



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : LT-24-L52-840-AF-(L48) EM14W-DIM-UNV\_EMER MODE ONLY.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] GEN FROM BALLABS TEST NO. 20802.0  
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC  
[ISSUEDATE] 01-09-2024  
[MANUFAC] WILLIAMS INDOOR  
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO  
[LUMINAIRE] 2x4' RECESSED LED LUMINAIRE  
[LUMINAIRE] WHITE REFLECTOR w/FROSTED CENTER LENS  
[LUMINAIRE] 0-10V DIMMING DRIVER  
[LUMCAT] LT-24-L52-840-AF-(L48)-EM14W-DIM-UNV  
[LAMPCAT] 22 INCH LED ARRAYS  
[ \_SEARCH\_SOURCETYPE] LED  
[ \_SEARCH\_APPLICATION] Indoor, Classroom, Office, Direct  
[ \_SEARCH\_MOUNTING] Recessed

### CHARACTERISTICS

|                                 |                 |
|---------------------------------|-----------------|
| Lumens Per Lamp                 | N.A. (absolute) |
| Total Lamp Lumens               | N.A. (absolute) |
| Luminaire Lumens                | 2016            |
| Total Luminaire Efficiency      | N.A.            |
| Luminaire Efficacy Rating (LER) | 144             |
| Total Luminaire Watts           | 14              |
| Ballast Factor                  | 1.00            |
| CIE Type                        | Direct          |
| Spacing Criterion (0-180)       | 1.22            |
| Spacing Criterion (90-270)      | 1.28            |
| Spacing Criterion (Diagonal)    | 1.36            |
| Basic Luminous Shape            | Rectangular     |
| Luminous Length (0-180)         | 3.93 ft         |
| Luminous Width (90-270)         | 1.91 ft         |
| Luminous Height                 | 0.00 ft         |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 833              | 926               | 996               |
| 55                  | 758              | 898               | 1004              |
| 65                  | 647              | 893               | 1051              |
| 75                  | 477              | 937               | 1176              |
| 85                  | 183              | 753               | 692               |

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|           | <u>0.0</u> | <u>22.5</u> | <u>45.0</u> | <u>67.5</u> | <u>90.0</u> |
|-----------|------------|-------------|-------------|-------------|-------------|
| <b>0</b>  | 700.312    | 700.312     | 700.312     | 700.312     | 700.312     |
| <b>5</b>  | 707.027    | 698.634     | 694.269     | 692.591     | 692.591     |
| <b>10</b> | 693.934    | 685.205     | 682.855     | 683.191     | 682.183     |
| <b>15</b> | 673.119    | 667.076     | 666.069     | 668.419     | 669.762     |
| <b>20</b> | 645.926    | 640.554     | 642.904     | 649.283     | 650.626     |
| <b>25</b> | 610.339    | 605.639     | 614.032     | 623.097     | 625.111     |
| <b>30</b> | 569.381    | 568.374     | 579.789     | 591.875     | 596.575     |
| <b>35</b> | 521.373    | 525.402     | 542.188     | 557.631     | 563.339     |
| <b>40</b> | 470.680    | 478.066     | 503.916     | 521.709     | 528.424     |
| <b>45</b> | 409.914    | 422.672     | 455.572     | 485.116     | 490.152     |
| <b>50</b> | 359.221    | 374.999     | 407.229     | 436.101     | 444.494     |
| <b>55</b> | 302.484    | 318.263     | 358.549     | 389.435     | 400.850     |
| <b>60</b> | 246.754    | 264.212     | 307.184     | 344.449     | 355.192     |
| <b>65</b> | 190.353    | 214.525     | 262.533     | 298.791     | 309.198     |
| <b>70</b> | 137.645    | 164.839     | 214.525     | 253.133     | 261.526     |
| <b>75</b> | 85.944     | 119.181     | 168.867     | 203.446     | 211.839     |
| <b>80</b> | 41.294     | 77.216      | 122.538     | 138.652     | 133.952     |
| <b>85</b> | 11.079     | 38.272      | 45.658      | 40.622      | 41.965      |
| <b>90</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : LT-24-L52-840-AF-(L48) EM14W-DIM-UNV\_EMER MODE ONLY.IES****ZONAL LUMEN SUMMARY**

