CODETEL

DÉTECTION - SÉCURITÉ - PROTECTION

421 Allée des Entrepreneurs
ZA Belle Croix
84210 VENASQUE
FRANCE
Tél : + 33 4 90 64 00 00
Fax : + 33 4 32 81 05 28
info@codetel.fr
www.codetel.fr

Catalogue 2020

SUMMARY

Destruction

Tools - Hook & line

Robots

Underwater detectors

Non military detectors

SECURITY

HANDSCANNERS
EB 610 C-2
EBEX 607-2

HANDSCANNERS

EBINGER handscanners are well known and proven in the field of security. They are used to screen persons for dangerous metal objects such as knifes, pistols ... These detectors are typically used in police work, prisons, embassies, airports, security services of industry, and at events where a large number of people will meet.

EB 610 C-2

NSN 6695-12-347-0977

The **EB 610 C-2** is a light weight but sturdy search device made of synthetic material, offered at a reasonable price. It is comfortable to handle and easy to operate. It is equipped with audio and optic controls.

The C-model is equipped with the standard functionality. The T-model feature additionally a discrimination between small and big metallic masses (tremolo).

The airport version of EB 610 C-2 is a sealed unit without removable components with its battery recharged externally. The standard version operates on a commercial dry battery or on a rechargeable battery.

TECHNICAL DATA
Power supply : 9V dry battery or NiMH battery
Operating time : approx. 35 h (with alkaline battery)
Search head : 170 x 115 mm
Length : 420 mm
Weight : 275 g
Temperature range : -20°C to +55°C

EBEX 607-2

NSN 6695-12-319-1068

The **EBEX 607-2** features a particularly robust design and metal structure which give it a high level of reliability, whether in large-scale or long-term usage. It is equipped with audio and optic controls.

The reliable electronic system consists of integrated circuitry which has low power consumption to ensure long battery life. Sensitivity can be varied by an external adjuster (with screwdriver), according to the detection task.

For pin-point location of small metal objects, the EBEX 607-2 can also be delivered with a cylindrical probe (model EBEX 607 Z-2).

TECHNICAL DATA
Power supply : 9V dry battery or NiMH battery
Operating time : 40-60 h (with alkaline battery)
Search head : Ø 145 mm
Length : 400 mm (385 mm for Z version)
Weight : 450 g (360 g for Z version)
Detection range : Pistol 6,35 mm at 25-30 cm

WALKTHROUGH DETECTOR
SC-900

WALKTHROUGH DETECTOR SC-900

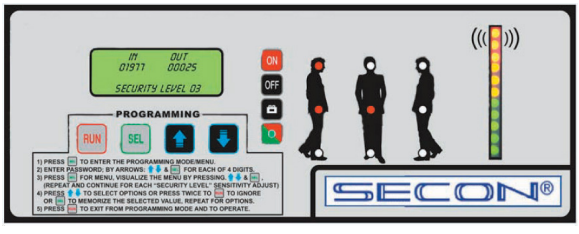
The SC 900 is a simple to operate microprocessor based digitally controlled, pulse induction walk through metal detector using VLF Technology. The electronics is microprocessor based and digitally controlled to provide a sensitive metal detection and discrimination.

SC 900 is a versatile and easy to install. It provides a high throughput level and detection level. SC 900 has an enlarged and homogenous detection field that comprises several horizontal and vertical zones to allow a discrimination of metal objects in 9 different scanning zones of the walk through detector : left, right, high, low or centre of the body. This improves the throughput rate by revealing the exact location of which requires further inspection.

The operation fascia is located at the overhead cross section of the SC 900. A bright, highly visible LED display provides a visual indication of the level of metal detected within the field of detection. This information is supported by an audio alarm. Traffic is counted inwards and outwards. A LCD monitor with backlight illumination provides operational information during programming of the device. The access to control functions is tamper proof by a clear cover with mechanical lock and a four-digit access code. SC 900 incorporates a UPS back up battery for 4h of operation.

SC 900 is compliant with international norms (NILECJ-0601 L1-5/IP44/EN60950 Class1) and in conformity with CE European Union Norms and produced under ISO 9001: 2008 QMS.

Control panel



TECHNICAL DATA
9 multi detection zones
10 sensitivity levels including NILEC -0601 L1
Emergency battery for 4 h operation
Simple to program
English programme menu
RS 232 interface
Weight: 52 Kg
Gross weight: 65 Kg
Operating voltage: 70 VAC to 270 VAC at 50 Hz to 60 Hz
Power: 10W at standby- 20W at alarm
Package Dimensions (W x H x L):
Box 1: 560 x 260 x 2260 mm
Box 2: 220 x 210 x 1050 mm
Ambient temperature: -20°C to +70° C

INSPECTION MIRRORS
EFIS S
EFIS 1

INSPECTION MIRROR EFIS S

The EFIS® S is the basic version within the EBINGER range of inspection mirrors for police and military. It's intended use is the support of an inspection of vehicles at checkpoints and to search boats, aircrafts, trains and parts of buildings, etc.

Although of small size when collapsed (pocket version) it can be extended to reach into cavities and voids. EFIS® S can be used in engine bays and next to electrical wiring as the surface of the device comes with a protective isolation to avoid sparks or short circuits.

EFIS® S is supplied with two mirrors of different size which are very easy to exchange. The telescopic handle can be extended between 30 and 50 cm and carries a powerful LED placed next to the mirror. The device can operate for up to 90 hours on commercial disposable dry cells (AA) or from rechargeable NiMH cells.

TECHNICAL DATA

Mirror small : approx. Ø 50 mm
Mirror big : approx. Ø 75 mm
Telescope : approx. 290 - 490 mm
Illumination : by LED
Power consumption : approx. 50 mA
Power supply : 3 AA micro cells (LR6)
Weight : approx. 390 g
Operation time : approx. 90 h continuous use

INSPECTION MIRROR EFIS 1

NSN 5120-12-349-3304

clamps to carry a torch with a high performance LED for operation in low light conditions.

The pivoting mirror is slightly convex to enlarge the view. Different sizes of mirror heads can be supplied upon demand.

The EFIS® inspection mirrors were designed to support a fast inspection of vehicles and parts of buildings which are difficult to access. There are various fields of application: vehicle undersides, baggage racks, areas over or under furniture, hollows and space in between as well as difficult to access building parts can be inspected rapidly.

This assists the police, customs, military and security companies to carry out a substantial accurate and thorough inspection as well as a quick handling at the inspection points.

The lightweight and rugged design of the handheld EFIS® 1 and its stepless adjustment make it easy to use in different working conditions. The telescopic handle is fitted with

TECHNICAL DATA

Mirror's dimensions : 135 x 185 mm, 135° pivotable
Telescopic rod : 1100 to 2000 mm
Lamp : 1W high performance led, splash waterproof
Weight : 1,4 kg approx.
Batteries : 2x LR 20 batteries
Operating time : 10 h with alkaline batteries

INSPECTION MIRROR EFIS 4

NSN 5120-12-368-3342

The wheeled search and inspection mirror EFIS® 4 is an efficient and simple to use tool for a fast inspection of vehicles.

The large, swivel mounted mirror head is available as a standard glass or a special stainless steel version. The metal version has proven its worth when used in harsh conditions and in continuous operations. The device is equipped with 10 splash waterproof LEDs of low power consumption.

The construction is ergonomic and the telescopic handle can be adjusted to suit tall and short operators. It can be extended to reach under large vehicles.

The EFIS® 4 incorporates a battery compartment for three commercial 1,5 V C-cell batteries (type LR 14) which provide the power for the LEDs. Batteries are easy and fast to change. Upon request rechargeable NiMH batteries and a robust battery charger are available as accessories.

Optionally it can be delivered with remote mechanical adjustment of the mirror angle. Upon request it can be delivered as a very robust special version of polished stainless steel. A 200 x 400 mm sized mirror head is available as option.

TECHNICAL DATA

Chassis : approx. 410 x 424 x 173 mm
Mirror : approx. 300 x 200 mm
Telescope : approx. 1,030 - 1,290 mm
Illumination : 10 x special LEDs
Power consumption : approx. 500 mA
Power supply : 3 x 1,5 V C-cell (LR 14) or 3 x rechargeable 1,2 V C-cell NiMH battery
Weight : approx. 4,000 g
Operation time : approx. 20 h with alkaline batteries, approx. 9 h with rech. batteries

TELESCOPIC CAMERA EFIS-5

NSN 5836-12-370-5030

The EFIS®5 videoscope completes the EBINGER range of viewing tools. Different to the optic mirrors, EFIS®5 applies a miniature CCD camera and a colour monitor.

Due to the small size of the video head and the wide extension of the telescopic handle (extendable up to 3m) even very difficult to access areas can be inspected easily.

EFIS®5 is also used for inspection of wheel wells of aircrafts. The device is widespread in use with police, customs, prison service and commercial security companies.

The simplicity of use, the large extension range of the telescopic handle and the high image quality of the TFT screen make the EFIS®5 a well liked and versatile tool in everyday work. The camera can be moved in various directions and tilted by a remote control knob in the handgrip. For work in low

light conditions or during nighttime the camera can come with an LED infrared illumination.

The camera is available as a black & white or a colour version. Power is supplied from 8 disposable 1,5 V C cell batteries or from a compact rechargeable Ni-MH battery pack.

The EFIS®5 is also available with video recording.

TECHNICAL DATA

Camera-module : CCD-chip 1/3“ (colour) or 1/3“ (b&w)
Camera resolution : 380 x 290 Pixel, 330 TV-lines (colour) or 500 x 552 Pixel, 400 TV-lines (b&w)
Lens : F = 2,0 / f = 3,6 mm
Light sensitivity : 0,1 Lux (colour) or 0,1 Lux (b&w)
Auto-Shutter : 1/50 + 1/100000s (colour) or – to 1/10000s (b&w)
Operation temperature : -10 to + 50ºC (camera) or to +40ºC (screen)
Screen : TFT - active matrix 17,8 cm (7“)
Resolution : 960 x 234 Pixel
Length : 1250 - 3000 mm
Power consumption : 750 - 1250 mA (without/with remote control)
Weight : approx. 4,000 g
Battery capacity : 3,8 Ah rechargeable Ni-MH
Operation time : 8 h with 3,8 Ah rechargeable batteries NiMH

MAIL / PARCEL X-RAY SCANNER AUTOCLEAR 5333

Designed to screen small to mid-sized items for weapons, explosives, drugs and other contraband, the single-source, dual-energy **Autoclear 5333** X-ray scanner is fast, rugged and easy to operate. Ideal for screening hand carried items such as purses, briefcases, backpacks, strollers, small parcels and more, the compact 5333 is a great choice for small or limited spaces. The system's low profile, bottom-up generator design makes fine lines appear much sharper and larger on-screen.

- Rapidly images full mailbags and long or tall items
- Fits in elevators, narrow halls and tight spaces
- Patented guided conveyor belt never needs adjusting
- Built on the industry's most stable and flexible operating system

TECHNICAL DATA
Overall dimensions : 125 x 72 x 111 cm
Aperture size : 53 x 33 cm
Weight : 236 kg
Contrast sensitivity : over 2 millions color tones
X-ray source : 100 kV or 160 kV
Dose rate per exam : 0,1 mR
Screen : 17 " LCD

PORTABLE X-RAY SCANNER AUTOCLEAR 6040

The **Autoclear 6040**, featuring a 62 cm wide x 42 cm high tunnel opening, is a high capacity, high penetration, heavy-duty, conveyorized X-ray scanner designed to inspect carry-on bags, briefcases, mail trays and parcels.

It is ideal for use at : airports, seaports, mailrooms, courthouses, embassies, corporate offices, government buildings, customs, rail or bus stations, schools, hospitals or special events…

AutoSensing® eliminates the need for troublesome photosensors or footpad switch. Assures 100% screening of thin blades or plastique in magazines or courier envelopes, or of bag already in tunnel at start-up.

Parcel contents are displayed at normal scale, wherever located, automatically and without distortion (autoscale®).

TECHNICAL DATA
Overall dim (without screen) : 155 x 81 x 126 cm
Tunnel dimensions : 62 x 42 cm
Weight : 352 kg
Contrast sensitivity : 2 million color shades
Conveyor speed 14,4 m/mn (at 50 Hz)
X-ray source : 160 kV
Dose rate per exam : 0,1 mR typical
Monitor : 17" SVGA

LETTERBOMB DETECTOR MAILEX 10

The letterbomb detector **MAILEX 10** was designed for checking suspicious mail like letters and small parcels. The MAILEX 10 is designed as a chute and a built-in electronics which is very easy to operate. Mail slips down the chute and can be separated as suspicious or unsuspicious, according to the alarms.

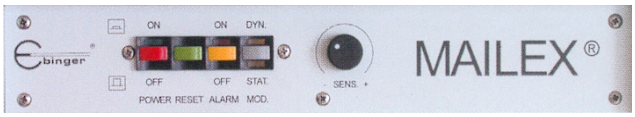
The device detects all kind of metal and alloys, and even very small components of improvised bombs or incendiary devices. Alarm is given as audio and optic alarm. The audio alarm can be switched off.

The device can operate in two modes : static or dynamic. In mode static, the alarm depends of an adjustable trigger threshold and has to be reset by hand. In mode dynamic, the alarm signal depends completely on the targets characteristics. This allows the cross-checking and determination of the targets size and position, when a letter was separated due to an alarm.

The sensitivity of MAILEX 10 is very high. It can be adjusted according to the required value and it is possible to suppress the indication of staples, clips or unwanted metal objects.

MAILEX 10 can handle a very large number of letters or small parcels in short time. Letters and parcels which have to be checked by X-ray equipment will be reduced to a small number.

MAILEX 10 is cost cutting, as X-ray checks on most letters and parcels become redundant.



TECHNICAL DATA
Alarm : optical alarm and switchable audio alarm
Dynamic mode : intermittent alarm with automatic reset Static mode : continuous alarm with manual reset by push button
Power supply : built-in NiCd battery
Operating time : approx. 18 h with NiCd battery
Battery control : by flashing led
Dimensions : 380 x 280 x 65 mm collapsed 380 x 280 x 215 mm in operation

MOBILE BIOMETRIC ENROLLMENT DEVICE **SEEK AVENGER**

MOBILE BIOMETRIC ENROLLMENT DEVICE SEEK AVENGER

Ideally suited for in-field operations, the compact SEEK Avenger is the only fully certified biometric enrollment and credential reading solution purpose built to perform in the harsh and challenging environments of the military, border security, and law enforcement. Combining forensic-quality fingerprint, stand-off dual iris capture, high resolution facial and evidence imaging, and multiple format credential reading, the SEEK Avenger delivers a lighter, smarter, and faster solution than what is available in the market today.

As the first mobile device of its kind capable of fingerprint and dual stand-off iris capture in direct sunlight, the SEEK Avenger provides mission flexibility by limiting operating constraints. Optional 3G/4G wireless connectivity and an onboard watchlist of up to 250,000 records, eliminates the need to transport unknown subjects in uncertain conditions for enrollment or identification; further reducing operational risk. With the addition of the optional MRZ and RFID readers, the functionality of the Avenger expands to include the reading and verification of ePassports and other non-contact credentials. These capabilities prove extremely valuable in highly remote locations, conditions where connectivity has been compromised, or when virtually instantaneous confirmation is required.

The SEEK Avenger delivers superior multi biometric enrollment and identity management capabilities in an age where risks are not always obvious and can carry extreme consequences. Being able to rely on a high degree of mobility, interoperability, and rapid accuracy can provid the decisive difference.


Keyboard & screen


Fingerprint sensor


MRZ reader


Iris and facial capture

TECHNICAL DATA

SPECIFICATIONS
Main Processor : Intel® Atom N2600 Dual Core – 1.6 GHz
Operating System : Windows® 7 Ultimate
Hard Drive : 32 GB removable SATA solid state drive (64 GB optional)
Memory (optional) : 2 GB DRAM (4 GB optional)
External Interfaces : 2 USB 2.0, 1 Ethernet, headphone and microphone jack
Cellular Data Connectivity (optional) : 3G/4G
Other Wireless Communications : 802.11 b/g/n, Bluetooth® 4.0 LE / 3.0 HS / 2.1 EDR and GPS
Ruggedized Standards : Designed to MIL-STD 810G and IP65
Display : 5.0 Inch, 800 x 480 resolution resistive touchscreen
Keypad : Large backlit QWERTY keypad with optical mouse
Dimensions : 9.5” x 6.2” x 1.8” (24.13 cm x 15.75 cm x 4.57 cm)
Weight : 3.2 lbs (1.45 kg)
Battery : Dual hot-swappable, 2.9 Ahr, Li Ion
Battery Life : Up to 8 hours (use case dependent)
Operating Temperature : 35°F to 120°F (2°C to 50°C)

BIOMETRIC / CREDENTIAL CAPTURE
Fingerprint Capture : 500 ppi; FBI Appendix F (FAP 45)
Iris Capture : Stand-off, SAP 40 simultaneous dual eye, Auto-focus range 15.24 cm to 25.4 cm
Camera : 5 MP auto-focus, auto-flash
Contact Card : ISO / IEC 7816 (CAC, PIV)
Bar Code Reading : Using Facial Camera - 1D / 2D (PDF 417, Code 39)

MINE CLEARANCE

METAL DETECTOR
TREX 210 MG

Handy and sturdy design
High detection sensitivity
High electrical stability
Effective ground compensation (GEB)

METAL DETECTOR TREX 210 MG

The TREX® 210 MG is a new detector with lightweight and ergonomic design of compact shape and very low power consumption for humanitarian Mine Action carried out by indigenous deminers in third world conditions. It combines the handiness and ease of operation of the thousand fold proven EB 420 with the latest technology of ground compensation.

The hand held, battery operated eddy current metal detector is intended to locate objects containing large or minimum amounts of ferrous or non-ferrous metal which are buried in the top layer of the ground. It can be tuned to disregard unwanted signals from so-called non-cooperative ground within wide limits. Target acquisition is indicated by an audio alarm, which changes in intensity depending on the size and distance of the detected object. Due to its electronic design the detector is particularly efficient on small metal objects or objects with low conductivity but therefore not suitable for operation in saltwater or on saltwater impregnated ground.

TREX® 210 MG is a useful tool to support search for minimum amounts of metal such as in archaeology, forensic police work or Mine Action due to its good detection range and resolution of metal objects buried close to each other. The TREX® 210 MG operates on a so-called 'dynamic' search mode that eases operations on non-cooperative ground or in parallel to fences, pipes, rails etc. if the search head is carried at an even distance and in parallel alongside the obstacle.

The TREX® 210 MG applies a new active TR-eddy current technique with an effective ground compensation (GEB) which, different to the PI technique, does not suffer from a detection range reduction on mineralised soils. Due to the high operation frequency, which is particularly sensitive to small metal objects the device is not suitable for use in saltwater or on saltwater impregnated ground. During the design attention was paid to a low power consumption which extends battery life. The detector operates with a rechargeable Li-Ion battery pack.

The device transmits an AC electromagnetic field by the oval search head inducing eddy currents into conductive objects. These counteract to the detector and are picked up by the search head.

TECHNICAL DATA
Power supply : Li-Ion Battery Pack - 4400 mAh
Operation time (at 20°C) : approx. 85 h
Temperature range
Storage : -40° to + 70 °C
Operation : -15° to + 55 °C
Dimensions
Short : approx. 800 mm,
Extended : approx. 1430 mm
Oval search head : approx. 220 x 170 mm
Sensitivity calibration : 3 ranges (low, medium, high)
Weight : approx. 2300 g

MINE DETECTOR
EBEX 422 GC

MINE DETECTOR EBEX 422 GC

NSN 6665-12-372-8248

The **EBEX 422 GC** can be used on non cooperative ground where other technology may fail. The index GC stands for “Ground Compensation” which refers to the rejection of interference from volcanic soil or laterit. This equipment is therefore suitable for use throughout the world.

In many areas throughout the world, mine detectors can be influenced by a mixture of soils such as laterit, magnetic rock and by soil conductivity due to monsoon rain. The wide band compensation of EBEX 422 GC meets such environmental working conditions and also rejects interference from saltwater due to its pulse induction operating principle.

Three decades of experience and close cooperation with international users led to this compact modular design. Components subject to wear and tear can easily be exchanged without further calibration work. This eases fault definition and significantly improves equipment availability in the field.

The rugged design and constructional features, coupled with available accessories, makes the EBEX 422 GC a very versatile equipment which can be used under almost all working conditions. It suits operating in the lying, kneeling, or standing position.

The EBEX 422 GC consists of :
- a Ø 230 mm circular search head
- a extension rod
- an electronic module with adjuster
- a loudspeaker with sleeve
- a battery container (or battery pack)
- a hand grip / arm rest kit
- a test piece
- a satchel
- an operation manual

The EBEX 422 GC can also be delivered with optional enlarged search head 420 x 280 mm.

TECHNICAL DATA

Power supply :
8 alkaline batteries 1,5 V type LR 14 (operating time 20 h)
or 8 rech. batteries NIMH 1,2 V - 4,5 Ah (operating time 15 h)
or battery pack 9,6 V - 3,8 Ah (operating time 12 h)

Temperature range : from - 25°C to + 55°C approx.

Dimensions :
Circular search head Ø 230 mm
Optional search head : 420 x 280 mm

Electronic cylinder : 35 x 460 mm
Extension rod : 25 x 600 mm
Battery container : 36 x 360 mm

Lengths and weights :
Short version : approx. 1000 mm and 2,1 Kg
Long version : approx. 1700 mm and 2,4 Kg
Complete in transit case : approx. 8,5 Kg

DEMINING VEST

This fragment proof protective vest is designed for mine clearance operations in hot and humid climates.

Its protects the throat, the front, the shoulders, the sides, and the lower part of the body. The groin protection can be folded up for more comfort, when walking. The back part is ventilated (no protection) for more comfort.

The demining vest exists in one size, it can be adjusted by large velcro strips.

TECHNICAL DATA
Protection against fragments : V50 = 450 m/s
Testing standard STANAG 2920
Weight : 2,5 kg approx.
Colour : NATO green or Navy blue
Options : steel insert plate (V50 > 700 m/s)
or ceramic insert plate (V50 > 900 m/s)

DEMINING SUIT

This suit is designed for deminers and specialists in the armed forces and the police who search and locate mines and explosives.

The suit consists of a fragment proof overall, an improved ballistic vest and fragment proof detachable sleeves. It is light weight and allows good mobility, which is essential when searching mines in difficult locations.

It protects the torso, the neck area, the arms, the lower part of the body and the legs. The tactical vest can also be worn separately, in other assignments.

The demining suit also exists in a version for hot countries, i.e. without sleeves, open in the back and without the accessories holder (see photos below).

TECHNICAL DATA

Protection against fragments : V50 = 450 m/s
Options : metallic insert plate (V50 > 700 m/s)
ceramic insert plate (V50 > 900 m/s)
Testing standard STANAG 2920
Testing standard NIJ-STD-0101.03 for vest
Weight : 10 kg approx. (version “hot countries” 5,5 kg)

“HOT COUNTRIES” VERSION

EOD SUIT
HFS SERIES III

EOD SUIT HFS SERIES III

EOD suit HFS SERIES III

The HFS SERIES III is our workhorse in the EOD/IEDD suit range; it combines an ergonomic design while still providing the user with the best possible protection. The SERIES III is considered to be light and comfortable, providing a high degree of mobility.
The suit comprises of:
Trousers
Smock (jacket)
Integrated Groin Protector
Hand protectors and overshoes
External composite blast plates

Communication System

The duplex communication system is designed to work in conjunction with the HFS SERIES III EOD Suit. It is made up of a Base Station and Hardwire Reel with 125m of Cable. This allows the operator in the Suit to be deployed and to stay in communication with his command station. It is designed specifically to be basic, rugged, reliable and simple to operate.

TECHNICAL DATA

EOD suit
Materials :
Outer cover – Nomex®
Inner material – Aramid
Blast plates- Composite matrix
V50 Ratings :
Suit front – V50 600 + m/s
Suit rear – V50 450m/s
Suit with Blast plates – V0 +1800m/s
Weight : Complete suit with blast plates – 26kg
Colors : Navy Blue, Olive Drab and Black

HELMET
Materials :
Outer shell - moulded GRP
Outer Cover – Nomex®
Inner – Aramid laminate
Ballistic Visor - Acrylic Polycarbonate laminate
V50 Ratings :
Helmet 630m/s
Visor 800m/s
Weight : 4.6kg
Colors : Navy Blue, Olive Drab, Black and Desert Sand

COOLING SUIT
Materials :
Kermel® (heat and flash fire resistant)
Integrated medical grade silicone tubing
Weight : 2.7kg with pump assembly
Colors : Navy Blue

Helmet HFS SERIES III

The HFS SERIES III EOD Helmet improves on its predecessor in a number of ways. Firstly there is a high-tech ventilation fan that still delivers superior airflow in to the helmet but greatly reduces vibration and noise levels. The Series III Helmet comes standard with a Kermel® comfort liner and spare with built in communications. This provides excellent comfort and cushioning for the head. The helmet has a 4 point adjustable Suspension System. The HFS SERIES III Helmet also comes standard with a higher protection level for the visor. The Series III Helmet has ambient sound amplification with high-level noise cut out.

Cooling suit with pump

The HFS Cooling Suit has revolutionized the EOD operators effective working time in an EOD/IEDD suit. The suit which is worn underneath the EOD suit circulates iced water around the entire body and head keeping the body from over heating too quickly. The water is circulated by means of a 12v battery operated pump worn externally on the EOD suit.

HELMET AND VISOR

The composite Combat Helmet is designed to give the best possible ballistic protection for the user, against various projectiles in various combat situations. Compared to a standard steel helmet, the composite Combat Helmet gives a much higher level of protection against fragments and bullets. High energy absorption capacity, extremely high strength and minimal protrusion (i.e. trauma) caused by a projectile hit, ensure unique protection. The novel inner lining with firm cotton straps, with an easy-to-use and safe lock, guarantee excellent mounting and comfort use.

The helmet has been developed in close collaboration with field operators to meet the requirements of demanding customers. The helmet design, production technology and materials used are a result of extensive research and development work. The ballistic and others properties are verified by numerous tests and trials.

The 8 mm ballistic visor fastening system enables to mount it on regular helmets of PASGT type, in a simple short and safe method. Its adjustable rear buckle fits various helmets sizes.

The polycarbonate visor is designed to protect the operator against fragments. The visor has two possible positions: fully down covering the face or up above the helmet's centre of gravity

This quick fastening system allows the user to enjoy the benefits of the full face protection for the time period when he really chooses to have this protection while having the ability to take off the extra weight of the ballistic visor and still have the protection of the helmet.

