



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MD4ERRG-4-L80-840-A-DIM-UNV BOTH ON_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13362267.01

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 16-JUL-2020

[MANUFAC] H E Williams Inc

[LUMCAT] MD4ERRG-4-L80/840-A-DIM-UNV BOTH ON

[LUMINAIRE] Formed white steel housing, prismatic lens, clear plastic

[MORE] enclosure

[OTHER] This test was performed using the calibrated photodetector met

[MORE] hod of absolute photometry.

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	8998
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	109
Total Luminaire Watts	82.4957
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.72
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.43 ft
Luminous Width (90-270)	3.77 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	36267	31801	21358
55	35180	30714	18047
65	24890	26529	13635
75	10164	13875	7483
85	172	504	354

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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>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
0	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643
5	3633.974	3640.370	3616.713	3629.585	3632.686	3543.629	3429.738	3348.799	3472.051	3305.499
10	3846.828	3836.005	3736.329	3643.424	3596.289	3409.951	3082.228	2779.260	2840.416	2710.660
15	4027.747	3981.414	3859.278	3647.125	3527.596	3222.263	2585.351	2399.299	2528.182	2384.499
20	4168.048	4106.268	3945.804	3645.416	3418.588	2875.024	2276.413	2078.128	2184.233	2065.528
25	4237.836	4180.975	3961.027	3586.936	3259.641	2511.580	2023.554	1815.437	1869.367	1804.737
30	4246.241	4190.680	3928.112	3495.156	3063.376	2279.936	1801.191	1580.629	1598.035	1571.229
35	4188.543	4137.387	3827.594	3321.545	2821.199	2045.936	1548.228	1339.897	1347.162	1333.097
40	4058.434	4005.659	3642.524	3111.992	2560.559	1813.137	1316.428	1132.572	1125.586	1127.142
45	3839.848	3791.792	3367.014	2854.924	2261.345	1566.492	1118.530	960.577	931.652	955.437
50	3505.518	3497.176	3035.079	2524.853	1918.660	1303.896	908.646	796.050	771.875	791.980
55	3021.418	3105.980	2637.865	2123.530	1549.921	1041.675	708.583	643.890	637.230	639.760
60	2348.725	2561.920	2203.149	1682.896	1196.736	771.506	541.586	493.544	494.157	489.224
65	1575.033	1816.147	1678.767	1292.832	862.802	508.070	379.479	331.732	322.583	327.322
70	918.860	1086.330	1091.396	893.130	554.653	318.544	223.879	182.626	182.264	178.286
75	393.897	494.524	537.724	462.193	289.990	177.134	101.256	84.471	96.501	81.731
80	78.293	108.121	148.173	136.627	97.210	57.106	38.891	35.587	39.046	33.797
85	2.240	6.524	6.574	4.829	4.614	5.524	5.269	4.695	6.664	3.985
90	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Vert. Angles **Horizontal Angles**

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643	3570.643
5	3381.238	3504.229	3628.386	3635.785	3617.813	3643.670	3633.974
10	2953.128	3349.051	3590.689	3648.824	3751.429	3851.305	3846.828
15	2565.751	3108.563	3518.896	3646.825	3869.278	3994.614	4027.747
20	2259.813	2729.924	3409.288	3639.516	3944.204	4116.568	4168.048
25	2009.254	2480.280	3254.141	3579.036	3954.027	4189.175	4237.836
30	1789.991	2267.136	3055.976	3484.756	3918.012	4193.680	4246.241
35	1541.828	2038.236	2824.199	3317.445	3814.794	4136.187	4188.543
40	1312.928	1808.037	2568.659	3099.992	3628.124	3994.059	4058.434
45	1114.000	1562.492	2282.245	2841.424	3359.614	3774.492	3839.848
50	905.136	1302.096	1943.860	2520.853	3023.179	3477.576	3505.518
55	706.763	1042.355	1588.721	2122.930	2629.565	3085.180	3021.418
60	540.916	773.866	1247.436	1688.496	2196.849	2543.520	2348.725

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CANDELA TABULATION - (Cont.)

