



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-OW-CSD-WM_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.05 and BALLABS #20687

[TESTLAB]

[ISSUE DATE] 17-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 8CRDI-TL-L20-835U-L20-835D-xxx-DIM1-UNV-ON-CSU-OW-CSD-WN

[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 | 4258 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 115 |
| Total Luminaire Watts | 36.9 |
| 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 |
| Luminous Length (0-180) | 0.50 ft (Diameter) |
| Luminous Width (90-270) | 0.50 ft (Diameter) |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 3563 | 3563 | 3563 |
| 55 | 1241 | 1241 | 1241 |
| 65 | 259 | 259 | 259 |
| 75 | 0 | 0 | 0 |
| 85 | 0 | 0 | 0 |

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-OW-CSD-WM_.IES

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> | <u>202.5</u> |
|-----|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| 0 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 |
| 5 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 |
| 10 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 |
| 15 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 |
| 20 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 |
| 25 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 |
| 30 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 |
| 35 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 |
| 40 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 |
| 45 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 |
| 50 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 |
| 55 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 |
| 60 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 |
| 65 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 |
| 70 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 75 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 80 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 85 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 95 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 100 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 105 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 110 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 |
| 115 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 |
| 120 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 |
| 125 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 |
| 130 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 |
| 135 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 |
| 140 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 |
| 145 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 |
| 150 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 |
| 155 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 |
| 160 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 |
| 165 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 |
| 170 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 |
| 175 | 9721.889 | 9721.889 | 9721.889 | 9721.889 | 9721.889 | 9721.889 | 9721.889 | 9721.889 | 9721.889 | 9721.889 |
| 180 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 |

Vert. Horizontal Angles

| | <u>225.0</u> | <u>247.5</u> | <u>270.0</u> | <u>292.5</u> | <u>315.0</u> | <u>337.5</u> | <u>360.0</u> |
|----|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 0 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 | 1672.000 |
| 5 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 | 1579.000 |
| 10 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 | 1738.000 |
| 15 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 | 1735.000 |
| 20 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 | 1812.000 |
| 25 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 | 1982.000 |
| 30 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 | 1947.000 |
| 35 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 | 604.000 |
| 40 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 | 83.000 |
| 45 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 | 46.000 |
| 50 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 | 27.000 |
| 55 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 | 13.000 |
| 60 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 | 7.000 |

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-OW-CSD-WM_.IES

CANDELA TABULATION - (Cont.)

| | | | | | | | |
|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 65 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 |
| 70 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 75 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 80 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 85 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 95 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 100 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 105 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 110 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 |
| 115 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 | 0.989 |
| 120 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 | 1.978 |
| 125 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 | 3.956 |
| 130 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 | 7.912 |
| 135 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 | 12.857 |
| 140 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 | 20.769 |
| 145 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 | 239.338 |
| 150 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 | 746.695 |
| 155 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 | 1009.769 |
| 160 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 | 1540.862 |
| 165 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 | 2009.648 |
| 170 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 | 3487.214 |
| 175 | 9721.887 | 9721.887 | 9721.889 | 9721.889 | 9721.889 | 9721.889 | 9721.889 |
| 180 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 | 21758.000 |

