# Technical Specifications

**NETZSCH**

| | TG 209 *F1 Nevio* | DSC 204 *F1 Nevio* | STA 449 *F3 Nevio* |
|---|---|---|---|
| Temperature range (max.) | (10°C) … RT to 1100°C | -180°C to 700°C | -150°C to 1000°C[3] |
| Max. cooling rate/ max. heating rate | 200 K/min | 200 K/min | 50 K/min |
| Measuring range/ weighing range (max.) | 2000 mg[1] | ± 750 mW | 35000 mg[1] /± 250 mW[4] |
| Enthalpy accuracy | n/a | < 1%[2] | ± 1 … 3% |
| TGA resolution | 0.1 µg | n/a | 0.1 µg |
| Indium Response Ratio | n/a | > 160 mW/K[5] | > 85 mW/K[2] [6] |
| Sensors | Interchangeable | Exchangeable | Interchangeable |
| Cooling options | n/a | ■ Air compressor: RT to 700°C<br>■ Compressed air: < 0°C to 700°C<br>■ Intracooler: -85°C to 600°C<br>■ Liquid nitrogen: -180°C to 700°C | ■ Compressed air: < 0°C to 1000°C[3]<br>■ Liquid nitrogen: -150°C to 1000°C[3] |
| Gas atmospheres | Inert, oxidizing, static and dynamic | Inert, oxidizing, static and dynamic | Inert, oxidizing, reducing (forming gas), humid, vacuum, static, dynamic |
| Gas-tight/vacuum-tight | Vacuum-tight | Gas-tight | Vacuum-tight |
| Mass flow controller for purge/protective gas | 3, integrated (0 to 250 ml/min) | 3, integrated (0 to 250 ml/min) | Optional, 3 (0 to 250 ml/min) |
| Automatic Sample Changer (ASC, optional) | 192 positions | 192 positions | 20 positions |
| *Proteus®* software including | *SmartMode, ExpertMode, AutoCalibration, BeFlat®, c-DTA®, AutoEvaluation, Identify* | *SmartMode, ExpertMode, AutoCalibration, BeFlat®,* specific heat capacity, *AutoEvaluation, Identify* | c-DTA®, *AutoEvaluation, Identify* |
| Software extensions, optional | Temperature modulation, *Proteus® Protect*, *Peak Separation*, Kinetics Neo, Thermal Simulations | Temperature modulation, *Proteus® Protect*, *Peak Separation*, Kinetics Neo, Thermal Simulations | Temperature modulation, *Proteus® Protect*, *Peak Separation*, Kinetics Neo, Thermal Simulations |

[1] minus weight of crucible
[2] for indium
[3] optimized temperature range for pharmacy, cosmetics and foodstuffs; depending on the selected furnaces: total temperature range: -150°C up to 2400°C
[4] for thermocouple type E
[5] using the equation published by B. Wunderlich, Thermal Analysis of Polymeric Materials, Springer (2005), page 346
[6] in $Al_2O_3$ crucibles