H.E. WILLIAMS, INC.

**IES INDOOR REPORT**
**PHOTOMETRIC FILENAME : PT-14-L27-940-SA-DIM-UNV_.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002
[TEST] GEN FROM BALLABS TEST NO. 20790.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 2023-06-23
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
[LUMINAIRE] 1 X 4 RECESSED LED LUMINAIRE
[MORE] W/ FROSTED SQUARE RIBBED LENS
[MORE] 0-10V LED DRIVER
[LUMCAT] PT-14-L27-940-SA-DIM-UNV
[LAMPCAT] HLM 22" LED ARRAYS

**CHARACTERISTICS**

| | |
|---|---|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 2326 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 124 |
| Total Luminaire Watts | 18.8 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.20 |
| Spacing Criterion (90-270) | 1.16 |
| Spacing Criterion (Diagonal) | 1.28 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.92 ft |
| Luminous Width (90-270) | 0.98 ft |
| Luminous Height | 0.00 ft |

**LUMINANCE DATA (cd/sq.m)**

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---|---|---|---|
| 45 | 2078 | 2014 | 1999 |
| 55 | 1870 | 1881 | 1923 |
| 65 | 1634 | 1808 | 1981 |
| 75 | 1319 | 1826 | 2278 |
| 85 | 611 | 1971 | 2381 |

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**CANDELA TABULATION**

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|---|---|---|---|---|---|
| **0** | 905.891 | 905.891 | 905.891 | 905.891 | 905.891 |
| **5** | 910.391 | 900.390 | 895.389 | 882.887 | 894.389 |
| **10** | 892.889 | 882.137 | 875.636 | 874.386 | 876.136 |
| **15** | 863.384 | 852.882 | 847.131 | 845.131 | 843.631 |
| **20** | 824.128 | 813.876 | 804.375 | 799.624 | 800.374 |
| **25** | 775.120 | 766.619 | 762.618 | 750.116 | 745.366 |
| **30** | 717.861 | 709.110 | 700.109 | 693.358 | 689.607 |
| **35** | 658.352 | 650.351 | 639.599 | 630.348 | 625.097 |
| **40** | 590.092 | 583.591 | 572.339 | 565.088 | 560.837 |
| **45** | 524.081 | 516.580 | 507.829 | 503.828 | 504.078 |
| **50** | 454.321 | 452.070 | 442.569 | 444.319 | 446.569 |
| **55** | 382.559 | 382.559 | 384.810 | 390.811 | 393.311 |
| **60** | 315.799 | 317.299 | 327.551 | 337.802 | 344.053 |
| **65** | 246.288 | 255.290 | 272.542 | 290.295 | 298.546 |
| **70** | 179.528 | 194.530 | 219.284 | 243.038 | 252.789 |
| **75** | 121.769 | 137.271 | 168.526 | 199.281 | 210.283 |
| **80** | 63.760 | 90.264 | 122.769 | 155.274 | 165.526 |
| **85** | 19.003 | 42.757 | 61.260 | 69.511 | 74.011 |
| **90** | 0.000 | 0.750 | 1.000 | 1.750 | 1.000 |

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## ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-20 | 324.14 | N.A. | 13.90 |
| 0-30 | 673.48 | N.A. | 29.00 |
| 0-40 | 1073.77 | N.A. | 46.20 |
| 0-60 | 1814.68 | N.A. | 78.00 |
| 0-80 | 2263.13 | N.A. | 97.30 |
| 0-90 | 2326.22 | N.A. | 100.00 |
| 10-90 | 2241.21 | N.A. | 96.30 |
| 20-40 | 749.63 | N.A. | 32.20 |
| 20-50 | 1144.03 | N.A. | 49.20 |
| 40-70 | 1011.26 | N.A. | 43.50 |
| 60-80 | 448.45 | N.A. | 19.30 |
| 70-80 | 178.10 | N.A. | 7.70 |
| 80-90 | 63.09 | N.A. | 2.70 |
| 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 | 2326.22 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A.%

## ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---|---|
| 0-10 | 85.01 |
| 10-20 | 239.13 |
| 20-30 | 349.35 |
| 30-40 | 400.28 |
| 40-50 | 394.40 |
| 50-60 | 346.51 |
| 60-70 | 270.35 |
| 70-80 | 178.10 |
| 80-90 | 63.09 |
| 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 | 104 | 99 | 95 | 106 | 101 | 97 | 94 | 97 | 94 | 91 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 99 | 90 | 83 | 77 | 96 | 88 | 82 | 77 | 85 | 79 | 75 | 81 | 77 | 73 | 78 | 75 | 71 | 69 |
| 3 | 90 | 79 | 71 | 65 | 87 | 78 | 70 | 64 | 75 | 68 | 63 | 72 | 66 | 62 | 69 | 65 | 61 | 58 |
| 4 | 83 | 70 | 62 | 55 | 80 | 69 | 61 | 55 | 67 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 54 | 47 | 60 | 52 | 47 | 58 | 51 | 46 | 56 | 50 | 46 | 44 |
| 6 | 70 | 57 | 48 | 42 | 68 | 56 | 48 | 41 | 54 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 40 | 38 |
| 7 | 65 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 49 | 42 | 37 | 48 | 41 | 36 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 37 | 33 | 43 | 37 | 32 | 30 |
| 9 | 57 | 44 | 35 | 30 | 56 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 29 | 40 | 34 | 29 | 27 |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 27 | 25 |

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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 | 14.2 | 15.8 | 14.6 | 16.2 | 16.5 |
| | 3H | 15.6 | 17.0 | 15.9 | 17.4 | 17.7 | 16.5 | 18.0 | 16.9 | 18.3 | 18.6 |
| | 4H | 16.2 | 17.5 | 16.6 | 17.9 | 18.3 | 17.6 | 19.0 | 18.0 | 19.3 | 19.7 |
| | 6H | 16.5 | 17.8 | 17.0 | 18.2 | 18.6 | 18.6 | 19.9 | 19.0 | 20.3 | 20.7 |
| | 8H | 16.6 | 17.9 | 17.1 | 18.3 | 18.7 | 19.0 | 20.3 | 19.4 | 20.7 | 21.1 |
| | 12H | 16.7 | 17.9 | 17.1 | 18.3 | 18.7 | 19.3 | 20.5 | 19.7 | 20.9 | 21.3 |
| 4H | 2H | 14.6 | 16.0 | 15.0 | 16.4 | 16.7 | 14.9 | 16.2 | 15.3 | 16.6 | 17.0 |
| | 3H | 16.5 | 17.7 | 16.9 | 18.1 | 18.5 | 17.4 | 18.5 | 17.8 | 18.9 | 19.3 |
| | 4H | 17.3 | 18.3 | 17.7 | 18.7 | 19.2 | 18.6 | 19.7 | 19.1 | 20.1 | 20.5 |
| | 6H | 17.8 | 18.7 | 18.3 | 19.2 | 19.6 | 19.9 | 20.8 | 20.3 | 21.3 | 21.7 |
| | 8H | 18.0 | 18.8 | 18.4 | 19.3 | 19.7 | 20.4 | 21.3 | 20.8 | 21.7 | 22.2 |
| | 12H | 18.0 | 18.8 | 18.5 | 19.3 | 19.8 | 20.7 | 21.5 | 21.2 | 22.0 | 22.5 |
| 8H | 4H | 17.8 | 18.7 | 18.2 | 19.1 | 19.6 | 19.0 | 19.8 | 19.4 | 20.3 | 20.7 |
| | 6H | 18.5 | 19.2 | 19.0 | 19.7 | 20.2 | 20.4 | 21.2 | 20.9 | 21.6 | 22.1 |
| | 8H | 18.8 | 19.4 | 19.3 | 19.9 | 20.4 | 21.0 | 21.7 | 21.5 | 22.2 | 22.7 |
| | 12H | 18.9 | 19.5 | 19.4 | 20.0 | 20.6 | 21.5 | 22.1 | 22.0 | 22.6 | 23.1 |
| 12H | 4H | 17.9 | 18.7 | 18.4 | 19.2 | 19.6 | 19.0 | 19.8 | 19.5 | 20.3 | 20.7 |
| | 6H | 18.7 | 19.4 | 19.2 | 19.8 | 20.4 | 20.5 | 21.2 | 21.0 | 21.6 | 22.2 |
| | 8H | 19.0 | 19.6 | 19.6 | 20.1 | 20.7 | 21.2 | 21.7 | 21.7 | 22.2 | 22.8 |

