



IES INDOOR REPORT

PHOTOMETRIC FILENAME : CL-4-L54-840-FAF12125-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN from BALLABS TEST NO. 18716.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 1-SEP-2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO. 64836
 [LUMINAIRE] 4' CORNER MOUNT LUMINAIRE
 [MORE] WITH ACRYLIC LENS
 [LUMCAT] CL-4-L54/840-FAF12125-DIM-UNV
 [LAMPCAT] HLM 80 CRI, 4000K CCT
 [SEARCH_SOURCETYPE] LED
 [SEARCH_APPLICATION] INDOOR, COMMERCIAL, EDUCATIONAL, OFFICE
 [SEARCH_MOUNTING] SURFACE

CHARACTERISTICS

| | |
|---------------------------------|---------------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 5448 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 116 |
| Total Luminaire Watts | 46.8 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 2.72 |
| Spacing Criterion (90-270) | 1.14 |
| Spacing Criterion (Diagonal) | 1.66 |
| Basic Luminous Shape | Rectangular w/Sides |
| Luminous Length (0-180) | 0.48 ft |
| Luminous Width (90-270) | 3.77 ft |
| Luminous Height | 0.48 ft |



LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 11046 | 9099 | 4181 |
| 55 | 10704 | 8631 | 3521 |
| 65 | 10438 | 8054 | 2995 |
| 75 | 9338 | 6932 | 2516 |
| 85 | 8470 | 5930 | 1742 |

