H.E. WILLIAMS, INC.

**IES INDOOR REPORT**
**PHOTOMETRIC FILENAME : GL-4-L150-940-SAF118-DIM-UNV_.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002
[TEST] GEN FROM BALLABS TEST NO. 19726.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 2023-07-17
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
[LUMINAIRE] 48 INCH LOW PROFILE LED HIGHBAY LUMINAIRE
[MORE] WHITE REFLECTOR w/.118"THK FROSTED ACRYLIC LENS
[MORE] 0-10V LED DRIVERS
[LUMCAT] GL-4-L150-940-SAF118-DIM-UNV
[LAMPCAT] 22 INCH HLM LED ARRAYS
[_SEARCH_SOURCETYPE] LED
[_SEARCH_APPLICATION] Indoor, Commercial, Industrial, Manufacturing, High Bay
[_SEARCH_MOUNTING] Cable, Pendant, Suspended

**CHARACTERISTICS**

| | |
|---|---|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 10715 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 112 |
| Total Luminaire Watts | 96 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.32 |
| Spacing Criterion (90-270) | 1.26 |
| Spacing Criterion (Diagonal) | 1.38 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.83 ft |
| Luminous Width (90-270) | 1.00 ft |
| Luminous Height | 0.00 ft |

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

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---|---|---|---|
| 45 | 11385 | 10848 | 9444 |
| 55 | 10293 | 8800 | 8138 |
| 65 | 8105 | 6730 | 6451 |
| 75 | 5588 | 4576 | 4563 |
| 85 | 1995 | 1831 | 1983 |

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**CANDELA TABULATION**

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|---|---|---|---|---|---|
| **0** | 4137.659 | 4137.659 | 4137.659 | 4137.659 | 4137.659 |
| **5** | 4200.820 | 4140.405 | 4113.336 | 4091.759 | 4085.482 |
| **10** | 4165.120 | 4096.466 | 4078.813 | 4054.097 | 4048.605 |
| **15** | 4098.036 | 4030.559 | 4016.436 | 3984.659 | 3980.736 |
| **20** | 3986.621 | 3938.367 | 3917.575 | 3869.713 | 3878.736 |
| **25** | 3843.036 | 3808.121 | 3779.090 | 3723.383 | 3736.721 |
| **30** | 3666.498 | 3636.683 | 3614.714 | 3544.491 | 3535.076 |
| **35** | 3448.376 | 3404.045 | 3398.553 | 3305.184 | 3236.530 |
| **40** | 3183.961 | 3140.023 | 3110.207 | 2965.054 | 2821.077 |
| **45** | 2869.331 | 2835.593 | 2733.985 | 2528.417 | 2380.125 |
| **50** | 2508.017 | 2476.240 | 2280.871 | 2097.272 | 2014.887 |
| **55** | 2104.333 | 2060.395 | 1799.118 | 1708.103 | 1663.773 |
| **60** | 1659.457 | 1619.050 | 1376.604 | 1296.574 | 1307.950 |
| **65** | 1220.858 | 1176.528 | 1013.720 | 959.582 | 971.744 |
| **70** | 844.636 | 763.821 | 705.367 | 664.568 | 672.806 |
| **75** | 515.491 | 447.622 | 422.122 | 399.761 | 420.945 |
| **80** | 245.192 | 211.453 | 199.292 | 194.976 | 207.138 |
| **85** | 61.984 | 57.669 | 56.884 | 59.238 | 61.592 |
| **90** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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## ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-20 | 1526.64 | N.A. | 14.20 |
| 0-30 | 3266.37 | N.A. | 30.50 |
| 0-40 | 5362.16 | N.A. | 50.00 |
| 0-60 | 9091.2 | N.A. | 84.80 |
| 0-80 | 10626.63 | N.A. | 99.20 |
| 0-90 | 10715.27 | N.A. | 100.00 |
| 10-90 | 10322.96 | N.A. | 96.30 |
| 20-40 | 3835.52 | N.A. | 35.80 |
| 20-50 | 5899.6 | N.A. | 55.10 |
| 40-70 | 4790.02 | N.A. | 44.70 |
| 60-80 | 1535.43 | N.A. | 14.30 |
| 70-80 | 474.45 | N.A. | 4.40 |
| 80-90 | 88.64 | N.A. | 0.80 |
| 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 | 10715.27 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A.%

## ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---|---|
| 0-10 | 392.31 |
| 10-20 | 1134.33 |
| 20-30 | 1739.73 |
| 30-40 | 2095.79 |
| 40-50 | 2064.07 |
| 50-60 | 1664.96 |
| 60-70 | 1060.98 |
| 70-80 | 474.45 |
| 80-90 | 88.64 |
| 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 | 110 | 106 | 102 | 98 | 107 | 103 | 100 | 97 | 99 | 96 | 94 | 95 | 93 | 91 | 92 | 90 | 88 | 86 |
| 2 | 101 | 93 | 87 | 81 | 98 | 91 | 85 | 80 | 88 | 83 | 79 | 84 | 80 | 77 | 81 | 78 | 75 | 73 |
| 3 | 92 | 82 | 75 | 68 | 90 | 81 | 74 | 68 | 78 | 72 | 67 | 75 | 70 | 66 | 73 | 68 | 64 | 62 |
| 4 | 85 | 73 | 65 | 59 | 82 | 72 | 64 | 58 | 69 | 63 | 57 | 67 | 61 | 57 | 65 | 60 | 56 | 54 |
| 5 | 78 | 66 | 57 | 51 | 76 | 65 | 57 | 50 | 63 | 55 | 50 | 61 | 54 | 49 | 59 | 53 | 49 | 47 |
| 6 | 72 | 59 | 51 | 45 | 70 | 58 | 50 | 44 | 57 | 49 | 44 | 55 | 48 | 44 | 53 | 48 | 43 | 41 |
| 7 | 67 | 54 | 45 | 39 | 65 | 53 | 45 | 39 | 52 | 44 | 39 | 50 | 44 | 39 | 49 | 43 | 38 | 37 |
| 8 | 62 | 49 | 41 | 35 | 61 | 49 | 41 | 35 | 47 | 40 | 35 | 46 | 40 | 35 | 45 | 39 | 35 | 33 |
| 9 | 58 | 45 | 37 | 32 | 57 | 45 | 37 | 32 | 44 | 36 | 32 | 42 | 36 | 31 | 41 | 36 | 31 | 29 |
| 10 | 55 | 42 | 34 | 29 | 53 | 41 | 34 | 29 | 40 | 33 | 29 | 39 | 33 | 29 | 38 | 33 | 28 | 27 |

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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 | 20.2 | 21.8 | 20.6 | 22.1 | 22.4 | 18.8 | 20.3 | 19.1 | 20.7 | 21.0 |
| | 3H | 21.5 | 22.9 | 21.9 | 23.2 | 23.6 | 20.0 | 21.4 | 20.4 | 21.8 | 22.1 |
| | 4H | 21.8 | 23.2 | 22.2 | 23.5 | 23.9 | 20.4 | 21.8 | 20.8 | 22.1 | 22.5 |
| | 6H | 22.0 | 23.3 | 22.5 | 23.6 | 24.0 | 20.7 | 21.9 | 21.1 | 22.2 | 22.6 |
| | 8H | 22.1 | 23.2 | 22.5 | 23.6 | 24.0 | 20.7 | 21.9 | 21.1 | 22.3 | 22.7 |
| | 12H | 22.1 | 23.2 | 22.5 | 23.6 | 24.0 | 20.7 | 21.8 | 21.1 | 22.2 | 22.6 |
| 4H | 2H | 20.5 | 21.8 | 20.9 | 22.2 | 22.6 | 19.3 | 20.6 | 19.7 | 21.0 | 21.3 |
| | 3H | 22.0 | 23.0 | 22.4 | 23.4 | 23.8 | 20.7 | 21.8 | 21.2 | 22.2 | 22.6 |
| | 4H | 22.4 | 23.4 | 22.8 | 23.8 | 24.2 | 21.2 | 22.2 | 21.7 | 22.6 | 23.1 |
| | 6H | 22.7 | 23.5 | 23.1 | 24.0 | 24.4 | 21.5 | 22.4 | 22.0 | 22.8 | 23.3 |
| | 8H | 22.7 | 23.5 | 23.2 | 24.0 | 24.4 | 21.6 | 22.4 | 22.0 | 22.8 | 23.3 |
| | 12H | 22.8 | 23.5 | 23.2 | 23.9 | 24.4 | 21.6 | 22.3 | 22.1 | 22.8 | 23.3 |
| 8H | 4H | 22.5 | 23.3 | 23.0 | 23.7 | 24.2 | 21.4 | 22.2 | 21.9 | 22.6 | 23.1 |
| | 6H | 22.8 | 23.5 | 23.3 | 24.0 | 24.4 | 21.7 | 22.4 | 22.2 | 22.9 | 23.4 |
| | 8H | 22.9 | 23.5 | 23.4 | 24.0 | 24.5 | 21.8 | 22.4 | 22.4 | 22.9 | 23.4 |
| | 12H | 23.0 | 23.5 | 23.5 | 24.0 | 24.5 | 21.9 | 22.4 | 22.4 | 22.9 | 23.5 |
| 12H | 4H | 22.5 | 23.2 | 23.0 | 23.7 | 24.1 | 21.4 | 22.1 | 21.9 | 22.6 | 23.1 |
| | 6H | 22.8 | 23.4 | 23.3 | 23.9 | 24.4 | 21.8 | 22.4 | 22.3 | 22.8 | 23.4 |
| | 8H | 22.9 | 23.4 | 23.4 | 23.9 | 24.5 | 21.9 | 22.4 | 22.4 | 22.9 | 23.5 |

