

THE SUBTLE DIFFERENCE:

SOMETIMES YOU DON'T NOTICE IT.

Continuous innovation and precision, geo-FENNEL offers a measurably high quality product for all applications. Whether on a construction site or in a residential development, exterior or interior – you can always rely on our latest measuring technology to achieve precise results. To that end, we continue to develop our products. Straight from the start you are aware of the quality and innovation integral to geo-FENNEL products.





ALWAYS IN MOTION:

THE CROSS LINE LASER THAT ROTATES.

The FL 80Tracking SP from the Selection PRO series is very convincing with its unique performance characteristics.

With its tracking function for automatic axis alignment it is significantly superior when compared to other devices within its comparable category. During alignment, the nearest vertical line is automatically centred onto the zero-point of the receiver. Eliminating the tedious and inaccurate manual alignment process which is finally a thing of the past. You can now concentrate on what is essential: the measurement result.



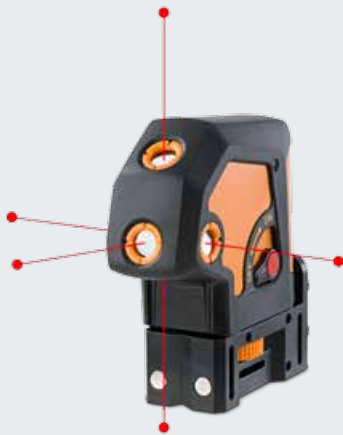


Geo3P 3-Point Laser Plumb up and down

- » **Self-levelling laser plummet for easy plumbing from floor to ceiling. 3 Laser points at right angles.**
- » Compact and handy size. Shock-resistant design suitable for robust use on construction sites.

TECHNICAL DATA	GEO3P	FEATURES	SUPPLIED WITH
			ART.-NO. 555030
Self-levelling range	± 3.5°	<ul style="list-style-type: none"> · 3 laser dots (up, down, forward) · Out-of-level alarm · Multi-functional mount with <ul style="list-style-type: none"> · strong magnets for optimal use at drywall construction rails · can be fixed to a wall (magnetic or screw hanging) · strap attachment · Transport lock · 1/4" and 5/8" tripod thread 	<ul style="list-style-type: none"> · Multi-functional mount · Magnetic target · 3 x AA Alkaline battery · Padded carrying bag
Accuracy	± 2 mm / 10 m		
Working range	30 m*		
Laser diode / laser class	635 nm / 2		
Power supply	3 x AA Alkaline		
Operating time	20 h		
Temperature range	-10 °C – +50 °C		
Dust / water protection	IP 54		
Weight (instrument only)	0.5 kg		

* depending on room illumination

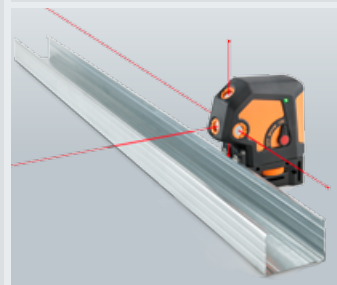


Geo5P 5-Point Laser Five directions

- » **5 self-levelling laser dots at right angles to each other: up, down, forward, left, right. For plumbing, alignments, levelling, transfer of points and many more applications.**
- » Compact and handy size. Shock-resistant design suitable for robust use on construction sites.

TECHNICAL DATA	GEO5P	FEATURES	SUPPLIED WITH
			ART.-NO. 555050
Self-levelling range	± 3.5°	<ul style="list-style-type: none"> · 5 laser dots (up, down, forward, left, right) · Out-of-level alarm · Multi-functional mount with <ul style="list-style-type: none"> · strong magnets for optimal use at drywall construction rails · can be fixed to a wall (magnetic or screw hanging) · strap attachment · Transport lock · 1/4" and 5/8" tripod thread 	<ul style="list-style-type: none"> · Multi-functional mount · Magnetic target · 3 x AA Alkaline battery · Padded carrying bag
Accuracy	± 2 mm / 10 m		
Working range	30 m*		
Laser diode / laser class	635 nm / 2		
Power supply	3 x AA Alkaline		
Operating time	20 h		
Temperature range	-10 °C – +50 °C		
Dust / water protection	IP 54		
Weight (instrument only)	0.5 kg		

* depending on room illumination



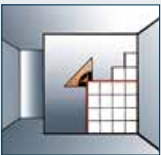


Torpedo Straight line and level

- » The universal laser spirit level that incorporates a beam splitter to generate a laser dot or a laser line.

TECHNICAL DATA	TORPEDO	FEATURES	SUPPLIED WITH
			ART.-NO. 560000
Accuracy	± 3 mm / 10 m	<ul style="list-style-type: none"> · Switchable laser dot or laser line · Stepless rotation of laser line plus 90° lock intervals · 45°, 90° and 180° vials · Magnetic base · 1/4" thread for tripod 	<ul style="list-style-type: none"> · Batteries · Case
Working range	max. 30 m*		
Laser diodes	1 x 635 nm		
Laser class	2		
Power supply	2 x AAA Alkaline		
Operating time	30 h		
Temperature range	0 °C – +40 °C		

* depending on room illumination



Square Liner II At the right angle

- » The angle template generates two laser lines at 90° to each other. Ideal for use on floor and all tiling!

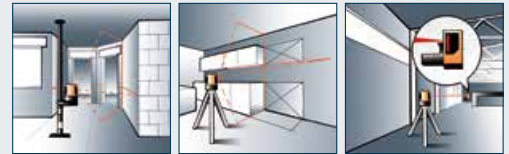
TECHNICAL DATA	SQUARE LINER II	FEATURES	SUPPLIED WITH
			ART.-NO. 551000
Accuracy	± 3 mm / 10 m	<ul style="list-style-type: none"> · Fine and clear visible laser lines · 0° to 90° graduation for setting out 90°, 45° or any required angles to floor, wall or ceiling · Built-in circular and tubular vials for horizontal and vertical alignment 	<ul style="list-style-type: none"> · Batteries · Magnetic target · Case
Working range	max. 30 m*		
Laser diodes	2 x 635 nm		
Laser class	2		
Power supply	2 x AA Alkaline		
Operating time	48 h		
Temperature range	0 °C – +40 °C		

* depending on room illumination

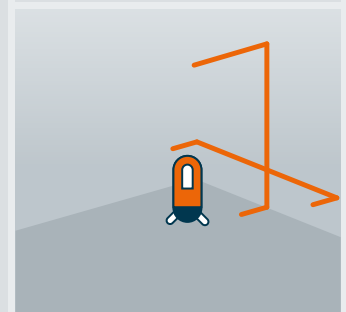
FL 40-Pocket II HP High-Power Version



- » Robust and handy laser cross level.
Horizontal and vertical levelling and aligning.
- » High specification diodes for optimum visibility of laser lines.



TECHNICAL DATA	FL 40-POCKET II HP	FEATURES	SUPPLIED WITH
Self-levelling range (left / right)	± 4°	<ul style="list-style-type: none"> · Laser cross · Multi-functional mount <ul style="list-style-type: none"> · for wall-hanging · for magnetic attachment · for tripod fixing with 5/8" or 1/4" thread · Locking device for safe transport · Visual and audible alarm when out of level · Pulse function for use with receiver FR 55 / FR 55-M (optional) to extend the working range up to 60 m (HP) 	ART.-NO. 541100
Accuracy	± 3 mm / 10 m		· Multi-functional mount
Working range without receiver	20 m*		· Set of batteries
Working range with receiver	60 m		· Magnetic target
Operating time	48 h		· Padded carrying bag
Power supply	3 x AA Alkaline		
Laser diodes / Laser class	2		
Dust / water protection	IP 54		
Weight	0.8 kg		
OPTIONAL			
FR 55			
ART.-NO. 500510			
OPTIONAL			
FR 55-M			
ART.-NO. 500520			

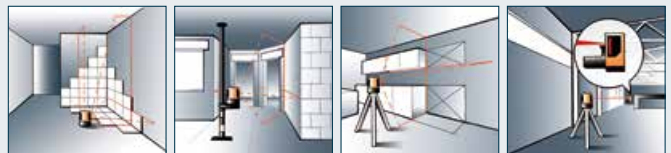


* depending on room illumination

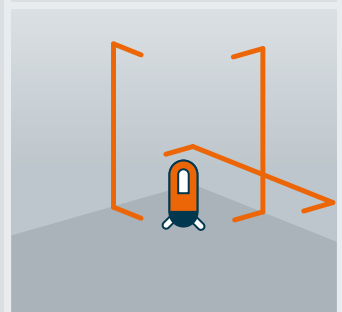
FL 40-3Liner HP The Best-Seller



- » The ideal measuring tool for interior works! Versatile and efficient. The laser line at 90° is ideally suitable for floor covering tasks (carpet, wood, hard tiles) as well as for wall tiles. Can be used on the floor as the laser lines start directly from the instrument.
- » High specification diodes for optimum visibility of laser lines.



TECHNICAL DATA	FL 40-3LINER HP	FEATURES	SUPPLIED WITH
Self-levelling range	± 3,5°	<ul style="list-style-type: none"> · Laser cross · Vertical laser line at 90° to laser cross · 3 clearly visible laser lines · Locking device for safe transport · Visual and audible alarm when out of level · Pulse function for use with receiver FR 55 / FR 55-M (optional) to extend the working range up to 60 m (HP) 	ART.-NO. 530100 <ul style="list-style-type: none"> · Wall / tripod mount · Set of batteries · Magnetic target · Laser intensive glasses · Padded carrying case
Accuracy	± 3 mm / 10 m		
Working range without receiver	20 m*		
Working range with receiver	60 m		
Operating time	15 h		
Power supply	3 x AA Alkaline		
Laser diodes / Laser class	635 nm / 2		
Dust / water protection	IP 53		
Weight	0.86 kg		
OPTIONAL			
FR 55			
ART.-NO. 500510			
OPTIONAL			
FR 55-M			
ART.-NO. 500520			



* depending on room illumination

Geo3X HP

Small but powerful



» **The ideal instrument for numerous alignment, measurement and levelling tasks. Projecting 3 high powered laser crosses at 90° to each other.**

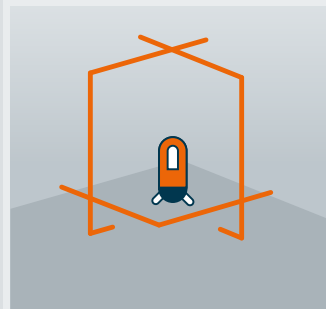
- » · The versatile multi-functional mount offers a variety of mounting options to increase flexibility and productivity
- 3 laser crosses
- Compact, handy size
- Shock-resistant design suitable for robust use on construction sites
- Self-levelling function can be switched off for manual use



1 Keypad

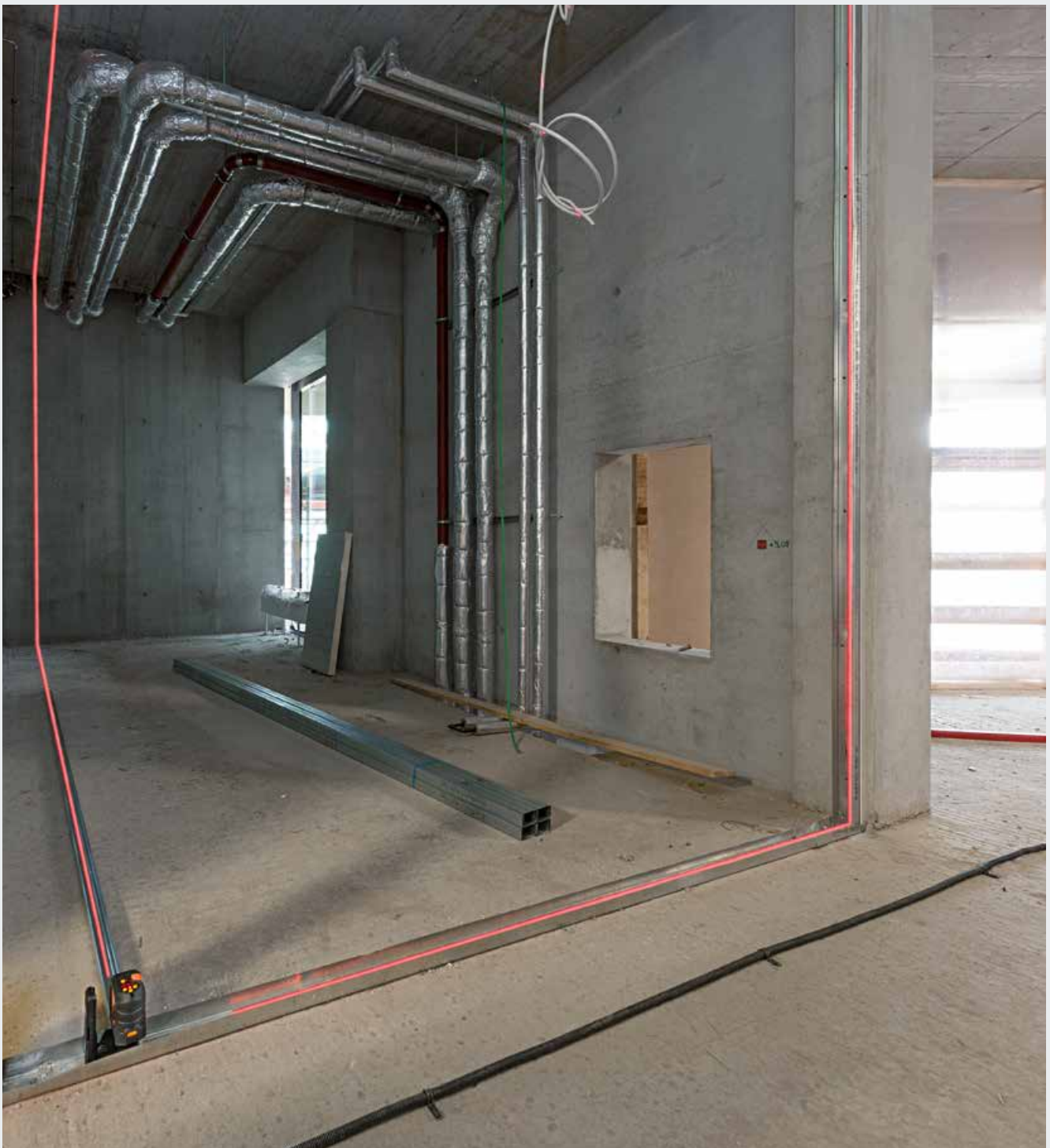
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TECHNICAL DATA	GEO3X HP	FEATURES	SUPPLIED WITH
			ART.-NO. 520600
Self-levelling range	± 3°	<ul style="list-style-type: none"> · 2 laser crosses at 90° to each other · Laser cross to the ceiling · Individually selectable laser lines · Self-levelling function can be switched off for manual use · Visual and audible alarm when out of level · Multi-functional mount with <ul style="list-style-type: none"> · strong magnets on the back face · can be fixed to a wall · strap attachment · height adjustable · 1/4" and 5/8" tripod thread · Pulse function for use with receiver (optional) to extend working range up to 60 m · 1/4" thread on the instruments base 	<ul style="list-style-type: none"> · Multi-functional mount · 3 x AA Alkaline battery · Padded carrying bag
Accuracy	± 3 mm / 10 m		
Working range without receiver	20 m*		
Working range with receiver (optional)	60 m		
Power supply	3 x AA Alkaline		
Operating time (all lines switched on)	12 h		
Dust / water protection	IP 54		
Laser diode / class	635 nm / 2		
Temperature range	-10 °C – +45 °C		
Weight (instrument with batteries)	0.8 kg		



