

ABOMO - Light

The ABOMO unit is a multitasking two-step device designed for the detection and measurement of radioactive contamination, ALPHA and BETA, on potentially exposed personnel. It has been specifically designed for controlled areas with low space available.

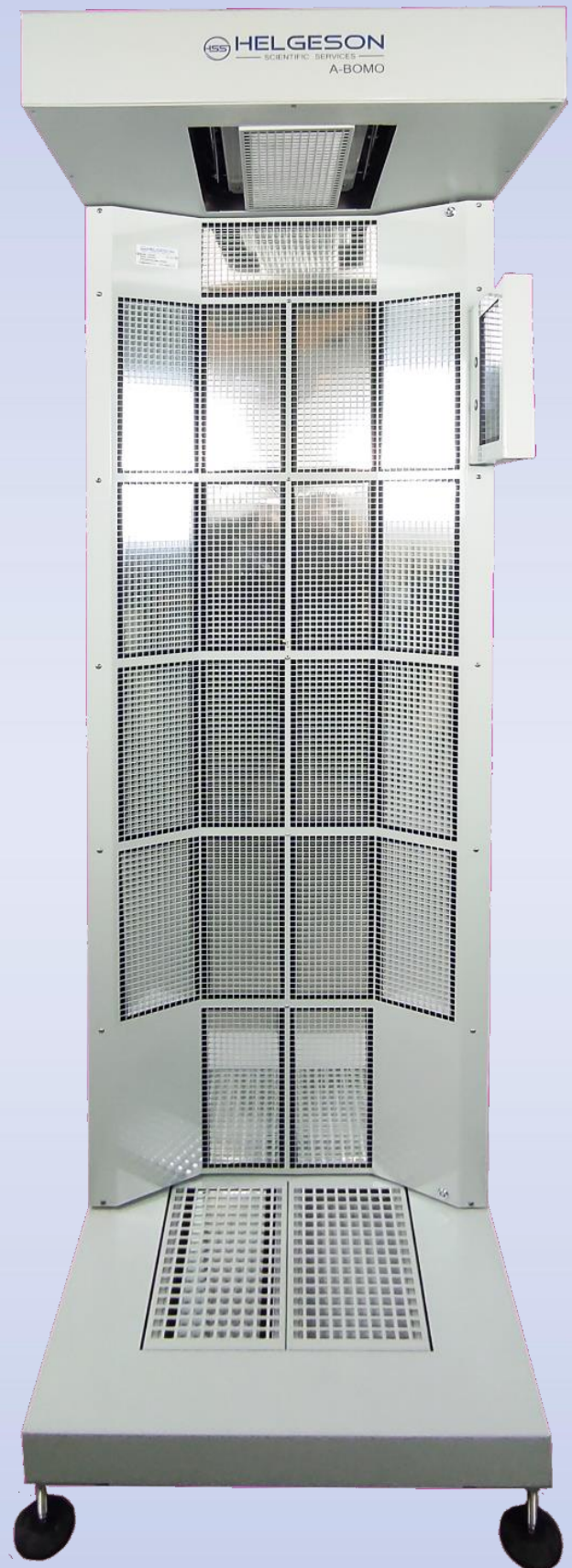


It includes 21 plastic scintillators + ZnS designed to measure alpha and beta particles which work autonomously and independently, allowing to perform simultaneous measurements with different alarm levels. Up to 26 detectors can be included in its largest configuration.

Its management is fully automated. The equipment has sensors that detect when a person enters the portal, interrupting the background reading and initiating automatically (when it detects that it is correctly positioned) a thorough examination of the subject.

Special Features:

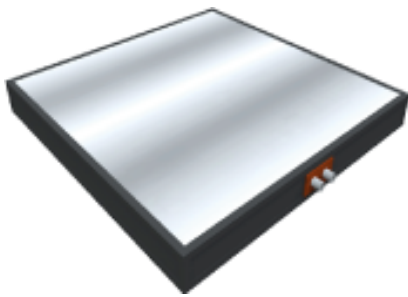
- Up to 26 plastic scintillators + ZnS. 525 cm².
- Each detector is configurable via software by the operator to define its operating energy (beta or gamma), zones, alarms, cancellation of a specific detector, etc.
- Efficiency for Beta (2π in contact with grid): C-14 \geq 4% Co60 \geq 22% Cl-36 \geq 44% Sr90/Y90 \geq 52%.. Alpha: Am241 \geq 12%..
- TCP / IP and / or RS232 / RS485 communication between modules.
- Sensors for the automatic detection of people, both in proximity / access and in the counting position.
- Motorized head detector.
- Open configuration to fit in small areas or where space constrictions are present.
- Operation / measurement in two steps (front position and back position).
- LED lighting.
- Digital parameter adjustment. (without potentiometers or mechanical actuators).
- 8" LCD Color touch screens for information and control. External keyboards included.
- Integrated industrial PC (without maintenance), with Windows 10 operating system.
- Includes calibration routines, verification and configuration (alarms, levels, gain, etc).
- Software, HSRAD, customizable in all its functions and languages.
- Critical routines such as calibration, algorithms, etc., protected by password.
- Allows its remote operation (TCP / IP). Optional module for ADR interconnection.
- It has a standard USB port for data and historical dump in any USB external support (memory stick, disk, etc) as well as TCP / IP connector.
- It has signal output for remote alarm indicators.
- Texts, tone and volume of voice messages configurable by the user.
- Record of events, backgrounds, measures, alarms, operation failures, etc.
- Dynamic automatic calculation of measurement duration.
- Different configurable operating modes (background accounts, counting, etc..).
- Indication, exterior and interior, optical and acoustic, status, alarms, etc.
- All software and documentation in English.
- Electronics and software used in multiple equipment installed in the Spanish's NPPs, interchangeable and standardized.



