



NSNs: 6665-151805235 / 6665-151805236

# EMA series

## LIQUID EXPLOSIVE DETECTOR



- Certified according to **ECAC** performance requirements for **Type B** and **Type A\*** Liquid Explosive Detection Systems (LEDS)
- Accurate automatic inspection of sealed and unsealed **LAGs** (Liquids, Aerosols and Gels) in ~ 5 sec. [Type B] and ~ 4 sec. [Type A]
- Compact size and ergonomic design
- Certified to screen liquids in clear, colored and opaque plastic and glass, metal and metallized containers
- Very low combined Nuisance Alarm Rate: < 0.4%
- No-ionizing source or part in movements
- No maintenance required

\* Optional



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Threat Detection through Electromagnetics

CEIA reserves the right to make changes, at any moment and without notice, to the models (including programming), their accessories and options, to the prices and conditions of sale

Scan QR code to see EMA video

The EMA is a compact device designed for the analysis of liquid containers and their contents with the goal of **detecting the possible presence of explosive precursors and explosive liquids.**

When the operator places the bottle in the inspection cavity, its presence is automatically detected and the **analysis is performed in ~ 5 seconds.**

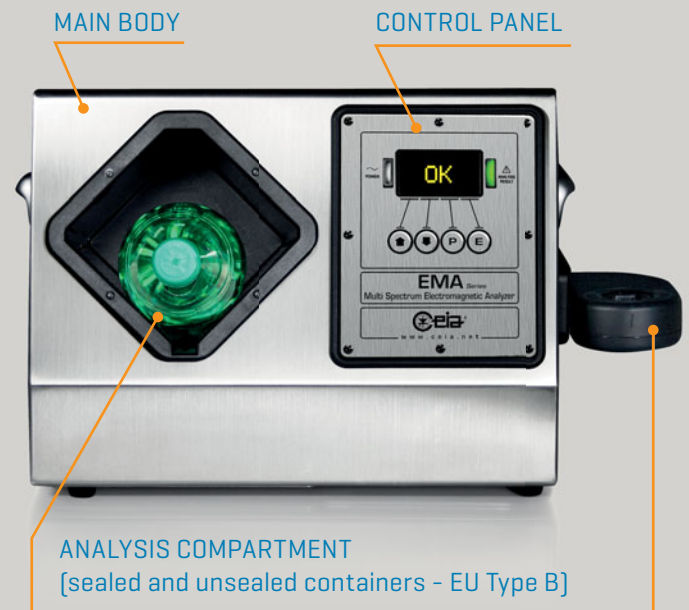
### General description

The EMA is a compact device designed for the analysis of liquid containers and their contents with the goal of detecting the possible presence of explosive precursors and explosive liquids.

The content of the bottles is analyzed without the need to open the container as the detection is effected using simultaneous multiple sensing technologies.

The housing of the analyser, which is extremely robust, durable and easy to clean, is made of AISI 304 Stainless Steel and anti-friction plastic.

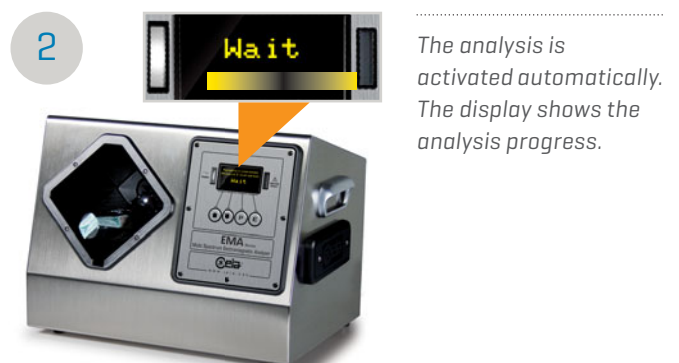
The Analyser consists of a main body, a control panel and an analysis compartment. In case of open containers such as cups and thermos flasks, it is possible to carry out the analysis by means of the type A integrated analyser [optional], using small disposable plastic sample cups to be inserted into an external probe.



### Inspection of bottles or containers

- Independently of their shape
- Made of different materials
- In a wide range of capacity

### EMA type B Operational Sequence



The detection capability of the certified CEIA EMA LAGs\* analyser exceeds the current European requirements as it is able to detect additional dangerous substances.

Examples of liquid containers that can be screened with EMA



### CEIA EMA and LEDS Requirements

**Type B Liquid Explosive Detection Systems** are intended for the inspection of individual liquid containers with the purpose of detecting explosives and their precursors, according to the current Regulation Authority requirements [EU Reg. No 185/2010].

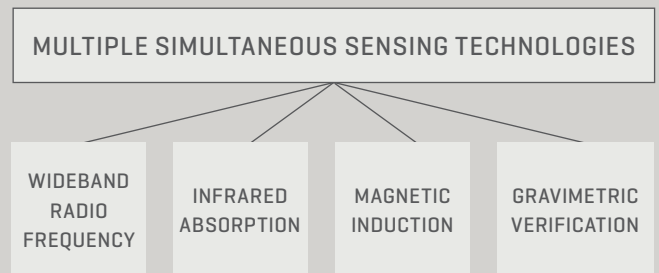
As containers can be made of different materials and can have different geometry and volume, the use of multiple simultaneous physical principles is necessary for a reliable and secure screening.

The CEIA EMA analyser family design started in 2003; since then the number of sensors installed on-board have been growing in order to comply with the increasing requirements on the liquid threats to be detected and on the kind of containers to be inspected. The comprehensive set of sensors installed on the equipment makes the EMA liquid analyser a unique machine on the market providing very high security and set for future detection requirements.

