

FIXTURLASER NXA Geometry Measurements



FixturLaser

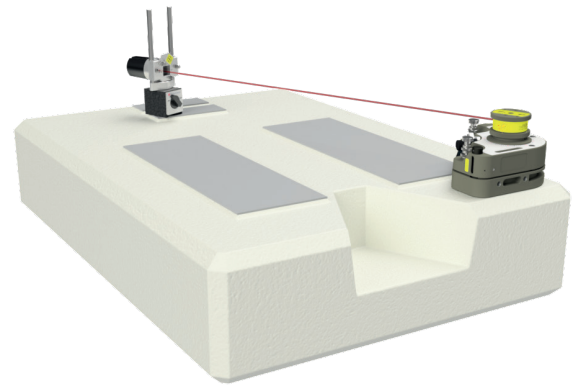
ACOEM Group

FIXTURLASER NXA Geometry

Geometric Versatility with the FIXTURLASER NXA Platform

FIXTURLASER has a long history of developing geometric applications that come with an industry leading user friendliness.

The FIXTURLASER NXA Geometry is characterized by versatility with regards to both its hardware and software. The multitude of applications made possible by the fixture kits are numerous, such as rectangular and circular flatness, straightness for full- and halfbore, etc.



The FIXTURLASER NXA Geometry Packages

Versatility in Software

The Fixturlaser NXA Geometry packages are characterized by their user friendliness and versatility. They contain software for straightness and flatness measurements, such as:

- Standard straightness
- Straightness for full and half bore applications
- Flatness measurements of foundations and machine beds when installing machines. Flatness measurements can be done with both rectangular and circular configurations.

Versatility in Hardware

The Fixturlaser NXA Geometry is available in two versions, basic and full. The basic version contains display unit, receiver and selected optional transmitter. FIXTURLASER NXA Geometry Full is a copy of the basic version, with one exception; it has two receivers. A second receiver used as reference is helpful during measurements over long distances and over a long period of time. You can then easily verify that the measurement set up is stable and has not been moved or disturbed in any way during the measurement process.

We also offer several geometry fixture solutions and dedicated bore packages. The latter are complete packages, including both transmitter, receiver, and fixtures. In case you are dealing with turbine of large diameter ranges, you can extend the fixtures in different lengths thanks to our two accessory kits.

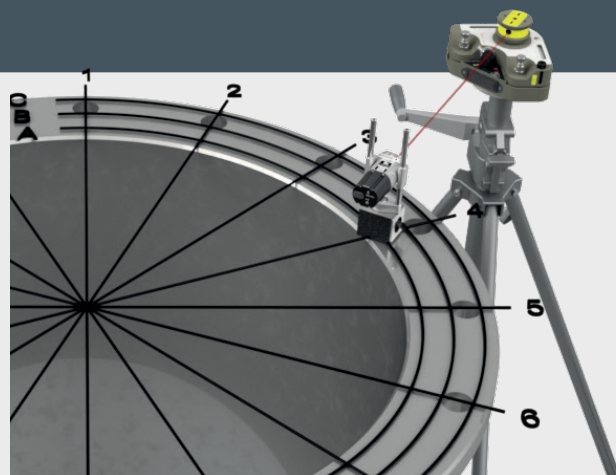
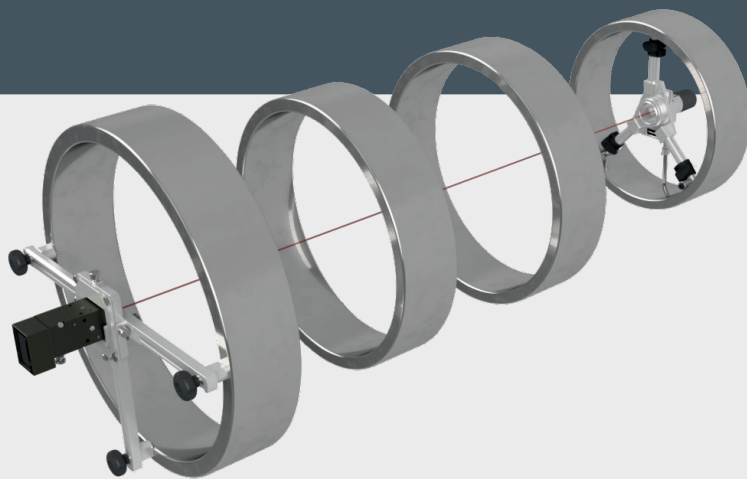
User Friendly Graphic User Interface Our Graphical User Interface, Your Guide

We have developed a patented adaptive user interface for the FIXTURLASER NXA platform. This adaptive user interface guides the user throughout the job in logical and easy to follow steps. It will deliver measurement and correction values based on what the system finds during the measurement, thus minimizing the risk of operator errors.

