



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 80R-4-L52-940-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 21046.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 16-SEPT-2022

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 4' WHITE STRIP LED LUMINAIRE WITH

[MORE] WHITE SIDE REFL w/ FROSTED/RIB ACRYLIC LENS

[MORE] 0-10V LED DRIVER

[LUMCAT] 80R-4-L52-940-DIM-UNV

[LAMPCAT] HLMX 90 CRI 4000K CCT

CHARACTERISTICS

| | |
|---------------------------------|---------------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 4336 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 115 |
| Total Luminaire Watts | 37.6 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.20 |
| Spacing Criterion (90-270) | 1.30 |
| Spacing Criterion (Diagonal) | 1.36 |
| Basic Luminous Shape | Rectangular w/Sides |
| Luminous Length (0-180) | 3.98 ft |
| Luminous Width (90-270) | 1.05 ft |
| Luminous Height | 0.21 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 2881 | 2920 | 3146 |
| 55 | 2482 | 2626 | 2956 |
| 65 | 2033 | 2318 | 2685 |
| 75 | 1577 | 2086 | 2511 |
| 85 | 706 | 1858 | 2223 |

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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 | 1483.601 | 1483.601 | 1483.601 | 1483.601 | 1483.601 |
| 5 | 1495.375 | 1472.317 | 1471.826 | 1469.373 | 1470.354 |
| 10 | 1467.901 | 1448.767 | 1451.221 | 1452.692 | 1454.164 |
| 15 | 1423.256 | 1405.103 | 1417.369 | 1425.709 | 1428.653 |
| 20 | 1359.477 | 1347.702 | 1370.270 | 1384.498 | 1393.329 |
| 25 | 1279.017 | 1276.564 | 1307.963 | 1332.984 | 1339.852 |
| 30 | 1186.292 | 1193.651 | 1236.825 | 1267.242 | 1276.564 |
| 35 | 1073.942 | 1094.057 | 1153.421 | 1195.613 | 1212.785 |
| 40 | 962.574 | 986.123 | 1054.809 | 1113.191 | 1132.815 |
| 45 | 834.525 | 876.227 | 945.894 | 1015.069 | 1037.147 |
| 50 | 717.270 | 756.519 | 846.791 | 925.288 | 943.931 |
| 55 | 595.599 | 641.716 | 734.441 | 817.845 | 846.300 |
| 60 | 485.212 | 526.423 | 632.885 | 718.251 | 734.932 |
| 65 | 371.881 | 423.886 | 525.933 | 602.467 | 628.960 |
| 70 | 278.175 | 327.236 | 423.886 | 508.761 | 529.857 |
| 75 | 189.866 | 241.870 | 348.823 | 415.546 | 439.585 |
| 80 | 109.406 | 169.260 | 273.269 | 331.651 | 350.785 |
| 85 | 38.267 | 108.425 | 190.356 | 233.530 | 245.795 |
| 90 | 0.981 | 43.174 | 106.462 | 142.277 | 149.636 |
| 95 | 0.000 | 4.906 | 28.946 | 61.817 | 78.988 |
| 100 | 0.000 | 2.453 | 3.925 | 2.453 | 6.378 |
| 105 | 0.000 | 0.000 | 2.944 | 1.962 | 0.981 |
| 110 | 0.000 | 0.000 | 1.962 | 1.962 | 1.962 |
| 115 | 0.000 | 0.000 | 0.981 | 0.491 | 0.491 |
| 120 | 0.000 | 0.000 | 0.981 | 0.000 | 0.000 |
| 125 | 0.000 | 0.000 | 0.491 | 0.000 | 0.000 |
| 130 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 135 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 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 | 540.24 | N.A. | 12.50 |
| 0-30 | 1142.27 | N.A. | 26.30 |
| 0-40 | 1859.14 | N.A. | 42.90 |
| 0-60 | 3241.83 | N.A. | 74.80 |
| 0-80 | 4103.63 | N.A. | 94.60 |
| 0-90 | 4288.96 | N.A. | 98.90 |
| 10-90 | 4148.88 | N.A. | 95.70 |
| 20-40 | 1318.9 | N.A. | 30.40 |
| 20-50 | 2048.34 | N.A. | 47.20 |
| 40-70 | 1893.9 | N.A. | 43.70 |
| 60-80 | 861.80 | N.A. | 19.90 |
| 70-80 | 350.59 | N.A. | 8.10 |
| 80-90 | 185.33 | N.A. | 4.30 |
| 90-110 | 46.23 | N.A. | 1.10 |
| 90-120 | 46.81 | N.A. | 1.10 |
| 90-130 | 46.92 | N.A. | 1.10 |
| 90-150 | 46.92 | N.A. | 1.10 |
| 90-180 | 46.92 | N.A. | 1.10 |
| 110-180 | 0.69 | N.A. | 0.00 |
| 0-180 | 4335.88 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 140.09 |
| 10-20 | 400.15 |
| 20-30 | 602.03 |
| 30-40 | 716.87 |
| 40-50 | 729.44 |
| 50-60 | 653.25 |
| 60-70 | 511.21 |
| 70-80 | 350.59 |
| 80-90 | 185.33 |
| 90-100 | 44.39 |
| 100-110 | 1.84 |
| 110-120 | 0.58 |
| 120-130 | 0.11 |
| 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 | 101 | 101 | 101 | 99 |
| 1 | 107 | 102 | 97 | 93 | 104 | 100 | 95 | 92 | 95 | 92 | 88 | 91 | 88 | 86 | 87 | 85 | 83 | 81 |
| 2 | 97 | 89 | 81 | 75 | 95 | 87 | 80 | 74 | 83 | 77 | 72 | 79 | 75 | 71 | 76 | 72 | 69 | 67 |
| 3 | 89 | 78 | 69 | 62 | 86 | 76 | 68 | 62 | 73 | 66 | 60 | 70 | 64 | 59 | 67 | 62 | 58 | 56 |
| 4 | 81 | 69 | 60 | 53 | 79 | 67 | 59 | 52 | 65 | 57 | 51 | 62 | 56 | 51 | 60 | 54 | 50 | 48 |
| 5 | 75 | 61 | 52 | 45 | 72 | 60 | 52 | 45 | 58 | 50 | 45 | 56 | 49 | 44 | 54 | 48 | 43 | 41 |
| 6 | 69 | 55 | 46 | 40 | 67 | 54 | 46 | 39 | 52 | 45 | 39 | 51 | 44 | 39 | 49 | 43 | 38 | 36 |
| 7 | 64 | 50 | 41 | 35 | 62 | 49 | 41 | 35 | 48 | 40 | 35 | 46 | 39 | 34 | 45 | 39 | 34 | 32 |
| 8 | 60 | 46 | 37 | 31 | 58 | 45 | 37 | 31 | 44 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 30 | 28 |
| 9 | 56 | 42 | 34 | 28 | 54 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 32 | 28 | 38 | 32 | 27 | 26 |
| 10 | 52 | 39 | 31 | 26 | 51 | 38 | 31 | 25 | 37 | 30 | 25 | 36 | 30 | 25 | 35 | 29 | 25 | 23 |

