



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OW-CSU-RM-WHD-WM 4000K\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN from UL #13537338.03  
 [TESTLAB] UL Verification Services Inc.  
 [ISSUE DATE] 24-FEB-2021  
 [MANUFAC] WILLIAMS INDOOR  
 [MORE] H.E. WILLIAMS, INC. - CARTHAGE, MO  
 [LUMCAT] 8CRDI-TL-L20-8TWU-L20-8TWD-xxx-DALI-UNV-OW-CSU-RM-WHD-WM 4000k  
 [LUMINAIRE] White formed aluminum housing, wide distribution reflector  
 [MORE] trims, clear uplight glass lens enclosure, no downlight enclosure  
 [LAMP] Two white LEDs (one up/one down)  
 [SEARCH\_SOURCETYPE] LED  
 [SEARCH\_APPLICATION] INDOOR, DIRECT, INDIRECT  
 [SEARCH\_MOUNTING] WALL

### CHARACTERISTICS

|                                 |                    |
|---------------------------------|--------------------|
| Lumens Per Lamp                 | N.A. (absolute)    |
| Total Lamp Lumens               | N.A. (absolute)    |
| Luminaire Lumens                | 4244               |
| Total Luminaire Efficiency      | N.A.               |
| Luminaire Efficacy Rating (LER) | 88                 |
| Total Luminaire Watts           | 48                 |
| Ballast Factor                  | 1.00               |
| CIE Type                        | General Diffuse    |
| Spacing Criterion (0-180)       | N.A.               |
| Spacing Criterion (90-270)      | N.A.               |
| Spacing Criterion (Diagonal)    | N.A.               |
| Basic Luminous Shape            | Circular w/ Sides  |
| Luminous Length (0-180)         | 0.65 ft (Diameter) |
| Luminous Width (90-270)         | 0.65 ft (Diameter) |
| Luminous Height                 | 2.17 ft            |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 772              | 772               | 772               |
| 55                  | 385              | 385               | 385               |
| 65                  | 200              | 200               | 200               |
| 75                  | 83               | 83                | 83                |
| 85                  | 24               | 24                | 24                |

