



## H3 hybrid locomotive

### Data and facts

Locomotives based on the ALSTOM H3 platform are triple-axle shunting locomotives designed for use as shunting locomotives in extremely varied works-traffic applications and for light freight-train operations over the entire European railway network, with the exception of high-speed lines.

This range of locomotives includes four different variants for energy generation/storage that are built on a modular basis on the same triple-axle standard platform. They can travel on electrified and non-electrified main and secondary lines, as well as on connecting tracks and shunting systems, including tracks with UIC-compliant retarders.

### Requirements

The hybrid variant of the ALSTOM H3 platform has been developed to an adequate degree of technical and economical readiness for serial production. Compared to a conventional shunting locomotive, 50% lower fuel consumption and 70% lower pollutant emissions have been achieved. The hybrid locomotive is also intended to operate in battery mode for 80% of its operating time.

### Implementation

- Design and calculation of locomotive frame and front/rear hoods
- Constructional arrangement of all main components:
  - Chassis
  - Drawbar and buffering equipment

- Compressed-air pipework
- Brake
- Superstructure and vehicle body
- Hand grips and steps
- Lighting
- Motor-generator set
- Hydraulics
- Cooling system
- Air-conditioning system
- Tank
- Safety and protective equipment
- Electrical equipment
- Development, design and calculation of the driver's cab as an autonomous project at CE cideon engineering

### Customer benefits

Thanks to the performance of services by CE cideon engineering, Alstom Stendal has had the design and calculation of many of the locomotive's main components performed by one engineering partner. Alstom can therefore utilise the expertise of CE cideon engineering, and has access to experts in the specialist areas of construction/ FEM/approvals and various specific areas of expertise.

### CE cideon engineering GmbH & Co. KG

Tzschirnerstraße 5a  
02625 Bautzen . Germany  
Phone +49(0)3591 3744-60  
Fax +49(0)3591 3744-80

Olbernhauer Straße 5  
09125 Chemnitz . Germany  
Phone +49(0)371 77415-10  
Fax +49(0)371 77415-39

Handelsplatz 1  
04319 Leipzig . Germany  
Phone +49 (0) 341 652336-0  
Fax +49 (0) 341 652336-12

### CE cideon engineering Schweiz AG

Steingraben 42  
4051 Basel . Switzerland  
Phone +41(0)61 20577-50  
Fax +41(0)61 20577-59