



Platinum Clad Molybdenum Wire & Ribbon

GENERAL ELECTRIC COMPANY

Components/Quartz Marketing & Sales Operation
24400 Highland Road
Richmond Heights, Ohio 44143

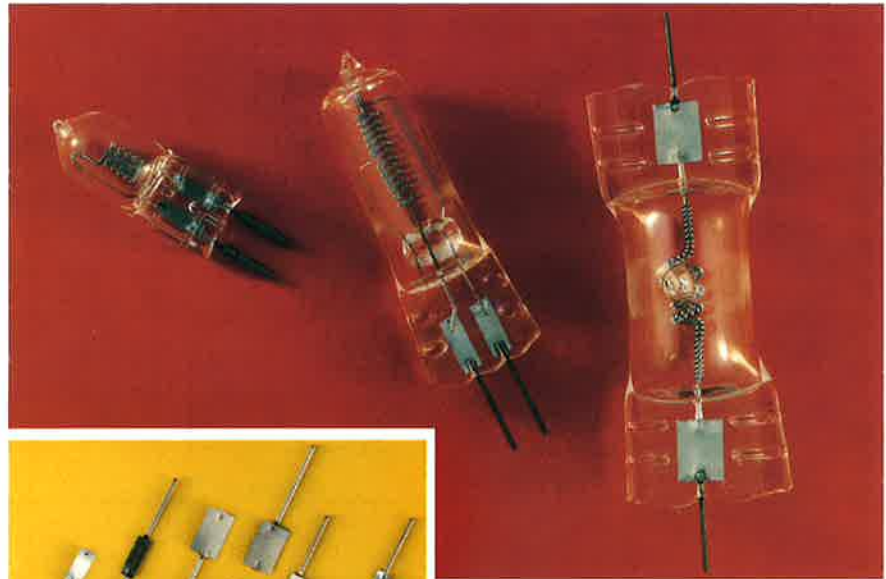
PRODUCT DATA SHEET 7220-B

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INTRODUCTION

Many high performance vacuum tubes, lamps and electronic devices utilize tabs of platinum clad molybdenum ribbon on etched foil leads to provide an effective seal with quartz or hard glass envelopes. Using platinum clad molybdenum at the wire-to-foil interface assures excellent weld strength. The material also provides the desired high temperature properties and resists the potential for burn through.

Applications include mercury arc lamps, tungsten-halogen cycle lamps, infrared heat lamps, and certain electronic and instrumentation applications.



For many quartz or hard glass seals, etched foil lead assemblies utilize tabs of platinum clad ribbon to create an effective weld joint between the foil and lead wire.

PRODUCT DESCRIPTION

General Electric Company furnishes platinum clad molybdenum in both wire and ribbon. The core material is General Electric Type R molybdenum and the sheath is thermocouple quality 99.5% pure platinum.

The specialized cladding process developed by General Electric creates a uniform covering of nominal 15% platinum by weight, or nominally 4% of the wire diameter. In the GE process, the platinum is metallurgically bonded to the molybdenum core.

AVAILABLE SIZES

Platinum clad wire is available in diameters between 5 mil and 50 mil and platinum clad ribbon is supplied in widths up to 0.120" and thicknesses down to 0.002".

MECHANICAL PROPERTIES

Tensile
Strength .. 35 to 55 gms/mg/200
Elongation <25%

PHYSICAL DIMENSIONAL TOLERANCES

Wire $\pm 2\%$ by diameter
Ribbon $\pm 0.0002''$ to
 $\pm 0.0005''$ on
thickness
 $\pm 0.0002''$ to
 $\pm 0.0005''$ on width

Special tolerances will be quoted upon request.

PACKAGING

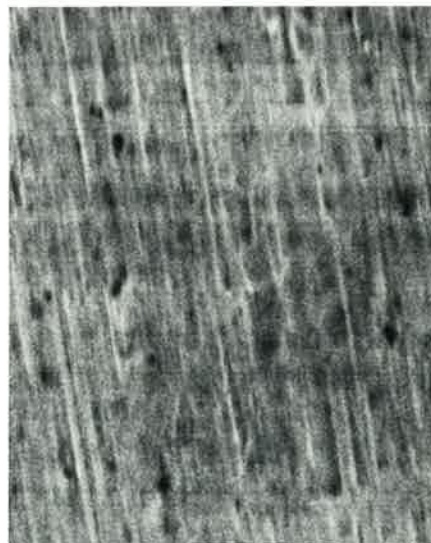
Large diameter wire, 32 mil and above, is supplied in 16 inch diameter coils while wire below 32 mil is furnished on Lexan® reels. Ribbon is supplied on Lexan® reels.

FINISH

Platinum clad wire is normally diamond die drawn for tolerance and finish control. Processing and finishing practices are designed to provide wire that has a uniformly clean, smooth, bright surface finish.

Comparison of platinum clad and platinum plated surfaces can be seen at the near and far right, respectively. Both samples are 2 x 60 ribbon at a SEM magnification of 2000 x.

Clad



Plated



CONTAINER OPTIONS

Name	Material	GE Drawing No.	Approx. Weight In Grams	Container Dimensions						Wire Size Range	Container Deposit Charge	Maximum Container Loading, kg	Designation of Container Dimensions
				Units	Flange Diameter (A)	Width (B)	Transverse (C)	Barrel (D)	Hole (E)				
4K Reel	Lexan polycarbonate resin	601-C 358	744	mm	152.40	96.82	76.20	110.62	15.90	0.13 to 0.76 mm	\$8.00	2.500	
				in	6.00	3.812	3.00	4.355	0.626	0.005 to 0.0299 inches			
Self-Contained Coil				406.4 mm I.D.						0.76 to 2.03	None	2.500	
				16" I.D.						0.030 to 0.080 inches			

CHEMICAL COMPOSITION

Molybdenum core content of Type R is 99.90% calculated by subtracting the listed impurities from 100%.

Total impurities for the molybdenum core are maintained at 0.10% or less. Wire chemistry is based on ingot analysis for the following chemical elements:

Mo: 99.9% Min. Si: 60 PPM Max.
Fe: 60 PPM Max. W: 400 PPM Max.

Other impurities, each less than 50 PPM:

Aluminum	Copper	Lead
Calcium	Manganese	Titanium
Chromium	Magnesium	Zirconium
Nickel	Tin	Carbon
Cobalt	Oxygen	Sodium
Potassium		

Platinum sheath: Thermocouple quality 99.50% Platinum. (Traces of Ni may be present on the surface.)

TECHNICAL ASSISTANCE

General Electric Company will be happy to discuss your requirements for platinum clad molybdenum wire and ribbon. Send your specifications or inquiry to the Dover Wire Plant, listed below, attention of Manager-Engineering.

ORDERING

To order platinum clad molybdenum wire or ribbon, contact your Components/Quartz Marketing representative or:

Domestic

General Electric Company
Dover Wire Plant
200 West Broadway
Dover, Ohio 44622
Phone: (216) 343-8841 Ext. 224

International

General Electric Company
Components/Quartz Marketing & Sales Operation
24400 Highland Road
Cleveland, Ohio 44117 U.S.A.
Telex: 985569 (GECOLCS EUCD)
Phone: (216) 266-3295
FAX: (216) 266-3372

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