

# Technical Specifications



Kinexus Prime			
	ultra+	pro+	lab+
Rheometer platform	High-end rheometer for highest demands	For research and development	Quality control with SOP <sup>4)</sup>
Operating modes	Direct strain control, shear rate control, shear stress control		
Torque range – viscometry <sup>1)</sup>	1.0 nNm - 250 mNm	5.0 nNm - 225 mNm	10 nNm - 200 mNm
Torque range – oscillation <sup>2)</sup>	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 position control in strain control	< 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 mm·s <sup>-1</sup>	0.1 μm·s <sup>-1</sup> to 35 mm·s <sup>-1</sup>	0.1 μm·s <sup>-1</sup> to 35 mm·s <sup>-1</sup>
Vertical lift range (measurable)	230 mm	230 mm	230 mm
Gap resolution <sup>3)</sup>	0.1 μm	0.1 μm	0.1 μm
Fully configurable vertical profiles	By speed and Normal Force		
Raw instrument variables	5 kHz constant streaming data		
Complete sample history	Acquisition of raw data from loading to unloading as standard		
Interface	USB2 – plug and play		
rSpace software	Site-wide user license, sequence-driven user interface enabling Standard Operating Procedure (SOP)-type test functionality and fully customizable test designs		
Dimensions and weights	D x W x H (weight): 485 mm x 490 mm x 680 mm (47 kg)		
Power supply	100 - 240V, 15A		

1) Shear rate and shear stress controlled  
2) Shear strain and shear stress controlled

3) Specification of accuracy over full vertical list range  
4) Standard Operating Procedures

# Technical Specifications



Kinexus Prime	
	ultra+                      pro+                      lab+
<b>Measuring geometries</b>	
Quick-connect geometries	Plug and Play; auto-recognition and configuration by the software
Material	Stainless Steel 316 (British Steel BS) as standard Other options are available, e.g., for chemical compatibility (titanium or Hastelloy)
Plate and cone diameter	20 mm throughout 60 mm as standardized range – other diameters on request Plates with 4 mm, 8 mm and 25 mm specifically designed for asphalt testing
Cone angle	Variants with 0.5°, 1°, 2° and 4° – 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, optional with removable base and fill-up mark
Surface finish option	Smooth, sand blasted, serrated, splined or grooved
Vane tools	Type C14 and C25
Disposable option	Upper and lower disposable plates for the investigation of curing materials
<b>Environmental controllers</b>	
Quick-Connect cartridge system	Plug and play; auto-recognition and configuration by the software
Peltier-plate cartridge	Temperature range: -40°C to 200°C Maximum heating rate*: 30°C/minute Maximum cooling rate*: 30°C/minute
Peltier-plate cartridge with active hood	Temperature range: -40°C to 180°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
HTC Prime	Temperature range: 0 °C** to 450 °C Max. heating rate*: 30 K/min Max. cooling rate*: 15 K/min Max. boost cooling rate: 20 K/min
Temperature resolution	0.01°C
Temperature stability	Better than ± 0.1°C

\* Temperature range dependent

\*\* At 6 bar Vortex cooling air pressure (5 °C at 5.5 bar Vortex cooling air pressure)

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