OPTICS-1000

(Advance Analytics OPTICS-1000 Series)

www.advanceanalytik.com

ADVANCE ANALYTIK

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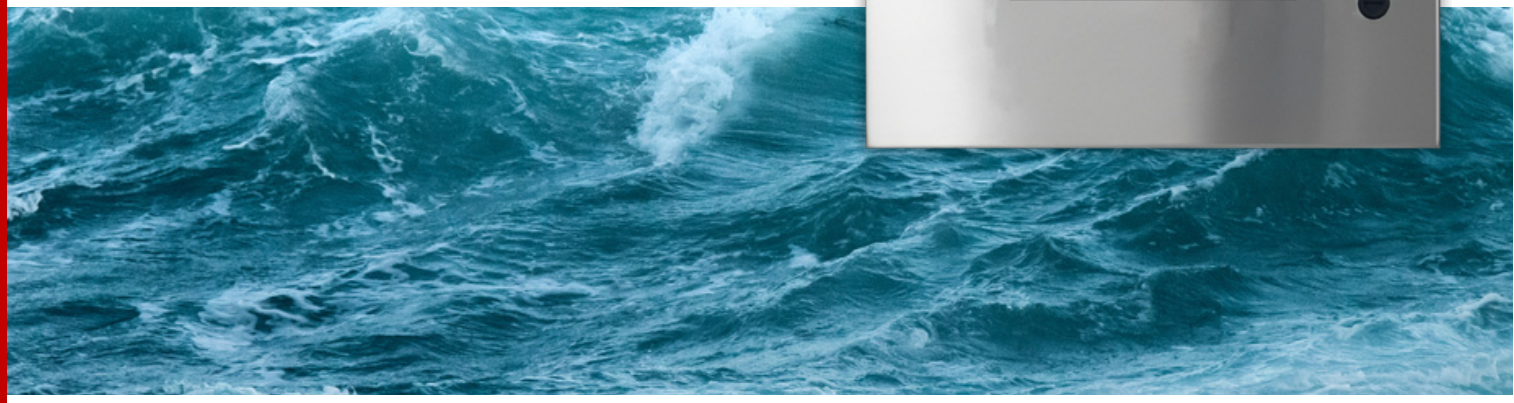
(COD / BOD / pH / TSS MONITORING)

Overview: The OPTICS-1000 Analyzer by Advance Analytik is a cutting-edge water quality analysis instrument designed for precise and efficient measurement of various compounds in water samples. This high-performance analyzer offers a range of features and benefits, making it ideal for a wide range of applications.



Key Features

Powerful Analytical Methods -

- Conduct multi-compound analysis simultaneously.
- High selectivity and accuracy for specific compound detection.
- Utilizes high-resolution and sensitive optical sensors for accurate measurements.
- Effective mathematical treatment FTLS for advanced data processing.
- Unaffected by interference from turbidity, color, salinity, etc.
- Boasts a low detection limit and wide dynamic range. Conducts non-destructive analysis in a short period.
- **Range of UV visible spectroscopy - 180 NM to 750 NM Full spectroscopy dual beam measurement**

High Reliability & Robustness -

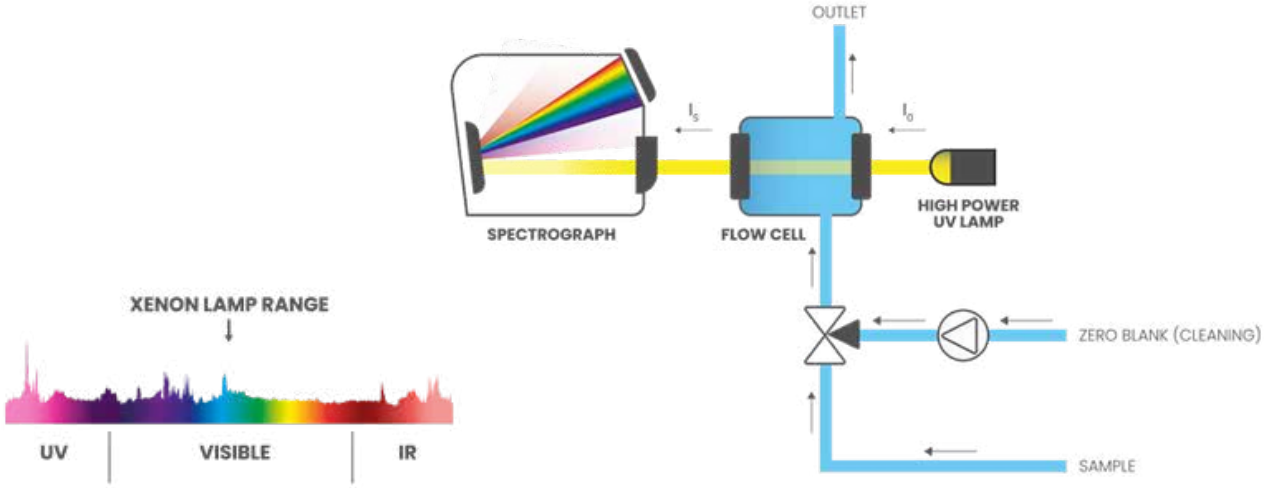
- Suitable for both indoor and outdoor use.
- Durable stainless-steel construction (IP65 optional) for harsh environments.
- Crafted from high-quality materials for long-lasting performance.
- Minimal maintenance with no regular spare parts replacements.
- Optional multiplexing system for simultaneous analysis of multiple samples.
- User-friendly integrated touch screen for easy operation.
- Requires calibration only once a year, reducing downtime and effort.

