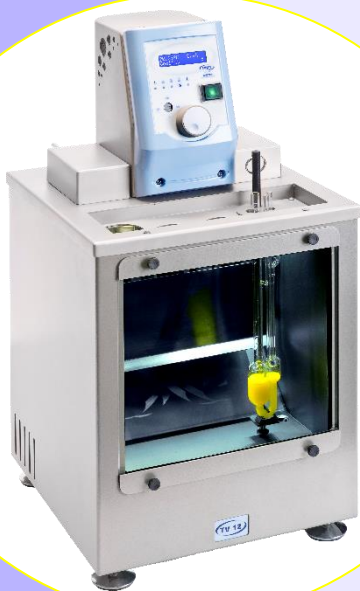


Specifications TV12

Tamson Visibility Bath 12 liters ASTM D445, ASTM D446, IP 71, ISO/EN 3104, ASTM D2170



- ⊕ **Small footprint**
- ⊕ **Internal LED light**
- ⊕ **Ultra-high stability**
- ⊕ **Bath drain and overflow outlet**
- ⊕ **Standard cooling coil**
- ⊕ **Four places, small bath volume**

Item	Unit	TV12
P/N		00T0400
230V/50~60Hz		
P/N		00T0405
115V/60Hz		
Range	°C °F	ambient ..120°C (302°F)
Reading		°C or °F (menu selectable)
Interface		RS232
Setting	[°C]	0.01
Stability*±	[°C]	0.01 (stdev 0.002)
Uniformity*±	[°C]	0.01 (stdev 0.008)
Heating	[kW]	0.5 + 0.7
Heaters		2
Bath volume	[L]	12 ..15
Number of lids		4 x round ø51mm
Window	[mm]	140 x 285
Opening bath	[mm]	250 x 75
Depth	[mm]	300
Length	[mm]	318
Width	[mm]	365
Height	[mm]	640
Weight	[kg]	20
Power	[kW]	0.2 .. 1.3 max
CE	Product conform CE regulation	
*Measured in water @40°C		

General

Tamson viscometer and Tamson calibration 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 bath is fitted with a double window of which the front pane is detachable for cleaning purposes.

Construction

The stainless steel construction ensures an exceptionally stable bath temperature which is further improved by an ingenious stirring mechanism with baffle plates. All wetted parts are made of stainless steel and brass, providing resistance against all usual bath fluids. The bath is fitted with adjustable feet for leveling. The cover of the bath has 4 round ø 51 mm openings with lids, for suspending glass capillary viscometers in holders.

When using Cannon Fenske Routine viscometers only three openings can be used. To work at temperatures below ambient, use of cooling must be made. Cooling fluid can be pumped through the cooling coil inside the apparatus. Tap water or a combination with the external Tamson TLC10-3 cooling circulator can be used for this purpose. The windows are formed with two panes of tempered safety glass separated by 20 mm air space. A permanent light is located in the top plate to supply clear light and guarantee optimal visibility inside the bath. A bath overflow outlet protects against expanding bath oil when the bath filling is too high.

Agitation

A vane type stirrer with maintenance free bearings moves the bath fluid past a special heater then from under the main baffle plate, thus specifically directing the fluid creating an optimal temperature and excellent uniformity.

Specifications TV12

Accuracy

Span

All baths can be operated from ambient +5°C up to +120°C (302°F). With the use of the built-in cooling coil, span lies 5°C above the temperature of the cooling liquid.

Safety

The bath conforms to CE-regulation. Further the bath is equipped with a mechanical over temperature device which trips when in case of malfunction the bath exceeds the pre-set maximum temperature. This feature guarantees safe around the clock operation.

Accuracy

The system overall accuracy is within $\pm 0.005^\circ\text{C}$

Fine adjustment and offset

After the temperature control is stable, the offset may be more accurately adjusted in the range of -5.00°C to $+5.00^\circ\text{C}$, if necessary.

