



IES INDOOR REPORT

PHOTOMETRIC FILENAME : V4DR-P12-835-POE-RN-OF-WH_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.15

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 21 SEP 2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] V4DR-P12-835-POE-RN-OF-WH

[LUMINAIRE] Black formed aluminum housing, white reflector, clear plas

[MORE] tic optic, clear glass patterned lens enclosure

[LAMP] One white LED

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Classroom, Commercial, Corridor, Hotel, Industrial, Office, Downlight

[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

| | |
|---------------------------------|--------------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 1524 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 87 |
| Total Luminaire Watts | 17.5 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 0.44 |
| Spacing Criterion (90-270) | 0.44 |
| Spacing Criterion (Diagonal) | 0.46 |
| Basic Luminous Shape | Circular |
| Luminous Length (0-180) | 0.38 ft (Diameter) |
| Luminous Width (90-270) | 0.38 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 | 7628 | 7628 | 7628 |
| 55 | 5075 | 5075 | 5075 |
| 65 | 3493 | 3493 | 3493 |
| 75 | 2269 | 2269 | 2269 |
| 85 | 1829 | 1829 | 1829 |

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CANDELA TABULATION

| | |
|------|----------|
| | <u>0</u> |
| 0.0 | 5716.076 |
| 0.5 | 5709.184 |
| 1.0 | 5691.093 |
| 1.5 | 5659.217 |
| 2.0 | 5616.142 |
| 2.5 | 5561.867 |
| 3.0 | 5497.254 |
| 3.5 | 5423.165 |
| 4.0 | 5339.599 |
| 4.5 | 5247.418 |
| 5.0 | 5147.484 |
| 5.5 | 5039.796 |
| 6.0 | 4924.355 |
| 6.5 | 4800.298 |
| 7.0 | 4669.350 |
| 7.5 | 4533.232 |
| 8.0 | 4391.945 |
| 8.5 | 4244.628 |
| 9.0 | 4094.727 |
| 9.5 | 3940.517 |
| 10.0 | 3785.447 |
| 10.5 | 3627.792 |
| 11.0 | 3469.275 |
| 11.5 | 3310.758 |
| 12.0 | 3153.103 |
| 12.5 | 2998.033 |
| 13.0 | 2843.823 |
| 13.5 | 2693.060 |
| 14.0 | 2544.882 |
| 14.5 | 2401.011 |
| 15.0 | 2262.308 |
| 15.5 | 2128.775 |
| 16.0 | 1998.688 |
| 16.5 | 1875.493 |
| 17.0 | 1757.467 |
| 17.5 | 1644.610 |
| 18.0 | 1537.784 |
| 18.5 | 1436.127 |
| 19.0 | 1340.500 |
| 19.5 | 1250.903 |
| 20.0 | 1166.476 |
| 20.5 | 1086.356 |
| 21.0 | 1011.405 |
| 21.5 | 942.485 |
| 22.0 | 876.149 |
| 22.5 | 813.949 |
| 23.0 | 754.677 |
| 23.5 | 699.799 |
| 24.0 | 648.626 |
| 24.5 | 600.726 |
| 25.0 | 556.014 |
| 25.5 | 514.490 |
| 26.0 | 476.239 |
| 26.5 | 440.831 |

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CANDELA TABULATION - (Cont.)

| | |
|-------------|---------|
| 27.0 | 408.180 |
| 27.5 | 378.114 |
| 28.0 | 350.460 |
| 28.5 | 325.304 |
| 29.0 | 302.129 |
| 29.5 | 280.850 |
| 30.0 | 261.294 |
| 30.5 | 243.202 |
| 31.0 | 226.748 |
| 31.5 | 211.585 |
| 32.0 | 197.543 |
| 32.5 | 184.620 |
| 33.0 | 172.818 |
| 33.5 | 161.963 |
| 34.0 | 151.883 |
| 34.5 | 142.665 |
| 35.0 | 134.308 |
| 35.5 | 126.555 |
| 36.0 | 119.491 |
| 36.5 | 113.029 |
| 37.0 | 107.085 |
| 37.5 | 101.657 |
| 38.0 | 96.661 |
| 38.5 | 92.095 |
| 39.0 | 87.960 |
| 39.5 | 84.083 |
| 40.0 | 80.464 |
| 40.5 | 77.105 |
| 41.0 | 74.003 |
| 41.5 | 71.074 |
| 42.0 | 68.403 |
| 42.5 | 65.905 |
| 43.0 | 63.493 |
| 43.5 | 61.253 |
| 44.0 | 59.185 |
| 44.5 | 57.204 |
| 45.0 | 55.395 |
| 45.5 | 53.586 |
| 46.0 | 51.949 |
| 46.5 | 50.312 |
| 47.0 | 48.761 |
| 47.5 | 47.210 |
| 48.0 | 45.746 |
| 48.5 | 44.367 |
| 49.0 | 42.989 |
| 49.5 | 41.697 |
| 50.0 | 40.405 |
| 50.5 | 39.198 |
| 51.0 | 37.992 |
| 51.5 | 36.872 |
| 52.0 | 35.752 |
| 52.5 | 34.719 |
| 53.0 | 33.685 |
| 53.5 | 32.651 |
| 54.0 | 31.703 |
| 54.5 | 30.842 |

