



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LT-24-L64-935-AF-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 20802.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 2023-07-24
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 2x4' RECESSED LED LUMINAIRE
 [LUMINAIRE] WHITE REFLECTOR w/FROSTED CENTER LENS
 [LUMINAIRE] 0-10V DIMMING DRIVER
 [LUMCAT] LT-24-L64-935-AF-DIM-UNV
 [LAMPCAT] 22 INCH LED ARRAYS
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] Indoor, Classroom, Office, Direct
 [_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 5309 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 109 |
| Total Luminaire Watts | 48.5 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.22 |
| Spacing Criterion (90-270) | 1.28 |
| Spacing Criterion (Diagonal) | 1.36 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.93 ft |
| Luminous Width (90-270) | 1.91 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 2193 | 2438 | 2623 |
| 55 | 1995 | 2365 | 2644 |
| 65 | 1704 | 2350 | 2768 |
| 75 | 1256 | 2468 | 3097 |
| 85 | 481 | 1982 | 1822 |

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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 | 1844.114 | 1844.114 | 1844.114 | 1844.114 | 1844.114 |
| 5 | 1861.795 | 1839.694 | 1828.201 | 1823.781 | 1823.781 |
| 10 | 1827.317 | 1804.332 | 1798.144 | 1799.028 | 1796.376 |
| 15 | 1772.507 | 1756.594 | 1753.942 | 1760.130 | 1763.666 |
| 20 | 1700.899 | 1686.755 | 1692.943 | 1709.740 | 1713.276 |
| 25 | 1607.191 | 1594.814 | 1616.915 | 1640.784 | 1646.089 |
| 30 | 1499.337 | 1496.685 | 1526.743 | 1558.568 | 1570.945 |
| 35 | 1372.919 | 1383.528 | 1427.730 | 1468.396 | 1483.425 |
| 40 | 1239.429 | 1258.878 | 1326.949 | 1373.803 | 1391.484 |
| 45 | 1079.417 | 1113.010 | 1199.647 | 1277.443 | 1290.703 |
| 50 | 945.926 | 987.476 | 1072.344 | 1148.372 | 1170.473 |
| 55 | 796.523 | 838.073 | 944.158 | 1025.490 | 1055.548 |
| 60 | 649.772 | 695.742 | 808.900 | 907.028 | 935.318 |
| 65 | 501.253 | 564.904 | 691.322 | 786.799 | 814.204 |
| 70 | 362.458 | 434.065 | 564.904 | 666.569 | 688.670 |
| 75 | 226.315 | 313.835 | 444.674 | 535.730 | 557.831 |
| 80 | 108.737 | 203.330 | 322.676 | 365.110 | 352.733 |
| 85 | 29.173 | 100.781 | 120.230 | 106.969 | 110.505 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 670.48 | N.A. | 12.60 |
| 0-30 | 1417.09 | N.A. | 26.70 |
| 0-40 | 2310.53 | N.A. | 43.50 |
| 0-60 | 4068.29 | N.A. | 76.60 |
| 0-80 | 5178.05 | N.A. | 97.50 |
| 0-90 | 5308.51 | N.A. | 100.00 |
| 10-90 | 5134.44 | N.A. | 96.70 |
| 20-40 | 1640.04 | N.A. | 30.90 |
| 20-50 | 2562.01 | N.A. | 48.30 |
| 40-70 | 2426.3 | N.A. | 45.70 |
| 60-80 | 1109.76 | N.A. | 20.90 |
| 70-80 | 441.22 | N.A. | 8.30 |
| 80-90 | 130.46 | N.A. | 2.50 |
| 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 | 5308.51 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 174.07 |
| 10-20 | 496.41 |
| 20-30 | 746.61 |
| 30-40 | 893.43 |
| 40-50 | 921.97 |
| 50-60 | 835.80 |
| 60-70 | 668.54 |
| 70-80 | 441.22 |
| 80-90 | 130.46 |
| 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 | 108 | 103 | 99 | 95 | 105 | 101 | 97 | 93 | 97 | 93 | 90 | 93 | 90 | 87 | 89 | 87 | 85 | 83 |
| 2 | 98 | 90 | 82 | 77 | 95 | 88 | 81 | 76 | 84 | 79 | 74 | 81 | 76 | 72 | 78 | 74 | 70 | 68 |
| 3 | 89 | 78 | 70 | 63 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 65 | 61 | 68 | 64 | 59 | 57 |
| 4 | 82 | 69 | 60 | 53 | 79 | 68 | 60 | 53 | 65 | 58 | 52 | 63 | 57 | 52 | 61 | 55 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 52 | 46 | 59 | 51 | 45 | 57 | 50 | 45 | 55 | 49 | 44 | 42 |
| 6 | 69 | 56 | 47 | 40 | 67 | 55 | 46 | 40 | 53 | 45 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 37 |
| 7 | 64 | 51 | 42 | 35 | 62 | 50 | 41 | 35 | 48 | 41 | 35 | 47 | 40 | 35 | 45 | 39 | 34 | 32 |
| 8 | 60 | 46 | 37 | 32 | 58 | 45 | 37 | 31 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 35 | 31 | 29 |
| 9 | 56 | 42 | 34 | 28 | 54 | 42 | 34 | 28 | 41 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 39 | 31 | 26 | 38 | 30 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 24 |

