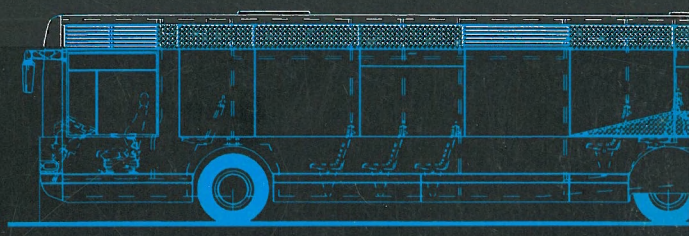
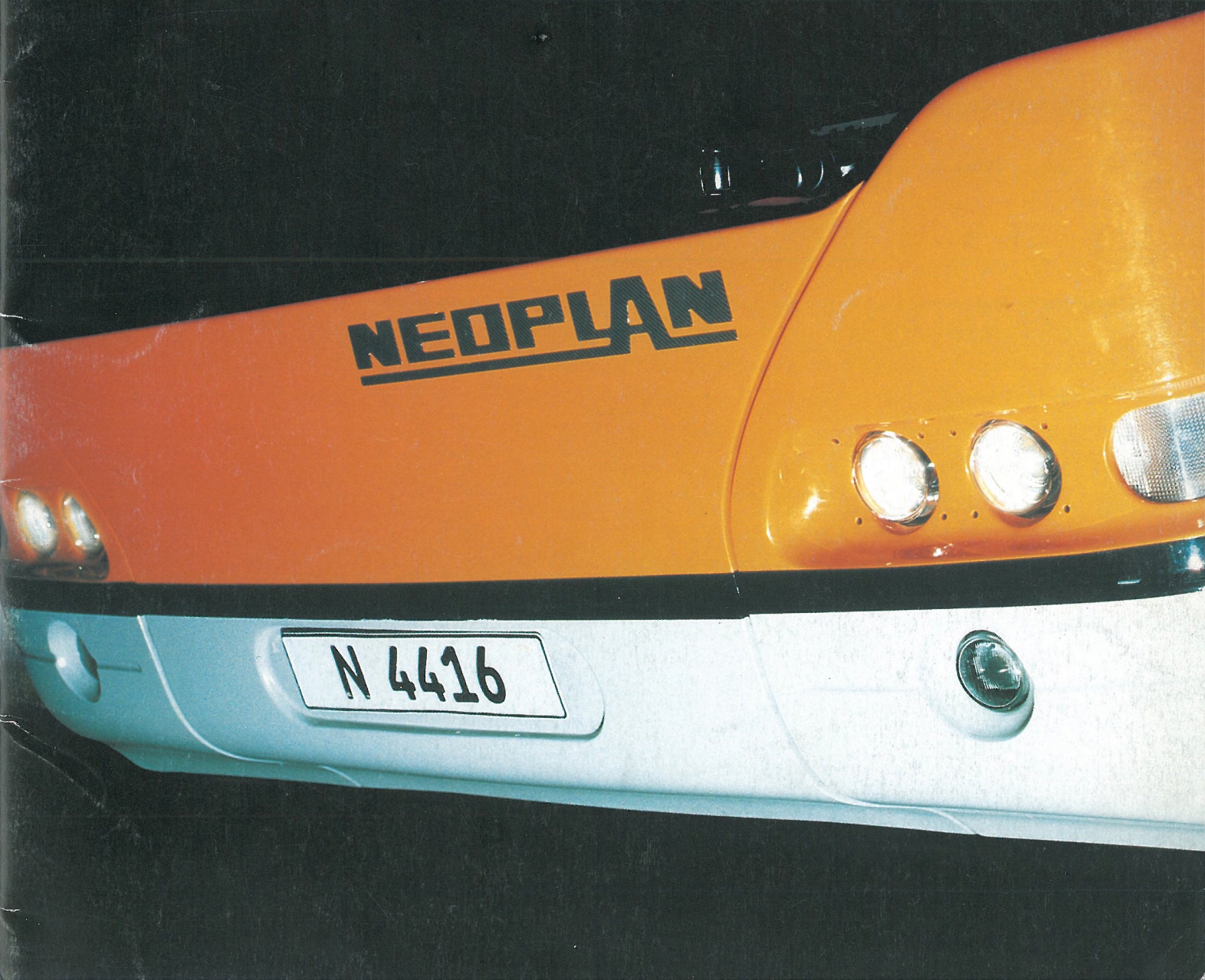
NEOPLAN N 4416

# Quantum Leap in City Bus Services





# LIKE A GENTLEMAN IN A WELL-TAILORED SUIT.

## A BUS MADE FOR CITY OPERATION.

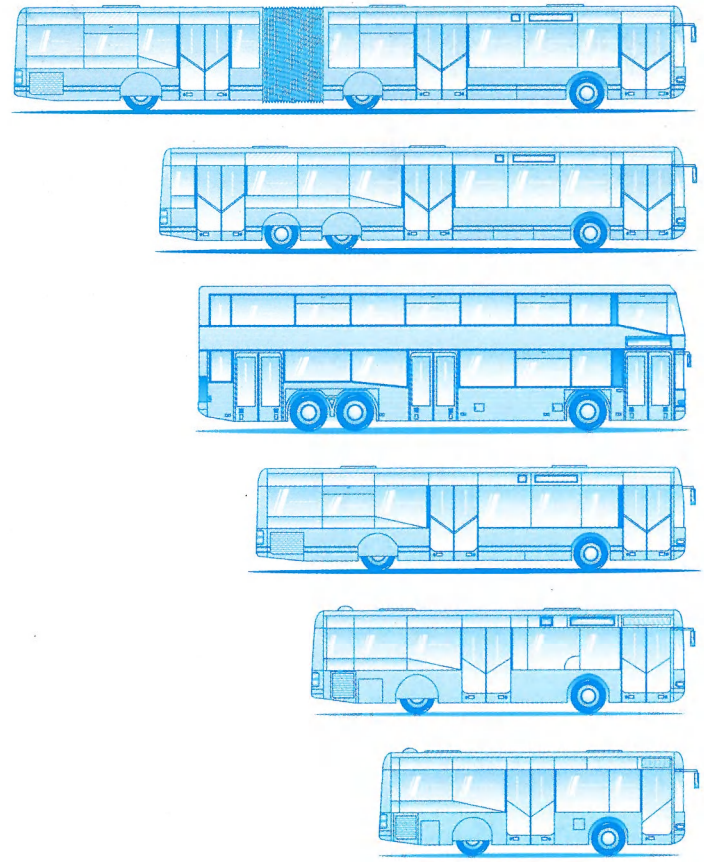
Progress which is not for the good of the community is just an end in itself. Not so with NEOPLAN, dedicated to progress in bus engineering for more than 60 years. Where every new development within the company is conceived with safety, comfort, ecology, economy, functionality and styling in mind.
As the initiator of low-floor bus technology, NEOPLAN has always been a pioneer, setting new criteria in meeting passenger needs.
A perfect example is the latest member of the NEOPLAN bus range: in terms of both engineering and design, the Centroliner sets new standards in public bus transport. Designed as a classical public service bus to meet the heavy demands of city transport conditions, for example the 12 m version, it offers the options of two or three double width entrance doors. And the interior can boast of a multitude of innovations for both passengers and driver – progress that speaks for itself.

**Attractive suburban transport. LOW LIFE CYCLE COSTS.**
Lighter, more airy, longer service life: This is how one could sum up the characteristics of the Centroliner in short.
Thanks to its lightweight construction and the utilisation of the maximum standardisation of components, we not only save weight but also increase the ease of repair and maintenance (minimization OF LIFE CIYCLE COSTS LCC). This is achieved by improved corrosion protection, amongst other features: all Centroliner models are supplied with stainless steel floor as standard – there is now no chance of any rust. 2.55 m wide, the vehicle offers a wider aisle width and more standing area, giving it the highest headroom for passengers in its category. In short, the Centroliner gives passengers a completely new sensation of roominess and space.

**3 doors.**
**1,000 advantages.**
The 3-door version of the N 4416 (12 m) is fully low-floored, 3-door bus with an upright engine installation. "Turret construction" is what makes this possible: third entrance with no steps, with no steps in the aisle, low-


*Harmony of engeneering and styling: the Neoplan N 4416*

*The whole range of feeder traffic – covered by all of the Centroliner family variants.*



floor technology in the back as well. The Centroliner is ready for all the rigours of day-to-day operation, and access to equipment has been substantially optimised by the tower installation, useful for maintenance and repairs. The load-bearing structural members in the Centroliner's front and rear module consists of fiber-reinforced materials. The mode of construction from the integral front to the tail ends also provide considerably increased safety for the driver.

# WELCOME TO THE FAMILY.

# WELCOME ABOARD.


*Centroliner N 4416*

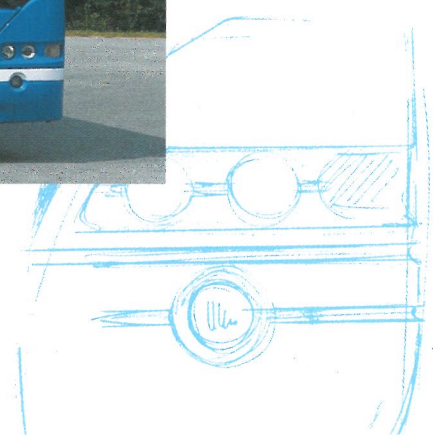

*Centroliner N 4407*
*center: Centroliner N 4426/3 L*


*Centroliner N 4421*


*Centroliner N 4420*


*Centroliner N 4411*


*Centroliner N 4421*

# THE NEW MAGNIFICENCE.

## THE NEW INTERIOR DESIGN.

*Entrance without obstacles – the Centroliner's middle door with no steps.*

**We are concerned with inner values.**
The interior of the Centroliner fulfils the promise of its exterior. The interior compartment has a very friendly colour scheme and a fantastic degree of space. It is wider, higher and more airy, and tall people will be comfortable here. The panoramic glazing, which comes right down to a lower level, gives both standing and seated passengers an excellent panoramic view. The venus glazing tinted in grey absorbs heat and makes for an elegant design. You will also have a view forwards, thanks to the generously sized glazing behind the driver's seat, which is something that passengers in city-type vehicles cannot take for granted. Integrated ceiling lights give the bus a pleasant light, with no dazzle for the driver.

**Function in optimised form.**
The cantilever suspension of the seats, mounted on side wall rails, is a feature which

*The inside : Wider, higher and more airy thanks to a pleasing colour scheme and a fantastic amount of space.*

*Practical: The cantilever mounting of the seats, fitted on side-wall rails.*

*Extravagant: Pivoting mounting rods and individual roof tilts.*

*An all-round success: The all-round glazing of the Centroliner provides an excellent panoramic view.*


is not only highly modern but also extremely easy with regard to cleaning of the floor.
This is a clear benefit: there are no rails or screwed fastenings on the floor of the bus. A further plus point for the Centroliner: thanks to the absence of any pedestals in the central aisle, the bus not only gives the maximum possible freedom of movement to passengers but also provides adequate space for baby buggies, wheelchairs and items of baggage. Convenience has been combined with functionality with regard to the ceiling configuration, too: specially developed for the Centroliner, and this gives the passenger the optimum combination of pivoting mounting rods, rounded-off aluminium slotted ceiling panels and individual overhead tilts.
With improved acoustic insulation and quiet ventilation, an extremely friendly atmosphere can be enjoyed. And, so that passengers and the driver do not freeze on cold days, the new, low wear, high-performance heating convectors, specially designed for this new vehicle, give 20% more heat output (800 Watt/m). To sum up, it is an interior in which you feel comfortable all round.

*Pleasant: Integrated ceiling lamps, with no dazzle for the driver.*

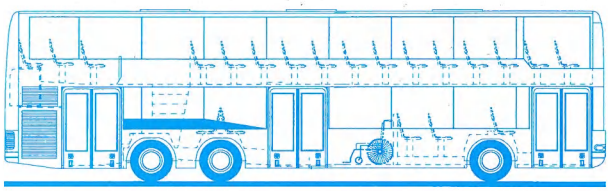
# COMPLETELY ON YOUR WAVELENGTH:

## THE CENTROLINER AS DOUBLE-DECKER.

The Centroliner family helped urban bus transport to a "quantum leap". The family's latest offspring is the Centroliner N 4426/3, which introduces a new concept for urban double-decker buses. Two different versions, 12 m and 13.85 m in length, are available. With its exterior appearance as well as its interior design, it is in perfect harmony with the overall design of the Centroliner line. We have improved a lot of things, but we have also kept what's perfect: the covers in perforated aluminum sheet, the wide access doors (alternatively single-winged) and the standardized VDV cockpit. Also well tried are the modular body and the underbody made of special steel. The undercarriage has been optimized and the installation of the drive unit has been standardized. The electrohydraulic trailing axle is actively guided and the rigid axles guarantee a most comfortable suspension.

Speaking of comfort: last but not least, air condition (option) and convector heating assure that driver and passengers on board the Centroliner feel perfectly at ease.

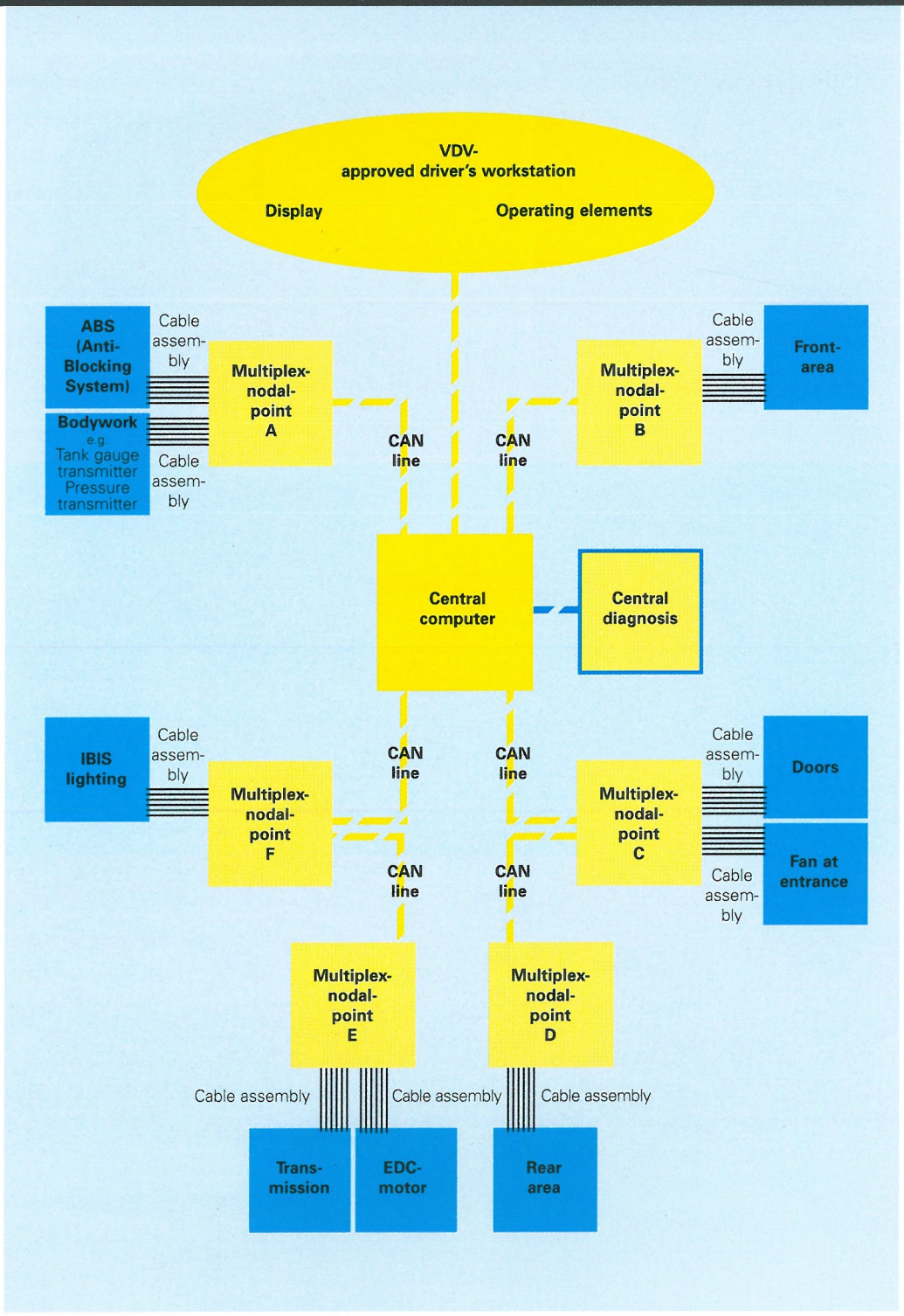
*Neoplan Centroliner*
*N4426/3 L.*



*Welcome on board...*

*The perfect design of the upper deck affords a maximum number of seats.*

# A REVOLUTION IN VEHICLE ELECTRICAL SYSTEMS. AND A REVOLUTION IN THE DRIVER'S SEAT.




*No more tangled cables: this is how the NEOPLAN CAN-Bus System works.*

**Cables are out. NEOCAN is in.**
Controller Area Network – CAN: three letters that stand for a revolution in vehicle electrical systems. The CAN System, developed partly by NEOPLAN, functions by means of electronic impulse transfer (digital data transmission). The difference from conventional central electrical systems: the space-consuming main cable loom can be dispensed with; central diagnosis of all input and output impulses makes defect tracing, repairs and maintenance a much simpler proposition.

