LEAB
mobile energy

ENERGY UNIT

Self-sufficient energy supply for sewer inspection – light, durable, powerful

SMALL AND LIGHT

The battery pack – the heart of the system – weighs a maximum of 55 kilograms, depending on the capacity selected, with compact dimensions of just 75.5 cm × 31.5 cm × 9.5 cm (L × W × H).

PROGRESSIVE AND UNIVERSAL

Plug-in system, lithium-ion technology and can be used independently of the vehicle's drive type – the Energy Unit can provide the energy supply in numerous inspection vehicles for years to come.

HIGH CYCLE STABILITY

Over 3,000 charging cycles at a discharge depth of 80 %.

Stronger, faster – and unfortunately also heavier and heavier: This is not just the case for passenger cars, but also for special and commercial vehicles.

But every kilo counts, especially when it comes to fitting out inspection vehicles. Because in addition to the ever heavier vehicles, there is an increasing need for technical equipment on board – all of which must also be reliably supplied with energy.

Thanks to continual exchanges with users and focussed development work, we have now designed a new system that easily meets these requirements in the long term – the Energy Unit.

THREE VARIANTS

Mobile power supply made to measure

You can choose between three variants of the Energy Unit: The Energy Unit Split together with its components offers maximum flexibility for delivery vans. The Energy Unit Box, on the other hand, is tailored to outdoor use in box body vehicles. With Energy Unit Customized, we can jointly develop a system from scratch.

ENERGY UNIT SPLIT

The flexible, compact and lightweight complete system available as a kit in three capacities

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ENERGY UNIT BOX

The robust, weatherproof, all-in-one solution for outdoor use in box body vehicles

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ENERGY UNIT CUSTOMIZED

Our individually developed solution for your requirements

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“We are particularly proud of the battery pack – the heart of the complete system: It offers enormous capacity and withstands the highest loads.”

The development team

HOUSING

Lightweight, corrosion-resistant, highly stable: The aluminium housing protects the battery modules and, thanks to its extremely flat design, provides completely new installation options.

DIMENSIONS

Even with its enormous capacity of 210 Ah, just 75 cm long – and not even 10 cm high.

ASSEMBLY

Ready to plug in and can be installed without the need for a qualified electrician.

INDEPENDENCE

Self-sufficient system that reliably supplies the additional consumers with energy – regardless of the type of drive.