Options

- Level detector/float **P/N 07T0085**

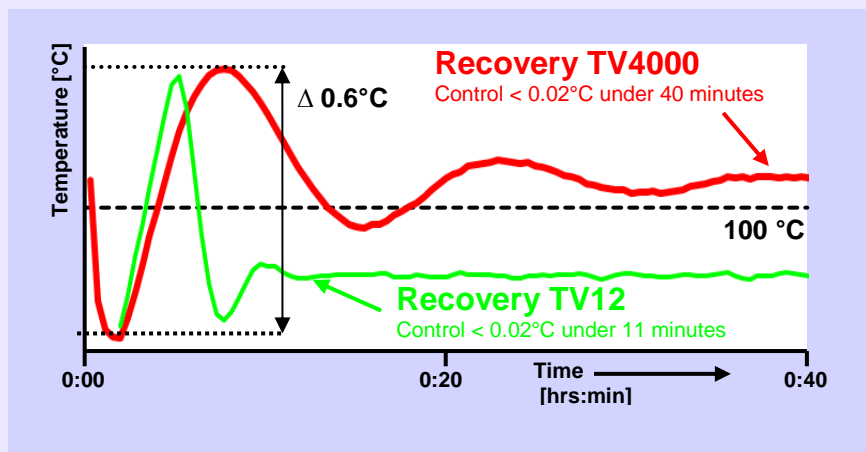
Dynamic control

Temperature recovery after placement of one viscometer with holder inside the viscometer bath.

TV12 bath recovers stable control within $\pm 0.02^\circ\text{C}$ after 11 minutes.

Conventional bath TV4000 needs 40 minutes to recover and resumes stable control within $\pm 0.02^\circ\text{C}$.

Measured in oil at 100°C .



Control accuracy

Measured over one hour



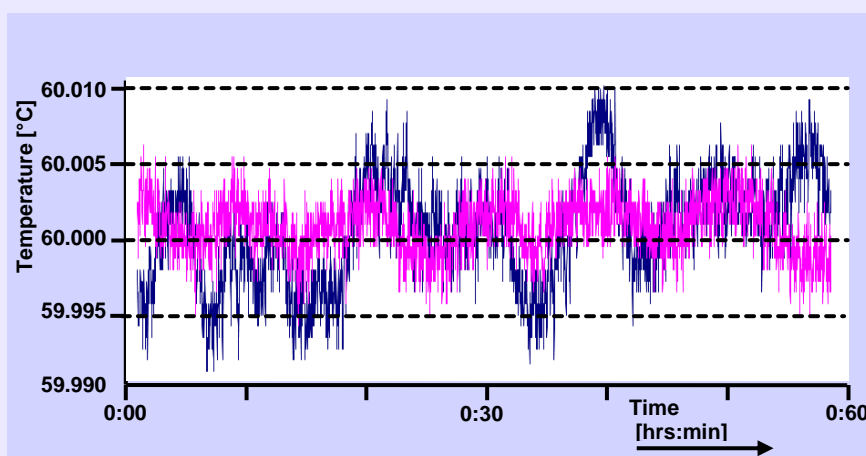
In water

standard deviation $\pm 0.002^\circ\text{C}$,
min / max $\pm 0.008^\circ\text{C}$



In oil

standard deviation $\pm 0.005^\circ\text{C}$,
min / max $\pm 0.014^\circ\text{C}$



Specifications TV12

Homogeneity

Temperature Homogeneity

In water

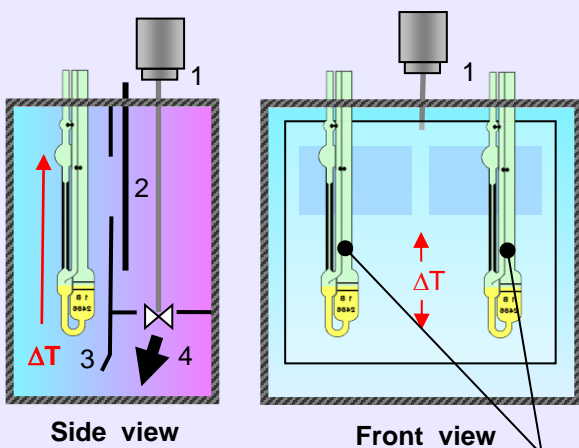
standard deviation $\pm 0.002^{\circ}\text{C}$
min / max $\pm 0.008^{\circ}\text{C}$

