Milwaukee® Nothing but HEAVY DUTY.®



L4 CLL, L4 CLLP

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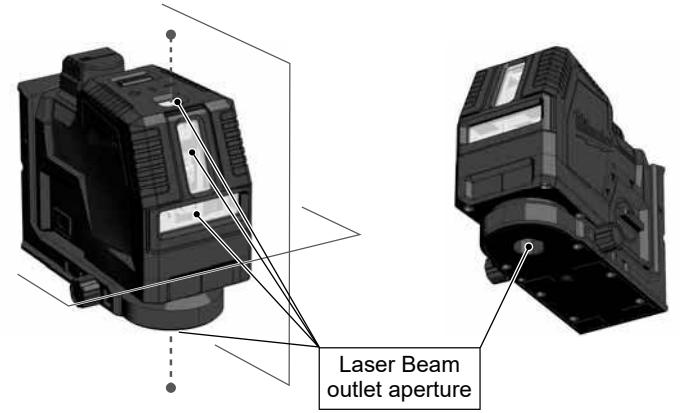
IMPORTANT SAFETY INSTRUCTIONS



CAUTION! WARNING! DANGER!

Do not use the product before you have studied the safety instructions and the user manual.

Laser Classification



WARNING:
It is a Class 2 laser product in accordance with EN60825-1:2014 .



WARNING:
Avoid direct eye exposure. The laser beam can cause severe eye damage and/or blindness.

Do not stare into the laser beam or direct it towards other people unnecessarily.

Caution! The laser emitting product may be behind you in some applications. Be careful when facing the product.

WARNING:
Do not operate the laser around children or allow children to operate the laser.

The reflective surface could reflect the beam back at the operator or other persons.

WARNING: Use of controls, adjustments, or the performance of procedures other than those specified in the manual may result in hazardous radiation exposure.

When the laser is brought into a warm environment from very cold conditions, or vice versa, allow it to come to the surrounding temperature before use.

Always store the cross laser indoors, avoid substantial knocks, continuous vibration or extreme temperatures.

Always keep the tool away from dust, liquids and high humidity. These may damage internal components or affect accuracy.

If laser radiation hits your eye, you must close your eyes and immediately turn your head away from the beam.

Do not position the laser beam so that it unintentionally blinds you or others.

Do not look into a laser beam using magnifying optical devices such as binoculars or a telescope, as this will increase the level of eye injury.

If you use laser goggles to enhance the visibility of the laser beam, please notice that they will not protect your eyes against laser radiation.

Do not remove or deface warning labels on the laser level.

Do not disassemble the laser level, laser radiation can cause serious eye injury.

When not in use, turn off the power, engage the pendulum lock and place the laser in its carrying pouch.

Make sure the pendulum lock mechanism is engaged before transporting the laser.

Note: If the pendulum lock mechanism is not engaged before transportation, internal mechanical damage may occur.

Do not use aggressive cleaning agents or solutions. Use only a clean, soft cloth for cleaning.

Avoid heavy impact to or dropping of the laser. The accuracy of the laser should be checked before use if it has been dropped or subjected to other mechanical stresses.

Any repair required on this laser product should be performed only by authorised service personnel.

Do not operate the product in explosion hazardous areas or in aggressive environments.

If the laser level is not in use for a long period of time, remove the batteries from the battery compartment. This will prevent batteries from leaking and corrosion damage.

Flat batteries must not be disposed of with household waste. Care for the environment and take them to the collection points provided in accordance with national or local regulations. The laser must not be disposed with household waste. Dispose of the product appropriately in accordance with the national regulations in force in your country. Adhere to the national and country specific regulations. Please contact your local authority or your dealer for how to dispose of batteries properly.

CE European Conformity Mark

UK CA British Conformity Mark

MAINTENANCE

Wipe the aperture lens and the body of the cross laser with a clean soft cloth. Do not use solvents.

Although the cross laser is dust and dirt resistant to a certain degree, do not store in dusty places as long term exposure may damage internal moving parts.

If the cross laser is exposed to water, dry the laser level before returning it to the carrying case to prevent corrosion damage.

TECHNICAL DATA

Laser Class	2
Self-Leveling Range	± 4°
Self-Leveling Time	≤ 3 s
Battery technology	Li-Ion
Voltage DC	4 V ⎓
USB input	5 V DC; 2.1 A max.
DC output	4 V ⎓ 2.1 A
AC/DC Adaptor Input	100-240 V ~ 50/60 Hz; 0.6 A max.
AC/DC Adaptor Ouput	5 V ⎓ 2.1 A; 10.5 W
Charging time	≤ 130 min
Power input	1,5 W @ 4.2 V
Protection class (water and dust protection)	IP54
Max. altitude	2000 m
Relativ air humidity max.	80%
Pollution degree according to IEC 61010-1	2*
Pulse duration t_p	≤ 70 µs
Functions	
L4 CLL	horizontal, vertical, cross line
L4 CLLP	horizontal, vertical, cross line, plumb function (2 points)
Frequency	10 kHz
Projections	2 lines green, 2 points green
Diode Quantity	2
Diode type	30 mW
Laser beams output pattern	
L4 CLL	Single horizontal, single vertical, cross line
L4 CLLP	Single horizontal, single vertical + 2 plump dots up and down , cross line + 2 plumb dots (up and down).
Operating time	8 hrs
Tripod mount	1/4" thread
Suitable detector	Milwaukee LLD50
Laser Line	
Width	< 9.53mm @ 30m
Wavelength	510 - 530 nm Laser Class II
Max. Power	≤ 7 mW
Accuracy	+/- 3 mm / 10 m
Fan angle	Vertical Line > 120°; Horizontal Line > 120°
Colour	green
Working Range	30 m (with detector 50 m)
Laser plumb (L4 CLLP only)	
Laser point wavelength	510 - 530 nm Laser Class II
Laser point max. power	< 1 mW
Plumb accuracy	+/- 3 mm / 10 m
Laser point colour	green
Working Range	30 m
Recommended ambient operating temperature	-10°C - +40 °C
Storage Temperature	-20°C - +60 °C
Recommended ambient charging temperature	5°C - +60 °C
Recommended battery types	L4B3
Recommended USB Power Supply	CUSB
Dimensions	135 mm x 61 mm x 97 mm
Weight (incl. Battery)	
L4 CLL	995 g
L4 CLLP	998 g

* Only non-conductive deposits occur, wherby occasional temporary conductivity caused by condensation is expected.

SPECIFIC CONDITIONS OF USE

The product is designed for mainly indoor use. For outdoor use make sure that the boundary conditions are the same as for indoor use.

The laser is innovatively designed for a very broad range of professional jobs, including:

- Aligning tiles, marble, cabinets, borders, moldings and trimmings
- Marking layout for doors, windows, rails, stairs, fences, gates, decks and pergolas installation.
- Transferring reference point for light installations, vents, transfer of heights, levelling perimeter walls, wall studs, setting out tracks on floors and all other professional use.
- It is intended for determining and checking horizontal and vertical lines.

Do not use this product in any other way as stated for normal use.

OVERVIEW

Plumb spot up (only L4 CLLP)

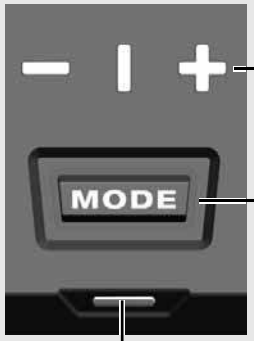
Vertical laser beam window

Horizontal laser beam window

Rotation dial

- OFF — Off / locked
- ON — On / manual mode
- ON — On / self leveling mode





Beam selector LED indicator

- horizontal
- vertical
- cross line

Mode button

Short press: choose between beams:
- horizontal
- vertical + plumb function
- cross lines + plumb function

Long press: low power mode

LED indicator
- Fuel gauge
- Charging status

Battery

Magnetic mount

USB port

LED indicator
- Fuel gauge
- Charging status

360° Adjustment





Plumb spot down (only L4 CLLP)

1/4" tripod mount

Riser (only L4 CLLP)



Track clip



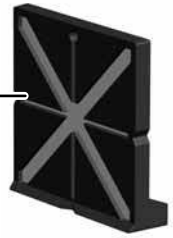
ACCESSORY

Accessory - Not included in standard equipment, available as an accessory.

