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RegioJet Tour And Plans

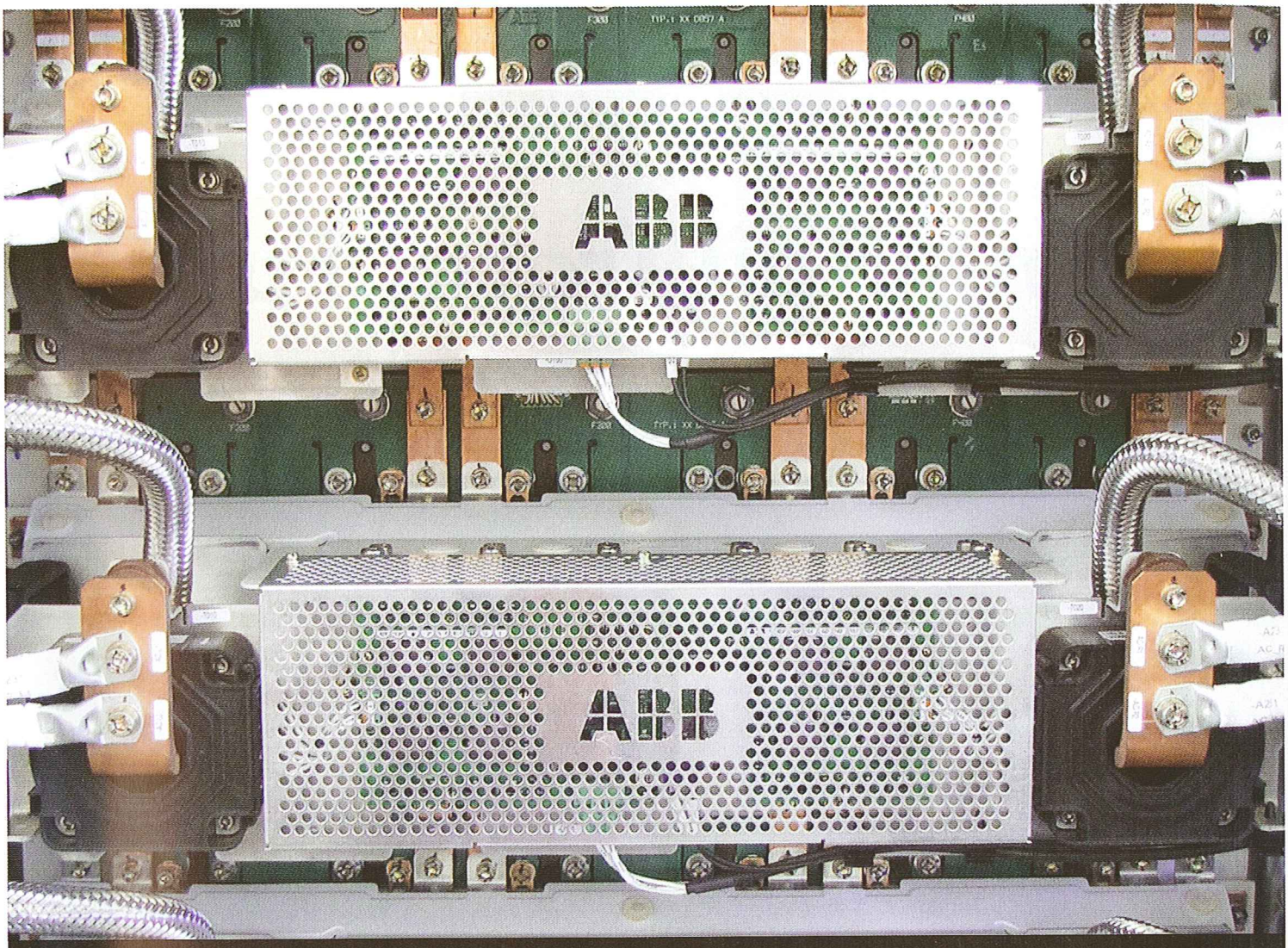
A Cluster Of RZD Contracts

Class 407 Velaro D Progress

Viaggio Light For Israeli Railways

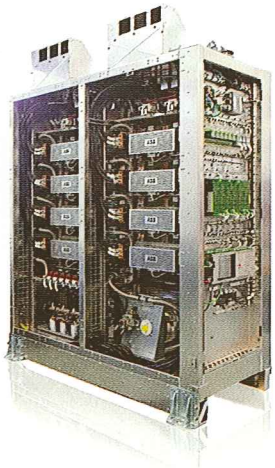
SBB Class RABe 511 EMU Presentation

Railvolution No 1 In Europe



Maximal power, minimal weight?

Absolutely.



Building on field-proven technologies and modules, ABB brings powerful new traction converters and traction packages to the railway market. In 2010, for example, Stadler Rail celebrates the rollout of the new DOSTO double-deck regional trains equipped with ABB Compact Converters and traction transformers. Exceptional power density, perfect control, and consequent weight reduction are only some reasons why customers choose ABB. www.abb.com/railway

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Light And Powerful - The New EUROLIGHT Combines Both Requirements

Vossloh Espana has developed a new diesel-electric locomotive with a low axle-load of under 20 t, and brand-named EUROLIGHT. The company is thus able to offer a 2,800 kW machine able to run on lightly laid secondary lines, yet sufficiently powerful to operate at speed on the main line.

Anticipating customer requirements, the company is focused on cross-border operators - both freight and passenger - and has identified a market demanding high power four-axle diesel electric locomotives for railways with restricted axle-loads, bearing in mind that many European **secondary lines** are not electrified. The EUROLIGHT, with its axle-load of under 20 t, also fulfills the latest EU regulations and operator necessities, setting new standards in the European locomotive market. The groundwork for the EUROLIGHT is Vossloh España's new concept of interoperable diesel locomotives, developed to overcome the existing differences found in rail transport and motive power across Europe.

The EUROLIGHT Basis

