



MLB242 Analysis Instrument

User Guide



Instrument for the analytical Quality Control of several sorts of foodstuff.
For In-Vitro-Analysis only.

Similar to

CDR FoodLab Junior, CDR WineLab Junior, CDR BeerLab Junior,
CDR CiderLab Junior, CDR OxiTester Junior

Distributor:



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! Common Safety Issues

Please read the Instruction Manual entirely prior operating your analysis system. In order to ensure a high level of performance, all warnings and references to technical safety in this document must be followed.

! 1 Hazards and Precautions

The cautions and safety regulations in this Instruction Manual meet international classifications:



	<p>Danger - Electrical hazards</p> <p>Warns of a risk of injury or of a risk to life (for example by electrical shock).</p>
	<p>Danger – Mechanical hazards</p> <p>Warns of a risk of injury or of a risk to life. Warns of a risk of injury or of the analyser being severely damaged.</p>
	<p>Danger - Biohazard</p> <p>Warns of a risk of biological material like blood or other human or animal specimen. Risk of infection! Potential infectious area/material!</p>
	<p>Danger - Toxic substances</p> <p>Warns of a risk of a serious intoxication!</p>
	<p>Skin irritation</p>
	<p>Inflammable substance</p>
	<p>Introduces rules to be observed</p>

The following safety issues have to be observed at all times:



Electrical safety

- Check that the operating voltage is set correctly before you connect the device to the main power supply.
- To connect the analyzer to the main power supply, use only sockets which are grounded to avoid the risk of an electrical shock.
- Use only grounded extension power cords. The used power cord has to correspond to the country specific regulations.
- Never intentionally disconnect the grounding contacts.
- There is the risk of electrical shock if the protective conductor is interrupted within or outside the analyzer, and/or the grounded contacts have been disconnected from the line.
- Never remove protective guards or secured components since you could expose electrically live parts in this way.
- Electrical connection contacts (plugs, sockets, etc.) can be electrically live.
- Even after an analyzer has been switched off, components (e.g. capacitors) can be under voltage as the result of an electrical charge.
- All current carrying parts are sources of danger for an electrical shock.
- Surfaces (floors, work tables) have not to be moist when you are working with any electrical device.
- Carry out only the maintenance work and/or the replacement of parts described in this document.
- Unauthorized work on the analyzer can lead to the guarantee obligation becoming null and void with necessary expensive service work to correct it.
- All work, which requires the analyzer to be opened, have to be carried out by an authorized technician who is familiar with the risks related thereto.

<p>Mechanical Safety</p> 	<p>Analyzer is operating</p> <ul style="list-style-type: none"> - Never open or unscrew analyzer's casing parts while it is switched ON. There is a risk of injury due to moving parts as fans, pumps, motors or any other mechanical movements.
<p>Biological Material</p> 	<p>Risk of Infection</p> <ul style="list-style-type: none"> - Wear gloves in all cases if there is a risk of infection. - Avoid any direct contact with samples that are potentially infectious. On cdR analyzers normally the reagents used together with sample materials to test are not potential infectious. In case of a contamination, immediately use a suitable skin disinfection solution. Ask your doctor for aid. - If sample material or reagent is spilled onto the analyzer, wipe it off immediately and refer to the chapter !2 Maintenance and Hygiene. - Do not open a waste bottle as long as the analyzer is in process.
<p>Reagents and Controls</p>	<ul style="list-style-type: none"> - Observe the suggestions in the package inserts for an exact use of the reagents and quality controls. Note that reagents and quality control material can be biological material! - Don't use Reagents, Controls and other Liquids after expiration date! - Avoid any liquid penetration into the analyzer.
<p>Restrictions</p>	<p>Samples, Reagents and Controls</p> <ul style="list-style-type: none"> - For consumables no guarantee can be provided for any resistance against organic solvents. For this reason, do not use any organic solvents unless such solvents are expressly indicated. - Do not use any other rinsing or cleaning solutions as recommended by the manufacturer or representative. - Waste liquid has to be disposed in compliance with the legislation.

Quality	<p>Accuracy and Precision of the measured results</p> <ul style="list-style-type: none"> - In order to ensure a flawless operation of the analyzer measure control samples and watch the function of the analyzer closely. - Faulty measurement results may result in an incorrect diagnosis or range danger for patient.
Fire and Explosion Hazards	<ul style="list-style-type: none"> - Do not place any inflammable or hazardous explosive material close to the device. - Electrical sparks could cause fire or explosions.
Operator Qualification	<ul style="list-style-type: none"> - The analyzer should only be operated by trained personnel. Improper operation of the analyzer might cause inaccurate measuring results!

! 2 Maintenance and Hygiene

- No **organic acid** based cleaning substances should be applied. Instead use cleaner designed for cleaning and disinfecting laboratory analysers.
- **Only use** a dampened cloth to clean the analyser.
- **Never spray** or pour cleaning solution directly onto the analyser that may negatively impact the analyzer's functions significantly.
- Keep the analyser clean and **do not spill liquids** onto it.
- In case liquids were spilled onto the analyser, immediately absorb liquid with a suitable cloth.
- Contact your distributor if your control measurements do not produce the expected results.

Cleaning and Disinfection

- Use a suitable surface disinfectant solution available for laboratory instruments.
- In urgent cases use **Surgical Spirit 94%** if no other more suitable solution is available.

! 3 First-Aid Measures

- If a person swallowed any chemical solution may be while servicing, wash out mouth with water.
- If provided person is unconscious, **than call a physician.**
- If inhaled, remove to fresh air. If breathing becomes difficult, **than call a physician.**
- In case of contact, immediately wash skin with soap and copious amount of water.
- In case of contact with eyes, flush with copious amounts of water for at least 15 minutes.
- Assure adequate flushing by separating the eyelids with fingers, **than call a physician.**

! 4 Repairs

Repairs to the analyser may only be carried out by trained personnel, and replacement

parts have to comply with the analyser specifications. In case of analyser problems contact your representative.