The CEIA EMA includes an **EU Standard 3 Certified type A analyser** (optional) to screen loose liquids, open containers or following to an alarm on the type B section. A disposable cup allows sampling and measurement of a minimum quantity of liquid to be analysed.

\*LAGs: Liquids, Aerosols and Gels

### Operating principle



When the operator places the bottle in the inspection cavity, its presence is automatically detected and the analysis is performed in ~ 5 seconds.

The fields generated in the inspection cavity are weak in intensity and non-ionizing, therefore completely safe for the liquids and for the operator.

**The fields interact with containers and with their content. The entire volume is analyzed in order to verify its conformity with allowed liquids.**

After a few seconds, the unit provides an **OK or ALARM message without requiring any data interpretation by the operator.**

Calibration is carried out automatically by the unit.

3a



If the container content is identified as conforming, the "OK" message and a green light are displayed.

A short "double beep" is emitted by the internal sounder.

3b



If the container content is not conforming, a YELLOW or RED light and an **ALARM message** ["Not allowed product"] are displayed.

A burst of prolonged "beeps" is emitted by the internal sounder.



## EMA series Specifications

### KEY FEATURES

Integrated Type B and Type A Standard 3 certified System
Automatic inspection of any type of containers
Inspection time in ~ 5 seconds (type B) and ~ 4 seconds (type A)
Multiple simultaneous sensing technologies
Minimum installation space
Minimum operator training required
All solid state
No mechanical parts in movements
No-ionizing or laser sources
No maintenance required

### MULTIPLE SENSING TECHNOLOGY

Wideband Radio Frequency (R.F.)
Infrared (IR)
Magnetic Inductive
Gravimetric

### INSPECTION CHARACTERISTICS

Commercial Bottles of any shape and materials including plastic, glass, metal with capacity ranging from 100 ml to 2000 ml
Type A sample cups volume: 10 ml
Initial Start-up time: 15 sec. max
Analysis type: automatic
Analysis time: 5 sec. typical (type B) and 4 sec. typical (type A)

### DETECTABLE SUBSTANCES

Explosive precursors and explosive liquids

### ALARM SIGNALLING

LIGHT COLOR	DISPLAY MESSAGE	MEANING
Green	OK	Allowed liquid
Yellow	Not allowed product	Alarm of medium intensity
Red	Not allowed product	Alarm of high intensity

### ACOUSTIC ALARM

### THREAT CLASSIFICATION AVAILABLE

### OPERATOR INTERFACE

Easy to read high-contrast graphic display
High durability stainless steel function keys
Programmability of all the parameters protected by passwords

### FUNCTION AND CALIBRATION CONTROL

Automatic calibration, continuously running
Manual verification of calibration, performed by the operator through Pass/No-Pass reference test pieces (according to the operational procedures)

### COMMUNICATION CAPABILITY

RS-232 serial interface
Ethernet network interface

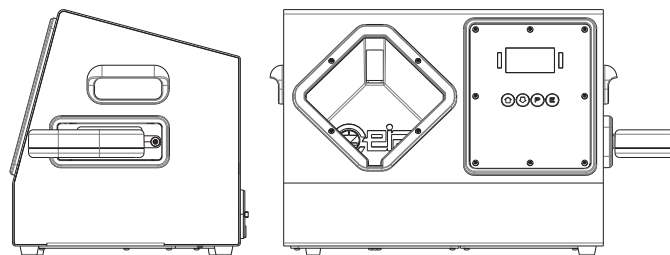
### REMOTE CONTROL AND ETHERNET NETWORKING FUNCTIONS

Available through the CEIA NetID Management software	Programming
	Statistical Data Collection
	Maintenance
	Firmware upgrade

DEGREE OF PROTECTION: IP 20 (IEC 60529)

### WEIGHT

17 kg (type B only) - 17.5 kg (type B and type A)



### DIMENSIONS (WxDxH)

- 470 mm x 317 mm x 330 mm (type B only)
- 545 mm x 317 mm x 330 mm (type B and type A)

### MAIN ELECTRONICS FEATURES

High integration SMT
32-bit flash-based microcontrollers
32-bit DSP
Low power and high reliability
Very low power inspection field, confined in the analysis compartment, completely safe for both the operator and the liquid
No ionizing radiation or radioactive sources
No laser sources

### MAIN MECHANICAL FEATURES

Constructed entirely in AISI304 Stainless Steel
Anti-fingerprint surface treatment
Rugged and Durable
Compact and Aesthetically pleasing

### INSTALLATION AND MAINTENANCE

Automatic adjustment to environmental conditions
No initial or periodic calibrations required
Firmware upgradeable via RS232 or Ethernet interface
No periodical maintenance or consumables required
Built-in automatic calibration and self-diagnosis system

### CERTIFICATION AND CONFORMITY

<b>STANDARD 3</b> Certified according to ECAC performance requirements for Type B Liquid Explosive Detection Systems
<b>STANDARD 3</b> Certified according to ECAC performance requirements for Type A Liquid Explosive Detection Systems
Conforms to the currently applicable International Standards for Electrical Safety and EMC

### POWER SUPPLY

115/230V~ ±15%, 50/60 Hz ±10%, 15W

### ENVIRONMENTAL CONDITIONS

Operating temperature: 0°C to +40°C
Storage temperature: -10°C to +60°C
Operating Relative humidity: 0 to 95% (without condensation)
Storage Relative humidity: 0-98%, without condensation

### NATO STOCK NUMBER

6665-151805235  
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### TYPE A ANALYSER (OPTIONAL)

EMA is designed for the analysis of LAGs in their original container. In case of open containers such as cups and thermos flasks, it is possible to carry out the analysis by means of an optional type A analyser, using small disposable plastic sample cups. The external probe is installed on the right side of the device. Analysis time: 4 sec.



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