

# SAN<sup>®</sup>

Electro Heat



## **Infrared Radiators**

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# FTE - Full trough element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- UL approved
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

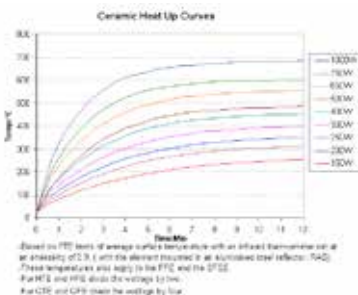
## Options available:

- |                    |  |
|--------------------|--|
| Colours:           | White, yellow, coral, black<br>Others on request |
| Wire terminations: | Ferrule (standard)<br>Ring termination           |
| Thermocouples      | Type K, Type J                                   |

## FTE

Wattage	150	250	300	400	500	650	750	1000
Mean surface temp (°C)	262	354	400	464	486	589	634	722
Max permissible operating temp (°C)	750	750	750	750	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	9 (5.8)	15 (9.7)	18 (11.6)	24 (15.5)	30 (19.4)	39 (25.2)	45 (29)	60 (38.7)
Average weight	180 g							
Dimensions	245 x 60 x 31mm							
Useful wavelength range								

## Heat up / cool down graphs





### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- UL approved
- Recommended radiation distance from heater is 100 mm to 200 mm.
- Supplied with 100mm ceramic beaded power leads

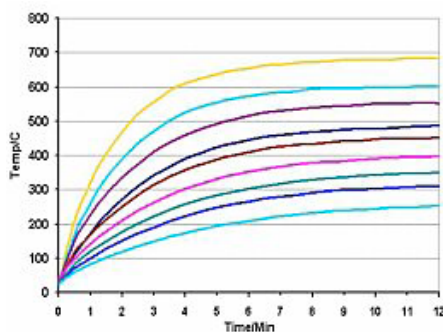
### Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

### HTE

Wattage	125	150	200	250	325	500
Mean surface temp (°C)	354	400	464	486	634	722
Max permissible operating temp (°C)	750	750	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	15 (9.6)	18 (11.6)	24 (15.5)	30 (19)	39 (25)	60 (38)
Average weight	116 g					
Dimensions	122 x 60 x 31 mm					
Useful wavelength range	2 to 10µm					

### Heat up / cool down graphs



# LFTE - Large full trough element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

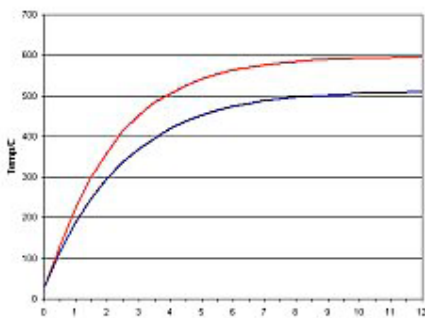
## Options available:

- |                    |  |
|--------------------|--|
| Colours:           | White, yellow, coral, black<br>Others on request |
| Wire terminations: | Ferrule (standard)<br>Ring termination           |
| Thermocouples      | Type K, Type J                                   |

## LFTE

Wattage	1000	1500
Mean surface temp (°C)	511	596
Max permissible operating temp (°C)	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	36 (23)	54 (34)
Average weight	369 g	
Dimensions	245 x 110 x 37mm	
Useful wavelength range	2 to 10µm	

## Heat up / cool down graphs



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### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

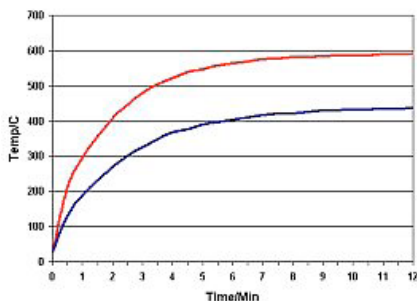
### Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

### QCE

Wattage	150	250
Mean surface temp (°C)	440	592
Max permissible operating temp (°C)	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	34 (22)	56 (36)
Average weight	75 g	
Dimensions	60 x 55 x 40mm	
Useful wavelength range	2 to 10µm	

### Heat up / cool down graphs



# QTE - Quarter trough element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

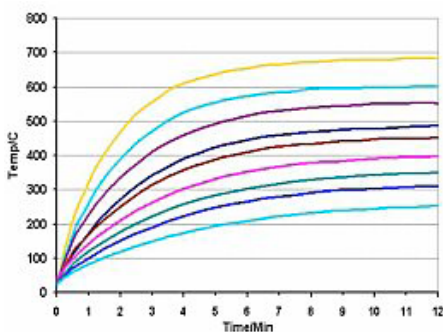
## Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

## QTE

Wattage	125	250
Mean surface temp (°C)	486	722
Max permissible operating temp (°C)	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	30	60
Average weight	78 g	
Dimensions	60 x 60 x 31mm	
Useful wavelength range	2 to 10µm	

## Heat up / cool down graphs



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### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- UL approved
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

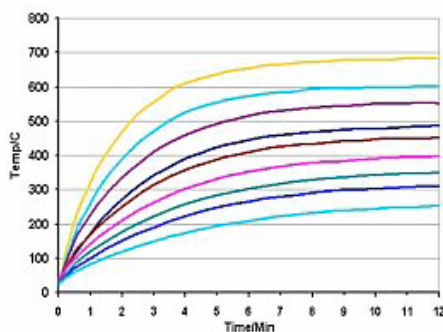
### Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