! 5 Safety of the product

European Directives consulted during the design stage. The analyzer has been designed and constructed following the health and safety requirements of the directives:

European Directives consulted during the design stage	
Directive Number	Title and implementation into Italian legislation
Directive 2014/30/EC	<i>EMC Directive 2014/30/EC of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast) (all languages), aligned to the New Legislative Framework, will be applicable from 20 April 2016.</i>
Directive 2006/95/EC	<i>The Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (codified version) was published in the OJEU L 374 of 27.12.2006, p. 10-19. It entered into force on the 20th day following that of its publication, i.e. on 16 January 2007. The old Directive 73/23/EEC was repealed on the same date.</i>

! 6 Norms and standards used for the design and testing

The MLB242 analyzer corresponds to the essential requisites of the norms:

EN 55022:2010	Radio disturbance characteristics - Limits and methods of measurement.
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements (IEC 61010-1:2010 + Cor. :2011
ENV 61010-2-081	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes (IEC 61010-2-081:2001

EN 60950-1	<p>European Standard CEI EN 60950-1 (CEI 74-2) "Information technology equipment – Safety. Part 1: General Requirement." VI° Ed. File n°8683 (February 2007) , with amendment A11 (CEI 74-2;V2) Technical file 10285 (March 2010), A1 (CEI 74-2;V2) Technical file 12566 E (October 2012), A12 (CEI 74-2;V3) Technical file 12567 E (October 2012) and A2 (CEI 74-2;V4) Technical file 13635 (June 2014).</p> <p>ETSI EN 300 328 V 1.7.1 (2006) "electromagnetic compatibility and Radio spectrum Matters (ERM); wideband transmission system; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.</p>
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! 7 Conformity of the product

The instrument has the CE-mark in accordance with the Directive 89/336/CEE and successive modifications and integrations. Each modification that alters the design and construction characteristics of the instrument and not expressly authorised by cdR S.r.l. will cancel the conformity and consequently the right of use.

Use of the instrument that is not described by this document is considered. cdR S.r.l. will not be held responsible for damage caused by not respecting the technical specifications described herein and by the improper use of the instrument or biological products. See chapter 6.3 for the Declaration of conformity.



1 General information

1.1 Intended use

The MLB242 analyzer is made for the analysis on several sorts of food using cdR's dedicated test kits together with special test application instructions for use on production lines or special laboratories. All analytical tests provided by the MLB242 analyzer are well calibrated after valid international standards.

1.2 System description

MLB242 analyzer is a standalone, compact instrument designed and made after latest technology. Its main part is the spectrophotometer with 4 channels and 2 beams each of different wavelength. Free cells can also be used for incubation purposes. It is temperature-controlled at $37.0^{\circ}\text{C} \pm 1$), for pre-warming of test cuvettes. **The analyzer is calibrated and controlled automatically after the power ON where also other elementary function checks will be done.** Possible malfunction will be shown on display automatically after detection.

The analyzer is equipped with a colour LCD touch screen. All operations take place by using a finger or a special touch-screen pen which is to put on a symbol or message. The analytical tests are internally stored along with the associated calibration parameters. Test results will be stored with a serial or positive identification in a data base where it can be called up. A lithium battery ensures a loss of all data. The language and other basic functions can be set up in Settings Menu. Following language selection can be done: Italian, English, German, French and Spanish.

CdR test cuvettes 10 or 20 ps., pre-filled with reagent, are packed in an aluminium bag often together with enzyme vials or R1a reagent vials.

The analytical tests are mainly run in 2-phases. In the first phase, a defined amount of sample material is pipetted into each pre-filled cuvette to R1 reagent. After incubation, a blank value is measured and stored. For colour handling, a reagent R2 must add to the cuvette content and after the second incubation the colour change can be read. The results are shown on the display and automatically memorised. The data transfer to a host computer can be done by the USB interface. After connection a temporary drive will be installed for the transfer of data.

The analyzer must be powered by a LPS - Limited Power Source - that automatically adapts to the existing voltage from 115V to 230V. The secondary voltage is 24Vdc +/- 10%, 3 A. This LPS is in accordance with Clause 2.5 of EN 60950-1.

Useful hint



**In this Manual a bullet “•” draws your attention to an instruction.
Example: • Press enter-key to confirm ...**

1.3 The MLB242 analyzer



Ports at back site for power supply and data transfers.

4 Reading cells, with different wavelengths.
Operating cell is indicated by a blue shining control LED.
Cells not used for testing can be used for incubation purposes.

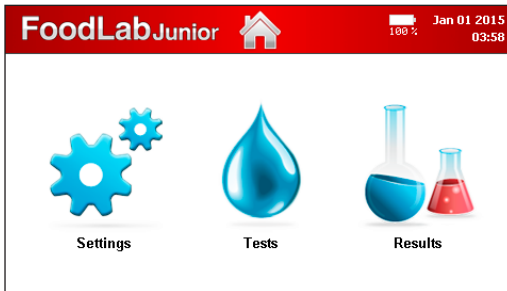
Power ON: press button short
Power OFF: press button for 3 seconds

4,3" TFT-Colour Display with touch-function.

Figure 1 MLB242 Modules

TOUCH function: is an active area on display expressed as a symbol that can be used to carry out a function.

Operating parts
Colour touchscreen display



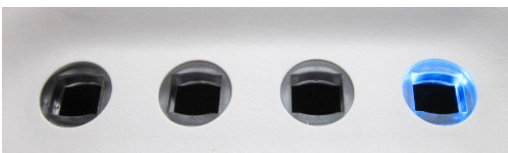
Top line with:
Analyzer name, HOME button
Optional: Battery loading status.
Date/Time

Main part
Menus for Settings, Tests
And Results (DATABASE)

Figure 2 Main Dialogue

Measuring cells

After test selection a blue illuminated LED shows the reading cell that must be used for chosen test. Automatically the cell will be checked, if it fails the operator will be warned and the specific test is inhibited for further use. As a new innovation every measuring cell is equipped with an **Insertion Tube Sensor** at the button to control whether a cell



is occupied by a cuvette or not. (see chapter 3.7.10)

During reading don't touch cuvette or other parts and avoid any vibrations!

