

# Q4 MOBILE

- The Mobile Metals Analyzer

Innovation with Integrity

OES



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Testing Equipment Since 1969!

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# Highest Efficiency – Ready From the Start



Recycling industry



Rolls of aluminum



Inspection companies & contract laboratories



Zink-coated steel



Fabricators



Rolls of steel sheet



Automotive



Different metal billets and pipes



Steelplants



Rolled wire

## The new freedom in mobile OES

The Q4 MOBILE is a milestone for mobile optical emission spectroscopy. For all fields of applications in metal sorting, Positive Material Identification (PMI), and analysis, the Q4 MOBILE offers innovative solutions such as patented CCD optics, special power management, hybrid cable and much more.

## Most compact design

Q4 MOBILE is one of the most compact integrated spectrometers. Even a battery is already built-in allowing operation independent from mains supply. For special tasks, various cable lengths are available. The ultra-light probe and the light hybrid cable make this configuration very handy.

## High-end analytical performance

Like all Bruker OES products the Q4 MOBILE uses state-of-the-art technology for high-end performance: The patented optic, source generator, orthogonal plasma observation, combined with latest spectra deconvolution algorithms provide an analytical performance close to laboratory instruments. Even challenging applications like carbon, sulphur, or nitrogen determination are possible.



# Great Analytical Performance Wherever You Go

## Versatility in applications

The application areas are diverse. Besides inspection of incoming goods – the quick testing of coils on the truck, for example – the mix-up test is the classic application. The portability of the Q4 MOBILE allows inspection away from the lab, giving convenient access to incoming goods. Contract laboratories and inspectors can easily transport the instrument directly to the job for on-site analysis. Unsorted scrap, including carbon steels, can be quickly tested in the scrap yard. With the help of the analysis the various alloys can be differentiated and valuable and precious material delivered to customers. The Q4 MOBILE is versatile!

Q4 MOBILE offers highest efficiency. As soon as you power on, you are ready to start working. The patented Adaptive Ambient Compensation (AAC) technology does not require any warm-up time! Q4 MOBILE is always stable – instantly.

The universal power management system allows to operate the instrument with any power source between 12 and 230 volts. The integrated battery pack lasts for hundreds of sparks, making the unit truly mobile. The new hybrid cable in various lengths add further flexibility. The optionally available, attachable iPod™ shows the complete analysis screen remotely using a Wifi connection. Q4 MOBILE is best equipped for all scenarios of mobile metal testing!



## Features

- Most compact design
- Ultra-light probe
- Hybrid cable allowing longer, lighter, more flexible probe cabling
- Thermal stability without warming-up times ensure instant availability
- Combined arc/spark pistol with quick change adapter
- Patented CCD optic with outstanding resolution and thermal stability
- User-friendly touch-screen operation and built-in probe display
- Special power management, supports all forms of power suppliers



# Q4 MOBILE is Innovation Made by Bruker



- 1 With a simple mechanism it is possible to quickly change from arc to spark mode. Two LED "headlights" illuminate the measurement spot.
- 2 Ignition and electronic components are securely embedded into the rugged housing. IP class allows operation in rough conditions.
- 3 Ergonomically designed and light-weighted, the probe suits for long hours and high work load.
- 4 The easy-to-use software interface is operated via a touchscreen panel. It can be stowed away for transport.
- 5 The light housing with a stable carry grip allows easy transportation. A simple on/off LED button signals status.
- 6 The small high capacity battery easily slides in. Hot swap allows battery change without switching off. Adapters for other power sources are available.
- 7 The optical system is well protected. It provides stable results even in quickly changing environments.
- 8 Docking port for the probe ensures reliable connection of arc/spark probes or FIPOS.
- 9 All electronic boards are EMC & RoHS compliant. Power management gives flexibility: use any power source.

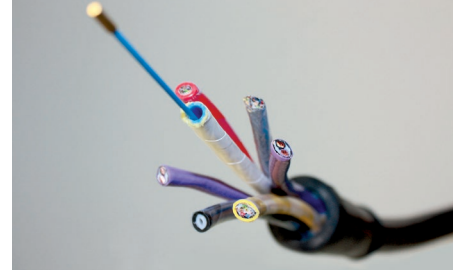


## The next generation of mobile metal testing

Latest technologies, user-friendly interfaces, advanced applications: our R&D team has created the next generation of mobile metal testing. Here are some of the many innovative aspects of the Q4 MOBILE:

### Hybrid cable

A lighter, more bendable, extremely tough, easy-to-handle cable replaces the old hard-plastic hoses. This hybrid cable transports power, signals, gas and light all-in-one cable. The fibre light guide is well-protected in the core of the cable. High-tech at work!



### Display

A two-line, illuminated LCD display allows to show – depending on mode-element concentrations or grade ID. This makes the operation independent from the position of the unit's main screen.



### Elemental.Suite software

The touchscreen software supports all working modes of the system with simple, informative screens. An alloy table is integrated for PMI. Analysis results can be stored and reported. Different user-roles define available functionality, ensure safety and integrity, and simplify operation.



