LITHIUM BATTERIES
NOT AS HARMLESS AS THEY SEEM

Dangerous:
Unattended storing and charging of batteries

All-round protection:
ION-LINE safety storage cabinets
for your safety
In order to maintain the insurance cover, managing directors or their equivalent, must provide a suitable storage and charging solution for lithium-ion batteries. They are responsible for:

1. their employees and are obliged to comply with the Occupational Health and Safety Act.
2. They are also personally liable if inadequate fire protection measures are taken. This includes damage to property, possible damage to neighbouring facilities and, if necessary, the costs for large-scale evacuation measures.

Requirements for the storage of the hazardous materials by legislative bodies do not yet exist. The fact that numerous insurance companies and associations, including the VdS (General Association of the German Insurance Industry), have included clear guidelines in their contracts, shows the acute need for action.

According to German insurers and associations, batteries of medium capacity must spatially or structurally (in a fire-resistant manner) be separated from other areas. Spatial separation by storing the defective batteries outdoors is only possible if there is a safety distance of 10 m surrounding the area.

In addition, you must take the manufacturer’s instructions for storage into account.

Frequent, sometimes weekly accidents and countless damages prove: the unattended charging and storing of batteries, for example overnight, poses great risks and dangers.

People admitted to hospitals with smoke inhalation and burns. High property damages of up to 500,000 €, leading to the financial ruin of companies and other organisations. These are the sad and distressing consequences of improper storage and charging of batteries.

Lithium-ion batteries pose major fire and eruption hazards. Damaged batteries can, under certain circumstances spontaneously ignite or become unstable and explode when heated.

According to the ADR lithium-ion batteries are clearly classified as hazardous materials and therefore must be handled appropriately.

With Type 90 safety storage cabinets of the asecos ION-LINE you fulfil the requirements of insurers and associations. The different models provide you with a secure storage and charging solution for your batteries that can be easily integrated into your premises - no cost-intensive conversions are necessary!

Take action now and do not take unnecessary risks. Our experts will be happy to help you and carry out a risk assessment for your premises. Together we will find the right solution and achieve concrete results:

- Maintaining your insurance cover in the event of a fire
- Minimising the risk of damage to property and person

Your asecos experts can be reached via +49 6051 9220-0 or by sending an e-mail to info@asecos.com
LITHIUM-ION BATTERIES – NOT AS HARMLESS AS THEY SEEM

With the increasing use of lithium-ion batteries, the dangers related to storing and in particular charging these batteries increase in both commercial and private environments.

Property insurers, therefore, are highly interested in ensuring available protective equipment (such as type 90 safety storage cabinets) are used to minimise risks and avoid damage claims.

The recommendations of the property insurers, for example in Germany, for the use of safety cabinets are clear:

"In order to effectively protect against damages from lithium batteries, there are certainly conventional protective concepts using classical measures that have proven useful in manufacturing, handling and storing flammable materials."

Lithium batteries – fire hazards and safety risks
Dr. Michael Buser, Dr. Jochen Mähliß

"We tell customers to store batteries in hazardous goods storage cabinets."

Underwriter for a German property insurer

"Areas with medium power batteries should be spatially (at least 5 m) or structurally separated from other areas with fire-resistant structures."

Publication VdS 3103 : 2019-06 (03)
General Association of the German Insurance Industry
published by VdS Schadenverhütung GmbH

"Lithium batteries should generally be treated as a hazardous material."

Publication VdS 3103 : 2019-06 (03)
General Association of the German Insurance Industry
published by VdS Schadenverhütung GmbH

"The VdS data sheet offers very good instructions for implementation here. No insurer will block itself off or add more requirements than the VdS recommends."

German Insurance

"(…) it is generally recommended to only allow storage and handling of lithium batteries in fire-resistant separate areas or if an appropriate safety distance is ensured. Based on past damages, an international standard of 90 minutes fire resistance (…) or a safety distance of at least 20 meters has proven effective here."

Lithium batteries – fire hazards and safety risks
Dr. Michael Buser, Dr. Jochen Mähliß

Electric car battery causes major fire in 2,000 m² commercial space

A lithium-ion battery exploded on a test track for E-bikes in the Netherlands. The fire spread quickly and caused a huge plume of smoke in a very short time. Residents were cautioned to keep doors and windows closed. The fire department’s response was severely curtailed due to the unpredictability of the battery. Their primary goal: To prevent the fire from spreading to neighbouring buildings. After allowing the commercial space to burn in a controlled manner, they delivered the devastating news: The building was unrecoverable and could not be saved.

