

# CDR**Food**Lab®

Fats & Oils



[www.Quartz-Analytics.com](http://www.Quartz-Analytics.com)

248 844 1239



Buyer's Guide

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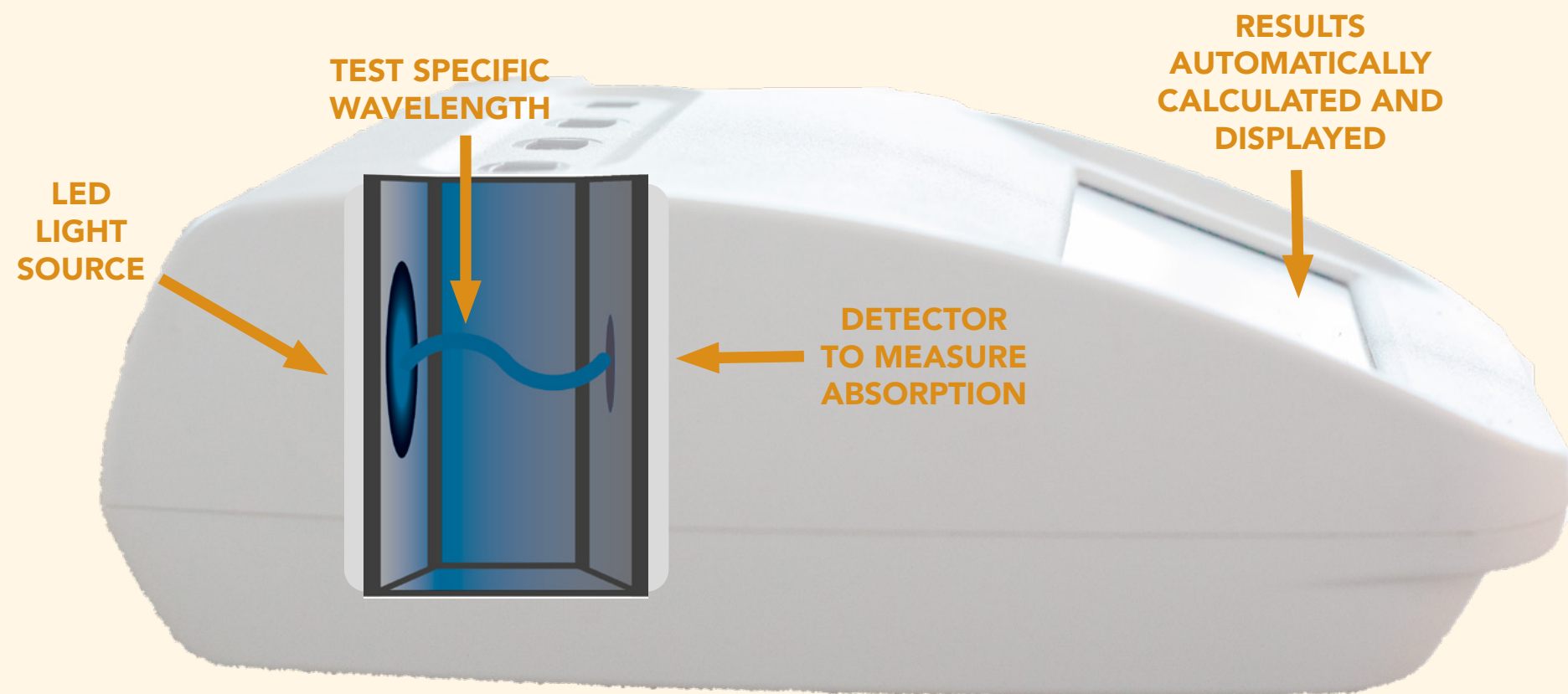
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# HOW THE CDRFoodLab<sup>®</sup> WORKS

The CDR FoodLab<sup>®</sup> line analyzers are pre-calibrated, easy to use photometers that utilize pre-filled reagent kits and LED technology in order to simplify the testing process of many foods and beverages.



## Easy to Use

The analysis methods of the CDR FoodLab<sup>®</sup> are easier than the traditional, official methods, and can be performed in a few steps. Thanks to this design, the CDR FoodLab<sup>®</sup> is not only to be used in a laboratory, but also real time in the processing plant by staff with no previous lab experience. The analyzers feature touch screen technology and step-by-step directions through the testing process.