Figure 3 Measuring cells

Beeper

A beep will be heard:

- after power on/off
- after touch of function on screen
- at end of incubation cycle
- if an error occurs

Connections

At rear site following parts are available:

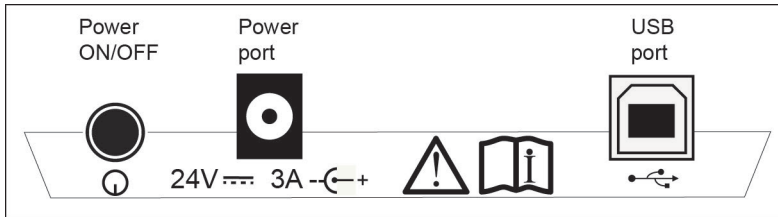


Figure 4 connections and its symbols

	Power switch ON/OFF
24Vdc 	24V DC port for external power unit (internal pin is +)
	USB port type B for technical service and for the data transfer to computer.

Connection to the host PC.

To upload analytical data, connect an USB-cable between analyser and USB-port of the pc. See chapter 6.5.






Power requirements

The analyzer must be powered by an external power supply of secondary 24Vdc +/- 10%; 3 A with limited power supply LPS after Clause 2.5 of EN 60950-1, branded with European Quality Marks for Safety like: TUV, VDE, SEMKO, NEMEKO etc. Use the power adapter supplied with the analyser to meet important safety regulations.

Normally a standard power cable is supplied with the adapter with a protective ground contact. Check if the plug will fit the power outlet (convenience outlet) you have. If you need a common adapter use one that meets a standard regulation for safety.

Instrument nameplate

The instruments nameplate displays symbols for safety and identification data.

		  	
CDR S.r.l. Via degli Artigiani, 6 50055 Ginestra F.na - Florence ITALY - www.cdr-mediared.com		 made in Italy	
TYPE	MLB242		
SERIAL No.	A-222005 / 0001		
YEAR OF PRODUCTION	2014		
POWER	24V --- 3A		

Address of manufacturer, CE mark

Symbols for attention and wasting

Type: MLB242 and

Serial number:

Year of production:

Power requirement: 24V, 3A AC

Figure 5 Nameplate

Important:

- Never remove the nameplate from the original position chosen by the manufacturer.
- Do not modify or falsify the data displayed on the nameplate.
- Do not clean the nameplate with abrasive products.

1.4 Storage of data

Analyser data, test specific data and results are stored in the memory as long as they will be overwritten or deleted by user interaction.

1.5 CDR Test cuvette

For opening or closing of the cuvette, it is much recommended to place the cuvette into a free incubation cell and turn then the cup on or off. This procedure keeps the optical window clean.

Pre-filled test cuvette

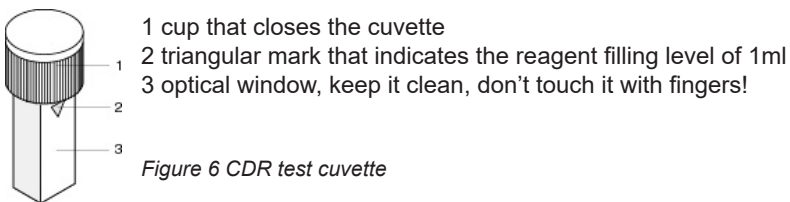


Figure 6 CDR test cuvette

1.6 CDR Reagent kit

A test kit contains 10 or 20 pre-filled cuvettes in a welded aluminium bag.



Important information on plate:
 Test name: e.g. Acidity
 REF: 300xxx (order code)
 Instrument name
 Number of test cuvettes inside
 LOT: reagent lot number
 EXP: expiration date
 Store at: storing temperature
 Link for method download
 Symbols should be observed!

Figure 7 Bag of pre-filled test cuvettes

MSDS: For all cdR test kits **Material Safety Data Sheets** are available on cdR's website downloadable only in English language: <http://resources.cdRfoodlab.com/msds.php>
 For testing, transportation, storing and wasting you should know any dangers or consequences!

Symbol explanation:

Expiration date  followed by date e.g. 07/2014

Storing condition  followed by temperature e.g. 15 to 25°C

For symbols for safety see chapter ! 1 Hazards and Precautions.

1.7 Pipettes

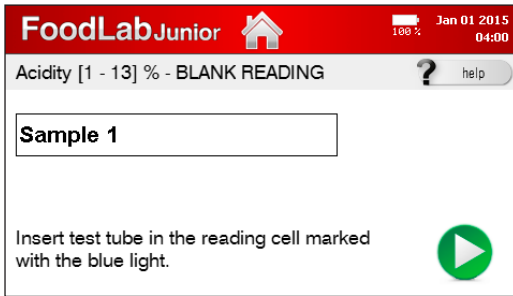
For a maximum of accuracy it is much recommended to use especially for the displacement of doughy sample material a positive displacement one. Ask your distributor for more information. Operate with pipette according to manufacturer's description! Know that a pipette is an instrument that needs after a certain time of use a special maintenance, otherwise results could be wrong!

MiniPet: types of different volumes can be in the accessories. It is not of highest accuracy and should be used only as described in the test application instructions.

1.8 Testing

For testing go as described in the specific test application instructions available in Menu **Settings** and **Test Methods**. For quick information about the test procedure, touch the question mark that is visible in Main Dialogue.

All following illustrations are examples!



Touch ? **help** to open the first application dialogue.

This dialogue asks you to place the cuvette with sample 1 into the indicated measuring cell for blank reading.

Figure 8 Blank reading



Figure 9 Help dialogue

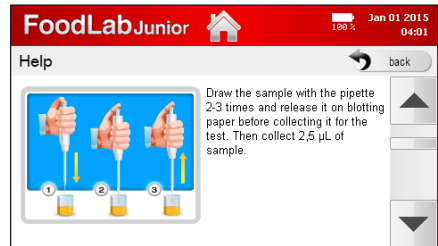


Figure 10 Help dialogue

For every test you can have a look of a number of illustrations that explain the test procedure entirely.

Touch:

- for next dialogue



- for previous dialogue



- to leave a dialogue, Exit



Reagent indications

While reading test applications you will be confronted by different reagents terms. Understand the following description:

R1 basically all reagents pre-filled in test cuvettes are called as R1, also in bulk ware where the reagent must be pipetted into empty test cuvettes.

