

Setra Specials, 18 to 20 May 2009, Stuttgart

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The right Setra coach for any assignment

- **Setra Specials: comparative test drives with five coaches**
- **Setra product range comprises 23 vehicle models**
- **Presentation of future-oriented technology**

Whether for private travel operators or state-owned regular services, with its 23 different models the Setra product range has the right vehicle for every individual purpose. At the “Setra Specials” driving presentation (18 - 20 May 2009 in Stuttgart), the participants will be able to test a very specific selection from this versatile vehicle range in practice. These include both the highest and the shortest representatives of the new TopClass 400 in the form of the Setra S 431 DT double-decker coach and the S 411 HD. The vehicles of this latest touring coach generation stand for travel at the highest level in terms of comfort, technology and safety.

With the 15-metre long S 419 GT-HD, the specialist journalists will also have the longest variant in the ComfortClass 400 available for test driving. The commercially attractive touring coaches in this Setra product segment stand for the best possible combination of touring and occasional operations. With the S 419 UL as the longest and the S 415 NF as the lowest coach in the MultiClass 400, the lineup also includes two representatives from the inter-urban regular service bus segment.

In addition to taking comparative test drives with the five coaches, the “Setra Specials” participants will have the opportunity to update themselves on the current status of fuel cell and battery technology at the Daimler AG research facility in nearby Nabern.

May 2009

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The Setra S 431 DT

- **Setra double-decker coach with features of the new TopClass 400**
- **More than 500 examples of the highest Setra on the roads throughout Europe**

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With a length of 13.89 metres and a height of four metres, the double-decker S 431 DT rounds off the Setra touring coach range at the top end.

With a new cockpit and new steering wheel, the facelifted flagship in this Setra touring coach generation has also adopted major features from the new TopClass 400.

The test vehicle is equipped with a Mercedes-Benz OM 502 LA engine developing 370 kW (503 hp) and the automated ZF-AS Tronic 12-speed manual transmission, and already meets the Euro 5 emission standard coming into force in the autumn. The flagship model in the new TopClass 400 features a kitchen and card tables on the lower deck, and can accommodate a total of 68 passengers whose comfortable seats have Ambiente upholstery. Passengers on the upper deck can also enjoy a panoramic view through the glass roof. Fire alarm systems are installed in both the engine compartment and the luggage compartments, whose capacity has been increased to 8.4 cu. m.. Other modern safety systems for the driver and passengers include the Electronic Stability Program (ESP), Proximity Control and Lane Keeping Assist.

The 500th example of this model was already delivered two years ago, and since December 2007 this double-decker coach has been in Europe-wide service with the Luxembourg coach operator “Voyages Demy Cars”.

Technical data

Setra S 431 DT

Vehicle data

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Length	13 890 mm
Width	2 550 mm
Height	4 000 mm
Wheelbase	6 700 mm
Overhangs	front: 2 620 mm rear: 3 220 mm
Turning circle	22 760 mm
Diesel tank capacity	approx. 560 litres
AdBlue tank capacity	approx. 67 litres
Luggage capacity	8.4 cu. m.
Perm. gross vehicle weight	26 000 kg

Engine and chassis

Engine	MB OM 502 LA Euro 5, 370 kW
Overall displacement	15 930 cc
Max. torque	2 300 Nm (1 080 rpm)
Final drive ratio	i=3.154
Injection system	PLN (pump-line-nozzle)
Transmission	ZF-AS Tronic 12-speed manual transmission
Front axle	Independent suspension with wishbones, stabiliser
Drive axle	MB H06 axle, stabiliser
Trailing axle	RAS / RL 75 A
Steering	ZF 8098, ratio 22.2 to 26.2
Brakes	Electronic braking system (EBS), compressed-air disc brakes, Brake Assist (BA)

Seating capacity and seats

Seats	68, model "Top" with Ambiente upholstery red Alcantara	
Driver's seat	ISRI 6860/875	4

Special equipment

	Proximity control	
	Lane Keeping Assist	
Fire alarm systems in engine compartment and luggage compartment		
	Reversing camera	
	Video surveillance on upper deck	
	Panoramic camera	
	Toilet in staircase	
	Kitchen in special design	
	iPod connection in cockpit	
	19-inch flat-screen monitors	
	Driver and courier camera	
	3 000 W voltage transformer	

Paint finish

	shell grey metallic	
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The Setra S 411 HD

- **The S 411 HD is the highly manoeuvrable Club Bus in the new TopClass 400**
- **With a length of 10.16 metres, it is the shortest touring coach in this range**

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The two-axle S 411 HD high-decker is the shortest model in the new TopClass 400 with a length of 10.16 metres, and rounds off the touring coach range at the lower end. With up to 36 seats in the 4-star version, it is ideal for larger groups or small clubs. Thanks to its compact dimensions, the “Club Bus” is not only interesting to the growing touring market for smaller groups, but also eminently suitable for travel through the narrow streets of old towns or on narrow mountain roads.