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CANDELA TABULATION - (Cont.)

| | |
|------|--------|
| 55.0 | 29.894 |
| 55.5 | 29.033 |
| 56.0 | 28.171 |
| 56.5 | 27.310 |
| 57.0 | 26.534 |
| 57.5 | 25.759 |
| 58.0 | 24.897 |
| 58.5 | 24.122 |
| 59.0 | 23.433 |
| 59.5 | 22.658 |
| 60.0 | 21.882 |
| 60.5 | 21.193 |
| 61.0 | 20.504 |
| 61.5 | 19.815 |
| 62.0 | 19.125 |
| 62.5 | 18.436 |
| 63.0 | 17.747 |
| 63.5 | 17.058 |
| 64.0 | 16.455 |
| 64.5 | 15.852 |
| 65.0 | 15.162 |
| 65.5 | 14.559 |
| 66.0 | 13.956 |
| 66.5 | 13.353 |
| 67.0 | 12.836 |
| 67.5 | 12.233 |
| 68.0 | 11.716 |
| 68.5 | 11.113 |
| 69.0 | 10.596 |
| 69.5 | 10.080 |
| 70.0 | 9.563 |
| 70.5 | 9.132 |
| 71.0 | 8.701 |
| 71.5 | 8.270 |
| 72.0 | 7.926 |
| 72.5 | 7.495 |
| 73.0 | 7.150 |
| 73.5 | 6.892 |
| 74.0 | 6.547 |
| 74.5 | 6.289 |
| 75.0 | 6.031 |
| 75.5 | 5.772 |
| 76.0 | 5.514 |
| 76.5 | 5.255 |
| 77.0 | 4.997 |
| 77.5 | 4.738 |
| 78.0 | 4.566 |
| 78.5 | 4.308 |
| 79.0 | 4.049 |
| 79.5 | 3.877 |
| 80.0 | 3.618 |
| 80.5 | 3.360 |
| 81.0 | 3.188 |
| 81.5 | 2.929 |
| 82.0 | 2.757 |
| 82.5 | 2.585 |

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CANDELA TABULATION - (Cont.)

| | |
|-------|-------|
| 83.0 | 2.326 |
| 83.5 | 2.154 |
| 84.0 | 1.981 |
| 84.5 | 1.809 |
| 85.0 | 1.637 |
| 85.5 | 1.465 |
| 86.0 | 1.206 |
| 86.5 | 1.120 |
| 87.0 | 0.948 |
| 87.5 | 0.775 |
| 88.0 | 0.603 |
| 88.5 | 0.431 |
| 89.0 | 0.345 |
| 89.5 | 0.258 |
| 90.0 | 0.172 |
| 90.5 | 0.172 |
| 91.0 | 0.086 |
| 91.5 | 0.000 |
| 92.0 | 0.086 |
| 92.5 | 0.086 |
| 93.0 | 0.086 |
| 93.5 | 0.086 |
| 94.0 | 0.000 |
| 94.5 | 0.086 |
| 95.0 | 0.086 |
| 95.5 | 0.000 |
| 96.0 | 0.000 |
| 96.5 | 0.000 |
| 97.0 | 0.000 |
| 97.5 | 0.000 |
| 98.0 | 0.000 |
| 98.5 | 0.000 |
| 99.0 | 0.000 |
| 99.5 | 0.000 |
| 100.0 | 0.000 |
| 100.5 | 0.000 |
| 101.0 | 0.000 |
| 101.5 | 0.000 |
| 102.0 | 0.000 |
| 102.5 | 0.086 |
| 103.0 | 0.000 |
| 103.5 | 0.086 |
| 104.0 | 0.086 |
| 104.5 | 0.086 |
| 105.0 | 0.086 |
| 105.5 | 0.086 |
| 106.0 | 0.086 |
| 106.5 | 0.086 |
| 107.0 | 0.086 |
| 107.5 | 0.000 |
| 108.0 | 0.086 |
| 108.5 | 0.086 |
| 109.0 | 0.086 |
| 109.5 | 0.086 |
| 110.0 | 0.086 |
| 110.5 | 0.086 |