The quick simple and strong attachment of the ballistic visor to regular helmets of PASGT type is a tactical

TECHNICAL DATA

Helmet K-96 :
Material: high quality Aramid fiber
Protection area: 1300 cm² (size M)
Fragment endurance: STANAG 2920 (MIL-STD-662E) V50 value > 610 m/s
Colour: NATO green (others colours available on request)
Inner liner: leather and cotton with size adjustment
Weight: < 1350 g (size M 56-62 cm)
Others characteristics on request

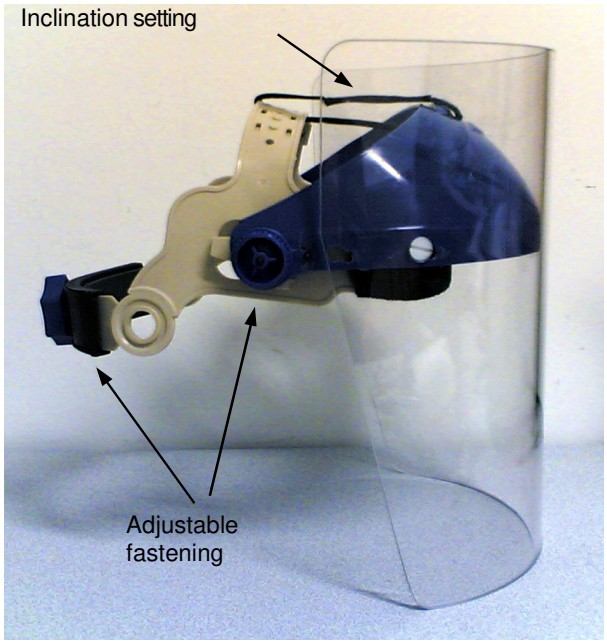
Polycarbonate visor:
Material: high quality polycarbonate
Thickness: 8 mm
Weight: 1300 g
Level protection :
Steel fragment 1,1 g – V50 x 280 m/s
If the visor gets any kind of visual fracture or breakage, it has to be remove immediately.

POLYCARBONATE VISOR

This lightweight and durable polycarbonate visor provides effective facial protection against fragments and other flying debris resulting of plastic anti-personnel mines explosion.

It is fitted on a half-helmet which can be adjusted in depth, width, and inclination of the visor.

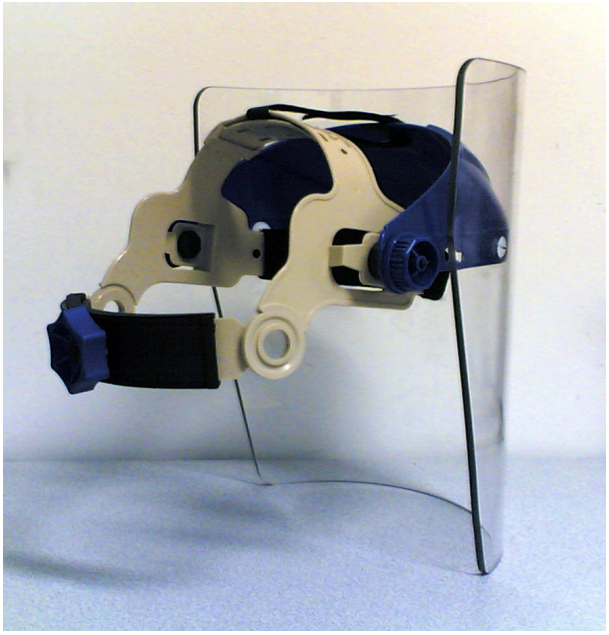
Its design allows to protect the neck, the face and the upper part of the skull, and to be worn over or under the collar of the demining vest.



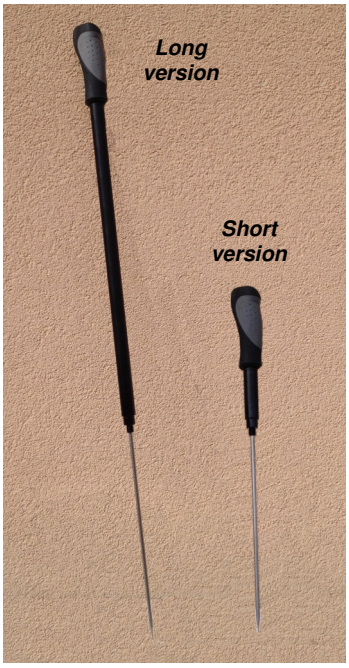
It is protected against scratching, thus increasing its lifetime.

Warning :
A polycabonate visor, deeply scratched or cracked, has imperatively to be changed.

The ballistic level of this visor is not sufficient in the case of the explosion of a fragmentation mine or a mine with high amount of explosives.



TECHNICAL DATA
Weight : 800 g
Thickness : 5 mm
Material : polycarbonate
Height : 290 mm
Width : 220 mm
Protection V50 : 250 m/s (STANAG 2920)



NON MAGNETIC PROBE NMP-95

The mine probe, non-magnetic **NMP-95** is designed for use in manually locating mines, buried at depths of up to 250 mm. The mine probe is lightweight, robust and easy to assemble.

It consists of three main components (handle, extension tube, probe) and can be assembled in two operational versions :

- a short version, for use when operating in the kneeling position
- a long version for use when in upright position.

TECHNICAL DATA

Length :
Long version 95 cm
Short version 54 cm
Weight : 420 g
Materials :
Body in black anodised aluminium
Needle in non magnetic stainless steel

DANGER MINES'' SIGNS

These mine signs are available in different languages (English, French, Yugoslavian, Cambodian, Portuguese…), shapes and sizes.

TECHNICAL DATA

Material : Akylux (alveolar polypropylene)
Dimension : 250 x 250 mm approx.
Colors : white writing on a red background.

LEATHERMAN SUPER TOOL 300 EOD BLACK

The **Super Tool 300 EOD** is a workhorse of a multi-tool with beefy features and added EOD-specific tools. It incorporates the following tools : needlenose pliers, stranded-wire cutters, 154CM replaceable fuse-wire cutters, military performance cap crimper, electrical crimper, wire stripper, 420HC combo knife, saw, replaceable t-shank metal saw, replaceable C4 punch, #8-32 cleaning rod/brush adapter, awl w/ thread loop, ruler (22 cm), can opener, bottle opener, Phillips screwdriver, large screwdriver, medium screwdriver, small screwdriver.

TECHNICAL DATA

Length : 11,43 cm
Weight : 272 g

GAS MASK TR 82

TR 82

- Mask and strap manufactured in black EPDM or yellow silicone.
- Screen featuring large vision angle and can be, on request, anti-solvent or anti-scratch treated.
- Connexion system chock-resistant and solvent-resistant, equipped with two breathe out valves, one breath in valve and one phonic membrane allowing easy communication.
- Specific designed air circulation, avoiding mist formation on the screen.
- Rapid fastening straps

The TR 82 mask can be used with assisted ventilation or with compressed air adduction. The TR82 mask meets EN 136-10 standard.

The TR 82 mask must not be used in an atmosphere where the concentration is higher than 0,5 % or where the oxygen rate is lower than 17 %.

CARTRIDGES FOR TR 82

Designed with polycarbonate enclosure and metallic bottom, they are equipped with caps allowing to increase their lifetime, as they keep them sealed when not used.

The cartridge A2 B2 E2 K2 P3 is suitable for war gases.

CASE FOR TR 82

Designed exclusively in thermoplastic material, it increases the mask's lifetime, as it protects against dust, light, vapours of chemical agents and heat sources. This case can contain one mask and one cartridge of any type, not screwed.

TECHNICAL DATA					
	A2 B2	K2	A2 B2 E2 K2	A2 B2 P3	A2 B2 E2 K2 P3
DUSTS					
Thin (flour, cotton, coal)					
Thin dangerous (quartz, silica, powders, chemical products)					
Thin very dangerous (asbestos, lead, arsenic...)				✖	✖
GAS					
Soldering vapours and dusts				✖	
Solvents, hydrocarbons, paints	✖		✖	✖	✖
Acid gases, chlorine...	✖		✖	✖	✖
Ammoniac		✖	✖		✖
Sulphuric anhydre			✖		✖
GAS AND DUSTS					
Pesticides, isocyanat paints					✖

PNEUMATIC SHOES

The pneumatic shoes were designed for the protection against anti-personnel mines. This particular type of mine is designed to explode when the pressure exerted upon it is above a threshold in the range of 0,1 to 0,2 daN / cm². This threshold is lower than the pressure on the ground exerted by an average adult walking across a mine field.

The pneumatic shoes concept is based on drastically increasing the surface area of the terrain where the body weight will be applied, to attain pressure on the ground significantly below triggering threshold.

The principle of the pneumatic shoes linked air-cushions ensures that the pressure is kept constant throughout all parts of the cushion. Thanks to an air flow between the linked cushions, the pneumatic shoes conform to the configuration of the ground, while continuing to maintain uniform pressure.

The sandal is made from a reinforced plastic surface. The plastic surface is attached to a canvas and nylon fabric envelope. This flexible envelope contains 5 compartments, each of which contains one air cushion. These cushions are connected to each other via a connecting tube and a flexible manifold. The upper part of the plastic surface is equipped with special straps that harness the shoe to the sandal. In addition, it has a rubber tube with an oral inflation valve and an emergency inflation mechanism made of a manual inflator grip attached to a compact CO2 cylinder (as an option).

The pneumatic shoes can be used in all types of terrain without loss of efficiency. They maintain maximum safety and reliability on various surfaces from sand to rocky terrain and from mud to vegetated areas.

The pneumatic shoes are supplied with individual carrying bag.

TECHNICAL DATA
Size: 35 x 70 x 13 cm
Weight: 2,5 Kg
Designed to carry up to 150 kg (333 pounds) on each sandal
CO 2 cartridge: 38 gr (option)
Pressure relief valve: 1,8 PSI

VEHICLE PROTECTION AGAINST AP MINES

This lightweight system has been developed for protection of vehicles against anti-personnel mines during humanitarian missions. In this new system the following criteria have been given highest priority :

- High degree of protection – V50 > 600 m/s for 1,1 g. FSP according to STANAG 2920.
- Low weight.
- Swift and easy mounting.
- No modification of the vehicle.

Looking into the interior of a vehicle where the ballistic mats are being glued to the bottom of the car. The individual mats overlap each other in order to secure maximum protection. After mounting the ballistic mats, the original components of the car are reinstalled.

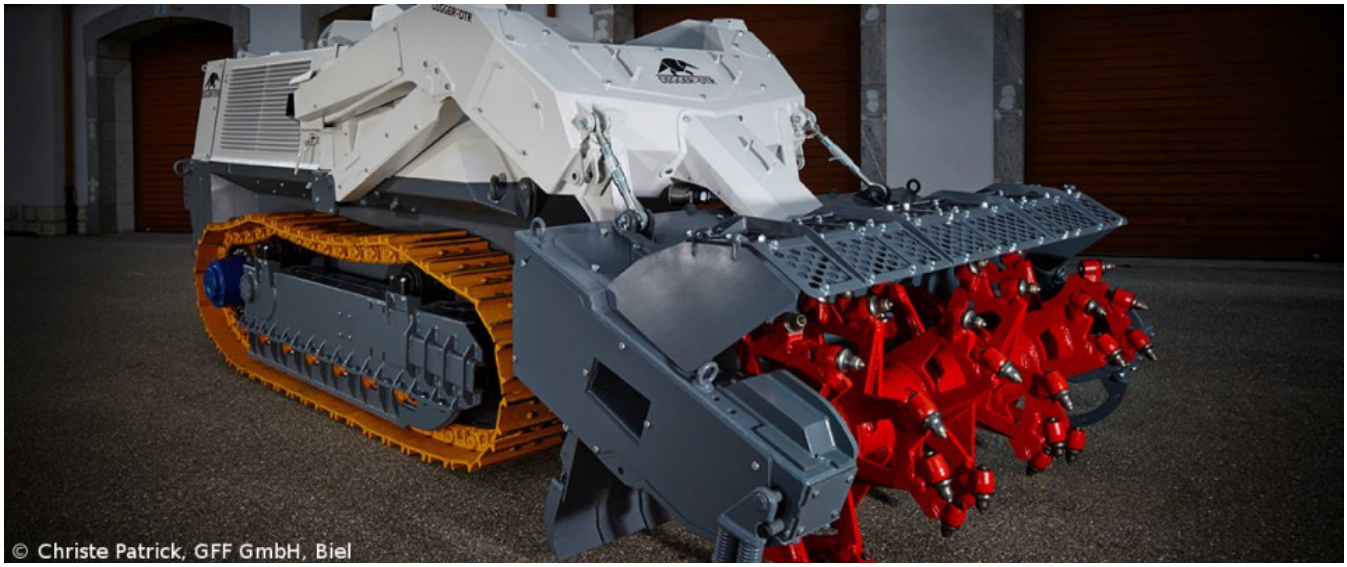
The mine protection system can be supplied as a kit ready for mounting on the site where the vehicle is located. Before mounting the system, seats, door panels and bottom mats of the car are removed.

Then the individual ballistic mats are mounted in the vehicle. Please notice the big overlap that grants maximum protection against fragments.

Example of a protection for a Toyota Land Cruiser : the system consists of over 20 different mats, each one sealed by a heavy PVC-cover for protection against wear and moisture.

TECHNICAL DATA
Protection level: V50 > 600 m/s for 1.1 gram FSP, according to STANAG 2920.
Material: Aramid fibers woven and stitched together into flexible mats.
Surface: PVC foil.
Weight: 8.2 kg/sqm.
Total weight: approx. 60 kg, depending on the model.
Interior: No modifications.
Scantex system made in cooperation with Scanfiber Composites manufacturer of armoured systems made of light weight high strength ballistic fibres.

VEHICLE FOR MECHANICAL MINE CLEARANCE
DIGGER D-250



VEHICLE FOR MECHANICAL MINE CLEARANCE DIGGER D-250

More powerful, with more performing tracks, the DIGGER D-250 is based on the experience gained over three generations of previous machines. It is the result of ten years of field feedbacks integration giving high efficiency even under extreme environmental conditions.

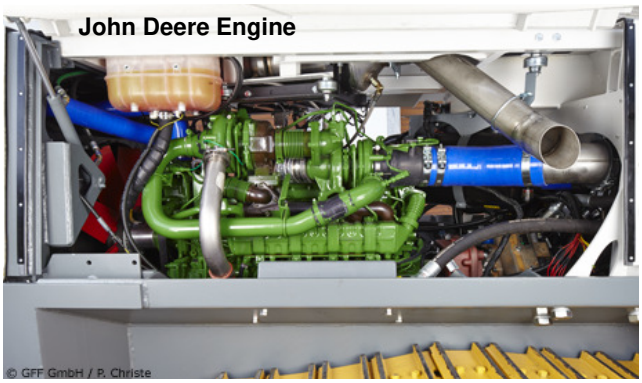
Equipped with a 250 hp engine, weighting less than 12 tonnes, it can be transported by 6x6 truck (without trailer). Relatively small in size in regards of its high power, it fits in a 20 feet ISO shipping container, without disassembling tools.

The DIGGER D-250 is first of all a multi-purpose machine designed to respond to deminers' needs. Equipped with quick front and rear couplers, it is compatible with various specific tools (flail and tiller) or Caterpillar® standards (bucket, fork, ...) easily interchangeable. Like so, it can be used in different types of operations such as ground preparation, vegetation clearance, reduced land and demining itself, storage or disposal of dangerous items, etc.

360° armoured, easy to maintain, it is equipped with over-dimensioned hydraulic and cooling systems to withstand the harshest operational conditions. The DIGGER D-250 is designed for a fast handling, even by an inexperienced pilot, in order to ensure an immediate engagement on the ground.

Several equipments are offered in option, such as ultra-high precision GPS (<2cm) with interface designed for humanitarian demining and IMSMA compatible, camera, digging depth control sensors, flow reversal cooling system for self-cleaning of air intake grids ,diesel engine EURO-2 or EURO-3b compatible.

John Deere Engine



Anti-Tank mine 8 kg TNT

TECHNICAL DATA

Dimensional Data
Overall length, with tool : 5755 mm
Overall width, vehicle : 1690 mm
Overall width, tool : 2320 mm
Working width : 1895 mm
Height : 2041 mm
Mass, total (with Tiller, fuel & lubricant) : 11910 kg

Driving Specification
Ground pressure : 0.43 kg/cm2
Ground clearance (base to body) : 0.3 m
Max. climbing ability : 35°
Max. slide slope : 30°
Max. forward & backward speed : 6 km/h

Remote Control
Max. operating distance : 500 m
Transmitter battery autonomy : > 20 h

Engine Specifications
Engine type : John Deere, 6 cylinder
Displacement : 6800 cm3
Engine max. power : 250 hp @ 2200 RPM
Fuel consumption (average in works) : 30 - 35 L/h
Fuel capacity : 285 L
Emission : Euromot 3 Stage II or Euromot 3 Stage IIIb
Max. ambiant temp. @ full power without derating : 50°C

Armouring
Hull & undercarriage frame : 10 mm Hardox™ 450
Tool frame : 8 & 10 mm Hardox™ 450
Roof & arms : 4, 8 & 10 mm Hardox™ 450

Front Tools
Quick coupler type : Caterpillar™

UXO DETECTION

MAGNETOMETER
MINIMAG

Robust built - Lightweight
Precise location - High sensitivity
Low power consumption – up to 80 h operating time with lithium battery
Dynamic / static detection modes
Data output
Advantageous price / performance ration

MAGNETOMETER MINIMAG

EBINGER is a leading manufacturer of gradiometer probes, which after more than half a century in explosive ordnance clearance have proven themselves in bomb and munitions searches.

Early probes were thick and heavy, but today new technologies enable the production of robust yet lightweight search devices.

A prime example of these new technologies is the EBINGER MINIMAG, designed mainly for rapid deployment. Weighting in at 1,480 g or 1,550 g (depending on power supply), it is extremely lightweight and manoeuvrable.

With quick localisation and precise guides, the probe reduces the time factor in search work. The operator is not encumbered by a heavy device.

CARACTERISTIQUES TECHNIQUES

Power Supply :
- 6 C cells
- or Lithium rechargeable battery
- or NiMH rechargeable battery

Operating Time :
- approx. 130 h with C cells
- approx. 80 h with Lithium battery
- approx. 43 h with NiMH battery

Temperature Range : -20°C to +55°C

Sensitivity Levels:
- Level 1 dynamic 150 nT
- Level 2 static 150 nT
- Level 3 static 50 nT

Operating Weight :
- 1920 g with battery tube and C cells
- 1480 g with Li-Ion battery pack
- 1550 g with NiMH battery pack

Case Dimensions: ca. 850 x 350 x 150 mm

Total length :
- 950 mm with battery tube
- 780 mm with Li-Ion battery pack
- 780 mm with NiMH battery pack

Probe Length: 510 mm

Base Distance: 480 mm

MAGNETOMETER
MAGNEX 120 L-2

MAGNETOMETER MAGNEX 120 L-2

The brand new MAGNEX® 120 L-2 locator is used in geophysical surveys and applied for the detection of magnetic anomalies such as caused by ferromagnetic objects buried underground. The locating of UXO, pipes & pipelines, concealed weapon caches or archeological traces are typical tasks for this anomaly magnetic detector. The limit of the detection depth is determined by the size and position as well as the magnetic signature of the ferrous parts to be detected.

The very light weight, the ergonomics and the well outbalanced design of the MAGNEX® 120 L-2 help to strongly reduce operator fatigue improving the quality of work. The controls such as the sensitivity stepping switch and the compensation adjuster can be operated by the guide hand. The need for parallelization by the users is eliminated due to a new sensor technology.

In general the search device is designed as a differential saturation magnetometer applying two inductors which are sensitive to magnetism. This arrangement suppresses the indication of the natural magnetic field. The sensors (inductors) are placed at a set distance inside the probe and placed in coaxial position. As soon as the probe is carried into magnetic anomaly interference the inductors will start to provide different electric values e.g. an alternating tension which is indicated by an audio signal and a galvanometer reading after processing and amplification.

The MAGNEX® 120 L-2 is a lightweight, handheld, battery operated magnetometer for operation under adverse working conditions. It consists of a compact dismountable unit.

The operation fascia shows the following adjuster and sockets: volume adjuster knob (VOL.), test push button for sensitivity test (TEST.), LED-battery control (BAT.), socket for datalogging / loudspeaker.

The components are delivered in a transit case protected against impacts. By taking the probe from the case and fitting the battery container to the carrying rod the MAGNEX® 120 L-2 is immediately operational.

TECHNICAL DATA	
Power supply: 6 D-cell batteries 1,5V or a rechargeable Li-ion battery pack	
Operation time : approx. 50 h type (D-cells), approx. 22 h with Li-Ion batt.	
Temperature range : approx. - 20°C to +55°C	
Sensitivity ranges:	Range 1 approx. 3000 nT Range 2 approx. 1000 nT Range 3 approx. 300 nT Range 4 approx. 100 nT Range 5 approx. 30 nT Range 6 approx. 10 nT
Operation weight: approx. 3200 g with D-cells, approx. 2400 g with rech batt.	
Carrier case: approx. 850 x 350 x 150 mm	

MAGNETOMETER MAGNEX 120 LW

NSN 6695-12-349-1502

APPLICATION

The **MAGNEX 120 LW** is used to locate ferromagnetic objects buried underground. UXO and pipes are typical search objects for the Magnetic Anomaly Detector, which is preferably used in the field of post-conflict battle area clearance.

Size position and magnetic intensity of the search object determine the possible detection range. Large ferrous objects can be located as far as up 6 meters buried underground.

The ergonomic well balanced design ensure an easy handling. The sensitivity stepping switch and the compensation knob can be operated with the same hand the detector is held with. The essential operation as well as batteries and electronics circuitry are integrated into the carrying. External battery container or electronic boxes interfering to the operator during search are now a thing of the past.

OPERATION PRINCIPLE

The MAGNEX 120 LW is a saturation-Magnetometer working as differentiating field strength meter. The design is based on two inductors, which are sensitive to magnetism and placed inside the probe. They indicate magnetic anomalies in the natural field. Both inductors are connected as differential bridge to suppress the homogenous terrestrial field. Magnetic anomalies coming within the range of the probe will generate an electric difference which is transformed into a positive resp. negative reading corresponding to the magnetic signature of the detected object. This indication, is also converted into a threshold-less audio signal. Indication starts by single signal pulses, which increase in frequency when approaching an object.

CONSTRUCTION

The MAGNEX 120 LW is a battery operated magnetometer designed for use in adverse conditions. It is designed as a compact unit, which consists of : the probe, the galvanometer, the control section with stepping switch and compensation button and the battery rod with closure.

The probe can be dismantled for immersion under water or in bore holes. A 25 meters immersion cable and non magnetic ballast can be supplied as options.

TECHNICAL DATA

Power supply : 6 batteries 1,5 V, type LR20
Operating time : 40 h to +20°C approx.
Sensitivity level : 3000 - 1000 - 300 - 100 - 30 - 10 nT approx.
Test rod indication : 20 parts of scale in range 5
Temperature range : from -20°C to + 50°C
Weight : 4,3 kg approx. (in transit case 8 kg approx.)
Dimensions : total length 1260 mm
total height 760 mm
probe height 600 mm
ABS transit case : 820 x 370 x 170 mm

UXO DETECTOR UPEX 725 D

UPEX® 725 D is the latest EBINGER design for UXO detection under difficult conditions such as ground mineralization and scrap. In addition to the simplicity in operation the UPEX® 725 D has the advantage that it can be programmed to fade out interfering signals from non-cooperative soil, magnetic rocks and small pieces of scrap metal. This improves productivity significantly. To ease pinpointing the audio signal will be modulated upon target approach of the search head.

The UPEX® 725 D is a compact metal detector. It consists of a foldable oval search head which is flanged to a swivel joint, an extension rod (short version), the electronic cylinder and the battery pack (respectively the battery container). On request, the UPEX® 725 D can be supplied with a telescopic extension rod (long version) with a flanged and (not exchangeable) 300 x 230 mm search head.

On the control section there is the rotary switch for the operation mode DYNAMIC/STATIC. The UPEX® 725 D comes with an internal stepping switch offering 6 settings to adapt the detector to the respective task. The flanged battery tube accommodates 6 C-cell batteries.

TECHNICAL DATA
Power supply Battery container 6 x 1,5 V (LR14) : operation time approx. 20 h Ni MH batteries 9,6 V 2,1 Ah : operation time approx. 20 h Li-ion battery pack 4,4 Ah : operation time approx. 35 to 40 h
Temperature range: approx. - 10 to + 55 ° C
Dimensions Short version with rechargeable battery : approx. 855 mm Short version with dry battery : approx. 1105 mm Long version with rechargeable battery : approx. 1.550 mm Long version with dry battery : approx. 1800 mm Length of extension rod : approx. 710 mm (customized variable) Oval search head (exchangeable) : 300 x 230 mm (standard) 420 x 280 mm (large size)
Weight Short version with rechargeable battery : approx. 1,75 kg Long version with rechargeable battery : approx. 2,10 kg

Delivery content :

- Search head 300 x 230 mm
- Electronic cylinder
- Extension rod
- Battery pack 11.1 V 4.4 Ah Li-ion or customized power supply
- Charger
- Test plate

UXO DETECTOR
UXO PIDD® 2

- Robust and handy
- One knob operation
- Large detection range
- Static/dynamic search mode
- Programmable delay steps
- Non-cooperative soil suppress.
- Interchangeable search heads
- Adjustable length

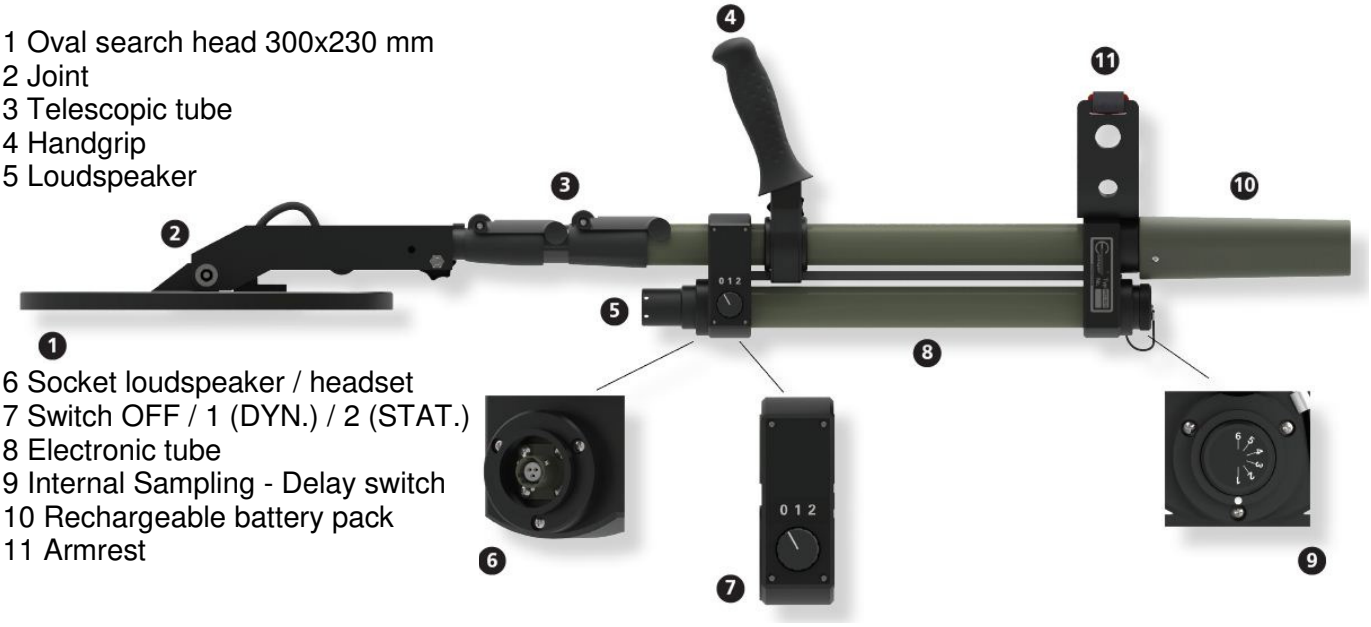
DETECTEUR D'UXO PIDD® 2

EBINGER is the first manufacturer of pulse induction detectors in Germany, known also as TDEM systems. These are so-called time-controlled pulse detectors, like handheld mine detectors and PI large loops for example.

