



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-14-L54-8TW-D-DALI-UNV 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 19432.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 20-DEC-2019

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 2-32 LED 22" ARRAYS 1x4' RECESSED LUMINAIRE

[MORE] WHITE REFLECTOR w/2 PIECE FROSTED ACRLIC LENS IN DOOR

[LUMCAT] AT1-14-L54-8TW-D-DALI-UNV 4000k

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 5440 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 98 |
| Total Luminaire Watts | 55.4 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.14 |
| Spacing Criterion (90-270) | 1.10 |
| Spacing Criterion (Diagonal) | 1.22 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.76 ft |
| Luminous Width (90-270) | 0.77 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 6730 | 6606 | 6515 |
| 55 | 5648 | 5634 | 5494 |
| 65 | 4977 | 4977 | 3993 |
| 75 | 3925 | 3276 | 2936 |
| 85 | 3120 | 1927 | 1377 |

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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 | 2468.807 | 2468.807 | 2468.807 | 2468.807 | 2468.807 |
| 5 | 2488.212 | 2486.056 | 2486.056 | 2486.056 | 2483.900 |
| 10 | 2417.059 | 2412.746 | 2408.434 | 2404.122 | 2404.122 |
| 15 | 2322.188 | 2322.188 | 2309.251 | 2300.626 | 2300.626 |
| 20 | 2227.316 | 2220.848 | 2205.755 | 2188.505 | 2184.193 |
| 25 | 2020.325 | 2013.856 | 1992.295 | 1983.670 | 1972.889 |
| 30 | 1837.051 | 1828.426 | 1806.865 | 1789.615 | 1785.303 |
| 35 | 1677.495 | 1668.870 | 1649.465 | 1634.372 | 1625.747 |
| 40 | 1461.878 | 1451.098 | 1436.005 | 1420.911 | 1414.443 |
| 45 | 1282.917 | 1267.824 | 1259.199 | 1248.418 | 1241.950 |
| 50 | 1088.862 | 1080.238 | 1071.613 | 1067.301 | 1065.145 |
| 55 | 873.246 | 873.246 | 871.090 | 862.465 | 849.528 |
| 60 | 711.534 | 713.690 | 713.690 | 683.504 | 661.942 |
| 65 | 567.071 | 571.383 | 567.071 | 495.917 | 454.950 |
| 70 | 413.983 | 420.452 | 388.109 | 319.112 | 312.644 |
| 75 | 273.833 | 284.614 | 228.553 | 209.148 | 204.835 |
| 80 | 161.712 | 153.088 | 129.370 | 107.808 | 99.183 |
| 85 | 73.310 | 60.373 | 45.279 | 34.499 | 32.342 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 886.51 | N.A. | 16.30 |
| 0-30 | 1808.81 | N.A. | 33.20 |
| 0-40 | 2833.48 | N.A. | 52.10 |
| 0-60 | 4588.33 | N.A. | 84.30 |
| 0-80 | 5378.36 | N.A. | 98.90 |
| 0-90 | 5440.05 | N.A. | 100.00 |
| 10-90 | 5205.71 | N.A. | 95.70 |
| 20-40 | 1946.97 | N.A. | 35.80 |
| 20-50 | 2917.68 | N.A. | 53.60 |
| 40-70 | 2285.45 | N.A. | 42.00 |
| 60-80 | 790.03 | N.A. | 14.50 |
| 70-80 | 259.43 | N.A. | 4.80 |
| 80-90 | 61.69 | N.A. | 1.10 |
| 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 | 5440.05 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|---------|
| 0-10 | 234.34 |
| 10-20 | 652.17 |
| 20-30 | 922.30 |
| 30-40 | 1024.67 |
| 40-50 | 970.71 |
| 50-60 | 784.14 |
| 60-70 | 530.60 |
| 70-80 | 259.43 |
| 80-90 | 61.69 |
| 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 | 318 | 318 | 318 | 318 | 310 | 310 | 310 | 310 | 296 | 296 | 296 | 284 | 284 | 284 | 272 | 272 | 272 | 267 |
| 1 | 293 | 281 | 271 | 262 | 286 | 275 | 266 | 258 | 264 | 256 | 249 | 254 | 248 | 242 | 244 | 239 | 235 | 229 |
| 2 | 269 | 248 | 232 | 218 | 262 | 243 | 228 | 215 | 234 | 221 | 210 | 226 | 215 | 205 | 218 | 209 | 201 | 195 |
| 3 | 247 | 220 | 200 | 184 | 240 | 216 | 198 | 183 | 209 | 193 | 179 | 201 | 188 | 176 | 195 | 183 | 173 | 168 |
| 4 | 227 | 197 | 175 | 158 | 221 | 194 | 173 | 157 | 187 | 169 | 155 | 181 | 166 | 153 | 175 | 162 | 151 | 146 |
| 5 | 210 | 177 | 155 | 138 | 204 | 175 | 153 | 137 | 169 | 150 | 136 | 164 | 147 | 134 | 159 | 145 | 133 | 128 |
| 6 | 195 | 161 | 138 | 122 | 190 | 158 | 137 | 121 | 154 | 135 | 120 | 149 | 132 | 119 | 145 | 130 | 118 | 113 |
| 7 | 181 | 147 | 124 | 109 | 177 | 145 | 123 | 108 | 140 | 121 | 108 | 137 | 120 | 107 | 133 | 118 | 106 | 101 |
| 8 | 169 | 134 | 113 | 98 | 165 | 133 | 112 | 98 | 129 | 110 | 97 | 126 | 109 | 96 | 123 | 107 | 96 | 91 |
| 9 | 158 | 124 | 103 | 89 | 155 | 122 | 102 | 88 | 119 | 101 | 88 | 117 | 100 | 88 | 114 | 98 | 87 | 82 |
| 10 | 149 | 115 | 94 | 81 | 145 | 113 | 94 | 81 | 111 | 93 | 80 | 108 | 92 | 80 | 106 | 91 | 80 | 75 |

