



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 96-4-L62-850-HIAFR-(L59)-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 19227.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 19 DEC 2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4' SUSPENDED ENCLOSED & GASKETED LUMINAIRE
 [MORE] WHITE REFLECTOR w/FROSTED ACRYLIC LINEAR RIBBED DIFFUSER
 [MORE] 0-10V DIMMING DRIVER
 [LUMCAT] 96-4-L62-850-HIAFR-(L59)-DIM-UNV
 [LAMPCAT] HLMX 80 CRI 5000K CCT LED

CHARACTERISTICS

| | |
|---------------------------------|---------------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 6062 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 147 |
| Total Luminaire Watts | 41.3 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.26 |
| Spacing Criterion (90-270) | 1.16 |
| Spacing Criterion (Diagonal) | 1.30 |
| Basic Luminous Shape | Rectangular w/Sides |
| Luminous Length (0-180) | 4.23 ft |
| Luminous Width (90-270) | 0.50 ft |
| Luminous Height | 0.18 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 9135 | 7203 | 7013 |
| 55 | 7772 | 6129 | 6053 |
| 65 | 5697 | 4979 | 5375 |
| 75 | 3493 | 4198 | 4635 |
| 85 | 1287 | 3296 | 3954 |

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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 | 2141.559 | 2141.559 | 2141.559 | 2141.559 | 2141.559 |
| 5 | 2160.336 | 2132.665 | 2118.829 | 2108.947 | 2105.982 |
| 10 | 2131.677 | 2097.088 | 2075.346 | 2067.440 | 2059.534 |
| 15 | 2078.311 | 2038.780 | 2006.168 | 1987.391 | 1976.520 |
| 20 | 2001.226 | 1960.708 | 1912.283 | 1872.753 | 1871.764 |
| 25 | 1910.307 | 1866.823 | 1795.668 | 1745.267 | 1729.455 |
| 30 | 1795.668 | 1740.326 | 1644.465 | 1629.641 | 1631.617 |
| 35 | 1654.347 | 1598.016 | 1507.096 | 1551.568 | 1575.286 |
| 40 | 1493.261 | 1441.871 | 1397.400 | 1446.813 | 1466.578 |
| 45 | 1323.280 | 1274.855 | 1281.773 | 1292.644 | 1320.315 |
| 50 | 1132.546 | 1086.098 | 1127.605 | 1146.382 | 1164.170 |
| 55 | 928.964 | 905.246 | 967.507 | 1005.060 | 1027.790 |
| 60 | 721.430 | 746.136 | 804.444 | 870.657 | 903.270 |
| 65 | 515.872 | 589.003 | 662.134 | 757.995 | 785.667 |
| 70 | 352.809 | 432.858 | 547.496 | 647.310 | 664.111 |
| 75 | 205.558 | 301.419 | 436.811 | 529.707 | 547.496 |
| 80 | 96.849 | 200.617 | 327.114 | 416.057 | 432.858 |
| 85 | 32.613 | 127.486 | 237.182 | 324.149 | 341.938 |
| 90 | 13.836 | 77.084 | 172.945 | 243.112 | 260.901 |
| 95 | 10.871 | 53.366 | 138.356 | 191.722 | 208.523 |
| 100 | 9.883 | 32.613 | 113.650 | 160.098 | 168.992 |
| 105 | 7.906 | 19.765 | 85.979 | 128.474 | 137.368 |
| 110 | 4.941 | 5.930 | 60.284 | 99.814 | 109.697 |
| 115 | 2.965 | 2.965 | 39.530 | 74.119 | 85.979 |
| 120 | 0.000 | 0.000 | 19.765 | 53.366 | 64.237 |
| 125 | 0.000 | 0.000 | 5.930 | 32.613 | 42.495 |
| 130 | 0.000 | 0.000 | 0.000 | 16.800 | 23.718 |
| 135 | 0.000 | 0.000 | 0.000 | 3.953 | 8.894 |
| 140 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 145 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 150 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 155 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 160 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 165 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 170 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 175 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 180 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 768.97 | N.A. | 12.70 |
| 0-30 | 1601.44 | N.A. | 26.40 |
| 0-40 | 2582.1 | N.A. | 42.60 |
| 0-60 | 4441.73 | N.A. | 73.30 |
| 0-80 | 5541.4 | N.A. | 91.40 |
| 0-90 | 5786.15 | N.A. | 95.40 |
| 10-90 | 5584.66 | N.A. | 92.10 |
| 20-40 | 1813.13 | N.A. | 29.90 |
| 20-50 | 2808.37 | N.A. | 46.30 |
| 40-70 | 2521.4 | N.A. | 41.60 |
| 60-80 | 1099.67 | N.A. | 18.10 |
| 70-80 | 437.90 | N.A. | 7.20 |
| 80-90 | 244.75 | N.A. | 4.00 |
| 90-110 | 218.95 | N.A. | 3.60 |
| 90-120 | 259.47 | N.A. | 4.30 |
| 90-130 | 273.82 | N.A. | 4.50 |
| 90-150 | 276.08 | N.A. | 4.60 |
| 90-180 | 276.08 | N.A. | 4.60 |
| 110-180 | 57.13 | N.A. | 0.90 |
| 0-180 | 6062.23 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 201.49 |
| 10-20 | 567.48 |
| 20-30 | 832.47 |
| 30-40 | 980.66 |
| 40-50 | 995.24 |
| 50-60 | 864.38 |
| 60-70 | 661.78 |
| 70-80 | 437.90 |
| 80-90 | 244.75 |
| 90-100 | 137.30 |
| 100-110 | 81.65 |
| 110-120 | 40.52 |
| 120-130 | 14.35 |
| 130-140 | 2.26 |
| 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 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 103 | 103 | 103 | 98 | 98 | 98 | 95 |
| 1 | 107 | 102 | 97 | 93 | 104 | 99 | 95 | 91 | 94 | 90 | 87 | 89 | 86 | 84 | 85 | 83 | 81 | 78 |
| 2 | 97 | 89 | 82 | 76 | 94 | 86 | 80 | 74 | 82 | 77 | 72 | 78 | 73 | 70 | 74 | 71 | 67 | 65 |
| 3 | 89 | 78 | 69 | 63 | 86 | 76 | 68 | 62 | 72 | 66 | 60 | 69 | 63 | 59 | 66 | 61 | 57 | 55 |
| 4 | 81 | 69 | 60 | 53 | 78 | 67 | 59 | 53 | 64 | 57 | 51 | 61 | 55 | 50 | 59 | 53 | 49 | 47 |
| 5 | 75 | 62 | 53 | 46 | 72 | 60 | 52 | 46 | 58 | 50 | 45 | 55 | 49 | 44 | 53 | 47 | 43 | 41 |
| 6 | 69 | 56 | 47 | 40 | 67 | 54 | 46 | 40 | 52 | 45 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 |
| 7 | 64 | 50 | 42 | 36 | 62 | 49 | 41 | 35 | 47 | 40 | 35 | 46 | 39 | 34 | 44 | 38 | 34 | 32 |
| 8 | 60 | 46 | 38 | 32 | 58 | 45 | 37 | 32 | 44 | 36 | 31 | 42 | 35 | 31 | 40 | 35 | 30 | 28 |
| 9 | 56 | 42 | 34 | 29 | 54 | 42 | 34 | 28 | 40 | 33 | 28 | 39 | 32 | 28 | 37 | 32 | 27 | 25 |
| 10 | 52 | 39 | 31 | 26 | 51 | 38 | 31 | 26 | 37 | 30 | 25 | 36 | 30 | 25 | 35 | 29 | 25 | 23 |

