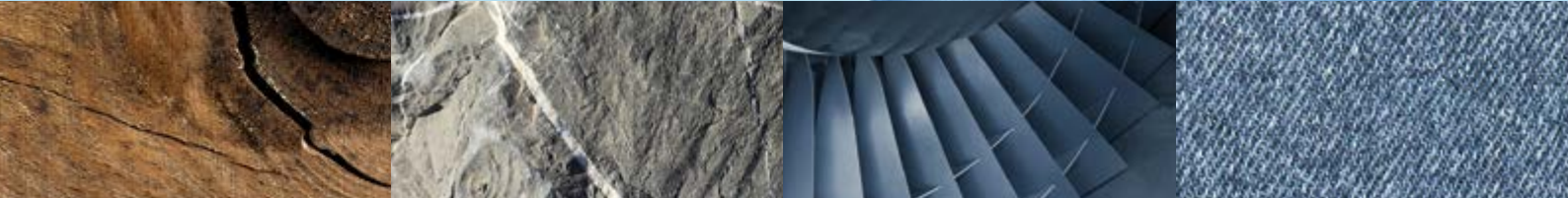




LASER

POINT-, CROSS- AND LINE LASER CATALOGUE

EN



**FIXED AND MOVABLE LASER SYSTEMS FOR ALIGNMENT AND POSITIONING
IN INDUSTRY AND CRAFTS**





Wood

Wind Energy

Stone

Textile Industry

Plastics

Sawmills

Fabrics

Prefabrication

Leather

Veneer

Composites

Food Industry

Concrete

Metrology

Paper

Metal Construction

Glulam Trusses

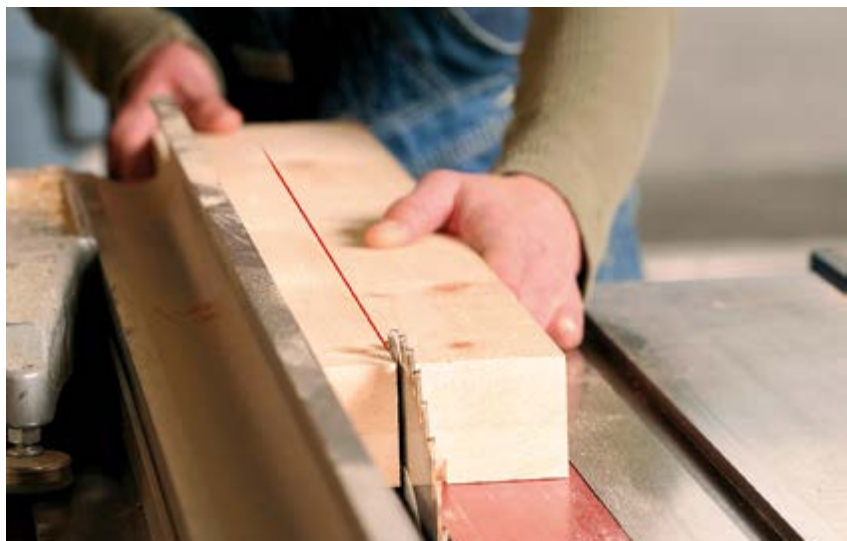
Automotive

Assembly

Masonry

Tin

Healthcare



PRECISION WORK AND LESS CROP DUE TO PRECISE ALIGNMENT AND POSITIONING USING LASERS

Point, crosshair or linelasers are used to align or to position objects in industry and crafts. They replace rulers, stops, measuring aids or templates. Lasers may show the working points of machines, e.g. the aiming point of drills or needles, or cutting lines of saws. They assist the operator in placing the workpiece at the right position, avoiding crop. Laser lines and spots don't move when touched, and you can use both hands for working.



LAP lasers are robust tools, that simplify and speed up your work.

SIMPLER PROCEDURES

Save yourself the cumbersome handling of templates or rulers and the intricate use of measuring aids

FASTER TO THE FINISH LINE

Switch on laser. Align workpiece. Work on it. It's as simple as that!

PROTECTING SURFACES

Lasers don't leave marks, colour residues or other tracks on sensitive surfaces. They don't disperse dirt or humidity.

COST-EFFECTIVE

LAP lasers will proof themselves a profitable investment soon by saving setup time, working time and material.

Content	Page
Applications	5
Industries	7
Overview	8
XtrAlign HY	11
XtrAlign HD	13
XtrAlign FD	15
LD Laser	17
XtrAlign HU	19
UD Laser	21
SERVOLASER Xpert	23
Brackets	26
Did you know?	28
Laser classes	29



THE RIGHT SOLUTION FOR EVERY APPLICATION

The field of application for lasers is as manifold as the use of rulers, templates or measuring tools. You have a wide variety of attributes to choose from: point, cross or line; red or green; long or short; fixed or movable laser; fixed focus or focusable; optimised for cameras or for the human eye - LAP offers a wide range of lasers to solve all common tasks. And if you have a special demand, we will find a solution, as we manufacture LAP lasers inhouse, using our own know-how.



ALIGNMENT OF SINGLE OBJECTS



ALIGNMENT OF MULTIPLE OBJECTS



VISUALISATION OF CUTTING LINE



VISUALISATION OF WORKING POINTE



POSITIONING



INSPECTION



MEASUREMENT





WOOD INDUSTRY

LAP lasers accompany the whole processing in the wood industry. They help aligning the tree trunks at the frame saw and the planks in front of the edger. They show the cutting line of rip saws, sliding table saws, miter saws, band saws and veneer clippers. For more complex tasks and wood processing centers LAP offers the laser projection system WOOD PRO. Contact us for details!

AUTOMOTIVE INDUSTRY AND SUPPLIERS

During production of vehicles and accessories you often encounter alignment tasks, that can easily be taken care of by lasers. You may position seats, align displays, place parts, adjust headlights or check assembly. You need to place parts with organic shape? Ask for our laser projection systems. Where point, cross or line lasers are not sufficient, laser projectors will visualize any outline generated from CAD data on 3D surfaces.

STONE MASONRY

LAP lasers assist during production and processing of natural stone slabs and objects. Line lasers show the cutting line of bridge saws or crosscut saws to use material with as little crop as possible. For complex cutting and milling at processing centers LAP offers the laser projection system STONE PRO. Please contact us for details!

TIRE INDUSTRY

LAP SERVOLASER are standard equipment in the tire industry. The systems with fixed and movable line lasers have been designed based on requirements and requests of tire manufacturers and providers of tire building machines. SERVOLASER display center line and edges of the next layer on tire building machines – symmetrically or asymmetrically, controlled by the machines PLC.