The EUROLIGHT's big brother, the EURO 4000, was the first Vossloh locomotive to be built under the new interoperable concept. It was presented in September 2006 at InnoTrans. With its pan-European objective, the **EURO 4000** complies with all European standards, adapts easily to the railway networks of different countries, and is fully prepared for the retro-fitting of ETCS mobile equipment for use on the future ERTMS corridors. Thanks to the locomotive's modularity, Vossloh is now targeting the important market of European secondary lines, with their limited axle-loads. Many such lines exist right across the continent - from Portugal to Greece and from Italy to Poland. The locomotive is designed also for operation in any of the Middle East and North African countries.

Based on the experience gained already with the EURO family, the EUROLIGHT is a high-power but lightweight diesel-electric locomotive, with AC-AC transmission. It incorporates components already used for the EURO 4000s and EURO 3000s, which are powered by EMD engines, as well as propulsion and traction components developed by well known and highly qualified suppliers, namely ABB and CAT.

Technical Feature

The EUROLIGHT is light enough to run on lines with Class C and D track, designed for an axle-weight of under 20 t, but also sufficiently powerful to haul quite heavy freights on trunk routes at a maximum speed of 120 km/h. It can be equipped with two different types of **engine**, the CAT C175-16 or the CAT C175-12. These incorporate tried and tested technology, and over 2,600 of them have been produced and sold to date. They were also put through an extensive Vossloh prototype testing phase. The nominal power is 2,800 kW for the 16-cylinder model and 2,300 kW for the 12-cylinder one. A whole range of EUROLIGHTs is planned, such as versions with top speeds between 140 and 200 km/h for passenger operators, and with power ratings between 2,300 kW and 3,500 kW.

