FIXTURLASER® Level

The One-Man-Level Instrument

Self-levelling laser transmitter for mechanical measurement and alignment

The Fixturlaser® Level program in short:

- ***Can be fully integrated with other Fixturlaser products***
- ***Self-levelling, both horizontally and vertically***
- ***Easily operated by only one man***
- ***The laser plane can be locked to specific references***
- ***IR communication***
- ***Battery operated***
- ***Measurement documentation capabilities***

Fixturlaser Level makes a difficult task easy to accomplish. A scanning laser and a receiver measuring where the laser beam hits the target. That's it!

These few, but very delicate, features combine accuracy, self-levelling and detector intelligence, making this product entirely unique on the market. These features provide astonishing usability benefits measuring flatness and straightness with all its sub-diciplines. The accuracy meets all requirements that engineers working with machine installations, adjustments and fitting might have.

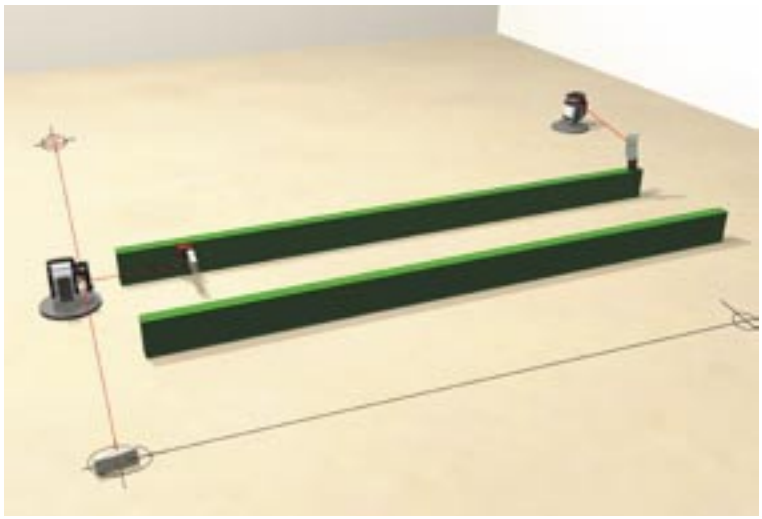
The innovative combination of state-of-the-art components makes it easy to accomplish alignment and levelling quickly and easily, yet precise. All by yourself.

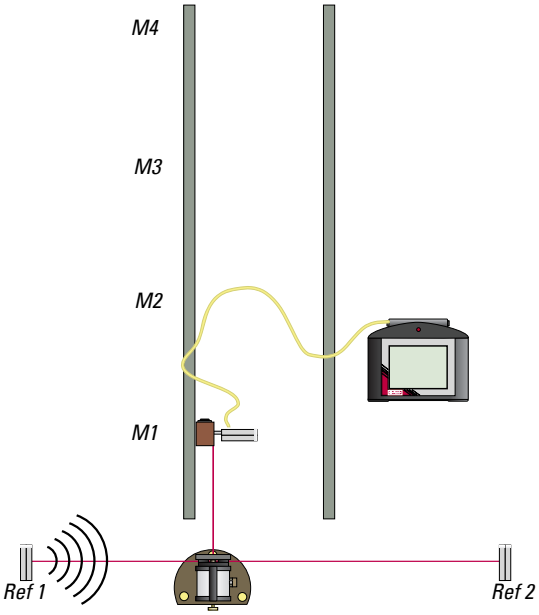
The one-man-level makes the helping hand redundant. The laser transmitter scans and automatically generates a laser plane within ±0,025 mm/m in level, while you walk around collecting measurement values with the handheld receiver. The result is displayed instantly. The laser plane can either be set to level or plumb to level, or locked to specific references. The receiver intelligence communicates to the transmitter, via IR or cable, maintaining the laser plane position. This is valuable while performing an alignment or measurement on moving objects, e g on board a ship, or on top of a harbour crane. The laser transmitter is also provided with a laser beam perpendicular to the generated laser plane, for measurement and alignment.

The system consists in its standard package of one laser transmitter and one receiver. Working with multiple receivers is recommended in situations, where adjustments are delicate and/or time is an issue. The receiver works also together with the Fixturlaser display unit for flatness and straightness measurements with full leverage on data collection and documentation. The system is available with an accuracy of 0,02 mm/m to 0,01 mm/m resolution. IR communication is optional.

