



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LLM-8-L20-835-X-SQ-XX-XXX-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] 06 FEB 2024
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMINAIRE] 8' DIRECT-INDIRECT LED LUMINAIRE
 [MORE] WHITE HOUSING w/FROSTED ACRYLIC SQUARE LENS
 [MORE] WITH
 [LUMCAT] LLM-8-L20-835-x-SQ-xx-xxx-DIM-UNV
 [LAMPCAT] HLM 80 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	16217
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	147
Total Luminaire Watts	110.4
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)	7.74 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	21060	15615	15588
55	16888	13050	13955
65	13585	11267	12564
75	10211	9375	10392
85	7546	8149	8799

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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	4946.715	4946.715	4946.715	4946.715	4946.715
5	4966.597	4974.550	4990.456	4990.456	5002.385
10	4827.421	4847.304	4871.162	4887.068	4887.068
15	4580.881	4624.622	4656.434	4672.339	4680.292
20	4393.987	4457.611	4501.352	4533.163	4537.140
25	3956.577	4036.106	4099.729	4143.470	4159.376
30	3550.978	3658.342	3745.824	3825.354	3861.142
35	3193.097	3328.296	3467.472	3602.672	3658.342
40	2707.969	2882.933	3093.685	3296.485	3383.967
45	2286.464	2501.193	2795.451	3097.662	3220.932
50	1872.912	2131.382	2485.287	2859.074	3006.203
55	1503.102	1793.383	2226.817	2660.251	2827.262
60	1184.985	1495.149	1968.347	2433.593	2604.581
65	906.633	1240.655	1769.524	2254.652	2417.687
70	652.139	1002.068	1542.866	2004.135	2151.264
75	433.434	779.386	1300.302	1709.877	1833.148
80	262.446	620.328	1121.361	1499.125	1602.513
85	127.247	469.222	946.397	1280.420	1363.925
90	19.882	310.164	715.763	974.232	1033.879
95	0.000	294.258	683.951	910.609	958.327
100	0.000	274.376	612.375	799.268	839.033
105	0.000	258.470	552.728	711.786	743.598
110	0.000	234.611	501.034	640.210	679.974
115	0.000	214.729	453.316	576.587	612.375
120	0.000	206.776	413.552	544.775	572.610
125	0.000	190.870	373.787	485.128	520.916
130	0.000	174.964	337.999	445.363	473.199
135	0.000	159.058	302.211	389.693	425.481
140	0.000	155.082	286.305	369.811	397.646
145	0.000	159.058	266.423	353.905	373.787
150	0.000	131.223	218.705	278.352	302.211
155	0.000	131.223	198.823	250.517	262.446
160	0.000	107.364	163.035	202.799	214.729
165	0.000	95.435	147.129	163.035	170.988
170	0.000	0.000	111.341	139.176	143.153
175	0.000	0.000	51.694	99.411	99.411
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1788.23	N.A.	11.00
0-30	3676.86	N.A.	22.70
0-40	5826.08	N.A.	35.90
0-60	9957.64	N.A.	61.40
0-80	12986.39	N.A.	80.10
0-90	13912.24	N.A.	85.80
10-90	13441.12	N.A.	82.90
20-40	4037.85	N.A.	24.90
20-50	6188.16	N.A.	38.20
40-70	5841.29	N.A.	36.00
60-80	3028.75	N.A.	18.70
70-80	1319.02	N.A.	8.10
80-90	925.86	N.A.	5.70
90-110	1142.5	N.A.	7.00
90-120	1531.74	N.A.	9.40
90-130	1827.51	N.A.	11.30
90-150	2184.3	N.A.	13.50
90-180	2304.77	N.A.	14.20
110-180	1162.28	N.A.	7.20
0-180	16217.02	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	471.12
10-20	1317.11
20-30	1888.63
30-40	2149.22
40-50	2150.32
50-60	1981.24
60-70	1709.73
70-80	1319.02
80-90	925.86
90-100	638.96
100-110	503.53
110-120	389.25
120-130	295.76
130-140	210.09
140-150	146.70
150-160	81.06
160-170	34.14
170-180	5.28

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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

