



IES INDOOR REPORT

PHOTOMETRIC FILENAME : HZL-4-L107-840-HIA-XXXX-DRV-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TESTLAB] GEN from BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 4-DEC-2024

[TEST] BALLABS TEST NO. 21051.0

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

[LUMINAIRE] 52 INCH SEALED & GASKETED LED LUMINAIRE

[MORE] WHITE REFLECTOR w/CLEAR ACRYLIC DROP LENS

[LUMCAT] HZL-4-L107-840-HIA-xxxx-DRV-UNV

[LAMPCAT] HLM 80 CRI 4000K CCT

CHARACTERISTICS

| | |
|---------------------------------|---------------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 10967 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 161 |
| Total Luminaire Watts | 68 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.30 |
| Spacing Criterion (90-270) | 1.28 |
| Spacing Criterion (Diagonal) | 1.36 |
| Basic Luminous Shape | Rectangular w/Sides |
| Luminous Length (0-180) | 4.25 ft |
| Luminous Width (90-270) | 1.10 ft |
| Luminous Height | 0.23 ft |



LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 8168 | 6269 | 6262 |
| 55 | 7399 | 5103 | 6680 |
| 65 | 6006 | 5730 | 5428 |
| 75 | 3495 | 3237 | 4043 |
| 85 | 1207 | 2301 | 2531 |