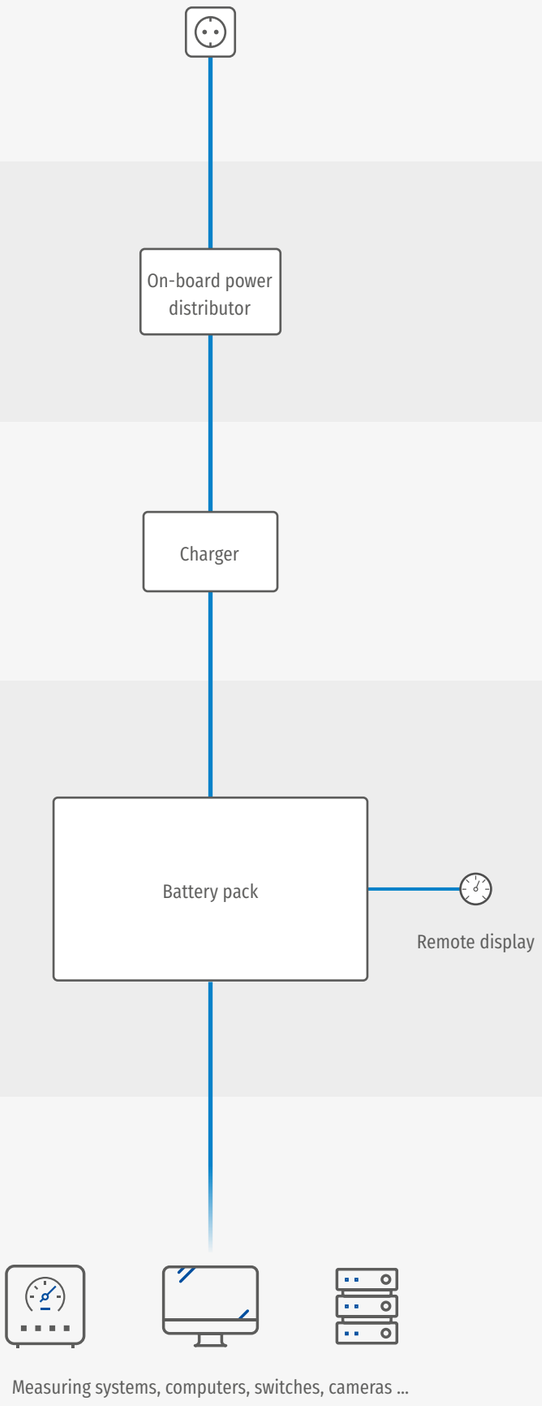
INPUT

DISTRIBUTE

CHARGE

STORE

SUPPLY



ENERGY UNIT SPLIT // COMPLETE SYSTEM AS A KIT

COMPLETE SYSTEM WITH INDIVIDUAL COMPONENTS AS A KIT

Variable and proven

For years, we have been offering a wide-ranging and precisely coordinated product portfolio. This enables us to easily meet the requirements of different vehicle models and to secure the specific energy supply required for different inspection vehicles.

ALL-ROUND SUPPLY

For the Energy Unit Split, the MelfBox is used for power supply. An on-board power distributor such as the PCM4 forwards the current to a battery charger. Here we rely on our microprocessor-controlled RBC 24105, which is ideal for charging the heart of our system – our newly developed battery pack: It reliably supplies a wide range of consumers with energy.

Outdoor power supply	LEAB MelfBox
Connection cable	Two-pin earthed plug 5 m, 230 VAC
On-board power distributor	PCM4 incl. fuse protection
Charger	RBC 24105, IP54, 105 A, 3 kW
Remote display	enGage II, model 3100R
Connection kit	Plug-in wiring kit
Option 1: Inverter	Output voltage 230 VAC
Option 2: DC-DC converter	Output voltage 12 VDC
Option 3: DC-DC booster	Recharging the battery pack while travelling

SUPPLY // MELFBOX

ENERGY UNIT SPLIT // BATTERY PACK

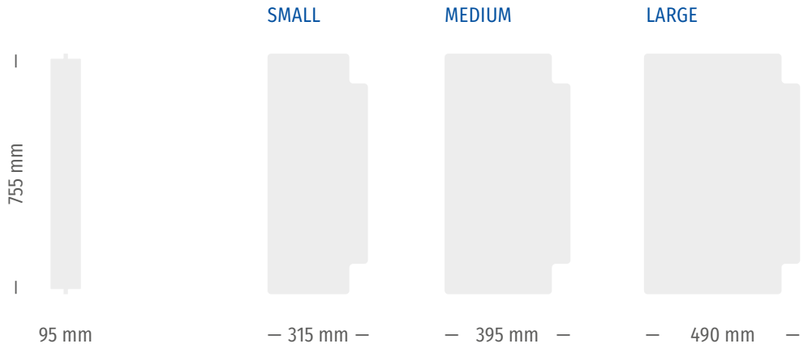
ENERGY UNIT SPLIT

The flexible, compact and lightweight complete system available as a kit in three capacities