R1a is a reagent that activates the R1.

R2 is a reagent that causes an optical change depending to a concentration.

R3 is a reagent that causes an optical change depending to a concentration.

1.9 Transportation and storage

Packaging, movement and transportation

The analyzer and its accessories are packed together in a cardboard box. To transport it, use its cardboard box to protect it against atmospheric influences. Please note that the carton does not provide sufficient protection against rain, sun, snow and wind.

Storage conditions

The analyzer in its carton must be stored in a closed environment within the temperature range +5°C to +30°C (41°F to 86°F) and a relative non-condensed humidity of 20% to 90%. The storage place must not be exposed to contaminating agents such as humidity, dust, acids, corrosive gases, salt, smoke etc. Do not stack the cartons more than five high.

Conservation and/or disposal of the packaging

The manufacturer recommends conserving the cardboard box in case of future transportation purposes. The disposal of the packaging does not present any particular dangerous aspects to persons, animals or materials. Before disposal of the cardboard box, consult the Council Directive 94/62/CE on packaging and the disposal of packaging.

1.10 Receipt of the analyzer

Each analyzer is checked following specific procedures on instruments by cdR prior shipment. However, damage could occur during transportation and will not be the responsibility of cdR. Effectuate a visual control of the packaging and the apparatus to check that there is no visual damage due to knocks and bangs. If damage is evident, call with your sales representative to find a solution.

Control whether all parts are available by Packing List.

2 Installation

For the installation of the analyzer proceed as follows:

A. Place **MLB242** on a plane surface in such a position that it is not exposed by mechanical vibrations or extreme temperature fluctuations or excessive light.

B. Connect the supplied external power adapter (LPS: Limited Power Supply) to the port at the rear of the instrument 24 Vdc, 3A (Figure 4) using the appropriate power cord to the mains (110V to 230V). In case the adapter is different from the one included with the instrument, check that the electrical and safety characteristics (24 Vdc, 3A) are equivalent (CE mark) and that the polarity of the connectors is respected (Figure 4).

C. After power ON the analyser, the photometer optics will be controlled together with other functional parts. A malfunction will be indicated on display.

After a while the following information is shown:



Example!

Figure 11 appears for seconds

Followed automatically by next dialogue:

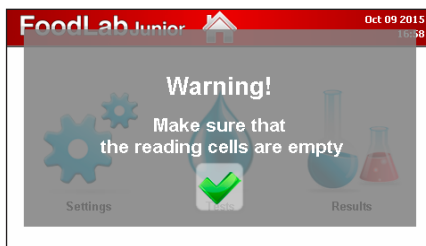


Figure 12 a, b: appears only if tube insertion sensor is off

Test applications are loaded into the working memory for quick access.

After warming up a **Warning message** appears:

- Make sure that the reading cells are empty!
- Make sure that no cell is occupied by a cuvette and confirm by touching the green check mark!

According to the customer needs, the analyser can be configured for Oils & Fats, Wine, Beer or other food products.

Similar analyzers have their own test application profile like the FoodLabJunior or

WineLabJunior or BeerLabJunior.

If the analyser is switched on first time after leaving production, automatically the dialogue for language setting appears.

Select language symbol you want to work with. After that dialogues to set or control will appear as date & time, Laboratory name.

After that the **Main dialogue** is shown:

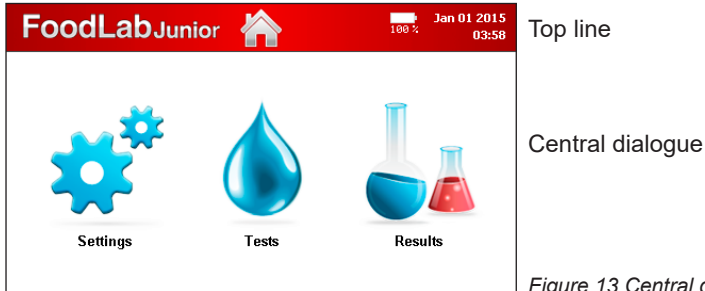


Figure 13 Central dialogue

According to the system verification, different messages could appear that you must follow and confirm always by OK.

Use SETTINGS to configure your system, see chapter 3.7 for details.

Use TESTS to run a test listed, see chapter 3 Operation for details.

Use Results to open a list of results, see chapter 3.8 for details.

Note



Regarding the operation on the MLB242, there is no risk for the operator if he uses the software as it is intended for!

After visual examination of the equipment, there shouldn't be an ergonomic danger for the operator!

End of installation.

3 Operation

3.1 Operation procedure

The MLB242 analyzer is equipped with dedicated software/application for the determination of parameters on different sorts of foodstuff.



Before you start your analysis, check if the analyzer set-up is ok, see chapter 3.7 Settings Menu.

3.2 Switching on the analyzer

To run the **MLB242** press the ON/OFF key at rear side. Make sure that the reading cells are free and not occupied by a cuvette! After that the analyzer heats up to 37°C/98.6°F. This will take about 20 min. The photometer and modules are checked automatically.

The MLB242 is now ready to start analysis as soon as **Tests** dialogue can be opened for a test selection.

3.3 Preparation of reagents and samples

Read carefully the information provided in the **Test Application Instructions!** While power up prepare reagents and samples for testing.

3.4 Test selection and execution

- For a test selection, touch **Tests** on display to open the **Parameters List**. The following (similar) dialogue is shown:

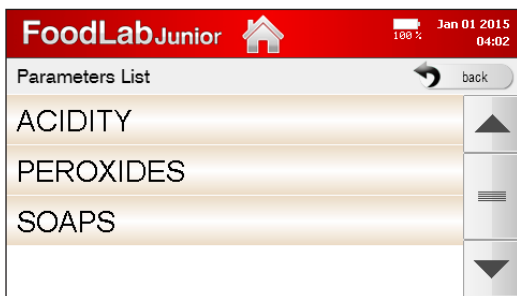


Figure 14 Parameters List

- Touch the test e.g. ACIDITY to open its List of different test ranges.



Note that the following line of dialogues are very special and is according to the test application instruction. For other tests the procedure is different!