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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 | 3827.821 | 3827.821 | 3827.821 | 3827.821 | 3827.821 |
| 5 | 3872.402 | 3836.649 | 3774.411 | 3766.908 | 3762.494 |
| 10 | 3819.876 | 3764.259 | 3752.783 | 3747.045 | 3753.224 |
| 15 | 3734.244 | 3698.932 | 3717.912 | 3708.643 | 3704.670 |
| 20 | 3627.425 | 3610.652 | 3603.590 | 3600.058 | 3598.293 |
| 25 | 3487.943 | 3498.536 | 3478.673 | 3484.853 | 3488.384 |
| 30 | 3327.273 | 3325.066 | 3340.074 | 3353.757 | 3356.847 |
| 35 | 3135.706 | 3148.065 | 3154.244 | 3254.442 | 3006.375 |
| 40 | 2925.599 | 2926.923 | 3265.036 | 2103.271 | 2086.498 |
| 45 | 2655.904 | 2652.373 | 2291.307 | 1963.789 | 2332.799 |
| 50 | 2350.896 | 2372.525 | 1688.796 | 2607.350 | 2495.676 |
| 55 | 1994.245 | 2187.137 | 1614.200 | 2131.079 | 2166.833 |
| 60 | 1624.352 | 1558.583 | 1907.289 | 1846.376 | 1913.028 |
| 65 | 1235.479 | 927.823 | 1475.159 | 1545.341 | 1446.026 |
| 70 | 843.074 | 672.694 | 1156.027 | 1010.365 | 795.844 |
| 75 | 474.064 | 478.036 | 617.519 | 571.613 | 809.969 |
| 80 | 202.603 | 350.913 | 310.746 | 450.669 | 463.470 |
| 85 | 74.155 | 158.021 | 272.344 | 342.085 | 324.429 |
| 90 | 18.097 | 76.362 | 105.495 | 102.846 | 99.756 |
| 95 | 23.394 | 27.367 | 33.546 | 41.050 | 42.374 |
| 100 | 37.078 | 25.160 | 30.457 | 33.105 | 32.664 |
| 105 | 31.339 | 29.132 | 29.132 | 39.285 | 40.167 |
| 110 | 22.953 | 21.187 | 23.394 | 29.132 | 31.339 |
| 115 | 15.449 | 19.422 | 19.422 | 21.629 | 23.394 |
| 120 | 11.035 | 11.035 | 30.457 | 17.656 | 19.422 |
| 125 | 7.504 | 5.297 | 22.070 | 40.167 | 31.781 |
| 130 | 5.297 | 0.000 | 9.711 | 21.629 | 38.402 |
| 135 | 3.973 | 0.000 | 15.008 | 11.476 | 11.476 |
| 140 | 0.000 | 0.000 | 6.180 | 23.394 | 15.449 |
| 145 | 0.000 | 0.000 | 0.000 | 10.152 | 17.215 |
| 150 | 0.000 | 0.000 | 0.000 | 4.414 | 5.738 |
| 155 | 0.000 | 0.000 | 0.000 | 0.000 | 3.973 |
| 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 | 1408.13 | N.A. | 12.80 |
| 0-30 | 3016.26 | N.A. | 27.50 |
| 0-40 | 4950.25 | N.A. | 45.10 |
| 0-60 | 8621.7 | N.A. | 78.60 |
| 0-80 | 10581.02 | N.A. | 96.50 |
| 0-90 | 10835.25 | N.A. | 98.80 |
| 10-90 | 10473.58 | N.A. | 95.50 |
| 20-40 | 3542.13 | N.A. | 32.30 |
| 20-50 | 5411.55 | N.A. | 49.30 |
| 40-70 | 4989.64 | N.A. | 45.50 |
| 60-80 | 1959.31 | N.A. | 17.90 |
| 70-80 | 641.12 | N.A. | 5.80 |
| 80-90 | 254.24 | N.A. | 2.30 |
| 90-110 | 82.79 | N.A. | 0.80 |
| 90-120 | 103.61 | N.A. | 0.90 |
| 90-130 | 120.58 | N.A. | 1.10 |
| 90-150 | 131.60 | N.A. | 1.20 |
| 90-180 | 131.95 | N.A. | 1.20 |
| 110-180 | 49.15 | N.A. | 0.40 |
| 0-180 | 10967.2 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|---------|
| 0-10 | 361.67 |
| 10-20 | 1046.45 |
| 20-30 | 1608.13 |
| 30-40 | 1934.00 |
| 40-50 | 1869.43 |
| 50-60 | 1802.02 |
| 60-70 | 1318.19 |
| 70-80 | 641.12 |
| 80-90 | 254.24 |
| 90-100 | 50.31 |
| 100-110 | 32.49 |
| 110-120 | 20.82 |
| 120-130 | 16.97 |
| 130-140 | 7.73 |
| 140-150 | 3.30 |
| 150-160 | 0.35 |
| 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 | 32 | 32 | 32 | 32 | 31 | 31 | 31 | 31 | 29 | 29 | 29 | 28 | 28 | 28 | 27 | 27 | 27 | 26 |
| 1 | 29 | 28 | 26 | 25 | 28 | 27 | 26 | 25 | 26 | 25 | 24 | 25 | 24 | 23 | 24 | 23 | 23 | 22 |
| 2 | 26 | 24 | 22 | 21 | 25 | 23 | 22 | 20 | 22 | 21 | 20 | 22 | 20 | 19 | 21 | 20 | 19 | 18 |
| 3 | 24 | 21 | 19 | 17 | 23 | 21 | 19 | 17 | 20 | 18 | 17 | 19 | 18 | 16 | 18 | 17 | 16 | 15 |
| 4 | 22 | 19 | 16 | 15 | 21 | 18 | 16 | 14 | 18 | 16 | 14 | 17 | 15 | 14 | 16 | 15 | 14 | 13 |
| 5 | 20 | 17 | 14 | 13 | 20 | 16 | 14 | 12 | 16 | 14 | 12 | 15 | 14 | 12 | 15 | 13 | 12 | 11 |
| 6 | 19 | 15 | 13 | 11 | 18 | 15 | 13 | 11 | 14 | 12 | 11 | 14 | 12 | 11 | 13 | 12 | 11 | 10 |
| 7 | 17 | 14 | 11 | 10 | 17 | 13 | 11 | 10 | 13 | 11 | 10 | 13 | 11 | 9 | 12 | 11 | 9 | 9 |
| 8 | 16 | 12 | 10 | 9 | 16 | 12 | 10 | 9 | 12 | 10 | 9 | 12 | 10 | 8 | 11 | 10 | 8 | 8 |
| 9 | 15 | 11 | 9 | 8 | 15 | 11 | 9 | 8 | 11 | 9 | 8 | 11 | 9 | 8 | 10 | 9 | 8 | 7 |
| 10 | 14 | 11 | 8 | 7 | 14 | 10 | 8 | 7 | 10 | 8 | 7 | 10 | 8 | 7 | 10 | 8 | 7 | 6 |

