



Molybdenum Disilicide Electric Heating Elements up to 1,800°C

MolyCom[®]-Ultra & MolyCom[®]-Hyper electric heating elements are dense cermet materials, mainly composed of MoSi₂ (molybdenum disilicide) and some ceramic components. Above 900°C service temperature the surface will form a protective high temperature layer of pure quartz, which gives the MolyCom[®]-Ultra / MolyCom[®]-Hyper material a high resistance to oxidation.

If this glassy phase should be exposed to contaminants, a lower melting phase forms. This material literally drips off the element exposing more molybdenum disilicide on which a new protective oxide layer forms. MolyCom[®]-Ultra & Hyper elements become somewhat ductile at approximately 1,200°C.

MolyCom[®]-Ultra / MolyCom[®]-Hyper elements may be used up to a surface temperature of 1,800°C in oxidizing atmospheres. Long service life and ease of replacement contribute to high furnace utilization and low maintenance costs.

New and old elements can be used together and in series.

MolyCom[®]-Ultra /-Hyper elements are manufactured according to established industry standards. The elements can also be used in combination with other molybdenum disilicide elements as an alternative or replacement part.

At low temperatures, an oxidation of molybdenum and silicon on the surface of the elements can occur at temperatures of around 550°C. The oxidation product is a yellowish powder known as „pest“ and has normally no detrimental effect on the performance of MolyCom[®]-Ultra /-Hyper elements because the material is dense.

The MolyCom[®]-Hyper heating elements have a high purity glassy silica layer and this layer works as an oxidation protection layer with very low oxidation permeability. Therefore the heating elements show less deformation, an excellent low temperature oxidation („pest“) resistance and long life use.

The High-Purity and No-Pest Grades are available in 3/6, 4/9 and 6/12mm at a maximum temperature of 1,800°C.

For MolyCom[®]-Ultra 1900, please ask our service team.



IMPURITIES OF MOLYCOM®-HYPER 1,800

	Al	Fe	Mg	Ca	Ti	Na	K	Cr	Ni	Mn	Cu
Competitor	3500	1200	740	560	114	104	95	53	43	13	<10
MolyCom®-Hyper	<10	590	<10	<10	<10	<10	<10	20	11	<10	<10

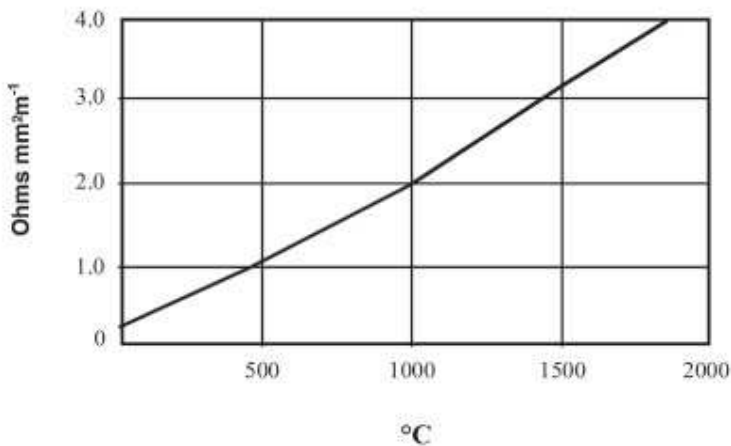
MATERIAL PROPERTIES

	MolyCom®-Ultra 1700°C	MolyCom®-Ultra 1800°C	MolyCom®-Hyper 1800°C
Density	5.8 kg/dm ³	5.8 kg/dm ³	5.8 kg/dm ³
Bending Strength at 20°C	350-450 N/mm ²	350-450 N/mm ²	350-450 N/mm ²
Porosity	<1%	<1%	<1%
Max. Element -Temperature (under air)	1,700 °C	1,800 °C	1,820 °C
Max. Furnace/Kiln Temperature (under air)	1,600 °C	1,700 °C	1,700 °C

MAXIMUM RECOMMENDED ELEMENT TEMPERATURES IN ATMOSPHERES (°C)

	MolyCom®-Ultra 1700°C	MolyCom®-Ultra 1800°C	MolyCom®-Hyper 1800°C
Air	1,700 °C	1,800 °C	1,800 °C
Nitrogen (N)	1,600 °C	1,700 °C	1,700 °C
Argon (Ar); Helium (He)	1,600 °C	1,700 °C	1,700 °C
Hydrogen (H), dry	1,150 °C	1,150 °C	1,150 °C