| Zone    | Lumens  | %Lamp | %Fixt  |
|---------|---------|-------|--------|
| 0-20    | 254.62  | N.A.  | 12.60  |
| 0-30    | 538.15  | N.A.  | 26.70  |
| 0-40    | 877.43  | N.A.  | 43.50  |
| 0-60    | 1544.95 | N.A.  | 76.60  |
| 0-80    | 1966.39 | N.A.  | 97.50  |
| 0-90    | 2015.94 | N.A.  | 100.00 |
| 10-90   | 1949.83 | N.A.  | 96.70  |
| 20-40   | 622.81  | N.A.  | 30.90  |
| 20-50   | 972.94  | N.A.  | 48.30  |
| 40-70   | 921.40  | N.A.  | 45.70  |
| 60-80   | 421.44  | N.A.  | 20.90  |
| 70-80   | 167.56  | N.A.  | 8.30   |
| 80-90   | 49.54   | N.A.  | 2.50   |
| 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   | 2015.94 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 66.10  |
| 10-20   | 188.51 |
| 20-30   | 283.53 |
| 30-40   | 339.29 |
| 40-50   | 350.12 |
| 50-60   | 317.40 |
| 60-70   | 253.88 |
| 70-80   | 167.56 |
| 80-90   | 49.54  |
| 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 | 103 | 99  | 95  | 105 | 101 | 97  | 93  | 97  | 93  | 90  | 93  | 90  | 87  | 89  | 87  | 85  | 83  |
| 2  | 98  | 90  | 82  | 77  | 95  | 88  | 81  | 76  | 84  | 79  | 74  | 81  | 76  | 72  | 78  | 74  | 70  | 68  |
| 3  | 89  | 78  | 70  | 63  | 87  | 77  | 69  | 63  | 74  | 67  | 62  | 71  | 65  | 61  | 68  | 64  | 59  | 57  |
| 4  | 82  | 69  | 60  | 53  | 79  | 68  | 60  | 53  | 65  | 58  | 52  | 63  | 57  | 52  | 61  | 55  | 51  | 49  |
| 5  | 75  | 62  | 53  | 46  | 73  | 61  | 52  | 46  | 59  | 51  | 45  | 57  | 50  | 45  | 55  | 49  | 44  | 42  |
| 6  | 69  | 56  | 47  | 40  | 67  | 55  | 46  | 40  | 53  | 45  | 40  | 51  | 44  | 39  | 50  | 44  | 39  | 37  |
| 7  | 64  | 51  | 42  | 35  | 62  | 50  | 41  | 35  | 48  | 41  | 35  | 47  | 40  | 35  | 45  | 39  | 34  | 32  |
| 8  | 60  | 46  | 37  | 32  | 58  | 45  | 37  | 31  | 44  | 37  | 31  | 43  | 36  | 31  | 42  | 35  | 31  | 29  |
| 9  | 56  | 42  | 34  | 28  | 54  | 42  | 34  | 28  | 41  | 33  | 28  | 39  | 33  | 28  | 38  | 32  | 28  | 26  |
| 10 | 52  | 39  | 31  | 26  | 51  | 39  | 31  | 26  | 38  | 30  | 26  | 37  | 30  | 25  | 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

| X=2H | Y=2H | 10.7 | 12.4 | 11.1 | 12.7 | 13.0 | 12.4 | 14.1 | 12.8 | 14.4 | 14.7 |
|------|------|------|------|------|------|------|------|------|------|------|------|
|      | 3H   | 12.3 | 13.8 | 12.7 | 14.1 | 14.5 | 14.8 | 16.3 | 15.2 | 16.6 | 17.0 |
|      | 4H   | 12.8 | 14.2 | 13.2 | 14.6 | 15.0 | 15.8 | 17.3 | 16.2 | 17.6 | 18.0 |
|      | 6H   | 13.1 | 14.5 | 13.5 | 14.8 | 15.2 | 16.7 | 18.0 | 17.1 | 18.4 | 18.7 |
|      | 8H   | 13.2 | 14.5 | 13.6 | 14.9 | 15.3 | 16.9 | 18.2 | 17.3 | 18.6 | 19.0 |
|      | 12H  | 13.2 | 14.4 | 13.7 | 14.8 | 15.3 | 17.0 | 18.3 | 17.5 | 18.6 | 19.1 |

