IES INDOOR REPORT
PHOTOMETRIC FILENAME : LLM-4-L10-935-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] 31-JAN-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-L10-935-S-SQ-xx-xx-DIM-UNV

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3297
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	127
Total Luminaire Watts	25.9
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	8345	6274	6331
55	6626	5232	5667
65	5245	4506	5103
75	3815	3737	4220
85	2500	3235	3573

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CANDELA TABULATION

	0.0	22.5	45.0	67.5	90.0
0	1005.774	1005.774	1005.774	1005.774	1005.774
5	1009.816	1011.433	1014.667	1014.667	1017.093
10	981.519	985.561	990.412	993.646	993.646
15	931.392	940.285	946.753	949.987	951.604
20	893.392	906.328	915.222	921.690	922.498
25	804.457	820.627	833.563	842.457	845.691
30	721.990	743.820	761.607	777.777	785.053
35	649.225	676.714	705.012	732.501	743.820
40	550.588	586.162	629.013	670.246	688.033
45	464.887	508.546	568.375	629.821	654.885
50	380.803	433.356	505.312	581.311	611.226
55	305.613	364.633	452.760	540.886	574.843
60	240.933	303.996	400.207	494.802	529.567
65	184.338	252.252	359.782	458.419	491.568
70	132.594	203.742	313.698	407.484	437.398
75	88.126	158.466	264.379	347.655	372.718
80	53.361	126.126	227.997	304.804	325.825
85	25.872	95.403	192.423	260.337	277.315
90	4.042	63.063	145.530	198.082	210.210
95	0.000	59.829	139.062	185.146	194.848
100	0.000	55.786	124.509	162.508	170.593
105	0.000	52.552	112.381	144.721	151.189
110	0.000	47.701	101.871	130.168	138.253
115	0.000	43.659	92.169	117.232	124.509
120	0.000	42.042	84.084	110.764	116.424
125	0.000	38.808	75.999	98.637	105.913
130	0.000	35.574	68.722	90.552	96.211
135	0.000	32.340	61.446	79.233	86.509
140	0.000	31.531	58.212	75.190	80.850
145	0.000	32.340	54.169	71.956	75.999
150	0.000	26.680	44.467	56.595	61.446
155	0.000	26.680	40.425	50.935	53.361
160	0.000	21.829	33.148	41.233	43.659
165	0.000	19.404	29.914	33.148	34.765
170	0.000	0.000	22.638	28.297	29.106
175	0.000	0.000	10.510	20.212	20.212
180	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	363.59	N.A.	11.00
0-30	747.59	N.A.	22.70
0-40	1184.57	N.A.	35.90
0-60	2024.6	N.A.	61.40
0-80	2640.41	N.A.	80.10
0-90	2828.66	N.A.	85.80
10-90	2732.87	N.A.	82.90
20-40	820.98	N.A.	24.90
20-50	1258.19	N.A.	38.20
40-70	1187.66	N.A.	36.00
60-80	615.81	N.A.	18.70
70-80	268.18	N.A.	8.10
80-90	188.25	N.A.	5.70
90-110	232.29	N.A.	7.00
90-120	311.44	N.A.	9.40
90-130	371.57	N.A.	11.30
90-150	444.11	N.A.	13.50
90-180	468.61	N.A.	14.20
110-180	236.32	N.A.	7.20
0-180	3297.27	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	95.79
10-20	267.80
20-30	384.00
30-40	436.98
40-50	437.21
50-60	402.83
60-70	347.62
70-80	268.18
80-90	188.25
90-100	129.91
100-110	102.38
110-120	79.14
120-130	60.14
130-140	42.72
140-150	29.83
150-160	16.48
160-170	6.94
170-180	1.07

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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	97	97	97	97	94	94	94	94	87	87	87	81	81	81	75	75	75	72
1	87	83	78	75	84	79	76	72	74	71	68	68	66	64	63	62	60	57
2	79	71	65	60	76	69	63	58	64	59	55	59	55	52	55	52	49	47
3	72	63	55	50	69	60	54	48	56	51	46	52	48	44	48	45	42	39
4	66	55	48	42	63	53	46	41	50	44	39	46	41	37	43	39	36	33
5	60	49	42	36	58	48	41	35	45	38	34	42	36	32	39	35	31	29
6	56	44	37	31	53	43	36	31	40	34	30	38	32	28	35	31	27	25
7	52	40	33	28	50	39	32	27	37	31	26	34	29	25	32	28	24	22
8	48	37	30	25	46	36	29	24	34	28	23	32	26	23	30	25	22	20
9	45	34	27	22	43	33	26	22	31	25	21	29	24	20	28	23	20	18
10	42	31	25	20	41	30	24	20	29	23	19	27	22	19	26	21	18	16