IES INDOOR REPORT
PHOTOMETRIC FILENAME : V4DR-P12-835-POE-RN-OF-WH_.IES

CANDELA TABULATION - (Cont.)

| | |
|-------|-------|
| 111.0 | 0.086 |
| 111.5 | 0.086 |
| 112.0 | 0.086 |
| 112.5 | 0.086 |
| 113.0 | 0.086 |
| 113.5 | 0.086 |
| 114.0 | 0.086 |
| 114.5 | 0.086 |
| 115.0 | 0.086 |
| 115.5 | 0.086 |
| 116.0 | 0.086 |
| 116.5 | 0.086 |
| 117.0 | 0.086 |
| 117.5 | 0.086 |
| 118.0 | 0.086 |
| 118.5 | 0.086 |
| 119.0 | 0.086 |
| 119.5 | 0.086 |
| 120.0 | 0.086 |
| 120.5 | 0.086 |
| 121.0 | 0.086 |
| 121.5 | 0.086 |
| 122.0 | 0.086 |
| 122.5 | 0.086 |
| 123.0 | 0.086 |
| 123.5 | 0.086 |
| 124.0 | 0.086 |
| 124.5 | 0.086 |
| 125.0 | 0.086 |
| 125.5 | 0.086 |
| 126.0 | 0.086 |
| 126.5 | 0.086 |
| 127.0 | 0.086 |
| 127.5 | 0.086 |
| 128.0 | 0.086 |
| 128.5 | 0.086 |
| 129.0 | 0.086 |
| 129.5 | 0.086 |
| 130.0 | 0.086 |
| 130.5 | 0.086 |
| 131.0 | 0.172 |
| 131.5 | 0.172 |
| 132.0 | 0.172 |
| 132.5 | 0.172 |
| 133.0 | 0.172 |
| 133.5 | 0.172 |
| 134.0 | 0.172 |
| 134.5 | 0.172 |
| 135.0 | 0.258 |
| 135.5 | 0.258 |
| 136.0 | 0.258 |
| 136.5 | 0.258 |
| 137.0 | 0.258 |
| 137.5 | 0.345 |
| 138.0 | 0.345 |
| 138.5 | 0.345 |

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PHOTOMETRIC FILENAME : V4DR-P12-835-POE-RN-OF-WH_.IES

CANDELA TABULATION - (Cont.)

| | |
|-------|-------|
| 139.0 | 0.345 |
| 139.5 | 0.431 |
| 140.0 | 0.431 |
| 140.5 | 0.431 |
| 141.0 | 0.517 |
| 141.5 | 0.517 |
| 142.0 | 0.517 |
| 142.5 | 0.603 |
| 143.0 | 0.603 |
| 143.5 | 0.603 |
| 144.0 | 0.689 |
| 144.5 | 0.689 |
| 145.0 | 0.775 |
| 145.5 | 0.775 |
| 146.0 | 0.862 |
| 146.5 | 0.862 |
| 147.0 | 0.948 |
| 147.5 | 0.948 |
| 148.0 | 1.034 |
| 148.5 | 1.034 |
| 149.0 | 1.120 |
| 149.5 | 1.120 |
| 150.0 | 1.206 |
| 150.5 | 1.206 |
| 151.0 | 1.292 |
| 151.5 | 1.292 |
| 152.0 | 1.378 |
| 152.5 | 1.378 |
| 153.0 | 1.465 |
| 153.5 | 1.465 |
| 154.0 | 1.551 |
| 154.5 | 1.551 |
| 155.0 | 1.637 |
| 155.5 | 1.637 |
| 156.0 | 1.723 |
| 156.5 | 1.723 |
| 157.0 | 1.723 |
| 157.5 | 1.809 |
| 158.0 | 1.809 |
| 158.5 | 1.895 |
| 159.0 | 1.895 |
| 159.5 | 1.895 |
| 160.0 | 1.981 |
| 160.5 | 1.981 |
| 161.0 | 1.981 |
| 161.5 | 1.981 |
| 162.0 | 2.068 |
| 162.5 | 2.068 |
| 163.0 | 2.068 |
| 163.5 | 2.068 |
| 164.0 | 2.068 |
| 164.5 | 2.068 |
| 165.0 | 2.068 |
| 165.5 | 2.068 |
| 166.0 | 2.154 |
| 166.5 | 2.068 |