The S 411 HD is equipped with the 300 kW (408 hp) Euro 5 Mercedes-Benz engine from the OM 501 LA series and servo-assisted Mercedes-Benz GO 190 6-speed manual transmission. A roof-mounted 32 kW air conditioner with automatic climate control and cockpit climatisation ensures pleasant temperatures in the interior at all times. The S 411 HD presentation vehicle is able to accommodate 21 passengers on seats with Ambiente upholstery, and a club corner is integrated at the rear. Like the double-decker S 431 DT, this coach has the very latest safety features such as the Electronic Stability Program (ESP), proximity control and Lane Keeping Assist.

First presented in 2001, this model was able to celebrate a milestone in autumn 2007 when the 500th example was ceremoniously handed over to the coach operator Fischwenger from Straßwalchen near Salzburg in Austria.

Technical data

Setra S 411 HD

Vehicle data

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Length	10 160 mm
Width	2 550 mm
Height	3 760 mm
Wheelbase	4 985 mm
Overhangs	front: 2 215 mm rear: 2 960 mm
Turning circle	17 300 mm
Diesel tank capacity	approx. 410 litres
AdBlue tank capacity	approx. 42 litres
Luggage capacity	8.4 cu. m.
Perm. gross vehicle weight	18 000 kg

Engine and chassis

Engine	MB OM 501, 300 kW (408 hp), Euro 5
Overall displacement	11 950 cc
Max. torque	1 900 Nm (1 080 rpm)
Final drive ratio	i=3.154
Injection system	PLN (pump-line-nozzle)
Transmission	GO 190 six-speed manual transmission, servo-assisted
Front axle	Independent suspension, stabiliser
Drive axle	MB H06 axle, stabiliser, i=2.846
Steering	ZF 8098, ratios 17.0 to 21.0
Brakes	Electronic Braking System (EBS), compressed-air disc brakes, Brake Assist (BA)

Seating capacity and seats

Seats	21, seat model "Top" with Ambiente upholstery mystic white leather	
Driver's seat	GRAMMER MSG 90.6 PG	7

Special equipment

	Proximity control	
	Lane Keeping Assist	
	Panoramic camera	
Special fitted kitchen with hot-air oven and Jura automatic coffee machine		
	iPod connection in the cockpit	
	19-inch flat-screen monitors	
	2 500 W voltage transformer	

Paint finish

	shell grey metallic	
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The new Setra TopClass 400: Touring par excellence

- **Even more mature and attractive touring coaches**
- **Active and passive safety at the highest level**
- **Engines with increased output and even more torque**

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Series production of the new Setra TopClass 400 has been under way since the beginning of 2008. With this series the Ulm-based brand is continuing its tradition of quality, innovative technology, comfort and safety to achieve high future sales figures, positive customer responses and numerous international awards. Accordingly, the development engineers and designers have worked together closely with Production and Sales to incorporate a large number of technical solutions and further developments into all the models in the TopClass 400 touring coach generation, which is now even more mature and attractive than ever. Werner Staib, CEO of Setra Buses & Coaches: “The aim of the model facelift was to achieve the maximum number of technical improvements while minimising the visual changes.”

Active and passive safety at the highest level

Safety was given the highest priority during this extensive model facelift. Once again Setra has adopted a pioneering role in this respect, and equips the TopClass 400 series with a module that moves the cockpit back out of the danger zone in the event of a crash, as well as an integrated, energy-absorbing structure, as standard. The interaction between these two systems has been optimised in countless crash simulations, resulting in a major increase in safety for the driver and courier. The effectiveness of this safety system has also been verified by several crash tests. Both the crash module with its moveable cockpit and the absorber structure are elements of the new Front Collision Guard (FCG), which also features an underride guard according to ECE-R 93 for the protection of any

other parties involved in an accident. In future the three letters FCG therefore mean protection at the highest level for the driver and passengers in Setra touring coaches of the TopClass 400. While the FCG significantly improves passive safety, there are other new features in the field of active safety. When the vehicle turns off at a junction, for example, the relevant foglamp acts as a cornering light to illuminate the junction area ahead. This function is automatically activated by the indicators at speeds below 40 km/h.

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The two front end-outline lights at the upper front corners are now in LED technology, and therefore have a considerably longer operating life. A new wiper control system ensures that at the fastest wiper setting, the wiping speed is slowed down before the reversing point to prevent the blades from lifting off the windscreen, which significantly reduces noise.

