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Siemens Mobility GmbH
Otto-Hahn-Ring 6
81739 Munich, Germany

contact.mobility@siemens.com

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SIEMENS
Ingenuity for life



Desiro HC

Smart combination – high
capacity

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Thinking about tomorrow today

The face of Europe is changing as more and more people gravitate to metropolitan areas. People living in city centers and in conurbations are increasingly making do without cars, but they still want mobility – and efficient, modern, punctual, and environmentally friendly trains make it easier for them to make the transition.

The Desiro HC is the flexible, future-proof solution for growing metropolitan regions that combines comfort and capacity. It is ready for the increase in passengers that the future will bring. Desiro HC already stands out thanks to its attractiveness and superb efficiency, and it will help facilitate the advancing trend toward denser networking.



AN INNOVATIVE AND PROVEN TRAIN:

A multi-talent

Changing infrastructure: Human mobility is increasingly shifting toward rail transportation. Keep your transport routes in tune with the times. Invest in a flexible train solution that opens up new possibilities for you – for increasing passenger volumes, changing routes, and efficiency across the board. With the Desiro HC you'll be on the safe side – for decades.

CAPACIOUS AND FLEXIBLE

The best of both worlds: Single-deck cars are efficient, light, and guarantee best conditions for wheelchair-accessibility. Double-deck cars, on the other hand, provide significantly greater passenger capacity. The Desiro HC combines the strengths of both car concepts: a substantial number of seats with a large, unobstructed floor area. And if your requirements change, you can vary the car composition and also configure the interior space entirely to your wishes. The versatile Desiro HC train concept makes it all possible.

SAFE AND PUNCTUAL

Competitive today and tomorrow: An operator that can offer its customers reliable and punctual trains scores over other forms of transport. That's why we've given the Desiro HC exceptionally quick acceleration. Passenger flow at stations is fast and unimpeded thanks to its wide doors. Over the long term, measures like the well thought-out maintenance concept ensure maximum reliability and availability so that people traveling on Desiro HC always arrive on schedule.

RELIABLE AND LONG-LASTING

Always operational right from the start: The Desiro HC uses tried and tested components and systems that have already demonstrated their reliability over millions of operating kilometers. In addition, the entire train is designed for fast, efficient maintenance. As manufacturer, we vouch for a service life of 30 years and more. Because we know the quality of our trains, at your request we can deliver them on the basis of a lifecycle model, in which you receive both vehicle and maintenance from a single source. In this way, you can rely on guaranteed reliability over the long term and calculable operating costs.

ECO-FRIENDLY AND ECONOMICAL

Cost-saving in every respect: The Desiro HC proves its economic strengths in operation. The lightweight construction saves traction power, while energy management, LED lighting, and regenerative braking reduce power consumption on board to a minimum. This is how Desiro HC helps protect the environment and also wins over cost-sensitive operators. Additional plus points for profitable operation are its exceptionally high availability and rugged construction and maintenance-optimized design. A train that runs reliably pays off in the final analysis.

