

TECHNICAL INFORMATION ON UPEX 740M

Updates and Upgrades on the original EBINGER Large loop metal detector

- NEW mode adjuster Low, Medium, High
- NEW light weight Lithium Ion battery technology
- Optional UPGRADES on all UPEX's
- Optional Multi-Channel System
- Optional Digital geophysical mapping (with GPS) and EPAS – GPS Software
- Optional One man operation
- Improved "Signal to Noise Ratio" (SNR)



(Photo: UPEX in operation)

Technical data of UPEX® 740M3

ANNEX I

Power supply	Lithium-Ion battery pack 11,1 V 4.4 Ah	Ebinger Part Number
	8 dry C- cells 1.5V (IEC LR14) Rechargeable Ni MH 1.2V / 4.5Ah	
Operation time*	LIION 11,1V 4.4Ah approx. 15hrs at 20°C	40420054
Temperature Range	(operation) ⁽²⁾ -35°C to approx. +65°C	
	(storage) -55°C to +75°C	
Dimensions	(W x H x D)	
UPEX® Electronic box	approx. 270 x 90 x 80 mm	30740114
LIION Battery pack	approx. 180X50X50mm	40420054
Battery container	approx. 290 x 105 x 50 mm	40740110
Large loop	approx. Ø 2600 mm	10740132
Search head	approx. Ø 450 mm	10740141
Search head	approx. Ø 260 mm	10740030
Weight:		
Electronic box (without battery)	approx. 1.1kg	30740114
LIION battery pack	approx. 0.4kg	40420054
LIION battery charger	Approx. 0.2kg	60000049
Large loop	approx. 0.7kg	10740132
GRP Frame 2 x 1 m	approx. 4.2kg	20740011
Transport hard case (incl. Electronic box, search coil, and accessories)	approx. 8.8kg	60740750
Search head 45cm	approx. 1,6kg	10740141
Signal display	Audio alarm and galvanometer indication 0 – 100skt	
Sensitivity calibration	3 ranges (low, medium, high), Sensitivity Adjuster, Frequency shift, delay Adjuster	
Delay time ranges	25µs, 30µs, 35µs, 45µs, 55µs, 75µs, 100µs, 150µs, 200µs, 250µs	
Bluetooth® Data Transfer (1)	Handheld BT adaptable to UPEX® 740M, MAGNEX® 120LW	
NATO Stock Number:	6695 - 12 -349 - 1502	
Level of protection:	*Transport bag water resistant synthetic canvas	
Search Coil:	IP68 (IEC 529)	
Electronic Box:	IP65 (IEC 529)	

(1) "The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Ebinger GmbH is under license.

