



PHOTO DAVID CHERRY



ARES II™ MANUAL



WARNING

The ARES II™, even when used as your primary means of maintaining altitude awareness, may fail. Always use your eyes to determine your approximate altitude.

Altimeters may give erroneous readings if you are tumbling or the altimeter is in a burble (wake). Chest mount altimeters are more vulnerable to this problem compared to hand/wrist mounted altimeters. If you are in doubt about how this limitation affects your skydiving, consult a licensed instructor.

DO NOT use this equipment unless you are currently participating in, or have successfully passed, an approved parachuting or freefall course.

Please read ALL instructions carefully prior to use.

The ARES II™ must be switched ON prior to entering the airplane.



ARES II™ is a trademark of LB Altimeters, Denmark

LB Altimeters operates a policy of continuous development. Therefore, we reserve the right to make changes and improvements to any of the products described in this guide without prior notice.

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INTRODUCTION

The ARES II™ is the most high-end, accurate, and reliable visual digital altimeter developed by LB Altimeters to date. The ARES II™ software includes second-to-none error correction to ensure correct live altitude readings in any application

Features

- Large high contrast, non-flicker, LCD display
- Electroluminescent backlight for night jumping
- Waterproof and shock resistant aluminum casing with hardened glass
- Quick buttons for access to primary functions
- Jump profile playback
- Basic logbook and daily jump counter

Functions

- Calibration to the local elevation
- User selection of feet / meter and mph / kmh
- Stores up to 10 min of data from last jump
- Log book stores up to 200 jumps including:
 - o Date / time
 - o Exit / opening altitudes
 - o Freefall time
 - o Max / average speed

DESCRIPTION

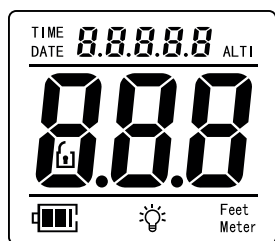
- 1 Altitude Offset / Up
- 2 Main
- 3 Backlight / Down
- 4 Display
- 5 Battery cover
- 6 Reset button



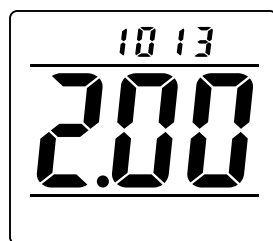
DISPLAY

Startup

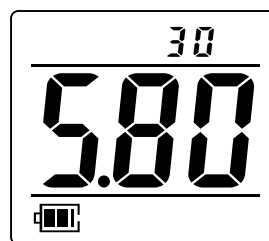
When turning on ARES II™, the unit will display the following during the startup self-test



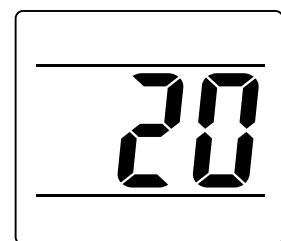
Full display



Air pressure reading (mbar)
Firmware version



Temperature (Celcius)
Battery voltage (V)

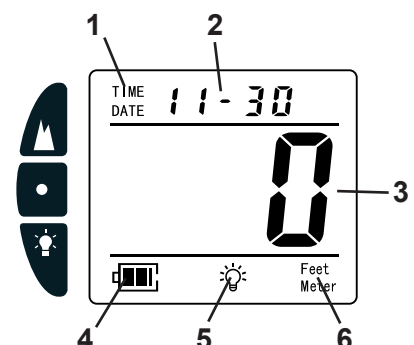


Self-test control number

Main window

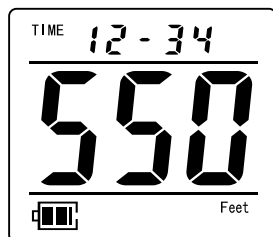
The main window is the default window after the unit is turned ON, and starting point for any further actions

- 1 Time/date indicator
- 2 Time/date display
- 3 Altitude display (flashing when negative)
- 4 Battery indicator
- 5 Backlight indicator
- 6 Feet / meter indicator

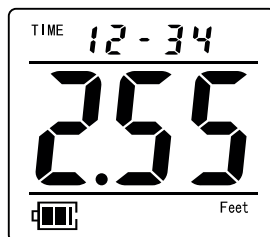


Altitude window

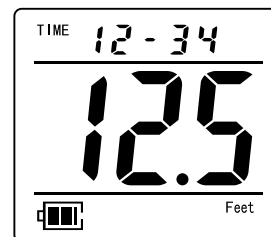
Shortly after take-off, the ARES II™ will enter Flight Mode. The main window will automatically display the current altitude when entering Flight Mode. The displayed altitude increments (feet / meter) depend on the current altitude.