**Everybody talks about workplaces. Ours are the safest.** All of the threads of the NeoCan bus system converge in the newly developed cockpit. This is developed according to ergonomic and economic criteria and offers a maximum level of comfort and safety. The concept for the design of the fitting was to provide only the amount of information needed and to minimise distraction. Whether the driver is employed on a tour bus or line service vehicle, the standardised centralised information display keeps him currently informed in his choice of six different languages. Whether it is a tour bus or a line bus you need, the standardised central information display with its organised priority levels, keeps the driver up-to-date.

*Less means more: the new VDV-approved driver's workplace*

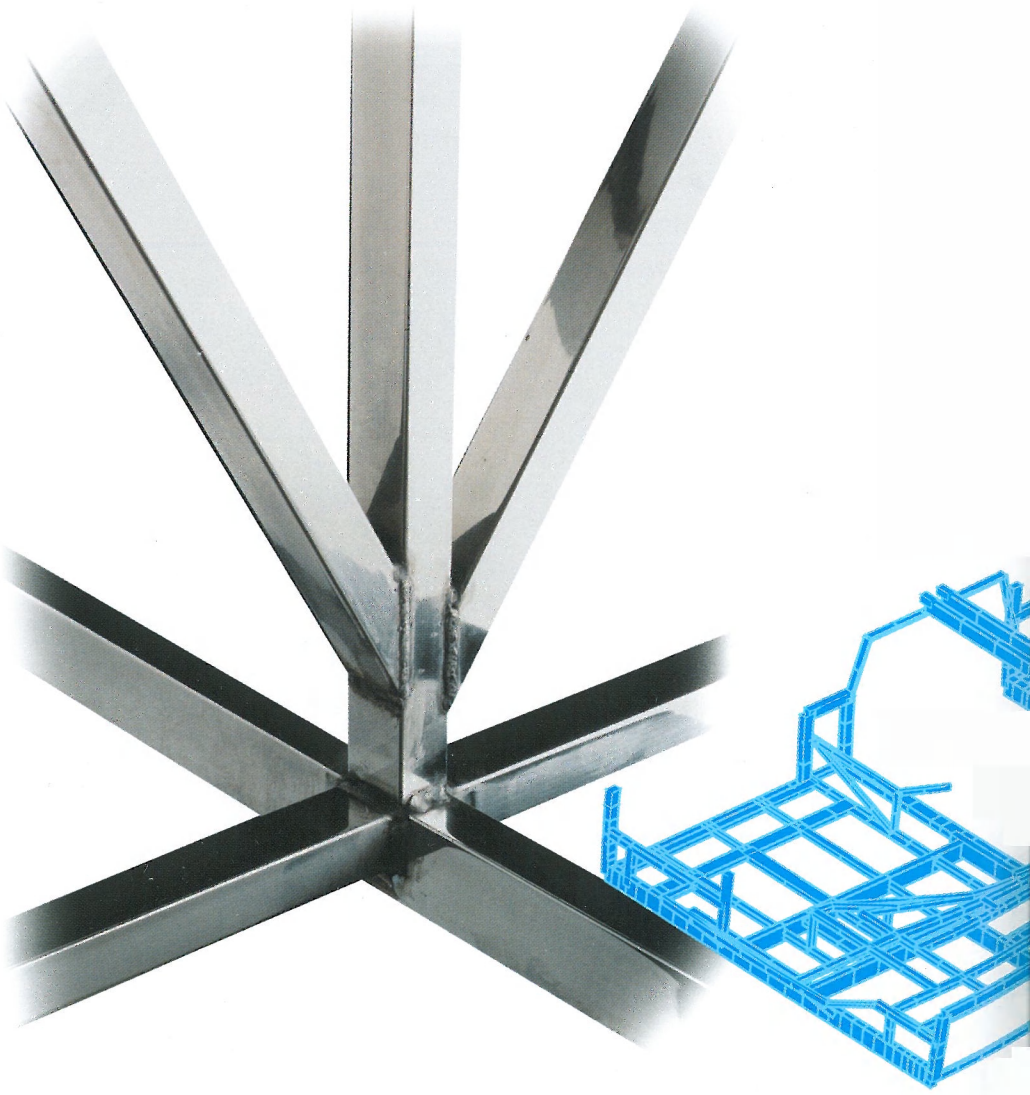
*Take your seat: the ISRI 6800/338 driver's seat Profi Class Sigus was developed according to ergonomic principles and the guidelines "New Driver's Workplace."*

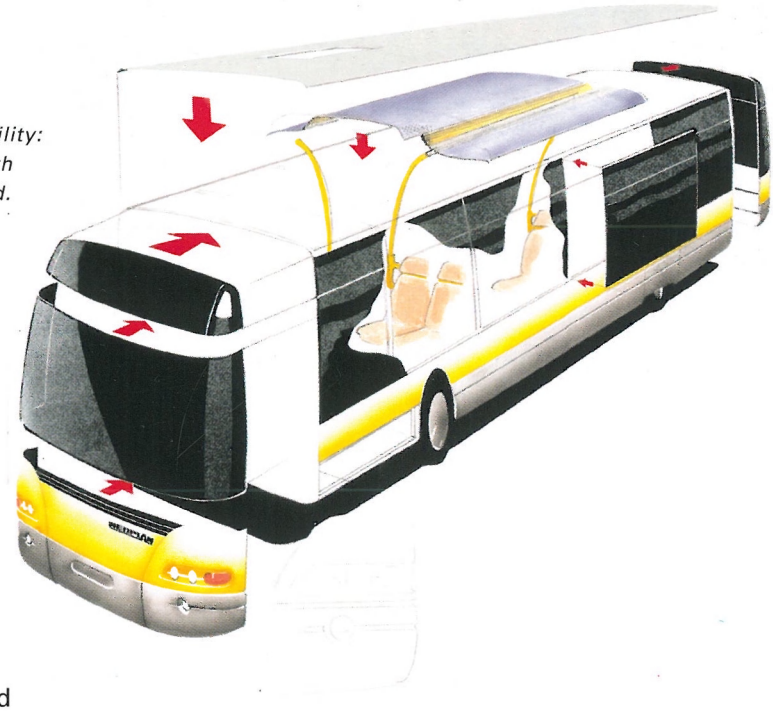
# THINK ABOUT TOMORROW.

## MAKE A CHANGE TODAY.

**A system for long service life.**
A special metal is employed in the construction of the Centroliner. Its importance in bus construction will become increasingly apparent over the years to come: Stainless steel. All Neoplan Centroliners are equipped with an underbody made of special steel. So there will be no chance of any floor rust in future: for that reason, Neoplan also guarantees all stainless steel buses against rust perforation for 12 years, which is our proud achievement in corrosion protection and sustained value.

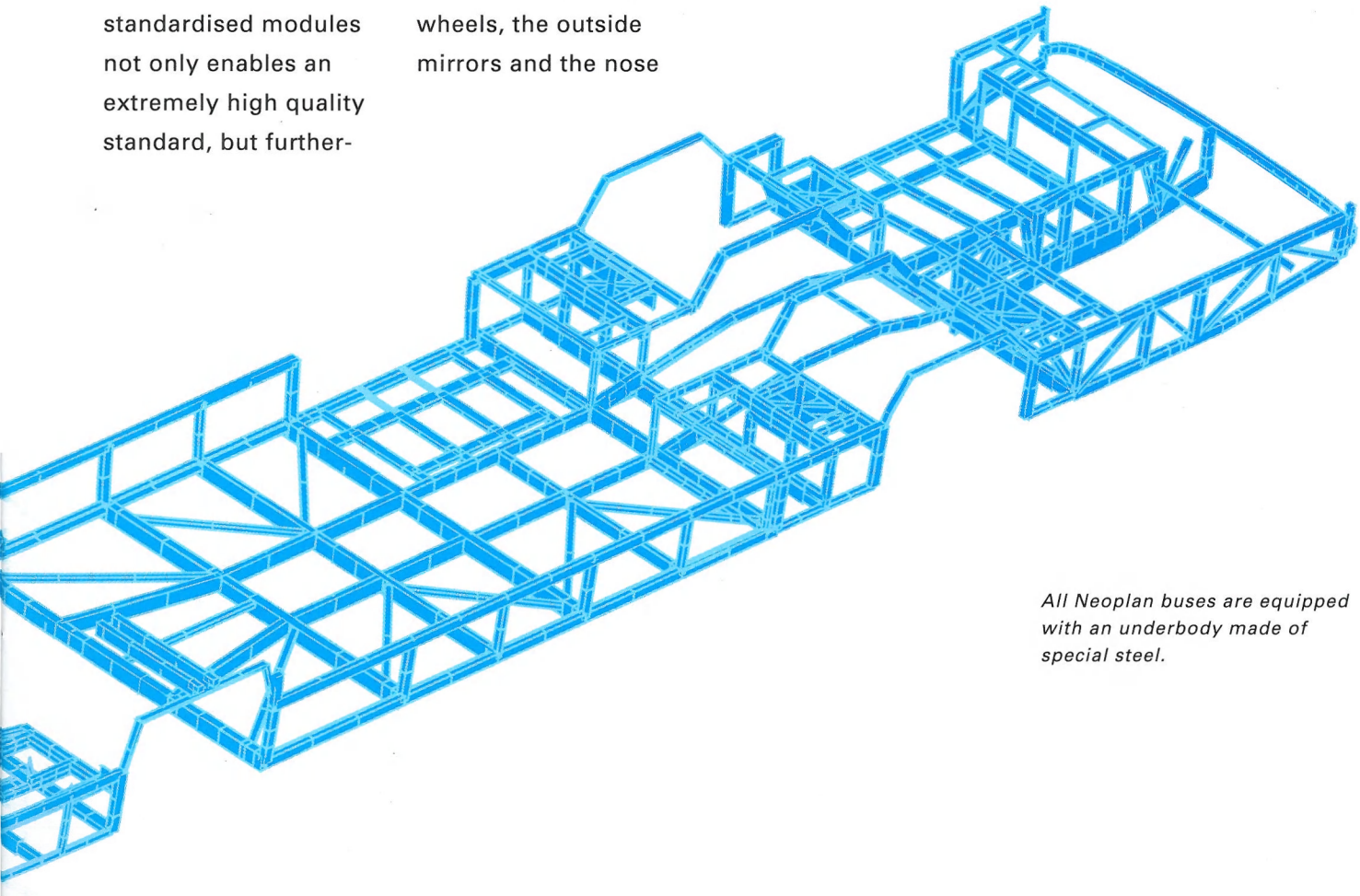
**Advantages of modular construction.**
The most distinguishing feature of the Centroliner must be its modular construction. Produced from composite fibre materials, the integral front and tail ends are made as load-bearing structural





*Virtually unlimited flexibility: modular construction with integral front and tail end.*

components. The advantage is virtually unlimited flexibility with regard to vehicle length, door layout and seating. It is clear that the time saving and problem free modular construction has enabled Neoplan to "tailor" the Centroliner to present-day requirements. Furthermore, the production of standardised modules not only enables an extremely high quality standard, but furthermore downtimes and maintenance times are minimised (that means minimization of the life-cycle costs). Visually, there is a family resemblance – from the covered driving wheels, the outside mirrors and the nose section with its conspicuous poly-elliptical headlamps – to a close relative, the Starliner, Neoplan's luxury tour bus.

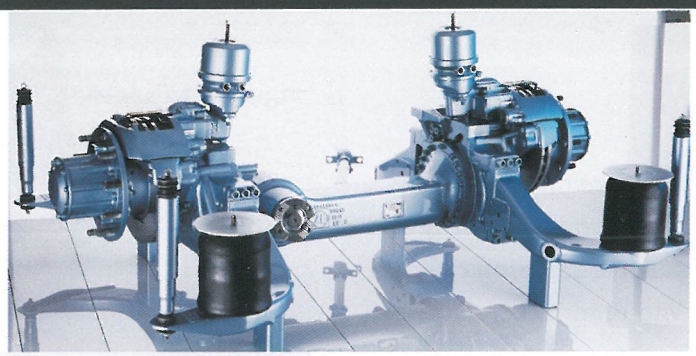


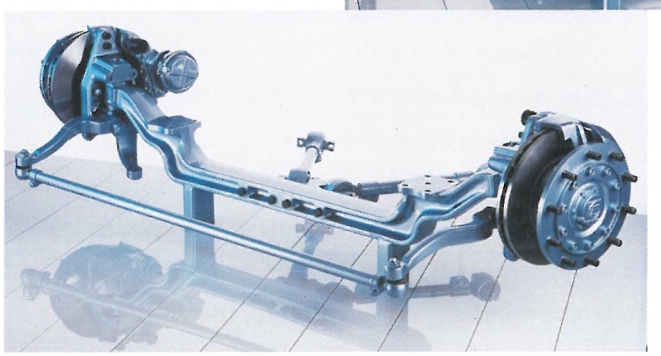
*All Neoplan buses are equipped with an underbody made of special steel.*

# ENGINES FOR ALL CASES.

## ADVANTAGES FOR ALL THOSE INVOLVED.

*Reliable, safe, easy to maintain: Disc brakes on all wheels, for optimum distribution of braking force.*





**The smart axle helps with the steering.**
A modern bus like the Centroliner has to prove its merits on big motorways and cross-country journeys, as much as in narrow, fully parked, city centre shopping areas. The high manoeuvrability of the N 4420 is achieved thanks to the third axle which does not employ the usual castor steering principle but electro-hydraulics. This "EHLA" standard gives the vehicle a degree of manoeuvrability which sets it apart from most 12-m buses.

But the driver does not have to put any more effort into steering the rear and castor axle, despite the higher manoeuvrability of the bus. This specification includes automation for the stop cycle (the bus pivots less on driving off) and minimisation of turning circle to below 23.5 m (the legislator only requires 25 m). For reversing, the axle is included in the steering process. The Centroliner's modern axle concept envisages disk brakes on all axles, over and above 2 or 3 axles from 8.6 to 18 m; thus, there is not only optimum distribution of braking force, but also the bus is made easier to maintain. This is a totally well considered concept which you can rely on.

**Drive: a consistent package.**
Low consumption, short maintenance times, versatile operation – requirements which a modern bus has to fulfil. For that reason, the new Centroliner family can be equipped with a range of high-performance, consumption-optimised EURO-II engines (from 2001 onwards also available with Euro 3 engine alternatives) that fulfil

*Turret construction: Because the engine is fitted in an upright position, there is no need for steps in the passenger compartment, and there are no pedestals on any doors – 100% low floor.*

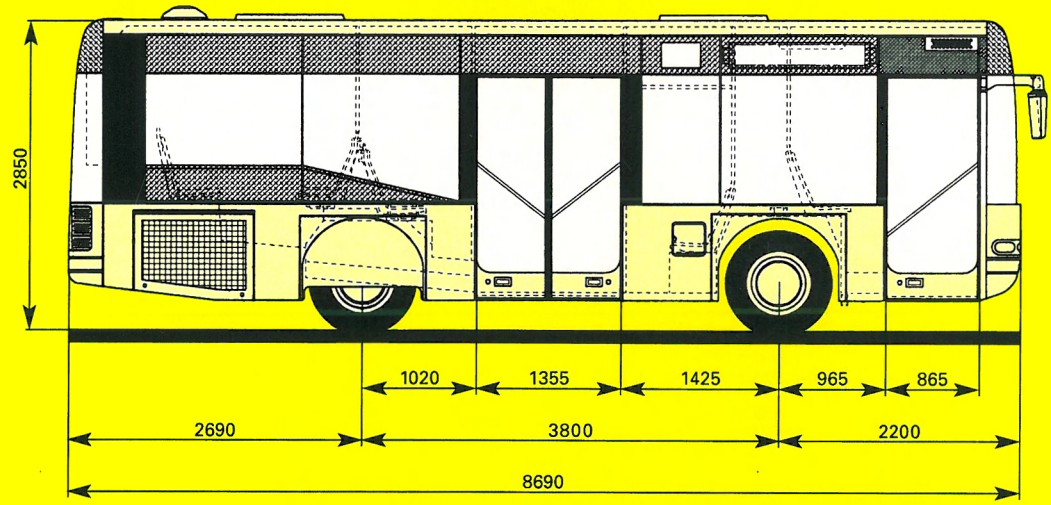
the most stringent environmental guidelines. These engines, from Neoplan's engine suppliers MAN and DaimlerChrysler, constitute the optimum drive solution for every application, thanks to their perfect adaptation of drive power to the respective vehicle length, in conjunction with the appropriate transmission system. Their installation is upright, which enables entrance via all doors with no steps or pedestals (tower installation). This is a present day investment in the future, because more and more transport companies are going to use 100% low-floor buses.

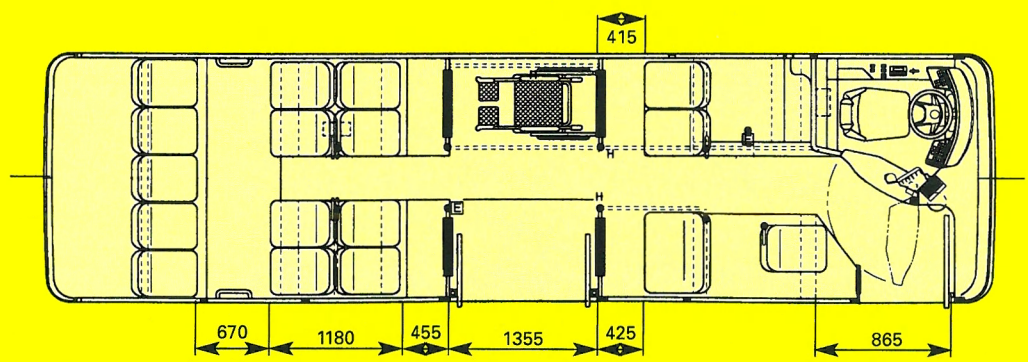
# ALL OF THE TECHNOLOGY.