Even more powerful engines

Another quality improvement is not apparent at first sight, but all the more obvious when pressing the accelerator. This is because coach operators can now rely on even more power. The Setra will overcome even the steepest gradients in comfort. Considerably more powerful engines are now installed under the newly designed engine flap, which is no longer a lift-up flap, but rather a rainwater-repelling top-hinged flap integrated into the rear end. The S 415 HD, S 415 HDH, S 416 HDH and S 417 HDH are available with the OM 457 LA six-cylinder in-line engine developing 315 kW/2100 Nm or 335 kW/2200 Nm. On request the three-axle variants can be equipped with the OM 502 LA V8-engine developing 370 kW/2300 Nm - this is standard for the S 431 DT double-decker coach. The compact S 411 HD touring coach is powered by the OM 501 LA V6 unit developing 300kW/1900 Nm. Another new addition is the GO 240-8 Powershift automated 8-speed transmission, which is available as an alternative to the ZF-AS Tronic. All the engines are also able to meet the Euro 5 standard if required.

More space thanks to an extended front end

The new TopClass 400 not only delivers more power, but also scores definite comfort points with passengers and drivers thanks to a 200 mm front-end extension. An extra 14 centimetres of bodyshell allows even more adjustments for the driver, while the courier benefits from seven centimetres that provide legroom at the level of 4-star seating. The S 411 HD has a shorter front-end extension. With its compact length of 10.16 metres, the Setra “Club Bus” remains the most manoeuvrable member of the touring coach family from Ulm.

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The wheelbase of the S 415 HDH has been extended by 100 mm, and the overall length of this three-axle coach is now 12.30 metres. Moreover, relocating the driver’s rest room behind the rear entry means that the super high-decker S 415 HDH, S 416 HDH and S 417 HDH have additional space for a second courier seat. Entering and exiting these vehicles in the rear door area is now even more convenient, as Setra has fitted the super high-decker models in the new TopClass 400 with additional easy-exit features.

Anti-pitch/roll control and trailing axle with independent suspension

Turning to ride comfort, here too Setra passengers are treated with the utmost gentleness. By means of controlled counteraction, the anti-pitch/roll control available as special equipment ensures that the coach glides along as smoothly as possible both when cornering and on uneven road surfaces. This is also partly due to the trailing axle with independent suspension and electronic control that has been integrated into the European TopClass 400 for the first time. The elimination of a hydraulic coupling ensures outstanding smoothness and reduces the kerb weight of the coach by 160 kilograms.

Further weight reduction measures

In this area too, there is plenty of good news where these reengineered touring coaches are concerned. This is because despite a number of weight-increasing features, the kerb weight of these coaches has in fact been reduced by one percent. The measures responsible include eliminating a luggage compartment flap on the left side, a new arrangement that also makes access to the luggage compartment far more convenient.

It is not only this change that alters the appearance of these coaches, as the rubber windscreen surround is also a thing of the past, with a consequent reduction in fuel consumption.

The newly integrated cornering lights, the increased angle of approach and the redesigned front end help to ensure that the Setra face has an even friendlier “smile” in future.

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The facelift is also of great benefit to the drivers, who will feel even more at home thanks to a number of new, exclusive features that make the cockpit increasingly similar to that of a passenger car. These include a redesigned joystick, a leather-lined multifunction steering wheel with numerous integrated key functions and the new instrument cluster with a clearly laid-out 3D appearance.

Entering a new dimension in touring coach engineering

With the presentation of the TopClass 400 in 2001, Setra entered a new dimension in touring coach engineering that guarantees travel at the highest level for the driver and passengers. Examples include innovative comfort features with seats designed for a healthy posture, multimedia systems, versatile kitchen facilities and the unique glass roof over the centre aisle. The ergonomically designed cockpit combines elegant functionality with visual appeal.

It was not without reason that just eight months after first appearing, the TopClass 400 was voted “Coach of the Year 2002” by European bus journalists. The reasons the jury cited for making its choice included the convincing technology and striking design as a symbiosis of form and function. Numerous international awards and prizes have followed since. For example, the 8 500 participants in the reader’s vote for “The best commercial vehicles of the year 2007” voted the Setra TopClass 400 the winner in the “High-deck touring coach” category for the third time.

