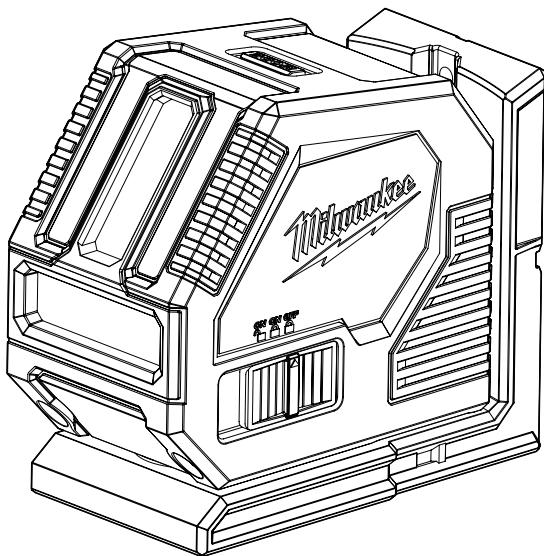





OPERATOR'S MANUAL



Cat. No.
CLL

GREEN CROSS LINE LASER

 **WARNING**

 To reduce the risk of injury, user must read and understand operator's manual.

GENERAL POWER TOOL SAFETY WARNINGS

⚠WARNING Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury. **Save all warnings and instructions for future reference. Save these instructions** - This operator's manual contains important safety and operating instructions.

LASER SAFETY

⚠WARNING The device produces visible laser beams, which are emitted from the tool.

- This device complies with AS/NZS 60825.1, Class 2 Laser.
- **Laser light - Do not stare into beam or view directly with optical instruments. Do not point laser light at others.** Laser light can cause eye damage.

WORK AREA SAFETY

- **Ensure adequate safeguards at the work site (e.g. surveying site when measuring on roads, construction sites, etc.).**
- **Avoid dangerous environments.** Avoid extended exposure to rain, snow, damp or wet locations. Do not use in the presence of explosive atmospheres (gaseous fumes, dust or flammable materials).

PERSONAL SAFETY

- **Do not allow persons unfamiliar with the tool, these safety instructions, and the tool's operator's manual to operate the tool.** This tool can be dangerous in the hands of untrained users.
- **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the tool in unexpected situations.

BATTERY USE AND CARE

- **This tool is designed to be powered by four AA batteries properly inserted into the tool.** Do not attempt to use with any other voltage or power supply.
- **Do not leave batteries within the reach of children.**
- **Do not mix new and used batteries. Do not mix brands (or types within brands) of batteries.**
- **Do not mix rechargeable and non-rechargeable batteries.**
- **Install batteries according to polarity (+/-) diagrams.**
- **Properly dispose of used batteries immediately.**
- **Do not incinerate or dismantle batteries.**
- **Under abusive conditions, liquid may be ejected from the battery, avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.

SPECIFIC SAFETY RULES FOR LASER LEVELS

⚠CAUTION Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

- **Be sure to power off instrument after use.** When instrument will not be used for a long period, place it in storage after removing batteries.
- **Watch out for erroneous results if the tool is defective or if it has been dropped, misused or modified.**
- **Do not dispose of tool or batteries together with household waste material!** Tool and batteries that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.
- **Ensure tool magnets are securely mounted to a metal surface. Magnet strength may not hold on thin metal surfaces, causing the tool to fall.**
- **To reduce the risk of injury, when working in dusty situations, wear appropriate respiratory protection or use a suitable dust extraction solution.**
- **Always use common sense and be cautious when using tools.** It is not possible to anticipate every situation that could result in a dangerous outcome. Do not use this tool if you do not understand these operating instructions or you feel the work is beyond your capability; contact **MILWAUKEE®** Tool or a trained professional for additional information or training.
- **Maintain labels and nameplates.** These carry important information. If unreadable or missing, contact a **MILWAUKEE®** service facility for a replacement.

ADDITIONAL BATTERY SAFETY RULES

⚠WARNING To reduce the risk of fire, personal injury, and product damage due to a short circuit, never immerse your tool, battery pack or charger in fluid or allow a fluid to flow inside them. Corrosive or conductive fluids, such as seawater, certain industrial chemicals, and bleach or bleach-containing products, etc., can cause a short circuit.

⚠WARNING Do not charge non-rechargeable batteries.

SYMBOLGY



Safety Alert Symbol



Volts



Direct Current



LASER RADIATION
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT



Magnets



Read operator's manual



Regulatory Compliance Mark (RCM). This product meets applicable regulatory requirements.