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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> | <u>112.5</u> | <u>135.0</u> | <u>157.5</u> | <u>180.0</u> |
|------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 0 | 1062.141 | 1062.141 | 1062.141 | 1062.141 | 1062.141 | 1062.141 | 1062.141 | 1062.141 | 1062.141 |
| 5 | 1316.868 | 1285.903 | 1226.311 | 1126.991 | 1038.771 | 992.033 | 921.340 | 869.343 | 851.232 |
| 10 | 1561.663 | 1504.407 | 1371.786 | 1187.167 | 1004.886 | 869.343 | 747.238 | 671.871 | 643.244 |
| 15 | 1838.006 | 1762.055 | 1566.921 | 1293.498 | 1017.739 | 812.088 | 656.097 | 572.551 | 541.587 |
| 20 | 2048.331 | 1933.821 | 1655.725 | 1254.939 | 885.117 | 627.469 | 468.557 | 385.011 | 359.305 |
| 25 | 2246.387 | 2134.798 | 1801.199 | 1327.384 | 882.196 | 577.809 | 408.965 | 327.756 | 304.387 |
| 30 | 2400.041 | 2256.903 | 1881.824 | 1314.531 | 793.977 | 468.557 | 314.903 | 239.537 | 210.909 |
| 35 | 2478.329 | 2337.528 | 1920.968 | 1301.678 | 739.058 | 411.302 | 262.906 | 179.360 | 148.396 |
| 40 | 2548.437 | 2397.704 | 1942.000 | 1252.018 | 647.918 | 317.824 | 179.360 | 91.141 | 54.918 |
| 45 | 2623.803 | 2457.296 | 1942.000 | 1178.988 | 559.698 | 255.311 | 112.173 | 28.628 | 18.111 |
| 50 | 2587.581 | 2412.894 | 1884.745 | 1103.622 | 484.332 | 203.314 | 44.402 | 21.032 | 0.000 |
| 55 | 2504.035 | 2327.012 | 1777.830 | 994.370 | 400.786 | 146.059 | 18.111 | 0.000 | 0.000 |
| 60 | 2394.783 | 2207.243 | 1658.062 | 895.634 | 335.936 | 85.883 | 0.000 | 0.000 | 0.000 |
| 65 | 2329.933 | 2131.877 | 1548.809 | 791.055 | 270.501 | 26.291 | 0.000 | 0.000 | 0.000 |
| 70 | 2168.099 | 1970.628 | 1395.155 | 681.803 | 221.425 | 0.000 | 0.000 | 0.000 | 0.000 |
| 75 | 1920.968 | 1731.091 | 1197.684 | 567.293 | 161.249 | 0.000 | 0.000 | 0.000 | 0.000 |
| 80 | 1741.607 | 1551.146 | 1035.850 | 460.962 | 112.173 | 0.000 | 0.000 | 0.000 | 0.000 |
| 85 | 1541.214 | 1353.675 | 877.522 | 375.079 | 62.513 | 0.000 | 0.000 | 0.000 | 0.000 |
| 90 | 1194.762 | 1041.108 | 661.355 | 275.759 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 95 | 1012.481 | 861.748 | 531.070 | 192.798 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 100 | 775.865 | 650.839 | 398.449 | 127.363 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 105 | 585.404 | 494.848 | 291.534 | 64.850 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 110 | 452.783 | 382.675 | 216.167 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 115 | 338.273 | 286.276 | 146.059 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 120 | 252.390 | 207.988 | 75.366 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 125 | 169.428 | 125.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 130 | 96.399 | 54.918 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 135 | 12.853 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 140 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 145 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 150 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 155 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 160 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 165 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 170 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 175 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 180 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 408.07 | N.A. | 7.50 |
| 0-30 | 906.75 | N.A. | 16.60 |
| 0-40 | 1566.55 | N.A. | 28.80 |
| 0-60 | 3097.63 | N.A. | 56.90 |
| 0-80 | 4444.09 | N.A. | 81.60 |
| 0-90 | 4903.7 | N.A. | 90.00 |
| 10-90 | 4802.19 | N.A. | 88.10 |
| 20-40 | 1158.48 | N.A. | 21.30 |
| 20-50 | 1914.98 | N.A. | 35.20 |
| 40-70 | 2262.49 | N.A. | 41.50 |
| 60-80 | 1346.46 | N.A. | 24.70 |
| 70-80 | 615.05 | N.A. | 11.30 |
| 80-90 | 459.60 | N.A. | 8.40 |
| 90-110 | 438.87 | N.A. | 8.10 |
| 90-120 | 514.75 | N.A. | 9.40 |
| 90-130 | 541.15 | N.A. | 9.90 |
| 90-150 | 544.06 | N.A. | 10.00 |
| 90-180 | 544.06 | N.A. | 10.00 |
| 110-180 | 105.19 | N.A. | 1.90 |
| 0-180 | 5447.76 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 101.50 |
| 10-20 | 306.57 |
| 20-30 | 498.68 |
| 30-40 | 659.80 |
| 40-50 | 756.49 |
| 50-60 | 774.59 |
| 60-70 | 731.41 |
| 70-80 | 615.05 |
| 80-90 | 459.60 |
| 90-100 | 283.94 |
| 100-110 | 154.93 |
| 110-120 | 75.88 |
| 120-130 | 26.40 |
| 130-140 | 2.92 |
| 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 | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 106 | 106 | 106 | 99 | 99 | 99 | 93 | 93 | 93 | 90 |
| 1 | 103 | 96 | 91 | 86 | 99 | 93 | 88 | 83 | 87 | 83 | 79 | 81 | 78 | 74 | 76 | 73 | 70 | 67 |
| 2 | 92 | 82 | 73 | 66 | 88 | 79 | 71 | 65 | 74 | 67 | 62 | 69 | 63 | 59 | 64 | 60 | 56 | 53 |
| 3 | 83 | 70 | 61 | 53 | 79 | 68 | 59 | 52 | 63 | 56 | 50 | 59 | 53 | 48 | 55 | 50 | 46 | 43 |
| 4 | 75 | 62 | 52 | 44 | 72 | 60 | 50 | 43 | 56 | 48 | 41 | 52 | 45 | 40 | 49 | 43 | 38 | 35 |
| 5 | 69 | 54 | 44 | 37 | 66 | 53 | 43 | 36 | 49 | 41 | 35 | 46 | 39 | 34 | 43 | 37 | 32 | 30 |
| 6 | 63 | 49 | 39 | 32 | 60 | 47 | 38 | 31 | 44 | 36 | 30 | 41 | 34 | 29 | 39 | 33 | 28 | 26 |
| 7 | 58 | 44 | 34 | 28 | 56 | 42 | 34 | 27 | 40 | 32 | 26 | 38 | 31 | 25 | 35 | 29 | 25 | 22 |
| 8 | 54 | 40 | 31 | 24 | 52 | 39 | 30 | 24 | 36 | 29 | 23 | 34 | 27 | 22 | 32 | 26 | 22 | 20 |
| 9 | 50 | 36 | 28 | 22 | 48 | 35 | 27 | 21 | 33 | 26 | 21 | 31 | 25 | 20 | 30 | 24 | 19 | 17 |
| 10 | 47 | 33 | 25 | 19 | 45 | 32 | 24 | 19 | 31 | 24 | 19 | 29 | 23 | 18 | 28 | 22 | 17 | 16 |