Setting up a machine

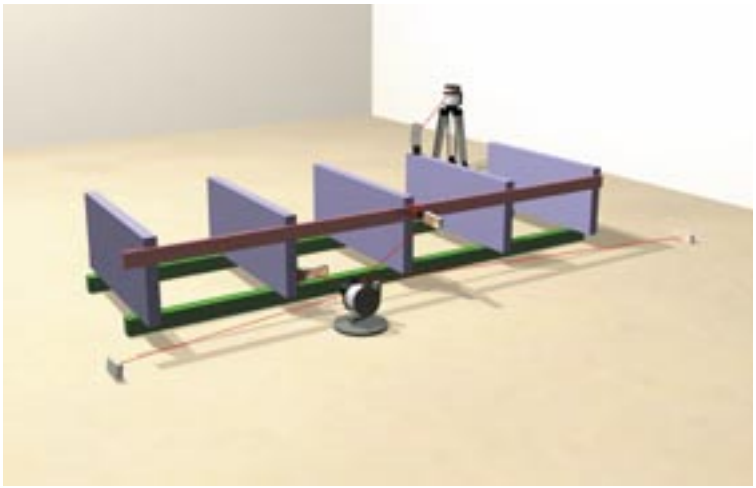
The following example shows how the Fixturlaser Level simplifies the setup of a machine.

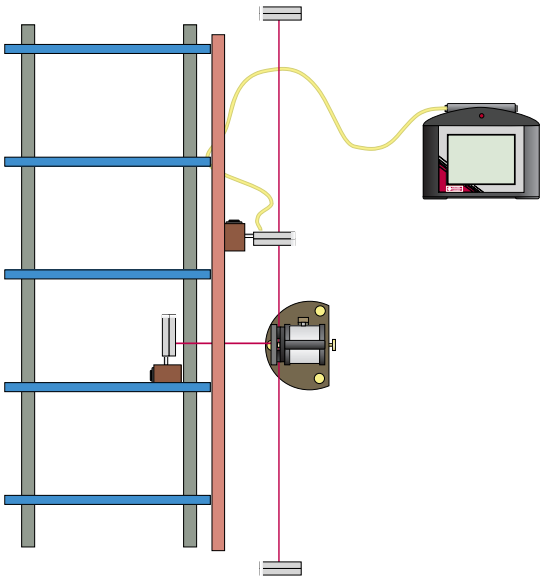




The illustration above shows how the foundation, in this case two rails, is positioned according to floor marks. The rails are set parallel to each other. The detectors are positioned on the floor marks as refereces. The standing beam from the transmitter is perpendicular to the floor reference.
The laser transmitter in the far end is used for measuring the level. Using two laser transmitters will make it easier, but is not required.

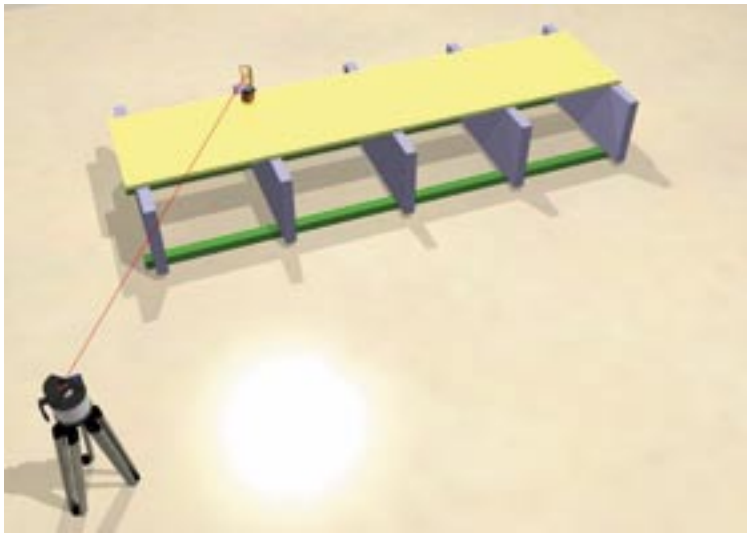
Adjusting the laser to align with the floor marks is carried out by first digitally zero one of the detectors (Ref 1) and then mechanically adjust the laser to zero or, a fixed value on the other reference detector (Ref 2). The detector at Ref. 1 maintains the laser plane position by controlling the laser transmitter via IR.
Measurements are made along the rail. By zeroing the detector value at the first measurement point, M1, the rail can easily be adjusted to zero in each of the other measurement points.
The use of the display unit is not required. The built in LED on the detector displays the current value.