### FFE

Wattage	150	250	300	400	500	650	750	1000
Mean surface temp (°C)	262	354	400	464	486	589	634	722
Max permissible operating temp (°C)	750	750	750	750	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	9 (5.8)	15 (9.7)	18 (11.6)	24 (15.5)	30 (19.4)	39 (25.2)	45 (29)	60 (38.7)
Average weight	206 g							
Dimensions	245 x 60 x 24mm							
Useful wavelength range	2 to 10 μm							

### Heat up / cool down graphs





# HFE - Half flat element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- UL approved
- Recommended radiation distance from heater is 100 mm to 200 mm.
- Supplied with 100mm ceramic beaded power leads

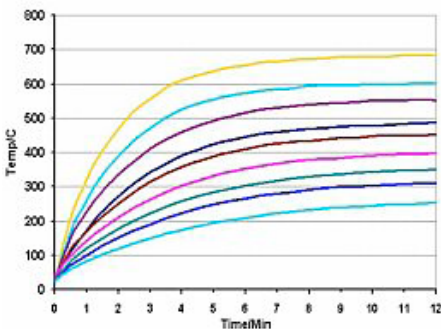
## Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

## HFE

Wattage	125	150	200	250	325	500
Mean surface temp (°C)	354	400	464	486	634	722
Max permissible operating temp (°C)	750	750	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	15 (9.6)	18 (11.6)	24 (15.4)	30 (19.3)	39 (25)	61 (39.3)
Average weight	113 g					
Dimensions	122 x 60 x 24mm					
Useful wavelength range	2 to 10 µm					

## Heat up / cool down graphs





### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

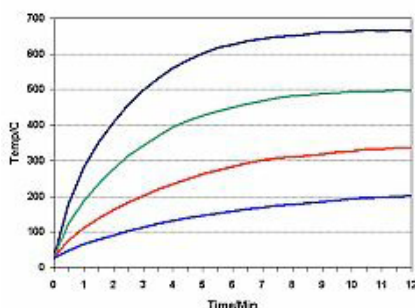
### Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

### LFFE

Wattage	150	350	750	1400
Mean surface temp (°C)	204	338	501	667
Max permissible operating temp (°C)	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	5.4 (3.4)	12 (7.6)	27 (17)	50 (31.9)
Average weight	342 g			
Dimensions	245 x 95 x 24mm			
Useful wavelength range	2 to 10 μm			

### Heat up / cool down graphs



# QFE - Quarter flat element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

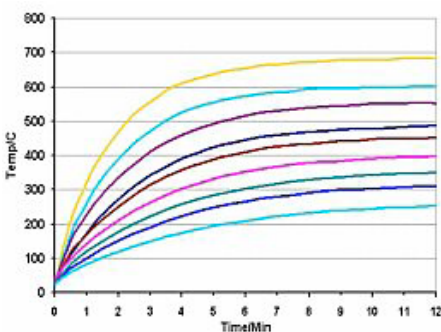
## Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

## QFE

Wattage	125	250
Mean surface temp (°C)	486	722
Max permissible operating temp (°C)	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	30	60
Average weight	107 g	
Dimensions	60 x 60 x 24mm	
Useful wavelength range	2 to 10 μm	

## Heat up / cool down graphs



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### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- UL approved
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

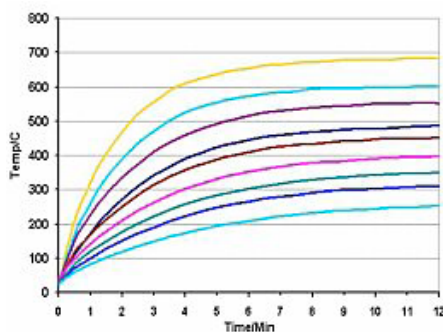
### Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

### SFSE

Wattage	150	250	300	350	400	500	650	750
Mean surface temp (°C)	262	354	400	420	464	486	589	634
Max permissible operating temp (°C)	750	750	750	750	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	9 (5.8)	15 (9.7)	18 (11.6)	21 (13.5)	24 (15.5)	30 (19.4)	39 (25.2)	45 (29)
Average weight	231 g							
Dimensions	122 x 122 x 24mm							
Useful wavelength range	2 to 10 µm							

### Heat up / cool down graphs



# FFEH - Full flat hollow element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

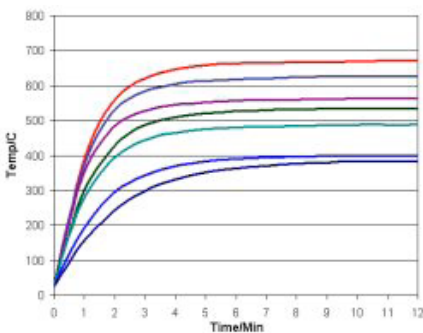
## Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

## FFEH

Wattage	250	300	400	500	600	800
Mean surface temp (°C)	383	400	488	535	563	670
Max permissible operating temp (°C)	750	750	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	15 (9.7)	18 (11.6)	24 (15.5)	30 (19.4)	36 (23.2)	48 (31)
Average weight	222 g					
Dimensions	245 x 60 x 36mm					
Useful wavelength range	2 to 10 µm					

## Heat up / cool down graphs



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### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm.
- Supplied with 100mm ceramic beaded power leads