Detectors:

The type of detector that the ABOMO incorporates is plastic scintillation for alpha and beta. The beta detector consists of thin layer of plastic scintillator, specially designed to be sensitive to beta radiation and not gamma radiation, making its efficiency and background values much more attractive. The entry window is aluminized with mylar ($0.9\text{mg} / \text{cm}^2$ or $2.7\text{mg} / \text{cm}^2$).

The beta scintillator includes a thin layer of ZnS in order to detect alpha particles.



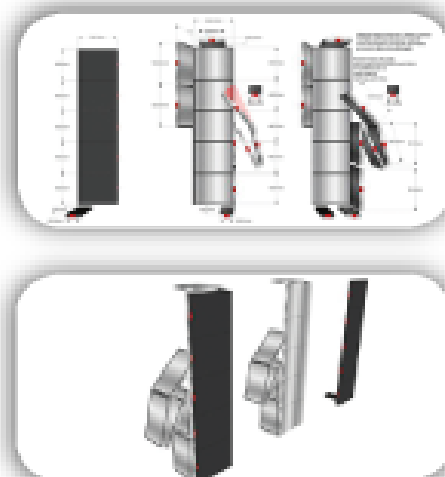
Characteristics:

Fast, low density and Z-value. High output power.

Applications:

Detection of particles. Alpha detection. Beta detection.

Each detector has its own HV source and electronics in order to separate the performance of each detector. This allows to disconnect a detector if malfunctioning is detected, keeping the rest of the equipment 100% functional. This is one of our competitive advantages that makes HELGESON outstand over the rest of our competitors.



Voice notifications:

A voice synthesizer module has been incorporated to allow the user to personalize the messages that will be heard by the loudspeaker.

Through this tool user can write a voice message for each of the different events available in the application and indicate how many times it should be played.

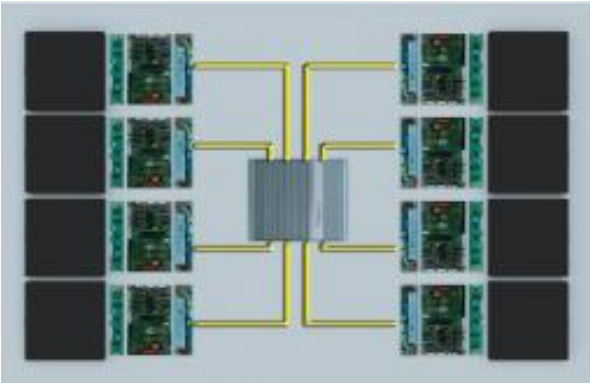
User can also set the dictation speed and choose between different voices available (male and female).

MENSAJES DE VOZ			
PÁGINA 1	PÁGINA 2		
EVEN TO	TEX TO	REP ETIR	
AL INICIAR LA APLICACIÓN	EQUIPO INICIALIZADO	0	ESCRIBIR
ENCAMBIAMIENTO DE CONEXIONES	REALIZADO CHEQUEO DE COM	0	ESCRIBIR
DR-8888 CONTROLADORA #	COMPROBANDO CONTROLADORA	0	ESCRIBIR
DIAGNÓSTICO SUPERADO	TEST EN CONTROLADORA # COM	0	ESCRIBIR
SUGERIDO NO CERRADO	ERROR EN CONTROLADORA #	0	ESCRIBIR
MEODO DE OPERACIÓN TELECOMANDO	MEODO # SELECCIONADO	0	ESCRIBIR
PREPARANDO FONDO	PREPARANDO MEDIDA DE FONDO	0	ESCRIBIR
SECCION FONDO	SECCIONANDO MEDIDA DE FONDO	0	ESCRIBIR
FONDO COMPLETADO	FONDO COMPLETADO	0	ESCRIBIR
SECCION APROXIMANDOSE DE EQUIPOTE FONDO	PASE POR FONDO	0	ESCRIBIR
SALIDA EN EL INTERIOR EQUIPOTE FONDO	ESPERE POR FAVOR	0	ESCRIBIR
PREPARANDO CONTAR	SE VA A INICIAR LA MEDIDA	0	ESCRIBIR
SECCION APROXIMANDOSE DE EQUIPOTE CONTAR	PASE POR FONDO	0	ESCRIBIR
CONTAR ATRAS DEBARRA CONTAR		0	ESCRIBIR
CONTAR FINALIZADO	SAUDA POR FAVOR	0	ESCRIBIR

VOZ SELECCIONADA:	VELOCIDAD:
Clara	VELOCIDAD 3
GUARDAR	REINICIAR
	CERRAR

The computer centralizes communications with the controller cards associated with each detector. These manage the high voltage modules and pre-amplifiers and are responsible for the data acquisition task.

All the electronic adjustments, corresponding to the acquisition (thresholds, gain, high voltage, etc.), are made through the presence of digital potentiometers controlled from the tools available in the software itself.



Calibrations:

The equipment can be calibrated to report activities. For this, a module is available to register patterns (calibration sources), which will be used in the calibration process.

Each zone is calibrated individually, and even different patterns can be used in each of them.

