



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4U-4-L8-8TW-X-A.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST]GEN FROM BALLABS TEST NO. 20196.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUE DATE] 28-DEC-2017
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 2-72 LED 24" ARRAYS 4' INDIRECT SUSPENDED LUMINAIRE
 [MORE] WHITE REFL w/FROSTED ACRYLIC LENS
 [LUMCAT] MX4U-4-L4-8TW-x-A

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 3384 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 126 |
| Total Luminaire Watts | 26.8 |
| Ballast Factor | 1.00 |
| CIE Type | Indirect |
| Spacing Criterion (0-180) | N.A. |
| Spacing Criterion (90-270) | N.A. |
| Spacing Criterion (Diagonal) | N.A. |
| 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 | 0 | 0 | 0 |
| 55 | 0 | 0 | 0 |
| 65 | 0 | 0 | 0 |
| 75 | 0 | 0 | 0 |
| 85 | 0 | 0 | 0 |

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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 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 5 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 10 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 15 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 20 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 25 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 30 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 35 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 40 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 45 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 50 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 55 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 60 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 65 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 70 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 75 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 80 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 85 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 95 | 19.508 | 25.779 | 18.812 | 13.238 | 16.721 |
| 100 | 85.001 | 78.033 | 63.402 | 55.738 | 51.558 |
| 105 | 160.247 | 139.345 | 121.927 | 103.115 | 102.419 |
| 110 | 262.666 | 236.887 | 198.567 | 167.214 | 169.304 |
| 115 | 379.716 | 342.789 | 283.568 | 241.067 | 240.371 |
| 120 | 510.004 | 469.594 | 397.134 | 337.912 | 330.945 |
| 125 | 639.595 | 603.365 | 512.791 | 461.930 | 428.487 |
| 130 | 784.514 | 731.563 | 648.652 | 593.611 | 538.569 |
| 135 | 927.343 | 855.580 | 813.080 | 742.710 | 683.489 |
| 140 | 1060.417 | 990.745 | 969.146 | 887.629 | 845.129 |
| 145 | 1181.648 | 1121.033 | 1105.008 | 1029.065 | 1000.499 |
| 150 | 1289.640 | 1227.632 | 1211.607 | 1162.140 | 1139.148 |
| 155 | 1380.912 | 1314.026 | 1307.059 | 1277.099 | 1253.411 |
| 160 | 1446.404 | 1392.756 | 1392.059 | 1370.461 | 1346.772 |
| 165 | 1488.904 | 1454.068 | 1447.101 | 1430.379 | 1410.871 |
| 170 | 1525.831 | 1496.568 | 1485.421 | 1468.002 | 1461.035 |
| 175 | 1548.126 | 1516.773 | 1510.503 | 1498.658 | 1491.691 |
| 180 | 1531.404 | 1531.404 | 1531.404 | 1531.404 | 1531.404 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 0.00 | N.A. | 0.00 |
| 0-30 | 0.00 | N.A. | 0.00 |
| 0-40 | 0.00 | N.A. | 0.00 |
| 0-60 | 0.00 | N.A. | 0.00 |
| 0-80 | 0.00 | N.A. | 0.00 |
| 0-90 | 0.00 | N.A. | 0.00 |
| 10-90 | 0.00 | N.A. | 0.00 |
| 20-40 | 0.00 | N.A. | 0.00 |
| 20-50 | 0.00 | N.A. | 0.00 |
| 40-70 | 0.00 | N.A. | 0.00 |
| 60-80 | 0.00 | N.A. | 0.00 |
| 70-80 | 0.00 | N.A. | 0.00 |
| 80-90 | 0.00 | N.A. | 0.00 |
| 90-110 | 165.20 | N.A. | 4.90 |
| 90-120 | 461.88 | N.A. | 13.60 |
| 90-130 | 935.91 | N.A. | 27.70 |
| 90-150 | 2233.44 | N.A. | 66.00 |
| 90-180 | 3384.11 | N.A. | 100.00 |
| 110-180 | 3218.91 | N.A. | 95.10 |
| 0-180 | 3384.11 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 0.00 |
| 10-20 | 0.00 |
| 20-30 | 0.00 |
| 30-40 | 0.00 |
| 40-50 | 0.00 |
| 50-60 | 0.00 |
| 60-70 | 0.00 |
| 70-80 | 0.00 |
| 80-90 | 0.00 |
| 90-100 | 28.39 |
| 100-110 | 136.81 |
| 110-120 | 296.69 |
| 120-130 | 474.03 |
| 130-140 | 620.45 |
| 140-150 | 677.08 |
| 150-160 | 599.68 |
| 160-170 | 407.38 |
| 170-180 | 143.60 |

