



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4D-4-00-L12-940-F-EM-10W-DIM-UNV_EM MODE ONLY.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 29653.0
 [TESTLABV] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 08/25/2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4' SUSPENDED LED DOWNLIGHT LUMINAIRE
 [MORE] WHITE ALUM BODY w/WHITE REFL & FLAT FROST LENS
 [LUMCAT] MX4D-4-00-L12-940-F-EM-10W-DIM-UNV EM MODE ONLY
 [LAMPCAT] HLMX 90 CRI 4000K CCT

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	935
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	93
Total Luminaire Watts	10
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.28
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	4.00 ft
Luminous Width (90-270)	0.32 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2685	2603	2563
55	2465	2365	2298
65	2098	2064	1996
75	1593	1667	1574
85	770	990	935

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	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	380.464	380.464	380.464	380.464	380.464
5	382.165	378.196	376.495	375.361	375.361
10	375.361	371.392	369.691	368.557	367.423
15	362.320	359.485	356.649	355.515	353.814
20	347.010	343.041	340.773	337.371	336.237
25	327.165	322.629	320.361	316.392	315.825
30	307.320	302.216	297.680	296.546	293.711
35	279.536	276.134	272.165	268.196	268.196
40	253.454	250.052	244.948	243.814	239.845
45	224.536	221.134	217.732	214.330	214.330
50	197.320	192.783	189.948	187.680	184.845
55	167.268	163.299	160.464	157.629	155.928
60	136.082	133.814	132.113	129.845	128.144
65	104.897	104.330	103.196	100.361	99.794
70	77.680	77.113	75.412	74.278	73.144
75	48.763	50.464	51.031	49.330	48.196
80	24.948	26.082	26.082	26.649	27.216
85	7.938	8.505	10.206	9.072	9.639
90	0.000	0.000	0.000	0.000	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	136.50	N.A.	14.60
0-30	284.21	N.A.	30.40
0-40	455.00	N.A.	48.70
0-60	767.57	N.A.	82.10
0-80	922.80	N.A.	98.70
0-90	934.91	N.A.	100.00
10-90	899.12	N.A.	96.20
20-40	318.50	N.A.	34.10
20-50	487.06	N.A.	52.10
40-70	414.68	N.A.	44.40
60-80	155.23	N.A.	16.60
70-80	53.12	N.A.	5.70
80-90	12.11	N.A.	1.30
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	934.91	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	35.80
10-20	100.70
20-30	147.71
30-40	170.79
40-50	168.56
50-60	144.01
60-70	102.11
70-80	53.12
80-90	12.11
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	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	87	82	77	83	79	75	80	77	74	72
3	91	81	73	67	89	80	72	67	77	70	65	74	69	64	71	67	63	61
4	84	72	64	57	82	71	63	57	68	62	56	66	60	55	64	59	55	52
5	77	65	56	50	75	64	56	49	62	54	49	60	53	48	58	52	48	46
6	72	59	50	44	70	58	49	43	56	48	43	54	48	43	53	47	42	40
7	66	53	45	39	65	52	44	39	51	44	38	49	43	38	48	42	38	36
8	62	49	40	35	60	48	40	35	47	39	34	45	39	34	44	38	34	32
9	58	45	37	31	57	44	36	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	15.1	16.7	15.5	17.0	17.3	UGR Viewed Endwise			
	3H	16.7	18.1	17.1	18.4	18.8	14.8	16.4	15.2	16.7
	4H	17.2	18.5	17.6	18.9	19.3	16.4	17.8	16.8	18.1
	6H	17.5	18.8	17.9	19.1	19.5	16.9	18.3	17.3	18.6
	8H	17.6	18.8	18.0	19.2	19.6	17.3	18.5	17.7	18.9
	12H	17.6	18.7	18.0	19.1	19.6	17.4	18.6	17.8	19.0

4H	2H	15.6	17.0	16.0	17.3	17.7	14.8	16.4	15.2	16.7
	3H	17.4	18.6	17.8	19.0	19.4	16.4	17.8	16.8	18.1
	4H	18.1	19.1	18.5	19.5	19.9	16.9	18.3	17.3	18.6
	6H	18.5	19.4	18.9	19.8	20.3	17.3	18.5	17.7	18.9
	8H	18.6	19.4	19.0	19.8	20.3	17.4	18.6	17.8	19.0
	12H	18.6	19.4	19.1	19.8	20.3	17.4	18.6	17.9	19.0

