

*CRES SF Miniature
In-Line Electric Heater*



The Leaders in Heat Transfer

COMPACT, RAPID HEATING OF LIQUIDS, STEAM AND GASES FOR ALL CLEAN, LABORATORY, BIO-MEDICAL, PHARMACEUTICAL, FUEL CELL AND FOOD PROCESSES

CRES SF Miniature In-Line Electric Heater



CRES Heaters

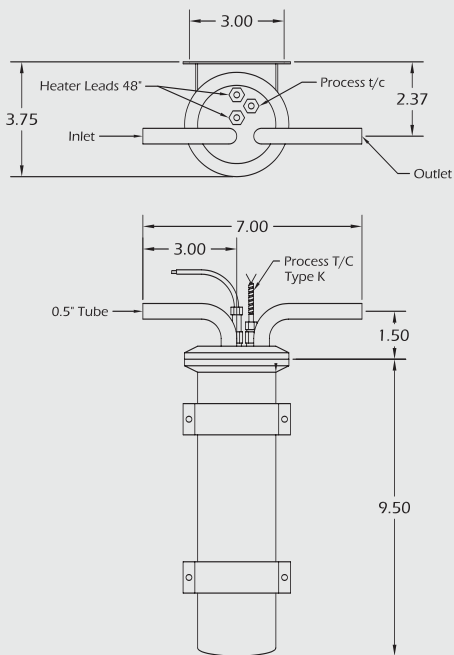
All CRES heaters provide the most compact and powerful solution in the heating of moving fluids, including liquids, gases and transition substances like saturated steam - super heated steam.

All CRES heating elements are electrically isolated so contaminants in the flow stream will not affect the life of the heater. This is critical while heating compressed airs and gases where compressor oils and debris enters the heated media stream.

The New Standard in Electric Heating

Infinity has developed and patented the most efficient and rapid response heater for all precision control processes with negligible pressure drops across it. Applications that demand precise temperature control and the fastest thermal response from an extremely tight footprint can now be attained with this new technology. The SF Compact In-Line heater provides the fastest thermal response and power within the tightest envelope, when compared with all other conventional and non conventional heaters on the market.

CRES SFC Miniature In-Line Electric Heater



Infinity Fluids High Purity Gas Heating

If you are using nitrogen or other ultra-pure gases to reduce drying time, you can increase your product throughput with heated N₂. Infinity Fluids Corporation created the first Ultra-Efficient In-Line Gas Heater for point-of-use to help improve production times.

Control your Process Temperature, not your heater temperature, with the new line of Infinity CRES-SF heaters, all of your hard to heat applications now have an answer.

- Reduces drying times
- Control your process temperature far more accurately
- Have an instant temperature control of your process

N₂/Gas and DI Solution Heating

Heating Nitrogen is a critical process, which requires a heater of minimal Watt Density (WSI), less than 25 watts/square inch is required to heat Nitrogen safely. All Infinity CRES-SFC Heaters provide the necessary WSI to safely heat all forms of gases. Units which use WSI higher than 25 run the risk of contaminating the flow stream with carbon precipitate or flaking, including dielectric failure which could introduce metal particulate and insulation materials into your flow stream.

Use the CRES-SFC to heat Nitrogen and other inert gases. Its compact design was invented and developed by Infinity and proved the safest, most compact design and ease of use and installation.

Custom units are available including different wattages, voltages, inlet and outlet fittings which include flow orientation. Contact an Infinity Sales Engineer if you have any heating requirement.

INFINITY'S ECONOMICAL HIGH PURITY AND ULTRA-PURE HEATING BREAK-THROUGH ALLOWS YOU TO MAINTAIN YOUR COMPETITIVE ADVANTAGE

APPLICATIONS

- Photoresist material
- Semiconductor processing equipment
- Supercritical fluid heating
- Solvent replacement
- Power generation systems
- Purification
- Parts cleaning
- Biomass extraction
- Bio reclamation

BENEFITS OF INFINITY CRES HEATERS

- Safely heat Nitrogen systems
- Most economical and highest quality
- Measure process temperature, not heater temperature
- Design the heater you need if our standard products do not fit perfectly

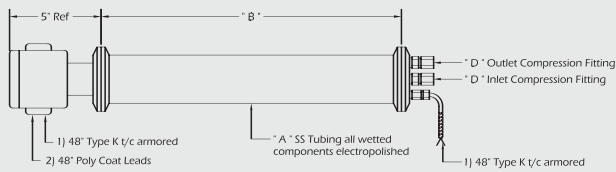
As your requirements for heating liquids and gases expand, Infinity Fluids Corporation continues to offer new and novel solutions. Infinity's innovations allow you to keep up with the rigors of the most stringent industry standards which will keep you ahead of your competition with a true design advantage. We have built our reputation around the new CRES technology, making Infinity the only manufacturer of the most efficient isolated electric heater in the world. Our products are used by the largest and smallest companies in the world, from Military to Food applications. Infinity has a solution for your most demanding projects.