## Reliable

The CDR FoodLab<sup>®</sup> system and its calibrations, which are correlated to the standard methods, guarantees high sensitivity, a wide measuring range, and excellent repeatability of test results due to its photometric technology utilizing LEDs.

## Minimal Prep

Thanks to CDR's pre-filled reagent kits, there is no mixing of chemicals, cleaning of glassware, or exposure to highly toxic chemicals. The reagents come pre-filled and ready to use in specialized kits for each test.



## Reduced Testing Times

The CDR FoodLab<sup>®</sup> line allows you to get accurate, reliable results within minutes.

## Stay Up to Date

The CDR FoodLab<sup>®</sup> line utilizes state of the art technology and allows one to stay up-to-date with remote calibration checks, periodic software updates, the ability to store thousands of results, and export results to a computer.



# CDR**Food**Lab<sup>®</sup>

CONFIGURATIONS | 222003Z01 **\$7,020<sup>00</sup>**

## FATS + OILS

Free Fatty Acid  
Peroxide Value  
p. Anisidine Value

Soaps  
Iodine Value  
Total Polyphenols/OSI *on olive oil*

## BAKERY

Free Fatty Acid  
Peroxide Value  
p. Anisidine Value

Lactose  
Alcohol by Volume  
Alcohol by Volume on Preservative solution

## DAIRY

Lactose  
L-Lactic Acid  
Milk Urea Nitrogen (MUN)  
Alkaline Phosphatase (ALP)  
Ammonia

Chloride  
Hydrogen Peroxide  
E-Fructosyl-Lisine (Furosine)  
Peroxidase

## EGGS

Lactic Acid  
D-3-Hydroxybutyric Acid

Color (Beta-Carotene)  
Cholesterol

## PUREES

Chloride



## Analyzer Specs

- 5.7" TFT color LCD touchscreen
- 2 USB 2.0 ports to transfer database of performed tests and update configuration and software
- USB type B port for technical service and PC connection
- Ethernet (LAN) port
- Internal memory to store thousands of results of analyses in CSV and XML files, compatible with all database formats
- 37C/98.6F incubation block with 16 sample prep positions
- Multitasking Mode
- Thermal Printer on board 80mm width

## WHAT'S INCLUDED:

- |                  |                |            |
|------------------|----------------|------------|
| 1-10uL Pipette   | 10uL MiniPet   | Power Cord |
| 20-25uL Pipette  | 30uL MiniPet   | AC Adapter |
| 50-100uL Pipette | 100uL MiniPet  | Cover      |
| 1mL Micropipette | MiniPet Tips   | USB Cord   |
| 1mL Pipette Tips | Cuvette Holder |            |