8H	4H	18.3	19.1	18.8	19.6	20.0	17.4	18.6	17.8	19.0
	6H	18.8	19.5	19.3	20.0	20.4	17.3	18.5	17.7	18.9
	8H	18.9	19.6	19.4	20.1	20.6	17.4	18.6	17.8	19.0
	12H	19.0	19.6	19.6	20.1	20.6	17.4	18.6	17.9	19.0

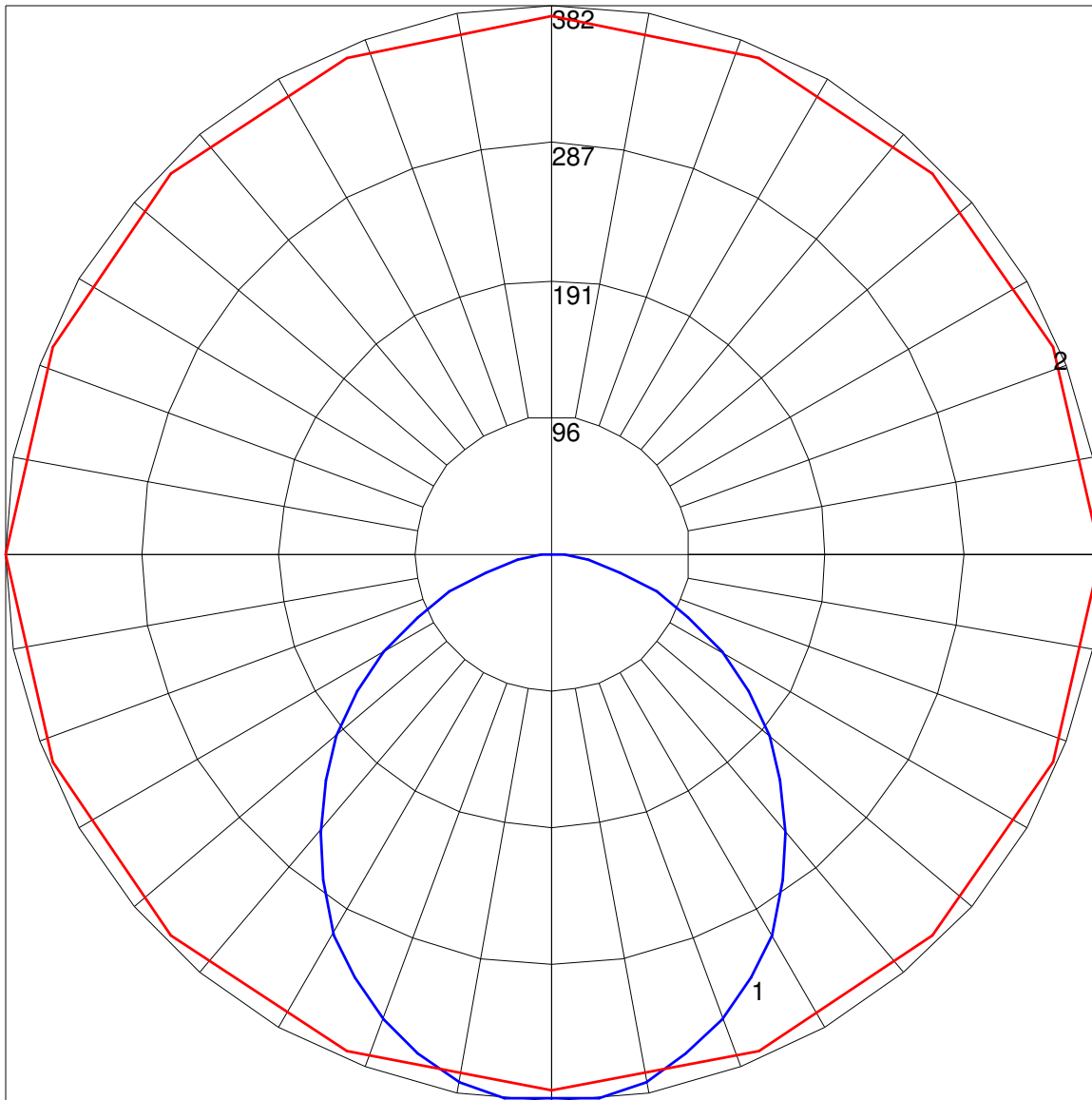
12H	4H	18.3	19.1	18.8	19.5	20.0	17.4	18.6	17.8	19.0
	6H	18.8	19.4	19.3	19.9	20.4	17.3	18.5	17.7	18.9
	8H	19.0	19.6	19.5	20.0	20.6	17.4	18.6	17.8	19.0

Maximum UGR = 20.6

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POLAR GRAPH



Maximum Candela = 382.165 Located At Horizontal Angle = 0, Vertical Angle = 5

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)