Clamp LM360



Hi-Vis target HI-VIST



Detector LLD50

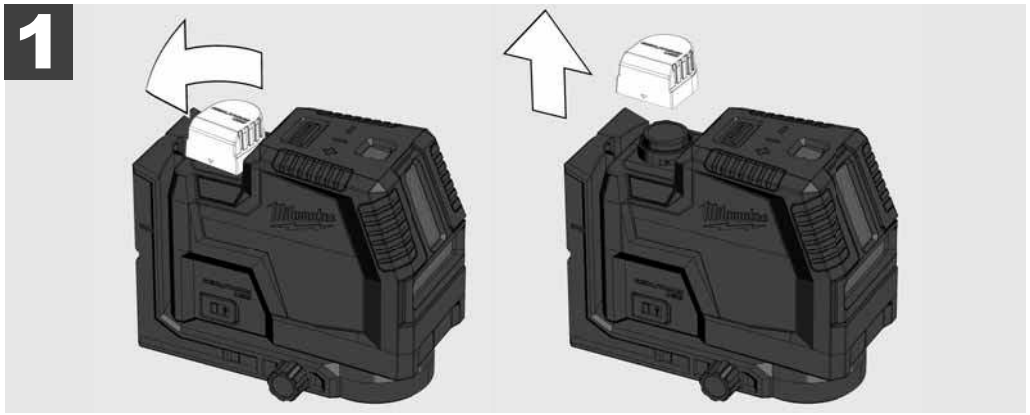


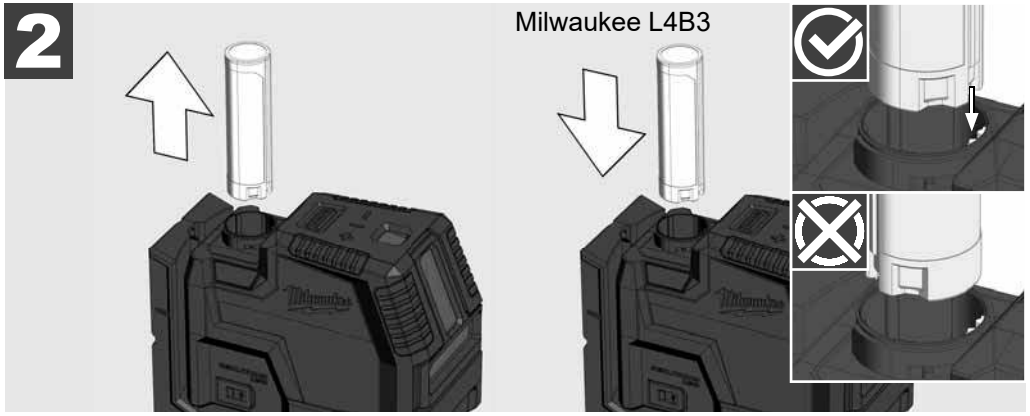
Tripod TRP180

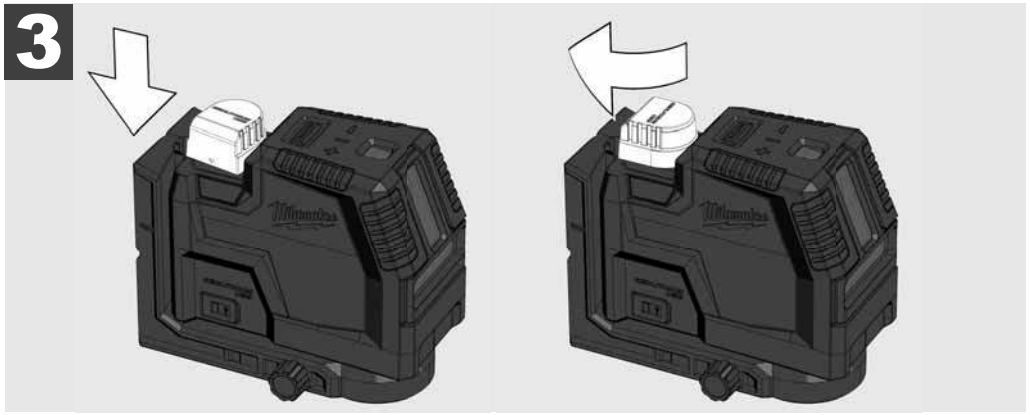


REPLACE BATTERIES

Only use Milwaukee Type L4B3 rechargeable batteries.



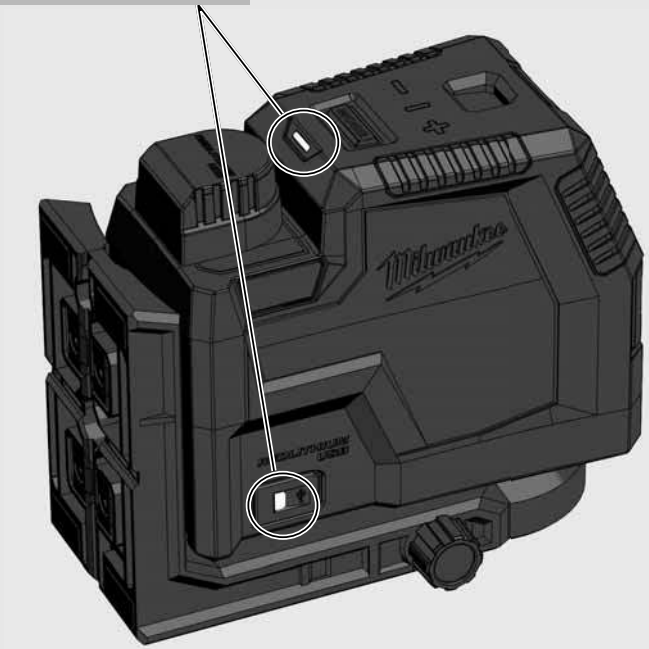




FUEL GAUGE

After switch on or switch off the laser the fuel gauge will display the battery life for 3 seconds

Green solid	100% - 50% remaining
Yellow solid	49% - 11% remaining
Red solid	10% - 3% remaining
Red flashing	3% - 0% remaining



LOW BATTERY INDICATION

When the voltage is low, the laser switch to power safe mode.
The laser will blink in self leveling mode

4 sec. 1 sec.

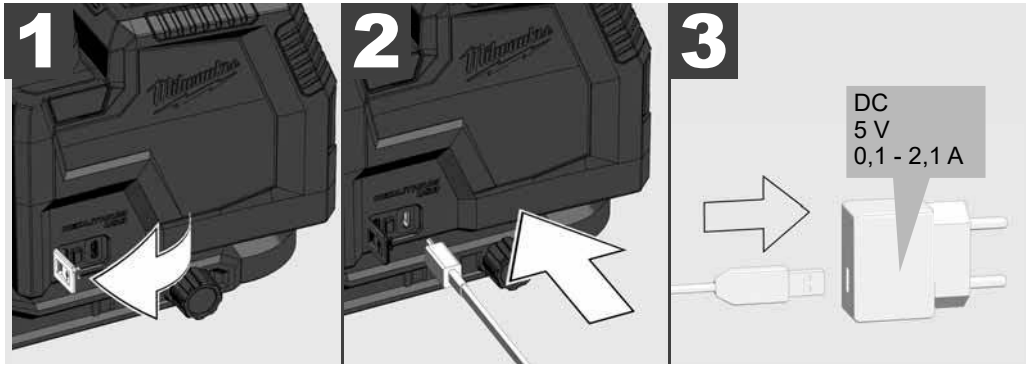
The laser will blink in manual mode

8 sec. 1 sec.