65	379.299	511.910	917.402	1303.332	1675.667	1806.547	1575.033
70	223.769	323.934	608.233	908.140	1090.996	1075.530	918.860
75	100.316	183.174	331.200	478.873	541.374	484.224	393.897
80	38.721	61.306	121.210	152.297	155.063	103.591	78.293
85	5.439	7.204	12.254	13.529	7.824	6.214	2.240
90	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	1266.67	N.A.	14.10
0-30	2672.25	N.A.	29.70
0-40	4375.78	N.A.	48.60
0-60	7652.03	N.A.	85.00
0-80	8970.12	N.A.	99.70
0-90	8997.51	N.A.	100.00
10-90	8663.66	N.A.	96.30
20-40	3109.11	N.A.	34.60
20-50	4867.86	N.A.	54.10
40-70	4249.8	N.A.	47.20
60-80	1318.09	N.A.	14.60
70-80	344.55	N.A.	3.80
80-90	27.39	N.A.	0.30
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	8997.51	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	333.85
10-20	932.82
20-30	1405.58
30-40	1703.52
40-50	1758.76
50-60	1517.49
60-70	973.55
70-80	344.55
80-90	27.39
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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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	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	107	104	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	81	98	91	85	81	88	83	79	84	80	77	81	78	75	73
3	92	82	75	68	90	81	74	68	78	72	67	75	70	65	72	68	64	62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	54
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	43	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	28	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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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

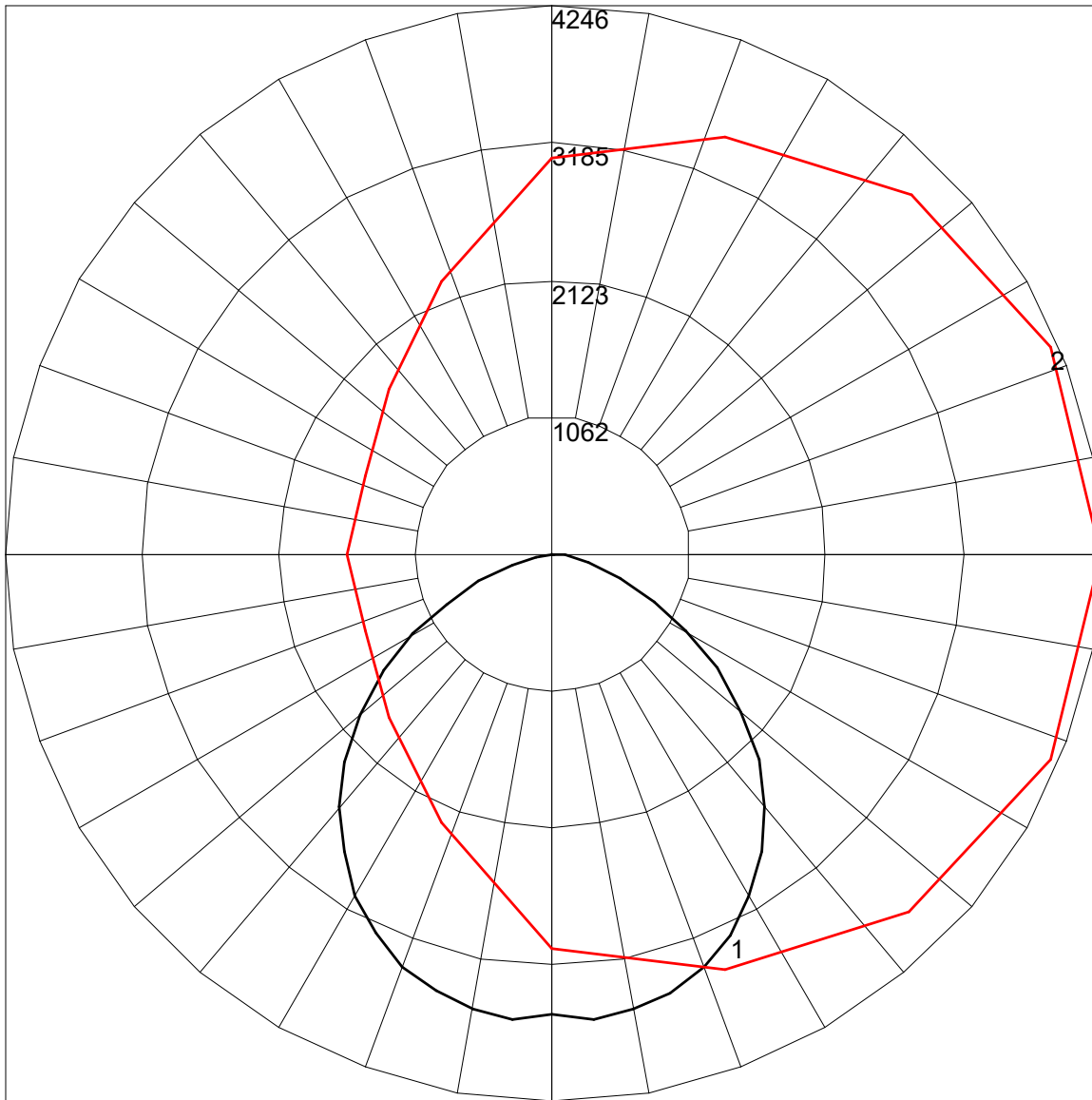
X=2H	Y=2H	26.7	28.3	27.1	28.6	28.9	22.2	23.8	22.6	24.1	24.4
	3H	27.7	29.1	28.1	29.4	29.8	23.3	24.7	23.7	25.1	25.4
	4H	27.8	29.1	28.2	29.5	29.9	23.6	24.9	24.0	25.2	25.6
	6H	27.8	29.0	28.2	29.4	29.8	23.6	24.8	24.0	25.2	25.6
	8H	27.8	28.9	28.2	29.3	29.7	23.6	24.8	24.0	25.2	25.6
	12H	27.7	28.9	28.2	29.2	29.7	23.6	24.7	24.0	25.1	25.5