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-OW-CSD-WM_.IES****ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 655.86 | N.A. | 15.40 |
| 0-30 | 1551.00 | N.A. | 36.40 |
| 0-40 | 2041.28 | N.A. | 47.90 |
| 0-60 | 2093.23 | N.A. | 49.20 |
| 0-80 | 2095.93 | N.A. | 49.20 |
| 0-90 | 2095.93 | N.A. | 49.20 |
| 10-90 | 1938.4 | N.A. | 45.50 |
| 20-40 | 1385.41 | N.A. | 32.50 |
| 20-50 | 1424.05 | N.A. | 33.40 |
| 40-70 | 54.65 | N.A. | 1.30 |
| 60-80 | 2.69 | N.A. | 0.10 |
| 70-80 | 0.00 | N.A. | 0.00 |
| 80-90 | 0.00 | N.A. | 0.00 |
| 90-110 | 0.26 | N.A. | 0.00 |
| 90-120 | 1.48 | N.A. | 0.00 |
| 90-130 | 5.43 | N.A. | 0.10 |
| 90-150 | 204.45 | N.A. | 4.80 |
| 90-180 | 2161.8 | N.A. | 50.80 |
| 110-180 | 2161.54 | N.A. | 50.80 |
| 0-180 | 4257.72 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 157.52 |
| 10-20 | 498.34 |
| 20-30 | 895.14 |
| 30-40 | 490.27 |
| 40-50 | 38.64 |
| 50-60 | 13.32 |
| 60-70 | 2.69 |
| 70-80 | 0.00 |
| 80-90 | 0.00 |
| 90-100 | 0.00 |
| 100-110 | 0.26 |
| 110-120 | 1.22 |
| 120-130 | 3.95 |
| 130-140 | 10.42 |
| 140-150 | 188.60 |
| 150-160 | 489.80 |
| 160-170 | 618.68 |
| 170-180 | 848.86 |

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-OW-CSD-WM_.IES

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 | 107 | 107 | 107 | 107 | 99 | 99 | 99 | 99 | 83 | 83 | 83 | 69 | 69 | 69 | 55 | 55 | 55 | 49 |
| 1 | 100 | 96 | 93 | 91 | 92 | 89 | 87 | 85 | 76 | 74 | 73 | 64 | 63 | 62 | 52 | 52 | 51 | 46 |
| 2 | 93 | 87 | 83 | 78 | 86 | 81 | 77 | 74 | 70 | 67 | 64 | 59 | 57 | 56 | 49 | 48 | 47 | 43 |
| 3 | 87 | 79 | 74 | 69 | 80 | 74 | 69 | 65 | 64 | 61 | 58 | 55 | 53 | 51 | 47 | 45 | 44 | 40 |
| 4 | 81 | 72 | 66 | 61 | 75 | 68 | 62 | 58 | 59 | 55 | 52 | 51 | 48 | 46 | 44 | 42 | 40 | 37 |
| 5 | 76 | 66 | 60 | 55 | 70 | 62 | 57 | 52 | 55 | 50 | 47 | 48 | 45 | 42 | 41 | 39 | 37 | 34 |
| 6 | 71 | 61 | 54 | 49 | 66 | 57 | 51 | 47 | 51 | 46 | 43 | 44 | 41 | 39 | 39 | 36 | 35 | 32 |
| 7 | 66 | 56 | 49 | 45 | 62 | 53 | 47 | 43 | 47 | 43 | 39 | 42 | 38 | 36 | 36 | 34 | 32 | 30 |
| 8 | 62 | 52 | 45 | 41 | 58 | 49 | 43 | 39 | 44 | 39 | 36 | 39 | 36 | 33 | 34 | 32 | 30 | 28 |
| 9 | 59 | 48 | 42 | 37 | 55 | 46 | 40 | 36 | 41 | 36 | 33 | 36 | 33 | 31 | 32 | 30 | 28 | 26 |
| 10 | 55 | 45 | 39 | 34 | 52 | 43 | 37 | 33 | 38 | 34 | 31 | 34 | 31 | 29 | 30 | 28 | 26 | 24 |

