H.E. WILLIAMS, INC.

**IES INDOOR REPORT**
**PHOTOMETRIC FILENAME : MX4D-4-00-L12-835-F-DIM-UNV.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002
[TEST]GEN FROM BALLABS TEST NO. 29653.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 02-NOV-2018
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
[LUMINAIRE] 2-72 LED 23.75"ARRAYS 4'DOWNLIGHT LUMINAIRE
[MORE] WHITE ALUM BODY w/WHITE REFL & FLAT FROST LENS
[MORE] ADVANCE #XI036C100V054DSM5 @375mA
[LUMCAT] MX4D-4-00-L12-835-F-DIM-UNV
[LAMPCAT] MX2472_2835 REV A 10560314

**CHARACTERISTICS**

| | |
|---|---|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 4858 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 112 |
| Total Luminaire Watts | 43.2 |
| 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 | 13948 | 13526 | 13314 |
| 55 | 12810 | 12289 | 11941 |
| 65 | 10903 | 10726 | 10372 |
| 75 | 8276 | 8661 | 8180 |
| 85 | 4001 | 5144 | 4858 |

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**CANDELA TABULATION**

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|---|---|---|---|---|---|
| **0** | 1976.785 | 1976.785 | 1976.785 | 1976.785 | 1976.785 |
| **5** | 1985.623 | 1965.001 | 1956.163 | 1950.271 | 1950.271 |
| **10** | 1950.271 | 1929.648 | 1920.810 | 1914.918 | 1909.026 |
| **15** | 1882.512 | 1867.782 | 1853.052 | 1847.160 | 1838.321 |
| **20** | 1802.969 | 1782.347 | 1770.563 | 1752.887 | 1746.995 |
| **25** | 1699.858 | 1676.290 | 1664.506 | 1643.884 | 1640.938 |
| **30** | 1596.747 | 1570.233 | 1546.665 | 1540.773 | 1526.043 |
| **35** | 1452.392 | 1434.716 | 1414.093 | 1393.471 | 1393.471 |
| **40** | 1316.875 | 1299.198 | 1272.684 | 1266.792 | 1246.170 |
| **45** | 1166.627 | 1148.951 | 1131.275 | 1113.599 | 1113.599 |
| **50** | 1025.218 | 1001.650 | 986.919 | 975.135 | 960.405 |
| **55** | 869.078 | 848.456 | 833.726 | 818.996 | 810.158 |
| **60** | 707.047 | 695.263 | 686.425 | 674.640 | 665.802 |
| **65** | 545.015 | 542.069 | 536.177 | 521.447 | 518.501 |
| **70** | 403.606 | 400.660 | 391.822 | 385.930 | 380.038 |
| **75** | 253.358 | 262.196 | 265.143 | 256.304 | 250.412 |
| **80** | 129.625 | 135.517 | 135.517 | 138.463 | 141.409 |
| **85** | 41.244 | 44.190 | 53.029 | 47.136 | 50.082 |
| **90** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-20 | 709.21 | N.A. | 14.60 |
| 0-30 | 1476.68 | N.A. | 30.40 |
| 0-40 | 2364.05 | N.A. | 48.70 |
| 0-60 | 3988.06 | N.A. | 82.10 |
| 0-80 | 4794.62 | N.A. | 98.70 |
| 0-90 | 4857.56 | N.A. | 100.00 |
| 10-90 | 4671.57 | N.A. | 96.20 |
| 20-40 | 1654.84 | N.A. | 34.10 |
| 20-50 | 2530.64 | N.A. | 52.10 |
| 40-70 | 2154.56 | N.A. | 44.40 |
| 60-80 | 806.56 | N.A. | 16.60 |
| 70-80 | 276.00 | N.A. | 5.70 |
| 80-90 | 62.94 | 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 | 4857.56 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

