Kapton and Silicone Rubber Flexible Heaters

Kapton® flexible heaters offer superior tensile strength and tear resistance, with precision heat distribution. They are ideal for extreme temperature environments, from -319°F to +392°F (-195°C to +200°C). Heaters are in stock standard at 0.0007” (0.2mm) thick and up to 20”x26” (.508m x .660m) areas. Watt density is 5W/in² (0.8W/cm²) standard, with units available to 50W/in² (7.8W/cm²). Kapton® is an organic polymer with very high dielectric capabilities, while providing superior resistance to most solvents, oils, even radiation. With low out gassing, these heaters are useful in vacuum environments.

Etched foil heating elements, with 12” (305mm) long Kapton or Teflon® leads, are standard. Silicone leads, as well as custom lengths, cord and plug sets available.
Being transparent, Kapton® film also allows easy visual inspection on the internal structures. Pressure-sensitive adhesive (PSA) backing surface is not standard, but NPH will customize your Kapton® heaters with special adhesives or mounting holes, as the application requires. Mechanical fasteners such as hooks, grommets, spring-loaded latches, snaps and Velcro® patches are also available. Minimum radius flexibility 1/32” (0.88mm) standard with weight of 1 1/2oz/ft² (0.05g/cm²).

**Kapton® Flexible Heaters**

The particular application conditions of aerospace, medical, composite fabrication, optical equipment and computers often require flexible heating elements. NPH offers a wide assortment of in-stock and custom flexible heaters in Kapton® and silicone rubber materials to suit most any of these needs.

Silicone Rubber heaters permit composite bonding and curing, as well as repair and fabrication operations. Equal length circuits and a cool tab are provided, while a fiberglass reinforced heater cover means long service life and increased durability. Standard watt density is 5W/in² (0.8W/cm²).

All standard heaters are UL Recognized. Many sizes in stock from 6” x 6” to 20” x 20” (152.4 mm x 152.4 mm to .508 m x .508 m).

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*Applications for these products include the following and many more:*

- Heating of Electronic Components- ATM's and Photocopiers
- Heating of Aerospace Instrumentation-Satellites and Spacecraft
- Semiconductor Wafer Processing
- Autoclaves, Incubators and Sterilizers
- Vacuum Chambers
- Medical Imaging, Medical Diagnostic Instruments and Analyzers
- Outdoor Electric Boxes, Fluid Line Freeze Protection
Kapton and silicone rubber heaters are extremely versatile and operate efficiently in many environments.

Some distinct advantages are:

- Moisture resistance
- Oil and solvent resistance
- Chemical resistance
- Outdoor exposure
- Extremely thin profiles
- Conform to almost any shape

All heaters are built to order, but rush delivery is available. In most cases, NPH can deliver custom heaters within 48-72 hours. All NPH flexible heaters are available with custom design modification.

Shown here are various styles, sizes and leadwire extensions available from NPH on its lines of Kapton® and SR flexible heaters. Many types are in stock and custom designs are welcome. Please contact us with your requirements.
Custom Kapton and Silicone Rubber Heaters - Specifications

How To Order

Maximum Dimensions:
36" x 120"
Contact NPH for longer lengths
Thickness:
.006" — .055"
Termination area will be slightly larger
Temperature Range:
-60°F to 450°F
-50°C to 230°C
Max Voltage:
600 Volts
Dielectric Strength:
1000VAC
Watt Density:
5 Watts per in/sq
typical
60 Watts per in/sq
Dependent on application
Wattage Tolerance:
+5% — -10%
Leadwire:
12" Teflon standard
Dimensional Tolerance:
Less than 12" ± .062
Greater than 12" ± .125

National Plastic Heater,
Sensor and Control Inc.
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