

Photometry

History

More than three decades have passed since the appearance of the first PC 100 photometer system.

Since that time, Tintometer has become a world-famous name as the manufacturer of photometer systems sold under the brand name of Lovibond®.

Our range of photometer systems extends from the **MD 100*** and **MD 110*** as hand-held model, the multi parameter photometer **MD 200*** as desktop model to the **SpectroDirect** spectro-photometer for laboratories.

The multi-functional **PM photometers** provide the answer to all requirements relating to the analysis of water used in modern swimming pools and baths. They offer a wide variety of pre-programmed methods and are therefore suitable for the demands of modern water analysis.

The **MultiDirect** offers a wide variety of pre-programmed methods and is therefore suitable for the demands of modern water and drinking water analysis.

A modern, mobile photometer for rapid, reliable water testing is the **MD 600**.

The latest development involves the photometer systems MD 610 and PM 630 with **Bluetooth®** data transmission. Both devices work wirelessly with the free app AqualX®.

All the parameters which can be measured with Lovibond® photometer systems are set out in the table. This table also explains what parameters can be measured with which photometer system.

Parameter	MD 100* & MD 110*	MD 200*	MD 600 & MD 610 & MD 640	MultiDirect	PM 620 & PM 630	PM 600	SpectroDirect	also compatible to Hach® devices*
Alkalinity-M	■	■	■	■	■	■	■	
Alkalinity-P			■	■			■	
Aluminium	■		■	■	■		■	see page 102
Ammonia	■		■	■	■		■	see page 102
Arsenic							■	
Boron			■	■			■	
Bromine	■	■	■	■	■	■	■	see page 102
Cadmium							■	
Calcium Hardness	■	■	■	■	■	■		
Chloride	■		■	■			■	
Chlorine	■	■	■	■	■	■	■	see page 102
Chlorine Dioxide	■	■	■	■	■		■	see page 102
Chromium			■	■			■	
COD	■	■	■	■			■	see page 102
Copper	■	■	■	■	■	■	■	see page 102
Cyanide			■	■			■	
Cyanuric acid	■	■	■	■	■	■	■	
DEHA	■		■	■			■	see page 102
Fluoresceine (only MD 640)			■					
Fluoride	■		■	■			■	
Formaldehyde							■	
Hazen (Pt-Co-Units ; APHA)	■		■	■			■	
Hydrazine	■		■	■			■	see page 104
Hydrogen Peroxide		■	■	■	■		■	
Iodine			■	■	■		■	
Iron (Fe ²⁺ , Fe ³⁺), soluble	■	■	■	■	■	■	■	see page 104
Langelier Water Balance System			■	■	■	■		
Lead							■	
Manganese	■		■	■			■	see page 104

* The MD 100 and MD 200 photometer series do not provide all parameters in a single instrument. The number and type of parameters depend on the variant (please refer to the relevant chapter).



MD 100 / 110



MD 200



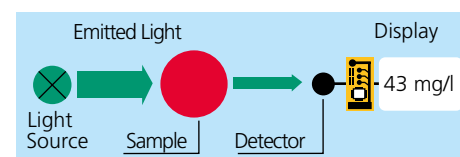
MD 600 / 610

Parameter	MD 100* & MD 110*	MD 200*	MD 600 & MD 610 & MD 640	MultiDirect	PM 620 & PM 630	PM 600	SpectroDirect	also compatible to Hach® devices*
Molybdate / Molybdenum	■		■	■			■	see page 104
Nickel			■	■			■	
Nitrate			■	■			■	see page 104
Nitrite			■	■			■	see page 106
Oxygen, active			■	■	■			
Oxygen, dissolved	■		■	■				
Ozone	■		■	■	■	■	■	
pH-value	■	■	■	■	■	■	■	
Phenols							■	
PHMB (Biguanide)			■	■	■			
Phosphate	■		■	■	■	■	■	see page 106
Phosphonate			■	■			■	see page 106
Polyacrylates	■		■					
Potassium			■	■			■	
PTSA (only MD 640)			■					
Silica	■		■	■			■	see page 106
Sodiumhypochlorite			■	■	■	■		
Spectral Absorption-Coefficient							■	
Sulphate	■		■	■	■		■	see page 106
Sulphide			■	■			■	
Sulphite			■	■			■	
Surfactants (anionic)							■	
Suspended Solids	■		■	■			■	
TOC							■	
Total Hardness	■		■	■	■		■	
Total Nitrogen			■	■			■	see page 104
Triazoles	■		■					
Turbidity (attenuated radiation method)			■	■			■	
Urea	■	■	■	■	■		■	
Zinc	■		■	■			■	

The principle of photometry

When specific reagents are added, the water sample takes on a degree of coloration that is proportional to the concentration of the parameter being measured. The photometer measures this coloration.

When a light beam passes through the coloured sample, energy with a specific wavelength is absorbed by the test substance. The photometer determines the coloration of the sample by measuring the transmission or absorption of light of this wavelength (in other words, monochromatic light). The photometer then uses a microprocessor to calculate the required concentration and displays the result.



Mode of operation of the photometer



MultiDirect



SpectroDirect



PM 630

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