



IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4WUD-8-00-P7-835U-P7-835D-AF-POE-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20659.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 15-MAR-2020

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] 2-72 LED-UP 4-72 LED-DOWN 23.75" ARRAYS 8' LUMINAIRE

[MORE] WHITE ALUM BODY w/REFL & FLAT FROST LENSES-UP/DOWN

[LUMCAT] MX4WUD-8-00-P7-835U-P7-835D-AF-PoE-UNV

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 11480 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 120 |
| Total Luminaire Watts | 96 |
| Ballast Factor | 1.00 |
| CIE Type | General Diffuse |
| 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) | 8.00 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 | 7421 | 7258 | 7075 |
| 55 | 6761 | 6535 | 6309 |
| 65 | 5731 | 5560 | 5322 |
| 75 | 4345 | 4233 | 4233 |
| 85 | 2316 | 2481 | 2150 |

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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 | 2117.968 | 2117.968 | 2117.968 | 2117.968 | 2117.968 |
| 5 | 2141.842 | 2111.147 | 2100.915 | 2094.094 | 2090.683 |
| 10 | 2097.504 | 2063.399 | 2056.577 | 2042.935 | 2042.935 |
| 15 | 2032.703 | 1998.598 | 1984.955 | 1974.724 | 1967.902 |
| 20 | 1937.207 | 1906.512 | 1892.870 | 1882.638 | 1872.406 |
| 25 | 1824.658 | 1793.963 | 1783.731 | 1766.678 | 1759.857 |
| 30 | 1688.235 | 1667.772 | 1657.540 | 1633.666 | 1613.202 |
| 35 | 1541.580 | 1538.170 | 1521.117 | 1493.832 | 1476.779 |
| 40 | 1398.336 | 1374.462 | 1371.052 | 1343.767 | 1330.125 |
| 45 | 1241.450 | 1224.397 | 1214.165 | 1180.059 | 1183.470 |
| 50 | 1077.742 | 1067.510 | 1057.279 | 1029.994 | 1019.762 |
| 55 | 917.445 | 907.213 | 886.750 | 866.286 | 856.055 |
| 60 | 740.095 | 736.684 | 712.810 | 702.579 | 692.347 |
| 65 | 572.977 | 569.566 | 555.924 | 545.692 | 532.050 |
| 70 | 422.911 | 412.680 | 395.627 | 402.448 | 395.627 |
| 75 | 266.025 | 259.204 | 259.204 | 266.025 | 259.204 |
| 80 | 133.012 | 146.655 | 146.655 | 146.655 | 136.423 |
| 85 | 47.748 | 51.159 | 51.159 | 51.159 | 44.337 |
| 90 | 3.411 | 3.411 | 3.411 | 3.411 | 3.411 |
| 95 | 78.443 | 81.854 | 78.443 | 68.212 | 68.212 |
| 100 | 184.171 | 180.761 | 180.761 | 167.118 | 153.476 |
| 105 | 317.184 | 317.184 | 300.131 | 283.078 | 259.204 |
| 110 | 497.944 | 487.712 | 457.017 | 443.375 | 419.501 |
| 115 | 675.294 | 658.241 | 637.778 | 603.672 | 576.387 |
| 120 | 893.571 | 893.571 | 839.002 | 801.485 | 781.022 |
| 125 | 1111.848 | 1128.901 | 1053.868 | 1029.994 | 995.888 |
| 130 | 1347.178 | 1360.820 | 1296.019 | 1258.503 | 1231.218 |
| 135 | 1562.044 | 1541.580 | 1521.117 | 1504.064 | 1497.243 |
| 140 | 1763.268 | 1759.857 | 1749.626 | 1725.752 | 1732.573 |
| 145 | 1937.207 | 1940.618 | 1930.386 | 1913.333 | 1940.618 |
| 150 | 2097.504 | 2104.325 | 2100.915 | 2077.041 | 2111.147 |
| 155 | 2220.285 | 2230.517 | 2230.517 | 2213.464 | 2247.570 |
| 160 | 2315.781 | 2336.245 | 2326.013 | 2315.781 | 2336.245 |
| 165 | 2394.224 | 2414.688 | 2394.224 | 2394.224 | 2404.456 |
| 170 | 2438.562 | 2462.436 | 2441.972 | 2438.562 | 2431.741 |
| 175 | 2472.668 | 2493.131 | 2472.668 | 2469.257 | 2452.204 |
| 180 | 2479.489 | 2479.489 | 2479.489 | 2479.489 | 2479.489 |