0-990
Altitude display: normal
Increments of 10 feet / 5 meters



1,000-9,990
Altitude display: 10s
Increments of 10 feet / 10 meters



10,000 and above
Altitude display: 100s
Increments of 100 feet / 100 meters

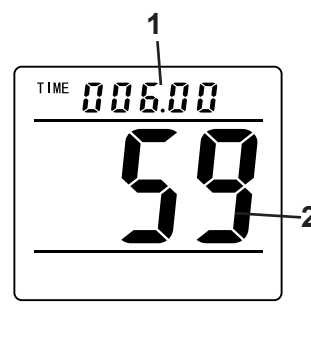
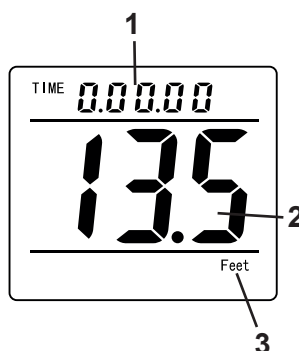
Logbook and Jump Info / Settings

See “Logbook and Jump Info” section for display examples and more information.

Jump Profile

The jump profile window is used when playing back the last jump.

- 1 Time display
- 2 Altitude display / Speed display
- 3 Feet/meter indicator



Battery Indicator

The battery indicator shows the current battery status.

-  Full capacity: Two black bars are shown inside the battery symbol
-  Half capacity: One black bar is shown inside the battery symbol
-  Low capacity: The battery symbol is empty. The batteries must be replaced as soon as possible
-  Empty: The battery symbol is flashing. Do not continue jumping. Replace batteries immediately

Warning: **Do not** perform night jumps, or jumps in sub-zero temperatures (Celsius), when the battery symbol shows low capacity.

MENU OVERVIEW

The ARES II™ menu system consists of 3 separate areas, which include the following (use road map for reference).

Quick Buttons

- Turn ON unit
- Altitude Offset
- Daily Jump Counter
- Backlight

Logbook and Jump Info

- Daily Jump Counter
- Total Jumps
- Exit Altitude
- Opening Altitude
- Freefall Time
- Average Freefall Speed
- Maximum Freefall Speed
- Altitude Profile - Last Jump
- Speed Profile - Last Jump

Settings

- Year
- Date
- Time
- Jump Counter
- Units – Altitude
- Units - Speed
- Dive Type
- Delete Last Jump
- Delete Logbook
- Turn OFF

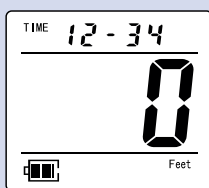
PERFORMING ACCESS

In order to access each of the individual areas, the following steps must be performed from the main window (Use road map for reference).

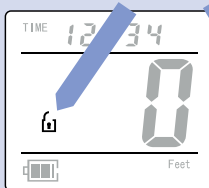
Quick Buttons

Press and hold the designated button for 5 seconds.

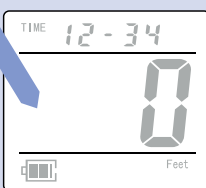
Performing ACCESS to Logbook and Jump Info



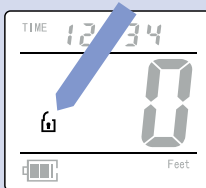
Press and release ■



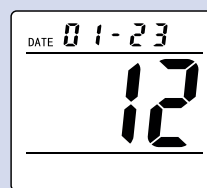
When the lock icon appears, press ■ and hold