In oil

standard deviation $\pm 0.005^{\circ}\text{C}$
min / max $\pm 0.014^{\circ}\text{C}$

Temperature gradient TV12 versus conventional system

TV12



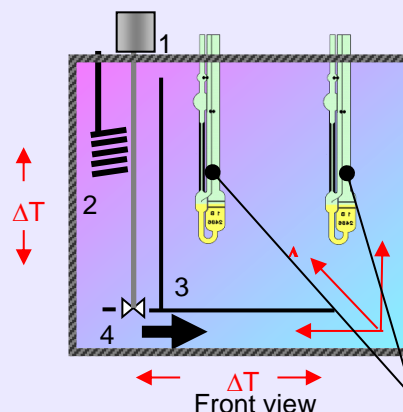
Side view

Front view

Devices have same temperature

Conventional bath

- 1: Stirrer
- 2: Heater
- 3: Baffle plate
- 4: Circulation



Front view

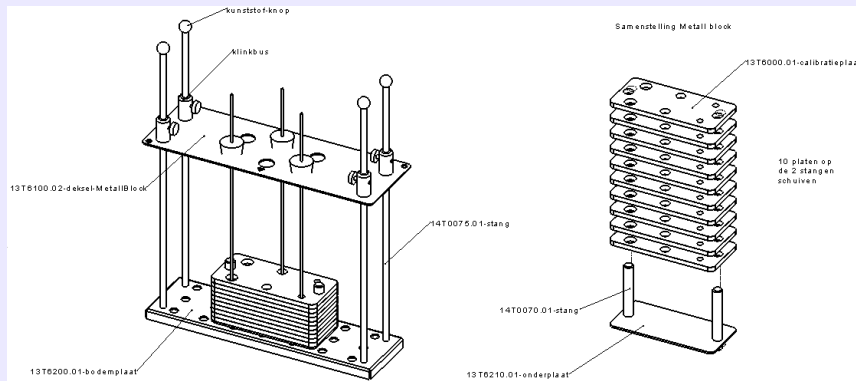
Devices have different temperature

TV12

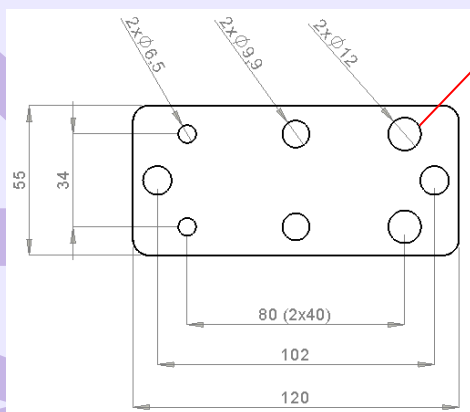
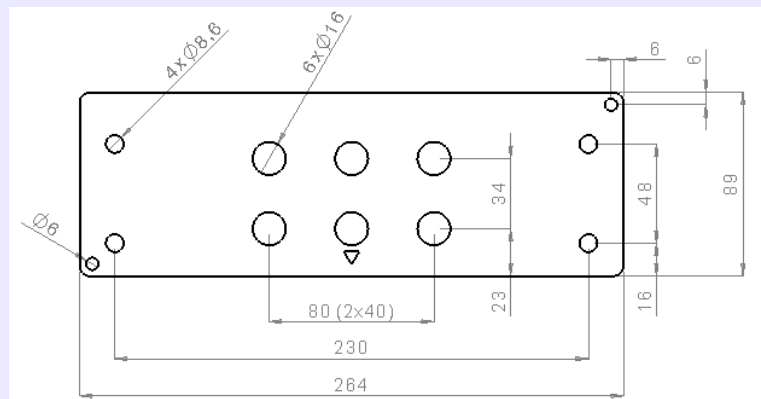
Specifications TV12

