



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : AVX-2-L31-8TW-CPC-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 20624.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 15-JUL-2020

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836

[LUMINAIRE] 2' SURFACE MNT LUMINAIRE

[MORE] WHITE FROST INTERIOR LENS w/CLEAR POLYCARB LENS

[LUMCAT] AVX-2-L31-8TW-CPC-DIM-UNV

[\_SEARCH\_SOURCETYPE] LED

[\_SEARCH\_APPLICATION] INDOOR, ARCHITECTURAL, COMMERCIAL, DIRECT, LINEAR

[\_SEARCH\_MOUNTING] SURFACE, SUSPENDED

### CHARACTERISTICS

|                                 |                     |
|---------------------------------|---------------------|
| Lumens Per Lamp                 | N.A. (absolute)     |
| Total Lamp Lumens               | N.A. (absolute)     |
| Luminaire Lumens                | 3190                |
| Total Luminaire Efficiency      | N.A.                |
| Luminaire Efficacy Rating (LER) | 106                 |
| Total Luminaire Watts           | 30                  |
| Ballast Factor                  | 1.00                |
| CIE Type                        | Direct              |
| Spacing Criterion (0-180)       | 1.14                |
| Spacing Criterion (90-270)      | 1.64                |
| Spacing Criterion (Diagonal)    | 1.50                |
| Basic Luminous Shape            | Rectangular w/Sides |
| Luminous Length (0-180)         | 1.90 ft             |
| Luminous Width (90-270)         | 0.58 ft             |
| Luminous Height                 | 0.06 ft             |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 6637             | 9574              | 11945             |
| 55                  | 5805             | 9087              | 11540             |
| 65                  | 4711             | 8318              | 10478             |
| 75                  | 2469             | 6814              | 8946              |
| 85                  | 522              | 4973              | 7487              |

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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>   | 966.510    | 966.510     | 966.510     | 966.510     | 966.510     |
| <b>5</b>   | 969.089    | 964.254     | 966.833     | 973.925     | 975.859     |
| <b>10</b>  | 943.299    | 949.101     | 970.379     | 991.334     | 1000.683    |
| <b>15</b>  | 903.000    | 923.955     | 971.024     | 1005.519    | 1021.316    |
| <b>20</b>  | 847.550    | 883.013     | 959.418     | 1019.059    | 1039.692    |
| <b>25</b>  | 788.231    | 834.977     | 946.200     | 1027.763    | 1061.291    |
| <b>30</b>  | 719.563    | 775.981     | 918.797     | 1032.922    | 1077.411    |
| <b>35</b>  | 645.415    | 715.050     | 879.466     | 1020.026    | 1060.324    |
| <b>40</b>  | 570.944    | 633.809     | 830.141     | 983.597     | 1023.895    |
| <b>45</b>  | 498.407    | 552.246     | 765.342     | 929.758     | 961.997     |
| <b>50</b>  | 424.903    | 470.360     | 691.838     | 854.965     | 879.789     |
| <b>55</b>  | 358.492    | 390.731     | 612.209     | 761.796     | 785.330     |
| <b>60</b>  | 291.758    | 317.227     | 526.777     | 669.916     | 678.620     |
| <b>65</b>  | 219.222    | 245.013     | 438.766     | 545.798     | 560.628     |
| <b>70</b>  | 145.073    | 178.601     | 341.728     | 434.253     | 450.372     |
| <b>75</b>  | 73.826     | 111.868     | 248.881     | 323.997     | 333.991     |
| <b>80</b>  | 27.725     | 58.996      | 163.772     | 219.544     | 233.729     |
| <b>85</b>  | 6.448      | 20.310      | 95.426      | 137.981     | 149.909     |
| <b>90</b>  | 0.000      | 4.836       | 43.844      | 73.826      | 82.531      |
| <b>95</b>  | 0.000      | 0.000       | 12.895      | 31.916      | 37.719      |
| <b>100</b> | 0.000      | 0.000       | 1.612       | 8.060       | 10.639      |
| <b>105</b> | 0.000      | 0.000       | 0.000       | 1.612       | 2.257       |
| <b>110</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>115</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>120</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>125</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>130</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>135</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>140</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>145</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>150</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>155</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>160</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>165</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>170</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>175</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>180</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |

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**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  | %Lamp | %Fixt  |
|---------|---------|-------|--------|
| 0-20    | 365.39  | N.A.  | 11.50  |
| 0-30    | 795.91  | N.A.  | 24.90  |
| 0-40    | 1337.04 | N.A.  | 41.90  |
| 0-60    | 2433.02 | N.A.  | 76.30  |
| 0-80    | 3072.41 | N.A.  | 96.30  |
| 0-90    | 3167.81 | N.A.  | 99.30  |
| 10-90   | 3075.27 | N.A.  | 96.40  |
| 20-40   | 971.64  | N.A.  | 30.50  |
| 20-50   | 1544.95 | N.A.  | 48.40  |
| 40-70   | 1497.69 | N.A.  | 46.90  |
| 60-80   | 639.39  | N.A.  | 20.00  |
| 70-80   | 237.68  | N.A.  | 7.50   |
| 80-90   | 95.40   | N.A.  | 3.00   |
| 90-110  | 22.28   | N.A.  | 0.70   |
| 90-120  | 22.28   | N.A.  | 0.70   |
| 90-130  | 22.28   | N.A.  | 0.70   |
| 90-150  | 22.28   | N.A.  | 0.70   |
| 90-180  | 22.28   | N.A.  | 0.70   |
| 110-180 | 0.00    | N.A.  | 0.00   |
| 0-180   | 3190.09 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 92.55  |
| 10-20   | 272.85 |
| 20-30   | 430.52 |
| 30-40   | 541.12 |
| 40-50   | 573.30 |
| 50-60   | 522.68 |
| 60-70   | 401.71 |
| 70-80   | 237.68 |
| 80-90   | 95.40  |
| 90-100  | 20.91  |
| 100-110 | 1.37   |
| 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  | 125 | 125 | 125 | 125 | 122 | 122 | 122 | 122 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 104 |
| 1  | 113 | 108 | 103 | 99  | 110 | 105 | 101 | 97  | 101 | 97  | 94  | 96  | 94  | 91  | 93  | 90  | 88  | 86  |
| 2  | 103 | 93  | 86  | 80  | 100 | 91  | 85  | 79  | 88  | 82  | 77  | 84  | 79  | 75  | 81  | 77  | 73  | 71  |
| 3  | 93  | 82  | 73  | 66  | 91  | 80  | 72  | 65  | 77  | 70  | 64  | 74  | 68  | 63  | 71  | 66  | 61  | 59  |
| 4  | 85  | 72  | 63  | 55  | 83  | 71  | 62  | 55  | 68  | 60  | 54  | 65  | 59  | 53  | 63  | 57  | 52  | 50  |
| 5  | 78  | 64  | 55  | 47  | 76  | 63  | 54  | 47  | 61  | 53  | 47  | 59  | 51  | 46  | 56  | 50  | 45  | 43  |
| 6  | 72  | 58  | 48  | 41  | 70  | 57  | 48  | 41  | 55  | 47  | 41  | 53  | 46  | 40  | 51  | 45  | 40  | 37  |
| 7  | 67  | 52  | 43  | 36  | 65  | 51  | 42  | 36  | 50  | 42  | 36  | 48  | 41  | 35  | 46  | 40  | 35  | 33  |
| 8  | 62  | 48  | 38  | 32  | 60  | 47  | 38  | 32  | 45  | 37  | 32  | 44  | 37  | 32  | 43  | 36  | 31  | 29  |
| 9  | 58  | 44  | 35  | 29  | 56  | 43  | 34  | 29  | 42  | 34  | 29  | 40  | 33  | 28  | 39  | 33  | 28  | 26  |
| 10 | 54  | 40  | 32  | 26  | 53  | 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

