	5230
75	4251	3903	4326
85	3142	3392	3663

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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	2061.843	2061.843	2061.843	2061.843	2061.843
5	2070.130	2073.445	2080.075	2080.075	2085.047
10	2012.120	2020.407	2030.352	2036.982	2036.982
15	1909.359	1927.591	1940.851	1947.480	1950.795
20	1831.460	1857.979	1876.211	1889.470	1891.128
25	1649.143	1682.292	1708.810	1727.042	1733.672
30	1480.085	1524.836	1561.299	1594.448	1609.365
35	1330.916	1387.269	1445.279	1501.632	1524.836
40	1128.710	1201.637	1289.481	1374.010	1410.473
45	953.022	1042.524	1165.173	1291.138	1342.518
50	780.650	888.383	1035.894	1191.692	1253.017
55	626.509	747.501	928.161	1108.821	1178.433
60	493.914	623.194	820.428	1014.347	1085.617
65	377.894	517.118	737.556	939.763	1007.717
70	271.819	417.672	643.083	835.345	896.670
75	180.660	324.856	541.980	712.695	764.075
80	109.390	258.559	467.395	624.851	667.944
85	53.038	195.577	394.468	533.692	568.499
90	8.287	129.280	298.337	406.070	430.932
95	0.000	122.650	285.078	379.551	399.441
100	0.000	114.363	255.244	333.143	349.718
105	0.000	107.733	230.383	296.680	309.939
110	0.000	97.788	208.836	266.846	283.421
115	0.000	89.501	188.947	240.327	255.244
120	0.000	86.186	172.373	227.068	238.670
125	0.000	79.557	155.798	202.206	217.123
130	0.000	72.927	140.882	185.632	197.234
135	0.000	66.297	125.965	162.428	177.345
140	0.000	64.640	119.335	154.141	165.743
145	0.000	66.297	111.048	147.511	155.798
150	0.000	54.695	91.159	116.020	125.965
155	0.000	54.695	82.872	104.418	109.390
160	0.000	44.751	67.955	84.529	89.501
165	0.000	39.778	61.325	67.955	71.269
170	0.000	0.000	46.408	58.010	59.667
175	0.000	0.000	21.547	41.436	41.436
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	745.35	N.A.	11.00
0-30	1532.56	N.A.	22.70
0-40	2428.37	N.A.	35.90
0-60	4150.45	N.A.	61.40
0-80	5412.86	N.A.	80.10
0-90	5798.77	N.A.	85.80
10-90	5602.4	N.A.	82.90
20-40	1683.02	N.A.	24.90
20-50	2579.29	N.A.	38.20
40-70	2434.71	N.A.	36.00
60-80	1262.41	N.A.	18.70
70-80	549.78	N.A.	8.10
80-90	385.91	N.A.	5.70
90-110	476.20	N.A.	7.00
90-120	638.45	N.A.	9.40
90-130	761.72	N.A.	11.30
90-150	910.44	N.A.	13.50
90-180	960.65	N.A.	14.20
110-180	484.45	N.A.	7.20
0-180	6759.42	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	196.37
10-20	548.99
20-30	787.20
30-40	895.82
40-50	896.27
50-60	825.80
60-70	712.63
70-80	549.78
80-90	385.91
90-100	266.33
100-110	209.88
110-120	162.24
120-130	123.28
130-140	87.57
140-150	61.15
150-160	33.79
160-170	14.23
170-180	2.20

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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

