

Multiparameter Measuring Systems



The No. 1 in Accuracy: The Prime Class

The Modulyzers of the Prime Class are your basic configurations on which all others are built. A DMA 4100 M, DMA 4500 M or the most accurate density meter in the world, DMA 5000 M, is combined with one of the 4 different refractometers from the Abbemat series and equipped with an Xsample filling unit - all Plug and Play. The resulting Prime Class Modulyzer is your versatile partner in the laboratory.

Measurements with the Modulyzer are highly reproducible, precise and easy to perform. The automatic filling warning given by FillingCheck™ on the DMA Generation M density meters, the check of the filling procedure via U-View™ and the temperature management with ThermoBalance™ result in stable and reliable measuring results. The DMA Generation M density meters and Abbemat refractometers fully support requirements according to 21 CFR Part 11 and cGLP/GMP.

Depending on how you custom-tailor your Prime Class Modulyzer to suit your application, you determine the density and refractive index of up to 96 samples consecutively - even when they are aggressive or volatile.



Unlimited Possibilities: The Unlimited Class



The Modulyzers of the Unlimited Class are top-league players when it comes to versatility and flexibility. To meet your measurement needs, the basic configuration (Prime Class) Modulyzers can be expanded at any time with a HazeQC ME turbidity measuring module, a pH meter, an MCP polarimeter, Lovis 2000 ME viscometer or a Lovibond* colorimeter. An Unlimited Class Modulyzer offers you the maximum flexibility today and tomorrow: Depending on the setup, this multiparameter measuring system** determines the density, refractive index, optical rotation, turbidity, pH, viscosity, color and calculated quality parameters of liquids.

**The Lovibond colorimeter is produced by Tintometer Ltd. The colorimeter communicates via RS232 interface with the tiamo™ laboratory software.*

*** The DMA Generation M density meter, Abbemat refractometer, MCP series polarimeter and colorimeter can be operated individually.*

Let the Future Come

Anton Paar measuring instruments embody precise and reproducible results. To help you keep pace with developments in your industry, be up-to-date and react flexibly, Anton Paar has developed the Modulyzers of the Prime Class and Unlimited Class. Highly accurate instruments, a wide range of sample filling units and measuring modules which can be added at a later date combine to make systems which are fit for the future.



DMA Generation M



Performance
Performance Plus
Abbemat



Xsample



HazeQC ME

Modulyzer **Prime Class**

Modulyzer

Density	Refractive index	Automation	Turbidity
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 22/122, Xsample 52/352/530	○
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 22/122	○
DMA Generation M	Abbemat Heavy Duty		○
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 352/530	○
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 22/122/352/530	HazeQC ME
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 22/122	HazeQC ME
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 22/122	○
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 22/122	○
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 22/122	HazeQC ME
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 22/122	HazeQC ME
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 352/530	○
DMA Generation M	Abbemat Performance/ Performance Plus	Xsample 352/530	○

To mention just a few modules

The four different Abbemat refractometers from Anton Paar are designed for routine applications, as high-end instruments or for operation in harsh environments. With automatic temperature control and a wide range of accessories they form a successful team with the DMA Generation M density meters and can be adapted to suit every task.

The filling units of the Xsample series leave nothing to be desired: Reliable filling, automation (of up to 71 samples), resistance to aggressive samples, automatic cleaning and a bar code reader which reads the sample ID and changes the measuring method for you. Your life in the laboratory will be much easier, without a doubt.

The modular circular polarimeters of the MCP series are automatically temperature-controlled and particularly quick and easy to operate. The Toolmaster™ technology enables automatic transfer of all relevant data from the measuring cell to MCP. FillingCheck™ shows a live video of the filling process inside the sample cell for secure instrument handling and data traceability.

Whichever combination you choose: The instruments do not need a lot of space in the laboratory, can be used individually, upgraded at any time - and you can rely on the compatibility of the instruments coming from one producer.



Unlimited Class

pH value	Viscosity	Optical rotation	Color	Controlled by
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	DMA Generation M
pH ME	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	DMA Generation M
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	DMA Generation M
<input type="radio"/>	<input type="radio"/>	MCP Series	<input type="radio"/>	tiamo™
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	DMA Generation M
pH ME	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	DMA Generation M
<input type="radio"/>	Lovis 2000 ME	<input type="radio"/>	<input type="radio"/>	DMA Generation M
pH ME	Lovis 2000 ME	<input type="radio"/>	<input type="radio"/>	DMA Generation M
<input type="radio"/>	Lovis 2000 ME	<input type="radio"/>	<input type="radio"/>	DMA Generation M
pH ME	Lovis 2000 ME	<input type="radio"/>	<input type="radio"/>	DMA Generation M
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Lovibond PFXi	tiamo™
<input type="radio"/>	<input type="radio"/>	MCP Series	Lovibond PFXi	tiamo™

The Specialists

To simplify your decision, Anton Paar offers preconfigured systems which have been defined by experienced application experts specially for your industry. These systems are also flexible and can be expanded at a later date: You define your parameters, the Modulyzers deliver the results you require.