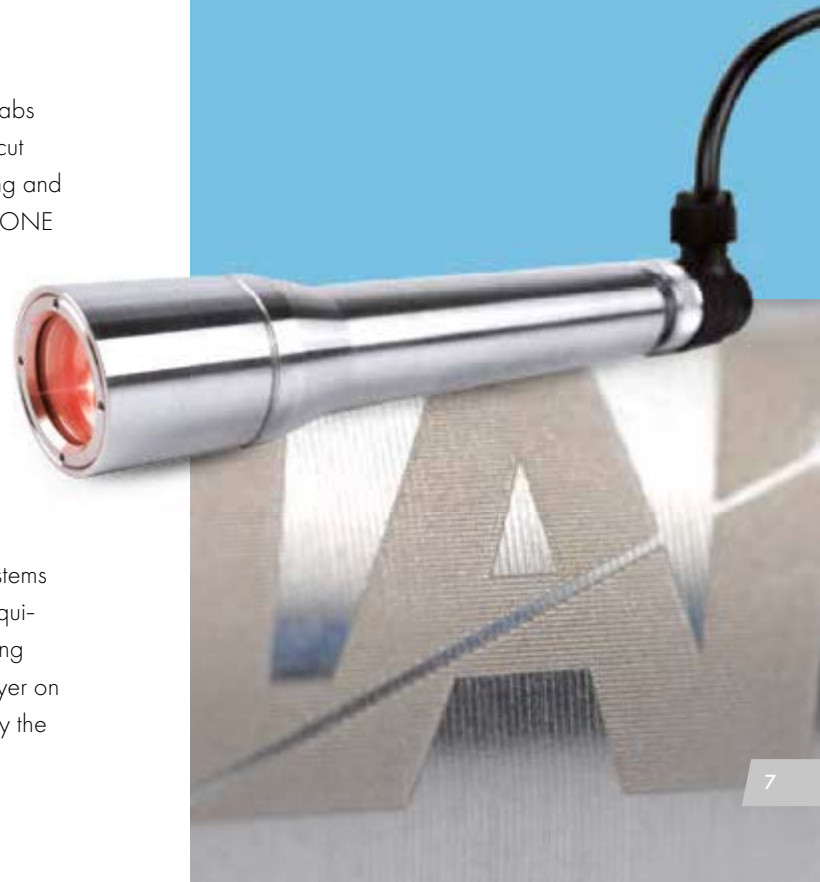
YOUR INDUSTRY

LAP lasers can also be used for alignment and positioning in industries and crafts not mentioned here, from the small workshop to the large scale industrial production.

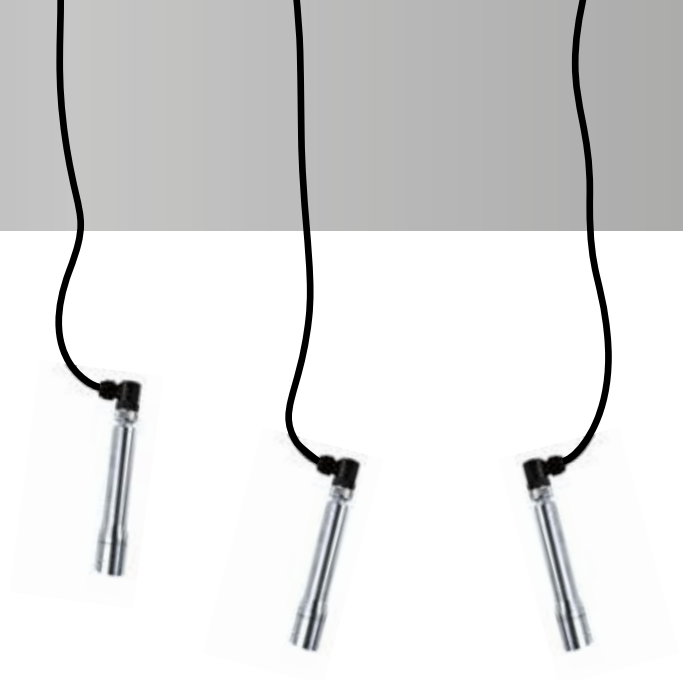
You may use LAP lasers to position textiles at sewing machines, to align paper coils, to show cut-outs in prefabs, to mark assembly positions, to project reference lines for cameras and much more.




Your application is not mentioned here?

Contact us, we will certainly have a solution for your task - or we will design it for you!



LAP LASERS AT A GLANCE



	XtrAlign HY	XtrAlign HD	XtrAlign FD
Laser			
Power supply	12 ... 30 V DC	12 ... 30 V DC	12 ... 30 V DC
Laser power	1 ... 40 mW	1 ... 30 mW	1 ... 30 mW
Line length*	1 ... 30 m	1 ... 20 m	1 ... 20 m
Optics	10°, 20°, 30°, 40°, 80° (standard), manually focusable	10°, 20°, 30°, 40°, 80° (standard), manually focusable	80°
Enclosure rating	IP 67	IP 67	IP 67
Special features	Stainless steel housing, for roughest industrial environment, shockproof IK10	Stainless steel housing, for roughest industrial environment, shockproof IK10	Stainless steel housing, for roughest industrial environment, shockproof IK10
Page	11	13	15

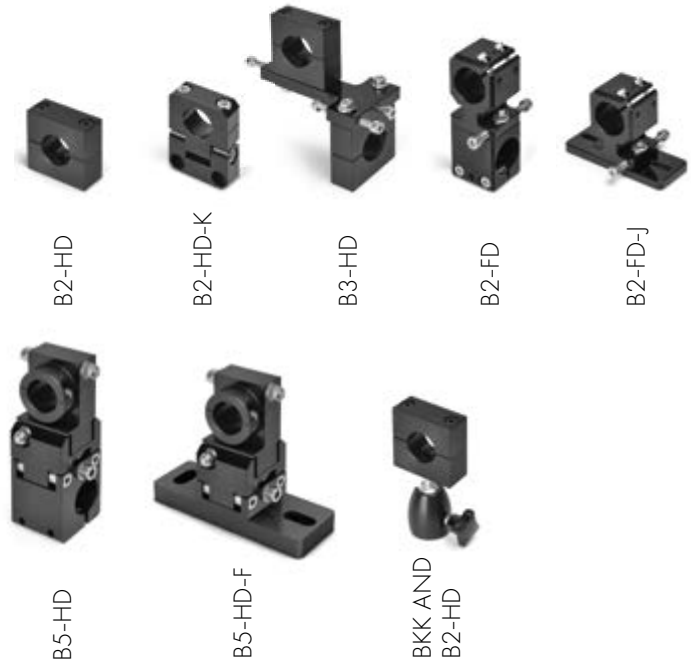


LD Laser	XtrAlign HU	UD Laser	SERVOLASER Xpert
5 V	12... 30 V DC	4... 6 V DC	24 V DC
1 ... 30 mW	1 ... 40 mW	5 ... 30 mW	21 mW, dimmable
1 ... 20 m	1 ... 20 m	3 ... 12 m	1 ... 30 m
10°, 20°, 30°, 40°, 80° (standard), manually focusable	Special optics for low mounting position	Special optics for low mounting position	Red: 90°, 40° optional Green: 90°, 40° optional
IP 54	IP 67	IP 42	IP 54
Smallest housing	Uniform distribution of brightness along laser line, shockproof IK10	Uniform distribution of brightness along laser line, smallest housing	Closed housing, 1 or 2 movable lasers, 1 fixed laser optional
17	19	21	23

* depending on opening angle, ambient light, mounting position and angle



BRACKETS:



POWER SUPPLY:



CONNECTOR:



HEATSINK:



Cooling Element optional

DRAWING (1:1):



XtrAlign HY

1 ... 40 mW

GREEN, BRIGHT, ROBUST:

Lasers of HY series with green laser beam are used, when visibility of red lasers is no longer sufficient. This may occur on adverse surfaces (e.g. red or black, wet stone) or bright ambient illumination (sunlight). Green light has a visibility about five times higher compared to red light, because human eyes have their maximum sensitivity in this wavelength area.

The robust housing made of stainless steel protects laser, electronic circuitry and precision optics. Thanks to a compact design and reduced weight the laser can be used just about anywhere.

FEATURES:

- Improved longevity due to diode laser source
- Manually focusable
- Optimal visibility of green beam
- „Heavy Duty“, extremely robust
- Available opening angles line: 10°, 20°, 30°, 40°, 80° (standard)
- Available opening angles cross: 38°, 62° (standard)



Get the green light for your production.

Technical data

Laser type, Wavelength	Diode, 520 nm, green
Power supply	12 ... 30 V DC
Application conditions	-10 ... +40 C, 35 ... 90 % rel. humidity, non-condensing
Enclosure rating	IP 67
Shock resistance	IK10
Divergence	0,5 mrad
MTTF	> 30.000 h at 25°C
Dimensions	Length 140 mm, Ø 25 mm (front) / 20 mm (back)
Connector	M12, 4-pol.

