

MultiScanner™ A250

Multifunction Wall Scanner

BEFORE YOU BEGIN

ZIRCON® STUD FINDERS WORK BY SENSING DENSITY CHANGES BEHIND THE WALL. OTHER OBJECTS CAN BE DETECTED ESPECIALLY IF THEY ARE VERY CLOSE TO THE WALL. **DO NOT ASSUME EVERYTHING DETECTED IS A STUD.**

- Always use a new alkaline battery with an extended expiration date. Match battery direction to image inside of battery cavity.

- Do not rely exclusively on the scanner to locate items behind a surface. Use other information to help locate such items before penetrating the surface, including construction plans, visible points of entry of pipes and wiring into walls such as in a basement, and standard stud-spacing practices.

- Always start your scan in StudScan Mode which scans through surfaces up to 19 mm deep. Scanning in DeepScan™ Mode may detect an object further behind the wall that may or may not be a stud.

- Always scan for studs at several different heights on the wall and mark the location of every target indicated by the stud finder. This is called "mapping the wall." Pipes and other objects will likely not give consistent readings from floor to ceiling, like a stud will.

- Readings should always be consistent and repeatable.

- Zircon stud finders are recommended for interior use only.

- Studs normally run from floor to ceiling, except above and below windows, and above doors.

- Other objects commonly contained in walls, floors, or ceilings are water pipes, gas lines, firestops, and electrical wiring.

- Sensing depth and accuracy can vary depending on scanning environment conditions such as mineral content, moisture, texture and consistency of the wall materials.

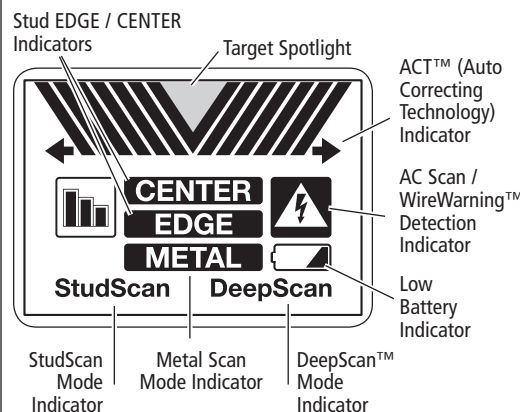
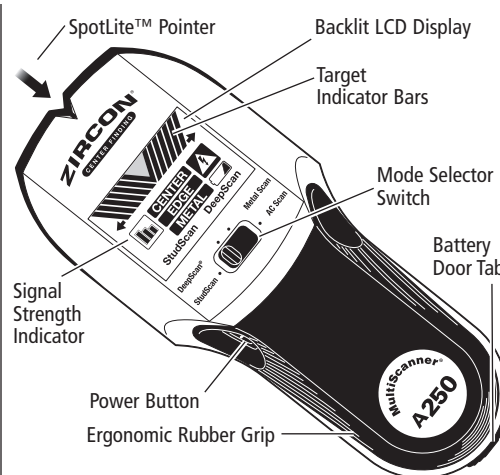
- Always turn off power when working near electrical wires.

- Depending on the proximity of electrical wiring or pipes to the wall surface, the scanner may detect them in the same manner as studs. Caution should always be used when nailing, cutting, or drilling in walls, floors, and ceilings that may contain these items.

- Studs and joists are normally spaced 40 or 60 cm apart, are normally 38 mm wide, and may be separated by firestops. Anything closer together, or of a different width, may not be a stud or joist.