Numerous safety systems

The TopClass 400 is also state-of-the-art where safety is concerned. All models are equipped with disc brakes, the Electronic Braking System (EBS), the anti-lock braking system (ABS), acceleration skid control (ASR), Brake Assist (BA) and the Electronic Stability Program (ESP), an active system that improves handling

safety and stability. Setra touring coaches have been optionally equipped with proximity cruise control since 2005, a system that eases the driver's workload on motorways and highways. When the system recognises a slower-moving vehicle travelling ahead, it automatically brakes the coach until a distance preset by the driver has been reached, and this is constantly maintained. Setra has also offered the engine brake limiter ex factory since 2005. This brakes the coach if it exceeds the legally prescribed maximum speed of 100 km/h, e.g. as a result of gravitational acceleration on a downhill gradient. Lane Keeping Assist is also available as special equipment. This system uses a video camera to detect any tendency for the vehicle to leave its lane by continuously monitoring the distance between the side of the coach and the lane markings. If the vehicle seems likely to cross this line, the driver is immediately warned by a pulsating movement in his seat which goes unnoticed by his passengers. The warning is given when the outer edge of the lane marking is reached, so that the driver has the greatest possible scope for corrective action. Lane Keeping Assist is activated automatically from a speed of 70 km/h. 12

At the end of last year Setra delivered the first S 416 HDH with Active Brake Assist (ABA). This system responds to slower-moving vehicles travelling ahead by warning the driver in several stages and if necessary initiating emergency braking action if the danger of a rear-end collision threatens. This system is linked to the proximity control system, and uses its sensors to detect "obstacles" travelling ahead. It therefore actively helps to prevent rear-end collisions and save lives.

Six models in Europe

The TopClass 400 generation comprises the 10.16-metre long S 411 HD Club Bus, the 12.2-metre long S 415 HD, the super high-decker S 415 HDH with three axles and length of 12.3 metres, the three-axle, 13.19-metre long S 416 HDH and the 14.05-metre long super high-decker S 417 HDH. The flagship model in this premium Setra model range is the 13.89-metre long S 431 DT double-decker coach. Setra has designed the S 417 specifically for the North American market, adapting it to meet the national regulations. It was first presented in the USA in spring 2003.

The Setra S 419 GT-HD

- **Longest coach in the ComfortClass 400**
- **Up to 67 seats possible in the 3-star version**

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The 14.96-metre long S 419 GT-HD extends the range of high-deck coaches in the ComfortClass 400 series, and is the longest variant in the combined touring/inter-urban segment. First presented at the 2008 International Commercial Vehicle Show (IAA) in Hanover, this touring coach was designed to meet specific customer requirements and has one more row of seats than the S 417 GT-HD. Accordingly this model, which is able to accommodate up to 67 seats with a 3-star seat layout and no toilet, is a particularly attractive alternative for coach operators in countries with large long-distance road networks.

The S 419 GT-HD is equipped with a 350 kW (476 hp) MB OM 502 LA V8-engine and the 12-speed ZF-AS Tronic AS-2300 transmission with automated gearshifting, and already meets the Euro 5 exhaust emission standard coming into force in the autumn.

The test bus is fitted with 60 Top seats with Nimbus upholstery, two courier seats, 19-inch monitors at the front and at the centre entry, fire alarm systems in the engine compartment and luggage compartments, and an efficient, roof-mounted 39 kW air conditioner with automatic climate control that includes the cockpit. Features in the onboard kitchen include a 5-litre boiler and a 40-cup coffee-maker. The cockpit is equipped with a leather-lined steering wheel and a carbon-look instrument panel. As passive systems, Lane Keeping Assist and proximity control ensure even greater safety for the driver and passengers.

Technical data

Setra S 419 GT-HD

Vehicle data

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Length	14 960 mm
Width	2 550 mm
Height	3 620 mm
Wheelbase	6 900 mm
Overhangs	front: 3 160 mm rear: 3 300 mm
Turning circle	23 490 mm
Diesel tank capacity	approx. 490 litres
AdBlue tank capacity	approx. 66 litres
Luggage capacity	10.4 cu. m.
Perm. gross vehicle weight	24 000 kg

Engine and chassis

Engine	MB OM 502 LA, 350 kW (476 hp), Euro 5
Overall displacement	15 930 cc
Max. torque	2 100 Nm (1 080 rpm)
Final drive ratio	i=3.154
Injection system	PLD (pump-line-nozzle)
Transmission	ZF-AS Tronic 12-speed manual transmission
Front axle	Independent suspension, shock absorbers, stabiliser
Drive axle	MB H06 axle, shock absorbers, stabiliser
Trailing axle	Actively steered trailing axle, Rear Axle Steering (RAS), shock absorbers
Steering	ZF 8098, ratios 22.2 to 26.2
Brakes	Electronic Braking System (EBS), compressed-air disc brakes, Brake Assist (BA)

Seating capacity and seats

Seats	60, seat model "Top", Nimbus design grey fabric, top section in blackberry leather	
Driver's seat	ISRI 6860/875	16

Special equipment

Fire alarm systems in engine compartment and luggage compartment
Smoke alarm in WC
19-inch flat-screen monitors
Leather steering wheel and carbon fibre-look instrument panel