STRENGTHS AT A GLANCE

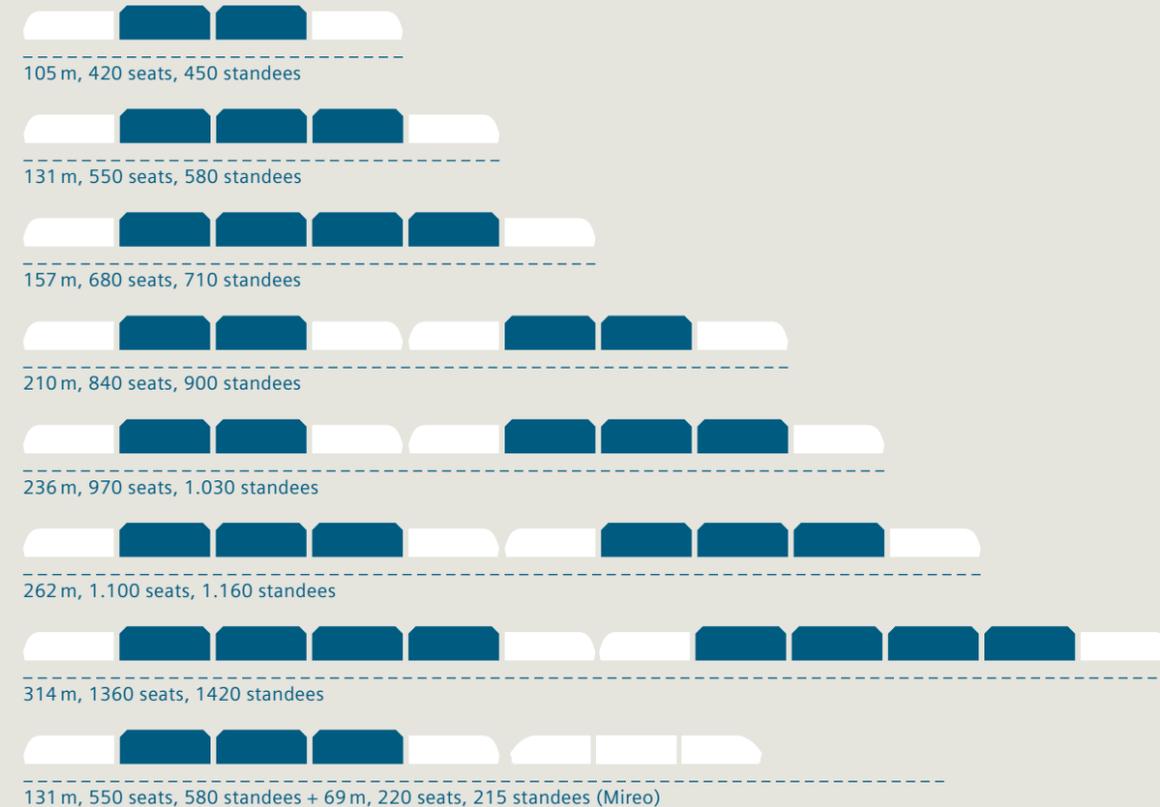
- High capacity thanks to innovative car combinations
- Custom adaptation with maximum design flexibility
- Outstanding availability based on proven technology
- Minimized energy consumption for low operating costs



SINGLE-DECKER AND DOUBLE-DECKER:

Clever combination

Single-deck trains are the first choice for local and regional transport. They are light, comfortable, and largely handicapped-accessible. However, they reach their limits with high passenger volumes and restricted platform length. In that case, double-deck trains offer the necessary capacity, but with compromises in terms of efficiency and comfort. Profit from the advantages of both concepts – the Desiro HC combines both in its innovative car combination.



FOR OPERATORS: CAPACITY PLUS EFFICIENCY

With up to 420 seats over a train length of 105 meters, the capacity of the four-car Desiro HC is pretty impressive: In fact, it's equivalent to conventional double-deck trains. The Desiro HC, though, uses single-deck end cars that make it light, dynamic, and passenger-friendly. Thanks to its fast acceleration, it can easily build up time reserves. The lower weight also has a marked effect on energy consumption. Extra intermediate cars can be added to increase capacity – so that you are equipped at all times for growing passenger numbers, timetable changes, or new lines.