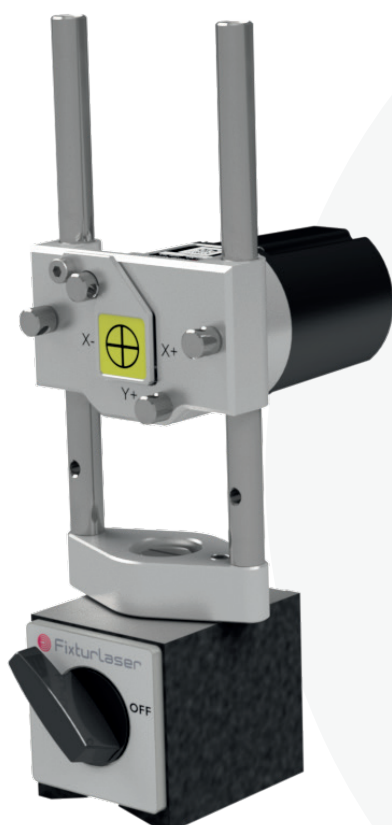
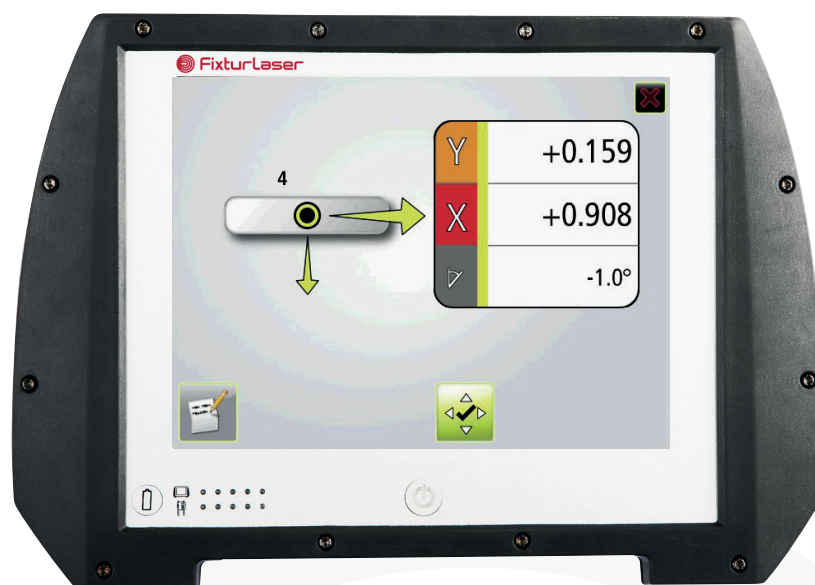
On-Site Evaluation and Report of Results

On-site evaluation of measurement results means that you can process saved measurement results in order to choose the best reference with our feature Best Fit. This will result in as few corrections as possible.

The PDF report function provides a fast on site reporting available for converting saved measurement reports into PDF files. This eliminates the need to take a laptop/PC on site.



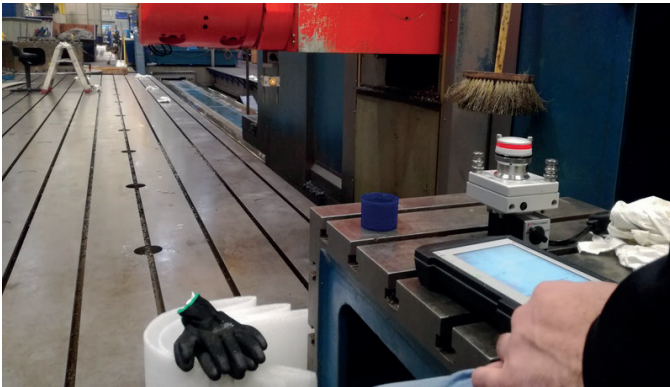
- **Dual-axis** live adjustment
- **6,5"** industrial-strength touch screen
- **Instant battery check** in both on and off mode
- **Integrated Bluetooth** for wireless communication between display unit and smart sensors
- **IP65** sealed rubberized frame
- **Icon-based and color-coded** user interface
- **Animated arrows** indicating adjustment orientation



