

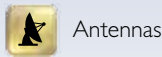
# Luma Tungsten Wire alloyed with 3% Rhenium



## Advantages compared to pure tungsten:

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

## Example of Applications:



Antennas



Printing



Medical



Mesh



Technical research



Integrated  
Circuit Testing



Lighting

## Properties of tungsten wire alloyed with 3% Rhenium

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

## Wire qualities:

## Description

860

An alloy wire 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)

20	Black drawn wire for further redrawing	50 - 500
21	Black drawn wire	8 - 500
22	Black drawn wire, straightened	8 - 500
25	Black drawn wire, used as heating element	8 - 500
31	"21" wire, electrolytically cleaned	10 - 500
32	"21" wire, straightened and electrolytically cleaned	10 - 500
34	"32" wire with a highly polished surface	10 - 500
36	"32" wire with an ultra polished surface	10 - 500
37	oxidized surface	10 - 500
41	"21" wire, electrolytically etched to the final dimension	4 - 30
42	"21" wire, straightened and electrolytically etched to the final dimension	4 - 30

## Dimensional tolerances

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

**LUMA METALL**   
Fine wire products

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www.luma-metall.se

Certified in accordance  
to ISO 9001:2008

**Ovality (out of roundness):**

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

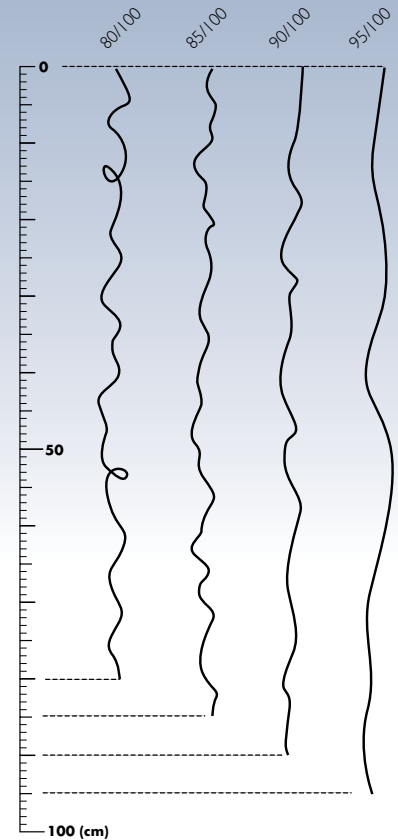
**Elongation:**

1 – 3%

**Straightness:**

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

Straightness grade	∅ Microns < 15	∅ Microns 15-30	∅ Microns ≥ 30
4 (80/100)	standard	-	-
3 (85/100)	on request	standard	-
2 (90/100)	on request	on request	standard
1 (95/100)	not available	on request	on request



**Standard tensile strength of Tungsten alloyed with 3% Rhenium**

**Tensile strength:**