Maximum UGR = 23.1

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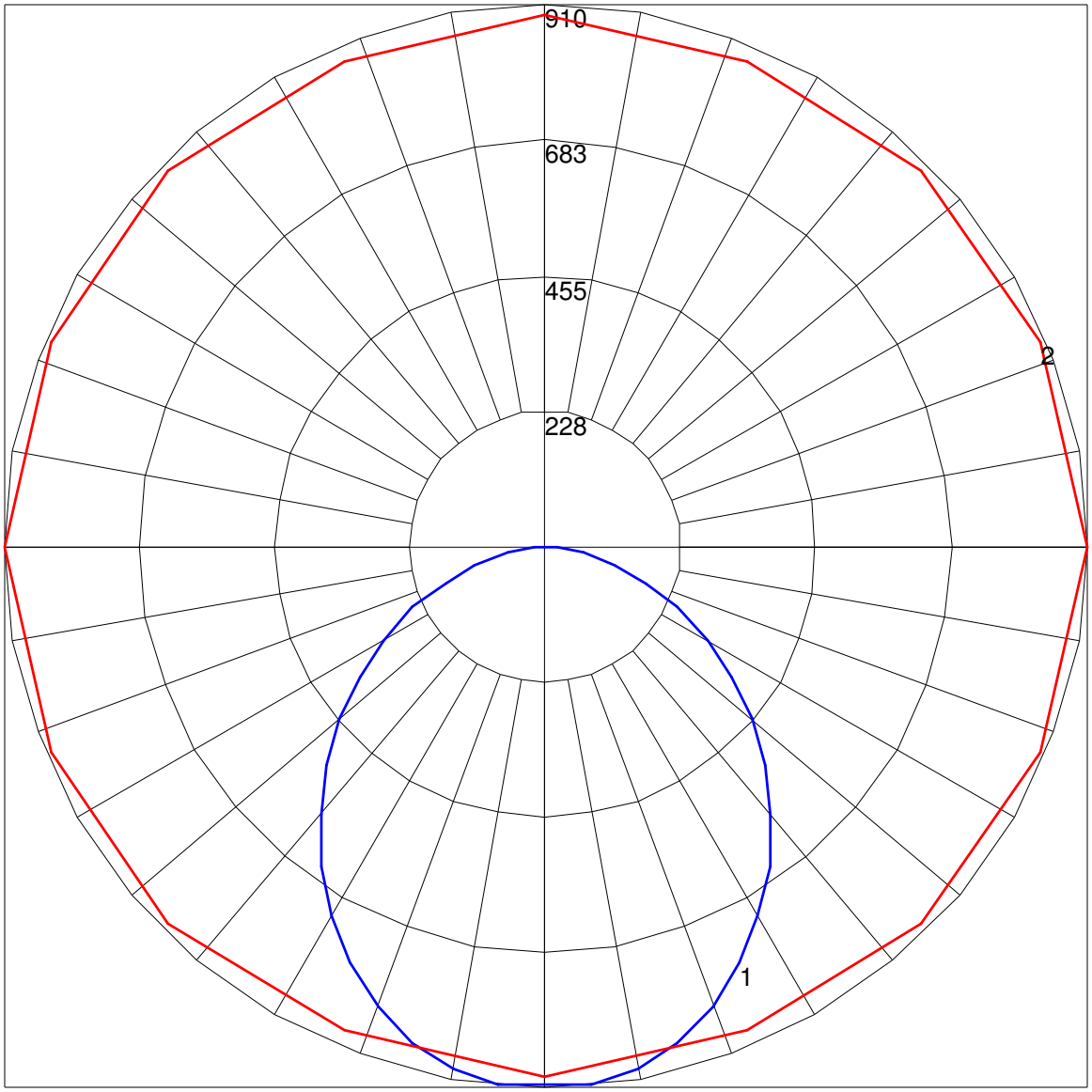
**POLAR GRAPH**




Maximum Candela = 910.391  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.)