LINE LASERS

Laser power	Product	Laser class*	Line length*
1 mW	LAP 1 HYL	1	up to 1 m
3 mW	LAP 3 HYL	1	up to 2 m
5 mW	LAP 5 HYL	1	up to 4 m
10 mW	LAP 10 HYL	2	up to 6 m
15 mW**	LAP 15 HYL	2	up to 10 m
30 mW**	LAP 30 HYL	2M	up to 20 m
40 mW**	LAP 40 HYL	3R	up to 30 m

CROSS LASERS

Laser power	Product	Laser class*	Line length at 1 m distance
1 mW	LAP 1 HYX	1	60 cm/90 cm
3 mW	LAP 3 HYX	1	60 cm/90 cm
5 mW	LAP 5 HYX	2	60 cm/90 cm
10 mW	LAP 10 HYX	2	60 cm/90 cm
15 mW**	LAP 15 HYX	2	60 cm/90 cm
30 mW**	LAP 30 HYX	2M	60 cm/90 cm
40 mW**	LAP 40 HYX	2M	60 cm/90 cm

POINT LASERS

Laser power	Product	Laser class
1 mW	LAP 1 HYP	2
3 mW	LAP 3 HYP	3R
5 mW	LAP 5 HYP	3R
10 mW	LAP 10 HYP	3B
15 mW**	LAP 15 HYP	3B
30 mW**	LAP 30 HYP	3B
40 mW**	LAP 40 HYP	3B

* Standard opening angle 80° line / 62° cross, line length depends on ambient light, mounting position and angle
** LAP bracket or heatsink required



BRACKETS:



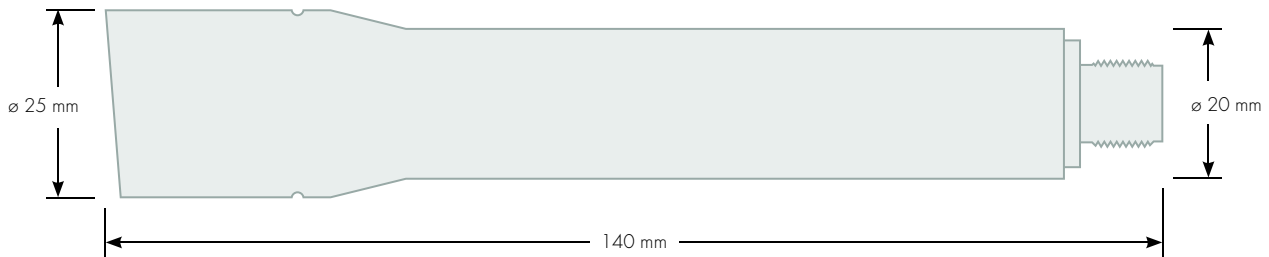
POWER SUPPLY:



CONNECTOR:



DRAWING (1:1):



XtrAlign HD

1 ... 30 mW

ROBUST AND FLEXIBLE:

Diode lasers of HD series are designed to withstand the day to day use in harsh industrial environment. The water-proof stainless steel housing protects laser diode, electronic circuitry and precision optics.

The laser diode is galvanically separated from the power supply, which makes the laser extremely resistant to voltage peaks or current variations. The wide range input capacity enables the HD lasers to be used with all typical low voltage power nets.

The optics may be focused without tools. Spot size or line width can be adjusted. The line position doesn't change during focusing.

FEATURES:

- Manually focusable
- Point, Line, Cross
- „Heavy Duty“, extremely robust
- Protected from voltage variations
- Reverse polarity protected
- Available opening angles line: 10°, 20°, 30°, 40°, 80° (standard)
- Available opening angles cross: 38°, 62° (standard)

LAP XtrAlign HD lasers don't resent being treated harshly or being pelted with any kind of chips.

Technical data

Laser type, Wavelength	Diode, 635 nm, red
Power supply	12 ... 30 V DC
Application conditions	-10 ... +40 C, 35 ... 90 % rel. humidity, non-condensing
Enclosure rating	IP 67
Shock resistance	IK10
Divergence	0,5 mrad
MTTF	> 30.000 h at 25°C (635 ... 670 nm)
Dimensions	Length 140 mm, Ø 25 mm (front) / 20 mm (back)
Connector	M12, 4-pol.

LINE LASERS

Laser power	Product	Laser class*	Line length*
1 mW	LAP 1 HDL	1	up to 1 m
3 mW	LAP 3 HDL	1	up to 2 m
5 mW	LAP 5 HDL	1	up to 4 m
10 mW	LAP 10 HDL	2	up to 6 m
15 mW	LAP 15 HDL	2	up to 10 m
30 mW	LAP 30 HDL	2M	up to 20 m

CROSS LASERS

Laser power	Product	Laser class*	Line length at 1 m distance
1 mW	LAP 1 HDX	1	60 cm/90 cm
3 mW	LAP 3 HDX	1	60 cm/90 cm
5 mW	LAP 5 HDX	2	60 cm/90 cm
10 mW	LAP 10 HDX	2M	60 cm/90 cm
15 mW	LAP 15 HDX	2M	60 cm/90 cm
30 mW	LAP 30 HDX	2M	60 cm/90 cm

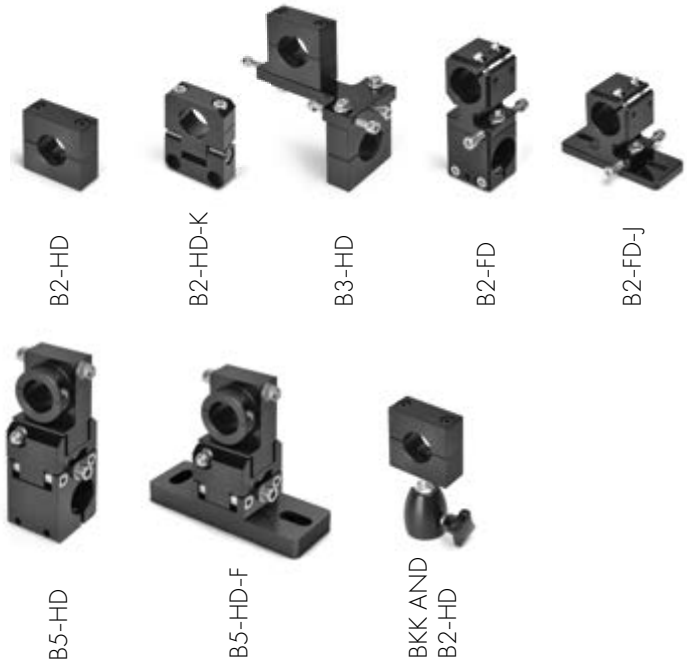
POINT LASERS

Laser power	Product	Laser class
1 mW	LAP 1 HDP	2
3 mW	LAP 3 HDP	3R
5 mW	LAP 5 HDP	3R
10 mW	LAP 10 HDP	3B
15 mW	LAP 15 HDP	3B
30 mW	LAP 30 HDP	3B

*Standard opening angle 80° line / 62° cross, line length depends on ambient light, mounting position and angle



BRACKETS:



POWER SUPPLY:



CONNECTOR:



DRAWING (1:1):



XtrAlign FD

1 ... 30 mW

SAFE AND WATERPROOF:

FD diode lasers are designed for use in rough industrial environment. A waterproof housing protects laser diode, electronic circuitry and precision optics.