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UGR TABLE - CORRECTED

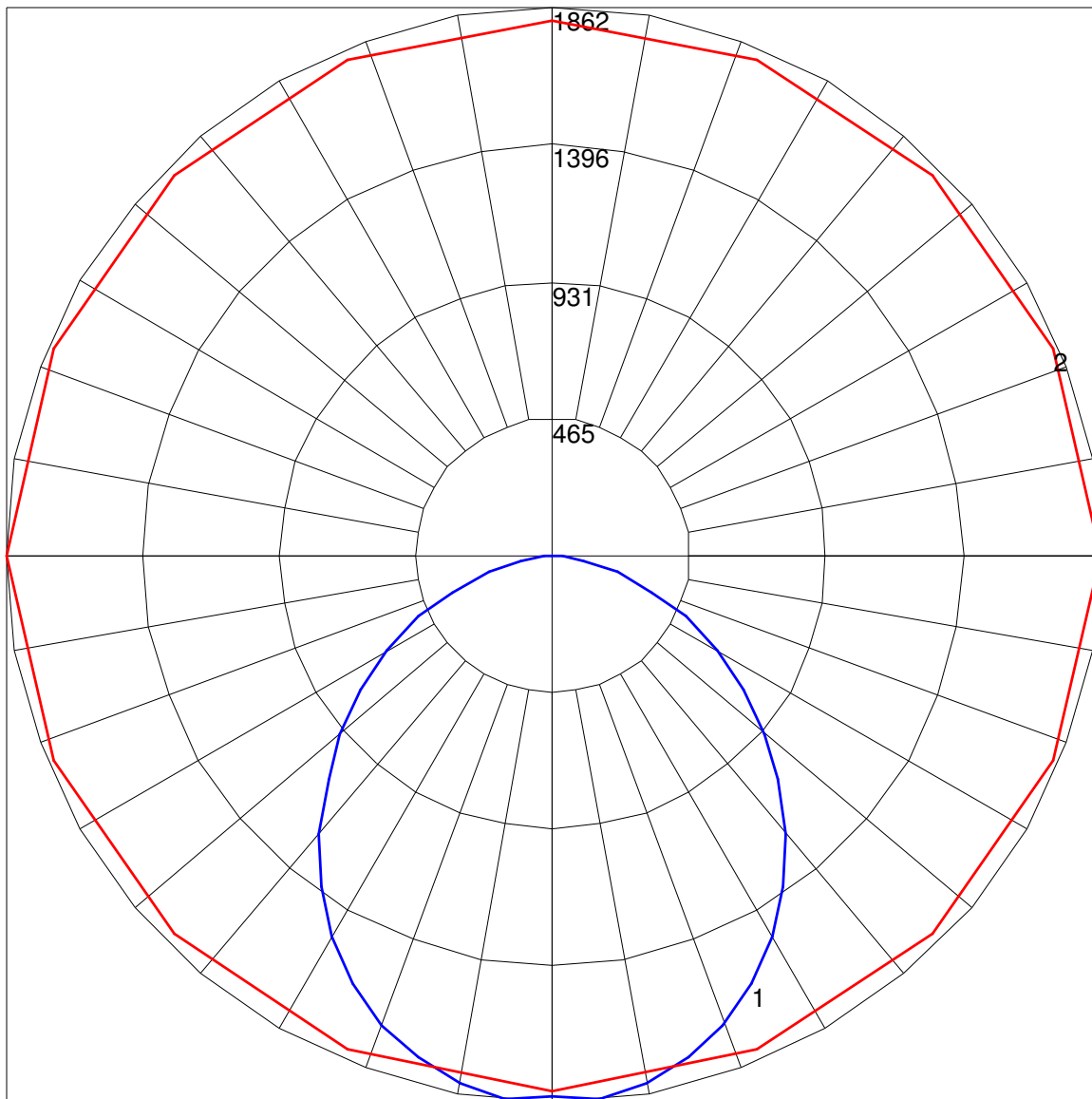
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | | | | | UGR Viewed Endwise | | | | |
|-----------|------|----------------------|------|------|------|------|--------------------|------|------|------|------|
| X=2H | Y=2H | 14.1 | 15.8 | 14.5 | 16.1 | 16.4 | 15.8 | 17.5 | 16.2 | 17.8 | 18.1 |
| | 3H | 15.7 | 17.2 | 16.1 | 17.5 | 17.9 | 18.2 | 19.7 | 18.6 | 20.0 | 20.4 |
| | 4H | 16.2 | 17.6 | 16.6 | 18.0 | 18.4 | 19.2 | 20.7 | 19.6 | 21.0 | 21.4 |
| | 6H | 16.5 | 17.9 | 16.9 | 18.2 | 18.6 | 20.1 | 21.4 | 20.5 | 21.8 | 22.2 |
| | 8H | 16.6 | 17.9 | 17.0 | 18.3 | 18.7 | 20.3 | 21.6 | 20.7 | 22.0 | 22.4 |
| | 12H | 16.6 | 17.9 | 17.1 | 18.2 | 18.7 | 20.4 | 21.7 | 20.9 | 22.0 | 22.5 |
| 4H | 2H | 15.1 | 16.5 | 15.5 | 16.8 | 17.2 | 16.4 | 17.8 | 16.8 | 18.2 | 18.5 |
| | 3H | 16.9 | 18.1 | 17.3 | 18.5 | 18.9 | 19.0 | 20.2 | 19.4 | 20.6 | 21.0 |