FOR PASSENGERS: SPACE PLUS COMFORT

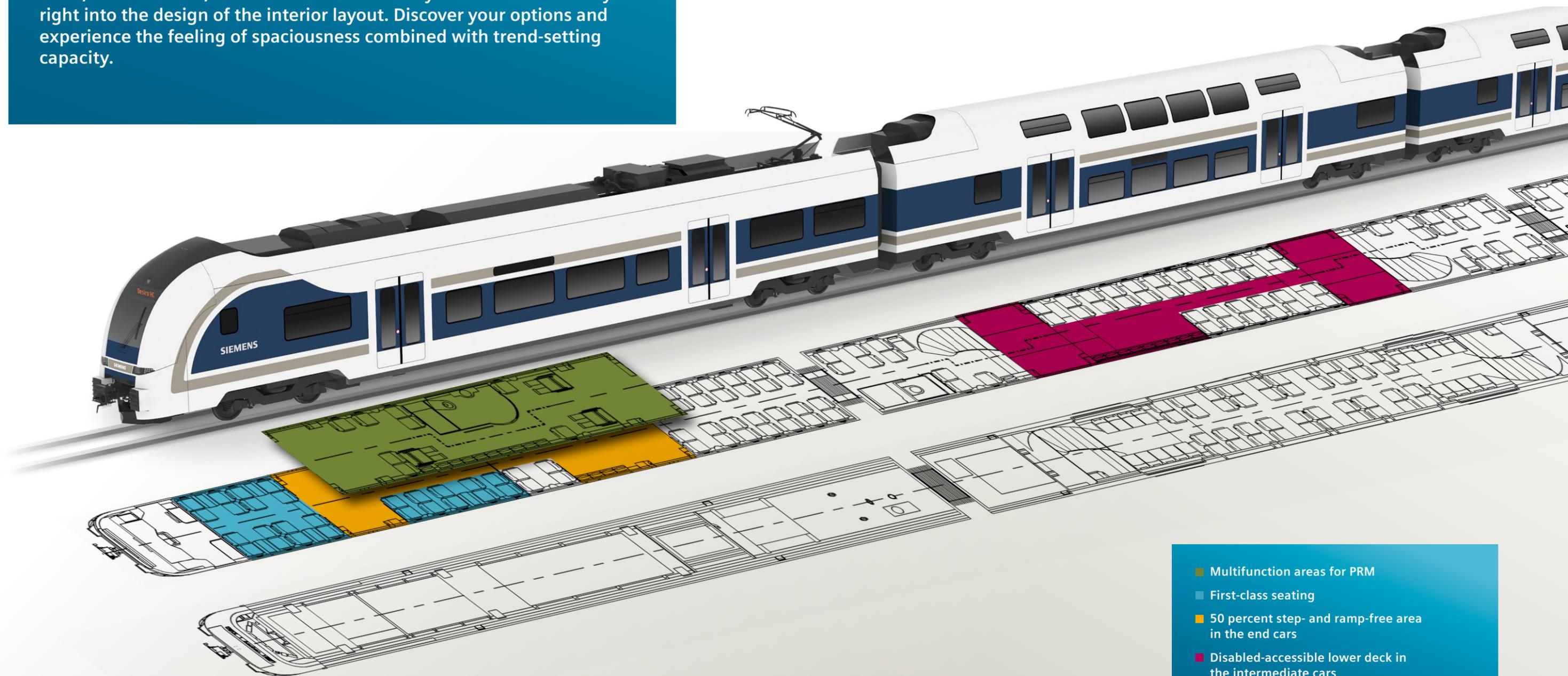
The fewer steps there are, the better the passenger flow. The Desiro HC is outstanding in this respect. Passengers have excellent access, even with bulky baggage, bikes, or strollers, thanks to the same-level entrance and the flat lower deck in the intermediate car – and 50 percent of the passenger space in the end cars has absolutely no steps or ramps. Passengers with restricted mobility benefit in particular from the absence of barriers in the train. The systematic relocation of engine compartments and switchgear cabinets also adds space. The arrangement of all this equipment under the floor or on the roof of the end cars makes the passenger compartment more spacious and airy.



ROOM FOR INDIVIDUALITY:

Variable layout

People and regions are different. So too are their requirements when it comes to a train that will be central to their mobility for decades. Whether you want high-quality first-class areas, plenty of space for bikes, or more seats, the Desiro HC's modular system builds flexibility right into the design of the interior layout. Discover your options and experience the feeling of spaciousness combined with trend-setting capacity.