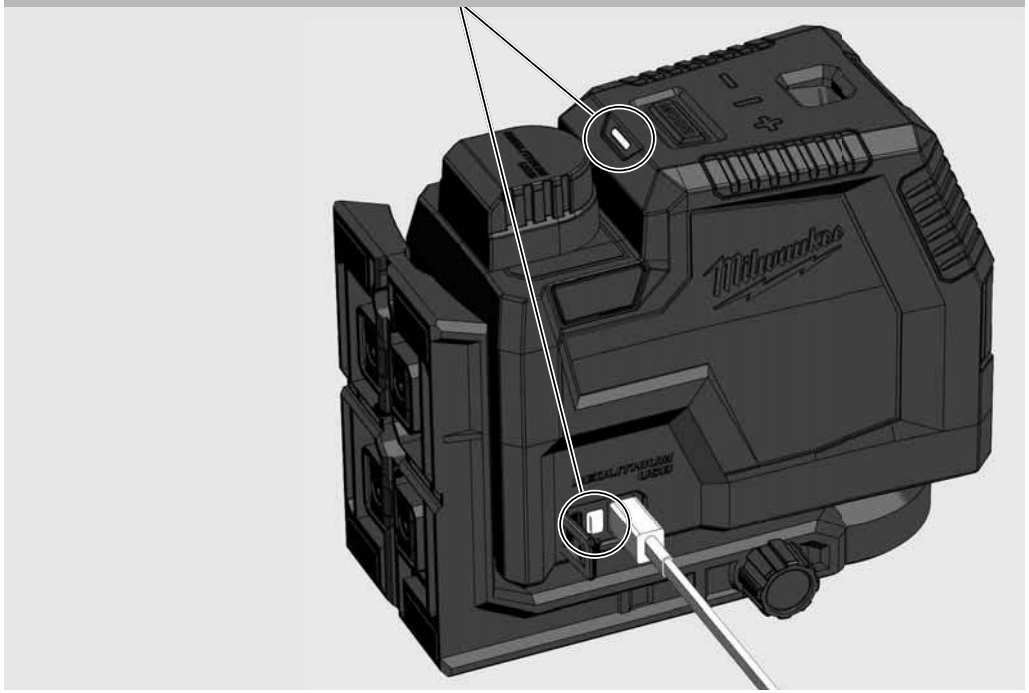
From now on it is still possible to continue the work.
When the voltage is too low, the laser and the LED will flash 3 times and it automatically shuts down.

CHARGE

It is possible to work with the laser during charge.

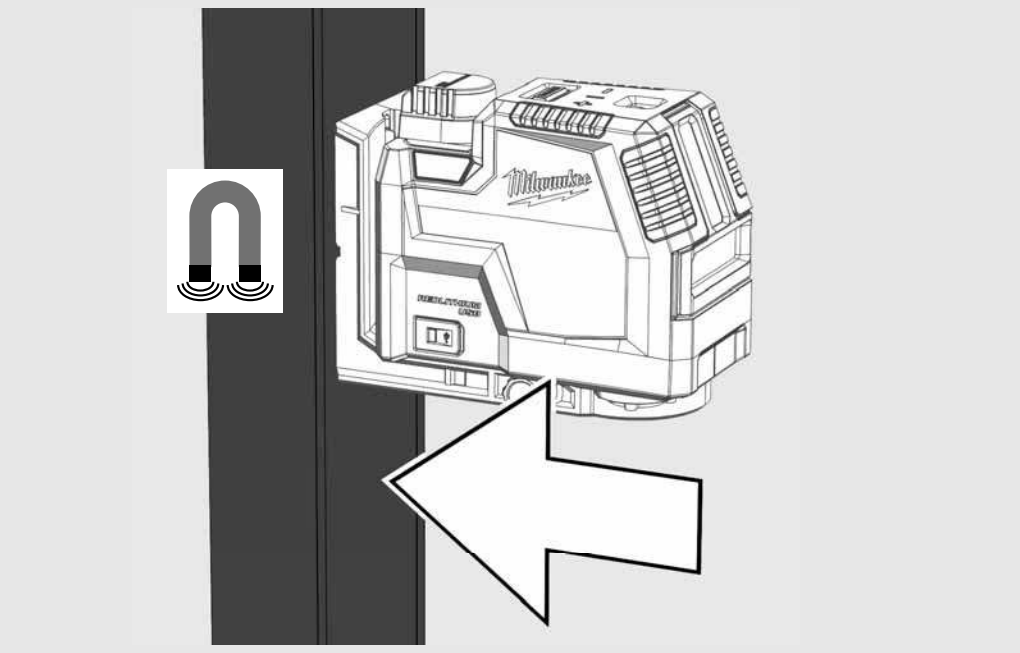


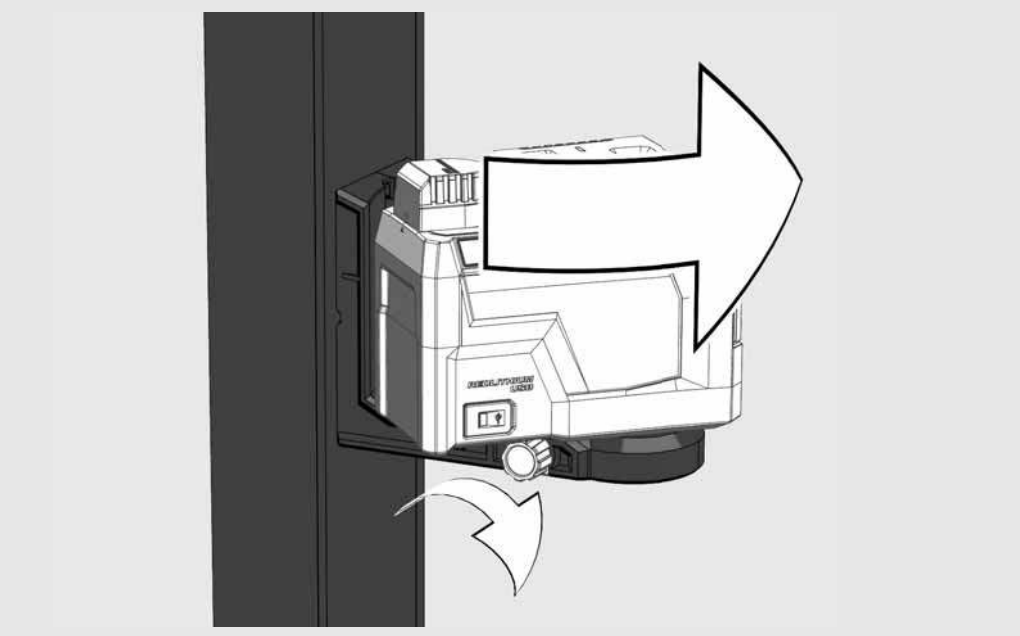
Red breathing	Charging, 0-49% charged
Yellow breathing	Charging, 50-99% charged
Green solid	100% charged
Red/Green flashing	No battery, damaged battery, faulty battery, over temperatur
Red breathing	Charging during use
Green flashing	No battery inserted during use