Why settle for inefficient and cumbersome customary technologies? With Infinity's patented CRES heaters, we can produce a heater for your application, whether from one of our thousands of existing designs or create a new unit, custom to your application. If you do not see what you need, contact our sales team and we will design the perfect solution to your heating requirement.

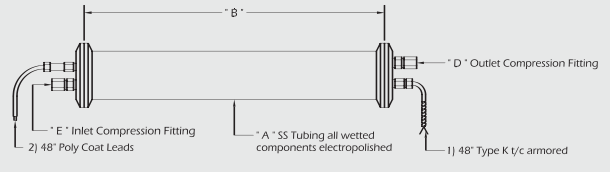
***INFINITY FLUIDS CORPORATION:
HIGH QUALITY, LESS EXPENSE***

CRES SFA MINIATURE IN-LINE ELECTRIC HEATER

CRES-SFA with NEMA (Explosion Proof Housing)

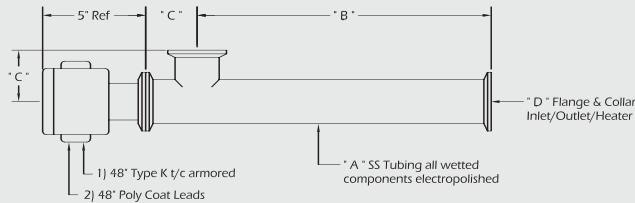


CRES-SFA with Low Profile Leads

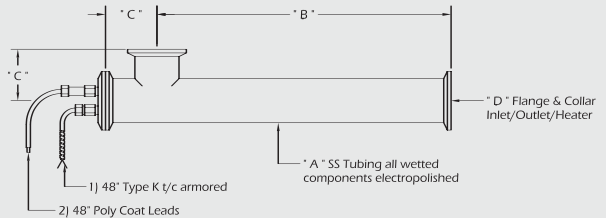


CRES SFB MINIATURE IN-LINE ELECTRIC HEATER

CRES-SFB with NEMA (Explosion Proof Housing)



CRES-SFB with Low Profile Leads



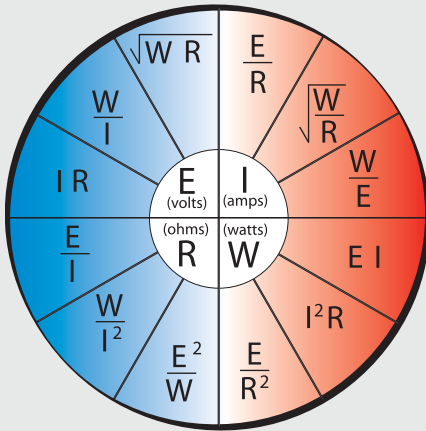
Model No.	A (tube)	B(in)	D(FNPT)	Voltage	Wattage
CRES-SFA-24-1	1.5	10	0.25	120/240	250/1000
CRES-SFA-24-2	1.5	10	0.25	120/240	500/2000
CRES-SFA-24-4	2	10	0.25	120/240	1000/4000
CRES-SFA-24-6	2	10	0.25	240	6000
CRES-SFA-48-6	2	10	0.25	480	6000
CRES-SFA-24-8	2	12.5	0.5	240	8000
CRES-SFA-48-8	2	12.5	0.5	480	8000
CRES-SFA-48-10	2	12.5	0.5	480	10,000

Model No.	A (tube)	B(in)	C(in)	Voltage	Wattage
CRES-SFA-24-1	1.5	10	0.25	120/240	250/1000
CRES-SFA-24-2	1.5	10	0.25	120/240	500/2000
CRES-SFA-24-4	2	10	0.25	120/240	1000/4000
CRES-SFA-24-6	2	10	0.25	240	6000
CRES-SFA-48-6	2	10	0.25	480	6000
CRES-SFA-24-8	2	12.5	0.5	240	8000
CRES-SFA-48-8	2	12.5	0.5	480	8000
CRES-SFA-48-10	2	12.5	0.5	480	10,000

- Add (-N4) for NEMA 4 Hsg
- Add (-XP) for Explosion Proof Head
- Add (-3P) for 3 Phase Power
- Add (-TF) for Teflon coating

- Other Inlet and Outlet fittings available
- * 3 Phase heaters available
- * Larger Power and Voltages available, up to 200kW, 600V

CRES SF Miniature In-Line Electric Heater



Volts

= sqrt (watts x ohms)
= watts / amps
= amps x ohms

Amps

= volts / ohms
= sqrt (watts / ohms)
= watts / volts

Ohms

= volts / amps
= watts / amps²
= volts² / watts

Watts

= volts / amps
= amps² x ohms
= volts / amps²

Our most economical heater available provides ease of use for new design, replacement or retrofit. If you have a new process or application, please contact one of our sales representatives to discuss your requirements. Our engineering staff has decades of experience and can design a single heater or a full turnkey process or system.