- Multifunction areas for PRM
- First-class seating
- 50 percent step- and ramp-free area in the end cars
- Disabled-accessible lower deck in the intermediate cars

FUNCTIONALITY AND DESIGN:

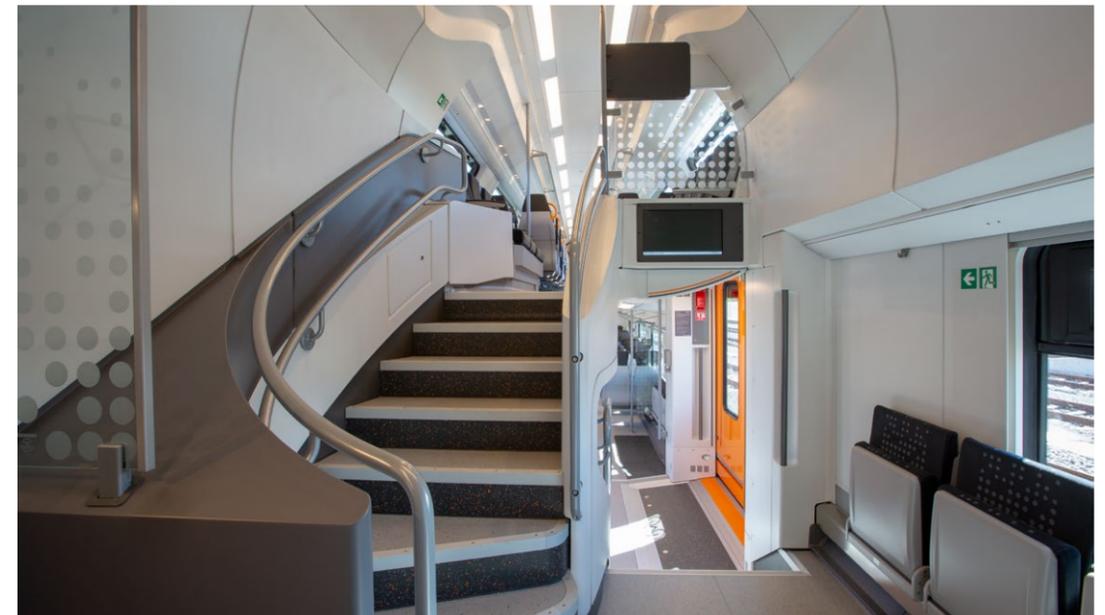
Timelessly impressive



The design of the Desiro HC is immediately appealing. It announces to everyone that here is a timelessly modern and high-quality train. Our customers have custom design options both inside and out. Make your mark with good visibility from a distance and strong brand recognition. With its spacious feel, the Desiro HC projects an especially pleasant and safe image.

LIGHT AND AIRY

Bright, spacious compartments welcome passengers on board the Desiro HC and immediately convey a sense of security. Wide visual axes and transparent separating walls facilitate the panoramic view. Thanks to wide inter-car passageways, passengers can access all parts of the train quickly and easily. Once seated on the comfortable seats, they enjoy plenty of legroom. In order to ensure that this positive impression is not marred, the interior is designed to be extremely easy to clean so that people still enjoy traveling by Desiro HC even after years of service.



A PLEASURE TO RIDE:

