



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4AR-P28-835-POE-OM-OF-CS_0 DEGREE TILT_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 20448.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUE DATE] 12-MAR-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] GEN7 V13 LED 4" SHORT HEATSINK 4" RND ADJ DOWNLIGHT @ 0 TILT

[MORE] ACRYLIC MED TIR OPTIC & 4" OPEN ASYM SEMI-SPEC TRIM

[LUMCAT] 4AR-P28-835-PoE-OM-OF-CS_0 DEGREE TILT

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Classroom, Commercial, Industrial, Direct, Downlight

[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

| | |
|---------------------------------|--------------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 2768 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 74 |
| Total Luminaire Watts | 37.5 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 0.54 |
| Spacing Criterion (90-270) | 0.54 |
| Spacing Criterion (Diagonal) | 0.48 |
| Basic Luminous Shape | Circular |
| Luminous Length (0-180) | 0.33 ft (Diameter) |
| Luminous Width (90-270) | 0.33 ft (Diameter) |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|------------------|---------------|----------------|----------------|
| 45 | 766 | 766 | 766 |
| 55 | 315 | 315 | 315 |
| 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> | <u>112.5</u> | <u>135.0</u> | <u>157.5</u> | <u>180.0</u> |
|-----------|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 0 | 10219.069 | 10219.069 | 10219.069 | 10219.069 | 10219.069 | 10219.069 | 10219.069 | 10219.069 | 10219.069 |
| 5 | 10170.790 | 10069.843 | 10056.676 | 10049.361 | 10050.824 | 10084.473 | 10075.695 | 10069.843 | 10043.508 |
| 10 | 9003.314 | 8959.424 | 9006.240 | 8966.739 | 8924.312 | 8697.547 | 8712.177 | 8738.511 | 8514.671 |
| 15 | 5367.754 | 5410.181 | 5797.877 | 5609.150 | 5492.109 | 4981.522 | 4443.137 | 4462.156 | 4169.556 |
| 20 | 1877.032 | 1916.533 | 1995.535 | 2008.702 | 1900.440 | 1682.452 | 1584.431 | 1499.577 | 1419.112 |
| 25 | 790.021 | 817.818 | 852.930 | 860.245 | 839.763 | 705.167 | 629.091 | 607.146 | 542.774 |
| 30 | 285.285 | 285.285 | 296.989 | 298.452 | 270.655 | 245.784 | 209.209 | 193.116 | 166.782 |
| 35 | 51.205 | 46.816 | 49.742 | 48.279 | 46.816 | 43.890 | 38.038 | 38.038 | 38.038 |
| 40 | 19.019 | 17.556 | 16.093 | 16.093 | 16.093 | 16.093 | 14.630 | 14.630 | 13.167 |
| 45 | 4.389 | 4.389 | 4.389 | 4.389 | 4.389 | 4.389 | 2.926 | 4.389 | 4.389 |
| 50 | 1.463 | 1.463 | 1.463 | 1.463 | 1.463 | 1.463 | 0.000 | 0.000 | 1.463 |
| 55 | 1.463 | 1.463 | 1.463 | 0.000 | 1.463 | 2.926 | 0.000 | 2.926 | 0.000 |
| 60 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 65 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 70 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 75 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 80 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 85 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4AR-P28-835-POE-OM-OF-CS_0 DEGREE TILT_.IES****ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 2316.36 | N.A. | 83.70 |
| 0-30 | 2707.99 | N.A. | 97.80 |
| 0-40 | 2761.92 | N.A. | 99.80 |
| 0-60 | 2767.57 | N.A. | 100.00 |
| 0-80 | 2767.57 | N.A. | 100.00 |
| 0-90 | 2767.57 | N.A. | 100.00 |
| 10-90 | 1848.33 | N.A. | 66.80 |
| 20-40 | 445.55 | N.A. | 16.10 |
| 20-50 | 450.35 | N.A. | 16.30 |
| 40-70 | 5.65 | N.A. | 0.20 |
| 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 | 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 | 2767.57 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|---------|
| 0-10 | 919.24 |
| 10-20 | 1397.12 |
| 20-30 | 391.63 |
| 30-40 | 53.93 |
| 40-50 | 4.80 |
| 50-60 | 0.85 |
| 60-70 | 0.00 |
| 70-80 | 0.00 |
| 80-90 | 0.00 |
| 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 | 314 | 314 | 314 | 314 | 307 | 307 | 307 | 307 | 293 | 293 | 293 | 281 | 281 | 281 | 269 | 269 | 269 | 264 |
| 1 | 304 | 298 | 294 | 289 | 298 | 293 | 289 | 285 | 282 | 279 | 276 | 273 | 270 | 268 | 264 | 262 | 260 | 256 |
| 2 | 294 | 285 | 277 | 271 | 289 | 281 | 274 | 268 | 272 | 267 | 262 | 265 | 260 | 257 | 258 | 254 | 251 | 248 |
| 3 | 285 | 273 | 264 | 257 | 281 | 270 | 261 | 255 | 263 | 256 | 251 | 257 | 252 | 247 | 252 | 247 | 243 | 240 |
| 4 | 277 | 263 | 253 | 245 | 273 | 260 | 251 | 244 | 255 | 247 | 241 | 250 | 244 | 238 | 246 | 240 | 236 | 233 |
| 5 | 269 | 254 | 243 | 235 | 265 | 251 | 242 | 234 | 247 | 239 | 232 | 243 | 236 | 230 | 240 | 233 | 229 | 226 |
| 6 | 261 | 245 | 234 | 227 | 258 | 243 | 233 | 226 | 240 | 231 | 225 | 237 | 229 | 223 | 234 | 227 | 222 | 219 |
| 7 | 254 | 237 | 227 | 219 | 251 | 236 | 226 | 219 | 233 | 224 | 218 | 230 | 222 | 217 | 228 | 221 | 216 | 213 |
| 8 | 247 | 230 | 220 | 212 | 245 | 229 | 219 | 212 | 227 | 218 | 211 | 224 | 216 | 210 | 222 | 215 | 210 | 207 |
| 9 | 241 | 224 | 213 | 206 | 239 | 223 | 213 | 206 | 220 | 211 | 205 | 219 | 210 | 205 | 217 | 209 | 204 | 202 |
| 10 | 235 | 217 | 207 | 200 | 233 | 217 | 207 | 200 | 215 | 206 | 200 | 213 | 205 | 199 | 212 | 204 | 199 | 196 |

