



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT3-24-L100-835-D-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 19260.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 3-JAN-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 4-56 LED 22" ARRAYS 2x4' RECESSED LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC CONCAVE LX4 LENS IN DOOR

[LUMCAT] AT3-24-L100-835-D-DIM-UNV

[_SEARCH_SOURCETYPE]LED

[_SEARCH_APPLICATION]INDOOR,COMMERCIAL,DIRECT,OFFICE,ARCHITECTURAL

[_SEARCH_MOUNTING]RECESSED

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 9719 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 112 |
| Total Luminaire Watts | 86.89 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.12 |
| Spacing Criterion (90-270) | 1.22 |
| Spacing Criterion (Diagonal) | 1.30 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.76 ft |
| Luminous Width (90-270) | 1.88 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 4427 | 4949 | 5279 |
| 55 | 3773 | 4372 | 4652 |
| 65 | 3425 | 4184 | 4495 |
| 75 | 2913 | 3984 | 3984 |
| 85 | 2581 | 1840 | 1721 |

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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 | 3872.705 | 3872.705 | 3872.705 | 3872.705 | 3872.705 |
| 5 | 3852.222 | 3853.588 | 3853.588 | 3854.953 | 3856.319 |
| 10 | 3774.386 | 3778.482 | 3788.041 | 3800.331 | 3808.524 |
| 15 | 3635.099 | 3644.658 | 3666.507 | 3699.280 | 3714.301 |
| 20 | 3426.170 | 3446.653 | 3498.544 | 3561.359 | 3587.305 |
| 25 | 3144.866 | 3170.812 | 3247.283 | 3331.947 | 3370.182 |
| 30 | 2848.541 | 3127.114 | 2953.689 | 2944.130 | 3158.522 |
| 35 | 2548.120 | 2594.549 | 2727.007 | 2856.735 | 2905.895 |
| 40 | 2259.988 | 2313.245 | 2471.649 | 2598.645 | 2639.612 |
| 45 | 2052.425 | 2117.971 | 2294.127 | 2410.199 | 2447.069 |
| 50 | 1727.423 | 1802.529 | 1966.395 | 2061.983 | 2086.563 |
| 55 | 1418.808 | 1496.645 | 1644.125 | 1721.961 | 1749.272 |
| 60 | 1153.891 | 1234.459 | 1360.090 | 1431.098 | 1454.313 |
| 65 | 949.059 | 1037.819 | 1159.354 | 1226.266 | 1245.383 |
| 70 | 718.280 | 812.503 | 923.113 | 976.370 | 985.929 |
| 75 | 494.330 | 588.553 | 675.948 | 684.142 | 675.948 |
| 80 | 319.539 | 415.128 | 406.934 | 282.669 | 256.724 |
| 85 | 147.480 | 169.328 | 105.148 | 99.685 | 98.320 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 1399.67 | N.A. | 14.40 |
| 0-30 | 2900.25 | N.A. | 29.80 |
| 0-40 | 4609.56 | N.A. | 47.40 |
| 0-60 | 7785.44 | N.A. | 80.10 |
| 0-80 | 9557.02 | N.A. | 98.30 |
| 0-90 | 9719.43 | N.A. | 100.00 |
| 10-90 | 9353.62 | N.A. | 96.20 |
| 20-40 | 3209.89 | N.A. | 33.00 |
| 20-50 | 4934.19 | N.A. | 50.80 |
| 40-70 | 4286.32 | N.A. | 44.10 |
| 60-80 | 1771.58 | N.A. | 18.20 |
| 70-80 | 661.14 | N.A. | 6.80 |
| 80-90 | 162.41 | N.A. | 1.70 |
| 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 | 9719.43 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|---------|
| 0-10 | 365.81 |
| 10-20 | 1033.86 |
| 20-30 | 1500.58 |
| 30-40 | 1709.31 |
| 40-50 | 1724.3 |
| 50-60 | 1451.58 |
| 60-70 | 1110.44 |
| 70-80 | 661.14 |
| 80-90 | 162.41 |
| 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 | 299 | 299 | 299 | 299 | 292 | 292 | 292 | 292 | 279 | 279 | 279 | 267 | 267 | 267 | 256 | 256 | 256 | 251 |
| 1 | 273 | 262 | 251 | 242 | 267 | 256 | 246 | 238 | 245 | 237 | 230 | 236 | 229 | 223 | 227 | 221 | 217 | 211 |
| 2 | 249 | 229 | 212 | 198 | 243 | 224 | 209 | 196 | 215 | 202 | 191 | 207 | 196 | 187 | 199 | 191 | 183 | 177 |
| 3 | 228 | 202 | 182 | 166 | 222 | 198 | 179 | 164 | 190 | 174 | 161 | 183 | 170 | 158 | 177 | 165 | 156 | 150 |
| 4 | 209 | 179 | 158 | 141 | 203 | 176 | 156 | 140 | 170 | 152 | 138 | 164 | 149 | 136 | 158 | 145 | 134 | 129 |
| 5 | 192 | 161 | 139 | 122 | 187 | 158 | 137 | 121 | 153 | 134 | 120 | 148 | 132 | 119 | 143 | 129 | 118 | 112 |
| 6 | 178 | 145 | 123 | 107 | 173 | 143 | 122 | 107 | 138 | 120 | 106 | 134 | 117 | 105 | 130 | 115 | 104 | 99 |
| 7 | 165 | 132 | 110 | 95 | 161 | 130 | 109 | 95 | 126 | 108 | 94 | 122 | 106 | 93 | 119 | 104 | 93 | 88 |
| 8 | 154 | 121 | 100 | 85 | 150 | 119 | 99 | 85 | 116 | 97 | 84 | 113 | 96 | 84 | 110 | 95 | 83 | 79 |
| 9 | 144 | 111 | 91 | 77 | 141 | 110 | 90 | 77 | 107 | 89 | 76 | 104 | 88 | 76 | 101 | 87 | 76 | 71 |
| 10 | 135 | 103 | 83 | 70 | 132 | 101 | 83 | 70 | 99 | 82 | 70 | 97 | 81 | 69 | 94 | 80 | 69 | 65 |

