



IES INDOOR REPORT

PHOTOMETRIC FILENAME : DIG-S24-L50-835-AD-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST]GEN FROM BALLABS TEST NO. 19231.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 05-19-2020

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836

[LUMINAIRE] 2x4'RECESSED LED TROFFER

[MORE] WITH FROST ACRYLIC DIFFUSER

[LUMCAT] DIG-S24-L50-835-AD-DIM-UNV

[LAMPCAT] HLM 80 CRI, 3500K CCT

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Architectural, Classroom, Commercial, Educational, Office, Direct, Indirect

[_SEARCH_MOUNTING] Ceiling, Recessed

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 5060 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 135 |
| Total Luminaire Watts | 37.4 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.10 |
| Spacing Criterion (90-270) | 1.18 |
| Spacing Criterion (Diagonal) | 1.38 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.91 ft |
| Luminous Width (90-270) | 1.88 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 2295 | 2541 | 2694 |
| 55 | 1994 | 2334 | 2545 |
| 65 | 1797 | 2332 | 2791 |
| 75 | 1471 | 1998 | 1798 |
| 85 | 1232 | 1363 | 1494 |

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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 | 1839.151 | 1839.151 | 1839.151 | 1839.151 | 1839.151 |
| 5 | 1817.368 | 1816.849 | 1816.849 | 1817.886 | 1817.886 |
| 10 | 1800.252 | 1801.289 | 1803.883 | 1808.551 | 1810.625 |
| 15 | 1729.196 | 1731.790 | 1741.644 | 1749.424 | 1752.017 |
| 20 | 1696.002 | 1697.558 | 1714.674 | 1729.196 | 1733.864 |
| 25 | 1525.365 | 1536.257 | 1560.115 | 1579.305 | 1588.122 |
| 30 | 1295.601 | 1388.959 | 1497.358 | 1463.645 | 1427.339 |
| 35 | 1297.675 | 1323.089 | 1368.731 | 1407.112 | 1420.597 |
| 40 | 1184.090 | 1215.728 | 1276.929 | 1323.089 | 1338.649 |
| 45 | 1105.254 | 1147.265 | 1223.508 | 1279.522 | 1297.157 |
| 50 | 940.322 | 984.408 | 1065.836 | 1121.851 | 1138.967 |
| 55 | 779.020 | 827.255 | 911.796 | 973.516 | 994.262 |
| 60 | 627.573 | 677.364 | 761.386 | 836.591 | 862.524 |
| 65 | 517.099 | 572.077 | 671.140 | 766.572 | 803.397 |
| 70 | 386.917 | 443.969 | 551.849 | 588.155 | 543.551 |
| 75 | 259.328 | 312.749 | 352.167 | 319.492 | 316.898 |
| 80 | 160.783 | 203.313 | 201.238 | 188.790 | 186.716 |
| 85 | 73.130 | 84.022 | 80.910 | 84.022 | 88.690 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 668.35 | N.A. | 13.20 |
| 0-30 | 1389.42 | N.A. | 27.50 |
| 0-40 | 2240.04 | N.A. | 44.30 |
| 0-60 | 3964.59 | N.A. | 78.40 |
| 0-80 | 4962.66 | N.A. | 98.10 |
| 0-90 | 5059.76 | N.A. | 100.00 |
| 10-90 | 4886.47 | N.A. | 96.60 |
| 20-40 | 1571.69 | N.A. | 31.10 |
| 20-50 | 2489.13 | N.A. | 49.20 |
| 40-70 | 2369.12 | N.A. | 46.80 |
| 60-80 | 998.07 | N.A. | 19.70 |
| 70-80 | 353.50 | N.A. | 7.00 |
| 80-90 | 97.10 | N.A. | 1.90 |
| 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 | 5059.76 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 173.29 |
| 10-20 | 495.06 |
| 20-30 | 721.07 |
| 30-40 | 850.63 |
| 40-50 | 917.43 |
| 50-60 | 807.12 |
| 60-70 | 644.57 |
| 70-80 | 353.50 |
| 80-90 | 97.10 |
| 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 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 94 | 97 | 94 | 91 | 93 | 91 | 88 | 90 | 88 | 86 | 84 |
| 2 | 99 | 90 | 83 | 78 | 96 | 88 | 82 | 77 | 85 | 80 | 75 | 82 | 77 | 73 | 79 | 75 | 72 | 69 |
| 3 | 90 | 79 | 71 | 64 | 87 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 66 | 62 | 69 | 65 | 61 | 58 |
| 4 | 82 | 70 | 61 | 55 | 80 | 69 | 61 | 54 | 66 | 59 | 53 | 64 | 58 | 53 | 62 | 56 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 53 | 47 | 59 | 52 | 46 | 57 | 51 | 46 | 56 | 50 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 68 | 55 | 47 | 41 | 54 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 40 | 38 |
| 7 | 65 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 49 | 41 | 36 | 47 | 41 | 35 | 46 | 40 | 35 | 33 |
| 8 | 60 | 47 | 38 | 32 | 59 | 46 | 38 | 32 | 45 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | 30 |
| 9 | 56 | 43 | 35 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 33 | 29 | 39 | 33 | 29 | 27 |
| 10 | 53 | 40 | 32 | 26 | 52 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 31 | 26 | 36 | 30 | 26 | 24 |