Source: orwoopgezichtland.nl

500,000 € in damages after an E-bike battery explodes

The sales floor of the northern German bicycle shop was quickly engulfed in flames. The 4 floors of the parking structure on the store had to be evacuated quickly due to the extreme hazardous smoke produced by the fire. Over 30 fire department vehicles and 70 fire fighters responded to the blaze.

Source: hitra.de

Lithium batteries – a hazardous material?

A lithium-ion battery – which was connected to a charger overnight – ignited a fire in the basement of a residential building in Lower Franconia. The owner used the basement rooms for his online shop, where he sold a variety of batteries and offered repair services. The fire quickly created clouds of smoke and unpleasant, harmful odours. The defective batteries emitted harsh, aggressive acids, forcing the fire department, police, and residents to take extensive safety precautions.

Source: main-echo.de

For more incidents related to lithium-ion batteries, please visit:
In normal operation, using lithium batteries is considered safe. However, according to the VDE this is true only if they are handled properly. If there is a technical defect or a battery is damaged, the situation can quickly become critical. The German Insurance Association (GDV), therefore, requires that lithium batteries “generally be treated like a hazardous material”.

The situation becomes especially dangerous when a lithium battery discharges its stored energy in an uncontrolled manner. Once the heat produced exceeds the melting point of the lithium, this causes an unstoppable chain reaction, the “thermal runaway”. The battery then burns up in an explosive manner. Such fires with lithium-ion batteries are difficult to manage, and the fire spreads quickly. Often, all the fire department can do is protect neighbouring areas.

<table>
<thead>
<tr>
<th>MECHANICAL DAMAGE</th>
<th>DEEP DISCHARGE</th>
<th>THERMAL OVERLOAD</th>
<th>ELECTRICAL OVERLOAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>In combination with the high energy density of the battery</td>
<td>Unstable cell</td>
<td>Caused by external heat or energy sources</td>
<td>During charging and discharging</td>
</tr>
</tbody>
</table>

Lithium-ion batteries can cause a fire. Causes include:

- **Technical expertise — Lithium-ion batteries**

  **THE HAZARDS - THE THERMAL RUNAWAY**

- **MECHANICAL DAMAGE**
  - In combination with the high energy density of the battery

- **DEEP DISCHARGE**
  - Unstable cell

- **THERMAL OVERLOAD**
  - Caused by external heat or energy sources

- **ELECTRICAL OVERLOAD**
  - During charging and discharging

In normal operation, using lithium batteries is considered safe. However, according to the VDE this is true only if they are handled properly. If there is a technical defect or a battery is damaged, the situation can quickly become critical. The German Insurance Association (GDV), therefore, requires that lithium batteries “generally be treated like a hazardous material”.

The situation becomes especially dangerous when a lithium battery discharges its stored energy in an uncontrolled manner. Once the heat produced exceeds the melting point of the lithium, this causes an unstoppable chain reaction, the “thermal runaway”. The battery then burns up in an explosive manner. Such fires with lithium-ion batteries are difficult to manage, and the fire spreads quickly. Often, all the fire department can do is protect neighbouring areas.
SAFETY REGULATIONS FOR MEDIUM POWER CLASS BATTERIES

according to VdS 3103:2019-06 (03)
(Publication of German insurers for loss prevention)

SAFETY REGULATIONS

- Compliance with manufacturer specifications (technical product data sheets)
- Protection against battery pole short circuits
- Protection against mechanical damages
- Do not expose to high temperatures or heat sources directly or for a long period of time (this includes direct sunlight)
- Compliance with structural or spatial separation (at least 2.5 m) from other flammable materials if no automatic extinguishing system is available
- Immediately remove damaged or defective batteries from storage and production areas (interim storage until disposal at a safe distance or in a separate fire-protected area)
- Exclusive storage of batteries with test certificate in accordance with UN 38.3 (prototypes only in exceptional cases and with risk assessment)
- Storage in separate fire-resistant areas or in compliance with a safety distance (spatial separation of 5 m)
- Avoidance of mixed storage with other products which are fire accelerants
- Monitoring the storage area with a suitable fire alarm system wired to a constantly occupied office
- If fire extinguishing systems are present: Compliance with information on suitable extinguishing agents in the technical product data sheets

CONCLUSION

Store and charge lithium-ion batteries in a safety storage cabinet!
When storing lithium-ion batteries, we can differentiate between passive and active storage:

**ACTIVE STORAGE**
In active storage, lithium-ion batteries or battery packs are charged in a cabinet with a charger or partially discharged (60 - 70%). Heat is generated when a lithium-ion battery charges. If this heat output is too high, a fire may occur, for instance if the lithium battery, the charger or the connection cable is defective. Another major danger is the risk of thermal runaway of lithium-ion batteries, for instance caused by internal short circuits.