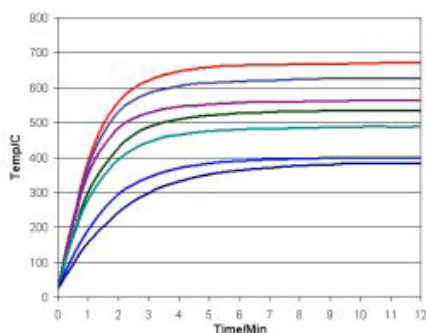
### Options available:

- |                    |  |
|--------------------|--|
| Colours:           | White, yellow, coral, black<br>Others on request |
| Wire terminations: | Ferrule (standard)<br>Ring termination           |
| Thermocouples      | Type K, Type J                                   |

### HFEH

Wattage	125	200	250	300	400
Mean surface temp (°C)	383	488	535	563	670
Max permissible operating temp (°C)	750	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	15 (9.7)	24 (15.5)	30 (19.3)	36 (23.2)	48 (31)
Average weight	106 g				
Dimensions	122 x 60 x 36mm				
Useful wavelength range	2 to 10 µm				

### Heat up / cool down graphs



# QFEH - Quarter flat hollow element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

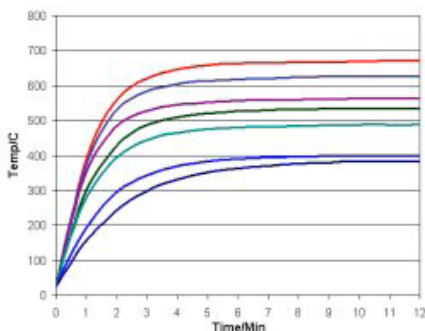
## Options available:

Colours:	White, yellow, coral, black Others on request
Wire terminations:	Ferrule (standard) Ring termination
Thermocouples	Type K, Type J

## QFEH

Wattage	125	200
Mean surface temp (°C)	535	670
Max permissible operating temp (°C)	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	30	48
Average weight	75 g	
Dimensions	60 x 60 x 36mm	
Useful wavelength range	2 to 10 μm	

## Heat up / cool down graphs



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**Standard Features**

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

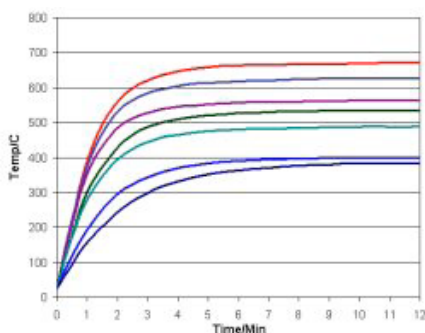
**Options available:**

- |                    |  |
|--------------------|--|
| Colours:           | White, yellow, coral, black<br>Others on request |
| Wire terminations: | Ferrule (standard)<br>Ring termination           |
| Thermocouples      | Type K, Type J                                   |

**SFEH**

Wattage	250	300	400	500	600	800
Mean surface temp (°C)	383	400	488	535	563	670
Max permissible operating temp (°C)	750	750	750	750	750	750
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	15 (9.7)	18 (11.6)	24 (15.5)	30 (19.4)	36 (23.2)	48 (31)
Average weight	242 g					
Dimensions	122 x 122 x 36mm					
Useful wavelength range	2 to 10 µm					

**Heat up / cool down graphs**





## ESE - Edison screw ceramic bulbs



The Ceramic Infrared Bulb is primarily used in the area of animal / pet healthcare.

Bulb infrared heaters available from 60 to 400 watts.

### Options available:

Colours: White, yellow, coral, black  
Others on request

Note: The ESER bulb is only available in 240V.  
All other bulbs are 230-240V.

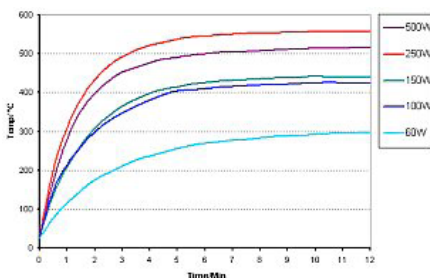
### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230~240 V standard except for the 250 W ESER bulb - 240 V as standard (other voltages available on request)
- Useful wavelength range: 2-10 microns
- Average Operating Life-Up to 20,000 hrs depending on conditions
- Recommended radiation distance from heater is 100 mm to 200 mm
- E27 tap on bulb cap

### QFEH

Bulb type	ESEB	ESES	ESEB	ESES	ESER	ESER	ESEXL	ESEXL
Wattage	60	60	100	100	150	250	300	400
Mean surface temp (°C)	300	300	426	426	441	516	450	530
Max permissible operating temp (°C)	750	750	750	750	750	750	750	750
Average weight	112 g	113 g	112 g	113 g	165 g	165 g	253 g	253 g
Dimensions	65 x 140	80 x 110	65 x 140	80 x 100	95 x 140	95 x 140	137 x 140	137 x 140
Useful wavelength range	2 to 10 µm							

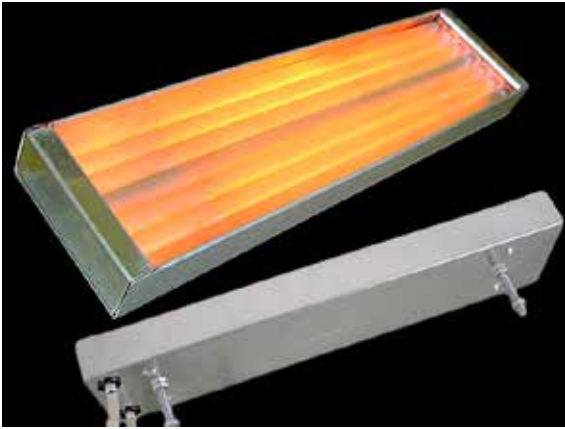
### Heat up / cool down graphs



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### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 1.5 - 8 microns
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