SENSOR & METHOD	RANGE	ACCURACY	REPEATABILITY	RESOLUTION	RESPONSE TIME
CHEMICAL OXYGEN DEMAND — **COD** UV Visible Spectroscopy	0 ... 3000 ppm*	± 2 % FS	± 2 % FS	± 2 % FS	≤ 10s.
BIOLOGICAL OXYGEN DEMAND — **BOD** UV Visible Spectroscopy	0 ... 3000 ppm*	± 2 % FS	± 2 % FS	± 2 % FS	≤ 10s.
pH — **H+** Potentiometry (probe)	0 ... 14	-	-	-	≤ 10s.
TOTAL SUSPENDED SOLID — **TSS** UV Visible Spectroscopy	0 ... 3000 ppm*	± 2 % FS	± 2 % FS	± 2 % FS	≤ 10s.

OUR METHOD

UV VISIBLE SPECTROSCOPY (COD,BOD)

By leveraging a high-resolution spectrograph combined with advanced mathematical processing, this method achieves heightened precision and selectivity, enabling us to attain superior levels of accuracy and specificity.

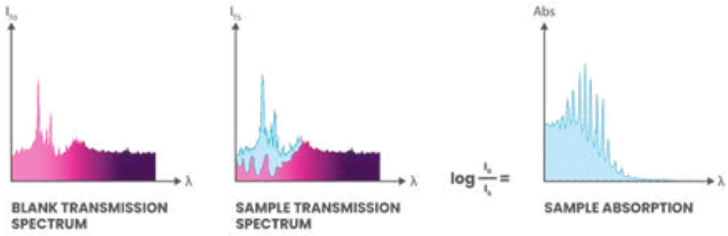


The measurement principle relies on UV spectroscopy, where the calculation of the absorption spectrum involves determining the difference between the incident light (ITO) received on the reference (zero) and the transmitted light (ITS) passing through the sample.

Absorbance (A) is determined using the formula: A = log(ITO / ITS)

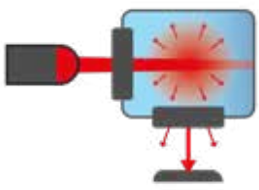
The relationship between the concentration of molecules (c), the absorbance spectrum (A), and the optical path (l) of the measuring cell is linear.

The absorption coefficient (ε) is defined by the formula: ε = A / (lc).



IR NEPHELOMETRY (TSS)

IR (infrared) nephelometry is a technique used to measure Total Suspended Solids (TSS) in a liquid medium, representing the content of suspended matter that disrupts the fluid. This measurement adheres to the ISO 7027 / EN 27027 standard. During the process, an IR light beam traverses the sample and scatters in various directions. A detector then transforms the scattered light's intensity into an electrical signal. The turbidity value increases with higher light intensity.



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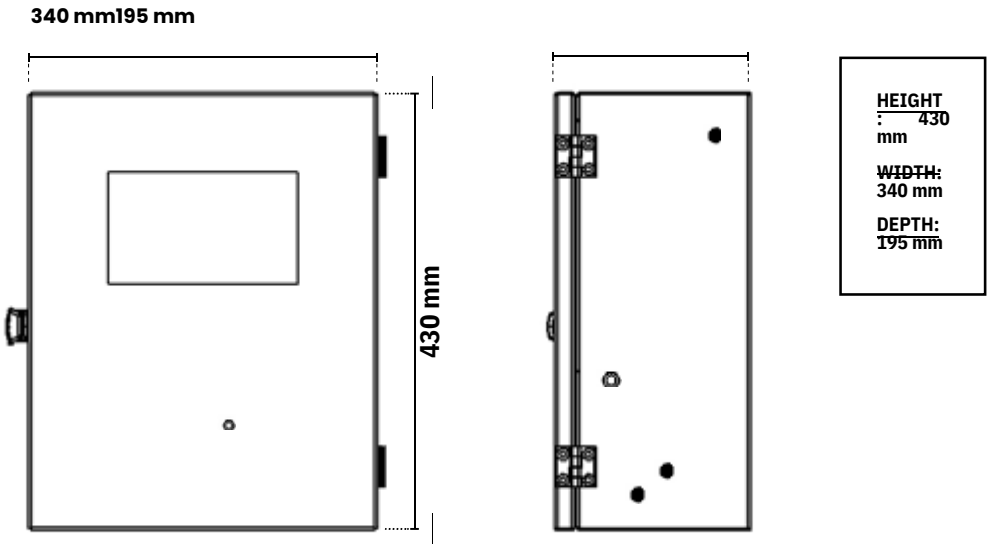
TECHNICAL SPECIFICATION



ENCLOSURE	
Type	Wall Mounted / Set / Portable (Optional handles)
Material	SS316L
Dimensions (HxWxD)	430x340x195 mm
Weight	± 15 kg
Protection class	IP65
Area Classification	Safe
SAMPLE CONDITION	
Flow	0...2 L/min
Pressure	≤ 0.5 bars
Temperature	5 ... 35°C
CONTROLLER	
Display	8.5" TFT colour screen 16/9 (LED backlight)
Resolution	800 x 480 px
Touch screen	Glass to glass
Memory	16 GB SD card
Data transfer	USB type A
Operating temperature	5 ... 55°C
Operating humidity	< 90 % RH
COMMUNICATION OUTPUT	
Analog	4-20 mA isolated (Active or Passive) / 500 Ω max
Relay	Programmable limit or fault alarms / 5A (NO) 3A (NC) @ 277 VAC
Digital	RS485 / Modbus (Slave or Master) - Show value, calibration status, fault status...
POWER SUPPLY	
Voltage	100 ... 240 VAC (50 - 60 Hz) or 24 VDC (Universal)
Consumption	< 20 W (60 W max.)

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made in HUNGARY

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