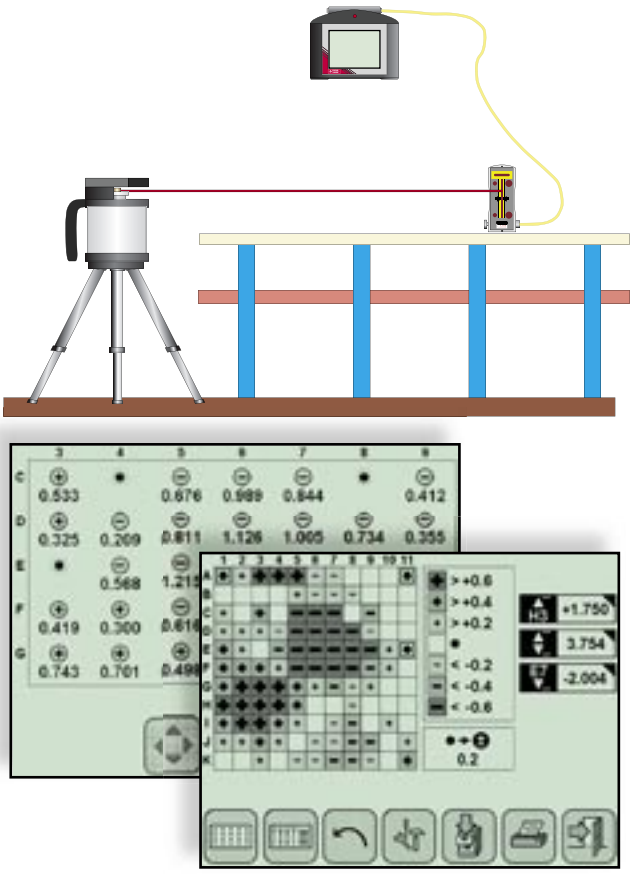




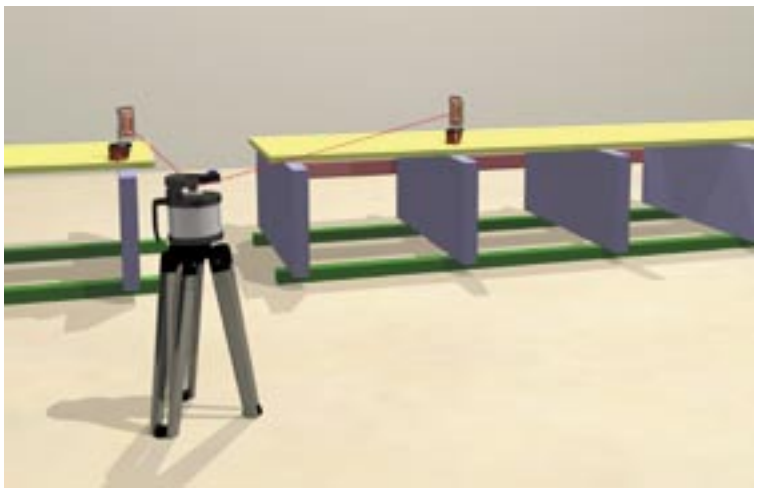
At this point, we set up the second part of the machine. The cross sections are positioned parallel to each other. The laser transmitter and the reference detectors are moved alongside the machine. With the same setup, we measure the vertical plane of the red beam. The laser transmitter automatically adjusts itself perpendicular to the horizontal level.
The second laser transmitter is used for flatness measurement, ensuring that each of the cross sections' top part is in level.

The Fixturlaser display unit can include software for straightness as well as flatness. Utilizing the capability in this system provides advantages in regards of traceability and documentation. Measurements are stored and can be printed out or transferred to a PC for further processing.





Finally, we put on the top section and we check that the level is correct. By using the Fixturlaser display unit with flatness measurement program, we get a perfect picture of how flat the top section is and where it requires further adjustments.
Due to the live value display, it is very easy to make adjustments. Just adjust the object until the display on the detector unit shows the desired value, and you have a perfectly aligned machine.



