**IES INDOOR REPORT**
**PHOTOMETRIC FILENAME : SL-4-L10-830-RD-DIM-UNV_.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002
[TEST] BALLABS TEST NO. 21002.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 2023-04-25
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
[LUMINAIRE] SL LED SLIMLINE ARCHITECTURAL LUMINAIRE
[MORE] 1.375 WIDE ALUM CHANNEL w/1"WIDE WHITE RADIAL ACRYLIC LENS
[LUMCAT] SL-4-L10-830-RD-DIM-UNV
[LAMPCAT] HLM 80 CRI 3500K CCT
[_SEARCH_SOURCETYPE] LED
[_SEARCH_APPLICATION] INDOOR, COVE, CLASSROOM
[_SEARCH_MOUNTING] SURFACE, WALL

**CHARACTERISTICS**

| | |
|---|---|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 3842 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 107 |
| Total Luminaire Watts | 36 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.26 |
| Spacing Criterion (90-270) | 1.28 |
| Spacing Criterion (Diagonal) | 1.38 |
| Basic Luminous Shape | Rectangular w/Sides |
| Luminous Length (0-180) | 4.00 ft |
| Luminous Width (90-270) | 0.13 ft |
| Luminous Height | 0.05 ft |

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

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---|---|---|---|
| 45 | 23751 | 19142 | 18207 |
| 55 | 22417 | 17126 | 16424 |
| 65 | 19953 | 14722 | 14615 |
| 75 | 16708 | 12117 | 13008 |
| 85 | 9046 | 10047 | 11713 |

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**CANDELA TABULATION**

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|---|---|---|---|---|---|
| **0** | 1209.78 | 1209.78 | 1209.78 | 1209.78 | 1209.78 |
| **5** | 1213.74 | 1207.80 | 1199.88 | 1197.90 | 1199.88 |
| **10** | 1195.92 | 1189.98 | 1182.06 | 1182.06 | 1186.02 |
| **15** | 1170.18 | 1164.24 | 1156.32 | 1158.30 | 1158.30 |
| **20** | 1130.58 | 1124.64 | 1114.74 | 1122.66 | 1124.64 |
| **25** | 1081.08 | 1075.14 | 1073.16 | 1079.10 | 1083.06 |
| **30** | 1019.70 | 1019.70 | 1019.70 | 1027.62 | 1025.64 |
| **35** | 954.36 | 954.36 | 954.36 | 962.28 | 968.22 |
| **40** | 875.16 | 877.14 | 879.12 | 892.98 | 900.90 |
| **45** | 790.02 | 795.96 | 801.90 | 817.74 | 823.68 |
| **50** | 696.96 | 702.90 | 716.76 | 740.52 | 752.40 |
| **55** | 607.86 | 609.84 | 635.58 | 655.38 | 673.20 |
| **60** | 504.90 | 514.80 | 550.44 | 588.06 | 599.94 |
| **65** | 401.94 | 417.78 | 459.36 | 500.94 | 518.76 |
| **70** | 306.90 | 322.74 | 374.22 | 425.70 | 441.54 |
| **75** | 209.88 | 237.60 | 295.02 | 352.44 | 376.20 |
| **80** | 122.76 | 152.46 | 229.68 | 287.10 | 312.84 |
| **85** | 41.58 | 97.02 | 168.30 | 225.72 | 251.46 |
| **90** | 0.00 | 53.46 | 124.74 | 176.22 | 196.02 |
| **95** | 0.00 | 27.72 | 85.14 | 136.62 | 154.44 |
| **100** | 0.00 | 13.86 | 59.40 | 100.98 | 118.80 |
| **105** | 0.00 | 7.92 | 41.58 | 73.26 | 89.10 |
| **110** | 0.00 | 5.94 | 27.72 | 53.46 | 63.36 |
| **115** | 0.00 | 3.96 | 17.82 | 37.62 | 47.52 |
| **120** | 0.00 | 0.00 | 9.90 | 23.76 | 29.70 |
| **125** | 0.00 | 0.00 | 7.92 | 15.84 | 19.80 |
| **130** | 0.00 | 0.00 | 0.00 | 9.90 | 11.88 |
| **135** | 0.00 | 0.00 | 0.00 | 0.00 | 7.92 |
| **140** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **145** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **150** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **155** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **160** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **165** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **170** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **175** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **180** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-20 | 441.71 | N.A. | 11.50 |
| 0-30 | 938.16 | N.A. | 24.40 |
| 0-40 | 1537.19 | N.A. | 40.00 |
| 0-60 | 2727.89 | N.A. | 71.00 |
| 0-80 | 3497.75 | N.A. | 91.00 |
| 0-90 | 3675.92 | N.A. | 95.70 |
| 10-90 | 3561.6 | N.A. | 92.70 |
| 20-40 | 1095.48 | N.A. | 28.50 |
| 20-50 | 1716.9 | N.A. | 44.70 |
| 40-70 | 1647.61 | N.A. | 42.90 |
| 60-80 | 769.86 | N.A. | 20.00 |
| 70-80 | 312.94 | N.A. | 8.10 |
| 80-90 | 178.18 | N.A. | 4.60 |
| 90-110 | 136.91 | N.A. | 3.60 |
| 90-120 | 157.70 | N.A. | 4.10 |
| 90-130 | 165.14 | N.A. | 4.30 |
| 90-150 | 166.32 | N.A. | 4.30 |
| 90-180 | 166.32 | N.A. | 4.30 |
| 110-180 | 29.41 | N.A. | 0.80 |
| 0-180 | 3842.25 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