### Adapters

Various adapters make it easy to analyze curved shapes, rod & wires, weld seams, etc. Adapter sets are available for both spark and arc mode and can easily be mounted to the probe with a simple quick change mechanism.



### FIPOS

The folded-in-probe-optical system (FIPOS) is embedded into the probe. It allows elements in the ultra-violet range of the spectrum – like P, S, As, B, Sn, N – to be analyzed. It also offers improved performance on carbon analysis. The patented optics offers an ultra-high resolution.



# Q4 MOBILE Creates Value

## Identify.Sort.Analyze



### Identify

When it comes to PMI the Q4 MOBILE provides a fast, easy and complete method for every metal component.

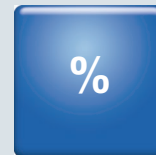
100% alloy verification is part of the ISO 9000 certification for many fabricators. Getting the verification right at an early stage prevents any possibility of a costly alloy mix-up, dramatically reducing scrap and improving product quality.

That's how Q4 MOBILE creates value!



### Sort

The Q4 MOBILE's grade libraries contain a good number of alloy definitions. In addition, users may create their own user-defined library or modify existing libraries. Using these libraries the Q4 MOBILE can reliably sort any metal. Switch on, shoot, and the green light signalizes OK. In case the tested material is not the expected grade, you see the red signal together with the next matching grade. It has never been easier to quickly sort your metals!



### Analyze

The mode „Analysis“ gives you the concentration of every required element in the metal. From traces to high concentrations, the analysis of different kinds of matrices, such as iron, nickel, cobalt, aluminium, copper, titanium and many more is possible. Due to its innovative solutions, limits of detection and precision of the Q4 MOBILE are close to laboratory instruments. FIPOS extends the capabilities even to elements like P, S, Sn, As, B, N, and others.

The screenshot shows the Q4 MOBILE software interface. At the top, there is a 'Leave Workflow' button. Below it, a search bar displays '2 / 8 matches' and a large value '1.0756'. The main part of the interface is a table with the following columns: Element, Min. Value, Average, Max. Value, and rel. Deviation [%]. The table contains data for various elements, with Carbon (C) highlighted in red and Iron (Fe) highlighted in yellow. At the bottom, there are three buttons: 'ACCEPT' (with a green checkmark), 'Reject Analysis' (with a red X), and 'Show Measurements' (with a magnifying glass icon).

Element	Min. Value	Average	Max. Value	rel. Deviation [%]
C	0,32	0,398	0,39	2,05
Si		0,140	0,4	
Mn	0,7	0,808	1,1	
Cr		1,074		
Mo		0,185		
Ni		0,085		
Cu		0,271		
Al		0,019		
Co		<0,020		
Nb		<0,020		
W		<0,050		
Ti		<0,0100		
V		<0,030		
Fe	97,2	96,98	98,4	0,23



**Analytical performance wherever you go:  
Q4 MOBILE sorting metals in a scrap yard**



The rugged steel cart is easy to maneuver in any terrain. The four big wheels with its wide track width and axis distance make it a pleasure to move around scrap yards, cross rail tracks, etc.. It offers ample space for the instrument and all accessories like gas bottle, angle grinder, tool box. Also the Q4 MOBILE can be mounted in two orientations which allow 2- and 4-wheel operation.

A truly mobile system in every detail.

**At your service**



Although each Q4 MOBILE has integrated service functions and you could easily use remote online support, we also like to talk to you personally. Call our local service or the headquarter in Germany. A network of international offices and representatives guarantees a competent customer support world wide. We will be pleased to assist you with all the questions you may have around your Q4 MOBILE.

Regular training courses and customized local training are vital elements of our know-how transfer. Please contact your local office.



Technical Data	
<b>Optical System</b>	Uncoated CCD detectors with lowest dark current ClearSpectrum technology for advanced spectra deconvolution Active Ambient Compensation (AAC)
<b>Source Generator</b>	Maintenance-free, two phase PWM generator Low ripple ARC max. 5 A Frequency 50 to 1000 Hz
<b>Probe</b>	Hybrid cable length 4 m / 10 m Combined arc/spark probe with quick-change Ultra-light probe Integrated display FIPOS: Optional probe for UV elements like P, S, As, Sn, B, N
<b>ELEMENTAL.SUITE</b>	Intuitive Windows® based software on a 12,1" touchscreen for simple routine operation Various user levels for secure and task-specific operations Working modes for sorting, PMI, and quantitative analysis Alloy library for grade definitions SQL result database with various export formats
<b>Analytical Solution Packages (ASP)</b>	Different matrix calibration packages available for arc/spark ASPs cover all major elements & alloy groups Upgradable for future expansion
<b>Electrical Data</b>	Power Supply Mains Operation: 100-240 V ± 15 % 11 - 28 V DC, 215 Wh optional battery module
<b>Weight &amp; Dimensions</b>	Dimensions: 507 x 530 x 310 mm; 20 x 20.9 x 12.2 inches (WxDxH) Weight: 27 kg, 59.53 lbs (base unit); 40 kg, 88.18 lbs with battery module and probe
<b>Environmental Range</b>	-10 °C to 50 °C; 14 °F to 122 °F

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