Belec IN-SPECT

New Compact Spectrometer for Metal Analysis with latest 5GSO System

SPEKTROMETRIE OPTO-ELEKTRONIK belec

Specifications

- high performance ability due to the latest 5GSO System (5th Generation Spectrometer Optic System)
- latest state-of-the-art detectors, developed for spectroscopy application
- compact construction
- service- and operator friendly design
- low detection limits
- excellent precision
- user-friendly software Belec Win 21
- free accessible sparking stand for bigger samples
- attractive design
- installation and instruction by qualified personnel

Our Recommendation

The Belec IN-SPECT is the new compact stationary spectrometer for metal analysis.

The tabletop instrument combines most of the features of a complex laboratory instrument in a compacted way.

Small but Nice

The Belec IN-SPECT is well suitable for laboratory operation.

The small space required makes it possible to situate the instrument at almost any possible place.

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Attractive Companion for Small and Medium-Sized Enterprises

The Belec IN-SPECT is the companion for all small and medium-sized enterprises. The standardized configuration of the inert gas breathed spectrometer optics and optimization of frequently requested analysis applications makes the instrument attractive. At the same time, the Belec IN-SPECT offers high-performance and accuracy to the user. Together with other accessories, the instrument presents a real unit and is an interesting alternative to conventional bulky stationary systems.

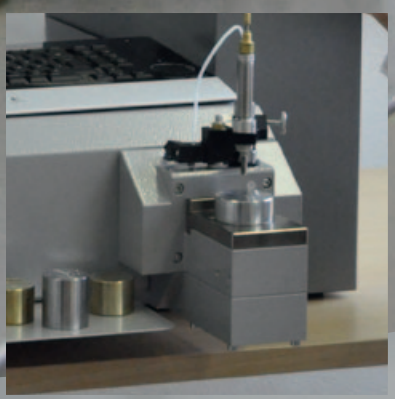
The integrated spectrometer, containing the latest state-of-the-art 5GSO System, designed by belec engineers, allows the usage of any ideal spectral lines without any compromise.

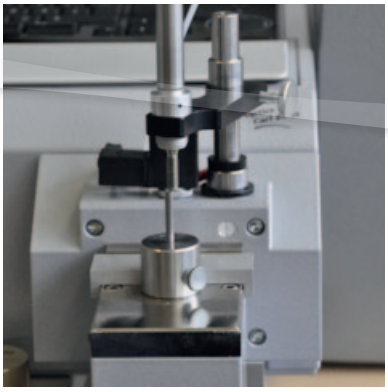
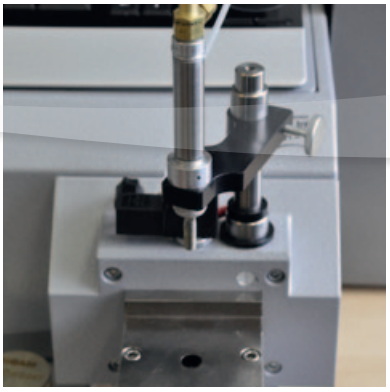
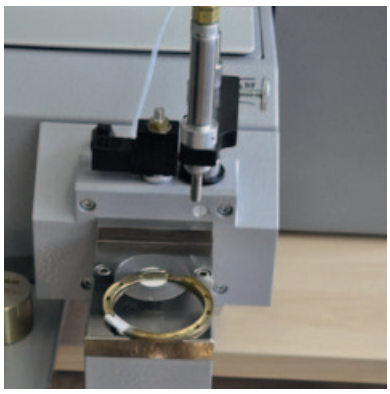
From now on the daily recalibration procedure belongs to history. The new MCDC system does it automatically unconsciously. One drift correction will give excellent results for several weeks.

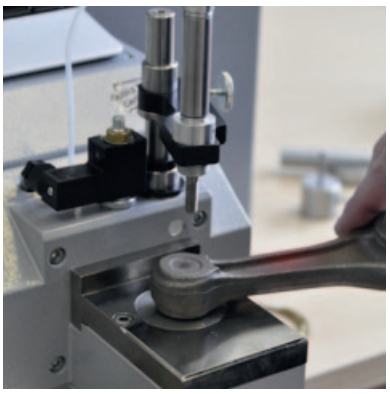
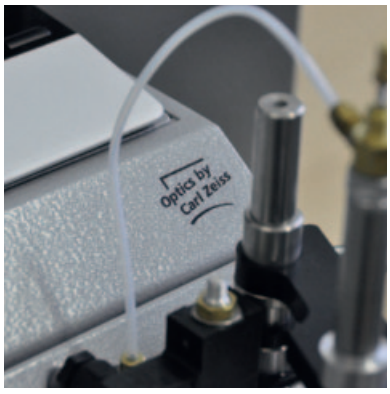
Adapters for any Kind of Sample Shapes

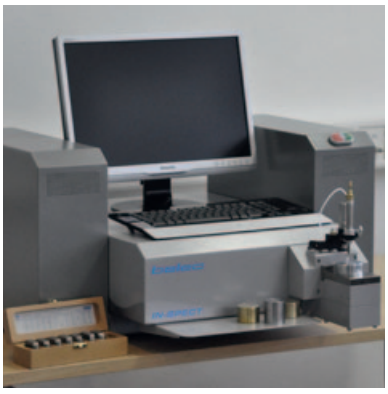
Belec offers a wide range of adapters for nearly all kinds of sample shapes and sizes.

