LIMITED WARRANTY AND LIMITATION OF LIABILITY

Each Fluke product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is two years and begins on the date of shipment. Parts, product repairs, and services are warranted for 90 days. This warranty extends only to the original buyer or end-user customer of a Fluke authorized reseller, and does not apply to fuses, disposable batteries, or to any product which, in Fluke's opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation or handling. Fluke warrants that software will operate substantially in accordance with its functional specifications for 90 days and that it has been properly recorded on non-defective media. Fluke does not warrant that software will be error free or operate without interruption.

Fluke authorized resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Fluke. Warranty support is available only if product is purchased through a Fluke authorized sales outlet or Buyer has paid the applicable international price. Fluke reserves the right to invoice Buyer for importation costs of repair/replacement parts when product purchased in one country is submitted for repair in another country.

Fluke's warranty obligation is limited, at Fluke's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to a Fluke authorized service center within the warranty period.

To obtain warranty service, contact your nearest Fluke authorized service center to obtain return authorization information, then send the product to that service center, with a description of the difficulty, postage and insurance prepaid (FOB Destination). Fluke assumes no risk for damage in transit. Following warranty repair, the product will be returned to Buyer, transportation prepaid (FOB Destination). If Fluke determines that failure was caused by neglect, misuse, contamination, alteration, accident, or abnormal condition of operation or handling, including overvoltage failures caused by use outside the product's specified rating, or normal wear and tear of mechanical components, Fluke will provide an estimate of repair costs and obtain authorization before commencing the work. Following repair, the product will be returned to the Buyer transportation prepaid and the Buyer will be billed for the repair and return transportation charges (FOB Shipping Point).

THIS WARRANTY IS BUYER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. FLUKE SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE OR THEORY.

Since some countries or states do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this Warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.

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Everett, WA  98206-9090
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The Netherlands

To register your product online, visit http://register.fluke.com
Symbols

Warning notices
The warning notices differ from one another concerning the type of danger through the following signs:

- **Caution** warns against damage to property.
- **Warning** warns against bodily harm.
- **Danger** warns against danger to life.

Composition of the warning notices

⚠️

Signal words

Type and source of the danger!

- Measure to avoid the danger.

Other symbols

Notes

- **Note** Notes on appropriate handling of laser measuring devices.

Operation instructions

Composition of the operating instructions:

- Guidance to an operation.

Indication of an outcome, if necessary.

Schedules

Composition of the non numbered schedules:

- Schedule level 1
- Schedule level 2

Composition of the numbered schedules:

1. Schedule level 1
2. Schedule level 1
   - 2.1 Schedule level 2
   - 2.2 Schedule level 2

Safety and dangers

- Make sure that the device is not used without instructions.
- Make sure that the device is used exclusively according to the instructions.
- Make sure that the safety settings are not disabled.
- Make sure that indication labels and caution labels are not removed.
- Do not open the device with tools (screwdriver etc.).
- Make sure that the device is not converted or modified.
- Avoid using accessories of other producers that are not recommended by Fluke.
- Make sure that the device is not used carelessly:
  - when working on scaffolds
  - when climbing ladders
  - when measuring near running machines
  - when measuring on open machine parts or installations
- Avoid aiming directly at the sun.
- Avoid blinding other persons intentionally (also in darkness).
- Make sure that the measuring position is secured sufficiently.
  (e.g. in streets, on construction sites, etc.)
- Make sure that the device is in proper and flawless condition.
- Do not use a defective device.

Correct usage

- measuring of distances
- calculation of functions e.g. areas and volumes
- Use the device exclusively in an atmosphere that is permanently inhabitable by humans.

Foreseeable misuse

- Do not use the device as a laser pointer.
- Do not use the device in explosive or aggressive environments.

Areas of responsibility

Area of responsibility of the manufacturer of the original equipment

Fluke Corporation, P.O Box 9090, Everett, WA (Fluke):

- Fluke is responsible for the safety-related flawless delivery of the device including the operating instruction.
Area of responsibility of other manufacturers of accessories

Other manufacturers of accessories for Fluke 411D are responsible for the development, the realization and the communication of safety concepts for their products and their effects in combination with the Fluke product.