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CANDELA TABULATION - (Cont.)

| | |
|--------------|-------|
| 167.0 | 2.154 |
| 167.5 | 2.154 |
| 168.0 | 2.154 |
| 168.5 | 2.068 |
| 169.0 | 2.068 |
| 169.5 | 2.068 |
| 170.0 | 2.068 |
| 170.5 | 2.068 |
| 171.0 | 2.068 |
| 171.5 | 2.068 |
| 172.0 | 2.068 |
| 172.5 | 2.068 |
| 173.0 | 2.068 |
| 173.5 | 2.068 |
| 174.0 | 2.068 |
| 174.5 | 2.068 |
| 175.0 | 2.068 |
| 175.5 | 2.068 |
| 176.0 | 2.068 |
| 176.5 | 2.068 |
| 177.0 | 2.068 |
| 177.5 | 1.981 |
| 178.0 | 1.981 |
| 178.5 | 1.981 |
| 179.0 | 1.981 |
| 179.5 | 1.981 |
| 180.0 | 1.981 |

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 1068.64 | N.A. | 70.10 |
| 0-30 | 1337.75 | N.A. | 87.80 |
| 0-40 | 1427.42 | N.A. | 93.70 |
| 0-60 | 1498.17 | N.A. | 98.30 |
| 0-80 | 1519.89 | N.A. | 99.70 |
| 0-90 | 1521.72 | N.A. | 99.80 |
| 10-90 | 1074.75 | N.A. | 70.50 |
| 20-40 | 358.78 | N.A. | 23.50 |
| 20-50 | 402.49 | N.A. | 26.40 |
| 40-70 | 85.92 | N.A. | 5.60 |
| 60-80 | 21.72 | N.A. | 1.40 |
| 70-80 | 6.54 | N.A. | 0.40 |
| 80-90 | 1.84 | N.A. | 0.10 |
| 90-110 | 0.11 | N.A. | 0.00 |
| 90-120 | 0.19 | N.A. | 0.00 |
| 90-130 | 0.27 | N.A. | 0.00 |
| 90-150 | 0.93 | N.A. | 0.10 |
| 90-180 | 2.44 | N.A. | 0.20 |
| 110-180 | 2.33 | N.A. | 0.20 |
| 0-180 | 1524.16 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 446.98 |
| 10-20 | 621.67 |
| 20-30 | 269.11 |
| 30-40 | 89.67 |
| 40-50 | 43.71 |
| 50-60 | 27.03 |
| 60-70 | 15.18 |
| 70-80 | 6.54 |
| 80-90 | 1.84 |
| 90-100 | 0.05 |
| 100-110 | 0.06 |
| 110-120 | 0.09 |
| 120-130 | 0.08 |
| 130-140 | 0.18 |
| 140-150 | 0.48 |
| 150-160 | 0.73 |
| 160-170 | 0.58 |
| 170-180 | 0.20 |