FEATURES:

- Fixed focus
- Small, robust stainless steel housing
- IP 67

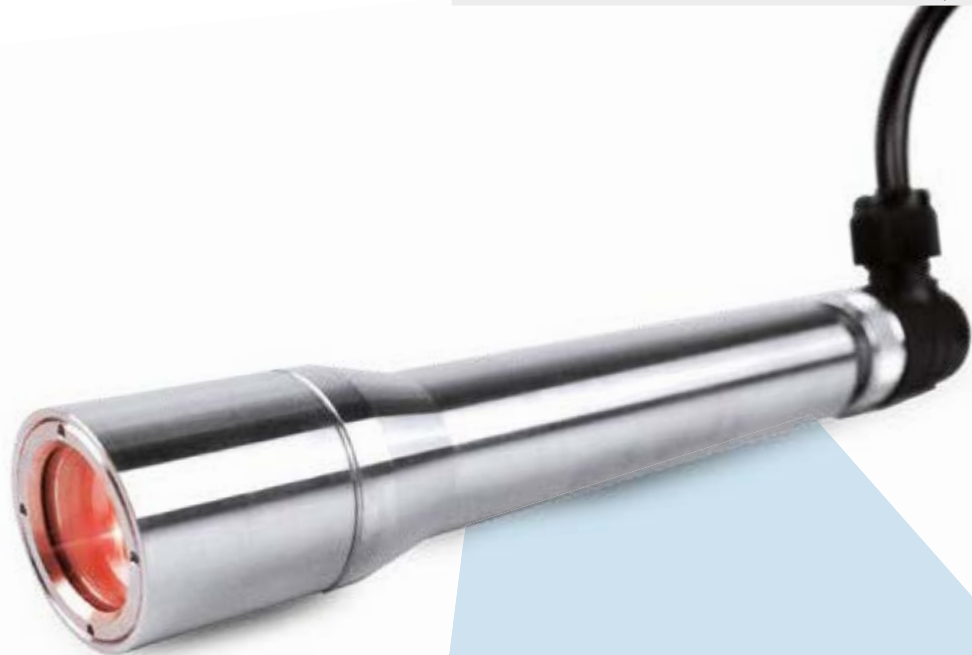
Technical data

Laser type, Wavelength	Diode, 635 nm, red
Power supply	12 ... 30 V DC
Application conditions	-10 ... +40 C, 35 ... 90 % rel. humidity, non-condensing
Enclosure rating	IP 67
Shock resistance	IK10
Divergence	0,5 mrad
MTTF	> 30.000 h at 25°C
Dimensions	Length 131 mm, Ø 25 mm (front) / 20 mm (back)
Connector	M12, 4-pol.

LINE LASERS

Laser power	Product	Laser class*	Line length*
1 mW	LAP 1 FDL	1	up to 1 m
3 mW	LAP 3 FDL	1	up to 2 m
5 mW	LAP 5 FDL	1	up to 4 m
10 mW	LAP 10 FDL	2	up to 6 m
15 mW	LAP 15 FDL	2	up to 10 m
30 mW	LAP 30 FDL	2	up to 20 m

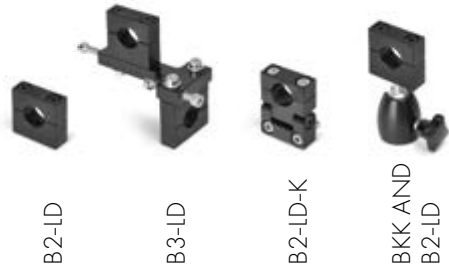
*Standard opening angle 80°, line length depends on ambient light, mounting position and angle



LAP XtrAlign FD lasers can't be harmed easily. Waterproof and peak protected they are always in line with their tasks.



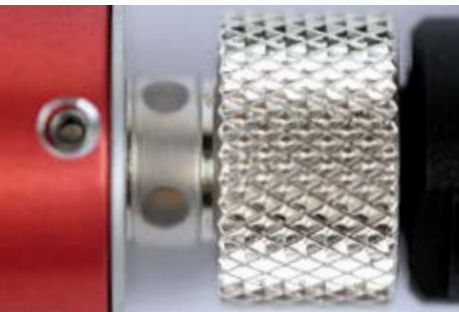
BRACKETS:



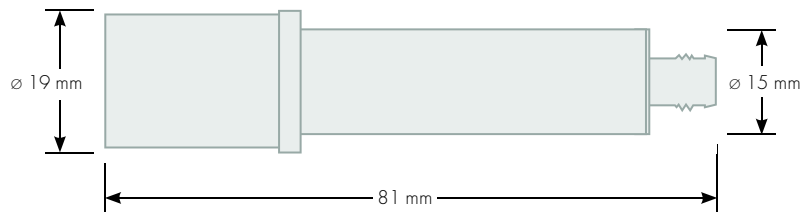
POWER SUPPLY:



CONNECTOR CABLE:



DRAWING (1:1):



LD LASER

1 ... 30 mW

SMALL AND VERSATILE:

Due to manual focussing from 30 mm to ∞ , you may achieve an extremely fine laserline at any working distance. This makes the LD laser the right choice for applications with changing working distances and projection positions. Flexibility is supported by the small housing, allowing to easily fix the laser on working place machines or rails.

FEATURES:

- Manually focusable
- Point, Line, Cross
- Smallest housing
- Reverse polarity protected
- Available opening angles line: 10°, 20°, 30°, 40°, 80° (standard)
- Available opening angles cross: 38°, 62° (standard)



Technical data

Laser type, Wavelength	Diode, 635 nm, red (optional: 670 nm)
Power supply	4 ... 6 V DC
Application conditions	-10 ... +40 C, 35 ... 90 % rel. humidity, non-condensing
Enclosure rating	IP 54
Divergence	0,5 mrad
MTTF	> 30.000 h at 25°C (635 ... 670 nm)
Dimensions	Length 81 mm, Ø 19 mm (front) / 15 mm (back)
Connector	M8, 3-pol.

LINE LASERS

Laser power	Product	Laser class*	Line length*
1 mW	LAP 1 LDL	1	up to 1 m
3 mW	LAP 3 LDL	1	up to 2 m
5 mW	LAP 5 LDL	1	up to 4 m
10 mW	LAP 10 LDL	1	up to 6 m
15 mW	LAP 15 LDL	2	up to 10 m
30 mW	LAP 30 LDL	2M	up to 20 m

CROSS LASERS

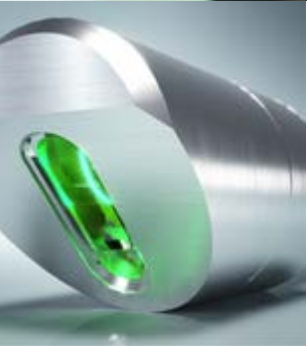
Laser power	Product	Laser class*	Line length at 1 m distance
1 mW	LAP 1 LDX	1	60 cm/90 cm
3 mW	LAP 3 LDX	1	60 cm/90 cm
5 mW	LAP 5 LDX	2	60 cm/90 cm
10 mW	LAP 10 LDX	2M	60 cm/90 cm
15 mW	LAP 15 LDX	2M	60 cm/90 cm
30 mW	LAP 30 LDX	2M	60 cm/90 cm