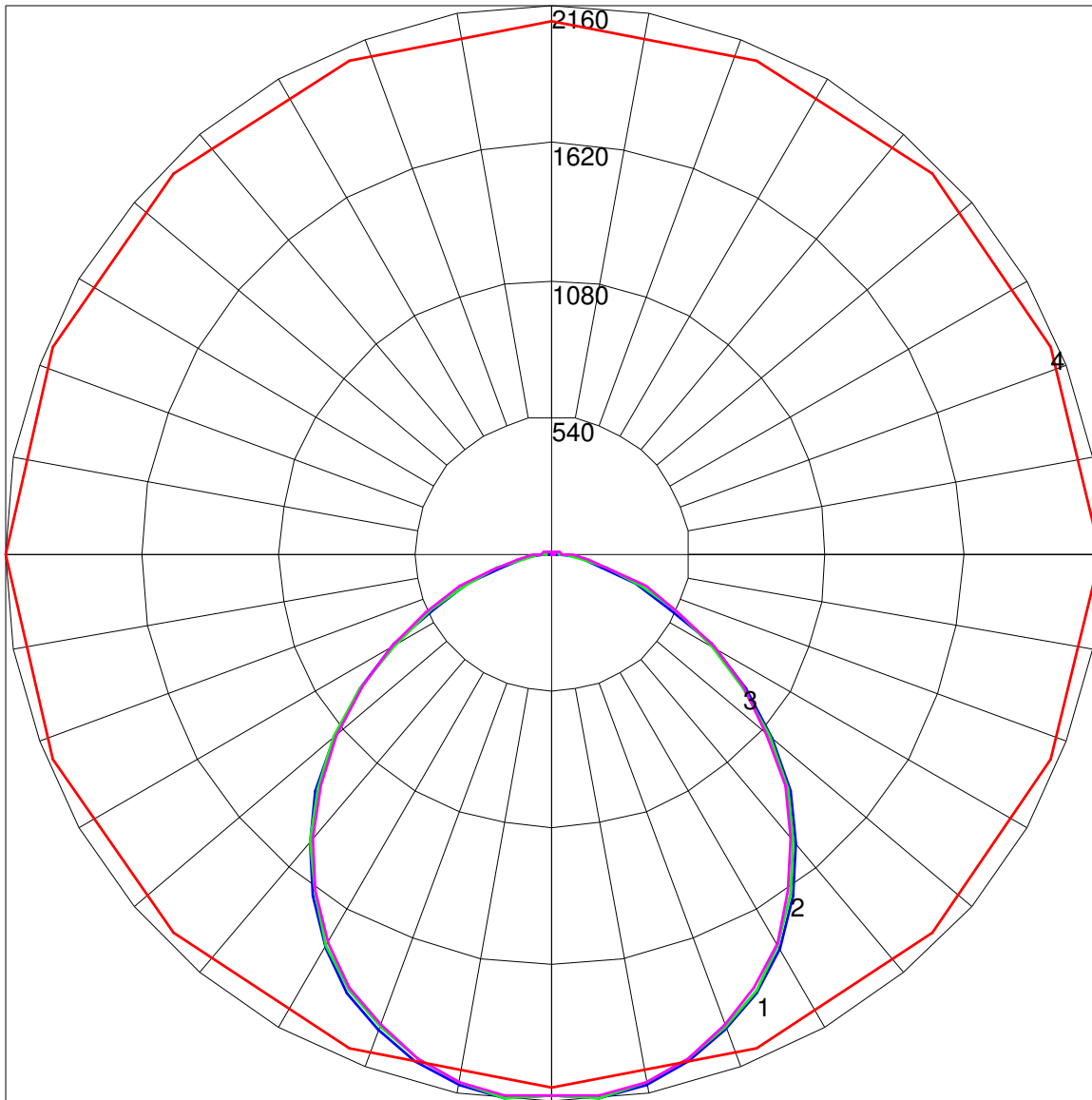
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UGR TABLE - CORRECTED