# CDR**FoodLab**® Jr

## Junior FFA + PV

**\$4,041<sup>00</sup>**

CONFIGURATIONS 242300Z10-FFAPV

**FATS + OILS**

Free Fatty Acid  
Peroxide Value

## Junior Basic

**\$4,490<sup>00</sup>**

CONFIGURATIONS 242300Z10

**FATS + OILS**

Free Fatty Acid  
Peroxide Value

p. Anisidine Value  
Soaps

## Junior Iodine

**\$4,790<sup>00</sup>**

CONFIGURATIONS 242300Z10-IOD

**FATS + OILS**

Free Fatty Acid  
Peroxide Value

p. Anisidine Value  
Soaps

Iodine Value

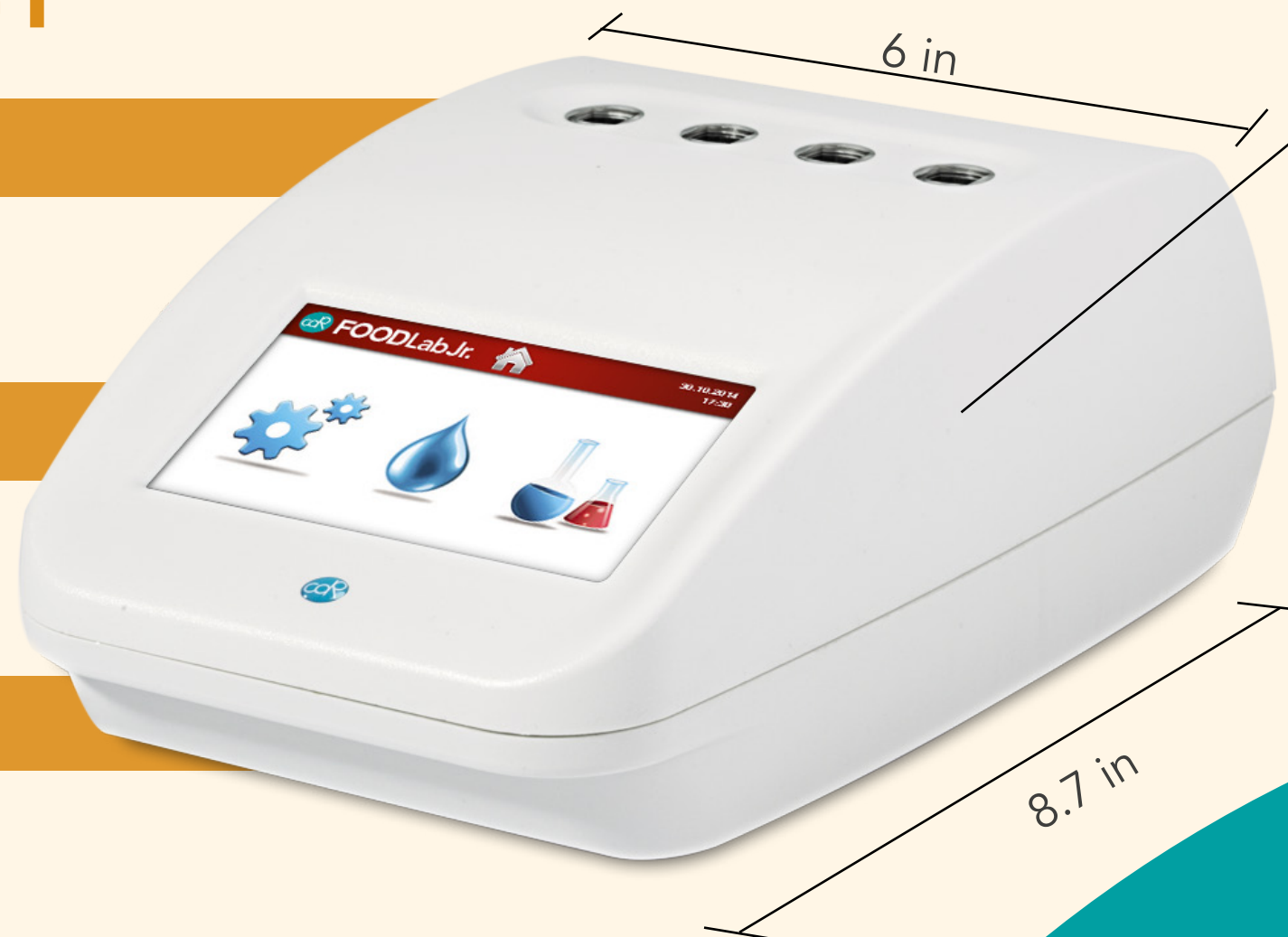
OPTIONAL

**ADD ONS**

**+ Battery Option \$410**

**+ Polyphenols on Olive Oil \$600**

(NOT AVAILABLE ON IODINE VERSION)



## Analyzer Specs

- 4.3" TFT color LCD touchscreen
- 1 USB "B" - Bluetooth 2.1 port
- Internal memory to store thousands of results of analyses in CSV and XML files, compatible with all database formats
- 37C/98.6F incubation block with 3 sample prep positions

## WHAT'S INCLUDED:

- |                  |                |            |
|------------------|----------------|------------|
| 1-10uL Pipette   | 10uL MiniPet   | Power Cord |
| 20-25uL Pipette  | 30uL MiniPet   | AC Adapter |
| 50-100uL Pipette | 100uL MniPet   | USB Cord   |
| 1mL Micropipette | MiniPet Tips   |            |
| 1mL Pipette Tips | Cuvette Holder |            |