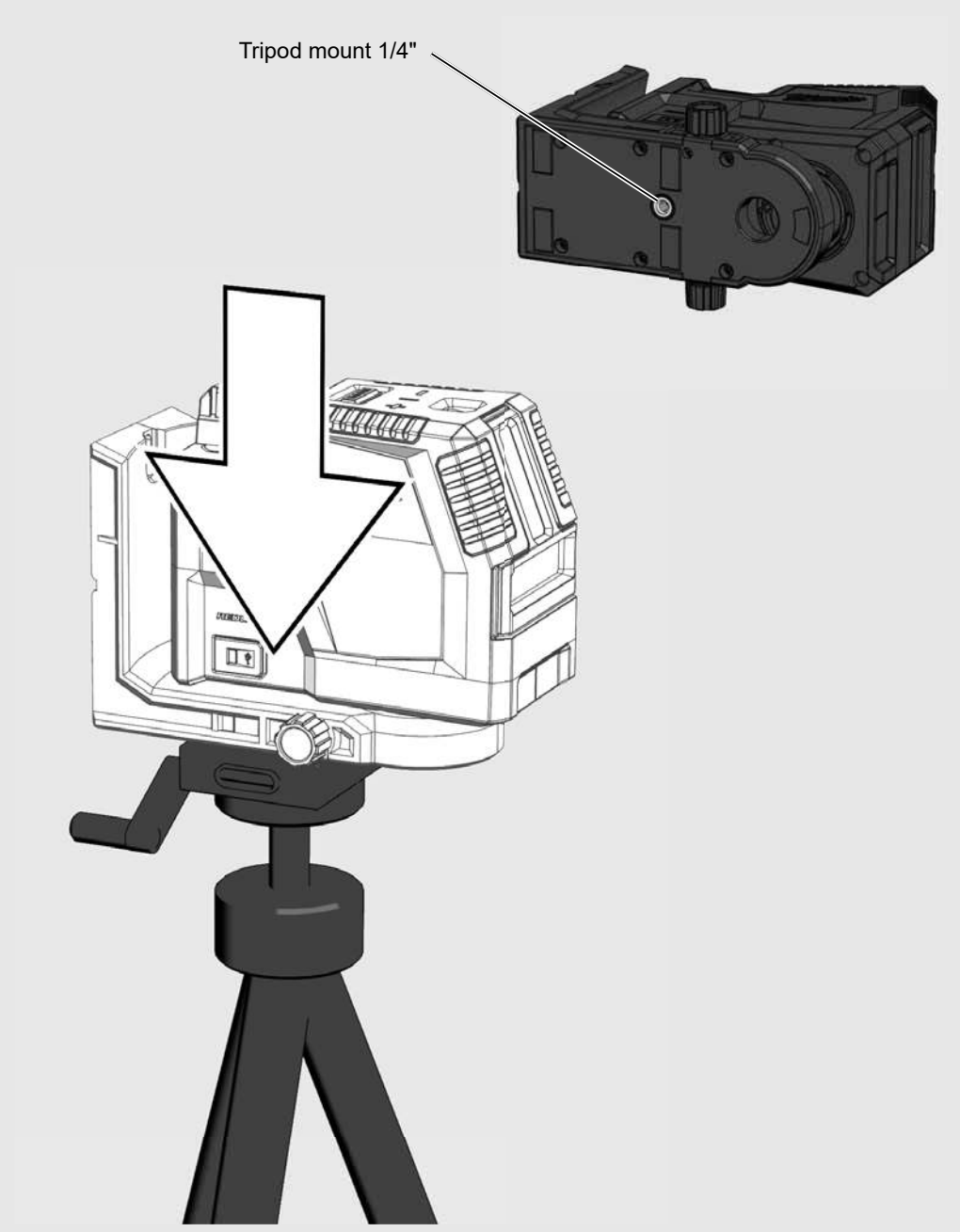


MAGNETIC WALL MOUNT

Use the magnetic wall mount to fix the laser to a wall or metallic structures or similar.
Turn the laser 360° with fine adjustment.

