



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT3-22-L40-840-D-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 19435.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUE DATE] 05-FEB-2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 2x2' RECESSED LED LUMINAIRE
 [MORE] WHITE REFLECTOR w/2 PIECE FROSTED ACRYLIC LENS
 [LUMCAT] AT3-22-L40-840-D-DIM-UNV
 [LAMPCAT] HLM 80 CRI 4000K CCT

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 3945 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 106 |
| Total Luminaire Watts | 37.2 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.16 |
| Spacing Criterion (90-270) | 1.28 |
| Spacing Criterion (Diagonal) | 1.30 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 1.76 ft |
| Luminous Width (90-270) | 1.77 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 4074 | 4434 | 4790 |
| 55 | 3582 | 4046 | 4348 |
| 65 | 3166 | 3703 | 4067 |
| 75 | 2628 | 3331 | 3850 |
| 85 | 1413 | 1253 | 1188 |

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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 | 1552.595 | 1552.595 | 1552.595 | 1552.595 | 1552.595 |
| 5 | 1549.359 | 1544.505 | 1543.696 | 1542.887 | 1541.268 |
| 10 | 1514.569 | 1513.760 | 1510.524 | 1520.233 | 1522.660 |
| 15 | 1462.789 | 1461.171 | 1466.834 | 1487.061 | 1493.534 |
| 20 | 1384.310 | 1388.355 | 1411.009 | 1440.135 | 1453.889 |
| 25 | 1288.031 | 1301.785 | 1338.193 | 1378.646 | 1399.682 |
| 30 | 1188.516 | 1206.316 | 1253.241 | 1306.640 | 1326.866 |
| 35 | 1080.102 | 1099.519 | 1152.917 | 1211.979 | 1231.397 |
| 40 | 958.742 | 976.541 | 1033.985 | 1089.810 | 1114.082 |
| 45 | 832.528 | 853.563 | 906.153 | 958.742 | 978.968 |
| 50 | 711.977 | 732.204 | 784.793 | 835.764 | 849.518 |
| 55 | 593.854 | 612.462 | 670.715 | 713.595 | 720.877 |
| 60 | 484.630 | 503.238 | 558.255 | 598.708 | 601.944 |
| 65 | 386.733 | 402.105 | 452.267 | 487.866 | 496.766 |
| 70 | 288.836 | 303.399 | 351.134 | 382.688 | 394.824 |
| 75 | 196.603 | 211.975 | 249.192 | 272.655 | 288.027 |
| 80 | 109.224 | 128.641 | 131.068 | 130.259 | 128.641 |
| 85 | 35.599 | 42.071 | 31.554 | 30.744 | 29.935 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 561.80 | N.A. | 14.20 |
| 0-30 | 1179.38 | N.A. | 29.90 |
| 0-40 | 1899.67 | N.A. | 48.20 |
| 0-60 | 3195.61 | N.A. | 81.00 |
| 0-80 | 3891.42 | N.A. | 98.60 |
| 0-90 | 3944.69 | N.A. | 100.00 |
| 10-90 | 3798.21 | N.A. | 96.30 |
| 20-40 | 1337.87 | N.A. | 33.90 |
| 20-50 | 2038.5 | N.A. | 51.70 |
| 40-70 | 1738.5 | N.A. | 44.10 |
| 60-80 | 695.81 | N.A. | 17.60 |
| 70-80 | 253.24 | N.A. | 6.40 |
| 80-90 | 53.27 | N.A. | 1.40 |
| 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 | 3944.69 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 146.48 |
| 10-20 | 415.32 |
| 20-30 | 617.58 |
| 30-40 | 720.29 |
| 40-50 | 700.62 |
| 50-60 | 595.31 |
| 60-70 | 442.57 |
| 70-80 | 253.24 |
| 80-90 | 53.27 |
| 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 | 100 | 97 | 106 | 102 | 99 | 95 | 98 | 95 | 92 | 94 | 92 | 89 | 91 | 89 | 87 | 85 |
| 2 | 100 | 92 | 85 | 79 | 97 | 90 | 84 | 78 | 86 | 81 | 77 | 83 | 79 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 81 | 73 | 66 | 89 | 79 | 72 | 66 | 76 | 70 | 65 | 73 | 68 | 64 | 71 | 66 | 63 | 60 |
| 4 | 84 | 72 | 63 | 57 | 81 | 70 | 62 | 56 | 68 | 61 | 56 | 66 | 60 | 55 | 64 | 58 | 54 | 52 |
| 5 | 77 | 64 | 56 | 49 | 75 | 63 | 55 | 49 | 61 | 54 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 49 | 43 | 55 | 48 | 42 | 54 | 47 | 42 | 52 | 46 | 42 | 40 |
| 7 | 66 | 53 | 44 | 38 | 64 | 52 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 37 | 48 | 42 | 37 | 35 |
| 8 | 62 | 48 | 40 | 34 | 60 | 48 | 40 | 34 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 33 | 32 |
| 9 | 58 | 44 | 36 | 31 | 56 | 44 | 36 | 31 | 43 | 36 | 31 | 42 | 35 | 30 | 41 | 35 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 32 | 28 | 38 | 32 | 28 | 26 |