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UGR TABLE - CORRECTED

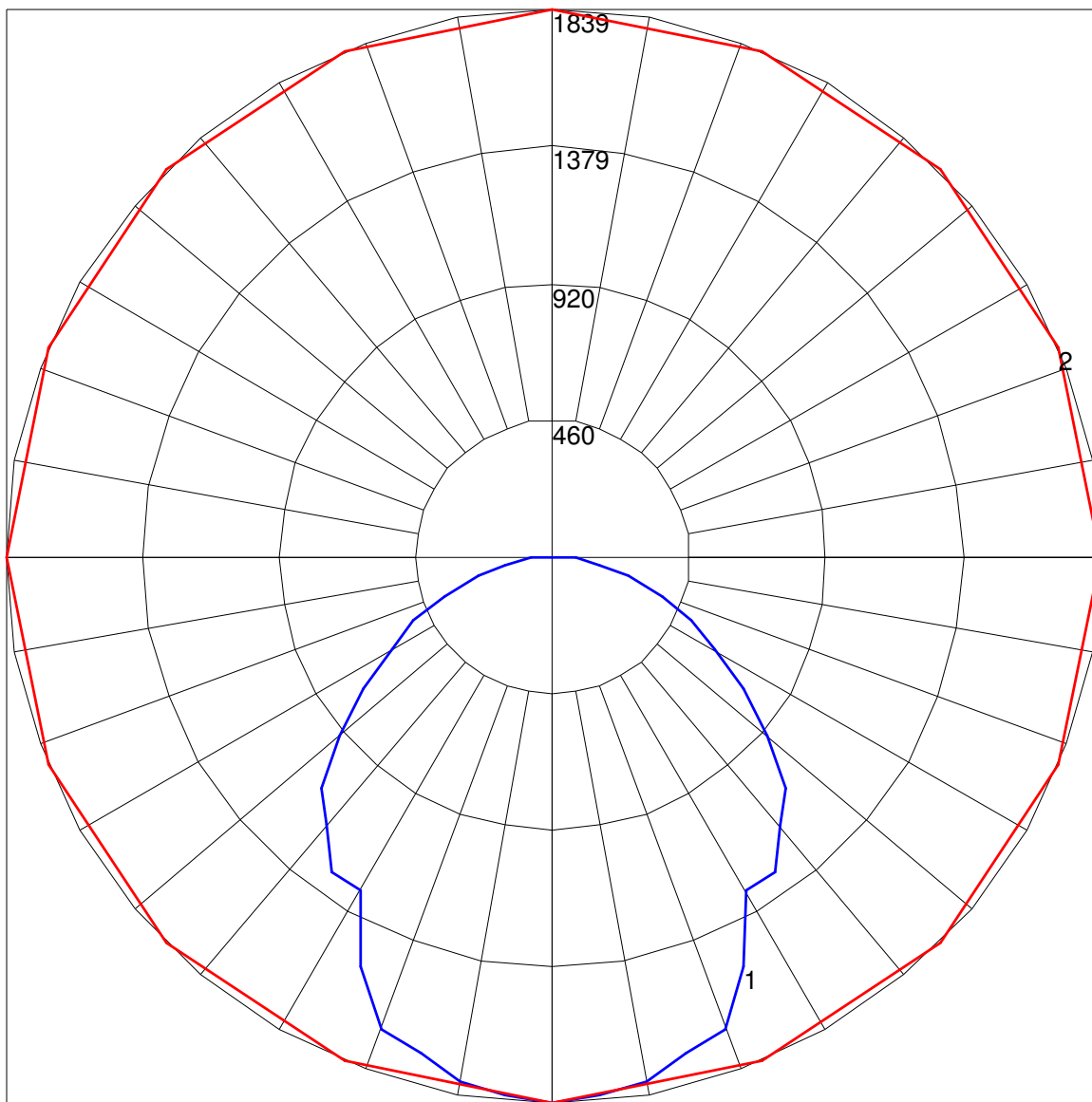
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | 14.2 | 15.8 | 14.5 | 16.1 | 16.4 | 15.6 | 17.2 | 15.9 | 17.5 | 17.9 |
| | 3H | 15.9 | 17.4 | 16.3 | 17.8 | 18.1 | 17.7 | 19.2 | 18.1 | 19.6 | 19.9 |
| | 4H | 16.5 | 18.0 | 16.9 | 18.3 | 18.7 | 18.3 | 19.7 | 18.7 | 20.0 | 20.4 |
| | 6H | 17.0 | 18.3 | 17.4 | 18.7 | 19.1 | 18.6 | 19.9 | 19.0 | 20.3 | 20.7 |
| | 8H | 17.2 | 18.4 | 17.6 | 18.8 | 19.2 | 18.7 | 20.0 | 19.1 | 20.4 | 20.8 |
| | 12H | 17.3 | 18.5 | 17.7 | 18.8 | 19.3 | 18.8 | 20.0 | 19.2 | 20.4 | 20.8 |
| 4H | 2H | 15.1 | 16.5 | 15.5 | 16.9 | 17.3 | 16.2 | 17.6 | 16.6 | 18.0 | 18.3 |
| | 3H | 17.1 | 18.3 | 17.5 | 18.7 | 19.1 | 18.6 | 19.8 | 19.0 | 20.2 | 20.6 |
| | 4H | 17.9 | 18.9 | 18.3 | 19.3 | 19.8 | 19.2 | 20.2 | 19.6 | 20.7 | 21.1 |
