

# Mining Analyzer XRF-3360



Mining Analyzer Instrument is a professional manufacturer of high-performance X-ray Fluorescence Spectrometer. The high-performance desktop XRF geology and mining analyzer-XRF-3360, brought up in 2011, is equipped with globally advanced analysis technology, intelligent vacuum system and developed electronic technology. Combined with low-energy tube, vacuum system and patent low background technology, it efficiently reduces testing interference, and improves energy resolution of Mg, Al, Si, P and other light elements in geology and minerals.

## ►►► Specialized in Mineral Elements and Grade Testing

- XRF-3360 Mining Analyzer is specially designed for geology and mining industries.
- This instrument features high precision, fast testing speed and easy operation etc.
- Bear several testing modes, including alloy analysis, soil analysis, precious analysis, RoHS analysis, loose and pressed powders and filters
- Testing samples includes minerals, slag, rocks, etc. Analytical content is from Na to U. Testing samples can be solids, liquids, and powders

## ►►► Performance Advantages

- Highly efficient super-thin window X-ray light tube which is specially developed for mineral testing reaches the international advanced level
- Silicon Drift Detector (SDD), provides better energy linearity, resolution, spectrum characteristics and higher peak/base ratio
- Analytical technologies Ltd-signal-to-Noise Enhancer (SNE), improves the signal processing ability by 25 times or more
- Built-in CMOS HD camera
- Automatic switch of collimator and filter according to different samples, it eliminates the troublesome manual operation
- Atmosphere: Helium mode, Air or vacuum mode



- Triple X-ray protection design
  - (1) Mechanical protection: Segregate X-ray
  - (2) Electronical protection: Automatic shut-down of X-ray when opening the cover during testing.
  - (3) Software protecting: Automatic shut-down of software program when opening the cover during testing.
- LCD screen directly shows the important parameters: tube voltage, tube current and vacuum degree
- 2L vacuum pump

### ▶▶▶ Technical Specifications

Measurable range: Na to U

Analytical range (sensitivity): ppm-100% (different materials, with different analytical range)

Simultaneous analytical: Testing tens of elements simultaneously

Precision: 0.05% (content 96%)

Type of Excitation: Polarised

Sample loading position: Minimum 8 position with spinner

X-ray window: Beryllium window

Testing time: 60s-200s

Resolution: 135eV

Tube voltage: 5KV-50KV

Tube current: 50μ A-1000μ A

Beam filters: 5

### ▶▶▶ Product Parameters

Power: 200W

Ambient temperature: 15°C-30°C

Sample chamber size: 320mm x 100mm

Weight: 65kg

Voltage input: AC 220V, 50Hz (Optional: 110V)

Ambient humidity: 35%-70%

Instrument dimension: 660mm x 510mm x 350mm

Radiation Shielding and warning indicator for X-Ray emission

### ▶▶▶ Standard Configuration

Highly efficient super-thin window X-ray light tube made of Pd and co alloy

Signal-to-Noise Enhancer

CMOS HD camera

Collimator and filter

Triple safety protection mode

90mm x 70mm LCD

Vacuum pump

### ▶▶▶ Software

Qualitative analysis

Quantitative analysis

RoHS analysis (Cd, Pb, Cr, Br, Hg)