**CONCLUSION:** The risk increases when lithium-ion batteries are left unattended to charge outside of work hours. We recommend active storage in the asecos BATTERY CHARGE safety storage cabinets.

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**ION-CHARGE-90**

<table>
<thead>
<tr>
<th>Feature</th>
<th>BATTERY CHARGE PRO</th>
<th>BATTERY CHARGE</th>
<th>BATTERY CHARGE LOCKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire protection from outside (type 90)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Fire protection from inside</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Store</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Charge</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Socket for connecting chargers</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Warning/fire suppression system</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Locker system</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Integrated technical ventilation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fitted for the integration into work benches</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Models from page 12  
Models from page 16
**PASSIVE STORAGE**

In passive storage, new or used lithium-ion batteries are stored over a certain time period.

**TIP:** We recommend that new and used lithium-ion batteries are stored separately (different storage levels) in the BATTERY STORE or BATTERY STORE PRO safety storage cabinets.

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**ION-STORE-90**

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<table>
<thead>
<tr>
<th>BATTERY CHARGE UB</th>
<th>BATTERY STORE PRO</th>
<th>BATTERY STORE</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>✔</td>
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</tr>
</tbody>
</table>

Models from page 20

Model from page 24

Models from page 24
THE ION-LINE PRO SAFETY CONCEPT

If the interior temperature increases above 50 °C, the warning/fire suppression system triggers a warning message to the central control office.

Possible causes:
- Temperature build-up due to battery charging processes
- Ventilation system failure

Alarm level 1 is triggered when smoke begins to form in the cabinet, as soon as the smoke detector is activated.

Possible causes:
- Smoke detected without simultaneous temperature increase

Alarm level 2 is triggered when the smoke detector is already activated (alarm level 1) and the temperature sensor registers an interior temperature greater than 70 °C.

Possible causes:
- Outbreak of fire

Visual and acoustic signal output
- The warning light (red LED) is activated and permanently illuminated, the function indicator (green LED) goes out
- Alarm triggers with slow tone interval

The potential-free alarm switch
- is activated, the alarm is transmitted to the building services management system

Visual and acoustic signal output
- The warning light (red LED) is activated and permanently illuminated, the function indicator (green LED) goes out
- Alarm triggers with medium tone interval

The potential-free alarm switch
- is activated, the alarm is transmitted to the building services management system

The visual and acoustic signals change to
- The warning light (red LED) switches from continuous illumination to flashing light
- The alarm switches to a fast tone interval

In the BATTERY CHARGE model, at the same time
- The technical ventilation is also switched off
- Power to the outlet strip is turned off

The aerosol fire suppression unit
- triggers

Internal qualified personnel can immediately inspect the system to take any further necessary measures. If the interior temperature decreases below 50 °C once again, the system returns to normal operations, and the visual and acoustic signals are turned off.

Technicians (such as from the fire department) can immediately inspect the system to take any further necessary measures. If the smoke detector does not detect any further smoke production inside the cabinet, the system can be returned to normal operations by briefly unplugging it from mains voltage.

The overall system can then only be assessed by an authorised asecos service technician and reset to normal operation if possible. At least the fire suppression unit and smoke detector must be exchanged before doing so.

EXPERT TIP: React quickly in case of a fire

With an integrated 3-stage warning/fire suppression system and smoke detector, the cabinets offer a high level of safety for storing and charging lithium-ion batteries.

Any fires which occur inside the cabinet are detected promptly, and employees can be evacuated immediately.

The warning/fire suppression system is also connected to a permanently staffed building services management, ensuring that trained rescue personnel...

The cabinets are equipped with a transport base to ensure fast transportation. Cabinets are automatically unplugged from mains supply during transportation. Once the cabinet is outside of the building at a safe location, rescue personnel can identify any further measures necessary.

We recommend an installation at the ground level for the simplified and quick evacuation of the safety storage cabinets!
FORWARDING ALARMS IS EASY
WITH OUR OPTIONAL MODULES

Whenever the cabinet is unattended, e.g. at night or on weekends, alarm forwarding is indispensable in an emergency. It is the only way to quickly detect the damage and initiate countermeasures.

MODULE FOR REMOTE SIGNALLING
The module offers an alarm forwarding via the mobile phone network (SMS/call) and is therefore especially suitable for companies and facilities without a central building management system. In an emergency, the immediate alerting of one or several defined persons is triggered.

The module is easily installed on-site by the customer via plug (also suitable for retrofitting) and offers the following functions:

1. five programmable telephone numbers
2. configurable message texts
3. collective alarm in case of an emergency or power failure

A SIM card is required for the initial operation of the module, which must be provided by the customer. Alternatively, the included SIM card (for European and UK use only) can be activated via an online portal.

