H.E. WILLIAMS, INC.

**IES INDOOR REPORT**
**PHOTOMETRIC FILENAME : PT-22-L61-930-RA-DIM-UNV_.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002
[TEST] GEN FROM BALLABS TEST NO. 19562.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 2023-06-23
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
[LUMINAIRE] 2x2'RECESSED LED LUMINAIRE
[MORE] WHITE REFLECTOR w/CENTER FROSTED RIBBED ACRYLIC LENS
[MORE] ELECTRONIC 0-10V LED DRIVER
[LUMCAT] PT-22-L61-930-RA-DIM-UNV
[LAMPCAT] 22 INCH HLM LED ARRAY

**CHARACTERISTICS**

| | |
|---|---|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 5040 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 100 |
| Total Luminaire Watts | 50.2 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.24 |
| Spacing Criterion (90-270) | 1.24 |
| Spacing Criterion (Diagonal) | 1.34 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 1.92 ft |
| Luminous Width (90-270) | 1.93 ft |
| Luminous Height | 0.00 ft |

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

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---|---|---|---|
| 45 | 4736 | 4912 | 5072 |
| 55 | 4004 | 4412 | 4708 |
| 65 | 3061 | 3828 | 4256 |
| 75 | 2127 | 3395 | 4196 |
| 85 | 1212 | 2769 | 3462 |

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**CANDELA TABULATION**

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|---|---|---|---|---|---|
| **0** | 1926.331 | 1926.331 | 1926.331 | 1926.331 | 1926.331 |
| **5** | 1932.808 | 1921.149 | 1918.558 | 1912.081 | 1912.081 |
| **10** | 1906.899 | 1895.240 | 1893.945 | 1887.468 | 1886.172 |
| **15** | 1861.559 | 1848.604 | 1847.309 | 1844.718 | 1843.422 |
| **20** | 1796.786 | 1785.127 | 1783.832 | 1785.127 | 1785.127 |
| **25** | 1706.105 | 1694.446 | 1702.219 | 1707.400 | 1702.219 |
| **30** | 1594.696 | 1589.515 | 1597.287 | 1606.355 | 1599.878 |
| **35** | 1466.447 | 1465.152 | 1481.992 | 1488.470 | 1494.947 |
| **40** | 1318.766 | 1318.766 | 1347.266 | 1358.925 | 1369.288 |
| **45** | 1150.358 | 1150.358 | 1193.108 | 1220.312 | 1231.971 |
| **50** | 972.881 | 974.177 | 1031.177 | 1067.449 | 1084.290 |
| **55** | 788.928 | 803.178 | 869.246 | 908.109 | 927.541 |
| **60** | 608.861 | 637.360 | 703.428 | 746.178 | 766.905 |
| **65** | 444.339 | 481.907 | 555.747 | 602.383 | 617.929 |
| **70** | 299.248 | 345.885 | 419.725 | 467.657 | 485.793 |
| **75** | 189.135 | 234.476 | 301.839 | 349.771 | 373.089 |
| **80** | 102.340 | 141.204 | 200.794 | 234.476 | 257.794 |
| **85** | 36.273 | 63.477 | 82.909 | 82.909 | 103.636 |
| **90** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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## ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-20 | 703.81 | N.A. | 14.00 |
| 0-30 | 1487.25 | N.A. | 29.50 |
| 0-40 | 2411.03 | N.A. | 47.80 |
| 0-60 | 4095.98 | N.A. | 81.30 |
| 0-80 | 4948.13 | N.A. | 98.20 |
| 0-90 | 5040.33 | N.A. | 100.00 |
| 10-90 | 4858.01 | N.A. | 96.40 |
| 20-40 | 1707.22 | N.A. | 33.90 |
| 20-50 | 2623.24 | N.A. | 52.00 |
| 40-70 | 2225.91 | N.A. | 44.20 |
| 60-80 | 852.15 | N.A. | 16.90 |
| 70-80 | 311.20 | N.A. | 6.20 |
| 80-90 | 92.21 | N.A. | 1.80 |
| 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 | 5040.33 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A.%

## ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---|---|
| 0-10 | 182.33 |
| 10-20 | 521.49 |
| 20-30 | 783.44 |
| 30-40 | 923.78 |
| 40-50 | 916.02 |
| 50-60 | 768.94 |
| 60-70 | 540.95 |
| 70-80 | 311.20 |
| 80-90 | 92.21 |
| 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 | 97 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 100 | 91 | 85 | 79 | 97 | 90 | 83 | 78 | 86 | 81 | 76 | 83 | 79 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 81 | 73 | 66 | 89 | 79 | 72 | 66 | 76 | 70 | 65 | 73 | 68 | 63 | 71 | 66 | 62 | 60 |
| 4 | 83 | 72 | 63 | 57 | 81 | 70 | 62 | 56 | 68 | 61 | 55 | 66 | 60 | 55 | 63 | 58 | 54 | 52 |
| 5 | 77 | 64 | 55 | 49 | 75 | 63 | 55 | 49 | 61 | 54 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 49 | 43 | 55 | 48 | 42 | 54 | 47 | 42 | 52 | 46 | 42 | 40 |
| 7 | 66 | 53 | 44 | 38 | 64 | 52 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 37 | 48 | 42 | 37 | 35 |
| 8 | 62 | 48 | 40 | 34 | 60 | 47 | 39 | 34 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 33 | 31 |
| 9 | 58 | 44 | 36 | 31 | 56 | 44 | 36 | 31 | 43 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 53 | 40 | 33 | 28 | 39 | 32 | 28 | 38 | 32 | 28 | 38 | 32 | 27 | 26 |

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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 | 16.4 | 18.0 | 16.7 | 18.3 | 18.6 | 17.4 | 19.0 | 17.8 | 19.3 | 19.6 |
| | 3H | 17.7 | 19.1 | 18.0 | 19.4 | 19.8 | 19.2 | 20.7 | 19.6 | 21.0 | 21.4 |
| | 4H | 18.1 | 19.4 | 18.5 | 19.8 | 20.2 | 20.0 | 21.4 | 20.4 | 21.7 | 22.1 |
| | 6H | 18.3 | 19.6 | 18.8 | 20.0 | 20.4 | 20.7 | 22.0 | 21.1 | 22.3 | 22.7 |
| | 8H | 18.4 | 19.6 | 18.8 | 20.0 | 20.4 | 20.9 | 22.1 | 21.4 | 22.5 | 22.9 |
| | 12H | 18.4 | 19.6 | 18.9 | 20.0 | 20.4 | 21.1 | 22.2 | 21.5 | 22.6 | 23.1 |
| 4H | 2H | 17.1 | 18.4 | 17.5 | 18.8 | 19.2 | 17.9 | 19.3 | 18.3 | 19.6 | 20.0 |
| | 3H | 18.6 | 19.7 | 19.0 | 20.1 | 20.5 | 20.0 | 21.1 | 20.4 | 21.5 | 21.9 |
| | 4H | 19.2 | 20.2 | 19.6 | 20.6 | 21.0 | 20.9 | 21.9 | 21.3 | 22.3 | 22.8 |
| | 6H | 19.5 | 20.4 | 20.0 | 20.9 | 21.3 | 21.8 | 22.7 | 22.2 | 23.1 | 23.6 |
| | 8H | 19.6 | 20.5 | 20.1 | 20.9 | 21.4 | 22.1 | 22.9 | 22.5 | 23.3 | 23.8 |
| | 12H | 19.7 | 20.5 | 20.2 | 20.9 | 21.4 | 22.3 | 23.0 | 22.8 | 23.5 | 24.0 |
| 8H | 4H | 19.6 | 20.4 | 20.1 | 20.9 | 21.4 | 21.2 | 22.0 | 21.6 | 22.4 | 22.9 |
| | 6H | 20.1 | 20.8 | 20.6 | 21.3 | 21.8 | 22.1 | 22.8 | 22.6 | 23.3 | 23.8 |
| | 8H | 20.3 | 20.9 | 20.8 | 21.5 | 21.9 | 22.5 | 23.2 | 23.1 | 23.7 | 24.2 |
| | 12H | 20.4 | 21.0 | 20.9 | 21.5 | 22.0 | 22.8 | 23.4 | 23.3 | 23.8 | 24.4 |
| 12H | 4H | 19.7 | 20.4 | 20.2 | 20.9 | 21.4 | 21.2 | 21.9 | 21.6 | 22.4 | 22.9 |
| | 6H | 20.3 | 20.9 | 20.8 | 21.4 | 21.9 | 22.2 | 22.8 | 22.7 | 23.3 | 23.8 |
| | 8H | 20.5 | 21.1 | 21.0 | 21.6 | 22.1 | 22.6 | 23.2 | 23.1 | 23.7 | 24.2 |