Geared to comfort

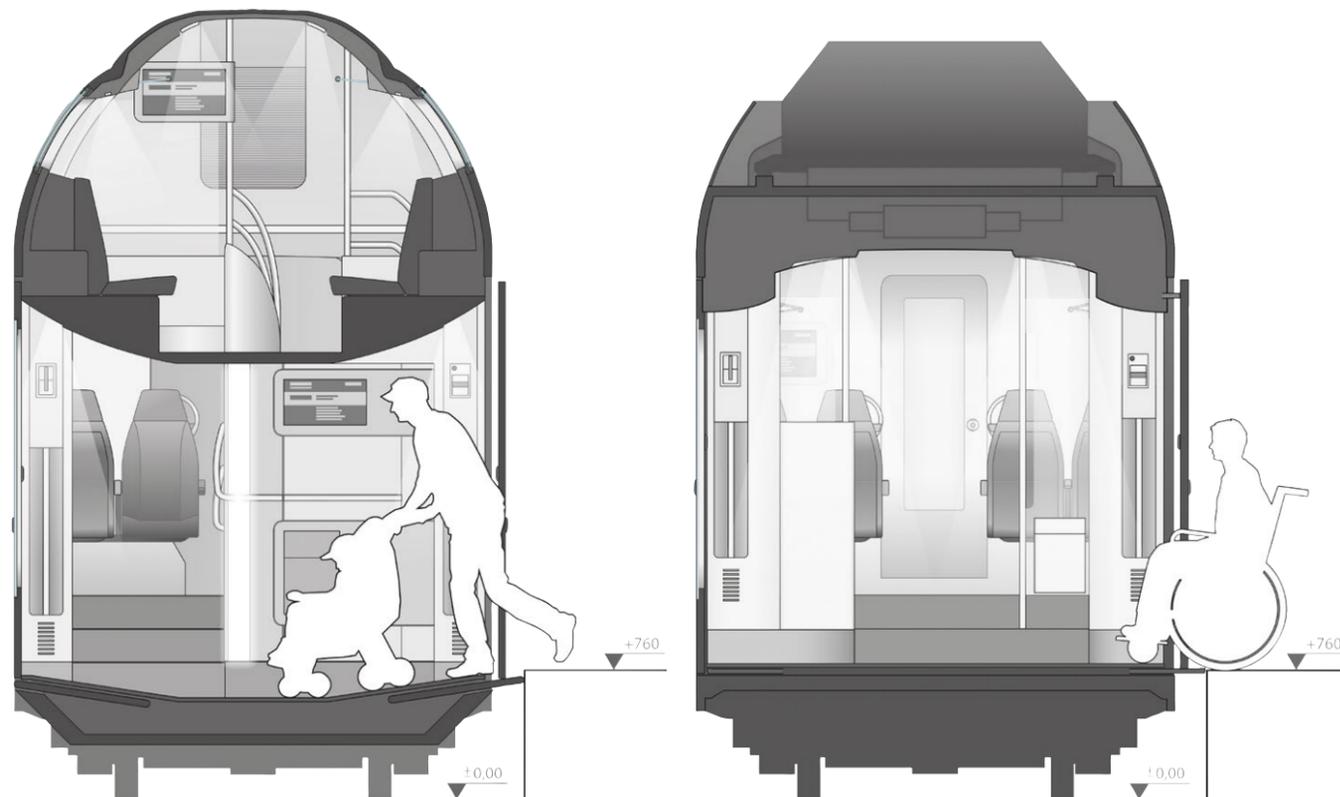
Step aboard and relax. A regional train has to impress occasional travelers as well as commuters time and again, on every journey. The Desiro HC redefines comfort with unobtrusive functionality, ground-breaking technology, and ergonomic and elegant design. Every single detail has to be thought through to make a train attractive. Don't be satisfied with anything less.

SMOOTH BOARDING

Boarding is easy for all passengers at the usual 550 and 760 mm high platforms. They can board the Desiro HC at the same level, which is a special advantage for passengers with bikes, strollers, or wheelchairs. They also benefit from the completely ramp- and step-free low-floor areas in the end cars. The wide doors, large gathering areas, and directly adjoining multifunctional zones ensure that passengers can disperse through the train quickly.

That saves stopping time at the station and everyone reaches their destination on time. The intermediate car offers extra flexibility by providing two different boarding heights in one car. The car can also be easily retrofitted later on, depending on whether the platform is 550 or 760 mm high. You benefit from more flexible deployment and significantly less residual value risk when it comes to financing.

Example: step-less entrance at 760-mm platforms



A MODERN WORKPLACE THAT SETS STANDARDS:

- Ergonomic, uncluttered control console – developed based on practical experience
- Best view, good climate, low-noise environment – for a relaxed workday
- Video surveillance and intelligent vehicle diagnostics – for comprehensive information



PLEASANTLY RELAXED JOURNEY

Conspicuously quiet: Residents living along the railway line and passengers alike benefit from the low-noise operating characteristics of the Desiro HC. The train accelerates and brakes smoothly and runs extremely quietly thanks to its high-quality bogies equipped with efficient air suspension. The energy-efficient heating, ventilation, and air-conditioning system ensures that the fresh-air supply is kept at a pleasant temperature. You almost forget that you're on a train! Socket outlets and WLAN are a must today, and of course they are provided on board. The innovative, expandable information system gives a foretaste of tomorrow's mobility and provides every passenger with the information they need. It is even possible to integrate real-time displays about individualized connection facilities. Your passengers can sit back, relax, and enjoy their trip.

