

# BIOS™

Brinell Impression Optical Scanner

**BRINELL MEASUREMENT SYSTEM**



# BIOS™

## Brinell Impression Optical Scanner

The BIOS Brinell optical scanner is a hand held device that can be connected to a standard laptop, tablet or any other device running a Windows 10 operating system. The software that comes with the unit is easy to install and provides an excellent way to measure Brinell indents in just a tenth of a second.

Different materials have different finish and for Brinell fast light adjustment is mandatory. Automatic light adjusting systems are too slow and often don't give the right result. The scroll wheel that is in thumb reach provides an ultra-fast way of experimenting with correct light setting, which is then stored for the current application.



## EASY SET UP

Software supports Windows PC's with Touch Screen, mouse & keyboard. Only a single USB cable runs from your laptop or tablet to the BIOS and provides both power for illumination, control and signal for live video.



## BEST IN CLASS OPTICAL SYSTEM

Most Brinell microscopes or imaging systems make use of standard lenses and optics. This results in to a number of limitations if it comes to sharpness, field of view and the possibility of meeting ISO|ASTM standards.

The BIOS™ has eliminated all such disadvantage as the camera and electronics are built around a TELECENTRIC objective with an adjustable direct LED light module that illuminates shadow area's around the indents. This results in to crisp high resolution image.

The ability to quickly perform repeatable, high accuracy measurements is critical to maximize the performance and efficiency of Brinell measurements. A telecentric lens allows the highest possible accuracy to be obtained.





## Experience the advantage of intuitive operation...

The settings in the software are just a few like ball diameter and force used, however for more advanced users there are plenty of features like min/max limitations, threshold, color settings, and even different video overlay settings for the measuring grid.

No special skills are required for operating the unit and making advantage of the efficiency of the entire system.

Designed to make daily testing of Brinell indents faster, more accurate and reliable.

It improves your quality control processes due to direct saving of results in a CSV file.

Therefore test results can easily be imported into MS applications such as Word and Excel for further statically processing or reporting.

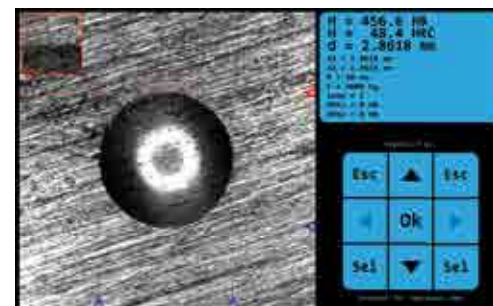
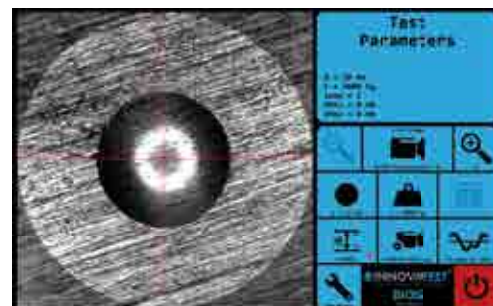
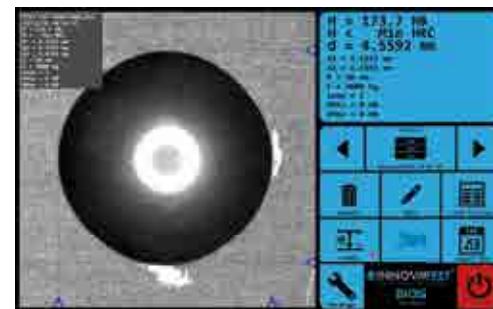
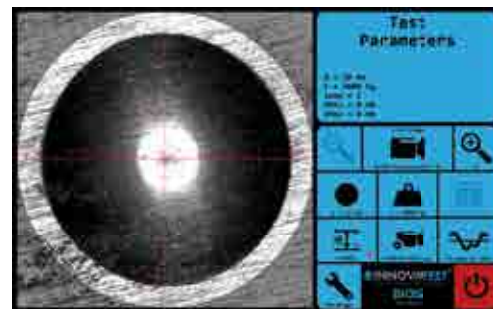
### CSV EXPORT FUNCTION

