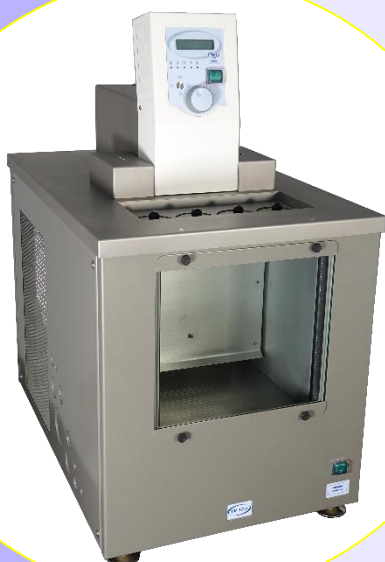


TV12LT

ASTM D445 - IP 71 - ISO 3104 - IP EM PJ - IEC 61868



- ⊕ **Ultra-high stability**
- ⊕ **Ideal for viscosity of jet fuel**
- ⊕ **Fast cool down to -20°C and -40°C**
- ⊕ **Small footprint**
- ⊕ **Detachable front window**
- ⊕ **Internal LED light**
- ⊕ **Bath drain**
- ⊕ **Built-in cooling**
- ⊕ **4 places, small bath volume**

General

Tamson visibility baths are specially designed for tests that require ultra-precise temperature control, or processes that need to be followed visually, e.g. viscometry, thermometer and sensor calibration, density and reaction rate measurement, etc. The window is heated preventing built up of condensate. The TV12LT is specially designed for kinematic viscosity determination of aviation fuels. Please see table 3. The TV12LT is able to cool down from ambient to -20°C (usual test temperature for aviation fuels) within 60 minutes. The TV12LT is ideal for ASTM D7566, where -40°C viscosity determinations are required for aviation turbine fuels containing synthesized hydrocarbons.

Fine adjustment and offset

After the bath has become stable, the set point may be more accurately adjusted in the range of -5.00 to +5.00°, if necessary. The absolute temperature can be adjusted with 0.005°C accuracy.

Item	Unit	TV12LT	
Range		-42...+20°C -43.6...+68°F	-42...+80°C -43.6...+176°F
P/N 230V/50Hz		00T0410	00T0425
P/N 115V/60Hz		00T0415	00T0430
P/N 230V/60Hz		00T0420	00T0435
Reading	[°C/°F]	Menu selectable	
Interface		RS232	
Setting	[°C]	0.01	
Stability ± *	[°C]	0.01	
Uniformity ± *	[°C]	0.01	
Heating	[W]	500 +700	
Heaters		2	
Bath volume	[L]	15	
Cover		1 cover with 4 x ø51 mm openings	
Window	[mm]	255 x 230	
Opening bath	[mm]	250 x 98	
Depth	[mm]	300	
Length	[mm]	670	
Width	[mm]	425	
Height	[mm]	760	
Power	[Watt]	Nominal 800, Maximum 2100	
Ambient condition	[°C]	18 .. 23	
CE	All models conform to CE regulations		
* Measured @-20°C in methanol			

Construction

The stainless steel construction ensures an exceptional stable bath temperature which is further improved by an ingenious stirring mechanism with baffle plates. The baffle plate directs the fluid which results in excellent temperature control and homogeneity. All wetted parts are made of stainless steel, providing resistance against all usual bath fluids. The cover of the bath has four round ø51 mm openings with lids, for suspending glass capillary viscometers in holders.

The bath is fitted with adjustable feet for levelling. Different covers can be used. The use of thermo insulated windows and window heating ensures clear sight. A permanent LED light is located in the top plate to supply clear light and guarantees optimal visibility inside the bath. A bath overflow outlet protects against expanding bath fluid or when the bath filling is too high.

TV12LT

ASTM D445 - IP 71 - ISO 3104 - IP EM PJ - IEC 61868

Span

Varies for different part numbers. Span lies from -42°C/-43.6°F up to + 80°C/176°F.

Safety

The bath conforms to CE-regulation. Further the bath is equipped with a mechanical over temperature device which cuts the power when in case of malfunction the bath exceeds the pre-set maximum temperature. This feature guarantees safe around the clock operation. The TV12LT is equipped with a float that switches off the bath when the level of bath fluid is too low.