IES INDOOR REPORT**PHOTOMETRIC FILENAME : MX4WUD-8-00-P7-835U-P7-835D-AF-POE-UNV_.IES****ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Lamp | %Fixt |
|---------|----------|-------|--------|
| 0-20 | 759.86 | N.A. | 6.60 |
| 0-30 | 1580.81 | N.A. | 13.80 |
| 0-40 | 2527.66 | N.A. | 22.00 |
| 0-60 | 4252.14 | N.A. | 37.00 |
| 0-80 | 5087.69 | N.A. | 44.30 |
| 0-90 | 5154.87 | N.A. | 44.90 |
| 10-90 | 4955.43 | N.A. | 43.20 |
| 20-40 | 1767.8 | N.A. | 15.40 |
| 20-50 | 2700.26 | N.A. | 23.50 |
| 40-70 | 2277.27 | N.A. | 19.80 |
| 60-80 | 835.55 | N.A. | 7.30 |
| 70-80 | 282.76 | N.A. | 2.50 |
| 80-90 | 67.18 | N.A. | 0.60 |
| 90-110 | 413.99 | N.A. | 3.60 |
| 90-120 | 1049.16 | N.A. | 9.10 |
| 90-130 | 2005.37 | N.A. | 17.50 |
| 90-150 | 4388.18 | N.A. | 38.20 |
| 90-180 | 6325.03 | N.A. | 55.10 |
| 110-180 | 5911.04 | N.A. | 51.50 |
| 0-180 | 11479.91 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|---------|
| 0-10 | 199.45 |
| 10-20 | 560.41 |
| 20-30 | 820.96 |
| 30-40 | 946.84 |
| 40-50 | 932.46 |
| 50-60 | 792.03 |
| 60-70 | 552.78 |
| 70-80 | 282.76 |
| 80-90 | 67.18 |
| 90-100 | 89.48 |
| 100-110 | 324.52 |
| 110-120 | 635.16 |
| 120-130 | 956.21 |
| 130-140 | 1176.33 |
| 140-150 | 1206.49 |
| 150-160 | 1024.71 |
| 160-170 | 676.95 |
| 170-180 | 235.19 |

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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 | 212 | 212 | 212 | 212 | 194 | 194 | 194 | 194 | 161 | 161 | 161 | 131 | 131 | 131 | 103 | 103 | 103 | 90 |
| 1 | 194 | 185 | 178 | 171 | 177 | 170 | 164 | 158 | 142 | 137 | 133 | 116 | 112 | 110 | 92 | 90 | 88 | 76 |
| 2 | 177 | 162 | 150 | 140 | 161 | 149 | 139 | 130 | 125 | 117 | 111 | 102 | 97 | 92 | 81 | 77 | 74 | 65 |
| 3 | 161 | 143 | 128 | 117 | 147 | 131 | 119 | 109 | 110 | 101 | 93 | 90 | 84 | 78 | 72 | 67 | 64 | 55 |
| 4 | 148 | 126 | 111 | 99 | 135 | 117 | 103 | 92 | 98 | 88 | 80 | 81 | 73 | 67 | 64 | 59 | 55 | 47 |
| 5 | 135 | 113 | 97 | 85 | 124 | 104 | 90 | 79 | 88 | 77 | 69 | 72 | 64 | 58 | 58 | 52 | 48 | 41 |
| 6 | 125 | 101 | 85 | 74 | 114 | 93 | 79 | 69 | 79 | 68 | 60 | 65 | 57 | 51 | 53 | 47 | 42 | 36 |
| 7 | 115 | 91 | 76 | 65 | 106 | 84 | 71 | 61 | 72 | 61 | 53 | 60 | 51 | 45 | 48 | 42 | 38 | 32 |
| 8 | 107 | 83 | 68 | 57 | 98 | 77 | 63 | 54 | 65 | 55 | 47 | 54 | 46 | 40 | 44 | 38 | 34 | 29 |
| 9 | 100 | 76 | 61 | 51 | 91 | 70 | 57 | 48 | 60 | 49 | 42 | 50 | 42 | 36 | 41 | 35 | 31 | 26 |
| 10 | 93 | 69 | 55 | 46 | 85 | 64 | 52 | 43 | 55 | 45 | 38 | 46 | 38 | 33 | 38 | 32 | 28 | 24 |

