Tamson Instruments
Specification sheet

Tamson Freezing Point Tester (TFPT)

ASTM D1177 - ASTM D852 - ASTM D1015 - ASTM D1493 - ASTM D6875

Item	Unit	TFPT
P/N 230V/50Hz		31T0500
P/N 230V/60Hz		31T0505
Power*	[kW]	2.8 max
Used materials inside bath		Stainless steel chrome plated coil
Range		-70..ambient°C -94..ambient°F
Reading		Standard °C, °F on request
Setting ±	[°]	0.1
Stability** ±	[°C]	Better than 0.05
Heating	[W]	1400 (1 heater)
Bath volume	[L]	14..15
Opening bath	[mm]	240 x 170 (240 x 160 effective use)
Depth bath	[mm]	150
Dimensions Cooler with stirrer, WxDxH	[mm]	470 x 810 x 1070, 90kg
Dimensions Control, WxDxH***	[mm]	400 x 340 x 320, 8kg
CE		Conforms to CE regulation

* Depends on bath temperature and cooling or heating cycle
** Absolute min/max value measured over 1 hour in methanol
*** Please note that table shown on picture is not included

- **Automated determination**
- **Stainless steel bath**
- **Software controlled stroke movement**
- **Predefined settings for test methods**
- **Able to create own test method**

D1177

General

The TFPT has been developed for the automated determination of the freezing point of aqueous engine coolant solutions, windscreen antifreeze liquids and de-icing fluids and the solidification point of industrial organic chemicals.

The determination of the freezing point involves the determination of the time-temperature curve prior to freezing (cooling) and the determination of the horizontal or flattened portion of the freezing curve.

The freezing point of coolant solutions is of greatest significance in order to protect water cooled engines from freeze damages. Also of great significance is the freezing point of antifreeze liquids for de-icing of windscreens and aircraft wings. The TFPT determines the freezing point in an easy, objective and comfortable way.

Due to the automated detection of the horizontal or flattened portion of the temperature cooling curve, the measurement will be performed with high accuracy and high repeatability.

Operation

The TFPT has an integrated embedded Industrial PC and is using Windows® 7 based software. The TFPT is operated by using a keyboard. The test procedure, the parameter settings, the measurement and the data acquisition will be performed with the freezing-point software, where the settings for several test methods are predefined.

All parameters can be set individually, so that the users are able to create their own test method. After the test, the measured values of the freezing curve will be stored and a test protocol can be printed out. The stored data can also be exported to a standard tabulation program (e.g. Excel®).

The TFPT is equipped with a powerful ultra-low cooling thermostat that enables the operator to conduct measurements down to -70°C. For more information on the cooler, please see the Tamson TLC80-14 specification sheet. The cooling circulator can be used either as a standalone unit or can be controlled via the freezing-point software.

The installed gear motor for the stroke movement is also software controlled. The stroke rate is adjustable and can be set by the controller. During the measurement the motor will be automatically switched off after the temperature minimum has been detected.