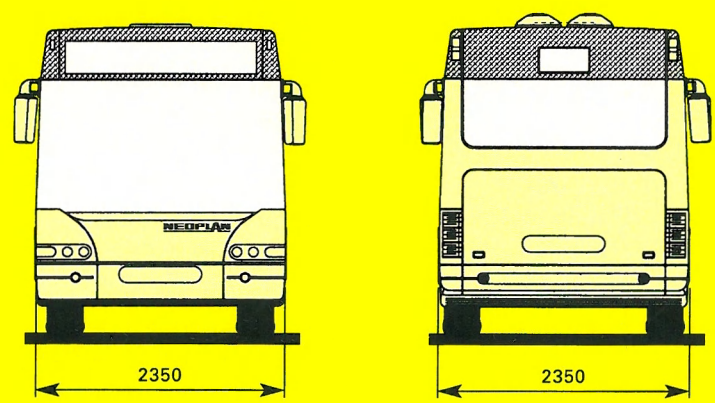
## NEOPLAN CENTROLINER N 4407.

| | Neoplan Centroliner N 4407 – 8.6 m Midibus |
|---|---|
| **Main dimensions** | ***Length:*** *8,690 mm,* ***width:*** *2,350 mm,* ***overall height:*** *2,850 mm,* ***wheelbase:*** *3,800 mm,* ***front overhang:*** *2,200 mm,* ***rear overhang:*** *2,690 mm,* ***headroom:*** *2,450 mm,* ***height of floor above ground:*** *350 mm,* ***entrance height:*** *320 mm,* ***angle of incline at front:*** *8°,* ***angle of incline at rear:*** *7.5°,* ***turning circle:*** *14,600 mm,* ***tyre size: front:*** *275/70 R 22.5",* ***rear:*** *315/60 R 22.5",* ***Fuel tank capacity:*** *180 l.,* ***Seating arrangement as per project drawing,*** *single tires* |
| **Passenger seating** | ***Capacity in full equipment: seats:*** *17,* ***standing room:*** *max 29 passengers,* ***driver:*** *1,* ***total approx:*** *47* |
| **Doors** | ***Front:*** *single panel inward-pivoting door 865 mm,* ***middle:*** *2-panel inward-pivoting and outward-pivoting doors* |
| **Weights** | ***Maximum front axle load:*** *4,500 kg,* ***maximum rear axle load:*** *7,500 kg,* ***maximum overall weight:*** *11,500 kg* |
| **Engine** | *6 cylinder in-line diesel engines with turbo supercharger and intercooler. Rear engine, upright mounting.* ***Engine variants: DC OM 906 LA*** *170 kW/231 PS EURO II, torque 900 Nm at 1,300 rpm;* ***MAN D 0826 LOH*** *162 kW/220 HP EURO II, torque 850 Nm at 1,600 rpm (EURO 3 engines available upon request)* |
| **Transmission** | *5-speed automatic transmission with integral retarder* ***ZF 5 HP 500,*** *4-speed with integral retarder,* ***Voith D 851.3*** |
| **Running gear** | ***Brakes:*** *dual circuit pneumatic system with ABS/ASR braking, 600 ccm pneumatic compressor, desiccator and central test connection, hand brake and stop braking.* ***Steering:*** *ZF Servocom hydraulic steering, type 8098 with pneumatic adjustment of steering column for height and rate,* ***axles – front:*** *rigid axle VN 6 NF-S with ventilated disc brakes,* ***rear:*** *ZF AV 132/90° with ventilated disc brakes.* ***Suspension:*** *roll bellows suspension with integral travel limitation, level regulation valves and shock absorbers as required. Kneeling in conjunction with ECAS,* ***tyres:*** *10-hole Monolex disc wheels, 4. At front: 7.5 x 22.5, tyres: 275/70 R 22.5",* ***rear:*** *9 x 22.5, tyres: 315/60 R 22.5"* |
| **Construction** | ***Rib framework:*** *Self-supporting grid construction and low-floor platform made of high-volume rectangular section tubes and angle sections, high-quality corrosion protection,* ***front section:*** *composite fibre material as the load-bearing structure (integral front end).* ***Rear end:*** *bonded glass fibre (integral tail)* |
| **Passenger compartment** | ***Glazing:*** *Single-pane, curved windscreen, flat side windows of particularly heat-insulating safety glass "Venus" double glazing on request.* ***Heating:*** *3-stage front mounted heater with silent high-output convectors along the side panels, Thermal THK 800 with 800 W/m, two additional heaters under seats or built into pedestal, Webasto Thermo 230 (23 kW) pre-heater, control via Neoplan control centre, with integrated system for de-misting and ceiling duct heaters or passenger compartment air-conditioning on request.* ***Ventilation:*** *2 electrical sunroofs, two hinged windows, two ceiling vents.* ***Seats:*** *Neoplan SKA NV 200, lightweight construction seats with bottoms for "cantilever" seat mounting, and, as desired: Neoplan Kiel Centra or other brands on request.* ***Internal equipment:*** *new municipal bus with "city top" interior design, integral strip lighting with solid state tubes* |
| **Driver's position** | ***New VDV II driver's position:*** *With new driver's cab, ergonomically optimised seat and instrument panel arrangement, informational display, automatic tachograph, instrument panel can be adjusted to match height and rake of steering column. Payment bar stand and driver's till, driver's seat ISRI 6800/338, other manufacturers available on request, heated windscreen on request, 3-stage front heater, driver's position air conditioning (option), electrically heated and adjustable external mirror* |
| **Electrics** | ***Vehicle mains:*** *24V nominal voltage, generator of 140 A with solid state regulator, NeoCan 2000 CAN bus system electricals.* ***Battery:*** *2 x 200 A ,* ***information and communication:*** *passenger address system with goose-neck microphone and 4 loudspeakers. Adequate capacity for onboard information systems (IBIS) with interfaces prepared for vehicle bus and radio data capability. Destination and numerical display as per VDV-SL II standard in full matrix or LCD specification (option)* |

*Special equipment on request, at extra cost*



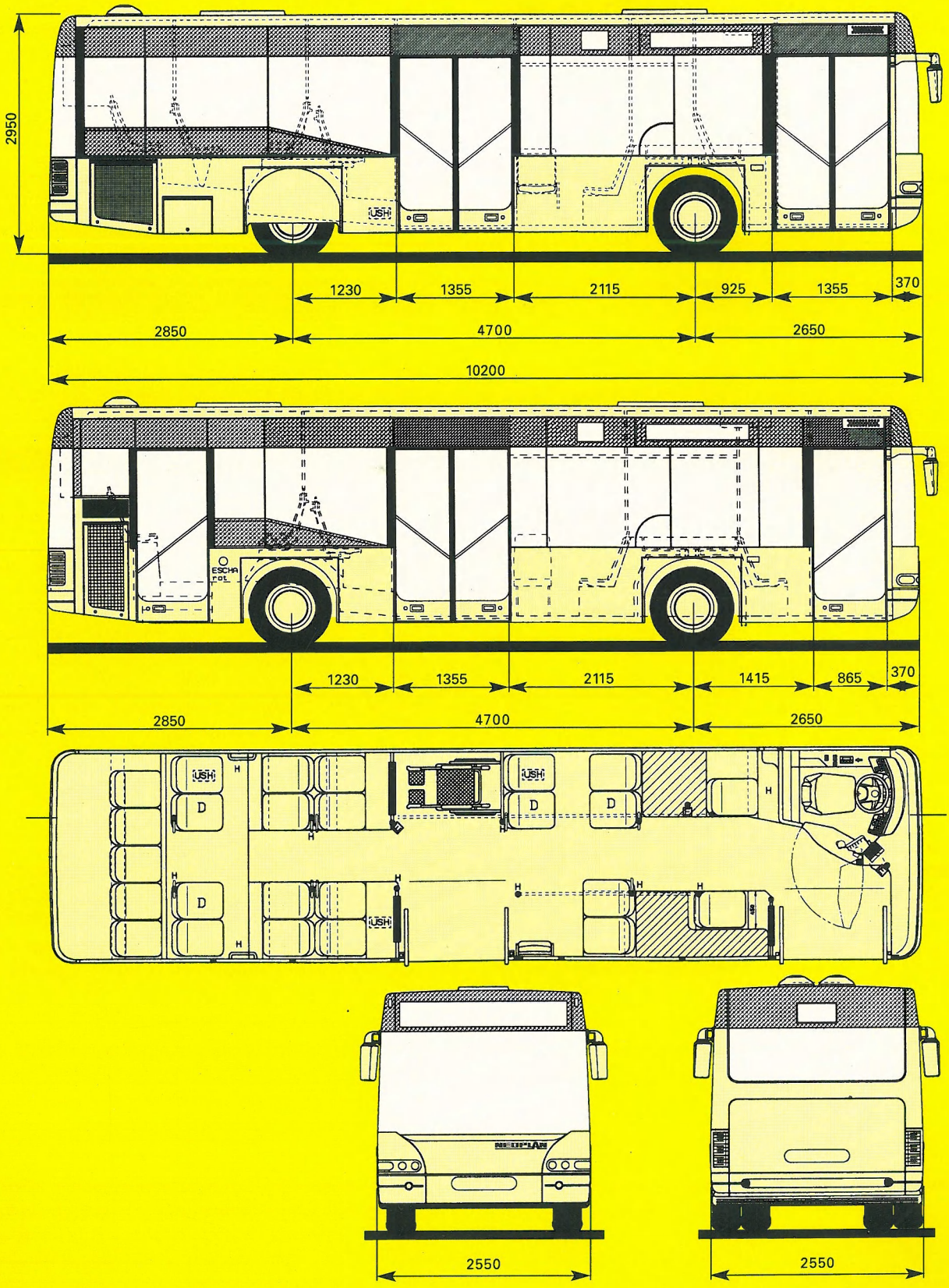

*Technical changes reserved*

# ALL OF THE TECHNOLOGY.

## NEOPLAN CENTROLINER N 4411.

| | Neoplan Centroliner N 44 11 – 10 m Solobus |
|---|---|
| **Main dimensions** | ***Length:*** *10,200 mm,* ***width:*** *2,550 mm,* ***overall height:*** *2,950 mm,* ***wheelbase:*** *4,700 mm,* ***front overhang:*** *2,650 mm,* ***rear overhang:*** *2,850 mm,* ***headroom:*** *2,450 mm,* ***height of floor above ground:*** *350 mm,* ***entrance height: door I*** *= 320 mm* ***door II*** *= 320 mm,* ***angle of incline at front:*** *8°,* ***angle of incline at rear:*** *7.5°,* ***turning circle:*** *18,300 mm,* ***tyre size:*** *275/70 R 22.5",* ***Fuel tank capacity:*** *270 l.,* ***Seating arrangement as per project drawing*** |
| **Passenger seating** | ***Capacity in full equipment:*** *seats: 25,* ***standing room:*** *max 40 passengers,* ***driver:*** *1,* ***total approx:*** *66* |
| **Doors** | ***Front and centre:*** *double panel inward- or outward-pivoting doors 1355 mm. If desired, installation of a single-panel door III in the tail. Alternative: door II as outward-pivoting sliding doors (option)* |
| **Weights** | ***Maximum front axle load:*** *7,000 kg,* ***maximum rear axle load:*** *8,165 kg,* ***maximum overall weight:*** *14,000 kg* |
| **Engine** | *6 cylinder in-line diesel engines with direct injection, turbo supercharger and intercooler. Rear engine, upright mounting.* ***Engine variants: DC OM 906 LA*** *170 kW/231 HP EURO II, torque 900 Nm at 1,300 rpm;* ***MAN D 0826 LOH*** *162 kW/220 HP EURO II, torque 850 Nm at 1,600 rpm (EURO 3 engines available upon request)* |
| **Transmission** | *5-speed automatic transmission with integral retarder* ***ZF 5 HP 502,*** *3-speed with integral retarder,* ***Voith D 851.3*** |
| **Running gear** | ***Brakes:*** *dual circuit pneumatic system with ABS/ASR braking, 600 ccm pneumatic compressor, desiccator and central test connection, hand brake and stop braking.* ***Steering:*** *ZF Servocom hydraulic steering, type 8098 with pneumatic adjustment of steering column for height and rate,* ***axles – front:*** *rigid axle VN 6 NF-S with ventilated disc brakes,* ***rear:*** *ZF AV 132/90° with ventilated disc brakes.* ***Suspension:*** *roll bellows suspension with integral travel limitation, level regulation valves and shock absorbers as required. Kneeling in conjunction with ECAS,* ***tyres:*** *10-hole Monolex disc wheels, 6 x 7.5 x 22.5, tyres: 275/70 R 22.5* |
| **Construction** | ***Rib framework:*** *Self-supporting grid construction and low-floor platform made of high-volume rectangular section tubes and angle sections, high-quality corrosion protection,* ***front section:*** *composite fibre material as the load-bearing structure (integral front end).* ***Rear end:*** *bonded glass fibre (integral tail)* |
| **Passenger compartment** | ***Glazing:*** *Single-pane, curved windscreen, flat side windows of particularly heat-insulating safety glass "Venus" double glazing on request.* ***Heating:*** *3-stage front mounted heater with silent high-output convectors along the side panels, Thermal THK 800 with 800 W/m, two additional heaters under seats or built into pedestal, Webasto Thermo 300 (30 kW) pre-heater, control via Neoplan control centre, with integrated system for de-misting and ceiling duct heaters or passenger compartment air-conditioning on request.* ***Ventilation:*** *2 electrical sunroofs, two hinged windows, two ceiling vents.* ***Seats:*** *Neoplan SKA NV 200, lightweight construction seats with bottoms for "cantilever" seat mounting, and, as desired: Neoplan Kiel Centra or other brands on request. Internal equipment: new municipal bus with "city top" interior design, integral strip lighting with solid state tubes* |
| **Driver's position** | ***New VDV II driver's position:*** *With new driver's cab, ergonomically optimised seat and instrument panel arrangement, informational display, automatic tachograph, instrument panel can be adjusted to match height and rake of steering column. Payment bar stand and driver's till, driver's seat ISRI 6800/338, other manufacturers available on request, heated windscreen on request, 3-stage front heater, driver's position air conditioning (option), electrically heated and adjustable external mirror* |
| **Electrics** | ***Vehicle mains:*** *24V nominal voltage, generator of 140 A with solid state regulator, NeoCan 2000 CAN bus system electricals.* ***Battery:*** *2 x 200 A ,* ***information and communication:*** *passenger address system with goose-neck microphone and 6 loudspeakers. Adequate capacity for onboard information systems (IBIS) with interfaces prepared for vehicle bus and radio data capability. Destination and numerical display as per VDV-SL II standard in full matrix or LCD specification (option)* |

