CRRC

CRRC ZELC
Public Transportation Solutions

Innovation Driven Green Future

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CRRC Zhuzhou Locomotive Co., Ltd.

- CRRC Zhuzhou Locomotive Co., Ltd. (CRRC ZELC) is a core subsidiary of CRRC Corporation, with its business line covering electric locomotives, mass transit vehicles, intercity EMU trainsets, maglev trains, energy-stored trams/ electric vehicles, key components, know-how products and maintenance services, etc. CRRC ZELC has been committed to offering the customers with world-class solutions of Public Transportation throughout the life cycle.

- With advanced design methods, lean production system and first-class testing platform, CRRC ZELC has built up the world's most integrated industrial chain of rail transit in Zhuzhou. It is the development and manufacturing base of rail transportation equipment, ranking top in China with a complete array of technologies, a diversified portfolio of products and a strong support of human resources.

Diverse Products

CRRC ZELC has set up manufacturing and maintenance bases in 13 cities at home and abroad, established full life cycle maintenance service system for locomotives, mass transit vehicles and EMU trainsets.


Kazakhstan
Urumqi
Uzbekistan
Cangzhou
Zhengzhou
Huaian
Luoyang
Wuxi
Yima
Wuhan
Shanghai
Changsha
Ningbo
Zhuzhou
Guangzhou
Kunming
Nanning
Shenzhen
India
Malaysia
Singapore
Application of CRRC ZELC whole train
Domestic and Overseas Production Bases

1 Intercity EMU Trainset

Birthplace of China's EMU trainsets and China's first EMU trainset exporter

Macedonia EMU Trainset

With independent intellectual property rights of intercity EMU trainset, CRRC ZELC took the lead in "Go Global", winning the orders from Malaysia and Macedonia, worth 5 billion yuan. The photo above is Macedonia EMU trainset, China's first intercity EMU trainset exported to Europe, with operating speed of 160km/h.

Technical advantages

- More powerful traction/brake performances, and more cost-and-energy efficient operation
- Meeting international standards, such as TSI, EN15085 and DIN6701
- Standardized, serialized and modularized design philosophy
- EMU trainset design platform with independent and smart train network

Single-deck EMU Trainset

Malaysia SCS Intercity EMU Trainset

Malaysia SCS intercity EMU trainset has operated safely for more than 20,000,000km in Kuala Lumpur with operating speed of 140km/h.

Malaysia ETS Intercity EMU Trainset

Malaysia ETS intercity EMU trainset, with operating speed of 160km/h (equivalent to 230km/h on standard gauge), is the fastest meter-gauge EMU trainset in the world. It is applicable to middle-and-long distance trips.

▶ **Changsha-Zhuzhou-Xiangtan intercity EMU trainset**

Changsha-Zhuzhou-Xiangtan intercity EMU trainset, with operating speed of 160km/h, can run in multiple unit and has functions of quickly coupling and uncoupling.

Technical data of intercity EMU trainset			
Operating speed	120km/h、140km/h、160km/h、200km/h		
Traction mode	Power-distributed, power-concentrated		
Train configuration	4	6	8
Seating capacity	740 persons	856 persons	1,028 persons
Length	101400mm	138600mm	203000mm
Width	2750–3300mm		
Height	3875–3890mm		
Axle load	14–17t		
Current collection	AC25000V, pantograph		

CRRC ZELC has independently innovated technologies of EMU trainset in different speed levels, such as Blue Arrow, Midland Star and China Star, enjoying the title of home to China's EMU trainset.

▶ Blue Arrow, 200 km/h

▶ Midland Star, 160 km/h

▶ China Star, 270 km/h

2 Electric locomotives

Home of China's Electric Locomotive

The world's largest development and manufacture base of electric locomotives, with the most advanced technology of railway heavy-duty transport worldwide.

In 1958, CRRC ZELC produced China's first electric locomotive. Over the years it has developed and manufactured 51 types of mainline electric locomotives, totally 7500 sets, covering rapid passenger locomotive, passenger/freight locomotive and heavy-duty freight locomotive, which contributes to its over 60% share of Chinese market. CRRC ZELC has taken the lead in transformation of China's electric locomotive from common duty to heavy duty and from DC drive to AC drive.

Technical advantages

- Integration of cutting-edge technologies brings the automated, intelligent and energy-saving performance to world's top level
- A diversified array of high-power AC drive electric locomotives with different axle arrangements and traction forces
- Customized solutions and rich experience from intensive application worldwide
- Catering to the specific requirements in different regions and climatic environments

▶ 8-axle fast passenger locomotive

2.1 Heavy-duty Freight Electric Locomotive

▶ Shenhua 12-axle Electric Locomotive

Shenhua 12-axle electric locomotive has a traction power of 14400Kw, boasting the most powerful electric locomotive in the world. It creates a new development direction of locomotive traction power mode, steering the technology trend of global heavy-duty freight locomotive and standing at the commanding point of technology in global rail transport sector.