| Zone | Lumens |
|---|---|
| 0-10 | 114.32 |
| 10-20 | 327.39 |
| 20-30 | 496.45 |
| 30-40 | 599.03 |
| 40-50 | 621.42 |
| 50-60 | 569.28 |
| 60-70 | 456.92 |
| 70-80 | 312.94 |
| 80-90 | 178.18 |
| 90-100 | 91.40 |
| 100-110 | 45.52 |
| 110-120 | 20.79 |
| 120-130 | 7.44 |
| 130-140 | 1.18 |
| 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 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 103 | 103 | 103 | 98 | 98 | 98 | 96 |
| 1 | 106 | 101 | 96 | 92 | 103 | 98 | 94 | 90 | 93 | 90 | 86 | 89 | 86 | 83 | 84 | 82 | 80 | 77 |
| 2 | 96 | 87 | 80 | 74 | 93 | 85 | 78 | 73 | 81 | 75 | 70 | 77 | 72 | 68 | 73 | 69 | 66 | 63 |
| 3 | 88 | 76 | 68 | 61 | 85 | 75 | 67 | 60 | 71 | 64 | 59 | 68 | 62 | 57 | 64 | 60 | 55 | 53 |
| 4 | 80 | 68 | 58 | 51 | 77 | 66 | 57 | 51 | 63 | 55 | 50 | 60 | 54 | 49 | 57 | 52 | 47 | 45 |
| 5 | 74 | 60 | 51 | 44 | 71 | 59 | 50 | 44 | 56 | 49 | 43 | 54 | 47 | 42 | 51 | 46 | 41 | 39 |
| 6 | 68 | 54 | 45 | 38 | 66 | 53 | 44 | 38 | 51 | 43 | 37 | 49 | 42 | 37 | 47 | 41 | 36 | 34 |
| 7 | 63 | 49 | 40 | 34 | 61 | 48 | 40 | 34 | 46 | 39 | 33 | 44 | 38 | 32 | 43 | 37 | 32 | 30 |
| 8 | 59 | 45 | 36 | 30 | 57 | 44 | 36 | 30 | 42 | 35 | 29 | 41 | 34 | 29 | 39 | 33 | 29 | 27 |
| 9 | 55 | 41 | 33 | 27 | 53 | 40 | 32 | 27 | 39 | 32 | 27 | 37 | 31 | 26 | 36 | 30 | 26 | 24 |
| 10 | 51 | 38 | 30 | 25 | 50 | 37 | 30 | 24 | 36 | 29 | 24 | 35 | 28 | 24 | 33 | 28 | 23 | 22 |

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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 | 20.8 | 22.4 | 21.2 | 22.8 | 23.2 | 22.5 | 24.1 | 22.9 | 24.5 | 24.9 |
| | 3H | 22.3 | 23.7 | 22.7 | 24.1 | 24.6 | 24.8 | 26.2 | 25.2 | 26.7 | 27.1 |
| | 4H | 22.7 | 24.1 | 23.2 | 24.5 | 25.0 | 25.9 | 27.3 | 26.4 | 27.7 | 28.2 |
| | 6H | 23.0 | 24.3 | 23.5 | 24.8 | 25.2 | 27.1 | 28.3 | 27.5 | 28.8 | 29.3 |
| | 8H | 23.1 | 24.3 | 23.6 | 24.8 | 25.3 | 27.6 | 28.9 | 28.1 | 29.3 | 29.8 |
| | 12H | 23.1 | 24.3 | 23.6 | 24.7 | 25.3 | 28.3 | 29.5 | 28.8 | 29.9 | 30.5 |
| 4H | 2H | 21.6 | 23.0 | 22.0 | 23.4 | 23.8 | 22.9 | 24.3 | 23.4 | 24.7 | 25.2 |
| | 3H | 23.3 | 24.4 | 23.7 | 24.9 | 25.4 | 25.4 | 26.6 | 25.9 | 27.1 | 27.6 |
| | 4H | 23.8 | 24.9 | 24.3 | 25.4 | 25.9 | 26.7 | 27.8 | 27.2 | 28.2 | 28.8 |
| | 6H | 24.2 | 25.2 | 24.8 | 25.7 | 26.2 | 28.0 | 29.0 | 28.6 | 29.5 | 30.0 |
| | 8H | 24.3 | 25.2 | 24.9 | 25.7 | 26.3 | 28.7 | 29.6 | 29.2 | 30.1 | 30.7 |
| | 12H | 24.4 | 25.2 | 24.9 | 25.7 | 26.3 | 29.5 | 30.3 | 30.0 | 30.8 | 31.4 |
| 8H | 4H | 24.4 | 25.3 | 24.9 | 25.8 | 26.3 | 26.9 | 27.8 | 27.4 | 28.3 | 28.8 |
| | 6H | 24.9 | 25.7 | 25.5 | 26.2 | 26.8 | 28.4 | 29.1 | 28.9 | 29.7 | 30.2 |
| | 8H | 25.1 | 25.8 | 25.6 | 26.3 | 26.9 | 29.2 | 29.9 | 29.7 | 30.4 | 31.0 |
| | 12H | 25.2 | 25.8 | 25.8 | 26.3 | 27.0 | 30.1 | 30.7 | 30.7 | 31.3 | 31.9 |
| 12H | 4H | 24.5 | 25.3 | 25.1 | 25.9 | 26.4 | 26.9 | 27.7 | 27.4 | 28.2 | 28.8 |
| | 6H | 25.1 | 25.8 | 25.7 | 26.4 | 27.0 | 28.4 | 29.1 | 29.0 | 29.6 | 30.2 |
| | 8H | 25.4 | 26.0 | 26.0 | 26.5 | 27.2 | 29.3 | 29.9 | 29.8 | 30.4 | 31.1 |

