

# Technical Specifications

**NETZSCH**

DIL 502 <i>Expedis</i> ®			
	<i>Classic</i>	<i>Select</i>	<i>Supreme</i>
Design	<ul style="list-style-type: none"> <li>▪ Horizontal, pushrod</li> <li>▪ Single or dual furnace operation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Horizontal, pushrod</li> <li>▪ Single or dual furnace operation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Horizontal, pushrod</li> <li>▪ Single or dual furnace operation***</li> </ul>
Instrument interface	Illuminated information panel (optional touch display)	Touch display	Touch display
Temperature range	RT ... 1600°C	-180°C ... 2000°C	-180°C ... 2800°C
Heating rates	0.001 ... 50 K/min	Depending on furnace type: 0.001 ... 50 K/min Graphite: 0.001 ... 100 K/min	
Cooling systems	Depending on furnace: Air compressor	Depending on furnace: Vortex, LN <sub>2</sub> device, air compressor	Depending on furnace: Vortex, LN <sub>2</sub> device, air compressor
	SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , graphite, user-interchangeable	SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , graphite, user-interchangeable	SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , graphite, user-interchangeable
User-interchangeable specimen holder systems	<ul style="list-style-type: none"> <li>▪ Single system (one pushrod)</li> <li>▪ Dual system with two pushrods usable in dual or differential mode</li> </ul>	<ul style="list-style-type: none"> <li>▪ Single system (one pushrod)</li> <li>▪ Dual system with two pushrods usable in dual or differential mode</li> </ul>	<ul style="list-style-type: none"> <li>▪ Single system (one pushrod)</li> <li>▪ Dual system with two pushrods usable in dual or differential mode</li> </ul>
Specimen dimensions	Length: Max. 52 mm Ø 12 mm standard (optional Ø 19 mm max.) Ø 8 mm in dual specimen holder system	Length: Max. 52 mm (Graphite furnace: 25 mm) Ø 12 mm standard (optional Ø 19 mm max.) Ø 8 mm in dual specimen holder system	Length: Max. 52 mm (Graphite furnace: 25 mm) Ø 12 mm standard (optional Ø 19 mm max.) Ø 8 mm in dual specimen holder system
Gas atmosphere	Inert, oxidizing under static or dynamic conditions	Inert, oxidizing**, reducing, vacuum	Inert, oxidizing**, reducing, vacuum
Gas control	1-way switch or 3-way switch*, MFC*	1-way MFC or 3-way/4-way MFC*	1-way MFC or 3-way/4-way MFC*
Gas-tight	Yes	Vacuum-tight	Vacuum-tight
Oxygen Trap System (OTS®)	Optional, for single and for dual specimen holder systems		

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Temperature accuracy	1 K	1 K	1 K
Temperature precision	0.1 K	0.1 K	0.1 K
Temperature resolution	0.001 K	0.001 K	0.001 K
Thermal stability (isothermal)	± 0.02 K	± 0.02 K	± 0.02 K
Measuring range	± 5000 µm	± 10000 µm	± 25000 µm
ΔL Resolution	2 nm	1 nm	0.1 nm
ΔL/L <sub>0</sub> Repeatability	0.002%, absolute value	0.001%, absolute value	0.001%, absolute value
ΔL/L <sub>0</sub> Accuracy	0.003%, absolute value	0.002%, absolute value	0.002%, absolute value
Force range (load at the specimen)	10 mN ... 3 N (compressive and tensile force, depending on sample holder)		
Force resolution	0.001 mN	0.001 mN	0.001 mN

\* optional

\*\* graphite furnace: measurements in oxidizing atmosphere possible up to 1680°C by using a special protective tube

\*\*\* for the 2400°C and 2800°C graphite furnaces, only single furnace operation is possible



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