

**Full Quartz Element Hollow with type K Thermocouple**  
 Properties: Quartz infrared heating elements provide medium wave infrared radiation. They are favoured in industrial applications where a more rapid heater response is necessary, including systems with long heater off cycles. The standard quartz heating elements range consists of cassette style elements constructed with polished aluminium clad steel as standard, stainless steel is also an option. These emitters have peak emissions in the medium to long wavelength range.

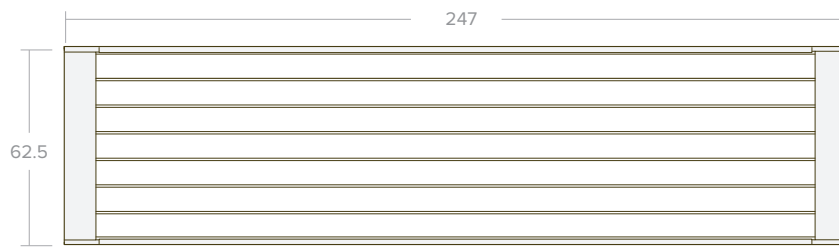
Type K thermocouple is the standard we use. This gives an indication of the operating temperature of the emitter itself at a point close to the resistance heating coil.

#### Technical specification

|                          |   |
|--------------------------|---|
| Material                 | Polished aluminium clad steel body with an ironchrome aluminium resistance wire |
| Heater Voltage           | 230 V ( <i>standard</i> )   |
| Useful wave-length range | 1.5 - 8 $\mu\text{m}$ ( <i>microns</i> ) - Long wave                            |
| Dimensions               | 247 x 62.5 x 22.5 mm  |
| Average weight           | 383 g   |
| Electric connection      | 120 mm ceramic beaded power leads<br>150 mm ceramic beaded thermocouple leads   |
| Assembly                 | Recommended radiation distance from heater is 100 - 200mm                       |
| Mounting                 | 2 x M5 x 30 mm fixing   |
| Element spacing          | Minimum spacing between elements 5 mm   |
| Average operating life   | Up to 10,000 hrs depending on conditions  |
| Standards                | CE  |
| Operating temperature    | Ensure temperature of aluminium clad steel body does not exceed 500 °C          |
| Note                     | Element should always be mounted so the quartz glass tubes are horizontal.      |

#### Standard FQE TcK range

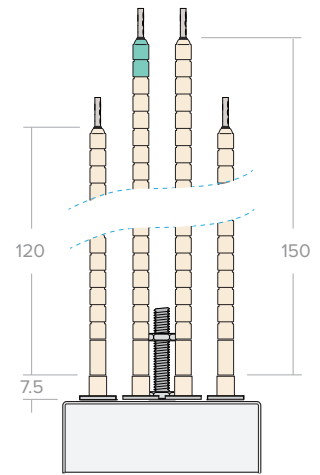
|        | Mean Surface Temperature °C | Max Power Density kW/m <sup>2</sup> |
|--------|-----------------------------|-------------------------------------|
| 250 W  | 438                         | 15                                  |
| 400 W  | 542                         | 24                                  |
| 500 W  | 593                         | 30                                  |
| 650 W  | 664                         | 39                                  |
| 750 W  | 690                         | 45                                  |
| 1000 W | 772                         | 60                                  |



THERMOCOUPLE POSITION FOR FQE ELEMENTS 500W OR LOWER



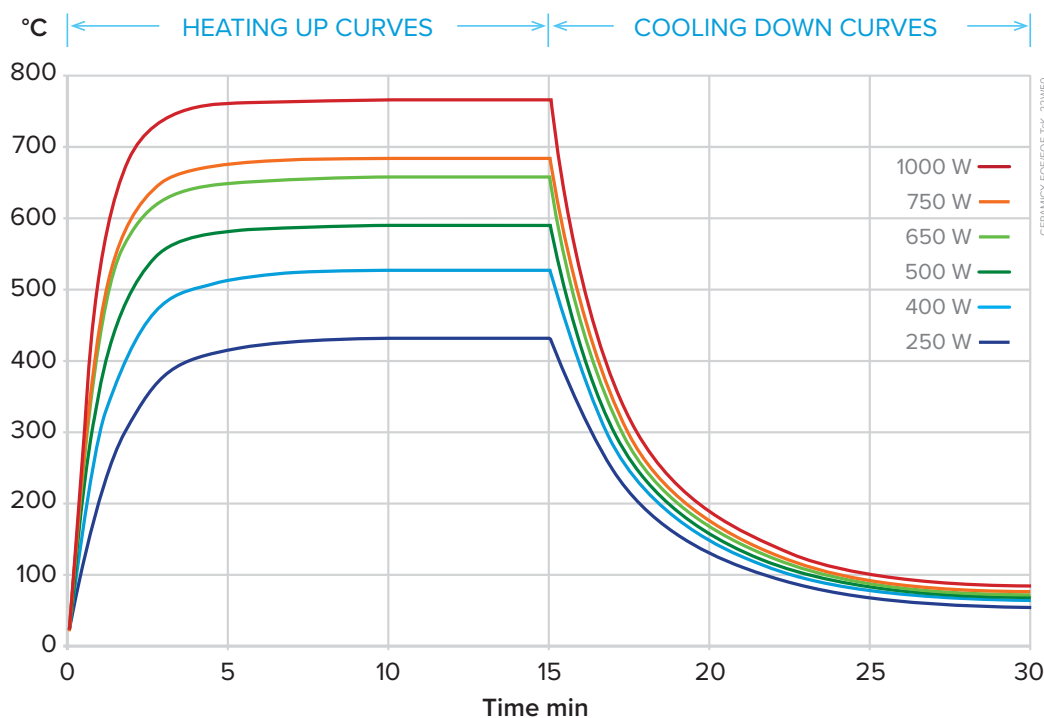
THERMOCOUPLE POSITION FOR FQE ELEMENTS HIGHER THAN 500W



**FQE TcK**  
FULL QUARTZ ELEMENT  
WITH TYPE K THERMOCOUPLE  
Tolerances apply, all dimensions mm.  
Heater body manufactured from 0.75 mm  
polished aluminium clad steel (500°C max)



24W36



**FQE TcK** Heat up and cool down curves showing average surface temperature measured with a thermal imaging camera set to an emissivity of 0.7

CERAMICX FQEFQETcK 22W50