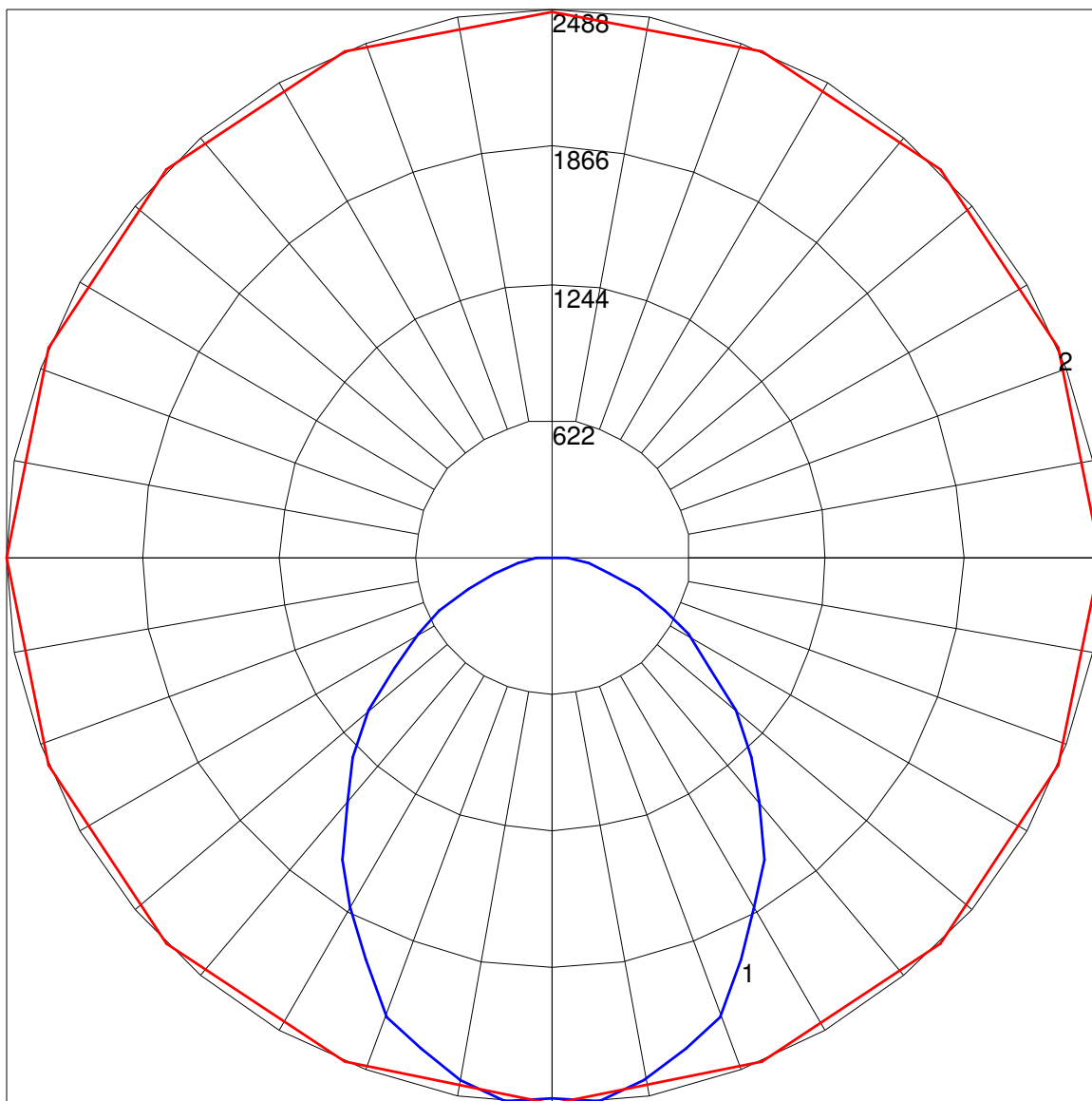
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UGR TABLE - CORRECTED