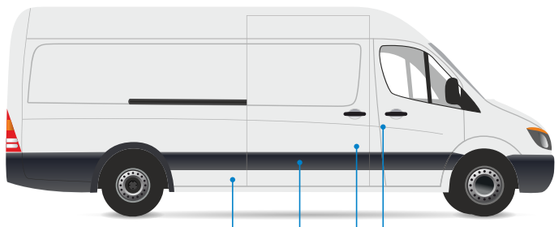
ENERGY UNIT SPLIT // DETAILS

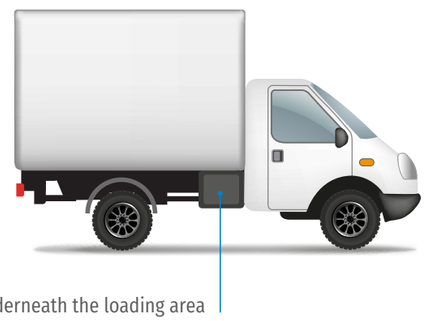
	SMALL	MEDIUM	LARGE
Capacity	105 Ah	150 Ah	210 Ah
Amount of energy	2,720 Wh	3,885 Wh	5,439 Wh
Height	95 mm	95 mm	95 mm
Width	755 mm	755 mm	755 mm
Depth	315 mm	395 mm	490 mm
Battery pack weight	20 kg	27 kg	35.5 kg
Overall system weight	35 kg	40 kg	49 kg
Charge time (with RBC 24105)	1 h	1.5 h	2 h
Cycle stability (80 % DoD)	≥ 3,000	≥ 3,000	≥ 3,000
Output voltage	24 VDC	24 VDC	24 VDC

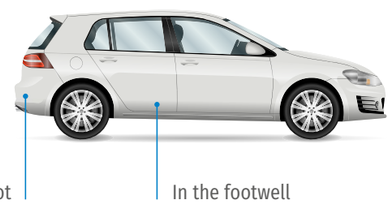
DIMENSIONS



POSSIBLE PLACEMENTS IN THE VEHICLE (EXAMPLES)







IMPRESSIVE EFFICIENCY

Plug and play in the smallest space

IDEAL HOUSING HEIGHT

With its low height of just 9.5 centimetres, the battery pack of the Energy Unit Split can be installed in various places. The wide range of possibilities extends from the boot to the cargo area and the driver's cab. Wherever it is mounted, there is no need to interfere with the body of the vehicle.

In addition, all other system components can be installed independently of each other in the vehicle to meet individual space requirements.

PLUG AND PLAY

All the system's devices and cables are pre-assembled. This allows for an extremely short installation time – especially compared to a conventional system.

Installation in the driver's cab of a Sprinter.

POWERFUL STORAGE TECHNOLOGY

Technology meets safety

PROVEN RELIABILITY

The battery pack is based on particularly high-energy lithium cells. This storage technology combines reliability and modernity, as it has proven itself for years in our product development and on the market. At the same time it is constantly being further developed and therefore remains future-proof.

MULTIPLE PROTECTION LEVELS

Thanks to redundant monitoring on each individual module within the battery as well as the overriding battery management system (BMS), it offers an extremely high level of functional safety.

In addition, the battery pack has an highly robust housing. At the same time, thanks to the built-in cells, we have been able to achieve extraordinary savings in terms of weight and dimensions.

Misuse is also prevented: Short circuits, reverse polarity and deep discharge are technically prevented. Last but not least, all relevant components communicate with each other via a CAN bus.

// Proven battery management system

// Short circuits, polarity reversal and deep discharge are excluded

// Permanent monitoring of all components by the battery management system

THE BEST OF BOTH WORLDS

Flyweight and long-lasting

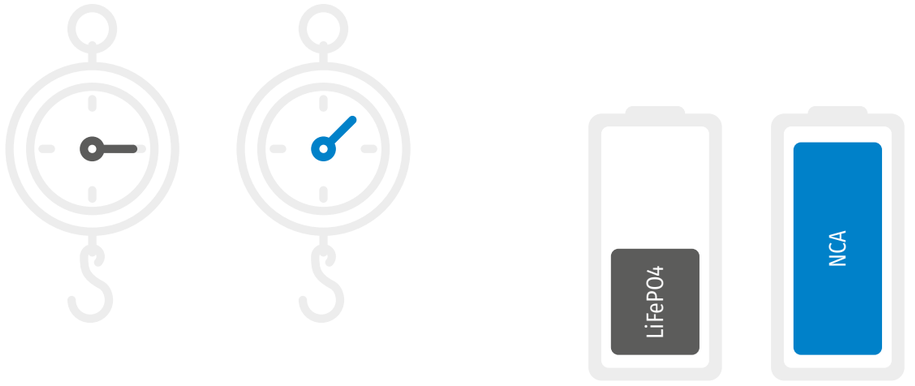
ADAPTING THE CELL CHEMISTRY

In order to optimally adapt the ratio of weight and energy density to the requirements of inspection vehicles, we use a different cell chemistry for the Energy Unit. These are cells that are also used in the drive batteries of electric vehicles.