Continue holding ■, the lock icon will disappear

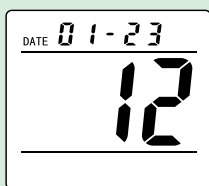


When the lock icon reappears, release ■

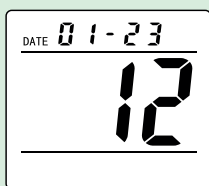


Logbook and Jump Info window

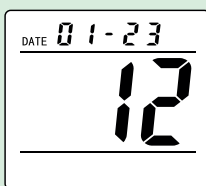
Settings



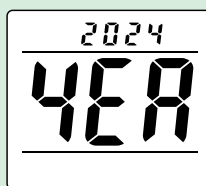
Perform ACCESS to Logbook and Jump Info window



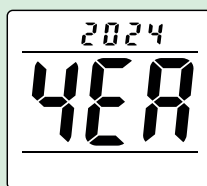
Press ■ and hold



Continue holding ■ for 5 seconds



Release ■



Settings window

QUICK BUTTONS

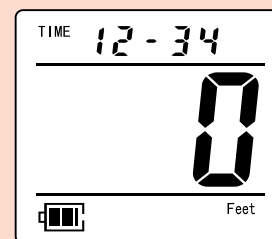
Quick Buttons are accessible from the Main Window and do not require ACCESS.

Turn the unit on

Turn on the ARES II™ on the ground before use. The unit runs a self-test and calibrates to the current ground level. The ARES II™ will stay on for 14 hours after the last jump or after last ACCESS performed.

With the unit off, press and hold any button for 5 seconds.

If ARES II™ is turned on during flight, the present altitude must be adjusted manually.



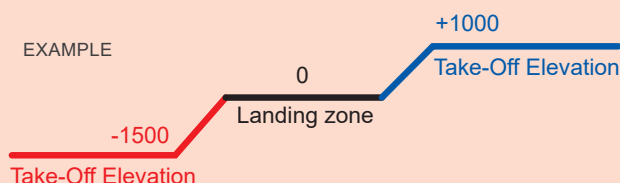
Altitude Offset

Use Altitude Offset to adjust for altitude difference between landing zone and take-off elevation.

To ensure proper ground reference on landing zone:

Select a **positive** offset, if take-off elevation is **HIGHER** than the landing zone.

Select a **negative** offset, if take-off elevation is **LOWER** than the landing zone.



Press and hold  for 5 seconds.

Press  to increase altitude. Press  to decrease altitude.

Press  to confirm Altitude Offset setting. The Altitude Offset will now be displayed in the main window (flashing when negative). Altitude Offset **must** be confirmed within 15 seconds following an altitude change. Altitude Offset is cancelled if no button is pressed within 15 seconds.

Note: If using Altitude Offset during flight use the aircraft altimeter for reference.

Note: When performing an Altitude Offset, the ARES II™ enters Flight Mode and will retain any offset for 14 hours if no jump is made. After 14 hours the unit will calibrate itself to the field elevation where it is located.

Backlight

 indicates if the backlight is on or off.

To enable/disable the backlight, press and hold  for 5 seconds.

The backlight will turn off automatically after 10 minutes, if ARES II™ is not in Flight Mode. The backlight will remain on while ARES II™ is in Flight Mode.

Note: If an Altitude Offset is present, the backlight will stay on until the Altitude Offset is cleared by a jump, times out (14 hours), or the unit is restarted.

LOGBOOK AND JUMP INFO

Logbook and Jump Info contain detailed information regarding previous jumps.

Perform ACCESS to enter the first entry of Logbook and Jump info.

Press  to scroll through all the entries.

ARES II™ exits Logbook and Jump info if no button is pressed within 15 seconds after ACCESS.

Daily Jump Counter

Displays **daily jump counter** for **individual dates**.

Press  to select later date(s).

Press  to select earlier date(s).

Press  to continue.



Total Jumps

Displays **total number of jumps**.

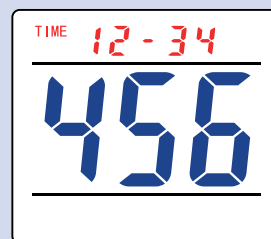
Select jump number to display more information.

Press  to select next jump.