Maximum UGR = 24.4

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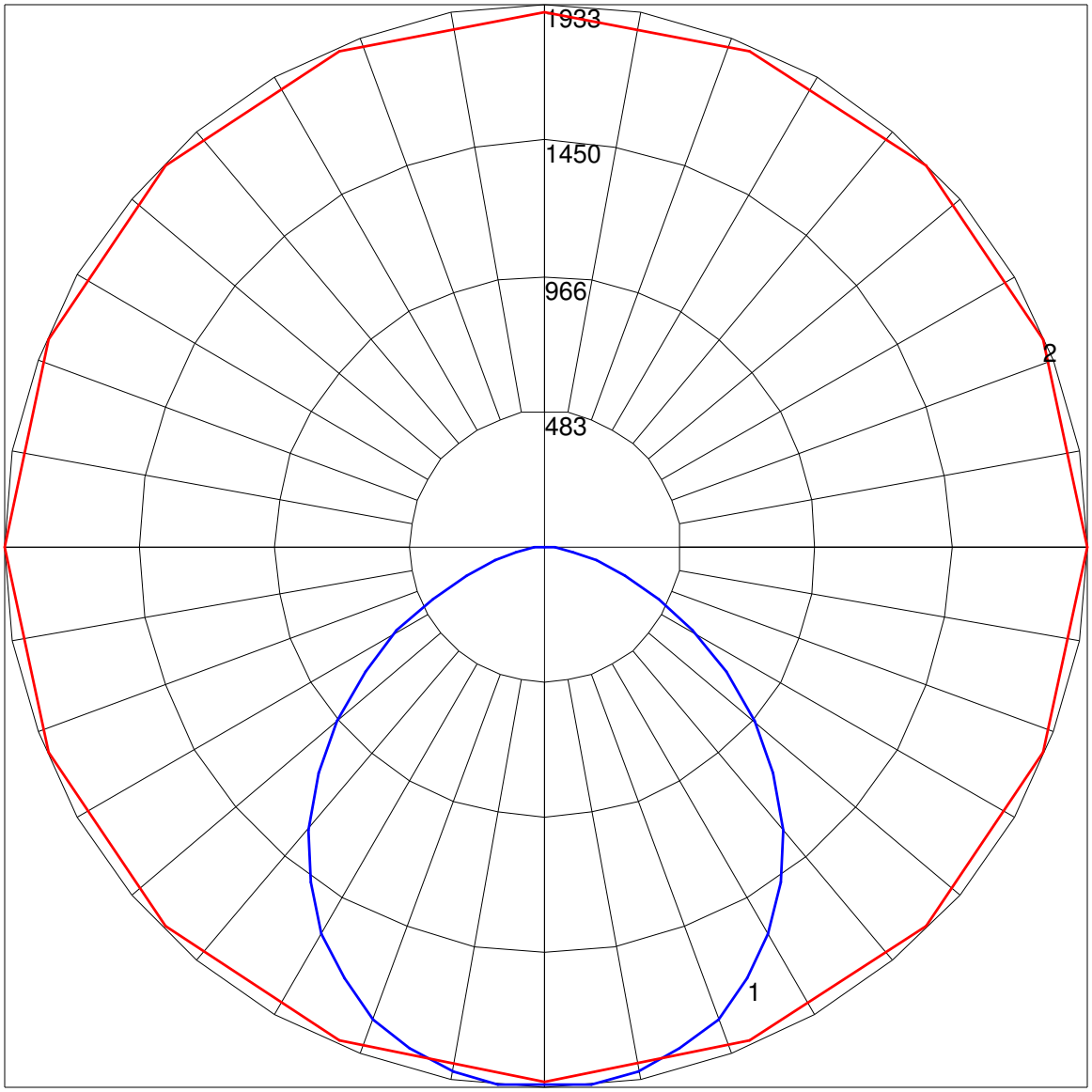
**POLAR GRAPH**




Maximum Candela = 1932.808  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.)