- **Dual-axis 20 mm** PSD detector
- **Slim design**
- **Rechargeable** Li-Ion batteries
- **Target integrated** in fixture
- **Integrated direction** coordinates
- **Inclinometer** with high accuracy
- **Integrated Bluetooth** for wireless communication between display unit and smart sensor
- **Instant battery** check in both on and off mode

Measurements with the FIXTURLASER NXA Geometry Flatness

Rectangular Flatness

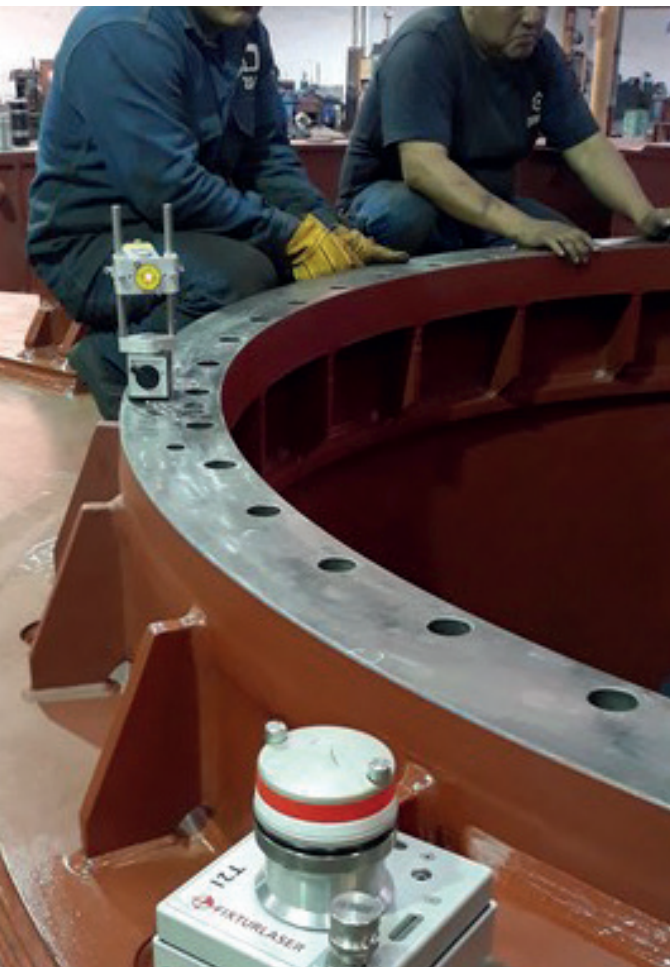


Rectangular flatness across machine foundation.

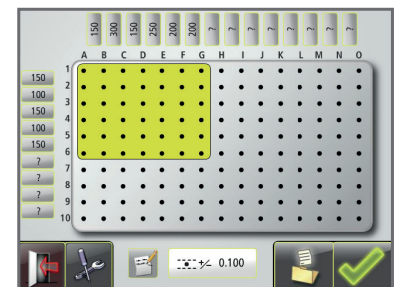
Typical applications are measurements of e.g. machine beds and machine foundations. For the latter application, it is particularly beneficial to combine flatness measurement with shaft alignment when installing rotating machinery. Prior to installing the machine, you check the foundation's surface for possible irregularities, a so called pre-alignment check.

The geometric measurement, regardless of method starts out with a configuration of the measurement object. When the registration of measurement points is done, you will have a view of the measurement results, color coded, for easier interpretation. As you proceed to the adjustment phase of the measurement process, you have a live view with arrows indicating the adjustment orientation.

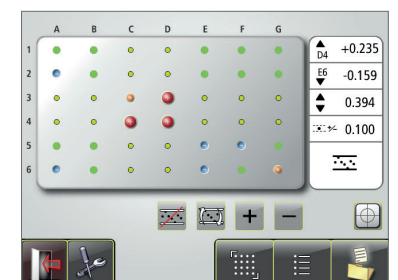
Circular Flatness



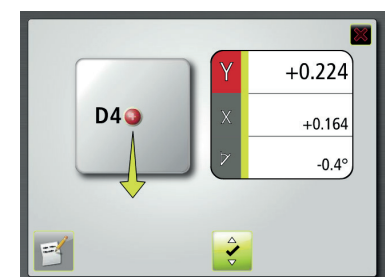
A typical application is the measurement of flanges, e.g. wind turbine towers and machine foundations.