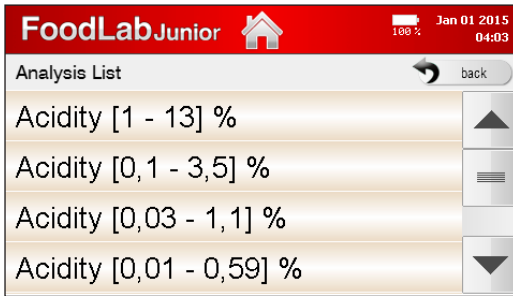


Figure 15 Analysis List

- Select a test you want to run by touching it on the list shown. If more test available as shown, touch arrow-key up or down to scroll through the list.

After test selection the first application dialogue is shown e.g. Acidity:



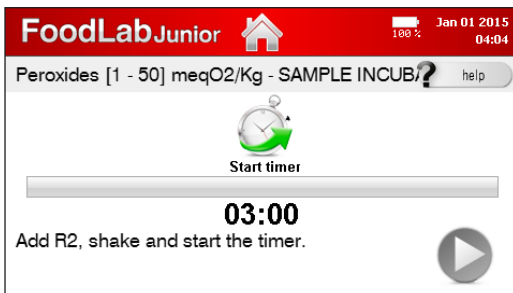
Cuvette with magnifying symbol shows the reading cell to be used for testing. It is not touchable. Position is also indicated by a blue LED light.

Up to three samples can be tested a run.

Figure 16 Samples for Blank Reading

- Proceed as described in test application instructions, e.g. select Sample 1 and ...

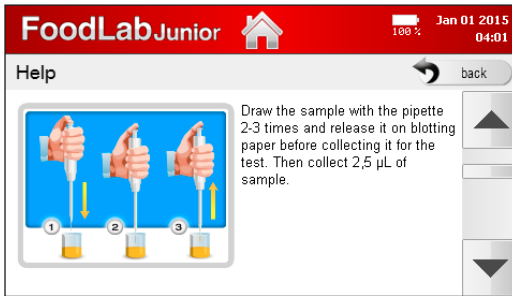
A dialog appears where you can modify the sample identification, it is instructed to pipette a reagent or sample into a cuvette. After blank reading, the cuvette icon is marked with a green check mark. Proceed in the same way with the samples 2 and 3. By selecting STOP, the measurement of blank values may be closed early after test 1 or 2, this happens automatically after completion of sample 3. The dialogue for the incubation of samples is displayed then:



An instruction is indicated that should be followed below the timer.

If you touch this **question mark “?”**, you will get a series of separate dialogues for test application instructions.

Figure 17 Sample incubation



In this example you can switch between a number of dialogues by using the arrow-key.

Note advises as shown for your orientation.

To leave this dialogue, touch **back**.

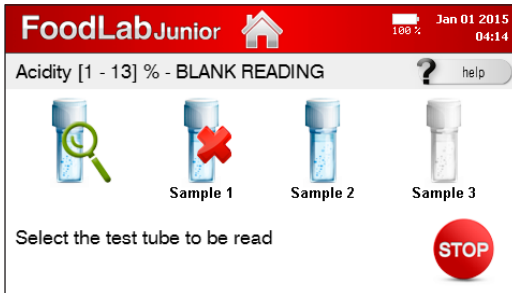
Figure 18 Help dialogue

You will be back at Timer dialogue.

- Touch **Start timer** button to run the timer count-down. If the incubation cycle is over, a beeper is heard to get attention.
- Touch **NEXT** button to proceed next step of analysis, the following dialogue is possibly shown:

Selectable symbols of test cuvettes are shown for a Blank Reading.

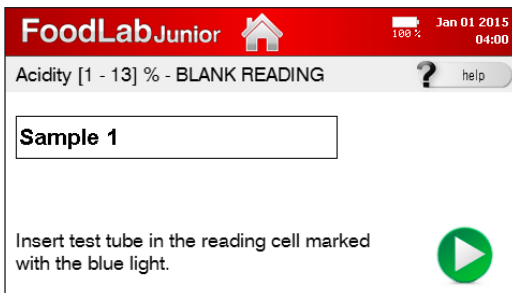
Especially for testing of peroxides, a red coloured cuvette symbol is shown to store



the Reagent Blank value. Go as described in section 3.4.2 for more details.

Figure 19 Symbols - Blank Reading

- Touch **Sample 1** that should be read and put test cuvette with sample 1 into the blue indicated measuring cell. If the blank reading is not ok, a **red cross** appears.
- Check test cuvette and try again blank reading. **Reason:** wrong test cuvette, is out of stability, shelf-live is over, dirty cuvette ...

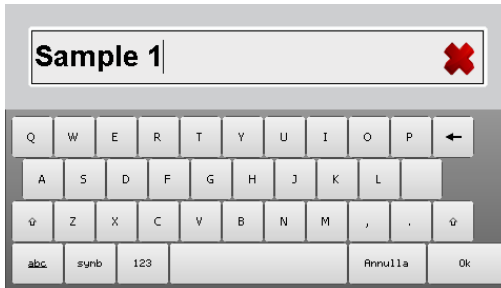


After setting of identification, follow the instruction given in this dialogue.

Figure 20 Sample identification

- Proceed as advised and touch button for Blank Reading of sample 1.

For **positive sample identification**, touch Sample 1 to open a dialogue that allows a name of figures. Different dialogs of figures can be selected by touching the corresponding button.



Sample identification name
red cross: deletion of figures

List of figures abc, symb,
Arrow up: big figures
Arrow left: deletion of figure
Ok: to confirm
EXIT: to leave dialogue:

Figure 21 Sample identification

- Touch Ok to leave this dialogue.



For every sample a cuvette symbol is shown.

Figure 22 Blank reading

- Proceed as described for next sample, or touch **STOP END OF SESSION** to finish BLANK READING session.

3.4.1 Cancellation of a test

A test run can be terminated by touching HOME on head line except during a measurement. A message will appear providing functions **Continue** or **Finish**. Make your choice.

3.4.2 Storing of Reagent Blank value

This description is special for testing of peroxide values! If you put R2 reagent into the test cuvette with R1 reagent, a red colour is shown. This colour "Reagent Blank" must be subtracted by testing of samples to get accurate results.

