

SPECTRO xSORT^{xHH03}

HANDHELD XRF SPECTROMETER



Faster scrap analysis
and sorting

The key to profitable
metals recycling:

SPECTRO xSORT

Over 400 million tons of metal is recycled each year worldwide. Recycling conserves precious natural resources; its environmental benefits in saved energy and reduced greenhouse gas emissions are also well recognized. Scrap metal in a raw, unsorted form has low monetary value; is bulky and expensive to handle and transport; and attracts low margins as a trade commodity. Manual sorting to identify higher-value metals based on appearance, magnetic behavior, and similar physical properties is labor-intensive, inaccurate, and unreliable. Fortunately, the SPECTRO xSORT handheld metals analyzer can take the uncertainty out of scrap sorting — and positively identify alloy grades in seconds.



THE DESIGN, PERFORMANCE, AND SIMPLE OPERATION OF THE SPECTRO xSORT HANDHELD

X-ray fluorescence (XRF) spectrometer make it ideal for scrap sorting. XRF spectrometry is a proven technique for metals analysis, popular since its introduction in the 1950s. Today's XRF spectrometers are a standard tool for quality control analysis in most major metal processing facilities.

ADD VALUE WITH ANALYSIS

The SPECTRO xSORT Alloy model delivers grade identification in seconds. With the even more powerful SPECTRO xSORT AlloyPlus, most alloys can be analyzed in 2 seconds. For alloys containing difficult light elements such as aluminum, magnesium, silicon, phosphorus, and sulfur, metal grade identification now takes only 7 seconds!

EASY SCRAP METAL SORTING

With SPECTRO xSORT, operators don't have to switch methods between samples, or bother with helium flushes or vacuum systems. Its compact, one-piece 1.64 kg (3.62 lb) design is optimized for easy use in the field, even in tight or less accessible spots.

BUILT-IN PROTECTION AND CALIBRATION

A shutter that automatically closes the measurement window between analyses — to protect internal components — also functions as the sample material for unique, automatic iCAL standardization. All calibrations loaded into SPECTRO xSORT are always ready for use.

SPECTRO xSORT

advantages for scrap sorting and analysis

X-ray safety gasket to prevent backscatter radiation from light element matrix samples

Optional integrated GPS receiver



Optional integrated video camera for precise spot testing, with visual memory storage

Si-PIN detector (on xSORT Alloy only) or high-resolution, high-sensitivity SDD

Easy-to-use wireless LAN to deliver results anywhere on network; users can view and manage results or collaborate remotely and archive the information

Quick-change battery

Low detection limits — down to ppm range for heavy metals and now even light elements

Interface bezel with operator-defined hot keys to maximize speed of common tasks

"Live" analysis results (display updated every few seconds)

Simplified software featuring touchscreen interface with only two menu levels — intuitive ease for highest productivity

SPECTRO iCAL one-sample, one-time automated standardization system



SPECTRO xSORT Alloy

This entry-level model employs an innovative silicon PIN (Si-PIN) detector. Get grade identification of metals in seconds without extensive analysis.



SPECTRO xSORT AlloyPlus (Combi)

With its top-of-the-line silicon drift detector (SDD), this model provides reliable, high-productivity measurement and analysis.

IMPROVED PERFORMANCE WITH LIGHT ELEMENTS

Previous handheld XRF analyzers had difficulty with light elements such as magnesium and silicon. Some required substantial time — up to 60 seconds — to reliably measure light elements at all. SPECTRO xSORT's new light element LODs mean it can accurately identify alloys based on aluminum, magnesium, or silicon with twice (2X) the precision of previous models — and in half the time: only 7 seconds!