Press  to select previous jump.

Date and time for the selected jump is shown at the top of the screen.

Press  to continue.



Exit Altitude

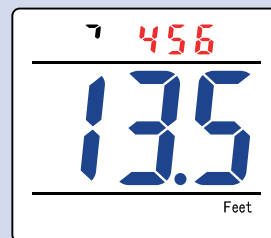
Displays **exit altitude** for **selected jump**.

Press  to select next jump.

Press  to select previous jump.

Selected jump number is shown at the top of the screen.

Press  to continue.



Opening Altitude

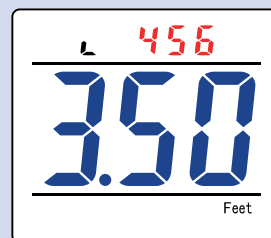
Displays **opening altitude** for **selected jump**.

Press  to select next jump.

Press  to select previous jump.

Selected jump number is shown at the top of the screen.

Press  to continue.



Freefall Time

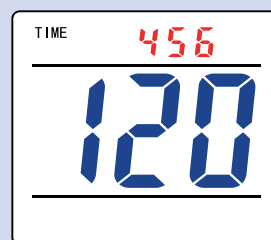
Displays **freefall time** registered for **selected jump**.

Press  to select next jump.

Press  to select previous jump.

Selected jump number is shown at the top of the screen.

Press  to continue.



Average Freefall Speed

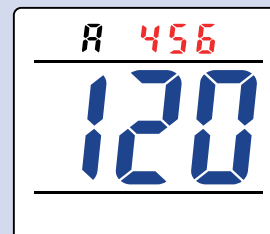
Displays **average speed** for **selected jump**.

Press **▲** to select next jump.

Press **▼** to select previous jump.

Selected jump number is shown at the top of the screen.

Press **■** to continue.



Maximum Freefall Speed

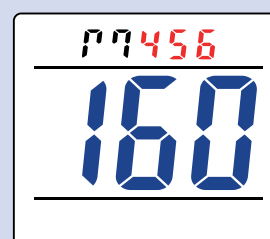
Displays **maximum speed** for **selected jump**.

Press **▲** to select next jump.

Press **▼** to select previous jump.

Selected jump number is shown at the top of the screen.

Press **■** to continue.



Altitude Profile - Last Jump

Displays the **altitude profile**, at a **given time**, for the last jump.

Press **▲** to scroll forward in time (seconds).

Press **▼** to scroll backwards in time (seconds).

Holding down either **▲** or **▼** will fast scroll.

Time is shown at the top of the screen.

Press **■** to continue.



Speed Profile - Last Jump

Displays the **speed profile**, at a **given time**, for the last jump.

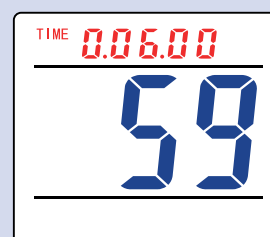
Press **▲** to scroll forward in time (seconds).

Press **▼** to scroll back in time (seconds).

Holding down either **▲** or **▼** will fast scroll.

Time is shown at the top of the screen.

Press **■** to continue.



Note: Freefall time must be minimum 6 seconds to store a speed profile.

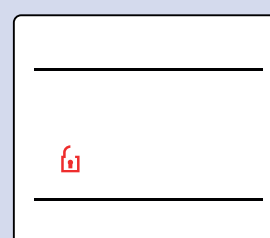
Exit Logbook and Jump Info

⏏ is flashing.

Allows manual exit from menu.

Press **▲** or **▼** to exit from menu.

Press **■** to start from the beginning.



SETTINGS

Settings are used to customize the ARES II™.

Perform ACCESS to enter the Logbook and Jump Info Window. While in the Logbook and Jump Info Window, press and hold **■** for 5 seconds to access Settings.

Press **■** to scroll through all settings.

ARES II™ will exit Settings if no button is pressed within 15 seconds after performing ACCESS.

Year

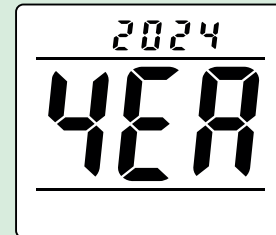
Sets current year.