| | | | | | | | | | | | |
|----------------|------|----------------------|------|------|------|------|--------------------|------|------|------|------|
| 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 | 17.0 | 18.5 | 17.4 | 18.9 | 19.4 | 18.7 | 20.2 | 19.1 | 20.6 | 21.1 |
| | 3H | 18.1 | 19.5 | 18.6 | 19.9 | 20.4 | 21.0 | 22.3 | 21.4 | 22.8 | 23.3 |
| | 4H | 18.4 | 19.7 | 18.9 | 20.2 | 20.7 | 22.0 | 23.3 | 22.5 | 23.8 | 24.2 |
| | 6H | 18.5 | 19.7 | 19.0 | 20.2 | 20.7 | 23.0 | 24.2 | 23.5 | 24.7 | 25.2 |
| | 8H | 18.5 | 19.7 | 19.0 | 20.2 | 20.7 | 23.5 | 24.6 | 24.0 | 25.1 | 25.6 |
| | 12H | 18.5 | 19.6 | 19.0 | 20.1 | 20.7 | 24.0 | 25.1 | 24.5 | 25.6 | 26.1 |
| 4H | 2H | 17.7 | 19.0 | 18.2 | 19.4 | 19.9 | 19.1 | 20.4 | 19.5 | 20.8 | 21.3 |
| | 3H | 19.1 | 20.2 | 19.6 | 20.7 | 21.2 | 21.6 | 22.7 | 22.1 | 23.2 | 23.7 |
| | 4H | 19.5 | 20.5 | 20.0 | 21.0 | 21.6 | 22.8 | 23.8 | 23.3 | 24.3 | 24.8 |
| | 6H | 19.7 | 20.6 | 20.3 | 21.2 | 21.7 | 24.0 | 24.8 | 24.5 | 25.4 | 25.9 |
| | 8H | 19.8 | 20.6 | 20.3 | 21.2 | 21.7 | 24.5 | 25.4 | 25.1 | 25.9 | 26.5 |
| | 12H | 19.8 | 20.6 | 20.4 | 21.1 | 21.7 | 25.2 | 25.9 | 25.7 | 26.5 | 27.1 |
| 8H | 4H | 20.1 | 20.9 | 20.6 | 21.5 | 22.1 | 23.0 | 23.8 | 23.5 | 24.3 | 24.9 |
| | 6H | 20.5 | 21.2 | 21.1 | 21.8 | 22.4 | 24.3 | 25.0 | 24.9 | 25.6 | 26.2 |
| | 8H | 20.6 | 21.3 | 21.2 | 21.8 | 22.4 | 25.0 | 25.6 | 25.6 | 26.2 | 26.8 |
| | 12H | 20.7 | 21.3 | 21.3 | 21.8 | 22.5 | 25.8 | 26.4 | 26.4 | 26.9 | 27.6 |
| 12H | 4H | 20.3 | 21.0 | 20.8 | 21.6 | 22.2 | 23.0 | 23.7 | 23.5 | 24.3 | 24.9 |
| | 6H | 20.8 | 21.4 | 21.3 | 21.9 | 22.6 | 24.3 | 25.0 | 24.9 | 25.5 | 26.2 |
| | 8H | 21.0 | 21.5 | 21.5 | 22.1 | 22.7 | 25.1 | 25.6 | 25.7 | 26.2 | 26.9 |

Maximum UGR = 27.6

POLAR GRAPH



Maximum Candela = 2160.336 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Vertical Plane Through Horizontal Angles (5 - 185)
3 - Vertical Plane Through Horizontal Angles (10 - 190)
4 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)