Area of responsibility of the operator

Caution
Damage to property due to repairing!

In case of malfunctions, contact the retailer.

The operator is obliged to observe the following:

- He understands the protection information on the device and the operating instruction.
- He is familiar with the customary in-house accident control directives.

Overview

Keys
See drawing A:
1. laser emitter
2. receiver lens
3. display
4. on/measure
5. Subtraction
6. measuring plane/unit
7. clear/off
8. area/space volume/Pythagoras
9. Addition

Display
See drawing D:
10. measuring plane
11. area/space volume/Pythagoras
12. battery symbol
13. 2nd row
14. fractions/exponents
15. units
16. summary row
17. Addition/Subtraction

Initial operation

Insert the batteries
See drawing E:
- To ensure a reliable use, use exclusively alkaline batteries.
- Remove battery compartment cover.
- Insert alkaline batteries (2 x AAA) observing the polarity.
- Close the battery compartment cover.

Changing the batteries
- Change the batteries when the battery symbol is blinking permanently.

How to use

Measuring conditions
The quality of the measurement depends on the surfaces to which you are measuring.

Measurement errors

Caution
Damage to property due to use of wrong measuring results!

Avoid measuring errors due to unexpected events during distance measuring.
- Perform a control measurement.

Measuring errors are possible in case of:

- colorless fluids (e.g. water)
- clean, translucent glass
- styrofoam or similar semi-translucent surfaces
- strongly reflecting targets that deflect the laserbeam
- measurements aimed at moving objects

Causes:

- Strongly reflecting targets deflect the laser beam and cause measuring errors.
- Non-reflecting, dark surfaces increase the measuring time.

For constantly high-quality measurements

- Perform control measurements periodically.
- Perform control measurements before and after important measurements.
Switching on/off

Switch on the device by pressing key 4 briefly. The device shows the battery symbol until another key is pressed.

Switch off the device by holding key 7 for several seconds. If no key is pressed for 180 seconds, the device switches off automatically.

Delete key

Undo the most recent action by pressing key 7 briefly.

Adjusting the measuring plane

See drawing F:

Rear measuring plane is the standard setting.

For measurement from front edge, press key 6 briefly.

For measurement from rear edge, press key 6 briefly again.

Adjusting the measuring units

Metric system is the standard setting.

To change the unit, hold key 6 for several seconds.

With every keypress, the device switches to the next unit.

Possible units:

- meters with mm display
- feet inch fractional
- summary row up to 1/16 inch
- 2nd row up to 1/8 inch
- inch fractional
- summary row up to 1/16 inch
- 2nd row up to 1/8 inch

Measuring

Measuring individual distances

Press key 4 briefly.

Aim active laser at target area.

Press key 4 briefly. The device measures the distance.

The device displays the result immediately.

Continuous measuring

This function enables distances to be staked out.

Hold key 4 for several seconds. Continuous measuring starts.

Press key 4 briefly. Continuous measuring stops.

The value last measured appears in the summary row.

Functions

Add/Subtract

Add:

- Measure the first distance.
- Press key 9 once.
- The device adds the second measuring result to the first measuring result.
- Measure the second distance.

Subtract:

- Measure the first distance.
- Press key 5 once.
- The device subtracts the second measurement result from the first measurement result.
- Measure the second distance.

Repeat if required. The device displays the result in the summary row and the previous value in the second row.

Area

Press key 8 once.

The area symbol appears on the display.

Press key 4 and measure the first distance. (e.g. length).

Press key 4 and measure the second distance. (e.g. width).

The device displays the result in the summary row and the respective measured distance to the next measurement in the second row.

Space volume

Press key 8 twice.

The volume symbol appears on the display.

Press key 4 and measure the first distance (e.g. length).

Press key 4 and measure the second distance (e.g. width).