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UGR TABLE - CORRECTED

Reflectances

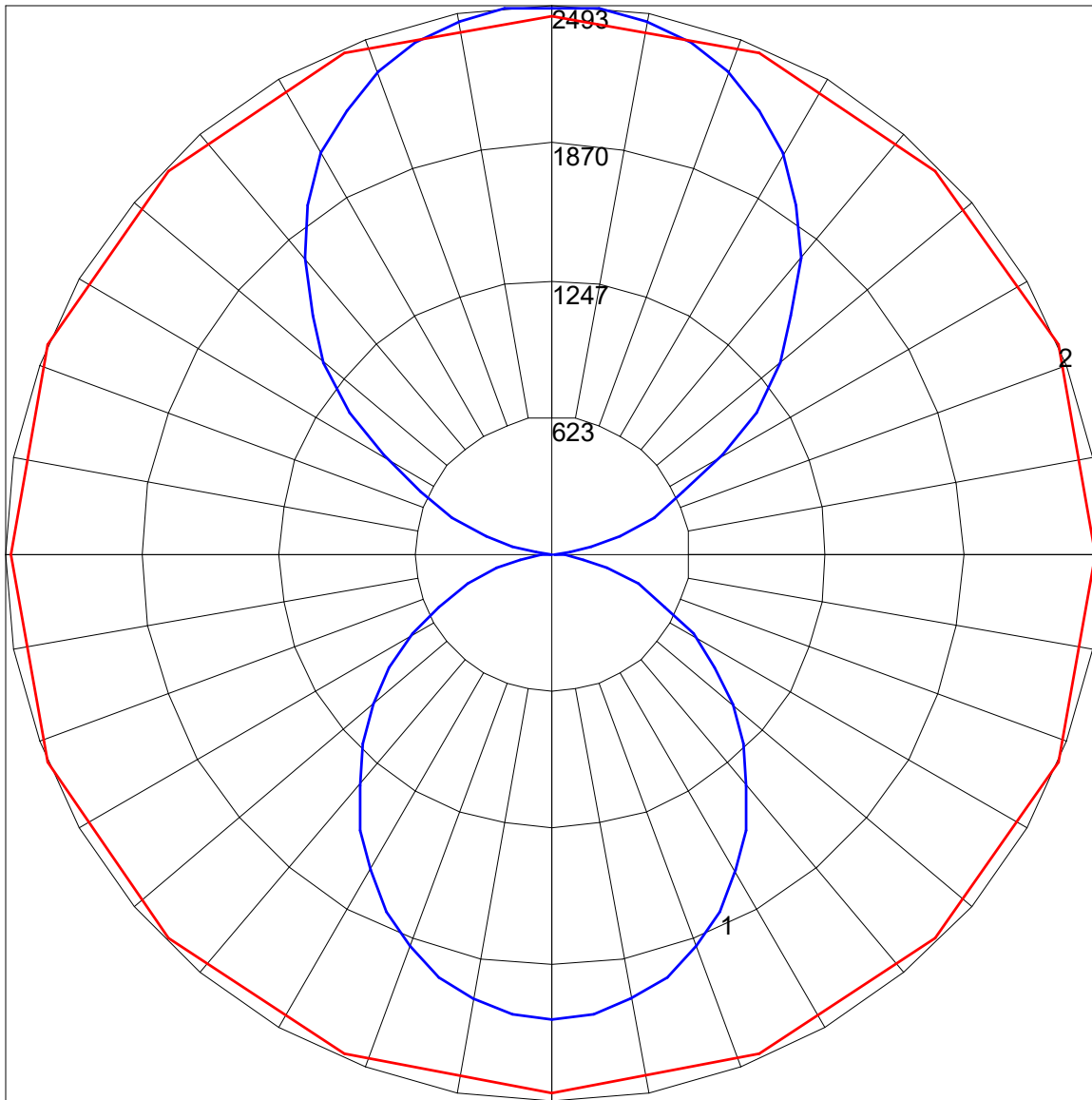
| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| Ceiling Cavity | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Walls | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Floor Cavity | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

