



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4D-4-00-L12-935-F-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST]GEN FROM BALLABS TEST NO. 20195.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUE DATE] 7 JAN, 2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836
 [LUMINAIRE] 4' DIRECT SUSPENDED LUMINAIRE
 [MORE] WITH FROSTED ACRYLIC LENS
 [LUMCAT] MX4D-4-L12-935-S-A-DIM-UNV
 [LAMPCAT] HLM 90 CRI, 3500K CCT
 [SEARCH_SOURCETYPE] LED
 [SEARCH_APPLICATION] Indoor, Architectural, Classroom, Direct
 [SEARCH_MOUNTING] Suspended

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3952
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	94
Total Luminaire Watts	42.2
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.30
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	11400	10886	10479
55	10504	10014	9393
65	9293	8742	8369
75	7150	6859	6806
85	3303	4090	3775

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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	1561.365	1561.365	1561.365	1561.365	1561.365
5	1593.482	1558.895	1549.013	1540.777	1532.542
10	1572.071	1535.013	1523.484	1511.131	1502.073
15	1539.954	1498.779	1477.368	1457.604	1451.839
20	1472.427	1431.251	1419.722	1385.959	1380.194
25	1377.724	1345.607	1334.078	1308.549	1302.785
30	1283.020	1254.198	1239.375	1221.258	1212.199
35	1194.082	1160.318	1136.437	1125.731	1115.849
40	1095.261	1068.909	1034.322	1017.852	1004.676
45	968.442	950.325	924.796	909.149	890.209
50	851.504	821.034	816.093	787.271	771.624
55	723.861	705.744	690.097	665.392	647.275
60	606.100	579.747	570.689	548.454	532.808
65	471.868	457.869	443.869	429.870	424.928
70	346.696	334.343	325.284	312.108	317.873
75	222.346	223.170	213.288	213.288	211.641
80	109.526	116.114	112.820	119.408	111.173
85	34.587	41.175	42.822	50.234	39.528
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	564.75	N.A.	14.30
0-30	1178.54	N.A.	29.80
0-40	1894.65	N.A.	47.90
0-60	3225.71	N.A.	81.60
0-80	3897.49	N.A.	98.60
0-90	3952.01	N.A.	100.00
10-90	3804.61	N.A.	96.30
20-40	1329.9	N.A.	33.70
20-50	2045.94	N.A.	51.80
40-70	1772.33	N.A.	44.80
60-80	671.78	N.A.	17.00
70-80	230.51	N.A.	5.80
80-90	54.52	N.A.	1.40
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	3952.01	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	147.40
10-20	417.35
20-30	613.79
30-40	716.11
40-50	716.04
50-60	615.02
60-70	441.26
70-80	230.51
80-90	54.52
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	102	99	95	98	95	92	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	73	71
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	67	63	61
4	84	72	63	57	81	71	63	56	68	61	56	66	60	55	64	58	54	52
5	77	64	56	49	75	63	55	49	61	54	48	59	53	48	57	52	47	45
6	71	58	49	43	69	57	49	43	55	48	43	54	47	42	52	46	42	40
7	66	53	44	38	64	52	44	38	51	43	38	49	42	38	48	42	37	35
8	62	48	40	34	60	48	40	34	46	39	34	45	39	34	44	38	33	32
9	58	44	36	31	56	44	36	31	43	36	31	42	35	30	41	35	30	29
10	54	41	33	28	53	41	33	28	40	33	28	39	32	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	20.2	21.8	20.6	22.1	22.4	19.7	21.3	20.1	21.6	22.0
	3H	21.9	23.3	22.2	23.6	24.0	21.3	22.8	21.7	23.1	23.5
	4H	22.4	23.7	22.8	24.1	24.5	21.9	23.3	22.3	23.6	24.0
	6H	22.7	24.0	23.1	24.3	24.7	22.3	23.5	22.7	23.9	24.3
	8H	22.8	24.0	23.2	24.4	24.8	22.4	23.6	22.8	23.9	24.3
	12H	22.8	24.0	23.2	24.3	24.8	22.4	23.6	22.8	23.9	24.4

