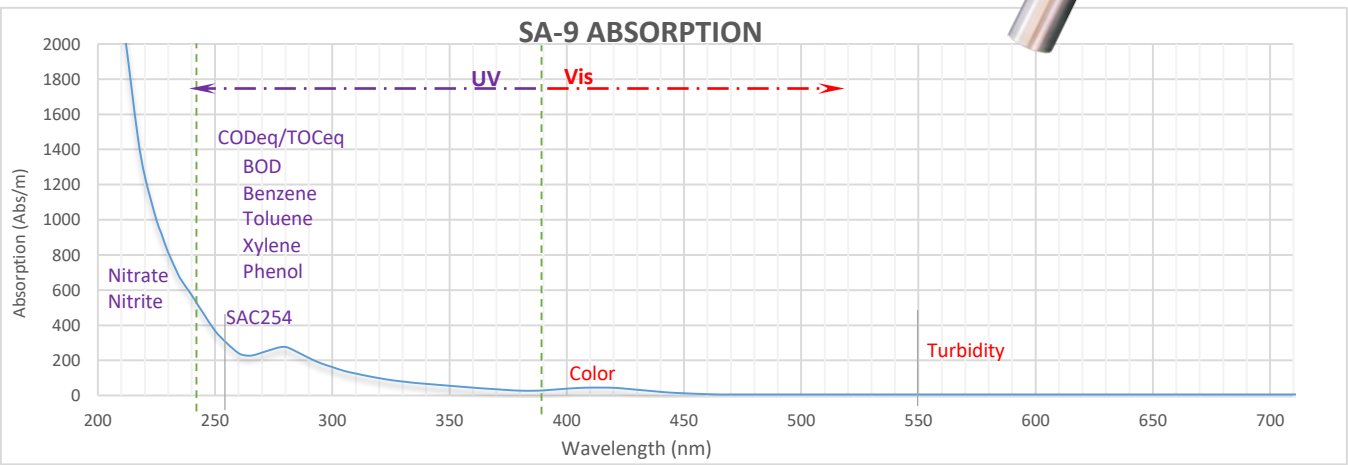
CROSS SMART SENSOR

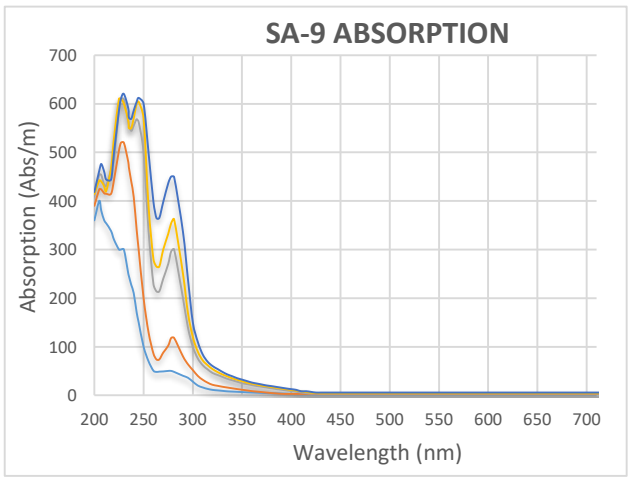
SA-9: In-situ UV-Vis Spectra Analyzing Sensor

Digital Smart Optical

SA-9 is the new generation of immersion spectra analyzing sensor. It uses standardized spectra algorithms by taking the complete 200 to 710 nm absorption spectrum of water into account to determine the nitrogen and carbon compounds. SA-9's spectrum compensation for light absorbing particles and turbidity provides a unique and high sensitivity approach that allows the monitoring of dissolved organic substances without sample pre-treatment. SA-9 gives reliable readings for NO_3-N, NO_2-N, organic ingredients (CODeq, BODeq, DOCeq, TOCeq), and a number of other parameters. The sensor can be submerged into water by mounting hardware or using flow cell for bypass installation. Measurement path length is from 0.5 to 35 mm. There is a built-in purging nozzle for cleaning the test window by compressed air or pressurized water stream. There is also an optional clamp-on wiper for automatic test window cleaning.