Technical Data	
Catenary voltage & frequency	25kV/50Hz
Electric drive mode	AC-DC-AC
Axle arrangement	3 (Bo-Bo)
Traction power	14400kW
Design speed	120km/h
Axle load	25t

▶ **HXD1C Plateau Electric Locomotive**

HXD1C plateau electric locomotive is applicable to plateau environment with altitude of more than 4000m. Single locomotive is able to haul 5000t freight for long-distance and on large gradient.

▶ **HXD1B Electric Locomotive**

HXD1B electric locomotive is one of the most advanced railway traction equipment in the world at present, capable of hauling 6000t heavy-duty long freight train on all mainlines.

▶ **HXD1F Heavy-duty Electric Locomotive** (axle load: 30t)

HXD1F heavy-duty electric locomotive represents the trend of global heavy-duty transportation, with its transportation capability being increased by more than 20% to reduce the traction energy consumption and improve cost efficiency.

2.2 Rapid Passenger Electric Locomotive

▶ 8-axle Rapid Passenger Electric Locomotive

CRRC ZELC has innovated the first 8-axle rapid passenger electric locomotive in the world, with design speed of 210km/h, filling the blank of high-speed AC drive locomotive. Its light-weighted design meets the requirements of rapid passenger transport on both passenger dedicated lines and mainlines.

Technical Data	
Catenary voltage & frequency	25kV/50Hz
Electric drive mode	AC-DC-AC
Axle arrangement	2 (Bo-Bo)
Traction power	11200kW
Design speed	210km/h
Axle load	19.5t

▶ **HXD1D Electric Locomotive**

With max. operating speed of 160km/h, HXD1D electric locomotive is one of the most powerful passenger locomotives for mainline service in China, and it is also the mainstay for future quasi-high speed passenger transport on China's mainline railways.

Technical Data	
Catenary voltage & frequency	25kV/50Hz
Electric drive mode	AC-DC-AC
Axle arrangement	Co-Co
Traction power	7200kW
Design speed	160km/h
Axle load	21t

2.3 Electric Locomotives for Different Track

South Africa 20E Locomotive

South Africa 20E locomotive uses dual-voltage electric traction technology, applicable to the mainline railways in South Africa. It can realize multiple operation in an 8-loco-configuration at maximum or wired multiple operation between electric locomotive and diesel locomotive to better serve for the transportation of minerals in South Africa.

Technical Data	
Catenary voltage & frequency	Single-phase AC25kV/50Hz or DC3000V
Track gauge	1067mm
Electric drive mode	AC-DC-AC (AC catenary), DC-AC (DC catenary)
Axle arrangement	Bo-Bo
Traction power	3000kW
Design speed	100 km/h

Technical Data	
Catenary voltage & frequency	Single-phase AC25kV/50Hz or DC3000V
Track gauge	1067mm
Electric drive mode	AC-DC-AC (AC catenary), DC-AC (DC catenary)
Axle arrangement	Co-Co
Traction power	4500kW
Design speed	100 km/h

▸ South Africa 22E Electric Locomotive

South Africa 22E electric locomotive adopts dual-voltage electric traction technology. It is a 6-axle locomotive with max. traction power of 4500KW. It can realize multiple operation in an 8-loco-configuration at maximum or wired multiple operation between electric locomotive and diesel locomotive to greatly improve transportation capability of railways in South Africa.

▸ Malaysia 6-axle Electric Locomotive

Malaysia 6-axle electric locomotive is the first meter-gauge electric locomotive in the world, customized for Malaysia by CRRC ZELC and applied to both freight and passenger transportation.

Technical Data	
Catenary voltage & frequency	25kV/50Hz
Application	Freight and passenger transportation
Track gauge	1000mm
Electric drive mode	AC-DC-AC
Axle arrangement	Co-Co
Traction power	3000kW
Design speed	120km/h
Axle load	19.5t

3 Urban Transit Vehicles

Provider of urban transit system solutions

Diverse vehicles for various traveling demands

Vehicles	Applicable distance	Speed scope	Capacity
Metro	20-50km	80-120km/h	Large
Light rail vehicle, mid-and-low speed maglev train	20-50km	80-120km/h	Intermediate
Tram	10-20km	60-70km/h	Intermediate and small
Electric vehicle, BRT, bus	10-20km	40-60km/h	Small

Technical advantages

- Integration of cutting-edge technologies brings the automated, intelligent and energy-saving performance to world's top level
- A complete portfolio of products and customized solutions
- Customized solutions and rich experience from intensive application worldwide