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UGR TABLE - CORRECTED

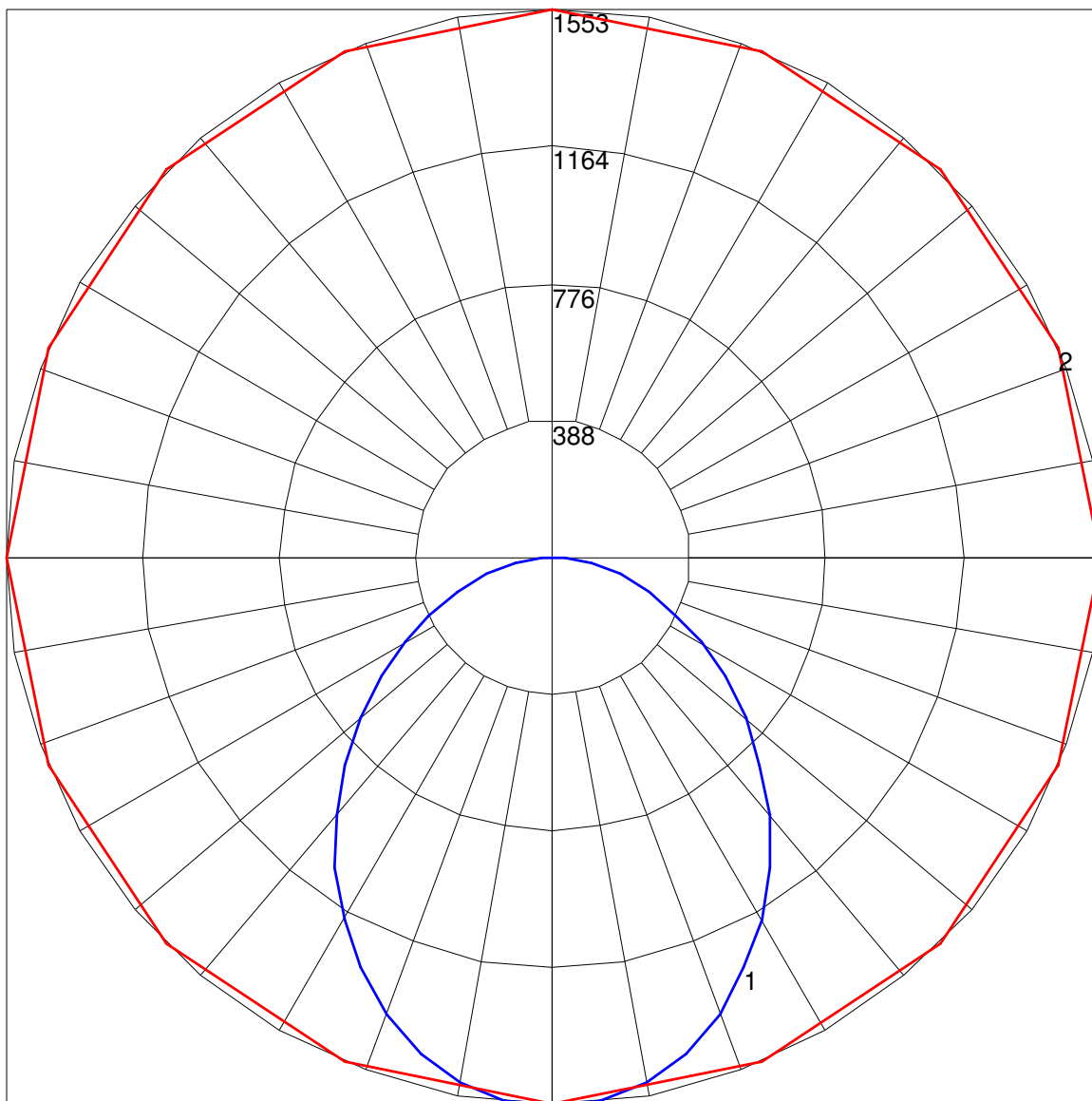
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | 16.1 | 17.7 | 16.5 | 18.0 | 18.3 | 17.3 | 18.9 | 17.7 | 19.2 | 19.5 |
| | 3H | 17.8 | 19.2 | 18.1 | 19.5 | 19.9 | 19.2 | 20.6 | 19.6 | 21.0 | 21.3 |
| | 4H | 18.4 | 19.7 | 18.8 | 20.1 | 20.4 | 19.9 | 21.3 | 20.3 | 21.6 | 22.0 |
| | 6H | 18.8 | 20.0 | 19.2 | 20.4 | 20.8 | 20.3 | 21.6 | 20.8 | 22.0 | 22.4 |
| | 8H | 18.9 | 20.1 | 19.3 | 20.5 | 20.9 | 20.4 | 21.6 | 20.9 | 22.0 | 22.4 |
| | 12H | 18.9 | 20.1 | 19.3 | 20.4 | 20.9 | 20.4 | 21.6 | 20.9 | 22.0 | 22.4 |
| 4H | 2H | 16.9 | 18.2 | 17.3 | 18.6 | 19.0 | 17.8 | 19.2 | 18.2 | 19.5 | 19.9 |
| | 3H | 18.8 | 19.9 | 19.2 | 20.3 | 20.7 | 20.0 | 21.1 | 20.4 | 21.5 | 21.9 |
| | 4H | 19.5 | 20.5 | 19.9 | 20.9 | 21.3 | 20.8 | 21.9 | 21.3 | 22.3 | 22.7 |