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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> | <u>112.5</u> | <u>135.0</u> | <u>157.5</u> | <u>180.0</u> |
|-----|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 0   | 4983.426   | 4983.426    | 4983.426    | 4983.426    | 4983.426    | 4983.426     | 4983.426     | 4983.426     | 4983.426     |
| 5   | 4773.135   | 4773.135    | 4773.135    | 4773.135    | 4773.135    | 4773.135     | 4773.135     | 4773.135     | 4773.135     |
| 10  | 4167.683   | 4167.683    | 4167.683    | 4167.683    | 4167.683    | 4167.683     | 4167.683     | 4167.683     | 4167.683     |
| 15  | 3083.877   | 3083.877    | 3083.877    | 3083.877    | 3083.877    | 3083.877     | 3083.877     | 3083.877     | 3083.877     |
| 20  | 1854.486   | 1854.486    | 1854.486    | 1854.486    | 1854.486    | 1854.486     | 1854.486     | 1854.486     | 1854.486     |
| 25  | 977.967    | 977.967     | 977.967     | 977.967     | 977.967     | 977.967      | 977.967      | 977.967      | 977.967      |
| 30  | 504.004    | 504.004     | 504.004     | 504.004     | 504.004     | 504.004      | 504.004      | 504.004      | 504.004      |
| 35  | 259.397    | 259.397     | 259.397     | 259.397     | 259.397     | 259.397      | 259.397      | 259.397      | 259.397      |
| 40  | 139.346    | 139.346     | 139.346     | 139.346     | 139.346     | 139.346      | 139.346      | 139.346      | 139.346      |
| 45  | 87.698     | 87.698      | 87.698      | 87.698      | 87.698      | 87.698       | 87.698       | 87.698       | 87.698       |
| 50  | 62.856     | 62.856      | 62.856      | 62.856      | 62.856      | 62.856       | 62.856       | 62.856       | 62.856       |
| 55  | 47.835     | 47.835      | 47.835      | 47.835      | 47.835      | 47.835       | 47.835       | 47.835       | 47.835       |
| 60  | 36.281     | 36.281      | 36.281      | 36.281      | 36.281      | 36.281       | 36.281       | 36.281       | 36.281       |
| 65  | 26.229     | 26.229      | 26.229      | 26.229      | 26.229      | 26.229       | 26.229       | 26.229       | 26.229       |
| 70  | 17.563     | 17.563      | 17.563      | 17.563      | 17.563      | 17.563       | 17.563       | 17.563       | 17.563       |
| 75  | 11.092     | 11.092      | 11.092      | 11.092      | 11.092      | 11.092       | 11.092       | 11.092       | 11.092       |
| 80  | 6.817      | 6.817       | 6.817       | 6.817       | 6.817       | 6.817        | 6.817        | 6.817        | 6.817        |
| 85  | 3.120      | 3.120       | 3.120       | 3.120       | 3.120       | 3.120        | 3.120        | 3.120        | 3.120        |
| 90  | 4.678      | 4.678       | 4.678       | 4.678       | 4.678       | 4.678        | 4.678        | 4.678        | 4.678        |
| 95  | 4.785      | 4.785       | 4.785       | 4.785       | 4.785       | 4.785        | 4.785        | 4.785        | 4.785        |
| 100 | 5.789      | 5.789       | 5.789       | 5.789       | 5.789       | 5.789        | 5.789        | 5.789        | 5.789        |
| 105 | 7.162      | 7.162       | 7.162       | 7.162       | 7.162       | 7.162        | 7.162        | 7.162        | 7.162        |
| 110 | 9.035      | 9.035       | 9.035       | 9.035       | 9.035       | 9.035        | 9.035        | 9.035        | 9.035        |
| 115 | 11.846     | 11.846      | 11.846      | 11.846      | 11.846      | 11.846       | 11.846       | 11.846       | 11.846       |
| 120 | 16.397     | 16.397      | 16.397      | 16.397      | 16.397      | 16.397       | 16.397       | 16.397       | 16.397       |
| 125 | 24.830     | 24.830      | 24.830      | 24.830      | 24.830      | 24.830       | 24.830       | 24.830       | 24.830       |
| 130 | 39.453     | 39.453      | 39.453      | 39.453      | 39.453      | 39.453       | 39.453       | 39.453       | 39.453       |
| 135 | 62.843     | 62.843      | 62.843      | 62.843      | 62.843      | 62.843       | 62.843       | 62.843       | 62.843       |
| 140 | 250.337    | 250.337     | 250.337     | 250.337     | 250.337     | 250.337      | 250.337      | 250.337      | 250.337      |
| 145 | 889.783    | 889.783     | 889.783     | 889.783     | 889.783     | 889.783      | 889.783      | 889.783      | 889.783      |
| 150 | 1574.772   | 1574.772    | 1574.772    | 1574.772    | 1574.772    | 1574.772     | 1574.772     | 1574.772     | 1574.772     |
| 155 | 1867.574   | 1867.574    | 1867.574    | 1867.574    | 1867.574    | 1867.574     | 1867.574     | 1867.574     | 1867.574     |
| 160 | 1829.761   | 1829.761    | 1829.761    | 1829.761    | 1829.761    | 1829.761     | 1829.761     | 1829.761     | 1829.761     |
| 165 | 1731.714   | 1731.714    | 1731.714    | 1731.714    | 1731.714    | 1731.714     | 1731.714     | 1731.714     | 1731.714     |
| 170 | 1659.434   | 1659.434    | 1659.434    | 1659.434    | 1659.434    | 1659.434     | 1659.434     | 1659.434     | 1659.434     |
| 175 | 1514.538   | 1514.538    | 1514.538    | 1514.538    | 1514.538    | 1514.538     | 1514.538     | 1514.538     | 1514.538     |
| 180 | 1404.506   | 1404.506    | 1404.506    | 1404.506    | 1404.506    | 1404.506     | 1404.506     | 1404.506     | 1404.506     |