The remote signalling module is suited for the PRO models, as well as for all BATTERY CHARGE cabinets.

Order No. EU version 38765 UK version 39221

RELAY MODULE
By choosing this option, you are opting for alarm differentiation instead of a collective alarm.

The module is easily installed on-site by the customer (also suitable for retrofitting) and differentiates between four different warning and alarm levels:

1. warning message at a temperature above 50° C inside the cabinet
2. alarm level 1 (see page 10)
3. alarm level 2 (see page 10)
4. power failure

Via potential-free alarm contacts, these signals are passed on to a central control centre. With the clear differentiation of the alarm conditions, you can initiate optimally coordinated measures.

The relay module is suited for the PRO models of the ION-LINE.

Order No. 38766
Safe and approved **passive** and **active** storage of lithium-ion batteries in working areas

1. Charging lithium-ion batteries safely in cabinets with 90 minutes fire resistance and outlet strips with earthed sockets ready to use.

2. Cabinet can easily and quickly be evacuated in case of an emergency due to an integrated transport base.

3. PRO model incl. LED display with visual and audible alarm for a quick indication of emergencies without opening the cabinet doors.

4. PRO model with integrated fire suppression system, which automatically triggers in the event of a fire.

5. Smoke detector and temperature sensor (PRO model) for an early fire detection and alarm transmission to the building services management system.

6. PRO model incl. extraction unit for technical ventilation and to avoid heat build-up during the charging process.

7. Optionally available with relay module and module for remote signalling.

8. Perforated shelves (load capacity 25 or 75 kg) to avoid heat build-up during the charging process.

9. Bottom collecting sump is used to catch any leakage which may occur from burning batteries.
Fire resistance of 90 minutes from outside to inside (Type 90), type-tested in accordance with EN 14470-1.

Fire resistance of 90 minutes from inside to outside in accordance with EN 1363-1.

CE compliant

Extended manufacturer warranty of up to 10 years in combination with an ascos service tariff. Please see page 30 for further information.
Choose and configure your safety storage cabinet:

Order example 37276-047-38254 + Service (e.g. SER90018)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IO90.195.120.K3.WDC</td>
<td></td>
<td>37276</td>
<td></td>
<td>047</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Technical data**

<table>
<thead>
<tr>
<th></th>
<th>IO90.195.120.K3.WDC</th>
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<tbody>
<tr>
<td>External dimensions W x D x H (mm)</td>
<td>1193 x 615 x 2224</td>
</tr>
<tr>
<td>Internal dimensions W x D x H (mm)</td>
<td>1050 x 522 x 1647</td>
</tr>
<tr>
<td>Weight without interior equipment (kg)</td>
<td>424</td>
</tr>
<tr>
<td>Maximum load (kg)</td>
<td>600</td>
</tr>
<tr>
<td>Distributed load (kg/m²)</td>
<td>531</td>
</tr>
<tr>
<td>Entry width transport base (mm)</td>
<td>1120</td>
</tr>
<tr>
<td>Entry height transport base (mm)</td>
<td>90</td>
</tr>
</tbody>
</table>

**Total power rating of the power socket strips**

<table>
<thead>
<tr>
<th></th>
<th>EU version</th>
<th>UK version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuse (1-phase) (A)</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Power max. (1-phase) (kW)</td>
<td>3,68</td>
<td>2,99</td>
</tr>
<tr>
<td>Fuse (3-phase) (A)</td>
<td>3 x 16</td>
<td>3 x 13</td>
</tr>
<tr>
<td>Power max. (3-phase) (kW)</td>
<td>11,04</td>
<td>8,97</td>
</tr>
</tbody>
</table>

*Earthed Sockets per Outlet Strip: EU = 10 / UK = 8

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**Accessories**

- Power supply cable 400 V (can only be ordered in combination with the cabinet)
  - 3-phase, fuse 3 x 16 A (each phase 16 A, CEE-plug 3L+N+PE, 6h)
  - Order No. EU version: 38038
  - Order No. UK version: 38038

- Module for remote signalling
  - Alarm transmission to 5 mobile numbers of your choice
  - Order No. EU version: 38765
  - Order No. UK version: 39221

- Relay module
  - Potential-free forwarding of up to 4 different alarm modes
  - Order No. EU version: 38766
  - Order No. UK version: 38766

**Service**

- For UK only
  - SERVICE SER90018

* The total power is only valid for Germany. It may differ for other countries.
* The fuse protection has to be carried out on site.
**BATTERY-CHARGE**