Accessories

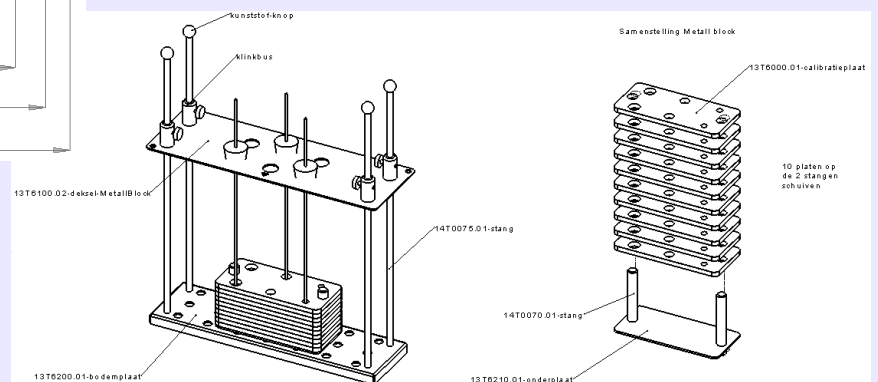
Levelling platform (P/N 13T6200) and metal block (P/N 13T6210)



Dimensions top plate

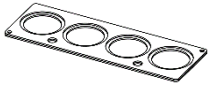



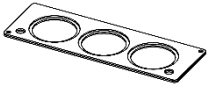


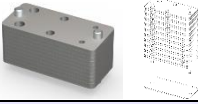
☞ Number of holes, dimensions and position. Other dimensions on request ☞



Specifications TV12

Accessories








TV12 is standard included with:		
P/N	Picture	Description
23T2409		Cover with 4 openings: - 4 x \varnothing 51 mm opening - 2 x \varnothing 12.5mm opening for thermometer
		4 * Lid for \varnothing 51 mm opening

Optional cover and levelling platform for TV12:		
P/N	Picture	Description
23T2410		Cover with 3 openings: - 3 x \varnothing 60 mm opening - 2 x \varnothing 12.5mm opening for thermometer
		3 * lid for \varnothing 60 mm opening
13T6200		Levelling platform - without metal block (P/N 13T6210) - openings in cover can be custom designed
13T6210		Metal calibration block

TV12

Specifications TV12

Accessories

Accessories and options				
00T0050		Cooling circulator TLC10-3 - 230V/50Hz		
00T0051		Cooling circulator TLC10-3 - 230V/60Hz		
00T0052		Cooling circulator TLC10-3 - 115V/60Hz		
10T6090		Timer, 8 positions		
Thermometers		ASTM no.	Ordering no.	Range°C
		Similar to 44C	25T0937B	+18.5 ... +21.5
		Similar to 46C	25T0939B	+48.6 ... +51.4
		Similar to 47C	25T0940B	+ 58.6 ... +61.5
		S120C	25T0990B	+38.6 ... +41.4
		Similar to 121C	25T0991B	+98.6 ... +101.4
		Similar to 44C	25T0924B	+18.5 ... +21.5
			Other ranges available on request	
00T0239		Thermometer holder		
E20 thermometer		Please see specification sheet "E20 thermometers"		
14T0303		Adapter to insert an E20 thermometer in the opening of the cover		
Viscosity accessories		Please see specification sheet "Viscosity accessories", e.g. Viscometers, Viscometer holders, bath fluids, general purpose reference standards, etc		
02T0202		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.		
07T0085		Level detector/float		