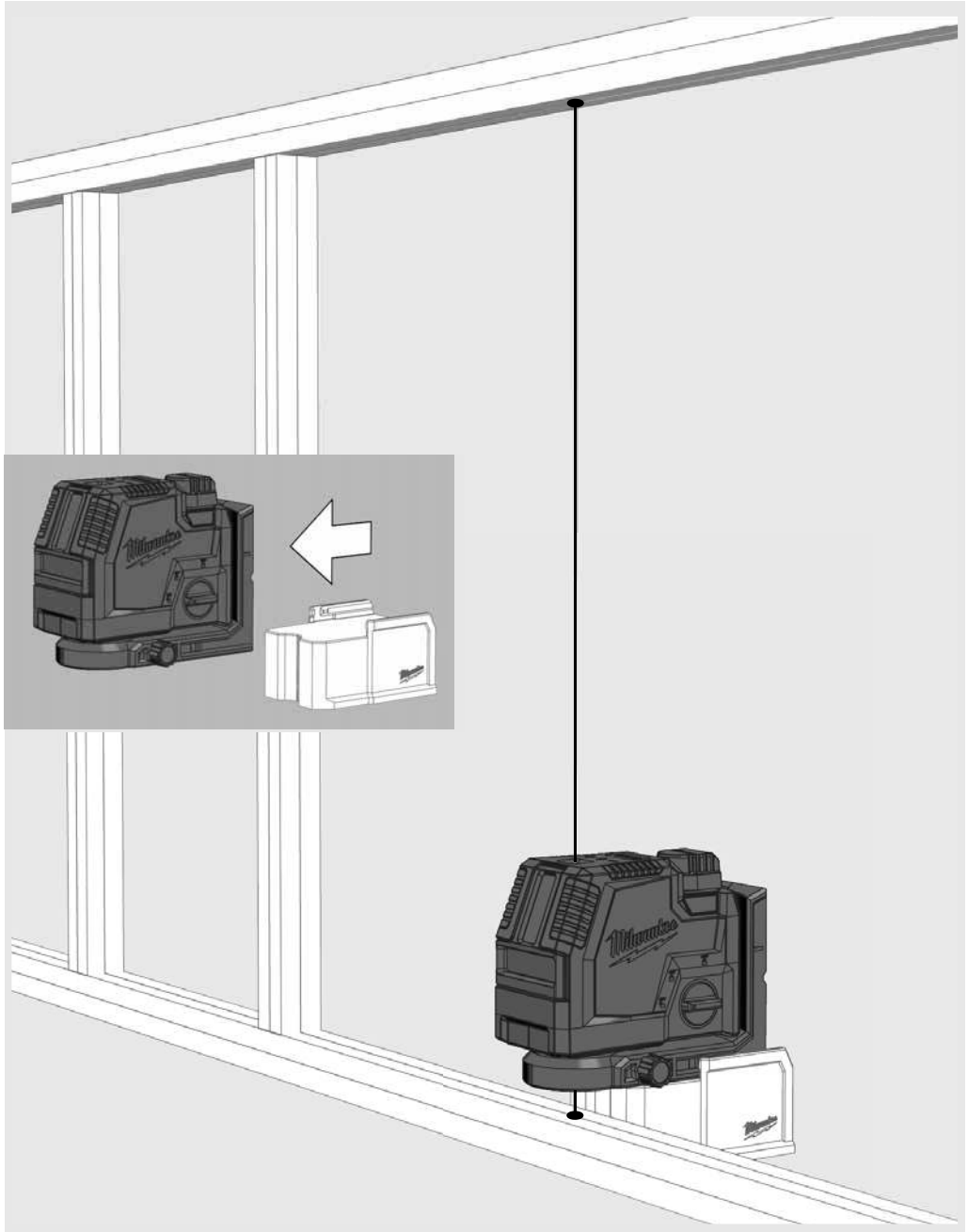






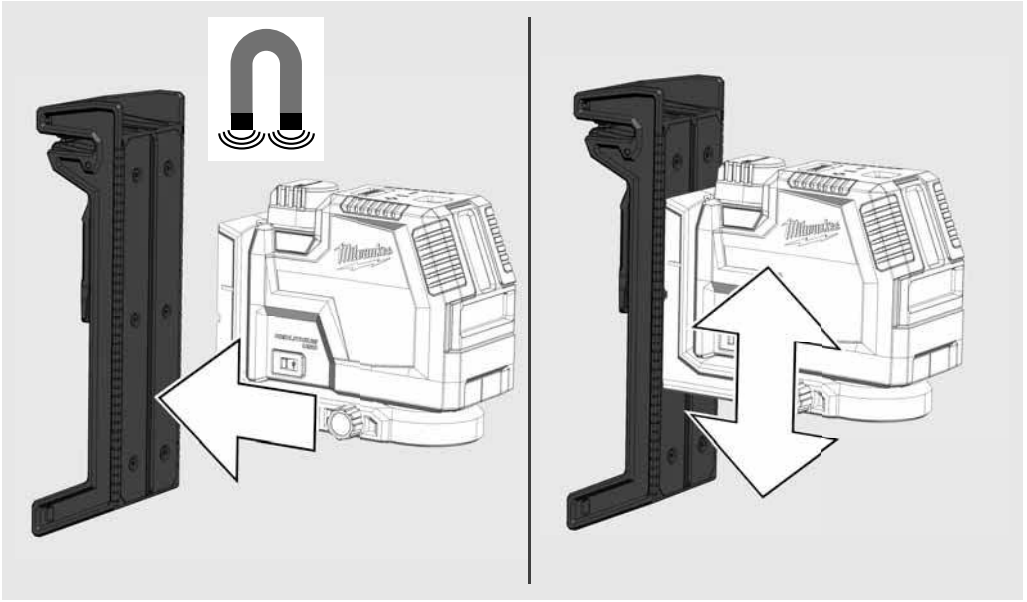
RISER

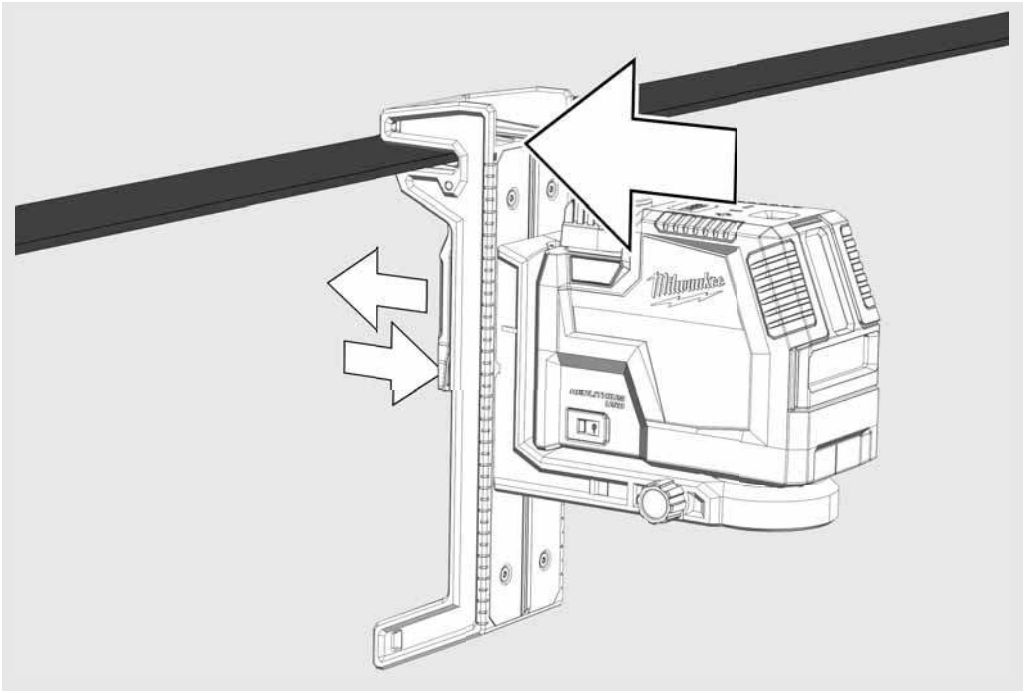
Use the riser to come over the floor track



TRACK CLIP

Use the track clip to clamp the laser to ceiling channels, racks....



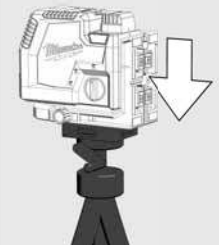


WORKING IN SELF-LEVELING MODE

In self-leveling mode the cross laser will level itself in a ± 4° range and can project a horizontal beam, a vertical beam or both beams simultaneously + plumb dot up and down (plumb dot only L4 CLLP).

1

Place the cross laser on a solid flat vibration free surface or on a tripod.



1/4" male thread

2

Turn the rotation dial to: ***ON***.

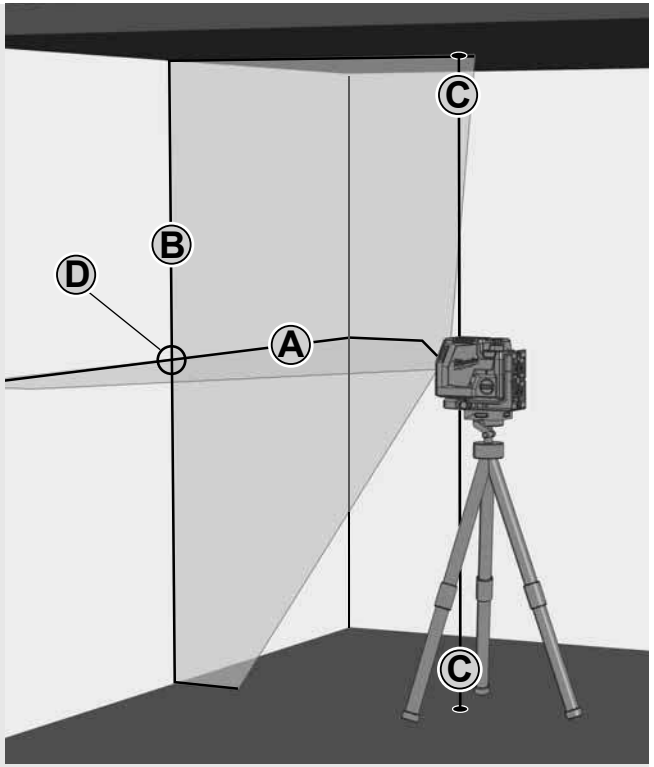


3

The cross laser will generate 2 laser beams.

(A) horizontal beam forward
(B) vertical beam forward
(C) Laser point

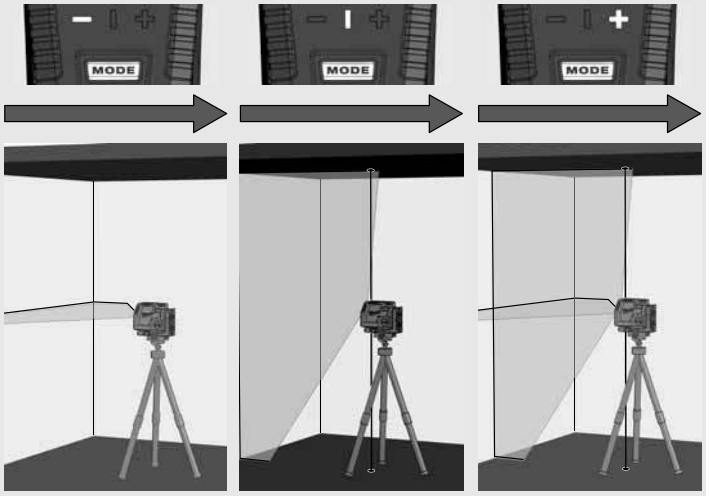
(D) The cross laser will generate forward cross beam when all beams are activated.



4

Choose the beams that you want to work with by pushing the MODE button.

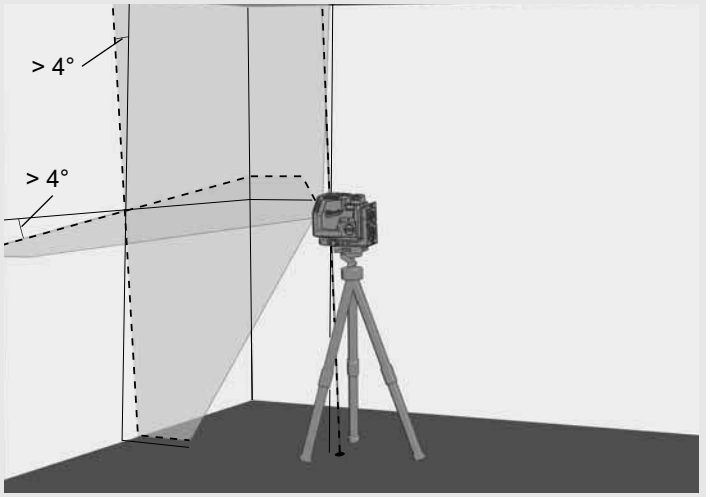




5

If the initial level of the cross laser is beyond ±4° and the self-leveling mode is activated, the laser beams will flash – – – –.

In this case reposition the cross laser.



6

Before moving the cross laser, turn the rotation dial to: ***OFF***.