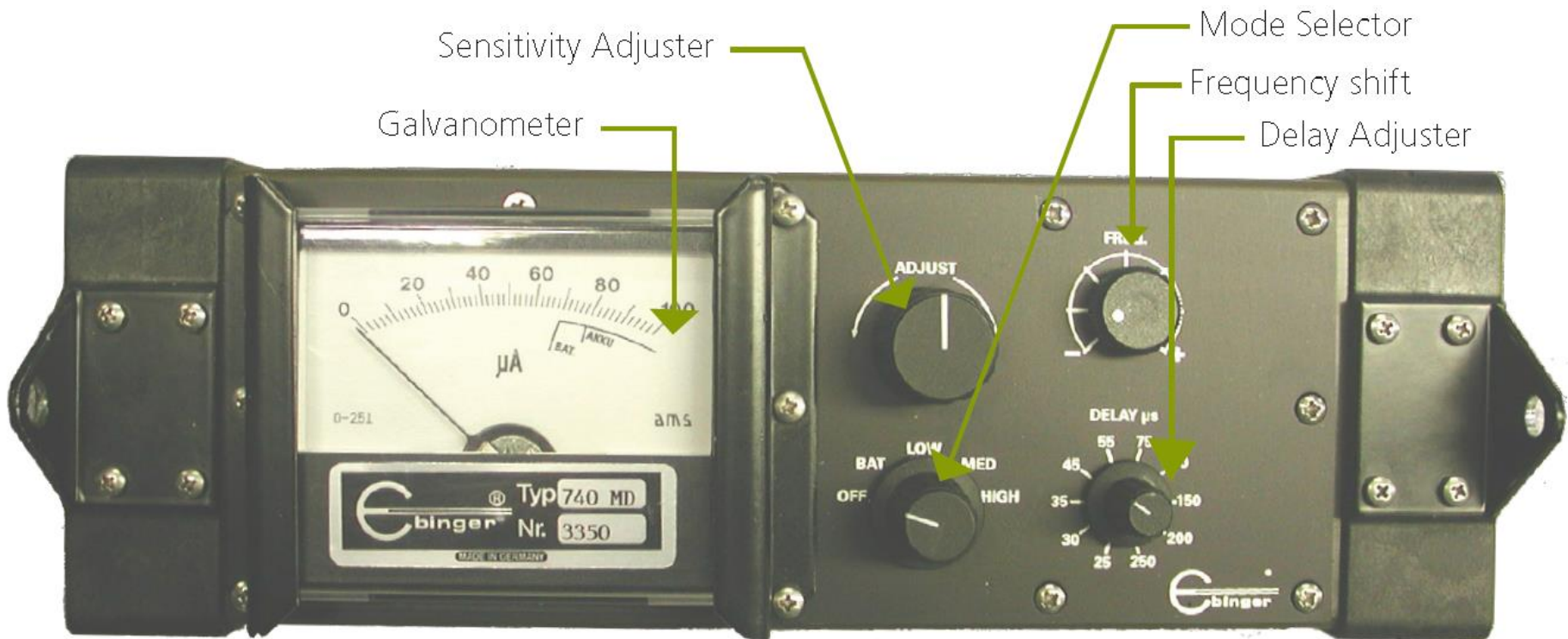
(2) Protected close to the human body

IMPROVEMENTS / UPGRADES ON UPEX® 740M

1. UPEX® 740M3 Electronic box NEW -MODE SELECTOR-: Low, Medium, and High

Low = low sensitivity - Use this mode if strong electromagnetic fields cause unwanted readings or strong mineralization of the ground causes interfering signals.
Med = medium sensitivity. Normal operation mode (this is equivalent to previous versions of the UPEX 740M)
High = high sensitivity. Use this mode only when there are no interfering electromagnetic fields and the ground is free of mineralization (co-operative soil).
Higher detection ranges
Improved "Signal to Noise Ratio" (SNR)

NEW -FREQUENCY SHIFT-: to reduce external electromagnetic interferences (e.g.Powerlines)

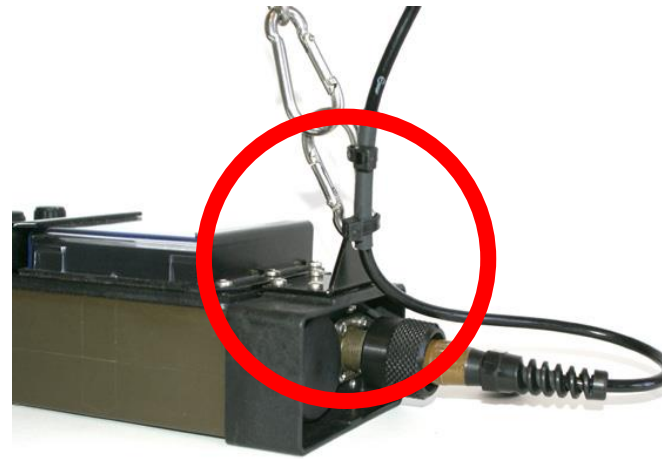


2. Mechanical improvements: NEW 3PIN – CONNECTOR 3-Pin-Connector for large loop search cable with improved robustness



NEW Attachment

New connection of carrier belt/shoulder trap by a karabiner hook (all previous electronic boxes can be modified)









