

Xact® 920 Continuous Water Analyzer



Multi-Metals Continuous Water Analyzer



Description

The Xact® 920 system uses reel-to-reel filter tape sampling and nondestructive X-ray fluorescence (XRF) analysis to monitor aqueous samples for user-selected metals.

A measured amount of unknown sample is blended with a known amount of internal standard which is continuously nebulized, evaporated, and collected onto the filter tape. The liquid sample is aerosolized facilitating the removal of water and allowed metal salts to be concentrated on the filter tape. This method of pre-concentration allows detection limits in the low parts per billion (ppb) ranges for elements ranging from potassium to uranium.

The concentrated deposit is automatically advanced and analyzed by XRF for selected metals as the subsequent sample is collected. Sampling and analysis are performed continuously and simultaneously, except during advancement of the tape (~20 sec) and during daily-automated quality assurance checks.

Features

- Sampling, analysis, and near-real time reporting (every 15, 30, 60, and 120 minutes in ppb)
- Automatic quality assurance, alarms, and control features
- Proven XRF and RTR technology
- Identification and measurement of 23 elements simultaneously
- Incorporates an XRF stability check with every sample analyzed
- Provides an automatic daily upscale and QA check

Benefits

- Highly sensitive and reliable (low ppb to ppm range)
- Nondestructive analysis allows 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 metals in liquid samples to provide data for use in the following applications:

- Waste water and water treatment plants
- Industrial and mining influent and effluent
- Drinking water
- Food and beverage industry
- Surface water

Specifications

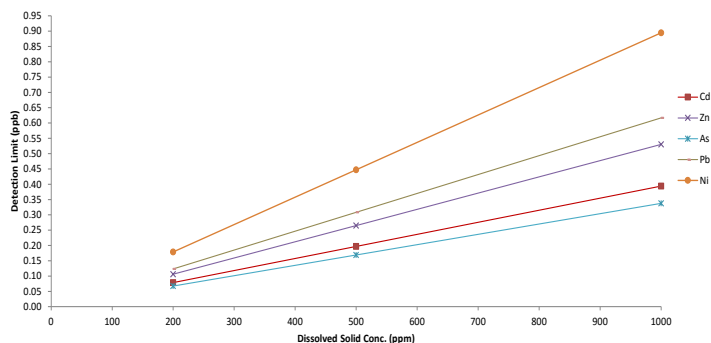
Measurement method.	Based on EPA Method IO 3.3: Determination of Metals in Ambient PM Using XRF
Key applicable elements.	Sb, As, Ba, Cd, Ca Cr, Co, Cu, Fe, Pb, Mn, Ni, Se, Ag, Sn, Ti, Tl, V, Zn, and more available
Measurement range.	1,000ppm of any analyte
Detection limits.	Depends on specific metal, sampling times, interfering metals, and level of dissolved solids. See performance section.
Sampling and analysis times.	Every 15, 30, 60, or 120 minutes, depending on the per sample dissolved solids
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 (2 cabinets).	19"(W) x 24" (D) x 60" (H) 120 lbs 19 inch (483 mm) rack-mountable components
Required operating environment.	Office environment with temperature controlled to 20±3°C (68°F)
Power requirements.	120 VAC/60 Hz @ 20 amp circuits 220 VAC/60 Hz 10 amp with an optional power converter
Outputs.	RS232 Modbus signal Selected analytes plus quality control parameters are reported
Options.	Change or add elements Enclosures (NEMA 4, 4x, 12 or 12x) Remote control Remote polling

Performance

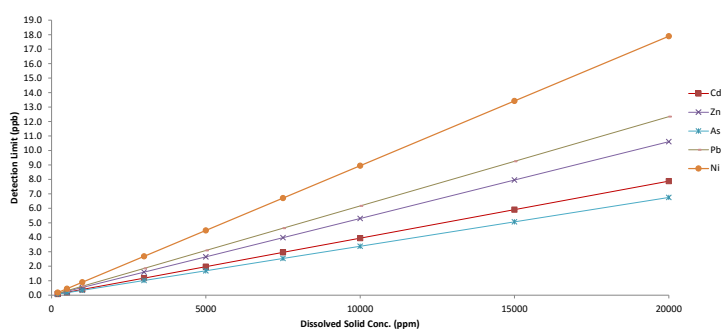
Minimum Detection Limits (ppb) Sample Time (min)

Element	TDS (PPM)	15	30	60	120
Cd	200	0.16	0.11	0.08	0.06
	500	0.39	0.28	0.20	0.14
	1000	0.79	0.56	0.39	0.28
	3000	2.36	1.67	1.18	0.84
As	200	0.14	0.10	0.07	0.05
	500	0.34	0.24	0.17	0.12
	1000	0.68	0.48	0.34	0.24
	3000	2.03	1.43	1.01	0.72
Zn	200	0.21	0.15	0.11	0.07
	500	0.53	0.37	0.27	0.19
	1000	1.06	0.75	0.53	0.37
	3000	3.18	2.25	1.59	1.12
Ni	200	0.36	0.25	0.18	0.13
	500	0.89	0.63	0.45	0.32
	1000	1.79	1.27	0.89	0.63
	3000	5.37	3.80	2.68	1.90
Pb	200	0.25	0.17	0.12	0.09
	500	0.62	0.44	0.31	0.22
	1000	1.23	0.87	0.62	0.44
	3000	3.70	2.62	1.85	1.31

Xact® 920 Detection Limits
60 min sample & analysis time



Xact® 920 Detection Limits
60 min sample & analysis time



* One sigma interference free detection limits.

* Detection limits based off standard instrument calibration. Detection limits can be optimized based off requested elements of interest.

* Please contact your Xact® representative for detection limits on other elements and optimized detection limits for specific applications.

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	Ha	Sg	Bh	Hs	Mt	Ds	Rg	Uub	Uut	Uuq	Uup	Uuh	Uus	Uuo
* Lanthanide Series			La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
** Actinide Series			Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Elements Supported

Xact® 920 water monitoring systems are capable of identifying and measuring the 65 elements highlighted in the table above. The Xact® 920 can measure elements highlighted in gray, but quantification depends significantly on solution matrix. Please contact your Xact® representative for more information on your specific metals monitoring requirements.

Ordering Information

To request more information about the Xact® 920 continuous water monitoring system, contact your regional CES representative or email us at CES-Sales@cooperenvironmental.com.