



Technical specifications	ML10x	ML11x	ML13x or ML13ld	ML14i
Working range (diam)	300m	300m	300m or 500m (ld)	300m
Accuracy	1.5mm/30m	1.5mm/30m	1.5mm/30m	1.5mm/30m
Self leveling	Yes (±5°)	Yes (±5°)	Yes (±5°)	Yes (±5°)
Battery: 7.2 V Makita™ type - 1.4 Ah.				
Battery life, approx.**:	20 hours	20 hours	20 hours	20 hours
Recharge time, approx.:	1 hour	1 hour	1 hour	1 hour
Operation temperature	-20° to 55°	-20° to 55°	-20° to 55°	-20° to 55°
Environmental	Waterproof (IP68)*	Waterproof (IP68)*	Waterproof (IP68)*	Waterproof (IP68)*
Laser receiver w/clamp (adjustable)	HS10 (Standard)	HS10 (Standard)	HS10 (Standard)	HS14 (Standard)
Shock proof carrying case	Yes	Yes	Yes	Yes
Model specific functions				
Horizontal level laser	Yes	Yes	Yes	Yes
Alarm function if disturbed	Yes	Yes	Yes	Yes
Grade adjustment range, semi-automatic:		0 - 10% Single Grade	0 - 10% Dual Grade	0 - 10% Dual Grade
Rotation speed	fixed at 600	fixed at 600	fixed at 600	0/30/60/180/360/600
Split Beam (90)			Yes	Yes
Vertical operation			Yes	Yes
Plumb function			Yes	Yes
Scan function				Yes
Remote Control				Yes (HS14)
Visible laser beam			Yes (plumb only) – Yes (super bright)	Yes
Working range Visible (diam)				60m
Remotely operated Search-and-scan function				Yes
Remotely operated Search-and-align function				Yes
Wall bracket and goggles	optional	optional	optional	standard
Laser/Optics:				
Diode:	650 nm	650 nm	650 nm	635 nm
Maximum output:	2.5 mW	2.5 mW	2.5 mW or 4.9 mW (ld)	2.5 mW
Laser class:	Class 3A	Class 3A	Class 3A	Class 3A
Laser Detector specification	HS10		HS14	
Bright red LED for laser detection	Yes		Yes	
LCD display for laser detection	Yes (front and rear)		Yes (front and rear)	
Audio guidance	Yes		Yes	
LCD display for laser settings			Yes	
Remote operation			8 channel 2-way radio	
Range for remote operation			Up to 60m (typical)	
Environmental	Waterproof (IP68)*		Waterproof (IP68)*	
Battery Operation	9V standard Alkaline		9V standard Alkaline	
Battery life	min.100 hours**		min.100 hours**	
Power saving functions	Yes (adjustable)		Yes (adjustable)	

*waterproof to 3m head of water. Battery compartment IP65
**temperature dependent



Five Great Mikrofyn Lasers

- all with unique features to meet specific contractor needs...



- European quality, designed and manufactured
- Market leading 3-year warranty
- 100% Water and dustproof
- 1 Hour recharge time



AUTHORIZED MIKROFYN DISTRIBUTOR:
Exclusive to Carters



Mikrofyn A/S · Bondovej 16 · 5250 Odense SV · Denmark · www.mikrofyn.com

Since the start in 1987 Mikrofyn A/S has placed itself among the top-five worldwide manufacturers of professional precision lasers and machine control systems. The profits of the business are reinvested in new products and growing the business. Mikrofyn is built upon sound principals of developing and manufacturing state-of-the-art products, supported by experts and cooperating with outstanding professional local distributors.



- do you want to work on first class..?

The Mikrofyń ML10-14 laser series is the most rugged, easy to use, function packed multipurpose laser you can buy.

Just look at the ML14i multipurpose laser.

The ML14i is

- a full automatic self leveling laser
- a semi automatic dual grade laser
- remotely controlled from the HS14 combined handheld laser receiver
- features a 90° split beam
- plumb function
- advanced scanning functions for increased visibility
- vertical function projecting a vertical plane across the worksite
- remotely controlled alignment function.