**NEW BATTERY HOLDER
RECHARGEABLE BATTERY**

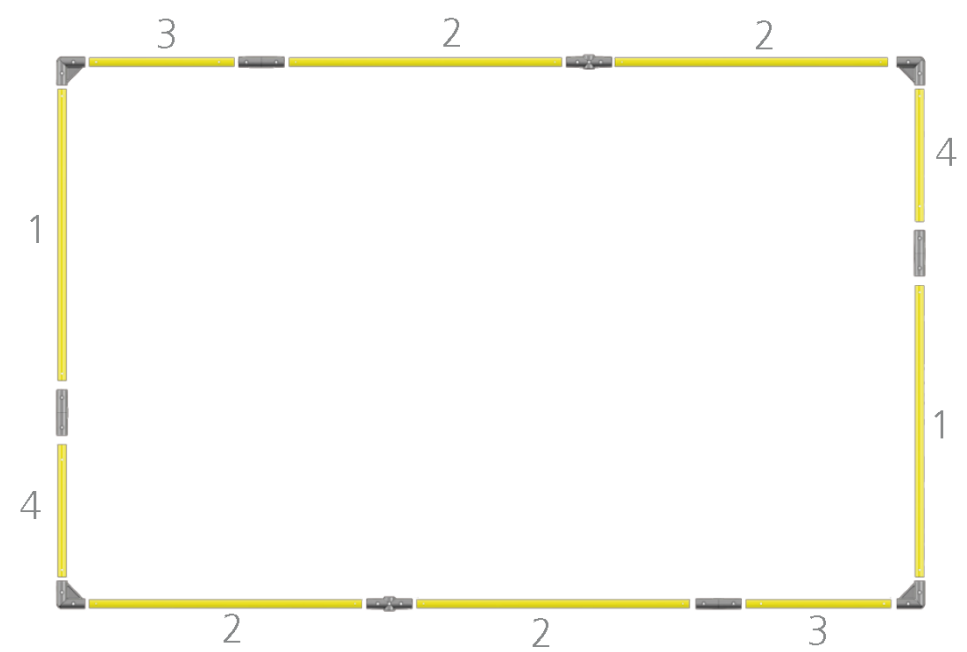


New attachment for the light weight battery pack on the UPEX® Electronic Box
New light weight rechargeable battery pack Lithium Ion 11.41V / 4.4Ah 0.4kg


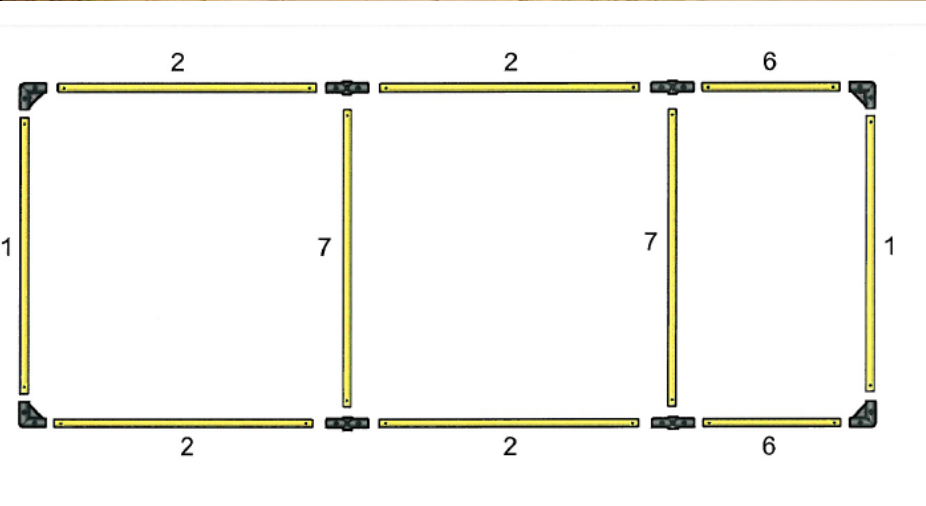


3. LISTING OF ALL SEARCH FRAMES IN DIFFERENT CONFIGURATIONS
NEW Support frame and large loop version (OPTIONAL)

Pos.	Dimension	Photo
1.	<p>260mm search head</p>	
2.	<p>450mm search head</p>	
3.	<p>1 x 1m search frame carrying version</p>	

