

The BLACK PEARL controlled shear rate rotational rheometer is a high performance instrument capable of both steady shear and yield stress testing in a rugged yet compact footprint. Designed for performing both routine QC tests and complex R&D evaluations, the BLACK PEARL is ideal for investigating the mixing, stirring and process flow characteristics of fluid systems.

#### Key Applications:

- Viscosity Measurements
- Temperature Ramps
- Yield Stress Measurements
- Thixotropic Recovery Tests
- Sticky Point Determination

#### Key Industries:

- Oil
- Paint, Coating & Ink
- Pharmaceutical & Cosmetic
- Lubricant
- Food

# BLACK PEARL Controlled Rate Rotational Rheometer

For Rheological Characterization from -10° C to 100° C

#### Product Features & Benefits

- Real time display of test values
- Automated program control
- "Test Definition" windows to rapidly create multiple step experiments
- Provides instantaneous viscosity flow curves
- Interactive graphing allows full control over displayed, printed, and plotted variables
- User enterable data sets and data comparison
- Simple data exportation through Windows Clipboard to Excel
- CE certified



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# BLACK PEARL Controlled Rate Rotational Rheometer

## Ordering Information

Description	Part #
The Black Pearl comes standard with built in Peltier Temperature Control for all measuring systems. Cone and plate, parallel plate and concentric cylinder measuring systems are included. The measuring systems employ novel "quick capture" mounting technology. The gapping mechanism is highly accurate and user adjustable. Black Pearl is interfaced and controlled with powerful Windows based software.	9728-V20

## Viscosity Ranges\*

Measuring System	Specific Viscosity Range	
	Minimum	Maximum
Parallel Plate	~ 100 cP (30 mm diameter plates)	~ 10,000,000 cP (≤15 mm diameter plates)
Cone & Plate	~ 100 cP (30 mm diameter plates)	~ 10,000,000 cP (≤15 mm diameter plates)
Cup and Bob	1 cP (narrow gap ≥ 0.5 mm gap)	~ 30,000 cP
Vane Tool	~ 5 cP	~ 100,000 cP

\*All viscosity ranges are measuring system and material behavior dependent. Please contact Cannon Instrument Company to help you select the appropriate measuring system for your applications.

## Product Specifications

Dimensions (W x D x H)	18 cm x 52 cm x 34 cm (7.1 in x 20.5 in x 13.4 in)
Weight	5 kg (11 lb)
Max throughput	2-6 samples per hour
Automated sample capacity	1
Viscosity range & accuracy	*See "Viscosity Ranges" chart below
Test temperatures & accuracy	-10 °C to 120 °C ±xx °C
Torque Range	0.005 mNm to 20 mNm
Angular Velocity	0.01 rad/s to 200 rad/s
User Selectable Shear Rates	20,000 discrete steps
Operating conditions	15 °C to 30 °C, 10% to 90% relative humidity (non-condensing), Installation Category II; Pollution Degree 2
Electrical specifications	100 to 240 VAC, 47 to 63 Hz; 120 watts power consumption
Compliance	CE Mark; EMC directive (2004/108/EC); Low voltage directive (2006/95/EC); HI-POT (1900 VDC, 60 sec.); ROHS

\*below 0 C requires liquid cooling

## Viscosity Ranges\*

Measuring System	Specific Viscosity Range*	
	Minimum	Maximum
Parallel Plate	~100 mPa·s (cP) (30 mm diameter)	~10,000,000 mPa·s (cP) (≤15 mm diameter)
Cone & Plate	~100 mPa·s (cP) (30 mm diameter)	~10,000,000 mPa·s (cP) (≤15 mm diameter)
Cup and Bob	1 mPa·s (cP) (narrow ≥0.5 mm gap)	~ 30,000 mPa·s (cP)
Vane Tool	~5 mPa·s (cP)	~100,000 mPa·s (cP)

\*All viscosity ranges are measuring system and material behavior dependent Please contact us for assistance with measuring system selection.



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