This Reagent Blank Value is different between reagent lots. So whenever you start with a new peroxide reagent lot, you must store the reagent blank for all curves used for peroxides! The values are stored as long as they are stored again.

To store Reagent Blank Value, proceed as follows:

- Select in dialogue **Blank reactive**
- Put a test cuvette only with R1 reagent into the indicated reading cell.
- Touch **READ** to store the 1st blank result.
- Touch **STOP** to terminate 1st blank reading session.
- Add **10µl of R2** reagent into the test cuvette and start incubation cycle.
- After incubation, mix cuvette content and place cuvette into the indicated reading cell.
- Touch **READ** to store the 2nd blank result.

This procedure can be combined together with cuvettes containing a sample.



The advantage of this two phases test is that intensive coloured oils cannot interfere with the R2 reagent!

3.4.3 Exceeded measuring range

In case of exceeded measuring range, a [*] star is shown on display and in print-out, proceed as follows:

- If result is shown as [$<$] smaller, repeat test using double amount of sample volume and divide result by two.
- If result is shown as [$>$] bigger, repeat test using half of the sample volume and multiply result by two.

3.5 Management of results

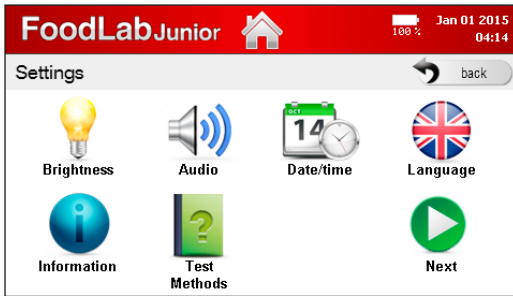
The results of the analysis are shown on the display.

On request they can be shown in menu **Results**, see chapter 3.8.

3.6 Standardisation of tests

A recalibration directly on the analyzer is not possible. In case of calibration questions ask your distributor or manufacturer cdR srl.

3.7 Settings Menu



This dialogue consists of two pages selectable by NEXT button.

The HOME button on Top line leads you back.
Touch Next for other options.

Figure 23 Menu Settings

3.7.1 Language

Touch the **LANGUAGE** button to open its dialogue.



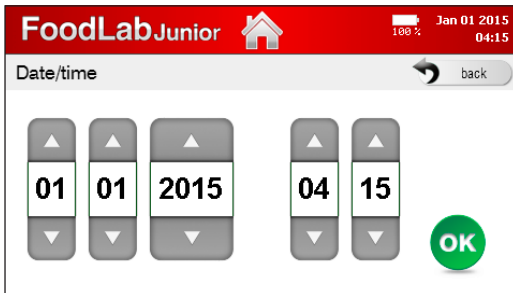
Touch language you want to run, it's once available for operation.

Touch HOME to leave dialogue.

Figure 24 Language selection

3.7.2 Date/Time

Touch DATE/TIME button to open its dialogue.



Setting of day, month and year by arrow-keys up and down.

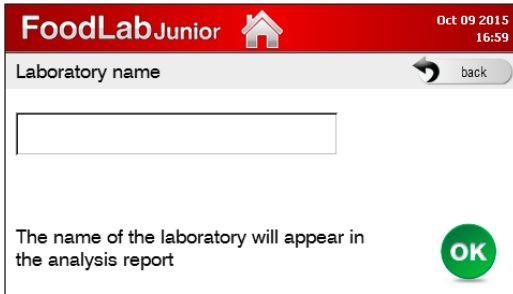
Setting of hours and minutes by arrow-keys up and down.

Touch **OK** for storing.

Figure 25 Setting Date/Time

3.7.3 Laboratory name

Touch LAB NAME to open its dialogue LAB SETTINGS.



Touch a position and specify your entry.

Touch **OK** for storing.

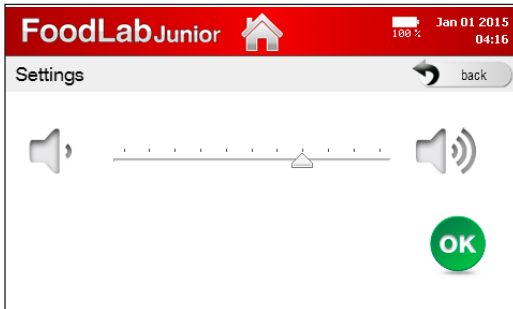
Figure 26 Setting of lab name

3.7.4 Test Methods

Touch Test Methods to open its dialogue. For all tests the application methods are available and explained step by step. After selection a series of different dialogues will be shown to get details for test application. These dialogues are also available after starting a test run and selection of help-symbol.

3.7.5 Audio

Touch AUDIO to open its dialogue.



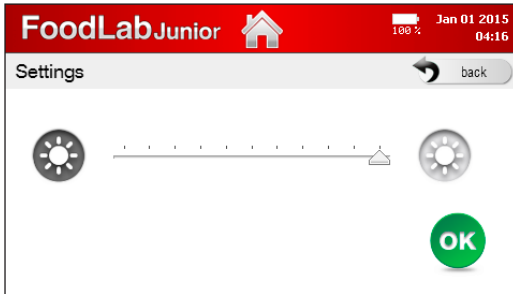
Adjust here the loudness of the beeper by touching symbols. The line shows the adjusted range of loudness.

Touch back for exit or
Touch **OK** for storing.

Figure 27 Adjustment audio

3.7.6 Brightness

Touch BRIGHTNESS to open its dialogue.



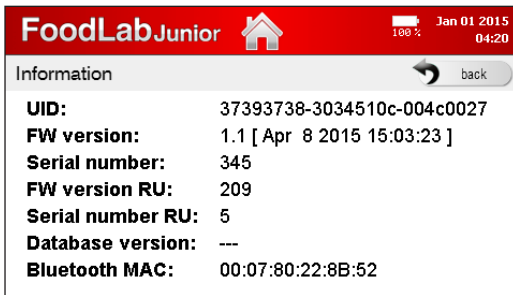
Adjust here the brightness of the display by touching symbols. The line shows the adjusted range of brightness.

Touch back for exit or
Touch **OK** for storing.

Figure 28 Adjustment brightness

3.7.7 Info

Touch INFO to open its dialogue.



