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ADA INSTRUMENTS





OPERATING MANUAL

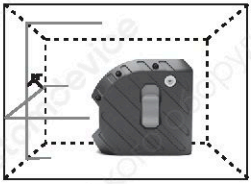
ARMO 2D / ARMO 2D GREEN

Line laser

adainstruments.com

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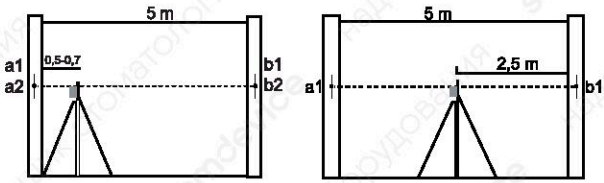
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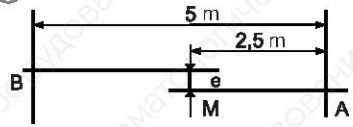
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THE MANUFACTURE RESERVES THE RIGHT TO MAKE CHANGES (NOT HAVING AN IMPACT ON THE SPECIFICATIONS) TO THE DESIGN, COMPLETE SET WITHOUT GIVING PRIOR WARNING.

SPECIFICATIONS FOR ARMO 2D

Laser beam	1H1V
Laser sources	635nm
Laser class	Class 2, <1mW
Accuracy	±3mm/10m
Self-leveling range	±4°
Working range without / with receiver	20 m / 40 m
Power supply	2xAA batteries, 1,5V or charger 5V
Tripod thread	1/4"
Dust/water protection	IP54
Operating temperature	-10°C +40°C
Weight	0,270 kg

SPECIFICATIONS FOR ARMO 2D GREEN

Laser beam	1H1V
Laser sources	520nm
Laser class	Class 2, <1mW
Accuracy	±3mm/10m
Self-leveling range	±4°
Working range without / with receiver	40 m / 70 m
Power supply	2xAA batteries, 1,5V or charger 5V
Tripod thread	1/4"

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Dust/water protection IP54
Operating temperature .....-10°C +40°C
Weight .....0,270 kg

APPLICATION

Line laser ADA ARMO 2D / ADA ARMO 2D GREEN is designed to check the horizontal and vertical position of the surfaces of the elements of building structures and also to transfer the angle of inclination of the structural part to similar parts during construction and installation works.

FUNCTIONAL CHARACTERISTICS

- 1 vertical line, 1 horizontal line.
- Receiver mode for outdoor operation.
- Slope mode
- Compensator for fast self-leveling works in the range up to ± 4°.
- The alarm is activated (laser lines are blinking), when the device deviates from the horizontal plane by ± 4°.
- The possibility to switch on/off laser lines separately.
- When turning off the power, built-in locking system can automatically lock the compensator to avoid vibration in the transportation.

1 LASER LINES

2 FEATURES

1. **Horizontal and Vertical laser window**
2. **Keypad**
3. **External power**
4. **Switch ON handle (compensator lock)**
5. **Battery compartment**
6. **Screw lug**
7. **Magnets**
8. **Thread 1/4"**
9. **Horizontal and vertical lines On/Off button**
10. **Detector mode On/off button**
11. **Laser lines indicator**
12. **Detector mode On/Off indicator**

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OPERATION

1. Open battery compartment. Insert batteries. Take care to correct polarity. Close battery compartment. Note: Remove batteries, if you are not going to use the tool for a long period of time.

2. Power supply. It's possible to use a power supply when working with the line laser. If rechargeable batteries are used as a power supply, you can charge them with the help of a charger.
WARNING: Never use charger for ordinary batteries. Do not leave the instrument unattended while using charger. Parameters of the charger must correspond to the parameters of domestic electricity. Output voltage must be no more than 5V.

3. Place line laser on the floor, magnet target or tripod. When using tripod/magnet mount, place the line laser on the tripod/magnet mount and screw the centering screw into the center hole.

4. Switch on the line laser setting the handle (4) to the low position. Always set the handle to the up position during transportation. If laser lines begin to blink when switching on the line laser, that means the line laser is out of range more than ±4°. Level the line laser.

5. Choose the laser lines by pressing button H (9): vertical line only, horizontal line only, both vertical and horizontal lines. Press and hold button H (9) more than 5 sec to choose the slope mode. Laser line indicator (11) will turn red. Line laser gives a signal one time per 10 sec. in this mode. Press and hold button H (9) more than 5 sec to leave this mode. Laser line indicator (11) will turn green.

6. Use laser glasses (are not supplied with the tool) or switch on the receiver mode during operation in bright light, if the beam is poorly visible. Press button (10) to switch on the receiver mode. Laser lines indicator is ON. Laser beam can be detected with the receiver (is not supplied with the tool). To switch Off the mode, press button (10) once again. Indicator (11) is off.

7. To switch off the line laser, move the switch on handle (4) into the upper position.

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3 TO CHECK THE ACCURACY OF LINE LASER (SLOPE MODE)

Set up the instrument between two walls, the distance is 5 m. Turn on the line laser and mark the point of cross laser line on the wall. Turn the line laser by 180° and mark again the point of cross laser line. Set up the line laser 0,5-0,7m away from the wall and make, as described above, the same masrks. If the difference {a1- b2} and {b1-b2} is less then the value of "accuracy" (see spesifications), there is no need in calibration.
Example: when you check the accuracy of Line Laser the difference is {a1-a2}=5 mm and {b1-b2}=7 mm. The instrument's error: {b1-b2}-{a1-a2}=7-5=2 mm. Now you can compare this error with standard error.
If the accuracy of line laser isn't corresponding with claimed accuracy, contact the authorized service center.

