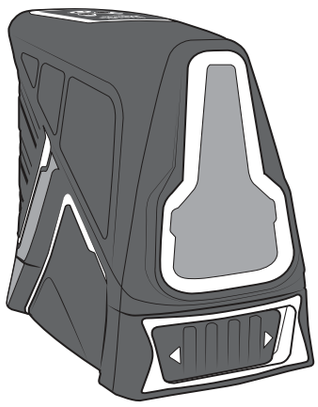
STANLEY®

Green Beam Self-Levelling Cross Line Laser

FCL-G

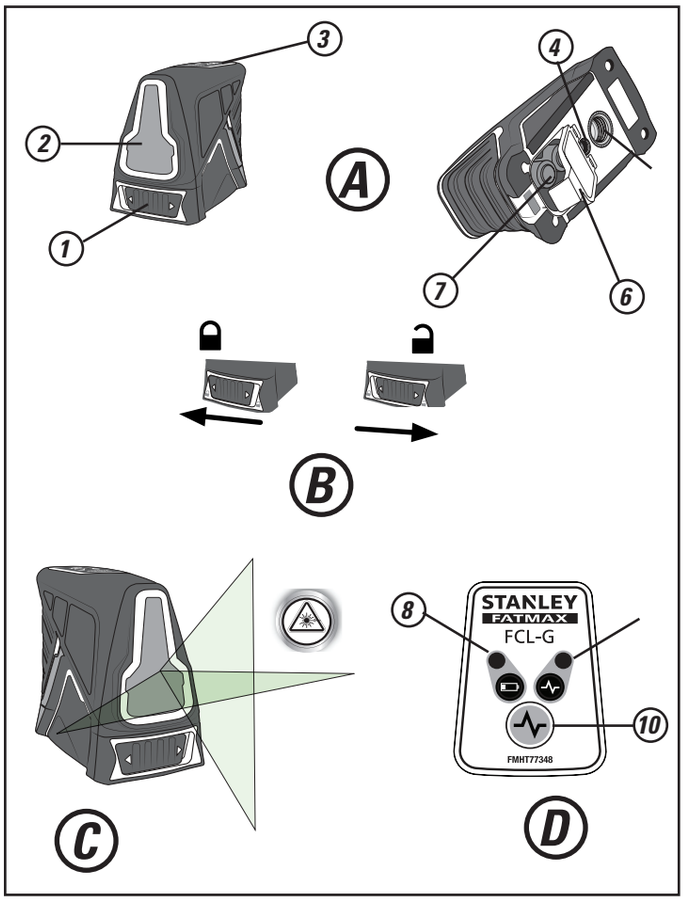


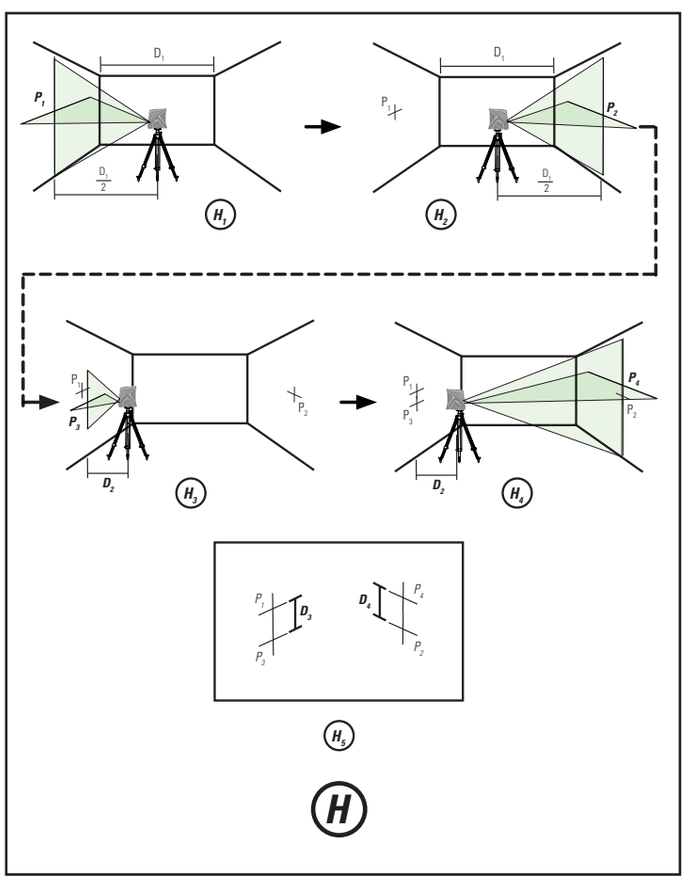
GB

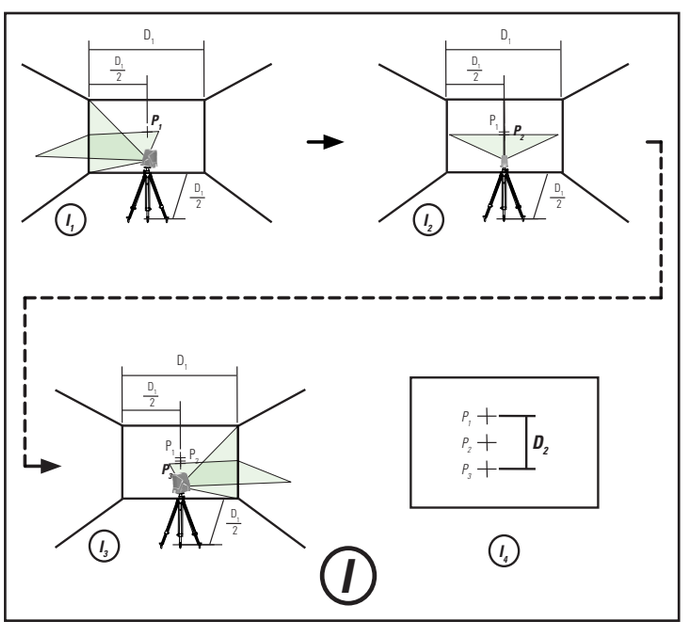
Self-Levelling

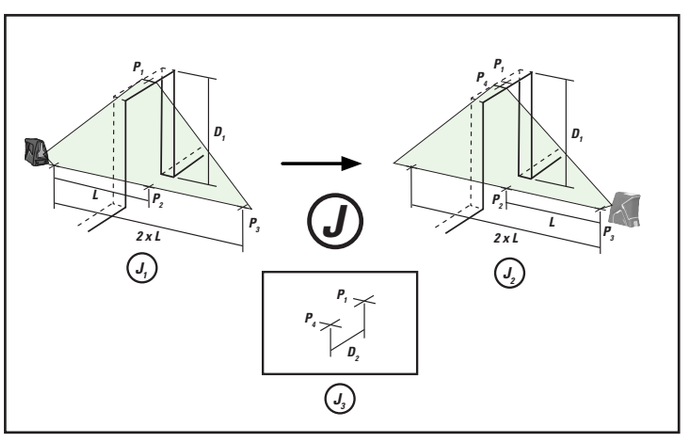
Please read these instructions before operating the product.

FMHT77348









Retain all sections of the manual for future reference.

User Safety

WARNING:
- Carefully read the ***Safety Instructions and Product Manual*** before using this product. The person responsible for the instrument must ensure that all users understand and adhere to these instructions.

WARNING:
- The following labels are placed on the laser tool to inform you of the laser class for your convenience and safety. (Text has been translated here for your convenience)

IEC /EN 60825-1

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 2007

CAUTION:
- While the laser tool is in operation, be careful not to expose your eyes to the emitting laser beam (red light source). Exposure to a laser beam for an extended time may be hazardous to your eyes.

CAUTION:
- Glasses may be supplied in some of the laser tool kits. These are NOT certified safety glasses. These glasses are ONLY used to enhance the visibility of the beam in brighter environments or at greater distances from laser source.

Contents

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- Contents
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- Keypad, Modes, and LED
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Product Overview

Figure A - Laser Tool
1. Power /Transport Lock
2. Laser Window
3. Keypad
4. 1/4-20 threaded mount
5. 5/8-11 threaded mount
6. Battery Cover with Warning label
7. 4 x AA Batteries

Figure B - Power /Transport Lock

Figure C - Laser Modes

Figure D - Keypad

Figure H - Level Beam Accuracy

Figure I - Horizontal Beam Accuracy

Figure J - Vertical Beam Accuracy

Keypad, Modes, and LED

Switch

Power ON/Pendulum lock off /Self-leveling On

Power OFF/Pendulum lock on
- To turn the laser tool ON move switch to the unlocked position
- To turn the laser tool OFF, move switch to the locked position

Modes
Laser Beam Available Modes
- All beam lines ON
- All beam lines OFF

Self-Leveling *(See figure Ⓑ)*
- The pendulum lock on the laser tool needs to be switched to the unlocked / ON position to enable self-leveling.