### Warranty Details:

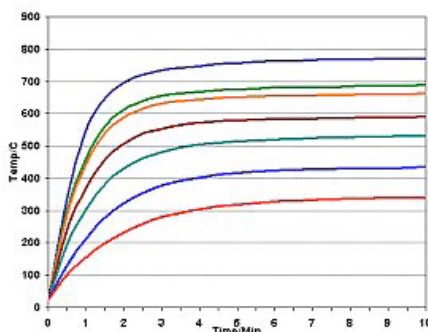
Standard warranty on quartz heaters is 5000 hours under the following conditions:

- Rated voltage is not exceeded.
- Heaters are mounted horizontally and perpendicular to movement (if any).
- Heaters are not subjected to any external force capable of fracturing the quartz tubes.
- Heating coils are not exposed to chemically corrosive substances or gases.
- Temperature of the aluminised steel body does not exceed 500°C (932°F).

### FQE

Wattage	150	250	400	500	650	750	1000
Mean surface temp (°C)	343	438	542	593	664	690	772
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	9 (5.8)	15 (9.7)	24 (15.5)	30 (19.4)	39 (25.2)	45 (29)	60 (38.7)
Average weight	327 g						
Dimensions	247 x 62.5 x 22mm						
Useful wavelength range	1.5 to 8 μm						

### Heat up / cool down graphs



## HQE - Half quartz element



### Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 1.5 - 8 microns
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

### Warranty Details:

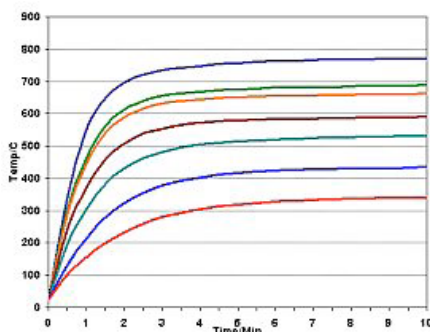
Standard warranty on quartz heaters is 5000 hours under the following conditions:

- Rated voltage is not exceeded.
- Heaters are mounted horizontally and perpendicular to movement (if any).
- Heaters are not subjected to any external force capable of fracturing the quartz tubes.
- Heating coils are not exposed to chemically corrosive substances or gases.
- Temperature of the aluminised steel body does not exceed 500°C (932°F).

### HQE

Wattage	150	250	400	500
Mean surface temp (°C)	470	593	720	772
Max power density kW/m <sup>2</sup>	18	30	48	60
Average weight	210 g			
Dimensions	124 x 62.5 x 22mm			
Useful wavelength range	1.5 to 8 µm			

### Heat up / cool down graphs



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### Standard Features

- Iron-chrome aluminium resistance wire
- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 1.5 - 8 microns
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

### Warranty Details:

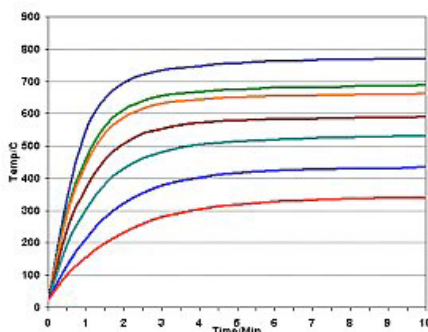
Standard warranty on quartz heaters is 5000 hours under the following conditions:

- Rated voltage is not exceeded.
- Heaters are mounted horizontally and perpendicular to movement (if any).
- Heaters are not subjected to any external force capable of fracturing the quartz tubes.
- Heating coils are not exposed to chemically corrosive substances or gases.
- Temperature of the aluminised steel body does not exceed 500°C (932°F).

### QQE

Wattage	150	250
Mean surface temp (°C)	635	772
Max power density kW/m <sup>2</sup> (Winch <sup>2</sup> )	36	60
Average weight	136 g	
Dimensions	62.5 x 62.5 x 22mm	
Useful wavelength range	1.5 to 8 µm	

### Heat up / cool down graphs



# SQE - Half quartz element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 1.5 - 8 microns
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with 100mm ceramic beaded power leads

## Warranty Details:

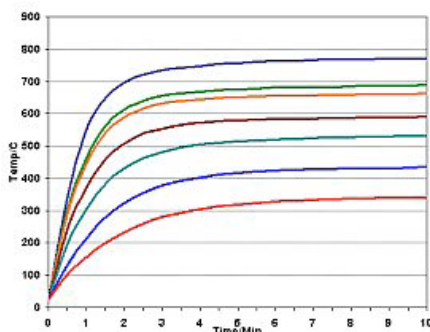
Standard warranty on quartz heaters is 5000 hours under the following conditions:

- Rated voltage is not exceeded.
- Heaters are mounted horizontally and perpendicular to movement (if any).
- Heaters are not subjected to any external force capable of fracturing the quartz tubes.
- Heating coils are not exposed to chemically corrosive substances or gases.
- Temperature of the aluminised steel body does not exceed 500°C (932°F).