Press **▲** to select next year.

Press **▼** to select previous year.

Year is displayed at the top of the screen.

Press **■** to continue.



Date

Sets current date.

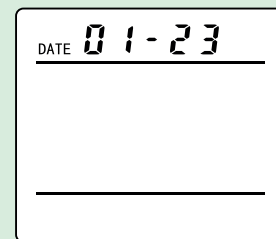
Press **▲** to select next date.

Press **▼** to select previous date.

To change month:

Scroll DAY until reaching 31 or 1, then ARES II™ will scroll MONTH up/down

Press **■** to continue.



Time

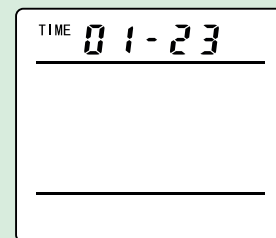
Sets current time in 24-hour format.

Press **▲** to add minutes/hours.

Press **▼** to subtract minutes/hours.

Holding down either **▲** or **▼** will fast scroll time.

Press **■** to continue.



Jump Counter

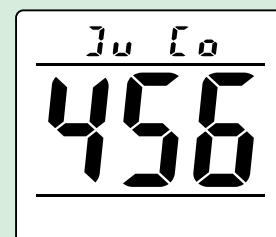
Sets the current total number of jumps.

Press **▲** to add jumps.

Press **▼** to subtract jumps.

Holding down either **▲** or **▼** will fast scroll.

Press **■** to continue

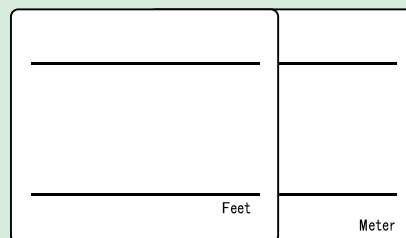


Units - Altitude

Sets altitude display in either feet or meters.

Press  or  to switch units.

Press  to continue.

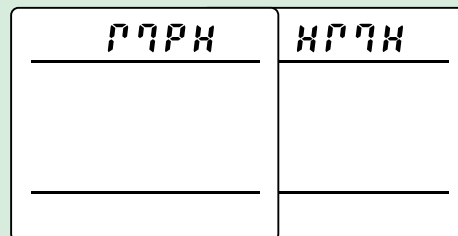


Units - Speed

Sets speed display in either miles/hour or kilometers/hour.

Press  or  to switch units.

Press  to continue.



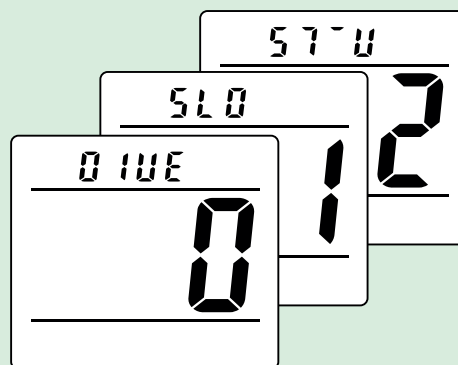
Dive type

Sets the current dive type used for logging data:

- 0: Standard. Standard parameters.
- 1: Slow. The exit and deployment parameters are designed to fit very slow fall rates, such as wingsuiting. Freefall detection is very sensitive, and may register jumps if the airplane descends.
- 2: Student. The descent rate parameters are changed to fit very short free falls (3 seconds).

Press  or  to switch between Dive Types.

Press  to continue.



Delete Last Jump

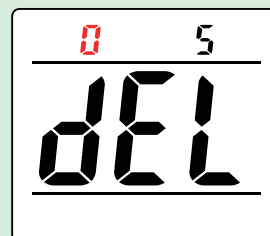
Deletes the last jump in the logbook. To avoid unintentional deletions, the counter at the top of the screen must be set to '5'

Use  and  to match counter to '5'.

Press  to accept deletion of last jump.

WARNING: If the counter is set at '5',  cannot be used to scroll through settings and will delete last jump. Once deleted, the jump data is lost.