Do not dispose of electric tools together with household waste material. Electric tools and electronic equipment that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

ASSEMBLY

Inserting/Removing the Batteries

To **insert** the batteries, gently push AA batteries into position according to the directions on the bottom of the battery port. Close the battery door. Make sure it latches securely into place.

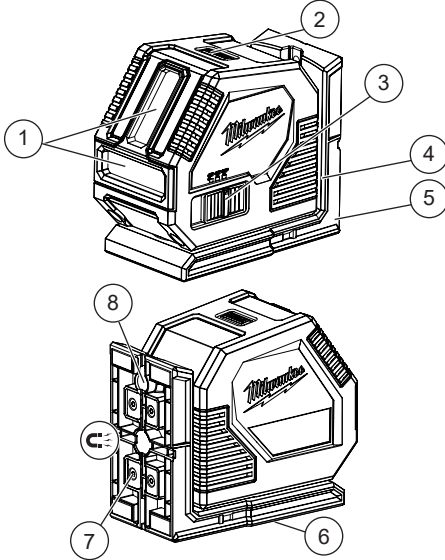
⚠ WARNING Only use accessories specifically recommended for this tool.

Others may be hazardous.

To **remove** the batteries, rotate laser on the bracket 180°, then unclip the battery door. Pull gently on battery tether to release 4 AA batteries.

⚠ WARNING Always remove batteries before changing or removing accessories.

FUNCTIONAL DESCRIPTION



- | | |
|----------------------|--------------------|
| 1. Laser apertures | 5. Pivot Bracket |
| 2. Laser mode button | 6. Threaded insert |
| 3. On/Off switch | 7. Magnets |
| 4. Battery door | 8. Nail/Screw hole |

SPECIFICATIONS

Cat. No.	CLL
Volts	6 V DC
Battery Type	4 x AA
Laser	Class 2
Lines Max Power	$P_{AVG} \leq 7 \text{ mW}$
Pulse Frequency	10 KHz
Pulse Duration Normal Mode	Continuous
Pulse Duration Power Save	$T_p \leq 50 \mu\text{s}$
Wavelength	510-530 nm
Lines Beam Divergence	1 rad
Storage Temp	-20°C to 60°C
Working Range	30 m
Range with Detector	50 m
Accuracy	$\pm 3.2 \text{ mm (1/8")}$ at 10 m
Settle Time	< 3 Seconds
Tripod Mount	1/4"-20
Ingress Protection	IP54
Drop Rating	1 m
Leveling	Auto ± 4 side to side, front to back
Recommended Ambient Operating Temperature	-20°C to 60°C

Detector/Power Save Mode

Use Detector/Power Save Mode with MILWAUKEE® 48351211 50m (165') Laser Detector to extend the battery run time. Manually activate Detector/Power Save Mode by holding the Mode button for 3 seconds. Visual range will be decreased when Detector/Power save mode is activated. Power Save Mode is indicated when flashing laser output appears with approximately 30 minutes battery left.

Low Battery Indication

To indicate low battery (about 30 minutes of battery life remaining*), the laser lines will flash:

- In Unlocked ON - 3 times every 4 seconds
 - In Locked ON - 3 times every 8 seconds
- The low battery indicator flashing will continue until the batteries are removed and replaced. During self-leveling, the out-of-level indicator (flashing 3 times per second) will override the low battery indicator.

NOTE: Battery life may vary by brand/age. Replace the batteries as soon as possible.

⚠ WARNING To reduce the risk of injury or damage, securely mount/attach the laser before starting an operation. Injury/damage may occur if the laser falls.

Mounting/Adjusting the Laser Level

The pivot bracket can be used to mount the laser level in multiple ways:

- Use the embedded magnets to secure the laser level to steel studs, steel beams, etc.
- Use the keyhole slot to hang the laser level on the wall with a nail or screw.
- Set the laser level on a flat surface.
- Position the laser and/or wall mount on a stable surface.
- Use the 1/4"-20 threaded insert to mount on a tripod.
- Once the level is mounted, use the micro adjustment knobs to fine tune the laser line.

OPERATION

AWARNING To reduce the risk of injury or temporary effects on vision, do not look directly into the laser when it is on.

CAUTION Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

NOTICE Perform the Accuracy Field Check procedure immediately upon unboxing each new laser and before exposure to jobsite conditions. See "Accuracy Field Check" for information.

Turning On/Off

To turn on the laser and unlock the pendulum, switch the On/Off to the desired position.