Press key 4 and measure the third distance (e.g. height).

The device displays the result in the summary row and the respective measured distance to the next measurement in the second row.
Pythagoras

See drawing G:

- Press key 8 three times. The Pythagoras symbol appears on the display.
- Press key 4 and measure the first distance (diagonal measurement).
- Press key 4 and measure the second distance (horizontal measurement).

The device displays the result in the summary row and the respective measured distance to the next measurement in the second row.

Troubleshooting

- If the message Error does not disappear after switching on the device repeatedly, please contact the retailer.
- If the message Info appears with a number, observe the instructions in the following table.

<table>
<thead>
<tr>
<th>No.</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>Calculation error</td>
<td>Perform measurement again.</td>
</tr>
<tr>
<td>252</td>
<td>Temperature too high</td>
<td>Let the device cool down.</td>
</tr>
<tr>
<td>253</td>
<td>Temperature too low</td>
<td>Warm the device up.</td>
</tr>
<tr>
<td>255</td>
<td>Reception signal too weak, measuring time too long</td>
<td>Change target surface (e.g. white paper).</td>
</tr>
<tr>
<td>256</td>
<td>Input signal too high</td>
<td>Change target surface (e.g. white paper).</td>
</tr>
<tr>
<td>257</td>
<td>Measuring error, too much background light</td>
<td>Shadow the target area.</td>
</tr>
<tr>
<td>258</td>
<td>Measurement outside of the measuring range</td>
<td>Mind the range.</td>
</tr>
<tr>
<td>260</td>
<td>Laser beam interrupted</td>
<td>Repeat the measurement.</td>
</tr>
</tbody>
</table>

Technical data

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>0.1 m to 30 m</td>
</tr>
<tr>
<td></td>
<td>0.33 ft to 100 ft</td>
</tr>
<tr>
<td>Measuring accuracy (2 σ)</td>
<td>Typ.: ± 3.0 mm*</td>
</tr>
<tr>
<td></td>
<td>± 0.12 in*</td>
</tr>
<tr>
<td>Smallest unit displayed</td>
<td>1 mm (1/16 in)</td>
</tr>
<tr>
<td>Laser class</td>
<td>2</td>
</tr>
</tbody>
</table>

Electromagnetic compatibility (EMC)

**Warning**

Possible disturbance of other devices (e.g. safety equipment, medical equipment) due to electromagnetic radiation!

- Observe the safety instructions of the respective devices.

Despite the compliance with all requirements of the corresponding directives and norms, a disturbance of other devices is possible.
Laser classification

The Fluke 411D generates a visible laser beam that is emitted from the front of the device. The device complies with laser class 2 according to:

- IEC60825-1: 2007 Safety of laser products
- EN60825-1: 2007 Safety of laser products

Laser class 2 products

Do not look into the laser beam and do not unnecessarily aim at other persons. The eye is usually protected by preventive reactions such as the eyelid closure reflex.

Cleaning

Care

- Clean the device with a damp, soft cloth.
- Do not immerse the device in water.
- Do not use aggressive cleaning agents or solvents.

Disposal

Note: Do not dispose of this product as unsorted municipal waste. Go to Fluke’s website for recycling information.

Warning

Bodily harm due to laser beam!

- Do not look directly into the laser beam.
- Do not look directly into the laser beam with optical appliances (such as binoculars, telescopes).

Caution

Damage to property due to inappropriate disposal!

- Dispose of the device and the batteries according to the national, country-specific disposal directives.
- Protect the device and the batteries from access of unauthorized persons.

Labels

- Laser Radiation
- Do not look into the laser beam
- Laser Radiation
- Do not look into the laser beam
- Laser Radiation
- Do not look into the laser beam
- Laser Radiation
- Do not look into the laser beam

Disposal

Caution

Damage to property due to inappropriate disposal!

- Dispose of the device and the batteries according to the national, country-specific disposal directives.
- Protect the device and the batteries from access of unauthorized persons.

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