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| X=2H | Y=2H | 13.9 | 15.5 | 14.2 | 15.8 | 16.2 | 19.2 | 20.8 | 19.6 | 21.2 | 21.5 |
|      | 3H   | 15.1 | 16.6 | 15.5 | 17.0 | 17.3 | 21.2 | 22.7 | 21.6 | 23.0 | 23.4 |
|      | 4H   | 15.4 | 16.8 | 15.8 | 17.2 | 17.6 | 22.0 | 23.4 | 22.4 | 23.7 | 24.1 |
|      | 6H   | 15.5 | 16.8 | 15.9 | 17.2 | 17.6 | 22.7 | 24.0 | 23.1 | 24.4 | 24.8 |
|      | 8H   | 15.5 | 16.7 | 15.9 | 17.1 | 17.6 | 23.0 | 24.2 | 23.4 | 24.6 | 25.0 |
|      | 12H  | 15.5 | 16.7 | 15.9 | 17.1 | 17.5 | 23.3 | 24.5 | 23.7 | 24.9 | 25.3 |

UGR Viewed Endwise

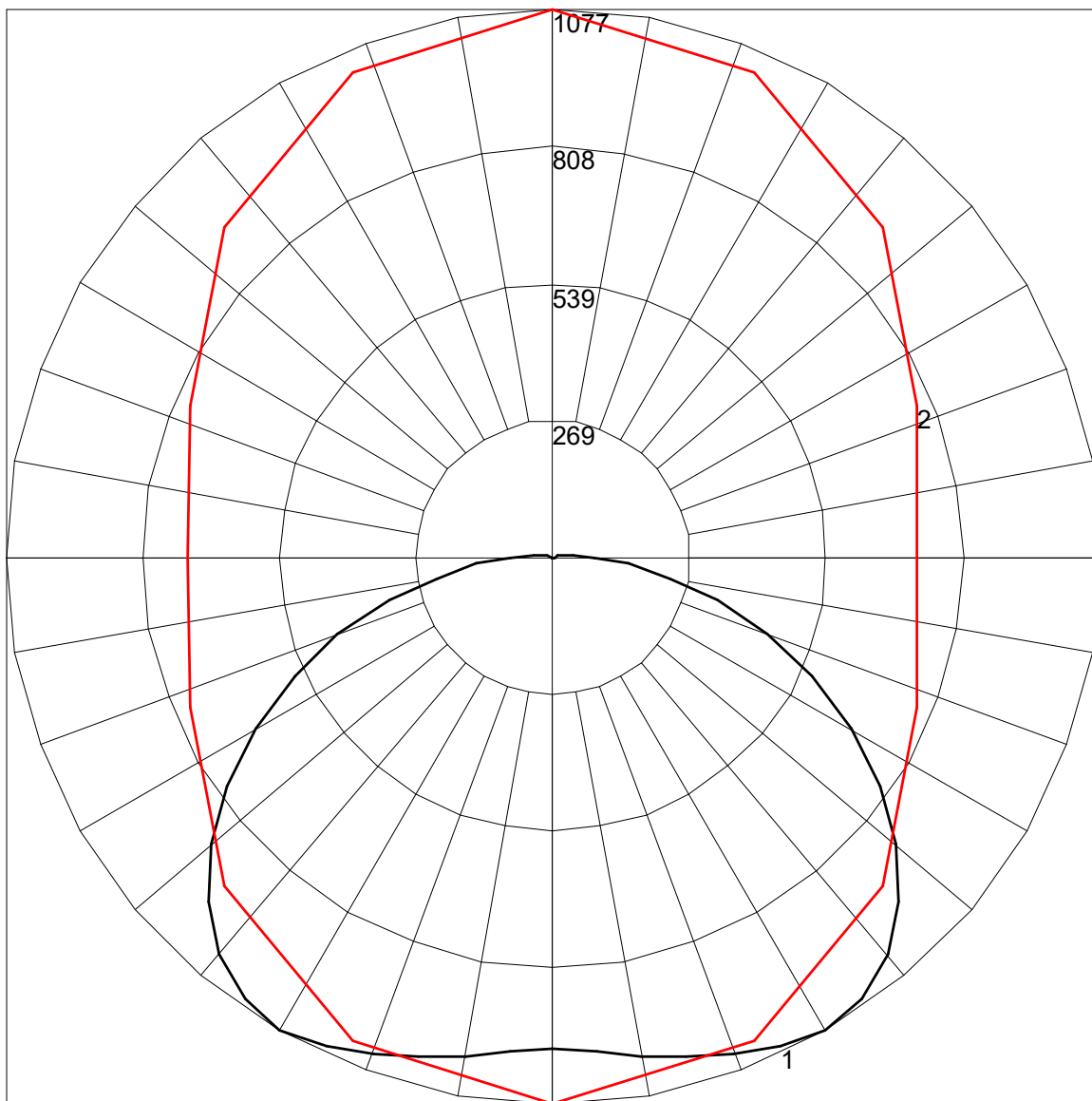
|    |     |      |      |      |      |      |      |      |      |      |      |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H | 2H  | 15.6 | 17.1 | 16.1 | 17.4 | 17.8 | 19.5 | 20.9 | 19.9 | 21.3 | 21.7 |
|    | 3H  | 17.0 | 18.2 | 17.4 | 18.6 | 19.0 | 21.8 | 22.9 | 22.2 | 23.4 | 23.8 |
|    | 4H  | 17.3 | 18.4 | 17.7 | 18.8 | 19.3 | 22.7 | 23.8 | 23.2 | 24.3 | 24.7 |
|    | 6H  | 17.4 | 18.4 | 17.9 | 18.8 | 19.3 | 23.6 | 24.6 | 24.1 | 25.0 | 25.5 |
|    | 8H  | 17.4 | 18.3 | 17.9 | 18.8 | 19.3 | 24.0 | 24.9 | 24.5 | 25.3 | 25.8 |
|    | 12H | 17.4 | 18.2 | 17.9 | 18.7 | 19.2 | 24.4 | 25.2 | 24.9 | 25.7 | 26.2 |