ACTIVE AND PASSIVE SECURITY

For the Desiro HC, the first step toward creating a secure vehicle is compliance with the latest standards. Choice of materials, sensors, and design are consistently geared to providing the best possible protection in the event of a critical situation. Video surveillance, emergency intercom systems at all entrances, hand grips throughout the train, and intelligent door monitoring additionally play an important role in security. Why take risks in everyday operation? With Desiro HC, that's not necessary.

ECONOMICAL TRAIN OPERATION:

A safe investment

Investment in a new vehicle fleet involves long-term planning. Customers expect today's trains to keep running for 30 years or more, naturally without any breakdowns and with the shortest possible downtimes so that their investment pays off over the long term. The Desiro HC is designed from scratch for efficient maintenance to guarantee optimal availability. You can trust in its reliability – for decades.

LOWER MAINTENANCE COSTS

A major proportion of lifecycle costs are accounted for by maintenance. Siemens has acquired extensive experience by servicing more than 500 local and regional trains over many years in Great Britain, Russia, and Germany. This experience is embodied in every Desiro innovation. We've reduced wear through a lower axle load and an exceptionally efficient electrodynamic brake. We use rugged, low-maintenance components from the outset. The Desiro HC is also extremely maintenance-friendly. Ease of access to its systems, wearing parts, and consumables saves a significant amount of time. It's often the small optimization measures that pay the real dividends in the long run.

OUTSTANDING RELIABILITY

Over 99 percent availability documented in Great Britain: With the Desiro, you are investing in a tried and tested vehicle. This is verified not only by awards from trade associations, but more importantly by the satisfaction of our customers and their passengers who depend on the punctuality of their trains every day. The Desiro HC equipment has been tested for just this quality. The train control system, bogies, mechanical braking system, and drive train have been reliably in service for years and have proven themselves under all kinds of different conditions. We test every single train rigorously at our Test and Validation Center in Wegberg-Wildenrath prior to delivery to the customer to ensure that it is available punctually.

The Test and Validation Center in Wegberg-Wildenrath



NEW MAINTENANCE PHILOSOPHY: THE LIFECYCLE CONCEPT

If required, Siemens can provide maintenance for the Desiro HC over its entire lifecycle. As the manufacturer, we are glad to take on this responsibility – because we know the quality of the vehicle and because we know that we can guarantee its reliability over the long term, thanks to preventive service and intelligent maintenance concepts. The Desiro HC is designed so that you as the operator have zero risk and your trains are ready to run every morning.

SUSTAINABILITY AND EFFICIENCY:

Developed for the future

It's important for passengers today that their means of transport is eco-friendly. Sustainability is a convincing argument for the railway versus other modes of transport – and an increasingly important competitive factor. Energy efficiency and lower emissions also save money in the long run. The entire technology of the Desiro HC, from the aerodynamic concept down to the last screw, demonstrates our awareness of both people and the environment.

ECONOMICAL THROUGH AND THROUGH

Economy begins with the drive system. Thanks to its light-weight construction, the Desiro HC inherently uses little energy. An assistance system helps the driver accelerate and brake proactively. Efficiency on board is also impressive. An energy management system gets the most out of the recovered braking energy, and intelligent consumer units minimize power consumption because they only operate on demand. This means that the heating, ventilation, and air-conditioning system with CO₂ detection heats or cools exactly as much fresh air as needed – no more and no less. Together with the economical LED lighting, it creates a pleasant atmosphere at all times of the day and year.