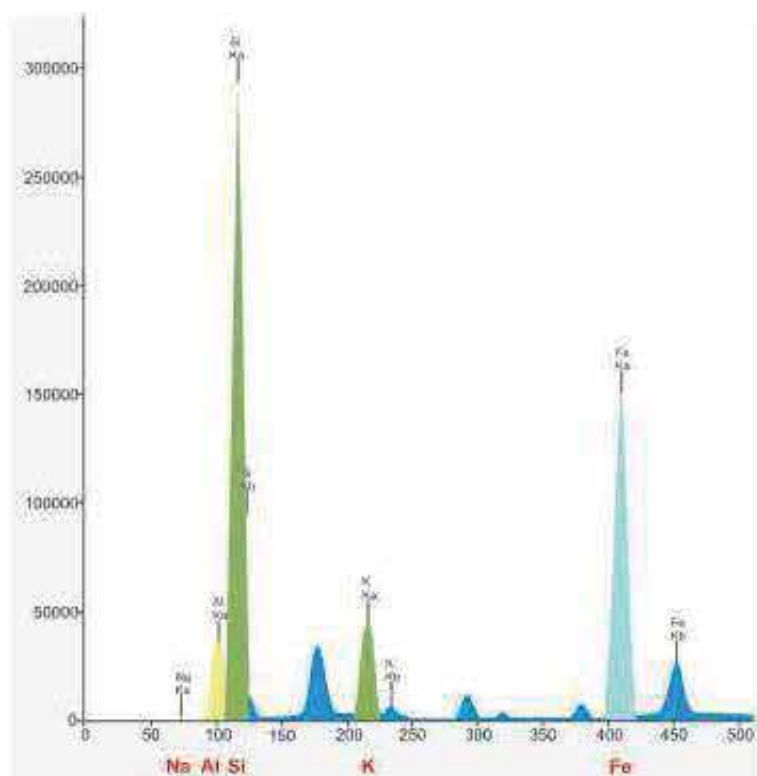
Simplified analysis solution

Report creation and daily check features



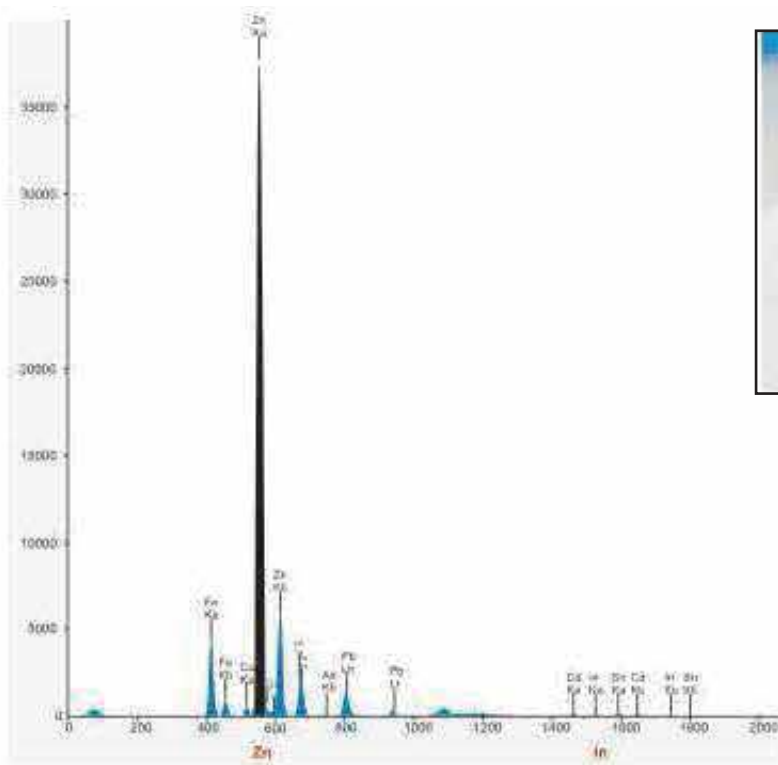
## ►► Application Cases

### Case One Kaolin



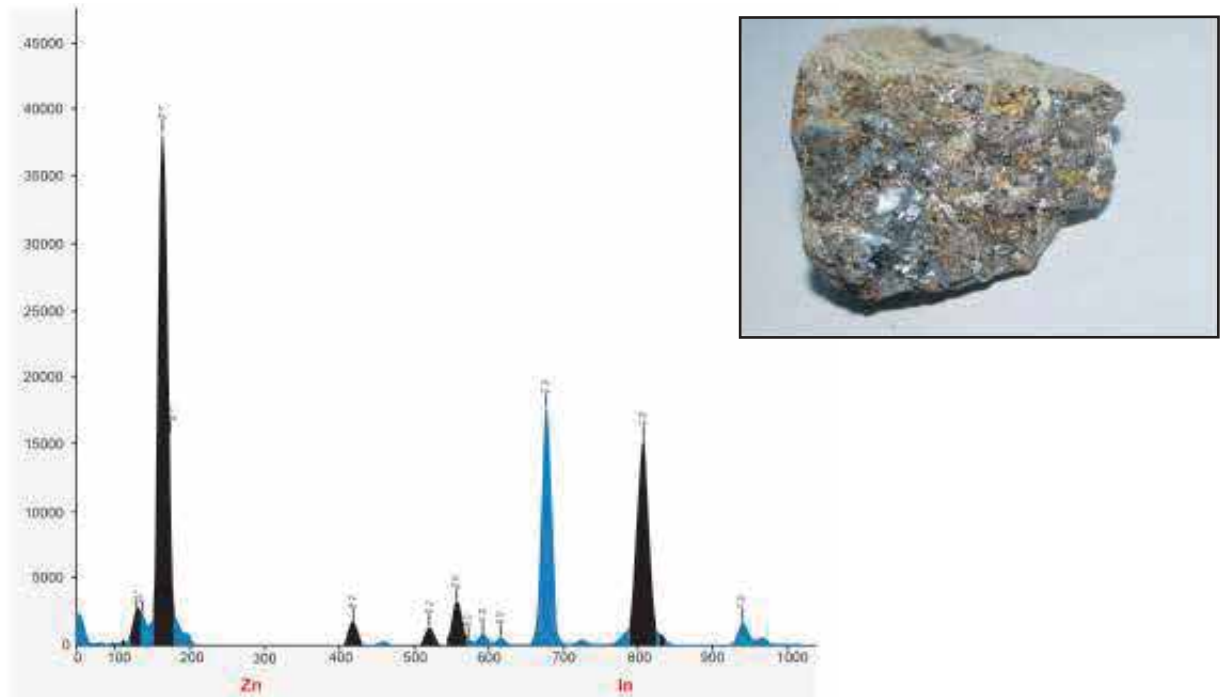
Name	Na2O	Al2O3	SiO2	Fe2O3	K2O
Kaolin-1	0.4775	16.3222	74.6662	4.8268	3.4161
Kaolin-2	0.5892	16.5028	74.6302	4.8413	3.4483
Kaolin-3	0.4711	16.4921	74.6794	4.8281	3.4532
Kaolin-4	0.5814	16.4986	74.6796	4.8460	3.4570
Kaolin-5	0.5375	16.4457	74.6653	4.8253	3.4422
Kaolin-6	0.5425	16.4979	74.6883	4.8258	3.4540
Kaolin-7	0.5494	16.4726	74.6485	4.8116	3.4443
Kaolin-8	0.4972	16.4997	74.7446	4.8327	3.4443
Kaolin-9	0.5439	16.5299	74.6029	4.8235	3.4394
Kaolin-10	0.4972	16.4562	74.6771	4.8126	3.4386
Kaolin-11	0.5773	16.5287	74.7196	4.8233	3.4478
Average value	0.5331	16.4769	74.6729	4.8270	3.4441
Range	0.1181	0.2076	0.1416	0.0343	0.0409
Standard deviation	0.0418	0.0576	0.0388	0.0104	0.0110
Relative standard deviation	7.8326	0.3495	0.0520	0.2147	0.3207

## Case Two Zinc concentrate



Name	In	Zn
Zn Mineral 1	0.1662	45.7814
Zn Mineral 2	0.1814	45.6665
Zn Mineral 3	0.1681	45.7325
Zn Mineral 4	0.1843	45.7121
Zn Mineral 5	0.17	45.7047
Zn Mineral 6	0.174	45.5862
Zn Mineral 7	0.1866	45.5271
Zn Mineral 8	0.1882	45.6769
Zn Mineral 9	0.1857	45.6586
Zn Mineral 10	0.1804	45.6416
Zn Mineral 11	0.1808	45.7063
Average value	0.1787	45.6724
Standard deviation	0.0078	0.0698
Relative standard deviation	4.3849	0.1527