*Special equipment on request, at extra cost*



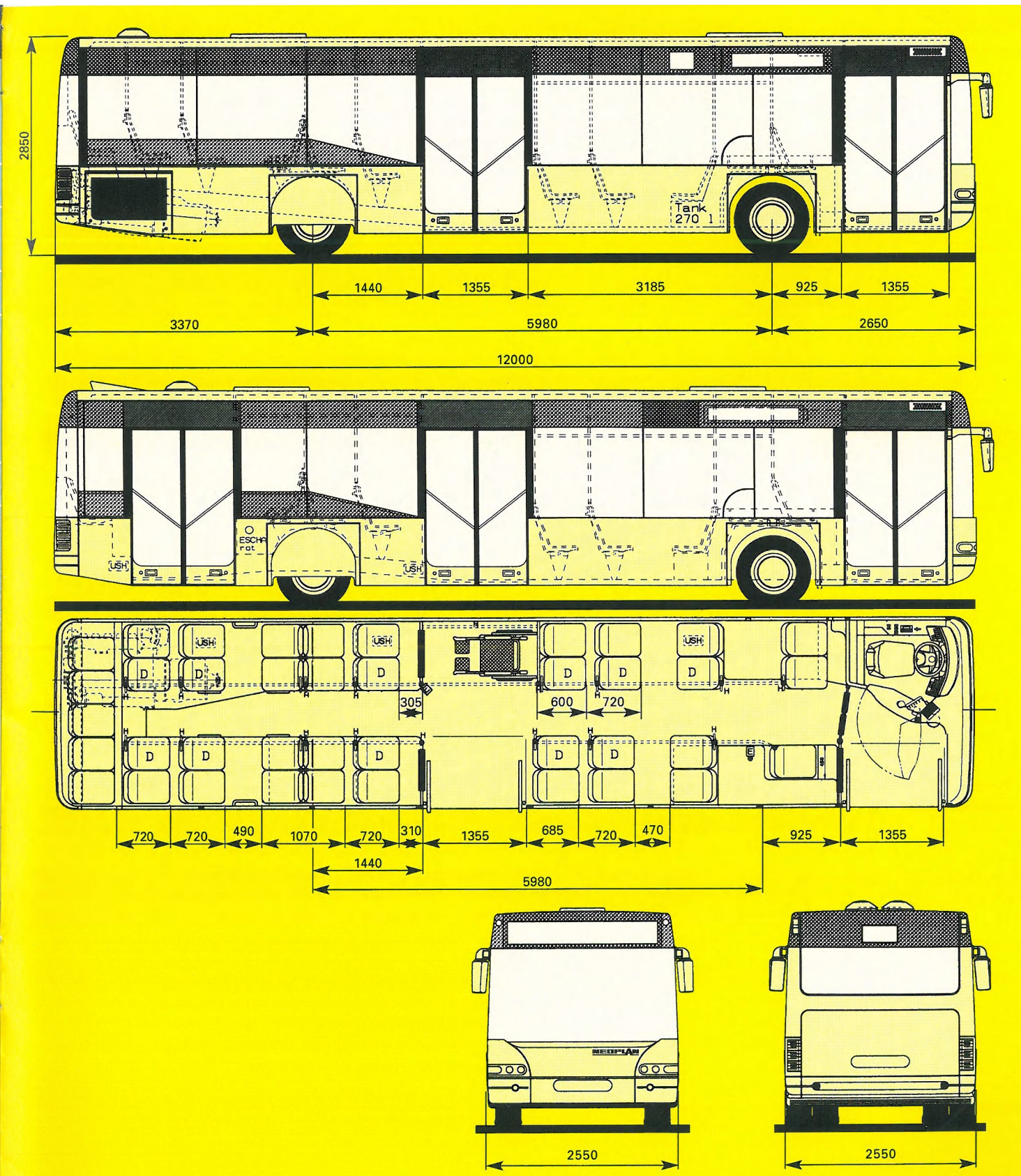

*Technical changes reserved*

# ALL OF THE TECHNOLOGY.

## NEOPLAN CENTROLINER N 4416.

| | Neoplan Centroliner N 4416 – 12 m Solobus |
|---|---|
| **Main dimensions** | ***Length:*** *12,000 mm,* ***width:*** *2,550 mm,* ***overall height:*** *2,850 mm,* ***wheelbase:*** *5,980 mm,* ***front overhang:*** *2,650 mm,* ***rear overhang:*** *3,370 mm,* ***headroom:*** *2,450 mm,* ***height of floor above ground:*** *350 mm,* ***entrance height: door I*** *= 320 mm* ***door II*** *= 320 mm,* ***angle of incline at front:*** *8°,* ***angle of incline at rear:*** *7.5°,* ***turning circle:*** *21,500 mm,* ***tyre size:*** *275/70 R 22.5",* ***Fuel tank capacity:*** *270 l.,* ***Seating arrangement as per project drawing*** |
| **Passenger seating** | ***Capacity in full equipment: seats: 40, standing room:*** *max 63 passengers,* ***driver:*** *1,* ***total approx:*** *104* |
| **Doors** | ***Front and centre:*** *double panel inward- or outward-pivoting doors 1355 mm. If desired, installation of a single-panel door III without step. Alternative: door II as outward-pivoting sliding doors (option)* |
| **Weights** | ***Maximum front axle load:*** *7,100 kg,* ***maximum rear axle load:*** *11,500 kg,* ***maximum overall weight:*** *18,000 kg* |
| **Engine** | *6 cylinder in-line diesel engines with turbo supercharger and intercooler. Turbo drive located under-floor in tail, if 3rd door fitted, then "turret version" (tower installation) installed.* ***Engine variants: MAN D 0826 LUH*** *162 kW/220 HP, EURO II, torque 850 Nm at 1,600 rpm;* ***MAN D 2866 LUH*** *191 kW/260 HP EURO II, torque 1,050 Nm at 1,000 – 1,500 rpm;* ***DC OM 457 hLA*** *457 185 kW/252 HP, EURO II, torque 1,100 Nm at 1,100 rpm; other engine variants and EURO 3 engines on request* |
| **Transmission** | *5-speed automatic transmission with integral retarder* ***ZF 5 HP 502,*** *4-speed with integral retarder,* ***Voith 854.3/864.3*** |
| **Running gear** | ***Brakes:*** *dual circuit pneumatic system with ABS/ASR braking, 600 ccm pneumatic compressor, desiccator and central test connection, hand brake and stop braking.* ***Steering:*** *ZF Servocom hydraulic steering, type 8098 with pneumatic adjustment of steering column for height and rate,* ***axles – front:*** *rigid axle VN 6 NF-S with ventilated disc brakes,* ***rear:*** *ZF AV 132/90° with ventilated disc brakes.* ***Suspension:*** *roll bellows suspension with integral travel limitation, level regulation valves and shock absorbers as required. Kneeling in conjunction with ECAS,* ***tyres:*** *10-hole Monolex disc wheels, 6 x 7.5 x 22.5, tyres: 275/70 R 22.5* |
| **Construction** | ***Rib framework:*** *Self-supporting grid construction and low-floor platform made of high-volume rectangular section tubes and angle sections, high-quality corrosion protection,* ***front section:*** *composite fibre material as the load-bearing structure (integral front end).* ***Rear end:*** *bonded glass fibre (integral tail)* |
| **Passenger compartment** | ***Glazing:*** *Single-pane, curved windscreen, flat side windows of particularly heat-insulating safety glass "Venus" double glazing on request.* ***Heating:*** *3-stage front mounted heater with silent high-output convectors along the side panels, Thermal THK 800 with 800 W/m, two additional heaters under seats or built into pedestal, Webasto Thermo 300 (30 kW) pre-heater, control via Neoplan control centre, with integrated system for de-misting with 2 ceiling duct heaters or passenger compartment air-conditioning on request.* ***Ventilation:*** *2 electrical sunroofs, two hinged windows, two ceiling vents.* ***Seats:*** *Neoplan SKA NV 200, lightweight construction seats with bottoms for "cantilever" seat mounting, and, as desired: Neoplan Kiel Centra or other brands on request. Internal equipment: new municipal bus with "city top" interior design, integral strip lighting with solid state tubes* |
| **Driver's position** | ***New VDV II driver's position:*** *With new driver's cab, ergonomically optimised seat and instrument panel arrangement, informational display, automatic tachograph, instrument panel can be adjusted to match height and rake of steering column. Payment bar stand and driver's till, driver's seat ISRI 6800/338, other manufacturers available on request, heated windscreen on request, 3-stage front heater, driver's position air conditioning (option), electrically heated and adjustable external mirror* |
| **Electrics** | ***Vehicle mains:*** *24V nominal voltage, generator of 140 A with solid state regulator, NEOCAN 2000 CAN bus system electricals.* ***Battery:*** *2 x 200 A,* ***information and communication:*** *passenger address system with goose-neck microphone and 6 loudspeakers. Adequate capacity for onboard information systems (IBIS) with interfaces prepared for vehicle bus and radio data capability. Destination and numerical display as per VDV-SL II standard in full matrix or LCD specification (option)* |

*Special equipment on request, at extra cost*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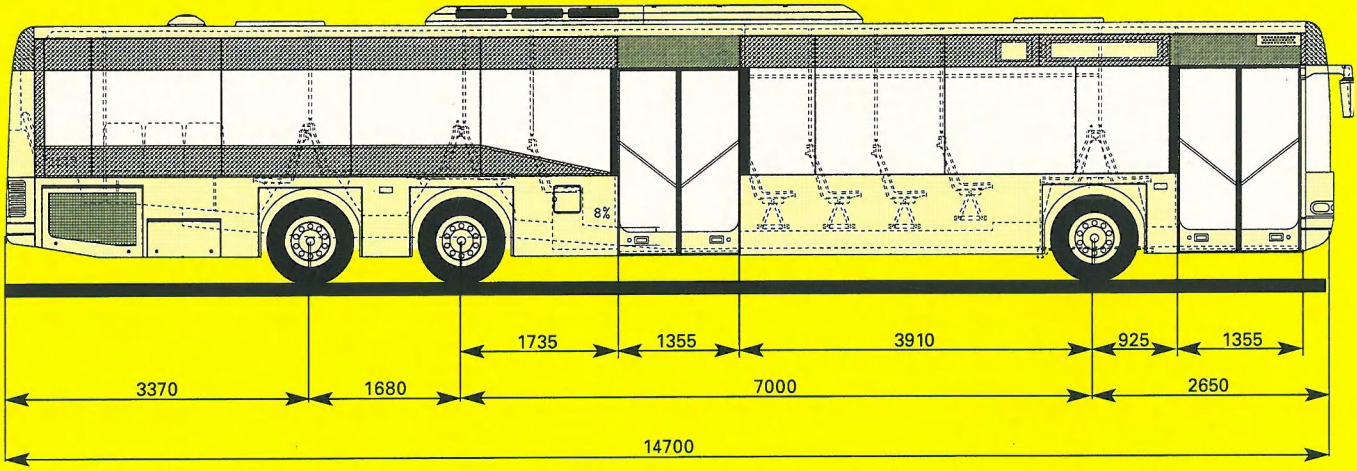
# ALL OF THE TECHNOLOGY.

# NEOPLAN CENTROLINER N 4420.

| | Neoplan Centroliner N 4420 – 15 m Solobus |
|---|---|
| **Main dimensions** | ***Length:*** *14,700 mm,* ***width:*** *2,550 mm,* ***overall height:*** *2,950 mm,* ***wheelbase:*** *7,000/1,680 mm,* ***front overhang:*** *2,650 mm,* ***rear overhang:*** *3,370 mm,* ***headroom:*** *2,450 mm,* ***height of floor above ground:*** *350 mm,* ***entrance height: door I*** *= 320 mm,* ***door II*** *= 320 mm,* ***door III*** *= 350 mm,* ***angle of incline at front:*** *8°,* ***angle of incline at rear:*** *7.5°,* ***turning circle:*** *23,500 mm,* ***tyre size, front:*** *275/70 R 22.5",* ***rear:*** *275/70 R 22.5",* ***Fuel tank capacity:*** *320 l.,* ***Seating arrangement as per project drawing*** |
| **Passenger seating** | ***Capacity in full equipment: seats: 42, standing room:*** *max approx 80 passengers,* ***driver:*** *1,* ***total approx:*** *123* |
| **Doors** | ***Front, centre and rear:*** *three x double-panel inward- or outward-pivoting doors 1355 mm. If desired, doors II and III as outward-pivoting sliding doors (option), without door III (option)* |
| **Weights** | ***Maximum front axle load:*** *7,500 kg,* ***maximum rear axle load:*** *11,500/6,000 kg,* ***maximum overall weight:*** *25,000 kg* |
| **Engine** | *6 cylinder in-line diesel engine with direct injection, turbo supercharger and intercooler. Upright, tail-mounted drive, in "turret" (tower installation) or under-floor location.* ***Engine variants: MAN D 2866 LOH*** *228 kW/310 HP, EURO II, torque 1,250 Nm at 800 - 1,600 rpm;* ***DC OM 457 hLA*** *220 kW/299 HP, EURO II, torque 1,250 Nm at 1,100 rpm; other engine variants and EURO 3 engines on request* |
| **Transmission** | *5-speed automatic transmission with integral retarder* ***ZF 5 HP 592,*** *4-speed with integral retarder,* ***Voith 864.3*** |
| **Running gear** | ***Brakes:*** *dual circuit pneumatic system with ABS/ASR braking, 600 ccm pneumatic compressor, desiccator and central test connection, hand brake and stop braking.* ***Steering:*** *ZF Servocom hydraulic steering, type 8098 with pneumatic adjustment of steering column for height and rate,* ***axles – front:*** *rigid axle VN 8 NF-S with ventilated disc brakes,* ***middle:*** *ZF AV 132/90° with ventilated disc brakes.* ***Rear:*** *castor axle NN8 NF-S with ventilated disc brakes.* ***Rear axle steering:*** *electrohydraulic control trailing axle (EHLA as standard), or option of EHLA electrohydraulic control axles II and III (EHLA optimal).* ***Suspension:*** *roll bellows suspension with integral travel limitation, level regulation valves and shock absorbers as required. Kneeling in conjunction with ECAS.* ***Tyres:*** *10-hole Monolex disc wheels, 8 at* ***front:*** *275/70 R 22.5" 8.25 x 22.5"; rear: 275/70 R 22.5" 7.5 x 22.5/8.25 x 22.5"* |
| **Construction** | ***Rib framework:*** *Self-supporting grid construction and low-floor platform made of high-volume rectangular section tubes and angle sections, high-quality corrosion protection,* ***front section:*** *composite fibre material as the load-bearing structure (integral front end).* ***Rear end:*** *bonded glass fibre (integral tail)* |
| **Passenger compartment** | ***Glazing:*** *Single-pane, curved windscreen, flat side windows of particularly heat-insulating safety glass "Venus" double glazing on request.* ***Heating:*** *3-stage front mounted heater with silent high-output convectors along the side panels, Thermal TKV 800 with 800 W/m, two additional heaters under seats or built into pedestal, Webasto Thermo 300 (30 kW) pre-heater, control via Neoplan control centre, with integrated system for de-misting with ceiling duct heaters or passenger compartment air-conditioning on request.* ***Ventilation:*** *3 electrical sunroofs, two hinged windows, two ceiling vents.* ***Seats:*** *Neoplan SKA NV 200, lightweight construction seats with bottoms for "cantilever" seat mounting, and, as desired: Neoplan Kiel Centra or other brands on request.* ***Internal equipment:*** *new municipal bus with "city top" interior design, integral strip lighting with solid state tubes* |
| **Driver's position** | ***New VDV II driver's position:*** *With new driver's cab, ergonomically optimised seat and instrument panel arrangement, informational display, automatic tachograph, instrument panel can be adjusted to match height and rake of steering column. Payment bar stand and driver's till, driver's seat ISRI 6800/338, other manufacturers available on request, heated windscreen on request, 3-stage front heater, driver's position air conditioning (option), electrically heated and adjustable external mirror* |
| **Electrics** | ***Vehicle mains:*** *24V nominal voltage, generator of 140 A with solid state regulator, CAN bus system electricals.* ***Battery:*** *2 x 200 A ,* ***information and communication:*** *passenger address system with goose-neck microphone and 6 loudspeakers. Adequate capacity for onboard information systems (IBIS) with interfaces prepared for vehicle bus and radio data capability. Destination and numerical display as per VDV-SL II standard in full matrix or LCD specification (option)* |

*Special equipment on request, at extra cost*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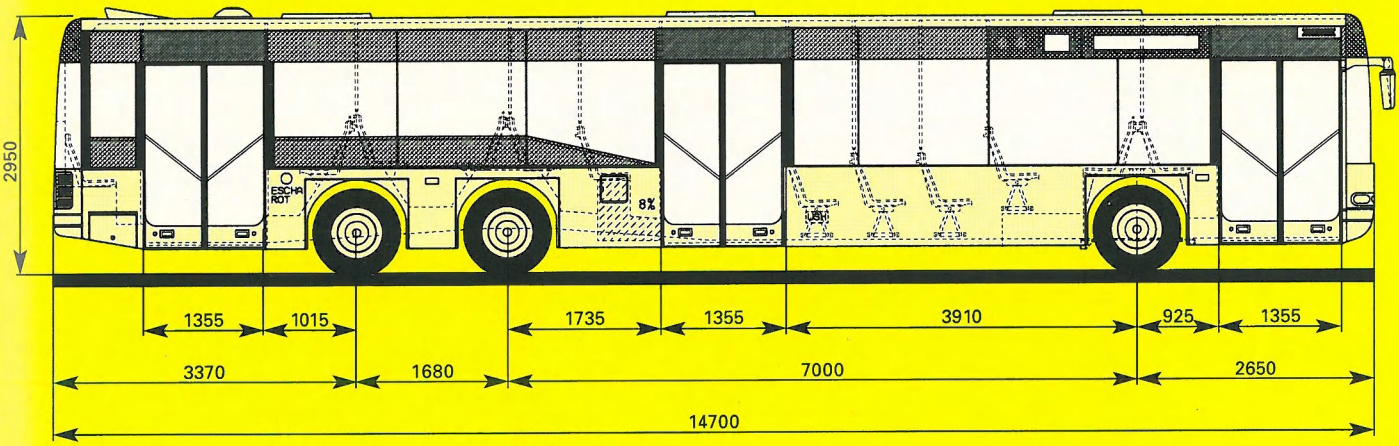
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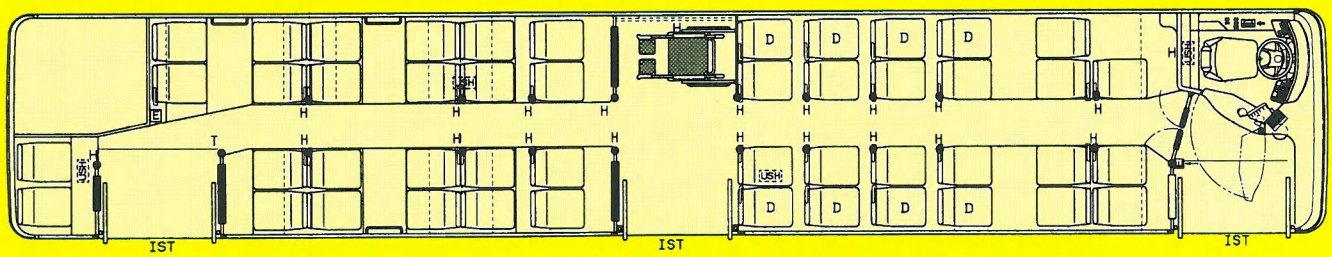
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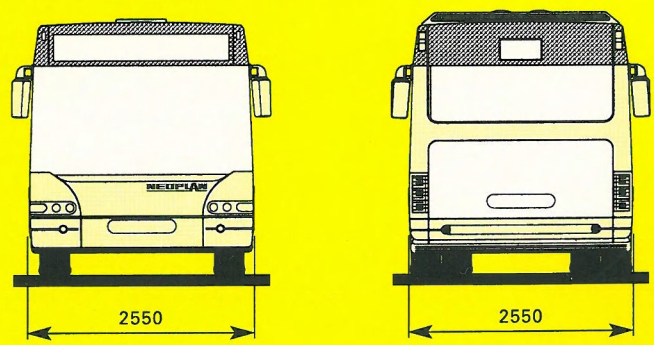
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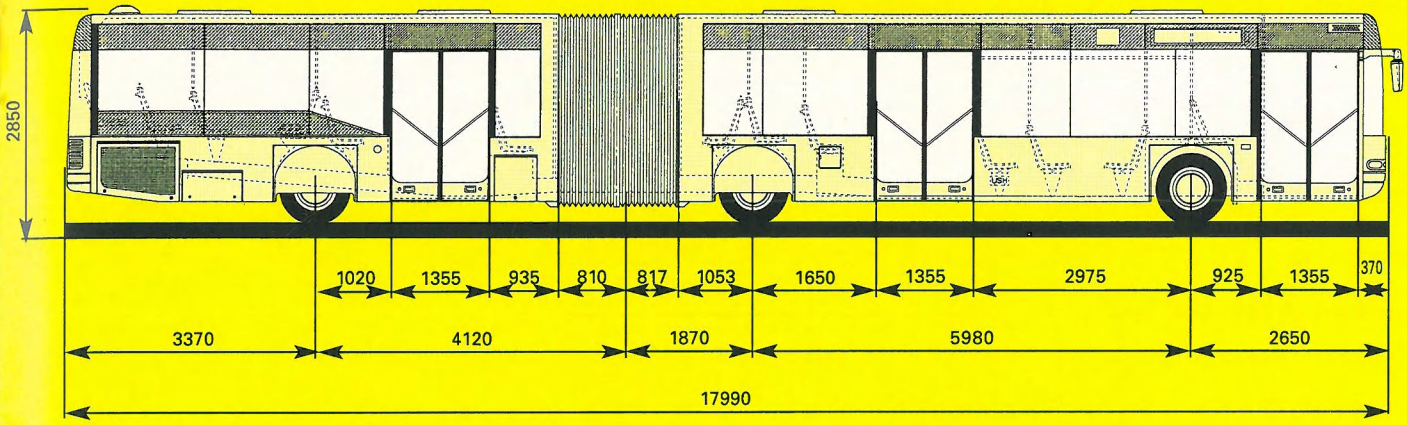
# ALL OF THE TECHNOLOGY.