Conventional mine detectors are due to their extreme detection sensitivity for small metal parts inefficient for the UXO detection. The PIDD 2 system has been especially developed by EBINGER for UXO detection. It suppresses within wide limits not only ground magnetic interfering effects but also metal fragments to a pre-programmable size. The user can adjust the small objects' suppression by using the delay switch.

The UXO PIDD 2 offers two operation modes: step 1 dynamic, step 2 static, as well as ground adaption for interfering soil. Dynamic mode allows quick search of UXOs and objects buried shallowly. Static mode provides increased detection distance. Indication is given by a clear acoustic signal, that is modulated near the object as a tremolo effect, extension of display dynamics.

1 Oval search head 300x230 mm
2 Joint
3 Telescopic tube
4 Handgrip
5 Loudspeaker



6 Socket loudspeaker / headset
7 Switch OFF / 1 (DYN.) / 2 (STAT.)
8 Electronic tube
9 Internal Sampling - Delay switch
10 Rechargeable battery pack
11 Armrest

UXO PIDD 2 is a compact metal detector with a telescopic tube. The oval, watertight search head with adjustable joint connection can be found at the lower end of telescopic tube. Power supply is given by rechargeable battery packs screwed onto the upper guide tube. The electronics are located in the lower module tube. Frontally there is the detachable loudspeaker resp. connection socket for the optional headset that can be delivered as accessories. At the rear of the electronic tube there is the switch for the delay times, which is accessible after removal of screw cap.

TECHNICAL DATA

Power supply : Li-ion battery pack 11.1 V, 4.4 Ah
Or NiMH rechargeable battery 9.6 V, 2.1 Ah
Operating time : approx. 35 to 40 h with Li-ion batt, approx. 20 h with NiMh
Search speed approx. : 0,2 to 1 m/s
Delay times : approx. 20 to 120 µs
Temperature range : approx. - 20 to + 65 ° C
Dimensions
Search head : 300 x 230 mm standard
Length : folded approx. 950 mm, extended approx. 1.750 mm
Transport case 840 x 350 x 150 mm (w x d x h)
Weight
Complete with batt. approx. 2.6 kg (Ni MH rech battery)
Complete in transport case approx. 7,1 kg

LARGE LOOP
UPEX 740 M

New version : improved efficiency
Very easy to use
High productivity

LARGE LOOP UPEX 740 M

NSN 6695-12-349-1503

The **UPEX 740 M** large loop technology enables low skilled personnel to locate air delivered ordnance buried at depth. It is introduced into battle area clearance where large areas have to be inspected and cleared of munitions in short time. It is ideal for road clearance of UXO and A/T mine traps.

The UPEX 740 M applies the eddy current pulse induction principle. It detects all metals, ferrous and non ferrous.

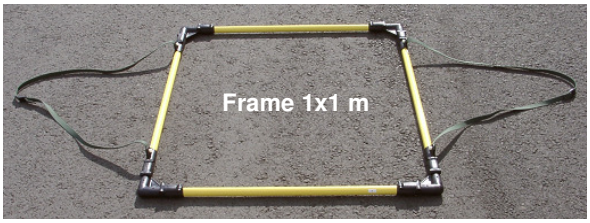
The equipment consists in an electronics box, a battery container, a large loop diameter 2600 mm with search frame. A ring coil diameter 260 mm is available as an option.

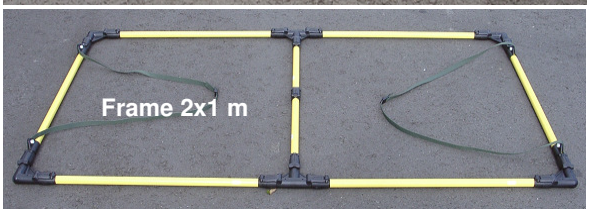
The modular frame can be assembled several ways, which enables to obtain frames from different sizes (1 x 1 m, 1 x 2 m or 1,5 x 2,5 m), according to the searched targets and the burying depth.

The ring coil (option), working with the same electronics, is used for pin-point location, after detection with the large loop.

The UPEX 740 M is as easy to use as a conventional mine detector. Detection signals are easy to interpret and no advanced training is required for operation. The unit is splash-waterproof and of sturdy design. The target acquisition is indicated by audio alarm and on a galvanometer.

The delay setting allows to suppress the indication of small metal fragments located at the surface while detecting bigger objects buried deeply. This way it is made possible to detect efficiently bombs or big shells buried in depth, with presence of surface clutter.





TECHNICAL DATA	
Power supply :	8 dry batteries 1,5 V type LR 14 or rechargeable batteries
Operating time :	55 h in pos. low / 25 h in pos. high (LR14)
Dimensions :	Electronics box : 270 x 90 x 70 mm Battery pack : 290 x 105 x 50 mm Search loop : Ø 2550 mm
Weights :	Frame : 2,5 kg Electronics box : 0,9 kg Battery pack : 1,1 kg
Detection range (in air) :	Mine T57 at approx. 1,6 m Bomb MK82 at approx. 3 m

PULSE INDUCTION DETECTION SYSTEM **UPEX 740 MF-3**

3 sensitivity levels
10 sampling delay levels
Analogue output
Reduced in-motion noise
Visual / acoustic signal

Simple operation
No equipment on main body
Extendable UXO detector
Good resolution capacity
Dismantled for transport

PULSE INDUCTION DETECTION SYSTEM UPEX 740 MF-3

Search system MF-3 is based on the EBINGER pulse induction system UPEX 740 M, which can be described as an electromagnetic echo procedure. Via its search head, the PI detector emits magnetic pulses with a specifi c repetition frequency that induces eddy currents in search objects. An electromagnetic reaction is created, which is then picked up in the pulse pauses and electronically indicated on the display.

UPEX 740 MF-3 is equipped with an analogue output for data recording with the EBINGER EPAD data logger. This device records the values measured during the survey for later processing, analysis and conversion into digital anomaly maps. Optional geo-referencing allows for a longer time delay between detection work, interpretation and object recovery. In conventional analogue detection, the object had to be excavated directly after surveying in order to minimise the loss of coordinates.

UPEX 740 MF-3 thus offers visual / acoustic search as a purely digital recording or a combination of the two.

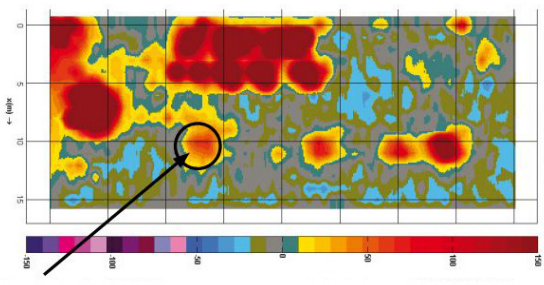
Components of UPEX 740 MF-3

1 Search head 1 x 1 m (1 m2)
2 Electronics unit including mounting equipment
3 Frame with wheel set
4 Rechargeable battery pack including charger

Special Accessories

5 EPAD– PDA including Bluetooth unit (data logger), transport case, charging technology and mount
6 EPAS – software for data analysis/ mapping
7 GPS – system
8 GPS – antenna rod and catch strap

TECHNICAL DATA
Power Supply : detachable Li-Ion battery pack: 11.1 V, 4.4 Ah
Operating Time: Li-Ion battery pack approx.12h
Temperature Range: - 20 °C to + 55 °C
Dimensions : Search head frame approx. 1 m2 Wheel diameter approx. 600 mm Special wheels upon request Electronics box 305 x 145 x 150 mm
Weight : Electronics box 1400 g without battery Li-Ion battery 380 g PDA 600 g PDA mount 466 g 1 m2 search head 1500 g Detection frame assembled 11,40 kg Complete system with PDA and 1 m2 search head 15,75 kg



MK82 at approx 3.2 m depth at level MEDIUM

MULTI CHANNEL MAGNETOMETER SYSTEM **MAGNEX 120 / EPAD / EPAS**

EPAD / EPAS MAGNETOMETER MULTI CHANNEL SYSTEMS

New light weight Lithium Ion battery technology
One man operation
From 3- to 5-channel expandable in just two steps
Flexible probe distance (variable track width)
Probe height adjustable over ground
Rugged design, for use in difficult terrain
Various wheels
Expendable with GPS system
Ergonomic, lightweight design

The **EPAD®** / **EPAS®** magnetometer's multi-channel systems uses the gradiometric principle to detect magnetic anomalies: A ferromagnetic object interacts with the magnetic field in its vicinity, the intensity and field direction (polarity) are evaluated as detection information for localizing the position of the object. It is used for the finding of ferromagnetic objects which are buried underground.

The **EPAD®** data logger and the **EPAS®** software are perfectly matched to one another and form the system for recording, processing, visualizing and evaluating digital data for explosive ordnance disposal work. The **EPAD®** data logger can be used in the field as a single channel or multi-channel system (up to 6 channels). GPS positioning as option.

Typically, the MAGNEX/EPAD data recording systems are linked to global positioning systems (GPS) to accurately record the location of detected anomalies. Subsequently, the data are processed to provide an anomaly location map, target anomaly list, and the measured geophysical signal amplitude for each anomaly. These results are then used by UXO specialists to locate, investigate, and remove the metallic anomaly.

The **EPAS® software** carries out the complex data processing and evaluating steps automatically in the background. It is characterized in particular by the simplicity of use as well as by its multilingualism. The **EPAS®** software presents the detection data as two-dimensional colour-coded maps and/or as ISO line charts. The detection data visualization can be superimposed on geographical maps. **EPAS®** software facilitates interpreting of the objects that have been localized in respect of their horizontal position, approximate depth and orientation. All object data are summarized in tabular form, this information assisting at the excavating of target objects.

MULTI CHANNEL MAGNETOMETER SYSTEM **MX-PDA**

1 to 5 probes
Rugged PDA
Robust carrier
GPS positioning
Data processing software

MX-PDA MULTI CHANNEL MAGNETOMETER SYSTEM

The **MX-PDA** system is a measurement data recording system which applies in the detection of magnetic anomalies underground. It is intended for the detection and location of all ferromagnetic objects buried underground, and especially ammunitions on battlefield areas.

The D-GPS device, connected to the **MX-PDA**, allows real time GPS positioning of the measurements. The navigation window on the PDA screen informs the user in real time about the covered areas.

After measurement, the data can be transferred to a PC computer with the supplied cable.

The data acquisition system consists of :

3 or 5 magnetometer probes
1 carrier with amagnetic wheels
1 electronic box with 5 channels inputs
1 rugged PDA JUNIPER MESA
1 power supply kit : batteries 12V / 7 Ah with charger
1 set of cables
1 differential GPS system

TECHNICAL DATA

Electronic box
Dimensions : 155 x 170 x 70 mm
Weight : 1350 g
Material : aluminium
Temperature range : -20°C to +60°C
Supply voltage : 10 to 14 VDC
Power consumption : 4.2 W max. (without GPS)
Resolution of ADC : 24 bits
Sampling frequency : 20 Hz
5 analogical inputs : 1 to 5 probes can be connected

Rugged PDA JUNIPER MESA
Dimensions : 136 x 200 x 51 mm
Weight : 998 g with 2 batteries
Temperature range : -20°C to +60°C
Standard : MIL-STD-810F and IP67
Processor : PXA320 (806 MHz)
System : Windows Mobile 6
Screen : LCD colour 5.7", resolution 640 x 480
Memory : 256 Mo RAM, 4 Go flash
Memory card : 2 Go (area > 100 ha)
Power supply : battery Li-Ion 7.4 V capacity 2550 mAh
Operating time : 16 h with one battery set, 32 h with the 2 sets
Charging time : 4 hours max.

DLMGPS and **MAGNETO** software allow to process the data, to create a colour coded map of the measured area, to locate the detected objects and to determine their characteristics.

Navigation windows : the blue color represents the measured area

GEO REFERENCED MAGNETOMETER SURVEY SYSTEM **MX-V3**

Up to 16 probes
Towed or pushed
High resolution 24 bits
Sampling 200 Hz

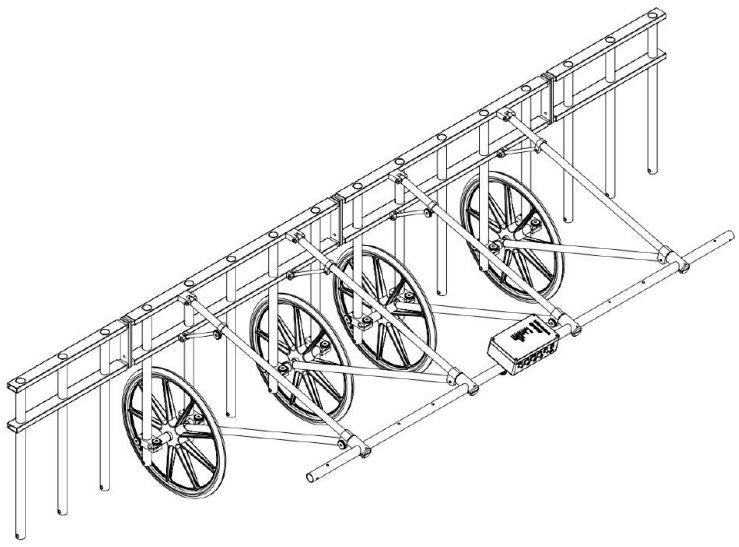
GPS REFERENCED SURVEY SYSTEM MX-V3

The MAGNETO® **MX-V3** is a large area magnetometer survey system. It can host up to 16 fluxgate gradiometers on a trailer having a width of 3.85m. This allows a rapid non-invasive cartography on land in order to search for UXO or archaeological structures as well as doing large scale soil evaluations.

One of the unique features is the modular trailer that can be set up in various configurations to be carried, pushed or pulled. The survey width can be adjusted from 1m to 4m.

Furthermore, the compact data acquisition unit offers high sampling rates, 24 bit digitizing of all measurement data and an Ethernet interface to output the data. Thus, the survey system is very flexible to interconnect with third party components and systems. A wireless option is available. At the maximum survey speed, the system is capturing the data every 20 mm.

In order to reach a positioning accuracy of ±1 cm for every measurement point, the MX V3 is equipped with a RTK DGPS. The GPS rover station is mounted to the car while the GPS base station (reference point) is set next to the measurement area.



TECHNICAL DATA

General Technical Data
Power Supply : 12 V battery pack (lead gel)

Dimension of Carrier
Length : min 1.2 m (pushed), max 4.50 m (towed)
Width : min 1.25, max 3.85 m
Height (incl. GPS antenna) :approx. 1.3 m
Weight (net) : 45 kg

Data acquisition
Analog input : 16 channel max
Output : Proprietary MonMX protocol
Position accuracy : ±1 cm (with RTK DGPS)
PC interface : LAN, 100 Mbit/s

Measurement configuration
Distance between probes : 0.25m min
Sensor above ground level : 0.1m to 0.4 m
Maximum survey speed : 15 km/h; 9 mph
Data density (y) at max survey speed : 20 mm

Area coverage
Maximum daily coverage : 20 ha

ADVANCED PULSE INDUCTION SYSTEM **UPEX 745 DF**

Increased detection depth
Geometric separation of the receiver coils
8 measurement channels
5 delays

ADVANCED PULSE INDUCTION SYSTEM UPEX 745 DF

General

The UPEX® 745 DF is a deep active search system, based on the electromagnetic pulse induction principle designed and produced by us in Germany. The system is used to detect ferromagnetic and non-ferrous metal objects, primarily in unexploded ordnance clearance and subsurface geophysical surveys. With the UPEX® 745 DF, Ebinger completes its traditional range of pulse induction-biased measuring systems as far as resolution and detection depth are concerned. “German innovation from the Ebinger ideas laboratory”.

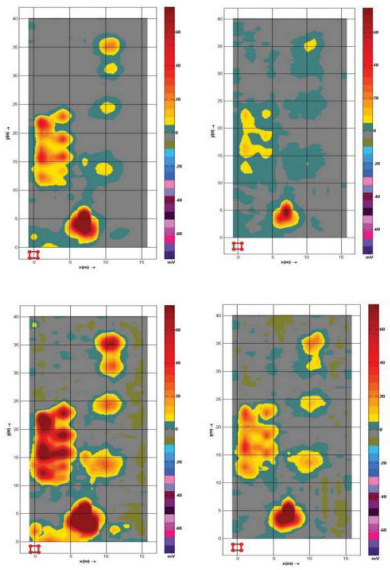
Constructional Features

The circular coil arrangement substantially betters the signal-noise ratio (S/N) up to 50 % and thus allowing a significant increase in detection depth. The 5 time gates and a decoupling of the receiver coils substantially ameliorate detection and resolution. The dimensioning and the geometric arrangement of the inner receiver coils in conjunction with an early measurement also contribute to the enhanced performance and boost the resolution of small, near surface objects. The size and arrangement of the external receiver coils are adapted to the detection of larger and deeper buried targets. The geometric dimensioning of the system implies a significant increase in productivity due to the large scan area covered.

- High detection range
- Signal-noise (S/N) ratio improved by up to 80%
- 8 measuring channels /5 time gates
- Substantially improved resolution
- Geometric separation of the receiver coils

TECHNICAL DATA	
Measurement principle	Time domain Transient electromagnetics (TDEM)
Time window	8 measuring channels/ 5 time gates
Transmitter signal	unipolar rectangular
EM transmitter	vertical dipoles, decoupled coil, Ø 1400 mm
EM receiver	4 decoupled coils 2 decoupled coils, Ø 1300 mm 2 decoupled coils, Ø 700 mm
Vertical spacing of receiver coils	800 mm
Transmitter current	≥ 22 A
Transmit moment	≥ 400 Am2
Measurement range	± (0.1-5000)mV
Dynamic range	≥ 16 bits
Measurement frequency	90-130 Herz, selectable
Signal evaluation	Individually or at any difference required
Power supply	System-integrated or external Internal lithium battery 24 V (2 x 4 h operating time) Charging time approx. 4 h for the internal batteries External power supply 24 V (e.g. car battery)
Electronic/control unit	System-integrated or separable

Color maps with different delays



ACTIVE METAL DETECTION SYSTEM SURFACE AND BOREHOLE
UPEX 745 P2I

ACTIVE METAL DETECTION SYSTEM UPEX 745 P2I

The new UPEX® 745 P2I system offers substantial advantages in subsurface search due to its flexibility and the wide choice of transmitter and receiver components. The UPEX® 745 P2I can be optimized for different tasks and operations. It suits for standard on surface usage as well as for borehole inspection.

Due to an improved decoupling from the inspected medium the typical interference from soil magnetic effects (i.e. basalt rock) can be suppressed. Therefore unwanted signals from small scraps can be eliminated. In comparison to conventional magnetic surveys it allows much larger grids with substantially fewer boreholes. This reduces cost, improves revenue even when submitting very competitive offers.

Borehole inspection

For active borehole inspection a transmission coil of 20 m x 20 m or 40 m x 40 m – if necessary even larger – is laid out over the borehole field. The receiver probe resembles the known differential magnetometer probes in shape and size and is used in a very similar way as in magnetic borehole inspection. The active borehole inspection devices have a superior lateral detection range allowing to increase the distance of the boreholes. This reduces their number and the related expense for the contractor substantially.

The trials and measurements of the UPEX® 745 P2I could proof a higher sensitivity when compared to the conventional magnetic borehole inspection method.

Surface detection

For active from-surface inspection two different transmitter configurations are available :

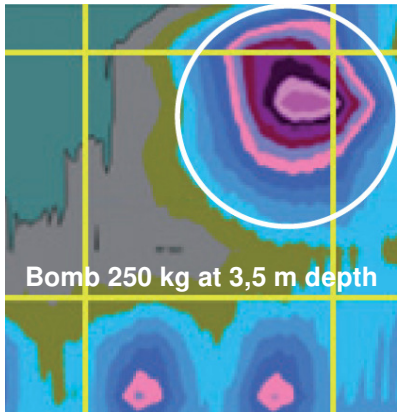
1. a static transmitter loop covering a grid area of 20 m x 20 m or 40 m x 40 m. A handheld receiver probe is carried within this grid

2. an integrated detection system consisting of a 1 m x 1 m handheld transmitter which is combined with the mobile receiver unit

Receivers, probes and loops of various sizes are available (260 mm, 450 mm, 1 m x 1 m, 2 m x 1 m).

The choice of components allows to optimise the system for different detection tasks. The equipment cost is low when compared to the increase in productivity, the long life cycle and versatility of the detection system.

TECHNICAL DATA
Power supply : Rechargeable battery 2x 12V/ 7,2 Ah operation time approx. 2.5 h
Dimensions : Transmitter loop, 20 m x 20 m, on 1 reel approx. 500 mm x 380 mm x 300 mm Transmitter loop, 40 m x 40 m on 2 reels of: approx. 500 mm x 380 mm x 300 mm Standard borehole probe approx. 800 mm x 40 mm
Weight : Transmitter loop, 20 m x 20 m, on 1 reel approx. 18.5 kg Transmitter loop, 40 m x 40 m, on 2 reels approx. 18.5 kg (each) Standard borehole probe approx. 1.3 kg



VERSATILE METAL DETECTOR **EBEX 410**

Multi-component system for diverse detection applications
Very high detection sensitivity
Dynamic operation mode
Simple handling: single-button operation
Acoustic battery and activation control
Comprehensive range of accessories

METAL DETECTOR EBEX 410

NSN 6695-99-860-5121

The **EBEX 410** equipment permits a particularly versatile range of applications, since the various equipment components make more than 50 individual combinations possible. It is particularly suitable for crime-related investigation purpose as well as for precise, sophisticated detection work. The EBEX 410 indicates all metals by an audible signal. It is possible to draw conclusions as to the size and distance of the located metal object from the different types of signals.

The different coils enable good adjustment to the detection task in question. According to the size of the metal object, the large or the small search coil is applied. The cylindrical probe permits pin-point location of very small metal objects. Operating of the unit is very simple : the only rotary button enables to switch the unit ON/OFF and to adjust the sensitivity.

The EBEX 410 consists of the following equip-ment components : one electronic cylinder, two extension rods, one search coil Ø 145 mm, one search coil Ø 260 mm, one cylindrical probe, one extension cable, one headphone, one piezo buzzer, one rechargeable battery with charger.

TECHNICAL DATA
Power supply : 1 dry battery 9 V or NiMH rech. battery
Operating time : approx. 20 - 25 h with dry alkaline battery
Temperature range : -10 to +50 °C approx.
Operating weight : depending upon version 0,8 to 1,2 kg
Weight with case : 6,8 kg
Coil diameter : 22, 145 and 260 mm
Detection range in the air with the 260 mm coil : 1 € coin at approx. 30 cm, US hand grenade at approx. 60 cm.

IED INSPECTION

WIRE LOCATOR EBEX 420 TR

The wire locator EBEX® 420 TR is a further development of the forerunner model EB 420DS.

The **EBEX® 420 TR** is enhanced by a transmitter, fitted to the rear of the search device, which increases the detection sensitivity to wires and other oscillating items substantially. When operating in areas with a low ambient high frequency level, the transmitter would become necessary anyway.

The search device detects high frequency signals as caused by longitudinal conductive items. Such items and wires in particular act as an antenna, which concentrates and emits high frequency. To a some extend the device can locate metal objects of substantial size, which are within the effective range of the transmitter. Also active HF transmitter can be located.

A significant advantage of the transmitter / receiver design consists in its increased detection sensitivity and in the possibility to demount the transmitter from the **EBEX® 420 TR** search arrangement and to place it on top of a detected wire. This allows a direct coupling of the transmitter signal to the wire, which almost doubles the detection range and makes it easy to follow the route of the wire.

The **EBEX® 420 TR** locator is switched into operation by connection of the single sided headset or a loudspeaker. The T shaped transmitter is activated by its own ON/OFF rocker switch. To adjust the sensitivity, respectively the audio alarm threshold of the locator a threshold adjuster is placed at the right side of the control section. As soon as the locator search head comes close to a wire (of a minimum length of 5 m), the approach is indicated by an audio signal.

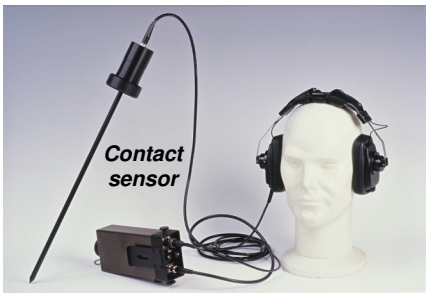
TECHNICAL DATA
Batteries :
Detector : 8 x 1,5 V AA size
Transmitter : 1 x 9 V model 6F22
Operating time :
Detector : approx. 60 h with alkaline batteries
Transmitter : approx. 12 h with alkaline battery
Temperature range : approx. –20 to +55 °C
Search head : 200 x 200 mm
Length :
Detector : short 710 mm, extended 1620 mm
Transmitter : approx. 270 mm
Detector & transmitter : approx. 1860 mm
Weight :
Detector short : approx. 0.65 kg
With transmitter : approx. 2,4 kg
Complete in transit case : approx. 6 kg

ELECTRONIC STESTHOSCOPE EBEX 2001 C/K

NSN 1385-12-319-0402

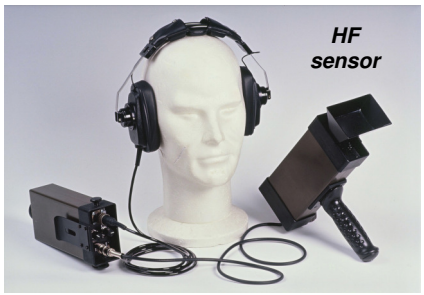
The electronic stethoscope **EBEX 2001 C/K** is designed to monitor air delivered ordnance during render safe procedures and to search for IEDs. It allows the detection of timing devices, from close to several meters, depending on the position and local conditions of the timing device.

The EBEX 2001 C/K consists of : a very sensitive impact sound sensor (contact sensor), a high frequency search head (HF sensor), an amplifier and a headset. A magnetic sensor is available as an option. The sensors can detect mechanical movements or certain electronic components which are often used in timing devices. Signals received by a sensor are fed to the amplifier with stepless adjustable filters which make the signals audible in the headset.



