

Hot plates

Basic values:

Parameter	Value
Dimensions	Ø 100 x 7.0 mm
Heated area	Ø 100 x 7.0 mm
T _{max}	500 °C

Details of Standard:

Description

With a diameter of 100 mm, the heating element of the QEB type is suitable for the relatively large-scale heating of round bodies. The low thermal expansion of silicon nitride helps to make sure that even at 500 °C, only a very small thermal distortion occurs in the heating element and the heat transfer area remains smooth.

* The actual power depends on resistance, temperature and voltage.

Parameter	Value
Article no.	FLR 100 128
Resistance @ 20 °C	50 Ω ±25 %
Nominal voltage	230 V
Nominal power @ 20 °C	1 058 W*

Basic Material

Parameter	Scale unit	Si ₃ N ₄
max. temperature (T _{max})	°C	1 000
thermal conductivity (l)	W/mK	40
temperature shock resistance (ΔT)	K	500
emissivity (1 100 °C) (ε)	-	0.96
Young's modulus (E)	GPa	320
bending strength (δ _{BB})	MPa	400
compressive strength (δ _D)	MPa	2 000
coefficient of thermal expansion (α)	10 ⁻⁶ K ⁻¹	3
density (g)	g/cm ³	3.21
specific heat (c _p)	J/kgK	750
porosity (100 - % t.D.)	%	0
critical stress intensity factor (K _{IC})	MPa m ^{1/2}	6
Weibull - modulus (m)	-	7.9

The thermal shock resistance depends on the geometric shape of the heater.

Electrical parameters

Parameter	Scale unit	Si ₃ N ₄
resistivity	Ω cm	5 · 10 ⁻³ - 5 · 10 ⁻¹
isolation resistivity	Ω mm (20 °C)	10 ¹³
dielectric strength	kV/mm	25

Emission spectrum

Fully ceramic heating elements are long-wave infrared heaters with a maximum emission of 5 to 10 μm and a radiation coefficient of ε > 0.9.