Accuracy

Recovery from temperature dip

TV12LT bath



Conventional rectangle bath



Inside glass viscometer capillary



Accuracy @ -20°C

Methanol

standard deviation $\pm 0.004^{\circ}\text{C}$

min / max $\pm 0.013^{\circ}\text{C}$

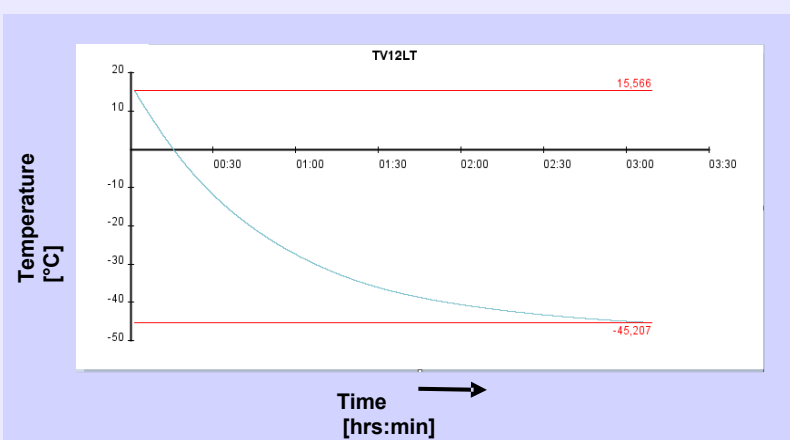
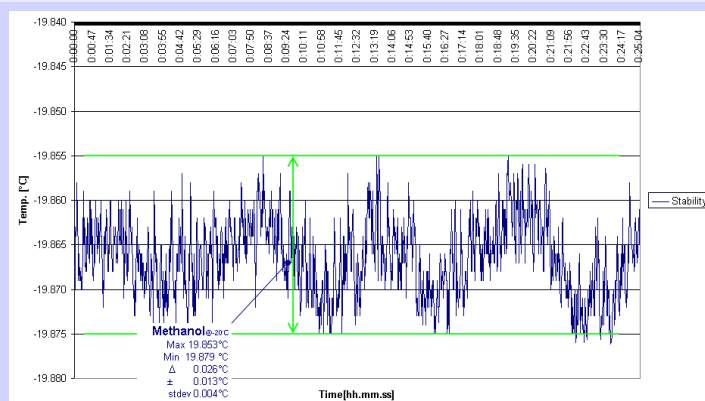
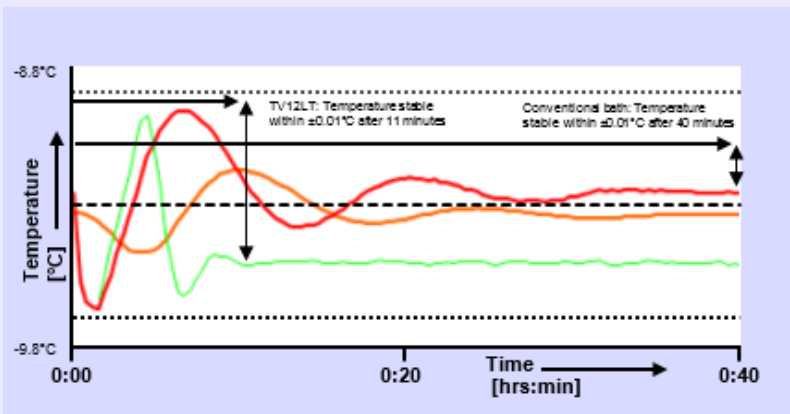