UGR Viewed Endwise

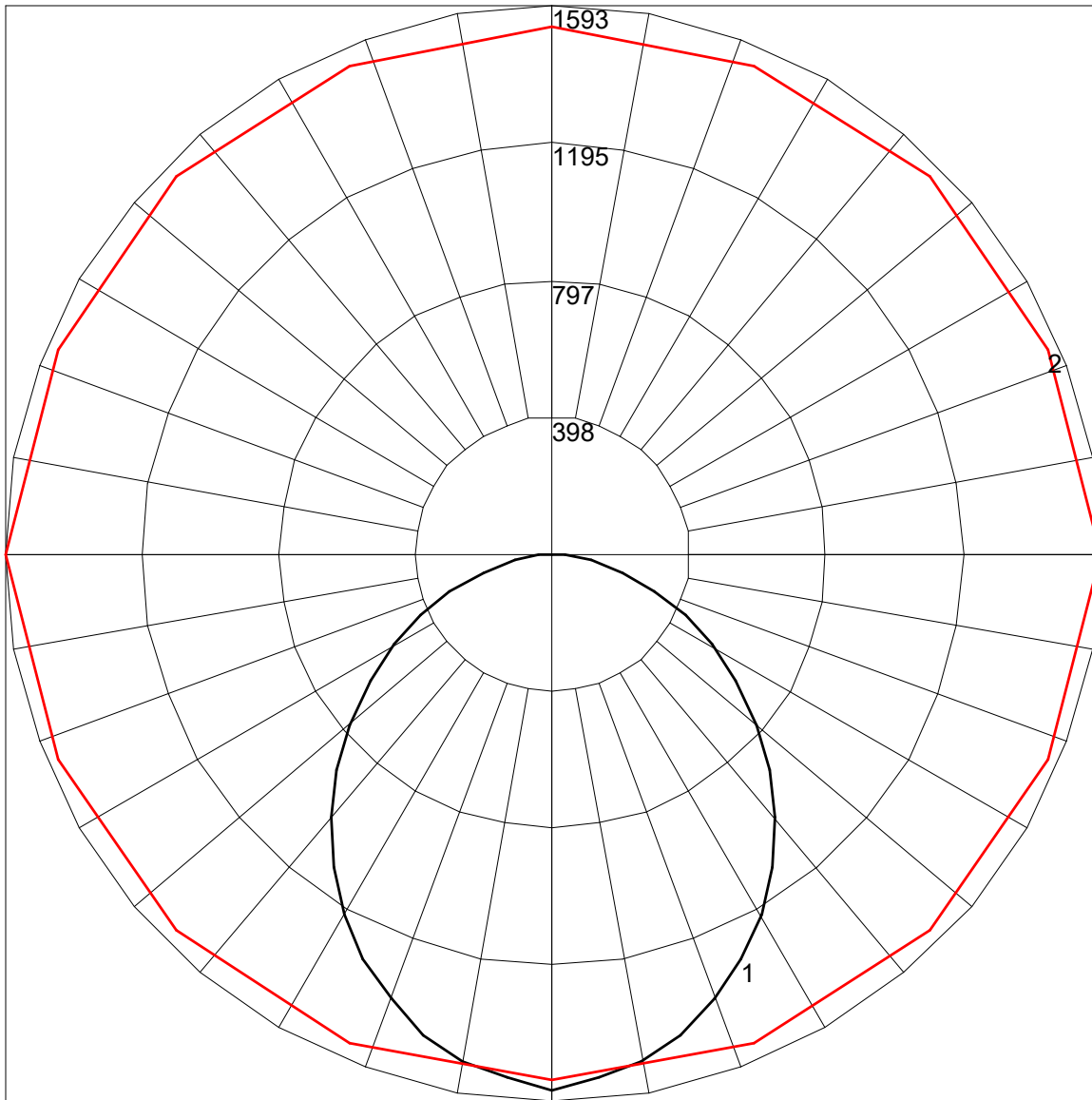
4H	2H	20.7	22.1	21.1	22.4	22.8	20.4	21.7	20.8	22.1	22.4
	3H	22.6	23.7	23.0	24.1	24.5	22.2	23.3	22.6	23.7	24.1
	4H	23.2	24.3	23.7	24.7	25.1	22.8	23.9	23.3	24.3	24.7
	6H	23.7	24.6	24.1	25.0	25.5	23.3	24.2	23.8	24.6	25.1
	8H	23.8	24.6	24.2	25.0	25.5	23.4	24.3	23.9	24.7	25.2
	12H	23.8	24.6	24.3	25.0	25.5	23.5	24.3	24.0	24.7	25.2

8H	4H	23.5	24.3	23.9	24.7	25.2	23.1	23.9	23.6	24.4	24.8
	6H	24.0	24.7	24.5	25.2	25.6	23.7	24.4	24.2	24.8	25.3
	8H	24.1	24.8	24.6	25.3	25.7	23.9	24.5	24.4	25.0	25.5
	12H	24.2	24.8	24.8	25.3	25.8	24.0	24.6	24.5	25.1	25.6

12H	4H	23.5	24.2	24.0	24.7	25.2	23.1	23.9	23.6	24.3	24.8
	6H	24.0	24.6	24.5	25.1	25.6	23.7	24.3	24.2	24.8	25.3
	8H	24.2	24.8	24.7	25.2	25.8	24.0	24.5	24.5	25.0	25.5

Maximum UGR = 25.8

POLAR GRAPH



Maximum Candela = 1593.482 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)