<p>4.</p>	<p>1 x 1m search frame wheeled version (MF3) “new cable”</p>	
<p>5.</p>	<p>2 x 1m search frame carrying version</p>	
<p>6.</p>	<p>2 x 1m search frame wheeled version (MF3) “new cable” with DGPS</p> <p>Digital geophysical mapping (DGM) is commonly used to accurately locate, identify, and select metallic anomalies that may be unexploded ordnance (UXO). Modes of DGM include ground-based and optional airborne platforms with multiple sensor arrays and man-portable single sensor systems. Typically, the UPEX/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 Explosive Ordnance Disposal (EOD) specialists to locate (reacquire), investigate (dig), and remove (clear) the metallic anomaly.</p>	

<p>7.</p>	<p>1,5 x 2,5m search frame carrying version (or 2 x 2m)</p>	
<p>8.</p>	<p>Dia. Approx. 2,8m Octagon frame</p>	
<p>9.</p>	<p>Multi-Channel- Hovercraft (2) x (2x1m)</p>	

10.	<p>UPEX® 740MV Multichannel mounted on a vehicle</p>	
11.	<p>Ebinger special customized carrying frame (+0,5m)</p>	

Standard configuration for UPEX 740M3 consisting of:

Pos.	Ebinger Part Number	Description	quantity
1.	UPEX 740M304	Large loop metal detector, 3step L,M,H with attached battery holder and Data output consisting of:	1
2.	10740132	Large loop Ø 2600mm for UPEX 740M with Amphenol type and connection cable 3.5m	1
3.	30740114	UPEX® 740M3 Electronic box Mil. Incl. battery holder	1
4.	40420054	Rechargeable battery pack, 11.1V / 4.4Ah LIION	2
5.	60535001	Carrying strap UPEX 740M for Electronic box	1
6.	10006238	Stainless steel snap hook	2
7.	10002586	Shoulder pad for carrying strap	1
8.	60000049	Rapid charger LG2241 with microcontroller to charge LIION battery pack	1
9.	60740610	Transport bag for carrying frame	1
10.	20740011	GRP carrying frame for large loop with straps	1
11.	60740750	Transport hard case for UPEX 740M3, grey with foamed liner	1
12.	10003169	Test plate PI_2 AL	1
13.	60740956	Assembly instruction for UPEX frame	1
14.	60740955	Operation manual (in Cambodian language Khmer)	1
15.	60740951	Operation manual (in English)	1


Additional support:

- In country training for operators
- Service and maintenance training in country “basic service”
- Professional Service support by local partner trained by Ebinger personnel
- Spare parts availability in country

The original Ebinger large loop

The EBINGER-Large Loop Technology is a trend setting development in the field of battle area clearance and EOD. It is introduced into humanitarian and commercial battle area clearance in UK, Afghanistan, Kosovo, Vietnam, Cambodia, France, Angola and Laos where large areas have to be inspected and cleared of munitions in short time. 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 the operators. The UPEX® detector applies the eddy current Pulse Induction principle for the detection of metal components in UXO. The device can be adjusted to various types of non-co-operative soils and to suppress surface bound small fragmentation.

1.	<p>DGPS HEMISPHERE GPS S321+</p>	
2	<p>Consisting of:</p>	<p>DGPS solution inclusive all accessories, consisting of: 17.500,007.500,00S321 Hemisphere DGPS electronic S321+ International Network Receiver Kit (10 Hz, sFreq, mGNSS), Atlas capable - Included Components:</p> <ul style="list-style-type: none"> 1 x S321 (Network) Receiver 1 x Atlas H10 Subscription (6 months) 1 x European Power Plug Adapter 1 x Tape measure 1 x S321 Network Accessory Kit c/w: 1 x Serial Cable for PC or Controller 1 x GPRS Antenna 2 x Battery 1 x Battery charger adapter 1 x Battery charger 1 x S321 Cigarette Lighter Adapter 1 x Quick Release 1 x S321 Carrying case 1 x Hemisphere GNSS backpack 1 x lightweight aluminum non telescopic T pole