Homogeneity

Methanol

standard deviation $\pm 0.004^{\circ}\text{C}$

min / max $\pm 0.013^{\circ}\text{C}$



TV12LT

Cooldown

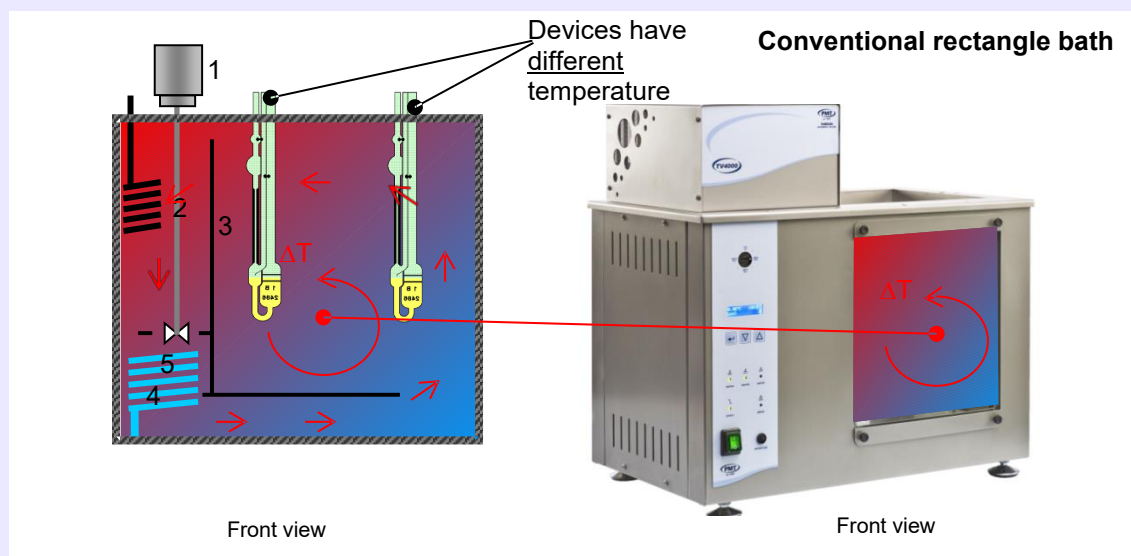
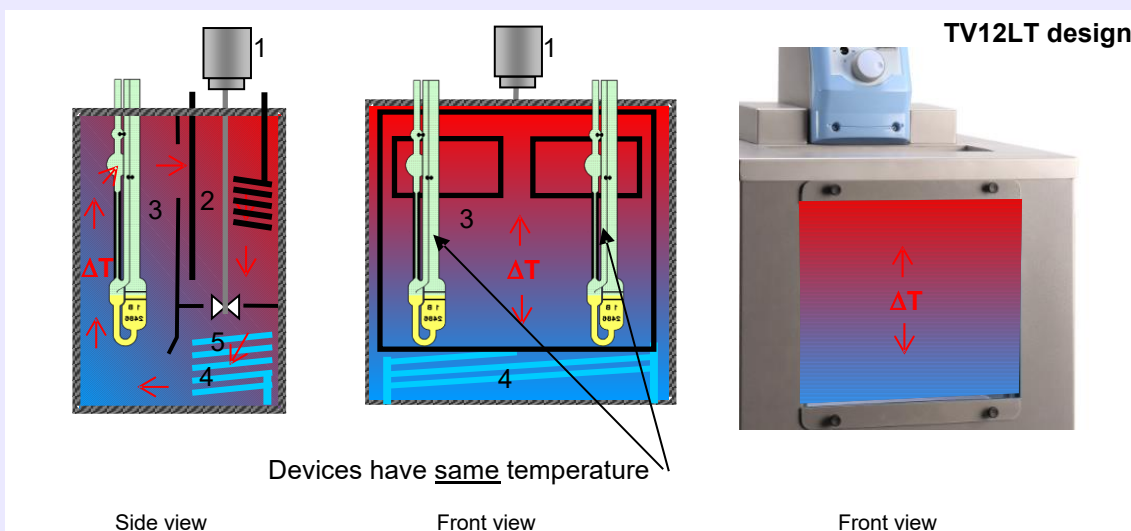
Reaches -20°C within 60 minutes

Reaches -40°C within 120 minutes

TV12LT

Principle of operation

Superior homogeneity



- 1 : Motor
- 2 : Heater
- 3 : Baffle plates
- 4 : Cooling
- 5 : Stirrer vane

TV12LT

TV12LT

Accessories

Table 1: TV12LT is standard included with:

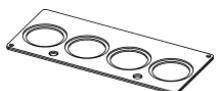
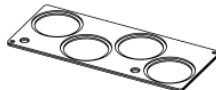
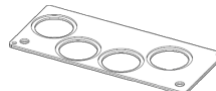
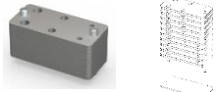
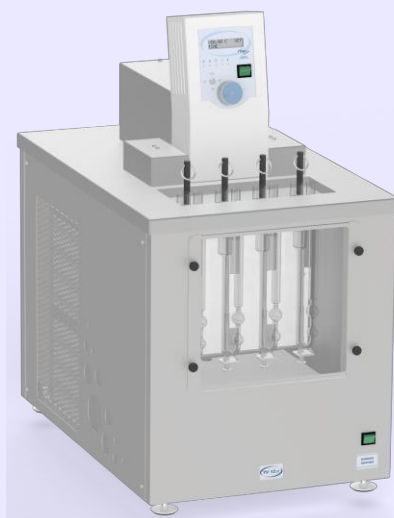
P/N	Picture	Description
23T2411		Cover with 4 openings: - 4 x ø51 mm opening - 2 x ø12.5mm opening for thermometer
		4 * lid for ø 51 mm opening

Table 2: Optional covers and levelling platform for TV12LT:

P/N	Picture	Description
23T2413		Cover with 4 openings: - 4 x ø60 mm opening - 2 x ø12.5mm opening for thermometer
		4 * lid for ø60 mm opening
23T2412		Special cover for CFR (Cannon Fenske Routine) viscometers with 4 openings: - 4 x ø51 mm opening - 2 x ø12.5mm opening for thermometer
		4 * lid for ø 51 mm opening
13T6200		Levelling platform - without metal block (P/N 13T6210) - openings in cover can be custom designed (Please see final page for more information)
13T6210		Metal calibration block