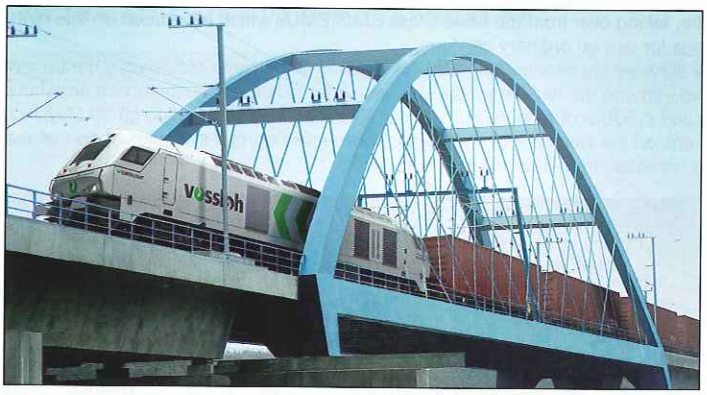
The EUROLIGHT is equipped with four traction **inverters** (one for each traction motor) to improve its adhesion performance, a key factor in the design of a four-axle locomotive with a low axle-load. In addition, this redundancy will improve operational reliability. The use of lighter components, such as the prime mover from CAT and the alternator from ABB, as well as the optimised cooling and auxiliary systems, allowed Vossloh to create a locomotive which is considerably lighter than any other existing model within this power range. The 16-cylinder engine version weighs 77.5 t in working order, the 12-cylinder one will have an even lower weight. All relevant standards, namely the UIC and EU Emissions regulations (EU Stage IIIA plus further update to IIIB), are fulfilled.

The EUROLIGHT is also able to negotiate curves as tight as 80 m radius, so access to industrial networks and sidings presents no problems. The wheels have a large diameter of 1,100 mm. The EUROLIGHT is equipped with a 4,000-litre fuel **tank**, although a 7,000-litre one can be fitted for long haul freight operations if required. The power to weight to fuel rank capacity ratio is the best yet achieved among existing Bo'Bo' locomotive designs. The EUROLIGHT is the only diesel-electric to date on the market that combines a low axle-load with a high power rating, resulting in the lowest possible operating costs. As a result, the effective cost per kW is lower than in the case of other locomotives.

The EUROLIGHT has been designed to be equipped with any of the onboard **ATP** systems that currently are requested for operation on European networks, including ETCS. The first EUROLIGHT will make its public debut at InnoTrans 2010, in Berlin in late September.

Daniel Mesa
Sales Vice-President
Vossloh España

Pictures: Vossloh España



A photomontage of the EUROLIGHT locomotive crossing the Oderbrücke between Germany and Poland.

Logitren Services Start

Logitren Ferroviaria was created by the Valencian concern Torrescámara y Compañía and Vías y Construcciones, and in late 2007 applied for an open access railfreight operating licence, being granted this on 30 April 2008. At the end of the latter year Ferrocarrils de la Generalitat Valenciana, which operates the metre gauge networks in València and Alacant, acquired 33 % of Logitren's shares. An order was placed with Vossloh España for a EURO 4000, and the first services started up in April 2010, linking València port with Zaragoza Plataforma Logística. ***Here, its locomotive, numbered 335.028, is seen at Fuencarral on 28 March 2010.***

Mike Bent, photo: Adrian Rodríguez

Powerful ABB Traction Packages For EUROLIGHT

Two very compact traction converters combined with four robust traction motors and a lightweight and compact synchronous generator represent the ABB traction package in Vossloh Espana's innovative concept for EUROLIGHT locomotives.

Development Partnership

The aim of Vossloh España was to develop a versatile and reliable 4-axle diesel-electric locomotive for freight and passenger traffic with an axle load below 20 t. Based on latest technologies, ABB designed the traction package to the specifications of the new locomotive design. The traction package development partnership has the advantage that all components of the package are designed for optimum overall performance, efficiency, and availability with a simple and clear interface to the sub-system supplier.

