Tamson Instruments

Specification sheet

Specifications TV7000DC

ASTM D445 - ASTM D446 - IP 71 - ISO/EN 3104 - ASTM D2170 - ASTM D2162

Item	Unit	TV7000DC	TV7000DCSP
P/N 230V/50~60Hz		00T0796	00T0806
P/N 115V/60Hz		00T0798	00T0808
Range		Ambient.. 230°C /446°F	Ambient.. 100°C /212°F
Reading	°C or °F menu selectable		
Interface		RS232	
Setting	[°C]	0.01	
Uniformity* ±	[°C]	0.01	
Stability		See graphs	
Heating 230V	[kW]	2.4	
Heating 115V	[kW]	2.0	
Heaters	3	2 x 500W DC, 1 x 1400W boost	
Bath volume	[L]	70	
Window		270 x 585	
Opening bath	[mm]	260 x 240	
Depth	[mm]	630	
Length	[mm]	460	
Width	[mm]	410	
Height	[mm]	1010	
Weight	[kg]	61	
Power	[kW]	2.6	
Frequency	[Hz]	Suited for both 50 & 60	
CE	All models conform CE regulation		

* Value measured in water @ +50°C/+122°F

TV7000DC

- **Completely stainless steel**
- **Conforming to ASTM D445 and D2162**
- **High precision and stability**
- **Large windows**
- **Easy to operate**
- **RS232 communication**
- **Drain and overflow outlet**

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 calibration, crystal growing, density and reaction rate measurement, etc. The TV7000DC is fitted with double windows in front and rear walls. The windows are formed with two panes of tempered safety glass separated by 20 mm air space. Visibility through the bath is excellent.

Construction
The stainless steel construction with 25 mm thick glass wool insulation ensures exceptional stable temperatures which is further improved by an ingenious stirring mechanism with baffle plates. All wetted parts are made of stainless steel and a brass bearing, providing resistance against all usual bath fluids. The bath is fitted with adjustable feet for levelling. The cover of the bath has seven round ø51 mm openings with lids, for suspending glass capillary viscometers in holders. To work at temperatures around ambient, use of cooling must be made.

A cooling coil is standard included in the bath through which tap water or cooling fluid can be circulated. The Tamson TLC15-5 can be used for this application. A power plug on the backside is mounted to provide power for an optional Z71 LED illumination unit.

Agitation
A vane type stirrer with bearings moves the bath fluid past the heaters and then from under the main baffle plate, thus directing the freshly heated fluid to the walls as well as window areas and creating an optimal temperature uniformity.

Temperature Control
The bath is equipped with DC current heaters. A special power supply stabilizes the mains power enabling very precise temperature control. A high accuracy control system heats the bath fluid, resulting in very stable temperature control.

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Span
All baths can be operated from ambient +5°C up to +230°C (41..446°F). With the use of the built-in cooling coil, span lies 5°C above the temperature of the cooling liquid.

Accuracy and set point
The set point can be set in steps of 0.01°C. The system overall accuracy is within ± 0.007°C, please see the graphs. After the temperature control is stable, the offset can even be adjusted with ± 0.005°C.

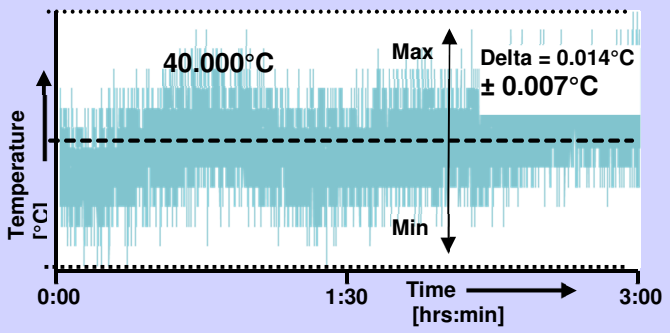
Viscometer arrangement
The stainless steel bath cover has seven openings with lids, arranged in two rows of respectively four and three. Optional is a cover with eight openings (2*4 openings). These ø51 mm openings can accommodate glass capillaries in holders (see specification sheet "viscosity accessories"). Additionally, thermometers can be placed through two ø12.5 mm openings in the cover.

Safety
The bath conforms to CE regulations. It also is equipped with a mechanical adjustable and resettable safety thermostat. Advanced safety features are microprocessor control of:
- Electronic- and processor system,
- Control and feedback from each heating,
- System accuracy.

