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



HFRR ADV

High Frequency Reciprocating Rig

Paltro's next generation High Frequency Reciprocating Rig (**HFRR ADV**) is a compact, fully automated desktop instrument for **ASTM D6079, ISO 12156, ASTM D7688** and **IP 450** to assess lubricity of biodiesel blends and diesel fuels as per EN590.

HFRR ADV offers an ultra compact, state of the art fuel lubricity tester that is designed for full compliance with global test standards. Its compact and easy to use design, automated workflow simplifies testing and the high precision automated humidity control system eliminates manual activities by the operator.

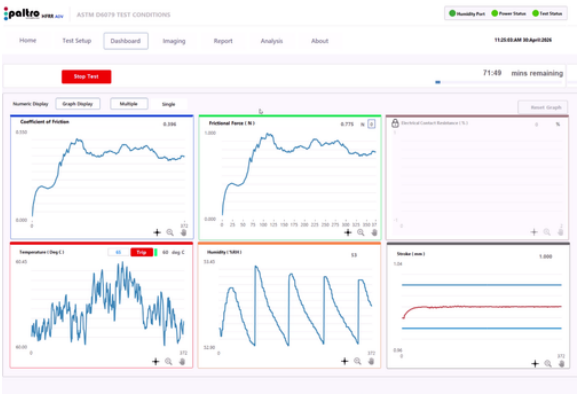
Features

- Ultra-compact, fully integrated design with HFRR vibrator, electronics controller, automatic humidity control module in a single unit offering the smallest footprint and lab space requirement.
- Integrated PC with touchscreen allows test execution with a few clicks
- Fully automated workflow manages the entire sequence, from testing and imaging to measurement and report generation for effortless operation.
- Clean, salt-free humidity that is electronically controlled requires only distilled water. Air temperature and humidity are measured and recorded for the entire test duration.
- Real-time stroke length acquisition during the test with inline sensor makes electronic calibration effortless.

Standards

ASTM D6079, ASTM D7688, ISO 12156, IP 450, consult us for other standards

HFRR ADV
Technical Specifications

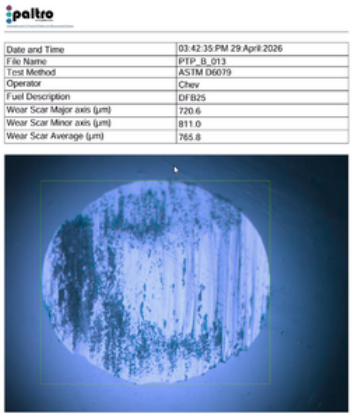


Fully automated workflow
with realtime data acquisition and display

- Applied load: 200 ± 1.0 gm (1 kg capability)
- Stroke: 1 ± 0.02 mm (0.02 to 2 mm capability)
- Frequency: 50 ± 1 Hz (10 to 200 Hz capability)
- Temperature: 60 ± 2 °C (150 °C capability)
- Relative humidity: 30 to 85 %RH
- Fluid volume: 2 ± 0.2 ml
- Friction force: 10 N
- Upper specimen (ball): 6 mm
- Lower specimen (disk): 10 mm dia, 3 mm thick

Options

- Microscope with digital camera and accessories
- Microscope with eyepiece and glass slide micrometer



Date and Time	03:42:35 PM 29 April 2026
File Name	PTP_B_013
Test Method	ASTM D6079
Operator	Chev
Fuel Description	DFB25
Wear Scar Major axis (µm)	720.6
Wear Scar Minor axis (µm)	811.0
Wear Scar Average (µm)	765.8

Report generation

Consumables & Reference Fluids

- Test balls (SAE AMS 6440 steel, with a diameter 6 mm, grade 28, HRC between 58 to 66)
- Test disks (SAE AMS 6440 steel, with a diameter 10 mm, Vickers hardness HV 30, surface finish < 0.02 µm Ra)
- CRM, DFA ASTM D6079
- CRM, DFB ASTM D6079

Power

- 110 to 230 V, 50/60Hz CE

Weight & Dimensions

- Net Dimensions: 440 x 240 x 400 mm
- Net Weight: 35 Kg

Continuing R&D may result in specifications, appearance changes