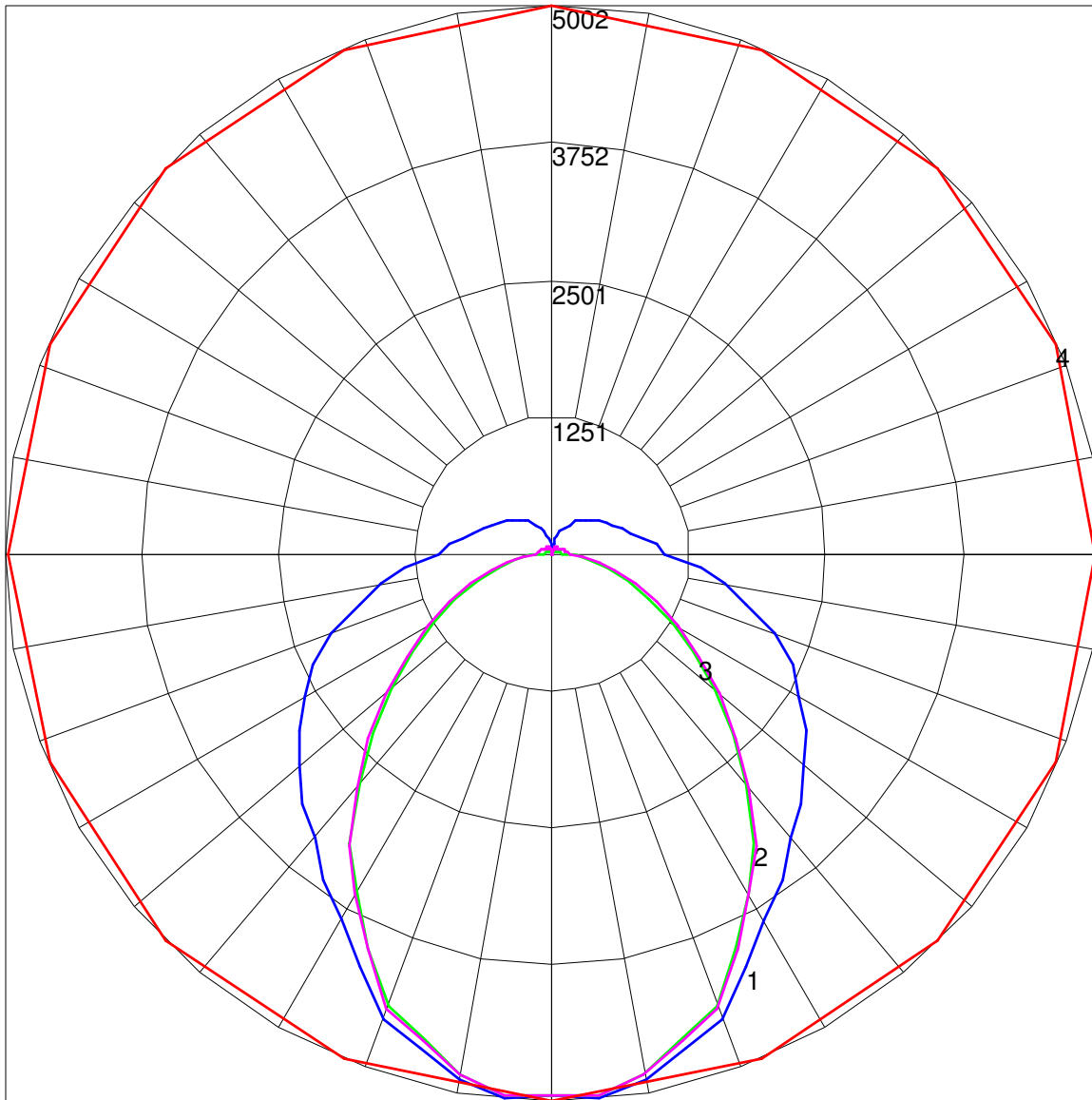
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UGR TABLE - CORRECTED

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	17.1	18.5	17.7	19.1	19.7	22.2	23.6	22.8	24.1	24.8
	3H	18.3	19.5	18.8	20.1	20.8	25.0	26.2	25.5	26.8	27.5
	4H	18.6	19.8	19.2	20.4	21.1	26.2	27.4	26.8	28.0	28.7
	6H	18.8	19.9	19.4	20.5	21.2	27.6	28.7	28.2	29.3	30.0
	8H	18.8	19.9	19.4	20.5	21.2	28.3	29.4	28.9	30.0	30.7
	12H	18.8	19.9	19.5	20.5	21.2	29.1	30.1	29.7	30.7	31.5
4H	2H	18.5	19.7	19.1	20.3	21.0	22.4	23.6	23.0	24.2	24.9
	3H	19.9	20.9	20.5	21.6	22.3	25.4	26.4	26.0	27.0	27.7
	4H	20.4	21.3	21.0	21.9	22.7	26.8	27.8	27.5	28.4	29.1
	6H	20.7	21.5	21.3	22.2	22.9	28.3	29.2	29.0	29.9	30.6
	8H	20.7	21.5	21.4	22.2	23.0	29.2	29.9	29.8	30.6	31.4
	12H	20.8	21.5	21.5	22.2	23.0	30.1	30.8	30.7	31.5	32.2
8H	4H	21.5	22.3	22.1	22.9	23.7	26.9	27.7	27.6	28.4	29.1
	6H	22.0	22.7	22.7	23.4	24.2	28.6	29.3	29.3	30.0	30.7
	8H	22.2	22.8	22.9	23.5	24.3	29.5	30.1	30.2	30.8	31.6
	12H	22.3	22.8	23.0	23.5	24.4	30.6	31.1	31.3	31.8	32.7
12H	4H	21.8	22.5	22.5	23.2	24.0	26.9	27.6	27.6	28.3	29.1
	6H	22.5	23.1	23.2	23.8	24.6	28.6	29.2	29.3	29.9	30.7
	8H	22.8	23.3	23.5	24.0	24.9	29.6	30.1	30.3	30.8	31.7

Maximum UGR = 32.7

POLAR GRAPH



Maximum Candela = 5002.385 Located At Horizontal Angle = 90, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
2 - Vertical Plane Through Horizontal Angles (5 - 185)
3 - Vertical Plane Through Horizontal Angles (10 - 190)
4 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)