Modulyzer **for Chemicals**



DMA 4100 M



Abbemat 300



Xsample 122 Chemical



pH ME

Modulyzer for Chemicals – withstands harsh environments and aggressive samples

The Modulyzer for Chemicals determines the quality parameters of dangerous and aggressive samples with minimum effort. Chemical resistance to aggressive samples is guaranteed.

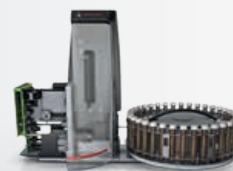
Modulyzer **for Flavors & Fragrances**



DMA 4500 M



Abbemat 300



Xsample 530



Bar code reader

Modulyzer for Flavors & Fragrances – quickly analyzes valuable samples

The Modulyzer for Flavors and Fragrances fills and measures your samples and then cleans the whole system for you. In addition, the bar code reader saves a lot of time and work. Modulyzer for Flavors and Fragrances is extremely efficient and also: Measured results can be sent to your LIMS directly.

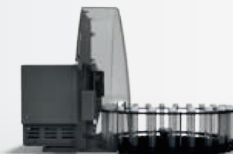
Modulyzer **for Pharma**



DMA 5000 M



Abbemat 500



Xsample 122



Pharma Qualification

Modulyzer for Pharma – ready for the standards

Demanding regulations and social responsibility shape quality control in the pharmaceutical industry. The excellent measuring results delivered by Modulyzer for Pharma are complemented by the 4Q qualification and validation package, which helps you save time, money and work while documenting the perfect fulfillment of requirements.

Specifications

DMA Generation M

		DMA 4100 M	DMA 4500 M	DMA 5000 M
Measuring range	Density	0 to 3 g/cm ³	0 to 3 g/cm ³	0 to 3 g/cm ³
	Temperature	0 to 95 °C	0 to 95 °C	0 to 95 °C
	Pressure	0 to 10 bar	0 to 10 bar	0 to 10 bar
Accuracy	Density	0.0001 g/cm ³	0.00005 g/cm ³	0.000005 g/cm ³
	Temperature	0.05 °C	0.03 °C*	0.01 °C*
Repeatability s.d.	Density	0.00005 g/cm ³	0.00001 g/cm ³	0.000001 g/cm ³
	Temperature	0.02 °C	0.01 °C	0.001 °C

Abbemat Series

	Abbemat 300/350 Performance/ Performance Plus	Abbemat 500/550 Performance/ Performance Plus
Measuring range		
Refractive index		
Measuring range nD	1.26 to 1.72	1.26 to 1.72
Resolution nD	±0.00001	±0.000001
Accuracy nD	±0.0001	±0.00002
Temperature range	10 °C to 85 °C	10 °C to 85 °C
Accuracy temperature probe	±0.05 °C	±0.03 °C
Stability temperature probe	±0.002 °C	±0.002 °C

HazeQC ME

Measuring range	0 to 100 EBC (0 to 400 NTU)
Repeatability s.d.	0.02 EBC (0.08 NTU)
Resolution	better than 0.01 EBC or NTU
Measuring temperature (Peltier-thermostatted)	-5 °C to 40 °C

pH ME

Measuring range	0 to 14 pH
Repeatability	0.02 (in the range from 3 to 7)

MCP Series

	MCP 200	MCP 300	MCP 500
Optical Rotation scale (at 589 nm)			
Measuring range	±89.9°	±89.9°	±89.9°
Resolution	0.001° / 0.0001° (optional)	0.001° / 0.0001° (optional)	0.0001°
Accuracy	±0.002°	±0.002°	better than ±0.002°
Temperature control range	20 °C and 25 °C (optional 10 °C to 45 °C)	10 °C to 45 °C	10 °C to 45 °C

Lovis 2000 ME

Parameters	Dynamic viscosity	0.3 mPa.s to 10,000 mPa.s
	Inclination	15° to 80° in 1° steps
	Shear rate	0.5 s ⁻¹ to 1000 s ⁻¹ , influenced by capillary size and inclination
	Temperature	+5 °C to 100 °C
Viscosity	Repeatability s.d.	up to 0.1 %
	Accuracy	up to 0.5 %