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UGR TABLE - CORRECTED

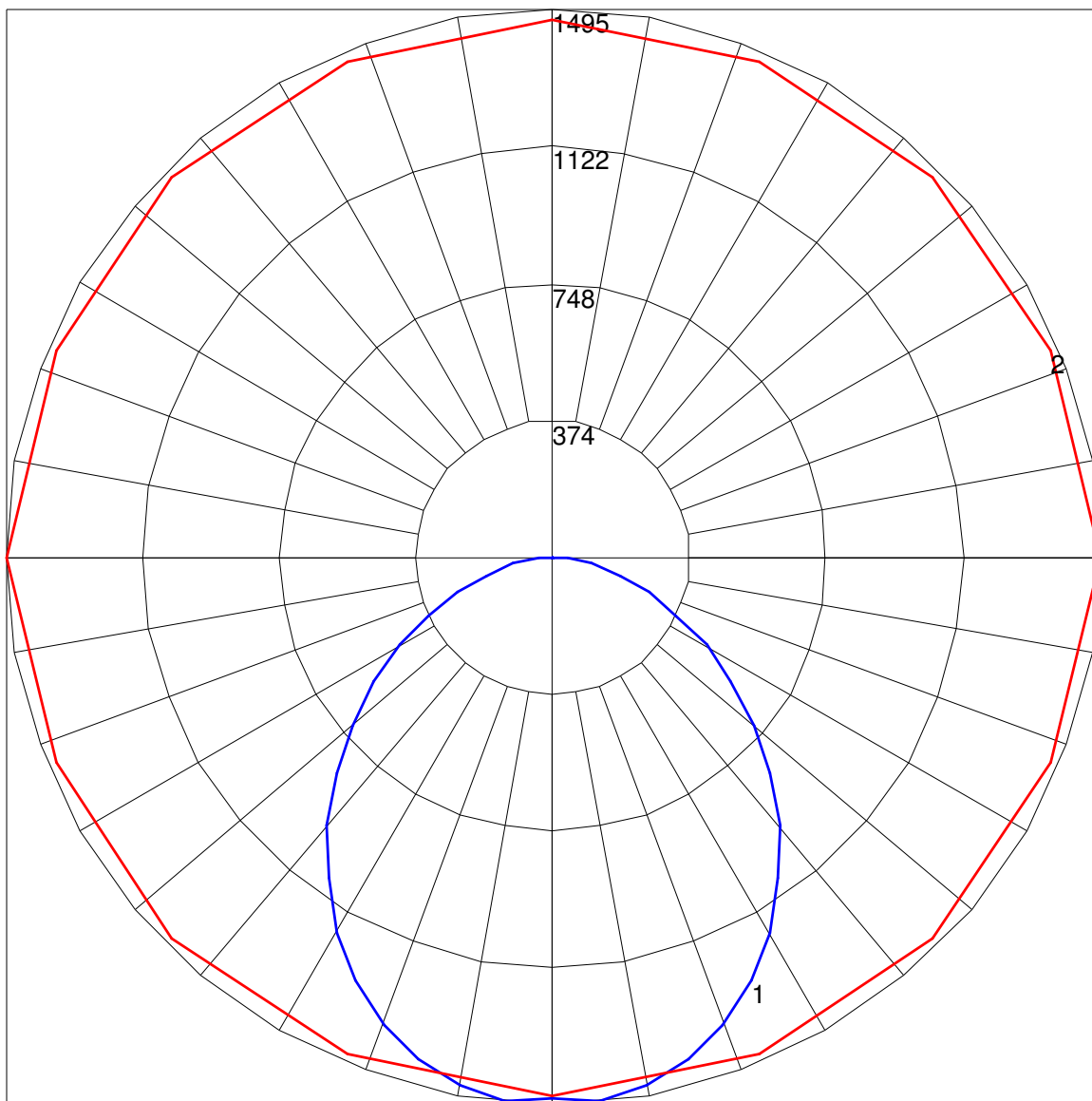
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | 13.9 | 15.5 | 14.3 | 15.9 | 16.2 | 16.3 | 18.0 | 16.7 | 18.3 | 18.7 |
| | 3H | 15.3 | 16.8 | 15.7 | 17.1 | 17.5 | 18.5 | 20.0 | 18.9 | 20.3 | 20.7 |
| | 4H | 15.8 | 17.2 | 16.2 | 17.5 | 17.9 | 19.5 | 20.9 | 19.9 | 21.3 | 21.7 |
| | 6H | 16.1 | 17.4 | 16.5 | 17.8 | 18.2 | 20.5 | 21.8 | 20.9 | 22.2 | 22.6 |
| | 8H | 16.1 | 17.4 | 16.6 | 17.8 | 18.2 | 20.9 | 22.2 | 21.4 | 22.6 | 23.0 |
| | 12H | 16.2 | 17.4 | 16.6 | 17.8 | 18.2 | 21.3 | 22.5 | 21.8 | 23.0 | 23.4 |
| 4H | 2H | 14.8 | 16.2 | 15.2 | 16.6 | 17.0 | 16.8 | 18.2 | 17.2 | 18.5 | 18.9 |
| | 3H | 16.5 | 17.7 | 16.9 | 18.1 | 18.5 | 19.2 | 20.4 | 19.6 | 20.8 | 21.2 |
| | 4H | 17.1 | 18.1 | 17.5 | 18.6 | 19.0 | 20.3 | 21.4 | 20.8 | 21.9 | 22.3 |