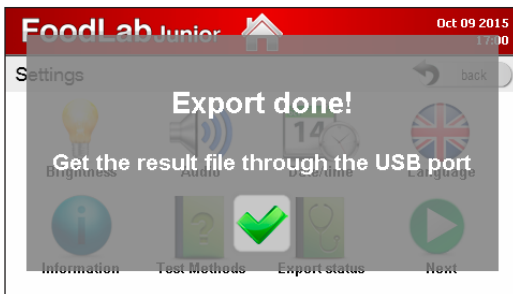
List of analyser's facts like Serial number S/N or Any update information.

Touch **back** for exit.

Figure 29 Info dialogue

3.7.8 Export Status

Touch EXPORT STATUS, the following dialogue appears:



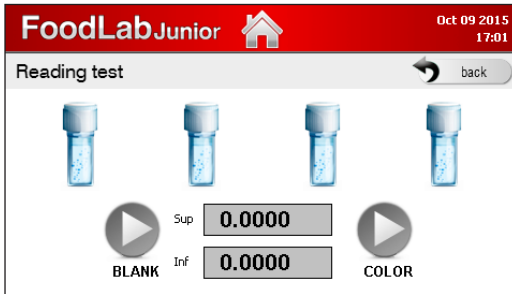
Function allows to save user settings and results on a JUNIOR drive on PC by USB cable. The file takes about 100 KB.

Proceed as described in chapter 6.5 Data transfers.

Touch **check mark** to leave dialogue.
Figure 30

3.7.9 Reading Test

Touch **READING TEST** to open its dialogue.



Use this dialogue only after instructions given by cdR or your local distributor!

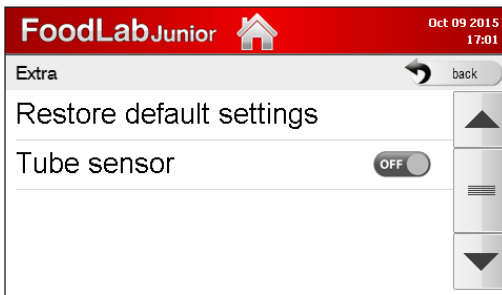
Reagents and measuring cells can be controlled by this function.

Touch **back** to exit.

Figure 31 Reading test

3.7.10 Extra

Touch **Extra** to open its dialogue.



Touch **back** to exit.

ON/OFF setting Tube Sensor

Figure 32 Extra dialogue

Restore default settings

This function allows you to get back to Factory Setting in case of need. Be aware you will lose user settings and all results! In the meantime installed updates remain installed.

Tube detection sensor

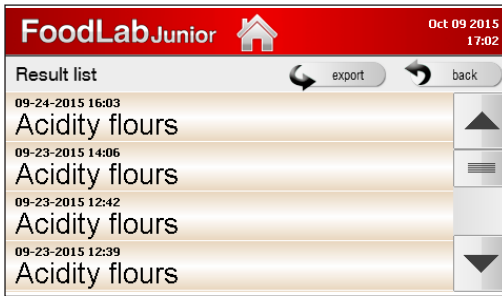
This sensor detects a cuvette placement inside a reading cell, if it is occupied or not. But it works well together with the new developed test cuvette which is available in 2016. For the moment let it be in off position.

3.8 Performed Tests (Data Base)

Touch **Results** to open its dialogue.

All test results are listed after test name, date and time. You can scroll through the data base by arrow keys.

After touching a test, a dialogue appears showing samples with their results and units.



To get back to the test selection dialogue, touch the **back** icon.

To export data, see description below.

Figure 33 Result list

The complete database can be exported by touching **export** in a *.XML or *.csv size to use it with e.g. MS-Excel. A message appears: Export done! Get result files through USB port. Proceed as described in chapter 6.5 Data transfers.

4 Error messages

Please understand that not all messages generated by the system can be explained in this document. In most cases read the message and try to solve it as displayed by the system. In case of a more serious message get in touch with your distributor e.g. **Temperature is out of range**, measurements could be wrong!

PROBLEM CHECK

Start problem:	blue LEDs are blinking contentiously, no information on display longer than 5 minutes. Fatal error in start up procedure, must be repaired by the manufacturer! Get in touch with your service.
DB ERROR	Could be appeared when the configuration file is not compatible with the analyser. action: try again or upload on the analyser the appropriate configuration file
Printer Offline	the printer is disconnected action: try again or contact the assistance
Reading Unit Offline	the reading part is disconnected action: try again or contact the assistance
Temperature	is out of range, get in touch with service.

5 Maintenance

5.1 Recommended actions and precautions

The analyzer is easy to use and it is normally free of maintenance.

Do not spill any liquid over the analyzer. In case of spilled liquid suck it immediately up with a suitable tissue or use a pipette to remove it out of cells.

Wipe the surface with a disinfection solution made for laboratory instruments once a week for your own safety.

For measuring safety it is recommended to use frequently a suitable precision or accuracy control material.

Problem cases

MLB242 will not turn on obviously there is a problem in the power supply. Check the correct connection of the external power supply between the appliance and the electricity network. Ask a technician to check the operating voltage.

Measuring cells are contaminated by a liquid.

- Switch off the device immediately!
- Remove the fluid such as using a pipette, siphon etc. or in the case of larger quantities of liquid to simply turn the device, allow the liquid to flow out. Then clean the cell (s) with a lint-free absorbent felt to remove liquid remains. In the case of biological materials, clean the cell (s) with an appropriate disinfectant, see corresponding notes in the chapter! Safety instructions.
- Note any error messages when switching on the computer.
- If necessary, call the technical service.

Incubation cells are contaminated with fluid.

- Proceed as described in the preceding case accordingly!

5.2 Software update

The manufacturer will inform about available software updates by E-Mail after a product registration and offer them for download. Proceed as described in Chapter 6.5.

6 Appendix

6.1 Additional products for analysis

Extrafluid	cdR code 300133, 100 ml It's for the extraction of oils out of chocolate, cakes, cremes etc.
Hand press	For the extraction of oil out of nuts, seeds etc. Ask your Distributor for more details
Pipette kit	A special kit of useful pipettes are available in respect to the installed tests (for oils/fats, milk/cheese, crèmes or tomatoes, wine/beer).
Centrifuge	ACF064, for sample preparation in Brewery
Ultrasonic	ACF065, for degassing of samples in Brewery

6.2 Spare parts

Will be updated next time.