* depending on room illumination

1 Use in dry-construction frames



Geo5X-L360 HP

The new all-rounder



- 1 Keypad
- 2 What's in the kit
- 3 Multi-functional mount





FL 1000 HP

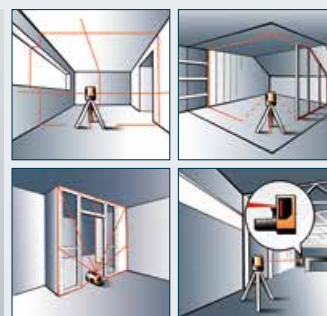
State-of-the-art

» **With combi-receiver FR 10.**
Detect rotating beams and laser lines with one device.

» With the ultimate FL 1000 HP even difficult measuring tasks become routine. Two vertical laser planes at 90° to each other formed through clearly visible laser lines – and additionally one 360° horizontal laser line projected by the rotation function.

» FL 1000 HP the ultimate for interior works! Even for the most complicated and specialized applications. The whole laser plane can, for example, be tilted manually if the object to be measured does not stand level – such as in the interior construction of ships.

- 1 Remote control
- 2 Combi-receiver FR 10 detects either rotating beam or laser line signals
- 3 Supplied with kit



TECHNICAL DATA	FL 1000 HP	FEATURES	SUPPLIED WITH	
Self-levelling range	± 5°	<ul style="list-style-type: none"> · Electronic self-levelling · Horizontal rotating laser beam, visible · 4 vertical laser lines at 90° to each other · Laser cross to the ceiling · Plumb down beam · TILT function · Slope setting · Combi-receiver for rotating and line beams · Remote control · On / off remote control · Adjustable 360° circle · Slow motion screw · Automatic shut-off / audible alarm when out of level · Integrated floor tripod · 5/8" thread for builders' tripod 	ART.-NO. 582020 <ul style="list-style-type: none"> · Combi-receiver FR 10 · Rechargeable batteries · Charger · Magnetic target · Laser intensive glasses · Remote control · Hard case 	
Power supply	NiMH / Alkaline			COMBI-RECEIVER FR 10 ART.-NO. 585510
Operating time	10 h			
Charger = power supply	yes			
Laser diode / Laser class	635 nm / 2			
Temperature range	-10 °C – +40 °C			
Weight	2.85 kg			
Dust / water protection	IP 54			
Rotating laser				
Accuracy	± 1 mm / 10 m			
Gradual slope setting in X and Y axis	± 5° (± 9 %)			
TILT function	yes			
Working range without receiver Ø	40 m*			
Working range with receiver Ø	400 m			
Scanning without receiver	30 m*			
Scanning range	10°, 30°, 60°			
Rotating speed rpm	200, 500			
Line laser				
Accuracy	± 2 mm / 10 m			
Working range without receiver	20 m*			
Working range with receiver	60 m			

* depending on room illumination

- » The main advantage of the FL 69 HP is the laser dots on the laser lines. On contrary to laser lines the laser dots have a much better visibility on longer distances and under unfavourable (e. g. very bright) light conditions. Therefore, it is easy to work under these circumstances and the laser dots are clearly visible for up to 30 m. When connecting the dots the vertical and horizontal lines as well as the 90° angles can be formed.





FL 69 Ultra-Liner HP

Revolutionize setting-out

» **The latest innovation in our line laser range.**

- » · 8 laser dots intersecting the laserlines for increased visibility in unfavorable light conditions:
 - 4 laser dots at the intersections of the horizontal and vertical lines
 - 4 laser dots intersecting the vertical lines at 45° to the horizontal
- Multiple laser line and dot options with 8 laser dots, 5 laser crosses, 4 vertical lines, 360° horizontal line and a plumb down beam individually selectable
- Li-Ion battery technology

1 Keypad

TECHNICAL DATA	FL 69 HP	FEATURES	SUPPLIED WITH	
			ART.-NO. 581500	
Self-levelling range	± 3°	<ul style="list-style-type: none"> · 5 laser crosses · 4 vertical lines at 90° to each other · 360° horizontal line · Laser cross to the ceiling · Plumb down beam · 8 laser dots · Self-levelling function can be switched off for manual use · Use with receiver FR 55 to extend the working range up to 60 m · Slow motion screw for fine adjustment · Audible and visible alarm when out of level · Integrated floor tripod · 5/8" thread for use with standard tripod 	<ul style="list-style-type: none"> · Integrated floor tripod · Li-Ion battery pack and intelligent charger · Magnetic target · Laser glasses · Adapter for tripod connection · Battery case for optional use of alkaline batteries · Hard carrying case 	
Accuracy	± 2 mm / 10 m			
Working range w/o receiver	20 m*			
Working range with receiver	60 m			
Power supply	Li-Ion			
Operating time	6–14 h**			
Dust / water protection	IP 54			
Laser diode	635 nm			
Laser class	2			
Temperature range	-10 °C – +45 °C			
Weight	1.2 kg			
				SUPPLIED WITH
				ART.-NO. 581510
			<ul style="list-style-type: none"> · Receiver FR 55 with clamp · Integrated floor tripod · Li-Ion battery pack and intelligent charger · Magnetic target · Laser glasses · Adapter for tripod connection · Battery case for optional use of alkaline batteries · Hard carrying case 	
				

* depending on room illumination

** depending upon the number of lines in use

The new class geo-FENNEL responding to our customers' needs.



» Benefiting from our many years of experience in the field of laser measuring technology, our technical expertise as well as listening to our customers' requirements we have developed a new class of lasers for the professional user. Selection PRO is a new range of line laser products that are characterized by the following features:

- Advanced laser diode / prism systems for outstanding visibility of the laser lines
- Lithium-Ion battery technology for permanent full power
- Selected accessories included
- 3 year warranty!*

Convince yourself of the special efficiency of our Selection PRO products!
The working ranges of all our line lasers are now categorized as follows:

TYPE	EXAMPLE	WORKING RANGE W/O RECEIVER (RADIUS)	WORKING RANGE WITH RECEIVER (RADIUS)
Standard	FL 40-3Liner	10 m	40 m
HP (High Power)	FL 40-3Liner HP	20 m	60 m
SP (Selection PRO)	FL 70 Premium Liner SP	30 m	80 m
SP (Selection PRO) – Green	FLG 40-PowerCross Green SP	40 m	–

* You can extend the warranty of all Selection PRO products from 2 years to 3 years. Simply register at www.geo-fennel.de/Produktregistrierung within 6 weeks of purchase to benefit from this extra cover.

Selection PRO



Our new Selection PRO range includes:

» FL 40-PowerCross SP

- Outstanding visibility of the laser lines
- Very long vertical line with 150° fan angle (beyond zenith)
- Manual use
- Extremely rugged design for rough use at construction site

» FLG 40-PowerCross GREEN SP

- The new Selection PRO GREENLASER-Technology – the ne plus ultra!
- Outstanding visibility of the laser line up to 40 m
- A clear narrow laser line

» FL 66-Xtreme SP

- Rugged technical design: Stable internal components ensure reliability and accuracy
- Perfect sealing assures dust and water protection according to IP 65
- Battery problems? Not with FL-66 Xtreme with the advantages of Li-Ion battery technology
- Outstanding visibility of the laser lines up to 30 m

» FLG 66-Xtreme GREEN SP

- The new Selection PRO GREENLASER-Technology – the ne plus ultra!
- Outstanding visibility of the laser line up to 40 m
- A clear narrow laser line

» CrossPointer5 SP

- Combination of a 5 point and cross line laser
- Projects 6 reference points and 2 reference lines
- Outstanding visibility of the laser lines

» FL 70 Premium-Liner SP

- 360° horizontal line, 4 vertical lines, plumb down beam, laser cross to the ceiling = simply the best!
- Motorized self-levelling – quick and precise
- Outstanding visibility of the laser lines
- High accuracy
- Li-Ion battery

» FL 80 Tracking Liner SP

- Locate on-grade position of the receiver at the target point
- Press the “Auto” button on the receiver, then press an arrow button
- The nearest vertical laser line automatically tracks to coincide with the on-grade position of the receiver

Selection PRO

FL 40-PowerCross SP

Convincing on the whole line



» **FL 40-PowerCross SP is a Selection PRO product with special features.**

- » · Outstanding visibility of the laser lines
- Very long vertical line with 150° fan angle (beyond zenith)
- Self-levelling function can be switched off for manual use
- Extremely rugged design suitable for use on the most demanding construction site – drop tested to 1 m. The sturdy technical design makes a transport lock needless

1 In manual mode

2 Easy to use – one button keypad



TECHNICAL DATA	FL 40-POWERCROSS SP	FLG 40-POWERCROSS GREEN SP
ART.-NO.	541500	541550
Self-levelling range	± 3°	± 3°
Accuracy	± 3 mm / 10 m	± 3 mm / 10 m
Working range	30 m* (radius)	40 m* (radius)
Fan angle horizontal	135°	135°
Fan angle vertical	150°	150°
Power supply	3 x AA Alkaline	3 x AA Alkaline
Operating time (all lines switched on)	40 h	9 h
Dust / water protection	IP 54	IP 54
Laser class	2	2
Temperature range	-10 °C – +45 °C	0 °C – +40 °C
Weight (instrument with battery)	0.4 kg	0.4 kg

SUPPLIED WITH

- Multi-functional mount
- 3 x AA Alkaline battery
- Padded bag



* depending on room illumination

Selection PRO

FLG 40-PowerCross GREEN SP

Convincing on the whole line – more than ever in green



» **FLG 40-PowerCross GREEN SP is a Selection PRO product with special features.**

- » · The new Selection PRO GREENLASER-Technology – the ne plus ultra!
 - Outstanding visibility of the laser line up to 40 m
 - A clear narrow laser line
 - Very long vertical line with 150° fan angle (beyond zenith)
 - Self-levelling function can be switched off for manual use
 - Extremely rugged design suitable for use on the most demanding construction site – drop tested to 1 m.
- The sturdy technical design makes a transport lock needless

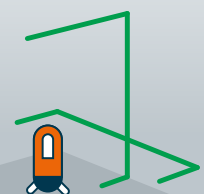
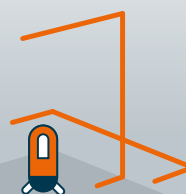


FEATURES FL 40-POWERCROSS SP

- 1 Laser cross
- Laser lines switchable separately
- TILT function for manual use
- Visual alarm when out of level
- Multi-functional mount
 - height adjustable
 - for wall-hanging with screw
 - strap attachment
 - strong magnet on back side
 - for tripod fixing with 5/8" or 1/4" thread

FEATURES FLG 40-POWERCROSS GREEN SP

- 1 Laser cross green
- Laser lines switchable separately
- TILT function for manual use
- Visual alarm when out of level
- Multi-functional mount
 - height adjustable
 - for wall-hanging with screw
 - strap attachment
 - strong magnet on back side
 - for tripod fixing with 5/8" or 1/4" thread



Selection PRO

FL 66-Xtreme SP

The toughest

- » **FL 66-Xtreme is a Selection PRO product with special features.**
- » This new generation of cross line laser withstand adverse conditions and rough handling on construction sites.
- »
 - Rugged technical design: Stable internal components assure function and accuracy
 - Perfect sealing assures dust and water protection according to IP 65
 - Batteries are a thing of the past as the FL 66-Xtreme SP utilizes the latest Li-Ion battery technology
 - Outstanding visibility of the laser lines up to 30 m



1 Keypad FL 66-Xtreme SP

2 What's in the kit FL 66-Xtreme SP



TECHNICAL DATA	FL 66-XTREME SP	FLG 66-XTREME GREEN SP
ART.-NO.	580500	580550
Self-levelling range	± 2°	± 2°
Accuracy	± 2 mm / 10 m	± 2 mm / 10 m
Working range		
without receiver	30 m* (radius)	40 m* (radius)
with receiver (optional)	80 m (radius)	–
Laser class	2	2
Operating time (all lines switched on)	15 h	15 h
Power supply	Li-Ion	Li-Ion
	Alkaline batteries (optional)	Alkaline batteries (optional)
Dust / water protection	IP 65	IP 65
Temperature range	-10 °C – +45 °C	0 °C – +40 °C
Weight (instrument with battery)	1.4 kg	1.4 kg
SUPPLIED WITH		
<ul style="list-style-type: none"> · Li-Ion batteries · Charger · Alkaline battery box 	<ul style="list-style-type: none"> · Laser intensive glasses · Magnetic target · Container 	



* depending on room illumination

Selection PRO

FLG 66-Xtreme GREEN SP

The toughest – red or green, your decision

» **FLG 66-Xtreme GREEN SP is a Selection PRO product with special features.**

» The new Selection PRO GREENLASER-Technology – the ne plus ultra!