The screenshot displays the SPECTRO Metal Database application. The interface includes a top navigation bar with the SPECTRO logo, a search bar, and a 'Metal Database' dropdown menu. Below the navigation bar, there is a table of metal grades. The table has columns for 'Grade', 'Al', 'Si', 'Mn', 'P', 'S', 'Fe', 'C', 'Cr', 'Ni', 'Cu', 'Mg', 'Zn', 'Co', 'Mo', 'W', 'Nb', 'Ti', 'Sn', 'Pb', 'Bi', 'As', 'Sb', 'Se', 'Te', 'Ag', 'Au', 'Hg', 'Br', 'I', 'Cl', 'F', 'O', 'N', and 'H'. The table lists various metal grades such as 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 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SPECTRO Metal Database

Exclusive optional SPECTRO Metal Database helps extend prepackaged libraries or create customized grade libraries.

SPECTRO xSORT: SERVICE AND SUPPORT

So that SPECTRO xSORT instruments continue to meet and exceed customer availability goals, SPECTRO offers AMECARE Performance Services. The program fields more than 200 service engineers in more than 50 countries. The high-value, customized services they deliver help ensure optimum performance and the longest possible equipment life. Available AMECARE support includes protective maintenance programs, applications solutions, expert consultation, and targeted training.

SPECTRO xSORT Specifications



Detector	SiPIN or high resolution silicon drift detector (SDD)
Excitation	X-ray tube, rhodium anode, 50 kV max.
Dimensions and weight (including battery pack)	Height: 270 mm (10.7 in) Width: 93 mm (3.7 in) Depth: 230 mm (9.1 in) Weight: 1.64 kg (3.62 lb)
Spectrometer control	Integrated PC with touchscreen, Windows Mobile 6.0, Interfaces: Bluetooth, wireless LAN, USB host/client
Software	SPECTRO XRF Analyzer CE iCAL (intelligent calibration logic) Analysis mode with grade ID/grade verification option, sorting mode (fast pass/fail assessment) Result manager for post-processing of testing results
Accessories (included)	Transport case Instrument with battery Holster 2nd battery pack Charger USB cable Consumables (films)
Accessories (not included)	Docking station Small parts/wire adapter Adapter for weld seams Printer Barcode reader
Options	Video camera (integrated) Internal GPS receiver

Typical results obtained with SPECTRO xSORT AlloyPlus

1117 carbon steel			
Element	Measurement time: 2 Sec		
	Certified Value [%]	Average Value [%]	2*SD [%]
Mn	1.07	1.04	0.04
Cr	0.076	0.072	0.01
Ni	0.042	0.05	0.014
Mo	0.016	0.015	0.006
Cu	0.085	0.056	0.018

AISI 303			
Element	Measurement time: 7 Sec		
	Certified Value [%]	Average Value [%]	2*SD [%]
Si	0.63	0.8	0.10
Mn	1.87	1.72	0.031
S	0.38	0.30	0.024
Cr	17.35	17.8	0.07
Mo	0.58	0.59	0.015
Ni	8.64	8.69	0.085
V	0.11	0.08	0.02
Cu	0.51	0.46	0.029

AISI 321			
Element	Measurement time: 2 Sec		
	Certified Value [%]	Average Value [%]	2*SD [%]
Mn	1.52	1.2	0.061
Cr	17.45	17.6	0.11
Mo	0.36	0.38	0.018
Ni	9.42	9.5	0.064
Ti	0.63	0.67	0.036
V	0.13	0.11	0.02
Cu	0.30	0.20	0.019

SPECTRO: AN EXTENSIVE RANGE OF ELEMENTAL ANALYSIS SOLUTIONS

The SPECTRO xSORT handheld XRF analyzer is an easy-to-use, highly reliable and accurate tool for sorting metal scrap. It presents the opportunity to add value and increase profitability in the recycling process. The SPECTRO xSORT is ideally designed to handle many scrap sorting tasks encountered in the aluminum recycling industry.

For even more challenging requirements, consider the larger, more powerful SPECTROTEST. This mobile optical emission spectrometry (OES) analyzer delivers even more precise metal analysis. Furthermore, SPECTROTEST can detect not only the elements of interest in routine scrap sorting, but also elements like lithium, beryllium, or carbon that are beyond the performance range of even the best handheld XRF analyzer.

Whatever the choice, SPECTRO's more than 30 years of experience in element analysis and record of technological innovation ensure the best results in the business.

www.spectro.com



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