LUMA METALL®
Fine wire products

Luma Tungsten Wire

Some characteristics of tungsten

- Tungsten has the highest melting point and the highest tensile strength of all metals
- High strength at high temperatures
- Good conductivity for heat and electricity
- High absorption capacity for radioactive radiation and X-rays
- Tungsten has the lowest vapour pressure and the lowest coefficient of thermal expansion of all metals in pure form

Example of applications

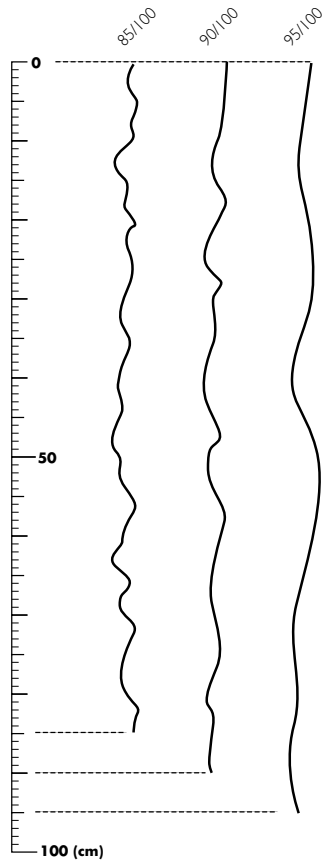
- Antennas
- Printing
- Fuses
- Musical strings
- Connectors
- Medical
- Lighting
- Mesh
- Automotive
- Integrated circuit testing
- Technical research

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	
820	Standard, non-sag quality wire containing minimum 99.95 % W, doped with potassium, silicon and aluminium.
821	A wire of 820 standard quality, which has passed the requisite tests to meet the demands for wire of a higher standard below Ø 50 microns i.e. virtually free from traces of cracks or splits.
823	Has a low concentration of unfavourable impurities. Has a long grain structure, high recrystallization temperature and increased ductility.

Surface finishes		Diameter range (microns)	(mils)
20	Black drawn wire for further redrawing	50 - 500	1.96 - 19.6
21	Black drawn wire	10 - 500	0.39 - 19.6
22	Black drawn wire, straightened	10 - 500	0.39 - 19.6
25	Black drawn wire, used as heating elemet	10 - 500	0.39 - 19.6
31	"21" wire, electrolytically cleaned	10 - 500	0.39 - 19.6
32	"21" wire, straightened and electrolytically cleaned	10 - 500	0.39 - 19.6
34	"32" wire with a highly polished surface	10 - 500	0.39 - 19.6
36	"32" wire with an ultra polished surface	10 - 500	0.39 - 19.6
37	oxidized surface	10 - 500	0.39 - 19.6
41	"21" wire, electrolytically etched to the final dimension	4 - 30	0.16 - 1.18
42	"21" wire, straightened and electrolytically etched to the final dimension	4 - 30	0.16 - 1.18

Straightness



Ovality (out of roundness)

ø Microns	Standard	Available on request
< 15	Max 6%	Max 3%
≥ 15	Max 5%	Max 2%

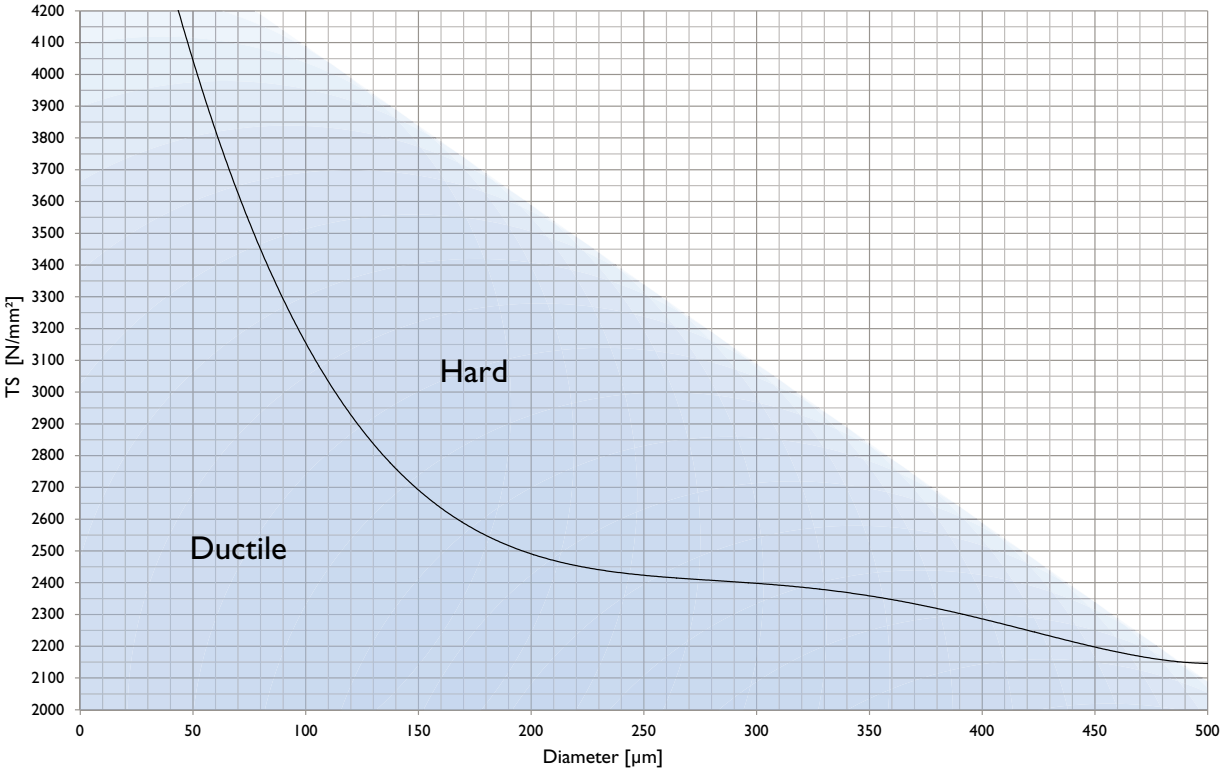
Elongation	1 – 3%

	Diameter tolerance		Weight tolerance	
Wire size micron	Standard	On request	Standard	On request
≥4<5	+/- 3.5%	+/- 2%	+/- 7%	SPC testing required
≥5<10	+/- 2%	+/- 0.5%	+/- 4%	SPC testing required
≥10<18	+/- 1.5%	+/- 0.25%	+/- 3%	SPC testing required
≥18	+/- 1%	+/- 0.25%	+/- 2%	SPC testing required

Straightness	Wire with a finish of 32 and 42 is available in the following grades of straightness.

Straighness grade	ø Microns < 15	ø Microns 15-30	ø Microns > 30
3 (85/100)	standard	-	-
2 (90/100)	on request	standard	-

Standard tensile strength of Tungsten



LUMA METALL
Fine wire products

LUMA-METALL AB, Kalmar, Sweden
Telephone +46-480 42 90 45
e-mail: sales@luma-metall.se
www.luma-metall.com