### UGR Viewed Endwise

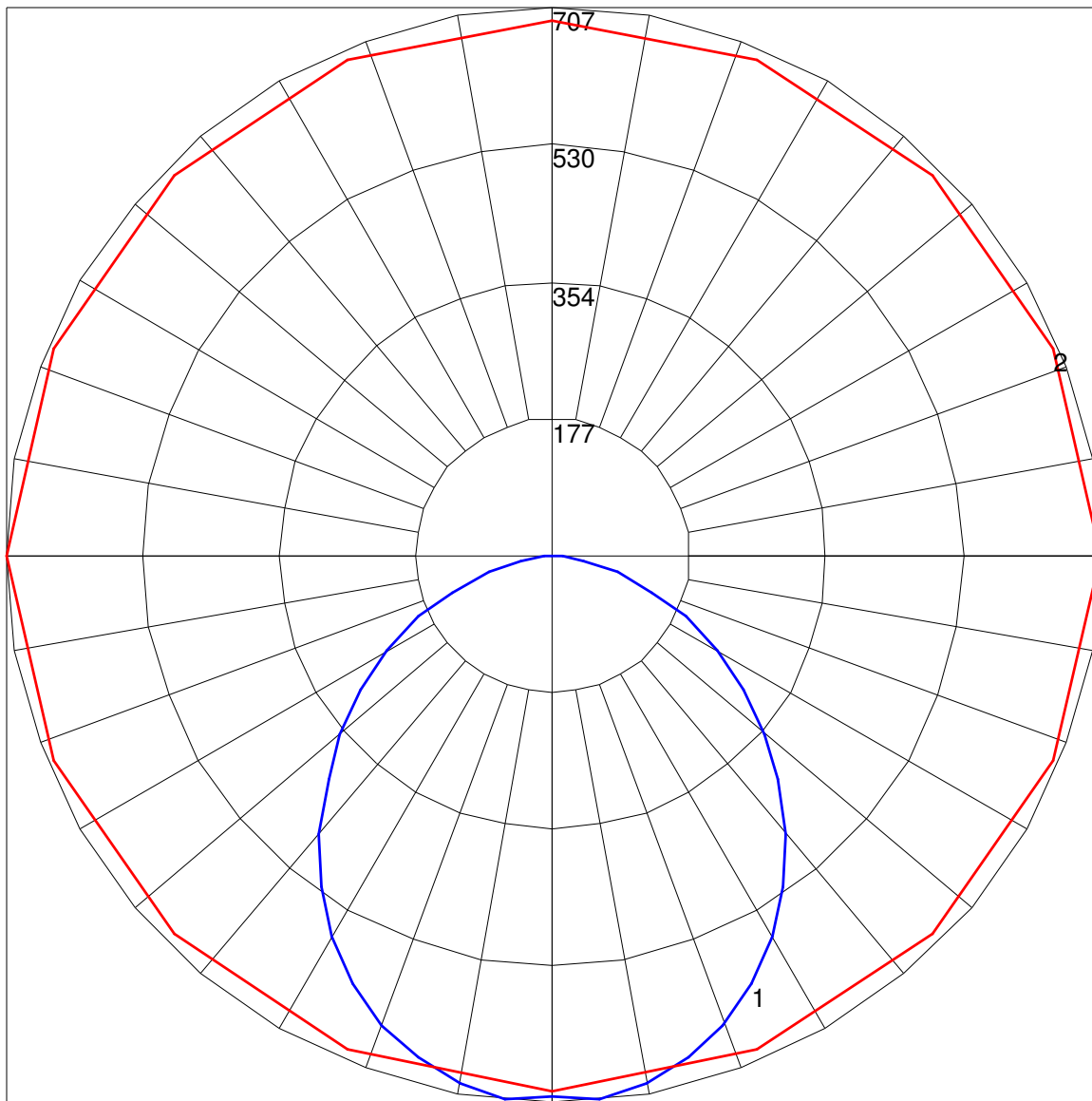
|     |     |      |      |      |      |      |      |      |      |      |      |
|-----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H  | 2H  | 11.7 | 13.1 | 12.1 | 13.4 | 13.8 | 13.0 | 14.4 | 13.4 | 14.8 | 15.1 |
|     | 3H  | 13.5 | 14.7 | 13.9 | 15.1 | 15.5 | 15.6 | 16.8 | 16.0 | 17.2 | 17.6 |
|     | 4H  | 14.2 | 15.3 | 14.6 | 15.7 | 16.1 | 16.9 | 18.0 | 17.3 | 18.4 | 18.8 |
|     | 6H  | 14.7 | 15.6 | 15.1 | 16.1 | 16.5 | 17.9 | 18.9 | 18.4 | 19.3 | 19.7 |
|     | 8H  | 14.8 | 15.7 | 15.3 | 16.1 | 16.6 | 18.2 | 19.1 | 18.7 | 19.5 | 20.0 |
|     | 12H | 14.9 | 15.7 | 15.3 | 16.1 | 16.6 | 18.4 | 19.2 | 18.8 | 19.6 | 20.1 |
| 8H  | 4H  | 15.0 | 15.9 | 15.4 | 16.3 | 16.8 | 17.2 | 18.1 | 17.7 | 18.5 | 19.0 |
|     | 6H  | 15.6 | 16.4 | 16.1 | 16.9 | 17.3 | 18.4 | 19.1 | 18.9 | 19.6 | 20.1 |
|     | 8H  | 15.9 | 16.5 | 16.4 | 17.0 | 17.5 | 18.8 | 19.5 | 19.3 | 20.0 | 20.5 |
|     | 12H | 16.0 | 16.6 | 16.5 | 17.1 | 17.6 | 19.0 | 19.6 | 19.5 | 20.1 | 20.7 |
| 12H | 4H  | 15.1 | 15.9 | 15.6 | 16.4 | 16.9 | 17.2 | 18.0 | 17.7 | 18.5 | 19.0 |
|     | 6H  | 15.9 | 16.6 | 16.4 | 17.0 | 17.6 | 18.5 | 19.1 | 19.0 | 19.6 | 20.1 |
|     | 8H  | 16.2 | 16.8 | 16.7 | 17.3 | 17.8 | 18.9 | 19.5 | 19.4 | 20.0 | 20.6 |

Maximum UGR = 20.7

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## POLAR GRAPH



Maximum Candela = 707.027 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.)