# REAGENT KITS

TEST	MEASURING RANGE	TESTING TIME	SHELF LIFE	STORAGE CONDITIONS	QUANTITY	PART NUMBER	PRICE
FREE FATTY ACID	0.01-26.0% Oleic Acid	1 min	12 months	2-8 C	10 Pre-filled	300128	\$57.00
					100 Pre-Filled	300125	\$496.00
					100 Bulk	300120	\$354.00
					250 Bulk	300148	\$490.00
PEROXIDE VALUE	0.01-550.0 meqO2/Kg	4 min	12 months	15-25 C	10 Pre-filled	300154	\$57.00
					100 Pre-Filled	300150	\$496.00
					100 Bulk	300190	\$354.00
					250 Bulk	300161	\$490.00
p. ANISIDINE VALUE	0.5-100.0 AnV	2 min	12 months	2-8 C	10 Pre-filled	300503	\$128.00
					100 Pre-Filled	300500	\$1,276.00
					100 Bulk	300510	\$1,062.00
SOAPS	1-3000 ppm	2 min	12 months	15-25 C	25 Bulk	300109	\$89.00
					100 Bulk	300108	\$354.00
IODINE VALUE	5-160 I.V.	6 min	6 months	2-8 C	10 Pre-filled	301395	\$57.00
					100 Pre-Filled	301390	\$496.00
					100 Bulk	301398	\$354.00



## PRE-FILLED VS. BULK

Pre-filled test kits come with the reagent in cuvettes, ready to use. Bulk test kits you fill empty cuvettes with 1mL of pre-mixed bottled reagent. Bulk test kits come with everything you need to fill the cuvettes and test.

# SPECIALTY KITS

Unsure if you need a specialty kit?

Contact: support@quartz-analytics.com

KIT	DESCRIPTION	SHELF LIFE	STORAGE CONDITIONS	QUANTITY	PART NUMBER	PRICE
EXTRAFLUID	Extraction solution for chocolates, baked goods, and more	24 Months	15-25 C	100 mL	300133	\$13.00
DEMULSIFIER	Demulsifier powder used to break emulsions	12 Months	15-25 C	20 Tests	300595	\$65.00
EXTRACTION KIT FLOURS	Extraction solution for flours	12 Months	15-25 C	30 Tests	300136	\$13.00
DILUENT KIT	Dilution for high peroxide and free fatty acid values	24 Months	15-25 C	100 Tests	300129	\$59.00

# ACCESSORIES

	DESCRIPTION	QUANTITY	PART NUMBER	PRICE
CDR Easy Pipette 1-10uL	● 1-10uL Micropipette	1	215000Z01	\$185.00
CDR Easy Pipette Tips 1-10uL	Pipette tips for 1-10uL CDR Easy Pipette	10	215094	\$25.00
CDR Easy Pipette 20-25uL	● 20-25uL Micropipette	1	215001Z01	\$185.00
CDR Easy Pipette Tips 20-25uL	Pipette tips for 20-25uL CDR Easy Pipette	10	215093	\$25.00
CDR Easy Pipette 50-100uL	● 50-100uL Micropipette	1	215002Z01	\$185.00
CDR Easy Pipette Tips 50-100uL	Pipette tips for 50-100uL CDR Easy Pipette	10	215092	\$25.00
10uL White Minipet	● Pipette for Peroxide Value R2	1	ACF012	\$20.00
30uL Purple Minipet	● Pipette for Soaps R2	1	ACF033	\$20.00
100uL Minipet	● Pipette for Iodine Value R2	1	ACF013	\$20.00
Printer Paper	● Paper for Touch Analyzer	1	AEP143	\$5.00
Mini Centrifuge	Used for seperating extracted oils	1	222061	\$415.00
2.0mL Tubes	2.0mL Mini Centrifuge Tubes	100	225246	\$32.00
Nut Press + Cups	Used to press oil out of nuts, seeds, and chips	1	OEP18	\$900.00
ZIP-IQ Centrifuge	Used for flour and meat meal extractions	1	ZIP-IQ TT	\$635.00
15mL Centrifuge Tubes	Centrifuge tubes for ZIP-IQ Centrifuge	50	225248	\$35.00
Opticon PX-20 QR code-Barcode Scanner	Barcode Scanner	1	222084	\$400.00
Minipet Pipette Tips	● Tips for minipets	1000	ACF058	\$20.00
200-1000uL Micropipette	● Adjustable Micropipette 200-1000uL	1	ACF080	\$300.00
200-1000uL Micropipette Tips	● Pipette tips for 200-1000uL Micropipette	100	225245	\$5.00