The laser has

- a visible rotating laser beam
- user selected rotating speed etc.
- multiple scanning and search functions

For quick setup the laser is self leveling and it even warns you if it has been disturbed. The ML14i is completely waterproof and of course crash proof. All functions and settings chosen by the user are clearly displayed on the large LCD display.

- what more can you possibly ask for? We'll also give you a 3-year warranty.

Build like a crash helmet

The lasers are build to be strong and robust. The rotor head, gearbox and electronics are incased in a very robust housing made of the same composite material as used for crash helmets.

Selection of slope in both X and Y

As something very special for a laser in this price class, the ML14i can work with grades up to 10% in both the X and Y direction.

Select the scan mode

The ML14i works with a visible laser beam. The unique scan function, where the laser beam scans rapidly back and forth, increases visibility by as much as 20 times compared with normal rotation.

Select the rotation speed

With selectable rotation speed from 0 to 600 RPM the ML14i laser will meet all your needs – even if you choose to use the laser for machine control.



Easy to learn, setup and use.

Look at the front panel of the ML14i. Then you'll understand why it's so easy to setup and use.

Everything at a glance.

Who wants a keypad when they can have a crisp and clear LCD display with all current settings displayed?

Entered X and Y slope values, RPM selected, battery status and mode selections are clearly displayed and can be overlooked at just a glance. Now there are no more excuses for mistakes in setting of the laser.

Waterproof or just protected against rain?

Is a laser waterproof when it can withstand water and rain? (IPX6) – we don't think so – all Mikrofyń lasers are tested to withstand 3m head of water (IP68) – now that's waterproof. This also means that our lasers are completely dustproof.

The most accurate laser in its class

Mikrofyń is renowned for producing precision lasers. We have used this experience to design the mechanics to a high standard ensuring an unbeatable accuracy of 1.5mm/30m.

Power ON

Set up the laser roughly - push the ON/OFF button – wait a little while until the automatic self-leveling function has adjusted the vertical and horizontal axes - and you are ready to GO.

Setting the slope

It's easy to set the correct slope. The LCD display always shows the slope entered.

Automatic or manual mode

For some operations the laser has to be switched from automatic to manual mode. This and all other functions can be remotely controlled from the HS14 combined 2-way remote control and laser receiver.

Uniform power plant

All Mikrofyń lasers use the same type of rechargeable batteries. The batteries are inexpensive and a new one can be picked up at the local hardware store. It only takes one hour for a complete recharge that will allow you to work for another 20 hours. Batteries can be changed without tools.

- do you want a multipurpose laser that fits your needs..?

Yes - why not buy a laser that is perfectly suited for your job..?

We call the laser series "multipurpose lasers" because they are just that. You can always find a Mikrofyn laser that will cover your exact needs - whatever your job might be.

As no other manufacturer we have looked into our customers daily problems and needs for special applications to solve their job efficiently.

If your need is for a tough level laser that will work every day - that's self leveling and easy to use - and will work with machine control - we offer you the ML10x.

If you instead need a laser for installing and laying out walls and foundation corners - checking car parks sloping in both directions or transferring points up through multiple floors - we offer you the ML13x.

As we say - "have it your way".



Mikrofyn Multipurpose Laser ML10x:

- accurate level laser
- truly waterproof to 3m head of water
- self leveling for quick set-up
- laser and accessories supplied in carrying case including HS10 laser receiver
- see technical specifications on back page for full details
- **Ideal for general site earthworks and general site leveling such as foundations, floors, interior-leveling, landscaping and building.**



Mikrofyn Multipurpose Laser ML11x:

- accurate single slope laser
- truly waterproof to 3m head of water
- large LCD display showing current settings
- alarm function if disturbed
- self leveling for quick set-up
- power saving function
- supplied in carrying case including HS10 laser receiver
- see technical specifications on back page for full details
- **Ideal for general site leveling such as foundations, floors, landscaping and with single grade function for drains, pipelaying, carparks, foot paths and driveways.**



Mikrofyn HS10 handheld receiver

- unique LCD display for guidance on both front and rear side
- bright LED for laser detection
- audio guidance to right level
- truly waterproof to 3m head of water
- one finger is all you need for total control
- see technical specifications on back page for full details



Mikrofyn Multipurpose Laser ML13x:

- accurate dual slope laser
- working range (dia) 300m
- truly waterproof to 3m head of water
- features vertical operation without need of bracket
- plumb function for transferring points up through multiple floors
- split beam (90°) for setting out corners and aligning walls and foundations
- large LCD display showing current settings
- supplied in carrying case including HS10 laser receiver
- see technical specifications on back page for full details
- **Ideal for general site leveling such as foundations, floors, set outs, partitions, tilt slab construction, concrete pads, driveways, carparks, paths and squaring framing.**

- do you want an interior multipurpose laser that is as tough as they get..?

