H.E. WILLIAMS, INC.

**IES INDOOR REPORT**
**PHOTOMETRIC FILENAME : PT-14-L27-927-RA-DIM-UNV_.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002
[TEST] GEN FROM BALLABS TEST NO. 19323.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 2023-06-23
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
[LUMINAIRE] 1x4'RECESSED LED LUMINAIRE
[MORE] WHITE REFLECTOR w/WHITE RIBBED ACRYLIC LENS
[MORE] 0-10V LED DRIVER
[LUMCAT] PT-14-L27-927-RA-DIM-UNV
[LAMPCAT] 22" LED ARRAYS
[_SEARCH_SOURCETYPE] LED
[_SEARCH_APPLICATION] Indoor, Architectural, Office, Direct
[_SEARCH_MOUNTING] Recessed

**CHARACTERISTICS**

| | |
|---|---|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 2153 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 115 |
| Total Luminaire Watts | 18.8 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.26 |
| Spacing Criterion (90-270) | 1.26 |
| Spacing Criterion (Diagonal) | 1.36 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.92 ft |
| Luminous Width (90-270) | 0.94 ft |
| Luminous Height | 0.00 ft |

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

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---|---|---|---|
| 45 | 2015 | 2105 | 2136 |
| 55 | 1779 | 1954 | 2037 |
| 65 | 1548 | 1834 | 1882 |
| 75 | 1125 | 1576 | 1642 |
| 85 | 512 | 843 | 992 |

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**CANDELA TABULATION**

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|---|---|---|---|---|---|
| **0** | 784.726 | 784.726 | 784.726 | 784.726 | 784.726 |
| **5** | 802.449 | 796.541 | 793.587 | 786.203 | 781.772 |
| **10** | 788.664 | 784.234 | 782.757 | 774.880 | 770.942 |
| **15** | 767.003 | 763.065 | 765.034 | 755.680 | 755.680 |
| **20** | 735.988 | 734.511 | 737.958 | 729.096 | 732.050 |
| **25** | 701.527 | 698.081 | 704.973 | 698.574 | 696.604 |
| **30** | 661.159 | 654.759 | 664.605 | 661.159 | 660.174 |
| **35** | 610.452 | 605.529 | 618.329 | 615.867 | 618.821 |
| **40** | 551.376 | 550.391 | 564.176 | 566.145 | 563.683 |
| **45** | 486.885 | 488.362 | 508.546 | 512.977 | 515.930 |
| **50** | 418.455 | 425.839 | 447.008 | 457.839 | 457.839 |
| **55** | 348.548 | 362.333 | 383.009 | 404.178 | 399.255 |
| **60** | 285.534 | 297.349 | 321.964 | 339.195 | 336.733 |
| **65** | 223.504 | 233.842 | 264.857 | 277.165 | 271.750 |
| **70** | 159.505 | 178.705 | 204.304 | 210.212 | 207.751 |
| **75** | 99.445 | 125.044 | 139.321 | 145.228 | 145.228 |
| **80** | 50.707 | 74.337 | 79.753 | 84.183 | 80.737 |
| **85** | 15.261 | 29.046 | 25.107 | 27.569 | 29.538 |
| **90** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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## ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-20 | 289.78 | N.A. | 13.50 |
| 0-30 | 612.36 | N.A. | 28.40 |
| 0-40 | 995.68 | N.A. | 46.20 |
| 0-60 | 1723.71 | N.A. | 80.00 |
| 0-80 | 2118.48 | N.A. | 98.40 |
| 0-90 | 2153.33 | N.A. | 100.00 |
| 10-90 | 2078.23 | N.A. | 96.50 |
| 20-40 | 705.90 | N.A. | 32.80 |
| 20-50 | 1093.56 | N.A. | 50.80 |
| 40-70 | 981.36 | N.A. | 45.60 |
| 60-80 | 394.77 | N.A. | 18.30 |
| 70-80 | 141.44 | N.A. | 6.60 |
| 80-90 | 34.85 | N.A. | 1.60 |
| 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 | 2153.33 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A.%

## ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---|---|
| 0-10 | 75.10 |
| 10-20 | 214.68 |
| 20-30 | 322.58 |
| 30-40 | 383.32 |
| 40-50 | 387.67 |
| 50-60 | 340.36 |
| 60-70 | 253.33 |
| 70-80 | 141.44 |
| 80-90 | 34.85 |
| 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 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 79 | 97 | 89 | 83 | 78 | 86 | 80 | 76 | 82 | 78 | 74 | 79 | 76 | 73 | 70 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 65 | 76 | 69 | 64 | 73 | 67 | 63 | 70 | 66 | 62 | 59 |
| 4 | 83 | 71 | 62 | 56 | 81 | 70 | 62 | 55 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 57 | 53 | 51 |
| 5 | 76 | 64 | 55 | 48 | 74 | 62 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 47 | 56 | 51 | 46 | 44 |
| 6 | 71 | 57 | 48 | 42 | 69 | 56 | 48 | 42 | 55 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 41 | 39 |
| 7 | 65 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 41 | 36 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 32 | 31 |
| 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 | 14.0 | 15.6 | 14.3 | 15.9 | 16.2 | 14.8 | 16.4 | 15.2 | 16.8 | 17.1 |
| | 3H | 15.5 | 17.0 | 15.9 | 17.3 | 17.7 | 16.6 | 18.1 | 17.0 | 18.4 | 18.8 |
| | 4H | 16.0 | 17.4 | 16.4 | 17.8 | 18.1 | 17.3 | 18.6 | 17.7 | 19.0 | 19.4 |
| | 6H | 16.3 | 17.6 | 16.8 | 18.0 | 18.4 | 17.7 | 19.0 | 18.1 | 19.3 | 19.7 |
| | 8H | 16.4 | 17.6 | 16.8 | 18.0 | 18.4 | 17.8 | 19.0 | 18.2 | 19.4 | 19.8 |
| | 12H | 16.4 | 17.6 | 16.9 | 18.0 | 18.4 | 17.9 | 19.1 | 18.3 | 19.4 | 19.9 |
| 4H | 2H | 14.7 | 16.1 | 15.1 | 16.4 | 16.8 | 15.4 | 16.8 | 15.8 | 17.1 | 17.5 |
| | 3H | 16.5 | 17.7 | 16.9 | 18.1 | 18.5 | 17.4 | 18.6 | 17.8 | 19.0 | 19.4 |
| | 4H | 17.2 | 18.2 | 17.6 | 18.6 | 19.1 | 18.2 | 19.2 | 18.6 | 19.7 | 20.1 |
| | 6H | 17.6 | 18.5 | 18.1 | 19.0 | 19.4 | 18.8 | 19.7 | 19.2 | 20.1 | 20.6 |
| | 8H | 17.7 | 18.6 | 18.2 | 19.0 | 19.5 | 18.9 | 19.8 | 19.4 | 20.2 | 20.7 |
| | 12H | 17.8 | 18.6 | 18.3 | 19.0 | 19.5 | 19.0 | 19.8 | 19.5 | 20.3 | 20.8 |
| 8H | 4H | 17.6 | 18.4 | 18.0 | 18.9 | 19.3 | 18.5 | 19.3 | 18.9 | 19.8 | 20.2 |
| | 6H | 18.2 | 18.9 | 18.6 | 19.3 | 19.8 | 19.2 | 19.9 | 19.7 | 20.4 | 20.8 |
| | 8H | 18.3 | 19.0 | 18.8 | 19.5 | 20.0 | 19.4 | 20.0 | 19.9 | 20.5 | 21.0 |
| | 12H | 18.5 | 19.0 | 19.0 | 19.5 | 20.1 | 19.5 | 20.1 | 20.0 | 20.6 | 21.2 |
| 12H | 4H | 17.6 | 18.4 | 18.1 | 18.9 | 19.3 | 18.5 | 19.3 | 19.0 | 19.7 | 20.2 |
| | 6H | 18.2 | 18.9 | 18.7 | 19.3 | 19.9 | 19.2 | 19.8 | 19.7 | 20.3 | 20.8 |
| | 8H | 18.5 | 19.0 | 19.0 | 19.5 | 20.1 | 19.5 | 20.0 | 20.0 | 20.5 | 21.1 |