MORE POWER WITH LESS WEIGHT

This allows us to achieve extreme weight savings – and at the same time increase the energy density.

In concrete terms, this means that the cells weigh less than half of those used up to now, which in turn results in almost twice the energy density.



LiFePO4 compared with NCA:
twice the energy density by halving the weight

ENERGY UNIT BOX

The robust, weatherproof, all-in-one solution for outdoor use in box body vehicles

Unlike the Energy Unit Split, the Energy Unit Box combines not only the battery, but also all components belonging to the overall system (excluding options) in one housing.

This enables us to optimally meet the special ratio of available space and energy requirements of box body vehicles.

The MelfBox for power supply (see page 7) and the remote display are also included in the scope of delivery, ready to plug in for individual placement on the vehicle.

ENERGY UNIT BOX // DETAILS

Capacity	210 Ah
Amount of energy	5,439 Wh
Cell chemistry	NCA
Height	465 mm
Width	560 mm
Depth	360 mm
Charge time (with RBC 24105)	2 h
Cycle stability (80 % DoD)	>= 3,000
Output voltage	24 VDC
Overall system weight	55 kg

Option 1: Inverter	Output voltage 230 VAC
Option 2: DC-DC converter	Output voltage 12 VDC
Option 3: DC-DC booster	Recharging the battery pack while travelling

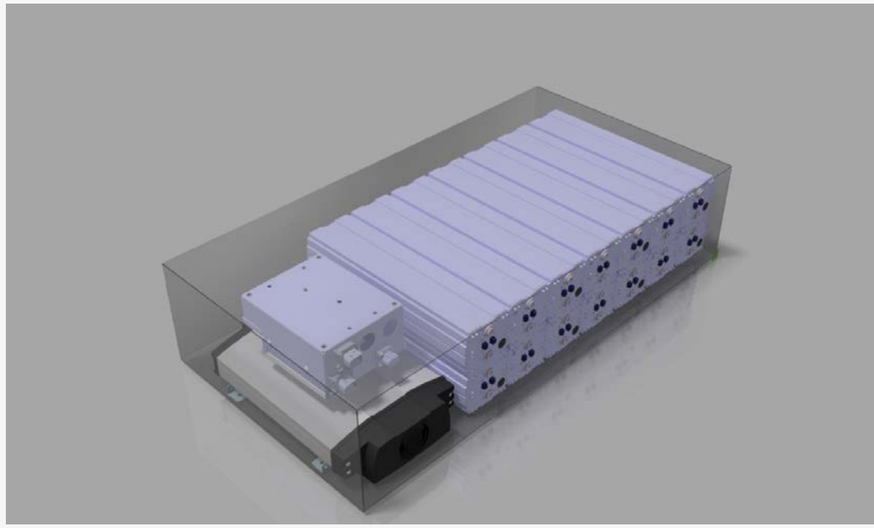
ENERGY UNIT CUSTOMIZED

Our industry-specific solution

Ever since we were founded over 30 years ago, intensive exchange and close attention have been the hallmarks of our work.

That's why we know that the amount of electrical consumers on board inspection vehicles is continuing to increase. In order to cover a complete working day self-sufficiently, a good deal of energy is therefore required.

To cater for this, we have developed a solution that provides a significant amount of power, for example 11 kWh, and enables a reliable energy supply for an entire working day.



LEAB
mobile energy

We make energy mobile.

LEAB Automotive GmbH
Thorshammer 6
24866 Busdorf
www.leab.eu

Your contacts
Marcel Viebrock
+49 4621 97860-118
mv@leab.eu

Simon Festini
+49 4621 97860-116
sf@leab.eu