| | 4H | 17.6 | 18.7 | 18.0 | 19.1 | 19.6 | 20.3 | 21.4 | 20.7 | 21.8 | 22.2 |
| | 6H | 18.1 | 19.0 | 18.5 | 19.5 | 19.9 | 21.3 | 22.3 | 21.8 | 22.7 | 23.1 |
| | 8H | 18.2 | 19.1 | 18.7 | 19.5 | 20.0 | 21.6 | 22.5 | 22.1 | 22.9 | 23.4 |
| | 12H | 18.3 | 19.1 | 18.7 | 19.5 | 20.0 | 21.8 | 22.6 | 22.2 | 23.0 | 23.5 |
| 8H | 4H | 18.4 | 19.3 | 18.8 | 19.7 | 20.2 | 20.6 | 21.5 | 21.1 | 21.9 | 22.4 |
| | 6H | 19.0 | 19.8 | 19.5 | 20.3 | 20.7 | 21.8 | 22.5 | 22.3 | 23.0 | 23.5 |
| | 8H | 19.3 | 19.9 | 19.8 | 20.4 | 20.9 | 22.2 | 22.9 | 22.7 | 23.4 | 23.9 |
| | 12H | 19.4 | 20.0 | 19.9 | 20.5 | 21.0 | 22.4 | 23.0 | 22.9 | 23.5 | 24.1 |
| 12H | 4H | 18.5 | 19.3 | 19.0 | 19.8 | 20.3 | 20.6 | 21.4 | 21.1 | 21.9 | 22.4 |
| | 6H | 19.3 | 20.0 | 19.8 | 20.4 | 21.0 | 21.9 | 22.5 | 22.4 | 23.0 | 23.5 |
| | 8H | 19.6 | 20.2 | 20.1 | 20.7 | 21.2 | 22.3 | 22.9 | 22.8 | 23.4 | 24.0 |

Maximum UGR = 24.1

POLAR GRAPH



Maximum Candela = 1861.795 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.)