● Indicates items that come with the CDR FoodLab® analyzers



# TEST PARAMETERS

## Free Fatty Acid

Free Fatty Acids (FFAs) are created when a fatty acid chain is cleaved from its parent fat molecule. The level of FFAs is dependent on temperature, moisture content, and time. They also will vary depending on how the fat/oil is stored, processed, or heated. When fatty acids cleave from their parent molecule and become a FFA, they are much less stable and more prone to oxidation and to turning rancid. Therefore, testing for free fatty acids is beneficial to monitor the health of your frying oil and final product, since foods will absorb the FFAs causing excessively oily and discolored food with poor taste, and likely a shorter shelf life.

### HOW IT WORKS

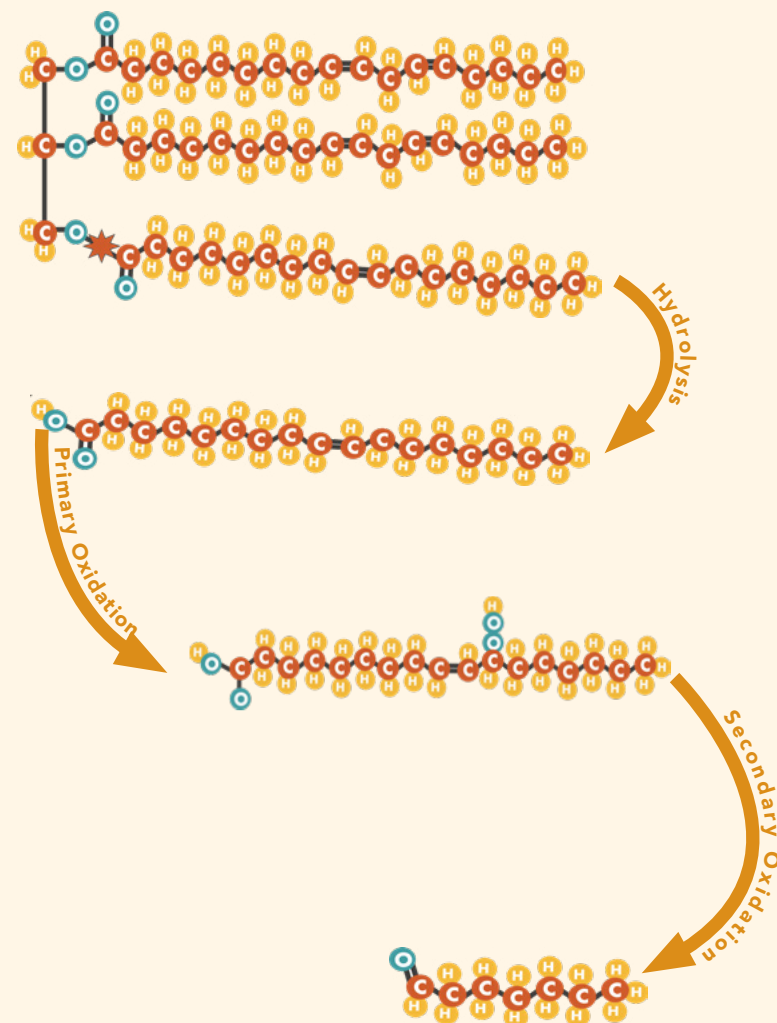
Free fatty acids of a sample, at pH <7.0, react with a chromogenous compound and decrease its color. The decreasing of color, read at 630nm, is proportional to the acid concentration of the sample, expressed as % of oleic acid.

## Peroxide Value

Peroxides are a result of primary oxidation in oil and is defined as the amount of peroxide oxygen per 1 kg of fat/oil. Peroxides are very unstable and can easily become rancid and develop into aldehydes. With that being said, peroxides are a key indicator of shorter shelf life, rancid odors, and poor flavor. The free fatty acids that are absorbed by the food during the frying process oxidize into peroxides and shorten shelf life.

### HOW IT WORKS

R-O-O-R peroxides oxidize Fe<sup>2+</sup> ions. The Fe<sup>3+</sup> ions resulting from oxidation are grouped and form a red complex. Its colorimetric intensity, measured at 505nm, is directly proportional to the concentration of peroxides in the sample. Results are expressed as meqO<sub>2</sub>/Kg.