Configuration



Measurement results



Live adjustment

Measurements with the FIXTURLASER NXA Geometry Straightness

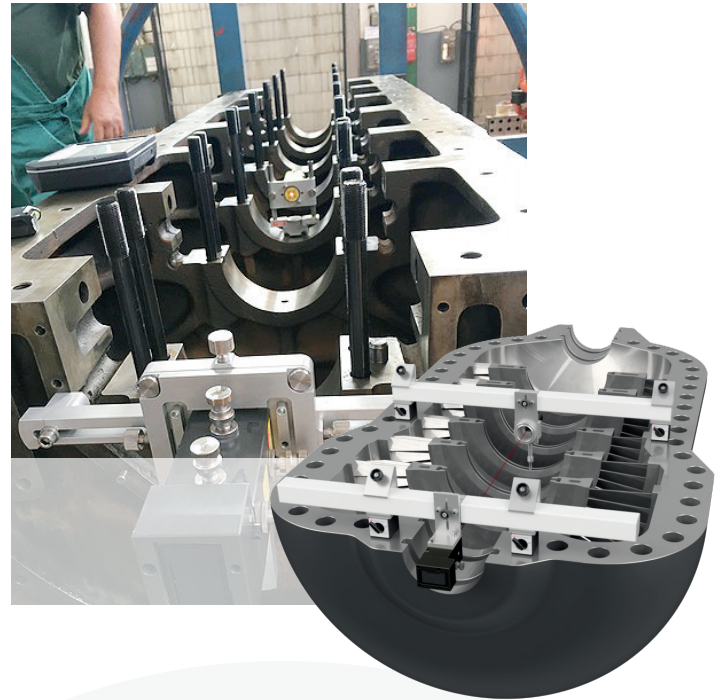
Straightness with One Single Point

Typical applications are measurements of machine guides, linear bearings, machine ways, and guide rails.



Straightness with Double Points (the Clock Method)

Typical applications are straightness measurements in bearing journals for e.g. compressors, turbines or machinery with split casings.



Straightness with Multi-Points (the Arc Angle Method)

Typical applications are fullbore measurements of bearing journals in diesel engines, compressors or gear boxes.



Measurements of bearing journals in split machine casings.

The FIXTURLASER NXA Geometry Packages

FIXTURLASER NXA Geometry Basic R2

Display unit
R2 sensor/receiver
R2 sensor holder, cc 60 mm
Rotational magnet base for the sensor holder
Tape measure, 5 m
2 pcs of angled universal tools
Power supply with 2 pcs of power cables US, EU
Power supply with 2 USB ports, adapter plugs and USB cable A-micro B, 1,5 m
USB memory
FIXTURLASER NXA User Manual (GB)
FIXTURLASER NXA Geometry User Manual (GB)



FIXTURLASER NXA Geometry Full R2

Display unit
2 pcs of R2 sensor/receivers
2 pcs of R2 receiver holders, cc 60 mm
2 pcs of rotational magnet bases for the sensor holder
Tape measure, 5 m
2 pcs of angled universal tools
Power supply with 2 pcs of power cables US, EU
Power supply with 2 USB ports, adapter plugs and USB cable A-micro B, 1,5 m
USB memory
FIXTURLASER NXA User Manual (GB)
FIXTURLASER NXA Geometry User Manual (GB)



Complete your FIXTURLASER NXA Geometry package by choosing from the following FIXTURLASER transmitters:



T220

- For applications such as straightness, flatness, and squareness
- Robust design for measurement stability ⇒ high measurement accuracy
- Measuring distance up to 50 m
- Micrometer screw for rotational adjustment of the turret
- Built-in spirit levels and micrometer screws for adjustment of the laser transmitter
- Battery powered laser transmitter



T21

- For applications such as straightness, flatness, and squareness
- Compact design for measurement stability
- Measuring distance up to 20 m
- Manual adjustment of the laser turret
- Battery powered transmitter

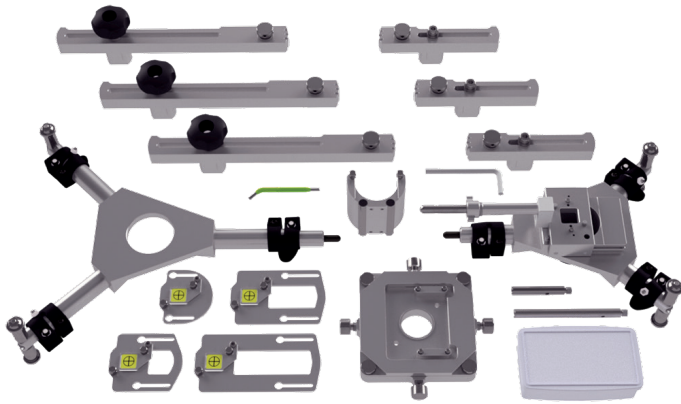


T110/T111

- For straightness applications
- Rigid design for measurement stability
- Laser range up to 50 m
- Micrometer screw for adjustment of the laser transmitter in both horizontal and vertical level
- Powered by battery or AC-adaptor