**Order example**: 38611-047-08630 + Service (e.g. SER90019)

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### Safety storage cabinet

<table>
<thead>
<tr>
<th>Model</th>
<th>Order No.</th>
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</thead>
<tbody>
<tr>
<td>IO90.195.000.K9.WDC</td>
<td>38611</td>
</tr>
</tbody>
</table>

### Interior equipment

<table>
<thead>
<tr>
<th>Version</th>
<th>Material</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4x perforated shelf, 2x socket strip*</td>
<td>sheet steel powder coated RAL 7035</td>
<td>38629</td>
</tr>
<tr>
<td>1x bottom collecting sump (V = 11.5 l)</td>
<td></td>
<td>38630</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Power supply cable 100 V (can only be ordered in combination with the cabinet)</th>
<th>3-phase fuse 3 x 16 A (each phase 16 A), CEE-plug 3L+N+PE, 6h</th>
<th>38038</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module for remote signalling</td>
<td>alarm transmission to 5 mobile numbers of your choice</td>
<td>38765</td>
</tr>
</tbody>
</table>

### Service (for UK only)

<table>
<thead>
<tr>
<th>Service</th>
<th>Order No.</th>
</tr>
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<tbody>
<tr>
<td>SERVICE</td>
<td>SER90019</td>
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</tbody>
</table>

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### Technical data

<table>
<thead>
<tr>
<th>Technical data</th>
<th>IO90.195.000.K9.WDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>External dimensions W x D x H mm</td>
<td>599 x 615 x 1953</td>
</tr>
<tr>
<td>Internal dimensions W x D x H mm</td>
<td>450 x 522 x 1647</td>
</tr>
<tr>
<td>Weight without interior equipment kg</td>
<td>265</td>
</tr>
<tr>
<td>Maximum load kg</td>
<td>600</td>
</tr>
<tr>
<td>Distributed load kg/m²</td>
<td>894</td>
</tr>
<tr>
<td>Entry width transport base mm</td>
<td>526</td>
</tr>
<tr>
<td>Entry height transport base mm</td>
<td>90</td>
</tr>
</tbody>
</table>

**Total power rating of the power socket strips**

<table>
<thead>
<tr>
<th>EU version</th>
<th>UK version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuse (1-phase) A</td>
<td>16</td>
</tr>
<tr>
<td>Power max. (1-phase) kW</td>
<td>3,68</td>
</tr>
<tr>
<td>Fuse (3-phase) A</td>
<td>3 x 16</td>
</tr>
<tr>
<td>Power max. (3-phase) kW</td>
<td>7,36</td>
</tr>
</tbody>
</table>

* Earthed Sockets per Outlet Strip: EU = 10 / UK = 8

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For further product information please visit: [www.asecos-configurator.com/ion_line_EN](http://www.asecos-configurator.com/ion_line_EN)

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* EXPERT TIP
  * Lithium-ion batteries with obvious damage should generally not be stored inside buildings.
  * Dispose of them promptly in appropriate disposal containers suitable for transportation outside of buildings.

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* Ready for dispatch within 15 days

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* For further product information please visit: [www.asecos-configurator.com/ion_line_EN](http://www.asecos-configurator.com/ion_line_EN)
Safe and approved **passive** and **active** storage of lithium-ion batteries in working areas

1. Integrated locker system enables a separated storage - protected against unauthorised access - of batteries and devices.

2. Charging lithium-ion batteries safely in cabinets with 90 minutes fire resistance and outlet strips with earthed sockets ready to use.

3. Cabinet can easily and quickly be evacuated in case of an emergency due to an integrated transport base.

4. Optionally available with module for remote signalling.

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**BATTERY CHARGE Locker PREMIUM**

1. Fire resistant lockers prevent the fire from spreading throughout the cabinet and to further stored batteries. In the event of a fire, individual damaged lockers can be evacuated and replaced.

2. For quick notification of emergencies, each locker is equipped with a temperature sensor and LED display with visual and audible alarm.

**BATTERY CHARGE Locker BASIC**

1. Locker system made of powder-coated sheet steel for the separated storage of batteries, protected from unauthorised access.

2. Built-in smoke detector for an early fire detection and fast alarm transmission to the building management system.
Fire resistance of 90 minutes from outside to inside (Type 90), type-tested in accordance with EN 14470-1.

Fire resistance of 90 minutes from inside to outside in accordance with EN 1363-1.