Customized urban transit solutions with various capacities

▶ Metro vehicles for Guangzhou Mefro Line 2&8

▶ Light rail vehicle

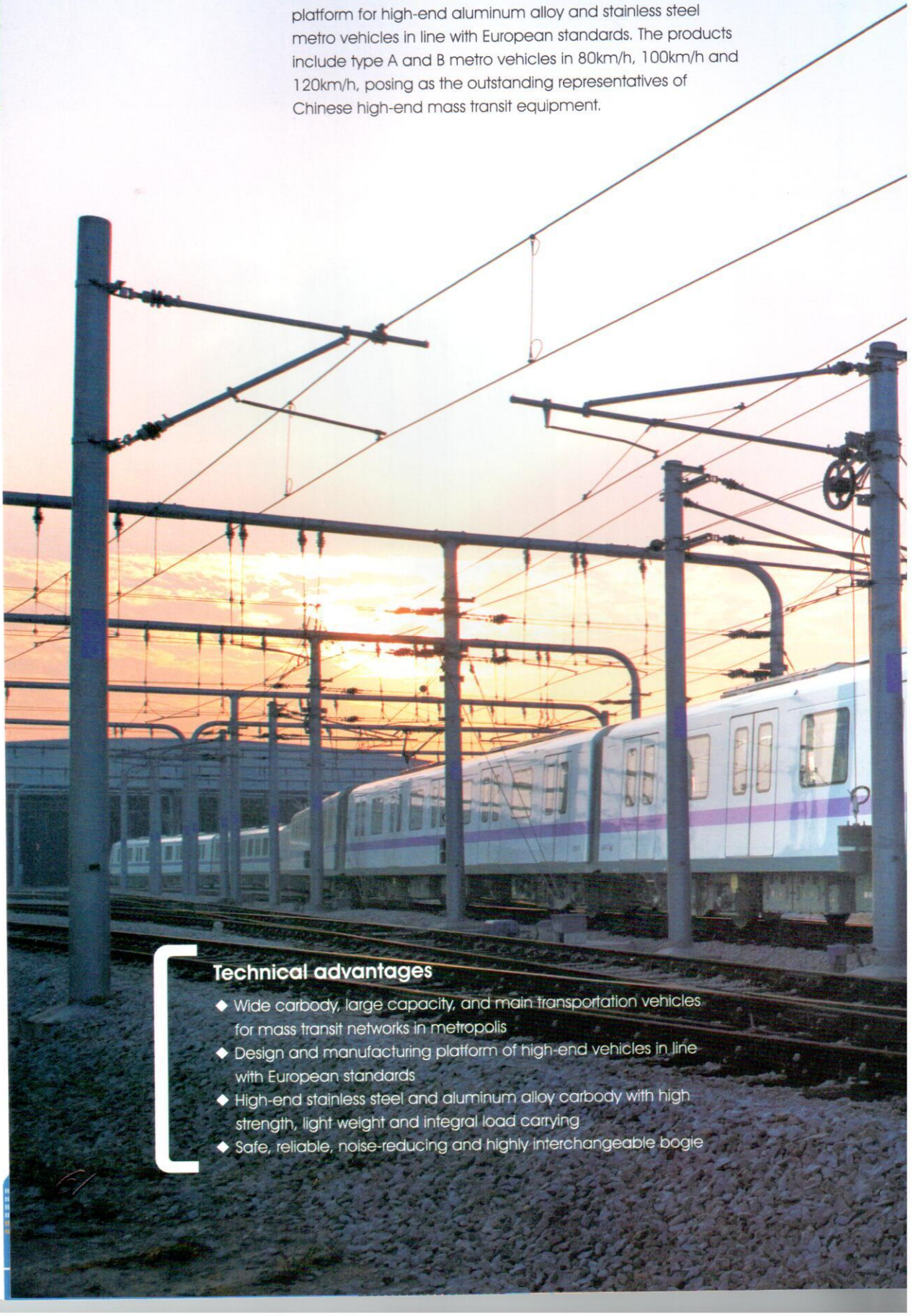
▶ Mid-and-low speed maglev train

▶ Ultra-capacitor tram

▶ Ultra-capacitor electric vehicle

3.1 Type A and B Metro Vehicles

CRRC ZELC has built up a development and manufacturing platform for high-end aluminum alloy and stainless steel metro vehicles in line with European standards. The products include type A and B metro vehicles in 80km/h, 100km/h and 120km/h, posing as the outstanding representatives of Chinese high-end mass transit equipment.



Technical advantages

- Wide carbody, large capacity, and main transportation vehicles for mass transit networks in metropolis
- Design and manufacturing platform of high-end vehicles in line with European standards
- High-end stainless steel and aluminum alloy carbody with high strength, light weight and integral load carrying
- Safe, reliable, noise-reducing and highly interchangeable bogie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