Paint finish

aubergine metallic

The ComfortClass 400: new dimensions in economy and comfort

- **More space thanks to new lengths**
- **More cockpit space for even more comfort**
- **Engines of the GT-HD models**
- **More free space when loading and unloading**
- **Easily accessible electronics**

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A new design, new vehicle lengths, a completely newly developed cockpit and numerous new technical features for the exterior and interior make the ComfortClass 400 presented in 2003 a product segment in which the S 415 GT, S 416 GT, S 415 GT-HD, S 416 GT-HD, S 416 GT-HD/2, S 417 GT-HD and S 419 GT-HD retain their distinctiveness and represent a new dimension with an outstanding combination of economy and travelling comfort. In spring 2005 the product range was extended with the right-hand drive S 415 GT-HD and S 416 GT-HD variants.

More space thanks to new lengths

When the regulation that buses and coaches must not have an overall length exceeding twelve metres was rescinded, Setra also made full use of this during the development of the ComfortClass 400. The S 415 GT and S 415 GT-HD measure 12 200 mm, the S 416 GT-HD 13 020 mm, the S 416 GT 13 040 mm and the S 417 GT-HD 14 050 mm in length. The S 419 GT-HD is 14 960 mm long. This completely new length concept for combined touring/occasional coach operations creates noticeably more interior space and impressively ensures even more economy and comfort. The decisive factor for the extended front end and width increase to 2 550 mm in these models is the annular frame technology used to construct the bodyshell, where continuous transverse, tubular members are connected by longitudinal members. This tubular frame technology gives the vehicle outstanding torsional rigidity. As in the touring coaches of the TopClass 400 series, the bodyshell skeleton is corrosion-protected by cathodic dip priming. These models are 60 mm longer at the front end than their predecessors, and the cockpit depth

has also been increased by another 140 mm. Extending the front end has also widened the front entrance by 70 mm. The new length concept improves passenger access and egress in the front entry area. The designers were also able to use another 70 mm for more generous seat spacing between the right-hand rows in front of the rear entrance. Despite the new lengths the angle of approach was increased to 7.65°, which is particularly advantageous when driving on narrow mountain roads or manoeuvring into bus bays.

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More cockpit space for even more comfort

The new, distinctively designed cockpit is another feature characterising the ComfortClass 400. The controls are arranged strictly in accordance with ergonomic principles. With features akin to a touring coach, the cockpit has a joystick gearshift, integrated navigation monitors, additional bottle-holders and stowage facilities for a briefcase or road maps. The adjustable steering column adopted from the TopClass 400 is pneumatically locked in place. For regular inter-urban service bus operations, a cash register can be installed in the cockpit of the ComfortClass 400 without difficulty.

Engines of the GT-HD models

The S 415 GT-HD, S 416 GT-HD and S 417 GT-HD models in the ComfortClass 400 are powered by an upright OM 457 LA six-cylinder in-line diesel engine with a turbocharger, intercooler and 4-stroke direct diesel injection. The engine for the S 415 GT-HD is available with an output of 315 kW (428 hp) and a maximum torque of 2 100 Nm. The S 416 GT-HD and S 417 GT-HD are available with an output of 315 kW (428 hp) as standard, with a maximum torque of 2 100 Nm.

The S 415 GT-HD, S 416 GT-HD and S 417 GT-HD are equipped with the Mercedes-Benz GO 210 six-speed manual transmission and a joystick gearshift. On request the GT-HD models are also available with the ZF-AS Tronic automated 12-speed manual transmission. The S 415 GT is equipped with the horizontally installed OM 457 hLA six-cylinder in-line engine based on 220 kW (299 hp) and the GO 190 transmission. On request this model is available with an output of 260 kW (354 hp) or 300 kW (408 hp) and the GO 190 transmission.

All models feature disc brakes, a Voith VR 115 retarder (ZF Intarder with

ZF-AS Tronic), the Electronic Braking System EBS, ABS, acceleration skid control (ASR), Brake Assist (BA) and the Electronic Stability Program ESP, which has been standard equipment for all models in the Setra TopClass 400 and ComfortClass 400 since 1 October 2003.

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More free space when loading and unloading

Even when space is very limited, the Setra ComfortClass 400 models allow the driver and passengers plenty of room when loading and unloading luggage. The Setra S 415 GT-HD and Setra S 416 GT-HD feature two enlarged, swing-out luggage compartment flaps on the left-hand side. Moreover, there is now no additional partition in the luggage compartment of the ComfortClass 400 models. Together with the reduced space requirement of the luggage compartment flaps, this ensures more convenient access to the luggage space.