CE compliant

Extended manufacturer warranty of up to 10 years in combination with an asecos service tariff. Please see page 30 for further information.
Choose and configure your safety storage cabinet:

Order example 39409-047-39413 + Service (e.g. SER90018)

**Technical data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>External dimensions W x D x H</td>
<td>599 x 615 x 1953 mm</td>
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<tr>
<td>Internal dimensions W x D x H</td>
<td>370 x 440 x 265 mm</td>
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<tr>
<td>Weight without interior equipment</td>
<td>375 kg</td>
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<tr>
<td>Maximum load</td>
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<td>Distributed load</td>
<td>894 kg/m²</td>
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<tr>
<td>Entry width transport base</td>
<td>526 mm</td>
</tr>
<tr>
<td>Entry height transport base</td>
<td>90 mm</td>
</tr>
<tr>
<td>Total power rating of the power socket strips</td>
<td></td>
</tr>
<tr>
<td>EU version</td>
<td>16 A, 3.68 kW</td>
</tr>
</tbody>
</table>

The total power is only valid for Germany. It may differ for other countries. The fuse protection has to be carried out on site.

**BATTERY CHARGE LOCKER PREMIUM**

*Each outlet strip with 2 earthed sockets.*
**Safety storage cabinet**

**Colour**

**Interior equipment**

**Order example** 38611-047-39079 + Service (e.g. SER90019)

**Technical data**

**IO90.195.060.K9.WDC**

- **External dimensions W x D x H mm**: 599 x 615 x 1953
- **Internal dimensions W x D x H mm**: 450 x 522 x 1647
- **Weight without interior equipment kg**: 265
- **Maximum load kg**: 600
- **Distributed load kg/m²**: 894
- **Entry width transport base mm**: 526
- **Entry height transport base mm**: 90

**Total power rating of the power socket strips EU version**

- **Fuse (1-phase) A**: 16
- **Power max. (1-phase) kW**: 3.68
- **Fuse (3-phase) A**: 3 x 16
- **Power max. (3-phase) kW**: 7.36

**Total power rating of the power socket strips UK version**

- **Fuse (1-phase) A**: 13
- **Power max. (1-phase) kW**: 2.99
- **Fuse (3-phase) A**: 3 x 13
- **Power max. (3-phase) kW**: 5.98

---

**For further product information please visit:**

[www.asecos-configurator.com/ion_line_EN](http://www.asecos-configurator.com/ion_line_EN)
Safe and approved **passive** and **active** storage of lithium-ion batteries in working areas

1. Charging lithium-ion batteries safely in cabinets with 90 minutes fire resistance and outlet strips with earthed sockets ready to use.

2. Cabinet can easily and quickly be evacuated in case of an emergency due to an integrated transport base and the optionally available castors.

3. The under bench cabinet can be flexibly integrated under worktops due to a height of 78 cm.

4. Smoke detector for an early fire detection and alarm transmission to the building services management system.

5. Optionally available with module for remote signalling.

6. Drawer lockable for protection against unauthorised use.
Fire resistance of 90 minutes from outside to inside (Type 90), type-tested in accordance with EN 14470-1

Fire resistance of 90 minutes from inside to outside in accordance with EN 1363-1

CE compliant

Extended manufacturer warranty of up to 10 years in combination with an asecos service tariff. Please see page 30 for further information.
Choose and configure your safety storage cabinet:

Order example 39354-047-39489 + Service (e.g. SER90019)

<table>
<thead>
<tr>
<th>Safety storage cabinet</th>
<th>Colour</th>
<th>Interior equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Order No.</td>
<td>Version</td>
</tr>
<tr>
<td>IO90.078.059.057.U9.S</td>
<td>39354</td>
<td>047</td>
</tr>
</tbody>
</table>

**Accessories**

<table>
<thead>
<tr>
<th>Module for remote signalling</th>
<th>Version</th>
<th>Material</th>
<th>Order No. EU version</th>
<th>Order No. UK version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module for remote signalling</td>
<td></td>
<td>sheet steel powder coated RAL 7035</td>
<td>39334</td>
<td>39374</td>
</tr>
</tbody>
</table>

**Service** (for UK only)

<table>
<thead>
<tr>
<th>Service</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVICE</td>
<td>SER90019</td>
</tr>
</tbody>
</table>

**Technical data**

<table>
<thead>
<tr>
<th>IO90.078.059.057.U9.S</th>
<th>Internal equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>External dimensions W x D x H</td>
<td>mm</td>
</tr>
<tr>
<td>Internal dimensions W x D x H</td>
<td>mm</td>
</tr>
<tr>
<td>Weight without interior equipment</td>
<td>kg</td>
</tr>
<tr>
<td>Maximum load</td>
<td>kg</td>
</tr>
<tr>
<td>Distributed load</td>
<td>kg/m²</td>
</tr>
<tr>
<td>Entry width transport base</td>
<td>mm</td>
</tr>
<tr>
<td>Entry height transport base</td>
<td>mm</td>
</tr>
</tbody>
</table>

**Total power rating of the power socket strips**

<table>
<thead>
<tr>
<th>EU version</th>
<th>UK version</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>16</td>
</tr>
<tr>
<td>kW</td>
<td>3,68</td>
</tr>
</tbody>
</table>

The total power is only valid for Germany. It may differ for other countries. The fuse protection has to be carried out on site.

