



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LT-24-L82-950-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-L82-950-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 | 7310 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 114 |
| Total Luminaire Watts | 64.3 |
| 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 | 3020 | 3357 | 3611 |
| 55 | 2748 | 3257 | 3641 |
| 65 | 2347 | 3236 | 3812 |
| 75 | 1730 | 3399 | 4264 |
| 85 | 662 | 2729 | 2509 |

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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 | 2539.488 | 2539.488 | 2539.488 | 2539.488 | 2539.488 |
| 5 | 2563.836 | 2533.401 | 2517.575 | 2511.488 | 2511.488 |
| 10 | 2516.358 | 2484.705 | 2476.184 | 2477.401 | 2473.749 |
| 15 | 2440.879 | 2418.966 | 2415.314 | 2423.835 | 2428.705 |
| 20 | 2342.270 | 2322.792 | 2331.313 | 2354.444 | 2359.313 |
| 25 | 2213.226 | 2196.182 | 2226.617 | 2259.487 | 2266.791 |
| 30 | 2064.704 | 2061.051 | 2102.443 | 2146.269 | 2163.313 |
| 35 | 1890.616 | 1905.225 | 1966.095 | 2022.095 | 2042.791 |
| 40 | 1706.789 | 1733.572 | 1827.311 | 1891.833 | 1916.181 |
| 45 | 1486.441 | 1532.702 | 1652.006 | 1759.137 | 1777.398 |
| 50 | 1302.614 | 1359.831 | 1476.701 | 1581.397 | 1611.832 |
| 55 | 1096.874 | 1154.091 | 1300.179 | 1412.179 | 1453.571 |
| 60 | 894.786 | 958.091 | 1113.917 | 1249.048 | 1288.005 |
| 65 | 690.264 | 777.916 | 952.004 | 1083.482 | 1121.222 |
| 70 | 499.132 | 597.741 | 777.916 | 917.917 | 948.352 |
| 75 | 311.653 | 432.176 | 612.350 | 737.742 | 768.177 |
| 80 | 149.740 | 280.001 | 444.350 | 502.785 | 485.741 |
| 85 | 40.174 | 138.783 | 165.566 | 147.305 | 152.175 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 923.31 | N.A. | 12.60 |
| 0-30 | 1951.45 | N.A. | 26.70 |
| 0-40 | 3181.77 | N.A. | 43.50 |
| 0-60 | 5602.35 | N.A. | 76.60 |
| 0-80 | 7130.57 | N.A. | 97.50 |
| 0-90 | 7310.23 | N.A. | 100.00 |
| 10-90 | 7070.52 | N.A. | 96.70 |
| 20-40 | 2258.47 | N.A. | 30.90 |
| 20-50 | 3528.08 | N.A. | 48.30 |
| 40-70 | 3341.21 | N.A. | 45.70 |
| 60-80 | 1528.22 | N.A. | 20.90 |
| 70-80 | 607.59 | N.A. | 8.30 |
| 80-90 | 179.66 | 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 | 7310.23 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|---------|
| 0-10 | 239.71 |
| 10-20 | 683.60 |
| 20-30 | 1028.14 |
| 30-40 | 1230.32 |
| 40-50 | 1269.62 |
| 50-60 | 1150.96 |
| 60-70 | 920.63 |
| 70-80 | 607.59 |
| 80-90 | 179.66 |
| 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