### Case Three Lead concentrate



Name	Pb	Zn	Cu	Fe	Ca	Sr	S	Mg	Al
1	53.62	5.05	3.56	10.11	1.19	3.98	14.16	0.28	0.27
2	53.45	4.95	3.48	9.91	1.28	3.37	15.30	0.32	0.26
3	53.32	5.15	3.49	9.89	1.32	3.54	15.23	0.20	0.26
4	53.84	5.13	3.29	9.94	1.26	3.46	14.98	0.35	0.24
5	53.42	5.07	3.88	9.69	1.25	3.37	15.36	0.61	0.25
6	53.79	5.09	3.46	10.10	1.24	4.12	15.48	0.29	0.28
7	53.23	5.04	3.48	9.97	1.28	3.84	14.98	0.44	0.26
8	53.31	5.06	3.64	9.66	1.19	3.21	14.65	0.52	0.24
9	53.80	5.13	3.54	9.76	1.34	3.94	14.32	0.42	0.27
10	53.19	5.01	3.31	9.82	1.27	4.16	15.04	0.37	0.26
11	52.86	5.34	3.67	9.24	1.60	3.72	14.16	0.43	0.29
Average value	53.44	5.09	3.53	9.83	1.29	3.70	14.88	0.38	0.26
Standard deviation	0.30	0.10	0.17	0.24	0.11	0.33	0.48	0.12	0.02
Relative standard deviation	0.57	1.96	4.68	2.48	8.64	8.90	3.25	30.37	5.87

# PERIODIC TABLE OF ELEMENTS

■ Alkali Metals   
 ■ Non-Metal   
 ■ Transitional element  
■ Halogen   
 ■ Lanthanoids   
 ■ Actinides  
■ Alkaline earth   
 ■ Rare gases   
 ■ Main group metal

Ln	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
	138.9	140.1	140.9	144.2	(147)	150.4	152.0	157.2	158.9	162.5	164.9	167.2	168.9	173.0	175.0
	33.30	34.57	35.86	37.19	38.54	39.91	41.32	42.76	44.23	45.73	47.26	48.82	50.41	52.04	53.93
	37.89	39.45	40.95	42.48	44.05	45.65	47.28	48.95	50.65	52.38	54.16	55.96	57.81	59.69	61.61
	4.651	4.840	5.034	5.230	5.431	5.636	5.846	6.059	6.275	6.495	6.720	6.948	7.181	7.414	7.654
	5.043	5.262	5.489	5.722	5.955	6.200	6.456	6.714	6.979	7.249	7.528	7.810	8.103	8.401	8.708
	5.789	6.052	6.322	6.602	6.891	7.180	7.478	7.778	8.104	8.418	8.748	9.089	9.424	9.779	10.14
	4.124	4.287	4.452	4.632	4.816	4.994	5.176	5.361	5.546	5.742	5.942	6.152	6.341	6.544	6.752
An	89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm			
	(147)	(148)	(150)	238.0	(237)	(244)	(243)	(247)	(247)	(251)	(252)	(257)			
	60.91	232.0	231.0	238.0	237.0	244.0	243.0	247.0	247.0	251.0	252.0	257.0			
	10.13	12.75	13.99	11.44	11.63	11.77	11.77	11.77	11.77	11.77	11.77	11.77			
	(2.69)	(2.69)	(2.69)	12.61	14.95	14.30	14.62	14.30	14.34	15.60	16.03	16.30			
	(6.77)	(6.77)	(6.77)	16.74	18.88	18.88	18.88	18.88	18.88	20.30	21.14	21.70			
	(10.4)	(10.4)	(10.4)	20.87	21.38	21.38	21.38	21.38	21.38	21.38	21.38	21.38			
	11.43	11.36	11.62	11.69	12.12	12.38									

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