

The automated CCS2100-G6 is a cold-cranking simulator for measuring apparent viscosity of engine oils from  $-40^{\circ}\text{C}$  to  $-5^{\circ}\text{C}$ . Automated sample loading, operation and solvent-free cleaning permit unattended processing of up to 14 samples at one time.

#### Common Applications

- Engine oils
- Lubricating oils
- Base stocks

# CCS™2100-G6 Automated Cold-Cranking Simulator

For Apparent Viscosity of Engine Oils from  $-40^{\circ}\text{C}$  to  $-5^{\circ}\text{C}$   
ASTM D5293, SAE J300

## Product Features & Benefits

Meets all ASTM D5293 and SAE J300 requirements and precision specifications

- Temperature range:  $-40^{\circ}\text{C}$  to  $-5^{\circ}\text{C}$  ( $\pm 0.02^{\circ}\text{C}$ )
- Viscosity range: 900 mPa·s (cP) to 25,000 mPa·s (cP)

## Unmatched Automation with Integrated Design

- Smaller footprint with no external chiller, waste pump, or computer, optimizing lab space.
- Fully Automated Operation: Load and test up to 14 samples with unattended operation for superior repeatability and reproducibility.
- Solvent-Free Cleaning: Automatically purges previous samples using a portion of the next sample during a thermoelectric warming cycle, eliminating the need for external solvents.

## Updated Efficiency and Control

- Optional 4-Oil Enhanced Calibration significantly reduces time with no effect on data accuracy.
- Users now have the ability to verify temperature accuracy and calibrate their own instrument.
- Fully automated speed calibration eliminates the need for user trial and error tuning.

## Reliable, convenient performance

- Standalone Touchscreen Interface: An intuitive touchscreen enables seamless configuration, testing, and on-board diagnostics, with options for data management, including saving or exporting results and other relevant information via flash drive or ethernet cable.
- FlowHub® software allows for data transfer between one computer and multiple instruments:
  - Export: data to LIMS, generate calibration certificates, set up carousels, standard oils management, automatic instrument settings backup, among many other features.
  - Import: data, calibration data from the instrument, among many other features.



# CCS2100-G6 Automated Cold-Cranking Simulator

## Ordering Information

CCS2100-G6 Automated Cold-Cranking Simulator consists of a thermoelectrically-cooled rotor/stator with vacuum system and injection pump, a 14 position sample carousel, a temperature verification kit, an integrated chiller, proprietary software and a set of Cannon CL viscosity standards.

| Description            | Part #   |
|------------------------|----------|
| 85 - 265 VAC, 50/60 Hz | 9728-E60 |

## 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)                                                                                                     | 76.0354   |
| Dry gas purge                                                                                                                      | 76.0190   |

## Product Specifications

|                                 |                                                                                                                                            |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions (W x D x H)          | Unit: 30.5 cm x 76.2 cm x 61 cm<br>(12 in x 30 in x 24 in)                                                                                 |
| Weight                          | Unit: 44.5 kg (98 lb)                                                                                                                      |
| Shipping dimensions (W x D x H) | Box 1: 53.4 cm x 94 cm x 109.2 cm<br>(21 in x 37 in x 43 in)<br>Box 2 (calibration oils):<br>66 cm x 51 cm x 26 cm (26 in x 20 in x 10 in) |
| Shipping weight                 | Box 1: 113.4 kg (250 lb)<br>Box 2 (calibration oils): 23 kg (50 lb)                                                                        |
| Maximum throughput              | Up to 6 samples per hour                                                                                                                   |
| Automated sample capacity       | 14                                                                                                                                         |
| Viscosity range                 | 900 mPa·s (cP) to 25,000 mPa·s (cP)                                                                                                        |
| Temperature range & accuracy    | -40 °C to -5 °C ±0.02 °C                                                                                                                   |
| Minimum sample volume           | 55 mL                                                                                                                                      |
| Operating conditions            | 15 °C to 30 °C, 10% to 75% relative humidity (non-condensing), Installation Category II; Pollution Degree 2                                |
| Electrical specifications       | 85 to 265 VAC, 50/60 Hz; 1,000 watts power consumption                                                                                     |
| Compliance                      | CE Mark; EMC directive (2014/30/EV); Low voltage directive (2014/35/EC); HI-POT (1900 VDC, 60 sec.); ROHS                                  |

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