- Outstanding visibility of the laser line up to 40 m
- A clear narrow laser line

» This new generation of cross laser withstand adverse conditions and rough handling on construction sites.

- Rugged technical design: Stable internal components assure function and accuracy
- Perfect sealing assures dust and water protection according to IP 65
- Batteries are a thing of the past as the FLG 66-Xtreme GREEN SP utilizes the latest Li-Ion battery technology

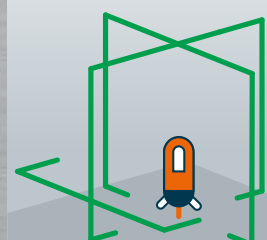
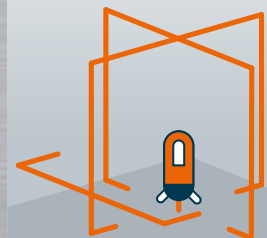


1 What's in the kit
FLG 66-Xtreme GREEN SP



FEATURES

- 4 vertical lines at 90° to each other
- 1 horizontal line 130°
- Plumb down beam (red)
- Laser lines switchable separately
- Plumbing function
- Self-levelling function can be locked for manual use (inclined applications)
- Audible and visual alarm when out of level
- Integrated floor tripod
- Slow motion screw for horizontal alignment
- For tripod fixing with 5/8" thread
- Use with receiver (optional) (FL 66-Xtreme SP)





CrossPointer5 SP

6 reference points plus a laser cross

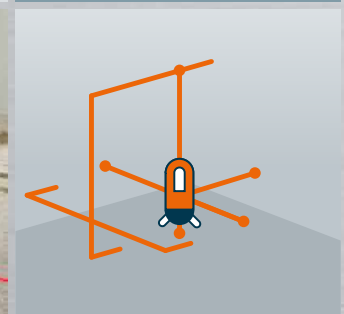
» CrossPointer5 SP is a Selection PRO product with special features.

- » Outstanding visibility of the laser lines
- » Combination of a 5 point and cross line laser
- » 6 reference points at 90° to each other
- » Horizontal and vertical lines at 90° to each other

- 1 5 laser points
- 2 Intuitive keypad
- 3 Universal mount



TECHNICAL DATA	CROSSPOINTER5 SP	FEATURES	SUPPLIED WITH	
Self-levelling range	± 4°	<ul style="list-style-type: none"> · 2 laser lines form a laser cross · 5 laser points: back, left, right, ceiling, floor · Plumbing function · Multi-functional mount · Strong magnets on the base · Strap attachment, rotatable · Use with receiver (optional) · Self-levelling function can be locked for manual use 	ART-NO. 531500	
Accuracy	± 3 mm / 10 m		<ul style="list-style-type: none"> · Universal mount · Laser glasses · Magnetic target · Set of batteries · Container 	
Line laser function	1 laser cross: front		OPTIONAL	FR 55
Working range w/o receiver	30 m*		ART-NO. 500510	
Working range with receiver	80 m (optional)		OPTIONAL	FR 55-M
Sector angle Hz-line	155°		ART-NO. 500520	
Sector angle V-line	160°			
Point laser function	5 laser dots: back, left, right, up, down			
Working range w/o receiver	30 m			
Power supply / Operating time	Alkaline / 7 h			
Dust / water protection	IP 54			
Laser diode / Laser class	635 nm / 2			
Temperature range	-10 °C – +45 °C			
Size	115 x 70 x 115 mm			



* depending on room illumination

Selection PRO

FL 70 Premium-Liner SP Technology at its best



» FL 70 SP is a Selection PRO product with special features.

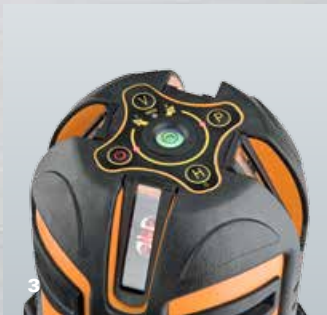
- » · Outstanding visibility of the laser line
- Li-Ion battery technology
- High accuracy of $\pm 1 \text{ mm} / 10 \text{ m}$
- Motorized self-levelling cross line laser
- 4 vertical lines at 90° to each other, 360° horizontal line, plumb up cross, plumb down beam
- Quick self-levelling and extremely stable performance
- Slope function: Laserplane can be tilted by using the remote control

1 Receiver FR 55 to extend the working range up to 80 m

2 Remote control for setting slopes

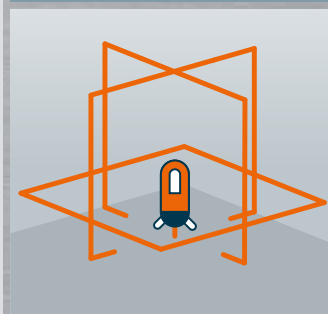
3 Circular bubble vial for optimal positioning

4 What's in the kit



TECHNICAL DATA	FL 70 PREMIUM-LINER SP	FEATURES	SUPPLIED WITH
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Self-levelling range	$\pm 3^\circ$	<ul style="list-style-type: none"> · 5 laser crosses · 4 vertical lines at 90° to each other · 360° horizontal line · Laser cross to the ceiling · Plumb down beam · Self-levelling function can be switched off · Use with receiver FR 55 to extend working range up to 80 m · Remote control for setting slopes · Adjustable 360° circle · Slow motion screw · Audible and visible alarm when out of level · Integrated floor tripod · $5/8''$ thread for use with standard tripod 	<p>ART.-NO. 582000</p> <ul style="list-style-type: none"> · Receiver FR 55 with clamp · Integrated floor tripod · Remote control · Li-Ion batteries and battery charger · Magnetic target · Laser glasses · Adapter for tripod connection · Compartment for alkaline batteries · Container
Accuracy	$\pm 1 \text{ mm} / 10 \text{ m}$		
Working range w/o receiver	30 m*		
Working range with receiver	200 m		
Power supply	Li-Ion		
Operating time	6–14 h		
	depending on number of laser lines switched on		
Dust / water protection	IP 54		
Laser diode	635 nm		
Laser class	2		
Temperature range	$-10^\circ \text{C} - +45^\circ \text{C}$	<p>FL 70 PREMIUM LINER SP WITHOUT RECEIVER FR 55</p> <p>ARTIKEL-NR. 582010</p>	



* depending on room illumination

Selection PRO

FL 80 Tracking Liner SP with automatic target tracking

- » The new FL 80 Tracking Liner SP is the latest product in our Selection PRO range which redefines innovation and ease of use.
- » Due to its tracking function it is unique when compared to all other products in its category. The vertical laser line automatically aligns with the on-grade position of the receiver. This self-alignment of the instrument eliminates arduous manual alignment.



- 1 Intuitive keypad
- 2 Receiver FR 57-TR to extend working range up to 80 m and to use at tracking function
- 3 What's in the kit



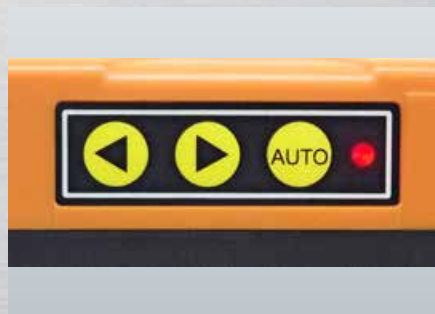
TECHNICAL DATA	FL 80 TRACKING LINER SP	FEATURES	SUPPLIED WITH
Self-levelling range	± 3°	<ul style="list-style-type: none"> · 4 vertical lines at 90° to each other · 1 horizontal line with a 130° arc · Laser cross to the ceiling · Plumb down beam · Self-levelling compensator with magnetic damping · Tracking function up to 30 m · 360° horizontal orientation in either motorized or manual mode · Use with FR 57-TR receiver (incl.) to extend the working range up to 80 m (w/o tracking) · Self-levelling function can be switched off for manual use · Slow motion screw for fine adjustment · Audible and visible alarm when instrument is out of level 	ART.-NO. 583000 <ul style="list-style-type: none"> · FR 57-TR receiver · Floor tripod · Magnetic target · Li-Ion battery pack with charger · Battery case for the optional use of Alkaline batteries · 5/8" tripod adapter · Container
Accuracy	± 2 mm / 10 m		
Working range	30 m		
· with receiver	80 m		
· with tracking function	30 m		
Centering accuracy Tracking	± 1 mm / 10 m		
Power supply	Li-Ion		
Operating time Laser	8 h Li-Ion		
Operating time Tribrach	15 h Alkaline		
Protection class	IP 54		
Laser diode	635 nm		
Laser class	2		
Temperature range	-10 °C – +45 °C		

* depending on room illumination

» **Perfect alignment – the easy way!**

» The automatic tracking function of the FL 80 Tracking Liner SP saves you time and money eliminating the need for manual alignment. The alignment is done automatically via the receiver.

- Activate the tribrach motor
- Locate on-grade position of the receiver at the target point
- Press the "Auto" button on the receiver then press an arrow button
- The nearest vertical laser line automatically tracks to coincide the on-grade position of the receiver





FL 66-XTREME SP

A laser resistant to extreme conditions: rain, dust, cold – no problem. Li-Ion battery, highly visible lines – this laser benefits from the latest technologies developed by geo-FENNEL.



FPL L Positioning Line Laser

» Positioning lasers are especially suited for use in manufacturing industry and in trade for marking and positioning.

TECHNICAL DATA	FPL L-5	FPL L-10	FPL L-20	FEATURES
	ART.-NO. 519005	ART.-NO. 519010	ART.-NO. 519020	
Visible laser line	red	red	red	<ul style="list-style-type: none"> · Projects a clearly visible laser line · Power supply 220 V with switch and plug · Multi-functional mount (rotatable and swivelling)
Laser wave length	635 nm	635 nm	635 nm	
Integrated laser diode	5 mW	10 mW	20 mW	
Laser output power	< 1 mW	< 1 mW	< 5 mW	
Laser class	2	2	3R	
Focusing	0–10 m focusable	0–10 m focusable	0–10 m focusable	
Fan angle	84°	84°	84°	
Temperature range	-10 °C – +40 °C	-10 °C – +40 °C	-10 °C – +40 °C	
Dust / water protection	IP 41	IP 41	IP 41	
Dimensions (without mount)	Ø 22,5 x 89 mm	Ø 22,5 x 89 mm	Ø 22,5 x 89 mm	



FPL C Positioning Cross Laser

TECHNICAL DATA	FPL C-5	FPL C-10	FPL C-20	FEATURES
	ART.-NO. 519105	ART.-NO. 519110	ART.-NO. 519120	
Visible laser cross	red	red	red	<ul style="list-style-type: none"> · Projects a clearly visible laser cross · Power supply 220 V with switch and plug · Multi-functional mount (rotatable and swivelling)
Laser wave length	635 nm	635 nm	635 nm	
Integrated laser diode	5 mW	10 mW	20 mW	
Laser output power	< 1 mW	< 5 mW	< 5 mW	
Laser class	2	2	3R	
Focusing	10 m	10 m	10 m	
Fan angle	120°	120°	120°	
Temperature range	-10 °C – +40 °C	-10 °C – +40 °C	-10 °C – +40 °C	
Dust / water protection	IP 43	IP 43	IP 43	
Dimensions (without mount)	Ø 41 x 55 mm	Ø 41 x 55 mm	Ø 41 x 55 mm	

Line and Cross Lasers Outline

			Laser class	Scheme of projected lines	Vertical lines	Horizontal laser range / angle	Laser points
510000	360° LINERPOINT HP		2		–	360°	4
531000	DUOCROSSPOINTER3 HP		2		1	110°	3
541100	FL 40-POCKET II HP		2		1	130°	–
530100	FL 40-3LINER HP		2		2	110°	–
520600	GEO3X HP		2		2	150°	–
533000	GEO5X-L360 HP		2		3	360°	–
500550	FL 55 PLUS HP		2		3	220°	–
581500	FL 69 HP		2		4	360°	8
541500	FL 40-POWERCROSS SP		2		1	135°	–
541550	FLG 40-POWERCROSS GREEN SP						
580500	FL 66-XTREME SP		2		4	130°	–
580550	FLG 66-XTREME GREEN SP						
531500	CROSSPOINTER5 SP		2		1	155°	5
582000	FL 70 PREMIUM-LINER SP		2		4	360°	–
583000	FL 80 TRACKING LINER SP		2		4	130°	–
585020	FL 1000 HP		2		4	360° (Rotation)	–

Plumb down beam	Accuracy / 10 m	Dust / water protection	Shock protected	Working range w/o receiver (radius)	Working range with receiver (radius)	Power supply	Receiver	PAGES
-	± 3 mm	IP 54	-	20 m	60 m	Alkaline	optional	16
yes	± 3 mm	IP 54	-	20 m	-	Alkaline	-	17
-	± 3 mm	IP 54	-	20 m	60 m	Alkaline	optional	18
-	± 3 mm	IP 53	-	20 m	60 m	Alkaline	optional	19
-	± 3 mm	IP 54	yes	20 m	60 m	Alkaline	optional	20
yes	± 2 mm	IP 54	-	20 m	60 m	Li-Ion	optional	22
yes	± 2 mm	IP 54	-	20 m	60 m	NiMH	inclusive	24
yes	± 2 mm	IP 54	-	20 m	60 m	Li-Ion	inclusive	27
-	± 3 mm	IP 54	yes	30 m 40 m	-	Alkaline	-	30 31
yes	± 2 mm	IP 65	yes	30 m 40 m	80 m -	Li-Ion	optional	32 33
yes	± 3 mm	IP 54	-	30 m	80 m	Alkaline	optional	34
yes	± 1 mm	IP 54	-	30 m	200 m	Li-Ion	inclusive	35
yes	± 2 mm	IP 54	-	30 m	80 m	Li-Ion	inclusive	36
yes	± 2 mm	IP 54	-	20 m	60 m	NiMH	inclusive	25

MORE PRECISELY:

EASY TO USE, ACCURATE, ROBUST AND RELIABLE.