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UGR TABLE - CORRECTED

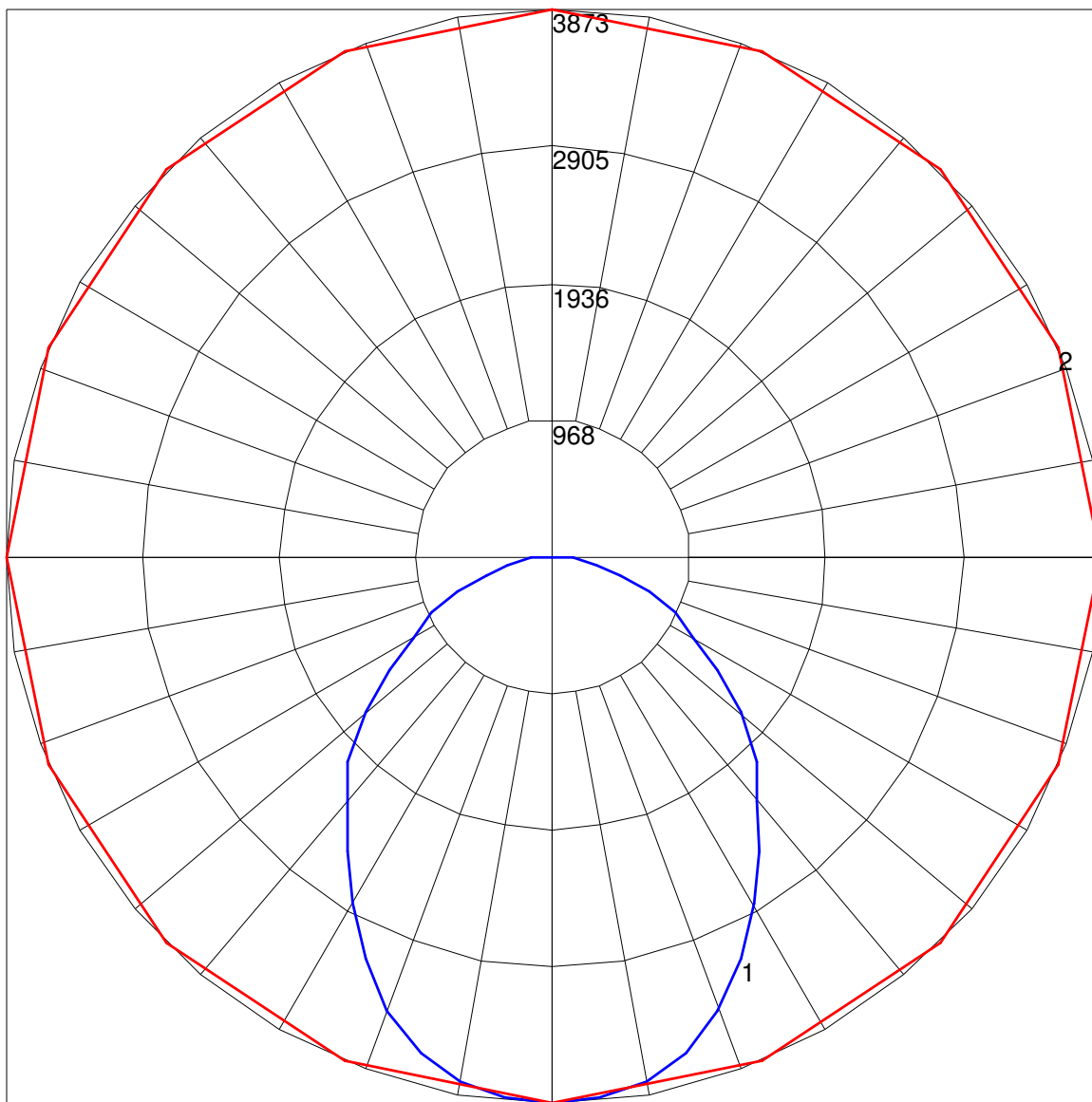
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | | | | | UGR Viewed Endwise | | | | |
|-----------|------|----------------------|------|------|------|------|--------------------|------|------|------|------|
| X=2H | Y=2H | 13.1 | 14.7 | 13.5 | 15.0 | 15.3 | 14.2 | 15.8 | 14.5 | 16.1 | 16.4 |
| | 3H | 14.9 | 16.3 | 15.2 | 16.6 | 17.0 | 16.2 | 17.7 | 16.6 | 18.0 | 18.3 |
| | 4H | 15.5 | 16.9 | 15.9 | 17.2 | 17.6 | 16.9 | 18.3 | 17.3 | 18.7 | 19.0 |
| | 6H | 16.0 | 17.3 | 16.4 | 17.7 | 18.1 | 17.3 | 18.5 | 17.7 | 18.9 | 19.3 |
| | 8H | 16.2 | 17.4 | 16.7 | 17.8 | 18.2 | 17.3 | 18.5 | 17.7 | 18.9 | 19.3 |
| | 12H | 16.4 | 17.5 | 16.8 | 17.9 | 18.3 | 17.4 | 18.5 | 17.8 | 18.9 | 19.3 |
| 4H | 2H | 13.9 | 15.3 | 14.3 | 15.7 | 16.0 | 14.8 | 16.1 | 15.2 | 16.5 | 16.9 |
| | 3H | 16.0 | 17.1 | 16.4 | 17.5 | 17.9 | 17.0 | 18.2 | 17.5 | 18.6 | 19.0 |