Bore Fixture Packages for the FIXTURLASER NXA Geometry

Two complete fixture kits are available for half- and fullbore measurements with the FIXTURLASER NXA Geometry package. Each kit contains fixtures for various bore diameters, ranging from $\varnothing 80$ mm up to $\varnothing 1700$ mm. One accessory kit is also available for each respective bore fixture package.

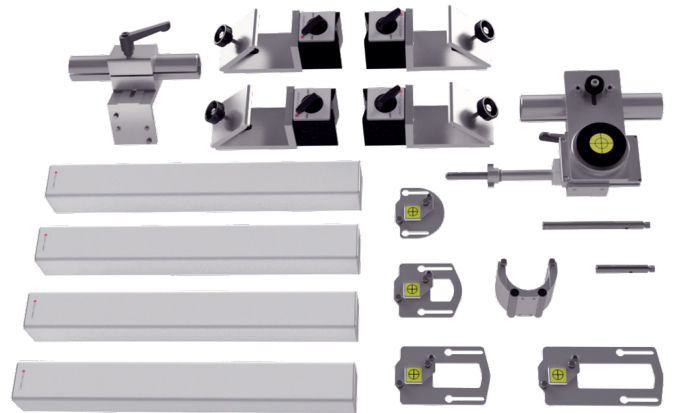


Fullbore fixture package, $\varnothing 80 - 620$ mm (non-magnetic materials)

- 3 pcs of arms and magnets, $\varnothing 180 - 300$ mm
- Bore receiver fixture, $\varnothing 80 - 300$ mm
- 3 pcs of arms and magnets, $\varnothing 300 - 600$
- XY table
- Rotational unit for non-magnetic bore
- Non-magnetic bore fixture, $\varnothing 290 - 400$ mm
- Non-magnetic bore fixture, $\varnothing 400 - 620$ mm
- 4 pcs of rods, $\varnothing 10$ mm, length 60 - 120 mm

Accessory kit

4 pcs extension legs for fullbore, $\varnothing 620 - 1500$ mm (non-magnetic materials)



Halfbore fixture package, $\varnothing 80 - 750$ mm

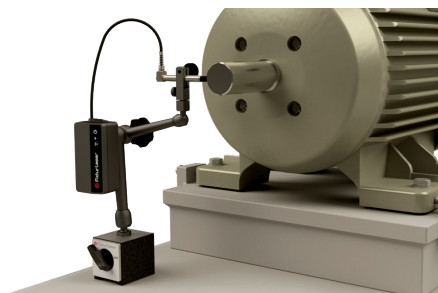
- Bore receiver fixture, $\varnothing 80 - 300$ mm
- 4 pcs of arms for halfbore, 400 mm
- Expanding joint for bore
- Magnetic base for transmitter profile
- Rotational unit for bore (non-magnetic materials)
- Mounting plate for rotation unit
- 4 pcs of rods, $\varnothing 10$ mm, length 60 - 120 mm

Accessory kit

Extension arms for halfbore, $\varnothing 750 - 1500$ mm

Accessories

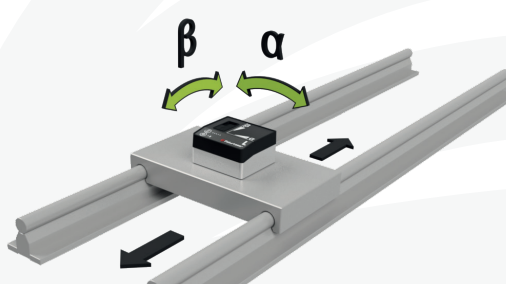
The FIXTURLASER ROP, FIXTURLASER Level and the angular prism will render a greater versatility and unique capabilities to the FIXTURLASER NXA Geometry platform.