Maximum UGR = 24.5

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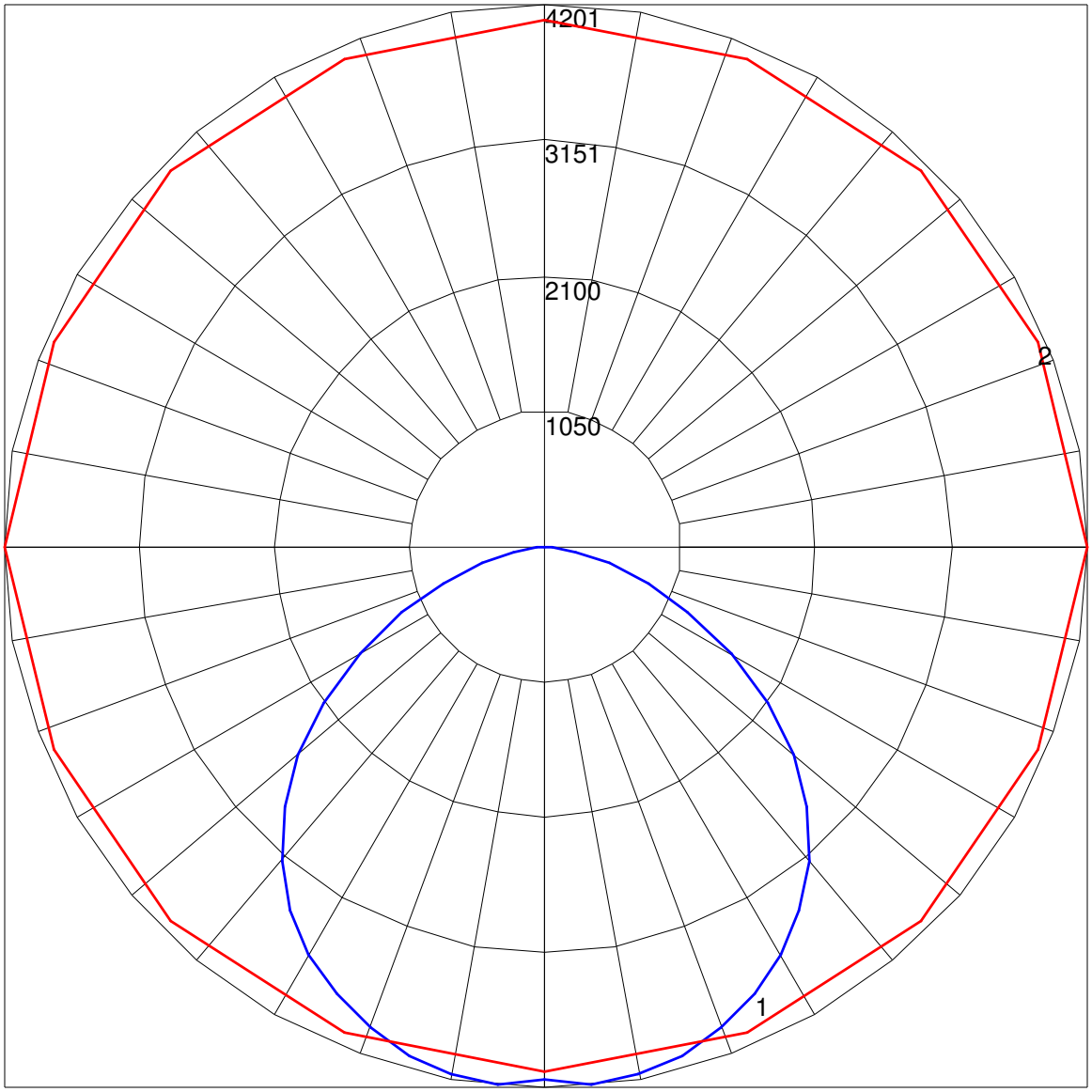
**POLAR GRAPH**




Maximum Candela = 4200.82  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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