Maximum UGR = 21.2

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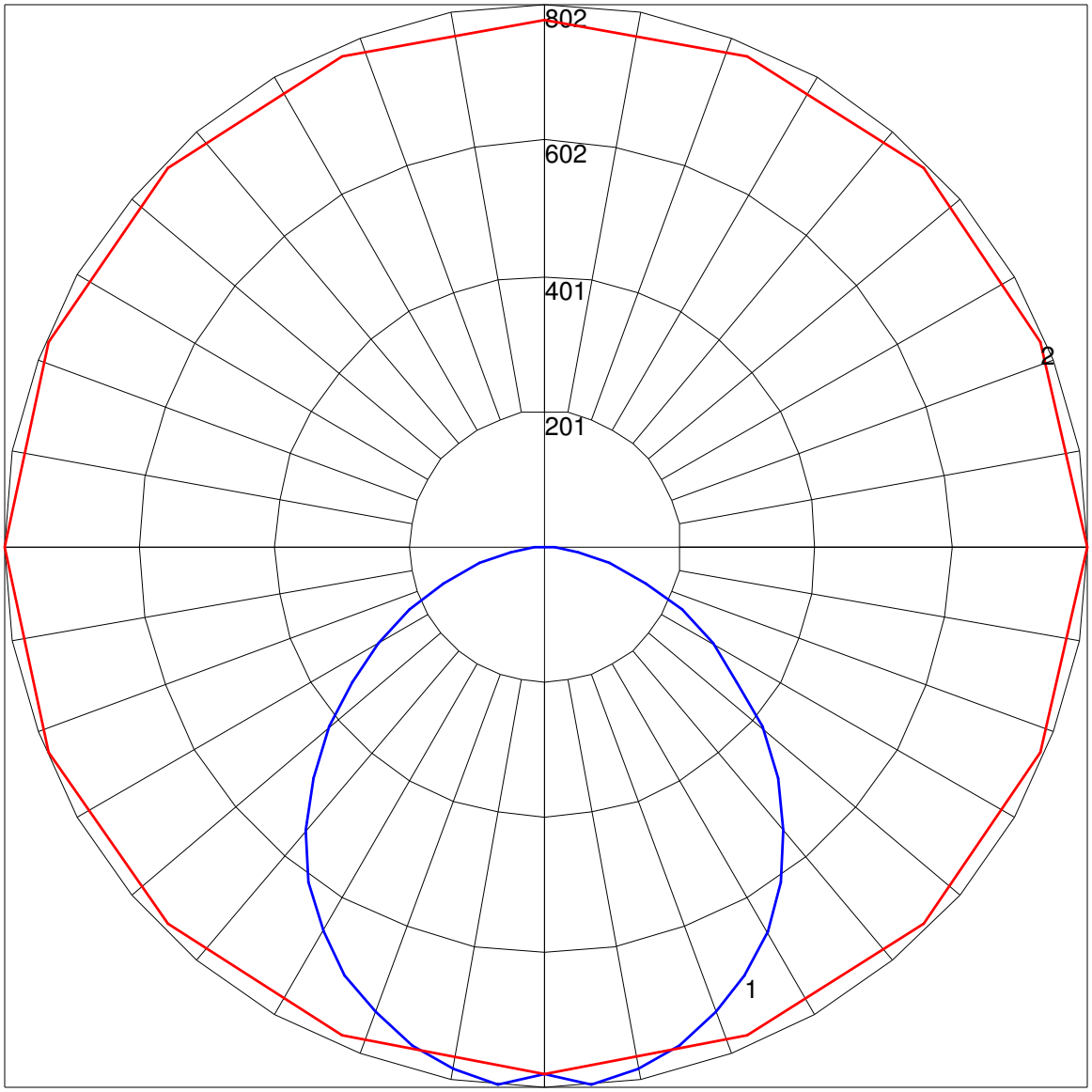
**POLAR GRAPH**




Maximum Candela = 802.449  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.)

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