This will lock the pendulum and protect your cross laser.

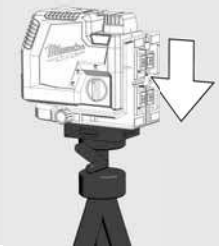


WORKING IN MANUAL MODE

In manual mode the cross lasers self-leveling mechanism is disabled and the laser lines can be set at any slope required.

1

Place the cross laser on a solid flat vibration free surface or on a tripod.



2

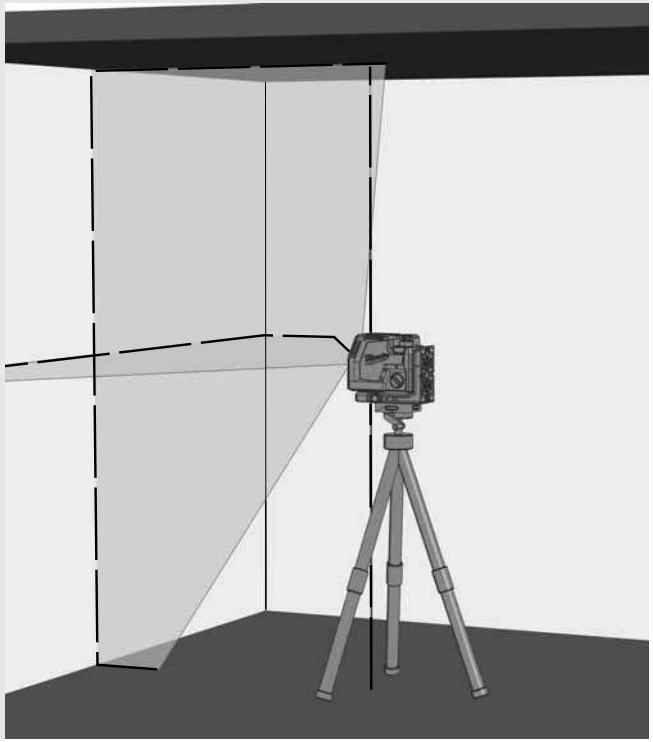
Turn the rotation dial to: ON



3

Same as in the self-leveling mode, the cross laser will generate 2 laser beams, but the laser beams are interrupted every 8 seconds.

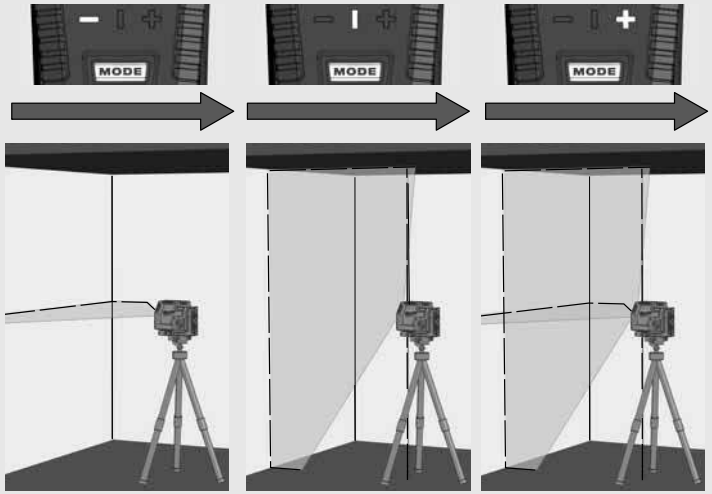
8 sec. 8 sec. 8 sec.



4

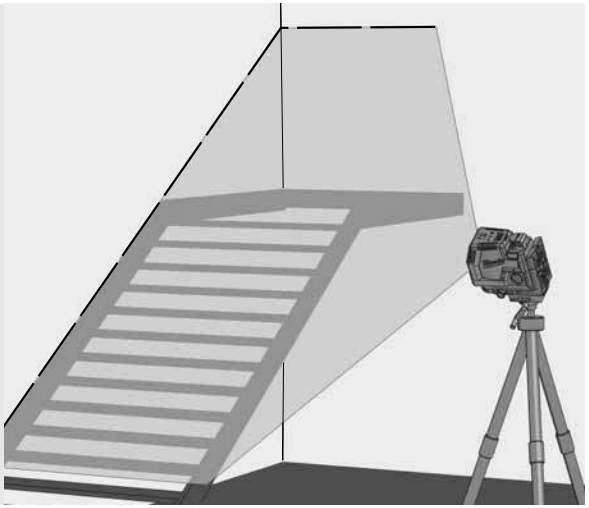
Choose the beams that you want to work with by pushing the MODE button.





5

Tilt the laser and adjust to the desired angle and height.



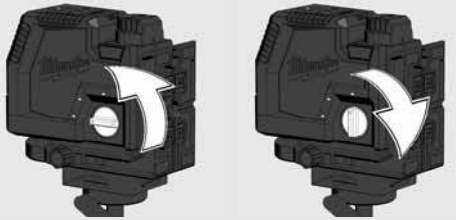
6

To turn the Manual mode off,

turn the rotation dial to: ON .

or

turn the rotation dial to: OFF .



PLUMB FUNCTION

With the plumb function, a point on the floor and on the ceiling can be projected.

Use the plumb function e.g. to transfer reference point for light installation, vents, transfer of heights.

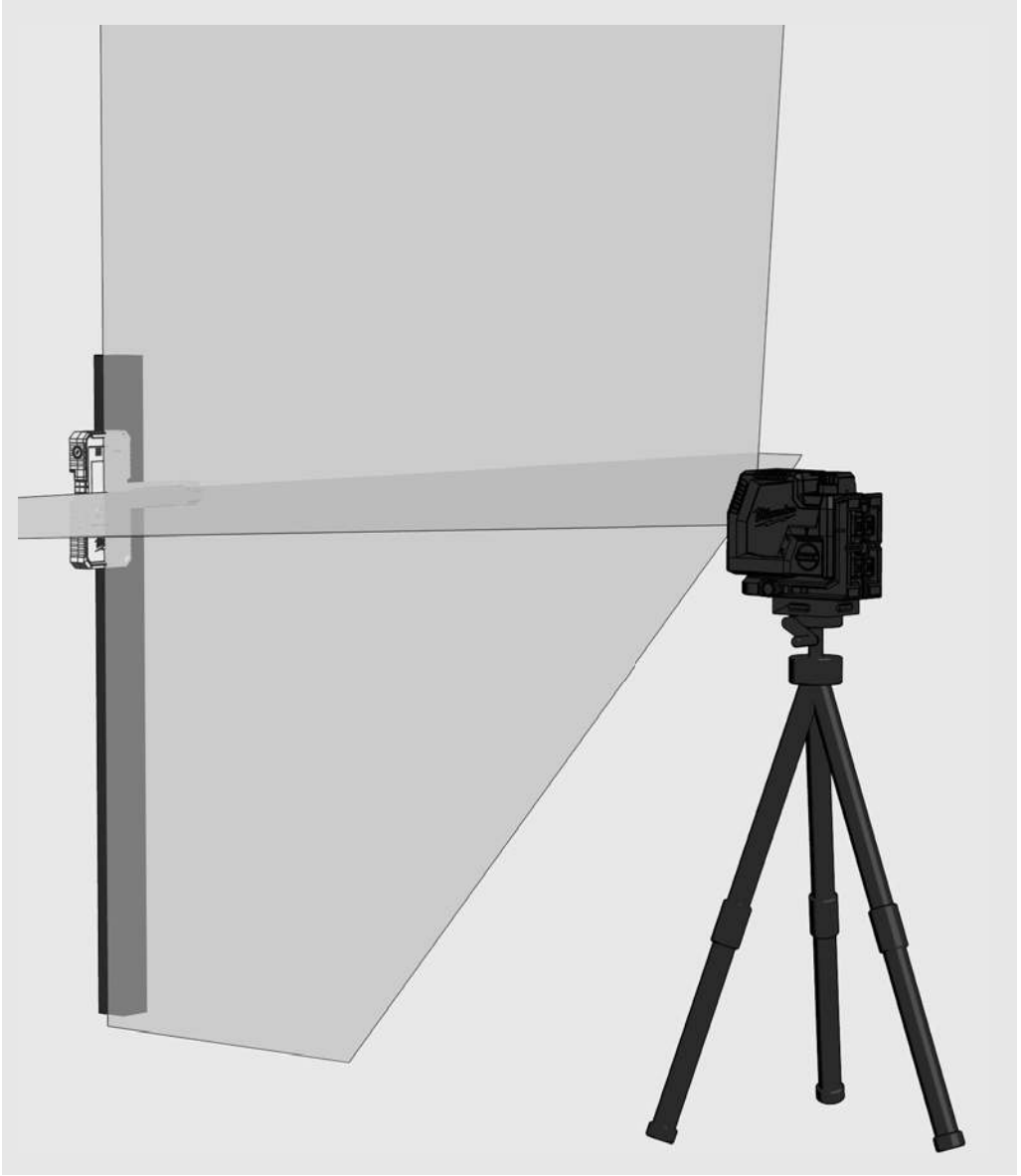


DETECTOR

For outdoor work under direct sunlight, or bright conditions and for extended indoor ranges of up to 50 meters / 164 feet, use the Milwaukee detector.