Without a special sample preparation, various pieces such as pipes, wires, metal splinters, screws and even small balls can be analysed.





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Laboratory-like Results and Maximum Flexibility

The open sparking stand of the Belec IN-SPECT is freely accessible from three sides which enables non-destructive material testing of even huge and bulky specimens.

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Optics by Carl Zeiss

ZDH ZERT
DIN EN ISO 9001
REG.-NR. QI 0310014

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Technical Data

Optics
- spectrometer in Paschen-Runge mounting
- rowland circle diameter 300 mm
- usable wavelengths 145-410 nm
- Zeiss-Grating with 3600 lines/mm
- reciprocal dispersion 0,9 nm/mm (1st order)
- shock resistance
- temperature stabilized detectors with wavelength depending configured entrance window (US-licensed)
- integrated noise compensation
- 7µ pixel width for optimized line separation
- one base module completely calibrated, expandable to almost unlimited additional base modules
- unlimited numbers of element channels
- inert gas-breathed optical chamber with purifier system
- optionally configured as vacuum spectrometer instead of inert gas-breathed

Source
- sparking generator with max. 400 Hz frequency
- unipolar discharge
- Separate spark parameters for pre-sparking and integration selectable via software
- ignition frequency program specifically selectable via software
- discharge parameters specifically selectable via software
- ignition voltage 20 kV

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Measuring Stand
- argon-flushed measuring stand for exact analysis
- sparking stand grounded with Ø 10 mm analysis opening, optionally with ceramic insert for samples of Ø 4 mm minimum
- adapters for wires, pipes and small parts are available
- low-wear tungsten electrode
- pneumatic sample clamping
- argon flow 0,1 l/min in stand-by mode and 2 l/min during analysis
- low maintenance effort

Electronics
- 10 detectors, each with 3648 pixel, 7µ pixel width
- temperature stabilization, at 0.1 °C exact
- separate AD- converter board for each detector, mounted on multi channel board, coupled by high-speed USB port
- integrated noise suppression
- integrated background compensation
- unlimited numbers of measuring channels, configurable for several bases

Dimensions
- width 30.5 in. (775 mm)
- height 14.9 in. (380 mm)
- depth 23.6 in. (600 mm) plus 6.1 in. (155mm) for sparking stand

Weight
- analysis unit 152.1 lbs. (69 kg) plus monitor and keyboard

Power Supply
- 230V/50Hz or 110V/60Hz
- 100 W in stand-by mode
- 600 W during analysis
- 600 W in stand-by mode with opt. vacuum system*
- 1100 W during analysis with opt. vacuum system*

Computer Hardware
- system-integrated industrial computer system
- Intel® Atom™ Prozessor D2550 (1,86 GHz)
- 4 GB RAM and 2,5" Intel® Solid State Drive 120 GB
- Onboard Intel® graphic 945 express with VGA output
- 18,5" widescreen colour monitor, other sizes available
- complete external keyboard with touch pad
- USB 2.0 ports
- RJ45 ethernet interface, 100 Mbit/sec
- serial port, parallel port*

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win 21

Documentation Made Easy

Our software Belec WIN 21 convinces its users: easy to handle, always up-to-date and best operation conditions by clear arrangements. Measuring values and statistics are displayed at the touch of a button and can then be printed out or archived.

The analysis values can be easily filed in a local network via Ethernet connection.

Belec WIN 21 Analysis and Quality Control Program

Software
- arbitrary operating system, e.g. Windows 7
- Remote-Service-System (RSS)
- display of analysis values at each measurement
- as many analysis programs to customer specifications as required
- individual analysis parameters for each program
- Automatic Program Finding (APF)*
- analysis computation with: background correction, curve position correction, additive and multiplicative inter-element correction
- automatic correction with standard types
- easy and simultaneous recalibration of several programs
- extended recalibration cycles by usage of MCDC (Multi Channel Drift Correction)
- mix-up checking by comparison with reference measurement
- grade test by comparison with grade ranges
- type calibration and type measurement
- tolerances for every analysis program and element in absolute and relative weight percentages, individually adjustable
- average and standard deviation from chosen measurements
- warning signal, when calibration curve is exceeded
- automatic reminder of regular recalibration
- automatic display of grade name or material number
- alloy data bank, 100.000 grades and more storable (only limited by computer storage capacity)
- text size on monitor variable for optimum legibility
- protocol storage function
- report memory function for later analysis, printing and archiving
- several statistic functions with graphical representation
- automatic profile adjustment