4 TO CHECK THE ACCURACY OF HORIZONTAL LINE (BENDING PLANE)

Choose a wall and set laser 5M away from the wall. Turn on the laser and mark the point of cross laser line. Rotate the line laser to shift the beam approximately 2.5m to the left and check that the horizontal line is within the "accuracy" value (see characteristics) at the same height as the mark indicated by the laser cross. Repeat the same procedure shifting the line laser to the right. Note: do not move the rotating axis when checking the accuracy.

TO CHECK PLUMB

Choose a wall and set laser 5 m away from the wall. Hang a plumb with the length 2.5 m on the wall. Turn on the laser and make the vertical laser line meet the point of the plumb. The accuracy of the line is in the range if the vertical line doesn't exceed (up or down) the accuracy that is shown in the specifications (e.g. ±3 mm/10 m). If the accuracy isn't corresponding with claimed accuracy, contact the authorized service center.

PRODUCT LIFE

Product life of the tool is 7 years. The battery and the tool should never

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be placed in municipal waste. Date of production, manufacturer's contact information, country of origin are indicated on the product sticker.

SPECIFIC REASONS FOR ERRONEOUS MEASURING RESULTS

- Measurements through glass or plastic windows;
- Dirty laser emitting window;
- After instrument has been dropped or hit. Please check the accuracy;
- Large fluctuation of temperature: if instrument will beused in cold areas after it has been stored in warm areas (or the other way round) please wait some minutes before carrying out measurements.

CARE AND CLEANING

- Please handle line laser with care.
- Clean with soft cloth only after any use. If necessary damp cloth with some water.
- If the line laser is wet clean and dry it carefully.

ELECTROMAGNETIC ACCEPTABILITY (EMC)

• It cannot be completely excluded that this instrument will disturb other instruments (e.g. navigation systems);
• will be disturbed by other instruments (e.g. intensive electromagnetic radiation nearby industrial facilities or radio transmitters).

(5) CAUTION STICKER LASER CLASS 2

LASER CLASSIFICATION

The line laser is a laser class 2 laser product accortding to DIN IEC 60825-1:2014 and Class II.

SAFETY INSTRUCTIONS

- Please follow up instructions given in operators' manual.
- Do not stare into beam. Laser beam can lead to eye injury (even from

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greater distances).

- Do not aim laser beam at persons or animals. The laser plane should be set up above eye level of persons. Use the instrument for measuring jobs only.
- Do not open instrument housing. Repairs should be carried out by authorized workshops only. Please contact your local dealer.
- Do not remove warning labels or safety instructions.
- Keep instrument away from children.
- Do not use instrument in explosive environment.

WARRANTY

This product is warranted by the manufacturer to the original purchaser to be free from defects in material and workmanship under normal use for a period of two (2) years from the date of purchase. During the warranty period, and upon proof of purchase, the product will be repaired or replaced (with the same or similar model at manufactures option), without charge for either parts of labour. In case of a defect please contact the dealer where you originally purchased this product. The warranty will not apply to this product if it has been misused, abused or altered. Without limiting the foregoing, leakage of the battery, bending or dropping the unit are presumed to be defects resulting from misuse or abuse.

WARRANTY DOESN'T EXTEND TO FOLLOWING CASES:

1. If the standard or serial product number will be changed, erased, removed or wil be unreadable.
2. Periodic maintenance, repair or changing parts as a result of their normal runout.
3. All adaptations and modifications with the purpose of improvement and expansion of normal sphere of product application, mentioned in the service instruction, without tentative written agreement of the expert provider.
4. Service by anyone other than an authorized service center.
5. Damage to products or parts caused by misuse, including, without limitation, misapplication or nrgligence of the terms of service instruction.
6. Power supply units, chargers, accessories, wearing parts.
7. Products, damaged from mishandling, faulty adjustment, maintenance with low-quality and non-standard materials, presence of any liquids and foreign objects inside the product.
8. Acts of God and/or actions of third persons.
9. In case of unwarranted repair till the end of warranty period because of damages during the operation of the product, it's transportation and storing, warranty doesn't resume.

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WARRANTY CARD

Name and model of the product _____

Serial number_____Date of sale_____

Name of commercial organization _____

stamp of commercial organization

Warranty period for the instrument explotation is 24 months after the date of original retail purchase.

During this warranty period the owner of the product has the right for free repair of his instrument in case of manufacturing defects.

Warranty is valid only with original warranty card, fully and clear filled (stamp or mark of thr seller is obligatory).

Technical examination of instruments for fault identification which is under the warranty, is made only in the authorized service center. In no event shall manufacturer be liable before the client for direct or consequential damages, loss of profit or any other damage which occur in the result of the instrument outage.

The product is received in the state of operability, without any visible damages, in full completeness. It is tested in my presence. I have no complaints to the product quality. I am familiar with the conditions of qarranty service and i agree.

purchaser signature _____

Before operating you should read service instruction!

If you have any questions about the warranty service and technical support contact seller of this product

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