Efficient, flexible and reliable – some of the characteristics that define all geo-FENNEL rotating lasers. Whether used for interior applications or on the most demanding outdoor construction sites, in the rain, wind, cold or hot conditions: Our robust, water and dust protected laser measuring instruments provide the precise measuring results, even under unfavourable weather conditions.



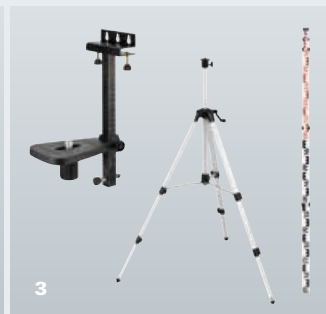


FL 30 SET

For horizontal and vertical use

- » A robust manual laser, quick set-up with two vials and easy to operate. For horizontal and vertical measurements. Scanning, laser point mode and permanent 90° beam to zenith. The ideal laser for indoor applications, suitable for simple outdoor jobs.
- » **FL 30 with all the necessary accessories to start working immediately!**
- » Consists of: Elevating tripod, wall mount, magnetic target, laser glasses for better visibility of the laser beam, 2.45 m levelling staff and a receiver that all fit neatly into the handy carrying case.

- 1 Vertical use
- 2 Receiver and clamp
- 3 Wall mount, tripod, levelling staff
- 4 What's in the kit



TECHNICAL DATA	FL 30	FEATURES	SUPPLIED WITH FL 30 SET
			ART.-NO. 271500
Accuracy	± 2 mm / 10 m	<ul style="list-style-type: none"> · For horizontal and vertical measurements · Manual levelling · Easy horizontal setting with 2 vials · Stepless rotating speed · Scanning function (2 step) and laser point mode · Multi-stage rotating beam · Permanent 90° beam to zenith 	<ul style="list-style-type: none"> · Container · Floor / tripod mount · Set of batteries · 2.45 m levelling staff · Elevating tripod with max. height of 1.58 m · Receiver with clamp · Magnetic target · Laser glasses · Height adjustable wall mount
Working range without receiver Ø	30 m*		
Working range with receiver Ø	120 m		
Rotating speed	150 – 300 rpm stepless		
Laser diodes / Laser class	635 nm / 2		
Scan angle	0°, 5°, 10°		
Temperature range	-10 °C – +45 °C		
Dust / water protection	IP 54		
Dimensions w/o mount	90 x 90 x 120 mm		
Weight	0.74 kg		
Power supply	4 x AA Alkaline		

* depending on room illumination



FL 210A

Instant self-levelling

» Horizontal and vertical laser for interior and exterior applications. This instrument is characterized by its versatility, instant self-levelling, stability and a robust technical construction. Instant self-levelling makes it ideal when applications necessitate frequent positional changes, i. e. floor construction.

Scanning functions, permanent 90° beam to zenith, automatic shut-off when misaligned and a comprehensive set of accessories make these models ideal for the all-rounder.

1 Vertical application



TECHNICAL DATA	FL 210A	FEATURES	SUPPLIED WITH
			ART.-NO. 291500
Self-levelling range	± 3.5°	· Instant self-levelling	· Receiver FR 45 with clamp
Accuracy horizontal	± 1 mm / 10 m	· Horizontal self-levelling with automatic shut-off and audible alarm when out of tolerance	· Remote control
Accuracy vertical	± 1.5 mm / 10 m	· Easy vertical set-up with one foot screw	· Rechargeable batteries and charger
Working range with receiver Ø	400 m	· Variable rotating speed	· Floor / wall mount
Rotating speed	150, 200, 250, 300 rpm	· Scanning and laser dot mode	· Magnetic target
Laser diodes / Laser class	635 nm / 2	· Permanent 90° beam to zenith	· Laser glasses
Scan angle	0°, 20°, 40°	· NiMH batteries	· Carrying case
Temperature range	-10 °C – +50 °C	· Can be used with alkaline batteries	
Dust / water protection	IP 66	· Dust / water protection IP 66	
Dimensions	180 x 162 x 202 mm		
Weight (instrument only)	2.8 kg		
Power supply	4 x C NiMH*		

* with 6.4 V intelligent charger, battery can be charged externally, alkaline batteries can be used alternatively



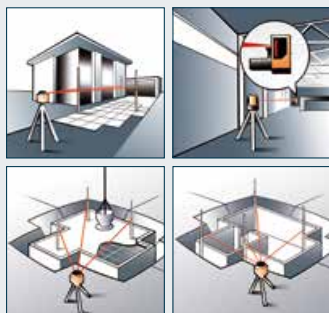
FL 100HA Junior

Quick and easy to use

- » · Self-levelling rotating laser for horizontal applications
- 3 buttons for user-friendly functionality
- Robust and efficient

1 With receiver FR 45

2 Supplied with kit



1



2



TECHNICAL DATA	FL 100HA JUNIOR	FEATURES	SUPPLIED WITH
Self-levelling range	± 5°	<ul style="list-style-type: none"> · Auto shut-off when out of self-levelling range · TILT alarm function · VWS function · Powerful rechargeable battery · Dust / water protection IP 65 	ART.-NO. 212000 <ul style="list-style-type: none"> · Receiver FR 45 with clamp for levelling staff · Rechargeable battery and charger · Battery compartment for alkaline batteries · Container
Accuracy	± 1 mm / 10 m		SUPPLIED WITH FL 100HA JUNIOR WITH FR 77-MM
Working range with receiver FR 45 Ø	600 m		ART.-NO. 212077 <ul style="list-style-type: none"> · Receiver FR 77-MM · Rechargeable battery and charger · Battery compartment for alkaline batteries · Container
Working range with receiver FR 77-MM Ø	300 m		
Rotating speed	600 rpm		
Power supply / Operating time	NiMH / 24 h		
	Alkaline / 36 h		
Temperature range	-20 °C – +50 °C		
Laser diode / Laser class	635 nm / 2		
Dust / water protection	IP 65		
Weight	2.4 kg		

FL 110HA

The standard for horizontal laser levels



- » The FL 110HA is a real professional in its business: Compact and robust with a rubberized housing and metal cover for effective site protection. Easy and intuitive operation.
- » High performance: Li-Ion technology for continuous operation, VWS function (Vibration-Wind-Security), automatic TILT function, zonal control, large working range, high accuracy – the FL 110HA does not lack anything.

1 With receiver FR 45

2 Supplied with kit



1



2



TECHNICAL DATA	FL 110HA	FEATURES	SUPPLIED WITH	
Self-levelling range	± 5°	<ul style="list-style-type: none"> · Zonal control with electronic beam screen avoids spurious measurements caused by crossing laser planes and reflections – increases site safety · Robust and dust / water protected housing to IP 66, rubberized protection and metal top · Large working range and high accuracy · Automatic shut-off when out of self-levelling range · Manual slope setting of X and Y axes up to ± 5° · 360° reception range of remote control · VWS function 	ART.-NO. 211000 <ul style="list-style-type: none"> · Receiver FR 45 with clamp · Li-Ion rechargeable battery with charger · Battery case for alkaline batteries · Remote control · Container 	
Accuracy	± 0.75 mm / 10 m		SUPPLIED WITH FL 110HA WITH FR 77-MM	
Working range with receiver FR 45 Ø	800 m			ART.-NO. 211077 <ul style="list-style-type: none"> · Receiver FR 77-MM · Li-Ion rechargeable battery with charger · Battery case for alkaline batteries · Remote control · Container
Working range with receiver FR 77-MM Ø	400 m			
Slope setting in X and Y axis	± 5° (9 %)			
Rotating speed	800 rpm			
Power supply / Operating time	Li-Ion / 40 h 6 x AA Alkaline / 40 h			
Temperature range	-10 °C – +45 °C			
Laser diode / Laser class	635 nm / 2			
Weight	2.1 kg			
Dust / water protection	IP 66			

FL 150H-G

Horizontal dual grade laser

» **FL 150H-G combines high performance and easy operation.**

- » High performance
- Advanced technology at usage of mechanical parts, temperature stability and grade technology
 - High accuracy of $\pm 0.5 \text{ mm} / 10 \text{ m}$
 - Grade setting of X and Y axis up to $\pm 10 \%$ (monitored)
 - TILT and VWS function
 - Li-Ion battery technology
 - 2-Way RF remote control

Easy operation

- Digital setting of grade values
- Monitored grade
- Reduced number of buttons at instrument



TECHNICAL DATA	FL 150H-G LASER CLASS 2	FL 150H-G LASER CLASS 3R	FEATURES
Self-levelling range	$\pm 6^\circ$	$\pm 6^\circ$	<ul style="list-style-type: none"> · Dual Grade Laser · Horizontal · Digital grade adjustment · Monitored grade · Automatic TILT function · VWS function combined with TILT function · Permanent 90° beam to zenith · Illuminated display · 2-Way RF remote control · Remote control screen · Li-Ion battery technology · International charger with adapter for car cigarette lighter socket
Accuracy	$\pm 0.5 \text{ mm} / 10 \text{ m}$	$\pm 0.5 \text{ mm} / 10 \text{ m}$	
Working range with receiver FR 45 Ø	800 m	1200 m	
receiver FR 77-MM (optional) Ø	400 m	600 m	
Laser class	2	3R	
Horizontal slope setting			
X-Axis	-10 % – +10 %	-10 % – +10 %	
Y-Axis	-10 % – +10 %	-10 % – +10 %	
X and Y-Axis	$\Sigma \pm 14 \%$	$\Sigma \pm 14 \%$	
Rotating speed	600 rpm	600 rpm	
Operating time	30 h	30 h	
Power supply	Li-Ion	Li-Ion	
	Alkaline batteries (optional)	Alkaline batteries (optional)	
RF Remote control range	80 m	80 m	
Temperature range	-20 °C – +50 °C	-20 °C – +50 °C	
Dust / water protection	IP 65	IP 65	
Weight (instrument only)	2.2 kg	2.2 kg	

SUPPLIED WITH FL 150H-G LASER CLASS 2	SUPPLIED WITH FL 150H-G LASER CLASS 2	SUPPLIED WITH FL 150H-G LASER CLASS 3R	SUPPLIED WITH FL 150H-G LASER CLASS 3R
ART.-NO. 213020	ART.-NO. 213097	ART.-NO. 213000	ART.-NO. 213077
<ul style="list-style-type: none"> · Receiver FR 45 with clamp for levelling staff · 2-Way RF remote control · Li-Ion battery · International charger · Battery compartment for alkaline batteries · Carrying case 	<ul style="list-style-type: none"> · Receiver FR 77-MM with clamp for levelling staff · 2-Way RF remote control · Li-Ion battery · International charger · Battery compartment for alkaline batteries · Carrying case 	<ul style="list-style-type: none"> · Receiver FR 45 with clamp for levelling staff · 2-Way RF remote control · Li-Ion battery · International charger · Battery compartment for alkaline batteries · Carrying case 	<ul style="list-style-type: none"> · Receiver FR 77-MM with clamp for levelling staff · 2-Way RF remote control · Li-Ion battery · International charger · Battery compartment for alkaline batteries · Carrying case

1 Supplied with kit

2 Remote control range up to 80 m





FL 240HV

The all-rounder

» Versatile and easy to use. Fully automatic self-levelling in horizontal and vertical. A feature packed laser designed for the interior professional with a dust and water protection making it also suitable for outdoor use. Variable scanning and laser point mode for optimum beam visibility.



