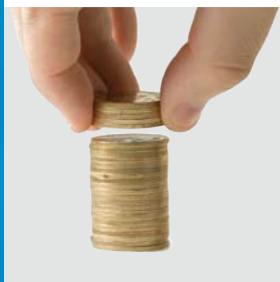


## Enhanced Density Accuracy for Best Value



### Value for money

Density measurement to 5 decimal places is normally performed for products with a density below  $1\text{g/cm}^3$  at temperatures between  $15$  and  $20\text{ }^\circ\text{C}$ . Our new DE45 and DR45 DeltaRange™ meters offer enhanced accuracy over this range, but at a cost significantly lower than for the full range 5 place meters.



### Accurate

Some applications such as legal ethanol content determinations (EC 2870/2000) require density meters which offer a temperature stability of  $\pm 0.02\text{ }^\circ\text{C}$  and a measuring accuracy of  $\pm 0.00002\text{ g/cm}^3$ . Our new DE45 DeltaRange™ Density Meters and DR45 DeltaRange™ Combined Meters fulfill these requirements.



### Compact

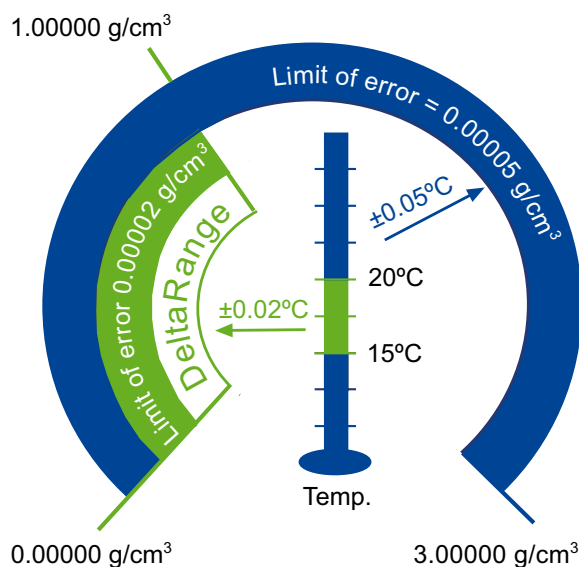
The DR45 DeltaRange™ combined density and refractive index meter is compact and easy to use. It is ideal for use in the quality control of raw materials and organic solvents. Thanks to its highly accurate measuring cells it can eliminate the necessity for alternative techniques such as gas chromatography that are costly and time-consuming.



### Flexible

All of our DE density meters and DR Combined Meters can be integrated into automated multi-parameter analysis systems. Up to four parameters can be measured under the control of our LiQC software. The benefits are clear

- More results from a single sample run
- Full barcode reader support
- Seamless LIMS integration
- Secure biometric user management



### DeltaRange™ density measuring cells

Measurement accuracy is often the most important criterion when purchasing a density meter, as the instrument must provide results with the accuracy specified by the standards and norms associated with the particular application or process.

Five decimal place measuring accuracy is not usually needed over the entire measuring range, as most organic solvents and alcohol solutions have a density lower than  $1\text{ g/cm}^3$ . With the new DeltaRange™ measuring cells, METTLER TOLEDO now offers a tailor-made solution for such applications - at best value prices!

## Automatic prevention of measuring errors

High resolution instruments will only yield correct results if used with utmost care. The measuring accuracy achieved in practice depends more on the measurement procedure adopted by the user than on the absolute accuracy of the measuring instrument. The higher the accuracy required by the application, the more care must be taken to avoid any source of error, which leads to long measurement times. If the measuring instrument is equipped with either the SC1 automation unit or SC30 sample changer, measuring errors due to insufficient sampling, rinsing and cell drying can all be detected and eliminated. In addition, operator involvement is reduced, leading to improved productivity and significant cost savings. Therefore the SC1 or SC30 is the best guarantee for a fast return on investment on your DeltaRange™ meter.

## Improved traceability

Whenever five decimal-place accuracy is required for your application, it is even more important that regular instrument performance checks are carried out. The certified, combined density/refractive index standards (water and dodecane), available from METTLER TOLEDO, let you verify the measuring accuracy of your DeltaRange™ meter easily and quickly.

## Technical Data

Density measuring cell		DE45 DeltaRange™	DR45 DeltaRange™
Measuring range		0.00000 ... 3.00000 g/cm <sup>3</sup>	0.00000 ... 3.00000 g/cm <sup>3</sup>
Limit of error density	whole range	0.00005 g/cm <sup>3</sup>	0.00005 g/cm <sup>3</sup>
	DeltaRange™ (0 ... 1 g/cm <sup>3</sup> ) <sup>1)</sup>	0.00002 g/cm <sup>3</sup>	0.00002 g/cm <sup>3</sup>
Repeatability	whole range	0.00001 g/cm <sup>3</sup>	0.00001 g/cm <sup>3</sup>
Temperature range		4.00 ... 90.00 °C	15.00 ... 50.00 °C
Limit of error temperature	whole range	0.05 °C	0.05 °C
	DeltaRange™ (15 ... 20 °C)	0.02 °C	0.02 °C

<sup>1)</sup> in the temperature range 15.00 ... 20.00 °C for non viscous samples

Refractive index measuring cell		DR45 DeltaRange™
Measuring range		1.32000 ... 1.58000 nD
Limit of error refractive index	1.32000 ... 1.40000 nD	0.00005 nD
	1.40000 ... 1.58000 nD	0.00010 nD
Repeatability	whole range	0.00002 nD
Temperature range		15 ... 50 °C
Limit of error temperature	whole range	0.05 °C

## Order information

Description	Reference
DE45 DeltaRange™ Density Meter	DE45 DeltaRange
DR45 DeltaRange™ Combined Meter	DR45 DeltaRange
SC1 Automation Unit (for individual samples)	SC1
SC30 Automation Unit (for sample series, 30 positions)	SC30
LiQC Multi-Device (Software, LiQC Device Controller, connecting cables)	51327315
Combined Standard (density and refractive index) Reference Material Water (d = 0.998 ... g/cm <sup>3</sup> , 9 mL)	51338010
Combined Standard (density and refractive index) Reference Material Dodecane (d = 0.749 ... g/cm <sup>3</sup> , 9 mL)	51338012



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