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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

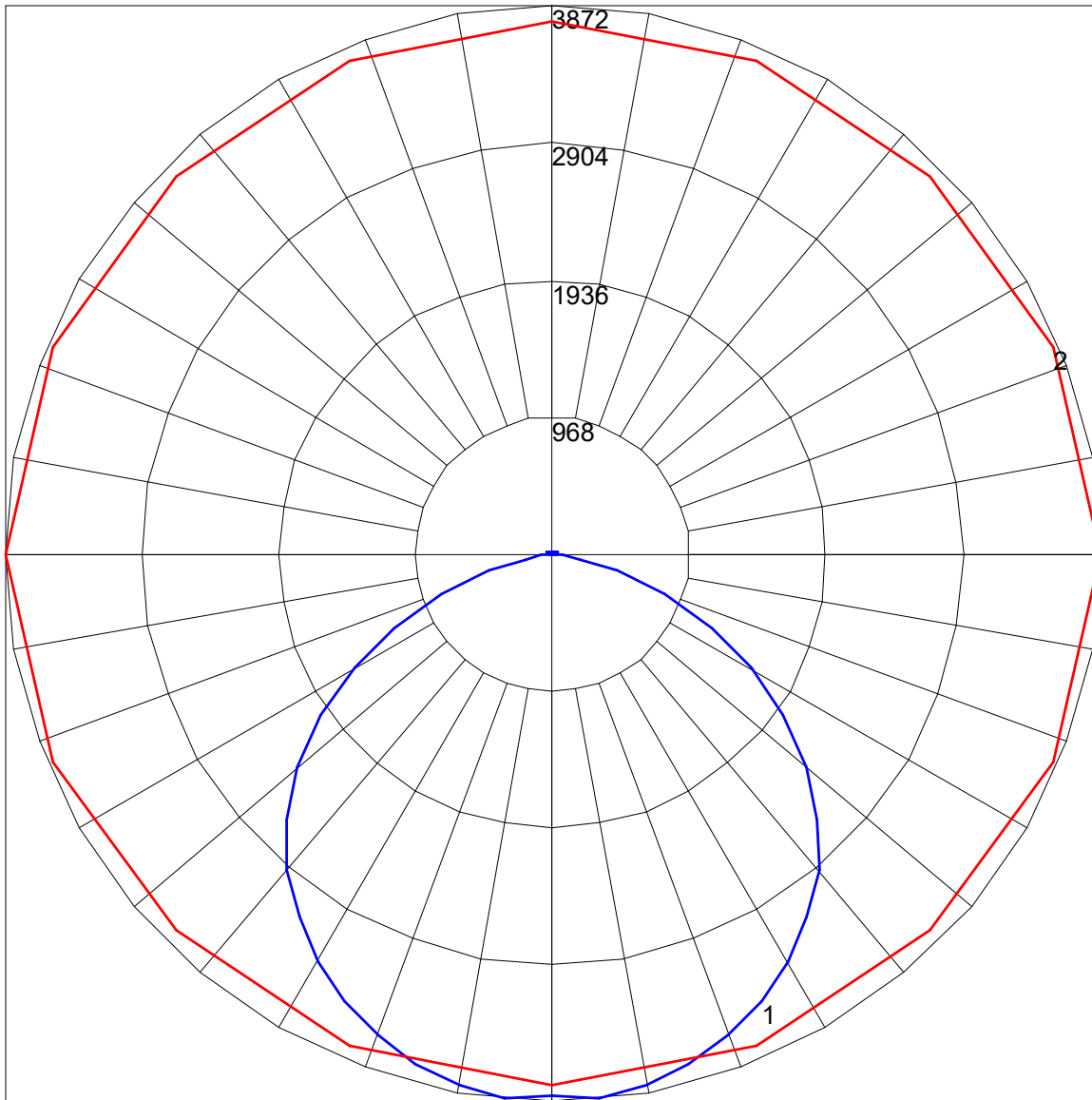
| X=2H | Y=2H | 23.0 | 24.6 | 23.4 | 24.9 | 25.3 | 23.9 | 25.5 | 24.3 | 25.9 | 26.2 |
|------|------|------|------|------|------|------|------|------|------|------|------|
| | 3H | 23.9 | 25.3 | 24.3 | 25.7 | 26.1 | 25.3 | 26.7 | 25.7 | 27.1 | 27.5 |
| | 4H | 24.2 | 25.5 | 24.6 | 25.9 | 26.3 | 25.8 | 27.2 | 26.2 | 27.6 | 28.0 |
| | 6H | 24.3 | 25.6 | 24.7 | 25.9 | 26.4 | 26.3 | 27.5 | 26.7 | 27.9 | 28.3 |
| | 8H | 24.3 | 25.5 | 24.7 | 25.9 | 26.4 | 26.5 | 27.7 | 26.9 | 28.1 | 28.5 |
| | 12H | 24.3 | 25.5 | 24.8 | 25.9 | 26.3 | 26.7 | 27.8 | 27.1 | 28.2 | 28.7 |