Easily accessible electronics

The entire electronics are a network of conventionally switched systems and the flexibly programmable control system FPS, whose modules are in turn networked via a CAN databus. FPS consists of several “intelligent” components in decentralised onboard locations wherever something needs to be controlled or regulated. The advantage of these networked electronics is fewer cables and relays. The resulting reduction in complexity increases the operating safety and reliability of the vehicle.

The Setra S 419 UL

- **The longest of the Setra inter-urban coaches**
- **15-metre long MultiClass 400 variant with 69 seats**

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With a length of 14.98 metres, the S 419 UL is the longest variant in the MultiClass 400 series. Its 69 seats make it a true large-capacity vehicle that impressively demonstrates how a high level of quality, flexibility and economy can also be achieved in the inter-urban bus segment. Generously sized luggage compartments, comfortable seats and a wide choice of appointments make the S 419 UL ideal for combined regular service and touring operations.

The test vehicle has a straight front end and is equipped with the Mercedes-Benz OM 457 hLA engine developing 300 kW (408 hp) plus the servo-assisted Mercedes-Benz GO 210 six-speed manual transmission, and already meets the Euro 5 emission standard coming into force in the autumn.

Other features include a roof-mounted 35 kW air conditioner with automatic climate control and cockpit climatisation, as well as fire alarm systems in the engine and luggage compartments. The 69 individual "Tourist" seats are fitted with grab handles, a rigid backrest and a 2-point seat belt. There is a pushchair space with a removable platform opposite the rear entry door. The interior standing height of the S 419 UL is 2 170 mm.

Technical data

Setra S 419 UL

Vehicle data

21

Length	14 980 mm
Width	2 550 mm
Height	3 175 mm
Wheelbase	6 920 mm
Overhangs	front: 3 160 mm rear: 3 300 mm
Turning circle	23 637 mm
Diesel tank capacity	approx. 340 litres
AdBlue tank capacity	approx. 45 litres
Luggage capacity	6.2 cu. m.
Perm. gross vehicle weight	24 000 kg

Engine and chassis

Engine	MB OM 457 hLA, 300 kW (408 hp), Euro 5
Overall displacement	11 967 cc
Max. torque	1 600 Nm (1 100 rpm)
Final drive ratio	i=3.909
Injection system	PLN (pump-line-nozzle)
Transmission	GO 210 6-speed manual transmission, servo-assisted
Front axle	Independent suspension, shock absorbers, stabiliser
Drive axle	MB H06 axle, shock absorbers
Trailing axle	Actively steered trailing axle, Rear Axle Steering (RAS), shock absorbers
Steering	ZF 8098, ratios 22.2 to 26.2
Brakes	Compressed-air disc brakes

Seating capacity and seats

Seats	69, seat model "Tourist" varicolour petrol polyester	
Driver's seat	GRAMMER MSG 90.6 PG	22

Special equipment

Raising/lowering system with kneeling function
Fire alarm systems in engine compartment, luggage compartment, and auxiliary heater installation space
Passenger signalling system
Lawo destination display

Paint finish

ocean turquoise metallic

The Setra S 415 NF

- **The lowest Setra allows convenient access and egress**
- **Setra S 415 NF low-floor bus is “Bus of the Year 2009”**

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The S 415 NF low-floor inter-urban bus in the MultiClass 400 series celebrated its world premiere at the 2006 International Motor Show (IAA) in Hanover. Together with the S 416 NF, the 11.95-metre long S 415 NF has since complemented the high-floor inter-urban buses in the MultiClass 400 series in an ideal way. In addition to the latest drive technology with a high level of economy and cutting-edge emissions control, the highly demanding operators of inter-urban services now have comfortable vehicles available whose low-floor design makes getting in and out a sheer pleasure for any passenger.

The two-door test vehicle is equipped with a Mercedes-Benz OM 457 hLA engine developing 260 kW (354 hp) and the four-speed Voith 864.3 automatic transmission. Complying with the EEV emission standard, it already meets the European Euro 5 standard coming into force in autumn this year.

The S 415 NF features a fire alarm system with detection lines for engine compartment surveillance, as well as a roof-mounted 32 kW air conditioner. The vehicle is fitted with 44 Transit seats and a wheelchair space on the right-hand side. The interior standing height of the S 415 NF is 2 313 mm.

In autumn last year, Setra won the coveted, international “Bus of the Year” award with the S 415 NF for the second time with a low-floor bus since 1996.

During the 2008 bus test in Berlin, the S 415 NF from the MultiClass 400 series emerged the winner over its competitors by a considerable margin. The main criteria for the jury were day-to-day suitability, quality of finish, the vehicle concept and economy.