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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	14.5	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
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	19.5	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	21.6	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	19.8	20.6	21.4	24.2	24.9	24.8	25.6	26.3
	6H	19.9	20.5	20.6	21.1	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

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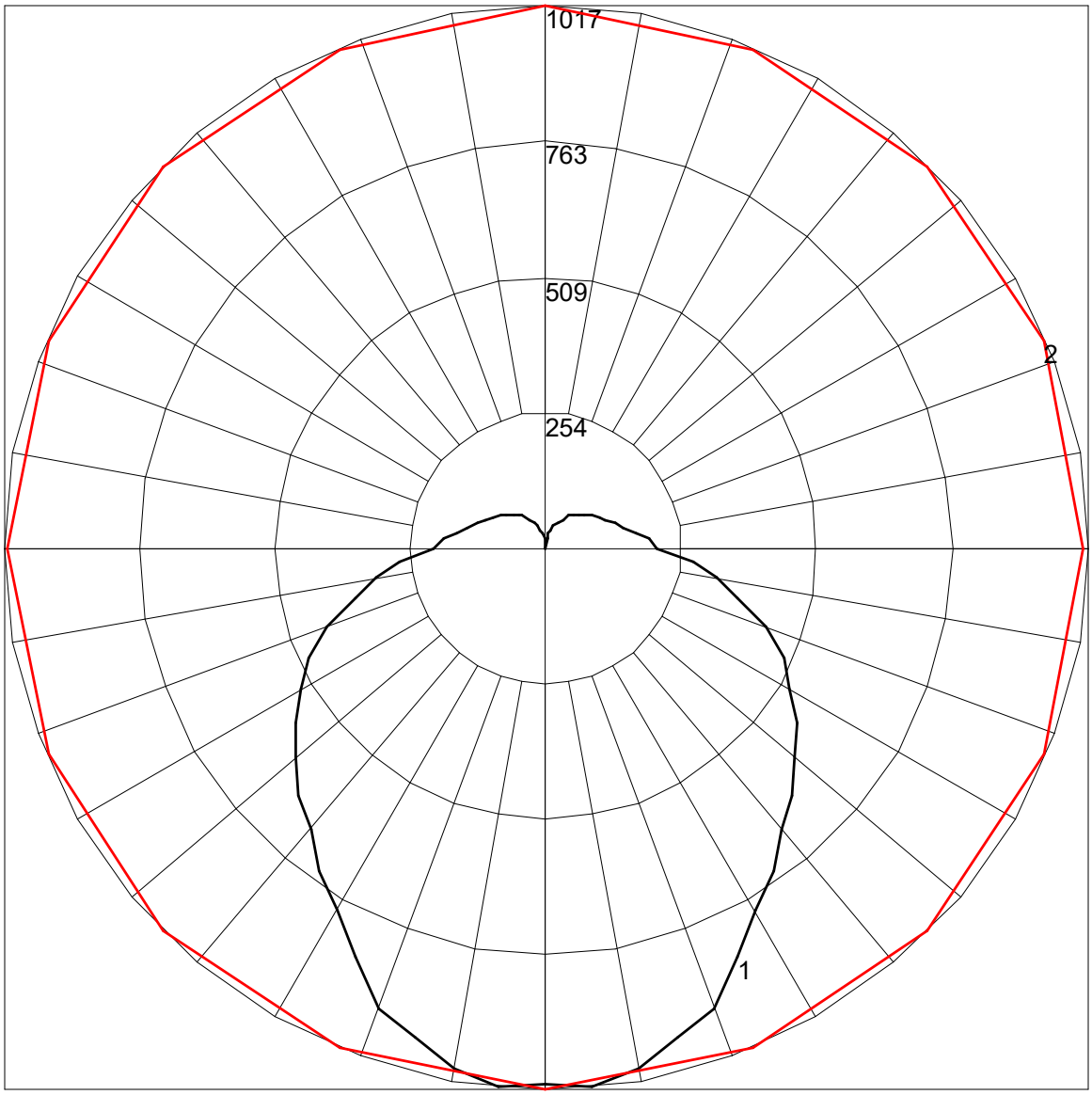
POLAR GRAPH



Maximum Candela = 1017.093 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.)

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