TECHNICAL DATA	FL 240HV	FL 240HV	FLG 240HV-GREEN
	ART.-NO. 244020	ART.-NO. 244000	ART.-NO. 244500
Self-levelling range	± 5°	± 5°	± 5°
Accuracy horizontal	± 1 mm / 10 m	± 1 mm / 10 m	± 1 mm / 10 m
Accuracy vertical	± 1.5 mm / 10 m	± 1.5 mm / 10 m	± 1.5 mm / 10 m
Working range with receiver Ø	500 m	700 m	1000 m
Scanning w/o receiver	40 m*	60 m*	40 m*
Rotating w/o receiver Ø	40 m*	60 m*	60 m*
Scanning modes	2 stage	2 stage	2 stage
Slope setting in X and Y axis	± 5° (± 9 %)	± 5° (± 9 %)	± 5° (± 9 %)
Rotating speed rpm	200, 500	200, 500	200, 500
Operating time / Power supply	24 h (NiMH) 40 h (Alkaline)	24 h (NiMH) 40 h (Alkaline)	24 h (NiMH) 40 h (Alkaline)
Temperature range	-10 °C – +50 °C	-10 °C – +50 °C	-20 °C – +50 °C
Laser diode / Laser class	2	3R	2
Dust / water protection	IP 54	IP 54	IP 54
Weight (instrument only)	1.95 kg	1.95 kg	1.95 kg

FEATURES

- Visible laser beam
- 2 rotating speeds
- Variable scanning mode
- Laser dot mode
- Manual slope setting up to ± 5° (± 9 %) in X and Y axis
- Permanent 90° plumb beam
- Automatic TILT function
- Remote control screen (on / off)
- Closed top cover housing offers excellent protection against dust and water

* depending on room illumination

FLG 240HV-Green

The all-rounder in green

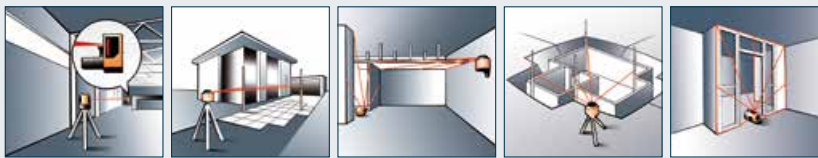


» **The new generation: Now with laser class 2 and enhanced visibility of the laser line. Additionally the temperature range was increased to -20 °C to +50 °C.**

» Horizontal and vertical laser for interior applications. Similar functions to the FL 240HV but incorporating a green laser diode for improved visibility under difficult measuring conditions such as bright surroundings and long distances.



1 Supplied with kit



SUPPLIED WITH FL 240HV

- Receiver FR 45 with clamp
- Remote control
- Rechargeable battery (NiMH)
- Intelligent charger
- Battery case for alkaline batteries
- Adjustable wall and ceiling mount
- Laser glasses
- Magnetic target
- Container

SUPPLIED WITH FLG 240HV GREEN

- Receiver FRG 45 with clamp
- Remote control
- Rechargeable battery (NiMH)
- Intelligent charger
- Battery case for alkaline batteries
- Adjustable wall and ceiling mount
- Laser glasses
- Magnetic target
- Container

FLG 240HV GREEN WITHOUT RECEIVER FRG 45-GREEN

ART.-NO. 244550





FL 260VA

Best in class

- » Fully automatic horizontal and vertical self-levelling. Compact ergonomic design and intuitive operation. The ultimate multi-functional laser for interior and exterior applications.
- »
 - High accuracy of $\pm 0.5 \text{ mm} / 10 \text{ m}$
 - Dust / water protection to IP 66 as well as especially protected housing
 - Li-Ion battery technology
 - Enhanced scanning functions with small increments and a large range of 180°
 - Permanent 90° plumb beam up / down for right angles
 - Automatic TILT function
 - VWS function (Vibration-Wind-Security) – rotation will not be stopped due to light ground and wind vibrations
 - Slope functions:
 - Manual slope setting in X and Y axis or
 - One axis manual slope, second axis self-levelled
 - On / Off remote control function: to avoid interference with other remote controls, mobile phones or other electronic devices on site
 - Integrated floor mount with centring mark

FEATURES

- Visible laser beam
- Adjusted slope setting (manual) up to $\pm 5^\circ$ ($\pm 9 \%$) in X and Y axis
- Single slope setting up to $\pm 5^\circ$ ($\pm 9 \%$)
- 2 rotating speeds
- Variable scanning and laser point mode
- Permanent 90° beam to zenith
- VWS function combined with TILT function
- Automatic TILT function
- Remote control screen
- Use with rechargeable batteries; alkaline batteries alternatively
- Li-Ion battery technology / intelligent charger
- Dust / water protection IP 66

SUPPLIED WITH FL 260VA

- Receiver FR 45 or FR 77-MM with clamp
- Remote control
- Rechargeable batteries and charger
- Floor mount
- Magnetic target
- Laser glasses
- Carrying case

SUPPLIED WITH FLG 260VA-GREEN

- Receiver FRG 45-Green or FR 77-MM with clamp
- Remote control
- Rechargeable batteries and charger
- Floor mount
- Magnetic target
- Laser glasses
- Carrying case



FLG 260VA-Green

The best in green



» **The new generation: Now with laser class 2 and enhanced visibility of the laser line. Additionally the temperature range was increased to -20 °C to +50 °C.**

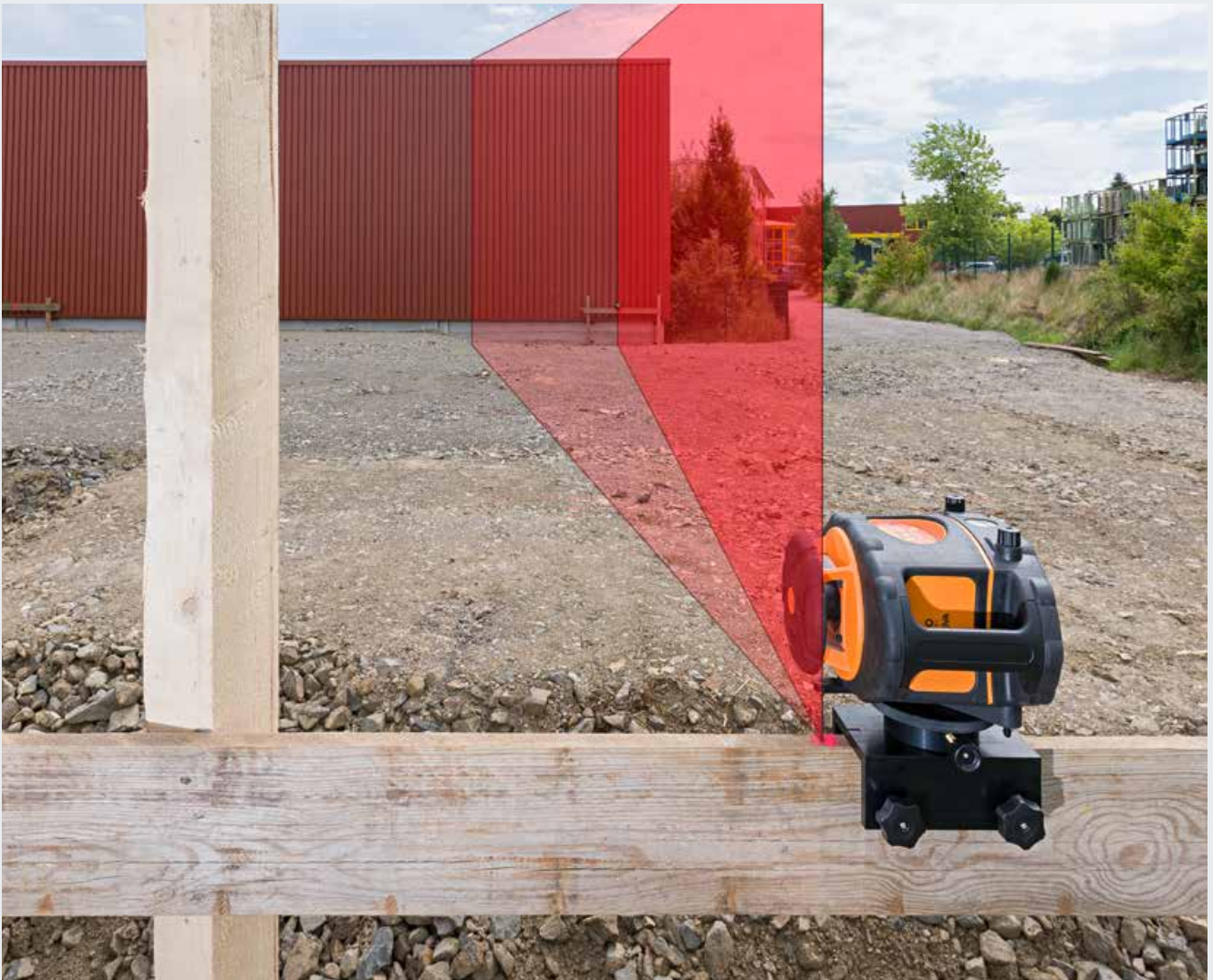
» Same features like FL 260VA combined with superior visibility of the green laser beam; for interior application.



TECHNICAL DATA	FL 260VA LASER CLASS 2	FL 260VA LASER CLASS 3R	FLG 260VA-GREEN
WITHOUT RECEIVER			ART.-NO. 242550
WITH RECEIVER FR 45	ART.-NO. 242020	ART.-NO. 242000	ART.-NO. 242500 (FRG 45-GREEN)
WITH RECEIVER FR 77-MM	ART.-NO. 242097	ART.-NO. 242077	ART.-NO. 242577
Self-levelling range	± 5°	± 5°	± 5°
Accuracy horizontal	± 0.5 mm / 10 m	± 0.5 mm / 10 m	± 0.5 mm / 10 m
Accuracy vertical	± 1.0 mm / 10 m	± 1.0 mm / 10 m	± 1.0 mm / 10 m
Working range with receiver FR 45 Ø	800 m	1000 m	–
receiver FR 77-MM Ø	400 m	600 m	1000 m
receiver FRG 45-Green Ø	–	–	1200 m
Scanning w/o receiver	40 m*	60 m*	40 m*
Rotating w/o receiver Ø	40 m*	60 m*	60 m*
Rotating speed	800, 300 rpm	800, 300 rpm	800, 300 rpm
Laser diode / Laser class	2	3R	2
Scan angle	0°, 10°, 45°, 90°, 180°	0°, 10°, 45°, 90°, 180°	0°, 10°, 45°, 90°, 180°
Manual slope setting X and Y axis	± 5° (± 9 %)	± 5° (± 9 %)	± 5° (± 9 %)
Single slope	One axis manual slope, second axis self-levelled		
Power supply	3.6 V Li-Ion battery	3.6 V Li-Ion battery	3.6 V Li-Ion battery
Operating time Li-Ion battery	50 h	50 h	25 h
Temperature range	-10 °C – +50 °C	-10 °C – +50 °C	-20 °C – +50 °C
Dust / water protection	IP 66	IP 66	IP 66
Weight	2.6 kg	2.6 kg	2.6 kg

* depending on room illumination

- » **NEW** – Tracking function for automatic axis alignment. Including receiver FR 77-MM Tracking with mm-indication.
- » **Tracking functions:**
 - The laser plane is automatically centred to the receiver “on-grade”
 - Vertical: in both X and Y axis
 - Horizontal: one axis X or Y, other axis horizontal self-levelled
- » · Fully automatic horizontal and vertical self-levelling. Compact ergonomic design and intuitive operation
 - High accuracy of ± 0.5 mm / 10 m
 - Enhanced scanning functions with small increments and a large range of 180°
 - Permanent 90° plumb beam up / down for right angles
 - Automatic TILT function
 - VWS function (Vibration-Wind-Security) – rotation will not be stopped due to light ground and wind vibrations
 - Slope functions:
 - Manual slope setting in X and Y axis or
 - One axis manual slope, second axis self-levelled
 - Li-Ion battery technology
 - On / Off remote control function: to avoid interference with other electronic devices
 - Integrated floor mount with centring mark



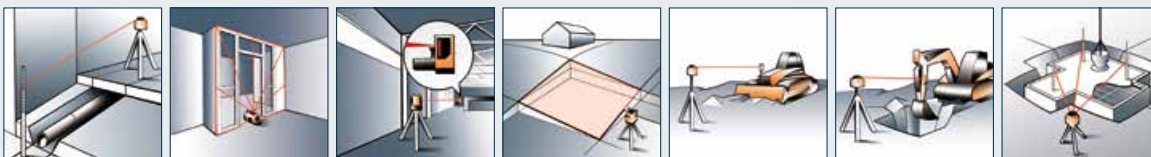
FL 500HV-G

The versatile grade laser for interiors and exteriors



» **Advanced second generation with many improvements.**

- » · New and improved mechanical parts ensuring temperature stability and enhancing sloping ability.
- Fully automatic self-levelling in horizontal, vertical and grade
- Slope functions:
 - Horizontal:
 - Digital grade setting of X and Y axis up to $\pm 10\%$
 - Manual slope setting of X and Y axis
 - Vertical:
 - Direction of X axis can be set up to $\pm 10\%$ with Y axis self-levelled
 - Direction of X and Z axis can be set manually
- Automatic TILT function
- VWS function (Vibration-Wind-Security)
 - Rotation will not be stopped due to light ground and wind vibrations (combined with TILT function)
- Fully functional 9-channel 2-way RF remote control
- Li-Ion battery technology
- 4-step scanning function



FEATURES

- Dual Axis Laser
- Horizontal and vertical
- Digital grade adjustment
- Monitored grade
- TILT function
- VWS function
- 90° beam to zenith
- Illuminated display
- 2-way RF remote control
- Manual function
- 4-step scanning function
- Operation with rechargeable Li-Ion or alkaline batteries
- Dust / water protection IP 66

SUPPLIED WITH FL 500HV-G

- Receiver FR 45 or FR 77-MM with clamp
- 2-way RF remote control
- Li-Ion batteries and charger
- Vertical mount
- Telescopic viewfinder
- 360° horizontal fine adjustment bracket
- Container