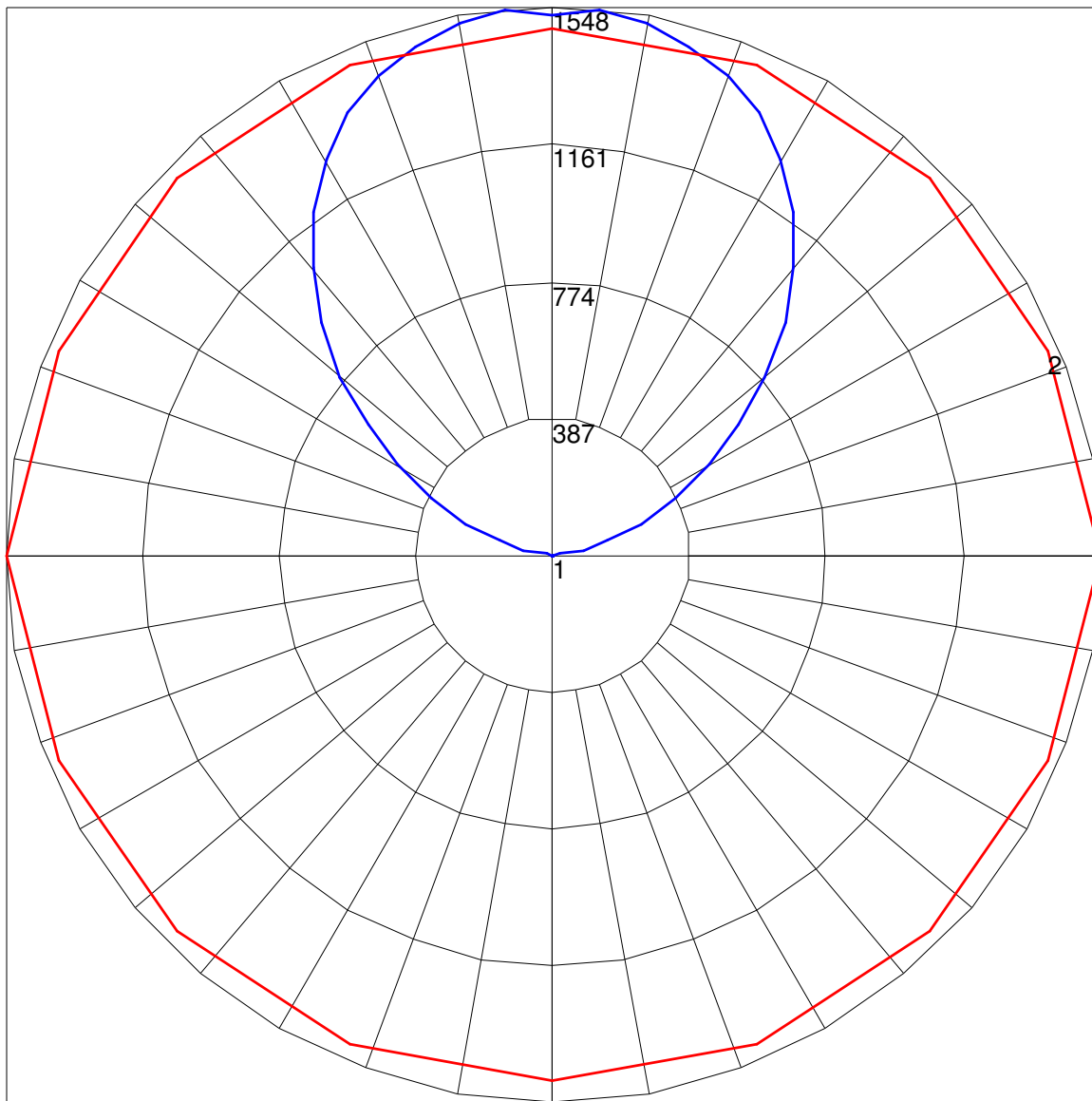
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

| RC RW | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | |
| 0 | 95 | 95 | 95 | 95 | 81 | 81 | 81 | 81 | 55 | 55 | 55 | 32 | 32 | 32 | 10 | 10 | 10 | 0 |
| 1 | 86 | 82 | 79 | 75 | 73 | 70 | 67 | 65 | 48 | 46 | 45 | 28 | 27 | 26 | 9 | 9 | 8 | 0 |
| 2 | 78 | 72 | 66 | 61 | 67 | 61 | 57 | 53 | 42 | 39 | 37 | 24 | 23 | 22 | 8 | 7 | 7 | 0 |
| 3 | 71 | 63 | 56 | 51 | 61 | 54 | 48 | 44 | 37 | 34 | 31 | 21 | 20 | 18 | 7 | 6 | 6 | 0 |
| 4 | 65 | 55 | 48 | 43 | 55 | 47 | 42 | 37 | 33 | 29 | 26 | 19 | 17 | 15 | 6 | 6 | 5 | 0 |
| 5 | 59 | 49 | 42 | 36 | 51 | 42 | 36 | 31 | 29 | 25 | 22 | 17 | 15 | 13 | 5 | 5 | 4 | 0 |
| 6 | 55 | 44 | 36 | 31 | 46 | 37 | 31 | 27 | 26 | 22 | 19 | 15 | 13 | 11 | 5 | 4 | 4 | 0 |
| 7 | 50 | 39 | 32 | 27 | 43 | 34 | 28 | 23 | 23 | 19 | 17 | 13 | 11 | 10 | 4 | 4 | 3 | 0 |
| 8 | 46 | 35 | 28 | 23 | 39 | 30 | 24 | 20 | 21 | 17 | 14 | 12 | 10 | 9 | 4 | 3 | 3 | 0 |
| 9 | 43 | 32 | 25 | 20 | 36 | 27 | 22 | 18 | 19 | 15 | 13 | 11 | 9 | 8 | 4 | 3 | 2 | 0 |
| 10 | 40 | 29 | 22 | 18 | 34 | 25 | 19 | 16 | 17 | 14 | 11 | 10 | 8 | 7 | 3 | 3 | 2 | 0 |

POLAR GRAPH



Maximum Candela = 1548.126 Located At Horizontal Angle = 0, Vertical Angle = 175
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (175) (Through Max. Cd.)