



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*

Scan QR code to see EMA video



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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.

**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.

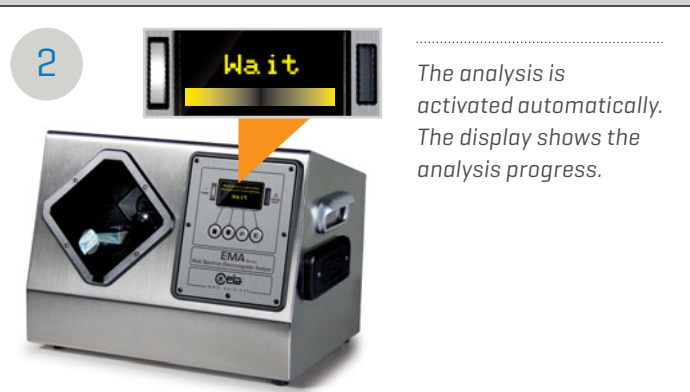
The Analyser consists of a main body, a control panel and an analysis compartment. In case of open containers such as cups and thermos flasks, it is possible to carry out the analysis by means of the type A integrated analyser (optional), using small disposable plastic sample cups to be inserted into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

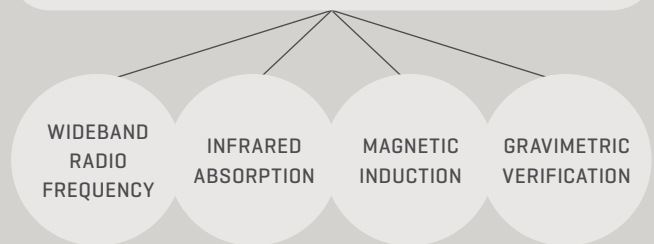
The CEIA EMA analyser family design started in 2003; since then the number of sensors installed on-board have been growing in order to comply with the increasing requirements on the liquid threats to be detected and on the kind of containers to be inspected. The comprehensive set of sensors installed 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

#### MULTIPLE SIMULTANEOUS SENSING TECHNOLOGIES



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.





## SPECIFICATIONS

<b>KEY FEATURES</b>	Integrated Type B and Type A Standard 3 certified System		
	Automatic inspection of any type of containers		
	Minimum installation space		
	Minimum operator training required		
<b>MULTIPLE SENSING TECHNOLOGY</b>	All solid state    No mechanical parts in movements		
	No-ionizing or laser sources		
	Wideband Radio Frequency (R.F.)		
	Infrared (IR)		
<b>INSPECTION CHARACTERISTICS</b>	Magnetic Inductive		
	Gravimetric		
	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		
<b>DETECTABLE SUBSTANCES</b>	Initial Start-up time: 15 sec. max		
	Analysis type: automatic		
	Analysis time: 5 sec. typical (type B) and 4 sec. typical (type A)		
	Explosive precursors and explosive liquids		
<b>ALARM SIGNALLING</b>	<b>LIGHT COLOR</b>	<b>DISPLAY MESSAGE</b>	<b>MEANING</b>
	Green	OK	Allowed liquid
	Yellow	Not allowed product	Alarm of medium intensity
	Red	Not allowed product	Alarm of high intensity
<b>ACOUSTIC ALARM</b>			
<b>THREAT CLASSIFICATION AVAILABLE</b>			
<b>OPERATOR INTERFACE</b>	Easy to read high-contrast graphic display		
	High durability stainless steel function keys		
	Programmability of all the parameters protected by passwords		
<b>FUNCTION AND CALIBRATION CONTROL</b>	Automatic calibration, continuously running		
	Manual verification of calibration, performed by the operator through Pass/No-Pass reference test pieces (according to the operational procedures)		
<b>COMMUNICATION CAPABILITY</b>	RS-232 serial interface		
	Ethernet network interface		
<b>REMOTE CONTROL AND ETHERNET NETWORKING FUNCTIONS</b>	Available through the CEIA NetID Management software	Programming	
		Statistical Data Collection	
		Maintenance	
		Firmware upgrade	
<b>DEGREE OF PROTECTION: IP 20 (IEC 60529)</b>			
<b>WEIGHT</b>	17 kg (type B only) - 17.5 kg (type B and type A)		
<b>DIMENSIONS (WxDxH)</b>	470 mm x 317 mm x 330 mm (type B only)		
	545 mm x 317 mm x 330 mm (type B and type A)		
<b>POWER SUPPLY</b>	115/230V~ ±15%, 50/60 Hz ±10%, 15W		
<b>MAIN ELECTRONICS FEATURES</b>	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			

<b>MAIN MECHANICAL FEATURES</b>	Constructed entirely in AISI304 Stainless Steel	
	Anti-fingerprint surface treatment	
	Rugged and Durable	
<b>INSTALLATION AND MAINTENANCE</b>	Compact and Aesthetically pleasing	
	Automatic adjustment to environmental conditions	
	No initial or periodic calibrations required	
<b>CERTIFICATION AND CONFORMITY</b>	Firmware upgradeable via RS232 or Ethernet interface	
	No periodical maintenance or consumables required	
	Built-in automatic calibration and self-diagnosis system	
<b>ENVIRONMENTAL CONDITIONS</b>	STANDARD 3 Certified according to ECAC performance requirements for Type B Liquid Explosive Detection Systems	
	STANDARD 3 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	
<b>NATO STOCK NUMBER</b>	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		

## ACCESSORIES / OPTIONS

### TYPE A ANALYZER

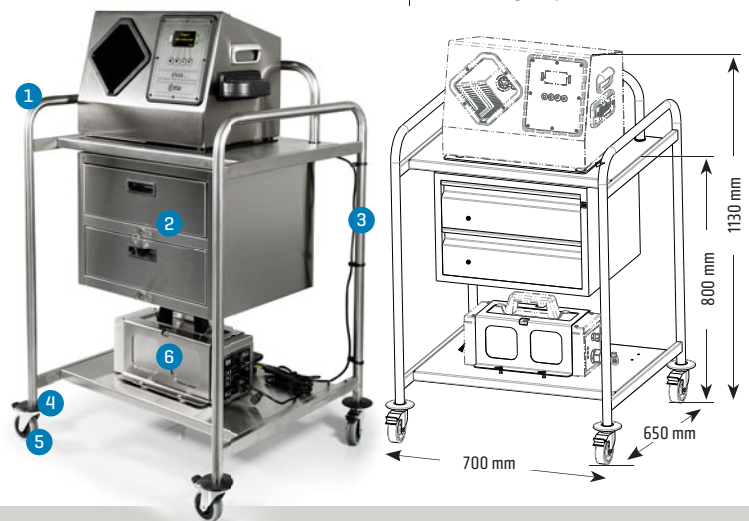


EMA is designed for the analysis of LAGs in their original container. In case of open containers such as cups and thermos flasks, it is possible to carry out the analysis by means of an optional type A analyzer, using small disposable plastic sample cups. The external probe is installed on the right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

### EMA MOBILE STATION (code 70900)

Robust Stainless-Steel Cart, specially designed for optimal use of EMA. Wheels and locking brakes allow comfortable mobile deployment.

- |                     |   |
|---------------------|---|
| 1 Transport handles | 4 Frame protection  |
| 2 Lockable drawers  | 5 Floating wheels + brake (4)   |
| 3 AISI 304 frame    | 6 MBSU-2: Independent, compact size, long life power supply with embedded fast charger (optional) |



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