

Polyimide Thermofoil™ Heaters

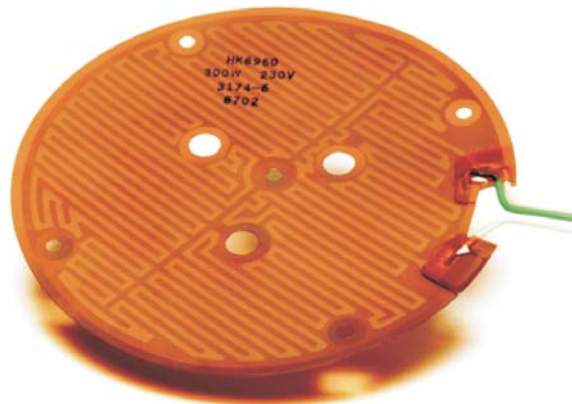
Thin, flexible heating solutions from -200 to 200°C

Overview

Polyimide (Kapton™) is a thin, semitransparent material with excellent dielectric strength. Polyimide Thermofoil™ heaters are ideal for applications with space and weight limitations, or where the heater will be exposed to vacuum, oil, or chemicals.

- Thin, lightweight heaters allow you to apply heat where it's needed, reducing operating costs
- Etched-foil heating technology provides fast and efficient thermal transfer
- Customized options (i.e. SMT components, flex leads and connectors) offer turnkey solutions to drastically reduce assembly time and increase productivity
- Custom profiling gives uniform thermal performance of the heating output to improve processing yields and productivity
- FEP internal adhesive for use to 200°C (392°F)
- UL component recognition available
- Suitable for vacuum environments (NASA-RP-1061)
- NASA approved materials for space applications (S-311-P-079)
- Resistant to most chemicals: acids and solvents
- Radiation resistant to 10⁶ rads if built with polyimide-insulated leadwire (custom option)
- Very small sizes available
- Fluid immersible designs available (not standard)

Configure Minco heaters and order online at:
www.minco.com/heater_config/



Typical applications

- Medical diagnostic instruments and analyzers
- Maintain warmth of satellite components
- Protect aircraft electronic and mechanical devices against cold at high altitudes
- Stabilize optoelectronic components
- Test or simulate integrated circuits
- Enable cold weather operation of outdoor electronics such as card readers, LCDs or ruggedized laptops
- Maintain constant temperature in analytic test equipment

Custom options

- Custom shapes and sizes:
Polyimide / FEP – 22" x 42" (560 x 1065 mm)
Polyimide / WA/ULA – 22" x 72" (560 x 1825 mm)
- Custom resistance:
Polyimide / FEP – 450 Ω/in² (70 Ω/cm²)
Polyimide / WA/ULA – 1500 Ω/in² (233 Ω/cm²)
- WA or ULA internal adhesive is more economical than FEP for most custom designs that operate below 150°C
- Available with surface mount sensors, connectors, heat sinks and even integral controllers
- NASA approval is available in nearly all of the standard size Polyimide heaters
- TÜV or UL recognition marking is optional
- Tighter resistance tolerance
- RoHS compliance
- Contact Access: Minco Sales and Support for design assistance

Specifications subject to change

Polyimide Thermofoil™ Heaters

Specifications

Temperature range: -200 to 200°C (-328 to 392°F). Upper limit with 0.003" (0.08 mm) foil backing is 150°C (302°F).

Material: .0002" Polyimide/0.001" FEP, (0.05/0.03 mm).

Resistance tolerance: ±10% or ±0.5 Ω, whichever is greater.

Dielectric strength: 1000 VRMS.

Minimum bend radius: 0.030" (0.8 mm).

Leadwire: Red PTFE insulated, stranded.

Current capacity (based on 100°C max. ambient temp.):

AWG 30 - 3.0 A

AWG 26 - 5.0 A

AWG 24 - 7.5 A

AWG 20 - 13.5 A

Maximum heater thickness:

Over element 0.012" (0.3 mm)

Over leads

AWG 30 (0.057 mm²) 0.050" (1.3 mm)

AWG 26 (0.141 mm²) 0.060" (1.5 mm)

AWG 24 (0.227 mm²) 0.065" (1.7 mm)

AWG 20 (0.563 mm²) 0.085" (2.2 mm)

Add 0.005" (0.1 mm) to above dimensions for foil backing.

Dimensional tolerance:

6" (150 mm) or less ±0.03" (±0.8 mm)

6.01 to 12" (150 to 300 mm) ±0.06" (±1.5 mm)

Over 12" (300 mm) ±0.12" (±3.0 mm)

Tighter tolerances are available on custom designs if needed.



Flexible Heaters Prototype Design Kit

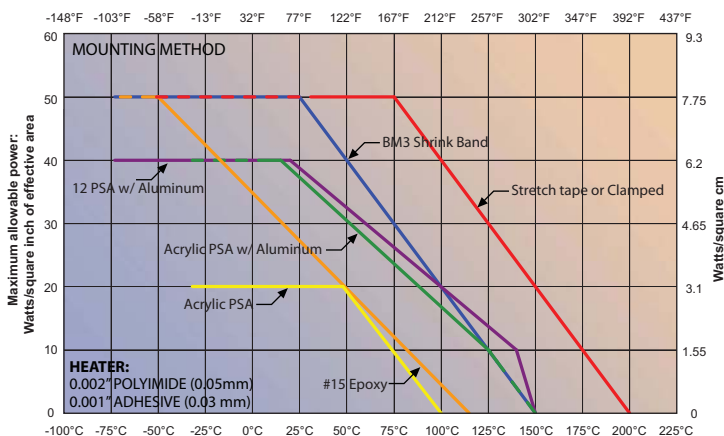
The Flexible Heaters Prototype Design Kit allows you to easily test and prototype a heating concept before starting on a journey of custom-built-to-order product.

Filled with polyimide and silicone rubber Thermofoil™ heaters, instructions and technical data, this kit will help you move towards successfully integrating flexible heaters into your application.

Model Number

TB-H1

Polyimide/FEP Heaters Maximum Watt Density



Example: At 50°C, the maximum power for a heater mounted with acrylic PSA is 20 W/in² (3.1 W/cm²).

Specifications subject to change



Stock Polyimide Thermofoil™ Heaters

These heaters are normally available from stock for immediate shipment. Voltage and wattage values are for reference only. Heaters may be operated at other voltages if they do not exceed the maximum allowable watt density ratings.

See "Standard Polyimide & Rubber Heaters" (pages 22-31) for these and other models with additional ordering options:

- Greater selection of resistances
- Variable lead length
- More backing options
- UL recognition marking 

Specification options

HK5160R157L12	Model number
A	Heater backing
	A = No adhesive -200 to 200°C B = PSA backing -32 to 100°C
HK5160R157L12A = Sample part number	

Type (configuration)



TAB DIMENSIONS:
AWG 30: 0.40" long × 0.25" wide (10.2 × 6.4 mm)
AWG 24/26: 0.40" × 0.40" (10.2 × 10.2 mm)



Size (inches)		Size (mm)		Type	Resistance in ohms*	Typical power	Effective area in ² (cm ²)	Lead AWG	Model number
X	Y	X	Y						
0.50	2.00	12.7	50.8	1	157	5 W at 28 V	0.79 (5.10)	30	HK5160R157L12
0.50	4.00	12.7	101.6	1	78.4	10 W at 28 V	1.67 (10.77)	30	HK5161R78.4L12
0.50	6.00	12.7	152.4	1	52.3	15 W at 28 V	2.35 (15.16)	30	HK5162R52.3L12
1.00	1.00	25.4	25.4	1	157	5 W at 28 V	0.82 (5.29)	30	HK5163R157L12
1.00	2.00	25.4	50.8	1	78.4	10 W at 28 V	1.76 (11.35)	30	HK5164R78.4L12
1.00	3.00	25.4	76.2	1	52.3	15 W at 28 V	2.70 (17.42)	30	HK5165R52.3L12
1.00	5.00	25.4	127.0	1	529	25 W at 115 V	4.41 (28.45)	30	HK5166R529L12
1.00	10.00	25.4	254.0	1	264	50 W at 115 V	8.96 (57.81)	30	HK5167R264L12
1.00	15.00	25.4	381.0	1	176	75 W at 115 V	13.51 (87.16)	30	HK5168R176L12
2.00	2.00	50.8	50.8	1	661	20 W at 115 V	3.59 (23.16)	30	HK5169R661L12
2.00	3.00	50.8	76.2	1	441	30 W at 115 V	5.50 (35.48)	30	HK5170R441L12
2.00	4.00	50.8	101.6	1	331	40 W at 115 V	7.41 (47.81)	30	HK5171R331L12
2.00	6.00	50.8	152.4	1	220	60 W at 115 V	11.23 (72.45)	30	HK5172R220L12
2.00	12.00	50.8	304.8	1	110	120 W at 115 V	22.69 (146.39)	24	HK5173R110L12
3.00	3.00	76.2	76.2	1	294	45 W at 115 V	8.41 (54.26)	30	HK5174R294L12
3.00	5.00	76.2	127.0	1	176	75 W at 115 V	14.23 (91.81)	30	HK5175R176L12
3.00	10.00	76.2	254.0	1	88.2	150 W at 115 V	28.75 (185.48)	24	HK5176R88.2L12
3.00	15.00	76.2	381.0	1	58.8	225 W at 115 V	43.30 (273.35)	24	HK5177R58.8L12
4.00	4.00	101.6	101.6	1	165	80 W at 115 V	15.20 (98.06)	30	HK5178R165L12
4.00	8.00	101.6	203.2	1	82.7	160 W at 115 V	30.84 (198.97)	24	HK5179R82.7L12
4.00	12.00	101.6	304.8	1	55.1	240 W at 115 V	46.48 (299.87)	24	HK5180R55.1L12
5.00	5.00	127.0	127.0	1	106	125 W at 115 V	24.02 (154.97)	24	HK5181R106L12
5.00	10.00	127.0	254.0	1	52.9	250 W at 115 V	48.57 (313.35)	24	HK5182R52.9L12
5.00	15.00	127.0	381.0	1	35.3	375 W at 115 V	73.12 (471.74)	24	HK5183R35.3L12
10.00	10.00	254.0	254.0	1	26.4	500 W at 115 V	97.52 (629.16)	20	HK5184R26.4L12
10.00	15.00	254.0	381.0	1	17.6	750 W at 115 V	146.92 (947.87)	20	HK5185R17.6L12
0.50	0.09	12.7	2.4	31	25.0	1 W at 5 V	0.13 (0.84)	30	HK5186R25.0L12
1.00	0.09	25.4	2.4	31	157	5 W at 28 V	0.68 (4.39)	26	HK5187R157L12
3.00	0.12	76.2	3.1	31	378	35 W at 115 V	6.61 (42.65)	26	HK5188R378L12

*Resistance tolerance is ±10% or ±0.5 Ω, whichever is greater

Note: Standard leadwire length is 12" (305mm) minimum

Specifications subject to change

Commercial Grade Polyimide Heaters

Reliable heating options at an affordable price

Overview

Minco's commercial grade polyimide heaters provide the performance and reliability you expect at a lower cost than our standard polyimide/FEP models. Sizes are available for 12 and 24 volt operation, or connect multiple heaters in a series/parallel system for consistent power over larger areas.