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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 | 132 | 132 | 132 | 132 | 129 | 129 | 129 | 129 | 123 | 123 | 123 | 118 | 118 | 118 | 113 | 113 | 113 | 111 |
| 1 | 127 | 124 | 122 | 120 | 124 | 122 | 120 | 118 | 118 | 116 | 114 | 113 | 112 | 111 | 110 | 109 | 108 | 106 |
| 2 | 122 | 118 | 114 | 111 | 120 | 116 | 112 | 109 | 112 | 109 | 107 | 109 | 107 | 105 | 106 | 104 | 103 | 101 |
| 3 | 117 | 112 | 107 | 103 | 115 | 110 | 106 | 103 | 107 | 104 | 101 | 105 | 102 | 99 | 102 | 100 | 98 | 96 |
| 4 | 113 | 106 | 101 | 98 | 111 | 105 | 101 | 97 | 103 | 99 | 96 | 101 | 97 | 95 | 99 | 96 | 94 | 92 |
| 5 | 109 | 102 | 97 | 93 | 108 | 101 | 96 | 92 | 99 | 95 | 92 | 97 | 94 | 91 | 96 | 92 | 90 | 89 |
| 6 | 105 | 98 | 92 | 89 | 104 | 97 | 92 | 88 | 95 | 91 | 88 | 94 | 90 | 87 | 92 | 89 | 87 | 85 |
| 7 | 102 | 94 | 89 | 85 | 101 | 93 | 88 | 85 | 92 | 88 | 84 | 91 | 87 | 84 | 90 | 86 | 83 | 82 |
| 8 | 99 | 90 | 85 | 82 | 98 | 90 | 85 | 82 | 89 | 84 | 81 | 88 | 84 | 81 | 87 | 83 | 81 | 79 |
| 9 | 96 | 87 | 82 | 79 | 95 | 87 | 82 | 79 | 86 | 82 | 78 | 85 | 81 | 78 | 84 | 81 | 78 | 77 |
| 10 | 93 | 85 | 80 | 76 | 92 | 84 | 79 | 76 | 83 | 79 | 76 | 83 | 79 | 76 | 82 | 78 | 76 | 74 |

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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 | 9.2 | 10.2 | 9.6 | 10.5 | 10.8 | UGR Viewed Endwise | 9.2 | 10.2 | 9.6 | 10.5 | 10.8 |
| | 3H | 10.1 | 11.0 | 10.5 | 11.3 | 11.7 | | 10.1 | 11.0 | 10.5 | 11.3 | 11.7 |
| | 4H | 10.3 | 11.1 | 10.8 | 11.5 | 11.9 | | 10.3 | 11.1 | 10.8 | 11.5 | 11.9 |
| | 6H | 10.5 | 11.2 | 10.9 | 11.6 | 12.0 | | 10.5 | 11.2 | 10.9 | 11.6 | 12.0 |
| | 8H | 10.6 | 11.2 | 11.0 | 11.6 | 12.0 | | 10.6 | 11.2 | 11.0 | 11.6 | 12.0 |
| | 12H | 10.6 | 11.2 | 11.0 | 11.6 | 12.0 | | 10.6 | 11.2 | 11.0 | 11.6 | 12.0 |