Patented Design - Pat. No. 6,456,785

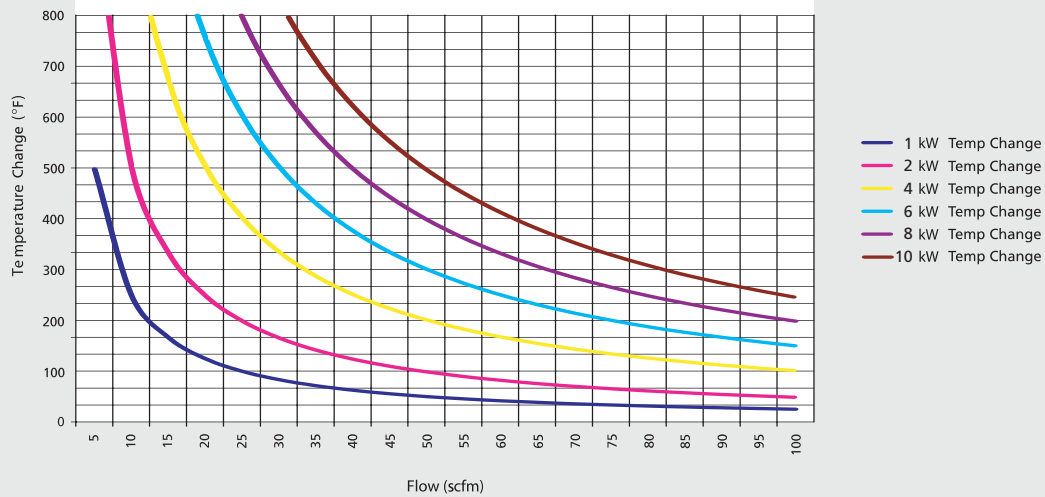
CRES Heaters:

- All SS Construction
- Fastest Response Available
- Ultra Compact
- Easy to Install and Service
- Inexpensive Option Compared to Larger Heaters
- Many sizes and Configurations in Stock

This patented product was developed around the CRES electric heater design and placed into a flow housing designed specifically to accommodate your process pressure and temperature requirements. A wide range of special fittings and connectors can be used to facilitate new designs or retrofit existing applications.

The CRES heater operating in the fluid stream provides incredibly fast response time and far greater utility efficiency. Many different designs and configurations are available to suit your processes needs. If your process requires the most precise temperature control and fastest response, let the SF Miniature In-Line Electric Heater provide the competitive advantage to your system. Integrated sensors are available as standard equipment on most CRES Heater arrangements.

CRES Heater Air Flow vs. Temperature



Power Requirement for Air : $\text{kW} = \text{SCFM} \times (\text{Tout} - \text{Tin}) / 2500$

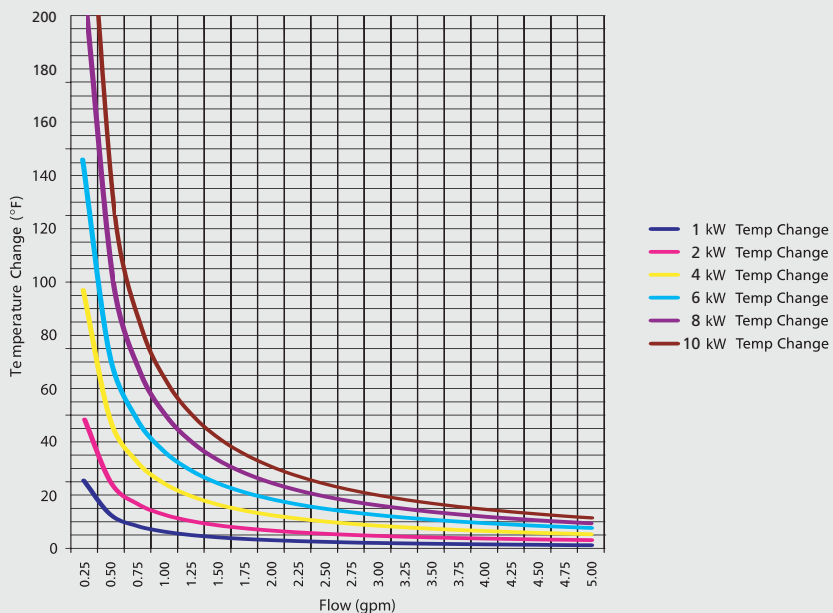
$\text{SCFM} = \text{SCFH} / 60$

$\text{SLPM} = \text{SCFH} / 28.3$

$\text{SCFH} = \text{SLPM} / 28.3$

$\text{SCFM} = (\text{lbs.Air/Min}) / (0.080 \text{ lbs/ft}^3)$

CRES Heater Water Flow vs. Temperature



Power Requirement for Water : $\text{kW} = \text{GPM} \times (\text{Tout} - \text{Tin}) \times 0.16$



PID Temperature Controller

We provide fully functional, turn key control systems which come standard with micro processor based PID temperature controller, solid state power control, control transformer and control contactor, fused and wired for the individual heater. Power disconnects are provided with all of our 480 volt control systems.

The systems provide +/-1 degree control capability with stable flow. The controllers

can accommodate all types of thermocouple sensors or RTD's. Temperature controllers can be tuned for every individual process giving you the most stable and uniform control for any process.

We will match your heater with the correct control system at your request. We are not only the leader in Electric Heating technology we are experts in process heat and control.



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