The contact sensor can be used in EOD missions, for detection of timers in bombs during render safe operations. It also can be applied for the detection of mechanical timing devices or clocks which may be present in parcels or mail suspected to contain improvised explosive devices.

The contact-less search head uses a high frequency field to check mechanical noises coming from timers. This field penetrates a large range of materials and is only stopped if the target is enclosed into a sealed metallic box. The contact-less search head is not affected by loud ambient airborne noise and so enables search operations in noisy places such as public buildings. It is also well adapted for searching IEDs in walls or when suspicious objects must not be touched. The contact-less search head can also intercept sub-harmonic signals coming from electronic circuits, thus allowing to detect electronic timing circuits.



TECHNICAL DATA

Power supply :
Amplifier : 1 alkaline batt. 9 V type 6LR61 - operating time 20 h
HF search head : built-in batt. 12 V / 600 mA - operating time 6 h

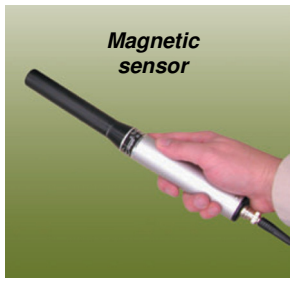
Dimensions :
Amplifier : 205 mm x 115 mm
Impact sound transducer : 85 mm x Ø 45 mm
Contact-less search head : 240 x 95 mm
Magnetic sensor (option) : 297 mm x Ø 24 mm
Aluminium transit case : 630 x 350 x 175 mm

Weights :
Amplifier : approx. 580 g
Impact sound transducer : approx. 270 g
Contact-less search head : approx. 850 g
Magnetic sensor : approx. 245 g
Headset : approx. 250 g
Complete device in transit case : approx. 6 kg

Band pass of the amplifier : 300 Hz - 6 kHz

Amplification : more than 700 000

Temperature range : -15 to +55 °C



The magnetic sensor is a passive sensor designed for the reception of magnetic pulses coming from timers, and also of signals generated by local receivers' oscillators.

The EBEX 2001 C/K is supplied in an aluminium transit case, with all its accessories.

X-RAY GENERATORS

XR 150

TECHNICAL DATA

Size : 231 x 103 x 77 mm
Weight : 2.13 kg
Power supply : rechargeable batteries Li-ion 12 V
Battery life : 5100 pulses approx.
Maximum energy : 150 kVp
Charging time : 40 minutes with fast charger
Sortie : 1 milliroentgens per pulse at 30 cm from source
Pulse rate : 12 pulses / s
Source size : 3 mm
Pulse length : 20 nanosecondes
Exposure control : can be set from 0 to 999
Time delay : selectable

XR 200

TECHNICAL DATA

Size : 271 x 148 x 108 mm
Weight : 4.8 kg
Power supply : rechargeable batteries Li-ion 18-20 V
Battery life : 6000 pulses approx.
Maximum energy : 150 kVp
Beam angle : 40°
Output : 2,6 milliroentgens per pulse at 30 cm from source
Pulse rate : 10 pulses / s
Source size : 3 mm
Pulse length : 50 nanosecondes
Exposure control : can be set from 1 to 999
Time delay : selectable

XRS 3

TECHNICAL DATA

Size : 361 x 148 x 109 mm
Weight : 5,3 kg
Power supply : rechargeable batteries Li-ion 18-20 V
Battery life : 5500 pulses approx.
Maximum energy : 270 kVp
Beam angle : 40°
Output : 2.6 milliroentgens per pulse at 30 cm from source
Pulse rate : 15 pulses / s
Source size : 3 mm
Pulse length : 25 nanosecondes
Exposure control : can be set from 1 to 999
Time delay : selectable

X-RAY SYSTEM LOGOS+ CR

The LOGOS+ CR imaging system is the most popular system with more than 3,000 systems deployed. The LOGOS+ system uses storage phosphor image plates that provide users with a reusable, thin, flexible medium that produces a high resolution image. The system relies on a contact free scanning method that reduces wear and tear on the image plates and the system itself. This affords users the opportunity to reduce soft costs associated with replacing and repairing image plates and systems. The LOGOS+ system comes in a Pelican carrying case that provides protection for the entire system during transport. The case also includes an X-ray cut out that holds either the Golden Engineering XR200 or XRS-3 source.

The system uses thin, flexible, storage phosphor plates as the imaging medium. These image plates are reusable after being erased with fluorescent light, and they can be connected using the supplied image plate frame system to X-ray large objects in a single exposure with minimal downrange equipment weight and minimal downrange time. The scanner relies on a contact free, carousel based scanning method to read the image plates. This means that dust and debris on the image plate surface will not damage the plate or the scanner during processing. Therefore, even in extreme environments, there is no consumable expense for daily cleaning products required to maintain trouble-free operation.

The wide dynamic range of the Logos Digital Imaging System also allows users the ability to capture a quality image in one X-ray exposure. The scanner outputs 16-bit grayscale images (65,536 levels of gray) providing a high level of contrast adjustment to easily correct over and under exposures without requiring another trip downrange. The standard Logos Imaging Application offers a suite of automated image processing filters enabling even novice computer users to quickly capitalize on this powerful image processing capability.

TECHNICAL DATA

Height : 15.5”, 39.4 cm
Width : 19.4”, 49.3 cm
Depth : 10.8”, 27.4 cm
Weight : 35 lb, 16 kg
Interface : Cable USB 2.0 Cable
Voltage : 110-240 VAC
Frequency : 50/60 Hz
Power Consumption : 150 watts (Maximum)
Image Plate Size : 8” x 10”, 20 x 25 cm
4.5 ” x17”, 11.4 x 43 cm
8” x 17”, 20 x 43 cm
High resolution options available
Resolution : 150 dpi, 2.2 lp/mm, 51 second scan
300 dpi, 4.4 lp/mm, 102 second scan
600 dpi, 8 lp/mm, 204 second scan time per plate (requires high resolution image plates)

FLASH CR IMAGING SYSTEM **RIZIKOS**

Features :

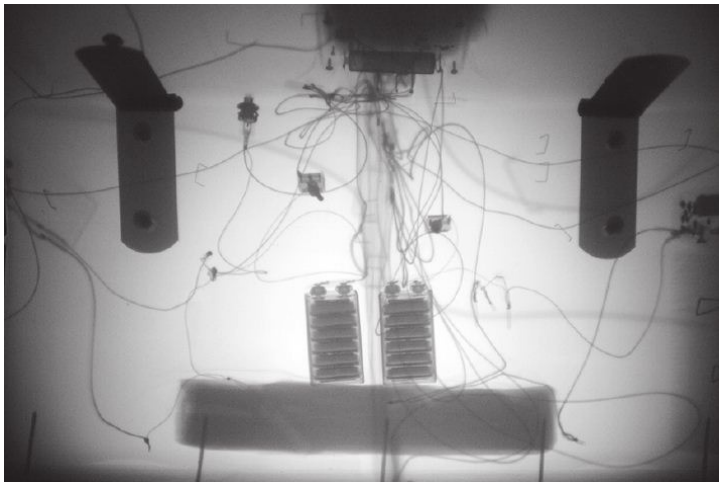
- Fully Battery Powered - Day Long Operation
- Uses Standard Storage Phosphor Imaging Plates
- Less than Five Second Total Acquisition Time Using Camera, Ten Seconds to Display Using PC or Tablet

FLASH CR RIZIKOS

The RIZIKOS is a revolutionary Flash CR imaging system that uses conventional storage phosphor plates to capture high quality images in a fraction of the time of typical CR scanners. The system is among the smallest, lightest, and fastest CR imaging systems in the world. Weighting just 5.7 kg when fully operational, the RIZIKOS produces x-ray images in just seconds. The full system can be deployed in a small tactical backpack and weighs just 10 kg (with XR-150).

Designed for highly mobile applications, the RIZIKOS is fully battery powered and field deployable. The RIZIKOS imaging system (10" x 15" image area) weighs under 13 lb, making it one of the lightest imaging systems in the world. When combined with a Golden Engineering XR150, the RIZIKOS offers users a complete X-ray imaging system weighing under 25 lb.

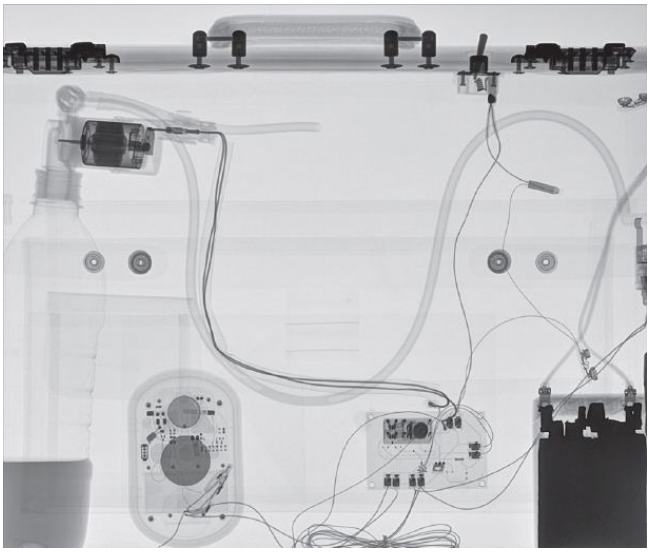
A bright flash of red, photostimulation light is provided by a custom-designed pulse-power LED flash system, which liberates the blue, photoemission light from the image plates. This process liberates the entire image in one instant. The image is then digitized and saved on the CCD camera for immediate review.



TECHNICAL DATA

Limiting Resolution : 1.8 lp/mm
Dimensions : 20.0" x 15.8" x 10.8"
50.8 x 40.0 x 27.3 cm
Weight : 12.5 lb - 5.7 kg
Dimensions (In Backpack) : 17.1" x 14.2" x 9.8"
43.5 x 36.0 x 25.0 cm
Camera : CMOS Monochrome, 36 x 23.9 mm
Actual: 16.6 Megapixel
Effective: 16.2 Megapixel
4,928 x 3,280 pixels
Battery : Lithium-Ion 1,150 mAh - 7.2 V - 8.28 Wh
Image Plate Sizes : 8" x 10", 8"x12", 8"x17", 10"x12", 10" x 15" (Standard with RIZIKOS), 14"x17"
Custom sizes available on request

FLAT PANEL X-RAY SYSTEM
ORAMA II



Flat panel 14" x 17"

Communication panel / computer with interface ASYRMATOS
- wired - 50 à 200 m
- radio - 400 m

Generator control
- wired
- radio

Material discrimination

FLAT PANEL X-RAY SYSTEM ORAMA II

ORAMA II system is not only the most popular DR system we offer, it is also the most rugged. With an IP64 rating and a drop test rating of 1 m, the ORAMA II is the ideal solution for field use. This system offers a 14" x 17" image area, 8 mm bottom border, and is shielded for up to 330 kV sources. Coupled with the ASÝRMATOS II interface, the ORAMA II provides users with up to 400 m line of site wireless operation. When used in conjunction with a Golden Engineering XRS-3, the system provides over 60 mm of steel penetration as well as material discrimination (organic detection) using the optional CHRÓMA module.

The ORAMA II is a large format portable digital X-ray system that generates high-resolution, high-sensitivity digital images. The complete X-ray imaging system includes a flat panel detector, an operating PC (optional), LIA image acquisition and enhancement software, wireless and wired interface, wired and wireless X-ray control, X-ray machine (optional), and carrying case.

The ORAMA II system includes full wired and wireless capabilities. Wireless communication between the imager and the computer, as well as wireless firing for 5-pin Golden Engineering X-ray machines is included in the base ORAMA II system. There is no need to buy additional wireless accessories.

The ORAMA II is available with three carrying case options. All cases options hold the ORAMA II panel, ASÝRMATOS II interface, batteries, power center, computer, cable reel, XR200 or XRS-3 X-ray machine, and all operation cables. Users can choose to have the system packaged in a single Storm iM2950 case, two Storm iM2720 cases, or a custom backpack.

With a battery run time of more than three hours per hot-swappable battery, the standard system provides up to seven hours of battery life allowing users to operate the system in wired or wireless modes all day even when mains power is not available. If mains power is available; the panel, interface, and PC can be powered indefinitely through a single power connection on the power center mounted in the carrying case.

TECHNICAL DATA

Technology : Amorphous Silicon with TFT
Scintillator : Gadox
Pixel Area : 42.3 x 35.8 cm, 16.7" x 14.1"
Pixel Matrix : 3328 x 2816 pixels
Pixel Size : 127 µm
Limiting Resolution : 3.9 lp/mm
AD Conversion : 16 bits
Communications Interface Wireless : 2.4 GHz (5 GHz Optional) & Wired LAN
Communications Range : Wireless up to 400 m (using 2.4 GHz), Wired 50 m standard, option up to 200 m
Image Transfer : Wired 5 seconds, Wireless 9 seconds
X-ray Energy Range : 40 - 330 kV
Weight : 5.3 kg (11.7 lbs)
Dimensions (Panel) : 47.5 x 40.0 x 1.8 cm (18.7" x 15.7" x 0.7")
Power : 100-240 VAC (50-60 Hz), 2A using included power supply, 14.4 V, 93 Wh, Li-Ion hot-swappable battery pack
Operating Temperature : -20 to 50 °C
Storage Temperature : -20 to 50 °C
PC Specs (Minimum) : Core i7 Processor, 4 GB RAM, 500 GB hard disk, 14" 1600 x 900 display, Windows 7 Professional

FLAT PANEL X-RAY SYSTEM
MONOS

Flat panel 14" x 17"

Panel with built-in 50 m wireless communication system

Communication panel / computer with interface ASYRMATOS
- wired - 50 à 200 m
- radio - 400 m

Generator control
- wired

FLAT PANEL X-RAY SYSTEM MONOS

The MÓNOS system is a versatile, large format, high resolution imaging system that provides users an ideal system for multiple types of operations. The MÓNOS panel includes built in wireless with a 50 m range and an internal battery when a lightweight, extremely portable system is required. Adding the ASÝRMATOS II interface allows users extended battery life and increased wireless range (up to 400 m line of sight). Just like our other DR systems, the MÓNOS panel has an 8 mm bottom border, is 18 mm thin, and is rated up to 330 kV.

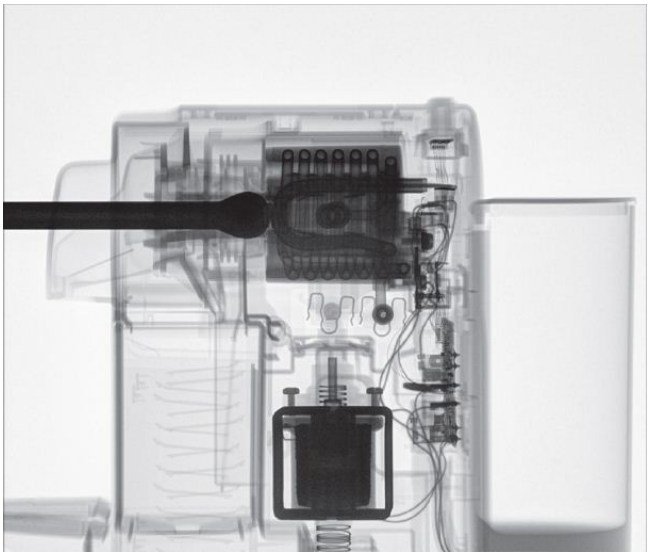
The MÓNOS is available with multiple carrying case options. Users can choose to have the system, including X-ray sources, packaged in a single Storm iM2950 case, two Storm iM2720 cases, or a custom backpack. When configured with the Golden Engineering XR150 X-ray source and our custom backpack, the MÓNOS is Logos Imaging's lightest and most portable DR imaging solution.

In full wireless mode, the MÓNOS can operate for up to two hours on a single battery charge. The system includes two batteries for a total of up to four hours of operation on a single battery charge (additional batteries can be purchased to extend run time). Batteries are easily changed in the field and are charged with the supplied dual battery charger. With a wireless range of 50 m using only the PC or tablet internal wireless card and a USB dongle for X-ray firing, users can work safely in almost any environment. All X-ray firing and image acquisition functions are controlled uprange from our proprietary Logos Imaging Application, which can be installed on either a laptop or most Windows based tablets.

TECHNICAL DATA

Technology : Amorphous Silicon with TFT
Scintillator : Gadox
Pixel Area : 42.3 x 35.8 cm, 16.7" x 14.1"
Pixel Matrix : 3328 x 2816 pixels
Pixel Size : 127 µm
Limiting Resolution : 3.9 lp/mm
AD Conversion : 16 bits
Communications Interface Wireless : 2.4 GHz (5 GHz Optional) & Wired LAN
Communications Range : Wireless 50 m, up to 400 m with interface (using 2.4 GHz), Wired 50m standard, option up to 200m
Image Transfer : Wired 5 seconds, Wireless 9 seconds
X-ray Energy Range : 40 - 330 kV
Weight : 5.3 kg (11.7 lbs)
Dimensions (Panel) : 47.5 x 40.0 x 1.8 cm (18.7" x 15.7" x 0.7")
Power : 100-240 VAC (50-60 Hz), 2A using included power supply, 14.4 V, 93 Wh, Li-Ion hot-swappable battery pack
Operating Temperature : -20 to 50 °C
Storage Temperature : -20 to 50 °C
PC Specs (Minimum) : Core i7 Processor, 4 GB RAM, 500 GB hard disk, 14" 1600 x 900 display, Windows 7 Professional

FLAT PANEL X-RAY SYSTEM
NEOS III



Flat panel 13" x 10"

Panel with built-in 50 m wireless communication system

Communication panel / computer with interface ASYRMATOS
- wired - 50 à 200 m
- radio - 400 m

Generator control
- wired

FLAT PANEL X-RAY SYSTEM NEOS III

NEOS III is our latest small format DR imaging system specifically designed to withstand the rigors of harsh environments. The imager housing is cast Mg and includes shielding to allow use with higher X-ray energies. The design of the NEOS III provides shock, vibration, and water ingress protection giving users unparalleled confidence in the system's performance wherever the job site is located. The system also offers the advantages of built in wireless communications and a removable battery that provides two hours of operation for situations where ultra-portability and short-range communications are desirable.

Ideally suited for dismounted operations, the NEOS III is the lightest DR system provided by Logos Imaging. With a built in battery and internal wireless communication, the NEOS III is perfect for users that want to quickly assess an item. At 3.3 kg and only 18 mm thin, the NEOS III can be easily transported on target with minimal effort. The NEOS III produces high resolution 16-bit images and is shielded for up to 330 kV sources.

In environments where wireless communication is acceptable, the entire imaging system consists of only a flat panel detector, an operating PC, LIA Security software, and carrying case. In full wireless mode, the NEOS III can operate for up to two hours on a single battery charge. The system includes two batteries for a total of up to four hours of operation on a single battery charge. Batteries are easily changed in the field and are charged with the supplied dual battery charger.

With a wireless range of 50 m using only the PC or tablet internal wireless card, users can work safely in almost any environment. When longer battery life and extended wireless range or wired operation are required, the ASÝRMATOS II interface provides up to even hours of additional battery life (the system can also be operated continuously when mains power is available at the PC workstation), and 400 m wireless range or up to 200 m wired range.

TECHNICAL DATA

Technology : Amorphous Silicon with TFT
Scintillator : Gadox
Pixel Area : 32.5 x 26.0 cm, 12.8" x 10.2"
Pixel Matrix : 2560 x 2048 pixels
Pixel Size : 127 µm
Limiting Resolution : 3.9 lp/mm
AD Conversion : 16 bits
Communications Interface Wireless : 2.4 GHz (5 GHz Optional) & Wired LAN
Communications Range : Wireless 50 m or up to 400 m with interface (using 2.4 GHz), Wired option 50 m to 200 m
Image Transfer : Wired 5 seconds, Wireless 9 seconds
X-ray Energy Range : 40 - 330 kV
Weight : 3.3 kg (7.3 lbs)
Dimensions (Panel) : 38.5 x 32.0 x 1.8 cm (15.2" x 12.6" x 0.7")
Power : 100-240 VAC (50-60 Hz), 2A using included power supply, 14.4 V, 93 Wh, Li-Ion hot-swappable battery pack
Operating Temperature : -20 to 50 °C (Wired), 0 to 40 °C (Wireless)
Storage Temperature : -20 to 50 °C
PC Specs (Minimum) : Core i7 Processor, 4 GB RAM, 500 GB hard disk, 14" 1600 x 900 display, Windows 7 Professional

A full NEOS III system in lightweight, backpack configuration weighs under 10 kg.

ULTRA PORTABLE X-RAY SYSTEM **PROTOS**

Features :

- Wired and Wireless Panel Operation
- 0.2” Bottom Border
- Flat panel 10.7" x 7.4"
- Panel with built-in 50 m wireless communication system

ULTRA PORTABLE X-RAY SYSTEM PROTOS

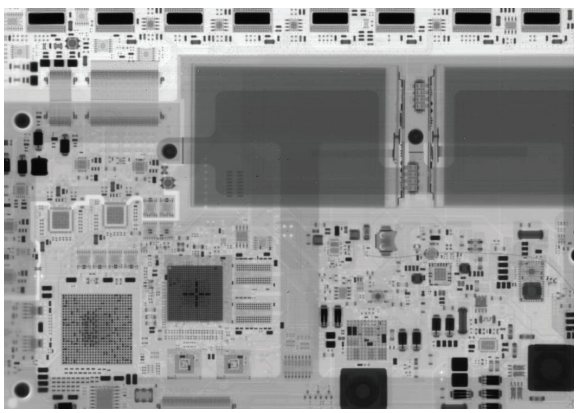
Logos Imaging's PROTOS system is the newest ultra-portable, small format DR imaging system. The PROTOS imager is a revolutionary glass-free flat panel. The ultra-portable panel, with a 0.2" bottom border, provides users with near ground-level imaging and 16-bit image clarity. The lightweight, portable PROTOS system offers the choice of wired or wireless communication.

The PROTOS system, with the small format panel is a ground-breaking advancement in DR systems. All components fit into a custom backpack, allowing operators to deploy the system quickly. The glass-free PROTOS panel is a rugged, durable, high-performance flat panel ideally suited for operations where space is limited. At just 2.2 lb and 0.5" thick, this is the smallest and lightest imager offered by Logos Imaging while providing exceptional image quality (208 µm) and a narrow bottom border of just 0.2". The versatile PROTOS system is easily deployed by a single operator and designed for incidents where size and speed are paramount.

In a matter of minutes users have the ability to quickly capture multiple images to make an accurate threat assessment. X-ray technicians throughout the world now have access to this cost-effective, portable DR solution capable of being deployed in any setting, no matter how remote.

The full PROTOS system is available in a lightweight backpack.

TECHNICAL DATA
Pixel Area : 8.4" x 6.3", 21.3 x 16.0 cm
Pixel Size : 208 µm
Pixel Matrix : 1024 x 768 pixels
Scintillator : Gadox
Ad Conversion : 16-bits
Communications Range : Wireless 50 m - Wired 50 m
Weight (Panel) : 2.2 lb (1.0 kg)
Dimensions : Panel 10.7" x 7.4" x 0.5" - 27.3 x 18.7 x 1.3 cm
Power : DC power supply

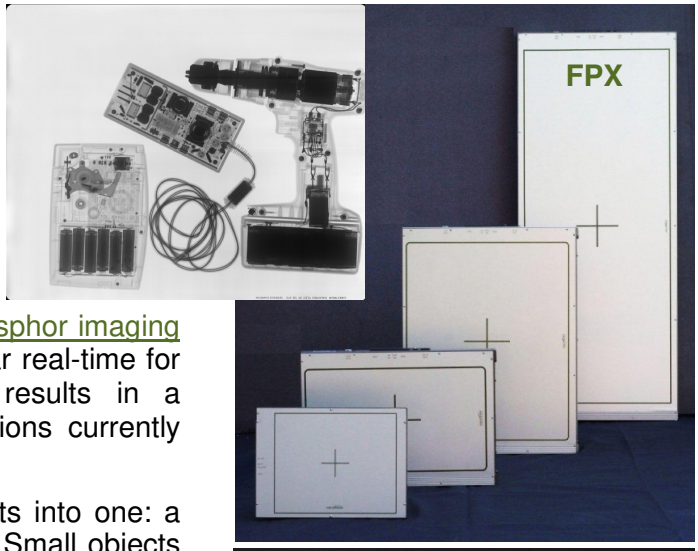


X-RAY IMAGE CAPTURE UNITS NEX-RAY® FPX & MMX

The NeX-Ray® product line consists of advanced, portable, lightweight x-ray image capture units used to obtain near real-time imaging in a variety of applications. The NeX-Ray® product line currently consists of seven products in two categories:

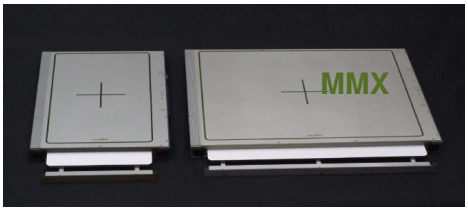
- The FPX (Flat Panel X-ray) product line
- The MMX (Multi Mission X-Ray) product line

The FPX products are lightweight flat panel x-ray detectors. The MMX products incorporate a removable imaging plate design that allows additional flexibility for the end-user in the field.



Technology : The NeX-Ray® technology is based on a novel method for reading storage phosphor imaging plates. The target image can be displayed in near real-time for analysis. The unique scanning methodology results in a significantly smaller form factor than other solutions currently offered in the market.

MMX : The MMX concept combines two products into one: a flat-panel detector and an imaging plate scanner. Small objects can be directly imaged and captured by the device. For large objects, such as a vehicle, multiple imaging plates can be tiled together in a mosaic frame to allow the user to capture the entire object at once. The imaging plates are then individually inserted into the device, read, and the scanned images are combined into a single tiled image.



The MMX consists of an enclosed flat-panel scanner with a removable imaging plate and an integrated power supply module with a LiPO battery. The unit is controlled from a laptop computer, a tablet or a smartphone via a USB 2.0 port using either a standard USB cable (15' max), a CAT5 cable (100 m max), a fiberoptic cable (1 km max) or wirelessly (800m max).

FPX : The FPX unit consists of an enclosed flat-panel scanner with a permanently mounted imaging plate and an integrated power supply module with LiPO battery. The unit is controlled, like MMX, from a laptop computer, a tablet or a smartphone.

The FPX Nano consists of two parts: (i) an enclosed flat-panel scanner with a permanently mounted 7"x 9" imaging plate and an integrated power supply module with lithium polymer battery and (ii) an image viewing screen in the form of a detachable tablet. The two parts are held together in a compact package that also provides additional protection to the unit.