TROUBLESHOOTING & CONSTRUCTION TIPS

SITUATION	LIKELY CAUSE	SOLUTION
Scanner detects objects other than studs in StudScan Mode or finds more studs than should be there.	Electrical wiring and metal or plastic pipes may be near or touching the back of the wall surface.	<ul style="list-style-type: none"> Scan the area in Metal Scan and/or AC Scan to determine if metal or hot AC is present. Check for other studs equally spaced to either side at 30, 40, or 60 cm, or check for the same stud at spots directly above or below the first scan area. Standard studs measure approximately 38 mm between edges. Anything larger or smaller is likely not a stud (unless near door or window).
Area of voltage appears larger than actual wire during AC Scan.	Voltage detection can spread on drywall by as much as 30 cm on each side of the wire.	Narrow the scan detection: 1. Turn scanner off. 2. Turn it on again at the edge of where the wire was first detected. 3. Repeat scan.
Difficulty detecting metal.	Scanner was calibrated over metal object or metal object is too deep or too small.	<ul style="list-style-type: none"> The scanner may have been calibrated over a metal object, reducing sensitivity. Try calibrating in another location. Scan in both horizontal and vertical directions. Metal sensitivity is increased when metal object is parallel to sensor.
Metal object reading appears wider than actual size.	Metal has a greater density than wood.	To reduce sensitivity in Metal Mode, recalibrate scanner over either of first two marks (see steps under SCAN FOR METAL).
Constant readings of studs near windows and doors.	Multiple studs are in use.	Double and triple studs are sometimes used around doors and windows. Headers are used above them. Detect outer edges so you know where to begin.
You suspect electrical wires, but do not detect any.	Wires are shielded by a metal conduit, braided wire or metallic wall covering.	Use Metal Scan Mode to scan for metal, wire, or metal conduit.
	Wires deeper than 50 mm from the surface might not be detected.	If there is an outlet switch, turn it to ON position while scanning, but turn OFF when working near the wires. Use extra caution if the area has plywood, thick wood backing behind drywall, or walls that are thicker than normal.
	Wires may not be live.	Plug a lamp into the outlet and turn it on to test whether wires are live.
Low Battery Indicator flashes and scanner does not operate.	Low battery.	Install new 9-volt alkaline battery with valid extended expiration date.



4 scanning modes:

- **StudScan** locates centre and edges of stud (wood or metal) up to 19 mm deep
- **DeepScan** locates center and edges of stud up to 38 mm deep
- **Metal Scan** locates ferrous (magnetic) metal, such as steel, up to 75 mm deep, and non-ferrous (non-magnetic) metal, such as copper, up to 38 mm deep
- **AC Scan** locates live, unshielded AC wires up to 50 mm deep

To activate scanner, press and hold Power Button. If Power Button is not pressed & held, unit shuts off.

FIND A STUD

For best results, hold the scanner as shown (Figure A) and move slowly when scanning. **Do not touch the surface during calibration or scan.**

1. Set mode to StudScan.
2. Hold scanner flat against wall, then press and hold Power Button. In 1–2 seconds, the unit will calibrate. A short beep confirms that calibration is complete. **DO NOT MOVE SCANNER DURING CALIBRATION.**

3. While holding down the Power Button, slide the scanner slowly along the wall. When scanner finds the edge of a stud, EDGE displays. (Figure B)

4. Continue sliding. When scanner finds the centre of a stud, CENTER displays, light illuminates, 3 bars show signal strength, and a buzzer sounds. (Figure C)

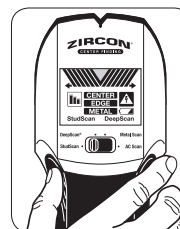


Figure A

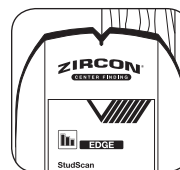


Figure B

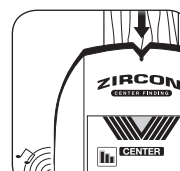


Figure C

NOTE: If only two signal bars show (Figure D), stud may be too deep. Select DeepScan Mode, and repeat scan.

Scanner automatically recalibrates when in use. If an arrow shows (Figure E), the scanner was calibrated too close to a stud, then moved away. Arrow indicates the direction to the stud. This is ACT (Auto Correcting Technology).

SCAN FOR METAL

Use Metal Scan to determine if the stud found is wood, or a metal stud or pipe.

