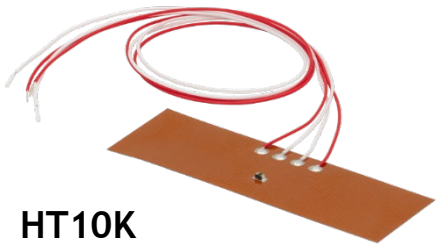
Flexible Polyimide Foil Heater with 10 kΩ Thermistor



HT10K

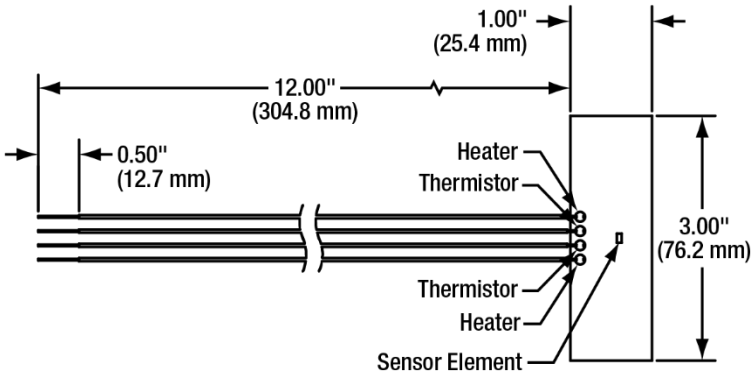
Description

The HT10K is a 1" x 3" flexible polyimide foil heating element with an integrated NTC thermistor for closed-loop temperature control. It features bare wire leads for use with a user-provided connector and an acrylic pressure-sensitive adhesive backing for easy installation. It can be used with Thorlabs' TC300 general-purpose temperature controller.

Specifications

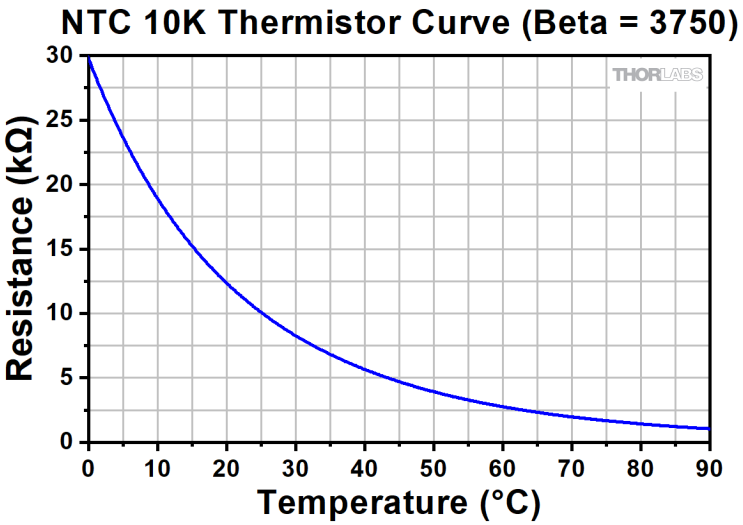
General Specifications			
Temperature Range			-32 to 100 °C (-26 to 212 °F)
Material			Kapton/Acrylic Adhesive
Heater Resistance			19.7 Ω ±10% or ±0.5 Ω, Whichever is Greater
Heating Capacity			10 W/in^2 (0.016 W/mm^2) @ 70 °C
Thermistor Sensor Type			NTC
Thermistor Resistance (R_0) at Room Temperature (T_0 = 25 °C)			10 kΩ
Thermistor Beta (ß)			3750 K
Minimum Bend Radius			0.5" (12.7 mm) in Thermistor Area, 0.030" (0.8 mm) in All Other Areas
Effective Heating Area			2.23 in^2 (1438.7 mm^2)
Dimensions	**Thickness**	**Kapton**	0.002" (0.05 mm)
		Acrylic	0.001" (0.03 mm)
	Length x Width		1" x 3" (25.4 mm x 76.2 mm)
Wire Lead Length			12" (304.8 mm)
Wire Gauge			26 AWG

Drawing



Heater and Thermistor Connections are Not Polarized

Typical Performance Plot



The resistance of the NTC 10K Thermistor is given by

$$R_T = 10\,000\, e^{\left(\beta\left(\frac{1}{T+273}-\frac{1}{298}\right)\right)},$$

where R_T is the resistance in ohms (Ω) at T
and T is the temperature in degrees Celsius (°C).