

# Technical Specifications



Kinexus			
	ultra+	pro+	lab+
Rheometer platform	Highest specification bearing available for advanced testing	Meeting rheological needs in research and development	Standard Operating Procedure (SOP) testing for quality control
Standard operating modes	Direct strain control; shear rate control; shear stress control		
Torque range – viscometry (rate and stress control)	1.0 nNm – 250 mNm	5.0 nNm – 225 mNm	10 nNm – 200 mNm
Torque range – oscillation (strain and stress control)	0.5 nNm – 250 mNm	1.0 nNm – 225 mNm	5.0 nNm – 200 mNm
Torque resolution	0.05 nNm	0.1 nNm	0.1 nNm
Position resolution	< 10 nrad	< 10 nrad	< 10 nrad
Angular velocity range	1 nrad/s <sup>-1</sup> to 500 rad/s <sup>-1</sup>	1 nrad/s <sup>-1</sup> to 500 rad/s <sup>-1</sup>	10 nrad/s <sup>-1</sup> to 325 rad/s <sup>-1</sup>
Step change in strain	< 10 ms	< 10 ms	< 10 ms
Frequency range	6.28 μrad/s <sup>-1</sup> to 942 rad/s <sup>-1</sup> (1 μHz to 150 Hz)	6.28 μrad/s <sup>-1</sup> to 942 rad/s <sup>-1</sup> (1 μHz to 150 Hz)	6.28 μrad/s <sup>-1</sup> to 628 rad/s <sup>-1</sup> (1 μHz to 100 Hz)
Motor inertia	12 μN.m.s <sup>2</sup>	12 μN.m.s <sup>2</sup>	12 μN.m.s <sup>2</sup>
Normal force range	0.001 N – 50 N	0.001 N – 50 N	0.001 N – 50 N
Normal force resolution	0.5 mN	0.5 mN	0.5 mN
Normal force response time	< 10 ms	< 10 ms	< 10 ms
Vertical lift speed	0.1 μm/s <sup>-1</sup> to 35 mms <sup>-1</sup>	0.1 μm/s <sup>-1</sup> to 35 mms <sup>-1</sup>	0.1 μm/s <sup>-1</sup> to 35 mms <sup>-1</sup>
Vertical lift range (measurable)	230 mm	230 mm	230 mm
Gap resolution (over full vertical lift range)	0.1 μm	0.1 μm	0.1 μm
Fully configurable vertical profiles	By speed and by Normal Force		
Raw instrument variables	5 kHz constant streaming data		
Complete sample history	Data available from loading to unloading as standard		
Instrument interface	USB2 – plug and play		
rSpace software	Sequence-driven user interface enabling Standard Operating Procedure (SOP)-type test functionality and fully customizable test designs		
21 CFR part 11 software	Optional	Optional	Optional
Dimensions	D x W x H (weight): 485 mm x 490 mm x 680 mm (47 kg)		

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Accessories	Designed for dispersed systems characterization – including polymer and surfactant solutions, foams, emulsions, suspensions, pastes and gels
Measuring systems (geometries)	
Quick-connect upper geometries	Plug and play; auto-recognition and configuration in software
Material	Stainless Steel 316 as standard Other options are available, e.g., for chemical compatibility (titanium)
Plate and cone diameter	20 mm through to 60 mm as standard size range – other sizes on request 4 mm, 8 mm and 25 mm plates specifically designed for Asphalt testing
Cone angle	0.5°, 1°, 2° and 4° variants – other angles on request
Interchangeable lower plates	Varying diameters and surface finishes (to match upper geometries)
Concentric cylinders	C14 (DIN), C25 (DIN), C34 as standard
Interchangeable cups	Quick release/engage mechanism
Surface finish options	Roughened (sand blasted); serrated; splined or grooved (cup and bobs)
Vane tools	C14 and C25 vane tools
Disposable option	Upper and lower disposable plate options for curing materials
<b>Environmental controllers</b>	
Quick-connect cartridge system	Plug and play; auto-recognition and configuration in software
Peltier plate cartridge	Temperature range: -40°C to 200°C Maximum heating rate*: 30°C/minute Maximum cooling rate*: 30°C/minute
Active Hood Peltier plate cartridge	Temperature range: -40°C to 200°C Maximum heating rate*: 30°C/minute Maximum cooling rate*: 20°C/minute
Peltier cylinder cartridge	Temperature range: -30°C to 200°C Maximum heating rate*: 15°C/minute Maximum cooling rate*: 15°C/minute
Temperature resolution	0.01°C
Temperature stability	Better than ± 0.1°C

\* Temperature range dependent.

NOTE: Specifications have been obtained under conditions as stated in the Installation and Site Requirements for Kinexus rheometers