|    |     |      |      |      |      |      |      |      |      |      |      |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 8H | 4H  | 18.3 | 19.2 | 18.8 | 19.6 | 20.1 | 22.9 | 23.8 | 23.4 | 24.2 | 24.7 |
|    | 6H  | 18.5 | 19.3 | 19.1 | 19.8 | 20.3 | 23.9 | 24.6 | 24.4 | 25.1 | 25.6 |
|    | 8H  | 18.6 | 19.2 | 19.1 | 19.8 | 20.3 | 24.4 | 25.1 | 24.9 | 25.6 | 26.1 |
|    | 12H | 18.6 | 19.2 | 19.1 | 19.7 | 20.3 | 24.9 | 25.5 | 25.4 | 26.0 | 26.6 |

|     |    |      |      |      |      |      |      |      |      |      |      |
|-----|----|------|------|------|------|------|------|------|------|------|------|
| 12H | 4H | 18.5 | 19.3 | 19.0 | 19.8 | 20.3 | 22.9 | 23.7 | 23.4 | 24.2 | 24.7 |
|     | 6H | 18.9 | 19.5 | 19.4 | 20.0 | 20.6 | 23.9 | 24.6 | 24.4 | 25.1 | 25.6 |
|     | 8H | 19.0 | 19.6 | 19.5 | 20.1 | 20.7 | 24.5 | 25.1 | 25.0 | 25.6 | 26.1 |

Maximum UGR = 26.6

POLAR GRAPH



Maximum Candela = 1077.411 Located At Horizontal Angle = 90, Vertical Angle = 30  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270)  
# 2 - Horizontal Cone Through Vertical Angle (30) (Through Max. Cd.)