| | 6H | 17.5 | 18.4 | 17.9 | 18.9 | 19.4 | 21.5 | 22.5 | 22.0 | 22.9 | 23.4 |
| | 8H | 17.6 | 18.5 | 18.1 | 19.0 | 19.4 | 22.1 | 23.0 | 22.5 | 23.4 | 23.9 |
| | 12H | 17.6 | 18.5 | 18.1 | 19.0 | 19.5 | 22.6 | 23.4 | 23.1 | 23.9 | 24.4 |
| 8H | 4H | 17.8 | 18.7 | 18.2 | 19.1 | 19.6 | 20.6 | 21.5 | 21.0 | 21.9 | 22.4 |
| | 6H | 18.4 | 19.1 | 18.9 | 19.6 | 20.1 | 21.9 | 22.7 | 22.4 | 23.2 | 23.7 |
| | 8H | 18.6 | 19.2 | 19.1 | 19.8 | 20.3 | 22.6 | 23.3 | 23.1 | 23.8 | 24.3 |
| | 12H | 18.7 | 19.3 | 19.2 | 19.8 | 20.4 | 23.3 | 23.9 | 23.8 | 24.4 | 25.0 |
| 12H | 4H | 17.9 | 18.7 | 18.4 | 19.2 | 19.7 | 20.6 | 21.4 | 21.1 | 21.9 | 22.4 |
| | 6H | 18.6 | 19.3 | 19.2 | 19.8 | 20.4 | 22.0 | 22.7 | 22.5 | 23.1 | 23.7 |
| | 8H | 18.9 | 19.5 | 19.4 | 20.1 | 20.6 | 22.7 | 23.3 | 23.2 | 23.8 | 24.4 |

Maximum UGR = 25.0

POLAR GRAPH



Maximum Candela = 1495.375 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.)