| | | | | | | | | | | | |
|----------------|------|----------------------|------|------|------|------|--------------------|------|------|------|------|
| 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 | 14.4 | 15.9 | 14.7 | 16.2 | 16.5 | 14.2 | 15.7 | 14.5 | 16.0 | 16.3 |
| | 3H | 16.0 | 17.4 | 16.4 | 17.7 | 18.1 | 15.3 | 16.7 | 15.7 | 17.0 | 17.3 |
| | 4H | 16.6 | 17.9 | 17.0 | 18.2 | 18.6 | 15.6 | 16.9 | 16.0 | 17.3 | 17.7 |
| | 6H | 16.9 | 18.1 | 17.4 | 18.5 | 18.9 | 15.9 | 17.1 | 16.3 | 17.4 | 17.8 |
| | 8H | 17.1 | 18.2 | 17.5 | 18.6 | 19.0 | 15.9 | 17.0 | 16.3 | 17.4 | 17.8 |
| | 12H | 17.2 | 18.2 | 17.6 | 18.6 | 19.1 | 15.9 | 17.0 | 16.3 | 17.4 | 17.8 |
| 4H | 2H | 15.0 | 16.3 | 15.4 | 16.6 | 17.0 | 14.8 | 16.1 | 15.2 | 16.4 | 16.8 |
| | 3H | 16.8 | 17.8 | 17.2 | 18.2 | 18.6 | 16.1 | 17.2 | 16.5 | 17.6 | 18.0 |
| | 4H | 17.4 | 18.4 | 17.9 | 18.8 | 19.3 | 16.5 | 17.5 | 17.0 | 17.9 | 18.3 |
| | 6H | 17.9 | 18.8 | 18.4 | 19.2 | 19.7 | 16.8 | 17.7 | 17.3 | 18.1 | 18.6 |
| | 8H | 18.1 | 18.9 | 18.6 | 19.3 | 19.8 | 16.9 | 17.7 | 17.3 | 18.1 | 18.6 |
| | 12H | 18.2 | 18.9 | 18.7 | 19.4 | 19.9 | 16.9 | 17.6 | 17.4 | 18.1 | 18.6 |
| 8H | 4H | 17.6 | 18.4 | 18.1 | 18.8 | 19.3 | 16.8 | 17.6 | 17.2 | 18.0 | 18.5 |
| | 6H | 18.2 | 18.8 | 18.7 | 19.3 | 19.8 | 17.1 | 17.8 | 17.6 | 18.3 | 18.8 |
| | 8H | 18.4 | 19.0 | 18.9 | 19.5 | 20.0 | 17.2 | 17.8 | 17.8 | 18.3 | 18.8 |
| | 12H | 18.6 | 19.1 | 19.1 | 19.6 | 20.2 | 17.3 | 17.8 | 17.8 | 18.3 | 18.9 |
| 12H | 4H | 17.6 | 18.3 | 18.1 | 18.8 | 19.2 | 16.8 | 17.5 | 17.3 | 18.0 | 18.4 |
| | 6H | 18.2 | 18.8 | 18.7 | 19.2 | 19.8 | 17.2 | 17.8 | 17.7 | 18.2 | 18.8 |
| | 8H | 18.5 | 19.0 | 19.0 | 19.5 | 20.0 | 17.3 | 17.8 | 17.8 | 18.3 | 18.9 |

Maximum UGR = 20.2

POLAR GRAPH



Maximum Candela = 2488.212 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.)