System Overview

A Caterpillar diesel engine drives the ABB generator which feeds two identical parallel ABB Compact Converters. Each Compact Converter contains its own drive control, a rectifier unit, an auxiliary converter, a braking chopper, and two independent motor inverters. Optionally the power supply for the train supply line can also be integrated in the Compact Converters for the passenger version of the EUROLIGHT locomotive.

Generator

The 2.8 MW brushless synchronous generator from ABB is directly coupled to the Caterpillar engine and has a single bearing. It is forced air-cooled and weighs 5.6 t only. The generator is self-excited with a redundant automatic voltage regulator UNITROL 1000 from ABB. After a system test at ABB, the generator was shipped to Caterpillar, USA, for rigorous testing with the diesel engine.

Compact Converter

Each BORDLINE® CC1500 DE Compact Converter is a rugged, liquid-cooled unit with small, intelligent IGBT power modules (35 kg each). The design is optimized for reliability and service friendliness. For passenger locomotives, an additional power module feeds the head-end power supply from the intermediate circuit of the two converters. The auxiliary converter for the locomotive's self consumption is also integrated in the Compact Converter and galvanically isolated.

Each drive control is based on the powerful AC800 PEC platform, which is used in all ABB traction converters, as well as in a wide range of industrial applications. In the configuration of Vossloh España's EUROLIGHT, the drive control is also responsible for adhesion control and power management, optimising the energy efficiency and effectiveness of the entire traction chain. The control is mounted on a swing frame, covering the power modules. All electronics and power semiconductors are perfectly contained and protected in an IP54 housing.

Motors

The ABB traction motor has a rate power of 600 kW and can reach operating speed at 4,400 rpm. The motor has the pinion directly machined on the shaft in order to reach a better space and weight optimisation.

Harald Hepp
ABB Switzerland

Photos: ABB

ABB generator for EUROLIGHT.

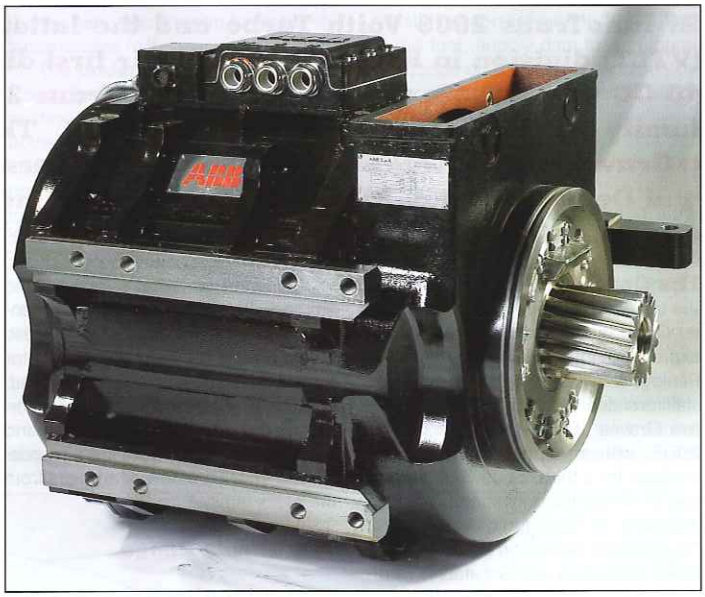


ABB traction motor for EUROLIGHT locomotives.

Photo on the left: BORDLINE® CC1500 DE Compact Converter.

Technical Data Of The Traction Package For EUROLIGHT
(2.4 MW version; four power ranges up to 3.5 MW available)

Propulsion Output	4 x 600 kW
Tractive Effort	300 kN
Braking Chopper	2x 750 kW
Auxiliary Converter	(2x) 3 x 480 V/60 Hz, 90 kVA
Vehicle Control Interface	Can Open, I/Os
Dimensions Compact Converter (L x W x H)	1,350 x 850 x 1,910 mm
Weight - Of A Converter	1,100 kg
- Of A Traction Motor	1,900 kg
- Of A Generator	5,600 kg