Technical data

Setra S 415 NF

Vehicle data

24

Length	11 950 mm
Width	2 550 mm
Height	3 049 mm
Wheelbase	5 845 mm
Overhangs	front: 2 705 mm rear: 3 400 mm
Turning circle	20 830 mm
Diesel tank capacity	approx. 350 litres
AdBlue tank capacity	approx. 47 litres
Perm. gross vehicle weight	18 000 kg

Engine and chassis

Engine	MB OM 457 hLA, 260 kW (354 hp), EEV
Overall displacement	11 967 cc
Max. torque	1 600 Nm (1 100 rpm)
Final drive ratio	i=4.721
Injection system	PLN (pump-line-nozzle)
Transmission	Voith D 864.3 4-speed automatic transmission
Front axle	Independent suspension, shock absorbers, stabiliser
Drive axle	Portal axle, shock absorbers
Steering	ZF 8098, ratios 17.0 to 20.0
Brakes	Electronic Braking System (EBS), compressed-air disc brakes

Seating capacity and seats

Seats	40, model "Transit" jade rush green/gold polyester	
Driver's seat	ISRI 6860/875	25

Special equipment

	Pneumatic swing-out doors	
	50-litre heating oil tank	
	24 V to 12 V voltage transformer	
	Retarder	
	Accident data recorder	
	Driver's cab door with integrated interior surveillance with two cameras and monitor	
	Wheelchair space	
	Mechanical folding ramp at door 2	

Paint finish

	ocean turquoise metallic	
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The MultiClass 400: Economy right down the line

- **Seven vehicle models in the inter-urban coach product segment**
- **Wide variety of interiors available**

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Regular service operations during the week and the ideal vehicle for excursions at the weekend: the MultiClass 400 impresses with outstanding flexibility and economy. A total of seven models are available to bus operators in this Setra product segment.

With a length of only 10.80 metres the S 412 UL is the most “manoeuvrable”, and was specially designed for regular service with 45 “Transit” seats from in-house production. Thanks to its compact length, it is ideally suited to cost-effective regular service operations in topographically difficult regions with steep and narrow mountain roads. The other models in the MultiClass 400 are the 12.20-metre long S 415 UL, the S 417 UL with a length of 14.05 metres and the S 419 UL measuring 14.98 metres. Generously sized luggage compartments, comfortable seats and a wide variety of available interior features, e.g. a kitchen, toilet and air conditioning, make these vehicles ideal for combining regular service with touring operations.

And if low-floor operation is required, the entry heights in the twelve-metre long S 415 NF and 13-metre S 416 NF are only 360 mm when size 11 R 22.5 tyres are used all-round, leading directly into the level interior. Two vehicles tailor-made for regular service with a high passenger throughput and enormous practicality. Features available include innovative door systems, cockpit variants, different destination displays and a wide variety of seating options.

The latest product is the S 416 UL, which makes the MultiClass 400 product range even more versatile with a new vehicle length. The wheelbase of the 13.04-metre long S 416 UL was extended to 6920 mm versus the S 415 UL (6080 mm). This creates space for an even larger luggage capacity of 5.5 cu. m..

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With a wide range of equipment and seating alternatives, plus a modern appearance, the “newcomer” is likewise the ideal solution for inter-urban regular service in combination with excursions.

Operating a Setra bus or coach means keeping abreast of the future. The models in the MultiClass 400 are already equipped with Euro 5 engines, which become mandatory from 2009, as well as an NO_x sensor. This nitrogen oxide sensor is installed downstream of the SCR catalytic converter, and measures the proportion of nitrogen monoxide (NO) and nitrogen dioxide (NO₂) in the exhaust gases to ensure that the legally prescribed nitrogen oxide limits defined by the Euro 4 and Euro 5 emission standards are not exceeded.

Setra milestones and innovations

- 1893** Foundation of the Wagner business by Karl Kässbohrer
- 1911** Start of Kässbohrer omnibus production 28
- 1951** The first bus with a unitary body, the Setra S 8, is presented
- 1955** Setra presents the first air-sprung independent suspension for buses at the International Motor Show (IAA) in Frankfurt
- Presentation of the Setra S 6 at the Geneva Motor Show
- 1959** First Setra modular system and Europe's first articulated bus with a unitary body
- 1964** Setra is the first bus manufacturer to install a retarder as a non-wearing brake
- 1967** Presentation of the 100 series and series production of air-sprung independent suspension
- 1976** The 200 series with cross-flow ventilation enters series production. Over the subsequent 15 years this series generates numerous further developments, including a three-axle high-decker touring coach specifically for the US market and the first low-floor bus for inter-urban regular service in Europe
- 1981** Setra presents the S 228 DT (Double-deck Touring) as the first double-decker bus
- 1984** ABS becomes standard equipment in all buses and coaches