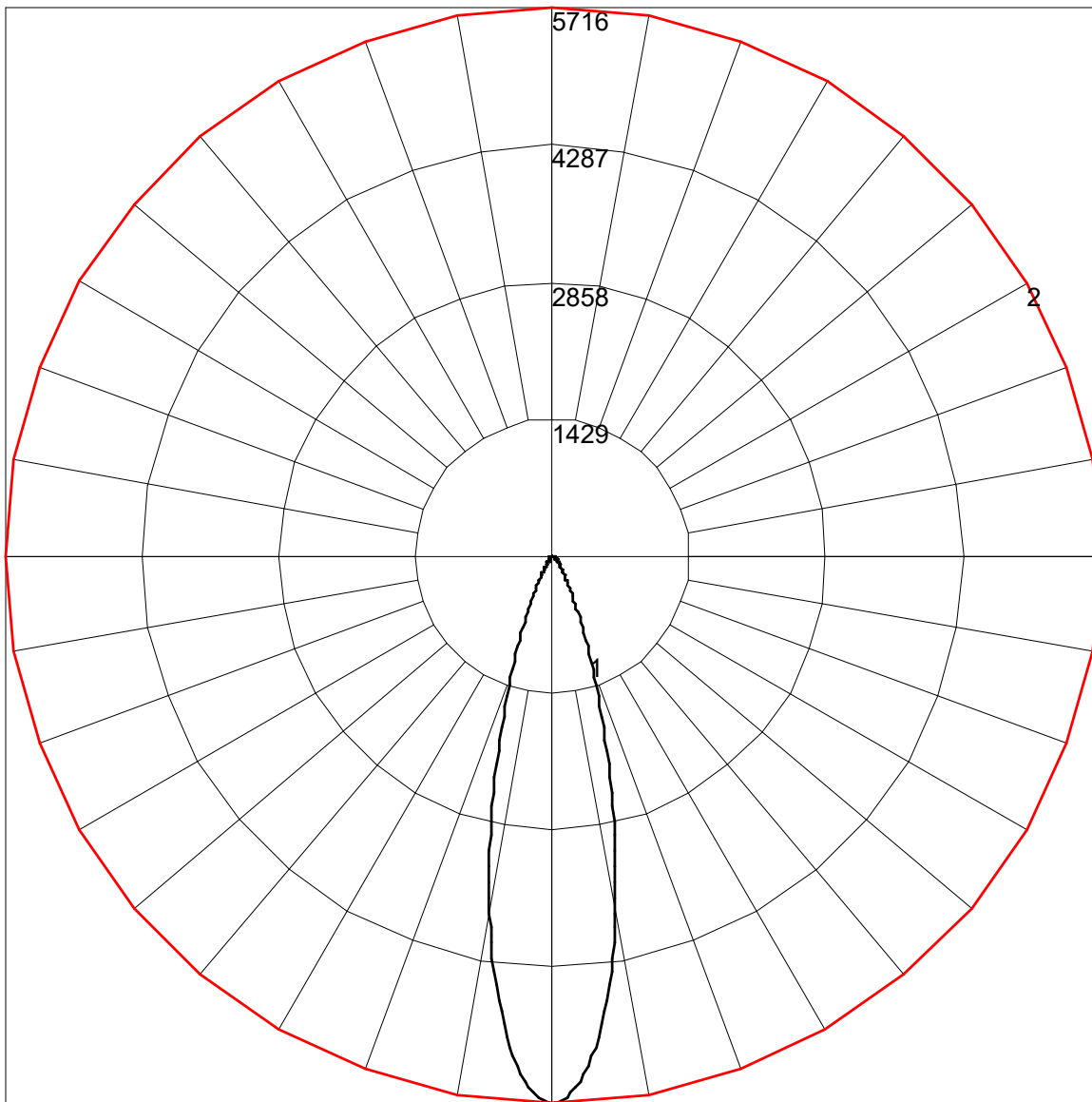
| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H | 2H | 9.5 | 10.3 | 9.9 | 10.6 | 11.0 | 9.5 | 10.3 | 9.9 | 10.6 | 11.0 |
| | 3H | 10.5 | 11.1 | 10.9 | 11.5 | 11.9 | 10.5 | 11.1 | 10.9 | 11.5 | 11.9 |
| | 4H | 10.8 | 11.4 | 11.3 | 11.8 | 12.3 | 10.8 | 11.4 | 11.3 | 11.8 | 12.3 |
| | 6H | 11.1 | 11.6 | 11.6 | 12.0 | 12.5 | 11.1 | 11.6 | 11.6 | 12.0 | 12.5 |
| | 8H | 11.2 | 11.6 | 11.6 | 12.1 | 12.6 | 11.2 | 11.6 | 11.6 | 12.1 | 12.6 |
| | 12H | 11.2 | 11.6 | 11.7 | 12.1 | 12.6 | 11.2 | 11.6 | 11.7 | 12.1 | 12.6 |

| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 8H | 4H | 10.9 | 11.3 | 11.3 | 11.8 | 12.2 | 10.9 | 11.3 | 11.3 | 11.8 | 12.2 |
| | 6H | 11.2 | 11.6 | 11.7 | 12.1 | 12.6 | 11.2 | 11.6 | 11.7 | 12.1 | 12.6 |
| | 8H | 11.4 | 11.7 | 11.9 | 12.2 | 12.7 | 11.4 | 11.7 | 11.9 | 12.2 | 12.7 |
| | 12H | 11.5 | 11.8 | 12.0 | 12.3 | 12.8 | 11.5 | 11.8 | 12.0 | 12.3 | 12.8 |

| | | | | | | | | | | | |
|-----|----|------|------|------|------|------|------|------|------|------|------|
| 12H | 4H | 10.8 | 11.2 | 11.3 | 11.7 | 12.2 | 10.8 | 11.2 | 11.3 | 11.7 | 12.2 |
| | 6H | 11.2 | 11.5 | 11.8 | 12.0 | 12.6 | 11.2 | 11.5 | 11.8 | 12.0 | 12.6 |
| | 8H | 11.4 | 11.7 | 11.9 | 12.2 | 12.8 | 11.4 | 11.7 | 11.9 | 12.2 | 12.8 |

Maximum UGR = 12.8

POLAR GRAPH



Maximum Candela = 5716.076 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.)