Keypad-Pulse key.

Pulse mode ON/OFF key *(See figure Ⓓ)*

Press to activate Pulse mode.***(See figure Ⓓ # 10)***

Pulse Mode LED/Out-of-Level Indicator Operation *(See figure Ⓓ # 9)*

LED OFF
1. Pulse Mode is OFF/ Unit is level

LED ON-CONTINUOUS
2. PULSE MODE is ON, and laser unit is within self-leveling range

LED ON-FLASHING
3. Laser unit is OUT OF LEVEL.

Keypad-Battery key

Battery level indicator key *(See figure Ⓓ)*

Battery Life LED (See figure Ⓓ # 8)

LED OFF
1. Battery life >25%

LED ON-CONTINUOUS
2. Battery life < 25%

Applications

Plumb Transfer
- Using the vertical laser beam, establish a vertical reference plane.
- Position the desired object(s) until they are aligned with the vertical reference plane to ensure object(s) are plumb.

Level Transfer
- Using the horizontal laser beam, establish a horizontal reference plane.
- Position the desired object(s) until they are aligned with the horizontal reference plane to ensure object(s)are level.

Square
- Using the vertical and horizontal laser beams, establish a point where the two beams cross.
- Position the desired object(s) until they are aligned with both the vertical and horizontal laser beams to ensure objects(s) are square.

Batteries and Power

Battery Installation / Removal *(See figure Ⓑ)*

Laser Tool
- Turn laser tool to battery door and open.
- Install / Remove batteries. Orient batteries correctly when placing into battery compartment.
- Close battery door. Be sure that the door has been closed securely.

WARNING:
- Pay close attention to the battery holder's (+) and (-) markings for proper battery insertion. Batteries must be of same type and capacity. Do not use a combination of batteries with different capacities remaining.

Set Up

Laser Tool
- Place laser tool on a flat, stable surface.
- To power ON and activate the auto leveling feature move the pendulum / transport lock to the unlocked position. The laser tool must then be positioned in its upright position on a surface that is within the specified compensation range.

Mounting on Accessories
- Position accessory in a place where it will not be easily disturbed and near the central location of the area to be measured.
- Set up the accessory as required. Adjust positioning to be sure accessory base is near horizontal (within laser tools compensation range).
- Mount the laser tool to the accessory using the appropriate fastening method to be used with such accessory / laser tool combination.

CAUTION:
- Do not leave the laser tool unattended on an accessory without fully tightening the fastening screw. Failing to do so may lead to the laser tool falling and sustaining possible damage.

NOTE:
- It is best practice to always support laser tool with one hand when placing or removing laser tool from an accessory.
- If positioning over a target, partially tighten the fastener, align laser tool, and then fully tighten.

Operation

NOTE:
- Before operating the laser tool always be sure to check the laser tool for accuracy.
- Laser tool will indicate when it is out of compensation range. Reference LED Descriptions. Reposition laser tool to be closer to level.
- When not in use, please be sure to power OFF the laser tool by placing the pendulum lock in the locked position.

Power
- To turn the laser ON move the pendulum / transport lock to the unlocked position.
- To turn the laser OFF, move the pendulum / transport lock to the locked position.

Modes
OFF/ Locked *(See figures Ⓑ)*
- The laser will be OFF and the pendulum locked.

ON/ Self-Leveling *(See figures Ⓑ)*
- The pendulum lock on the laser tool will be positioned in the unlocked /self-leveling position when the laser is turned ON
-

Accuracy Check and Calibration

NOTE:
- The laser tools are sealed and calibrated at the factory to the accuracies specified.
- It is recommended to perform a calibration check prior to its first use and then periodically during future use.
- The laser tool should be checked regularly to ensure its accuracies, especially for precise layouts.
- When performing the accuracy checks, use the largest area / distance possible, closest to the operating distance. The greater the area / distance, the easier to measure the accuracy of the laser.
- The lock must be in the unlocked position to allow the laser tool to self-level before checking the accuracy.