1991 Presentation of the 300 series with an innovative integral mirror system and exterior design, as well as an ergonomically designed cockpit and, for the first time, a multifunction display as standard

1992 The Setra S 315 HDH is voted “Coach of the Year 1993” 29

1996 The Setra S 315 NF is voted “Bus of the Year 96”

2001 Setra presents the TopClass 400, which sets new standards in terms of technology, design and appointments. In the same year this new touring coach generation is voted “Coach of the Year 2002” at the “Busworld Kortrijk” show

2002 Presentation of the S 431 DT double-decker coach at the International Commercial Vehicle Show (IAA) in Hanover

Presentation of the S 415 HD as a right-hand drive version

The 1000th example of the TopClass 400 is sold

2003 In February the S 417 is officially presented for the North American market at the UMA (United Motorcoach Association) show in Orlando, Florida

In September the right-hand drive S 415 HD is presented at a specialist show, “Coach and Bus” in Birmingham, for the first time

Presentation of two vehicles from the newly designed ComfortClass 400 at the “Busworld” show in Kortrijk, Belgium

The 1500th example of the TopClass 400 is sold

From October onward, the models in the TopClass 400 and ComfortClass 400 are equipped with the Electronic Stability Program (ESP) as standard

2004 Presentation of the Setra S 415 GT at the 60th International Commercial Vehicle Show (IAA) in Hanover 30

2005 In early March, Setra celebrates the 50th anniversary of the presentation of the Setra S 6

In March the north German coach operator Imken Touristik takes delivery of the 3000th vehicle from the TopClass 400 series – a Setra S 415 HD

In June the 10,000th vehicle from the MultiClass – a S 315 UL – is handed over to Ludwigsluster Verkehrsgesellschaft mbH (Mecklenburg West-Pommerania), during an event demonstrating the reliability and ride comfort of the S 315 NF low-floor bus at RVO in Berchtesgaden

In June the coach operator Birkmaier takes delivery of a Setra S 415 GT as the 1000th coach from the ComfortClass 400 series

At the “Busworld” show in Kortrijk, Belgium in October, the brand first presents the Setra S 415 UL and Setra S 417 UL as two buses from the newly designed MultiClass 400 inter-urban regular service bus generation

Presentation of the new safety systems – proximity control and the engine brake limiter in touring coaches from the TopClass 400 and ComfortClass 400 series

2006 The 1500th Setra coach is delivered to Belgium in early February, an S 416 HDH with glass roof

On 7 March the 5000th touring coach from the TopClass 400 and ComfortClass 400 series is delivered. This S 416 HDH with a glass roof, proximity control and 50 comfortable reclining seats goes to the Swedish coach operator Stigen Buss AB in Stigen

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2007 At the United Motorcoach Association (UMA) show in New Orleans, Louisiana, Setra is once again represented with two S 417 touring coaches from the TopClass 400 series. The highlight of this year's display is the 500th Setra S 417, which has been produced for the North American and Mexican market and is already sold

Setra delivers the 90,000th bus since the foundation of the brand in 1951. This S 416 HDH from the TopClass 400 touring coach generation is handed over to the coach operator Arnold Reisen in Dietmannsried near Kempten/Allgäu in February

The brand presents vehicles from the new Setra TopClass 400 at the "Busworld" show in Kortrijk, Belgium. Following an extensive model facelift, these touring coaches now offer even more quality, technology, safety and comfort

Setra delivers the 500th S 431 DT double-decker touring coach to its customer, the coach operator Voyages Demy Cars in Luxembourg. The 500th S 411 HD touring coach is also handed over, to the coach operator Fischwenger in Straßwalchen near Salzburg

For the first time the Setra Show 2007 is held in the newly constructed Setra customer centre in Neu-Ulm, which also houses the modern design centre

2008 The 10,000th touring coach from the 400 series, an S 416 GT-HD/2, is handed over to the Turkish fleet operator Varan Turizm

In August “Avanti Reisen” is the world’s first coach operator to travel from Germany to China with a touring coach, a Setra S 415 HDH

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At the International Commercial Vehicle Show (IAA), the brand presents ten exhibits from the current product range including the world premiere of the S 419 GT-HD from the ComfortClass 400 series

The low-floor S 415 NF from the MultiClass 400 is voted “Bus of the Year 2009”

Setra delivers the first touring coach equipped with Active Brake Assist (ABA). The customer for this S 416 HDH from the new Setra TopClass 400 is Reisedienst Bölck

2009 Setra presents two US versions of the S 417 at the United Motorcoach Association (UMA) show in Orlando, Florida. To mark 25 years of sales activities in the USA, the brand also exhibits an S6 dating from 1955 on the stand