Press  to continue.



Delete Log Book

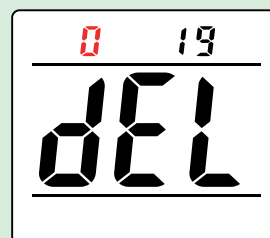
Deletes the entire logbook. To avoid unintentional deletions, the counter at the top of the screen must be set to '19'

Use  and  to match counter to '19'.

Press  to accept deletion of entire logbook.

WARNING: If the counter is set at '19',  cannot be used to scroll through settings and will delete the entire logbook. Once deleted, the logbook data is lost.

Press  to continue.



Turn off

Turns the ARES II™ off.

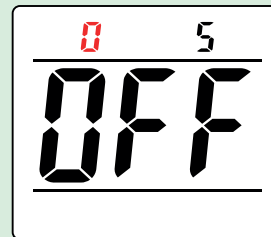
To avoid unintentionally turning the ARES II™ off, the counter at the top of the screen must be set to '5'

Press  and  to match counter to '5'

Press  to accept turning ARES II™ off.

Warning: If the counter is set at '5',  cannot be used to scroll through settings and will turn ARES II™ off.

Press  to continue.



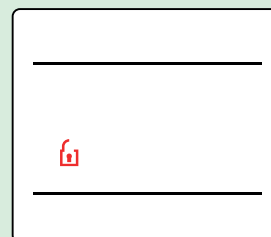
Exit Settings

 is flashing

Allows manual exit from menu.

Press  or  to exit from menu.

Press  to start from the beginning.



FUNCTIONALITY

Automatic Calibration / Flight Mode

After the ARES II™ is turned on, it will continue to automatically calibrate itself to the field elevation where it is currently located. This will continue after each jump / landing, to ensure the unit is always zeroed before jumps are made and will take into account weather related pressure changes.

Shortly after take-off, the Ares II™ will enter Flight Mode. The main window will automatically display the current altitude when entering Flight Mode. Flight Mode indicates that the ARES II™ is calibrated to ground level and ready to jump.

Altitude Offset

When performing Altitude Offset, the ARES II™ enters Flight Mode and will retain any offset for 14 hours if no jump is made. After 14 hours the unit calibrates itself to the field elevation where it is located.

To exit Flight Mode, turn the unit off, then on.

Manual Zeroing

If the unit does not display the correct altitude when arriving at the drop zone, it must be manually zeroed. Turning the unit off, then on, will clear any Altitude Offset and re-enter automatic calibration.

Automatic Off

The ARES II™ automatically switches off if no jump has been made within 14 hours, no button has been pressed within 14 hours, or the unit has not been in Flight Mode within 14 hours.

MAINTENANCE

Reset ARES II™

A reset may be necessary for troubleshooting and firmware verification.

Locate the small hole on the side of the battery cover.
Insert a paper clip or similar into hole, press and release.
Battery system calibrates.

The firmware version will be displayed after reset.



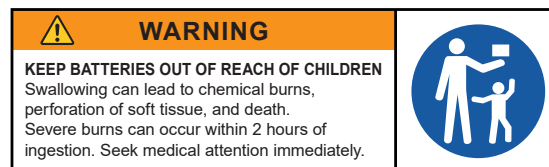
Battery Change

Only use Renata CR-2325 batteries (2 ea.).
Battery cover screw specs: M3/T6 head (4.5mm length).

Remove the screws and battery cover.
Remove both batteries and note the polarity.
Install 2 new batteries.
Install battery cover, and ensure rubber seal is in correct placement.
Place and tighten screws, using a torque screwdriver set at 0.3 Nm.



Reset ARES II™ after battery replacement.
All settings and logbook is kept in a non-volatile memory and will not be lost, however time may need to be set again after battery change.



WARNING: The battery cover and seal must be installed correctly, using correct screws and torque, before any water jumps are made.

Air Filter Change

The ARES II™ is waterproof to a depth of 3 feet, for 2 hours.

If the ARES II™ is submerged into water, allow the unit and air filter to dry in a warm place for 48 hours.
The air filter must be replaced if jumping is to be resumed immediately, or if the air filter is suspected to be contaminated.

