

Building industry leading test platforms to automate sensing and improve measurements by reducing human errors.



BOCLE 2.0

AUTOMATIC

Ball on Cylinder Lubricity Evaluator

The System

Paltro Ball on Cylinder Lubricity Evaluator (BOCLE 2.0) is a compact, fully automated desktop instrument for ASTM D5001 to assess wear aspects of the boundary lubrication properties of aviation turbine fuels on rubbing steel surfaces.

BOCLE 2.0 is a fully automatic system including loading, conditioning, and test sequences with automated operation while offering unmatched user convenience. Comprises a compact bench top mounted unit, humidity and temperature controller, and PC for operation with Lab IQ control and data acquisition system. It brings a level of automation and ease of use to ATF lubricity testing with high repeatability and reproducibility.

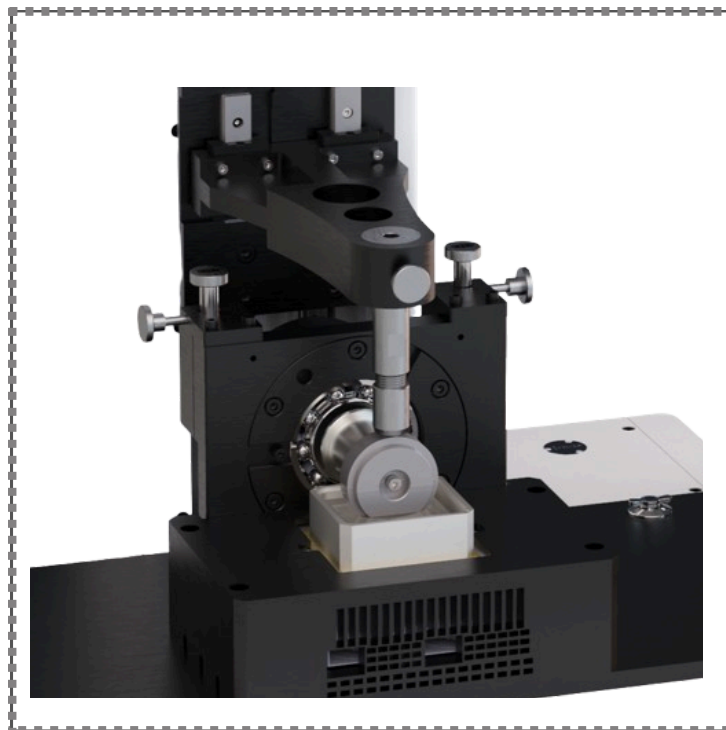
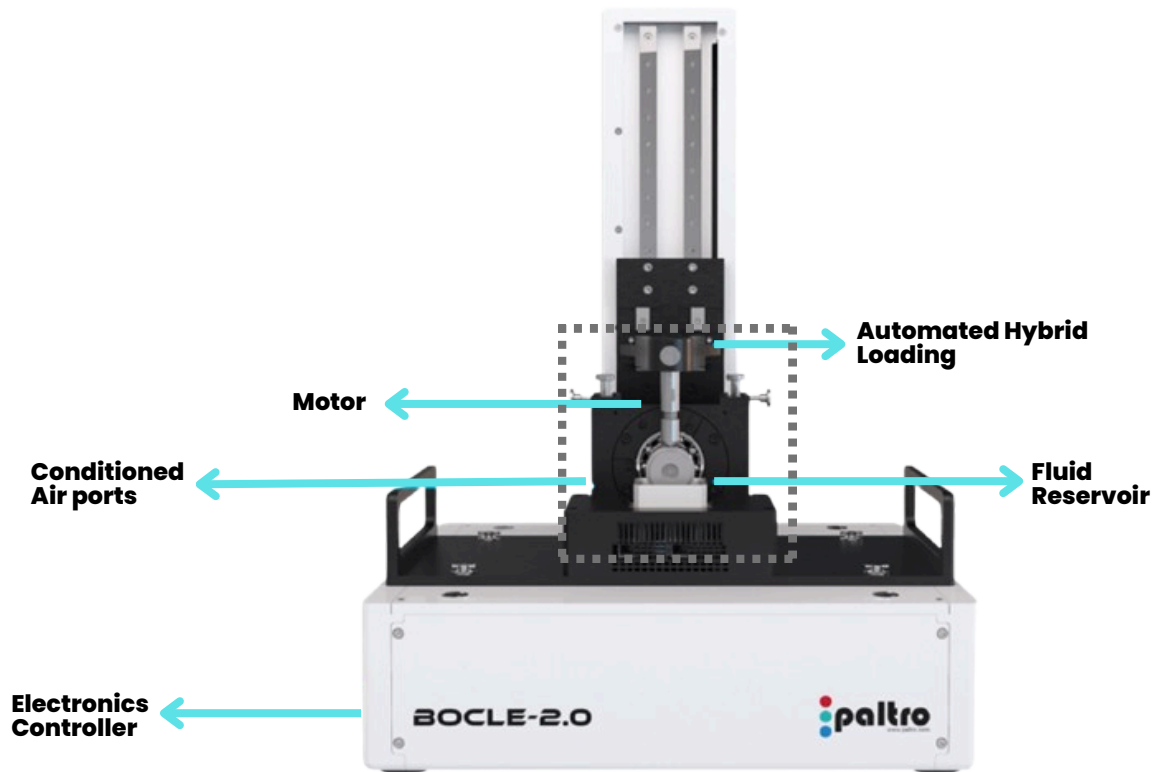
Features

- Fully automated loading, includes unique hybrid loading system
- Microprocessor based system controls for all instrument functions
- Automatic control of test sequences, flow rate and conditioned air to reduce operator induced variability in test results
- PC based control and test sequence software included
- Pre-programmed ASTM D5001 test sequence for standardized tests
- Intuitive user interface with plug-and-play functionality

Standards

ASTM: D5001: "Standard Test method for measurement of Lubricity of Aviation Turbine fuels by the Ball-on-Cylinder Lubricity Evaluator (BOCLE)"

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Technical Specifications

- Load: 1000 ± 1 g
- Speed: 240 ± 1 rpm
- Temperature: $25 \pm 1^\circ\text{C}$
- Sample Volume: 50 ± 1 ml
- Conditioned Air: 10 ± 0.2 % RH at $25 \pm 1^\circ\text{C}$
- Fluid pretreatment: 0.5 L/min flowing through & 3.3 L/min over the fluid for 15 min
- Fluid test conditions: 3.8 L/min flowing over the fluid
- Test duration: 30 ± 0.1 min
- Power Supply: 100-230 V, 50/60 Hz

Options

- Microscope with Digital Imaging & Software
- Zero Air supply (includes compressor and dryer)

Consumables & Reference Fluids

- Test Balls (chrome alloy steel made from AISI E52100, with a diameter 12.7 mm, Grade 5 to 10, HRC between 64 to 66)
- Test Rings (SAE 8720 Steel, Hardness HRC 58 to 62 and Surface finish of 0.56 to 0.71 μm root mean square)
- CRM, JFA ASTM D5001, $\frac{1}{2}$ US Gallon
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Power

- 110V-230V, 50/60Hz 

Weight & Dimensions

BOCLE 2.0:

- Net Dimensions: 480 x 560 x 770 mm
- Net Weight: 60 Kg

Humidity Controller:

- Net Dimensions: 460 x 550 x 300 mm
- Net Weight: 20 kg



Continuing R&D may result in specifications, appearance changes

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