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OW-CSU-RM-WHD-WM 4000K\_.IES****ZONAL LUMEN SUMMARY**

| Zone    | Lumens  | %Lamp | %Fixt  |
|---------|---------|-------|--------|
| 0-20    | 1273.63 | N.A.  | 30.00  |
| 0-30    | 1758.24 | N.A.  | 41.40  |
| 0-40    | 1937.19 | N.A.  | 45.60  |
| 0-60    | 2053.16 | N.A.  | 48.40  |
| 0-80    | 2091.72 | N.A.  | 49.30  |
| 0-90    | 2096.56 | N.A.  | 49.40  |
| 10-90   | 1660.08 | N.A.  | 39.10  |
| 20-40   | 663.56  | N.A.  | 15.60  |
| 20-50   | 736.02  | N.A.  | 17.30  |
| 40-70   | 142.26  | N.A.  | 3.40   |
| 60-80   | 38.57   | N.A.  | 0.90   |
| 70-80   | 12.28   | N.A.  | 0.30   |
| 80-90   | 4.84    | N.A.  | 0.10   |
| 90-110  | 13.16   | N.A.  | 0.30   |
| 90-120  | 25.32   | N.A.  | 0.60   |
| 90-130  | 48.82   | N.A.  | 1.20   |
| 90-150  | 680.62  | N.A.  | 16.00  |
| 90-180  | 2147.15 | N.A.  | 50.60  |
| 110-180 | 2133.99 | N.A.  | 50.30  |
| 0-180   | 4243.71 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 436.48 |
| 10-20   | 837.15 |
| 20-30   | 484.62 |
| 30-40   | 178.94 |
| 40-50   | 72.46  |
| 50-60   | 43.51  |
| 60-70   | 26.28  |
| 70-80   | 12.28  |
| 80-90   | 4.84   |
| 90-100  | 5.46   |
| 100-110 | 7.70   |
| 110-120 | 12.15  |
| 120-130 | 23.51  |
| 130-140 | 78.66  |
| 140-150 | 553.14 |
| 150-160 | 823.41 |
| 160-170 | 494.68 |
| 170-180 | 148.44 |

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## COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

| RC<br>RW | 80  |     |     |     | 70 |    |    |    | 50 |    |    | 30 |    |    | 10 |    |    | 0  |
|----------|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|          | 70  | 50  | 30  | 10  | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| 0        | 107 | 107 | 107 | 107 | 99 | 99 | 99 | 99 | 83 | 83 | 83 | 69 | 69 | 69 | 56 | 56 | 56 | 49 |
| 1        | 100 | 97  | 94  | 91  | 92 | 90 | 87 | 85 | 76 | 75 | 73 | 64 | 63 | 62 | 53 | 52 | 52 | 47 |
| 2        | 94  | 88  | 83  | 80  | 87 | 82 | 78 | 75 | 71 | 68 | 66 | 60 | 58 | 57 | 50 | 49 | 48 | 44 |
| 3        | 88  | 81  | 75  | 71  | 81 | 75 | 71 | 67 | 66 | 62 | 59 | 56 | 54 | 52 | 48 | 47 | 45 | 42 |
| 4        | 83  | 74  | 68  | 64  | 77 | 70 | 65 | 60 | 61 | 57 | 54 | 53 | 51 | 49 | 46 | 44 | 43 | 40 |
| 5        | 78  | 69  | 62  | 58  | 72 | 65 | 59 | 55 | 57 | 53 | 50 | 50 | 47 | 45 | 44 | 42 | 40 | 38 |
| 6        | 73  | 64  | 58  | 53  | 68 | 60 | 55 | 51 | 54 | 50 | 47 | 48 | 45 | 42 | 42 | 40 | 38 | 36 |
| 7        | 69  | 60  | 53  | 49  | 65 | 57 | 51 | 47 | 51 | 47 | 44 | 45 | 42 | 40 | 40 | 38 | 37 | 34 |
| 8        | 66  | 56  | 50  | 46  | 62 | 53 | 48 | 44 | 48 | 44 | 41 | 43 | 40 | 38 | 38 | 36 | 35 | 33 |
| 9        | 62  | 53  | 47  | 43  | 59 | 50 | 45 | 41 | 46 | 41 | 39 | 41 | 38 | 36 | 37 | 35 | 33 | 31 |
| 10       | 59  | 50  | 44  | 40  | 56 | 48 | 42 | 39 | 43 | 39 | 37 | 39 | 36 | 34 | 36 | 33 | 32 | 30 |

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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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|      | 3H   | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|      | 4H   | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|      | 6H   | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|      | 8H   | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|      | 12H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