FIXTURLASER ROP

The FIXTURLASER ROP is a battery-powered displacement probe connecting wirelessly via Bluetooth to the Fixturlaser NXA display unit. It can be used for:

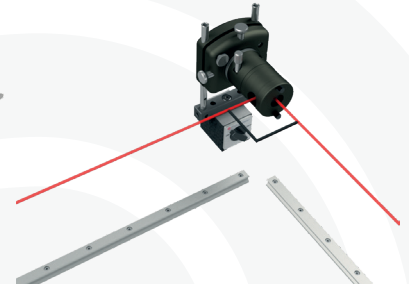
- checking bearing clearances
- checking axial and radial runout on flanges
- measurement during the positioning of machine components.



FIXTURLASER Level

The FIXTURLASER Level is a battery-powered two-axis measuring sensor that connects wirelessly via Bluetooth to the FIXTURLASER NXA Pro display unit. It can be used:

- as a digital level
- for levelling machines or machine parts during installation
- for measuring twist on linear guideways
- for measuring parallelism between machine foundations.



Angular Prism

The angular prism is used for measurement of perpendicularity and parallelism together with any FIXTURLASER transmitter, R2 sensor and a display unit. It is useful when measuring e.g:

- parallelity between two linear guides
- perpendicularity of flanges
- squareness between linear guides/machine components

TECHNICAL SPECIFICATION

FIXTURLASER NXA Geometry

Display Unit

Operating Temp: -10 to 50°C (14 to 122°F)

Storage temp: -20 to 70°C (-4 to 158°F)

Weight: 1,2 kg (2,6 lbs) with battery

Dimensions: 124 mm x 158 mm x 49 mm (4,9 in x 6,2 in x 1,9 in)

Environmental protection: P 65 (Dust tight and protected against water jets)

Display size: 6,5" (165 mm) diagonal (133 x 100 mm)

Battery charging time (system off, room temperature): 1 hour charge – 5 hours operating time

Operating time: 10 hours continuous use (with 50% LCD back light)

R2 Sensor/Receiver

Operating temperature: 0 to 50°C (32 to 122°F)

Storage temperature: -20 to 70°C (-4 to 158°F)

Weight: 116 g (4.1 oz)

Dimensions: 57 x 50 x 40 mm (2.2 x 2.0 x 1.6 in)

Detector size: 20 mm x 20 mm (0.8 in x 0.8 in)

Measurement accuracy: 1% ± 3 µm

Detector resolution: 1 µm

Detector: 2-axes PSD

Wireless communication: Class 1 Bluetooth transceiver with multi-drop capability

Communication range: 10 m (33 ft)

Operating time: 12 hours continuous use



T220 Transmitter

Operating Temp: 0 to 50°C (32 to 122°F)

Storage Temp: -20 to 70°C (-4 to 158°F)

Weight: 3500 g

Laser class: Class 2

Dimensions: 175 x 175 x 115 mm (6.9 x 6.9 x 4.5 in)

Measuring distance: Up to 50 meters (164 feet)

Laser sweep flatness: ±0,02 mm/m

Spirit level resolution: 0.02 mm/m

Angular prism accuracy: ±0,02 mm/m

Power supply: 4 batteries type LR6

Operating time: 15 hours continuous use

T21 Transmitter

Operating Temp: 0 to 50°C (32 to 122°F)

Storage Temp: -20 to 70°C (-4 to 158°F)

Weight: 1150 g

Laser class: Class 2

Dimensions: 100 x 103 x 109 mm (3.9 x 4.1 x 4.3 in)

Measuring distance: Up to 20 meters (66 feet)

Laser sweep flatness: ±0,02 mm/m

Spirit level resolution: 0,3 mm/m

Angular prism accuracy: ±0,02 mm/m

Power supply: 2 batteries type LR6

Operating time: 15 hours continuous use

Transmitter T110/111 (battery or AC-adaptor)

Operating Temp: 0 to 50°C (32 to 122°F)

Storage Temp: -20 to 70°C (-4 to 158°F)

Weight: 1100 g

Laser class: Class 2

Dimensions: 60 x 60 x 140 mm (2.4 x 2.4 x 5.5 in)

Measuring distance: Up to 50 meters (164 feet)

Power supply: 2 batteries type LR6

Operating time: 15 hours continuous use

ACOEM AB is a global player and leader in developing innovative, user-friendly equipment for shaft alignment. By helping industries worldwide to become perfectly aligned, and eliminating anything that might not be, we minimize unnecessary wear and production stoppages. This will ultimately make our customers more profitable and our environment more sustainable.



*Limited lifetime warranty! For more information, contact your local dealer.

Fixturlaser NXA Patents:
SE 524 366, SE 537 833
US 7312871, US 7460977, US 10060719
EU 2836788

Other patents pending.



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