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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

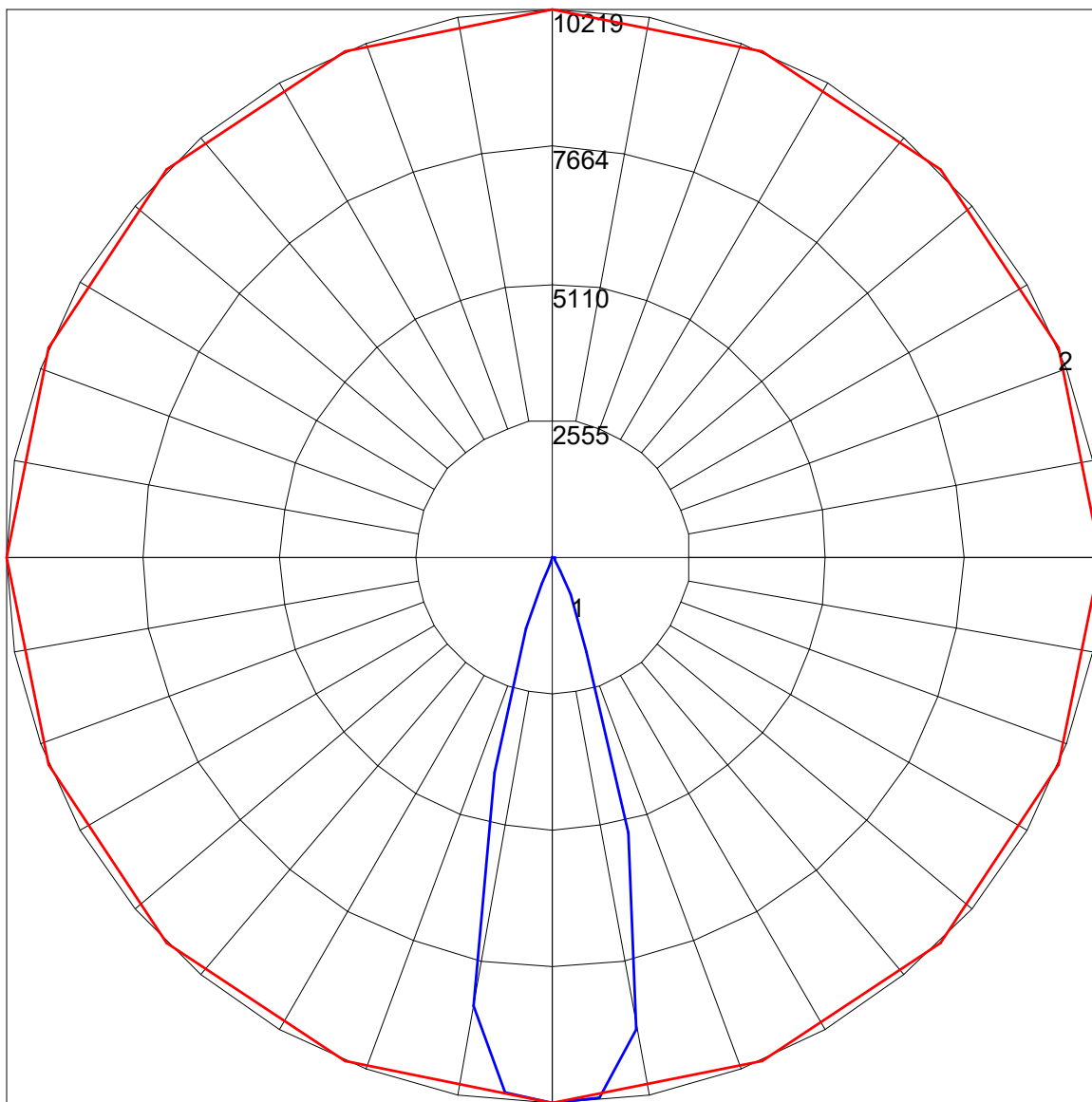
| X=2H | Y=2H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 3H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 4H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 6H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 8H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 12H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

UGR Viewed Endwise

| | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4H | 2H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 3H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 4H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 6H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 8H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 12H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 8H | 4H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 6H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 8H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 12H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 12H | 4H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 6H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 8H | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

Maximum UGR = 0.2

POLAR GRAPH



Maximum Candela = 10219.069 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.)