## SQE

Wattage	150	250	400	500	650	750	1000
Mean surface temp (°C)	343	438	542	593	664	690	772
Max power density kW/m <sup>2</sup>	9 (5.8)	15 (9.7)	24 (15.5)	30 (19.4)	39 (25.2)	45 (29)	60 (38.7)
Average weight	386 g						
Dimensions	124 x 124 x 22mm						
Useful wavelength range	1.5 to 8 µm						

## Heat up / cool down graphs

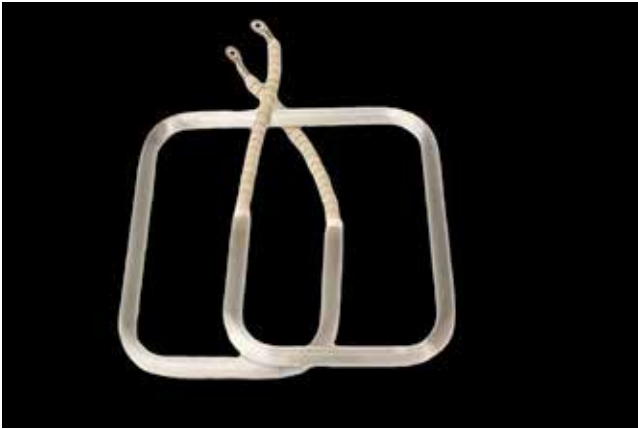


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CVR No.: 42 16 59 13



**Standard Features**

- Iron-chrome aluminium resistance wire.
- Heater Voltage: 230 Volts standard. (other voltages available on request)
- Useful wavelength range: 1.5 - 8 microns.
- Recommended radiation distance from heater is 100 mm to 200 mm.
- Supplied with 100mm ceramic beaded power leads.

**Warranty Details:**

Standard warranty on quartz heaters is 5000 hours under the following conditions:

- Rated voltage is not exceeded.
- Heaters are mounted horizontally.
- Heaters are not subjected to any external force capable of fracturing the quartz tubes.
- Heating coils are not exposed to chemically corrosive substances or gases.

**STQH**

Dimensions	100 x 100mm	112 x 112mm	140 x 140mm	150 x 150mm
Wattage range	150 - 400W	150 - 400W	150- 650W	150- 650W
Useful wavelength range	1.5 to 8 $\mu$ m			

# PFQE - Pillared full quartz element



## Standard Features

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 1.5 - 8 microns
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with our 2 piece wave spring and clip.

## Warranty Details:

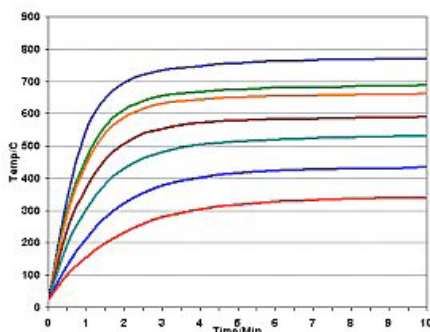
Standard warranty on quartz heaters is 5000 hours under the following conditions:

- Rated voltage is not exceeded.
- Heaters are mounted horizontally and perpendicular to movement (if any).
- Heaters are not subjected to any external force capable of fracturing the quartz tubes.
- Heating coils are not exposed to chemically corrosive substances or gases.
- Temperature of the aluminised steel body does not exceed 500°C (932°F).

## PFQE

Wattage	150	250	400	500	650	750	1000
Mean surface temp (°C)	343	438	542	593	664	690	772
Max power density kW/m <sup>2</sup>	9 (5.8)	15 (9.7)	24 (15.5)	30 (19.4)	39 (25.2)	45 (29)	60 (38.7)
Average weight	387 g						
Dimensions	247 x 62.5 x 22mm						
Useful wavelength range	1.5 to 8 µm						

## Heat up / cool down graphs



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CVR No.: 42 16 59 13



**Standard Features**

- Iron-chrome aluminium resistance wire
- Heater Voltage: 230 Volts standard (other voltages available on request)
- Useful wavelength range: 1.5 - 8 microns
- Recommended radiation distance from heater is 100 mm to 200 mm
- Supplied with our 2 piece wave spring and clip.

**Warranty Details:**

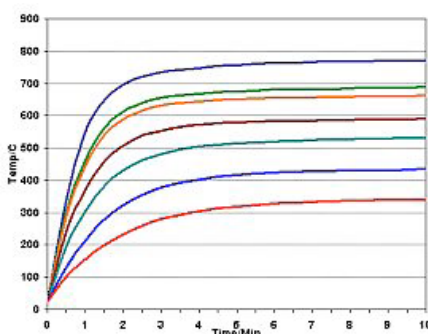
Standard warranty on quartz heaters is 5000 hours under the following conditions:

- Rated voltage is not exceeded.
- Heaters are mounted horizontally.
- Heaters are not subjected to any external force capable of fracturing the quartz tubes.
- Heating coils are not exposed to chemically corrosive substances or gases.
- Temperature of the aluminised steel body does not exceed 500°C (932°F).

