

BIOS™

Brinell Impression Optical Scanner

BRINELL MEASUREMENT SYSTEM





Brinell Impression Optical Scanner

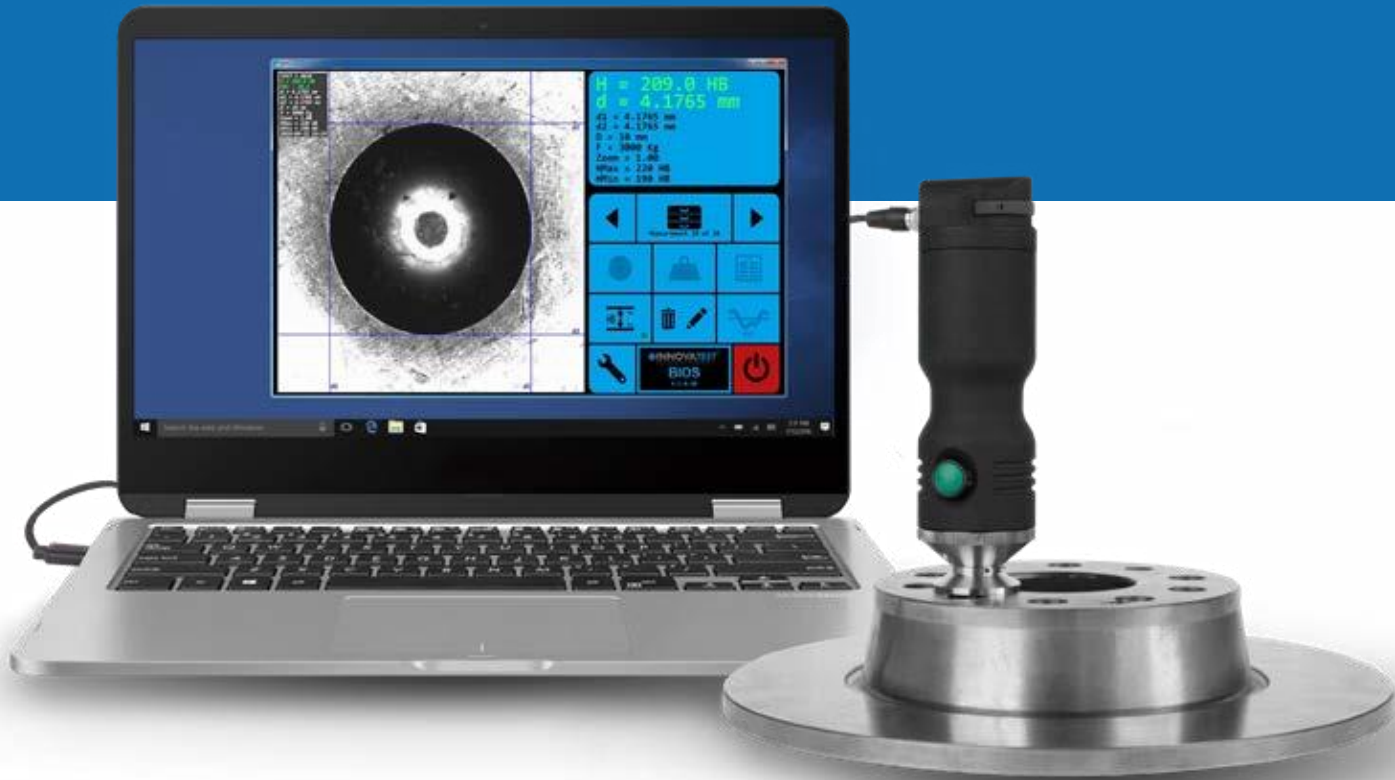
The BIOS Brinell optical scanner is a hand held device that can be connected to a standard laptop, tablet or any other device running a Windows 10 operating system. The software that comes with the unit is easy to install and provides an excellent way to measure Brinell indents in just a tenth of a second.

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 static processing or reporting.