Take the toughest exterior laser you can buy - then add the functionality of the best interior lasers you can find - then you've got the Mikrofyn multipurpose laser ML14:

This laser features visible laser beams – and as if this wasn't enough – the scanning function will increase visibility by as much as 20 times, ensuring greater distance and better visibility in bright sunlight.

Remote control

This laser is supplied with the unique HS14 combined 2-way remote control and laser receiver.

The HS14 is in essence labor saving. It will enable you to remotely access all laser functions across the entire work site. Eight selectable radio channels will ensure undisturbed functionality on a crowded worksite.



Mikrofyn Multipurpose Laser ML14:

- laser beam visible at a range of 60m
- dual slope laser
- truly waterproof to 3m head of water
- selectable rotation speed
- full automatic "search-and-align" function
- full automatic "search-and-scan" function
- split beam, vertical operation, plumb function, scanning, etc.
- see technical specifications on back page for full details
- **Ideal for general site leveling such as foundations, floors, set outs, suspended ceilings, interior lighting setout, squaring, car parks and earthworks.**



Mikrofyn Multipurpose Laser ML13x/4:

- accurate dual slope laser
- working range (dia) 500m
- long range laser
- truly waterproof to 3m head of water
- features vertical operation without need of bracket
- plumb function for transferring points up through multiple floors
- split beam (90°) for setting out corners and aligning walls and foundations
- large LCD display showing current settings
- supplied in carrying case including HS10 laser receiver
- see technical specifications on back page for full details
- **Ideal for general site leveling such as foundations, floors, set outs, partitions, tilt slab construction, concrete pads, driveways, carparks, paths, squaring framing and specialist long range applications like drains and earthworks.**

- do you need a compact and protective case for all your equipment..?

All Mikrofyn multipurpose lasers are supplied in a sturdy carrying case.

The case will fit the laser and all necessary accessories - your laser receiver, the charger, extra battery, wall bracket and everything else will fit into the case.

Even though everything fits into one case we have managed to keep the case so compact that it can be stowed under or behind the seat of your car. In fact - the case for the ML10-13 lasers is less than 13cm thick.

When transporting your laser you don't have to worry about wear and tear as the laser is very well protected by the case.



- do you want a multi-purpose laser sturdy as a crash-helmet..?

100% watertight and shock-proof

You know the situation – your laser is accidentally knocked over and ends up in a puddle of water. If the water doesn't destroy your laser the shock will. That's why we have designed your Mikrofyn laser to withstand a 2m drop and survive on the bottom of the lake 3m below the water surface.

Mikrofyn laser receivers include the HS10 and the HS14. Both receivers have the unique LCD-display, bright LED for laser detection, audio guidance for right level and they are of course 100% waterproof. Also, with

just one finger you get total control with the HS14 2-in-1 remote control and hand-held receiver. This combines the laser receiver and the remote control in one small sensor unit for your convenience.



- do you also miss an extra hand for the remote control..?

Mikrofyn has solved the problem: The HS14 is a 2-in-1 combined remote control and hand-held receiver.

With Mikrofyn you don't have to use both hands to remotely control the beam adjustment on your laser.

We have combined the laser receiver and the remote control in one small sensor unit for your convenience. One finger is all you need to have total control.

2-way radio communication

Instead of infrared we use 2-way radio communication for the HS14 remote control. This gives you a number of advantages - for example the freedom to move around as you no longer have to be on the right side of the laser in order to target the IR eye.

A total of eight selectable radio channels ensure undisturbed functionality and convenient access to all laser functions across the work site typically as far as 60m away from the laser.