Maximum UGR = 31.9

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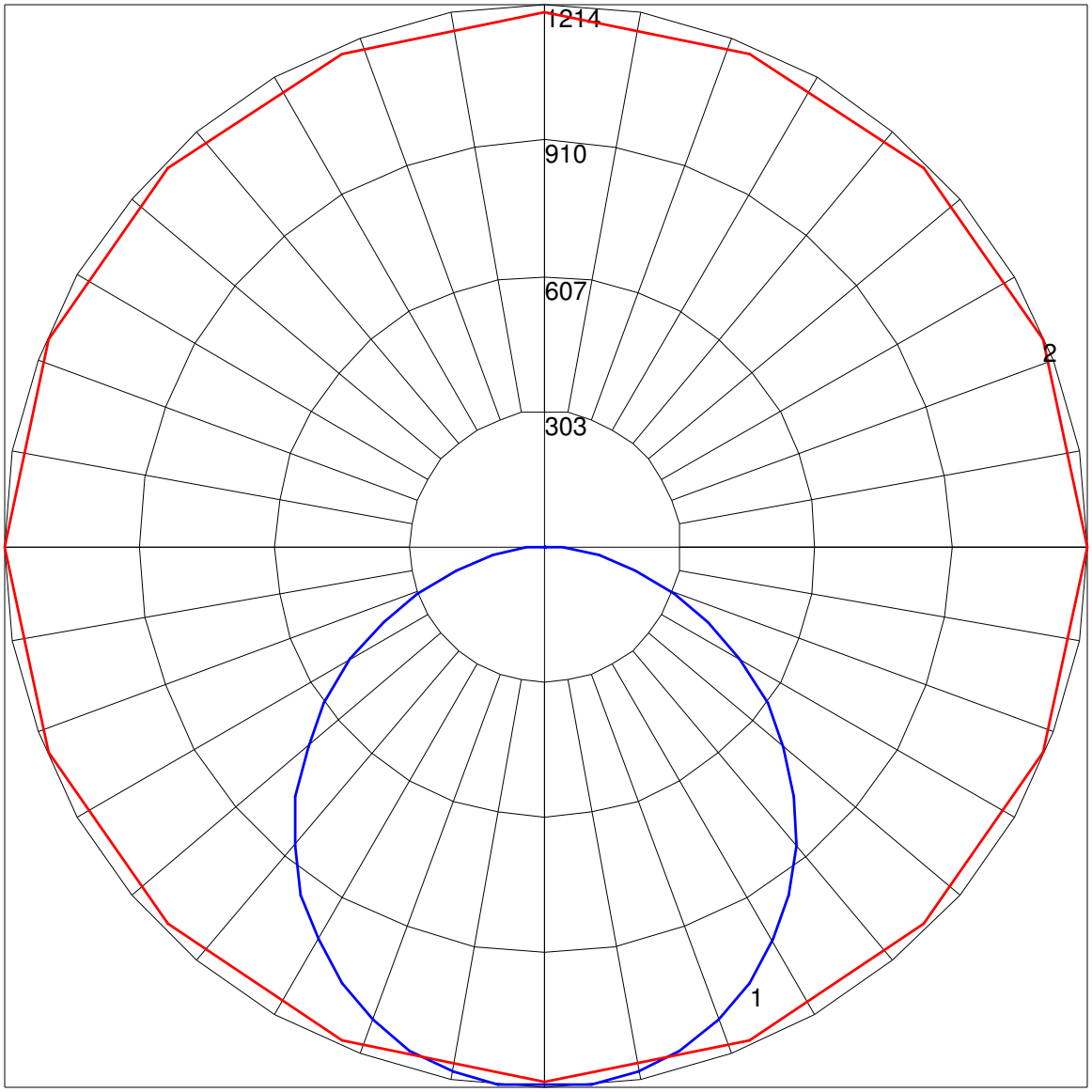
**POLAR GRAPH**




Maximum Candela = 1213.74  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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