1. Set mode to Metal Scan.
2. For maximum sensitivity, press and hold Power Button. Hold the scanner away from the surface until a short beep confirms calibration is complete, then place against the surface to be scanned.
3. While continuing to hold Power Button, slide the scanner slowly against the wall. **Mark the spot** where the most middle bars display. For a strong read, the scanner will light up and a steady beep will sound. (Figure F)
4. Continue sliding in same direction until bars reduce, then reverse direction.

Mark the spot where the display bars peak. The midpoint between the two marks is the location of the metal object.

NOTE: If the unit indicates a large area of metal, refine the scan to more accurately find the centre.

REFINE THE METAL SCAN

1. Release Power Button, then position the scanner over one of the previous marks. This will reset to a lower sensitivity and narrow the scan area. (Figure G)
2. Press and hold Power Button, then repeat 3 and 4 under SCAN FOR METAL.
3. Repeat as needed for increased accuracy. (Figure H)

NOTE: If any bars display, metal is present. Small targets or targets deep below the surface may only show one or two bars, and the scanner may not be able to locate the centre of the metal.

SCAN FOR AC (alternating current)

Use AC Scan to find live (hot) wiring. **ALWAYS TURN OFF POWER WHEN WORKING NEAR ELECTRICAL WIRES (EXCEPT WHEN SCANNING).**

1. Set mode to AC Scan.
2. Hold scanner flat against wall, then press and hold Power Button. A short beep confirms that calibration is complete. **DO NOT MOVE SCANNER DURING CALIBRATION.**
3. While holding Power Button, slide the scanner slowly against the wall. **Mark the spot** where the most middle bars display. For a strong read, the scanner will light up and a steady beep will sound. (Figure F)

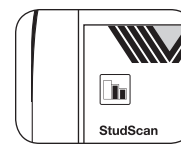


Figure D



Figure E

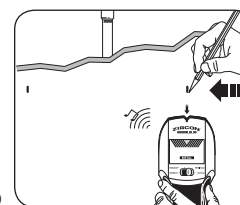


Figure F

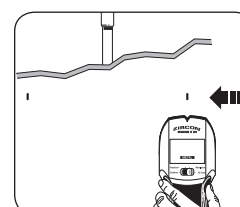


Figure G

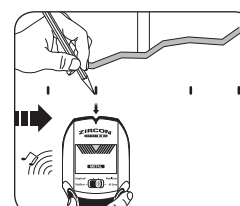


Figure H

4. Continue in same direction until bars reduce, then reverse direction. **Mark the spot** where the display bars peak. The midpoint between the two marks is the location of the live AC wiring. If the unit indicates live electricity over a large area, reduce the sensitivity of the scanner to refine the scanning area and more accurately locate the live AC wiring.

⚠ WARNING DO NOT ASSUME THERE ARE NO LIVE ELECTRICAL WIRES IN THE WALL. DO NOT TAKE ACTIONS THAT COULD BE DANGEROUS IF THE WALL CONTAINS A LIVE ELECTRICAL WIRE. ALWAYS TURN OFF THE ELECTRICAL, GAS, AND WATER SUPPLIES BEFORE PENETRATING A SURFACE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN ELECTRIC SHOCK, FIRE, AND/OR SERIOUS INJURY OR PROPERTY DAMAGE.

REFINE THE AC SCAN

1. Release Power Button, then position the scanner over one of the previous marks. This will reset to a lower sensitivity and narrow the scan area. (Figure G)
2. Press and hold Power Button, then repeat 3 and 4 under SCAN FOR AC.
3. Repeat as needed for increased accuracy. (Figure H)

NOTE: AC Scan only detects live (hot) unshielded AC wiring. Refer to the WARNING statement under WireWarning Detection below for important details and warnings about AC detection.

WIREWARNING DETECTION The Zircon® WireWarning Detection feature works continuously in StudScan, DeepScan and Metal Scan Modes. When live AC voltage is detected, the warning indicator shows and display flashes. If scanning begins over a live AC wire, the indicator or middle bars (in AC Scan) will flash continuously.

Use extreme caution under these circumstances, or whenever live AC wiring is present.