TV12LT

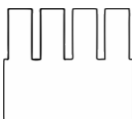
Aviation Fuel Viscosity

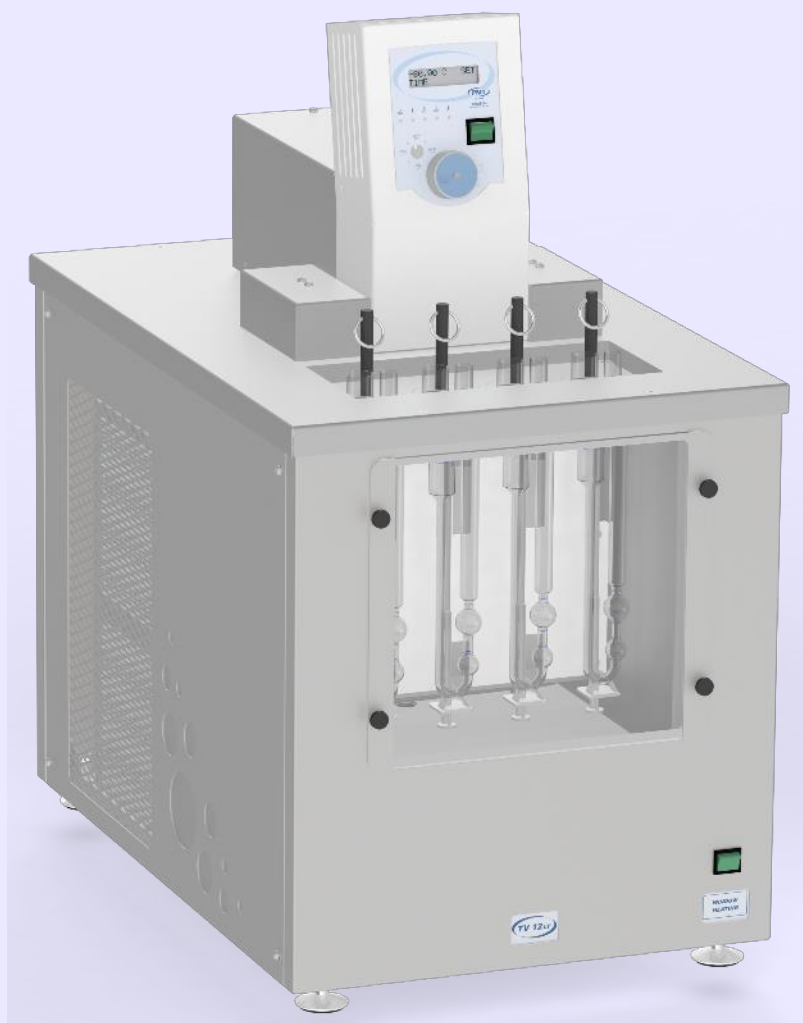
Table 3: Suggested set-up to determine the kinematic viscosity of aviation fuel

P/N	Picture	Suggested quantity	Description
00T0410		1	TV12LT (230V/50Hz)
00T0415			TV12LT (115V/60Hz)
00T0420			TV12LT (230V/60Hz)
10T6090		1	Timer, 8 positions
14T0303		1	Adapter to insert TT3B thermometer in to the bath cover
10T6094		1	Tamson TT3B thermometer with external probe, three decimal reading, precision $\pm 0.01^{\circ}\text{C}$, short PT-100 probe with range $-40 \dots +140^{\circ}\text{C}$ including a works calibration certificate. (Please see specification sheet "TT3B thermometer")
10T6001		4	Ubbelohde viscometer holder
25T0815		1	ISO 17025 Calibrated Ubbelohde viscometer tube size 0C
25T0816		1	ISO 17025 Calibrated Ubbelohde viscometer tube size 0B
25T0817		1	ISO 17025 Calibrated Ubbelohde viscometer tube size 1
25T0818		1	ISO 17025 Calibrated Ubbelohde viscometer tube size 1C
N2B		1	N2B viscosity reference standard
06T1724		1	Stoppers

TV12LT

Accessories

Table 4: Accessories and options		
Viscosity accessories		Please see specification sheet "Viscosity accessories", e.g. viscometers, viscometer holders, bath fluids, general purpose reference standards, etc
02T0204		Spill tray Protects your lab against dripping and spilling during operation or when replacing bath fluid. The tray has a drainage valve 3/8" BSP connection.
13T3021		White contrast plate to get better visibility when measuring transparent liquids like jet fuel



TV12LT