

## Callisto 100: A Small Cooling Unit for a Single Device

**Relevant for: Refineries, Biodiesel Producers, Additive Producers, Terminals, Independent Labs, Military Labs and Government Labs**

With the Julabo CF41 a small refrigerated circulator model is now available to be used with a single Callisto 100. Its small footprint and filling volume minimize costs and bench space.



### 1 Introduction

In testing laboratories space is a rare good. The provided room may not be sufficient for all instruments and devices needed to perform the relevant measurements. Anton Paar offers the possibility to run the Cold Filter Plugging Point tester Callisto 100 with a small external cooling unit saving valuable space in the laboratory and reducing costs.

The Callisto 100 is a fully automated and compact CFPP tester operated by a touchscreen. It contains all required components according to the standard method. Testing and results are in full compliance with ASTM D6371, EN 116, EN 16329, JIS K2288 and IP 309.

The Cold Filter Plugging Point (CFPP) method is used to determine the low-temperature operability of diesel fuel, biodiesel, blends and gas oils. The CFPP is a critical property used to forecast the lowest temperature at which a fuel will freely flow through filters in a diesel engine system.

All diesel fuels contain waxes. When the temperature of the fuel decreases, wax crystals will begin to precipitate at some point. If a certain amount of waxes have precipitated, the crystals can block the fuel flow through filters and other restricted passages in the fuel system.

### 2 Test Principle

According to the strict guidelines described in the applicable standards, a given portion of a fuel is cooled under the specified conditions and is drawn into a pipette under a controlled vacuum through a standardized wire mesh filter. The procedure is repeated when the sample has cooled by an additional 1 °C. At the temperature at which the sample fails to pass through the filtration device the test is finished, and the temperature is displayed as the CFPP as test result.

### 3 Save Costs and Space

Due to the innovative cooling system of the Callisto 100 it is possible to run the device with only a small cooling unit without the necessity of high power while fulfilling all requirements of the standard methods. At the same time a high homogeneity of the cooling jacket temperature is realized by the innovative Peltier technology.

Therefore the small refrigerated circulator CF41 from Julabo will be filled with approximately 2.5 L of a 2:3 Glysantin®/water mixture.



Figure 1: Callisto 100

#### 4 Good to Know

Instead of toxic or silicone-containing bath fluids a Glysantin® and water mixture with a mixing proportion of 2:3 is sufficient to reach the lowest required temperature of the cooling jacket (-67 °C) with only -23 °C counter cooling.

#### 5 Accessories

The following accessories are needed when performing tests with the Callisto 100 and a small cooling unit.

- **146618** Callisto 100
- **172530** Test jar
- **141692** Measuring pipette, 20 mL
- **147154** Measuring lid with light rod
- **106725** Filter assembly
- **106726** Centering guide EN 116
- **106231** Antifreeze, Glysantin® G48®, 1.5 L
  
- **170367** Refrigerated circulator Julabo CF41, 230 V, 50 Hz
- or-
- **170368** Refrigerated circulator Julabo CF41, 115 V, 60 Hz



Figure 2: Refrigerated circulator Julabo CF41

#### Contact Anton Paar ProveTec GmbH

Tel: +49 (0)33708 56-300

Fax: +49 (0)33708 56-556

support.provetec@anton-paar.com

<http://www.anton-paar.com>