## NEOPLAN CENTROLINER N 4421.

| | Neoplan Centroliner N 4421 – 18 m Solobus |
|---|---|
| **Main dimensions** | ***Length:*** *17,990 mm,* ***width:*** *2,550 mm,* ***overall height:*** *2,850 mm,* ***wheelbase:*** *5,980/5,990 mm,* ***front overhang:*** *2,650 mm,* ***rear overhang:*** *3,370 mm,* ***headroom:*** *2,450 mm,* ***height of floor above ground:*** *350 mm,* ***entrance height: door I*** *= 320 mm,* ***door II*** *= 320 mm,* ***door III*** *= 320 mm,* ***door IV*** *= 320 mm.* ***Angle of incline at front:*** *8°,* ***angle of incline at rear:*** *7.5°,* ***turning circle:*** *23,600 mm,* ***tyre size:*** *275/70 R 22.5",* ***Fuel tank capacity:*** *320 l.,* ***Seating arrangement as per project drawing*** |
| **Passenger seating** | ***Capacity in full equipment: seats:*** *55,* ***standing room:*** *max approx 100 passengers,* ***driver:*** *1,* ***total approx:*** *156* |
| **Doors** | ***Front , centre and rear:*** *three x double-panel inward- or outward-pivoting doors 1355 mm. If desired, doors II, III and IV as outward-pivoting sliding doors (option)* |
| **Weights** | ***Maximum front axle load:*** *7,500 kg,* ***maximum rear axle load:*** *11,500/6,000 kg,* ***maximum overall weight:*** *28,000 kg* |
| **Engine** | *6 cylinder in-line diesel engine with direct injection, turbo supercharger and intercooler. Turbo drive is tail-mounted in an under-floor location.* ***Engine variants: MAN D 2866/LUH*** *228 kW/310 HP, EURO II, torque 1,250 Nm at 800 – 1,600 rpm;* ***DC OM 457 hLA*** *220 kW/299 HP, EURO II, torque 1,250 Nm at 1,100 rpm; other engine variants and EURO 3 engines on request* |
| **Transmission** | *5-speed automatic transmission with integral retarder* ***ZF 5 HP 592,*** *4-speed with integral retarder,* ***Voith 864.3*** |
| **Running gear** | ***Brakes:*** *dual circuit pneumatic system with ABS/ASR braking, 600 ccm pneumatic compressor, desiccator and central test connection, hand brake and stop braking.* ***Steering:*** *ZF Servocom hydraulic steering, type 8098 with pneumatic adjustment of steering column for height and rate,* ***axles – front:*** *rigid axle VN 8 NF-S with ventilated disc brakes,* ***middle:*** *ZF AVN 132 with ventilated disc brakes.* ***Rear:*** *ZF AV 132/90° with ventilated disc brakes.* ***Suspension:*** *roll bellows with integral travel limitation, level control valves and shock absorbers, with option of kneeling in conjunction with ECAS.* ***Tyres:*** *10-hole Monolex disc wheels, 10 x 8.25 x 22.5" tyres 275/70 R 22.5"* |
| **Construction** | ***Rib framework:*** *Self-supporting grid construction and low-floor platform made of high-volume rectangular section tubes and angle sections, high-quality corrosion protection,* ***front section:*** *composite fibre material as the load-bearing structure (integral front end).* ***Rear end:*** *bonded glass fibre (integral tail)* |
| **Passenger compartment** | ***Glazing:*** *Single-pane, curved windscreen, flat side windows of particularly heat-insulating safety glass "Venus" double glazing on request.* ***Heating:*** *3-stage front mounted heater with silent high-output convectors along the side panels, Thermal TKV 800 with 800 W/m, two additional heaters under seats or built into pedestal, Webasto Thermo 300 (30 kW) pre-heater, control via Neoplan control centre, with integrated system for de-misting with 4 ceiling duct heaters or passenger compartment air-conditioning on request.* ***Ventilation:*** *3 electrical sunroofs, 4 hinged windows, two ceiling vents. Seats: Neoplan SKA NV 200, lightweight construction seats with bottoms for "cantilever" seat mounting, and, as desired: Neoplan Kiel Centra or other brands on request.* ***Internal equipment:*** *new municipal bus with "city top" interior design, integral strip lighting with solid state tubes* |
| **Driver's position** | ***New VDV II driver's position:*** *With new driver's cab, ergonomically optimised seat and instrument panel arrangement, informational display, automatic tachograph, instrument panel can be adjusted to match height and rake of steering column. Payment bar stand and driver's till, driver's seat ISRI 6800/338, other manufacturers available on request, heated windscreen on request, 3-stage front heater, driver's position air conditioning (option), electrically heated and adjustable external mirror* |
| **Electrics** | ***Vehicle mains:*** *24V nominal voltage, generator of 140 A with solid state regulator, CAN bus system electricals.* ***Battery:*** *2 x 200 A,* ***information and communication:*** *passenger address system with goose-neck microphone and 8 loud-speakers. Adequate capacity for onboard information systems (IBIS) with interfaces prepared for vehicle bus and radio data capability. Destination and numerical display as per VDV-SL II standard in full matrix or LCD specification (option)* |



*Special equipment on request, at extra cost*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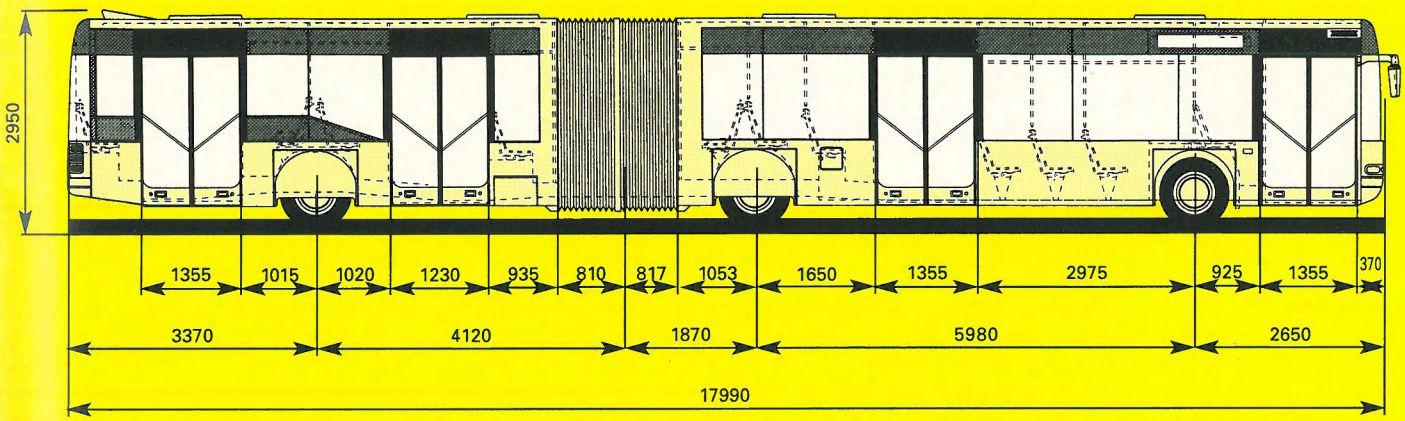
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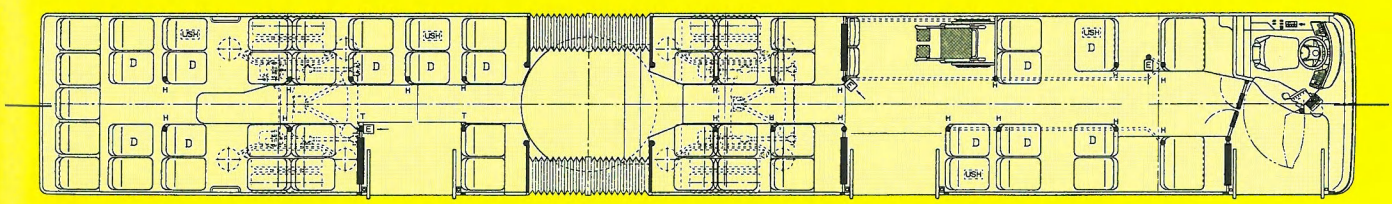

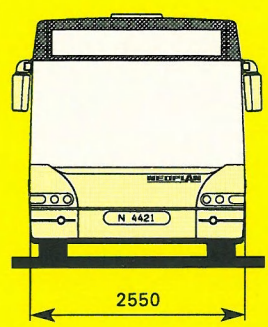
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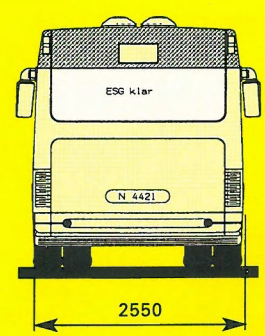
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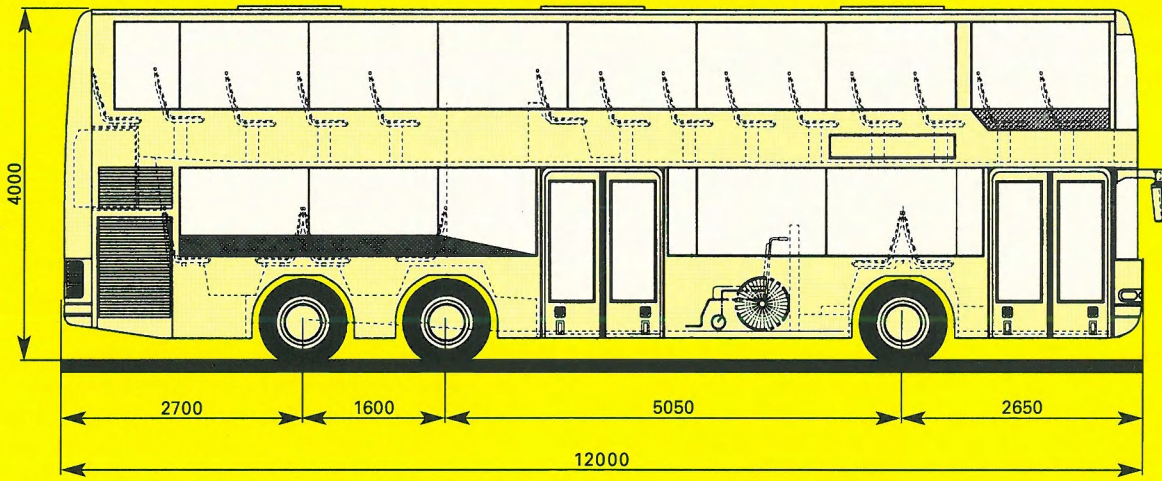
# TECHNOLOGY AT A GLANCE.

## THE NEOPLAN CENTROLINER N 4426/3.

| | Neoplan Centroliner N 4426/3 – 12 m |
|---|---|
| **Main dimensions** | ***Length:*** *12,000 mm,* ***Width:*** *2,550 mm,* ***Height:*** *4,000mm,* ***Wheelbase:*** *5,050/1,600 mm,* ***Turning circle:*** *approx. 20,000 mm,* ***Front overhang:*** *2,650 mm,* ***Rear overhang:*** *2,700 mm,* ***Height of floor:*** *350 mm,* ***Height of entrance:*** *320 mm,* ***Min. heights in aisle:*** *1,800/1,680 mm,* ***Fuel tank capacity:*** *380 l* |
| **Passenger seating** | ***Capacity in basic version: Seats:*** *approx. 92,* ***Standees:*** *approx. 30,* ***Driver:*** *1,* ***Total:*** *approx. 123* |
| **Doors** | *2 pneumatically or electrically operated outward-opening doors, with reversing mechanism and lift lock, double-winged 1,350 mm, 2 staircases leading to the upper deck* |
| **Engine** | *6-cylinder* ***DC OM 501 LA EURO II****, water-cooled Diesel engine, with direct injection, exhaust gas turbo charging and charge-air cooling, cubic capacity 11.95 l, 260 kW (354 hp) at 1,800 rpm, maximum torque 1,730 Nm at 1,080 rpm, engine enclosed for silencing, engine installed vertically in rear* |
| **Transmission** | ***ZF 5 HP 602*** *with retarder, derating in 1st and 2nd gear* |
| **Running Gear** | ***Brakes:*** *Dual-circuit air-assisted system, with ABS/TCS, air compressor with 2x300 cm3, air-drier and central pressure test connections,* ***Steering:*** *ZF type 8098, height and inclination of steering column adjustable,* ***Trailing axle:*** *actively guided with EHLA Standard,* ***Axles:*** *front – VN 8 NF-S rigid axle with ventilated disc brakes, center – ZF AV 132/90° hypoid portal axle with ventilated disc brakes, rear – electrohydraulic control trailing axle NN 8 NF-S with ventilated disc brakes,* ***Suspension:*** *pneumatic roll-bellows suspension with integrated elastic stroke limiter, leveling valves and shock absorbers, WABCO ECAS,* ***Tire equipment:*** *8 solid steel wheels 8.25x22.5 with 10 holes,* ***Tires:*** *front – 315/60 R 22.5 9x22.5 center/rear – 275/70 R 22.5"* |
| **Construction** | ***Rib framework:*** *Self-supporting grid construction and low-floor platform made of high-volume rectangular section tubes and angle sections, anticorrosive treatment of cavities and of underbody – lightweight construction* |
| **Body** | *Lateral, frontal, rear and roof carcass made of rectangular tubes, planking and side-panels without joints, made of steel plate galvanized in Sendzimir method. Front and rear covering in glass fiber reinforced plastic* |
| **Passenger compartment with platforms** | ***Glazing:*** *one-piece windshield, side windows, windows in doors and rear window in tempered safety glass "Venus", driver's window heated,* ***Heating:*** *VDV cockpit heater, convectors, under-seat heating, preheater Webasto Thermo 350 with 35 kW, thermostatic regulation of heating,* ***Ventilation:*** *6 roofs ventilators, in upper deck ventilation by air suction, in lower deck ventilation flaps, 2 emergency roof exits, 500x800 mm,* ***Air conditioning*** *(optional equipment) only for two-door version: air conditioner on rack in rear for cooling and heating,* ***Seats:*** *surface and back supports upholstered, individual seats of urban bus type NEOPLAN SKA NV 200,* ***Interior trim:*** *side-panels made of sheet plastic, floor made of Pegulan,* ***Accessories:*** *room for wheel-chair at right in front of 2nd door with fuel tank at left of vehicle (capacity approx. 380 liters) or room for wheelchair opposite 2nd door with fuel tank at right of vehicle (capacity approx. 380 liters)* |
| **Driver's position** | ***New VDV II driver's position:*** *With new driver's cab, ergonomically optimised seat and instrument panel arrangement, informational display, automatic tachograph, instrument panel can be adjusted to match height and rake of steering column. Payment bar stand and driver's till, driver's seat ISRI 6800/338, other manufacturers available on request, heated windscreen on request, 3-stage front heater, driver's position air conditioning (option), electrically heated and adjustable external mirror, barrier behind driver with pane made of plexiglass, lateral barrier with separating door and integrated counter on post* |
| **Electrics** | ***CAN-Bus:*** *CAN-Bus Neoplan NEOCAN 2000,* ***Vehicle electrical system:*** *nominal voltage 24 V, 2 generators of 140 A each with transistor control unit and automatic off-switch,* ***Batteries:*** *2 x 200 Ah,* ***Accessories:*** *communicator with goose-neck microphone, 6 loudspeakers, transistor light, heated exterior rearview mirrors,* ***Destination display:*** *installation of full matrix system and interior bus stop displays (optional equipment)* |