Measurements can also be made with an adjacent machine as reference. The generated laser plane is then locked by the detector placed on the adjacent machine. The detector controls the laser transmitter via IR or cable, to keep the laser plane in the set position. This is very useful in unstable environments, such as on board ships or in high constructions affected by wind.

The supplied fixture provides flexibility in how to set up the transmitter. It supports horizontal and vertical plane and has adjustment screws for both height and sideways adjustments. The transmitter can also be mounted on a standard tripod.

FIXTURLASER®
Level

straight to the point

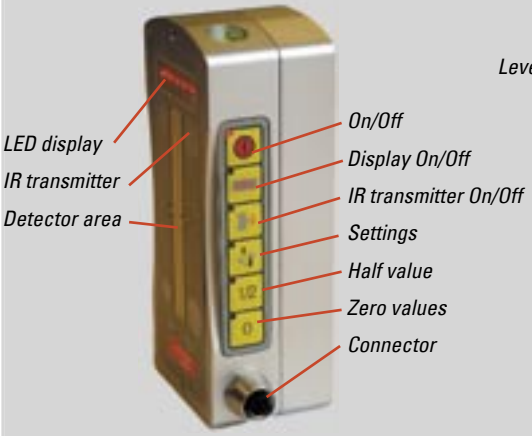
*The Fixturlaser® Level: **

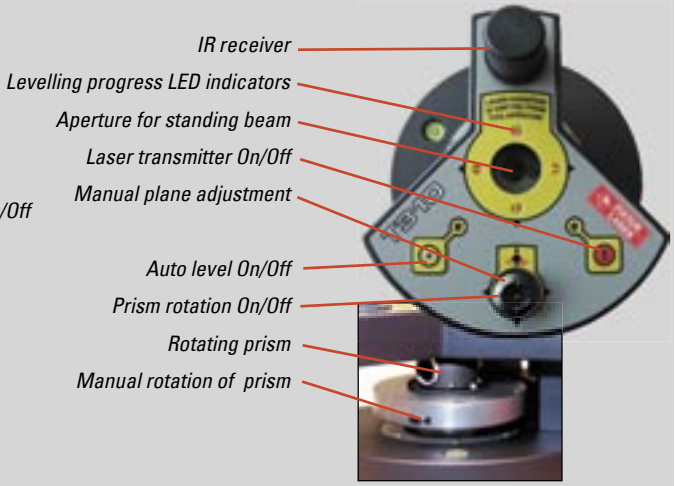
1 Robust carrying case
1 Laser transmitter T310
1 Detector unit R310
1 Manual
1 Magnetic base with rod
1 IR control

*Accessories: **

- Fixturlaser® DU (display unit) with flatness measurement software
- Cable 1 m, 10 m and/or 25 m
- RS 485 3-Way Bus Junction
- Bus power supply / RS485-RS232 PC module
- Cable for PC communication
- Measurement probe
- Angular prism

*Technical specification **





Detector		***Transmitter***	
Detector length	80 mm	Laser type	Visible red 630-670 nm, < 1 mW
Resolution	0,02 mm		Class II
Linearity	0,3% of displacement	Angular error between	
Operating time on		standing beam and plane	±0,03 mm/m
internal power supply	>24 hrs continuous operation	Elevation error	±0,05 mm / 360°
Temperature range	0°C to +50°C	Conical error	±0,03 mm/m
Input interface	Keyboard and	Levelling accuracy	±0,025 mm/m
	RS 485 Bus Control	Speed of rotation	300 rpm
Output interface	IR laser control, RS 485 Bus Control	Operating time on internal power	> 10 hrs continuous rotation
	and LED Display	Operating range	1 to 20 m
	(visible from 3 m)	Temperature range	0°C to +50 °C
Power supply	6 x alkaline AA or AC adapter	Input interface	IR (Infra red) and
Dimensions	150 x 65 x 30 mm		RS 485 Bus Control
Weight	0,4 kg	Power supply	8 x alkaline AA or AC adapter
		Dimensions	125 x 170 x 185 mm
		Weight	2,4 kg

** Specifications are subject to change without notice.*

Our representatives are all engineers and technicians with special knowledge and training in the latest measurement and alignment techniques. An extensive service program is provided to support all our customers. It includes telephone assistance, hardware repairs and software updates, as well as training and consultation regarding measurement applications.

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