GRADIENT COLUMN

DATA SHEET

Density Gradient Column is a method that enables determination of the density. The instrument permits determinations on solid materials at a temperature of 23°C (± 0.1°C), with a 0.0001 g/cm3 accuracy, within a measuring range of 0.8 ± 3.3 g/cm3, basing on the adopted marker floats at known density.

Technical features:

- Perspex bath capacity: 45 litres
- Two or three thermostated columns 850 mm length, (graduated scale range 700 mm/1 mm), 55 mm Ø, basing on model.
- Thermostatic unit that includes:
  - Touch screen display for control temperature (range: ambient to ÷50°C)
  - cooling coil
  - water inlet (at 15° ÷ 16°C)
  - water outlet
- Pump for an ellipsoid flow o thermostatic fluid into the bath
- Overall dimensions : 310 x 310 x 1080 h mm
- Weight: 10 kg (approx.)
- Power supply: 230 V – 50 Hz – 2 kVA monophase

2 columns and 3 columns version available.



Standards	
ASTM	D1505
ISO	1183-2

Principle :

Marker floats at known density are immersed in the column and stop, during sinking, when their own density corresponds exactly to the density of the reached solution. For determining the density of a sample it is therefore necessary to immerse in the same column and expect till it stops because the balance between its own density and solution density is reached. The referenced position of marker floats along the column and the steady position of the sample give the density determination of the sample. Repeated tests have demonstrated that distribution of gradient density does not vary for more than 40 weeks.

GRAVITY SYSTEM for liquids filling of the columns consists of a trolley on wheels , equipped with magnetic stirrer, two conical flasks by 2000 ml with conical fitting, taps in glass, connection and interception, capillary tube and spherical ground joints to be placed on the support by the floor.
The instrument is equipped with a motorised system for retrieving floats and samples without altering the gradient. System is to be positioned in front of to each column from which floats and samples are to be collected with the help of a glass basket.

- Dimensions: 600 x 160 x 1000 mm
- Weight: kg 8 (approx.)
- Power supply: 230 V – 50 Hz

Double-distilled water and anhydrous ethyl alcohol or other liquid appropriate to the gradient are necessary to prepare the solution.

Density range g/cm^3	
0.85 ± 0.98	Ethanol – Water
0.85 ± 1.59	Ethanol – Carbon tetrachloride
0.98 ± 1	Ethanol/Water – Water/Potassium iodide
1 ± 1.6	Water – Potassium iodide
1.10 ± 2.6	Tetrabromo ethane – Trietilphosphate

Code	Description
10006000	Two columns Density gradient
10006010	Three columns Density gradient
10006001	Kit 8 floats spheres at known density 0,84 ÷ 1,59 g/cm3 certified
10006005	Float sphere at known density 0,84xx ÷ 1,49xx g/cm3 certified
10006007	Float sphere at known density 1,60xx ÷ 2,30xx g/cm3 certified
10006012	Gravity system for solutions with all accessories