## p. Anisidine Value

p. Anisidine Value (AnV) is the measure of aldehydes. Aldehydes are a result of secondary oxidation, when the hydroperoxides decompose. These are the compounds that give foods the rancid taste and smell. Testing for p. Anisidine values can give you an overview of the oxidation history of your oil and food products, which can help further pinpoint rancidity issues.

### HOW IT WORKS

Aldehydes, a product of secondary oxidation, react with the p-anisidine resulting in a variation in absorbance, measured at 366nm. Anisidine Value is expressed as AnV (Anisidine Value), following AOCS (Cd 18-90) the reference method.

## Iodine Value

The most important application of the iodine number is to determine the amount of unsaturation contained in the fatty acids that make up oils. This unsaturation is in the form of double bonds which react with iodine compounds. The higher the iodine value, the greater the unsaturation present in the fatty acid. The iodine number is used as a quality or process control parameter but it can also be used as a characterization parameter because each type of oil or fat has an iodine value included in a range that identifies the product itself.

### HOW IT WORKS

Double bonds react with iodine in alcoholic solution determining a variation in the reagent's absorbance. This amount measured at 446 nm is indirectly related with concentration of double bond in the sample, expressed as IV (Iodine Value).

## Soaps

Soaps are salts of fatty acids obtained from a reaction that occurs between free fatty acids and sodium carbonate. Testing for soaps is a tool to determine the proper cooking oil treatment protocol using Filsorb. If soap levels rise too quickly, it can be a sign that the cooking oil is being treated too late, with too high of a FFA value, at too hot of a temperature, or if there is excessive amounts of moisture in the oil.

### HOW IT WORKS

At specific pH values soaps mixed with bromophenol generate a blue color. Its intensity, measured at 604nm, is directly proportional to the concentration of soaps in the sample.

[See how the CDR FoodLab® correlates to the official methods](#)

# PRODUCT SUPPORT

To register your **CDRFoodLab®** Analyzer for the extended 3 year warranty, find software updates, SDS documents, FAQs, procedures, and more, please visit:

[www.resources.cdrfoodlab.com](http://www.resources.cdrfoodlab.com)



For help or assistance, please email [support@quartz-analytics.com](mailto:support@quartz-analytics.com)  
or call us at (248) 844 1239

## WARRANTY

CDR S.r.l. designs and manufactures its products in compliance with the quality management system under ISO 9001 standards, which envisage constant monitoring of the product through all the production stages.

Warning: OBLIGATION TO READ THE USER'S MANUAL: at the time of delivery of the goods the final customer must read the user's manual, to avoid damages at the product.

General warranty conditions:

- CDR declares to the original purchaser that each product manufactured and/or sold by CDR shall be free from defects in material workmanship and, under normal and proper use conditions, warrants it for a period of 12 months from the invoice date or 36 months if you have registered your analyzer. If you want to extend the warranty period to 36 months register your CDR Analysis System and upload a copy of your invoice.
- CDR's obligation is limited to repairing, replacing or modifying (at CDR's undisputed judgment) at CDR's factory - or elsewhere - the material whose defects have been verified, on condition that the Purchaser has informed CDR of any defects found within 8 days from receipt of the product or from discovery in case of defects which may not be identified in the normal inspection.
- Damages caused by or connected to transport are excluded. Transport to and from CDR's Factory will be at purchaser's charge and risk and shall be paid also for reshipment.
- This warranty certificate does not cover those parts which deteriorate or which are considered consumables or those parts or items which by their nature are normally required to be replaced periodically consistent with normal maintenance (including without limitation lamps, cuvettes and caps).
- Those instruments or accessories, which are supplied by CDR but are not of CDR manufacture will only benefit from the warranty conditions offered by the manufacturer.
- It's also understood that, following the purchase and delivery of the product, the purchaser shall be deemed liable for any losses, damages or complaints concerning persons or things incurred by the use or misuse of the instrument on behalf of the purchaser, his employees, co-operators or others.
- CDR does not assume any obligation or warranty engagement concerning precision and/or accuracy of the measurements as well as for any damage to the instrument directly or indirectly resulting from the use of reagents and/or consumables different from those produced by CDR specifically for its own instruments on the same properly tested.

To activate the warranty is necessary to register your CDR Analysis System and upload a copy of your invoice.