**PHQE**

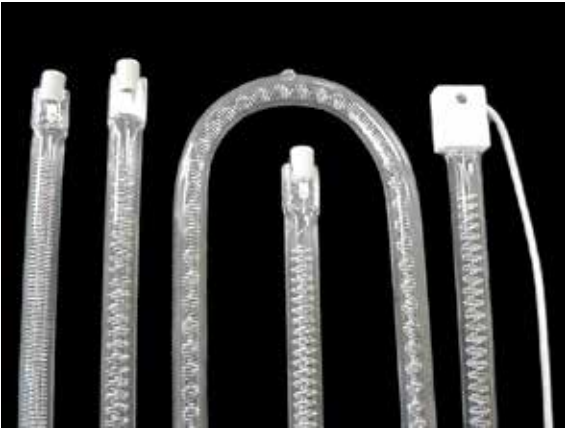
Wattage	150	250	400	500
Mean surface temp (°C)	470	593	720	772
Max power density kW/m <sup>2</sup>	18	30	48	60
Average weight	271 g			
Dimensions	124 x 62.5 x 22mm			
Useful wavelength range	1.5 to 8 µm			

**Heat up / cool down graphs**





## Fast medium wave quartz tungsten heaters



The tungsten filament used in these heaters is the porcupine or star type coil, which can be operated at temperatures up to 1500°C (2732°F), with peak wavelength emissions of approximately 1.6 microns. It reaches top temperatures within seconds.

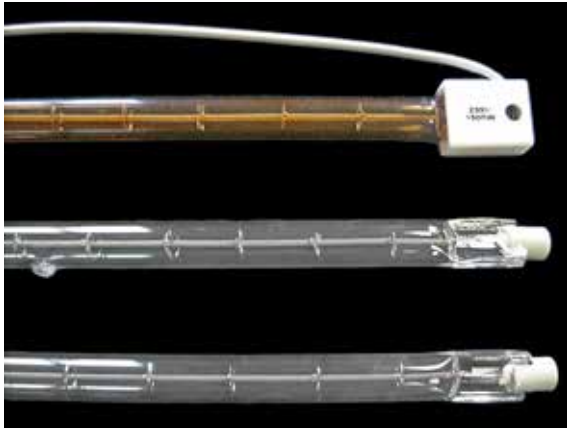
As well as having excellent structural rigidity, this coil is designed to minimize light output and maximize IR emission thereby increasing IR radiant efficiency.

Standard Products: 240 v, R7s termination and 10 mm diameter glass.

Please note: other configurations available on request.

Model	Wattage	Max. Coil temp.	Overall length	Heated length
QTS	750W	1450°C (2642°F)	224mm	170mm
QTM	1000W	1450°C (2642°F)	277mm	225mm
QTL	1500W	1270°C (2318°F)	473mm	415mm
QTL	1750W	1470°C (2678°F)	473mm	415mm
QTL	2000W	1500°C (2732°F)	473mm	415mm

## Short wave quartz halogen heaters



These heaters are filled with halogen gas to allow the supported tungsten filament to reach temperatures as high as 2600°C (4712°F).

With peak wavelength emissions of approximately 1 micron, they are extremely penetrative and allow rapid on/off cycles.

Standard Products: R7s termination and 10 mm diameter glass.

Please note: other configurations available on request.

Model	Wattage	Voltage	Max. Coil temp.	Overall length	Heated length
QHS	750W	240V	2410°C (4370°F)	224mm	170mm
QHS	1000W	480V	2520°C (4568°F)	224mm	170mm
QHM	1000W	240V	2410°C (4370°F)	277mm	225mm
QHL	2000W	240V	2250°C (4082°F)	473mm	415mm
QHL	2000W	480V	2390°C (4334°F)	473mm	415mm

## Fastir infrared heating systems



FastIR 305 model



FastIR 500 model



The FAST IR infrared heat system was developed by Ceramicx infrared heat consultants.

### Standard Products

Please note: other configurations available on request.

These compact robust systems form an ideal installation for quartz tungsten/halogen glass tube emitters. Optimum efficiency is achieved by highly polished aluminum steel reflection and near mounted axial flow fans, which eliminate rear convection losses and keep the reflectors cool for better directional quality on the infrared output.

The external body which manufactured from aluminum can be maintained at "touch safe" temperature.

Model	Configuration	Voltage	Emitters fitted	Dimensions
Fast IR 305	4 tube: 4kW 5 tube: 5kW	240V	1000W QTM or 1000W QHM	305 x 305 x 150mm
Fast IR 500	6 tube: 12kW 7 tube: 14kW	240V	2000W QTL or 2000W QHL	500 x 500 x 150mm



Mounting the quartz tungsten emitters in reflectors of high reflectivity maximizes output and gives a rigid, robust assembly.

The reflectors are fitted with the specialized R7 holders allowing safe and easy installation of quartz tungsten heaters with the R7s terminations.



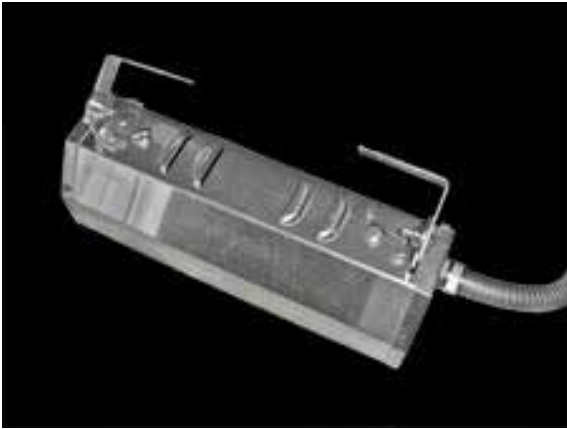
Ceramic R7s holders used for mounting of heaters with the R7s termination:

- Voltage rating: 250 V a.c.
- Current Rating: 8 A
- Max. Temperature: 350° C
- Leads: 190 mm long PTFE insulated (max. 250°C).
- Fixing Screw: M4
- Please note some off-standard connectors are available on request.