CAREFUL USE OF ENERGY

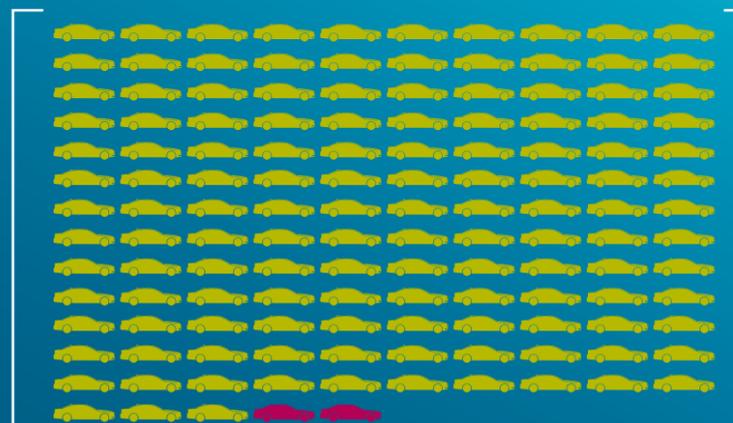
The Desiro HC is frugal, and wherever possible avoids dissipating heat unnecessarily into the environment. It does this with up to 90 percent efficiency in the traction system, with predominant use of the electrodynamic brake to recover energy, and with effective vehicle insulation and optimized door opening times. This means that the train doesn't waste energy and saves on operating costs.

QUIET IN OPERATION

Noise pollution is a major issue, especially in burgeoning metropolitan regions. The quieter a train is, the more acceptable it is politically as well as to passengers and residents living near railway lines. The Desiro HC is therefore designed to operate exceptionally quietly – when running, while at the station, and when parking at the depot. All potential noise sources inside and outside the vehicle have been minimized. When the train is standing at the station, an intelligent noise management system ensures minimal noise emissions. Even the disturbing whistling noise when starting up and braking has been largely eliminated. And thanks to the predominant use of the electrodynamic brake, the characteristic brake squeal is also becoming a thing of the past.



OVER 98.5 PERCENT RECYCLABILITY



205 TONS TOTAL WEIGHT MEASURED IN MEDIUM-SIZED CARS

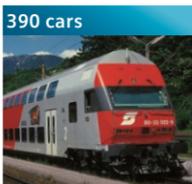
THREE TONS OF RESIDUAL MATERIAL

Economically compatible throughout the entire lifecycle:
With a total weight of 205 tons and a recycling quotient of more than 98 percent, only 3 tons of residual material is left after recycling a four-car Desiro HC – a weight equivalent to two medium-sized cars.

THE CRUCIAL DIFFERENCE:

Built on experience

Innovation is always based on a foundation of experience, expertise, and customer proximity. Siemens has all three. We've been building trains for over 130 year, and every day we've expanded our know-how and improved our technology. And we know our customers worldwide, who trust us to always develop the right solution for their requirements. And you can rely on one of these special solutions, the Desiro HC.

 17 trains Desiro ML – Mittelrheinbahn 2007 – 2008	 305 trains Desiro ML – SNCB 2008 – 2015	 54 trains Desiro RUS 2009 – 2013	 100 trains Desiro ML – ÖBB since 2013
 390 cars 1994 – 2010	 61 trains Desiro DD – SBB 2003 – 2008	 129 cars NDW – SBB 2011 – 2015	



82 trains
Desiro HC RRX – 2015



15 trains
Rheintal – 2017



60 trains
Israel – 2017



12 trains
Augsburg – 2019



23 trains
Elbe-Spree – 2019

THE DESIRO FAMILY

In 2000, the first Desiro Classic was rolled out at our plant in Krefeld. Since then we've continuously added to the family and today there are 2,000 Desiro trains in operation around the world. Today five different platforms fulfill our customers' individual requirements. The British Desiro City, for example, is tailored precisely for passenger service in and around London. In Russia the "Lastotschka" – the Swallow – operates reliably with a traction system designed for dual-power systems, and in Bangkok and Kuala Lumpur the Desiro is equipped for tropical conditions.

OUR SERVICE EXPERTISE

We have a long tradition of servicing our own rail vehicles. As far back as 1881, Siemens built the first electric tram in Berlin – and provided long-term maintenance. Today, we fulfill lifecycle contracts for our Desiro trains in Great Britain, Russia and Germany, providing maintenance and service throughout the entire lifecycle and guaranteeing the availability of the trains. We operate our own Desiro-optimized depots for this purpose. Our benchmark is a verified availability of over 99 percent, for which the Desiro UK received three Golden Spanners* awards in 2008.



* Railway Industry Innovation Award, presented by the "Fourth Friday Club"