

Xact® 920 Continuous Water Analyzer



Multi-Metals Continuous Water Analyzer



Description

Xact® 920 is designed for high time resolution multi-metals monitoring of aqueous samples, with detection limits in the low parts per billion (ppb) range. Providing near real-time elemental data that can assist in optimizing today's complex treatment systems, provide early detection of upset events, and compliance with agency regulations.

The system uses reel-to-reel filter tape sampling, a dynamic internal standard, and nondestructive energy dispersive X-ray fluorescence (EDXRF) analysis. The sample deposit is automatically advanced and analyzed by EDXRF for selected metals as the subsequent sample is collected.

Standard Features

- Sampling, analysis and near real-time reporting (every 15, 30, 60, 120, 180 or 240 minutes in ppb or ng/g)
- Windows-based operating system with 10.1-inch touchscreen
- Identification and measurement of multiple elements simultaneously
- Automatic quality assurance, alarms, and control features
- Incorporates an internal EDXRF quality assurance standard with every sample
- Provides automatic, daily EDXRF calibration drift checks
- Remote polling and system control
- Global power design does not require power conversion
- Installed in NEMA 4x temperature controlled enclosure

Benefits

- Highly sensitive and reliable (low ppb to high ppm)
- Large measurement range (greater than 5 orders of magnitude) with single calibration
- Nondestructive analysis for sample archiving
- Low maintenance cost
- Extremely stable, requiring only automated calibration checks
- Analytical recalibration frequency generally less than once per year

Applications

The Xact® 920 monitoring system can simultaneously identify and measure multiple elements in liquid samples providing near real-time data for the following applications:

- Wastewater and water treatment plants
- Industrial and mining influent and effluent
- Treatment system optimization evaluation
- Drinking water
- Food and beverage industry
- Surface water
- Ground water
- RO Membrane integrity
- FGD water treatment
- Ash pond remediation

Specifications

Measurement method	Based on EPA Method IO 3.3: Determination of Metals in Ambient PM Using XRF
Key applicable elements	Sb, As, Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mn, Ni, Se, Ag, Sn, Ti, Tl, V, Zn, and more available
Measurement range	1,000ppm of any analyte
Detection limits	Depends on specific element, sampling times, interfering elements, and level of dissolved solids. See performance section.
Sampling and analysis times	Every 15, 30, 60, or 120, 180, or 240 minutes, user defined.
Calibration stability check frequency	Automatically with each sample analyzed
Estimated recalibration frequency	Annually, when manufacturer's operating recommendations are followed
Sample flow rate	Application specific
Linearity.....	Correlation coefficient >0.98
Size and weight	60" (W) x 38" (D) x 80" (H), 900 lbs. Housed in NEMA 4x temperature controlled enclosure
Power requirements.....	Qty 2 of 120 VAC/60 Hz @ 15 amp; or 220 VAC/60 Hz 15 @ amp
Outputs	RS232 or TCP/IP Modbus protocol Selected analytes and quality control parameters
Options	Change or add elements Multiplex stream switching manifold

Performance

Xact® 920 Detection Limits				
Element	15 min MDL	30 min MDL	60 min MDL	120 min MDL
	(ppb)	(ppb)	(ppb)	(ppb)
Si	97.2	34.4	12.1	4.29
P	28.4	10.0	3.55	1.25
S	17.2	6.09	2.15	0.76
Cl	9.44	3.34	1.18	0.42
K	6.38	2.25	0.80	0.28
Ca	1.63	0.58	0.20	0.07
Ti	0.87	0.31	0.11	0.04
V	0.65	0.23	0.08	0.03
Cr	0.63	0.22	0.08	0.03
Mn	0.78	0.28	0.10	0.03
Fe	1.30	0.46	0.16	0.06
Co	1.04	0.37	0.13	0.05
Ni	0.72	0.26	0.09	0.03
Cu	0.60	0.21	0.07	0.03
Zn	0.50	0.18	0.06	0.02
As	0.47	0.17	0.06	0.02
Se	0.61	0.22	0.08	0.03
Br	0.78	0.28	0.10	0.03
Sr	1.63	0.58	0.20	0.07
Mo	3.63	1.28	0.45	0.16
Ag	14.5	5.13	1.81	0.64
Cd	18.9	6.70	2.37	0.84
Sn	30.6	10.8	3.82	1.35
Sb	38.8	13.7	4.85	1.72
Ba	2.12	0.75	0.26	0.09
Pt	0.89	0.31	0.11	0.04
Au	0.77	0.27	0.10	0.03
Tl	0.87	0.31	0.11	0.04
Pb	0.96	0.34	0.12	0.04

99% confidence level interference-free detection limit
 Detection limits vary based on sample composition, elements of interest, and analysis time

Element measured by Xact® 920

H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	*	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	**	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og
			La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
			Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

* Lanthanide Series
** Actinide Series

Elements Supported

Xact® 920 water monitoring systems are capable of identifying and measuring elements highlighted in the period table above. Please contact your Xact® representative for more information on your specific metals monitoring requirements.