6.3 Declaration of conformity

DECLARATION OF CONFORMITY

The company **CDR srl**, via degli Artigiani, 6 – Ginestra Fiorentina - Florence - ITALY declares under his own responsibility, that the following devices

Model	MLB242 – FoodLab Junior
Code	242001
Serial number	
Year of building	2015

ARE IN CONFORMITY

as a matter, with the following standards, the Low Voltage Directive 2006/95/EEC and the Electromagnetic Compatibility Directive EMC 2004/108/EEC, and in particular with the following normatives:

EN 61010	Safety requirements for electrical equipment for measurement, control and laboratory use.
EN 61000	Electromagnetic Compatibility (EMC)
EN 55011	Industrial, scientific and medical (ISM) radio-frequency Equipment. Electromagnetic disturbance characteristics. Limits and methods of measurement
EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements

Firenze, 22/06/2015

CDR srl

Ing. Luciano ROMOLI

6.4 Technical data

Analyzer Type:	Analyzer with photometer technique
Operating system:	Linux OS v2.6.33
Main processor:	ARM 9 AT91SAM9263
Memories:	128 MB for application routine 2GB SD ship for storing of user data
Measuring head:	4 cells, 2 optics each (different dep. on analyzer type) temp. controlled at 37°C ±1/98.6°F - automatic calibration and self-testing - linearity control, if necessary warning message - drift compensation automatically - photometric range: 0,0-6,0 Abs - photometric resolution: A = 0,0001 max - photometric accuracy: ± 3%
Self-checking:	made automatically after power on and after test selection.
Tube sensor:	each measuring cell is equipped with a tube insertion Sensor.
Analysis methods:	Endpoint, Kinetic and fixed time
Incubation block:	37,0°C ±1/98.6°F, temp. controlled, 4 x 4 positions
Cuvettes:	Volume at triangular mark: 1000µl mixed polymer, for optical use Cups: Polystyrol made
Languages:	English, German, Francais, Italiano, Espanol.
Tests selectable:	pre-defined test stored in memory
LCD-Display:	TFT 4,3" colour with touchscreen function
Connectivity:	1 x USB printer port for servicing and data transfer to host Bluetooth 2.1 function will be available on later series!
Printer	no
System time:	real time clock for time and date
Power supply:	external AC/DC adapter Prim. voltage: 100 - 250V, 47 - 63 Hz, 0,8 A Sec. voltage 24V, 1,4 VA, max.: 3,0 A Fuses: no Safety certificates: TÜV/GS, UL, CE
Optional:	Lithium battery 5000 mAh will be available on later series!
Environment-conditions:	rel. humidity: 20% - 80%, no condensing temperature range +12 to +30°C / 53.6 to 86°F
Dimensions:	height 90 mm, width 145 mm, depth 220 mm
Weight:	ca. 765 gr.

6.5 Data transfers

For a data transfer to and from a personal computer the MLB242 need a USB cable connection as supplied with the analyser.

Case 1 – Updating the MLB242

After product registration information about Software upgrades will be available for a download, see <http://resources.cdrfoodlab.com/registration.php>

- MLB242 is switched OFF and connected with power supply and PC by USB cable.
- Press the ON/OFF button for 3 seconds, a dialogue **Device Upgrade Mode** appears. Automatically a USB drive JUNIOR (F) is installed on your hard drive shown by Microsoft Explorer. Open the **README.TXT file**, the following information is shown:
Device Upgrade Mode
 - To update firmware: copy file.fw into the USB device
 - To update reading unit: copy file.ru into the USB device
 - To update database: copy file.db into the USB device
 - To update GUI: copy file.gui into the USB device
- Proceed as described for updating. The MLB 242 will read the file and the device will be updated automatically. Watch information on display.

The drive JUNIOR is available as long as the **Device Upgrade Mode** is on!

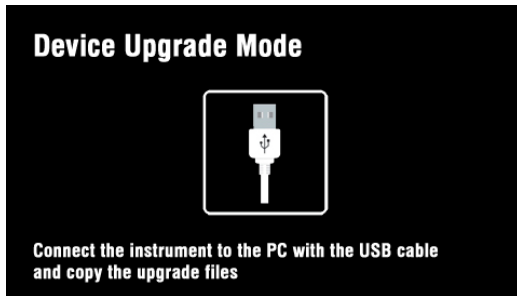


Figure 34 Device Upgrade Mode

Case 2 – Data Exportation

- Run MLB242 and connect it with your PC by USB cable as supplied by the analyser. Automatically a USB drive JUNIOR (F) is installed on your hard drive shown by Microsoft Explorer. The produced exportation files will be available in drive JUNIOR of your hard drive.
Export status produce: DIAG.XML
Results export produce: EXPORT.XML
- Save files as long as the JUNIOR drive is available! After disconnection the JUNIOR drive disappears automatically.

6.6 Disposal

6.6.1 Disposal of instrument

The instrument is constructed of materials that do not present particular problems for the operator during disposal.

The operator/owner must handle the waste product, (the substance or object of which the holder demolishes or has decided or has the obligation to demolish) as outlined by the European Directive 91/156/CEE on waste product, 91/689/CEE on dangerous waste product and 94/62/CE on packaging and waste materials (for Italy see D.L.vo 22 of the 05/02/97), in such a way that the waste material can be recuperated or disposed of without danger to human health and without using procedures or methods that could cause danger to the environment.



In particular:

- without creating risk to water, air, the earth and the flora and fauna
- without causing inconvenience by noise and smells.
- without damaging the landscape and sites of particular interest, protected by the norms in force.

ATTENTION!

Do not hesitate to contact your distributor about any question that is inherent to the demolition procedures of the instrument and about any other subject not been contemplated in this technical document.

6.6.2 Disposal of cuvettes and reagents

- Waste only after valid regulations!

6.6.3 Disposal of packaging material

Packaging materials used consist of recyclable materials.
Dispose only at collection points particular for this.



