

Thermo Scientific™ Niton™ XRF Analyzers

CERTIFICATE OF ANALYSIS



Type P/N Element	RM 180-706 USGS SdAR-M2	CRM 180-649 NIST 2709a	Blank 180-647 SiO2 99.995%	QC Material 180-661 RCRA1
Ba Barium 56	990	979	<10	1000
Cs Cesium 55	12		<10	
Te Tellurium 52	<10		<10	
Sb Antimony 51	107	<30	<10	
Sn Tin 50	<10		<10	
Cd Cadmium 48	<10	<10	<10	500
Ag Silver 47	15		<10	500
Pd Palladium 46			<10	
Mo Molybdenum 42	13.3		<10	
Zr Zirconium 40	259	195	<10	
Sr Strontium 38	144	239	<10	
U Uranium 92	<10	<10	<10	
Rb Rubidium 37	149	99	<10	
Th Thorium 90	14.2	10.9	<10	
Pb Lead 82	808	17.3	<10	500

Type P/N Element	RM 180-706 USGS SdAR-M2	CRM 180-649 NIST 2709a	Blank 180-647 SiO2 99.995%	QC Material 180-661 RCRA1
Au Gold 79	<10		<10	
Se Selenium 34	<10		<10	500
As Arsenic 33	76	10.5	<10	500
Hg Mercury 80	<10	0.9	<10	
Zn Zinc 30	760	103	<10	
W Tungsten 74	<10		<10	
Cu Copper 29	236	33.9	<10	
Ni Nickel 28	48.8	85	<10	
Co Cobalt 27	<50	<50	<10	
Fe Iron 26	18395	33600	<10	
Mn Manganese 25	1038	529	<10	
Cr Chromium 24	49.6	130	<10	500
V Vanadium 23	25.2	110	<10	
Ti Titanium 22	1798	3360	<10	
Sc Scandium 21	<10	11.1	<10	

Part Number: 143-00131, Rev. D.

1-218 03/2016

www.thermoscientific.com/portableid

—continued next page

© 2016 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries. Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details.

Americas

Boston, USA
+1 978 642 1132
niton@thermofisher.com

Europe, Middle East, Africa

Munich, Germany
+49 89 3681 380
niton.eur@thermofisher.com

India

Mumbai, India
+91 22 6680 3000
ininfo@thermofisher.com

Asia Pacific

New Territories, Hong Kong
+852 2885 4613
niton.asia@thermofisher.com

Thermo
SCIENTIFIC

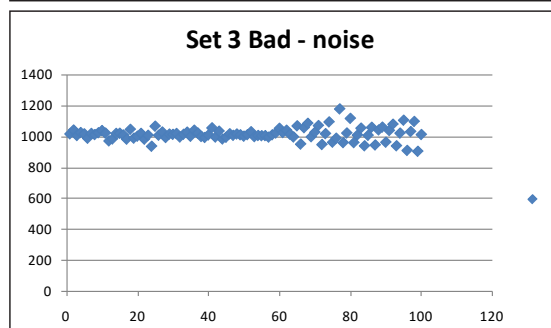
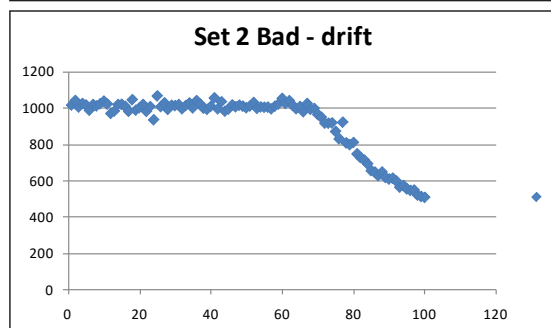
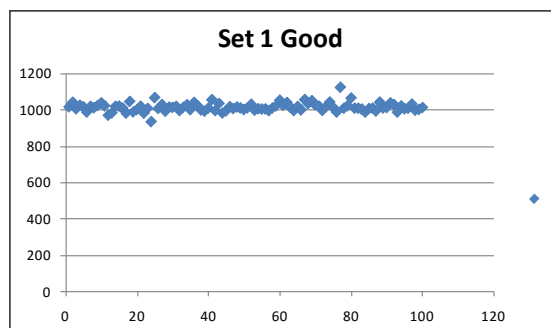
Use of reference materials

The reference materials provided with your analyzer are to help ensure the ongoing performance of your analyzer. These standards should be analyzed on a daily basis and the values obtained checked against this certificate of analysis. For quality assurance purposes you may wish to keep a running chart of the values obtained and monitor them for consistency.

If one or more of the elements begins to change in terms of reported concentration outside of the normal expected variability, the sample may have become damaged or contaminated. This may occur for a number of reasons. For example, oils and salts may transfer from hand contact onto the surface, dust or lint from the surroundings may be deposited onto the sample, or the thin film on the front of the cup may have pinholes or have been torn. If the cup film has torn or has been damaged in any other way, it should be replaced immediately; this will prevent loss of the material and prevent contamination of the instrument and other samples.

If the film has been torn and the sample exposed for a period of time, then it may be best to assume the sample is contaminated. Dispose of it following your local regulations, and then replace it as soon as possible. Also check the front window of the instrument and clean or replace it if necessary.

Examples of daily quality assurance charts are shown below; learn to understand normal variance and recognize drift and noise. Results from your instrument may be as much as +/-20% of the listed values, depending on the model you have. However, by using the same integration time every time, your results should be consistent with themselves. If you have more questions, please refer to the Statistical Aspects of Spectrometry section of the manual under Reference Documents, or call our Customer Support group.



Type P/N Element	RM 180-706 USGS SdAR-M2	CRM 180-649 NIST 2709a	Blank 180-647 SiO2 99.995%	QC Material 180-661 RCRA1
Ca Calcium 20	6003	19100	<10	
K Potassium 19	41507	21100	<10	
Cl Chlorine 17				
S Sulfur 16	970		<10	
P Phosphorus 15	345	688	<10	
Si Silicon 14	343331	303000	467400	
Al Aluminum 13	65997	73700	<10	
Mg Magnesium 12	2955	14600	<10	

Requires GOLDD technology for mining & minerals mode

Notes:

- All results are listed in ppm (mg/kg).
- To convert to %, divide by 10,000;
e.g., 33,600ppm Fe (NIST 2709) is 3.36%.
- Original certificates of analysis (if available) are on the Virtual Center of Excellence (vCoE) and can be requested from customer support.
- While every effort is made to ensure the high quality of these reference samples and their data, the use of the materials and interpretation of the results is the sole responsibility of the user.