POINT LASERS

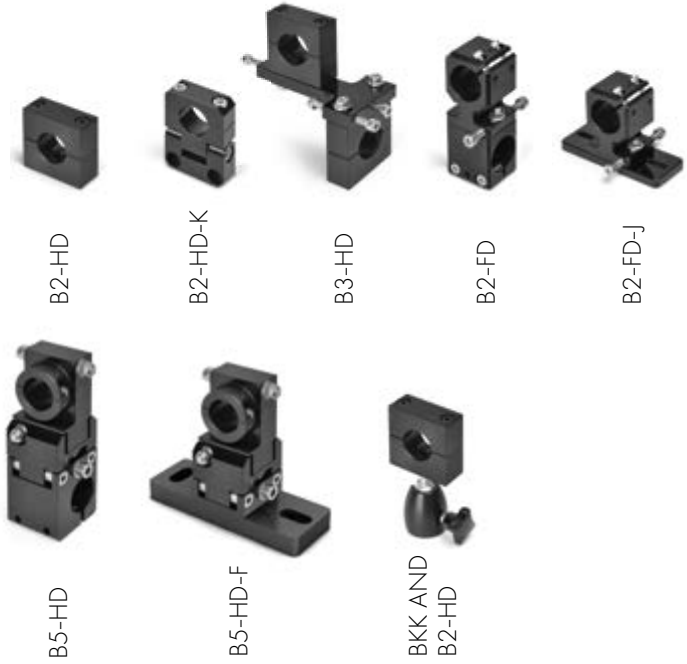
Laser power	Product	Laser class
1 mW	LAP 1 LDP	2
3 mW	LAP 3 LDP	3R
5 mW	LAP 5 LDP	3R
10 mW	LAP 10 LDP	3B
15 mW	LAP 15 LDP	3B
30 mW	LAP 30 LDP	3B

LAP LD lasers are a perfect match for nearly every gap and like to change their working place

*Standard opening angle 80° line / 62° cross, line length depends on ambient light, mounting position and angle



BRACKETS:



POWER SUPPLY:



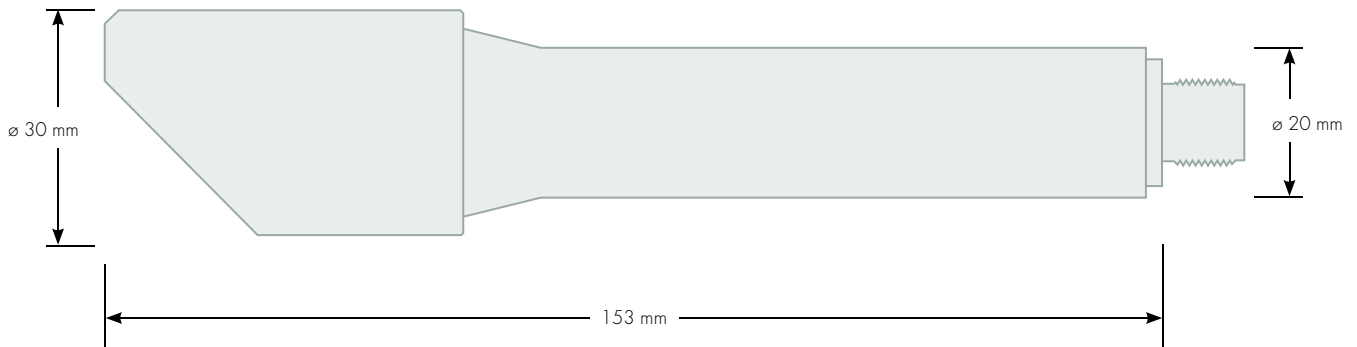
CONNECTOR:



HEATSINK:



DRAWING (1:1):



XtrAlign HU

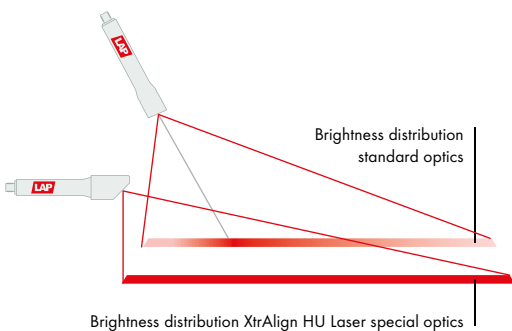
1 ... 30 mW
1 ... 40 mW

EXTRAORDINARY AND USEFUL:

If lasers can only be mounted laterally and very low above the projection surface, HU lasers are used. Even from this unfavorable position they deliver long lines with even brightness distribution. With horizontal mounting the line begins directly below the exit of the laser beam.

FEATURES:

- Low mounting position
- Extremely robust
- Special optics for even brightness distribution



Technische Daten

Laser type, Wavelength	Diode, red: 638 nm, green: 520 nm
Power supply	12 ... 30 V DC
Ambient conditions	-10 ... +40 °C, 0 ... 90 % rel. humidity, non condensing
Enclosure rating	IP 67
Shock resistance	IK10
Divergence	0,5 mrad
Power consumption	< 200 mA
MTTF	> 30,000 h at 25 °C
Dimensions/Weight	L: 153 mm × ø 30 mm (front); ø 20 mm (back)/330 g
Connector	M12, 4-core

LINIENLASER

Internal laser power	Models	Laser class	Line length*
1 mW	LAP 1 HU	1	max. 1 m
3 mW	LAP 3 HU	1	max. 2 m
5 mW	LAP 5 HU	1	max. 4 m
10 mW	LAP 10 HU	1	max. 6 m
15 mW	LAP 15 HU	1	max. 10 m
30 mW	LAP 30 HU	2	max. 15 m
40 mW	LAP 40 HU	2	max. 20 m

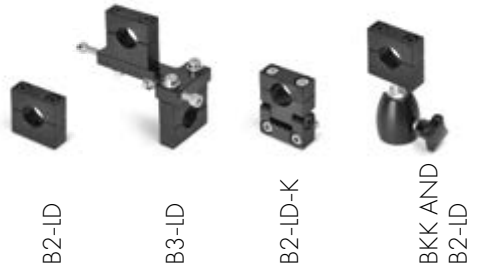
* Line length depends on ambient light, mounting position and angle



The excentric type
for low mounting positions.



BRACKETS:



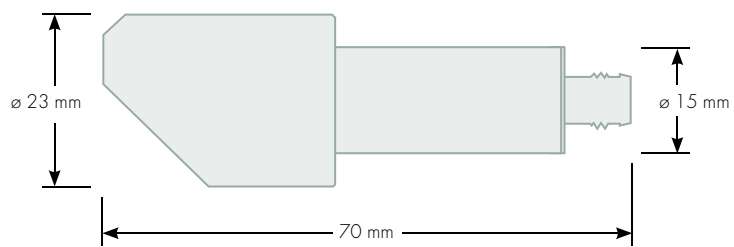
POWER SUPPLY:



CONNECTOR CABLE:



DRAWING (1:1):



UD LASER

5 ... 30 mW

LOW MOUNTING SPECIALIST:

Diode lasers of LAP UD Series are designed for installation low above the working surface. The main target for UD lasers are veneer- or sheet metal shears, as well as any place where you have little headroom but you need a long line, starting directly below the laser.

You need a 4 m line, you only have 50 cm of height and the laser must be installed on one side of the opening?

Then you need a UD laser!

FEATURES:

- Small housing
- Extremely low mounting position
- Special optics for laser line with homogeneous brightness distribution

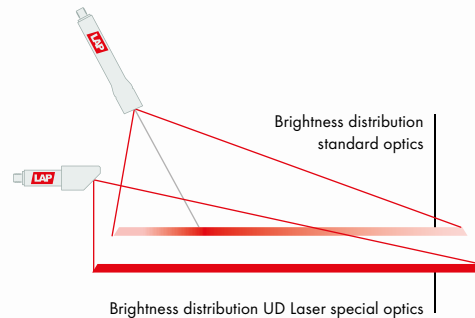
Technical data

Laser type, Wavelength	Diode, 635 nm, red
Power supply	4 ... 6 V DC
Application conditions	-10 ... +40°C, 35 ... 90 % rel. humidity, non-condensing
Enclosure rating	IP 42
Divergence	0,5 mrad
MTTF	> 30.000 h at 25°C
Dimensions	Length 70 mm, Ø 23 mm (front) / 15 mm (back)
Connector	M8, 3-pol.

