

Luma Tungsten Wire alloyed with 3% Rhenium

Advantages compared to pure tungsten

- Higher recrystallization temperature
- No brittleness in recrystallized condition
- Superior hot strength and vibration strength
- Greater specific resistance
- Higher thermal stability
- Greater tensile strength



Example of applications



Antennas



Medical



Lighting



Integrated Circuit testing



Printing



Technical research



Mesh

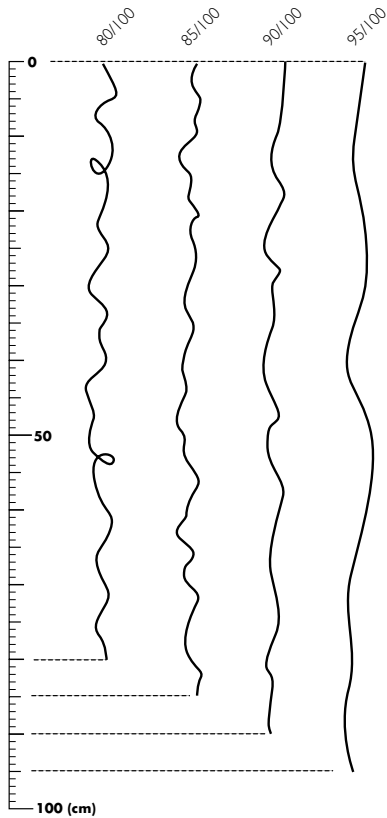
Properties of bare tungsten wire alloyed with 3% Rhenium

Purity of tungsten before rhenium addition	99.95% W
Melting point	3380 °C
Density	19.22 g/cm ³
Specific electrical resistance at 20 °C	0.092 Ohm × mm ² /m
Modulus of elasticity at 20 °C	430 kN/mm ²

Wire qualities	Description
860	An alloy of tungsten and 3% Rhenium
861	A wire of 860 standard quality which has passed the requisite tests to meet the demands for wire of a higher standard.

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
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%

Dimensional tolerances

Wire size micron	Diameter tolerance		Weight tolerance	
	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

Straightness grade	Ø Microns < 15	Ø Microns 15-30	Ø Microns > 30
4 (80/100)	standard	-	-
3 (85/100)	on request	standard	-
2 (90/100)	on request	on request	standard

Standard tensile strength of Tungsten alloyed with 3% Rhenium