- Solder pad option provides you the lowest price possible for Minco polyimide heaters
- All models include acrylic pressure sensitive mounting adhesive (PSA) for simple installation
- Ideal for prototyping, short production series or high volume/low cost applications
- Typical lead time is 3-5 days ARO

Specifications

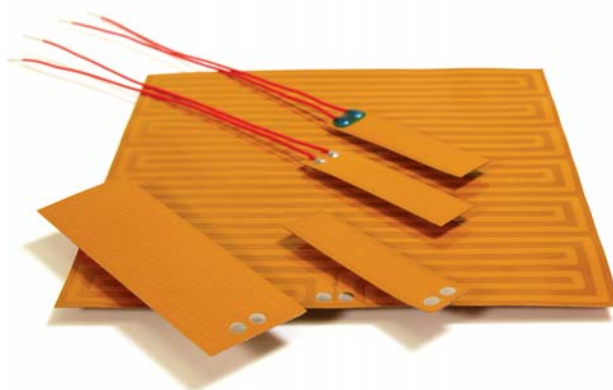
Temperature range: -32 to 100°C .

Material: Polyimide film/acrylic (Kapton™ or equivalent).

Resistance tolerance: ±10%.

Minimum bend radius: 0.030" (0.8 mm).

Electrical connection options: Exposed solder pads. Options include two AWG 26 PTFE insulated leadwires 4" (100 mm) long with insulated or bare connection points.



Commercial grade polyimide heaters

Polyimide Heaters

Specification options

HK5950	Base model from table
L	Termination options:*
	S = Solder pads
	L = 4" (100 mm) PTFE insulated leadwires - lead attachment area not insulated
	P = 4" (100 mm) PTFE insulated leadwires with insulated connection points
HK5950L = Sample part	

*Due to solder junctions parts are not RoHS compliant

Insulated connection wire for end-user attachment

Order loose insulated connection wires with stripped ends for fast, easy connection of heaters to your power source. These AWG 26 wires have high temperature PTFE insulation resistant to wear and abrasion. The insulation color is red and the standard length is 4" (100 mm). Wires are sold in pairs, order one pair for each heater. Order part number AC102371.

Base model table

Model numbers	Size (inches)	Size (mm)	Resistance in ohms	Voltage	Watt density W/in ² (W/cm ²)	Effective area in ² (cm ²)
HK5950	0.5 x 2.0	12.7 x 50.8	57.5	12	2.5 (0.39)	1.0 (6.45)
HK5951	1.0 x 1.0	25.4 x 25.4	57.5	12	2.5 (0.39)	1.0 (6.45)
HK5952	0.5 x 5.0	12.7 x 127	23.0	12	2.5 (0.39)	2.5 (16.13)
HK5953	1.0 x 3.0	25.4 x 76.2	19.2	12	2.5 (0.39)	3.0 (19.35)
HK5954	2.0 x 2.0	50.8 x 50.8	57.6	24	2.5 (0.39)	4.0 (25.81)
HK5955	3.0 x 3.0	76.2 x 76.2	25.6	24	2.5 (0.39)	9.0 (58.06)
HK5956	4.0 x 4.0	101.6 x 101.6	14.4	24	2.5 (0.39)	16.0 (103.2)
HK5957	5.0 x 5.0	127 x 127	9.2	24	2.5 (0.39)	25.0 (161.29)

Specifications subject to change



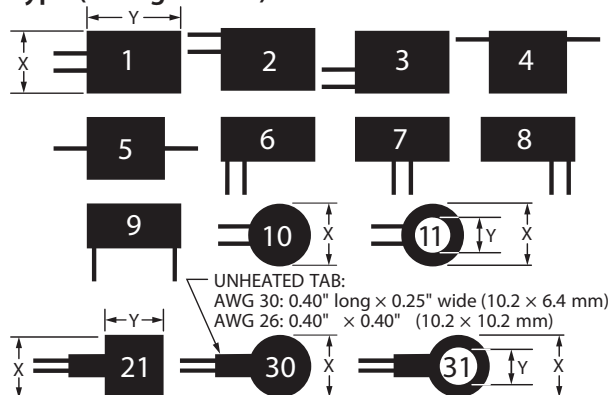
Standard Polyimide and Rubber Heaters

Minco has invested in the design time and fabrication tooling so you can jump immediately to your prototyping efforts. The following table outlines the specifications of previously designed polyimide and silicone rubber Thermofoil™ heaters.

Minco's build-to-order turnaround time is typically 3 weeks depending on quantity requirements. There is a limited available inventory of a variety of part configurations which generally allows us to meet your immediate delivery needs.

Contact Access: Minco Sales and Support to discuss mix and matching heater sizes and resistance values to help satisfy performance and lead time demands.

Type (configuration)



Types 21, 30, and 31 have lead connections on an external tab. The tab produces negligible heat and, in most cases, need not be adhered to the heat sink. On type 21 heaters that are 0.25" (6.4 mm) wide, the tab is the same width as the heated area.

Specification options

Technical Specifications on pages 16 (polyimide) & 20 (rubber).

HK	Insulation: HK = Polyimide HR = Silicone rubber																		
5200	Model number from tables on following pages																		
R17.4	Heater resistance in ohms																		
L12	Lead length in inches 12" (305 mm) is standard Contact Minco for other lengths																		
A	Heater backing option (see page 8) <table><thead><tr><th></th><th>HK</th><th>HR</th></tr></thead><tbody><tr><td>A = No adhesive</td><td>-200 to 200°C</td><td>-45 to 235°C</td></tr><tr><td>B = PSA backing</td><td>-32 to 100°C</td><td>-45 to 177°C</td></tr><tr><td>D = Foil backing</td><td>-200 to 150°C</td><td>-45 to 235°C</td></tr><tr><td>E = Foil/Acrylic PSA</td><td>-32 to 150°C</td><td>-32 to 150°C</td></tr><tr><td>F = Foil/#12 PSA</td><td>-73 to 150°C</td><td>-45 to 204°C</td></tr></tbody></table>		HK	HR	A = No adhesive	-200 to 200°C	-45 to 235°C	B = PSA backing	-32 to 100°C	-45 to 177°C	D = Foil backing	-200 to 150°C	-45 to 235°C	E = Foil/Acrylic PSA	-32 to 150°C	-32 to 150°C	F = Foil/#12 PSA	-73 to 150°C	-45 to 204°C
	HK	HR																	
A = No adhesive	-200 to 200°C	-45 to 235°C																	
B = PSA backing	-32 to 100°C	-45 to 177°C																	
D = Foil backing	-200 to 150°C	-45 to 235°C																	
E = Foil/Acrylic PSA	-32 to 150°C	-32 to 150°C																	
F = Foil/#12 PSA	-73 to 150°C	-45 to 204°C																	
U	U = Marked for UL component recognition:  Omit for no UL marking (lower cost) UL limits: 220°C for rubber heaters																		
HK5200R17.4L12AU = Sample part number																			

Temperature sensitive elements

Heaterstats™ (page 44) require temperature sensitive heating elements, such as those found in the "NiFe" and "Ni" columns. Their resistance increases with temperature. The resistances listed are measured at 0°C (32°F).

How to use the table of Standard Polyimide & Silicone Rubber Heaters

Overall heater size in inches. Listed in ascending order, first by dimension X, then Y. Round heaters are last.

Heater type (lead exit configuration).

Element resistance options in ohms. Select resistance to produce desired wattage with available voltage (see Ohm's law).

Effective heating area. Use this value for calculating watt density.

Available heater insulation options for this model. K=Polyimide R=rubber

Size (in)		Size (mm)		Type	Resistance options- ohms*										Effective area in ² (cm ²)	Lead AWG	Insulation	Model number
X	Y	X	Y		R(0°C) [May be used with Heaterstat] → NiFe Ni													
0.40	2.60	10.2	66.0	1 	123	62.5	37.8	18.2						19.1	0.74 (4.77)	30	K, R	5215
0.41	4.80	10.4	121.9	6 	100	50.1	30.2	14.5						15.5	1.40 (9.03)	26	K, R	5218
0.41	8.30	10.4	210.8	5 	61.9	31.1	18.8	9.1	6.2	4.3	9.6			2.50 (16.13)	26	K, R	5219	

Overall heater size in millimeters. Listed in ascending order, first by dimension X, then Y.

Temperature sensitive element resistance options (at 0°C) for use with Minco Heaterstat. Rubber (HR) models are not available with NiFe element.

Leadwire size. Maximum current capacities are listed on pages 17 and 20.