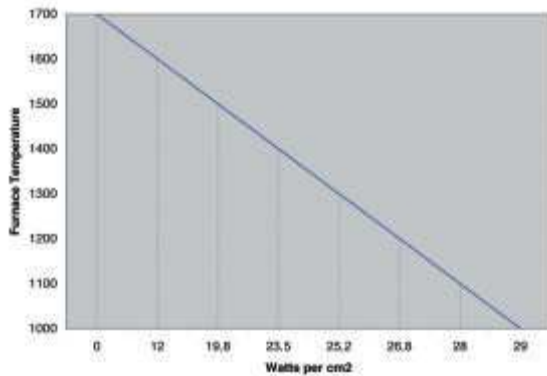
RESISTIVITY OF MOLYCOM ELEMENTS



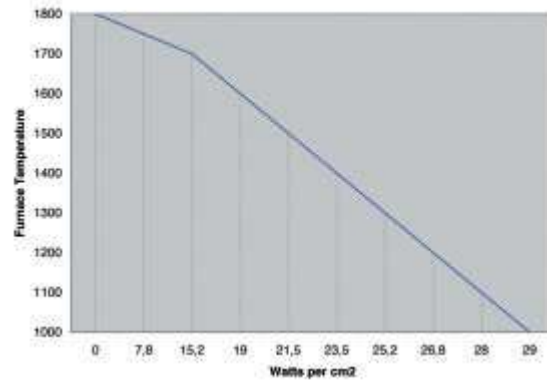


SURFACE LOADS

Maximum Surface Loads for MolyCom[®]-Ultra 1700



Maximum Surface Loads for MolyCom[®]-Ultra 1800



STANDARD TYPES AVAILABLE

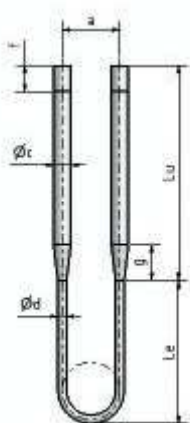
Size of element	Ø d	Ø c	Lu	Le	a	f
3/6 *	3	6	50-400	50-400	25	25
4/9 *	4	9	50-400	50-400	25	25
6/12*	6	12	125-800	125-1400	50	45
9/18	9	18	280-800	125-1400	60	75
12/24	12	24	280-800	125-1400	80	100

MolyCom[®]-Ultra & Hyper heating elements are manufactured by the Powder-Metallurgy-Technology. They are made in U-, W- and L-shapes, diameters 3/6, 4/9, 6/12, 9/18, 12/24 mm and in total length up to about 2,000 mm and more.

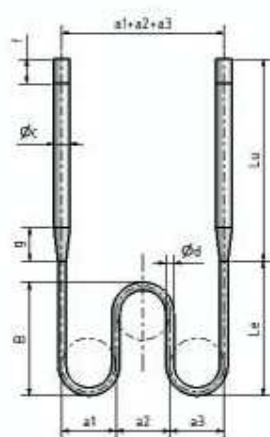
MolyCom[®]-Ultra 1,700 and 1,800 and MolyCom[®]-Hyper are precisely manufactured and hot bended.

*Also in MolyCom[®]-Hyper available

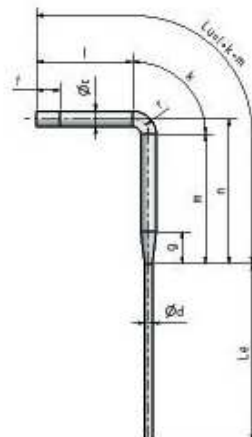
STANDARD TYPES AVAILABLE



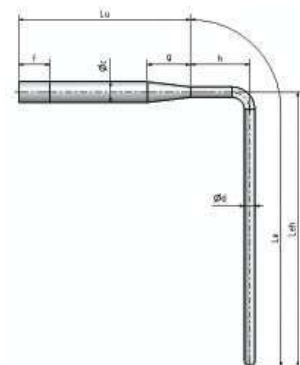
U-Shape



W-Shape and Multi-Shank



L-shape (bent 90° at Lu)



L-shape (bent 90° at Le)



STANDARD TYPES AVAILABLE

HOLDER:

- Elementholder
 - metallic
 - ceramic
- Two-Shank Holder
- Alumina Block Holder



CONTACT CLAMP:

- **New for improved current flow**

CONTACT STRAPS

- Power to Power
- Power to Element
- Element for to Element

All necessary accessories like contact-straps, single & double holders, clips, passage fibrous-blocks are available.