| Zone | Lumens |
|---|---|
| 0-10 | 185.99 |
| 10-20 | 523.22 |
| 20-30 | 767.47 |
| 30-40 | 887.38 |
| 40-50 | 875.79 |
| 50-60 | 748.22 |
| 60-70 | 530.55 |
| 70-80 | 276.00 |
| 80-90 | 62.94 |
| 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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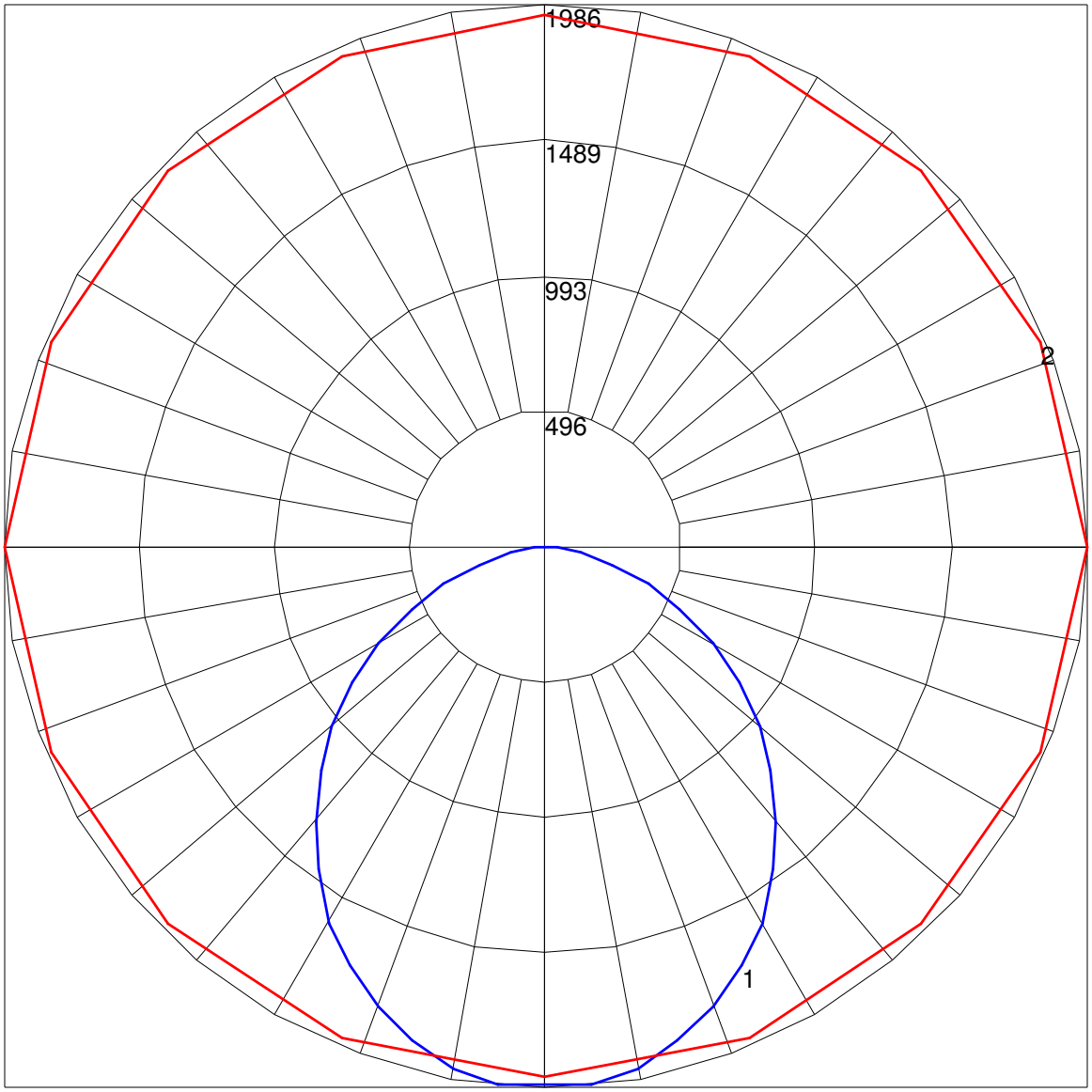
**POLAR GRAPH**




Maximum Candela = 1985.623  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.)