TECHNICAL DATA

	FPX pico	FPX nano	FPX mini	MMX mini	FPX (std)	MMX (std)	FPX max
image (cm)	10.1x17.8	17.8x22.8	20.3x14	20.3x35.5	35.5x43.2	35.5x43.2	35.5x86.3
image Plate	fixed	fixed	fixed	removable	fixed	removable	fixed
size (cm)	15x20x1.8	20x28x1.8	27x39x2.5	27x39x2.8	49x39x2.5	50x39x2.8	93x39x2.5
weight (g)	790	1100	2260	2260	3600	3600	5500
resolution	144 DPI	144 DPI	144 DPI	144 DPI	144 DPI	144 DPI	144 DPI
scan time	5 sec	10 sec	12 sec	12 sec	24 sec	24 sec	48 sec

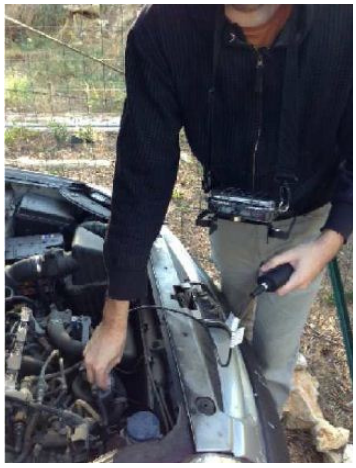
WIRELESS FLEXIBLE ENDOSCOPE Z6

The 5,5 mm diameter **CCD flexible endoscope Z6**, is fixed at the end of 1 m stainless shape-memory cable. It is lit with 4 high-intensity micro leds. The field of view goes from 10 mm to infinity.

The image is displayed on a 4.3 inches monitor, the transmission is wireless.

For a better view, or when working in the obscurity, the 4 leds can be switched on independently of the CCD camera.

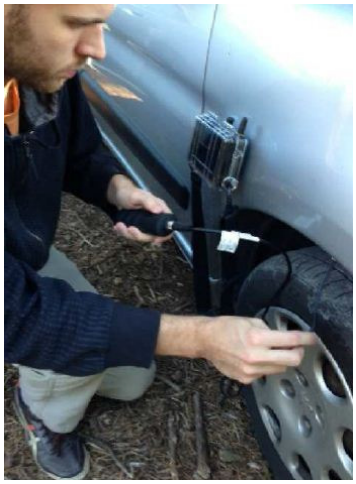
The system is supplied in a hard case with all accessories and chargers, allowing to charge the camera and the monitor from the mains or from the car cigarette lighter.

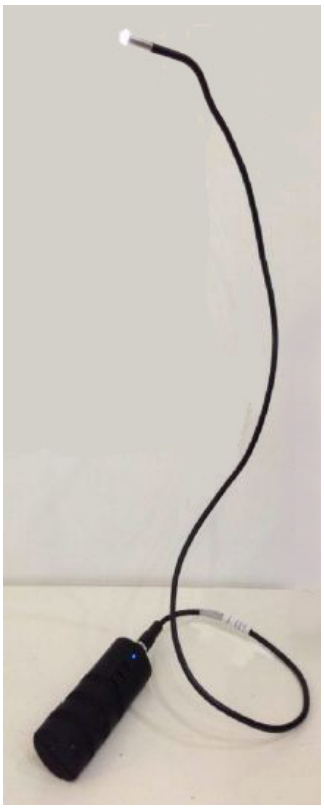


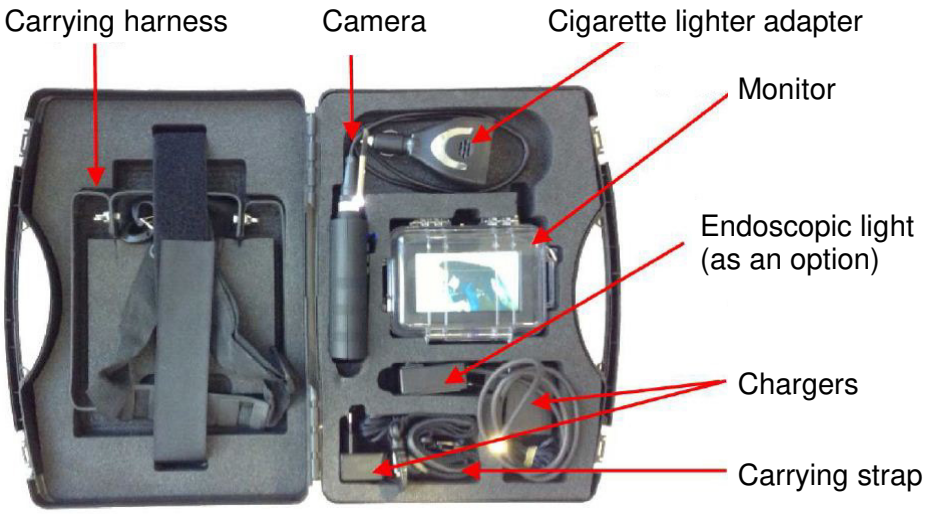
TECHNICAL DATA

Camera Z5
Length of the cable : 1 m
Dimensions of handle : 140 x 36 x 46 cm
Weight : 240 g
Protection : IP 54
Resolution : 640 x 480
Focal length : 1 cm to infinite
Viewing angle : 67°
Power supply : integrated Li-Po battery
Autonomy : >4 h
Charging time : 4 hours

Monitor
Dimensions : 170 x 120 x 50 mm
LCD screen : 4.3 inches
Monitor type : TFT color
Weight : 605 g
Protection : IP 67
Radio frequency : 2.4 GHz
Transmission distance : 60 m
Power supply : integrated Li-Ion battery
Autonomy : 4 hours
Charging time : 4 hours
Fixing : strap, harness and magnet







VIDEOSCOPE
IPLEX MX

- Maximal mobility
- Image recording
- 4-way articulation capability
- Brightness adjustment

VIDEOSCOPE IPLEX MX

A battery powered videoscope that can go anywhere. Weighing just 4.4 kg, this lightweight, ultra-compact videoscope system uses an internal battery as the first power option, resulting in new levels of portability.

The IPLEX MX is also the first videoscope to feature LED technology in a 6 mm diameter insertion tube, which is coupled to the precision and quality optics to provide bright, high resolution images. Integral still image storage further boosts the versatility of IPLEX MX, aiding decision making and documentation.

Maximum mobility

At just 4.4kg, the lightweight and portable B5-file-size IPLEX MX can be carried to the inspection site with just a shoulder strap, and even body mounted with safety during the entire inspection - it's that mobile!

Easy movement

Newly developed power assist articulation gives you more articulation with less work. The lower power consumption of this four-way articulation method means longer battery life. Just a light touch of the joystick moves the scope 120 degrees in any direction. The operator has quick access to the system features : zoom, image freeze, storage, brightness and brightness boost mode. Getting started is as easy as pressing one button.

Extended battery operation

You don’t have to worry about interruptions or delays even when doing long inspections. The system uses a large capacity, yet lightweight and compact rechargeable Lithium-ion battery providing 2 hours of continuous operation for uninterrupted inspections. Extended battery stamina can be doubled when using an optional external battery kit.

Digital image recording

Up to 230 digital images (JPEG format) can be recorded on the provided 32MB Compact Flash card. Images can be quickly transferred to the PC for full and immediate viewing.

Advanced specifications

With its 6 mm diameter insertion tube and 4-way articulation capability, the IPLEX MX is ideal for almost any inspection requirement, supported by an extensive array of in-demand functions including freeze, electronic zoom, extended exposure and digital image recording. A monochrome boost mode is also incorporated to further increase image sensitivity for low light level conditions.

TECHNICAL DATA

Insertion tube : diam. 6 mm x length 2 m
Field of view : 120°
Illumination method : LED
Brightness adjustment : 11 steps
Zoom : electronic linear zoom up to 3x
Video outputs : 1x BNC, 1x S-Video
Power supply : AC adapter (220 V)
Li-Ion battery
Battery operation time : 2 hours
Dimensions of main unit : 223 x 247 x 137 mm
Waterproofing : the insertion tube is waterproof and can be used under water, other parts are neither waterproof nor splash proof.

VIDEOSCOPE
MOVEO

Extremely resilient tungsten braided outer sheath
Sheath diameter of 4 and 6 mm
High performance LED light source
4-way deflection
Interchangeable lens
Integrated 5" TFT LCD monitor

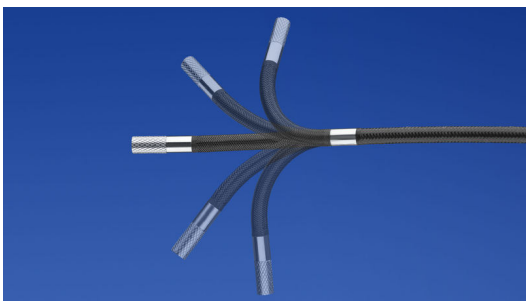
VIDEOSCOPE MOVEO

Portable video endoscopes are highly compact system solutions designed specifically for mobile use. These portable inspection tools are functional, small, lightweight, and battery operated.

Our industrial videoscopes are excellent for direct-view inspections of confined and hard-to-reach spaces. These tough and robust solutions facilitate inspections in harsh and hard-to-reach inspection environments.

Portable KARL STORZ videoscopes come in diameters of 4 mm through 6 mm and feature a robust, smooth sheath made of metal-tungsten braiding. Depending on the model range, the videoscopes are available in various working lengths from 1.5 m to 6 m. Two-way or four-way deflection provides a comprehensive view for easy and efficient endoscopy. A kink protector and integrated lock guarantee perfect handling of the systems. Powerful light sources and high-resolution CMOS image sensors deliver optimal image quality on the viewing screen.

MoVeo is a portable videoscope system that features an integrated 5" LCD screen, a high-power LED light source as well as lithium ion battery technology and functional software. The MoVeo allows both mains and battery operation in a stationary area or mobile use in applications such as, for example, aerospace, power generation or wind energy. Its 4-way deflection and the precise angulation of the sheath up to +/- 150° ensure reliable and effective visual inspection.



TECHNICAL DATA

Power supply - MoVeo Videoscope

Removable rechargeable lithium polymer battery, 3.7 VDC, 3900 mAh, operation time approx. 180 min, charge time approx. 180 min
AC adapter for main device
Charger for additional battery

Power supply - LED light source

Removable rechargeable lithium ion battery, 3.7 VDC, 3900 mAh, operation time approx. 180 min, charge time approx. 180 min
AC adapter for main device
Charger for additional battery

Operating conditions

Operating temperature : -10 °C to 45 °C (battery operation)
0 °C to 40 °C (AC operation)
Air pressure : normal atmospheric pressure (1.013 hPa)
Humidity : 5-95% relative humidity

Weight of overall system including rech. batteries and light source

1.5m: approx. 930 g
3.0m: approx. 1000 g

Multifunction case

Dimensions : 617 x 487 x 191 mm

EXPLOSIVES DETECTION COLORIMETRIC TEST KITS
E.L.I.T.E

E.L.I.T.E EXPLOSIVES DETECTION AND IDENTIFICATION KITS

The ELITE® explosives detection and identification kits are simple, reliable, robust and unique in their detection and identification of commercial, military and home-made explosives (HME):

- Model EL100-BX - a box of ten EL100 detection cards. Each disposable card can detect dozens of nitrogen-based explosives as well as bromate mixtures. It can also identify chlorate and perchlorate mixtures and HME precursors.

  The EL100 is currently in use with US and other NATO forces as well as police and security agencies around the world. It is known for its ease of use, long shelf life in all operating and storage conditions, robustness, sensitivity and very low false positive rate.

- Model EL240-BX - a box of ten EL240 detection/ identifications pens for the peroxide-based explosives (HME) such as TATP, HMTD and MEKP.The EL240 distinguishes the peroxides from chlorates by a color differentiation; orange for peroxides and blue for chlorates. The EL240 is the only disposable kit that can detect and identify solids as well as liquids (MEKP and hydrogen peroxide solutions).

  The pen-like design provides protection against static and friction-sensitive HME. The EL240 also has a very long shelf life, is robust and has a very low false positive rate.

The ELITE® detection kits are designed to be used in a variety of conditions and by users of different skill and knowledge levels.

Currently the ELITE® is used by forensics specialists in post-blast investigations, law enforcement and military groups in attack-the-network (ATK) operations, and by security guards screening personnel, passengers, and vehicles for evidence of explosives.

The ELITE® detection kits are available in a variety of field kits complete with ancillary devices, field guides and heating
methods.

E.L.I.T.E EL-100 EXPLOSIVES DETECTION

NSN 6665-01-591-1607

The **E.L.I.T.E. ™ Model EL100 Explosives Detection Kit** takes reliable explosives detection to the next level. The EL100 exceeds existing kits in:

1) **Detection Capability:** detects 50% more types of explosives

2) **Sensitivity:** is up to 10000% more sensitive

3) **Reliability:** has at least twice the shelf life of many existing kits

4) **Ease of Use:** there are no bottles or vials

The E.L.I.T.E.™ EL100 reliably detects the presence of explosives and propellants. It is self-contained, requiring only a small auxiliary heating system such as a butane lighter or battery powered heater.

To collect a sample, rub the EL100 swab on the suspect area, object or person and then place the swab back into the card for testing.

Several categories of explosives can be tested with one EL100, including nitro aromatics, aliphatics, inorganics, bromates, chlorates and perchlorates. Very bright color changes indicate the presence of a broad range of military, commercial and inorganic explosives and propellants. The entire test takes less than two minutes. Some examples of positives for TNT, Tetryl, 2,6 DNT, RDX and ANFO (left to right):

Model EL100-BPH
Battery Powered Heater – portable heating device for EL100. The portable heater operates on NiMH rechargeable batteries and is designed to operate for an eight-hour shift of normal, intermittent usage. It extends the range of the EL100 and improves sensitivity.

Model EL100-BLH
Heating Jig – the heating jig is designed for use with an open flame such as a cigarette lighter of some sort. The jig folds on itself for easy storage It extends the range of the EL100 and improves sensitivity.

IDEX EXPLOSIVES IDENTIFIERS

Individual disposable testers that identify visible amounts of unknown substances:

Model IDEX-001: nitro-aromatics (e.g. TNT, tetryl, tri-nitro benzene)
Model IDEX-002: AN (ammonium nitrate)
Model IDEX-003: UN (urea nitrate)
Model IDEX-004: CHL (chlorates)
Model IDEX-005: PCHL (perchlorates)
Model IDEX-006: NIT (nitrates)
Model IDEX-007: PH (phosphates)
Model IDEX-008: AA (acetic anhydride)
Model IDEX-009: PX (peroxides: TATP, HMTD. MEKP, H2O2)
Model IDEX-010: U (urea)
Model IDEX-011: Al (aluminum)
Model IDEX-012: Mg (magnesium)
Model IDEX-013: Fe (iron/iron oxide)

Each IDEX™ tester is packaged inside a rugged plastic tube. - no sharp edges, rugged, durable.

The IDEX™ Series of explosives identifiers each identify only one category of explosive or precursor instead of testing for a broad range of explosives. The IDEX™ Series are designed to identify visible amounts of explosives through a color change on a sampler tip - detecting/identifying bulk explosives rather than trace amounts of explosives.

IDEX™ Testers are easy to carry.

Models in the IDEX™ Series would generally be used to:

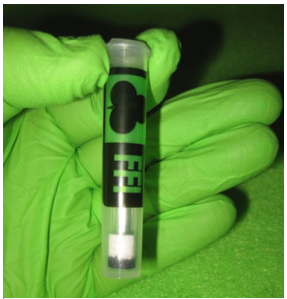
- Test found substances, visible to the naked eye, when particular explosives/ precursors are of concern
- Back-up sniffer or bench-top instruments to clear or verify alarms
- Back-up screening kits such as E.L.I.T.E.™ series of colorimetric detection kits

Tester being removed from outer package.

Every IDEX™ tester is packaged in a convenient, disposable (and recyclable) plastic tube that's durable yet easy to open and is easily carried in a pant or shirt pocket - in fact several can fit into a pants pocket and ten or more into a cargo pocket. Each tester is a stand-alone, disposable, colorimetric test kit that uses chemical reagents - no ancillary equipment is required for operation. Reagents are fully contained inside each tester and the user is not exposed to any of the chemical reagents during operation. The operators can use the outer package of the IDEX™ to take a forensic sample of found material. Each IDEX™ includes a forensics label on which operators can record data such as GPS location, data, time, etc.

Here's a summary of IDEX™ Series' features:

- Portable and rugged packaging - no sharp edges to dig into skin
- Small but easy to handle. Package is cylindrical less than 3" long and less ~ 3/4" diameter
- Reagents are fully contained - no exposure to the operator
- Operator training in 15 minutes or less
- Each kit is completely disposable
- Kits contain no electronics and no ancillary equipment is required
- Field test for each type of explosive or substance as marked on each kit
- Each kit contains usage instructions and color guide as well as a forensics label
- Shelf-life of 2 years



Example of chlorate positive, sampler tip turns from white to dark blue.

RAMAN SPECTROMETER
HANDYRAM™ II

Pocket-sized identifier of :

- Narcotics
- Explosives
- Toxic chemicals

RAMAN SPECTROMETER HANDYRAM™ II

This incredibly small Raman handheld analyzer identifies illicit narcotics, controlled drugs, explosives materials, pharmaceutical ingredients and a wide range of unknown substances. Thousands of compounds are available in the spectral libraries. It also analyzes and reports the components of mixtures.

HandyRam™ II is a compact, ruggedized Raman spectrometer that is incredibly powerful. It is able to analyze thousands of explosives, narcotics and toxic chemicals in seconds. Laser power is adjustable and use programmable acquisition delay when measuring energetic materials.

HandyRam™ II features a durable and waterproof construction yet can also be connected to a PC for detailed spectral analysis, library and record management.

HandyRam™ II has tactile buttons for operation designed for use while wearing gloves.

Accessories include: pouch, shoulder strap, USB cable, laser aperture cap with polystyrene target, sample vials, point-and-shoot adapter, vial holder, 90° angle adapter, attachment point, connection kit ethernet and WIFI, AC Adapter 5 VDC/1 A USB

TECHNICAL DATA

Battery : Rechargeable Li ion battery (transportable by air)
Weight & Size : 650 g (1.4 lb); 15.8 cm x 10.1 cm x 2.9 cm (6.2 x 4.0 x 1.1")
Environmental : IP67, Operating -20C to +40C, Storage: -30C to +50C, MIL-STD-810G
Display : 3.5" transmissive color TFT with LED backlighting
Excitation wavelength : 785 nm, Stability <0.01 nm, Linewidth <0.1 nm
Laser Power : max 300 mW - adjustable
Wavenumber Range : 400 cm-1 to 2300 cm-1
Resolution : 10 cm-1
Analysis Time : as little as 10 seconds but not longer than 5 minutes.
Spectral libraries & Data Output : various libraries available: narcotics, explosives, etc. - Data Output: Text; .txt, .csv, .jcamp
Interface : Mini-USB & WIFI
Calibration Standard : ASTM 1840 Raman Frequency Shift
Accessories : pouch, shoulder strap, USB cable, laser aperture cap with polystyrene target, sample vials, point-and-shoot adapter, vial holder, 90° angle adapter, tripod attachment point, connection kit ethernet and WIFI, AC Adapter 5 VDC/1 A USB

EXPLOSIVES TRACE DETECTOR
E3500

- Delivers laboratory-grade accuracy to the field
- Rapid, accurate and easy to read results in seconds
- Detects nitrogen-, ammonia- and peroxide-based explosive compounds
- Battery powered for true portability

APPLICATIONS

- **Force Protection**
- **Customs**
- **VIP Screening**
- **Embassies and Consulates**
- **Royal and Diplomatic Protection**
- **Critical Infrastructure**
- **High Security Events**

EXPLOSIVES TRACE DETECTOR E3500

The rugged E3500 explosives trace detector uses Chemilux to detect homemade, military and commercial explosives, including ICAO taggants, plastics, ammonium nitrate, black powder, other nitrates and perioxide-based explosives such as TATP and HMTD.

Build to withstand rough handling and tough environments, the E3500 packs potent detection capability into a lightweight, durable thermoplastic housing. The handheld E3500 analyzes both particulates and vapors in seconds, without the need for radioactive isotopes or carrier gases. This product delivers unsurpassed accuracy, speed and reliability for detecting the most dangerous and cleverly concealed threats.

It is ideal for security checks, law enforcement, fight against terrorism because it allows a discreet search of luggage, mails, vehicles, documents and containers, even individuals who could have handle explosive substances.

The E3500 detector uses two detection modes: the mode "particles" and the mode "vapors". The vapors are directly sniffed by the nose of the device. The collection of particles is done by passing the hand on the areas of the suspect object. The samples are then transferred to a reusable grid to insert into the device for analysis. This duality allows the operator to choose the most appropriate sampling method. The results are read in a few seconds on the LCD screen of the device. A volume sound signal adjustable is issued in case of alarm.

TECHNICAL DATA

Detector: Chemilux
Analysis Time: 16 seconds
Detects: Military, commercial and homemade explosives: C4, TNT, NG, dynamite, black powder, PETN, Semtex, RDX, ANFO, ICAO taggants (DMNB, EGDN, o-MNT, p-MNT), ammonium and urea nitrates, TATP and peroxides
Detection Level: Nanogram sensitivity
Sample Collection: Particulates and vapors
Warm-up Time: None, after one minute start
Alarms: LED indicator lights, large LCD display for status messages, audible alarm
Power Supply: 12 volt DC rechargeable six hour battery pack, 12 volt AC adapter
Voltage: 90-264 VAC, 47-63 Hz universal switching
Unit Weight: 2.7 kg (5.9 lb)
Unit Dimensions: 50 x 14 x 11 cm (20 x 5.5 x 4.3 in)
Shipping Weight: 14 kg (31 lb)
Shipping Dimensions: 52 x 26 x 39 cm (22 x 10 x 14 in) (L x W x H)
Operating Temperature : 0 to 55°C (32 to 131°F)
Storage Temperature: -5 to 65°C (23 to 149°F)
Communication: RS-232 serial output port
Data Storage: 1000 retrievable data records
Options: Earphone

DESTRUCTION

WIRED EXPLODER
ATLAS 400

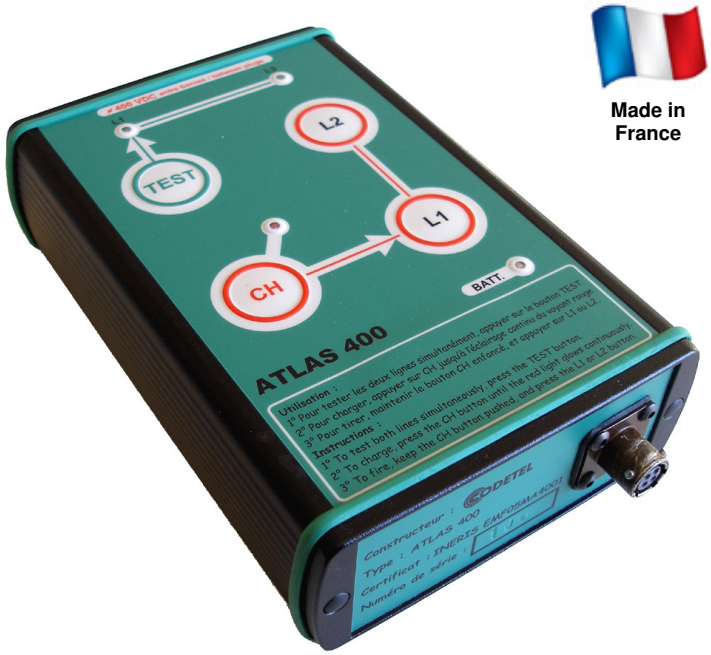
Security key
Rechargeable battery
Dual output
Certification Ineris EMF05MA4001

EXPLODER ATLAS 400

NSN 1375-14-562-5833

Made in France

The **ATLAS 400 (Certification INERIS EMF05MA4001)** is an electronic capacitor exploder, compact and sturdy, designed for firing electric detonators.



It is fitted with two fire outputs and features a built-in line continuity test.

The exploder **ATLAS 400** is powered by a rechargeable NiMH battery which offers a capacity of approximately 400 firings. A bicolour led indicates continuously the charge level of the battery.

It is integrated in an aluminium sturdy and compact box, whose control panel consists of 4 buttons and 4 leds. The both firing lines are connected on safety sockets which prevent that the user can be in contact with dangerous voltage.

A single socket is used to charge the battery and also to connect the security key which puts the device into operation.

ATLAS 400 features many security levels :

- security key
- permanent shunt on the firing output
- battery voltage monitoring
- automatic discharge of the capacitors when the charge button is released
- permanent measurement of the capacitors voltage
- to fire, 2 buttons must be pressed simultaneously
- firing is allowed only when the capacitors are fully charged
- safety plugs
- monitoring by micro-controller
- self-test of the control panel lights

This device is supplied with charger 220 V and transport bag.

TECHNICAL DATA
Box : Material : Aluminium Dimensions : 150 x 108 x 42 mm Weight : 750 g approx. Tightness : IP 65
Fire lines : 2 Line test : built-in
Charging voltage : 380 V minimum Stored Energy : 14 J minimum
Charging time : 5 s approx. Capacity : approx. 400 firings at 20°C

WIRED EXPLODER
ATLAS 300

Compact and robust
Single lithium battery
Versatile sockets

EXPLODER ATLAS 300

ATLAS 300 is an electronic capacitor exploder, very compact sized and sturdy, designed for firing electric detonators.

This device is very easy to use : pressing the CH button charges the capacitors; when the capacitors are charged, the firing can be triggered by pressing simultaneously the F button. If more power is needed, the capacitors can be charged to a higher voltage by keeping the CH button pressed for 3 more seconds.

The exploder **ATLAS 300** is supplied by a single lithium photo battery (cheap and widespread). A bicolour led indicates the state of the battery.

It is integrated in robust aluminium box, equipped with polyester control panel integrating the buttons and the lights. The leds' luminosity level can be selected by the user and thus adapted to the work conditions (day / night).

Made in France

The **ATLAS 300** exploder is equipped with versatile sockets, allowing to directly clamp the leads or to connect any type of 4 mm banana plugs.

It features one firing output, equipped with safety sockets, in order to avoid that the user can be in contact with the dangerous output voltage.

ATLAS 300 exploder feature many security levels : permanent shunt on the firing output, battery voltage monitoring, automatic discharge of the capacitors when the charge button is released, permanent measurement of the capacitors voltage, to fire 2 buttons must be pressed simultaneously, firing is allowed only when the capacitors are charged enough, safety sockets and plugs, monitoring by micro-controller, self-test of the control panel lights.

Dimensions of ATLAS-300 :
150 x 60 x 35 mm

TECHNICAL DATA	
Box	aluminium IP65
Dimensions	150 x 60 x 35 mm
Weight	approx. 200 g
Power supply	CR2 lithium battery
Continuity test	integrated
Security levels	listed above
Compatibility F3 detonator	yes
Firing output	1
Charging voltage	320 V mini - 395 V maxi
Energy	5 J mini - 7.5 J maxi
Charging time	5 s
Autonomy	200 firings at 20°C
Shunt on the outputs	internal shunt

WIRED EXPLODER
ATLAS 350

Compact and robust
Security key
Single lithium battery
Certification Ineris EMF14MA4002

WIRED EXPLODER ATLAS 350

ATLAS 350 is an electronic capacitor exploder, very compact sized and sturdy, designed for firing electric detonators.