AWARNING Do not look directly into laser apertures. Horizontal level line will immediately be emitted from aperture in the laser housing.

ON Turns **ON** the laser and unlocks the pendulum to enable self-leveling.

ON Turns **ON** the laser but does not unlock the pendulum (self leveling is disabled). The laser lines will flash once every 8 seconds to indicate that the projected lines are not level or plumb.

NOTICE The **ON** mode disables selfleveling and therefore is not intended for projecting a level or plumb line.

OFF Turns **OFF** the laser and locks the pendulum. When not in use, turn off the tool and store the Laser Level in the protective carrying case.

Use the MODE button to cycle through the three laser modes:

1. Horizontal Mode
2. Vertical Mode
3. Cross Mode

Using the Laser Level

1. For best results, place the tool on a work surface that is:
 - sturdy
 - level (within 4 degrees of true level)
 - free of vibrations
 - 90° to the work area
2. Turn on the tool.
3. The tool will self-level when placed on surfaces within 4 degrees of true level when switch is unlocked and **ON**.
4. The tool is ready once the emitted lines are continuous and no longer moving on the work surface.
5. If the tool cannot achieve a level state (i.e., the work surface is > 4 degrees off true level), the laser beams will flash rapidly (3 flashes per second). Relocate or adjust the work surface.

Troubleshooting

- If the tool does not turn on:
- Ensure batteries are installed properly.
 - Ensure batteries are good.
 - Ensure the tool's internal temperature is within specified operating ranges. If stored in excessive heat or cold, allow at least 2 hours to acclimate to ambient temperature before turning on the tool.

If problem persists, please return the laser to an authorised **MILWAUKEE**® service centre.

ACCURACY FIELD CHECK

NOTICE Perform the Accuracy Field Check procedure immediately upon unboxing each new laser and before exposure to jobsite conditions. Should any deviation from listed product accuracy be found, please contact an authorised **MILWAUKEE**® service centre. Failure to do so could result in rejection of warranty claim.

Influences on Accuracy

Ambient temperature gradients can impact laser accuracy. For accurate and repeatable results, the following procedure should be conducted with the laser elevated off the ground and placed in the centre of the working area.

Abusive treatment of the Laser Level, such as excessive impacts from drop, can also lead to deviations in product accuracy.

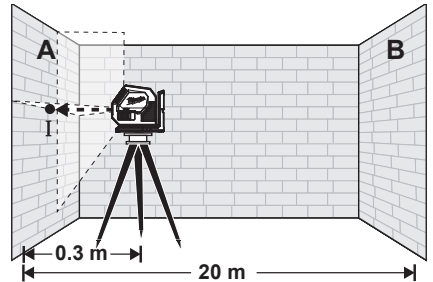
Therefore, it is recommended to conduct the Field Check procedure after any impact or before completing any critical jobs.

NOTE: Accuracies and leveling times are measured at ambient temperatures (20°C). Use of the tool at extreme temperatures (even within the operating temperature range) may negatively impact these specifications.

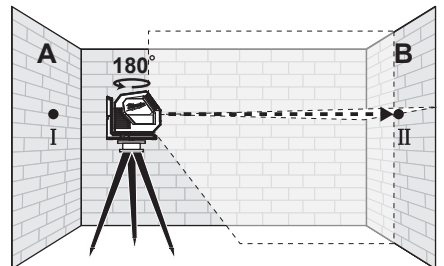
Horizontal Height Accuracy

A free measuring distance of approximately 20 m on a firm surface between two walls or structures A and B is required for this check. It is also suggested to mount the Laser Level to a Tripod for easy adjustment.

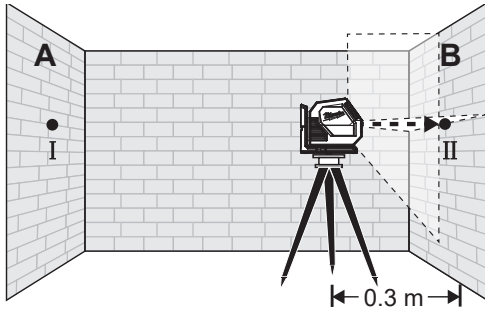
1. Securely mount the tool within 0.3 m of wall A.