<p>3</p>	<p>EPAS – GPS</p>	
<p>3.a</p>	<p>EPAS-GPS Software</p>	<p>Digital geophysical mapping (DGM) is commonly used to accurately locate, identify, and select metallic anomalies that may be unexploded ordnance (UXO). Modes of DGM include ground based and optional airborne platforms with multiple sensor arrays and man portable single sensor systems. 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 Explosive Ordnance Disposal (EOD) specialists to locate (reacquire), investigate (dig), and remove (clear) the metallic anomaly.</p>
<p>3.b</p>	<p>USB Dongle</p>	<p>1 x CD Rom with installation Software 1 x USB Dongle (Hard lock key)</p>
<p>3.c</p>	<p>EPAS-GPS</p>	

Optional Accessories and different coil configurations:

Pos.	Ebinger Part Number	Description	quantity
16.	ELG10LI	<p>Product description The ELG 10 LI charger is a multi-charger for Ebinger specific Li-Ion battery packs. Ten (10) rechargeable battery packs can be charged at once.</p> <p>Main characteristics</p> <ul style="list-style-type: none"> • Rugged case • Portable • Fully automatic charging with visual charge indicator 	
17.	EBINGER EPAD® Data logger	<p>Rugged tool for geophysical survey and QA/QC Mobile Bluetooth®-technology-based PDA data recording system for various sensor types with one to six recording channels. Data recording with real-time display. Ruggedized and waterproof version, suitable for all environments, complies with MIL-STD810 requirements.</p> <p>PDA Settings communicates with user in selected language (i.e. Khmer) and font</p> <p>* (optional with DGPS)</p>	
19.	Hard case with professional tools	Transport hard case with professional tools for service and maintenance	

<p>20.</p>	<p>Spare parts</p>	<p>UPEX 740M3 spare parts / catalogue</p>	<p>UPEX® 740 M PI large-loop metal detection system</p> <ul style="list-style-type: none"> ■ Deep search and large-area surveying ■ High productivity of up to 2.5 ha per day and device ■ Detects ferrous and non-ferrous metals and alloys ■ Simple to operate ■ Digital surveys <p>www.ebinger.org</p>																		
<p>21.</p>	<p>Service- and maintenance manual in different languages: Russian, Lao, Arabian, Vietnamese and Cambodian language (Khmer)</p> <p><i>Cost benefits from field service of the UPEX® 740M3 in comparison to the breakdown costs of conventional detectors</i></p>	<table border="0"> <tr> <th>Conventional detectors</th> <th>UPEX® 740M3</th> </tr> <tr> <td>Equipment breakdown</td> <td>Equipment breakdown</td> </tr> <tr> <td>Transport to airport</td> <td>✓ No transport costs and time</td> </tr> <tr> <td>Air freight</td> <td>✓ No air freight</td> </tr> <tr> <td>Repair costs</td> <td>Repair costs</td> </tr> <tr> <td>Return air freight</td> <td>✓ No return air freight</td> </tr> <tr> <td>Customs delays</td> <td>✓ No customs</td> </tr> <tr> <td>Forwarding to field</td> <td>✓ No transport costs and time</td> </tr> <tr> <td>Delays and loss of productivity</td> <td>Delays and loss of productivity</td> </tr> </table>	Conventional detectors	UPEX® 740M3	Equipment breakdown	Equipment breakdown	Transport to airport	✓ No transport costs and time	Air freight	✓ No air freight	Repair costs	Repair costs	Return air freight	✓ No return air freight	Customs delays	✓ No customs	Forwarding to field	✓ No transport costs and time	Delays and loss of productivity	Delays and loss of productivity	<p>SERVICE MANUAL UPEX® 740 M PI large-loop metal detection system</p> <ul style="list-style-type: none"> ■ Deep search and large-area surveying ■ High productivity of up to 2.5 ha per day and device ■ Detects ferrous and non-ferrous metals and alloys ■ Simple to operate ■ Digital surveys and object filtering <p>www.ebinger.org</p>
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