**For 12 m vehicles, the only available engine/gear box combination is DC OM 501 LA/ZF 5 HP 600.*
*Special equipment on request, at extra cost*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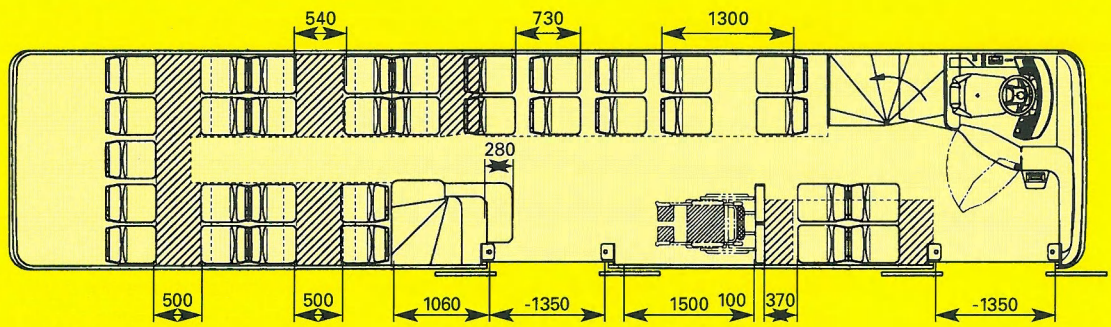
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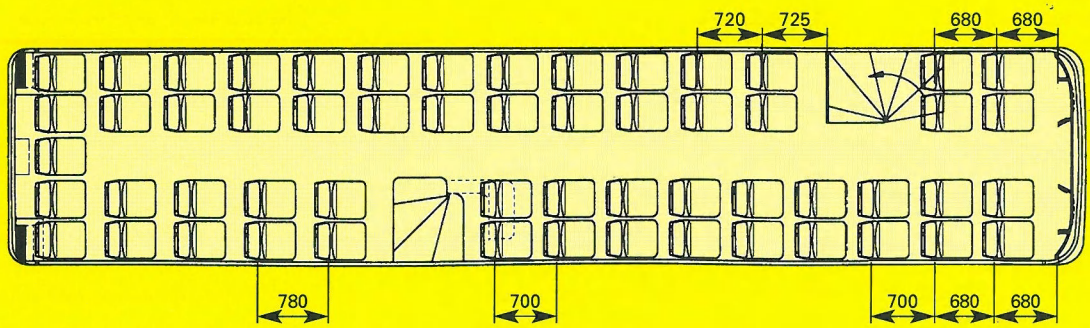
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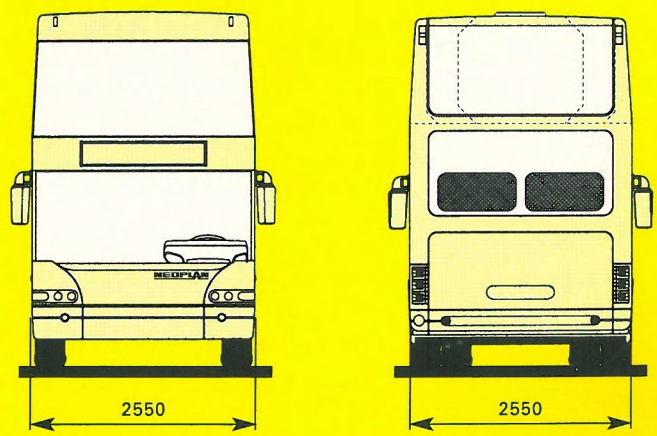
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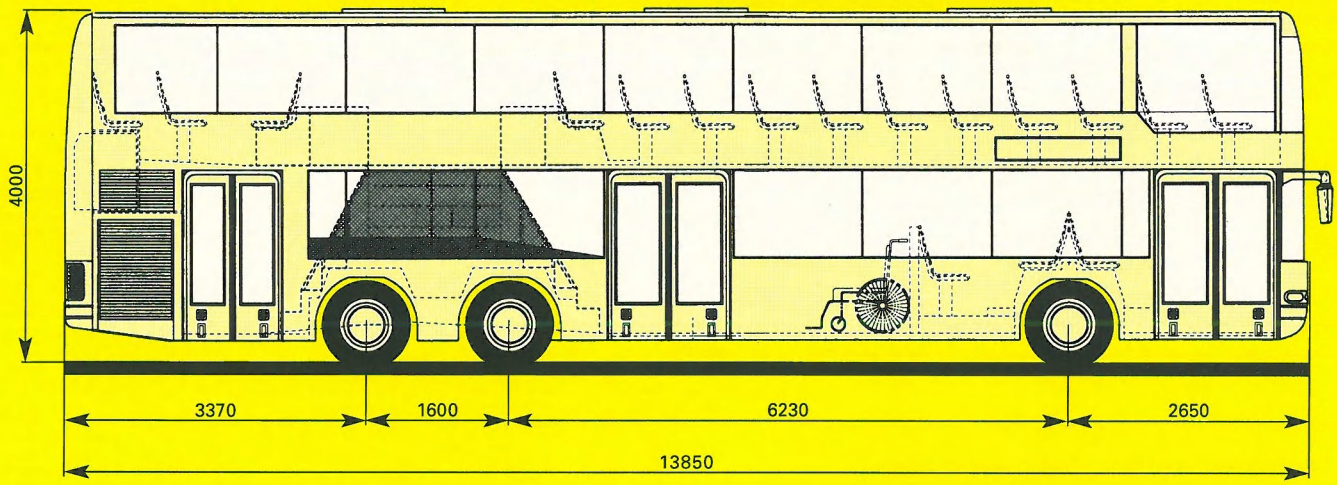
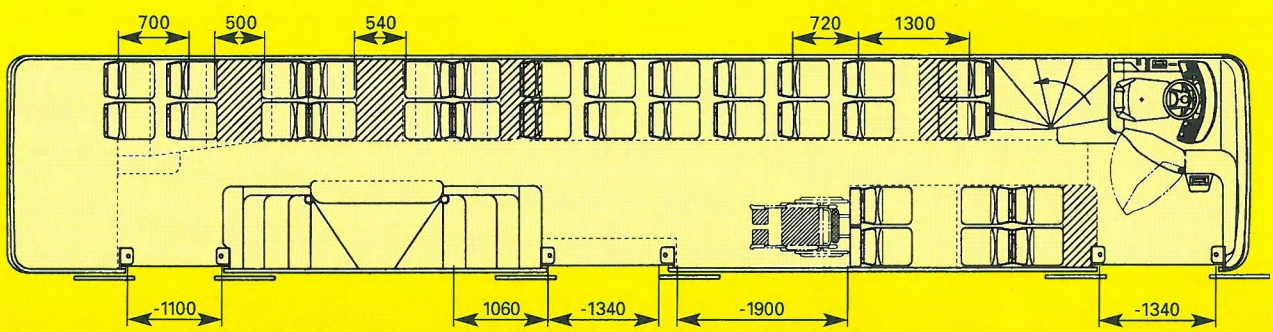
# TECHNOLOGY AT A GLANCE.

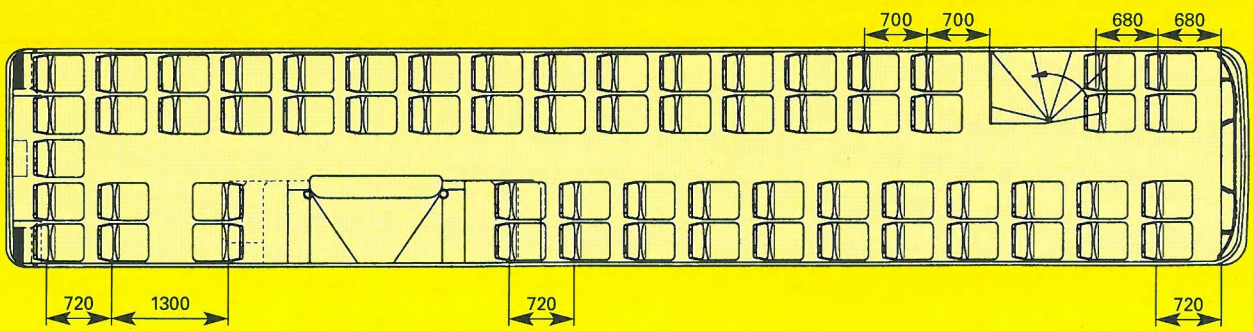
## THE NEOPLAN CENTROLINER N 4426/3 L.

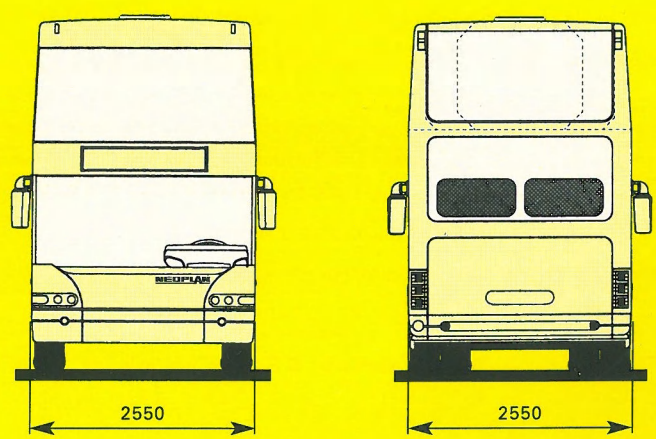
| | Neoplan Centroliner 4426/3 L – 13,85 m |
|---|---|
| **Main dimensions** | ***Length:*** *13,850 mm,* ***Width:*** *2,550 mm,* ***Height:*** *4,000mm,* ***Wheelbase:*** *6,230/1,600 mm,* ***Turning circle:*** *approx. 23,800 mm,* ***Front overhang:*** *2,650 mm,* ***Rear overhang:*** *3,370 mm,* ***Height of floor:*** *350 mm,* ***Height of entrance:*** *320 mm,* ***Min. heights in aisle:*** *1,800/1,680 mm,* ***Fuel tank capacity:*** *380 l* |
| **Passenger seating** | ***Capacity in basic version: Seats:*** *(II-doors) approx. 98,* ***Standees:*** *approx. 46,* ***Driver:*** *1,* ***Total:*** *approx. 145* |
| **Doors** | *3 pneumatically or electrically operated outward-opening doors, with reversing mechanism and lift lock, double-winged 1,350 mm, 2 staircases leading to the upper deck, 3 staircases on request (option)* |
| **Engine** | *6-cylinder* ***MAN D 2866 LUH EURO II,*** *water-cooled Diesel engine, with direct injection, exhaust gas turbo charging and charge-air cooling, cubic capacity 11.97 l, 257 kW (350 hp.) at 2,000 rpm, maximum torque 1,500 Nm at 800 – 1,600 rpm,* ***DC OM 501 LA*** *260 kW (354 hp.) Euro II at 1,800 rpm, maximum torque 1,730 Nm at 1,080 rpm.,cooling with hydrostatic ventilator drive, engine enclosed for silencing, engine installed as underfloor engine in rear* |
| **Transmission** | ***ZF 5 HP 602*** *with retarder, derating in 1st and 2nd gear* |
| **Running Gear** | ***Brakes:*** *Dual-circuit air-assisted system, with ABS/TCS, air compressor with 2x300 cm³, air-drier and central pressure test connections,* ***Steering:*** *ZF type 8098, height and inclination of steering column adjustable,* ***Trailing axle:*** *actively guided with EHLA Standard,* ***Axles:*** *front – VN 8 NF-S rigid axle with ventilated disc brakes, center – ZF AV 132/90° hypoid portal axle with ventilated disc brakes, rear – electrohydraulic control trailing axle NN 8 NF-S with ventilated disc brakes,* ***Suspension:*** *pneumatic roll-bellows suspension with integrated elastic stroke limiter, levelling valves and shock absorbers, WABCO ECAS,* ***Tire equipment:*** *8 solid steel wheels 8.25x22.5 with 10 holes,* ***Tires:*** *front – 315/60 R 22.5 9.00x22.5, center/rear – 275/70 R 22.5"* |
| **Construction** | ***Rib framework:*** *Self-supporting grid construction and low-floor platform made of high-volume rectangular section tubes and angle sections, anticorrosive treatment of cavities and of underbody – lightweight construction* |
| **Body** | *Lateral, frontal, rear and roof carcass made of rectangular tubes, planking and side-panels without joints, made of steel plate galvanized in Sendzimir method. Front and rear covering in glass fiber reinforced plastic* |
| **Passenger compartment with platforms** | ***Glazing:*** *one-piece windshield, side windows, windows in doors and rear window in tempered safety glass "Venus", driver's window heated,* ***Heating:*** *VDV cockpit heater, convectors, under-seat heating, preheater Webasto Thermo 350 with 35 kW, thermostatic regulation of heating,* ***Ventilation:*** *6 roofs ventilators, in upper deck ventilation by air suction, in lower deck ventilation flaps, 2 emergency roof exits, 500x800 mm,* ***Air conditionning*** *(optional equipment) only for two-door version: air conditioner on rack in rear for cooling and heating,* ***Seats:*** *surface and back supports upholstered, individual seats of urban bus type NEOPLAN SKA NV 200,* ***Interior trim:*** *side-panels made of plastic penels, floor made of Pegulan,* ***Accessories:*** *room for wheel-chair at right in front of 2nd door with fuel tank at left of vehicle (capacity approx. 380 litres), room for wheel opposite 2nd door with fuel tank at right of vehicle (capacity approx. 380 litres)* |
| **Driver's position** | ***New VDV II driver's position:*** *With new driver's cab, ergonomically optimised seat and instrument panel arrangement, informational display, automatic tachograph, instrument panel can be adjusted to match height and rake of steering column. Payment bar stand and driver's till, driver's seat ISRI 6800/338, other manufacturers available on request, heated windscreen on request, 3-stage front heater, driver's position air conditioning (option), electrically heated and adjustable external mirror, barrier behind driver with pane made of plexiglass, lateral barrier with separating door and integrated counter on post* |
| **Electrics** | ***CAN-Bus:*** *CAN-Bus Neoplan NEOCAN 2000,* ***Vehicle electrical system:*** *nominal voltage 24 V, 2 generators of 140 A each with transistor control unit and automatic off-switch,* ***Batteries:*** *2 x 200 Ah,* ***Accessories:*** *communicator with goose-neck microphone, 6 loudspeakers, transistor light, heated exterior rearview mirrors,* ***Destination display:*** *installation of full matrix system and interior bus stop displays (optional equipment)* |

*Special equipment on request, at extra cost*




*Technical changes reserved·*

# COMFORT IS STANDARD.

# LUXURY AS DESIRED.

| CENTROLINER Family low-floor municipal buses, standard production and special equipment | N 4407 | N 4411 | N 4416 | N 4420 | N 4421 | N 4426/3 | N 4426/3L |
|---|---|---|---|---|---|---|---|
| **Running gear/brakes** | | | | | | | |
| *ABS (anti lock system)* | ● | ● | ● | ● | ● | ● | ● |
| *ASR (anti slip control)* | ● | ● | ● | ● | ● | ● | ● |
| *EBS (electronic braking system)* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ |
| *Kneeling in conjunction with ECAS* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ |
| *600 ccm pneumatic compressor* | ● | ● | ● | ● | ● | ● | ● |
| **Vehicle construction** | | | | | | | |
| *Electrically operated sunroofs* | ● | ● | ● | ● | ● | — | — |
| *Electrically adjustable external mirrors* | ● | ● | ● | ● | ● | ● | ● |
| *Single-pane safety glass (ESG) "Venus" tint* | ● | ● | ● | ● | ● | ● | ● |
| *Double glazing* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ |
| *Fully glazed door panels* | ● | ● | ● | ● | ● | ● | ● |
| **Driver's position** | | | | | | | |
| *New VDV driver's position as per VDV document 234* | ● | ● | ● | ● | ● | ● | ● |
| *Front box (driver's position heater)* | ● | ● | ● | ● | ● | ● | ● |
| *Driver's position air conditioning* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ |
| *Driver's seat ISRI 6800/338 for new driver's position* | ● | ● | ● | ● | ● | ● | ● |
| *Recaro driver's seat RNC-P* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ |
| **Heating/ventilation/air conditioning** | | | | | | | |
| *High-performance convectors along the side panels* | ● | ● | ● | ● | ● | ● | ● |
| *Lower pedestal and lower seat heating units* | ● | ● | ● | ● | ● | ● | ● |
| *Webasto thermo water pre-heater* | ● | ● | ● | ● | ● | ● | ● |
| *Installation for window de-misting with ceiling duct heaters* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | — | — |
| *Compact air conditioner mounted in rear section* | — | — | — | — | — | ⊙ | ⊙ |
| *Airconditioning system* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | — | — |
| **Passenger cabin/seats** | ● | ● | ● | ● | ● | ● | ● |
| *Passenger modesty panel* | ● | ● | ● | ● | ● | ● | ● |
| *Neoplan SKA NV 200 municipal bus single seats* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ |
| *Different seating systems on request* | ● | ● | ● | ● | ● | — | — |
| *Wall-mounted (cantilever) seats* | | | | | | | |
| **Electrics** | ● | ● | ● | ● | ● | ● | ● |
| *NEOCAN 2000 (= Neoplan CAN bus system multiplex nodes)* | ● | ● | ● | ● | ● | ● | ● |
| *IBIS basic wiring with star-point distribution* | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ |
| *Further special equipment options on request* | | | | | | | |
| | | | | | | | |