This device is very easy to use : pressing the CH button charges the capacitors; when the capacitors are charged, the firing can be triggered by pressing simultaneously the F button. If more power is needed, the capacitors can be charged to a higher voltage by keeping the CH button pressed for 3 more seconds.

The exploder **ATLAS 350** is supplied by a single lithium photo battery CR 123 (cheap and widespread). A bicolour led indicates the state of the battery.

Made in France

It is integrated in robust aluminium box, equipped with polyester control panel integrating the buttons and the lights. The leds' luminosity level can be selected by the user and thus adapted to the work conditions (day / night).

It features one firing output, equipped with safety sockets, in order to avoid that the user can be in contact with the dangerous output voltage.

ATLAS 350 exploder feature many security levels :

security key, permanent shunt on the firing output, battery voltage monitoring, automatic discharge of the capacitors when the charge button is released, permanent measurement of the capacitors voltage, to fire 2 buttons must be pressed simultaneously, firing is allowed only when the capacitors are charged enough, safety sockets and plugs, monitoring by micro-controller, self-test of the control panel lights.

TECHNICAL DATA	
Box	aluminium IP65
Dimensions	120 x 85 x 35 mm
Weight	approx. 300 g
Power supply	CR123 lithium battery
Continuity test	integrated
Security levels	listed above
Compatibility F3 detonator	yes
Firing output	1
Charging voltage	300 V mini - 395 V maxi
Energy	9 J mini - 15 J maxi
Charging time	5 s
Autonomy	200 firings at 20°C
Shunt on the outputs	internal shunt

WIRED EXPLODER
ATLAS 450

Made in France

Very easy to use

Powerful : 440 V - 22 J

Rugged

Watertight IP67

Solid state

Galvanic isolation

Conformity to MIL-STD 810 G

Certification INERIS EMF19MA4002 of Conformity to the French ordinance of Dec 11, 1992

WIRED EXPLODER ATLAS 450

ATLAS-450 is a hard wired electronic exploder, designed for firing of electric detonators. It is a compact, robust and powerful equipment, especially designed for missions of engineering battalions or EOD teams, needing an important security distance.

This device is very easy to use : pressing the CH button charges the capacitors; when the capacitors are charged, the firing can be triggered by pressing simultaneously the F button.

Two charging levels are available. The first level is reached quickly and is suitable for most applications. A second step, offering more power, is reached with extended charging, thus allowing to store more energy into the capacitors.

ATLAS 450 exploder features many security levels :

- security key
- automatic discharge of the capacitors when the charge button is released
- permanent measurement of the capacitors voltage
- to fire 2 buttons must be pressed simultaneously
- firing is allowed only when the capacitors are charged enough
- permanent shunt on the firing output
- battery voltage monitoring
- safety sockets and plugs
- monitoring by micro-controller
- self-test of the control panel lights
- redundancy of certain functions

This exploder controls one firing line and integrate a line-continuity test. It is equipped with versatile sockets, allowing to directly clamp the leads or to connect any type of 4 mm banana plugs.

The rugged aluminium box is waterproof IP 67, Nato green color, and equipped with a polyester control panel, which integrates the buttons and the lights. The leds' luminosity level can be selected by the user and thus adapted to the work conditions (day / night).

The exploder **ATLAS 450** is power supplied by three CR 123 lithium photo batteries (cheap and widespread). A bicolour led indicates continuously the state of the batteries.

An optional maintenance dashboard software can be used to display the exploder's parameters, to test the main functions and diagnose any anomalies.

TECHNICAL DATA

Aluminium enclosure IP 67
Dimensions : 200 x 80 x 45 mm
Weight : 580 g
Power supply : 3 lithium CR 123 batteries
Autonomy : > 300 firings at 20°C
1 firing output with line continuity test
Charging voltage : 450 V maximum
Energy : 22 J maximum
Charging time : 6 s approx. for the first step, 10 s approx. for the second step
Operating temperature : -20°C to +55°C

Standards :

MIL-STD 810 G, method 516 procedure II (shocks)
MIL-STD 810 G, method 516 procedure IV (drops)
MIL-STD 810 G, method 501 procedure II (temp. 55°C)
MIL-STD 810 G, method 502 procedure II (temp. -20°C)
MIL-STD 810 G, method 512 procedure I (1m immersion)
Conformity to the French ordinance of December 11th, 1992 (INERIS certificate)

REMOTE CONTROLLED EXPLODER
ATLAS 400 RC

Three receiver units
Security key
Rechargeable battery
Certification Ineris EMF10MA4001

REMOTE CONTROLLED EXPLODER ATLAS 400 RC

ATLAS 400 RC is an electronic remote controlled exploder, designed for firing electric detonators. It consists of one control unit and 1 to 3 receiver units.

Control Unit

The control unit allows the remote control of the receiver units by the mean of a secured encrypted communication protocol.

The user can select the receiver unit he wants to control. The front panel displays the status information of the remote receiver unit : battery voltage, radio transmission status, capacitor voltage, health check, continuity of firing line…

The firing sequence consists of several steps in order ensure the user's safety. Each step is clearly indicated by a light on the front panel : safety delay, arming, charging and firing.

Made in France

TECHNICAL DATA

Aluminium housing IP65
150 x 108 x 42 mm, 750 g approx.

Power supply : integrated batt. NiMh
Operating time : 7 hours approx.

Radio : 869 MHz, 0,5 W
Up to 3 receiver units

Receiver Units

The receiver units, numbered from 1 to 3, include all the circuitry for line continuity test, charging and firing. The firing line is connected to safety sockets by the mean of clip on lead safety plugs.

The front panel informs the user about the operation of the device (status, firing sequence...), it includes a TEST button for line continuity testing and a DELAY button which starts the safety delay.

The receiver units includes many safety levels :
safety keys, secured encrypted transmission protocol between control and receiver units, safety delay, permanent shunt on the line, automatic discharge of the capacitor, monitoring of capacitor voltage, monitoring of the operation by a dedicated microcontroller...

TECHNICAL DATA

Aluminium housing IP65
150 x 108 x 42 mm, 750 g approx.

1 firing line with integrated line test

Charging voltage : approx. 90 V
Stored energy : approx. 5 J
Charging time : approx. 3 s

Power supply : battery NiMh
Operating time : 7 hours approx.

Radio : 869 MHz, 0,5 W
Range : 2500 m (direct sight)

REMOTE CONTROLLED EXPLODER
ATLAS 150 RC

Made in France

Five receiver units

Lithium batteries CR 123

Rugged design IP 67

Very compact

COMPACT REMOTE CONTROLLED EXPLODER ATLAS 150 RC

The **ATLAS 150 RC** is a radio-controlled electronic exploder, designed for remote firing of electric detonators. It is a compact equipment, especially designed for explosive method of entry and other missions requiring low firing line lengths.

It consists of a control unit and 5 receiver units (paired at the factory), packaged in a foamed carrying case.

The housings are extremely rugged aluminium, IP 67 waterproof, dark colors, with dominant black and grey. They are particularly well adapted to harsh environments.

The receiver units control each one firing line and integrate a line-continuity test. They are equipped with versatile sockets, allowing to directly clamp the leads or to connect any type of 4 mm banana plugs. They are powered by two cheap and widespread photo lithium batteries, model CR 123.

The control unit allows to remotely control the receiver units individually (only one receiver unit) simultaneously (all receiver units) or by group (several receiver units, chosen by the user). Its control panel indicates information from the receiver units : the battery voltage, the state of the radio communication, the level of capacitors' charge, the faults.

This system incorporates many levels of security : a secure encrypted communication protocol, a safety delay, a multistep firing sequence, the presence of a shunt on the line, an automatic capacitors discharge, a permanent control of the capacitors' voltage, the need to simultaneously press 2 buttons to trigger firing, the firing is made only when the capacitors are fully charged, safety terminals, an operation supervision by a microcontroller, the redundancy of certain functions.

Another control unit, less compact, with improved ergonomics and advanced features is also available as an option (the version name is ATLAS 150 RC-2).

TECHNICAL DATA

Receiver Unit
IP 67 aluminium housing
Dimensions: 90 x 80 x 45 mm, 145 x 80 x 45 overall
Weight: 450 g
Power supply: 2 lithium batteries CR 123
Battery life: 150 hours (6 days) minimum at 20 ° C, in sleep
1 firing output with integrated continuity tester
Output voltage: 30 V approximately
Stored energy: 2 J approximately
Charging time : about 4 s
Radio frequency: 869 MHz
Radio Power: 0.5W
Radio channel: 5 channels are available (factory)
Scope: about 5000 m line of sight with 1/2 wave antennas
Temperature: -20 ° C to + 55 ° C

Control Unit
IP 67 aluminium housing
Dimensions: 90 x 80 x 45 mm, 145 x 80 x 45 overall
Weight: 450 g
Power supply: 2 lithium batteries CR 123
Battery life: minimum 10 h at 20 ° C
Controls up to 5 receiver units
Radio frequency: 869 MHz
Radio Power: 0.5W
Radio channel: 5 channels are available (factory)
Scope: about 5000 m line of sight with 1/2 wave antennas
Temperature: -20 ° C to + 55 ° C

REMOTE CONTROLLED EXPLODER
ATLAS 250 RC

Made in France

- Very easy to use
- Powerful : 390 V - 14 J
- Rugged design
- Watertight IP67
- Solid state
- Encrypted communication
- Galvanic isolation
- Autonomy 6 days in sleep mode

REMOTE CONTROLLED EXPLODER ATLAS 250 RC

ATLAS 250 RC is a radio-controlled electronic exploder, designed for remote firing of electric detonators. It is a compact, robust and powerful equipment, especially designed for missions of engineering battalions or EOD teams, needing an important security distance.

It consists of a control unit and 5 receiver units (paired at the factory), packaged in a foamed carrying case.

The housings are made of extremely rugged aluminium, IP 67 waterproof, painted in Nato green color. They are powered by cheap and widespread lithium batteries CR 123.

The receiver units control each one firing line and integrate a line-continuity test. They are equipped with versatile sockets, allowing to directly clamp the leads or to connect any type of 4 mm banana plugs.

The control unit allows to remotely control the receiver units individually (only one receiver unit) simultaneously (all receiver units) or by group (several receiver units, chosen by the user). Its control panel indicates in real time the important information from the receiver units : the battery voltage, the status of the radio communication, the step in the firing sequence (receiver not armed, receiver armed, capacitors charging, fully charged), and the faults.

The operation of the exploder **ATLAS 250 RC** is very easy and intuitive. The firing sequence consists in several steps, in order to strictly prevent non intentional firing and thus ensure the user's safety : safety delay, arming of the receiver units, capacitor's charging and finally firing.

This system incorporates the following levels of security : an encoded safety key, a secure encrypted communication protocol, a safety delay, a multi-step firing sequence, the presence of a shunt on the firing output, an automatic capacitors' discharge, a permanent control of the capacitors' voltage, the need to simultaneously press 2 buttons to trigger the firing, the firing is made only when the capacitors are fully charged, the safety terminals, the operation supervision by a micro-controller, and the redundancy of certain functions.

TECHNICAL DATA

Receiver Unit
IP 67 aluminium housing
Dimensions: 200 x 80 x 45
Weight: 580 g
Power supply: 3 lithium batteries CR 123
Battery life: 150 hours (6 days) min at 20°C, in sleep mode
1 firing output with integrated continuity tester
Output voltage: 390 V approximately
Stored energy: 14 J approximately
Charging time : about 5 s
Radio frequency: 869 MHz
Radio Power: < 0.5W
Radio channel: 5 channels are available (factory)
Scope: about 5000 m line of sight with 1/2 wave antennas
Temperature: -20 ° C to + 55 ° C

Control Unit
IP 67 aluminium housing
Dimensions: 175 x 80 x 45 mm
Weight: 490 g
Power supply: 2 lithium batteries CR 123
Battery life: minimum 10 h at 20 ° C
Controls up to 5 receiver units
Radio frequency: 869 MHz
Radio Power: < 0.5W
Radio channel: 5 channels are available (factory)
Scope: about 5000 m line of sight with 1/2 wave antennas
Temperature: -20 ° C to + 55 ° C

Waterproof transit case
Dimensions : 46.2 x 34 x 17 cm - Weight : 6.3 kg

FIRING LINES
LT-100, LT-200 et LT-350

- Very robust
- Twisted cable NSN 6145-99-017-3378
- Safety sockets
- Shunt
- Brake
- Three sizes : 100 m, 200 m, 350 m

FIRING LINES MOUNTED ON DRUMS

The firing lines consist of :

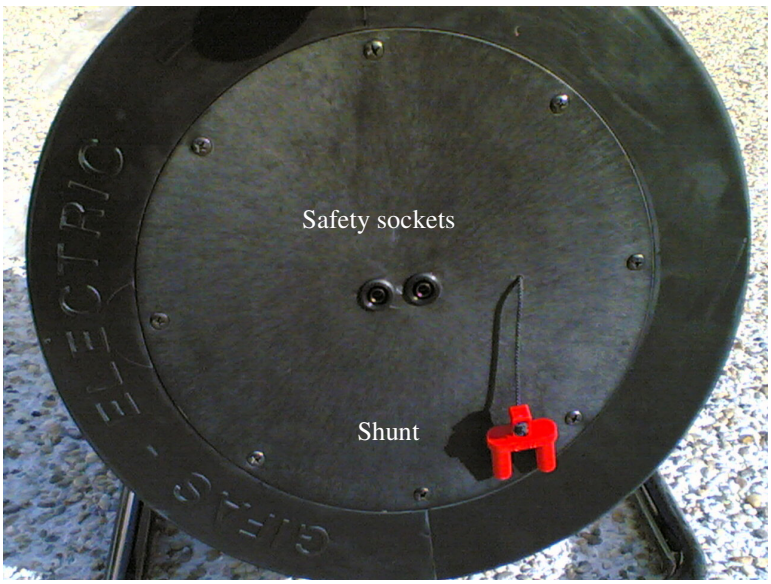
• twisted firing cable, colour black / brown, section 2 x 0,75 mm², **NSN 6145-99-017-3378**
• a drum made of butyl rubber, very robust, black colour

These firing lines exist in 3 different lengths :

Reference	Length	Diam. of drum
LT-100	100 m	24 cm
LT-200	200 m	30 cm
LT-350	350 m	35 cm

Front of the drum :

The front of the drum is fitted with two safety sockets (4 mm female) for connection of the exploder.



Two clip on lead safety plugs are also supplied for the connection on the two safety sockets.

A shunt is also supplied with the drum and can be connected on the sockets, if the user wishes.

Back of the drum :

The black knob located in the back of the drum is used to tighten the drum's brake.

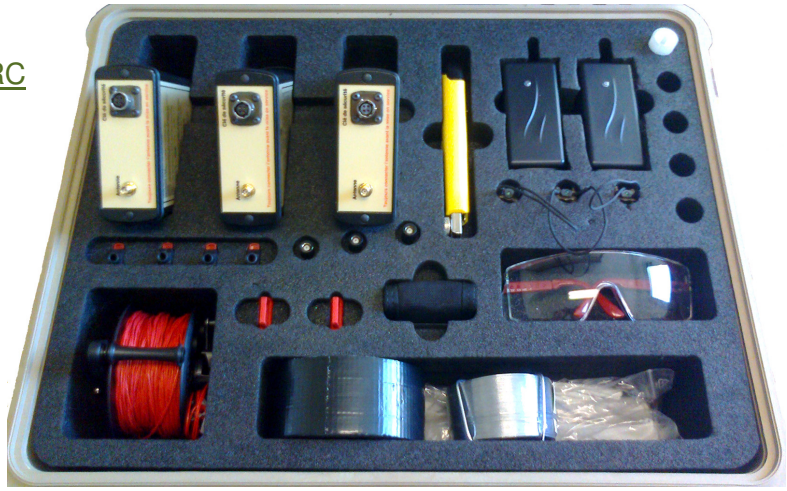
Turning in the clockwise direction tightens the brake, while turning in the anti-clockwise direction releases the brake.

Warning : make sure that the brake is not tightened before to roll or unroll the firing line.

DEMOLITION KIT DML-3

This demolition kit consists of a complete range of devices, tools and consumables needed in ammunition destruction jobs. It is supplied in a Pelicase 1550, with specific foaming.

This kit consists of :



- 1 remote controlled exploder ATLAS-400 RC comprising :
  - 1 control unit
  - 2 receiver units
  - 2 battery chargers
  - 3 safety keys
  - 3 antennas
  - 4 clip-on-lead safety plugs
  - 2 shunts
- 1 reel of firing cable, twisted pair, 50 m
- 1 reel of thin wire
- 1 pair of leather gloves
- 1 cutter
- 1 multi-tool Gerber 600 DET including a crimping tool
- 2 reels of vinyl electrical tape 19 mm x 20 m
- 1 mesh cloth adhesive tape 50 mm x 25 m
- 1 pair of protection glasses
- 1 case Peli 1550, dimensions 52 x 43 x 21 cm

Five extra locations in the foam are intended for electrical detonators with their safety tubes. (detonators are not supplied).

Option : one of the ATLAS-400 RC receiver units can be replaced by a hard wired exploder ATLAS-400, in order to get a mixed radio / wired kit. A drum fitted with 350 m of destruction cable can also be supplied as an option.

Made in France

PENETRATING SHAPED CHARGE ITS-2101

The 25 mm penetrating shaped charge **ITS-2101** (NSN 1375 14 486 6741) is in the form of a transparent cup provided at its base with three receptacles for receiving three support legs.

A cover pierced by a central hole is used as a fuse holder, allowing the nominal operation of the shaped charge. It closes the upper part of the shaped charge.

A copper cone is inserted inside the housing to form the shaped charge. It is removable to facilitate the preparation of the charge and the explosive loading of the latter.

The shaped charge consists of : 1 body, 1 cover, 1 copper cone and 3 feet.

CUTTING SHAPED CHARGES ITS-2102, ITS-2103, ITS-2104

The cutting shaped charge is in the form of a transparent U-shaped vessel equipped at its base with four supporting legs. Two end blades enable the association, if necessary, of several cutting charges, placed end to end, in order to form an elongated charge.

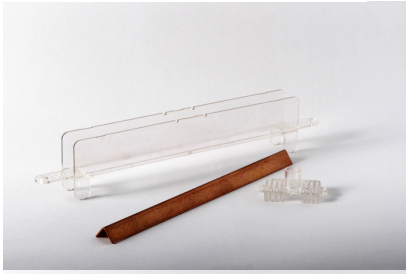
A cover pierced by a central hole is used as a fuse holder. The latter may be positioned at the center of the charge or at one of its ends, as a function of the desired effect.

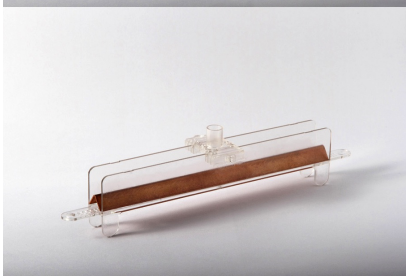
A copper wedge is inserted inside the housing to form the shaped charge. Thereof is removable to facilitate the preparation of the load, improving the adhesion of the explosive on copper and facilitate the loading of the explosive.

The shaped charge consists of: 1 body, 1 cover and 1 copper dihedral.

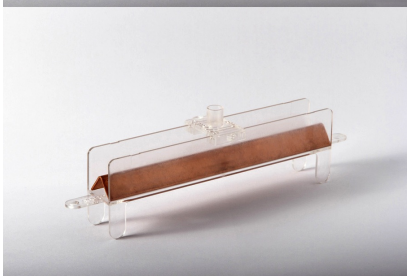
Made in France

ITS-2102 : 15 x 150 mm
NSN : 1375 14 486 6742

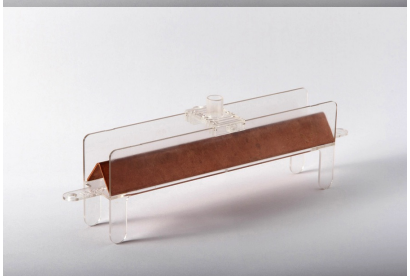




ITS-2103 : 20 x 150 mm
NSN : 1375 14 486 6743



ITS-2104 : 25 x 150 mm
NSN : 1375 14 486 6744



BALLISTIC SHIELD

The main function of mine sweeping shield is to improve user's protection against fragments moving on high speed in various mine sweeping assignments. Shield's structure is based on high performance material that has good kinetic energy absorption properties combined in light weight. Shield can be used by two persons at the same time if necessary.

Shield's functioning is based on a ballistic panel that provides ballistic protection and gives shield its structural strength. Combining those characters above in same structure is usually problematic because improving mechanical properties reduces ballistic properties and similarly optimising ballistic properties decreases strength. High performance aramid fibre has been used as reinforcement in the shield. Aramid weaved layers are laminated to each other by modified phenolic resin. This is optimal structure to combine structural strength and stiffness, ballistic performance and lightness.

Shield is provided with two hatches which can be blocked with two transparent shutters made of laminated anti-scratching material. Hatches with shutters makes it possible to work behind the shield still protected against fragments. Shutters are provided with mechanical fastening and using mechanism and they can be locked on two positions, open and closed. Soft Velcro tape fastened fabric cover reduces scratching during transportation and storing.

Shield is provided with two aluminium telescopic legs which are easily replaceable and makes holding the shield up possible. Two spare legs is included and they are placed inside the bag. There are four hinges for fastening the legs. One in each corner that makes it possible to use shield in different positions. There is also two spare hinges in a pocket inside the bag. Legs are wear resistant and their length is adjustable. Grip on ground is improved by spikes whose length is optional. During transportation and storing legs can be fastened with clipses inside the shield.

Handle is rigid, made of polyurethane elastomer and reinforced with a steel insert. It is fastened with screws on the backside of shield.

The shield is supplied with its storing and transportation bag, made of wear resistant material.

TECHNICAL DATA

Height : 1300 mm
Width 730 mm
Colour : dark green AN11 or customer defined
Protective area 0,97 m²
Hatches : 140 x 140 mm

Weight :
Ballistic panel : 9,4 kg/m² approx.
Fully equipped shield : 15 kg approx.

V50-value : over 600 m/s, including shutters (tested according to Stanag 2920)

Tested against .44 Magnum and 9 mm FMJ bullets (according to NIJ IIIA).
Panel does fulfil the norm, shutters not.

RAPID ARMOR SHELTER SYSTEM

The **Rapid Armor Shelter System** (international patent pending) is a new, innovative ballistic protection system. This military certified lightweight fortification wall system is ideal for fast moving troops. Fortification walls can be built and dismantled in a few minutes allowing troops to be protected even during short stops or operations.

Panels protect men or property mainly from fragments, protection level is v 50 > 600 m/s (1,1 g FSP, STANAG 2920). For bullet protection double panel system can be used.

The Rapid Armor Shelter System is simple and easy to use. Two basic shapes, squares (side length 950 mm, weight approx. 18 kg /each) and triangles (side length 950 mm, weight approx. 8 kg /each), are equipped with innovative quick coupling devices and supporting legs enable the construction of a large number of various fortification combinations in a very short time.

All components are capable of withstanding UV-radiation, fuel and oil spatters as well as temperatures between -40°C and +60°C. Panels do not absorb moisture.

This multipurpose protection system is easy to adapt for various military, police and peace keeping applications, e.g. protection during military operations, mine clearing activities, military or police sieges, UN personnel and property protection, as well as protection of humanitarian organisations.

The Rapid Armor Shelter System can also be used for civilian protection, e.g. protection of window and door openings.

When hung outside of vehicles during transportation, panels protect the men and property inside the vehicles.

TECHNICAL DATA

Material : Fibreglass and phenolic resin
Protection area : Square 0,90 m²
Triangle 0,39 m²
Thickness : about 9,5 mm (before painting)
Areal weight : under 19 kg/m 2
Splinter protection according to STANAG 2920 :
V50-value (1,1 g FSP) > 600 m/s
Explosion test : endures 0,5 bar overpressure, pressure influencing time 0,01 seconds. Testing method: 5 kg TNT exploded in 10m, no permanent transformation is allowed.

BALLISTIC PAW

The **Ballistic Paw** is a self-fill device using a non-explosive flammable liquid, classified HAZMAT Class 3, mixed with a small quantity of sensitizer immediately before use. At this point the device becomes an explosive unit. It is supplied in a rugged Peli case holding 40 devices, less detonators.

Immediate advantages over conventional 1.1 explosives: security, transportation, compatibility and shipping / product costs.

TECHNICAL DATA

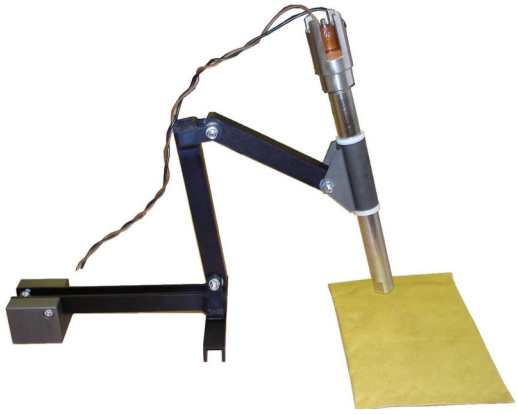
- UN Class 3 Flammable Liquid (Air/Land/Sea/Rail) for movement
- 27% greater power than TNT equivalent.
- VOD approx 6800 m/s.
- 1620 Pelicase packaging (27 kg total weight) 40 units
- 2400 Peli “Storm” Case packaging (7 kg total weight) 6 units
- Device all up weight : 350 g
- Takes any military/civilian detonator as well as det cord booster
- EOD uses for all munitions ranging from (AP) to large metal cased munitions (can be used in tandem on larger targets employing the vent and burn technique)
- Directional – point focal
- Steel Plate > 30 mm penetration
- Simple tripod / 45 degree attack angle – can be fired on all axis planes
- No tools required, simple to use and minimal training required
- Rapid deployment times / stand down times (det removed, liquid poured out immediately making device safe).

Ballistic Paw demonstration

PRECISION DISRUPTOR NEEDLE PLUS

NSN 1385-99-485-3385

The Needle (Plus) Disruptor is a multi-shot device capable of many firings and requires minimum maintenance.



Preparation of the Disruptor is straightforward and quick to achieve and may be carried out remotely from the target to enhance operator safety.

Needle Plus is constructed from non corroding stainless steel parts

TECHNICAL DATA

Disruptor: Length 310 mm, Main body dia 22 mm, Rear body dia 34 mm, Weight 940g
Holdall: Overall Size 380 X 220 X 120 mm, Overall equipment weight 3.2 kg

DISRUPTOR PIGSTICK

NSN 1385-99-208-3317

The Pigstick Disruptor is an established “General Purpose” disruptor suitable for disruption of devices that are contained in packages such as parcels, briefcases, etc.

Pigstick has been in active service for over 25 years with many bomb disposal teams worldwide and has proven to be an extremely reliable method of disruption.