⚠ WARNING THE SCANNER MAY NOT DETECT LIVE CURRENT IF WIRES ARE MORE THAN 50 mm BELOW THE SCANNED SURFACE, IN CONCRETE, ENCASED IN CONDUIT, BEHIND A PLYWOOD SHEAR WALL OR METALLIC WALL COVERING, OR IF MOISTURE IS PRESENT IN THE ENVIRONMENT OR SCANNED SURFACE.

LIMITED 1 YEAR WARRANTY

Zircon Corporation ("Zircon") warrants to the product owner that this product will be free from defects in materials and workmanship for one year from the original date of purchase. Any defective product returned to Zircon within the warranty period to the address below, freight prepaid, along with proof of purchase, will be repaired or replaced, at Zircon's option. Repair or replacement may be made with a new or refurbished product or components, at Zircon's sole discretion. If the returned product is no longer available, Zircon may replace the product with a similar product of similar function. This warranty is limited to the electronic circuitry of the product and original case of the product, and specifically excludes any damage caused by abuse, modification, handling contrary to these instructions, other unreasonable use, or neglect. This is your sole and exclusive remedy for breach of this Limited Warranty.

This Limited Warranty is in lieu of all other warranties, express or implied, and no other representations or claims of a similar nature will bind or obligate Zircon. Any implied warranties applicable to this product that cannot be disclaimed are limited to the one year period following its purchase. This Limited Warranty does not cover consumable parts, including batteries, or software, even if packaged with the product.

WORKING WITH DIFFERENT MATERIALS

Wallpaper This scanner functions normally on walls covered with wallpaper or fabric, unless the materials are metallic foil, contain metallic fibers, or are still wet after application. Wallpaper may need to dry for several weeks after application.

Freshly painted walls It may take a week or longer to dry after application. If it is difficult to locate a stud in StudScan Mode on dry or freshly-dried paint, switch to Metal Scan Mode to locate the nails or drywall screws holding drywall to the studs.

Lath and plaster Due to irregularities in plaster thickness, it is difficult for this scanner to locate studs in either stud-scanning mode. Switch mode to Metal Scan to locate the nail heads holding wood lath to the studs. If the plaster has metal mesh reinforcement, the scanner will be unable to detect studs through that material.

Highly textured walls or acoustic ceilings

When scanning a ceiling or wall with an uneven surface, place thin cardboard on the surface to be scanned and scan over the cardboard in DeepScan Mode. If irregular scanning results are received, switch to Metal Scan Mode to locate nails or drywall screws that line up vertically where a stud or joist is positioned.

Wood flooring, subflooring, or gypsum drywall over plywood sheathing Use DeepScan Mode and move the scanner slowly. The Signal Strength Indicator may only display one or two bars when the scanner locates a stud through a thick surface.

This scanner cannot scan for wood studs and joists through carpet and padding. In problematic situations, try using Metal Scan to locate nails or screws that may line up vertically or horizontally where a stud or joist is respectively positioned.

NOTE: Sensing depth and accuracy can vary depending on scanning environment conditions such as mineral content, moisture, texture, and consistency of the wall materials.

Electrical wiring and pipes Depending on the proximity of electrical wiring or pipes to the wall surface, the scanner may detect them in the same manner as studs. Caution should always be used when nailing, cutting, or drilling in walls, floors, and ceilings that may contain these items.

Studs and joists are normally spaced 40 or 60 cm apart, and are 38 mm wide. Anything closer together, or of a different width, may not be a stud or joist.

IN NO EVENT WILL ZIRCON BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM POSSESSION, USE OR MALFUNCTION OF THIS PRODUCT.

Some states do not allow limitations on certain implied warranties and/or the limitation on incidental or consequential damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Return products for warranty service, freight prepaid with proof of purchase (a dated sales receipt) to:

Zircon Corporation, Attn: Returns Department
1580 Dell Avenue
Campbell, CA 95008-6992 USA

Be sure to include your name and return address. Allow 4–6 weeks for delivery.

Customer Service: 1-800-245-9265 or 1-408-963-4550
Monday–Friday, 8:00 a.m.–5:00 p.m. PT
info@zircon.com • www.zircon.com

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