LINE LASERS

Laser power	Product	Laser class	Line length*
5 mW	LAP UD-PL	1	up to 3 m
10 mW	LAP UD-XL	2	up to 6 m
15 mW	LAP UD-XXL	2	up to 9 m
30 mW	LAP UD-XXXL	2M	up to 12 m

* Line length depends on ambient light, mounting position and angle



The LAP UD Laser best performs near your workpiece.



FEATURES:

- **More color**

Free combination of red and green modules

- **More power**

Modules with up to 40 mW laser power improve visibility especially on matte or black surfaces

- **Higher precision**

Projection accuracy from ± 0.18 mm

- **Higher speed**

Modules move with up to 1000 mm/s

- **Better communication**

EtherNet/IP™, ProfiNet and Modbus/TCP

- **More configurations**

Moving ranges up to 2600 mm

SERVOLASER Xpert

CONTROLLED MOVEMENT:

The LAP SERVOLASER Xpert is a flexible laser positioning system with fixed and movable line laser modules.

In most applications, SERVOLASER Xpert project two parallel lines in varying positions, controlled by product specifications.

Depending on configuration you get different moving ranges:

- Full range (F): one laser module moves the whole range
- Max range (M): two laser modules move the whole range independently. At both ends, the range of the second module is reduced by the width of the first module.
- Symmetrical (S): two laser modules move synchronously in relation to the middle of the range

Technical Data

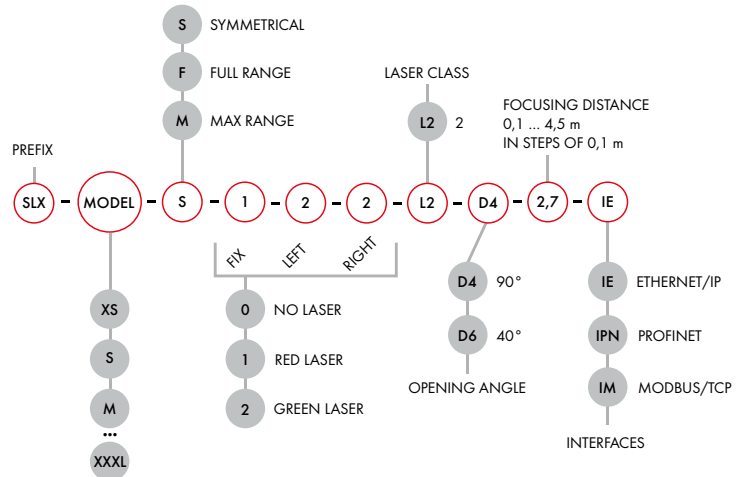
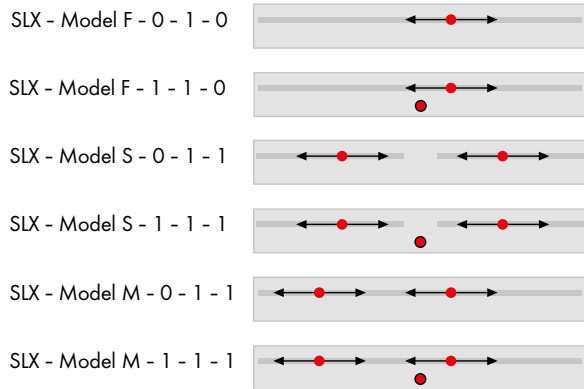
Number of modules	1 or 2 movable lasers in one housing. Fixed center laser optional.
Wavelengths*	635 nm (red) and 520 nm (green)
Laser power	21 mW, dimmable
Laser class	2
Standard-opening angle of laser modules	90°, 40° optional
Moving range	up to 2600 mm
Positioning speed	up to 1000 mm/s
Projection accuracy	±0.18 ... ±0.5 mm**
Line width	0.2 ... 0.6 mm (FWHM) at 1 ... 4 m focusing distance
Protection class	IP 54
Operating temperature	0 ... 40°C
Power supply	24 V DC + 20 % -15 %
Interfaces	EtherNet/IP™, ProfiNet, Modbus/TCP

Model	Range of Movement [mm]	Dimensions L x W x H [mm]
XS	600	1004 x 177 x 192
S	1000	1424 x 177 x 192
M	1200	1604 x 177 x 192
L	1600	2024 x 177 x 192
XL	1900	2324 x 177 x 192
XXL	2100	2504 x 177 x 192
XXXL	2600	2984 x 177 x 192

* free selection and combination
** depending on rail length and projection distance