The Pigstick Disruptor is a multi-shot device capable of many firings and requires minimum maintenance.

TECHNICAL DATA

Disruptor: Length 485 mm, Main body dia 37 mm, Rear body dia 50 mm, weight 2.95 Kg
Holdall: Overall Size 500 X 300 X 200 mm, Overall equipment weight 4 kg

DISRUPTOR HOTROD

NSN 1385-99-725-4389

The Hotrod Disruptor is an established equipment for disruption of Improvised Explosive Devices that are contained in larger or better protected devices such as those packed in large parcels, suitcases etc.

Hotrod may be deployed using an optional lightweight stand or by mounting to a Remotely Operated Vehicle (ROV) such as ABP’s Cyclops or Guardian. Preparation of the Disruptor is straightforward and quick to achieve and may be carried out remotely from the target to enhance operator safety.

The Hotrod is supplied as a complete kit (less stand) in a valise style holdall which includes pockets to secure all parts.

TECHNICAL DATA

Disruptor: Length 485 mm, Main body dia 50mm, Rear body dia 65 mm, weight 3.5 kg
Holdall: Overall Size 500 X 300 X 200 mm, Overall equipment weight 6.5 kg

RECOILLESS DISRUPTORS AND DE-ARMERS
ABL-1000, ABL-2000, ABL-3000

- Completely recoilless operation
- Optimal disruptive effect
- Simple to operate
- Can be assembled quickly and easily
- Exists in titanium lightweight version

RECOILLESS DISRUPTOR AND DE-ARMER ABL-1000 NSN 1385-99-130-7103

The ABL 1000 Recoilless Disruptor De-Armer has been developed as a dual role equipment to defeat the threat posed by both Improvised Explosive Devices (IEDs) and unexploded Ordnance (UXO).

When used as a Disruptor the ABL 1000 equipped with the supplied disruption barrel the equipment will project a high pressure water slug into the suspect device disrupting the firing circuit and providing a high probability of avoiding detonation.

TECHNICAL DATA

Disruptor : Length 515 mm, Weight 4.5 kg
De-Armer : Length 284 mm, Weight 3.5 kg
Container Overall Size : 873 X 428 X 187 mm
Overall equipment weight : 25 kg

RECOILLESS DISRUPTOR AND DE-ARMER ABL-2000 NSN 1385-99-132-8227

The ABL 2000 is a “General Purpose” Recoilless Disruptor designed to render safe IED’s found in containers such as a briefcases or similar sized packages.

The ABL 2000 Disruptor is a multi-shot device capable of many firings and requires minimum maintenance.

TECHNICAL DATA

Disruptor : Length 450 mm, Main body diameter 64 mm, Rear body diameter 78 mm, weight 3.2 kg
Holdall : Overall Size 550 X 350 X 150 mm
Overall equipment weight : 5 kg

RECOILLESS DISRUPTOR AND DE-ARMER ABL-3000 NSN 1385-99-930-7464

The ABL 3000 is a “High Power” Recoilless Disruptor designed to render safe IED’s found in larger or better protected containers than those that can be tackled with a General Purpose disruptor such as ABL 2000.

ABL 3000 has been subject to a series of formal tests against representative targets, sensitive explosives and pressure measuring systems ensuring reliable and consistent disruptive performance with complete recoilless operation ensuring minimum collateral damage and maximum operator safety.

TECHNICAL DATA

Disruptor: Length 460 mm, Main body diameter 78 mm, Rear body diameter 90 mm, weight 4.2 Kg
Holdall: Overall Size 550 X 400 X 200 mm
Overall equipment weight 6 Kg

TOOLS - HOOK & LINES

NON MAGNETIC TOOL KIT 36 PIECES

1 Tweezers
1 Double end scriber
2 Knifes
1 Scissors
1 Hacksaw
1 Blade for hacksaw
1 Wire brush
5 Screwdrivers flat
3 Screwdrivers offset
4 Screwdrivers crosspoint
7 Pliers (cutting, flat nose, round nose)
2 Adjustable wrench
1 Adjustable pipe wrench
1 Hammer ball point
1 Hammer sledge german type
2 Chisel flat
2 Bars lever
1 Transit case

NON MAGNETIC TOOL KIT 85 PIECES

In addition to the 36 pieces above :
24 Socket wrench (12 metric, 12 in inch)
20 Allen keys (10 metric, 10 in inch)
1 Ratchet
1 Sliding T bar
2 Extension bar
1 Universal joint
1 Transit case

EPSILON HOOK AND LINE KIT

NSN 1385-99-151-4889

Rigid case	1
Hook, small single barb	2
Hook, large single barb	2
Hook, medium single barb	2
Reel, white kevlar for hook & line kit	1
Hook triple barbed with keyring	2
Snatch block	2
Hook, small single plain	2
Hook, medium single plain	2
Hook, medium double plain	2
Hook, medium double barbed	2
Hook large single plain	2
25mm eye	4
Rope sling, 3mm dia x 2m long	2
Rope sling, 4mm dia x 2m long,	2
Rope sling, 5mm dia x 2m long,	2
Wire sling, 1.5mm dia x 2m long,	2
Wire sling, 2.0mm dia x 2m long,	2
Wire sling, 3.0mm dia x 2m long,	2
Shock cord, 10mm dia x 2m long, soft eye	1
Shock cord, 10mm dia x 1m long, soft eye	2
Shock cord, 12mm dia x 2m long, soft eye	1
Shock cord, 12mm dia x 1m long, soft eye	2
Piton spearpoint small	1
Piton spearpoint large	1
Piton chisel small	1
Piton chisel large	1
Single suction pad with anchor point	2
Cantilever clamp	1
Self grip forceps	2
Self grip pliers with eye	1
Karabiner (alloy) small screwgate	4
Pulling handle	1
Belt sling	1

SIGMA HOOK AND LINE KIT

NSN 1385-99-179-5408

Rigid case	1
Hook, small single barb	2
Hook, large single barb	2
Hook, medium single barb	2
Reel, white kevlar for hook & line kit	1
Reel, black kevlar for hook & line kit	1
Hook triple barbed with keyring	2
Snatch block	2
Hook, small single plain	2
Hook, medium single plain	2
Hook, medium double plain	2
Hook, medium double barbed	2
Hook large single plain	2
25mm eye	4
Rope sling, 3mm dia x 2m long	2
Rope sling, 4mm dia x 2m long,	2
Rope sling, 5mm dia x 2m long,	2
Wire sling, 1.5mm dia x 2m long,	2
Wire sling, 2.0mm dia x 2m long,	2
Wire sling, 3.0mm dia x 2m long,	2
Shock cord, 10mm dia x 2m long, soft eye	1
Shock cord, 10mm dia x 1m long, soft eye	2
Shock cord, 12mm dia x 2m long, soft eye	1
Shock cord, 12mm dia x 1m long, soft eye	2
Piton spearpoint small	1
Piton spearpoint large	1
Piton chisel small	1
Piton chisel large	1
Single suction pad with anchor point	2
Cantilever clamp	1
Self grip forceps	2
Self grip pliers with eye	1
Karabiner (alloy) small screwgate	4
Pulley with jammer cleat	1

Shackle D shape 13mm gate	1
Screw eye self tap	10
Sliding bar clamp system	1
Door stop plastic wedge	4
Pulling handle	1
Rope eye	1
Telescopic pole for 3 hooks	1
Hook spring gate 15mm	1
Hook spring gate 50mm	1
Light weight spring grip	2
Belt sling	1
Automatic opening snatch block	4
Torpedo release for 5.5 mm rope	2
Sticky eye	10
Gangway brace	2
Iedd skid pan (sledge)	1
Spring gate hook mount for tele pole	1
Triple barb hook mount for tele pole	1

HOOK AND LINE KITS

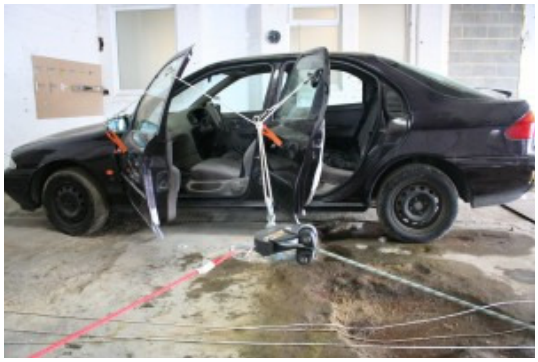
ALPHA 4 for buildings and vehicles

ALPHA 5 for buildings

ALPHA 6 for vehicles








ALPHA 4 HOOK AND LINE KIT

NSN 1385-99-979-2427

Karabiner with roller	4
Button pusher handle attachment	1
Finger pull handle opener attachment	1
Building door lever handle turner clamp	1
Building door knob turner clamp	1
Short screw assembly for clamps	1
Diamond tipped window breaker	1
Self grip handle lifter	1
Button pusher with suction pad	1
Key turner	1
Recessed handle lifter	1
Tyre clamp	1
Over hinge eye	2
Under door eye	2
Cavity wall eye	2
Door pusher attachment	1
Cavity wall eye fitting kit	1
Hood/bonnet a frame	1
Rigid case for hl007100	1
Duck tape 50mm x 50m	1
Self grip pliers with eye	1
Pulley with jammer cleat	1
Sticky eye	10
Gangway brace	1

ALPHA 5 HOOK AND LINE KIT

NSN 1385-99-184-6338

Karabiner with roller	4
Building door lever handle turner clamp	1
Building door knob turner clamp	1
Key turner	1
Over hinge eye	2
Under door eye	2
Cavity wall eye	2
Door pusher attachment	1
Cavity wall eye fitting kit	1
Rigid case for hl007200	1
Duck tape 50mm x 50m	1
Pulley with jammer cleat	1
Sticky eye	10
Gangway brace	1

ALPHA 6 HOOK AND LINE KIT

NSN 1385-99-213-3989

Karabiner with roller	4
Button pusher handle attachment	1
Finger pull handle opener attachment	1
Short screw assembly for clamps	1
Diamond tipped window breaker	1
Self grip handle lifter	1
Button pusher with suction pad	1
Key turner	1
Recessed handle lifter	1
Tyre clamp	1
Hood/bonnet a frame	1
Rigid case for hl007300	1
Duck tape 50mm x 50m	1
Sticky eye	10

DELTA LIGHTWEIGHT HOOK AND LINE KIT

NSN 1385-99-551-7759

This very light kit is designed for EOD & search operators working in combat zones. A minimalist kit, with only the essential tools for basic hook and line procedures. It is small & light weight, & the thigh pouch storage makes it the perfect solution for rapid response.

Thigh pouch	1
Small reel for 50m 3.5 mm white rope	1
Hook and line small suction pad	2
150 mm self locking plier with eye	2
Karabiner with roller	4
Light weight pulling handle	1
Hook, medium double plain	2
Hook, medium double barbed	2
Hook large single plain	2
25 mm eye	2
Piton chisel small	2
Piton chisel large	2
Karabiner (alloy) small screwgate	2
Screw eye self tap	10
Light weight spring grip	2
Sticky eye	4

TITANIUM DELTA LIGHTWEIGHT HOOK AND LINE KIT

This very light kit is designed for EOD & search operators working in combat zones. A minimalist kit, with only the essential tools for basic hook and line procedures. It is small & light weight, & the thigh pouch storage makes it the perfect solution for rapid response. Refined from the Delta kit, this kit is further reduced in weight. The hooks and pitons are a specialist titanium design, which significantly reduce weight and packing volume.

Thigh pouch	1
Titanium chisel piton	2
Light weight spring grip	1
Small self grip pliers	2
Self grip forceps	1
Titanium hook	6
Sticky eye	4
Wire sling 1.5 mm diameter x 2 m	1
Rope sling 3 mm diameter x 2 m	2
Karabiner with roller	4
Light weight pulling handle	1
Kevlar rope 3.5 mm x 50 m	1

GAMMA B PACKBACK HOOK AND LINE KIT

NSN 1385-99-361-2864

Wall stopper small	1
Wall stopper large	1
Self grip 'C' plier with eye	1
Set of tools in roll up holder	1
Backpack for hook and line kit	1
Box for backpack h&l & 1 reel	1
Safe-c security mirror	1
SM140SS 140 mm dia unbreakable stud mirror	1
Anchor line	1
Extension rod	2
Reel, white kevlar for hook & line kit	1
Hook triple barbed with keyring	1
Snatch block	2
Hook, small single plain	1
Hook, medium single plain	1
Hook, medium double plain	2
Hook large single plain	1
25 mm eye	4
Rope sling 3 mm dia x 2m long	2
Rope sling 4 mm dia x 2m long,	2
Rope sling 5 mm dia x 2m long,	2
Wire sling 1.5 mm dia x 2m long,	1
Wire sling 2.0 mm dia x 2m long,	1
Wire sling 3.0 mm dia x 2m long,	1
Shock cord 10 mm dia x 2m long, soft eye	1
Shock cord 10 mm dia x 1m long, soft eye	1
Piton chisel large	2
Single suction pad with anchor point	2
Cantilever clamp	2
Self grip forceps	1
Self grip pliers with eye	1
Karabiner (alloy) small screwgate	4
Karabiner (alloy) large screwgate	2
Shackle d shape 13 mm gate	2
Screw eye self tap	6
Door stop plastic wedge	2
Hook spring gate 15 mm	1
Hook spring gate 50 mm	1
Light weight spring grip	1
Automatic opening snatch block	2
Torpedo release for 5.5 mm rope	2
Sticky eye	15
Wedge it black	2
Spring gate hook mount for tele pole	1
Triple barb hook mount for tele pole	1
Telescopic inspection arm with h&l mount	1

HEAVY DUTY HOOK AND LINE KIT

NSN 1385-99-464-1274

A heavy-duty kit for moving vehicles or heavy suspect objects. The kit contains a range of rated slings and heavy duty snatch blocks. Supplied in a rigid carrying case.

150m reel, with white 10 mm line	1
Webbing sling, 50 mm wide x 2m	2
Webbing sling, 50 mm wide x 6m	2
Round sling, 1m diameter	2
Round sling, 2m diameter	2
Round sling, 4m diameter	2
Stake, short	2
Stake, medium	2
Stake, long	2
D shaped shackle	4
Snatch block	4
Large heavy duty hook, with eye	2
Case	1

LIGHTWEIGHT TRIPOD

NSN 3950-99-668-0573

A lightweight tripod used in conjunction with other hook & line equipment, offering the ability to lift and manoeuvre objects up to 75 kg.

The legs may be extended to different lengths and the feet swivel, to assist when working on uneven ground and may also be anchored with ground pins. A webbing strap can be connected to the feet to prevent the unit collapsing under load.

The tripod can be deployed by a single operator quickly and easily and comes complete with a range of pulleys to offer multiple solutions.

EOD TRIPOD

NSN 3950-99-666-7375

A strong tripod, specifically designed for EOD applications. The head is extruded for strength, and the unit is fitted with an integral pulley. Fitted with snap out legs for quick and positive deployment.

The legs may be extended to different lengths to cope with sloping ground. The feet swivel, again assisting when working on uneven ground and may also be anchored with ground pegs (supplied).

A webbing strap is also provided, which may be passed around the feet to prevent the unit collapsing under load. The feet are fitted with eyes, so that an extra pulley may be positioned to improve loading.

Supplied in a cordura carrying bag.

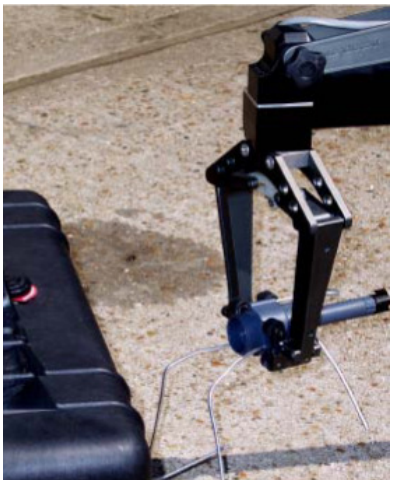
ROBOTIC HEAD TELESCOPIC MANIPULATOR AXIS-2 NSN : 1385 99 905 0766

The **AXIS-2** robotic telescopic manipulator has been developed with leading EOD operators in the British Army.

The manipulator offers the following advantages:

- Operators may carry out tasks at a 3 meter stand off, offering increased levels of safety.
- Ability to place disrupters, X ray equipment and a host of other tools used in device disposal and investigation.
- Jaws open/close and rotate under powered control. The angle of the jaws is achieved by manual adjustment.
- Adjustable counterweight for perfect balance.
- Telescopic tube sections, that simply plug together.
- Transport case (1700 Pelican).
- Rechargeable battery (charger included).
- Twice the rigidity of other telescopic manipulators.

The claw is positioned at the end of a 3 metre telescopic arm. This standoff distance significantly increases operator safety, in the event of an unplanned detonation. The manipulator also hosts a frangible section. In the event of an unplanned detonation, this section will fail first, significantly reducing the force transferred along the manipulator to the operator.



The extendable counterweight at the rear allows balance to be maintained when working. The counterweight may be preset, so that once a suspect device is lifted, perfect balance is obtained, thus making handling easier for the operator. Fine adjustment of balance may be achieved by moving the manipulator forwards or backwards on the shoulder strap.

The robotic claw is able to manipulate disrupters, X ray equipment and a host of other tools used in disposal or investigation techniques. The ability to grasp, and rotate objects in the claw also offers the options of moving devices into containment vessels, or to reposition them in. Once a device is held in the jaws, the ability to rotate the jaws ensures that the device may be moved in the safest orientation for the operator.

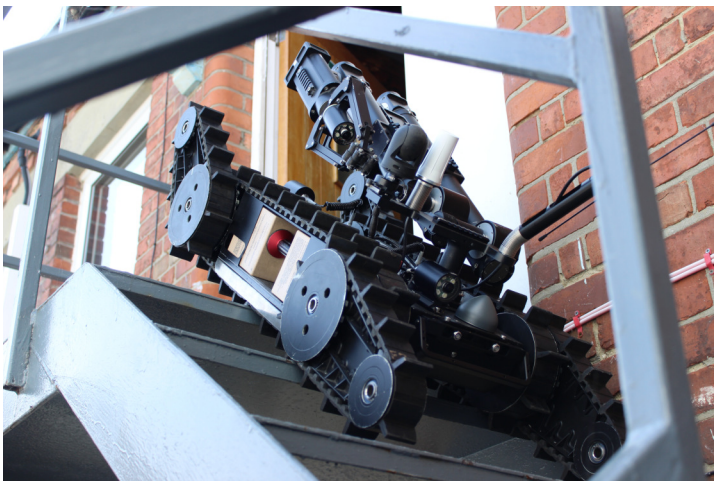
TECHNICAL DATA
Distance of operator to claw : 3 meters
Maximal length : 5,1 meters
Maximum weight that can be lifted : 15 kg
Maximum gripping force : 20 kg
Manipulator weight, assembled, ready to use : 14 kg
Manipulator weight, collapsed down, in transit case : 21,5 kg
Claw maximum opening : 200 mm
Claw rotation : 360 degrees continuous
Power supply : rechargeable battery 12V 3Ah Ni-MH
Operating time : manipulator used in a typical EOD operation : +/- 18 h

ROBOTS

REMOTE OPERATED VEHICLE
ZEUS

REMOTE OPERATED VEHICLE ZEUS

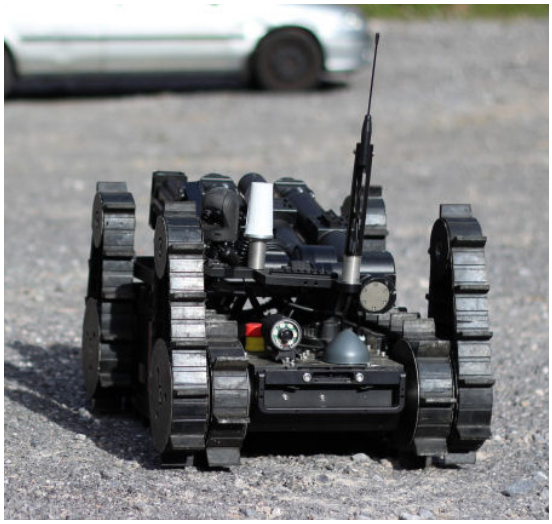
Zeus has been designed for the EOD and SWAT community to deal with a range of scenarios from simple reconnaissance to full scale EOD render safe procedures. The highly modular design allows the ROV to be configured from a lightweight simple ROV to a fully capable EOD ROV.



This ability to configure 'in field' gives maximum capability with minimum equipment. No longer will teams use multiple ROVs, now all those roles can be fulfilled with 1 platform. Now they have the strength and capability of heavier ROV, but with all the advantages of a lightweight ROV.

The modular design also allows operators to repair 'in field'. Should part of the ROV be damaged in action, there is no longer any need to send the entire unit back to a workshop for repair. By simply replacing the damaged part via the quick release modular construction, the ROV can be back up and running in minutes.

MANIPULATOR
Through claw camera view
Ability to mount additional tools on side of manipulator
Quick release
360° rotation



MAIN CHASSIS
Aluminium, stainless steel & titanium construction
Interfaces for 12v, 24v, RS232, camera & tether
Kevlar track with extreme climb ability
Waterproof & dustproof

CAMERAS
Up to 5 cameras : through claw, front view, rear view, pan tilt, nomad 'go anywhere'
Single camera design throughout ROV
Low light capability
High resolution
Infra red capability
Integrated white & infra red illuminators
Quick release mounting system

ARTICULATING TRACK SYSTEMS
Long for stability e.g. on stairs, short for manoeuvrability inside tight spaces
Quick release articulating track module

ARTICULATED ARM
Options for 1, 2, 3 and 4 section arm
Turret
No external wiring
Quick release
External Interfaces
Aluminium, stainless steel and titanium construction, reducing weight and centre of gravity

TECHNICAL DATA

Total assembled weight : 43 kg
Max speed (in any configuration) : 3 km/h
Payload : Up to 30 kg on flat surface
Drag capability : 50 kg on medium friction surface
Arm lift capability : retracted 21 kg, extended 7 kg
Operator Control Unit : Pelicase 1520, dimensions 485 x 392 x 192 mm, weight 10 kg

REMOTE OPERATED VEHICLE
CYCLOPS MK4D

REMOTE OPERATED VEHICLE CYCLOPS MK4D

NSN 1385-99-835-4885

The **Cyclops MK 4D** is the latest development in the Cyclops series, it has been developed from the well–proven variants in service with military and law enforcement organisations worldwide.

Now available in a digital version incorporating a COFDM radio system for enhanced performance.

Cyclops has a proven capability to : open doors, move furniture, search overhead lockers, search underneath vehicles seats, search vehicle boots / trunks / engine compartments, search bunk….

Vehicle control functions include:

- Vehicle drive, proportional joystick control
- Brake on / off control
- Arm extension and retraction, 2 speed control
- Arm raise and lower, 2 speed control
- Payload carrying head, pan and tilt controlled by joystick
- Automatic configuration for stair climb and descent
- Articulated drawbridge, automatic / down control
- 1 of 4 camera selection system
- Colour camera zoom control
- Auxiliary camera tilt facility (if fitted)
- Video / data channel selection
- Arm control for firing circuits with visual indication of armed status
- Fire control for each of 4 firing ccts
- Manipulator rotate and jaw control
- Drive system slow/fast speed control

TECHNICAL DATA

Size & weight
Width 395 mm max in tracked configuration, 535 mm max in wheeled config.
Length : 870 mm drawbridge down 790 mm drawbridge up,
Height (Stowed) : 400 mm Max
Weight (without payload or accessories) 34 kg

Manoeuvrability & Speed
Proportional control, 0-3 km/h tracked configuration, 0-6 km/h wheeled config.
Water fording capability: 65 mm tracked configuration, 135 mm wheeled config.
Towing capability: >1000 kg (terrain dependent)

Extending Arm
Extended length greater than 2 metres, retracted length within vehicle footprint.
Position of arm:- Adjustable from +90 degrees (vertically upwards) to minimum -7 degrees (below horizontal).

Payload carrying head (situated on extending arm).
Pan facility:- +/- 185-degree rotation from normal front facing position.
Tilt facility:- +/- 90 degrees from normal horizontal position with automatic system to keep head level as arm is raised and lowered.
Maximum payload: 10Kg (Dependant on arm position)

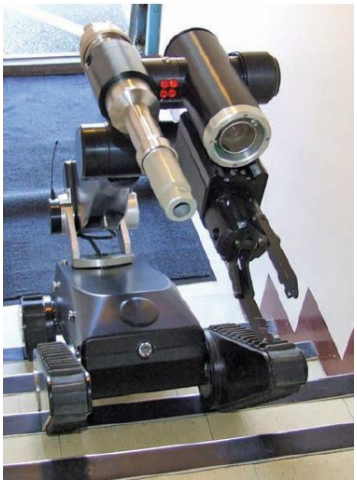
REMOTE OPERATED VEHICLE
GUARDIAN

REMOTE OPERATED VEHICULE GUARDIAN

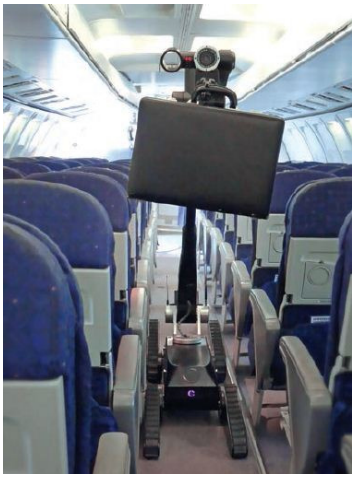
NSN 1385-99-173-8187

It's unique combination of size, payload capacity, reach, dexterity, manoeuvrability, operability and ability to negotiate a wide variety of urban and rural terrain combined with its "future proof" modular / open architecture construction, eclipse the capabilities of current competitors.

The GUARDIAN'S hybrid extending / folding arm has been designed to be strong and robust allowing deployment of significant payloads with the arm extended and up to 30 kg with the arm retracted. The arm extension capability avoids deployment difficulties in confined spaces often encountered with unfolding arm systems. The elbow joint provides "reach over" and "reach in" capability as required when deploying equipment into such areas as aircraft overhead lockers and car boots.



The GUARDIAN chassis has been developed to offer a highly stable and manoeuvrable platform. Track modules are able to move continuously through 360 degrees as independent front and rear pairs, ensuring great versatility in positioning, which in turn provides class leading obstacle negotiation capability and extremely stable stair climbing.



The GUARDIAN control station is housed in an attaché style case and has been developed to offer the operator maximum situational awareness with minimum operator workload and intuitive control. Video images from the four vehicle cameras are displayed on a dedicated 17" (430mm) high brightness TFT display. Picture in picture capability allows display of multiple camera images in a variety of configurations. GPS is also included as standard to provide additional positional data. Communication between the vehicle and base station can be by either radio or fibre optic cable. The fibre optic cable can be deployed from either a passive or active "intelligent" spooler.

