

# Luma Metall manufacturing capabilities

## Redrawing and surface treatment capabilities

The following types of round wires are available in any dimension within the specified diameter range. These types of wires are redrawn by Luma Metall and supplied on spools as black (graphite coated), electrolytically cleaned, polished, ultra polished, oxidized or gold plated.

Electroplated coatings can be used to enhance the joinability of the base wire grades (i.e. solderability, weldability etc), increase the conductivity, increase the oxidation resistance and provide a nobler surface.

Type of wire	Diameter range for wire supplied as electrolytically cleaned, polished or oxidized		Diameter range for wire supplied as gold plated with gold or nickel strike.	
	Ø mm	Ø Inch	Ø mm	Ø Inch
Tungsten	0.004 – 0.5	0.00016 – 0.0196	0.005 – 0.2	0.00020 – 0.00787
Tungsten alloyed with 3% rhenium	0.004 – 0.5	0.00016 – 0.0196	0.005 – 0.2	0.00020 – 0.00787
Molybdenum	0.010 – 0.5	0.00039 – 0.0196	0.015 – 0.2	0.00059 – 0.00787

Note: Should you have an enquiry for gold plated heavy gauge wire above 0.2 mm (0, 00787 inch), please let us know and we will look into our manufacturing possibilities.

Type of wire	Diameter range for wire supplied as ultra polished		Diameter range for wire supplied as black (graphite coated)	
	Ø mm	Ø Inch	Ø mm	Ø Inch
Tungsten	0.02 – 0.5	0.00079 – 0.0196	0.01 – 0.5	0.00039 – 0.0196
Tungsten alloyed with 3% rhenium	0.02 – 0.5	0.00079 – 0.0196	0.01 – 0.5	0.00039 – 0.0196
Molybdenum	Not available	Not available	0.025 – 0.5	0.00098 – 0.0196

Luma Metall also redraws tungsten wire alloyed with 1%, 5% and 26% rhenium. For these types of materials we do not have any feed stock in house, but receive heavy gauge wire from our customers and redraw to the requested dimension.

## **Additional plating capabilities**

In addition to electroplating of the tungsten and molybdenum that we re-draw ourselves, we also offer custom plating service for several other types of substrate metal wire.

The plating material that we currently work with is

- Gold
- Silver
- Nickel.

Our plating technology will provide oxidation resistance and improved wettability for soldering.

We have multiple lines available for reel to reel plating and our speciality is high quality electro plating of thin wire sizes.

Typical coat thicknesses are within the range 0.1 - 3 microns.

We will consider any type of substrate wire and our technical team will co-operate with you to ensure that the coating will have the most appropriate characteristics for your application.

Below you will find some specific materials and the corresponding available wire dimensions.

Type of wire	Diameter range	
	Ø mm	Ø Inch
Copper	0.05 – 0.3 mm	0.00196 – 0.0118
Beryllium copper	0.05 – 0.3 mm	0.00196 – 0.0118
Stainless steel	0.05 – 0.3 mm	0.00196 – 0.0118
Brass	0.05 – 0.3 mm	0.00196 – 0.0118
Monel	0.05 – 0.3 mm	0.00196 – 0.0118
Silver	0.05 – 0.3 mm	0.00196 – 0.0118

## **Material Analysis Capabilities**

At Luma Metall we have a well equipped laboratory for testing and development. In our laboratory we carry out various wet chemistry, physical and thermal analysis as well as corrosion testing.

You are welcome to discuss with our chemists on how we could assist you to meet your requirements in materials testing and analysis.

## **Straightening capabilities.**

Straightness is defined as follows: Suspend a 1 m length of wire vertically with no additional load and measure the height the free end rises. A smaller rise corresponds to a less curly wire.

Straightened wire is currently supplied in four different grades as follows:

- Grade 4: 80/100 cm (the free end rises maximum 20 cm)
- Grade 3: 85/100 cm (the free end rises maximum 15 cm)
- Grade 2: 90/100 cm (the free end rises maximum 10 cm)
- Grade 1: 95/100 cm (the free end rises maximum 5 cm)