● *Standard production equipment* ⊙ *Special equipment (additional cost)*

# DRIVE MEANS POWER.

## POWER MEANS PROGRESS.

| Centroliner Drive-train | | N 4407 | N 4411 | N 4416 2-Türer | N 4420 | N 4421 3-Türer | N 4426/3 | N 4426/3L |
|---|---|---|---|---|---|---|---|---|
| **Engine (upright)** | **Transmission** | | | | | | | |
| *MAN D 0826 LOH 17 162 kW* | *ZF 5 HP 502/Voith 851.3* | ● | ● | | | | | |
| *DC OM 906 LA 170 kW* | *ZF 5 HP 502/Voith 851.3* | ● | ● | | | | | |
| **Engine (located under floor)** | **Transmission** | | | | | | | |
| *MAN D 0826 LUH 12 162 kW* | *ZF 5 HP 502/Voith 854.3* | | | ● | | | | |
| *DC OM 906 hLA 170 kW* | *ZF 5 HP 502/Voith 854.3* | | | ● | | | | |
| *DC OM 457 hLA 185 kW* | *ZF 5 HP 502/Voith 864.3* | | | ● | ● | ● | | |
| *MAN D 0826 LUH 13 191 kW* | *ZF 5 HP 502/Voith 854.3* | | | ● | | | | |
| *MAN D 2866 LUH 22 191 kW* | *ZF 5 HP 502/Voith 864.3* | | | ● | ● | ● | | |
| *DC OM 906 hLA 205 kW* | *ZF 5 HP 502/Voith 864.3* | | | ● | | | | |
| *DC OM 457 hLA 220 kW* | *ZF 5 HP 592/Voith 864.3* | | | ● | ● | ● | | |
| *MAN D 2866 LUH 20 228 kW* | *ZF 5 HP 592/Voith 864.3* | | | ● | ● | ● | | |
| *MAN D 2866 LUH 21 257 kW* | *ZF 5 HP 602/Voith 864.3* | | | | ● | ● | | |

| Centroliner Drive-train | | N 4407 | N 4411 | N 4416 3-Türer | N 4420 | N 4421 4-Türer | N 4426/3 | N 4426/3L |
|---|---|---|---|---|---|---|---|---|
| **"Turret constr. version" engines** | **Transmission*** | | | | | | | |
| *MAN D 0826 LOH 17 162 kW* | *ZF 5 HP 502* | | | ● | | | | |
| *DC OM 906 LA 170 kW* | *ZF 5 HP 502* | | | ● | | | | |
| *MAN D 0826 LOH 18 191 kW* | *ZF 5 HP 502* | | | ● | ● | | | |
| *DC OM 906 LA 205 kW* | *ZF 5 HP 502* | | | ● | ● | | | |
| *DC OM 441 LA 213 kW* | *ZF 5 HP 592* | | | ● | ● | | | |
| *MAN D 2866 LOH 25 228 kW* | *ZF 5 HP 592* | | | | ● | ● | | |
| *DC OM 441 LA 250 kW* | *ZF 5 HP 602* | | | | | ● | | |
| *DC OM 501 LA 260 kW* | *ZF 5 HP 602* | | | | | | ● | ● |
| *DC OM 2866 LOH 250 kW* | *ZF 5 HP 602* | | | | | | | ● |

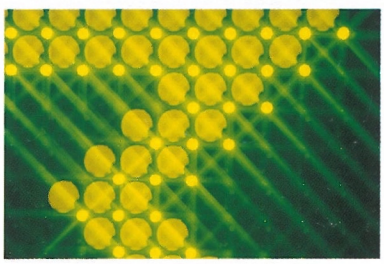
*Euro 3 engines available upon request*

** VOITH transmission can be supplied as an alternative option.*

● *Engine variants available*

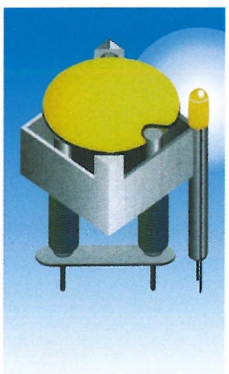
# THE AIM IN VIEW.

## MOBILE PASSENGER INFORMATION.

Info Systems

**Mobile passenger information systems serve to guide, inform and organize so that the passengers can easier find their way around in the tightly-knit traffic networks.** In the old days, bus drives used to manually operate their mechanic displays. Today, modern systems, from automatically controlled matrix systems in "flip-dot" technology to LCD information displays haven taken over. The contents are quickly and easily produced or modified, and transmitted by way of a central charge socket or by chip card. The surface of matrix displays resembles a honey-comb. In the interplay of mechanics and state-of-the-art electronics, hundreds of microlamina, each only 10 to 15 mm in diameter, generate letters, symbols and digits. The width of the display area results from the vertical sequences of points (e.g. B = 189, 126, 112, 84, 28, 23), whereas the height is structured linearly (e.g. G = 7, 13, 16, 19, 24, 28). The more lines and columns there are, the better resolution and legibility will be. NEOPLAN offers systems manufactured by Annax, Gorba, InfoSystems, Lawo-Luminator and Transit-Media.



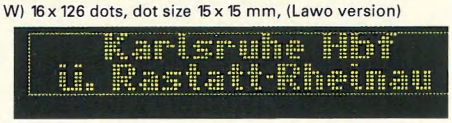
*Flip-Dot mit LED (Schema)*

**Two active displays in one device.** While the LEDs usually serve as passive sources of light, the "transit-media" technology improves the contrast of images by combining 2 active displays: matrix "flip-dot" and wide-angle LEDs.

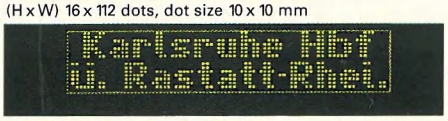
### Full-matrix destination displays for municipal buses (SL II)
Version 1 (16-dot display, 1 + 2-lines)



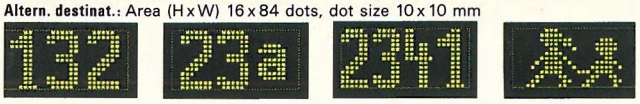
**Front display:** VDV SL II window: 348 x 2001 mm (H x W).
**Display area:** (H x W) 16 x 126 dots, dot size 15 x 15 mm, (Lawo version)


**Right-hand side:** Separate display for number and destination (Lawo version)
**Windows:** VDV-SL II window: 220 x 1200 mm + 220 x 451 mm (H x W)
**Number display:** Area (H x W) 13 x 28 dots, dot size 10 x 10 mm
**Destination:** Area (H x W) 16 x 112 dots, dot size 10 x 10 mm


**Altern. destinat.:** Area (H x W) 16 x 84 dots, dot size 10 x 10 mm




Rear and, if required, left-hand side: VDV-SL II window: 220 x 452 mm (H x W); display area (H x W) 13 x 28 dots, dot size 15 x 15 mm

### Full-matrix destination displays for municipal buses (SL II)
Version 2 (24-dot display 1 + 2-lines)

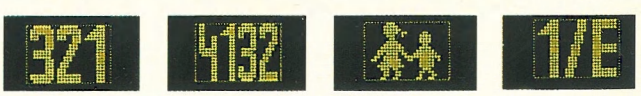


**Front display:** VDV-SL II window: 348 x 20001 mm (H x W).
**Display area:** (H x W) 24 x 189 dots, dot size 10 x 10 mm,





**Right-hand side:** Separate display for number and destination (Lawo version)
**Window:** VDV-SL II 220 x 1200 mm + 220 x 451 mm (H x W)
**Number display:** Area (H x W) 19 x 28 dots, dot size 10 x 10 mm
**Destination:** Area (H x W) 19 x 112 dots, dot size 10 x 10 mm




Rear and, if required, left-hand side: VDV-SL II window: 220 x 451 mm (H x W); display area (H x W) 19 x 28 dots, dot size 10 x 10 mm (Lawo version)

**Full-matrix destination displays for cross-country buses (STÜLB)** Version 1 (16-dot-display) 1 + 2-lines



**Front display:** B-VDV/Stülb window: 220 x 1400 mm (H x W)
**Display area:** (H x W) 7 x 84 dots, dot size 15 x 15 mm, (Lawo version)



**Right-hand side:** Single display for number and destination
**VDV-Stülb window:** 220 x 1400 mm (H x W), area and dot size as front.


**Rear number:** VDV-Stülb: window: display area (H x W) 7 x 23 dots, dot size 15 x 15 mm (Lawo version)

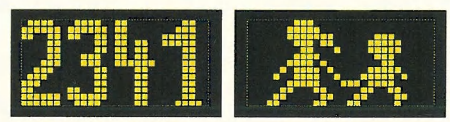
**Full-matrix destination displays for cross-country buses (STÜLB)** Version 2 (16-dot-display, 1 + 2-lines)



**Front display:** VDV-Stülb window: 220 x 1400 mm (H x W)
**Display area:** (H x W) 16 x 112 dots, dot size 10 x 10 mm, (Lawo version)



**Rigth-hand side:** Single display for number and destination VDV-STÜLB window: 220 x 1400 mm (H x W), area and dot size as front.




**Rear number:** VDV-Stülb window: 220 x 451 mm, display area (H x W) 13 x 28 dots, dot size 15 x 15 mm (Lawo version)

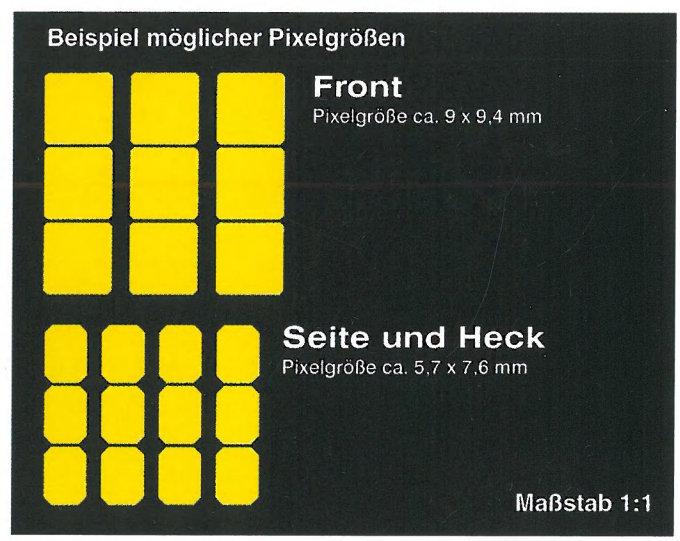
Transit-Media

**Matrix destination displays illuminated by LEDs are tops.** Each reversible element is associated with a light-emitting diode. Each lamina is illuminated separately, replacing the rather malfunction-prone neon lamps used previously. Although the LEDs are not even the size of a match's head, they are enormously bright. Even under crepuscular light conditions or in bad weather, the presentation is very rich in contrast. The LEDs are extremely sturdy, not susceptible to shocks and therefore very economic. They use only small amounts of electricity and may last for 14 years or longer.

**Matrix displays in liquid crystal version (LCD). The LCDs secure high resolution and a clear image – from all perspectives, be it under direct sunlight, in diffuse twilight or at night – and they are maintenance-free since they do not contain any mechanical parts.**


Meister Elektonik

Each individual module of the LCD (liquid crystal displays) system is made up of two transflexive glass panes. Between the two panes there is a layer of liquid crystals only one thousandth of a millimeter thick. When applying electricity, there is a pole reversal of the crystal molecules. Depending on the applied voltage, the layer be-



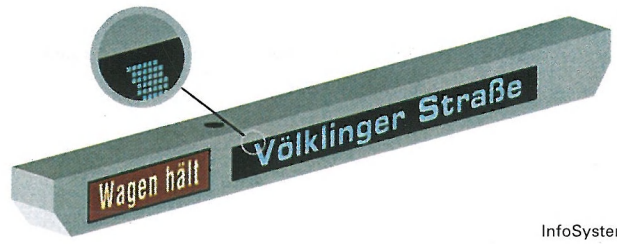

InfoSystems

comes translucent or blocks out the light. In order to be able to see the display, the glass is permanently illuminated from behind. The light source is controlled through brightness sensors and adapts itself to ambient light with high contrast. The modules can be combined to produce displays in all usual standard sizes. The high-quality LCD glass is made in Germany, maintenance-free and extremely reliable. The display area may be designed freely, with different heights and sizes of characters, symbols, pictographs, large or small letters and modified vowels (umlauts). Depending on type, it can display up to 3 lines. The devices are available with a resolution of 16 to 18 points, in small (10 mm) and large type (15 mm). **The following brands are available: Annax, Gorba, InfoSystems, Lawo-Luminator and Meister.**

# CUSTOM INFORMATION.

## MOBILE PASSENGER INFORMATION.

**Interior display of bus stops and route.** Optical and acoustic information contributes to the satisfaction of bus passengers. **The result is:** Speedier disembarking and embarking of passengers, the older passengers feel safer and all passengers are relieved of stress if they know when they have arrived at their destination or at the point where they need to change over. Triggered by vehicle BUS. **Products from these manufacturers are available: Adranz, Gorba, InfoSystems, Lawo-Luminator.**



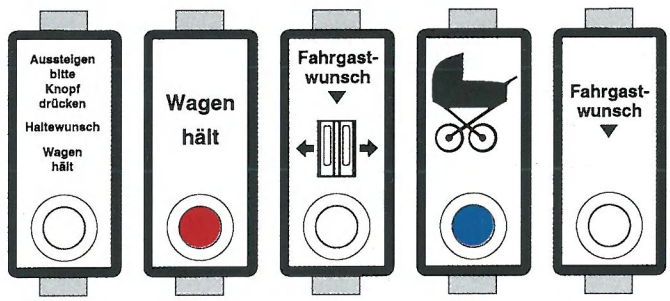

InfoSystems


InfoSystems

**Interior vacuum fluorescent display (VFD).** The finest resolution on the display is 16x320 pixels. The text is presented in green proportional type with up to 30 characters and a character height of 35 to 50 mm. May be combined with display "Bus will stop".

**Interior LED display of bus stops.** Display with yellow, green and red light-emitting diodes. For viewing distances up to 10 m, the maximum capacity is 30 characters with a character height of 30 mm. For larger viewing distances, the maximum capacity is 24 characters, with a character height of 50 mm. Display "Bus will stop", alternating with the display of bus stops or as separate display. May be combined with time signal clock DCF.


Lawo Luminator

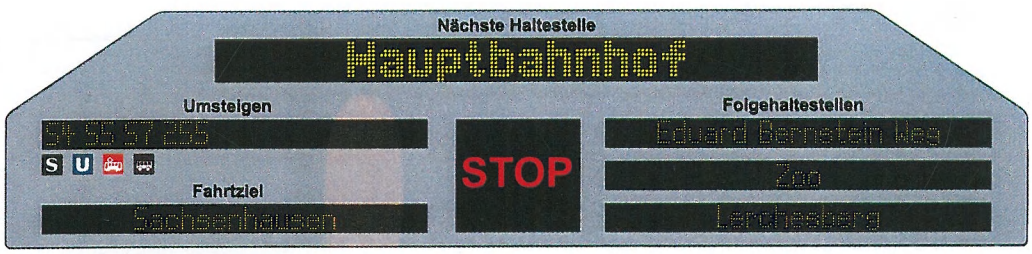



InfoSystems

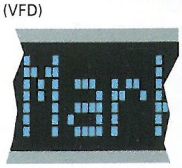
**Interior LCD display of bus stops.** Liquid crystal display. The text is presented in proportional type with up to 24 characters and a character height of 40 to 60 mm. With or without display "Bus will stop". Triggered by vehicle BUS.

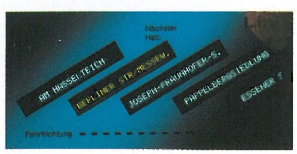
**Door control units open automatic doors.** Door controlling devices well tested in a variety of versions open the door with the push of a button or inform the driver.

