

The automated CCS-2100 is a cold-cranking simulator for measuring apparent viscosity of engine oils from -35 °C to -5 °C. Automated sample loading, operation and solvent-free cleaning permit unattended processing of up to 30 samples at one time.

#### Common Applications

- Engine oils
- Lubricating oils
- Base stocks

# CCS-2100

## Automated Cold-Cranking Simulator

For Apparent Viscosity of Engine Oils from -35 °C to -5 °C  
ASTM D5293, SAE J300

### Product Features & Benefits

Meets all ASTM D5293 and SAE J300 requirements and precision specifications

- Temperature range: -35 °C to -5 °C ( $\pm 0.05$  °C)
- Viscosity range: 900 mPa·s [cP] to 25,000 mPa·s [cP]

### Fully automated operation

- Automated sample loading and computer controlled testing of up to 30 samples at one time
- Unattended operation reduces operator-to-operator variability for enhanced repeatability and reproducibility
- Proprietary software automatically calculates and records sample viscosities based on test data and stored rotor/stator calibration information
- The system automatically purges the previously measured sample with a portion of the next sample prior to viscosity measurement

### Outstanding measurement control

- Features a patented, thermoelectrically-cooled rotor/stator for outstanding temperature management
- Rotor speed is automatically measured by a high resolution digital encoder

### Reliable, convenient performance

- Proven CANNON® reliability and outstanding support
- A thermoelectric sample warming cycle greatly improves sample flushing allowing solvent-free cleaning
- User interface options include an instrument calibration routine, configuration of test cycles, and multiple data output options including save, print, and export for LIMS capture



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# CCS-2100 Automated Cold-Cranking Simulator

## Ordering Information

CCS-2100 Automated Cold-Cranking Simulator consists of a patented thermoelectrically-cooled rotor/stator with vacuum system and injection pump, a 30 position sample table, a temperature verification kit, an integrated controller, a waste receiver, a recirculating cooler, proprietary software and a set of Cannon CL viscosity standards. Computer sold separately.

Description	Part #
115 VAC, 60 Hz	9728-E46
230 VAC, 50 Hz	9728-E47
230 VAC, 60 Hz	9728-E49

## Accessories & Consumables

Description	Part #
Cannon CL viscosity standards: for instrument calibration and certified dynamic viscosity data [in cP or mPa·s] from -5°C to -40°C	Various
2 oz bottles, 48 count	75.3110.1
Spare parts kit [for one year]	75.8165
Dry gas purge [post 2014 models]	75.8175

## Product Specifications

Dimensions [W x D x H]	<b>Unit:</b> 33.3 cm x 64.4 cm x 71.1 cm [13.1 in x 25.4 in x 28 in] <b>Waste receiver:</b> 26.7 cm x 34.3 cm x 38.9 cm [10.5 in x 13.5 in x 15.3 in] <b>Recirculating cooler:</b> 24.9 cm x 50.0 cm x 59.9 cm [9.8 in x 19.7 in x 23.6 in]
Weight	<b>Unit:</b> 46 kg [102 lb] <b>Waste receiver:</b> 8.2 kg [18 lb] <b>Recirculating cooler:</b> 39.1 kg [86 lb]
Shipping dimensions [W x D x H]	<b>Box 1:</b> 88.9 cm x 88.9 cm x 88.9 cm [35 in x 35 in x 35 in] <b>Box 2 [recirculating cooler]:</b> 81.3 cm x 61.0 cm x 106.7 cm [32 in x 24 in x 42 in]
Shipping weight	<b>Box 1:</b> 140.6 kg [310 lb] <b>Box 2 [recirculating cooler]:</b> 59.0 kg [130 lb]
Maximum throughput	Up to 6 samples per hour
Automated sample capacity	30
Viscosity range	900 mPa·s [cP] to 25,000 mPa·s [cP]
Temperature range & accuracy	-35 °C to -5 °C ± 0.5 °C
Minimum sample volume	40 mL
Operating conditions	15 °C to 30 °C, 10% to 75% relative humidity (non-condensing), Installation Category II; Pollution Degree 2
Electrical specifications	115 VAC, 60 Hz; 230 VAC, 50 Hz; 1,000 watts power consumption
Compliance	CE Mark; EMC directive [2004/108/EC]; Low voltage directive [2006/95/EC]; HI-POT [1900 Vdc, 60 sec.]; ROHS

CANNON Instrument Company® provides a variety of physical property testing equipment and consumables [vials, bath fluids, and reference materials] for your testing needs. To learn more, contact [sales@cannoninstrument.com](mailto:sales@cannoninstrument.com).



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