Level Beam Accuracy *(See figure Ⓗ)*

- Ⓗ1 Place laser tool as shown with laser ON. Mark point P_1 at cross.
- Ⓗ2 Rotate laser tool 180° and mark point P_2 at cross.
- Ⓗ3 Move laser tool close to wall and mark point P_3 at cross.
- Ⓗ4 Rotate laser tool 180° and mark point P_4 at cross.
- Ⓗ5 Measure the vertical distance between P_1 and P_3 to get D_3 and the vertical distance between P_2 and P_4 to get D_4 .
- Calculate the maximum offset distance and compare to the difference of D_3 and D_4 as shown in the equation.
- ***If the sum is not less than or equal to the calculated maximum offset distance the tool must be returned to your Stanley Distributor for calibration.***

Maximum Offset Distance:

$$Maximum = 0{,}6\ \frac{mm}{m} \times (D_1\,m - (2 \times D_2\,m))$$
$$= 0{,}007\ \frac{in}{ft} \times (D_1\,ft - (2 \times D_2\,ft))$$

Compare : (See figure Ⓗ5)

$$D_3 - D_4 \leq \pm Maximum$$

Example:
- $D_1 = 10\ m,\ D_2 = 0{,}5\ m$
- $D_3 = 0{,}5\ mm$
- $D_4 = -1{,}0\ mm$
- $0{,}6\ \frac{mm}{m} \times (10\ m - (2 \times 0{,}5\ m) = 5.4\ mm$ ***(maximum offset distance)***
- $(0{,}5\ mm) - (-1{,}0\ mm) = 1{,}5\ mm$
- $1{,}5\ mm \leq 5.4\ mm$ ***(TRUE, tool is within calibration)***

Horizontal Beam Accuracy *(See figure ①)*

- ① Place laser tool as shown with laser ON. Aim vertical beam towards the first corner or a set reference point. Measure out half of the distance D_1 and mark point P_1 .
- ② Rotate laser tool and align front vertical laser beam with point P_1 . Mark point P_2 where the horizontal and vertical laser beams cross.
- ③ Rotate laser tool and aim vertical beam towards the second corner or set reference point. Mark point P_3 so that it is vertically in line with points P_1 and P_2 .
- ④ Measure the vertical distance D_2 between the highest and lowest point.
- Calculate the maximum offset distance and compare to D2 .
- ***If D_2 is not less than or equal to the calculated maximum offset distance the tool must be returned to your Stanley Distributor for calibration.***

Maximum Offset Distance:

$$Maximum = 0{,}3 \frac{mm}{m} \times D_1 m$$

$$= 0{,}004 \frac{in}{ft} \times D_1 ft$$

Compare: (See figure ④)

$$D_2 \leq Maximum$$

Example:

- $D_1 = 10m,\ D_2 = 1{,}0\ mm$
- $0{,}3 \frac{mm}{m} \times 10\ m = 3mm$
  (maximum offset distance)
- $1{,}0\ mm \leq 1{,}0\ mm$
  (TRUE, tool is within calibration)

Vertical Beam Accuracy *(See figure ⑤)*

- ① Measure the height of a door jamb or reference point to get distance D_1 . Place laser tool as shown with laser ON. Aim vertical beam towards door jamb or reference point. Mark points P_1 , P_2 , and P_3 as shown.
- ② Move laser tool to opposite side of door jamb or reference point and align the same vertical beam with P_2 and P_3 .
- ③ Measure the horizontal distances between P_1 and the vertical beam from the 2nd location.
- Calculate the maximum offset distance and compare to D_2 .
- ***If D_2 is not less than or equal to the calculated maximum offset distance the tool must be returned to your Stanley Distributor for calibration.***

Maximum Offset Distance:

$$Maximum = 0{,}6 \frac{mm}{m} \times D_1 m$$

$$= 0{,}004 \frac{in}{ft} \times D_1 ft$$

Compare: (See figure ③)

$$D_2 \leq Maximum$$

Example:

- $D_1 = 2\ m,\ D_2 = 0{,}5\ mm$
- $0{,}6 \frac{mm}{m} \times 2\ m = 1{,}2\ mm$
  (maximum offset distance)
- $0{,}5\ mm \leq 1{,}2mm$
  (TRUE, tool is within calibration)

Specifications

Laser Tool

	FCL-G (STHT77348)
Levelling Accuracy:	≤3 mm / 10m (1/8in @ 30 ft)
Horizontal / Vertical Accuracy	≤3mm / 10m (1/8in @ 30 ft)
Compensation Range:	± 4°
Working Distance (Line):	20 m (65ft)
Laser Class:	Class 2 (IEC/EN60825-1)
Laser Wavelength	510 nm ~ 530 nm
Operating Time (All lasers ON):	≥ 10 hours (Alkaline)
Power Source:	4 x "AA" (LR6)
IP Rating:	IP54
Temperature Range (Operating):	-10° C ~ +50° C (14°F ~ 122°F)
Temperature Range (Storage):	-25° C ~ +70° C (-13°F~158°F)

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