Base model number

*Resistance tolerance is ±10% or ±0.5, whichever is greater
Rubber (HR) models not available with NiFe element

Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*						Effective area in ² (cm ²)	Lead AWG	Insu- lation	Model number	
X	Y	X	Y		R(0°C) [May be used with Heaterstat] →										NiFe
0.25	0.25	6.4	6.4	21 	10.0	5.3						0.04 (0.26)	30	K	5565
0.25	0.50	6.4	12.7	21 	15.0	7.9	4.3					0.08 (0.52)	30	K	5566
0.25	0.75	6.4	19.1	21 	20.0	10.5	5.7					0.13 (0.84)	30	K	5567
0.25	1.00	6.4	25.4	21 	25.0	13.1	7.1			3.9		0.18 (1.16)	30	K	5568
0.25	1.25	6.4	31.8	21 	30.0	15.8	8.5			4.7		0.23 (1.48)	30	K	5569
0.25	1.50	6.4	38.1	21 	35.0	18.4	10.0	4.7		5.4		0.27 (1.74)	30	K	5570
0.25	1.75	6.4	44.5	21 	40.0	21.0	11.4	5.3		6.2		0.32 (2.06)	30	K	5571
0.25	2.30	6.4	58.4	6 	17.4	9.2	5.2					0.38 (2.45)	26	K, R	5200
0.25	6.82	6.4	173.2	9 	100	46.7	28.2	13.6		15.5		1.22 (7.87)	26	K, R	5201
0.25	7.67	6.4	194.8	8 	143	71.7	38.1	19.1		22.2		1.15 (7.42)	30	K, R	5202
0.25	10.40	6.4	264.2	5 	160	80.1	48.4	23.3		24.8	5.7	1.55 (10.00)	26	K, R	5203
0.27	2.00	6.9	50.8	1 	18.9	9.5	5.7					0.35 (2.26)	26	K, R	5204
0.27	5.50	6.9	139.7	8 	153	76.5	40.7	20.4		23.7	5.5	0.87 (5.61)	30	K	5205
0.27	6.90	6.9	175.3	1 	220	110	65.5	32.1		34.1	7.8	1.40 (9.03)	30	K	5206
0.30	1.50	7.6	38.1	1 	42.1	20.7	12.5	6.1		6.5		0.30 (1.94)	30	K, R	5207
0.30	3.11	7.6	79.0	1 	44.1	22.1	13.3	6.4		6.8		0.70 (4.52)	26	K, R	5208
0.30	3.11	7.6	79.0	1 	31.7	15.8	9.6	4.6				0.72 (4.65)	26	K, R	5209
0.34	3.47	8.6	88.1	1 	120	56.1	33.9	16.3		18.6		0.88 (5.68)	30	K	5210
0.36	7.95	9.1	201.9	8 	225	113	68.3	32.8		34.9	8.0	1.97 (12.71)	26	K, R	5211
0.37	6.10	9.4	154.9	1 	73.1	36.4	22.1	10.6		11.3		1.68 (10.84)	26	K, R	5212
0.37	20.20	9.4	513.1	1 	130	65.0	39.3	18.9	12.9	9.1		5.54 (35.74)	26	R	5213
0.40	2.60	10.2	66.0	1 	123	62.5	37.8	18.2		19.1		0.74 (4.77)	30	K, R	5215
0.41	4.80	10.4	121.9	6 	100	50.1	30.2	14.5		15.5		1.40 (9.03)	26	K, R	5218
0.41	8.30	10.4	210.8	5 	61.9	31.1	18.8	9.1	6.2	4.3	9.6	2.50 (16.13)	26	K, R	5219
0.41	9.00	10.4	228.6	5 	199	99.7	60.3	29.1		30.8	7.0	2.77 (17.87)	26	K, R	5220
0.42	2.30	10.7	58.4	1 	50.1	26.1	15.3	7.3		7.8		0.67 (4.32)	26	K, R	5222
0.42	4.90	10.7	124.5	1 	198	100	60.2	28.9		30.7	7.0	1.55 (10.00)	26	K	5224
0.42	7.10	10.7	180.3	1	322	161	85.7	42.8		49.9	11.4	2.06 (13.29)	30	K, R	5225
0.42	14.40	10.7	365.8	1	709	354	189	94.3		110	25.2	4.17 (26.90)	30	K	5227
0.43	3.95	10.9	100.3	8	238	119	63.3	31.7		36.9	8.5	1.22 (7.87)	26	K	5228
0.43	5.50	10.9	139.7	1	131	65.8	35.0	17.5		20.3		1.70 (10.97)	30	K, R	5229
0.43	5.90	10.9	149.9	6	37.3	18.8	11.3	5.4	3.7	5.8		1.87 (12.06)	26	K, R	5230
0.44	3.00	11.2	76.2	6	27.8	13.6	8.2	3.9				1.03 (6.65)	26	K, R	5231
0.44	3.00	11.2	76.2	6	45.8	22.9	13.8	6.6		7.1		1.03 (6.65)	26	K, R	5232
0.44	3.00	11.2	76.2	6	77.7	38.8	23.5	11.3		12.0		1.03 (6.65)	26	K, R	5233
0.45	3.88	11.4	98.6	8	153	76.4	40.7	20.3		23.7	5.4	1.17 (7.55)	26	K	5234
0.45	3.88	11.4	98.6	1	102	51.1	30.9	14.8		15.8		1.16 (7.48)	26	K, R	5235
0.45	3.88	11.4	98.6	3	134	67.3	40.7	19.6		20.8		1.16 (7.48)	26	K	5236
0.45	3.88	11.4	98.6	8	102	51.2	27.2	13.6		15.8		1.17 (7.55)	30	K, R	5237
0.46	5.10	11.7	129.5	1	264	132	79.9	38.4		40.9	9.4	1.77 (11.42)	26	K	5238
0.48	4.50	12.2	114.3	8	47.1	23.6	14.3	6.8	4.7	7.3		1.60 (10.32)	26	K, R	5239
0.48	6.28	12.2	159.5	8	70.2	35.1	18.7	9.3	6.2	4.7	10.9	2.20 (14.19)	26	K, R	5240
0.49	4.80	12.4	121.9	8	170	85.1	51.5	24.7		26.4	6.0	1.60 (10.32)	26	K, R	5241
0.50	0.50	12.7	12.7	21	26.5	13.9	7.5			4.1		0.19 (1.23)	30	K	5572
0.50	0.75	12.7	19.1	21	30.0	15.7	8.5			4.7		0.30 (1.94)	30	K, R	5573
0.50	1.00	12.7	25.4	21	35.0	18.3	10.0	4.6		5.4		0.41 (2.65)	30	K, R	5574
*Resistance tolerance is ±10% or ±0.5, whichever is greater															
Rubber (HR) models not available with NiFe element															

Standard
Polyimide
& Rubber



Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*						Effective area		Lead	Insu- lation	Model number
X	Y	X	Y		R(0°C) [May be used with Heaterstat] → NiFe Ni						in² (cm²)				
0.50	1.25	12.7	31.8	21 	40.0	20.9	11.4	5.3		6.2	0.52 (3.35)	30	K, R	5575	
0.50	1.50	12.7	38.1	21 	45.0	23.5	12.8	5.9	4.4	7.0	0.63 (4.06)	30	K, R	5576	
0.50	1.75	12.7	44.5	21 	50.0	26.1	14.2	6.6	4.9	7.8	0.74 (4.77)	30	K, R	5577	
0.50	2.00	12.7	50.8	1 	157	78.4	44.0			24.3 5.6	0.79 (5.10)	30	K, R	5160	
0.50	2.50	12.7	63.5	1 	71.1	35.1	21.3	10.3		11.0	0.84 (5.42)	26	K, R	5242	
0.50	3.00	12.7	76.2	1 	124	65.0	35.3	16.4	12.3 9.3	19.2	1.09 (7.03)	26	K, R	5594	
0.50	3.77	12.7	95.8	1 	233	117	62.1	31.1		36.1 8.3	1.43 (9.23)	30	K	5243	
0.50	3.77	12.7	95.8	1 	163	81.5	43.4	21.7		25.3 5.8	1.36 (8.77)	30	K, R	5244	
0.50	4.00	12.7	101.6	1 	78.4	39.2	22.0			12.2	1.67 (10.77)	30	K, R	5161	
0.50	4.00	12.7	101.6	1 	43.9	22.1	13.3	6.4	4.4	6.8	1.63 (10.52)	30	K, R	5245	
0.50	4.00	12.7	101.6	1 	52.7	26.4	15.9	7.7	5.2 3.6	8.2	1.63 (10.52)	30	K, R	5246	
0.50	5.00	12.7	127.0	5 	36.7	18.3	11.1	5.3	3.6	5.7	1.63 (10.52)	26	K, R	5247	
0.50	5.10	12.7	129.5	8 	126	62.5	37.8	18.2		19.5	1.90 (12.26)	30	K, R	5248	
0.50	6.00	12.7	152.4	1 	52.3	26.1	14.6			8.1	2.35 (15.16)	30	K, R	5162	
0.50	7.50	12.7	190.5	1 	53.1	26.2	16.1	7.7	5.3 3.7	8.2	2.72 (17.55)	24	K, R	5249	
0.50	12.87	12.7	326.9	6 	230	115	69.5	33.5		35.7 8.1	4.80 (30.97)	26	K, R	5250	
0.50	12.87	12.7	326.9	6 	115	57.5	34.8	16.7	11.4 8.1	17.8	4.67 (30.13)	26	K, R	5251	
0.50	12.87	12.7	326.9	6 	77.1	38.5	23.3	11.2	7.7 5.4	12.0	4.67 (30.13)	26	K, R	5252	
0.50	18.50	12.7	469.9	1 	289	145	87.7	42.1	29.1 20.3	10.1	7.20 (46.45)	26	R	5253	
0.52	8.20	13.2	208.3	8 	224	112	59.6	28.8		34.7 7.9	3.46 (22.32)	26	K, R	5254	
0.53	1.00	13.5	25.4	1 	63.2	31.6	16.8	8.4		9.8	0.39 (2.52)	30	K	5255	
0.53	1.20	13.5	30.5	1 	59.6	29.8	15.9	7.9		9.2	0.39 (2.52)	30	K	5256	
0.53	2.00	13.5	50.8	2 	135	67.6	36.1	18.1		20.9	0.79 (5.10)	30	K	5257	
0.53	4.60	13.5	116.8	3 	166	83.3	50.4	24.2		25.7 5.9	1.76 (11.35)	24	K, R	5259	
0.53	4.60	13.5	116.8	3 	95.7	56.5	28.9	13.9		14.8	1.85 (11.94)	26	K, R	5260	
0.54	2.00	13.7	50.8	1 	135	67.5	40.8	19.6		20.9	0.75 (4.84)	30	K	5261	
0.54	8.10	13.7	205.7	1 	233	117	62.1	31.1		36.1 8.2	3.34 (21.55)	26	K, R	5262	
0.55	1.20	14.0	30.5	1 	24.9	12.9	7.8	3.7			0.35 (2.26)	26	K, R	5264	
0.55	6.60	14.0	167.6	1 	107	53.9	32.6	15.7	10.7 7.5	16.6	2.79 (18.00)	26	K, R	5267	
0.55	15.00	14.0	381.0	1 	217	108	65.8	31.7	21.7 15.2	33.6 7.6	6.38 (41.16)	24	K, R	5268	
0.60	9.90	15.2	251.5	1 	229	115	69.5	33.4	22.9 16.1	35.5 8.0	4.65 (30.00)	26	K, R	5270	
0.60	10.65	15.2	270.5	6 	360	180	95.9	47.9		55.8 12.7	4.84 (31.23)	30	K, R	5271	
0.65	10.75	16.5	273.1	7 	124	64.1	37.5	18.1	12.4 8.6	19.2	5.56 (35.87)	26	K, R	5273	
0.75	0.75	19.1	19.1	21 	35.0	18.3	9.9	4.6		5.4	0.48 (3.10)	30	K, R	5578	
0.75	1.00	19.1	25.4	21 	40.0	20.9	11.4	5.2		6.2	0.65 (4.19)	30	K, R	5579	
0.75	1.25	19.1	31.8	21 	45.0	23.4	12.8	5.9	4.4	7.0	0.82 (5.29)	30	K, R	5580	
0.75	1.50	19.1	38.1	21 	50.0	26.0	14.2	6.5	4.8	7.8	0.99 (6.39)	30	K, R	5581	
0.75	1.75	19.1	44.5	21 	55.0	28.6	15.6	7.2	5.3	8.5	1.17 (7.55)	30	K, R	5582	
0.75	1.85	19.1	47.0	1 	50.1	25.2	15.2	7.3	5.1 3.5	7.8	1.02 (6.58)	26	K, R	5274	
0.75	2.00	19.1	50.8	21 	124	64.9	35.3	16.4	12.2 9.2	19.2	1.34 (8.65)	26	K, R	5595	
0.75	2.50	19.1	63.5	2 	43.5	21.8	13.2	6.3	4.3	6.7	1.37 (8.84)	26	K, R	5275	
0.75	3.00	19.1	76.2	1 	144	71.7	43.6	21.1		22.3	1.72 (11.10)	26	K, R	5276	
0.75	3.00	19.1	76.2	1 	18.1	8.5	5.3				1.14 (7.35)	24	K, R	5277	
0.75	3.25	19.1	82.6	6 	160	80.1	48.5	23.3		24.8 5.6	1.95 (12.58)	26	K, R	5278	
0.75	4.00	19.1	101.6	1 	36.1	17.7	10.7	5.1	3.5	5.6	2.41 (15.55)	26	K, R	5279	
0.75	4.00	19.1	101.6	1 	24.5	11.1	6.9	3.3			1.69 (10.90)	24	K, R	5280	
*Resistance tolerance is ±10% or ±0.5, whichever is greater															
Rubber (HR) models not available with NiFe element															

Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*							Effective area in ² (cm ²)	Lead AWG	Insu- lation	Model number		
X	Y	X	Y		R(0°C) [May be used with Heaterstat] → NiFe Ni												
0.75	4.95	19.1	125.7	8	267	134	71.1	35.6				41.4	9.4	3.06 (19.74)	30	K	5281
0.75	5.00	19.1	127.0	1	30.6	14.1	8.7	4.2						2.24 (14.45)	24	K, R	5282
0.75	6.00	19.1	152.4	1	36.7	16.6	10.3	5.1				5.7		2.79 (18.00)	24	K, R	5283
0.75	7.00	19.1	177.8	1	38.8	19.4	12.1	5.5	4.1			6.0		3.34 (21.55)	24	K, R	5284
0.75	8.00	19.1	203.2	1	48.7	22.1	13.7	6.4	4.4	3.3		7.5		3.89 (25.10)	24	K, R	5285
0.75	9.00	19.1	228.6	1	54.7	25.1	15.6	7.1	5.1	3.6		8.5		4.44 (28.65)	24	K, R	5286
0.75	10.00	19.1	254.0	1	60.8	27.7	17.2	7.7	5.5	4.1		9.4		4.99 (32.19)	24	K, R	5287
0.75	11.00	19.1	279.4	1	66.9	30.4	18.8	8.7	6.1	4.5		10.4		5.54 (35.74)	24	K, R	5288
0.75	11.00	19.1	279.4	1	200	100	60.5	29.1	19.9	13.9		31.0	7.0	6.32 (40.77)	24	K, R	5289
0.75	12.00	19.1	304.8	1	72.6	33.1	20.5	9.1	6.4	4.7		11.3		6.09 (39.29)	24	K, R	5290
0.78	2.76	19.8	70.1	6	83.7	41.9	22.3	11.1	7.4	5.6		13.0		1.79 (11.55)	30	K, R	5292
0.80	1.55	20.3	39.4	2	313	156	83.1	41.6				48.5	11.3	0.90 (5.81)	30	K	5294
0.80	1.55	20.3	39.4	2	105	52.5	27.9	14.0				16.3		0.94 (6.06)	30	K, R	5295
0.80	2.75	20.3	69.9	8	39.7	19.8	12.1	5.7	3.9			6.2		1.52 (9.81)	26	K, R	5296
0.80	6.00	20.3	152.4	8	123	61.8	37.4	17.9	12.3	8.6		19.1		4.23 (27.29)	26	K, R	5297
0.80	8.10	20.3	205.7	8	21.5	11.2	6.9							5.39 (34.77)	26	K, R	5298
0.80	11.50	20.3	292.1	8	166	83.2	50.3	24.2	16.5	11.6		25.7	5.8	7.52 (48.52)	24	K, R	5299
0.80	14.25	20.3	362.0	8	206	103	62.4	30.1	20.5	14.4		31.9	7.2	9.38 (60.52)	24	K, R	5300
0.81	4.81	20.6	122.2	2	64.7	32.9	19.6	9.4	6.4	4.5		10.0		3.33 (21.48)	26	K, R	5301
0.82	2.46	20.8	62.5	9	243	121	64.5	32.3				37.7	8.6	1.66 (10.71)	30	K, R	5302
0.85	1.00	21.6	25.4	6	70.2	35.1	20.6	9.9				10.9		0.60 (3.87)	30	K, R	5303
0.85	2.48	21.6	63.0	9	268	134	71.3	35.7				41.5	9.5	1.65 (10.65)	30	K	5304
0.85	4.90	21.6	124.5	3	207	104	55.1	27.5				32.1	7.3	3.60 (23.23)	26	K, R	5305
0.86	15.80	21.8	401.3	1	140	70.1	42.3	20.3	13.9	9.7		21.7		11.10 (71.61)	24	K, R	5306
0.87	8.65	22.1	219.7	8	561	281	149	74.7				87.0	19.8	6.39 (41.23)	26	K, R	5307
0.87	14.85	22.1	377.2	8	131	65.4	39.6	19.1	13.1	9.1		20.3		10.28 (66.32)	24	K, R	5308
0.88	5.35	22.4	135.9	8	62.6	31.3	18.9	9.1	6.2	4.4		9.7		3.85 (24.84)	26	K, R	5309
0.90	4.95	22.9	125.7	3	207	103	62.6	30.1				32.1	7.3	3.52 (22.71)	26	K, R	5310
0.94	3.90	23.9	99.1	9	119	59.6	31.8	15.9	10.6	7.9		18.4		2.94 (18.97)	30	K, R	5311
0.96	1.48	24.4	37.6	3	76.1	38.1	20.2	10.1				11.8		1.10 (7.10)	30	K, R	5312
0.97	1.21	24.6	30.7	3	84.3	42.2	22.4	11.2				13.1		0.90 (5.81)	30	K, R	5313
0.97	2.96	24.6	75.2	2	303	151	80.5	40.3				47.0	10.7	2.45 (15.81)	30	K, R	5314
0.98	1.48	24.9	37.6	6	80.1	39.7	24.1	11.6				12.4		1.13 (7.29)	26	K, R	5315
0.98	2.75	24.9	69.9	1	206	103	61.7	29.7				31.9	7.3	2.07 (13.35)	26	K, R	5316
1.00	1.00	25.4	25.4	1	157	78.4	44.0					24.3	5.6	0.82 (5.29)	30	K, R	5163
1.00	1.00	25.4	25.4	1	52.1	26.1	15.7	7.6				8.1		0.65 (4.19)	26	K, R	5318
1.00	1.00	25.4	25.4	21	70.0	36.6	19.9	9.2	6.8	5.2		10.9		0.88 (5.68)	30	K, R	5583
1.00	1.25	25.4	31.8	21	65.0	33.9	18.5	8.5	6.3	4.7		10.1		1.12 (7.23)	30	K, R	5584
1.00	1.50	25.4	38.1	21	75.0	39.1	21.3	9.8	7.3	5.4		11.6		1.35 (8.71)	30	K, R	5585
1.00	1.75	25.4	44.5	21	100	52.2	28.4	13.1	9.7	7.3		15.5		1.59 (10.26)	30	K, R	5586
1.00	2.00	25.4	50.8	1	78.4	39.2	22.0					12.2		1.76 (11.35)	30	K, R	5164
1.00	2.00	25.4	50.8	1	14.6	7.3	4.5							1.04 (6.71)	24	K, R	5319
1.00	2.30	25.4	58.4	3	220	110	58.4	29.2				34.1	7.8	1.82 (11.74)	30	K, R	5320
1.00	2.50	25.4	63.5	1	146	72.1	43.1	20.7				22.6	5.1	1.89 (12.19)	26	K, R	5321
1.00	2.50	25.4	63.5	1	107	53.3	32.3	15.5				16.6		1.89 (12.19)	26	K, R	5322
1.00	3.00	25.4	76.2	1	52.3	26.1	14.6					8.1		2.70 (17.42)	30	K, R	5165
*Resistance tolerance is ±10% or ±0.5 , whichever is greater																	
Rubber (HR) models not available with NiFe element																	

