

### Density Measurement of Petroleum Products by Hydrometer Method

ASTM D287 – ASTM D1298 - IP 160 - API 2547 – ASTM D6822



- Small footprint**
- Detachable leakage tray**
- Easy to drain and clean**
- Stainless steel**
- Cylinder visible over full length**
- Wide temperature range**

#### General

This specific method covers following laboratory determinations by hydrometer method:

- Density,
- Relative density (Specific gravity),
- American Petroleum Institute Gravity of:
  - Crude petroleum,
  - Liquid Petroleum products,

Products must have a Reid vapor pressure of 26 lb or less.

#### Construction

A Tamson TLC15-5 refrigerator circulates a (cold) flow through the double walls of the cylinders. The TLC15-5 maintains the bath temperature within  $\pm 0.25^{\circ}\text{C}$  of the test temperature required by the method.

The PTFE valves ensure fast drainage and cleaning of the tube. The easy detachable leakage tray prevents that portions of the sample are spilled on the workbench.

Item	Unit	TLC15		
Ordering code		230V /50Hz	230V /60Hz	115V /60Hz
		00T2000	00T2001	00T2002
Reading	$^{\circ}\text{C}$ or $^{\circ}\text{F}$	Menu selectable		
Interface		RS232		
Setting	$[^{\circ}\text{C}/\text{F}]$	0.1		
Bath volume	[L]	5		
Opening bath	[mm]	85 x 150 (effective use)		
Depth bath	[mm]	150		
Length	[mm]	420 (460 Incl. drain)		
Width	[mm]	265		
Height	[mm]	565		
Weight	[Kg]	30		
Power	[Watt]	1100 (1 Heater)		
Item	Unit	Rack		
Length tripod	[mm]	360 (front to back)		
Width tripod	[mm]	320 (left to right)		
Height tripod	[mm]	800		
Weight tripod	[Kg]	9 (glass parts included)		
Ambient* temperature	$[^{\circ}\text{C}]$	18 .. 23		
CE		Products conform to CE regulation		

The rack offers full view on the hydrometer. Our special support eliminates the problem of mounting brackets or portions of a thermostatic bath blocking the view.

The measuring set-up contains three glass cylinders, support and circulator. Our system offers an interesting price advantage compared to other solutions based on a combination of a thermostatic bath and external chiller.

This set-up can also be used for ASTM D287, standard test method for API gravity of crude petroleum and petroleum products having a Reid vapour pressure of 26 psi (180 kPa) or less. For this method the gravities are determined at  $60^{\circ}\text{F}$ . The set-up can also be used for the thermo-hydrometer conform ASTM D6822.

#### Accuracy

The system keeps the sample within  $0.25^{\circ}\text{C}$  of the test temperature.

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#### Fine adjustment and offset

After the bath has stabilized the set point may be more accurately adjusted in the range of  $-5.00^{\circ}$  to  $+5.00^{\circ}$ , if necessary.

#### Ambient condition








For proper cooling performance within the specifications it is preferred that the ambient temperature is within range  $18^{\circ}\text{C}$ ... $23^{\circ}\text{C}$ .

#### Hydrometers

The precision hydrometers are manufactured conform to BS 718 or DIN12791.




#### Six positions

One cooler circulator is able to control the temperature of six double wall cylinders and an addition rack thus can be connected in series. Ordering code for an additional rack with three cylinders is 00T1260.

Part no.	Picture	Description
25T0911		ASTM thermometer (12C), range from $-20$ to $+102^{\circ}\text{C}$ with certificate of conformity.
25T0911W		ASTM thermometer (12C), range from $-20$ to $+102^{\circ}\text{C}$ with works certificate.
09T0000		Glass tube, fluid jacketed hydrometer cylinder with stopper valve. In total three per D1298 apparatus.
08T0100		Tubing 8 x 12mm per 1 mtr $-60.. +180$ , silicone Approx. 3 mtr per set.
08T0120		Plastic screw cap red with opening GL 14. In total six per D1298 apparatus.
08T0122		Plastic hose connection angle GL14. In total three per D1298 apparatus.
08T0121		Plastic hose connection straight GL14. In total three per D1298 apparatus.
08T0125		Y split polypro pylene. In total two per D1298 apparatus.

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#### Spareparts

Part no.	Picture	Description
8T0126		T Split polypropylene. In total two per D1298 apparatus.
00T1260		Complete rack with frame and cylinders.
25T2153		Thermometer holder D1298

# D1298