1 With receiver



2 With 360° horizontal fine adjustment bracket

3 With 9-channel 2-way RF remote control

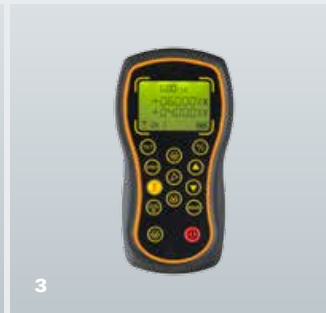
4 Complete kit supplied in container



1



2



3



4

TECHNICAL DATA	FL 500HV-G	FL 500HV-G
RECEIVER FR 45	ART.-NO. 231020	ART.-NO. 231000
RECEIVER FR 77-MM	ART.-NO. 231097	ART.-NO. 231077
Self-levelling range	± 8°	± 8°
Accuracy horizontal	± 0.5 mm / 10 m	± 0.5 mm / 10 m
Accuracy vertical	± 1 mm / 10 m	± 1 mm / 10 m
Working range with		
receiver Ø FR 45	900 m	1200 m
receiver Ø FR 77-MM	400 m	800 m
Scanning w/o receiver	40 m*	60 m*
Rotating w/o receiver Ø	40 m*	60 m*
Laser diode / Laser class	2	3R
Scanning ranges	0°, 10°, 45°, 90°, 180°	0°, 10°, 45°, 90°, 180°
Horizontal slope setting		
X axis	± 10.000 %	± 10.000 %
Y axis	± 10.000 %	± 10.000 %
X and Y axis	Σ ± 14 %	Σ ± 14 %
Vertical slope setting		
X axis	± 10.000 %	± 10.000 %
Y(Z) axis	horizontal self-levelled	horizontal self-levelled
Rotating speed	300 / 600 / 1100 rpm	300 / 600 / 1100 rpm
Operating time	40 h	40 h
Power supply	intelligent / Li-Ion Alkaline batteries (optional)	intelligent / Li-Ion Alkaline batteries (optional)
Remote control range	150 m	150 m
Remote control channels	9	9
Temperature range	-10 °C – +50 °C	-10 °C – +50 °C
Dust / water protection	IP 66	IP 66
Weight (instrument only)	3.85 kg	3.85 kg



FL 510HV-G Tracking

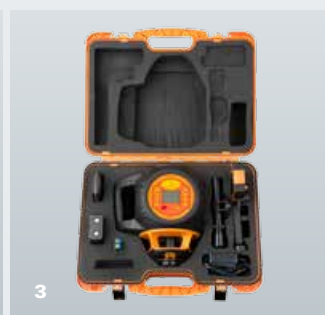
The ideal outdoor laser

» Advanced second generation with many improvements.

- New and improved mechanical parts ensuring temperature stability and enhancing sloping ability.



- 1 Receiver FR 77-MM Tracking included
- 2 Remote control range up to 100 m
- 3 Complete kit supplied in container



TECHNICAL DATA	FL 510HV-G TRACKING	FEATURES	SUPPLIED WITH
			ART.-NO. 231700
Self-levelling range	± 8°	<ul style="list-style-type: none"> · Dual Axis Laser · Horizontal and vertical · Digital grade adjustment · Monitored grade (also in tracking mode) · TILT function · VWS function · Tracking function horizontal and vertical · Zonal control · 90° beam to zenith · Illuminated display · 2-way RF remote control · Manual function · Operation with rechargeable Li-Ion or alkaline batteries · Dust / water protection IP 66 	<ul style="list-style-type: none"> · Receiver FR 77-MM Tracking with clamps for levelling staff and scaffold · 2-way RF remote control · Li-Ion batteries and charger · Vertical mount · Telescopic viewfinder · 360° horizontal fine adjustment bracket · Container
Accuracy horizontal	± 0.5 mm / 10 m		
Accuracy vertical	± 1 mm / 10 m		
Working range with receiver FR 77-MM Tracking Ø	400 m*		
Laser diode / Laser class	2		
Horizontal slope setting			
X axis	± 10.000 %		
Y axis	± 10.000 %		
X and Y axis	Σ ± 14 %		
Vertical slope setting			
X axis	± 10.000 %		
Y(Z) axis	horizontal self-levelled		
Working range tracking function	90 m*		
Rotating speed	300, 600, 1100 rpm		
Operating time	40 h		
Power supply	intelligent / Li-Ion Alkaline batteries (optional)		
Remote control range	100 m		RECEIVER FR 77-MM TRACKING ART.-NO. 257150 Technical data for FR 77-MM Tracking same as FR 77-MM (see page 73). Additional RF module to operate the tracking function.
Remote control channels	8		
Temperature range	-10 °C – +50 °C		
Dust / water protection	IP 66		
Weight (instrument only)	3.85 kg		

* depending on environmental conditions

» · Including receiver FR 77-MM Tracking with mm-indication

» · **Tracking functions:**

- The laser plane is automatically centred to the receiver “on-grade”
- Vertical: in both X and Y axis
- Horizontal: one axis X or Y, other axis horizontal self-levelled
- Indication of grade value in % after completion of tracking process shown on the instrument and remote control display. Zonal control with electronic beam screen avoids spurious measurements caused by crossing laser planes and reflections – increases site safety

· Fully automatic self-levelling in horizontal, vertical and grade

· **Slope functions:**

· **Horizontal:**

- Digital grade setting of X and Y axis up to $\pm 10\%$
- Manual slope setting of X and Y axis

· **Vertical:**

- Direction of X axis can be set up to $\pm 10\%$ with Y axis self-levelled
- Direction of X and Z axis can be set manually

· Automatic TILT function

· VWS function (Vibration-Wind-Security)

Rotation will not be stopped due to light ground and wind vibrations (combined with TILT function)

· Zonal control with electronic beam screen (masking)

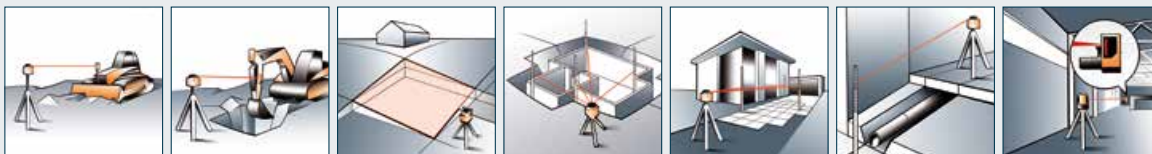
· Fully functional 8-channel 2-way RF remote control

· Li-Ion battery technology



FL 550H-G

For steep grades



» **This dual grade laser can be used for grades up to 25 %.**

» A rugged high performance fully automatic self-levelling dual grade laser. Designed for excavation, ground works and use with machine control systems for ultimate grade control.

- » · Horizontally fully automatic self-levelling
- Digital grade setting of X and Y axis
- Steep grade setting in Y axis up to 25 % (using steep grade adapter)
- Manual grade setting of X and Y axis
- VWS function (Vibration-Wind-Security); rotation will not be stopped due to light ground and wind vibrations (VWS function is combined with TILT function)
- Fully functional 9-channel 2-way RF remote control
- Li-Ion battery technology
- Zonal control with electronic beam screen (masking)

1 Fully functional 9-channel 2-way RF remote control

3 Remote control range up to 100 m

2 360° horizontal fine adjustment bracket for optimum alignment on long distances

4 Complete kit supplied in container



TECHNICAL DATA	FL 550H-G	FEATURES	SUPPLIED WITH
			ART.-NO. 232020
Self-levelling range	± 8°	<ul style="list-style-type: none"> · Dual Axis Laser · Steep grade laser · Digital grade adjustment · Monitored grade · TILT function · VWS function · Illuminated display · 2-way RF remote control · Manual function · Operation with rechargeable Li-Ion or alkaline batteries · Dust / water protection IP 66 	<ul style="list-style-type: none"> · Receiver FR 45 with clamp · 2-way RF remote control · Li-Ion batteries and charger · Telescopic viewfinder · Steep grade adapter · 360° horizontal fine adjustment bracket · Container
Accuracy horizontal	± 0,5 mm / 10 m		
Accuracy grade	± 1 mm / 10 m		
Working range with receiver Ø	900 m		
Working range w/o receiver Ø	40		
Laser diode / Laser class	635 nm / 2		
Slope setting			
X axis	± 10.000 %		
Y axis	-1.000 % – +25.000 %		
X and Y axis	Σ ± 20 %		
Rotating speed	600, 1100 rpm		
Operating time	40 h		
Power supply	intelligent / Li-Ion Alkaline batteries (optional)		
Remote control range	150 m		
Remote control channels	9		
Temperature range	-10 °C – +50 °C		
Dust / water protection	IP 66		
Weight (instrument only)	3.85 kg		

Rotating Lasers Outline

			Laser class	Horizontal levelling	Vertical levelling	Accuracy / 10 m	Dust / water protection	Working range w/o receiver Ø	
271500	FL 30-SET		2	manual	manual	± 2 mm	IP 54	30 m	120 m
212000	FL 100HA JUNIOR		2	fully automatic	–	± 1 mm	IP 65	40 m	600 m
211000	FL 110HA		2	fully automatic	–	± 0.75 mm	IP 66	40 m	800 m
291500	FL 210A		2	fully automatic	manual	H ± 1 mm	IP 66	40 m	400 m
213020	FL 150H-G		2	fully automatic	–	± 0,5mm	IP 65	40 m	800 m
213000	FL 150H-G		3R					60 m	1200 m
244020	FL 240HV		2	fully automatic	fully automatic	± 1 mm	IP 54	40 m	500 m
244000	FL 240HV		3R					60 m	700 m
244500	FLG 240HV-GREEN		2	fully automatic	fully automatic	± 1 mm	IP 54	60 m	1000 m
242020	FL 260VA		2	fully automatic	fully automatic	H ± 0.5 mm	IP 66	40 m	800 m
242000	FL 260VA		3R					60 m	1000 m
242700	FL 270VA-TRACKING		2	fully automatic	fully automatic	H ± 0.5 mm	IP 66	40 m	–
242500	FLG 260VA-GREEN		2	fully automatic	fully automatic	H ± 0.5 mm	IP 66	60 m	1200 m
231020	FL 500HV-G		2	fully automatic	fully automatic	H ± 0.5 mm	IP 66	40 m	900 m
231000	FL 500HV-G		3R					60 m	1200 m
231700	FL 510HV-G TRACKING		2	fully automatic	fully automatic	H ± 0.5 mm	IP 66	60 m	–
232020	FL 550H-G		2	fully automatic	–	± 0.5 mm	IP 66	40 m	900 m
582020	FL 1000 HP		2	fully automatic	–	± 1 mm	IP 54	40 m	400 m

Working range with receiver FR 45 Ø	Working range with receiver FR 77-MM Ø	rpm	Tracking function	TILT function	VWS function	Slope function of both axis X and Y	Slope setting	Plumb up / down beam	Power supply	Receiver, remote control, rechargeable battery, charger	PAGES
-	150 – 300	-	-	-	-	-	-	yes	Alkaline	optional/-/-	44
300 m	600	-	yes	yes	-	-	-	-	NiMH	inclusive	45
400 m	800	-	yes	yes	± 5° (9 %)	manual	-	-	Li-Ion	inclusive	46
-	150 – 300	-	-	-	-	-	-	yes	NiMH	inclusive	47
400 m 600 m	600	-	yes	yes	± 10 %	digital	-	-	Li-Ion	inclusive	48
- -	200 / 500	-	yes	-	± 5° (9 %)	manual	yes	yes	NiMH	inclusive	49
-	200 / 500	-	yes	-	± 5° (9 %)	manual	yes	yes	NiMH	inclusive	50
400 m 600 m	300 / 800	-	yes	yes	± 5° (9 %)	manual	yes	yes	Li-Ion	inclusive	52
400 m	300 / 800	yes	yes	yes	± 5° (9 %)	manual	yes	yes	Li-Ion	inclusive	50
1000 m	300 / 800	-	yes	yes	± 5° (9 %)	manual	yes	yes	Li-Ion	inclusive	51
400 m 800 m	300 / 600 / 1100	-	yes	yes	± 10 %	digital	yes	yes	Li-Ion	inclusive	54
400 m	300 / 600 / 1100	yes	yes	yes	± 10 %	digital	yes	yes	Li-Ion	inclusive	56
-	600 / 1100	-	yes	yes	X ± 10 % Y -1 % – +25 %	digital	-	-	Li-Ion	inclusive	58
-	200 / 500	-	yes	-	± 5° (9 %)	manual	yes	yes	NiMH	inclusive	25

FKL-55 and FKL-55 Green

Straight and advanced

» Our newest generation of pipe lasers with advanced technologies and improvements.

- » · Advanced technology of mechanical parts, temperature stability and grade technology
- Extremely good visibility of OLED-Display with large figures
- Long-range IR remote control with 100 m working range
- Laser spot direction setting: Quick shifting by continued pressing respective button at both laser or remote control

» Rugged, waterproof, powerful, easy operation and comprehensive range of standard accessories.

» To the human eye a green laser dot is much better visible than a red dot.
New generation of green laser technology with increased temperature range to -20 °C.