Standard
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& Rubber



Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*							Effective area in ² (cm ²)	Lead AWG	Insu- lation	Model number
X	Y	X	Y		R(0°C) [May be used with Heaterstat] → NiFe Ni										
1.00	3.00	25.4	76.2	1 	23.9	10.7	6.6					1.84 (11.87)	24	K, R	5323
1.00	3.00	25.4	76.2	1 	58.0	26.6	16.1	7.7	5.3	3.7	9.0	2.30 (14.84)	26	K, R	5324
1.00	3.00	25.4	76.2	1 	36.4	17.9	10.8	5.2	3.6		5.6	2.30 (14.84)	26	K, R	5325
1.00	3.62	25.4	91.9	3 	61.1	30.6	18.5	8.9	6.1	4.2	9.5	2.97 (19.16)	26	K, R	5326
1.00	3.72	25.4	94.5	3 	445	223	118	59.2			69.0	3.15 (20.32)	30	K, R	5327
1.00	3.72	25.4	94.5	3 	389	195	118	56.7			60.3	3.06 (19.74)	26	K, R	5328
1.00	3.82	25.4	97.0	2 	160	80.1	48.5	23.3	15.9	11.2	24.8	3.29 (21.23)	26	K, R	5329
1.00	4.00	25.4	101.6	1 	83.3	42.7	25.2	12.1	8.3	5.8	12.9	3.33 (21.48)	26	K, R	5330
1.00	4.00	25.4	101.6	1 	30.8	13.9	8.6	4.2				2.64 (17.03)	24	K, R	5331
1.00	4.75	25.4	120.7	6 	302	151	91.6	44.1			46.8	4.29 (27.68)	24	K, R	5332
1.00	4.75	25.4	120.7	6 	266	133	80.5	38.7			41.2	4.05 (26.13)	26	K, R	5333
1.00	5.00	25.4	127.0	1 	529	264	148				82.0	4.41 (28.45)	30	K, R	5166
1.00	5.00	25.4	127.0	1 	38.1	17.2	10.7	5.1			5.9	4.34 (28.00)	24	K, R	5334
1.00	6.00	25.4	152.4	1 	45.3	20.8	12.9	5.8	4.1		7.0	4.24 (27.35)	24	K, R	5335
1.00	6.00	25.4	152.4	2 	162	80.9	48.9	23.5	16.1	11.3	25.1	5.13 (33.10)	26	K, R	5336
1.00	7.00	25.4	177.8	1 	52.1	24.1	14.9	6.8	4.7	3.5	8.1	5.04 (32.52)	24	K, R	5337
1.00	7.00	25.4	177.8	1 	86.1	43.1	26.1	12.3	8.5	6.1	13.3	6.19 (39.94)	26	K, R	5338
1.00	7.05	25.4	179.1	1 	111	55.7	33.7	16.2	11.1	7.7	17.2	6.12 (39.48)	26	K, R	5339
1.00	8.00	25.4	203.2	1 	58.9	27.5	17.1	7.7	5.4	3.9	9.1	5.84 (37.68)	24	K, R	5340
1.00	9.00	25.4	228.6	1 	66.1	30.4	18.8	8.7	5.9	4.4	10.2	6.64 (42.84)	24	K, R	5341
1.00	10.00	25.4	254.0	1 	264	132	74.1				40.9	8.96 (57.81)	30	K, R	5167
1.00	10.00	25.4	254.0	1 	73.4	34.1	21.1	9.4	6.6	4.9	11.4	7.44 (48.00)	24	K, R	5342
1.00	11.00	25.4	279.4	1 	79.8	37.2	23.1	10.3	7.2	5.4	12.4	8.24 (53.16)	24	K, R	5343
1.00	12.00	25.4	304.8	1 	86.5	40.3	24.9	11.1	7.7	5.8	13.4	9.04 (58.32)	24	K, R	5344
1.00	12.00	25.4	304.8	3 	163	82.1	49.6	23.8	16.3	11.4	25.3	10.53 (67.94)	24	K, R	5345
1.00	12.00	25.4	304.8	1 	1063	531	321	154			165	10.53 (67.94)	26	K, R	5346
1.00	12.10	25.4	307.3	1 	155	76.6	46.3	22.3	15.2	10.6	24.0	10.62 (68.52)	26	K, R	5347
1.00	15.00	25.4	381.0	1 	176	88.2	49.4				27.3	13.51 (87.16)	30	K, R	5168
1.00	19.00	25.4	482.6	1 	121	60.8	36.8	17.7	12.1	8.5		13.88 (89.55)	24	R	5348
1.00	22.06	25.4	560.3	1 	93.1	46.5	24.8	12.4	8.3	6.2		18.90 (121.94)	24	R	5349
1.02	10.00	25.9	254.0	5 	946	473	252	126			147	8.60 (55.48)	24	K, R	5350
1.04	2.76	26.4	70.1	5 	262	131	69.6	34.8			40.6	2.04 (13.16)	26	K, R	5351
1.04	4.35	26.4	110.5	1 	87.6	43.8	23.3	11.7	7.8	5.8	13.6	4.06 (26.19)	26	K, R	5352
1.04	7.76	26.4	197.1	8 	1321	660	352	176			205	6.80 (43.87)	30	K	5353
1.05	4.04	26.7	102.6	8 	243	122	64.8	32.4			37.7	3.65 (23.55)	30	K, R	5354
1.05	4.65	26.7	118.1	8 	152	74.1	44.4	21.3			23.6	4.05 (26.13)	26	K, R	5355
1.05	5.60	26.7	142.2	7 	440	220	133	64.1			68.2	5.04 (32.52)	26	K, R	5356
1.05	9.70	26.7	246.4	1 	276	138	73.4	36.7	24.5	18.3	42.8	8.80 (56.77)	24	K, R	5357
1.07	4.05	27.2	102.9	8 	103	51.3	27.3	13.7	9.1	6.8	16.0	3.67 (23.68)	30	K, R	5358
1.10	4.00	27.9	101.6	1 	600	300	181	87.3			93.0	3.75 (24.19)	30	K	5359
1.10	4.00	27.9	101.6	1 	394	197	119	57.4			61.1	3.70 (23.87)	30	K, R	5360
1.10	18.50	27.9	469.9	3 	350	175	106	50.1	34.8	24.3		17.64 (113.81)	24	R	5361
1.13	3.51	28.7	89.2	8 	107	53.4	28.4	14.2	9.5	6.6	16.6	3.43 (22.13)	30	K, R	5362
1.17	1.91	29.7	48.5	2 	125	62.5	37.8	18.2			19.4	1.79 (11.55)	26	K, R	5364
1.20	2.76	30.5	70.1	1 	275	136	82.7	39.8			42.6	2.86 (18.45)	30	K, R	5366
1.20	3.40	30.5	86.4	7 	92.0	45.7	26.6	13.3	9.1	6.4	14.3	3.41 (22.00)	26	K, R	5367
*Resistance tolerance is ±10% or ±0.5 , whichever is greater															
Rubber (HR) models not available with NiFe element															

Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*								Effective area in ² (cm ²)	Lead AWG	Insu- lation	Model number
X	Y	X	Y		R(0°C) [May be used with Heaterstat] → NiFe Ni											
1.22	2.24	31.0	56.9	8	111	55.5	29.5	14.8	9.8	7.4	17.2		2.33 (15.03)	30	K, R	5368
1.23	2.48	31.2	63.0	2	101	50.8	27.1	13.5	9.4	6.7	15.7		2.60 (16.77)	30	K, R	5369
1.24	1.80	31.5	45.7	2	298	148	90.1	43.3			46.2	10.6	1.90 (12.26)	30	K	5370
1.25	1.25	31.8	31.8	21	100	52.2	28.4	13.1	9.7	7.3	15.5		1.42 (9.16)	30	K, R	5587
1.25	1.50	31.8	38.1	21	125	65.3	35.5	16.4	12.2	9.2	19.4		1.71 (11.03)	30	K, R	5588
1.25	1.75	31.8	44.5	21	150	78.4	42.6	19.7	14.6	11.0	23.3	5.3	2.01 (12.97)	30	K, R	5589
1.25	6.30	31.8	160.0	1	136	68.2	41.3	19.8	13.6	9.5	21.1		6.84 (44.13)	24	K, R	5371
1.25	8.80	31.8	223.5	1	51.9	25.9	15.7	7.5	5.1	3.6	8.0		9.86 (63.61)	24	K, R	5372
1.25	15.00	31.8	381.0	1	219	109	66.5	32.1	21.9	15.3	33.9	7.6	15.79 (101.87)	24	K, R	5373
1.35	5.60	34.3	142.2	3	876	438	265	127			136	31.1	6.57 (42.39)	30	K	5374
1.37	5.80	34.8	147.3	1	250	125	75.8	36.5	24.9	17.5	38.8	8.7	7.15 (46.13)	26	K, R	5375
1.38	2.75	35.1	69.9	2	305	152	92.1	44.2			47.3	10.8	3.21 (20.71)	26	K, R	5376
1.40	2.34	35.6	59.4	1	197	98.7	52.5	26.3	17.5	13.1	30.5	6.9	2.90 (18.71)	30	K, R	5377
1.40	6.30	35.6	160.0	8	771	386	205	103			120	27.2	8.08 (52.13)	30	K, R	5378
1.45	2.40	36.8	61.0	8	106	53.4	32.3	15.5	10.6	7.4	16.4		2.90 (18.71)	26	K, R	5379
1.45	8.15	36.8	207.0	8	474	237	126	63.1	42.1	31.5	73.5	16.6	10.52 (67.87)	24	K, R	5380
1.48	10.10	37.6	256.5	1	126	62.9	33.5	16.7	11.2	8.4	19.5		13.40 (86.45)	24	K, R	5381
1.50	1.50	38.1	38.1	21	150	78.3	42.6	19.7	14.6	11.0	23.3	5.3	2.07 (13.35)	30	K, R	5590
1.50	1.75	38.1	44.5	21	175	91.4	49.7	23.0	17.1	12.9	27.1	6.2	2.43 (15.68)	30	K, R	5591
1.50	2.00	38.1	50.8	1	14.8	7.2	4.5						1.84 (11.87)	24	K, R	5382
1.50	3.00	38.1	76.2	1	21.8	10.7	6.6						3.14 (20.26)	24	K, R	5383
1.50	4.00	38.1	101.6	1	29.1	14.4	8.8	4.3					4.44 (28.65)	24	K, R	5384
1.50	4.10	38.1	104.1	2	103	51.7	27.5	13.7	9.2	6.9	16.0		4.00 (25.81)	30	K, R	5385
1.50	5.00	38.1	127.0	1	36.2	17.9	10.9	5.1	3.4		5.6		5.74 (37.03)	24	K, R	5386
1.50	6.00	38.1	152.4	1	43.3	21.7	13.2	6.2	4.2		6.7		7.04 (45.42)	24	K, R	5387
1.50	6.42	38.1	163.1	8	140	70.2	37.4	18.7			21.7		7.70 (49.68)	30	K, R	5388
1.50	6.42	38.1	163.1	8	1317	659	350	175			204	46.8	8.50 (54.84)	30	K, R	5389
1.50	7.00	38.1	177.8	1	50.1	25.1	15.2	7.2	4.7	3.5	7.8		8.34 (53.81)	24	K, R	5390
1.50	8.00	38.1	203.2	1	57.1	28.7	17.5	8.1	5.3	3.9	8.9		9.64 (62.19)	24	K, R	5391
1.50	8.05	38.1	204.5	2	304	152	92.1	44.3	30.3	21.2	47.1	10.6	10.80 (69.68)	26	K, R	5392
1.50	9.00	38.1	228.6	1	64.1	32.2	19.6	8.9	6.1	4.4	9.9		10.94 (70.58)	24	K, R	5393
1.50	10.00	38.1	254.0	1	71.4	35.7	21.8	10.1	6.7	4.9	11.1		12.24 (78.97)	24	K, R	5394
1.50	11.00	38.1	279.4	1	78.5	39.1	23.9	10.9	7.3	5.3	12.2		13.54 (87.35)	24	K, R	5395
1.50	11.00	38.1	279.4	1	391	180	118	57.1	38.9	27.3	60.6	13.6	14.77 (95.29)	24	K, R	5396
1.50	12.00	38.1	304.8	1	85.6	42.8	25.8	11.8	7.8	5.8	13.3		14.84 (95.74)	24	K, R	5397
1.53	3.05	38.9	77.5	8	176	88.4	53.4	25.7	17.6	12.3	27.3	6.2	3.89 (25.10)	26	K, R	5398
1.55	3.05	39.4	77.5	1	130	65.3	39.5	19.1	13.1	9.1	20.2		4.06 (26.19)	26	K, R	5399
1.61	2.15	40.9	54.6	1	205	102	54.5	27.3			31.8	7.2	3.00 (19.35)	30	K, R	5400
1.62	2.77	41.1	70.4	1	166	81.1	48.6	23.3	15.9	11.2	25.7	5.8	3.95 (25.48)	30	K, R	5401
1.65	3.00	41.9	76.2	2	128	64.1	38.8	18.3	12.8	8.9	19.8		4.50 (29.03)	30	K, R	5402
1.65	5.00	41.9	127.0	1	162	81.1	48.9	23.5	16.1	11.3	25.1	5.6	7.44 (48.00)	26	K, R	5403
1.70	5.10	43.2	129.5	1	580	290	154	77.2			89.9	20.4	7.77 (50.13)	24	K, R	5404
1.75	1.75	44.5	44.5	21	200	104	56.8	26.3	19.5	14.7	31.0	7.0	2.86 (18.45)	30	K, R	5592
1.75	2.73	44.5	69.3	2	159	79.5	48.1	23.1	15.8	11.1	24.6	5.6	3.77 (24.32)	26	K, R	5405
1.76	4.79	44.7	121.7	1	330	165	87.9	43.9	29.3	22.1	51.2	11.6	7.56 (48.77)	30	K, R	5406
1.78	4.30	45.2	109.2	1	737	369	196	98.1			114	26.1	6.66 (42.97)	30	K, R	5407
*Resistance tolerance is ±10% or ±0.5 , whichever is greater																
Rubber (HR) models not available with NiFe element																

Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*							Effective area		Lead	Insu- lation	Model number
X	Y	X	Y		R(0°C) [May be used with Heaterstat] →							in ² (cm ²)				
1.78	5.28	45.2	134.1	1 	588	294	156	78.2			91.1	20.7	8.34 (53.81)	30	K, R	5408
1.80	1.80	45.7	45.7	3 	251	126	66.8	33.4			38.9	8.9	2.70 (17.42)	30	K, R	5409
1.88	5.75	47.8	146.1	1 	288	144	86.9	41.7	28.6	20.1	44.6	10.1	9.68 (62.45)	24	K, R	5410
1.90	3.16	48.3	80.3	6 	236	118	62.8	31.4	20.9	15.7	36.6	8.3	5.48 (35.35)	26	K, R	5411
1.92	4.45	48.8	113.0	8 	348	174	92.5	46.3	30.8	23.1	53.9	12.2	7.69 (49.61)	26	K, R	5412
1.94	5.29	49.3	134.4	6 	508	254	135	67.6	45.1	31.6	78.7	17.8	9.38 (60.52)	30	K, R	5413
1.96	3.77	49.8	95.8	1 	749	374	199	99.6			116	26.5	6.83 (44.06)	30	K, R	5414
1.97	2.16	50.0	54.9	3 	112	56.3	34.1	16.4	11.2	7.8	17.4		3.79 (24.45)	26	K, R	5415
1.98	3.82	50.3	97.0	1 	752	376	200	98.9			117	26.6	6.75 (43.55)	30	K, R	5416
2.00	2.00	50.8	50.8	1 	661	331	185				102	23.6	3.59 (23.16)	30	K, R	5169
2.00	2.00	50.8	50.8	1 	36.1	17.8	10.9	5.3			5.6		2.82 (18.19)	24	K, R	5417
2.00	2.60	50.8	66.0	7 	344	172	104	51.8			53.3	12.1	4.75 (30.65)	26	K, R	5418
2.00	3.00	50.8	76.2	1 	441	220	123				68.4	15.5	5.50 (35.48)	30	K, R	5170
2.00	3.00	50.8	76.2	1 	53.3	25.9	15.9	7.5	5.4	3.6	8.3		4.62 (29.81)	24	K, R	5419
2.00	3.00	50.8	76.2	7 	33.3	15.6	9.8	4.5			5.2		4.54 (29.29)	24	K, R	5463
2.00	3.25	50.8	82.6	6 	86.6	43.3	26.2	12.6	8.6	6.1	13.4		5.60 (36.13)	24	K, R	5420
2.00	3.25	50.8	82.6	6 	75.6	37.8	22.8	10.9	7.5	5.3	11.7		5.50 (35.48)	26	K, R	5421
2.00	4.00	50.8	101.6	1 	331	165	92.7				51.3	11.6	7.41 (47.81)	30	K, R	5171
2.00	4.00	50.8	101.6	1 	70.1	34.6	21.2	10.4	6.9	4.8	10.9		6.73 (43.42)	24	K, R	5422
2.00	4.00	50.8	101.6	7 	23.7	11.6	7.3						6.34 (40.90)	24	K, R	5487
2.00	5.00	50.8	127.0	1 	88.1	43.2	26.2	13.1	8.6	5.9	13.7		8.22 (53.03)	24	K, R	5423
2.00	5.00	50.8	127.0	7 	23.9	13.1	8.8	4.3					8.14 (52.52)	24	K, R	5506
2.00	6.00	50.8	152.4	1 	220	110	61.6				34.1	7.7	11.23 (72.45)	30	K, R	5172
2.00	6.00	50.8	152.4	1 	104	51.8	31.9	15.1	9.8	7.1	16.1		10.02 (64.65)	24	K, R	5424
2.00	6.05	50.8	153.7	1 	99.7	49.9	30.2	14.5	9.9	6.9	15.5		11.00 (70.97)	24	K, R	5425
2.00	7.00	50.8	177.8	1 	120	60.4	36.5	17.5	11.2	8.3	18.6		11.82 (76.26)	24	K, R	5426
2.00	8.00	50.8	203.2	1 	137	68.9	41.9	20.1	12.9	9.4	21.2		13.62 (87.87)	24	K, R	5427
2.00	9.00	50.8	228.6	1 	154	77.7	46.8	21.6	14.3	10.6	23.9	5.3	15.42 (99.48)	24	K, R	5428
2.00	10.00	50.8	254.0	1 	171	85.8	52.1	23.8	16.1	11.6	26.5	5.9	17.22 (111.10)	24	K, R	5429
2.00	10.00	50.8	254.0	6 	320	160	96.8	46.5	31.8	23.3	49.6	11.1	18.20 (117.42)	26	K, R	5430
2.00	11.00	50.8	279.4	1 	188	94.1	57.1	26.4	17.7	13.1	29.1	6.5	19.02 (122.71)	24	K, R	5431
2.00	12.00	50.8	304.8	1 	220	110	61.6	28.6			34.1	7.6	22.69 (146.39)	24	K, R	5173
2.00	12.00	50.8	304.8	1 	206	102	61.9	28.5	18.8	14.1	31.9	7.2	20.82 (134.32)	24	K, R	5432
2.00	12.00	50.8	304.8	1 	442	221	134	63.5	44.1	30.8	68.5	15.4	21.80 (140.64)	24	K, R	5433
2.05	2.70	52.1	68.6	8 	725	362	219	97.3			112	25.7	5.19 (33.48)	30	K	5434
2.15	2.55	54.6	64.8	2 	123	62.1	37.3	17.9	12.3	8.6	19.1		5.05 (32.58)	26	K, R	5435
2.17	3.80	55.1	96.5	1 	681	340	181	90.6			106	24.0	7.20 (46.45)	30	K, R	5436
2.25	4.00	57.2	101.6	1 	284	142	86.1	41.4	28.3	19.8	44.0	9.9	7.70 (49.68)	26	K, R	5437
2.25	4.50	57.2	114.3	6 	140	70.3	42.5	20.4	14.1	9.8	21.7		8.82 (56.90)	24	K, R	5438
2.25	5.25	57.2	133.4	6 	142	70.9	42.9	20.6	14.2	9.9	22.0		10.53 (67.94)	24	K, R	5439
2.25	5.25	57.2	133.4	6 	160	80.1	48.6	23.4	15.9	11.2	24.8	5.6	10.40 (67.10)	24	K, R	5440
2.25	6.28	57.2	159.5	8 	364	182	110	53.1	36.3	25.4	56.4	12.7	12.52 (80.77)	26	K, R	5441
2.30	9.07	58.4	230.4	6 	1016	508	270	135	90.1	67.6	157	35.6	19.70 (127.10)	24	K, R	5443
2.35	4.10	59.7	104.1	7 	168	84.1	50.9	24.4	16.7	11.7	26.0	5.9	8.58 (55.35)	24	K, R	5444
2.45	6.07	62.2	154.2	8 	861	431	229	115			133	30.3	14.00 (90.32)	24	K, R	5445
2.50	3.00	63.5	76.2	1 	421	210	127	61.2			65.3	14.8	6.40 (41.29)	26	K, R	5446
*Resistance tolerance is ±10% or ±0.5 , whichever is greater																
Rubber (HR) models not available with NiFe element																

Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*								Effective area in ² (cm ²)	Lead AWG	Insu- lation	Model number
X	Y	X	Y		R(0°C) [May be used with Heaterstat] →						NiFe	Ni				
2.50	3.00	63.5	76.2	1	290	145	87.9	42.2	28.9	20.2	45.0	10.2	6.90 (44.52)	26	K, R	5447
2.50	4.00	63.5	101.6	1	576	288	174	83.8			89.3	20.2	8.90 (57.42)	30	K, R	5448
2.50	4.04	63.5	102.6	1	703	351	187	93.5			109	24.8	9.35 (60.32)	24	K, R	5449
2.50	5.00	63.5	127.0	1	231	115	69.9	33.6	22.9	16.1	35.8	8.0	11.30 (72.90)	26	K, R	5450
2.50	6.00	63.5	152.4	3	206	103	62.3	30.1	20.5	14.3	31.9	7.2	13.60 (87.74)	26	K, R	5451
2.50	8.00	63.5	203.2	1	315	157	95.3	45.8	31.3	21.9	48.8	11.0	18.70 (120.64)	26	K, R	5452
2.50	11.30	63.5	287.0	1	2341	1170	623	311			363	82.6	25.70 (165.81)	24	K, R	5453
2.50	11.42	63.5	290.1	1	2089	1045	556	278			324	73.6	26.40 (170.32)	24	K, R	5454
2.53	3.05	64.3	77.5	6	93.7	47.1	28.3	13.6	9.3	6.5	14.5		7.17 (46.26)	26	K, R	5455
2.55	3.05	64.8	77.5	8	165	82.9	50.1	24.1	16.4	11.5	25.6	5.8	7.00 (45.16)	30	K, R	5456
2.68	3.44	68.1	87.4	2	72.6	36.3	21.9	10.6	7.2	5.1	11.3		7.64 (49.29)	26	K, R	5457
2.75	12.00	69.9	304.8	1	243	121	73.6	35.4	24.2	16.9	37.7	8.4	30.90 (199.35)	24	K, R	5458
2.81	2.94	71.4	74.7	2	253	126	76.7	36.9	25.2	17.7	39.2	8.8	7.45 (48.06)	26	K, R	5459
2.87	16.41	72.9	416.8	6	1648	824	438	219	146	110		57.6	45.30 (292.26)	24	R	5460
2.92	6.82	74.2	173.2	3	713	357	190	94.8	63.2	47.4	111	24.9	18.50 (119.35)	24	K, R	5461
2.92	6.82	74.2	173.2	1	1566	784	474	228			243	55.2	18.50 (119.35)	26	K, R	5462
3.00	3.00	76.2	76.2	1	294	147	82.3				45.6	10.3	8.41 (54.26)	30	K, R	5174
3.00	3.00	76.2	76.2	1	46.5	23.3	14.6	6.4	4.9		7.2		7.34 (47.35)	24	K, R	5464
3.00	3.10	76.2	78.7	1	44.4	22.2	13.4	6.5	4.4		6.9		7.98 (51.48)	24	K, R	5465
3.00	4.00	76.2	101.6	1	62.1	30.9	19.4	8.6	5.7	4.1	9.6		10.14 (65.42)	24	K, R	5466
3.00	4.00	76.2	101.6	7	35.1	17.1	10.8	4.6			5.4		10.14 (65.42)	24	K, R	5488
3.00	5.00	76.2	127.0	1	176	88.2	49.4				27.3	6.1	14.23 (91.81)	30	K, R	5175
3.00	5.00	76.2	127.0	1	77.7	38.7	24.2	10.3	7.1	5.1	12.0		12.94 (83.48)	24	K, R	5467
3.00	5.00	76.2	127.0	7	36.1	19.5	12.6	5.9	3.7		5.6		12.94 (83.48)	24	K, R	5507
3.00	6.00	76.2	152.4	1	93.8	46.1	29.1	12.9	8.6	6.1	14.5		15.74 (101.55)	24	K, R	5468
3.00	7.00	76.2	177.8	1	109	53.4	33.9	14.3	10.1	7.1	16.9		18.54 (119.61)	24	K, R	5469
3.00	8.00	76.2	203.2	1	125	60.9	38.8	16.1	11.4	8.1	19.4		21.34 (137.68)	24	K, R	5470
3.00	9.00	76.2	228.6	1	141	68.3	43.5	18.9	12.9	9.1	21.9		24.14 (155.74)	24	K, R	5471
3.00	9.00	76.2	228.6	1	407	203	123	59.2	40.5	28.3	63.1	14.2	25.50 (164.52)	26	K, R	5472
3.00	10.00	76.2	254.0	1		340	190	88.2	67.9	53.8	103	23.1	28.75 (185.48)	24	K, R	5176
3.00	10.00	76.2	254.0	1	156	75.8	48.3	20.3	14.9	10.2	24.2	5.4	26.94 (173.81)	24	K, R	5473
3.00	11.00	76.2	279.4	1	172	83.6	53.1	22.3	15.7	11.1	26.7	6.0	29.74 (191.87)	24	K, R	5474
3.00	12.00	76.2	304.8	1	188	91.1	57.7	23.9	16.7	12.1	29.1	6.5	32.54 (209.94)	24	K, R	5475
3.00	15.00	76.2	381.0	1		226	126	58.8	45.3	35.9	68.2	15.3	43.30 (279.35)	24	K, R	5177
3.03	3.03	77.0	77.0	3	1317	658	350	175			204	46.8	8.34 (53.81)	30	K	5476
3.10	4.10	78.7	104.1	1	306	153	92.7	43.8	18.1	12.7	47.4	10.7	11.40 (73.55)	26	K, R	5477
3.10	6.10	78.7	154.9	1	88.6	44.4	26.9	12.9	8.8	6.2	13.7		16.60 (107.10)	24	K, R	5478
3.10	7.10	78.7	180.3	3	104	52.3	31.6	15.2	10.4	7.3	16.1		19.80 (127.74)	24	K, R	5479
3.10	9.10	78.7	231.1	1	1500	750	454	218			233	52.7	25.60 (165.16)	26	K, R	5480
3.10	12.10	78.7	307.3	1	445	222	135	63.9	44.3	31.1	69.0	15.5	33.90 (218.71)	24	K, R	5481
3.25	3.25	82.6	82.6	7	172	86.1	52.1	25.1	17.1	12.1	26.7	6.0	9.80 (63.23)	26	K, R	5482
3.50	7.35	88.9	186.7	1	252	126	76.3	36.7	25.1	17.6	39.1	8.8	23.30 (150.32)	24	K, R	5483
3.63	16.27	92.2	413.3	1	795	398	212	106	70.5	52.9		27.7	56.00 (361.29)	24	R	5484
3.75	4.75	95.3	120.7	6	72.5	36.3	21.9	10.5	7.2	5.1	11.2		15.60 (100.64)	26	K, R	5485
3.80	8.60	96.5	218.4	1	243	121	73.6	35.4	24.2	16.9	37.7	8.4	29.80 (192.26)	24	K, R	5486
4.00	4.00	101.6	101.6	1	330	165	92.4	42.9			51.2	11.5	15.20 (98.06)	30	K, R	5178
*Resistance tolerance is ±10% or ±0.5 , whichever is greater																
Rubber (HR) models not available with NiFe element																

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Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*							Effective area	Lead	Insu-	Model
X	Y	X	Y		R(0°C) [May be used with Heaterstat] → NiFe Ni							in ² (cm ²)	AWG	lation	number
4.00	4.00	101.6	101.6	1 ■■■	46.5	23.3	14.3	6.1	4.9		7.2	13.94 (89.94)	24	K, R	5489
4.00	5.00	101.6	127.0	1 ■■■	57.9	27.7	17.7	7.6	5.5	3.8	9.0	17.74 (114.45)	24	K, R	5490
4.00	5.00	101.6	127.0	7 ■■■	48.5	25.9	16.8	7.3	5.1	3.5	7.5	17.74 (114.45)	24	K, R	5508
4.00	6.00	101.6	152.4	1 ■■■	69.3	33.2	21.3	9.4	6.4	4.6	10.7	21.54 (138.97)	24	K, R	5491
4.00	7.00	101.6	177.8	1 ■■■	80.7	38.6	24.7	10.9	7.2	5.3	12.5	25.34 (163.48)	24	K, R	5492
4.00	8.00	101.6	203.2	1 ■■■		318	178	82.7	63.7	50.4	96.0	30.84 (198.97)	24	K, R	5179
4.00	8.00	101.6	203.2	1 ■■■	92.3	43.9	28.3	12.3	8.4	6.1	14.3	29.14 (188.00)	24	K, R	5493
4.00	8.00	101.6	203.2	3 ■■■	378	189	114	55.1	37.6	26.3	58.6	30.30 (195.48)	24	K, R	5494
4.00	9.00	101.6	228.6	1 ■■■	103	49.5	31.7	13.4	9.3	6.8	16.0	32.94 (212.52)	24	K, R	5495
4.00	10.00	101.6	254.0	1 ■■■	114	55.1	35.3	14.8	10.8	7.6	17.7	36.74 (237.03)	24	K, R	5496
4.00	11.00	101.6	279.4	1 ■■■	126	60.6	38.8	16.2	11.7	8.3	19.5	40.54 (261.55)	24	K, R	5497
4.00	12.00	101.6	304.8	1 ■■■		212	118	55.1	42.4	33.6	64.0	46.48 (299.87)	24	K, R	5180
4.00	12.00	101.6	304.8	1 ■■■	137	66.1	42.1	17.6	12.2	9.1	21.2	44.34 (286.06)	24	K, R	5498
4.00	15.50	101.6	393.7	2 ■■■	445	223	135	64.8	44.3	31.1	69.0	58.70 (378.71)	24	K, R	5499
4.00	16.80	101.6	426.7	6 ■■■	720	360	218	105	71.6	50.1		63.00 (406.45)	24	R	5500
4.00	20.00	101.6	508.0	1 ■■■	851	426	257	120	84.6	59.3		74.50 (480.64)	24	R	5501
4.05	8.05	102.9	204.5	1 ■■■	617	312	186	89.9	61.4	43.1	95.6	30.40 (196.13)	26	K, R	5502
4.05	9.05	102.9	229.9	1 ■■■	1400	700	420	210	139	97.1	217	34.10 (220.00)	26	K, R	5503
4.05	11.90	102.9	302.3	8 ■■■	290	145	87.8	42.2	28.9	20.2	45.0	45.00 (290.32)	24	K, R	5504
4.50	19.40	114.3	492.8	1 ■■■	30.1	15.1	9.1	4.3				81.30 (524.52)	24	R	5505
5.00	5.00	127.0	127.0	1 ■■■		407	227	106	81.5	64.5	123	24.02 (154.97)	24	K, R	5181
5.00	5.00	127.0	127.0	1 ■■■	61.5	32.6	21.1	8.9	6.1	4.3	9.5	22.54 (145.42)	24	K, R	5509
5.00	6.00	127.0	152.4	1 ■■■	72.4	38.8	24.9	10.6	7.3	5.1	11.2	27.34 (176.39)	24	K, R	5510
5.00	7.00	127.0	177.8	1 ■■■	84.3	45.1	29.2	12.3	8.9	5.9	13.1	32.14 (207.35)	24	K, R	5511
5.00	8.00	127.0	203.2	1 ■■■	96.2	51.4	32.9	14.1	9.7	6.8	14.9	36.94 (238.32)	24	K, R	5512
5.00	9.00	127.0	228.6	1 ■■■	108	57.8	36.9	15.6	10.7	7.6	16.7	41.74 (269.29)	24	K, R	5513
5.00	10.00	127.0	254.0	1 ■■■				85.7	66.1	52.9	105	48.57 (313.35)	24	K, R	5182
5.00	10.00	127.0	254.0	1 ■■■	119	64.2	41.5	18.6	11.9	8.5	18.4	46.54 (300.26)	24	K, R	5514
5.00	11.00	127.0	279.4	1 ■■■	131	70.5	44.9	19.2	12.8	9.4	20.3	51.34 (331.23)	24	K, R	5515
5.00	12.00	127.0	304.8	1 ■■■	142	76.7	48.7	20.4	13.7	10.2	22.0	56.14 (362.19)	24	K, R	5516
5.00	12.10	127.0	307.3	1 ■■■	377	190	114	54.8	37.5	26.3	58.4	56.40 (363.87)	24	K, R	5517
5.00	15.00	127.0	381.0	1 ■■■				57.2	44.1	35.3	69.8	73.12 (471.74)	24	K, R	5183
5.00	15.97	127.0	405.6	8 ■■■	271	136	72.2	36.1	24.1	18.1	42.0	76.00 (490.32)	24	K, R	5518
5.05	5.05	128.3	128.3	3 ■■■	227	113	68.6	32.3	22.6	15.8	35.2	23.60 (152.26)	24	K, R	5519
5.05	5.05	128.3	128.3	3 ■■■	262	131	79.4	38.2	26.1	18.3	40.6	23.60 (152.26)	24	K, R	5520
5.05	8.05	128.3	204.5	1 ■■■	953	476	288	138	94.8	66.4	148	38.30 (247.10)	26	K, R	5521
5.05	10.10	128.3	256.5	1 ■■■	660	330	205	98.2	65.7	46.1	102	48.00 (309.68)	26	K, R	5522
5.05	10.50	128.3	266.7	6 ■■■	784	392	237	114	78.1	55.2	122	50.00 (322.58)	26	K, R	5523
5.10	12.10	129.5	307.3	1 ■■■	523	261	158	76.2	52.1	36.4	81.1	58.00 (374.19)	26	K, R	5524
5.50	5.50	139.7	139.7	1 ■■■	50.0	25.7	14.2	6.4	4.6	3.4	7.8	29.17 (188.19)	26	K, R	5596
5.50	7.00	139.7	177.8	1 ■■■	384	192	116	55.8	38.1	26.7	59.5	35.80 (230.97)	24	K, R	5525
6.00	6.00	152.4	152.4	1 ■■■	174	87.0	48.7	22.6	17.4	12.2	27.0	34.38 (221.81)	24	K, R	5560
6.06	8.06	153.9	204.7	6 ■■■	362	182	109	52.6	36.1	25.2	56.1	45.70 (294.84)	24	K, R	5526
6.06	8.06	153.9	204.7	2 ■■■	630	315	190	91.5	62.6	43.8	97.7	46.10 (297.42)	26	K, R	5527
6.90	9.00	175.3	228.6	2 ■■■	88.1	44.1	26.1	12.8	8.8	6.2	13.7	58.30 (376.13)	24	K, R	5528
7.50	11.55	190.5	293.4	8 ■■■	2890	1446	874	420			448	74.00 (477.42)	26	K, R	5529
*Resistance tolerance is ±10% or ±0.5 , whichever is greater															
Rubber (HR) models not available with NiFe element															

