



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AP-24-L50-830-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM LLI-20113-2

[TESTLAB] LightLab International (www.LightLabInt.com)

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.

[LUMCAT] AP-24-L50-830-DIM-UNV\_

[LUMINAIRE] RECESSED 2 X 4 ARCHED CENTER LED LUMINAIRE

[MORE] White steel fabricated housing with frosted white concave lens.

[MORE] 360 LEDs with 180 mounted along each long side of clear plastic sheet.

[ISSUEDATE] 2023-10-24

[\_SEARCH\_SOURCETYPE] LED

[\_SEARCH\_APPLICATION] Indoor, Architectural, Direct-Indirect

[\_SEARCH\_MOUNTING] Recessed

[\_CONVERT] Photometric web converted from original test data

### CHARACTERISTICS

|                                 |                 |
|---------------------------------|-----------------|
| Lumens Per Lamp                 | N.A. (absolute) |
| Total Lamp Lumens               | N.A. (absolute) |
| Luminaire Lumens                | 5009            |
| Total Luminaire Efficiency      | N.A.            |
| Luminaire Efficacy Rating (LER) | 111             |
| Total Luminaire Watts           | 45.3            |
| 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     |
| Luminous Length (0-180)         | 1.16 m          |
| Luminous Width (90-270)         | 0.57 m          |
| Luminous Height                 | 0.00 m          |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 2452             | 2460              | 2483              |
| 55                  | 2367             | 2381              | 2420              |
| 65                  | 2234             | 2259              | 2299              |
| 75                  | 2014             | 2029              | 2102              |
| 85                  | 1544             | 1472              | 1523              |

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CANDELA TABULATION

|           | <u>0.0</u> | <u>22.5</u> | <u>45.0</u> | <u>67.5</u> | <u>90.0</u> |
|-----------|------------|-------------|-------------|-------------|-------------|
| <b>0</b>  | 1722.623   | 1722.623    | 1722.623    | 1722.623    | 1722.623    |
| <b>5</b>  | 1718.095   | 1717.215    | 1715.673    | 1713.478    | 1710.571    |
| <b>10</b> | 1693.626   | 1693.310    | 1692.766    | 1691.402    | 1688.446    |
| <b>15</b> | 1654.565   | 1654.328    | 1654.407    | 1654.713    | 1652.400    |
| <b>20</b> | 1601.545   | 1601.743    | 1602.168    | 1604.184    | 1602.820    |
| <b>25</b> | 1535.316   | 1535.573    | 1536.839    | 1539.795    | 1539.834    |
| <b>30</b> | 1457.135   | 1457.382    | 1459.122    | 1463.146    | 1463.977    |
| <b>35</b> | 1366.231   | 1366.893    | 1369.206    | 1373.774    | 1376.226    |
| <b>40</b> | 1264.777   | 1265.568    | 1268.267    | 1273.566    | 1277.115    |
| <b>45</b> | 1153.042   | 1153.764    | 1156.700    | 1162.988    | 1167.664    |
| <b>50</b> | 1032.172   | 1033.111    | 1036.630    | 1043.462    | 1049.473    |
| <b>55</b> | 902.829    | 904.104     | 908.227     | 915.829     | 922.799     |
| <b>60</b> | 767.554    | 768.770     | 773.585     | 781.949     | 788.523     |
| <b>65</b> | 627.742    | 629.294     | 634.880     | 639.902     | 645.962     |
| <b>70</b> | 486.170    | 487.752     | 491.400     | 495.868     | 502.670     |
| <b>75</b> | 346.585    | 348.374     | 349.116     | 354.889     | 361.741     |
| <b>80</b> | 212.694    | 212.635     | 213.634     | 217.272     | 222.254     |
| <b>85</b> | 89.501     | 87.079      | 85.299      | 85.991      | 88.265      |
| <b>90</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |

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**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  | %Lamp | %Fixt  |
|---------|---------|-------|--------|
| 0-20    | 629.90  | N.A.  | 12.60  |
| 0-30    | 1338.56 | N.A.  | 26.70  |
| 0-40    | 2195.79 | N.A.  | 43.80  |
| 0-60    | 3902.69 | N.A.  | 77.90  |
| 0-80    | 4903.46 | N.A.  | 97.90  |
| 0-90    | 5009.31 | N.A.  | 100.00 |
| 10-90   | 4846.32 | N.A.  | 96.70  |
| 20-40   | 1565.89 | N.A.  | 31.30  |
| 20-50   | 2459.39 | N.A.  | 49.10  |
| 40-70   | 2335.38 | N.A.  | 46.60  |
| 60-80   | 1000.78 | N.A.  | 20.00  |
| 70-80   | 372.29  | N.A.  | 7.40   |
| 80-90   | 105.85  | N.A.  | 2.10   |
| 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   | 5009.31 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 162.99 |
| 10-20   | 466.91 |
| 20-30   | 708.67 |
| 30-40   | 857.23 |
| 40-50   | 893.50 |
| 50-60   | 813.40 |
| 60-70   | 628.49 |
| 70-80   | 372.29 |
| 80-90   | 105.85 |
| 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  | 108 | 104 | 99  | 95  | 106 | 101 | 97  | 94  | 97  | 94  | 91  | 93  | 90  | 88  | 90  | 87  | 85  | 83  |
| 2  | 98  | 90  | 83  | 77  | 96  | 88  | 82  | 76  | 85  | 79  | 75  | 81  | 77  | 73  | 78  | 74  | 71  | 69  |
| 3  | 90  | 79  | 71  | 64  | 87  | 77  | 70  | 63  | 74  | 68  | 62  | 72  | 66  | 61  | 69  | 64  | 60  | 58  |
| 4  | 82  | 70  | 61  | 54  | 80  | 68  | 60  | 54  | 66  | 59  | 53  | 64  | 57  | 52  | 61  | 56  | 51  | 49  |
| 5  | 75  | 62  | 53  | 46  | 73  | 61  | 53  | 46  | 59  | 51  | 46  | 57  | 50  | 45  | 55  | 49  | 45  | 42  |
| 6  | 70  | 56  | 47  | 40  | 68  | 55  | 46  | 40  | 53  | 46  | 40  | 52  | 45  | 40  | 50  | 44  | 39  | 37  |
| 7  | 64  | 51  | 42  | 36  | 63  | 50  | 42  | 36  | 48  | 41  | 35  | 47  | 40  | 35  | 46  | 39  | 35  | 33  |
| 8  | 60  | 46  | 38  | 32  | 58  | 46  | 37  | 32  | 44  | 37  | 31  | 43  | 36  | 31  | 42  | 36  | 31  | 29  |
| 9  | 56  | 42  | 34  | 29  | 55  | 42  | 34  | 28  | 41  | 33  | 28  | 40  | 33  | 28  | 39  | 32  | 28  | 26  |
| 10 | 53  | 39  | 31  | 26  | 51  | 39  | 31  | 26  | 38  | 31  | 26  | 37  | 30  | 26  | 36  | 30  | 25  | 24  |