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-OW-CSD-WM_.IES

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

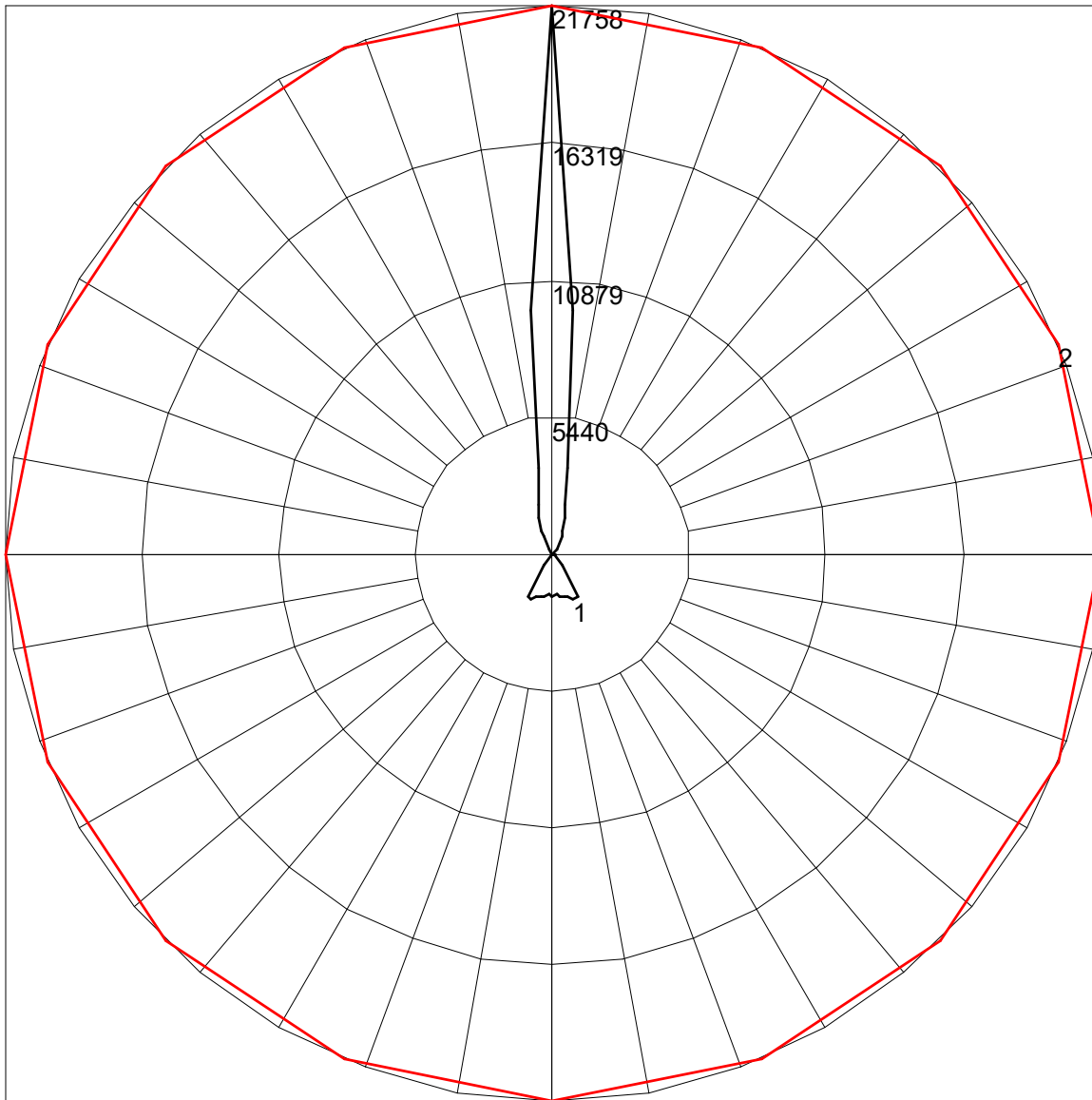
| | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4H | 2H | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| | 3H | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| | 4H | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| | 6H | 5.0 | 5.0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

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-835U-L20-835D-XXX-DIM1-UNV-ON-CSU-OW-CSD-WM_.IES

POLAR GRAPH



Maximum Candela = 21758 Located At Horizontal Angle = 0, Vertical Angle = 180

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

2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)