Standard Polyimide and Rubber Heaters

Size (in)		Size (mm)		Type	Resistance options- ohms*								Effective area	Lead	Insu-	Model
X	Y	X	Y		R(0°C) [May be used with Heaterstat] → NiFe Ni								in ² (cm ²)	AWG	lation	number
7.90	18.30	200.7	464.8	8 	241	120	73.1	35.1	24.1	16.8	8.3	140.00 (903.22)	24	R		5530
8.80	11.20	223.5	284.5	8 	220	110	66.5	31.9	21.8	15.3	34.1	7.6	94.40 (609.03)	24	K, R	5531
9.00	12.00	228.6	304.8	3 	545	273	165	79.3	54.2	38.1	84.5	18.9	103.00 (664.51)	24	K, R	5532
9.00	18.00	228.6	457.2	6 	184	92.1	55.6	26.7	18.3	12.8	6.4	156.00 (1006.45)	24	R		5533
10.00	10.00	254.0	254.0	1 				42.8	33.1	26.4	52.2	11.7	97.52 (629.16)	20	K, R	5184
10.00	15.00	254.0	381.0	1 				28.6	22.0	17.6	34.9	7.8	146.92 (947.87)	20	K, R	5185
10.00	18.00	254.0	457.2	1 	161	80.4	48.6	23.4	16.1	11.2	5.6	173.00 (1116.13)	24	R		5534
10.07	18.27	255.8	464.1	7 	327	163	98.9	47.5	32.5	22.7	11.3	177.00 (1141.93)	24	R		5535
10.70	11.00	271.8	279.4	6 	807	403	244	117	80.3	56.1	125	28.0	114.00 (735.48)	24	K, R	5536
11.00	15.00	279.4	381.0	1 	200	103	56.6	25.5	18.5	13.6	31.0	6.9	158.56 (1022.97)	20	K, R	5600
0.50	0.09	12.7	2.4	31 	25.0	12.8	7.1						0.13 (0.84)	30	K	5186
0.50		12.7		10 	26.1	13.1	7.8	3.8					0.15 (0.97)	30	K	5537
0.75	0.12	19.1	3.1	31 	39.2	20.6	11.2	5.2	3.9	3.0	6.1		0.35 (2.26)	26	K, R	5593
0.78		19.8		10 	32.2	16.1	9.7	4.7					0.32 (2.06)	30	K, R	5538
0.78		19.8		10 	70.1	35.2	21.1	10.2			10.9		0.32 (2.06)	30	K	5539
0.98	0.12	24.9	3.0	11 	37.2	18.6	11.3	5.4			5.8		0.65 (4.19)	24	K, R	5540
1.00	0.09	25.4	2.4	31 	157	80.5	44.4	19.9	14.4	10.5	24.3	5.6	0.68 (4.39)	26	K	5187
1.10	0.12	27.9	3.0	11 	61.1	30.5	18.5	8.9			9.5		0.66 (4.26)	24	K, R	5541
1.18		30.0		30 	288	144	80.6	37.4	28.8	20.2	44.6	10.4	0.90 (5.81)	30	K	5561
1.25	0.60	31.8	15.2	11 	84.4	42.2	25.5	12.3			13.1		0.59 (3.81)	26	K, R	5542
1.32		33.5		10 	38.0	19.0	10.6	4.9	3.8		5.9		1.19 (7.68)	30	K, R	5562
1.35	0.45	34.3	11.4	11 	156	78.1	47.2	22.7			24.2	5.6	0.96 (6.19)	30	K	5543
1.50	0.12	38.1	3.1	31 	75.0	39.0	21.3	9.8	7.2	5.4	11.6		1.60 (10.32)	26	K, R	5597
1.73		43.9		10 	227	114	68.7	33.1			35.2	8.0	2.00 (12.90)	30	K, R	5544
1.75	0.12	44.5	3.0	11 	61.1	30.5	18.5	8.9	6.1	4.2	9.5		2.19 (14.13)	24	K, R	5545
1.85	0.12	47.0	3.0	11 	61.2	30.6	18.5	8.9	6.1	4.2	9.5		2.44 (15.74)	26	K, R	5546
1.90		48.3		10 	156	78.4	47.4	22.8			24.2	5.5	2.48 (16.00)	24	K, R	5547
2.00	0.12	50.8	3.1	31 	100	51.9	28.4	13.0	9.6	7.1	15.5		2.93 (18.90)	26	K, R	5598
2.13	1.12	54.1	28.4	11 	180	90.1	54.6	26.3			27.9	6.3	2.16 (13.94)	26	K, R	5548
2.45		62.2		10 	530	265	160	77.1			82.2	18.8	4.16 (26.84)	26	K, R	5549
2.85		72.4		10 	200	100	56.0	26.0	20.0	14.0	31.0	7.0	5.98 (38.58)	30	K, R	5563
3.00	0.12	76.2	3.1	31 	378	194	107	48.0	34.7	25.4	58.6	13.3	6.61 (42.65)	26	K, R	5188
3.40		86.4		10 	198	99.0	55.4	25.7	19.8	13.9	30.7	6.9	8.34 (53.81)	24	K, R	5564
3.72	2.09	94.5	53.1	11 	317	158	95.9	46.1	31.6	22.1	49.1	11.1	6.76 (43.61)	26	K, R	5550
4.30	3.42	109.2	86.9	11 	405	206	125	60.1			62.8	14.3	3.91 (25.23)	26	K, R	5551
4.75	2.50	120.7	63.5	11 	54.5	27.3	14.5	7.2	4.8	3.6	8.4		11.48 (74.06)	24	K, R	5552
6.00	0.12	152.4	3.1	11 	150	77.4	42.5	19.2	14.0	10.3	23.3	5.2	27.02 (174.32)	26	K, R	5599
6.25	2.00	158.8	50.8	11 	610	305	185	88.8	60.7	42.5	94.6	21.3	25.66 (165.55)	24	K, R	5553
6.75	4.75	171.5	120.7	11 	251	125	76.1	36.6	25.1	17.5	38.9	8.7	15.79 (101.87)	26	K, R	5554
7.06		179.3		10 	120	60.1	31.9	16.1	10.6	7.4	18.6		37.19 (239.94)	24	K, R	5555
8.25	4.32	209.6	109.7	11 	670	335	202	97.4	67.1	47.4	104	23.3	36.13 (233.10)	24	K, R	5556
9.00	3.00	228.6	76.2	11 	710	355	215	101	70.6	49.4	110	24.7	52.46 (338.45)	24	K, R	5557
9.60	0.90	243.8	22.9	11 	72.7	36.3	21.9	10.6	7.2	5.1	11.3		67.65 (436.45)	24	K, R	5558
10.00	0.25	254.0	6.4	11 	667	334	202	96.7	67.1	47.7	103	23.2	74.78 (482.45)	24	K, R	5559
*Resistance tolerance is ±10% or ±0.5 , whichever is greater																
Rubber (HR) models not available with NiFe element																

Configure Minco heaters and order online at: www.minco.com/heater_config/

All standard polyimide and silicone rubber heater specifications subject to change