UGR Viewed Endwise

| | | | | | | | | | | | |
|-----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H | 2H | 23.7 | 25.0 | 24.1 | 25.4 | 25.8 | 24.4 | 25.8 | 24.8 | 26.2 | 26.6 |
| | 3H | 24.7 | 25.9 | 25.2 | 26.3 | 26.7 | 26.0 | 27.1 | 26.4 | 27.6 | 28.0 |
| | 4H | 25.1 | 26.1 | 25.5 | 26.6 | 27.0 | 26.6 | 27.6 | 27.0 | 28.0 | 28.5 |
| | 6H | 25.3 | 26.2 | 25.8 | 26.7 | 27.1 | 27.1 | 28.0 | 27.6 | 28.5 | 29.0 |
| | 8H | 25.3 | 26.2 | 25.8 | 26.7 | 27.1 | 27.4 | 28.2 | 27.9 | 28.7 | 29.2 |
| | 12H | 25.4 | 26.1 | 25.9 | 26.6 | 27.1 | 27.6 | 28.4 | 28.1 | 28.9 | 29.4 |
| 8H | 4H | 25.3 | 26.2 | 25.8 | 26.6 | 27.1 | 26.7 | 27.5 | 27.2 | 28.0 | 28.5 |
| | 6H | 25.6 | 26.3 | 26.1 | 26.8 | 27.3 | 27.3 | 28.0 | 27.8 | 28.5 | 29.0 |
| | 8H | 25.7 | 26.4 | 26.2 | 26.9 | 27.4 | 27.7 | 28.3 | 28.2 | 28.8 | 29.3 |
| | 12H | 25.8 | 26.3 | 26.3 | 26.8 | 27.4 | 28.0 | 28.6 | 28.6 | 29.1 | 29.7 |
| 12H | 4H | 25.4 | 26.1 | 25.9 | 26.6 | 27.1 | 26.7 | 27.4 | 27.2 | 27.9 | 28.4 |
| | 6H | 25.7 | 26.3 | 26.2 | 26.8 | 27.4 | 27.3 | 28.0 | 27.9 | 28.5 | 29.0 |
| | 8H | 25.8 | 26.4 | 26.3 | 26.9 | 27.5 | 27.7 | 28.3 | 28.2 | 28.8 | 29.4 |

Maximum UGR = 29.7

POLAR GRAPH



Maximum Candela = 3872.402 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.)