UGR Viewed Endwise

4H	2H	27.1	28.4	27.5	28.8	29.2	23.1	24.4	23.4	24.7	25.1
	3H	28.2	29.3	28.7	29.7	30.1	24.3	25.4	24.7	25.8	26.2
	4H	28.4	29.4	28.9	29.8	30.3	24.6	25.6	25.1	26.0	26.5
	6H	28.4	29.3	28.9	29.7	30.2	24.7	25.6	25.2	26.0	26.5
	8H	28.4	29.2	28.9	29.6	30.1	24.7	25.5	25.2	25.9	26.4
	12H	28.4	29.1	28.9	29.6	30.0	24.7	25.4	25.2	25.9	26.3
8H	4H	28.5	29.3	28.9	29.7	30.2	24.8	25.6	25.2	26.0	26.5
	6H	28.5	29.1	29.0	29.6	30.1	24.9	25.5	25.4	26.0	26.5
	8H	28.5	29.0	29.0	29.5	30.0	24.9	25.4	25.4	25.9	26.4
	12H	28.4	28.9	28.9	29.4	30.0	24.8	25.3	25.3	25.8	26.4
12H	4H	28.5	29.2	28.9	29.6	30.1	24.7	25.5	25.2	25.9	26.4
	6H	28.5	29.1	29.0	29.5	30.1	24.9	25.4	25.4	25.9	26.4
	8H	28.4	28.9	28.9	29.4	30.0	24.8	25.4	25.3	25.8	26.4

Maximum UGR = 30.3

POLAR GRAPH



Maximum Candela = 4246.241 Located At Horizontal Angle = 0, Vertical Angle = 30
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (30) (Through Max. Cd.)