| | 6H | 18.5 | 19.4 | 18.9 | 19.8 | 20.3 | 19.6 | 20.6 | 20.1 | 21.0 | 21.5 |
| | 8H | 18.6 | 19.5 | 19.1 | 20.0 | 20.4 | 19.8 | 20.7 | 20.3 | 21.1 | 21.6 |
| | 12H | 18.8 | 19.6 | 19.3 | 20.0 | 20.5 | 19.9 | 20.7 | 20.4 | 21.2 | 21.7 |
| 8H | 4H | 18.3 | 19.2 | 18.8 | 19.6 | 20.1 | 19.4 | 20.3 | 19.9 | 20.8 | 21.2 |
| | 6H | 19.0 | 19.8 | 19.5 | 20.2 | 20.7 | 20.0 | 20.7 | 20.5 | 21.2 | 21.7 |
| | 8H | 19.3 | 20.0 | 19.8 | 20.5 | 21.0 | 20.2 | 20.9 | 20.7 | 21.4 | 21.9 |
| | 12H | 19.5 | 20.1 | 20.0 | 20.6 | 21.2 | 20.4 | 21.0 | 20.9 | 21.5 | 22.0 |
| 12H | 4H | 18.3 | 19.1 | 18.8 | 19.6 | 20.1 | 19.5 | 20.3 | 19.9 | 20.7 | 21.2 |
| | 6H | 19.1 | 19.8 | 19.6 | 20.2 | 20.8 | 20.1 | 20.7 | 20.6 | 21.2 | 21.7 |
| | 8H | 19.4 | 20.0 | 19.9 | 20.5 | 21.1 | 20.3 | 20.9 | 20.8 | 21.4 | 22.0 |

Maximum UGR = 22.0

POLAR GRAPH



Maximum Candela = 1839.151 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)