	A	B	C	D	E	F	G	H	I	J	K
1	Bios 2 - Version 6.0.19										
2	Name	Method	d (mm)	d1 (mm)	d2 (mm)	D (mm)	F (Kgf)	HB	HBMax	HBMin	Date
3	TEST 1 #001	ASTM	0.597	0.596	0.598	1	10	32.2	215	205	24.03.2018
4	TEST 2 #002	ASTM	0.61	0.61	0.61	1	10	30.7	215	205	24.03.2018
5	TEST 3 #003	ASTM	0.597	0.598	0.597	1	10	32.1	215	205	24.03.2018
6	TEST 4 #004	ASTM	0.25	0.254	0.247	1	10	199.8	215	205	24.03.2018



# BRINELL MEASUREMENT SYSTEM

## BRINELL IMPRESSION OPTICAL SCANNER



2-IN-1

# MULTIFUNCTIONAL USE



SCROLL WHEEL

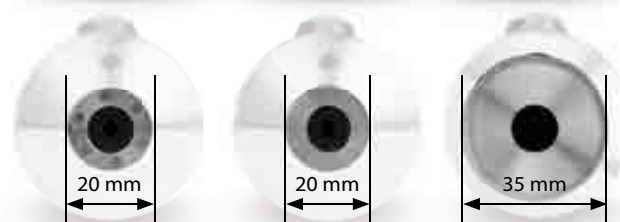
## EXCELLENT VERSATILITY

Suitable for Brinell indents of 10mm, 5mm, 2,5mm and 1mm balls. German Dakks certified (an ILAC member) ISO, JIS and ASTM standard compliant.

Ergonomic design, high quality cable connectors, aluminum shockproof housing, adjustable integrated power LED ring light. The BIOS is designed in such a way that it survives shocks and harsh environment.

The base has an adapter and supports the installation of different type of support rings like:

- Small diameter magnetic
- Small diameter non-magnetic
- Large diameter



MAGNETIC

NON-MAGNETIC

NON-MAGNETIC XL

## PARALLAX ERROR ELIMINATION; THE HIGHEST POSSIBLE PERFORMANCE

Conventional lenses have angular fields of view such that as the distance between the lens and object increases, the magnification decreases. This is how the human vision behaves, and contributes to our depth perception. This angular field of view results in parallax, also known as perspective error, which decreases accuracy, as the observed measurement of the vision system will change if the object is moved (even when remaining within the depth of field) due to the magnification change. Telecentric Lenses eliminate the parallax error characteristic of standard lenses by having a **constant, non-angular field of view**; at any distance from the lens, a Telecentric Lens will always have the same field of view.

### CONVENTIONAL LENS

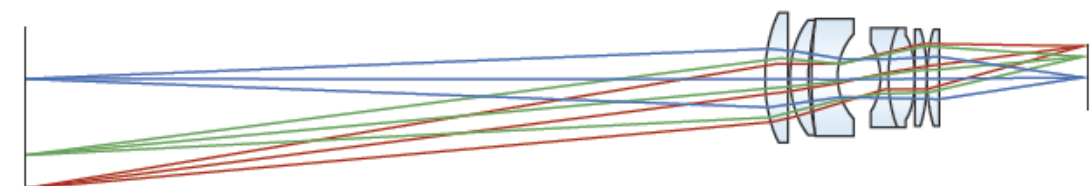


Figure A: Conventional BRINELL optical scanners and microscopes

### TELECENTRIC LENS

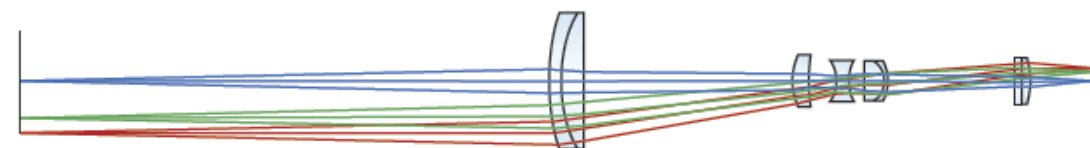


Figure B: INNOVATEST BIOS™ telecentric system

This technology results in to creating the most accurate image of the indent on the CCD camera and therefore guarantees "true image" measuring results.

INNOVATEST, innovations that make you to BE CERTAIN!

### ERGONOMIC DESIGN

The construction and shape of the BIOS make it possible to conduct measurements in all kind of circumstances and locations. The unit is small and it has a built "endless" scroll wheel to adjust the illumination setting all with one hand.