| | 4H | 16.8 | 17.8 | 17.2 | 18.2 | 18.6 | 17.9 | 19.0 | 18.4 | 19.4 | 19.8 |
| | 6H | 17.4 | 18.4 | 17.9 | 18.8 | 19.2 | 18.3 | 19.2 | 18.8 | 19.7 | 20.1 |
| | 8H | 17.7 | 18.5 | 18.1 | 19.0 | 19.4 | 18.4 | 19.3 | 18.9 | 19.7 | 20.2 |
| | 12H | 17.8 | 18.6 | 18.3 | 19.1 | 19.6 | 18.5 | 19.2 | 18.9 | 19.7 | 20.2 |
| 8H | 4H | 17.2 | 18.1 | 17.7 | 18.5 | 19.0 | 18.2 | 19.1 | 18.7 | 19.5 | 20.0 |
| | 6H | 18.1 | 18.8 | 18.6 | 19.3 | 19.8 | 18.7 | 19.4 | 19.2 | 19.9 | 20.4 |
| | 8H | 18.4 | 19.0 | 18.9 | 19.6 | 20.0 | 18.8 | 19.5 | 19.3 | 20.0 | 20.5 |
| | 12H | 18.7 | 19.2 | 19.2 | 19.7 | 20.3 | 18.9 | 19.5 | 19.4 | 20.0 | 20.5 |
| 12H | 4H | 17.3 | 18.0 | 17.7 | 18.5 | 19.0 | 18.2 | 19.0 | 18.7 | 19.5 | 20.0 |
| | 6H | 18.2 | 18.8 | 18.7 | 19.3 | 19.8 | 18.8 | 19.4 | 19.3 | 19.9 | 20.4 |
| | 8H | 18.5 | 19.1 | 19.0 | 19.6 | 20.2 | 18.9 | 19.5 | 19.5 | 20.0 | 20.6 |

Maximum UGR = 20.6

POLAR GRAPH



Maximum Candela = 3872.705 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)