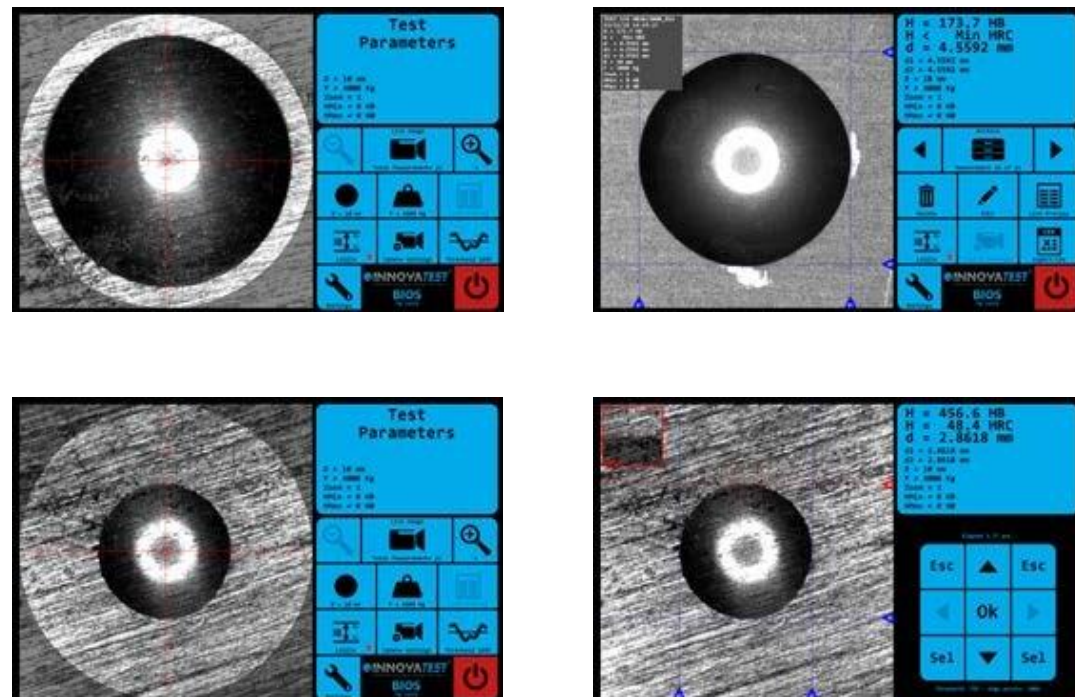
CSV EXPORT FUNCTION



	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	HMax	HBMin	Date	Time
3	TEST 1 #001	ASTM	0.597	0.596	0.598	1	10	32.2	215	205	24.03.2018	08:46
4	TEST 2 #002	ASTM	0.61	0.61	0.61	1	10	30.7	215	205	24.03.2018	08:47
5	TEST 3 #003	ASTM	0.597	0.598	0.597	1	10	32.1	215	205	24.03.2018	08:48
6	TEST 4 #004	ASTM	0.25	0.254	0.247	1	10	199.8	215	205	24.03.2018	08:49

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

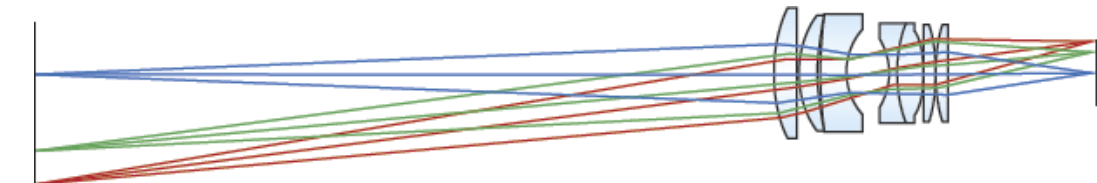


Figure A: Conventional BRINELL optical scanners and microscopes

TELECENTRIC LENS

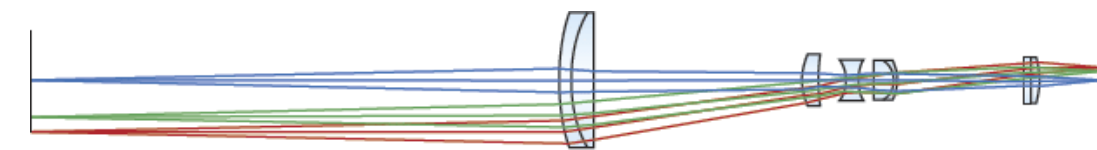


Figure B: INNOVATEST BIOS™ telecentric system

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 Clearly 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	BIOSOFT-V1	STANDARD
Magnetic supporting ring, Ø 20mm	SA-12-0004	STANDARD
Non-Magnetic supporting ring, Ø 20mm	SA-12-0003	STANDARD
Non-Magnetic XL supporting ring, Ø 35mm (mounted)	SA-12-0005	STANDARD
Packing box (suitable for ±13.3" screen)	SA-09-0020	STANDARD
Calibration certificate in compliance with ISO & ASTM, NADCAP	CALCEFRDW/1B	STANDARD

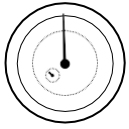
ACCESSORIES

DAKKS Calibration certificate for BIOSSCAN-1	BSCANDKS	
Laptop with touch screen (details on request)	UN-LAPTOP1	
Tablet with separate keyboard (details on request)	UN-TABLET1	
Calibration certificate traceable to ISO & ASTM	CALCEFRDW/2B	

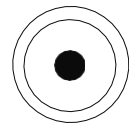
TECHNICAL REQUIREMENTS FOR LAPTOP & TABLET

CPU	Intel Core i5 8th generation (i5-8250U) (or higher)
Memory	8 GB (or larger)
Screen resolution	1920 x 1080 pixels (or better), touchscreen preferred
Graphics card	Intel UHD Graphics 620 (or better)
Storage	64 GB (or larger)

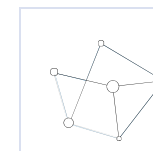
HARDNESS SCALES

	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 HBW2.5/187.5 HBW5/25 HBW5/31.25 HBW5/62.5 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



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**



Kalibrierzeichen
Calibration mark

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

Kalibrierschein
Calibration certificate

Gegenstand Object	Measuring microscope for Brinell evaluation	<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.</p> <p><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.</i></p> <p><i>The user is obliged to have the object recalibrated at appropriate intervals.</i></p>
Hersteller Manufacturer	INNOVATEST	
Typ Type	BIOS	
Fabrikat/Serien-Nr. Serial number	0001	
Auftraggeber Customer	INNOVATEST Europe BV Borgharenweg 140 6222 AA Maastricht The Netherlands	
Auftragsnummer Order No.	62496	
Anzahl der Seiten des Kalibrierscheines Number of pages of the certificate	7	
Datum der Kalibrierung Date of calibration	2018-10-29	

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This calibration certificate may not be reproduced other than in full except with the permission of both the Deutsche Akkreditierungsstelle GmbH and the issuing laboratory. Calibration certificates without signature are not valid.

Datum Date	Leiter des Kalibrierlaboratoriums Head of the calibration laboratory	Bearbeiter Person in charge
05.11.2018	H. Hauck	B. Hauck

This calibration certificate was originally written in German. In cases of doubt the German version shall prevail.

Changes in products and/or product specifications can emerge due to new technologies and continuous development.

We reserve the right to change or modify specifications of the products without prior notice. We recommend you to contact our sales office for up-to-date information.

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