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**UGR TABLE - CORRECTED**

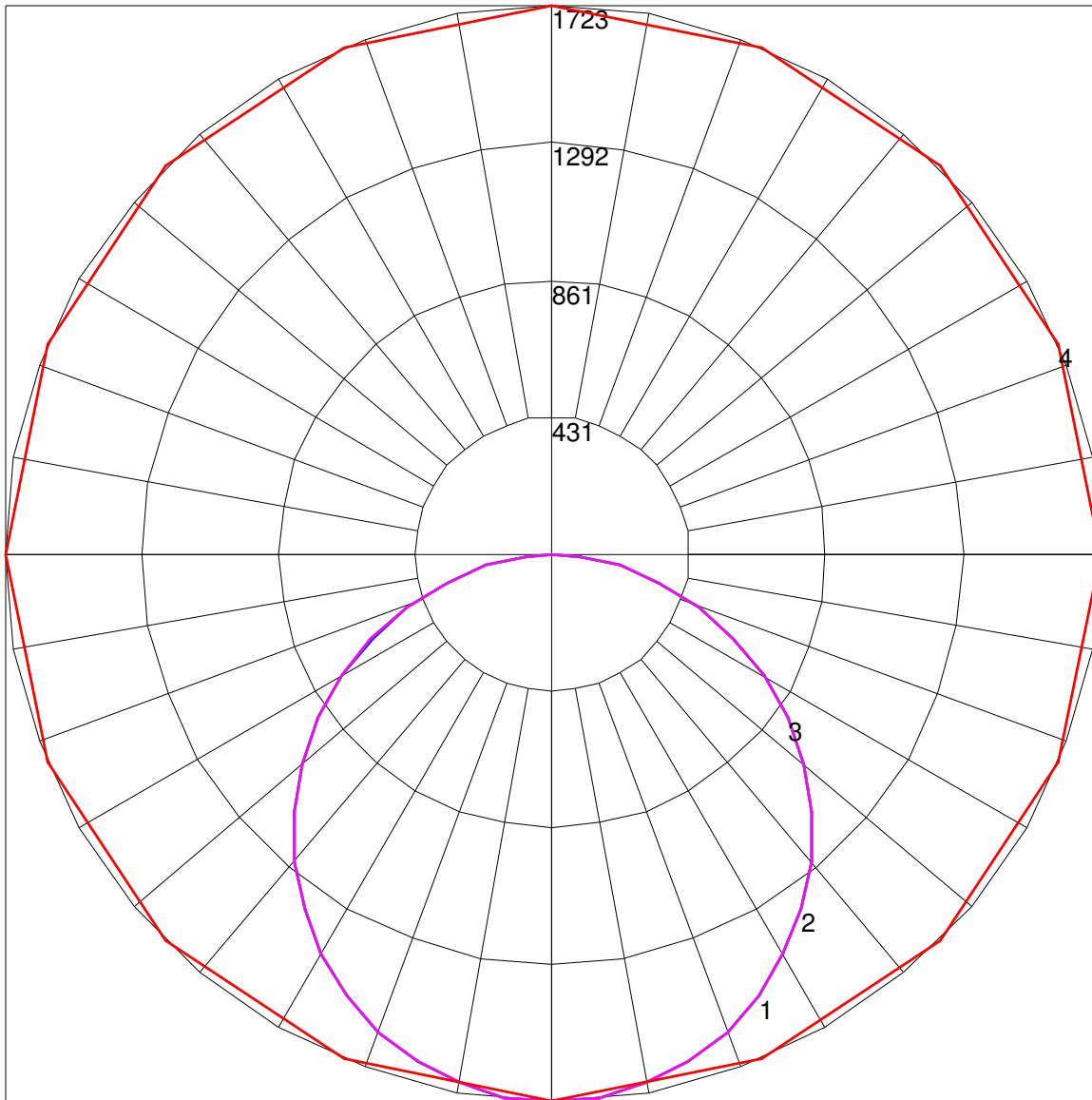
Reflectances

|                |    |    |    |    |    |    |    |    |    |    |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | 15.1                 | 16.8 | 15.5 | 17.1 | 17.4 | 15.3               | 16.9 | 15.6 | 17.2 | 17.5 |
|           | 3H   | 17.0                 | 18.5 | 17.4 | 18.8 | 19.2 | 17.1               | 18.6 | 17.5 | 19.0 | 19.3 |
|           | 4H   | 17.7                 | 19.1 | 18.1 | 19.5 | 19.9 | 17.9               | 19.3 | 18.3 | 19.6 | 20.0 |
|           | 6H   | 18.3                 | 19.6 | 18.7 | 19.9 | 20.3 | 18.4               | 19.7 | 18.8 | 20.1 | 20.5 |
|           | 8H   | 18.4                 | 19.7 | 18.9 | 20.1 | 20.5 | 18.6               | 19.9 | 19.0 | 20.3 | 20.7 |
|           | 12H  | 18.5                 | 19.8 | 19.0 | 20.1 | 20.6 | 18.7               | 19.9 | 19.1 | 20.3 | 20.7 |
| 4H        | 2H   | 15.8                 | 17.2 | 16.2 | 17.6 | 17.9 | 15.9               | 17.3 | 16.3 | 17.7 | 18.0 |
|           | 3H   | 17.9                 | 19.1 | 18.3 | 19.5 | 19.9 | 18.0               | 19.2 | 18.4 | 19.6 | 20.0 |
|           | 4H   | 18.7                 | 19.8 | 19.2 | 20.2 | 20.7 | 18.9               | 19.9 | 19.3 | 20.4 | 20.8 |
|           | 6H   | 19.4                 | 20.4 | 19.9 | 20.8 | 21.2 | 19.6               | 20.5 | 20.0 | 20.9 | 21.4 |
|           | 8H   | 19.7                 | 20.5 | 20.1 | 21.0 | 21.4 | 19.8               | 20.7 | 20.3 | 21.1 | 21.6 |
|           | 12H  | 19.8                 | 20.6 | 20.3 | 21.1 | 21.5 | 20.0               | 20.7 | 20.4 | 21.2 | 21.7 |
| 8H        | 4H   | 19.1                 | 20.0 | 19.6 | 20.4 | 20.9 | 19.2               | 20.1 | 19.7 | 20.5 | 21.0 |
|           | 6H   | 19.9                 | 20.6 | 20.4 | 21.1 | 21.6 | 20.0               | 20.7 | 20.5 | 21.2 | 21.7 |
|           | 8H   | 20.2                 | 20.8 | 20.7 | 21.3 | 21.8 | 20.3               | 21.0 | 20.8 | 21.5 | 22.0 |
|           | 12H  | 20.4                 | 21.0 | 20.9 | 21.5 | 22.0 | 20.5               | 21.1 | 21.0 | 21.6 | 22.2 |
| 12H       | 4H   | 19.1                 | 19.9 | 19.6 | 20.4 | 20.9 | 19.2               | 20.0 | 19.7 | 20.5 | 21.0 |
|           | 6H   | 20.0                 | 20.6 | 20.5 | 21.1 | 21.6 | 20.1               | 20.8 | 20.6 | 21.2 | 21.7 |
|           | 8H   | 20.3                 | 20.9 | 20.8 | 21.4 | 21.9 | 20.4               | 21.0 | 20.9 | 21.5 | 22.1 |

Maximum UGR = 22.2

POLAR GRAPH



Maximum Candela = 1722.623 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Vertical Plane Through Horizontal Angles (5 - 185)  
# 3 - Vertical Plane Through Horizontal Angles (10 - 190)  
# 4 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)