| | 6H | 20.0 | 20.9 | 20.4 | 21.3 | 21.8 | 21.4 | 22.2 | 21.8 | 22.7 | 23.1 |
| | 8H | 20.1 | 21.0 | 20.6 | 21.4 | 21.9 | 21.5 | 22.3 | 21.9 | 22.7 | 23.2 |
| | 12H | 20.2 | 21.0 | 20.7 | 21.4 | 21.9 | 21.5 | 22.2 | 22.0 | 22.7 | 23.2 |
| 8H | 4H | 19.9 | 20.7 | 20.3 | 21.1 | 21.6 | 21.1 | 21.9 | 21.5 | 22.4 | 22.8 |
| | 6H | 20.5 | 21.2 | 21.0 | 21.7 | 22.2 | 21.7 | 22.4 | 22.2 | 22.9 | 23.3 |
| | 8H | 20.7 | 21.3 | 21.2 | 21.8 | 22.3 | 21.8 | 22.4 | 22.3 | 22.9 | 23.4 |
| | 12H | 20.8 | 21.4 | 21.4 | 21.9 | 22.4 | 21.9 | 22.4 | 22.4 | 22.9 | 23.5 |
| 12H | 4H | 19.9 | 20.7 | 20.4 | 21.1 | 21.6 | 21.1 | 21.8 | 21.6 | 22.3 | 22.8 |
| | 6H | 20.6 | 21.2 | 21.1 | 21.7 | 22.2 | 21.7 | 22.3 | 22.2 | 22.8 | 23.3 |
| | 8H | 20.8 | 21.4 | 21.3 | 21.9 | 22.4 | 21.9 | 22.4 | 22.4 | 22.9 | 23.5 |

Maximum UGR = 23.5

POLAR GRAPH



Maximum Candela = 1552.595 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.)