* Each outlet strip with 4 earthed sockets.
Safe and approved **passive storage** of lithium-ion batteries in working areas

1. Storing lithium-ion batteries safely in cabinets with 90 minutes fire resistance.

2. Cabinet can easily and quickly be evacuated in case of an emergency due to an integrated transport base.

3. PRO model incl. LED display with visual and audible alarm for a quick indication of emergencies without opening the cabinet doors.

4. PRO model incl. smoke detector and temperature sensor for an early fire detection and alarm transmission to the building services management system.

5. PRO model with integrated fire suppression system, which automatically triggers in the event of a fire.

6. PRO model optionally available with relay module and module for remote signalling.

7. Perforated shelves with a load capacity of 25 or 75 kg.

8. Bottom collecting sump is used to catch any leakage which may occur from burning batteries.
Fire resistance of 90 minutes from outside to inside (Type 90), type-tested in accordance with EN 14470-1.

Fire resistance of 90 minutes from inside to outside in accordance with EN 1363-1.

CE compliant

Extended manufacturer warranty of up to 10 years in combination with an asecos service tariff. Please see page 30 for further information.
Choose and configure your safety storage cabinet:

Order example 38055-047-37258 + Service (e.g. SER90037)

<table>
<thead>
<tr>
<th>Safety storage cabinet Model</th>
<th>Colour</th>
<th>Order No.</th>
<th>Interior equipment</th>
<th>Material</th>
<th>Order No. EU version</th>
<th>Order No. UK version</th>
</tr>
</thead>
<tbody>
<tr>
<td>IO90.195.120.K2.WDC</td>
<td></td>
<td>38055</td>
<td>3x perforated shelf, 1x bottom collecting sump (V = 33.0 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>37258</td>
<td>37258</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4x perforated shelf, 1x bottom collecting sump (V = 33.0 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>37264</td>
<td>37264</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5x perforated shelf, 1x bottom collecting sump (V = 33.0 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>37265</td>
<td>37265</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6x perforated shelf, 1x bottom collecting sump (V = 33.0 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>37266</td>
<td>37266</td>
</tr>
</tbody>
</table>

| Accessories                 |        |           | Perforated shelf | sheet steel powder coated RAL 7035 | 38079 | 38079 |
|                             |        |           | Module for remote signalling | alarm transmission to 5 mobile numbers of your choice | 38765 | 39221 |
|                             |        |           | Relay module | potential-free forwarding of up to 4 different alarm modes | 38766 | 38766 |

Service for UK only: SERVICE SER90037

Front view

Side view

Sectional view

Top view

Technical data

<table>
<thead>
<tr>
<th></th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>External dimensions W x D x H</td>
<td>1193 x 615 x 1953</td>
</tr>
<tr>
<td>Internal dimensions W x D x H</td>
<td>1050 x 522 x 1647</td>
</tr>
<tr>
<td>Weight without interior equipment</td>
<td>424 kg</td>
</tr>
<tr>
<td>Maximum load</td>
<td>600 kg</td>
</tr>
<tr>
<td>Distributed load</td>
<td>531 kg/m²</td>
</tr>
<tr>
<td>Entry width transport base</td>
<td>1120 mm</td>
</tr>
<tr>
<td>Entry height transport base</td>
<td>90 mm</td>
</tr>
</tbody>
</table>
INCREASING POPULARITY, UNDERESTIMATED RISKS

EXPERT KNOWLEDGE
Our new white paper is your ideal tool for obtaining quick information about lithium-ion batteries.
On 20 pages, Dr. Friedhelm Kring - freelance trade journalist with a focus on environmental protection and occupational safety - explains the essential information on lithium batteries and their hazards in an approachable manner. Tips, practical examples and checklists for the handling of lithium-ion batteries complete the white paper.

