Datec
INTEGRATED HEATING SOLUTIONS

HEATING TECHNOLOGY COMPARISON

Heater		Description	Typical max operating temperature	Typical max watt density	Typical Max Size	Temperature uniformity	Low profile	Heat transfer efficiency	Attachment Method
	Thickfilm heater on aluminum(Datec)	Heating elements printed directly on Aluminum to form an integrated heater	240 °C 464 °F	40 w/cm² 258 w/in²	41cmX33cm 16"X13"	EXCELLENT	YES	HIGH	Print directly on substrate
	Thickfilm heater on mica(Datec)	Heating elements printed directly on mica	250 °C 482 °F	10 w/cm² 65 w/in²	76cmX61cm 30"X24"	EXCELLENT	YES	MEDIUM	Mechanically bolt to the target to be heated
	Thickfilm heater on stainless steel	Heating elements printed directly on stainless steel substrate	550 °C 1022 °F	30 w/cm² 194 w/in²	31cmX61cm 12"X24"	GOOD	YES	MEDIUM	Mechanically bolt to the target to be heated
	Etched Foil polyimide heater	Metal foil patterned and etched to create a conductive element on a polyimide substrate	100 °C 212 °F	10 w/cm² 65 w/in²	51cmX51cm 20"X20"	GOOD	YES	MEDIUM	Attach to the target to be heated using an adhesive
	Wire wound Al foil heater	Resistive wire sandwiched between two thin Aluminum foil sheets to form a flexible heater	150 °C 302 °F	0.1 w/cm² 0.65 w/in²	91cmX178cm 36"X70"	AVERAGE	NO	MEDIUM	Attach to the target to be heated using an adhesive
	Wire wound Silicone Rubber heater	Resistive wire sandwiched between silicone rubber sheets to form a flexible heater	200 °C 392 °F	2 w/cm² 13 w/in²	91cmX178cm 36"X70"	AVERAGE	NO	MEDIUM	Attach to the target to be heated using an adhesive or vulcanization
	Tubular heater	Resistive wire inserted into a metal sheath to form a tubular heater	750 °C 1382 °F	6 w/cm² 39 w/in²	NA	POOR	NO	LOW	Clamp to the exterior of the target to be heated
	Cartridge heater	Resistive wire inserted into a metal sheath to form a cartridge heater	750 °C 1382 °F	60 w/cm² 387 w/in²	NA	POOR	NO	LOW	Insert into a hole in the target to be heated

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