

Bruker aliconafocusX

Experience Metrology!



Bruker alicona FocusX

6 Reasons Why

One Device, Limitless Applications

FocusX is the most versatile measurement system in its class.

One Click Roughness

Fast, easy and ISO-compliant roughness measurement – even without expert knowledge.

Speed in Focus

FocusX is the fastest measuring device on the market in its precision class.

See every Detail. Measure every Detail.

No detail is too small for FocusX to display, inspect, and measure in high resolution.

The Answer to Miniaturization

FocusX embraces miniaturization and provides its best performance for small and high-precision parts.

Unmatched Value

FocusX delivers category-leading measurement performance in a smart package.

Experience
Metrology!



Application
Experience

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Optical 3D Measurement of Dimension, Position, Shape, and Roughness

Non-contact probing

High-gloss surfaces, steep flanks, complex shapes - industries such as medical technology place demands on measuring technology that tactile measuring devices have long been unable to meet. And what use is the best quality assurance if the component is no longer the same after the measurement as before? While tactile measuring devices need to touch the sample and can therefore damage it, the optical measuring technology in FocusX delivers precise shape and position parameters as well as roughness data. And it does so completely contact-free.



Proving Precision

Have you ever tried to measure the dimension, position, shape, and roughness of a milled and laser-machined component from machine tools like Kern Precision? If you ever have to measure anything equally elaborate, then you certainly do it with FocusX. The production of precision components puts metrology to the test: small radii, acute angles, and tolerances in the single-digit μm range. Not to mention the high quantities that come off the production line. These demands require a measuring system that automatically, traceably, and repeatably determines the sample's geometry. FocusX does just that - with only one optical sensor. The technology allows to laterally probe the sides of the workpiece, enabling also the measurements of holes and bores with a diameter-to-depth ratio of 1:3 to 1:10.



Access all areas

For comprehensive quality assurance, you need comprehensive 3D data of your component. FocusX delivers exactly that using Real3D technology. Imagine a measurement task on an electronic connector with a mating tab width of under 10 mm and a tab thickness under 1 mm. It requires individual measurements from different perspectives to be able to merge them into 3D data of your sample. This not only allows you to visualize your component from different angles but also to measure the contour, shape, and deviations. The optical high-precision rotation and tilting axes make the measurements repeatable and traceable.



One Device, Limitless Applications

„One size fits all“ sounds like a bad deal in most industries. But not in metrology. Imagine a system that solves all your measuring tasks - a system that measures dimension, position, shape, and roughness with one optical sensor. FocusX is the most versatile device in its category, not only regarding different tasks but also concerning industries. Medical technology, aerospace, automotive, micro, and precision manufacturing or cutting tools are but a few industries with metrology requirements FocusX is perfectly equipped for.

One Click Roughness

The measurement system must adapt to you and not the other way around. This is why the roughness measurement on the FocusX is designed to be particularly user-friendly and fast. The quick and easy handling not only guarantees you a short learning stage but also ISO-compliant measurements. And you don't even need expert knowledge for this because FocusX has got your back when it comes to international standards.

Speed in Focus

You need high resolution AND precision AND accuracy of your geometries, but don't have hours to wait for it? Then FocusX is the right system for you. It delivers millions of measurement points within seconds. But that's not it. The device also supports automation for every measurement task to further reduce labor efforts. That makes FocusX the fastest measuring device in its class.

See every Detail. Measure every Detail.

Don't settle for superficial quality assurance and insufficient traceability any longer! From now on you will find every deviation in your production process. Even better: Not only will you be able to see it, but you also get sound results, that satisfy your need for assurance and help you draw the right conclusions about the deficiency. No detail is too small for FocusX to display, inspect, and measure in high resolution.