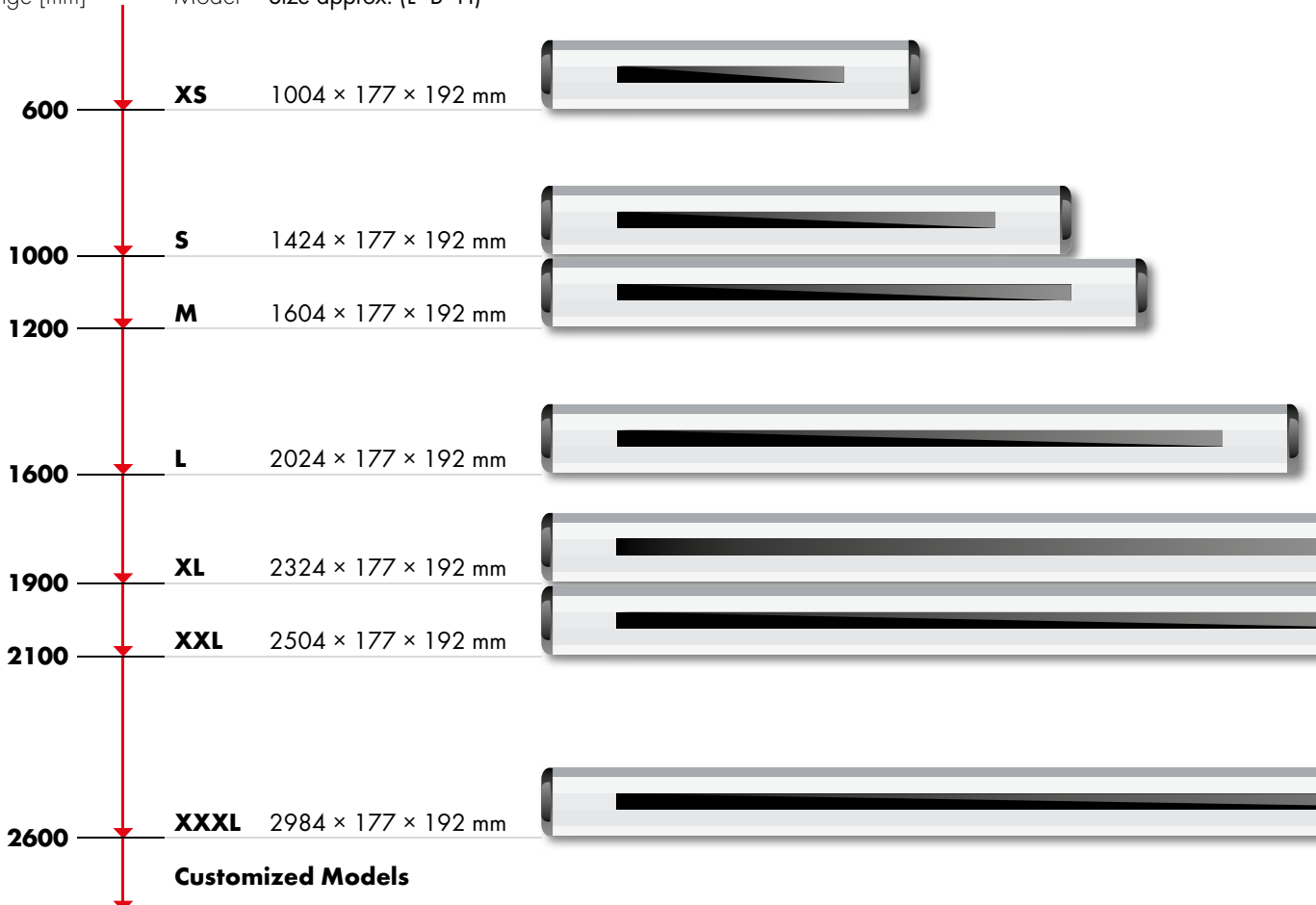


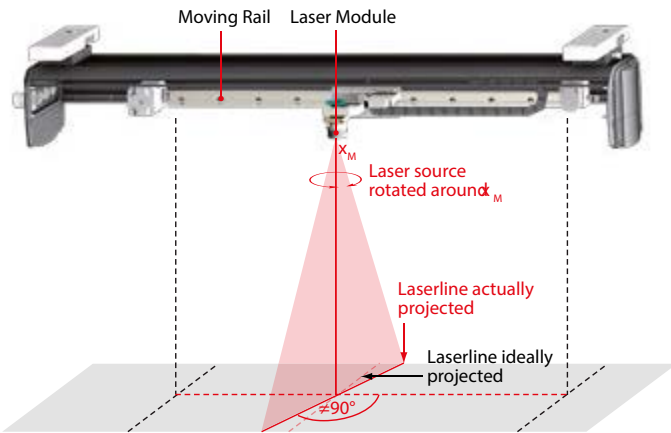
CONFIGURATIONS



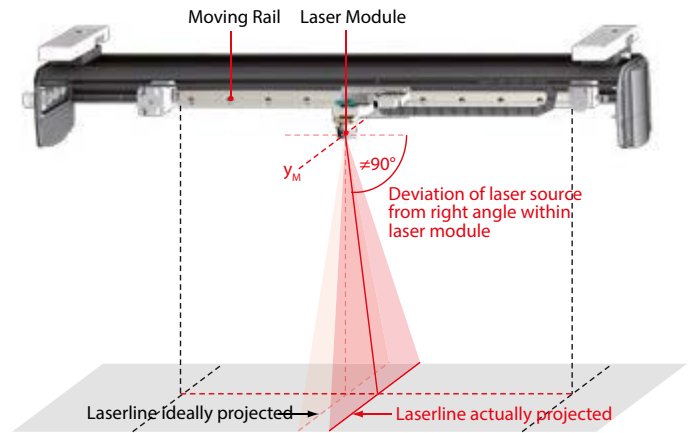
DIMENSIONS

Moving range [mm] Model Size approx. (L×B×H)





EXEMPLIFICATION: ANGULAR ERROR AROUND x



EXEMPLIFICATION: ANGULAR ERROR AROUND y

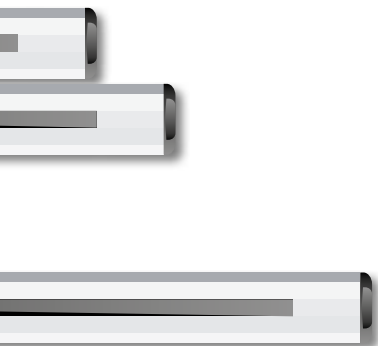
POSITIONING ACCURACY

Most providers of positioning systems define accuracy as „positioning accuracy“, meaning how precise and repeatable the laser module can be moved to a certain position on the linear rail. These values don't take into account other errors or tolerances besides the movement. If the module has minimal backlash, the projection angle may vary depending on whether a correct position is reached from the left or from the right. In some meters distance, this may cause deviations of some millimeters or even centimeters. Positioning accuracy neither defines angular accuracy nor parallelity of the displayed laser lines.



PROJECTION ACCURACY

At the end of the day, it is crucial for the user, that the projected laser line is exactly at the required position. So LAP offers a projection accuracy (at a certain distance). This value not only covers the positioning accuracy, but also all other causes for deviations.

To reach maximum precision, LAP puts maximum effort in the whole process: selection and testing of finest components; manual assembly by experienced product specialists; adjustment and calibration in own test laboratory on testing equipment developed only for this product; 48 hours of test run before delivery; quality management with 100% coverage.



BRACKETS

-  ADJUSTMENT
-  VERNIER

LD | UD Laser



B2-LD



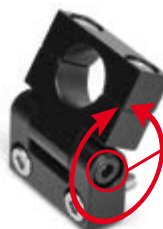
B2-LD-K



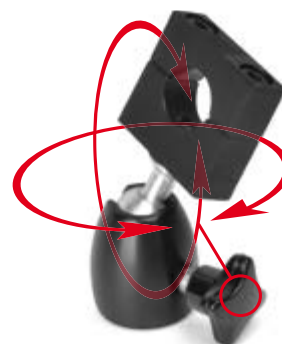
BKK AND
B2-LD



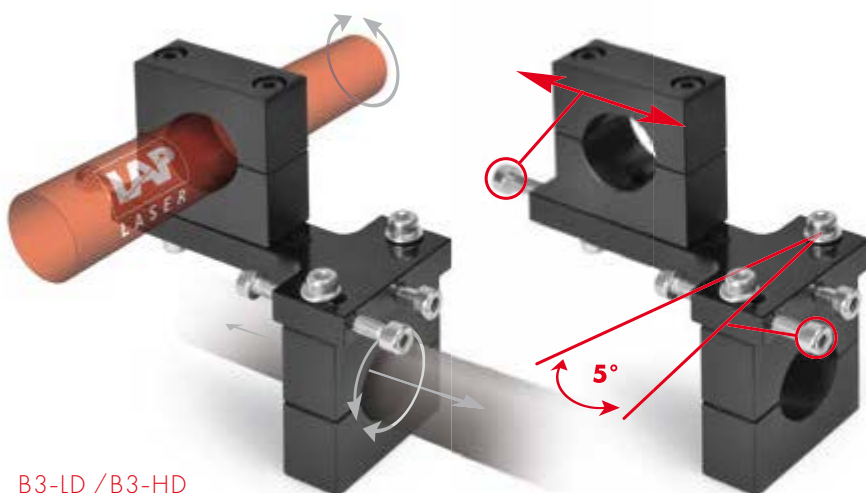
B3-LD



B2-LD-K / B2-HD-K



BKK AND B2-LD /
BKK AND B2-HD



B3-LD / B3-HD



B5-HD

XtrAlign HD | HY | FD | HU



B2-HD



B2-HD-K



B2-FD-J



BKK AND
B2-HD



B2-FD



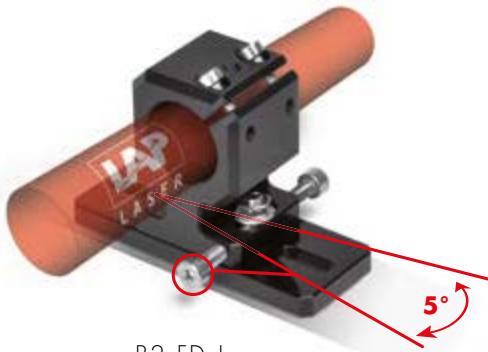
B3-HD



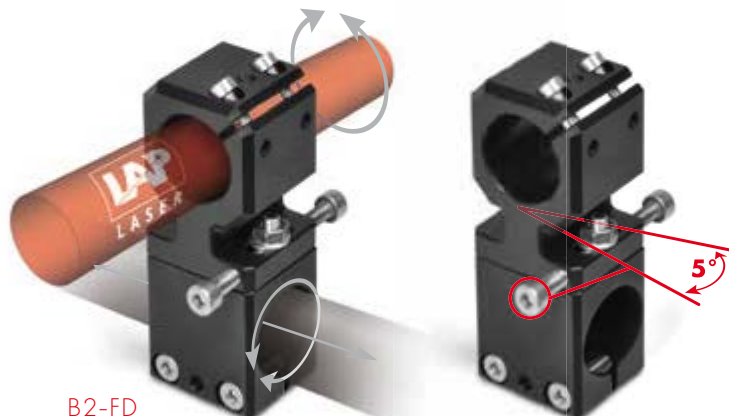
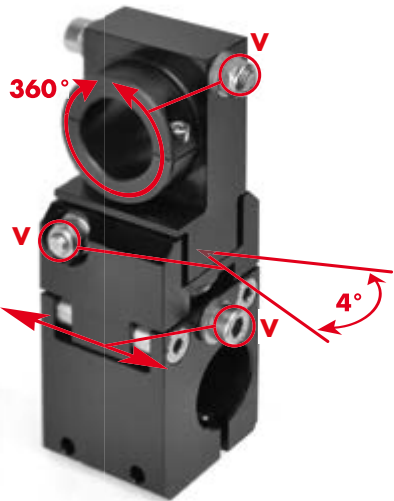
B5-HD-F