### SIMPLE PROCEDURE

Position the BIOS on top of the Brinell indentation and center the image of the indent as close as possible. Than push the camera button below your fingertips. In a fraction of a second the BIOS captures the image of the Brinell indentation and starts the automatic image evaluation, just a second later the actual measured value appears on the screen, with indicator lines in yellow or read Cleary positioned around the indent impression. Below the surface, the statistics and values in CSV file are updated with the new measuring data.



# ORDER DETAILS

## BIOS™



Brinell Impression Optical Scanner for 1mm, 2.5mm, 5mm & 10mm ball indentation according to ISO/ASTM standards  
Integrated power ringlight with diffuser

BIOSSCAN-1

Connection cable USB-2

CONCABLE BS1

STANDARD

BIOS Scan software

BIOSSOFT-V1

STANDARD

Magnetic supporting ring, ø 20mm

ASBIOS01-04

STANDARD

Non-Magnetic supporting ring, ø 20mm

ASBIOS01-05

STANDARD

Non-Magnetic XL supporting ring, ø 35mm

ASBIOS01-06

STANDARD

## ACCESSORIES

DAKKS Calibration certificate for BIOSSCAN-1

BSCANDKS

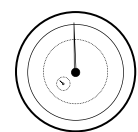
ASUS laptop with touch screen 13.3"

UN-LPTAS

ONDA Obook 11.8" tablet with separate keyboard

UN-TABONDA

## HARDNESS SCALES



### BRINELL

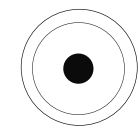
ISO 6506,  
ASTM E10  
JIS Z 2243

HBW1/1 | HBW1/1.25 | HBW1/2.5 | HBW1/5 | HBW1/10 | HBW1/30  
HBW2.5/6.25 | HBW2.5/7.8125 | HBW2.5/15.625 | HBW2.5/31.25 | HBW2.5/62.5  
HBW5/125 | HBW5/187.5 | HBW5/250 | HBW 5/750 | HBW10/100 | HBW10/125  
HBW10/250 | HBW 10/500 | HBW10/750 | HBW10/1000 | HBW10/1500 | HBW10/3000

### CONVERSIONS

Conversion to HRC.

## MICROSCOPE



### Microscope

Brinell Impression Optical Scanner

### Camera

5 Megapixel

### Lens

Telecentric 0.6x

### Field of view

Max. 9,50 x 7,12mm

### Dimensions

160mm x Ø45mm

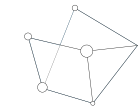
### Weight

527 gr

### Power supply

USB-2

## SYSTEM



### Electronic system

High performance embedded controller, i7, MS Windows® 10 operated

### Screen(s)

Landscape mode capacitive touch screen

### Display resolution

0.1 HBW

### Hardness conversion

HRC

### Software

Integrated database, Measurement for 1mm - 10mm balls with one lens only,  
Measurement resolution 1µm/step, Precise digital zoom function 1x - 8x,  
Fast measurement reaction time, Measurements can be edited after storage

