



## Polyester Etch Foil Heaters

### Lower cost. Superior heat transfer.

*An economical etch heater for lower temperature, complex design applications.*

HEATFLEX polyester heaters are constructed using an etched foil heating element. Advanced circuit imaging combined with chemical etching allows designers the flexibility to distribute wattage while creating multiple heat patterns in a single heater.

- Precise heat distribution
- Superior tensile strength and tear resistance
- Low out gassing
- Flexible circuit design
- Elimination of edge loss due to compensation using distributed wattage
- Water resistant
- Multiple layers possible

Agency Approval: **UL E91597** (UL 499)

Heatron offers an extensive UL option list and builds to UL 60601/IEC-60601.



#### DESIGN GUIDE

##### Construction Options:

See Design Guide on back page for common options

##### Performance Options:

Dual voltage  
Ground circuits or wires  
Three phase power  
Distributed wattage  
Dual wattage  
Onboard sensors, thermostats and thermal fuses  
Over temperature control  
Special marks, labels and serialization

#### APPLICATIONS

##### Medical and Life Science

Medical devices  
Laboratory equipment  
Veterinary tables

##### Industrial

Battery heaters  
Enclosures

##### Foodservice

Foodservice equipment  
Warming trays

##### Transportation

Rear view mirror  
Hand grip heater

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Specifications	
Max UL Component Recognition Operating Temperature*	105 °C 221 °F
Min Operating Temperature	-40 °C -40 °F
Max Watt Density	7.8 W/cm <sup>2</sup> 50 W/in <sup>2</sup>
Nominal Thickness	0.15 mm 0.006"
Dielectric Strength	300 V/mil
Max Size	560 x 560 mm 22" x 22"
Max Resistance Density	115 Ω/in <sup>2</sup>
Dimensional Tolerance	
- Less than 150 mm - Less than 6"	± 0.8 mm ± 0.03"
- 150 to 300 mm - 6" to 12"	± 1.5 mm ± 0.06"
- Greater than 300 mm - Greater than 12"	± 3.0 mm ± 0.12"
Resistance Tolerances	+10% -5%
<i>* Higher temperatures and tighter tolerances available.</i>	

**Wattage and Voltage**

Custom watt density and multi-zone controls are available for added efficiency. Distributed wattage can compensate for heat loss and create uniform temperature profiles. Polyester etch circuits typically operate from 2 to 240 volts, including dual voltage, and function with AC and DC voltage sources.

**Surface Mount Sensors and Thermostats**

Heatron offers a selection of sensors, thermostats and thermal fuses that maximize efficiency for your application, and can be incorporated in the assembly process. Sensors can be mounted over heated and non-heated sections. RTDs or thermistors provide direct, onboard temperature feedback and control for more complex heater system assembly.

**Connecting Leads**

A wide range of connections are available. Typical options include PVC insulated, Teflon® (TFE) insulated, 19-strand silver plated copper conductor, flexible circuits and silicon rubber.

**Attachment Methods**

Pressure Sensitive Adhesive can be bonded to customer's part at Heatron's facility or applied for attachment at customer location.