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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

| | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|
| X=2H | Y=2H | 24.4 | 25.9 | 24.9 | 26.4 | 27.0 | 13.6 | 15.2 | 14.1 | 15.7 | 16.3 |
| | 3H | 27.4 | 28.9 | 27.9 | 29.4 | 30.0 | 14.8 | 16.2 | 15.3 | 16.8 | 17.3 |
| | 4H | 28.8 | 30.2 | 29.4 | 30.7 | 31.3 | 15.2 | 16.5 | 15.7 | 17.1 | 17.7 |
| | 6H | 30.3 | 31.6 | 30.8 | 32.1 | 32.7 | 15.4 | 16.7 | 16.0 | 17.2 | 17.9 |
| | 8H | 31.0 | 32.2 | 31.6 | 32.8 | 33.4 | 15.5 | 16.7 | 16.0 | 17.3 | 17.9 |
| | 12H | 31.7 | 32.9 | 32.3 | 33.5 | 34.1 | 15.5 | 16.7 | 16.1 | 17.3 | 17.9 |

UGR Viewed Endwise

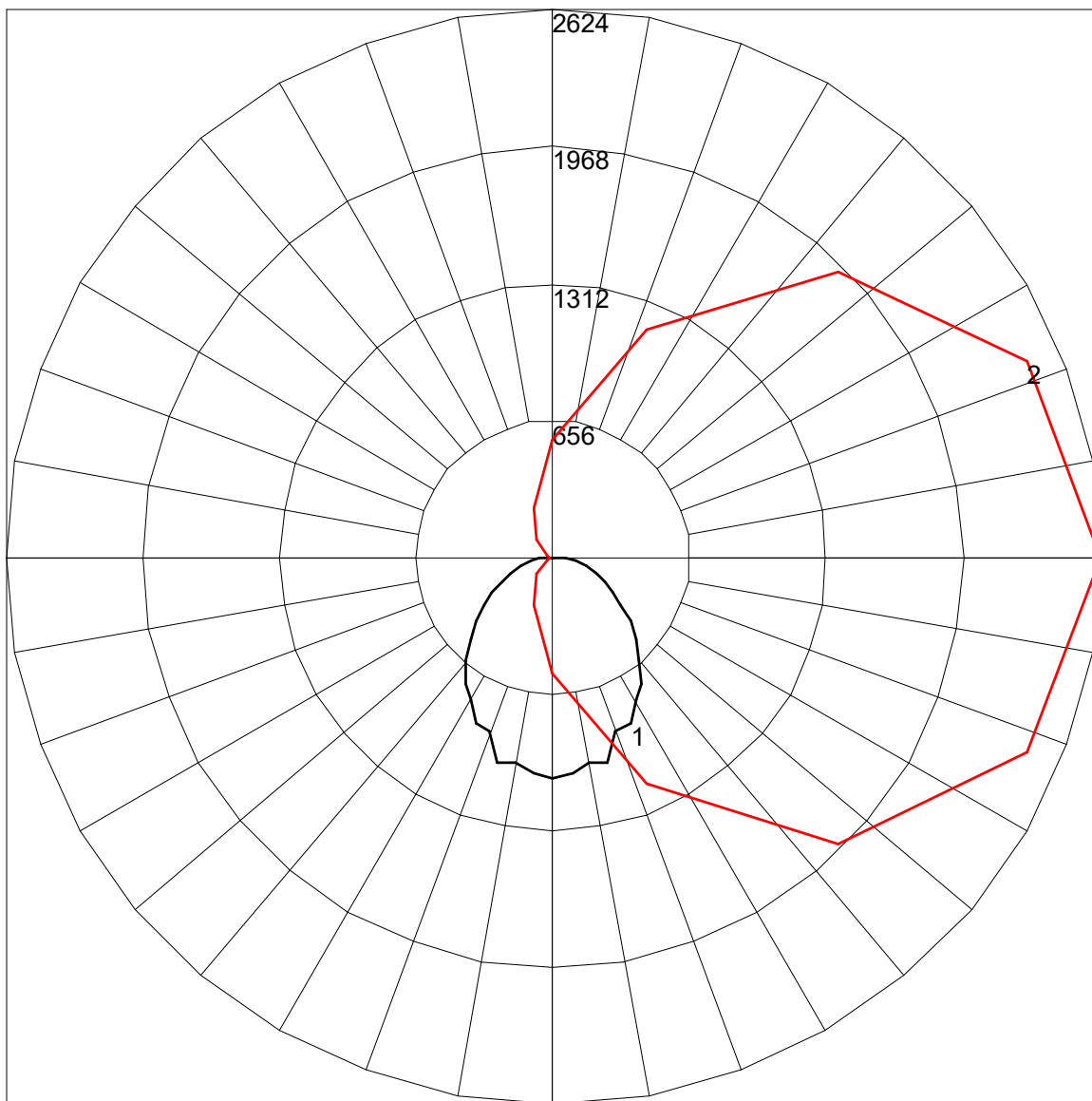
| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H | 2H | 24.6 | 26.0 | 25.1 | 26.5 | 27.1 | 16.6 | 18.0 | 17.1 | 18.5 | 19.1 |
| | 3H | 27.9 | 29.1 | 28.4 | 29.6 | 30.3 | 18.0 | 19.2 | 18.5 | 19.8 | 20.4 |
| | 4H | 29.4 | 30.5 | 30.0 | 31.1 | 31.8 | 18.4 | 19.5 | 19.0 | 20.1 | 20.8 |
| | 6H | 31.1 | 32.1 | 31.7 | 32.7 | 33.3 | 18.7 | 19.7 | 19.3 | 20.3 | 21.0 |