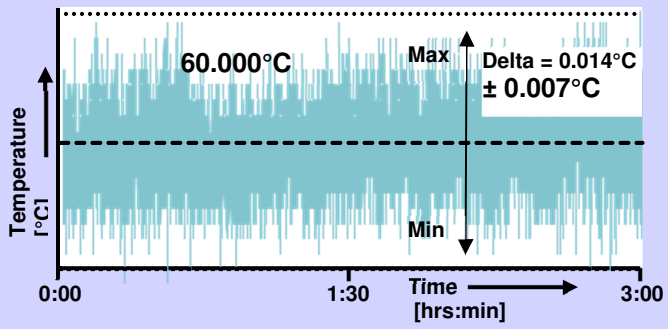
System error results in total cut-off from the power supply.

Optional equipment
Please see next page.

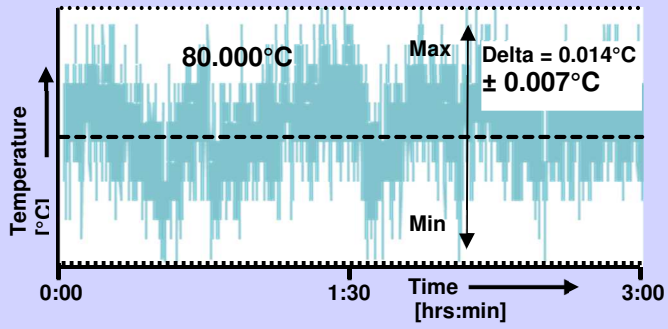
Stability @ 40°C



Stability @ 60°C



Stability @ 80°C



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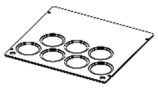
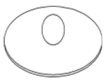
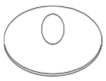
TV7000DC is standard included with:		
P/N	**Picture**	**Description**
23T2400		Cover with 7 openings: - 7 x ø51 mm opening - 2 x ø12.5mm opening for thermometer
		7 * lid for ø 51 mm opening

Optional covers for TV7000DC:		
P/N	**Picture**	**Description**
23T2401		Cover with 8 openings: - 8 x ø51 mm opening - 2 x ø12.5mm opening for thermometer
		8 * lid for ø 51 mm opening
23T2402		Cover with 8 openings: - 8 x ø60 mm opening - 2 x ø12.5mm opening for thermometer
		8 * lid for ø 60 mm opening
23T2403		Cover with 7 openings: - 4 x ø51 mm opening - 3 x ø60 mm opening - 2 x ø12.5mm opening for thermometer
		4 * lid for ø 51 mm opening
		3 * lid for ø 60 mm opening

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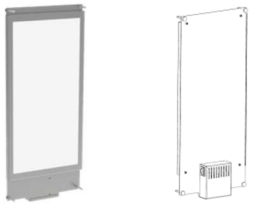
Accessories		
P/N	**Picture**	**Description**
00T0907		LED backlight panel Z71 (85 ~ 230V/50-60Hz)
00T0565		Cooling circulator TLC15 230V/50Hz
00T0567		Cooling circulator TLC15 230V/60Hz
00T0570		Cooling circulator TLC15 115V/60Hz
02T0201		Spill tray. Protects your lab against dripping and spilling during operation or when replacing bath fluid. The tray has a drainage with valve and 3/8" BSP connection
12T1075		Tubing with connectors and clamps to be used between a TLC and a TV
E20 thermometers		Please see specification sheet “E20 Thermometer” for more information
14T0303		Adapter to insert an E20 thermometer in the opening of the cover
07T0088		Complete level detector/float
Bath fluid		Please see specification sheet “Viscosity accessories”

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Accessories		
P/N	**Picture**	**Description**
25T0581P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 0
25T0583P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 0B
25T0582P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 0C
25T0584P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 1
25T0586P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 1B
25T0585P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 1C
25T0587P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 2
25T0589P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 2B
25T0588P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 2C
25T0590P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 3
25T0592P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 3B
25T0591P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 3C
25T0593P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 4
25T0595P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 4B
25T0594P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 4C
25T0596P		Master Ubbelohde viscometer ISO 17025 calibrated under UKAS size 5
10T6035		Viscometer holder Master Ubbelohde
10T6030		Viscometer holder Master Cannon Fenske
On request		Uncalibrated master viscometers either Cannon Fenske or Ubbelohde.
10T6090		Timer, 8 positions
Calibration, reference oils		Please see specification sheet "Viscosity accessories".