

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	19.3 g/cm ³
Specific electrical resistance at 20 °C	0.055 Ohm × mm ² /m
Modulus of elasticity at 20 °C	410 kN/mm ²

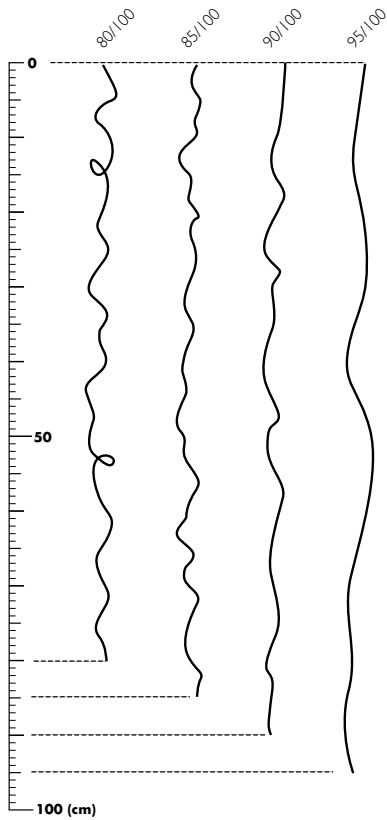
Wire qualities

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



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%	SPC testing required
≥ 15	Max 5%	SPC testing required

Elongation 1 – 3%

Tolerances in diameter and weight

Wire size micron	Diameter tolerance	Weight tolerance
< 15	+/- 3.5%	+/- 7%
> 15	+/- 2%	+/- 4%

Straightness

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

Standard tensile strength of Gold Plated Tungsten