A detector is not included and must be purchased separately.

For information on how to operate the detector, please refer to the operating instructions for the detector.



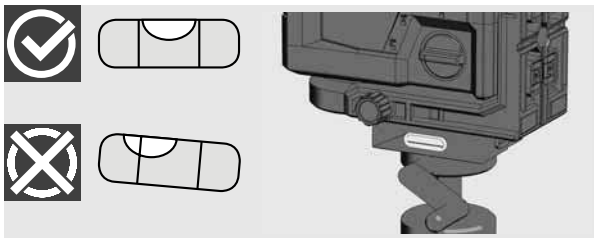
ACCURACY CHECK

This cross laser left the factory fully calibrated. Milwaukee recommends the user to check the accuracy of the laser periodically, especially if the unit falls or is mishandled.

If the maximum deviation of the laser is exceeded in one of the accuracy checks,please contact one of our Milwaukee service agents (see our list of guarantee/service addresses).

1. Checking the height accuracy of the horizontal beam.
2. Checking the leveling accuracy of the horizontal beam.
3. Checking the leveling accuracy of the vertical beam.
4. Checking the plumb accuracy.

Before checking the laser accuracy, after mounting the laser on the tripod, check the leveling of the tripod.

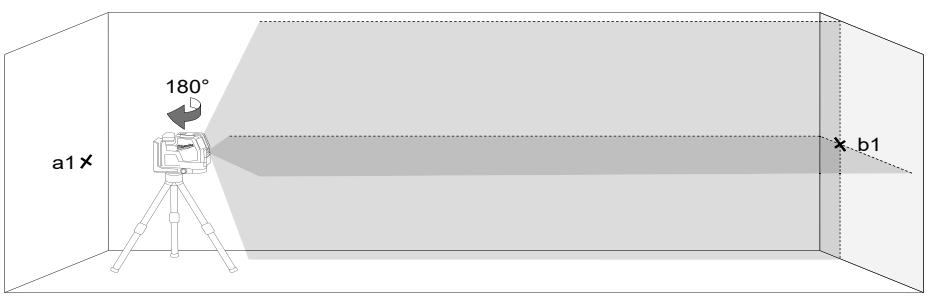


1 CHECKING THE HEIGHT ACCURACY OF THE HORIZONTAL BEAM (UP AND DOWN DEVIATION)

1. Set up the laser on a tripod or on a flat surface between two walls A and B, approximately 5 meters apart.
2. Position the laser level approximately 0.5 meter from wall A.
3. Switch ON the self-leveling mode and press the button to project the horizontal and the vertical cross beams towards wall A.
4. Mark the center of the cross beams on the wall as a1.



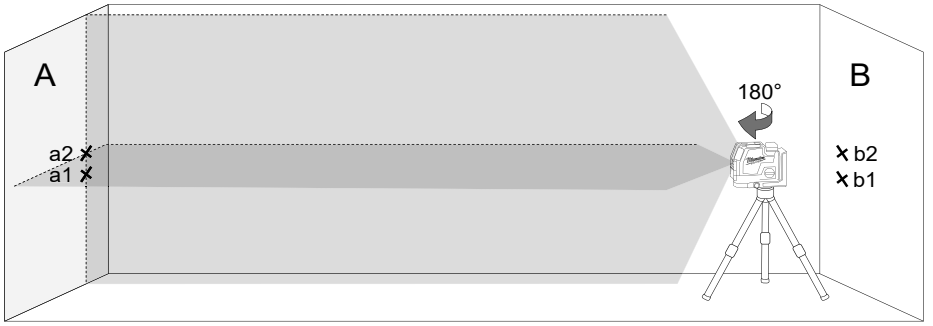
5. Turn the laser 180° towards wall B and mark the center of the cross beams as b1 on the wall.



6. Move the laser level towards wall B and position it approximately 0.5 meter from wall B.
7. Mark on wall B the center of the cross beams as b2.