Added functionality

The 2-way radio enables the laser to "communicate" with the HS14 remote control. This ability is used during the "search-and-scan" function where the laser automatically detects the laser receiver and immediately starts scanning at the right location - you can now mark, drill or hammer at the exact height using the clearly visible laser beam.

- do you want a multi-purpose laser with a fast and easy setup..?



Self leveling laser function

Fast and Easy Setup

Fully automatic self-leveling allows the operator to setup with just the push of one button. No level bubbles or screws to adjust! During work, the automatic self-leveling keeps the beam horizontal, even if the laser is exposed to knocks and vibration.

Alarm function

If the laser is exposed to shock or vibrations whilst working in the slope mode you will be warned by the level alarm.

NEW SmartSlope™ Automatic Slope Check

Mikrofyn presents the new and improved software for our Mikrofyn multipurpose laser series. The SmartSlope™ feature improves the overall accuracy of the ML11, ML13 and ML14 lasers when working with slope.

It is widely known that aluminium tripods shift with temperature. The SmartSlope™ solves the problem in the most advanced

way by measuring the current temperature, memorising it and comparing it with the initial temperature. The laser re-levels and reenters the slope automatically if there is any change in temperature. If there is no change in temperature, the SmartSlope™ re-levels every ten minutes. This ensures you the best possible precision.

- do you want a laser that runs for 20 hours and recharges in just one..?



The battery is easy to change without tools
The battery is available from local tool shops or from your Mikrofyn distributor.

One battery, five lasers
Low cost off-the-shelf rechargeable standard battery fits all Mikrofyn multipurpose lasers.

Standard battery
No need for expensive special battery packs to power Mikrofyn multipurpose lasers.

One hour recharging provides 20 hours working time
Recharging takes less than one hour.

We will save you a fortune

When you add up the cost of buying standard batteries you will know why all Mikrofyn lasers are powered by a commonly used rechargeable battery (Makita™ type). The one-hour charger automatically shuts off when the battery is fully charged. This feature protects from over-charging batteries.

Use your Mikrofyn lasers for:



Machine control for dozers, graders, excavators etc.



Pipe works



Construction work



Laser mounted on a batter board



Drainage works and sloping surfaces

- do you want a multi-purpose laser waterproof to 3m head of water..?



Waterproof - or just protected against rain?

Mikrofyn lasers are designed and manufactured in Scandinavia. That's why our lasers are built to survive the sometimes harsh Scandinavian climate.

You might think that a laser is waterproof if it can withstand water and rain (IPX6) - we don't. A temperature drop caused by chilled rain will make these lasers suck moisture like a sponge.

That's why all Mikrofyn lasers are tested to survive submersion to 3m head of water (IP68) - now that's truly waterproof.

Use your Mikrofyn lasers for:



Vertical function



Wall-mount when installing ceiling grids



Plumb function



Scan function using "search-and-scan"



Dual slope and visible beam

- do you want a function packed multipurpose laser..?

Perpendicular reference function

Position the laser in the vertical position on the batter board, tripod or on the floor. The plumb beam and the rotating laser beam now forms a perfect 90° angle and it becomes very easy to construct foundation corners or to erect walls in a perfect perpendicular angle to the reference as well as checking the plumb.

Visible laser beam function

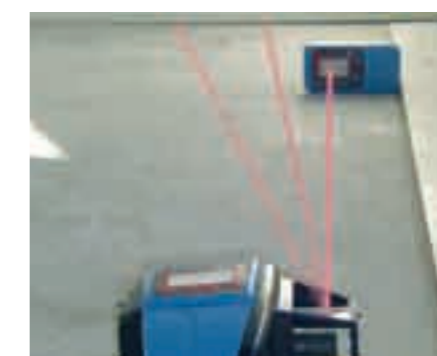
For many interior applications the visible laser beam will give you more opportunities and better flexibility - you can now use both hands when working with heavy tools or in awkward positions.

Unique "search-and-align" function

Position the laser over the reference point - walk up to the other end of the factory hall and place the HS14 combined receiver and remote control over the other reference point - press one button and the laser automatically aligns itself. A very practical function if you are alone and 6m up a scaffold. Works both in horizontal and vertical mode.



Scan function using "search-and-scan"



Dual slope and visible beam