| | 8H | 31.9 | 32.8 | 32.5 | 33.5 | 34.1 | 18.8 | 19.7 | 19.4 | 20.3 | 21.0 |
| | 12H | 32.8 | 33.7 | 33.4 | 34.3 | 35.0 | 18.9 | 19.7 | 19.5 | 20.3 | 21.0 |

| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 8H | 4H | 29.6 | 30.5 | 30.2 | 31.1 | 31.8 | 20.3 | 21.2 | 20.9 | 21.9 | 22.5 |
| | 6H | 31.4 | 32.1 | 32.0 | 32.8 | 33.5 | 20.9 | 21.7 | 21.5 | 22.3 | 23.0 |
| | 8H | 32.3 | 33.0 | 33.0 | 33.7 | 34.4 | 21.0 | 21.8 | 21.7 | 22.4 | 23.1 |
| | 12H | 33.4 | 34.0 | 34.0 | 34.7 | 35.4 | 21.2 | 21.8 | 21.8 | 22.5 | 23.2 |

| | | | | | | | | | | | |
|-----|----|------|------|------|------|------|------|------|------|------|------|
| 12H | 4H | 29.5 | 30.4 | 30.2 | 31.0 | 31.7 | 20.9 | 21.7 | 21.5 | 22.4 | 23.0 |
| | 6H | 31.4 | 32.1 | 32.0 | 32.7 | 33.5 | 21.6 | 22.3 | 22.3 | 23.0 | 23.7 |
| | 8H | 32.4 | 33.0 | 33.0 | 33.7 | 34.4 | 21.9 | 22.6 | 22.6 | 23.2 | 24.0 |

Maximum UGR = 35.4

POLAR GRAPH



Maximum Candela = 2623.803 Located At Horizontal Angle = 0, Vertical Angle = 45
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (45) (Through Max. Cd.)