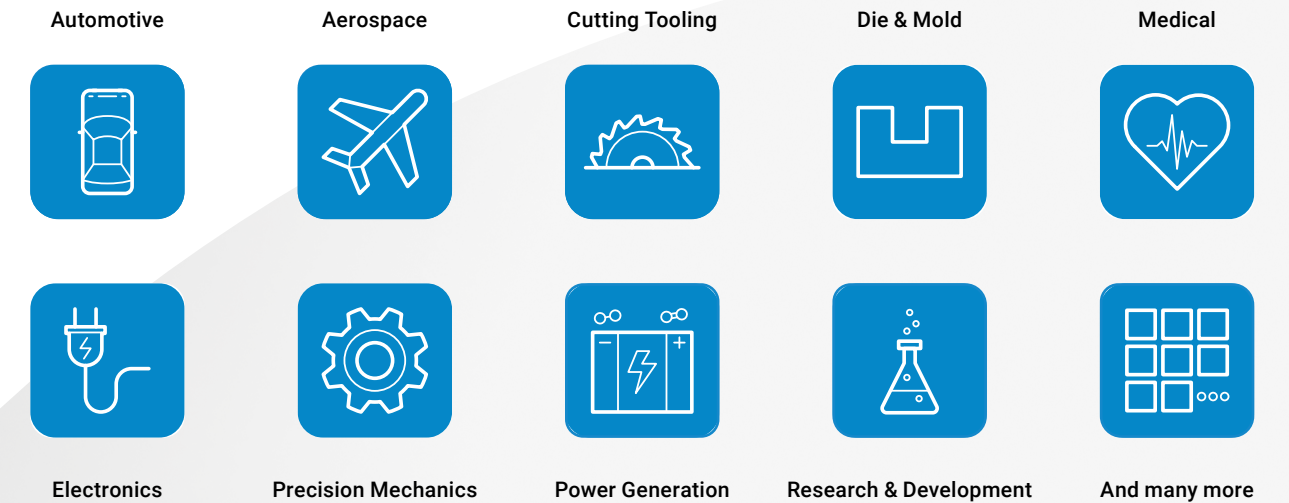
The Answer to Miniaturization

Small, smaller, smallest - industrial development is leading to more and more precision components. Regardless of whether you turn, mill, or grind your micro parts, at the end of the day, they have to work like a Swiss watch. FocusX embraces the trend towards miniaturization and provides the best performance for small and high-precision parts.

Unmatched Value

Not too long ago you could only dream of a measurement performance like this. Today FocusX delivers the highest value on the optical 3D metrology market. All of a sudden next-level quality assurance is in such close reach. A decision for FocusX makes you happy but also fits your budget.

Market
Experience



“
As an experienced user of Bruker Alicona's measuring devices, I would say that FocusX is hardly inferior to the higher-priced devices. It is fast and precise, the decent measuring volume is sufficient for most applications and the compact design convinced me straight away.
”

Florian Reinle
Process engineer – Simulation & Tribology

OTEC
PRECISION FINISHING SOLUTIONS





Technical Specifications

General Specifications

Measurement principle	Non-contact, optical, three-dimensional Technologies: • Advanced Focus-Variation (Smart Flash 2.0) • Focus Probing • Vertical Focus Probing • Real3D
Software	MetMaX: • State of the art CAD measurement planning • PDF Reporting • Alicona Inspect
Number of measurement points	Single measurement: X: 2160, Y: 2160, X x Y: 4.6 million Image Field: up to 500 million
Positioning volume (X x Y x Z)	100 x 100 x 100 mm = 1 000 000 mm ³
Maintenance	Yearly service and recalibration recommended
System monitoring	Automatic self-diagnosis due to temperature sensors, internal current and voltage monitoring
ControlServerSF	12 Core, 32 GB DDR5, SSD 1TB, Windows 10 IoT Enterprise 64bit, 2x 27" Full HD LED Monitor

Measurement Object

Surface texture	Any surface, including polished metals
Max. height	Up to 145 mm; more on request
Max. weight	Up to 8 kg; more on request
Max. measurable slope angle	Advanced Focus-Variation: 87° / Vertical Focus Probing: > 90°

Objective Specific Features

Objective (1)		1900 WD30	800 WD37 (2)*	800 WD17	400 WD19	150 WD11
Working distance	mm	30	37	17.5	19	11
Lateral measurement range (X,Y)	mm	3.8	1.6	1.6	0.66	0.3
Measurement point distance	µm	1.77	0.72	0.72	0.36	0.14
Measurement noise (3)	nm	100	90	20	12	6
Vertical resolution	nm	290	260	60	35	20

(1) Objectives with longer working distance available upon request

(2) Objective available in special objective configuration

(3) Measurement noise NM: Evaluation conforming to ISO 25178-700:2022 and Fair Datasheet V1.2

* only with polarizer

Resolution and Application Specifications

Objective		1900 WD30	800 WD37 (4)	800 WD17	400 WD19	150 WD11
Min. measurable roughness (Ra)	mm	n.a.	n.a.	0.18	0.13	0.06
Min. measurable roughness (Sa)	mm	n.a.	n.a.	0.09	0.07	0.04
Min. measurable radius	µm	12	10	5	3	2

(4) Objective available in special objective configuration.

Accuracy (5)

Max. deviation of a height step measurement	Height step 1000 µm Height step 100 µm Height step 10 µm Height step 1 µm	E _{Uniz} : St: ODS, MPE = 0.5 µm, σ = 0.1 µm E _{Uniz} : St: ODS, MPE = 0.4 µm, σ = 0.05 µm E _{Uniz} : St: ODS, MPE = 0.3 µm, σ = 0.025 µm E _{Uniz} : St: ODS, MPE = 0.15 µm, σ = 0.01 µm
Profile roughness	Ra = 0.1 µm Ra = 0.5 µm	U = 0.025 µm, σ = 0.004 µm U = 0.04 µm, σ = 0.002 µm
Area roughness	Sa = 0.75 µm	U = 0.05 µm, σ = 0.002 µm
Wedge angle	β = 70 ° - 110 °	U = 0.15° , σ = 0.02°
Edge radius	R = 5 µm - 20 µm R > 20 µm	U = 1.5 µm, σ = 0.15 µm U = 2 µm, σ = 0.3 µm

(5) EUni and EBi based on ISO 10360-8 and VDI 2617 sheet 12.2