To change the air filter, located inside the battery cover, remove the screws and battery cover. Install new battery cover and ensure rubber seal is in correct placement. Place and tighten screws using a torque screwdriver set at 0.3 Nm.



Reset ARES II™ after battery cover replacement.

TROUBLESHOOTING

If the ARES II™ detects an issue, an error symbol is shown (ERR) with a number at the top of the screen.

Error codes:

- 1: Transducer defective
- 2: Transducer out of range
- 3: Transducer Time Out too long
- 4: Crystal defective
- 5: Communications error to flash
- 100: Flash defective

Always restart ARES II™ to attempt to remedy a single ERR code.

If the ERR code persists, then also perform battery change.

After unsuccessful restart of the ARES II™, a Factory Reset is necessary:

To perform a Factory Reset, press and hold  while pressing the reset button. Continue to hold  until the display flashes 5 times and the screen returns to the main window.

WARNING: All logbook data will be lost with Factory Reset.

If the ARES II™ is still faulty after Factory Reset, it must be serviced by an LB Altimeters Service Center.

SPECIFICATIONS

Mechanical:

Casing:	Rugged and precision machined aircraft aluminum
Screen glass:	2mm thickness - Hardened glass lens
Dimensions:	64mm x 44mm x 15mm
Weight:	68g
LCD viewing area:	34mm x 29.5mm
Backlight intensity steps:	1 - fixed

Altitude Adjustment:

Altitude in feet /meter offset:	Yes
Altitude feet /meter offset range:	-19900 ft. to +19900 ft. (-6000 m to +6000 m)
Present altitude steps:	± 10 ft. (5 meters)

Tolerances:

Altitude display:	± 1%
Exit altitude:	± 1.2%
Deployment altitude:	± 1.2%
Freefall time:	± 1 sec
Speed:	± 3 mph (± 5 km/h)

Logbook:

Minimum freefall time for logbook generation in Normal mode:	8 seconds
Minimum freefall time for logbook generation in Student mode:	3 seconds
Maximum logging altitude (Normal mode):	30,000 ft. (9,150 m)
Maximum logging altitude (Student mode):	40,000 ft. (12,200 m)
Maximum Profile storage (last jump):	10 minutes. Sampling rate: 4/sec.
Accumulated number of jumps:	999
Exit Altitude, Deployment, Freefall Time, Speed:	200 Jumps
Storage principle:	First In First Out

Factory default settings:

Feet / meter:	Feet
Mph / kmh:	Mph
Type of Dive:	0
Date:	2024:1:1 (year : month : date)
Time:	12:00:00 (hours : minutes : seconds)

Other:

Operating altitude:	0 to 40,000 ft. (0 to 12,200 m)
Clock:	± 4 min/month
Storing Temperature:	-20C to +70C
Operating Temperature Range:	-20C to +60C continuous operation
Will operate at -50°C for:	10 minutes
Storing Pressure:	200 to 1075 mbar
Maximum allowable humidity:	Up to 99,9% relative humidity
Waterproof:	3 feet for 2 hours
Function Period:	14 hours
Maintenance:	4, 8 and 12 years, from date of manufacture
Battery type:	2 x Renata CR 2325
L&B part no.:	295929
NATO Stock no.	6675-22-630-2343

WARRANTY

The following conditions apply to the ARES II™ warranty:

If within 24 months of the purchase of ARES II™ a defect or damage is identified by faulty manufacture, LB ALTIMETERS will repair the unit at no cost to the end user.

To make a claim under this warranty, send the unit to an authorized dealer or directly to LB ALTIMETERS together with the dated purchase invoice or receipt.

The warranty becomes void if damage is caused by external circumstances or if the unit has been serviced or repaired by third parties unauthorized by our national agents or LB ALTIMETERS. All further claims, especially for defects after skydiving accidents, are excluded. LB ALTIMETERS has no obligation to honor any extension of warranty granted by any national agent.

WAIVER OF LIABILITY

The buyer and user of the ARES II™ indemnify the manufacturer and vendor from any liability for damage incurred before, during and after skydiving with the instrument.