### Data output

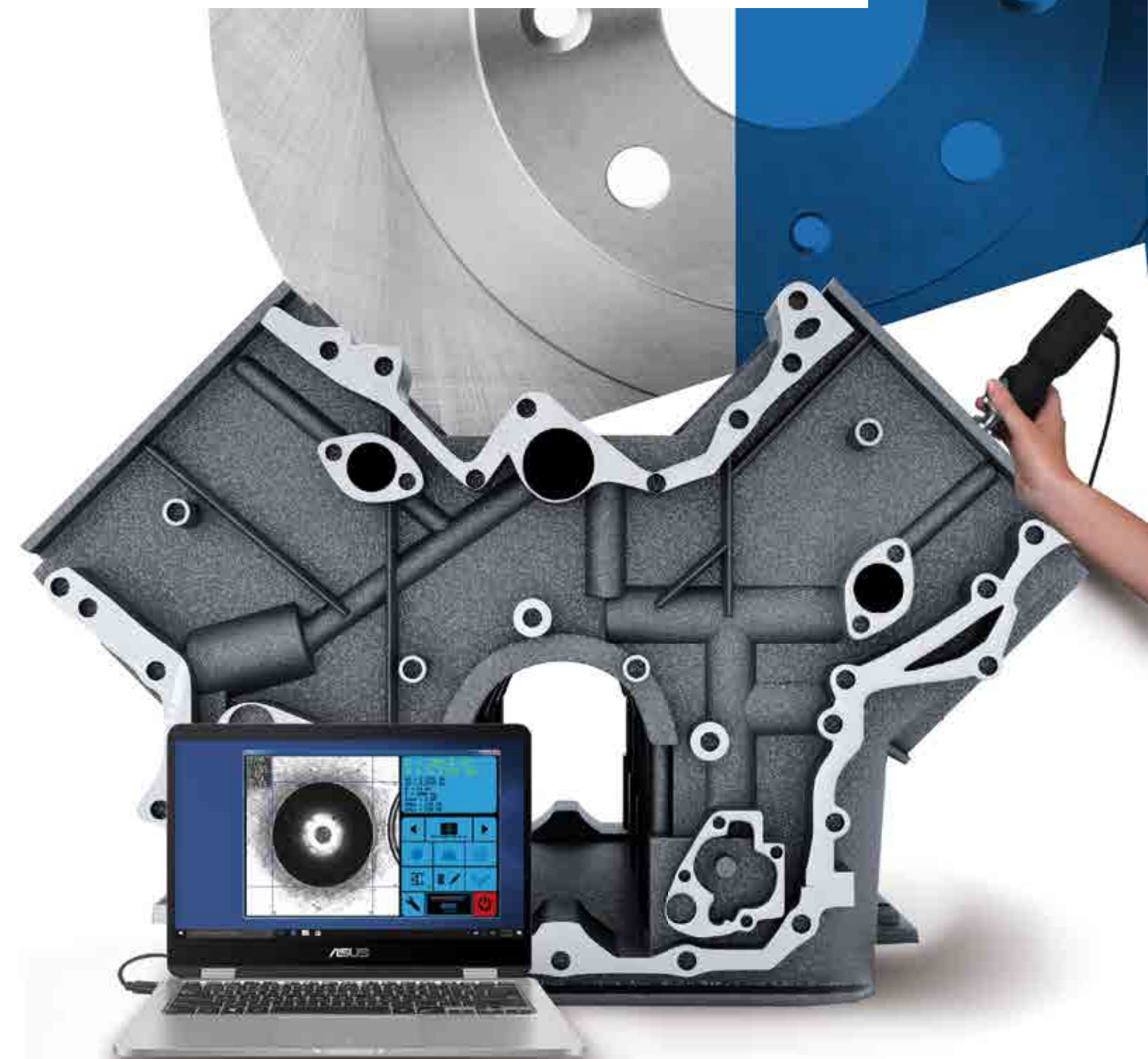
CSV, MS Solutions Excel, Word, etc.

### Connectivity

USB-2

# ENORMOUS

# FLEXIBILITY



# CERTIFICATE

The BIOS Brinell Impression Optical Scanner is certified according to ISO/ASTM standards.  
As an option a certificate can be provided.

akkreditiert durch die / accredited by the

**Deutsche Akkreditierungsstelle GmbH**



als Kalibrierlaboratorium im / as calibration laboratory in the

**Deutschen Kalibrierdienst** **DKD**

Kalibrierschein  
Calibration certificate

Kalibrierzeichen  
Calibration mark

B1029
D-K- 17344-01-00
2018-10

Gegenstand Object	<b>Measuring microscope for Brinell evaluation</b>	<p>Dieser Kalibrierschein dokumentiert die Rückführung auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI). Die DAkkS ist Unterzeichner der multilateralen Übereinkommen der European co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine. Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich. <i>This calibration certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI). The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates. The user is obliged to have the object recalibrated at appropriate intervals.</i></p>
Hersteller Manufacturer	<b>INNOVATEST</b>	
Typ Type	<b>BIOS</b>	
Fabrikat/Serien-Nr. Serial number	<b>0001</b>	
Auftraggeber Customer	<b>INNOVATEST Europe BV Borgharenweg 140 6222 AA Maastricht The Netherlands</b>	
Auftragsnummer Order No.	<b>62496</b>	
Anzahl der Seiten des Kalibrierscheines Number of pages of the certificate	<b>7</b>	
Datum der Kalibrierung Date of calibration	<b>2018-10-29</b>	

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05.11.2018	H. Hauck	B. Häuck

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