Order now!
Visit www.asecos.global to order your free copy of the white paper!
Choose and configure your safety storage cabinet:

Order example 37254-047-37258 + Service (e.g. SER90036)

### Safety storage cabinet
- **Model**: IO90.195.120.K1.WDC
- **Order No.**: 37254

### Interior equipment

<table>
<thead>
<tr>
<th>Version</th>
<th>Material</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3x perforated shelf, 1x bottom collecting sump (V = 33.0 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>37258</td>
</tr>
<tr>
<td>4x perforated shelf, 1x bottom collecting sump (V = 33.0 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>37264</td>
</tr>
<tr>
<td>5x perforated shelf, 1x bottom collecting sump (V = 33.0 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>37265</td>
</tr>
<tr>
<td>6x perforated shelf, 1x bottom collecting sump (V = 33.0 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>37266</td>
</tr>
</tbody>
</table>

### Accessories
- Perforated shelf
  - sheet steel powder coated RAL 7035
  - **Order No.**: 38079

### Service (for UK only)
- **SERVICE**: SER90036

### Technical data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>External dimensions W x D x H mm</td>
<td>1193 x 615 x 1953</td>
</tr>
<tr>
<td>Internal dimensions W x D x H mm</td>
<td>1050 x 522 x 1647</td>
</tr>
<tr>
<td>Weight without interior equipment kg</td>
<td>424</td>
</tr>
<tr>
<td>Maximum load kg</td>
<td>600</td>
</tr>
<tr>
<td>Distributed load kg/m²</td>
<td>531</td>
</tr>
<tr>
<td>Entry width transport base mm</td>
<td>1120</td>
</tr>
<tr>
<td>Entry height transport base mm</td>
<td>90</td>
</tr>
</tbody>
</table>

### Front view

- **Dimensions**: W x D x H mm 1193 x 615 x 1953

### Side view

- **Dimensions**: W x D x H mm 1193 x 615 x 1953

### Selectional view

- **Dimensions**: W x D x H mm 1193 x 615 x 1953

### Top view

- **Dimensions**: W x D x H mm 1193 x 615 x 1953

---

**BATTERY STORE**

Ready for dispatch within 2 days 4 weeks

See page 30 for further information.
Safety storage cabinet

<table>
<thead>
<tr>
<th>Model</th>
<th>Colour</th>
<th>Interior equipment</th>
<th>Version</th>
<th>Material</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IO90.195.060.K1.WDC</td>
<td>047</td>
<td>3x perforated shelf, 1x bottom collecting sump (V = 11.5 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>38086</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4x perforated shelf, 1x bottom collecting sump (V = 11.5 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>38087</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5x perforated shelf, 1x bottom collecting sump (V = 11.5 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>38088</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6x perforated shelf, 1x bottom collecting sump (V = 11.5 l)</td>
<td>sheet steel powder coated RAL 7035</td>
<td>38089</td>
<td></td>
</tr>
</tbody>
</table>

Accessories
Perforated shelf
sheet steel powder coated RAL 7035
38622

Service (for UK only)
SERVICE
SER900036

Front view Side view Selectional view

Technical data

<table>
<thead>
<tr>
<th></th>
<th>IO90.195.060.K1.WDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>External dimensions W x D x H mm</td>
<td>589 x 615 x 1953</td>
</tr>
<tr>
<td>Internal dimensions W x D x H mm</td>
<td>450 x 522 x 1647</td>
</tr>
<tr>
<td>Weight without interior equipment kg</td>
<td>265</td>
</tr>
<tr>
<td>Maximum load kg</td>
<td>600</td>
</tr>
<tr>
<td>Distributed load kg/m²</td>
<td>894</td>
</tr>
<tr>
<td>Entry width transport base mm</td>
<td>526</td>
</tr>
<tr>
<td>Entry height transport base mm</td>
<td>90</td>
</tr>
</tbody>
</table>

For further product information please visit:
www.asecos-configurator.com/ion_line_EN
When it comes to safety, we do not compromise. Improper or irregular inspection of safety-related equipment, not only risks the loss of insurance cover but also threatens your personal liability - you can be held personally responsible for damage or injury.

Therefore anyone who operates technical installations or systems of any kind must ensure that they are always in working order, i.e. they are maintained. This is of course particularly important where human life can be endangered by technical failure - and this is the case with safety-related installations. The objectives of maintenance are:

- To increase the service life
- Improvement of operational safety
- Increase of plant availability
- Reduction of disturbances
- Optimisation of operational processes
- Improved cost planning

Our proposal (for UK only) - tailored to your individual needs:

**The regular inspection according to EC-directives 89/391/EEC**

**Inspection**
- Visual inspection including ventilation test
- Error analysis

**Legal Certainty Inspectorate**
- Control of stored goods, legal marking, checking the documentation, installation conditions

**Immediate maintenance**
- Measures to delay wear and tear
- Functional test
- Feedback of maintenance work

**Immediate repair**
- Replacement of parts to a value of £5 are included in the service.
- Immediate repair in 98% of cases for manufactured products

**Signed entry in the asecos service booklet / inspection sticker / inspection record**

OUT AND ABOUT FOR YOUR SAFETY!
Dieses Angebot gilt nur für Deutschland.
No liability can be accepted for printing errors, product alterations due to further technical development and changes of model.