TECHNICAL DATA

Size & weight
Weight : (without payload or accessories) 70.5 kg (inc. battery)
Width : 417 mm max
Length : 810 mm max (in stowed configuration)
Height : 530 mm max (in stowed configuration)
Control station : 475 x 600 x 289 mm - 26.8 kg

Manoeuvrability & Speed
Gap crossing capability : 500 mm
Speed : 2.8 kph max

Extending Arm
Max. vertical reach : "tiptoe" mode 2.6m, drive mode 2.1m
Maximum horizontal reach : 2.1m (from mast axis)
Turntable ± 185° (from centre axis)

Lifting capacity
Maximum payload : 10 kg (arm extended), 30 kg (arm retracted)

Camera system
Four colour cameras as standard: forward facing drive camera, rearward facing drive camera, forward facing awareness camera and pan & tilt camera

REMOTE OPERATED VEHICLE
SENTINEL

REMOTE OPERATED VEHICLE SENTINEL

The **Sentinel** is an advanced, reliable and robust explosive ordnance disposal robot with applications extending to CBRN.

It has electronically driven actuators controlling the 6 degrees of freedom arm. The manipulator arm has a lifting capacity of 75 kg retracted and 30 kg extended. It has six independent wheel motors which allow for travel over the most difficult of terrains. The Sentinel has an extended radio range of up to 1 km in a built-up area and line of site is >2 km using Military Frequency Hopping Spread Spectrum and COFDM Video.

TECHNICAL DATA	
Power :	12V Lead Acid batteries x 2
Radio Control :	COFDM
Video :	1.2 GHz to 1.4 GHz
Data :	400 MHz to 450 MHz
Operating Range :	1 km in a built-up area, >2 km line of sight
Cable Control :	150m
Drive :	6 motor electric drive
Speed :	Variable, max speed 5 mph
Terrain :	Rough terrains including road, sand, marsh, rocky
Weight :	270 kg
Arm Movement :	Electric
Reach :	2.4m Vertical Reach - 1.2m Horizontal Reach
Lift Capacity :	75 kg arm retracted - 30 kg arm extended
Turret Rotation :	+/- 220˚
Claw Rotation :	Continuous in both directions
Claw Opening :	300 mm
Turret and Claw	Electrical Rotation Actuator Control
Wrist Rotation :	+20˚, - 90˚
Turning Circle :	Neutral
Climbing Ability :	35° incline on stairs - 40˚ incline on slope Rear drop axel for improved climbing ability
Stow Dimensions :	1.55 m x 0.72 m x 1 m

Command Console

1. Rugged case is hard-wearing and weather resistant
2. 19” high resolution flat screen for video display
3. 2 x 3 axis Joystick including twist-to-zoom
4. Intuitive Arm, Turret and Claw movement
5. Advanced TFT touchscreen works in direct sunlight and while wearing gloves
6. Key-activated weapons screen with self-test and diagnostic feedback

UNDERWATER DETECTORS

UNDERWATER METAL DETECTOR **UWEX 722 C**

UNDERWATER METAL DETECTOR UWEX 722 C

NSN 6695-12-319-4209

The **UWEX® 722 C** is a highly sensitive metal detector for underwater and normal land use. It is pressure tested up to 60 m water depth and can be used in short or long version, according to the job.

The UWEX® 722 C detects all metals, also small parts of precious metals. The earphone is pressure waterproof and gives a clearly audible signal with large frequency deviation. Therefore it is easy to pinpoint the target. The operation principle suppresses conductivity effects of saltwater or difficult grounds.

The UWEX® 722 C consists of a search head with joint, which is flanged to the detector handle containing the detector electronics. For normal land use or for working in underwater vegetation an extension rod can be added at the end of the handle.

The detector is switched on by rotating the handle by 180° in a clockwise direction. The ear shell can be removed from the waterproof headset for use with a dry diving suit.

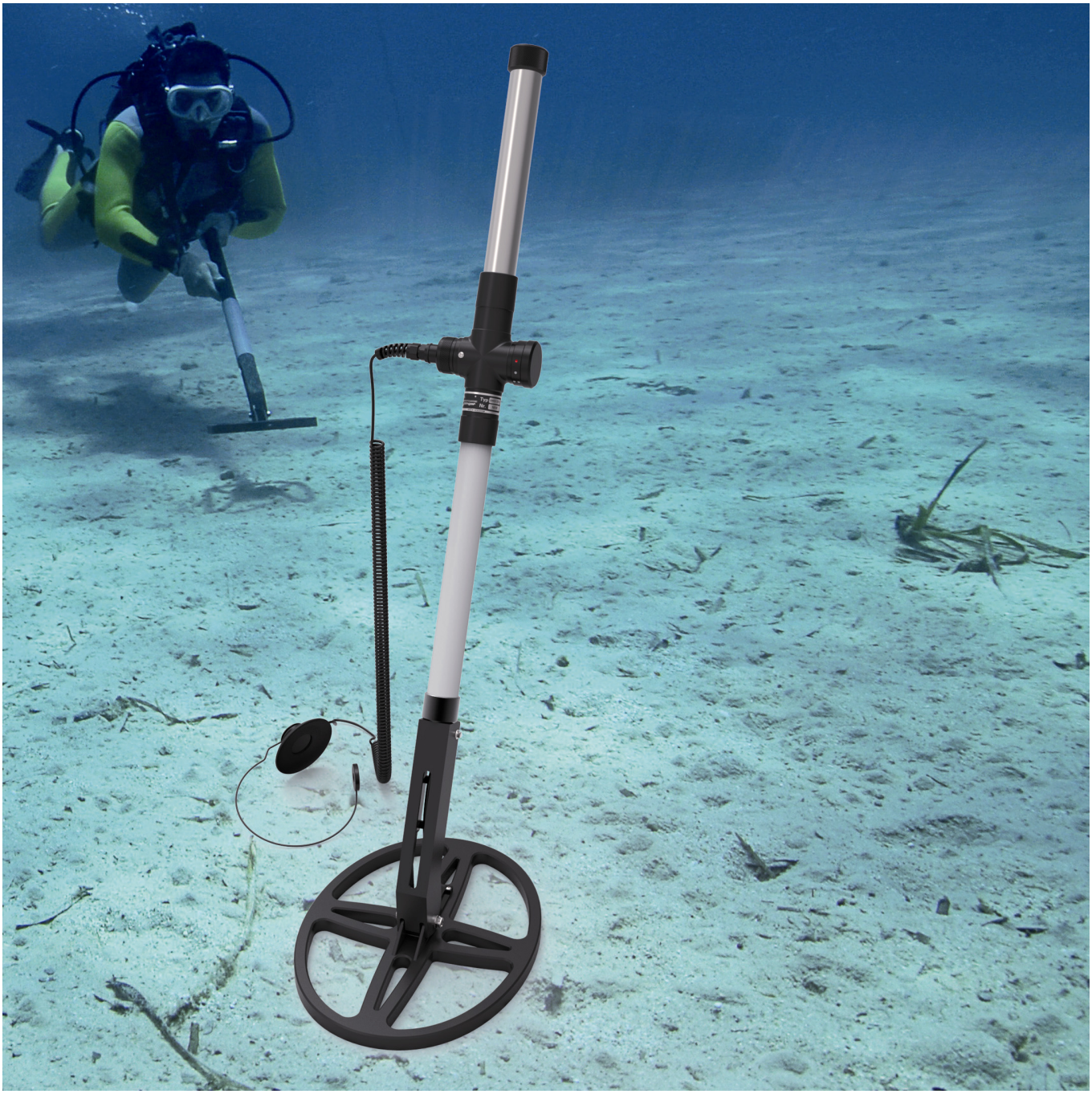
The sensitivity adjuster ring, easily accessible, even in the obscurity, permits tuning of the audio threshold. An internal adjuster allows the suppression of small-sized objects like nails, scraps and short wires. This speeds up underwater operations.

Due to sophisticated electronics, the device achieves a good performance at a low power consumption. It can be operated by a commercial 9V PP3 dry battery or rechargeable NiMH battery.

TECHNICAL DATA

Power supply :	1 dry battery 9 V type 6LR61 or rechargeable NiMH battery
Operating time :	20 - 25 h with alkaline battery 5 - 6 h with rechargeable battery
Temperature range :	-10 to +55 °C
Electronic cylinder	Ø 40 x 535 mm
Search coil :	Ø 200 mm
Length overall :	640 mm in short version
Extension rod :	580 mm
Weight :	approx. 1,2 to 1,4 kg
Pressure test :	7 bars (60 m)

UNDERWATER METAL DETECTOR **UWEX 725 D**



UNDERWATER METAL DETECTOR UWEX 725 D

EBINGER search devices are used worldwide to reduce the potential hazard from unexploded ordnance remnant of the world wars. UWEX®725 D is the latest design for underwater use, it relieves the scuba diver from equipment operation improving the efficiency of his work.

Due to the simplicity in operation and handling of the UWEX® 725 D, the diver is allowed to fully concentrate on his work.

The underwater metal detector can be programmed to fade out interfering signals from non-cooperative soil, magnetic rock and small pieces of scrap metal, which reduces the time factor significantly. The identification of metallic objects is facilitated by the modulation of the audio signal upon approaching the target.

The UWEX® 725 D is a compact underwater detector. It consists of a foldable oval probe with flanged joint connection, the handle with built-in PI electronics. On the control section there is the stepping switch for the operation mode dynamic/static as well as the pressure tight headset socket.

The ear pad and the headband can be dismantled to be worn under the headgear.

A vibration signal transmitter is available as additional accessory that can be acoustical perceivable under water.

The flanged battery tube accommodates 6 C-cell dry batteries or rechargeable batteries.

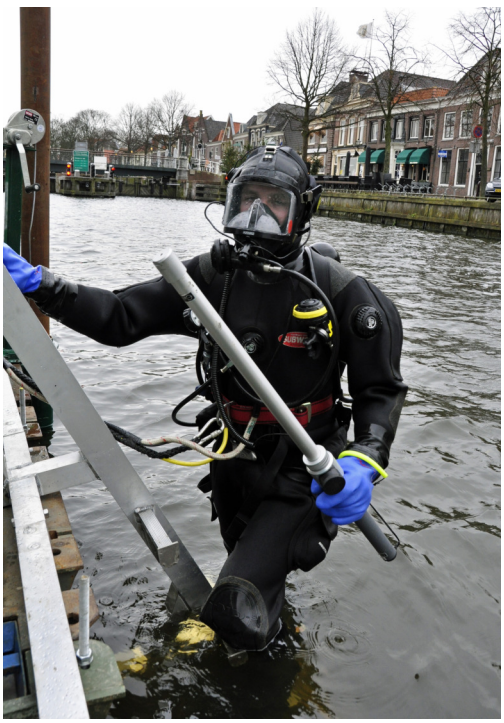
TECHNICAL DATA	
Power supply :	6 x 1,5V LR14 batteries or 6 x rechargeable NiMH LR14 batteries
Operating time :	25 h with alkaline batteries 16 h with rechargeable batteries
Temperature range : -10 to +55 °C	
Search coil : circular	
Length overall : 930 mm	
Weight : approx. 1,9 kg	
Pressure test : 7 bars (60 m)	

UNDERWATER MAGNETOMETER
MAGNEX 130 B

UNDERWATER MAGNETOMETER MAGNEX 130

The MAGNEX® 130 B is a high sensitive magnetometer designed for underwater operation. It is used for detection of ferromagnetic targets and is suitable for the detection of explosive devices such as bombs, sea mines, ordnance and other targets like wrecks or parts of ships.

The MAGNEX® 130 B is very easy to handle and also simple to operate : one single rotary switch with 3 sensitivity levels. The target detection is indicated by audio alarm which varies in frequency and volume with the distance and the size of the target. When the polarity of the magnetic field inverts, the alarm's type changes (continuous sound or intermittent sound).



The magnetometer has three detection stages with different ranges of sensitivity.

In the first and least sensitive stage the device functions dynamically and - in the vicinity of ferrous metal objects - adjusts itself continuously to the background noise/ interference.

In the second stage the device works in quasi-static mode. Here the adjusting to and suppressing of the external and undesired noise is carried out slowly. Thanks to the automatic adjustments carried out in these two detection stages the diver does not have to carry out adjustments on the device which naturally simplifies his work.

In the third stage the device works in static mode. In this stage the MAGNEX® 130 B possesses its maximum detection sensitivity. Naturally the range within which a particular ferro-magnetic object can be detected depends on the magnetic field strength of the latter.

TECHNICAL DATA
Power supply : battery 9 V type 6LR61 or lithium U9VL
Operating time : approx. 20 h
3 Sensitivity steps : 1000 nT - 300 nT - 50 nT
Maximal resolution : 5 nT
Audio signal : 0 to 4 kHz intermittent / continuous
Temperature range : approx. -15 to +50 °C
Dimension : total length approx. 1 m
Weight : approx. 1,35 kg
Pressure proof : up to 7 bar

UNDERWATER METAL DETECTOR **UWEX 725 K**

UNDERWATER METAL DETECTOR UWEX 725 K

NSN 6695-12-360-1620

The **UWEX 725 K** is a high sensitivity eddy current metal detector for underwater and normal land use.

The detector transmits an electromagnetic field of low intensity and bipolar character improving safety against magnetic influence fuses. It can be operated in a "silent mode", without headset, indicating target acquisition by a LED, in order to avoid the triggering of acoustic sensors.

The short detector length and the one-knob operation makes it a handy and easy to use for divers and for underwater EOD. In normal land use it can be applied in extended version.

The search device is waterproof to a depth of 90 m. The UWEX 725 K detects ferrous and non-ferrous metals and alloys. It transmits detection signals either by audio indication in the headset or by a visual indication through LED.

A large loop of 80 cm x 80 cm, working with the same electronics, is also available as an option.

TECHNICAL DATA
Power supply : 1 lithium battery 9V (amagnetic)
Operating time : approx. 10 h at +20° C
Temperature range : - 20°C to + 60° C
Search coil : Ø 230 mm
Large loop : Ø 800 mm
Electronic cylinder : Ø 30 x 535 mm
Extension rod : Ø 30 x 580 mm
Length : 2000 mm with extension rod
Weight : approx. 1,5 kg
Control pressure : 7 bars

NON MILITARY DETECTORS

MAGNETOMETER
MAGNEX 100 B

MAGNETOMETER MAGNEX 100 B

The **MAGNEX® 100 B** is a handy iron locator in longterm stable and innovative differential probe technology.

It detects magnetic anomalies in the normal magnetic field of the earth as caused by buried ferromagnetic objects. The detection range of the MAGNEX® locator depends on the size, position and magnetic signature of the objects to be detected.

The probe is moved in wide sweeping movements over the ground. As soon as the locator's probe is moved into the vicinity of a ferromagnetic object, the local field distortion is converted into an audible alarm. The audio coding of the field polarity (pulsating/continuous) indicates the magnetic polarity (north or south pole) of the object to be detected.

Two dynamic detection steps are foreseen for fast subsurface localization of ferromagnetic parts. In this mode continuous magnetic interferences e.g. mineralized soil or fences can be suppressed to certain limits.

In the static mode the indication of deep buried ferromagnetic objects is provided by an audible signal, which rises in intensity as the detector approaches the target.

Constructional features :

The **MAGNEX® 100 B** is a bar-type device containing sensors which are connected in differential mode, an electronics and the battery compartment.

The locator is put into operation by switching the rotary adjuster into one of the 3 sensitivity steps. The compensation knob allows a compensation of magnetic signatures and the device adjustment.

The detection signals are transmitted by a built-in piezo loudspeaker, which indicates the detected magnetic field by a continuous or pulsating increasing audio signal informing about the detected intensity and polarity.

TECHNICAL DATA
Power supply : 9V battery IEC Nr. 6LR61 or rechargeable NiMH battery 9V / 250mAh
Operation time : approx. 14 h continuous operation with alkaline battery approx. 7 h with NI-MH battery
Sensitivity : approx. 500 nT for maximum audio signal (approx. 1kHz)
Audio signal : continuous or pulsed, approx. 0...1 kHz
Temperature range : approx. -10° C to + 55°C
Sensitivity threshold : sensitivity threshold approx. 50 nT (Step 3, static mode)
Weight : approx. 800 g with battery
Dimension Overall Length : approx. 110 cm

UNDERGROUND MARKING SYSTEM EBEX 300

This locator can pinpoint the position of subsurface markers. The great advantage of the system consists in an object-selective location.

Thus, for example, the position of different pipe and cable lines concealed in the ground can be marked precisely and for an indefinite time. The different frequencies of these permit differentiation between several lines.

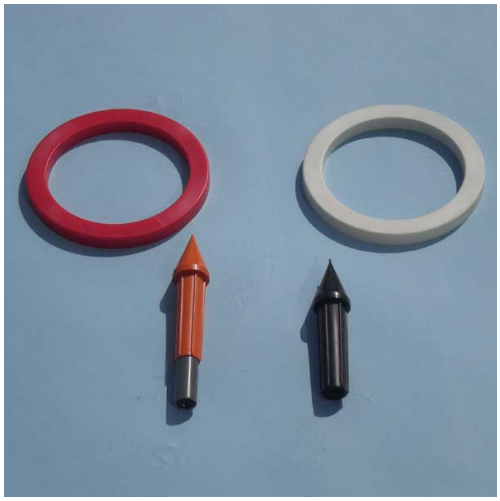
Scrap metal as well as the mineralization and ground conductivity have almost no effect on the location result. The subsurface markers can be detected even in the proximity of large masses of metal.

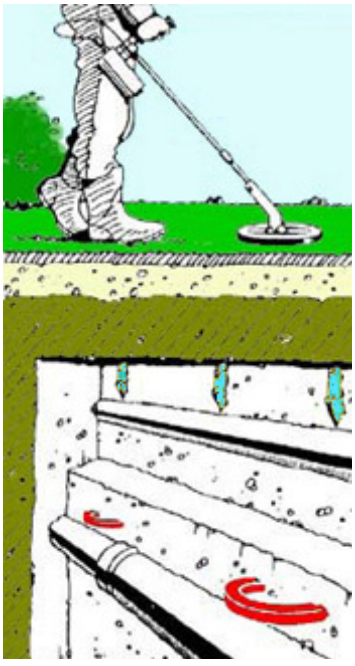
Since 40 years EBINGER passive subsurface markers are installed underground. With its robust design the EBEX® 300 locator is built for longtime use in adverse conditions.

Subsurface markers :

Passive, electromagnetic subsurface markers
Ring shaped or cylindrical
For different marking applications
4 standard response frequencies
Optional customer-specific frequencies upon request
Watertight and resistant to weathering

In accordance with their intended use as durable markers, they are resistant to weathering and cannot rot.





In addition to the 4 standard natural resonance frequencies, they can also be supplied with customer-specific ones.

The subsurface markers do not require any maintenance, have no batteries and are designed as a purely passive devices.

The markers are excited by the low-frequency transmission signal of the **EBEX® 300** locator which forces them to emit an own natural resonance signal which is of higher frequency. This feedback is received selectively by the locator which converts it into an audio indication signal. The markers laid in the ground are frequency-coded for characterizing the line or point they are marking.

METAL FRAGMENT DETECTOR EB 450 S

The fragment detector **EB 450 S** was designed especially for the forestry and timber industry. Its design is tubular and modular : all components of the device are integrated in a tube, which suppresses the need of cable links, thus improving product reliability. The battery compartment can be unscrewed to ease the transport.

The EB 450 S works on a sinus technology developed since more than 30 years for mine clearance applications. The main features of the EB 450 S are the high sensitivity, the suppression of interferences in a great extend, and a large detection range. The detector can be operated under adverse climatic conditions (rain, snow, frost, heat). The search head is waterproof and rugged.

This device detects all conductive objects, ferrous and non ferrous metals, including small fragment or thin metal sheets. An audio alarm is given by an integrated piezo buzzer. A single rotary button is used to turn the device ON/OFF and to set the sensitivity.

TECHNICAL DATA
Power supply : 6 batteries 1,5 V type LR 14
Operating time : 100 h approx. at 20 °C
Temperature range : -15 °C to +55 °C
Length : 1030 mm approx.
Diameter of search head : 260 mm approx.
Weight : 1,5 kg

TERMS OF SALES

I. COMMANDES
Toute remise de commande à la société CODETEL implique l'adhésion sans réserve de l'acheteur aux présentes conditions générales de vente.
II. PRIX
Nos prix s'entendent hors taxes, départ usine. Les frais d'expédition viennent en sus. Nos prix sont valables un mois, sauf spécifications particulières. Pour le matériel importé, nous nous réservons le droit de modifier nos prix en fonction des variations de la parité de la monnaie du pays d'origine et des droits de douane, ceci en conformité avec la réglementation en vigueur. Notre minimum de commande est de 100 Euros.
III. DELAIS DE LIVRAISON
Les délais de livraison sont donnés par la société CODETEL à titre indicatif. Les retards ne peuvent pas justifier l'annulation de la commande. L'acceptation éventuelle par la société CODETEL de pénalités de retard doit figurer sur l'accusé de réception. Celles-ci ne pourront en aucun cas dépasser 5 % du montant de la commande.
IV. TRANSFERT DE RESPONSABILITE
Les risques passent de la société CODETEL au client lorsque la fourniture est mise à sa disposition et que le bordereau de livraison est expédié. Des indications telles que "franco" ne sont que des concessions sur les prix sans déplacement de responsabilité.
V. RESERVE DE PROPRIETE
La société CODETEL conserve la propriété de la marchandise jusqu'au paiement intégral de celle-ci. Jusqu'à ce moment et dès la livraison du matériel, le client aura la charge d'assurer celle-ci contre tous les risques qu'il peut courir. A défaut de paiement intégral du prix, le client s'engage à restituer la marchandise à la société CODETEL sur simple demande écrite de cette dernière. Le client ne pourra ni donner la marchandise en gage, ni en transférer la propriété à titre de garantie. En cas de saisie opérée par les tiers sur cette marchandise, le client sera tenu d'en informer la société CODETEL. Dans tous les cas où la société CODETEL sera amenée à faire jouer la réserve de propriété, les acomptes versés par le client resteront acquis à titre d'indemnité forfaitaire.
VI. TRANSPORT
Les marchandises voyagent aux risques et périls du destinataire, quel que soit le mode de paiement du transport. Le client doit procéder à une inspection du matériel à l'arrivée et, en cas d'avarie ou de manquant, mentionner par écrit les réserves sur le récépissé du livreur et adresser ses réclamations au transporteur dans les 48 heures suivant la livraison.
VII. PROPRIETE INTELLECTUELLE
Les documentations, plans, modèles et outillages réalisés par la société CODETEL restent son entière propriété même s'il l'ont été à la demande du client ou si une participation aux frais a été facturée au client. Ils ne peuvent être communiqués à des tiers, reproduits ou utilisés sans notre autorisation écrite. La société CODETEL se réserve le droit d'apporter toute modification à ses produits par rapport aux renseignements portés sur les documentations et qui n'ont qu'une valeur indicative. Les matériels de la société CODETEL ne peuvent être vendus que sous les marques ou dénominations apposées par la société. Toute autre mention et tout changement de leur présentation et conditionnement doivent avoir reçu l'accord préalable de la société CODETEL.
VIII. CONDITIONS DE PAIEMENT
Les factures de la société sont payables nettes et sans escompte à notre siège social par traite à 30 jours fin de mois, sauf mention particulière. Tout marché peut être considéré par la société CODETEL comme annulé de plein droit, faute de paiement intégral dans les délais convenus, sans autre formalité qu'une simple mise en demeure par lettre recommandée avec accusé de réception à l'acheteur restée sans effet sous huit jours. L'annulation du marché entraînera la reprise de la fourniture par la société CODETEL et les acomptes reçus resteront acquis à la société CODETEL à titre d'indemnité forfaitaire. Si l'expédition des matériels ou de la fourniture se trouve retardée du fait de l'acheteur, la société CODETEL pourra établir une facture de mise à disposition payable dans les mêmes délais que si l'expédition avait eu lieu à la date prévue.
En cas de non paiement à l'échéance, la totalité de la créance devient exigible. La société CODETEL se réserve le droit d'appliquer des pénalités de retard (taux égal à 1,5 fois le taux légal courant de plein droit à compter du premier jour suivant l'échéance), de suspendre l'exécution et la livraison des commandes en carnet et de faire jouer la réserve de propriété.
En cas de changement grave intervenu dans la situation de l'acheteur (décès, incapacité, dissolution ou modification des sociétés, hypothèque de ses immeubles, mise en nantissement de ses fonds de commerce, soumission à une procédure collective de redressement ou de liquidation), la société CODETEL se réserve le droit d'exiger des garanties ou d'annuler le solde des commandes en carnet au nom de l'acheteur.
IX. GARANTIES
Le délai de garantie est de 12 mois à compter du jour de livraison, sauf indication particulière. Le client, sous peine de déchéance de garantie, est tenu de signaler à la société CODETEL :
- les vices apparents dans un délai de 10 jours suivant la livraison,
- les vices cachés dans un délai de 10 jours suivant leur découverte.

La garantie s'applique à toutes les pièces reconnues défectueuses par la société CODETEL. Cette garantie se traduit par la remise en état ou par le remplacement de la pièce défectueuse, à l'exclusion de tous autres frais. La garantie ne s'applique pas à l'usure normale des pièces ou aux détériorations provenant d'une utilisation non conforme aux caractéristiques du matériel, d'un défaut d'entretien, d'un non respect des normes et règles de l'art, d'un défaut de stockage. Le remplacement de pièces pendant la période de garantie ou autres interventions sur le matériel ne peut avoir pour conséquence de prolonger la garantie de celui-ci. Les réparations ou autres interventions effectuées sur le matériel sans l'accord préalables de la société CODETEL entraînent la perte du droit à la garantie. Aucun matériel ne sera réexpédié à la société CODETEL sans son accord préalable.
X. REPRISE DE MATERIEL
Toute reprise de matériel doit avoir été négociée au préalable avec la société CODETEL. Aucun matériel hors standard ne sera repris. Les produits standards, n'ayant jamais été montés ou utilisés, ne pourront être repris, selon le cas, que s'ils ont été livrés depuis moins d'un an et après examen par la société CODETEL de l'état de ces produits. Les produits voyageront aux frais du client et seront achetés avec un abattement de 30 % sur le prix facturé.
XI. ASSURANCES ET RESPONSABILITES
L'acheteur accepte la limitation du montant des garanties couvrant la responsabilité civile de la société CODETEL. Il reconnaît avoir connaissance du montant de ces garanties. Au cas où un sinistre viendrait à dépasser le montant desdites assurances, l'acheteur accepte expressément de rester son propre assureur pour la couverture de l'excédant. Cette renonciation à recours à l'encontre de la société CODETEL est opposable à tous les mandataires de l'acheteur qui a la charge de les informer le cas échéant.
XII. JURIDICTION
Pour toute contestation les tribunaux d'Avignon (84) seront seuls compétents. La loi du contrat est la loi française.

421 Allée des Entrepreneurs
ZA Belle Croix
84210 VENASQUE
FRANCE
Tél : + 33 4 90 64 00 00
Fax : + 33 4 32 81 05 28
info@codetel.fr
www.codetel.fr