**Special features:**

- Polished aluminised steel (gold coated on request).
- Temperature rating (max) of 500°C (932°F).
- Thickness: 0.75mm

## PAS - Projector aluminised steel



Designed to cater for a wide range of Ceramic and Quartz Elements, the aluminised steel (or stainless steel by special request) projectors are the ideal solution in areas where positional heat is required quickly, economically and effectively.

The P.A.S. can be fixed directly to walls and angled to give the most effective coverage of the area to be heated. They are very effective in areas where doors are continuously being opened or insulation is poor.

The P.A.S. is rugged, safe and reliable. With no moving parts, it is virtually maintenance free, and should offer years of trouble free operation.

The P.A.S. is supplied with a "fast-fit" wall mounting bracket. It also comes pre-wired with 1.5 metres of high temperature cable. A discreet adjustable angle bracket for 45° horizontal adjustment makes fine positioning quick and simple to achieve.

Contact us for further details

Model	Dimensions (mm)	Dimensions (inches)	Max Wattage
PAS 1	94 x 76 x 258mm	3.7 x 3 x 10.16"	650
PAS 2	94 x 76 x 508mm	3.7 x 3 x 20.00"	1300
PAS 3	94 x 76 x 758mm	3.7 x 3 x 29.84"	1950
PAS 4	94 x 76 x 1008mm	3.7 x 3 x 39.69"	2600
PAS 5	94 x 76 x 1258mm	3.7 x 3 x 49.53"	3250



Designed to cater for a wide range of Ceramic and Quartz Emitters, this aluminised steel (or stainless steel by special request) reflector features a highly reflective casing, to maximise heat output. The units can be mounted individually or side-by-side to form IR panels.

The R.A.S. can efficiently heat a defined area within a large space or can totally heat either large or small areas alike.

The R.A.S. is rugged, safe and reliable. With no moving parts, it is virtually maintenance free, and should offer years of trouble free operation.

Contact us for further details.

Model	Dimensions (mm)	Dimensions (inches)	Max Wattage
RAS 1	100 x 60 x 254mm	3.94 x 2.36 x 10"	1000W
RAS 2	100 x 60 x 504mm	3.94 x 2.36 x 19.84"	2000W
RAS 3	100 x 60 x 754mm	3.94 x 2.36 x 29.69"	3000W
RAS 4	100 x 60 x 1004mm	3.94 x 2.36 x 39.53"	4000W
RAS 5	100 x 60 x 1254mm	3.94 x 2.36 x 49.37"	5000W

## Standard panel heaters



**PFAE Panel Heater**

PFAE Pillar Full Anodised Element, Max wattage 300W – 230/240V. Dimensions 247 x 62.5 x 60mm (9.7" x 2.46" x 2.4")



**PHAE Panel Heater**

PHAE Pillar Half Anodised Element, Max wattage 150W – 230/240V. Dimensions 122 x 62.5 x 60mm (4.8" 2.46" x 2.4")



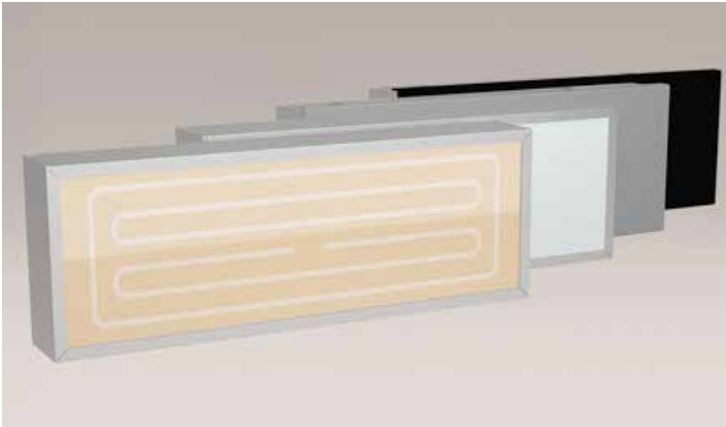
**PFRE Panel Heater**

PFRE Pillar Full Robax Element, Max wattage 650W – 230/240V. Dimensions 247 x 62.5 x 60mm (9.7" x 2.46" x 2.4")



**PHRE Panel Heater**

PHRE Pillar Half Anodised Element, Max wattage 325W – 230/240V. Dimensions 122 x 62.5 x 60mm (4.8" 2.46" x 2.4")



Infrared panel heaters are custom built infrared heaters operating primarily in the long wave range. The basic construction consists of a resistance coil embedded into a ceramic fibre board which is then located behind an emitting surface of either anodised aluminium or glass ceramic. This is then placed inside a 75mm high aluminised steel housing which normally contains 50mm of thermal insulation to reduce heat loss through the rear of the unit.

Panel heaters can be used in thermoforming ovens and for various curing and drying applications. The panel heater design and construction makes it a very robust and efficient heater with operating life often in excess of 20,000 hours in many applications (depending on operating temperature and environment). Standard power density is 1.5-2.3 W/cm<sup>2</sup> (10-15 W/in<sup>2</sup>). Higher power densities available on request.

### Standard options

- Emitting surface
  - Glass ceramic face - very good radiant efficiency, high percentage transmission of radiant output in medium to short wave range, surface can be easily cleaned.
  - Anodised aluminium face - good radiant efficiency, very robust, surface sheet can be easily cleaned or replaced if damaged by molten material.
- Electrical terminations:
  - Open 2P terminal block
  - Terminal block with cover
  - M6 or 1/4" threaded stud
- Type K thermocouple with fixed high temperature socket and removable plug
- Fixing studs: M5/M6/M8/0.25" x 25mm long

Other options available on request.