8. Turn the laser 180° towards wall A, and mark on the wall the center of the cross beams as a2.

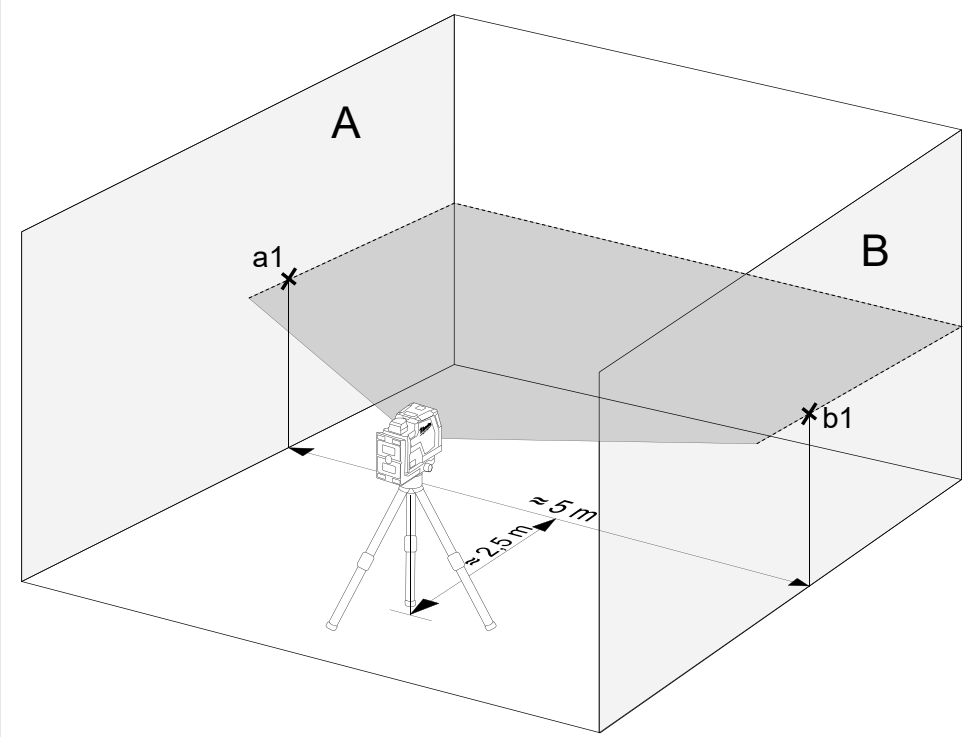


9. Measure the distances:
   Δa= |a2-a1|
   Δb= |b1-b2|
10. The difference | Δa – Δb| should be no more than 2 mm.

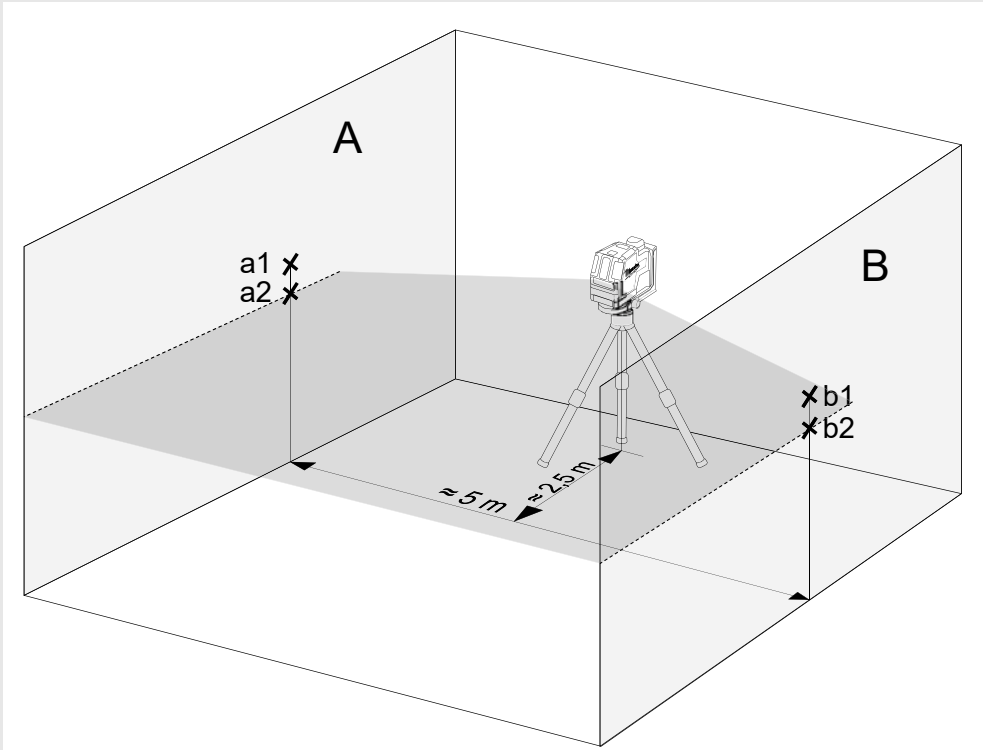
2 CHECKING THE LEVEL ACCURACY OF THE HORIZONTAL BEAM (SIDE TO SIDE INCLINATION)

For this check, a free surface of approx. 5 x 5 meters is required.

1. Set up the laser on a tripod or on a solid surface between two walls A and B, approximately 5 meters apart.
2. Position the laser level approximately 2.5 meters from the center of the room.
3. Switch ON the self-leveling mode and press the button to project the horizontal line towards wall A and B.
4. Mark the center of the laser line point a1 on wall A and point b1 on wall B.



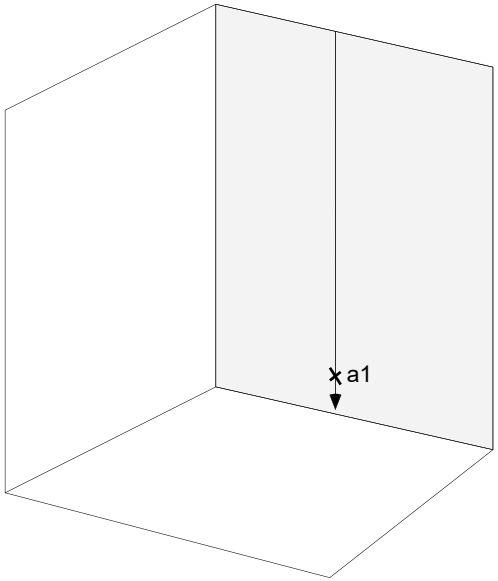
5. Move the laser level approximately 5 meters away and turn the laser 180° towards wall A and B.
6. Mark the center of the laser line point a2 on wall A and point b2 on wall B.



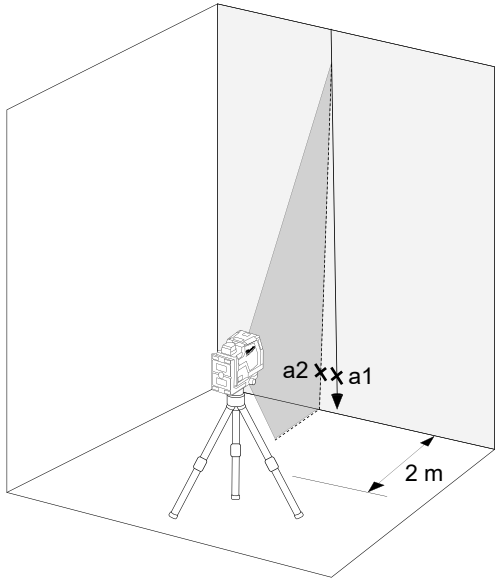
7. Measure the distances:
   Δa= |a2- a1|
   Δb= |b1- b2|
8. The difference | Δa – Δb| should be no more than 2 mm.

3 CHECKING THE LEVEL ACCURACY OF THE VERTICAL BEAM

1. Hang an approximately 4 m plumb line on a wall.
2. After the plumb line has settled, mark point a1 on the wall, behind the plumb line, near the plumb cone.



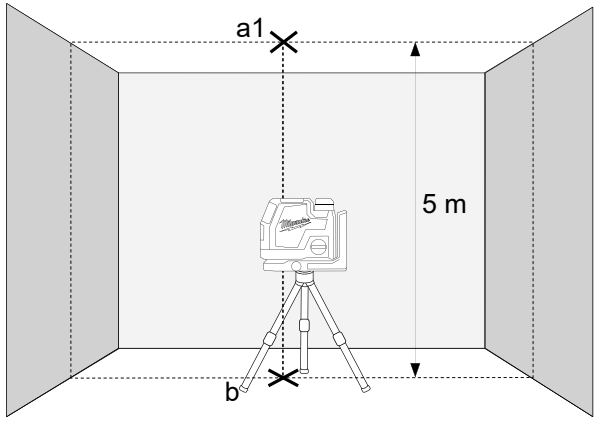
3. Set up the cross laser on a tripod or on a flat surface in front of the wall at a distance of approximately 2 m.
4. Switch ON the self-leveling mode, and press the button to project the vertical beam towards the plumb line.
5. Turn the cross laser so that the vertical beam will merge with the plumb line below the hanging point.
6. Mark point a2 on the wall, in the middle of the vertical beam at the same height as a1.
7. The distance between a1 and a2, should be no more than 1 mm.



4 CHECKING PLUMB ACCURACY

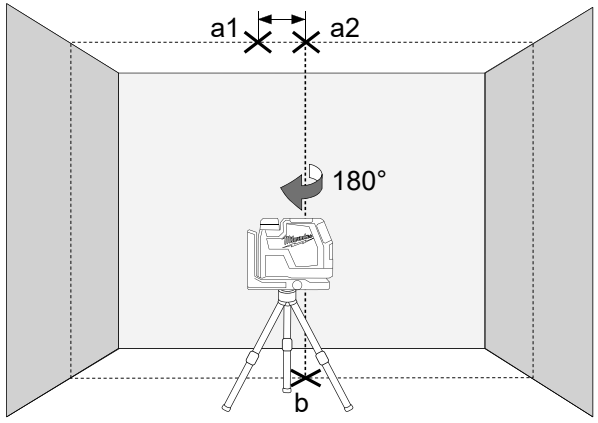
This procedure requires a room of with approx. 5m distance between floor and ceiling.

1. Set up the cross laser on a tripod.
2. Switch ON the self-leveling mode and press the push button to switch to the plump function.
3. Mark the upper plumb dot on the ceiling as point a1 (see the illustration).
4. Mark the lower plumb dot on the floor as point b.



5. Rotate the laser level 180°, position it so that the center of the plumb dot is on the point b, which has already been marked, and allow it to level.
6. Mark the center of the upper plumb dot on the ceiling as point a2.
7. The distance between points a1 and a2 marked on the ceiling is an indication of the actual deviation of the laser level from the ideal plumb line. If the measuring distance is 5m, the maximum permissible deviation is:

   5m x (+/- 0.6mm/m) x 2 = +/ - 6mm.
8. The distance between a1 and a2, should not be more than 6 mm.



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