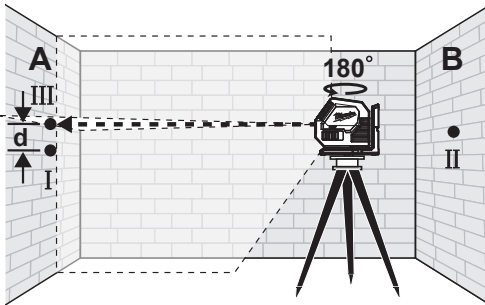
2. Turn the tool to **ON** and press the mode button 3 times.
3. Direct the front laser beam against wall A and allow to self-level. Mark the centre of the laser cross on the wall (point I).
4. Rotate the tool 180° without changing the height, allow it to self-level, and mark the centre of the laser cross on the opposite wall B (point II).



5. Move the tool within 0.3 m of wall B. Allow the laser to self level. Align the laser cross in the general direction of point II on wall B.



6. Adjust the height of the tool (using the tripod or by adding shims, if required) to align the laser cross directly onto point II on wall B. Allow the tool to self-level.
7. Rotate the tool 180° without changing the height, allow it to self-level, and mark the centre of the laser cross on wall A (point III). Point III should be aligned as vertically above or below point I on wall A as possible.



8. The distance between points I and III on wall A is the height deviation (d) of the tool. This distance should not exceed 3.2 mm (max.) at 10 m (12.8 mm at 40 m).
For the Measuring distance of $2 \times 20 \text{ m} = 40 \text{ m}$, the maximum allowable deviation (d) is:
 $40 \text{ m} \times \pm 3.2 \text{ mm} \div 10 \text{ m} = \pm 12.8 \text{ mm}$.

Horizontal Leveling Accuracy

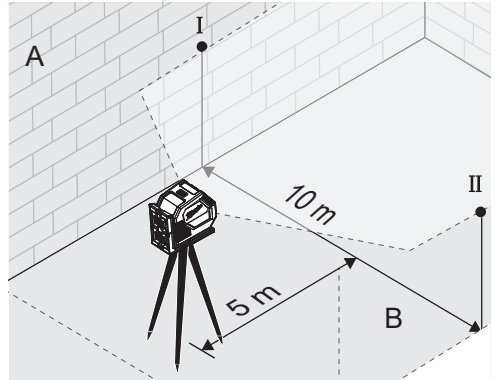
A free measuring space of approximately 10 m x 10 m on a firm surface between two walls or structures A and B is required for the check.

It is also suggested to mount the Laser Level to a Tripod for easy adjustment.

Securely mount the tool on one side of the room and centred between walls A and B. Direct the laser lines toward the other side of the room such that the horizontal line appears on both walls A and B. Allow the laser to Self-Level.

1. Turn the tool to **ON**.

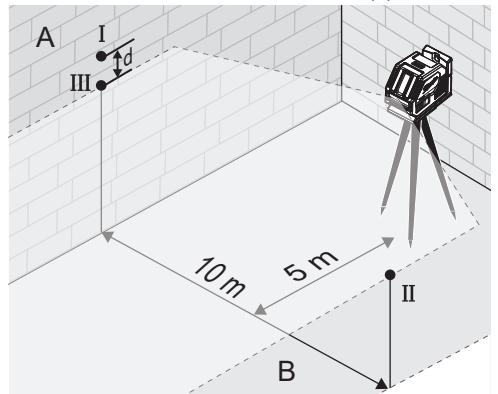
2. At a distance of 5 m from the laser, mark the centre of the horizontal line on Wall A (Point I). Do the same on Wall B (Point II).



3. Move the Laser 10 m toward the opposite wall and rotate the laser 180°. Allow the laser to Self-Level.

4. Adjust the height of the tool (using the tripod or by adding shims, if required) such that the centre of the horizontal line is projected exactly against the previously marked point II on wall B. Ensure the Laser is self-leveled after alignment.

5. Mark the centre of horizontal line on wall A (point III). Take care that point III is aligned as vertical as possible above or below point I.
6. The distance d between marked points I and III on wall A indicates the actual deviation (d) of the tool.

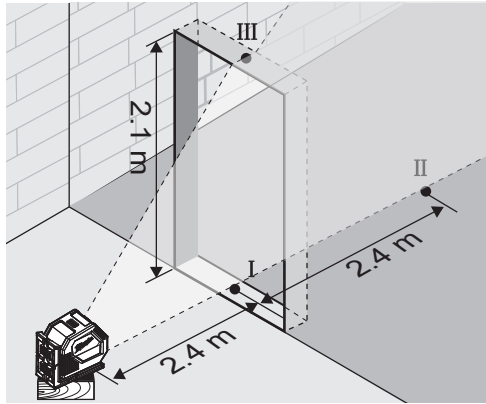


7. For the Measuring distance of $2 \times 10 \text{ m} = 20 \text{ m}$, the maximum allowable deviation (d) is:
 $20 \text{ m} \times \pm 3.2 \text{ mm} \div 10 \text{ m} = \pm 6.4 \text{ mm}$. Thus, the difference d between points I and III should not exceed 6.4 mm (max.) at 20 m.