Room Size UGR Viewed Crosswise

| X=2H | Y=2H | 14.3 | 15.1 | 15.3 | 16.1 | 17.5 | UGR Viewed Endwise | | | | | |
|------|------|------|------|------|------|------|--------------------|------|------|------|------|--|
| | 3H | 15.8 | 16.5 | 16.8 | 17.5 | 18.9 | 13.9 | 14.8 | 14.9 | 15.8 | 17.1 | |
| | 4H | 16.2 | 16.9 | 17.3 | 17.9 | 19.3 | 15.4 | 16.2 | 16.4 | 17.2 | 18.5 | |
| | 6H | 16.5 | 17.1 | 17.5 | 18.2 | 19.5 | 15.9 | 16.6 | 16.9 | 17.6 | 19.0 | |
| | 8H | 16.5 | 17.1 | 17.6 | 18.2 | 19.6 | 16.2 | 16.8 | 17.2 | 17.9 | 19.3 | |
| | 12H | 16.6 | 17.1 | 17.6 | 18.2 | 19.6 | 16.3 | 16.9 | 17.3 | 17.9 | 19.3 | |
| 4H | 2H | 14.7 | 15.4 | 15.8 | 16.4 | 17.8 | 16.3 | 16.9 | 17.3 | 17.9 | 19.3 | |
| | 3H | 16.4 | 17.0 | 17.4 | 18.0 | 19.4 | 14.4 | 15.1 | 15.5 | 16.1 | 17.5 | |
| | 4H | 17.0 | 17.5 | 18.0 | 18.5 | 19.9 | 16.1 | 16.7 | 17.1 | 17.7 | 19.1 | |
| | 6H | 17.3 | 17.8 | 18.4 | 18.8 | 20.2 | 16.7 | 17.2 | 17.8 | 18.3 | 19.7 | |
| | 8H | 17.4 | 17.8 | 18.5 | 18.9 | 20.3 | 17.1 | 17.6 | 18.2 | 18.6 | 20.0 | |
| | 12H | 17.4 | 17.8 | 18.5 | 18.9 | 20.3 | 17.2 | 17.6 | 18.3 | 18.7 | 20.1 | |
| 8H | 4H | 17.1 | 17.5 | 18.2 | 18.6 | 20.0 | 17.2 | 17.6 | 18.3 | 18.7 | 20.1 | |
| | 6H | 17.6 | 17.9 | 18.6 | 19.0 | 20.4 | 16.9 | 17.3 | 17.9 | 18.4 | 19.8 | |
| | 8H | 17.7 | 18.0 | 18.8 | 19.1 | 20.5 | 17.4 | 17.8 | 18.5 | 18.9 | 20.3 | |
| | 12H | 17.8 | 18.1 | 18.9 | 19.2 | 20.6 | 17.6 | 17.9 | 18.6 | 19.0 | 20.4 | |
| 12H | 4H | 17.1 | 17.5 | 18.1 | 18.5 | 20.0 | 17.7 | 17.9 | 18.7 | 19.0 | 20.5 | |
| | 6H | 17.6 | 17.9 | 18.7 | 19.0 | 20.4 | 16.9 | 17.3 | 17.9 | 18.3 | 19.7 | |
| | 8H | 17.8 | 18.0 | 18.9 | 19.1 | 20.6 | 17.4 | 17.7 | 18.5 | 18.8 | 20.3 | |

Maximum UGR = 20.6

POLAR GRAPH



Maximum Candela = 2493.131 Located At Horizontal Angle = 22.5, Vertical Angle = 175
1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (175) (Through Max. Cd.)