» FKL-55



» FKL-55 Green

FEATURES	SUPPLIED WITH
<ul style="list-style-type: none"> · Robust aluminium housing · Easy intuitive operation · Fully automatic self-levelling · Automatic beam centering · Laser start point indication · Clear easy-to-read OLED-Display · IR remote control with long working range · Integrated rechargeable batteries 	<ul style="list-style-type: none"> · Target frame with target DN 150–300 · Container · Pipe Laser · IR remote control · Leg set DN 500 · Leg set DN 400 · Leg set DN 300 · Leg set DN 250 · Leg set DN 200 · Adapter for 3-leg set up · Charger · Battery case for alkaline batteries · Target DN 400–500



Universal Mount for FKL-55 / FKL-55 Green



UNIVERSAL MOUNT

ART.-NO. 455100

- Levelling base with height adjustable mount for use
 - in manhole
 - in or in front of pipes with large diameter
- With 5/8" female thread for tripod connection

» SUPPLIED WITH

Fittings

- 1 Target frame with target DN 150–300
- 2 Container
- 3 Pipe Laser
- 4 IR remote control
- 5 Leg set DN 500
- 6 Leg set DN 400
- 7 Leg set DN 300
- 8 Leg set DN 250
- 9 Leg set DN 200
- 10 Adapter for 3-leg set up
- 11 Charger
- 12 Battery case for alkaline batteries
- 13 Target DN 400–500

Application in pipes DN 150 w/o legs



TECHNICAL DATA	FKL 55	FKL 55	FKL 55-GREEN
ART.-NO.	455500	455520	456500
Laser class	3R	2	3R
Laser diode	red	red	green
Beam diameter	10 mm	10 mm	10 mm
Working range	up to 200 m	up to 120 m	up to 300 m
Grade range	-20 % – +30 %	-20 % – +30 %	-20 % – +30 %
Self-levelling range	± 5°	± 5°	± 5°
Minimum display reading	0.000 %	0.000 %	0.000 %
Horizontal accuracy	± 5 mm / 100 m	± 5 mm / 100 m	± 5 mm / 100 m
Left / right scanning	± 4°	± 4°	± 4°
Operating time	24 h (NiMH)	24 h (NiMH)	24 h (NiMH)
Power supply	4 x D 8000 mAh NiMH (optional 4 x D Alkaline)	4 x D 8000 mAh NiMH (optional 4 x D Alkaline)	4 x D 8000 mAh NiMH (optional 4 x D Alkaline)
IR remote control range			
front / back	100 m / 50 m	100 m / 50 m	100 m / 50 m
Temperature range	-20 °C – +50 °C	-20 °C – +50 °C	-20 °C – +40 °C
Dust / water protection	IP 68	IP 68	IP 68
Dimensions	Ø 132 mm, length 380 mm	Ø 132 mm, length 380 mm	Ø 132 mm, length 380 mm
Weight (laser only)	6 kg	6 kg	6 kg

geo-FENNEL knowledge base – useful information about laser measuring technology

- » As specialists in the field of laser measuring equipment we would like our customers to benefit from our many years of experience, providing you with useful explanations relating to various topics in the field of laser technology. This will make using our instruments easier, safer and a more profitable experience.

IP Protection class according to DIN EN 60529

- » The degree of protection of an instrument's housing is defined by the indicator "IP" (Ingress Protection) followed by a two-digit code.

IP

5

4

- First digit: Protection against solid particles
- Second digit: Protection against water

Protected against dust that would interfere with the operation of the equipment

Protected against splashed water from any direction.

FIRST DIGIT – PROTECTION AGAINST SOLID PARTICLES	SECOND DIGIT – PROTECTION AGAINST WATER
0 No protection	0 No protection
1 Protected against solid particles with a diameter greater than 50 mm	1 Protected against dripping water
2 Protected against solid particles with diameter greater than 12 mm	2 Protected against dripping water, when the housing is tilted at an angle of up to 15°
3 Protected against solid particles with diameter greater than 2.5 mm	3 Protected against sprayed water up to an angle of 60°
4 Protected against solid particles with diameter greater than 1 mm	4 Protected against splashed water from any direction
5 Protected against dust that would interfere with the operation of the equipment	5 Protected against water projected from a nozzle
6 Dust tight	6 Protected against water projected from powerful jets from any direction
	7 Protected against temporary immersion
	8 Protected against permanent submersion in water

geo-FENNEL F6 Two-way Radio

- » The F6 is a PMR 446 channel (Private Mobile Radio) licence free Two-way Radio and works between the frequency band 446–446.1 MHz. The PMR (Private Mobile Radio) 446 service has been introduced following the adoption by the CEPT/ERC1 of the Decisions ERC/DEC/(98) 25, 26 and 27.
- » This type of radio can be used by anyone anywhere in the EU registration area totally fee free. They can have a maximum RF Output power of 500 mW and have an approx. maximum range of 5 km.

SET ASIDE THE BAND 446.0 - 446.1 MHZ FOR A PMR 446 SERVICE, WITH A CHANNEL PLAN BASED ON 12,5 KHZ SPACING:

Channel 1 = 446,00625 MHz
 Channel 2 = 446,01875 MHz
 Channel 3 = 446,03125 MHz
 Channel 4 = 446,04375 MHz

Channel 5 = 446,05625 MHz
 Channel 6 = 446,06875 MHz
 Channel 7 = 446,08125 MHz
 Channel 8 = 446,09375 MHz

geo-FENNEL – Product functions

» geo-FENNEL lasers have many features which help to carry out safe and comfortable work on construction sites. Some of these features are explained below.



» Automatic TILT Function

This is a measurement safety function. If the level of the instrument is disturbed it will re-level itself (within the self-levelling range of 5°). If the level is disturbed at a large range (for example if a tripod leg has moved) a height offset can be caused. This will be avoided by the TILT function. The instrument will shut off even within the self-levelling range. This function is activated automatically after the self-levelling procedure is completed.



» Vibration-Wind-Security (VWS)

This is also a measurement safety function. It allows continuous operation during periods of vibration and wind. If a significant movement occurs the laser stops rotating and the laser beam is flashing. The VWS-Mode is combined with the automatic TILT Function.



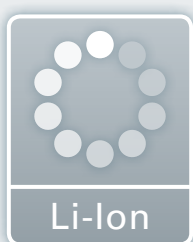
» Remote control function

The remote control function can be switched off to avoid interference from other instruments that are being used on the same construction site.



» Zonal control

Zonal control with electronic beam screen avoids spurious measurements caused by crossing laser planes and reflections. Furthermore it greatly increases site safety.



» Li-Ion battery technology

This technology has great advantages when compared against alkaline and NiMH rechargeable batteries:

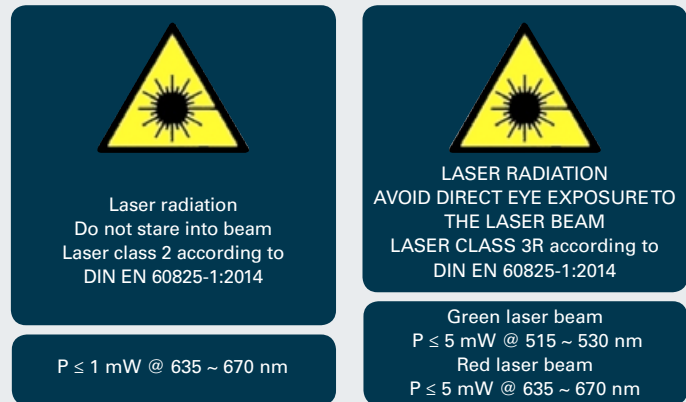
- 100 % power until fully discharged
- Top-up charging possible as no memory effect will occur
- Low self discharge then not in use

Laser classification according to DIN EN 60825-1:2014

- » geo-FENNEL laser products are classified into either laser class 2 or 3R.

Their laser class is specified in our technical data.

Please refer to the latest version.



» Instruments with laser class 2

The laser product can be used without further safety precautions (the relevant safety instructions are described in our user manuals). The eye is protected by the normal human aversion response and the blinking reflex of the human eye to a bright radiant source.

GEO-FENNEL CROSS LINE LASERS

The complete range is classified in laser class 2 and offered in 4 visibility classes:

Standard	e. g. FL 40-Pocket II	Working range visibility 10 m
HP (High Power)	e. g. FL 40-Pocket II HP	Working range visibility 20 m
SP (Selection PRO)	e. g. FL 40-PowerCross SP	Working range visibility 30 m
SP (Selection PRO) – Green	e. g. FLG 55-Green SP	Working range visibility 40 m

GEO-FENNEL ROTATING LASERS

Our complete range is available within the laser class 2 classification.

GEO-FENNEL PIPE LASERS

The FKL 55 (Art.-No. 455520) and FKL 80 Pipe Laser are classified in laser class 2.

» Instruments with laser class 3R

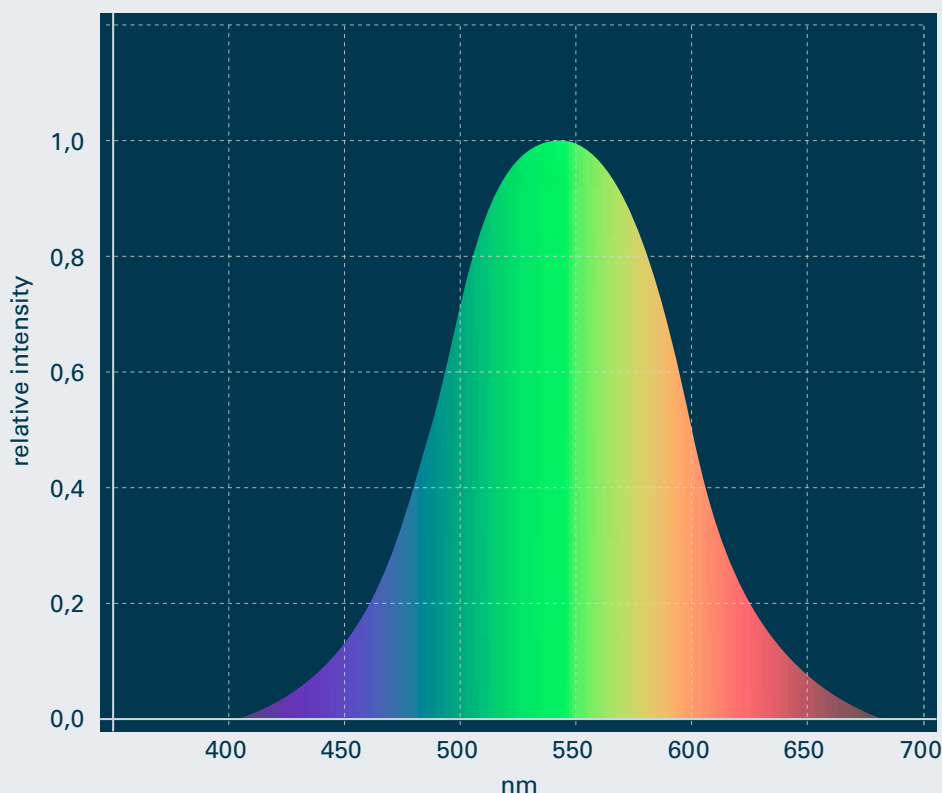
The legal requirement for using laser class 3R products varies from country to country. The user is responsible for compliance to the national standards and regulations. The use of laser class 3R products may require registration with a local authority and the appointment of a health and safety operative.

Special protection measures may be necessary as laser class 3R products have a higher laser output power. The positive effect of this is to increase the performance of the products for long range reception with receivers and improved visibility when using without a receiver.

geo-FENNEL offers various rotating and pipe lasers with laser class 3R.

Lasers with red or green laser diode

- » The human eye can see the different wavelengths (measuring unit 'nm') of the visible colour spectrum in different intensities. The optimum is at 555 nm. Green light is situated in the middle of this range and can be perceived much higher compared to red light.



- » Therefore green lasers have benefits when used without a receiver. The visibility is much better when working in a bright environment, over long distances or on dark surfaces.

Previously the disadvantages of green lasers were a limited temperature range, shorter battery life, the laser class classification, as well as the significantly higher price.

geo-FENNEL have now introduced an innovation in the field of rotating lasers:

The rotating lasers FLG 240HV-Green and FLG 260VA-Green are equipped with advanced laser diode technology offering the following advantages:

- Fully usable temperature range of -20 °C to +50 °C (the same as red laser diode)
- Classification in laser class 2 due to special control electronics
- Equal or slightly better visibility compared to the previous laser class 3R version.
Due to the laser class 2 classification the laser can be used without any regulatory complications on all construction sites.

OVERCOME DISTANCES:

WITHOUT LOSING THE DETAIL.

To quickly and easily implement the widest variety of measuring tasks, it is sometimes vital to have the appropriate solution available. Whether you are looking for laser intensive glasses, magnetic targets or the correct adapter – the versatile accessory range from geo-FENNEL makes your work noticeably more efficient.





Laser EasyFix 5 m Telescopic Rule



LASER EASYFIX 5 M

ART.-NO. 452

- Telescopic rule with incorporated measuring tape
- Each section can be clamped
- Universal adapter for laser receiver. Receiver can be fixed with on-level mark on top of the rule. The height of the receiver (on-level mark) can be easily read at measuring display
- Maximum length 500 cm
- Retracted length 121.5 cm
- Incorporated circular bubble
- Weight 2.7 kg
- Incl. case

Floor-to-Ceiling Pillar KS 3



FLOOR-TO-CEILING PILLAR KS 3

ART.-NO. 520100

- Floor-to-ceiling pillar (1-leg tripod) to be fixed between floor and ceiling
- Solid construction
- 5 sections with metal thread
- Maximal length 3.40 m
- 5/8" and 1/4" adapter
- Supplied with carrying bag
- The individual poles are equipped with 5/8" threads. This enables them to be screwed onto tripods, if no ceiling surface is available

WH 1 / WH 2 Wall and Ceiling Mount

» Reinforced version with large metal platform suitable for all geo-FENNEL lasers.



» WH 1



» WH 2



1 Example of use

WH 1	WH 2
ART.-NO. 290600	ART.-NO. 290610
<ul style="list-style-type: none"> · Robust mount for use on walls and ceilings · Ideal for use indoors e. g. setting out suspended ceilings · cm / inch graduation · Precise adjustment / alignment with large slow motion wheel · Incl. bag 	<p>Same as WH 1 but all metal.</p> <ul style="list-style-type: none"> · Especially solid · Platform size 150 x 95 mm for fixing larger instruments · Suitable for all geo-FENNEL-lasers

Grade Mount



GRADE MOUNT

ART.-NO. 290700

- For rotating and line lasers with manual function
- For setting slopes between 0° and 90° for laser levels in manual mode
- Robust construction
- Graduated slow motion screw
- Fits any tripod with 5/8" thread
- With bubble

Adapter for S-Digit mini +



ADAPTER FOR S-DIGIT MINI +

ART.-NO. 290750

- » Adapter for connecting S-Digit mini + (see page 116) to the Grade Mount. Allows higher accuracy to be achieved.