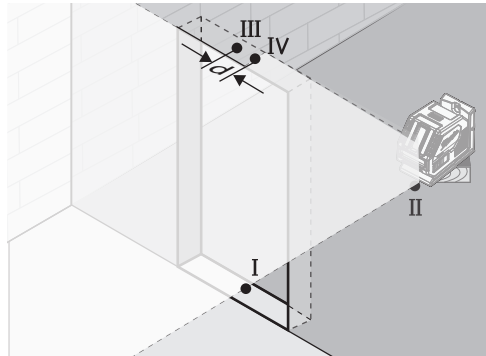
Vertical Leveling Accuracy

A free measuring distance of approximately 2.4 m on a firm surface between two walls or structures A and B is required for this check. It is also suggested to mount the Laser Level to a Tripod for easy adjustment.

1. Securely mount the tool 2.4 m from one side of the door opening.
2. Turn the tool to **ON** and press the mode button 2 times.
3. Position the tool with the laser towards the door opening. Allow the tool to self-level.
4. Mark the centre of the vertical laser line on the floor in the middle of the door opening (point I), at a distance of 2.4 m beyond the door opening (point II), and at the upper edge of the door opening (point III).



5. Move the laser level directly behind point II on the other side of the door. Align the vertical laser line so the centre is directly aligned with points I and II.
6. Mark the centre of the vertical line at the upper edge of the door opening (point IV).
7. Measure the height of the door opening.
8. The distance between points III and IV on the upper door opening is the vertical deviation (d) of the tool.



9. The maximum vertical deviation (d) is:
 $d_{max} = 2 \times H \text{ (door opening)} \times \pm 3.2 \text{ mm} \div 10 \text{ m}$
Example: for a door opening height of 2.1 m, the maximum permitted deviation (d) is:
 $d_{max} = 2 \times 2.1 \text{ m} \times \pm 3.2 \text{ mm} \div 10 \text{ m} = \pm 1.3 \text{ mm}$
Therefore, the measurement between points III and IV on the upper door opening should not exceed 1.3 mm in a 2.1 m doorway.

MAINTENANCE

WARNING To reduce the risk of injury, always remove the battery before performing any maintenance. Never disassemble the tool.

Maintain Laser Level

Maintain tools. If damaged, have the tool repaired before use at a nearest authorised **MILWAUKEE®** service centre. Accidents may be caused by poorly maintained tools.

Cleaning

Clean dust and debris from vents. Keep handles clean, dry and free of oil or grease. Use only mild soap and a damp cloth to clean, since certain cleaning agents and solvents are harmful to plastics and other insulated parts. Some of these include petrol, turpentine, lacquer thinner, paint thinner, chlorinated cleaning solvents, ammonia and household detergents containing ammonia. Never use flammable or combustible solvents around tools.

Cleaning the Aperture Windows

Blow off any loose particles with clean compressed air. Carefully wipe the surface with a cotton swab moistened with water.

Repairs

This tool has limited serviceable parts. Do not open housing or disassemble tool. For repairs, return the tool to the nearest authorised service centre.

ACCESSORIES

WARNING Use tools only with specifically designated accessories. Use of any other accessories may create risk of injury.

WARRANTY - AUSTRALIA and NEW ZEALAND

Please refer to Australian and New Zealand warranty supplied with tool. This warranty applies only to product sold by authorised dealers in Australia and New Zealand.

SERVICE - AUSTRALIA and NEW ZEALAND

MILWAUKEE® prides itself in producing a premium quality product that is Nothing But Heavy Duty™. Your satisfaction with our products is very important to us! If you encounter any problems with the operation of this tool, please contact your authorised **MILWAUKEE®** dealer.

For a list of **MILWAUKEE®** dealers, guarantee or service agents please contact **MILWAUKEE®** Customer Service or visit our website.

(Australia Toll Free Telephone Number 1300 645 928)

(New Zealand Toll Free Telephone Number 0800 645 928)

or visit milwaukeetool.com.au/milwaukeetool.co.nz.

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