The validated spectral calibration by SA-9 uses multiple wavelengths to monitor and compensate each sum parameter, which enables much more accurate and robust measurement than the single wavelength method. Using field special calibration that employs specific features of the absorption spectrum, it is even possible to distinguish various fractions of organic carbon groups. For a specific application, the relevant calculation and calibration of desired parameters require their corresponding spectra and reference values obtained from the analytical chemistry lab. The spectral data plus one or more corresponding measured values are called reference value pair. The sensor uses the reference value pair and the proprietary spectral algorithm to perform calibration. The more reference value pairs are provided; the more accurate calibration is given.



DELTA-PHASE ELECTRONICS, INC.
1502 E. Warner Ave., Suite B, Santa Ana, CA 92705 U.S.A. TEL: (714) 866-8070 www.delta-phase.us

Cross Smart Sensor

Benefit & Feature

- Online multi-parameter spectrometry parameter: COD*eq*, BOD*eq*, TOC*eq*, DOC*eq*, SAC254, NO_3-N*eq*, O_3*eq*, H_2S*eq*, Color and Turbidity/SS …
- Xenon flash light, 50 years theoretical life
- Different optical path lengths for various ranges and application
- 316L Stainless steel housing, Titanium is optional
- Factory pre-calibration for easy set up and field calibration for more accuracy
- Integrated air pressure purging nozzle and optional mechanical wiper
- Turbidity compensation
- Fully compatible with PC software Delta-Phase View™

Application

Drinking water

- Quality control
- Alarm system

Waste water

- Effluent monitoring
- Analysis of trends
- Early detection of disposal (fingerprint)

Process water

- Process monitoring in industrial facilities
- Control of water treatment

SPECIFICATIONS

SA-9 In-situ UV-Vis Spectra Analyzing Sensor	
Measuring Principle	Absorb spectral analysis UV-Vis(200~700nm) or Attenuation
Light source	Xenon flash light
Detector	Miniature 256 CCD array spectrometer
Optical Length	1/2/5/20/35 mm
Respond Time	T90 < 1 min
Operating Temp.	32 to 122 °F (0 to 50 °C)
Storage Temp.	14 to 140 °F (-10 to 60 °C)
Operating Pressure	< 5 bar
Housing Material	316L Stainless steel, optional Titanium
Protection type	>IP68 immersible
Auto cleaning	Air or water purging controlled by GDC uses either compressed air of 3-7 Bar or pressurized water; Optional clamp-on wipe
Interface	RS-485 Modbus RTU
Power	24 VDC (18-36VDC) by GDC, Consumption normally 5W, Max. 25W
Dimension & Weight	1.75” O.D, 22.05” length (Ø44.5 mm x L560 mm) & 6.6 lbs. (3 kg) with SS housing

ORDER CODE

SA-9 In-situ UV-Vis Spectra Analyzing Sensor

Optical path length

.001 *1mm;* **.002** *2mm;* **.005** *5mm;* **.020** *20mm;* **.035** *35mm*

Factory Pre-Calibration

a *COD/NO_3-N/SS for biological tank* **c** *NO_3-N/TOC/O_3/Tur for process;*

d *NO_3-N/TOC/Tur for drink water* **e** *COD/BOD/SS for outlet of WWTP;*

g *TOC/NO_3-N/TOC/Tur for ground water* **i** *COD/BOD/SS for inlet of WWTP;*

r *NO3-N/TOC/Tur for river water* **o** Other water contact factory.

-C10 *10’ (3 m) cable;* **-C30** *30’ (9 m) cable*

-C50 *50’ (15 m) cable;* Please contact factory for other cable length

SA-9 .005 i C30

GDC-04/06/08 Terminal
Multi-channels up to 8

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