1 Example of use

360° Fine adjustment bracket Just set



- » Allows a smooth 360° rotation and fine adjustment for rotating and line lasers. Final position can be clamped. Aperture for instruments with plumb down beam.

UNIVERSAL MOUNT

ART.-NO. 290760

- 5/8" threads (bottom female, top male)

Adapter 5814



ADAPTER 5814

ART.-NO. 290550

- Adapter 5/8" to 1/4"
- Converts a standard 5/8" tripod into a 1/4" fitting

Wall track adapter WS 1



WALLTRACK ADAPTER WS 1

ART.-NO. 290560

- Adapter for clamp connection at wall track for dropped ceiling installation
- Metal surface to connect with magnetic mount of line lasers
- Line laser can be moved up and down for correct height positioning



Scaffold Clamp Holder



SCAFFOLD CLAMP HOLDER

ART.-NO. 320600

- For quick centring over the linchpin
- To connect with rotating laser levels, automatic levels, theodolites
- Span approx. 60 mm
- Weight 1.5 kg



Laser Intensive Glasses



LASER GLASSES RED

ART.-NO. 253000



LASER GLASSES GREEN

ART.-NO. 253001

- Laser intensive glasses for better visibility of laser beam

Magnetic Target LS 307



TARGET RED

TARGET GREEN

ART.-NO. 290501

- Magnetic target with cm / inch graduation

FCA Adapter

» **Adapters to carry out facade construction work with Rotating Lasers.**

» Adapters FCA-L for rotating lasers and FCA-E for receivers are fixed on the wall. Rotating laser plane and receiver on-grade mark are to be set up at same distance to the wall by means of integrated cm/mm-graduation at both adapters.

Like this structural facings can be mounted exactly parallel.

Dedicated for use with FL 270VA-Tracking and FL 510HV-G Tracking in combination with receiver FR 77-MM Tracking.



» FCA-L



» FCA-E

FCA-L FOR LASER	FCA-E FOR RECEIVER
ART.-NO. 290820	ART.-NO. 290830



FR 55 Receiver for Line Lasers

- » Height indication by LEDs and LCD.



FR 55

ART.-NO. 500510

- Height indication by 3 LEDs which are situated on the front side and top and with a large display on the front
- With clamp
- Shut-off tone
- Automatic shut-off
- Built-in vials

FR 55-M Receiver for Line Lasers

- » Height indication by LEDs.



FR 55-M

ART.-NO. 500520

- Height indication by 3 LEDs which are situated on the front, side and back
- With clamp
- Shut-off tone
- 2-step accuracy
- Automatic shut-off
- Supplied in case
- Built-in magnet on top

FR 45 and FRG 45-Green Receiver for Rotating Lasers

- » With dual display and clamp for levelling staff, shut-off tone, automatic shut-off, illumination, built-in magnetic strips and vial. Rubberized housing for effective site protection.



- » FR 45 for rotating lasers with read beam



- » FRG 45-Green for rotating lasers with green beam

TECHNICAL DATA	FR 45	FRG 45-GREEN
	ART.-NO. 252000	ART.-NO. 252300
Suitable for laser diode	red	green
Indication	2 x LCD	2 x LCD
3-step accuracy	± 10 mm, ± 4 mm, ± 2 mm	± 10 mm, ± 4 mm, ± 2 mm
Power supply	1 x 9 V	1 x 9 V
Signal tones	3	3
Tone can be switched off	yes	yes
Automatic shut-off	yes	yes
Illumination	yes	yes
Weight	0.2 kg	0.2 kg
Dust / water protection	IP 66	IP 66

FR 77-MM Laser Receiver



» **NEW: Universal use for rotating laser with red and green laser beam!**

» With digital level indication in millimeters.



- Extra long receiving window
- mm-Indication of difference between laserplane and "0" level
- "0" position can be defined (Offset)

- 1 Illuminated display
- 2 Detail Offset
- 3 Special mount for divers connection e. g. at the scaffold



TECHNICAL DATA	FR 77-MM	FEATURES	SUPPLIED WITH
3-step accuracy	2 / 5 / 9 mm	<ul style="list-style-type: none"> · For rotating lasers using a red or green laser beam · Extra-long receiving window · mm-Indication of difference between laserplane and "0" level · Segments of display indication increase / decrease proportionally · "0"-Position can be defined (Offset) · Display illumination · Robust clamp · Special mount for divers connection e. g. at the scaffold 	ART.-NO. 257100 <ul style="list-style-type: none"> · 4 x AA Alkaline · Clamp for levelling staff · Bracket for scaffold
Accuracy mm-indication	± 1 mm		
Working range class 2-Laser*	150 – 500 m		
Working range class 3R-Laser*	300 – 500 m		
Length receiving window	125 mm		
Length receiving area mm-indication	100 mm		
Offset range (OSET) from base line	± 20 mm		
Measuring units	mm, cm, in, fraction of in		
Signal tones	3		
Display indication	front, back		
LED indication	front, side, back		
Power supply / Operating time	Alkaline / 110 h		
Temperature range	-10 °C – +50 °C		
Display illumination	yes		
Magnets	top, side		
Vials	top, side		
Dust / water protection	IP 67		
Dimensions	170 x 77 x 32 mm		
Weight	0.5 kg		

* depending on the laser source



FR 66-MM Receiver for Rotating Lasers

» With digital level indication in millimeters.

TECHNICAL DATA	FR 66-MM	FEATURES
	ART.-NO. 258000	
Indication	2 x LCD – 3 x LED on front	<ul style="list-style-type: none"> · Difference between laser plane and "0" level is shown on the display in mm · Segments of display indication increase / decrease proportionally · Extremely robust and shock-proof · Large receiving window (12 cm) · 5-step accuracy from 0.5 to 10 mm · Two "0" positions can be set (automatic recognition through re-set of receiver clamp) · HOLD function – reading on display can be held · Dust / water protection IP 67
5-step accuracy	0.5 / 1 / 2 / 5 / 10 mm	
Measuring units	mm, cm, ft, inch	
Power supply	2 x AA Alkaline	
Operating time	60+ h	
Signal tones	3 (65, 95, 100 dBA)	
Tone can be switched off	yes	
Automatic shut-off	yes (30 min. 24 h)	
Weight	0.54 kg	

FMR 600 Receiver for Rotating Lasers



» Heavy duty laser receiver, ideal for mounting onto construction machines. Strong built-in magnets for connection to machines and a clamp for levelling staffs. Large receiving window (125 mm) and clear height indication (audible and visible). Ideal for use with smaller excavators.

TECHNICAL DATA	FMR 600	SUPPLIED WITH FMR 600
		ART.-NO. 265000
Accuracy fine	± 5 mm	<ul style="list-style-type: none"> · Batteries · Container · Clamp for levelling staff · Attachment to levelling staff by use of clamp or directly to the machine with built-in magnets · LCD, LEDs and 3 different tones indicate heights · Memory function of last received data · Water / dust resistant
Accuracy coarse	± 12,5 mm	
Working range	200 m	
Receiving window	125 mm long	
Reception angle	240°	
Power supply	4 x AA Alkaline	
Operating time	50 h	
Temperature range	-20 °C – +50 °C	
Dimensions	170 x 100 x 42 mm	
Dust / water protection	IP 66	
Weight	0.96 kg	

FMR 700-M/C

Machine Control Receiver Set

» A machine control receiver to improve the operating accuracy of your construction machinery. Used for permanent level control the FMR 700 receiver has a 360° reception range.



» Magnet



» Clamp



» FRP 707

TECHNICAL DATA	FMR 700-M/C AND 706-M/C	FEATURES	SUPPLIED WITH
Accuracy fine	± 2 mm – ± 10 mm	<ul style="list-style-type: none"> · Length of receiving window: 25 cm · Connect to the machine with screw clamps or with strong magnets (both supplied in the kit) · Detects beam from rotating laser levels of any brand · Remote display 	Machine control receiver, built-in rechargeable battery, charger, 12/24V-battery cable, remote display with connection cable, hard case Also supplied separately: <ul style="list-style-type: none"> · Machine control receiver FMR 706-M/C, built-in battery, charger, 12/24V-battery cable, hard case · Remote display with connection cable
Accuracy coarse	± 5 mm – ± 23 mm		
Rechargeable batteries	7.2 V NiMH		
	2500 mAh		
Operating time	40 h		
Charging time	15 h		
Dust / water protection	IP 66		
Temperature range	-20 °C – +50 °C		
Dimensions	376 x 180 x 49 mm		
Weight	3.1 kg		
ART.-NO. SET FMR 700-M/C (MAGNET AND CLAMP)	260500		
ART.-NO. FMR 706-M/C (MAGNET AND CLAMP)	260550		
ART.-NO. FRP 707	263000		

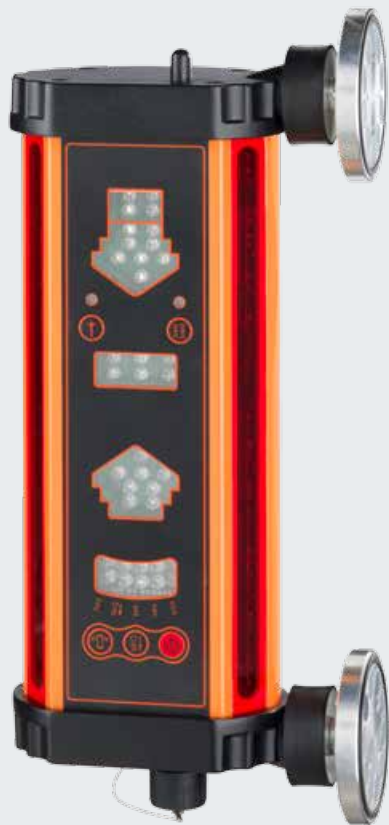
Magnetic Support for Machine Control Receiver



» For connection to construction machinery. Allows the receiver to be easily aligned to the laser plane. Strong magnets ensure non-slip grip onto the machine. Quick release lever allows the magnetic support to be detached easily. Suitable for all brands of machine receivers using a clamp fixing system.

MAGNETIC SUPPORT
FOR MACHINE CONTROL RECEIVER

ART.-NO. 290810



FMR 800-M/C SET Machine Control Receiver

» **Machine control receiver used with construction machinery to increase accuracy and boost productivity. For continuous tilt and height control.**

- Bulldozer: Blade tilt and height control
- Excavator: Bucket tilt and height control
- RF Communication link to the remote display



1 Clamp

TECHNICAL DATA	FMR 800-M/C	MACHINE CONNECTION	FEATURES
Beam Reception angle	360°	<ul style="list-style-type: none"> · Magnetic connection directly to the machine · Clamp connection to the machine mast · Mast diameter 40–50 mm 	<ul style="list-style-type: none"> · Length of receiving window 27 cm · Will detect the beam from any brand of rotating laser (red) · Dust / water protected metal housing · Wireless remote display with suction pad and integrated magnets
Detectable rotating laser speeds rpm	300 - 1200		
Working range class 2-Laser	250 m		
Working range class 3R-Laser	350 m		
Battery recharging time	4 -5h		
Automatic Power-off, after	60 min.		
Dust / water protection	IP 66		
Operating temperature	-10°C - +50°C		
Dimensions	370 x 132 x 92mm		
Weight (receiver only)	3,95 kg		

BULLDOZER MODE

Blade tilt

(Receiver movement left / right tilted)

Accuracy	fine / standard / coarse
	± 0.5° / ± 1.5° / ± 2.5°
Indication LED (left / right sideways)	5

Height indication

(Receiver movement up / down)

Accuracy	fine / standard / coarse
	± 2 / ± 5 / ± 15 mm
Indication LED (up / down)	3

EXCAVATOR MODE

Bucket tilt

(Receiver movement in longitudinal direction forward / backward tilted)

Accuracy	fine / standard / coarse
	± 0.5° / ± 1.5° / ± 2.5°
Indication LED, grouped	3
	3 signals: rapid/slow flashing, permanent light

Height indication

(Receiver movement up / down)

Accuracy	fine / standard / coarse
	± 2 / ± 5 / ± 15 mm
Indication LED, (up / down) grouped	4
	Extended upper LED for bucket dipping motion

FRD 807 Remote Display



TECHNICAL DATA	FRD 807	SUPPLIED WITH REMOTE DISPLAY FRD 807
Wireless (RF) communication range	10 m	ART.-NO. 264540 · Remote display FRD 807 · Suction pad · Batteries
Communication channels	3	
Machine connection:	· integrated magnetic pads · strong suction pad for cabin windscreen	
Power supply	4 x AA alkaline	
Dimensions	170 x 100 x 42 mm	
Weight	1.1 kg	

1 Suction pad attachment

**SUPPLIED WITH
FMR 800-M/C SET**

ART.-NO. 264550

- SET Machine receiver FMR 800-M/C with built-in rechargeable battery
- Charger
- Remote display FRD 807 with suction pad and batteries
- Hard carrying case

**SUPPLIED WITH
FMR 800-M/C**

ART.-NO. 264500

- Machine receiver FRM 800-M/C with built-in rechargeable battery
- Charger
- Hard carrying case

**OPTIONAL
MAGNETIC SUPPORT**

ART.-NO. 290810

- For connecting receiver to excavator bucket
- To be used with FMR 800 fitted with clamps