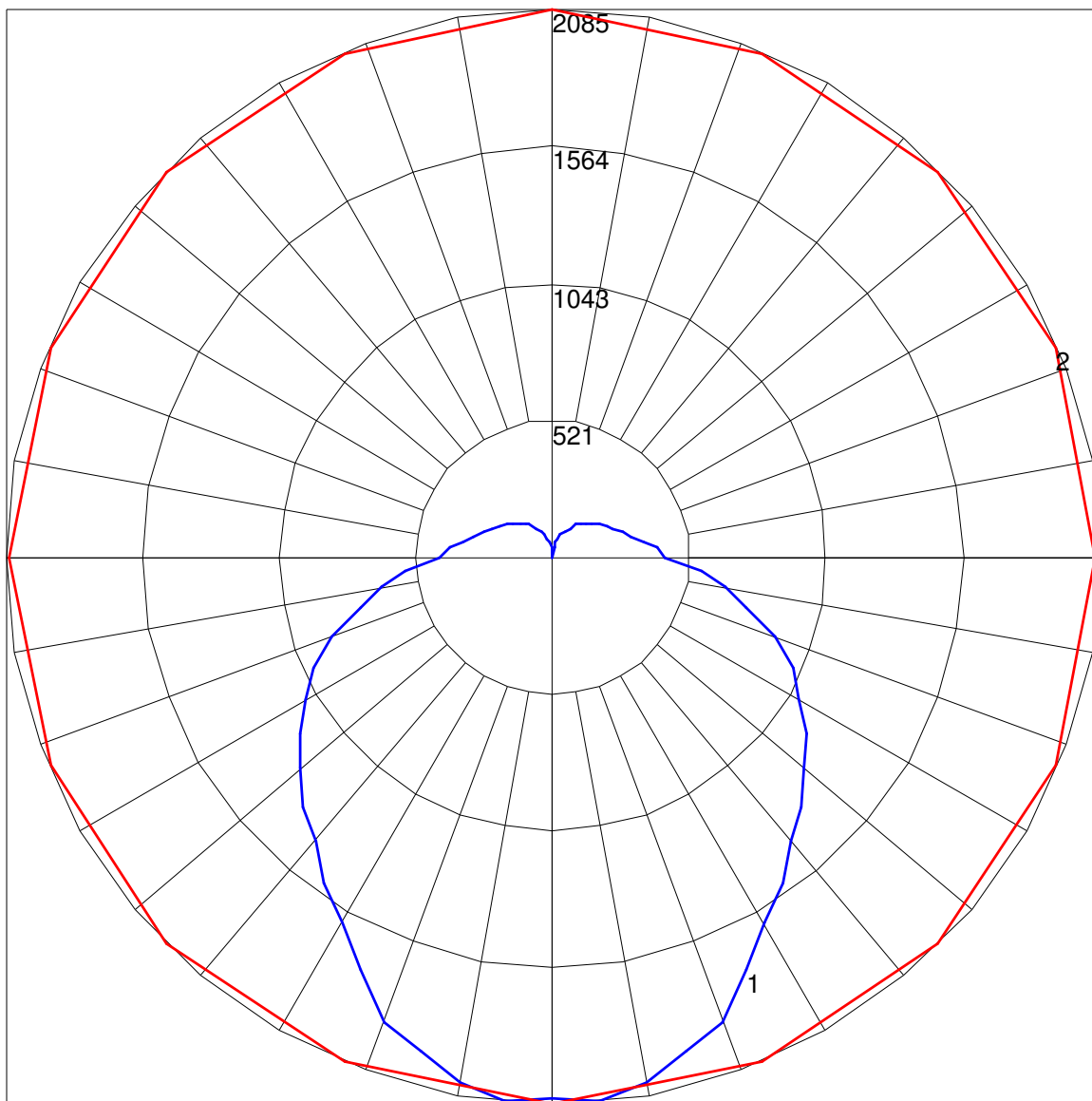
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	14.0	15.4	14.6	16.0	16.6	19.1	20.5	19.6	21.0	21.7
	3H	15.2	16.4	15.7	17.0	17.7	21.8	23.1	22.4	23.7	24.4
	4H	15.5	16.7	16.1	17.3	18.0	23.1	24.3	23.7	24.9	25.6
	6H	15.7	16.8	16.3	17.4	18.1	24.5	25.6	25.1	26.2	26.9
	8H	15.7	16.8	16.3	17.4	18.1	25.2	26.3	25.8	26.9	27.6
	12H	15.7	16.7	16.3	17.4	18.1	26.0	27.0	26.6	27.6	28.4
4H	2H	15.4	16.6	16.0	17.2	17.9	19.3	20.5	19.9	21.1	21.8
	3H	16.8	17.8	17.4	18.5	19.2	22.3	23.3	22.9	23.9	24.6
	4H	17.3	18.2	17.9	18.8	19.6	23.7	24.7	24.3	25.3	26.0
	6H	17.6	18.4	18.2	19.1	19.8	25.2	26.1	25.9	26.8	27.5
	8H	17.6	18.4	18.3	19.1	19.9	26.1	26.8	26.7	27.5	28.3
	12H	17.7	18.4	18.4	19.1	19.9	26.9	27.7	27.6	28.4	29.1
8H	4H	18.4	19.2	19.0	19.8	20.6	23.8	24.6	24.5	25.3	26.0
	6H	18.9	19.6	19.6	20.3	21.1	25.5	26.2	26.2	26.9	27.6
	8H	19.1	19.7	19.8	20.4	21.2	26.4	27.0	27.1	27.7	28.5
	12H	19.2	19.7	19.9	20.4	21.3	27.5	28.0	28.2	28.7	29.6
12H	4H	18.7	19.4	19.4	20.1	20.9	23.8	24.5	24.5	25.2	26.0
	6H	19.4	20.0	20.1	20.7	21.5	25.5	26.1	26.2	26.8	27.6
	8H	19.7	20.2	20.4	20.9	21.8	26.5	27.0	27.2	27.7	28.6

Maximum UGR = 29.6

POLAR GRAPH



Maximum Candela = 2085.047 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.)