B5-HD

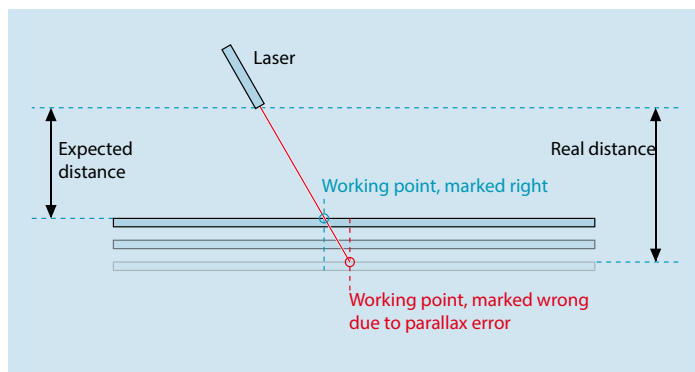


B2-FD-J



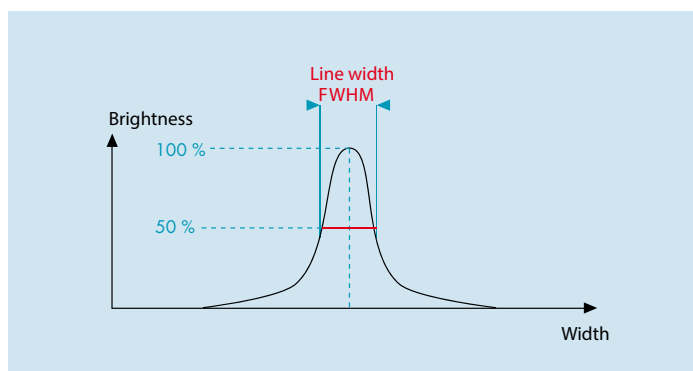
B2-FD

DID YOU KNOW?



PARALLAX ERROR

Parallax errors occur, where the laser is not adjusted exactly perpendicular to the working or object surface. By changing the distance between laser and surface, the laser point/cross/line changes its position.



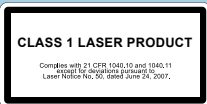
LINE WIDTH

To give a reliable, comparable scientific criterion for line width, LAP uses FWHM (Full Width at Half Maximum). The width of the line is given, where brightness decreases to half the maximum. As brightness distribution in most cases is similar to a Gaussian curve, this relates to the visual impression.



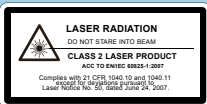


LASER CLASS



LASER CLASS 1

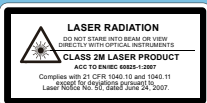
Laser is safe under all conditions of normal use.



LASER CLASS 2

Lasers that emit visible radiation (400 ... 700 nm).

Eye protection is normally granted by aversion responses. Don't look into the beam directly on purpose for longer or for several times.



LASER CLASS 2M

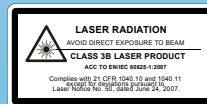
Lasers that emit visible radiation (400 ... 700 nm).

Eye protection is normally granted by aversion responses. However, looking into the beam may be more hazardous if the user employs optics within the beam. Don't look into the beam using optical instruments (lenses, magnifiers ...)



LASER CLASS 3R

Lasers that emit in the wavelength range from 302.5 nm to 10⁶ nm where direct intrabeam viewing is potentially hazardous. The accessible emission limit is within five times the AEL of Class 2 in the wavelength range from 400 nm to 700 nm.



LASER CLASS 3B

Direct exposure to these lasers is hazardous for eyes and in certain circumstances also for skin. Don't expose yourself to the laser beam! Viewing diffuse reflections is safe, if viewing distance is larger than 13 cm and exposure time is below 10 s.





THE SERVICE

LAP supports you before, during and after the installation of an LAP system. Tens of years of international experience with installation and maintenance of laser systems across virtually all industries make LAP a reliable and competent partner.

Before you decide, we offer intense consulting. We show you the advantages of our technology as well as its limits. We give advice during site planning and install the system on site. After commissioning, we accompany your first steps until you reach full performance.

Every customer has different requirements concerning maintenance intervals, response time and protection against downtime. Consequently, LAP offers every customer an individually tailored package, which may exceed normal performance by far.

You need on-site replacement? 24/7 emergency service? 24h-hot-line? Or is replacement within 24 hours, working day service and periodical training of your employees enough? Tell us your wishes – we will find a solution that is sufficient for your needs.

Customizing

- Support during site planning
- Supply of additional equipment (Mounting accessories, rails, beams ...)
- Software customizing and add-ons (connection to customer network, barcode handling ...)

Installation and commissioning

Training

Maintenance

- Substitution units for provisional use during maintenance
- Exchange of parts subject to regular wear and tear
- Cleaning
- Adjustment

Updates for software and firmware

Repairs

**BRING COLOUR TO YOUR LIFE.
LAP ALSO PROJECTS OUTLINES AND
TEMPLATES. MULTICOLOURED.**

www.LAP-LASER.com



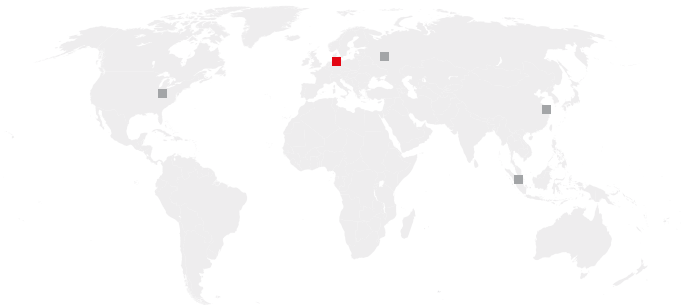
HIGH-TECH QUALITY LASERS BY LAP

For more than 35 years, LAP has been developing, manufacturing and distributing laser measurement systems, line lasers and laser template projectors for industrial and medical applications. LAP products are high-precision devices *Made in Germany*. Using LAP laser systems, our customers improve performance and increase the quality of their products as well as the effectiveness of their processes.

As a result of continuous product innovation, LAP has become a world leader in lasers for projection and measurement. LAP products are setting the standards in a wide range of markets from manufacturing to heavy industrial environments and medical applications. Environmental protection is important to us. We use solar panels, green electricity and roofs planted with grass. Our production is planned by standards of sustainability.

Quality has always been part of our commitment. We are content if you are. We know your high demands. To meet your requirements, the quality management of LAP is certified by DIN EN ISO 9001:2008 for industrial products and by DIN EN ISO 13485:2010 for medical engineering products.

www.lap-laser.com/LINELASER



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