

## Technical Data - MCR 72 and MCR 92

Standard methods
ASTM D2196, ASTM D4016, DIN 53019-2, DIN 53019-3, DIN 53019-4, DIN 54458, DIN 51810 Part 1, DIN 51810 Part 2, ASTM D1824, ASTM D4065, ASTM D4092, Ph. Eur. 0132, Ph. Eur. 2.2.10 - Rotating viscometer method, Ph. Eur. 2.2.8 – Viscosity, ISO 3219, ISO 3219-2 draft, ISO 3219-1 draft, IOCCC 2000 (chocolate)

Technical Specifications		
	MCR 72	MCR 92
Bearing	Ball	Air
EC motor (brushless DC) with high resolution optical encoder	✓	✓
Rotation Mode	✓	✓
Oscillation Mode	✓	✓
Direct Strain Controller	✓	✓
Direct Stress Controller	✓	✓
Maximum torque	125 mNm	125 mNm
Minimum torque, rotation	200 µNm	1 µNm
Minimum torque, oscillation	200 µNm	1 µNm
Torque resolution	100 nNm	100 nNm
Angular deflection, set value	1 to ∞ µrad	1 to ∞ µrad
Angular deflection, resolution	614 nrad	614 nrad
Step rate, time constant	100 ms	100 ms
Step strain, time constant	100 ms	100 ms
Minimum angular velocity	10 <sup>-4</sup>	10 <sup>-4</sup>
Maximum angular velocity	157 rad/s	157 rad/s
Minimum angular frequency	10 <sup>-3</sup>	10 <sup>-4</sup>
Maximum angular frequency	628	628
Minimum speed (CSS/CSR)	10 <sup>-3</sup>	10 <sup>-3</sup>
Rheometer Software:		
Maximum speed	1500 rpm	1500 rpm
Maximum temperature range	-40 to 400	-40 to 400

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Technical Specifications		
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SafeGap, Normal force Limiter during Gapsetting	✓	✓
TruRay, Dimmable illumination of sample area	✓	✓
Connections	USB, Ethernet, RS232, Analog interfaces, Pt100 port	
QuickConnect for measuring systems, screwless	✓	✓
Toolmaster™, measuring system	✓	✓
Toolmaster™, measuring cell	✓	✓
CoolPeltier™, Peltier-controlled Plate System with built in cooling option that requires no additional accessories for counter-cooling	25 below ambient temperature but not lower than -5 up to +200 °C	
Actively Peltier-controlled hood that requires no additional accessories for counter-cooling	- 5 to 200 °C	
CoolPeltier™, Peltier-controlled Cylinder System with built in cooling option that requires no additional accessories for counter-cooling	15 below ambient temperature but not lower than +5 up to +150 °C	
Virtually gradient-free (horizontal, vertical) temperature control	✓	✓
Test Designer	✓	✓
Report Designer	✓	✓
User Management	✓	✓
Electronic trim lock for the measuring system	✓	✓
Automatic gap control/setting, AGC/AGS	✓	✓