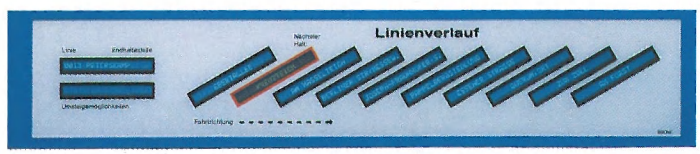
Lawo Luminator




InfoSystems (VFD)







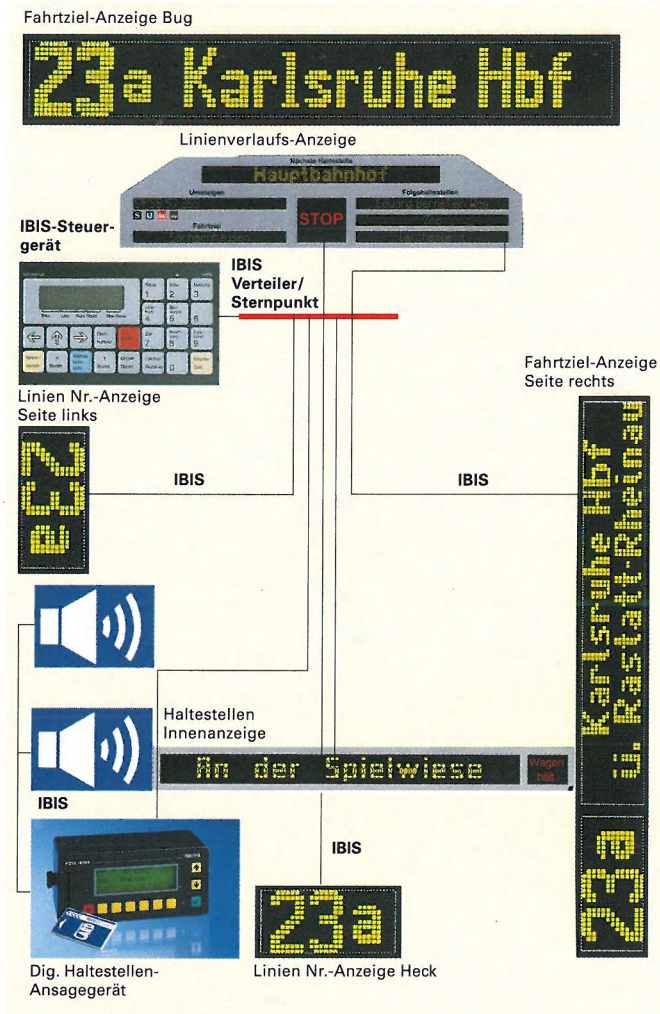

**Dynamic displays of the route**, in LED or VFD technology, depending on the vehicle's position, give a preview of the names of upcoming bus stops, as well as the change-overs they can make at the next bus stop.


Gorbatime

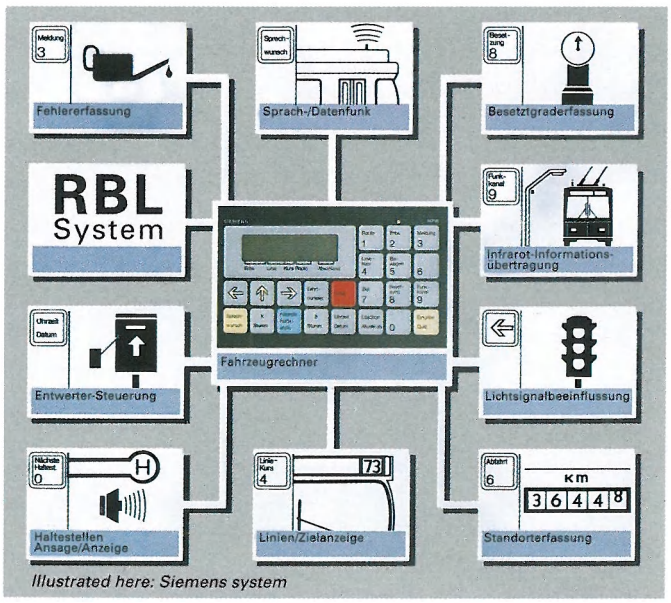
**The "atomic clock" measures punctuality.** The DCF 77 time signal controls and synchronizes the "clockwork". The display, 38 mm high, shows hours and minutes by LEDs, alternating with the bus stop display, and automatically takes daylight saving time and intercalary days into account. It may be combined with a display of upcoming bus stops. Voltage 24 V.

InfoSystems

**Everybody is able to understand the next bus stop.** A bandwidth of 10 Hz to 7 kHz and an amplifier of 25-40 W ensure optimal voice reproduction. The ELA system consists of: digital announcing device, acoustic control and an amplifier with automatic volume adjustment depending on the noise level, incorporated into 19" cassette racks.




**IBIS – Integrated On-Board Information System VDV-3005.** Automatic operations help the driver to carry out his routine tasks. Before taking to the road, he enters his line and route with the push of a button. The IBIS computer then takes care automatically of the correct adjustment of all connected devices, such as destination, line and bus stop displays, dater, ticket printer, etc. Communication is established via the **VDV vehicle BUS interface.** That is a four-wire line by which those devices are connected, supplied with data telegrams, and linked to each other. Additional functions such as the influencing of traffic lights (light signal system) are also possible. The quick exchange of data with these external installations is achieved by data modem or by **the infrared system IRIS.**



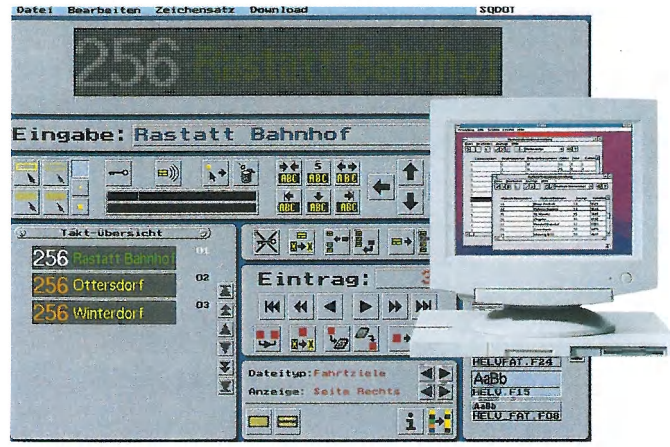
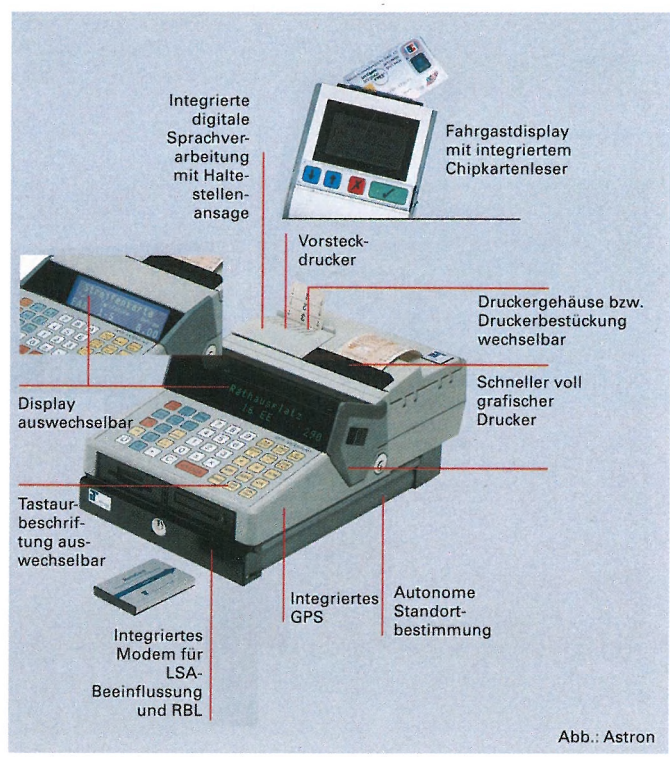



Abb.: LawoLuminator

Text recording and changes to the text are easily and quickly effected. Those tasks used to be very time-consuming and complicated. By way of graphic destination editor programs, even complex changes can be carried out. The text lists are memorized on RAMs or EPROMs or downloaded directly onto the displays or to the IBIS CPU.




**RBL – The computer-assisted operational control system.** Intelligent systems that make it easier for urban travelers to arrive at their destination serve to further improve the quality of local transport. The centerpiece of the RBL system is the IBIS on-board computer. Its modular design makes numerous practical solutions possible. Through this intelligent information center, the driver receives many important reference points, e.g. possible deviations from the regular bus schedule. On the other hand, he can also, in addition to the radiotelephone, transmit other messages to the control center. Via integrated data modem, the IBIS on-board computer also automatically sends the collected data on the current position of the bus (which is established through GPS or locating landmarks), the ratio of occupation (recorded with passenger counters), etc., to the central office.

# DESIGN WHICH SITS WELL.

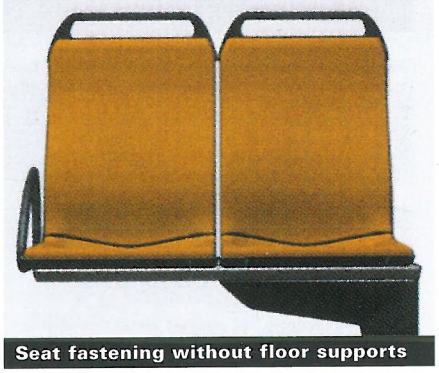
## SEATING VARIANTS.

**Concord 2050 – KIEL Centra**

**Design meets quality**
Modern bucket seat for urban buses. Monocoque construction, optimum shape, low body thickness, seat inclined at an angle of 1.5°, providing additional legroom. Extremely comfortable – width of seat: 420 mm, double seat: 870 mm. Seat and back pads covered with wool plush or Dralon velour. Seat pads in push-in design for quick replacement. Integrated grab handle, support bracket at aisle side for back-to-back seats.

**Concord 2050 – KIEL Centra**

**Fully colored bucket in 3 colors**
This sturdy seat bucket is available in single, double and "mother & child"(1 1/2-seat) versions. The surface is extremely smooth - a deterrent to vandalism. There is a choice of the following colors: **light gray** ( RAL 7035), **dusty gray** (RAL 7037) and **dark blue** (RAL 5011). The base mounting consists of a supporting profile made of aluminum for reduced weight: the double seat ready to be installed weighs a mere 13.5 kg. The connection for the hold-fast bar is adjustable.



**Seat fastening without floor supports**

**Cantilevered seats are standard for all CENTROLINERs**
They free floor space and allow for additional legroom. Attached to side panels, with optimum load distribution. A further advantage is that the floor can be cleaned much easier.

**Concord 3200 – SKA NV 200**

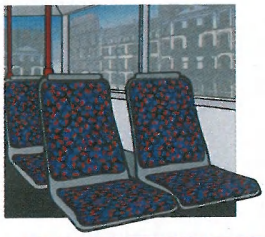
**Standard variable lightweight seat**
Nicely designed single seat in molded plastic and aluminum construction. Great seat comfort, replaceable seat and back pads. Large grab handle with chin protection. Width of seat: 430 mm, double seat: 890 mm, depth of seat: 420 mm. Measuring 860 mm, the "mother & child" seat is 60% wider than a single seat. Fabrics: Dralon velour and wool plush. Backside of seat: molded plastic, anti-graffiti coating (optional equipment). No visible screws. Back-to-back seat with lateral support bracket, bar holder.
**Bucket colors: silver-gray, aerogray.**

**Concord 1650 – VOGEL Typ 650**

**The versatile seat for urban buses**
Monocoque molded plastic single bucket seat. Lightweight construction in aluminum, embedded upholstery elements for excellent abrasion protection of edges, individually replaceable, integrated grab handle. Thanks to the protective coat applied to the backside of the seats (standard equipment) graffiti can be removed easier. Backside: needle-punched nonwoven (optional equipment). **Bucket colors: slate gray** (RAL 7015), **stone gray** (RAL 7030). Fabrics: Dralon velour or wool plush. Thickness of upholstery: approx. 30 mm. Width of seat: 420 mm, double seat: 870 mm, depth of seat: 415 mm.

**More than just a double seat**

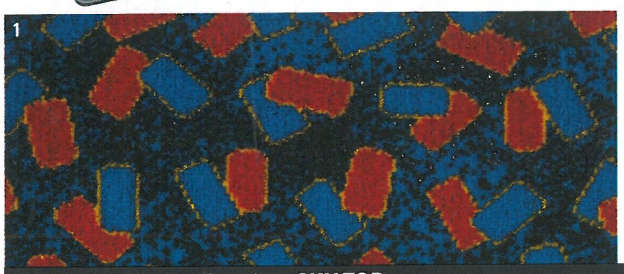
In the CENTROLINER, the barriers of the area for standees and prams can be turned into additional „emergency" seats – without narrowing the space. 80 mm of extra space per barrier make for up to 4 additional seats. Improved comfort in the standee area; parents with prams can be seated adjacently. Moreover, the "rebounding surface" for wheelchairs becomes redundant.

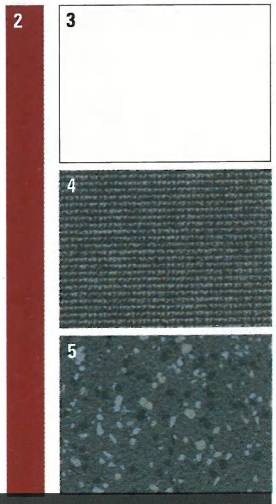


A wide range of high-quality seat covers, floor and side panel coverings are available. Our decoration specialists will be glad to assist you in matching the interior with the exterior design of your bus.

**Decoration example:**

| | | |
|---|---|---|
| 1 | Seat cover | Joker 411/630 (Lantal) |
| 2 | Hold-fast bars | RAL 3003 ruby red |
| 3 | Interior ceiling | RAL 7035 light gray |
| 4 | Side panel | Needle-punched nonwoven, gray |
| 5 | Floor covering | Altro Feag IM 2013 |




**NEOPLAN Design Studio – SKY TOP**

**Transport of persons in wheelchairs**

In many cases, a "rebounding surface" is officially required for the "special purpose area" where wheelchairs are parked. This panel is mounted at the edge of the standing room and also serves as additional back support. For personal safety, the wheelchairs need to be placed opposite to the driving direction.

**Concord 2040 – KIEL Regio**

**New fully upholstered seat for interurban traffic**
Comfortable, with a high standard of safety and quality. Heavy-duty model, seat and back pads replaceable. Width of seat: 420 mm, double seat: 890 mm. Back bucket in gray molded plastic (standard equipment), needle-punched nonwoven or anti-graffiti coating (optional equipment). Corner grab handle at aisle side, with support bracket for back-to-back seats (standard equipment). Extras: additional grab handle at the backside of the seat, support bracket for all seats at aisle side, newspaper nets, and safety belts.

**Concord 3300 – SKA ÜL 300**

**The ultralight fully upholstered seat**
Lightweight construction (weight of double seat is only 19.5 kg), comfort (seat pad made of two-zone foamed material), and a high safety standard (TÜV-tested according to ECE R 14) are its main construction features. The width of the seat is 440 mm, for the double seat 900 mm. Corner grab handles, support brackets and hold-fast bars available in matching colors. The seat is fully recyclable. Extras: support brackets or folding-up arm rests for aisle-side seats. For occasional transports, two-point safety belts can be ordered.

**Variable seat backs**

For an improved standard of comfort. In the standard version, the seat backs are equipped with a back bucket made of molded plastic. Needle-punched nonwoven or fabric covers, additional grab handles, newspaper nets and special anti-graffiti coating available on order.

**Multifunctional solution with tip-up seats**

Our modern low-floor buses feature areas for "parking" prams and wheelchairs. To allow accompanying persons to be seated close by, we have developed elegant tip-up seats.

**Concord 1406 VOGEL Spot 400/6**

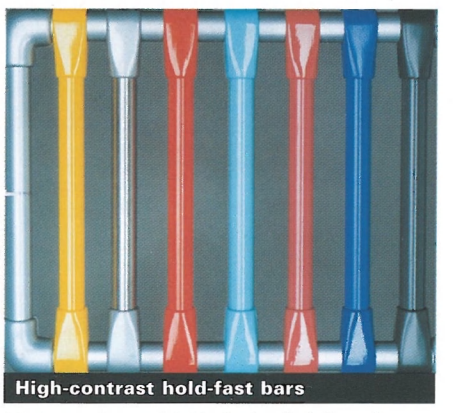
**Attractive fully upholstered seat for regional buses**
Comfortable and versatile. Seat and back pads are individually replaceable for easy servicing. Fabrics: Dralon velour or wool plush. Back bucket in gray molded plastic IC 189 with needle-punched nonwoven (optional equipment) or anti-graffiti coating (optional equipment). Grab handle with chin protection and angle covering at the aisle side. Width and depth of seat: 420 mm, double seat: 880 mm. Back-to-back seats with support bracket or folding-up arm rests (optional equipment) at the aisle side.

**Concord 1406**

**Seat with a colorful look for regional buses**
The fully upholstered seat with integrated decorative strip (5 colors), the corner grab handle, the angle covering, the fender bracket and the lateral decorative screen are available in those **standard colors: claret violet** (RAL 4004), **heather violet** (RAL 4003), **yellow** (RAL 1023), **gray** (RAL 7016), **green** (RAL 6001).

**More communication, less vandalism**

More and more public transport companies fit the rear section of both their urban and interurban buses with seats arranged in the form of a horse-shoe. This provides better all-round vision for the drivers, reduces the area available for "artistic" activities, and gives other passengers a chance to get to know each other. All in all, seating capacity is reduced by two, but we believe that it's well worth the sacrifice.



**High-contrast hold-fast bars**

A feature much appreciated by the visually challenged, colored bars also help to brighten up the interior. Have your pick of **8 standard colors:** RAL 9006 – **white aluminum**, RAL 1023 – **yellow**, polished version in **special steel**, RAL 3020 – **traffic red**, RAL 6072 – **acid green-mint**, RAL 4002 – **red violet**, RAL 5002 – **lazulite blue**, RAL 7016 – **anthracite gray**.

NEOPLAN

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