### UGR Viewed Endwise

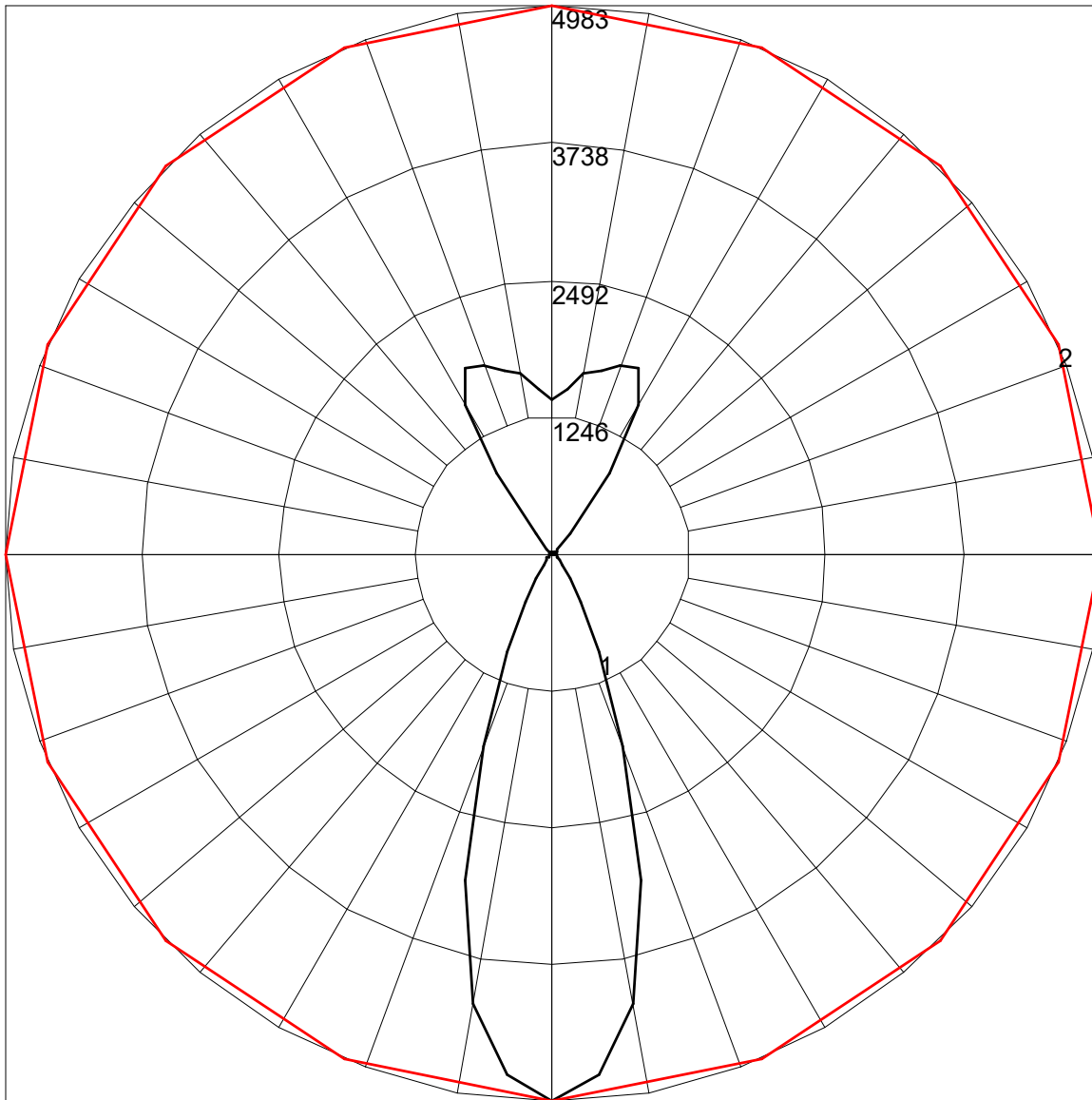
|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4H  | 2H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 3H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 4H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 6H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 8H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 12H | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| 8H  | 4H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 6H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 8H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 12H | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| 12H | 4H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 6H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
|     | 8H  | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

Maximum UGR = 5.0

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## POLAR GRAPH



Maximum Candela = 4983.426 Located At Horizontal Angle = 0, Vertical Angle = 0

# 1 - Vertical Plane Through Horizontal Angles (90 - 270)

# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)