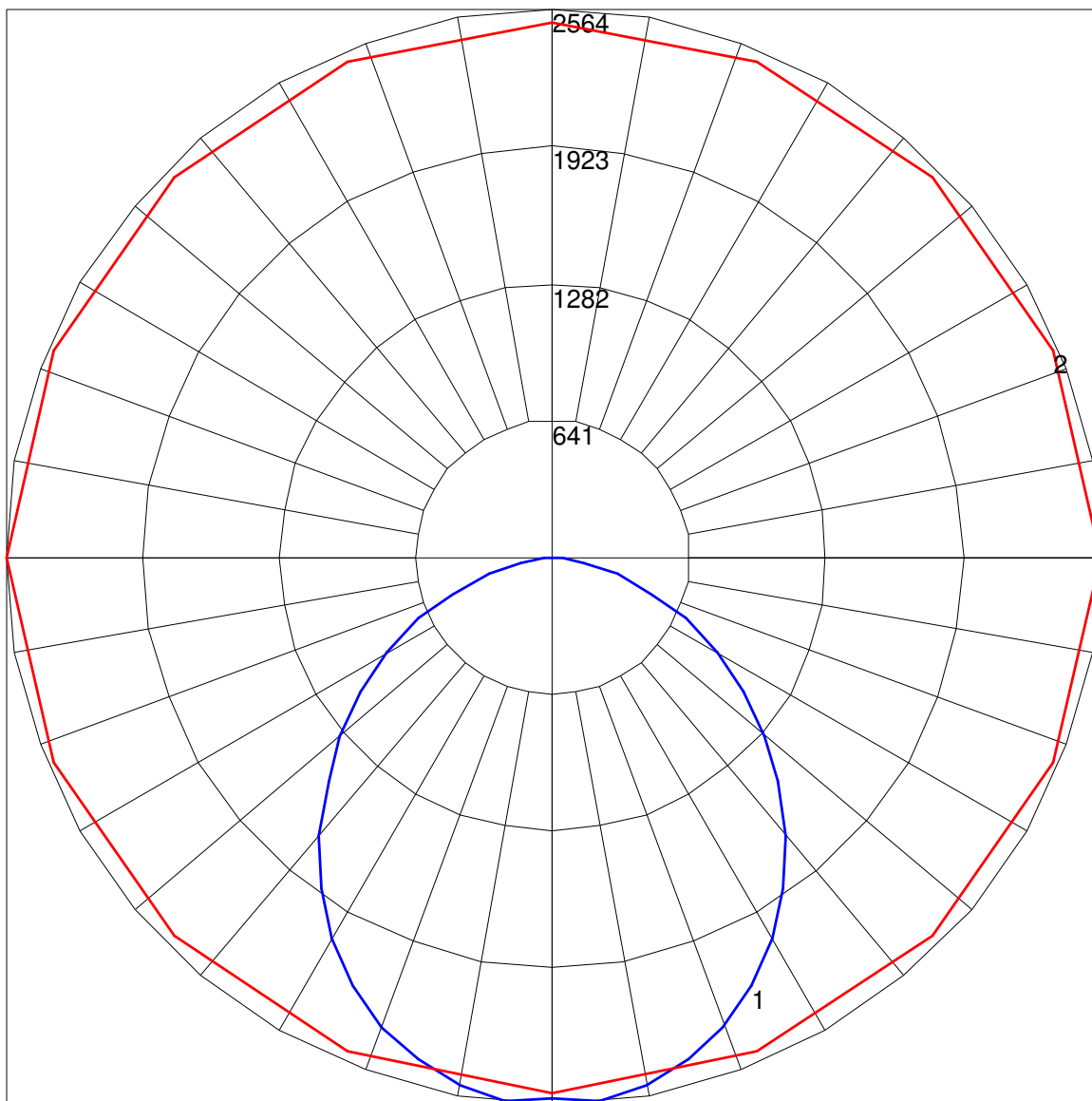
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | 15.2 | 16.9 | 15.6 | 17.2 | 17.5 | 16.9 | 18.6 | 17.3 | 18.9 | 19.2 |
| | 3H | 16.8 | 18.3 | 17.2 | 18.6 | 19.0 | 19.3 | 20.8 | 19.7 | 21.1 | 21.5 |
| | 4H | 17.3 | 18.7 | 17.7 | 19.1 | 19.5 | 20.3 | 21.8 | 20.7 | 22.1 | 22.5 |
| | 6H | 17.6 | 19.0 | 18.0 | 19.3 | 19.7 | 21.2 | 22.5 | 21.6 | 22.9 | 23.3 |
| | 8H | 17.7 | 19.0 | 18.1 | 19.4 | 19.8 | 21.4 | 22.7 | 21.8 | 23.1 | 23.5 |
| | 12H | 17.7 | 19.0 | 18.2 | 19.3 | 19.8 | 21.5 | 22.8 | 22.0 | 23.1 | 23.6 |
| 4H | 2H | 16.2 | 17.6 | 16.6 | 17.9 | 18.3 | 17.5 | 18.9 | 17.9 | 19.3 | 19.6 |
| | 3H | 18.0 | 19.2 | 18.4 | 19.6 | 20.0 | 20.1 | 21.3 | 20.5 | 21.7 | 22.1 |
| | 4H | 18.7 | 19.8 | 19.1 | 20.2 | 20.7 | 21.4 | 22.5 | 21.8 | 22.9 | 23.3 |
| | 6H | 19.2 | 20.1 | 19.6 | 20.6 | 21.0 | 22.4 | 23.4 | 22.9 | 23.8 | 24.2 |
| | 8H | 19.3 | 20.2 | 19.8 | 20.6 | 21.1 | 22.7 | 23.6 | 23.2 | 24.0 | 24.5 |
| | 12H | 19.4 | 20.2 | 19.8 | 20.6 | 21.1 | 22.9 | 23.7 | 23.3 | 24.1 | 24.6 |
| 8H | 4H | 19.5 | 20.4 | 19.9 | 20.8 | 21.3 | 21.7 | 22.6 | 22.2 | 23.0 | 23.5 |
| | 6H | 20.1 | 20.9 | 20.6 | 21.4 | 21.8 | 22.9 | 23.6 | 23.4 | 24.1 | 24.6 |
| | 8H | 20.4 | 21.0 | 20.9 | 21.5 | 22.0 | 23.3 | 24.0 | 23.8 | 24.5 | 25.0 |
| | 12H | 20.5 | 21.1 | 21.0 | 21.6 | 22.1 | 23.5 | 24.1 | 24.0 | 24.6 | 25.2 |
| 12H | 4H | 19.6 | 20.4 | 20.1 | 20.9 | 21.4 | 21.7 | 22.5 | 22.2 | 23.0 | 23.5 |
| | 6H | 20.4 | 21.1 | 20.9 | 21.5 | 22.1 | 23.0 | 23.6 | 23.5 | 24.1 | 24.6 |
| | 8H | 20.7 | 21.3 | 21.2 | 21.8 | 22.3 | 23.4 | 24.0 | 23.9 | 24.5 | 25.1 |

Maximum UGR = 25.2

POLAR GRAPH



Maximum Candela = 2563.836 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.)