If you would to place an order or require a quotation for an infrared panel heater, please supply the following information:

1. Overall dimensions required (length and width)
2. Wattage required and supply voltage
3. Zoning requirements (if more than 1 zone required)
4. Emitting surface type (see above)
5. Electrical termination type (see above)
6. With or without thermocouple type K
7. Fixing studs (see above)
8. Quantity required

Please contact us for further details.



## Comfortir



**Comfortir 2 black**

0.8 kW (2 x 400W) 1.0 kW (2 x 500W) 1.3 kW (2 x 650W) 230/240V or 120V  
Black powder coated stainless steel body with black glazed elements.  
509 x 100 x 166 mm



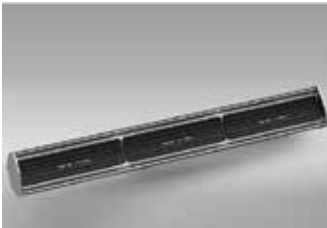
**Comfortir 2 white**

0.8 kW (2 x 400W) 1.0 kW (2 x 500W) 1.3 kW (2 x 650W) 230/240V or 120V  
Stainless steel body with white glazed elements.  
509 x 100 x 166 mm



**Comfortir 2 quartz**

0.8 kW (2 x 400W) 1.0 kW (2 x 500W) 1.3 kW (2 x 650W) 230/240V or 120V  
Stainless steel body with quartz elements.



**Comfortir 3 black**

1.5 kW (3 x 500W) 1.95 kW (3 x 650W) 230/240V or 120V  
Black powder coated stainless steel body with black glazed ceramic elements  
760 x 99 x 166 mm



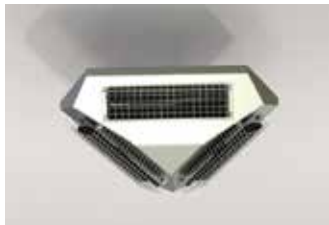
**Comfortir 3 white**

1.5 kW (3 x 500W) 1.95 kW (3 x 650W) 230/240V or 120V  
stainless steel body with white glazed ceramic elements  
760 x 99 x 166 mm



**Comfortir 3 quartz**

1.5 kW (3 x 500W) 1.95 kW (3 x 650W) 230/240V or 120V  
Black powder coated stainless steel body with black glazed ceramic elements  
760 x 99 x 166 mm



**Comfortir 360 black**

1.3 kW ( 3 x 650W ) 230/240V or 120V  
Stainless steel body with black glazed  
elements.  
450 x 450 x 160 mm



**Comfortir 360 white**

1.3 kW ( 3 x 650W ) 230/240V or 120V  
Stainless steel body with white glazed  
elements



**Comfortir 360  
quartz**

1.3 kW ( 3 x 650W ) 230/240V or 120V  
Stainless steel body with black glazed  
elements.  
450 x 450 x 160 mm



**Comfortir linear  
integral unit**

500W ( 2 x 250W FFEH ) 230/240 v or 120V  
For internal walls and ceilings.  
Stainless steel body with white glazed  
elements.  
Motion sensor and over temperature  
thermostat.  
690 x 165 x 55 mm



**Comfortir integral  
unit**

2.4 kW ( 4 x 600W ) 230/240 v or 120V  
Stainless steel body with white glazed  
elements.  
Fan assisted.  
502 x 283 x 102 mm

## Accessories



**Ceramic Terminal Blocks**

High temperature ceramic terminal blocks. They are used with buzz bars to produce power distribution systems.



**Wave Spring and Clip**

Used in the mounting and installation of all Ceramic elements and the PFQE element. Included with these heaters as standard. One piece spring/clip also available



**E27 Ceramic Bulb Holder**

High temperature porcelain holder used in operation of ceramic IR bulbs.



**Specialised Dust Press Components**

SAN has the ability to deliver specialised dust pressed components for any type of use. Contact us for more information.



**Buzz Bars**

Buzz Bars (Dimensions: 8 mm x 2 mm) can be used with the ceramic terminal block to produce a flexible and maintenance free power distribution system.



**V-Clips**

Can be used to connect power leads to buzz bar distribution systems in combination with a fixing screw (supplied)



**Ceramic Bulb Reflector**

Highly polished reflector for use with ceramic IR bulbs.



**R7s Holders**

The Ceramic R7s holder is used for mounting of heaters with the R7s termination. Max temperature: 350°C (662°F)

# SAN<sup>®</sup>

Member of the NIBE Group

## Electro Heat

- Process Heating
- Heating Elements
- Heating Cables
- Finned Tubular Radiators
- Immersion Heaters
- Church Heating
- Frost Protection
- Ex-Material
- Oilfilled Radiators
- Drum Heaters
- Heating Pads
- Flow Heaters
- Air Duct Heaters
- High-voltage
- Resistors
- Controllers



With more than 50 years of experience SAN Electro Heat's most valuable asset is special knowhow about design, product development and manufacturing of professional electrical heating equipment for industrial use.

The company is geared to deliver 100% customized products, and thus functions both as a catalyst for a development project and as supplier of the final product. At the same time we insure and maintain the required quality level, mechanical and electrical dimensioning, approvals and documentation.



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