

Luma Gold Plated Tungsten Wire

For some applications tungsten wire has to be plated to meet special requirements. This may be for instance to protect the wire from corrosion, to solder it to other metals or to reduce the secondary emission of electrons.



Example of applications

-  Antennas
-  Medical
-  Technical research
-  Bonding
-  Printing
-  Connectors
-  Fuses

Properties of bare Tungsten wire

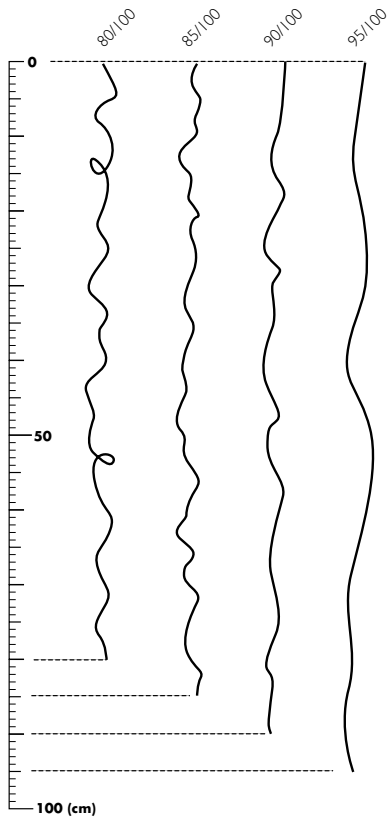
| | |
|---|--------------------------------|
| Purity | 99.95% W |
| Melting point | 3410 °C |
| Density | 19.17 g/cm ³ |
| Specific electrical resistance at 20 °C | 0.055 Ohm x mm ² /m |
| Modulus of elasticity at 20 °C | 410 kN/mm ² |

| Wire qualities | Description |
|----------------|---|
| 821/60 | Treatment before plating: Etched. Type of strike: Gold |
| 821/65 | Treatment before plating: Etched. Type of strike: Gold <i>This quality is processed to meet demands for medical use.</i> |
| 821/66 | Treatment before plating: Ultra polished. Type of strike: Gold |
| 821/67 | Treatment before plating: Ultra polished. Type of strike: Nickel |

Examples of wire dimensions with coat thickness as per Luma standard

| Wire Dimension (microns) | Wire Dimension (mils) | Au coat thickness (microns) | Au coat by weight % |
|--------------------------|-----------------------|-----------------------------|---------------------|
| 25 | 0.984 | 0.25 +/- 0.07 | 3.0 - 5.0 |
| 50 | 1.97 | 0.5 +/- 0.1 | 3.0 - 5.0 |
| 75 | 2.95 | 0.5 +/- 0.1 | 2.2 - 3.2 |
| 100 | 3.94 | 0.5 +/- 0.1 | 1.6 - 2.4 |
| 150 | 5.91 | 0.5 +/- 0.1 | 1.0 - 1.6 |

Straightness



| | |
|----------------------------|---|
| Wire dimensions | 5 - 200 microns 0.2 - 7.87 mils |
| Diameter tolerance | +/- 4% by weight as standard. Minimum +/- 1.5% available on request |
| Gold coat thickness | For wire dimensions below 50 microns, the coat thickness corresponds to 3 – 5% by weight as standard. For wire dimensions from 50 microns the coat thickness is 0.5 micron as standard. The coat thickness can be adjusted to meet your requirements. |

Ovality (out of roundness)

| Ø Microns | Standard | Available on request |
|-----------|----------|----------------------|
| < 15 | Max 6% | Max 3% |
| ≥ 15 | Max 5% | Max 2% |

| | |
|-------------------|--------|
| Elongation | 1 – 3% |
|-------------------|--------|

Straightness

| Straightness grade | Ø Microns < 15 | Ø Microns ≥ 15 |
|--------------------|----------------|----------------|
| 4 (80/100) | standard | - |
| 3 (85/100) | on request | standard |
| 2 (90/100) | on request | on request |
| 1 (95/100) | not available | on request |

Standard tensile strength of Gold Plated Tungsten

