MARINE.

Auxiliary gensets.



A RELIABLE DRIVING FORCE.

Renowned manufacturers of auxiliary gensets and emergency gensets often use MAN engines. Reliable, durable and economical, MAN engines serve their purpose well in the power range from 190 kW to 800 kW.



Right: Crystal Mahler – driven by four MAN D2862 LE324, diesel-electric propulsion



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| A reliable driving force |
|-----------------------------------|
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| Description of Engines |
| Auxiliary and emergency gensets 1 |
| D2676 |
| D28622 |
| E3262 |

BENEFITS



- Low fuel consumption in a wide range of engine loads
- Maximum power output with a quick load pick-up
- Class-leading compactness for a space-saving design
- Best fuel consumption values and long service intervals minimizing the TCO
- Low acoustics and low vibrations
- Worldwide service networkspare parts available within24 hours

Right: Magellan Explorer – driven by three MAN D2862 LE328





MAN SERVICE FOR NON-STOP OPERATION.



Worldwide service network
most certainly represented in your area



Spare parts availability
worldwide available within 24 hours



Extended warrantyup to 5 years with Work PLUS



MAN Customer Service as back-up from the headquarters



Servicing and maintenance plans individually for you



MAN Genuine Oil customised for MAN engines

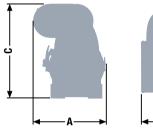


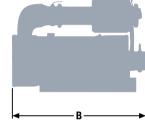
MAN Engine Academy for a deeper understandig of engines

EXHAUST AFTERTREATMENT IMO TIER III (< 1 066 KW) AND EU STAGE V (< 300 KW).

Flexibility makes use of free space – also when it comes to exhaust gas aftertreatment: Individual components of the modular exhaust gas aftertreatment kit from MAN Engines, which can be positioned variably, enable a wide range of installation variants as well as maximum design freedom when installed in machinery and vehicles.



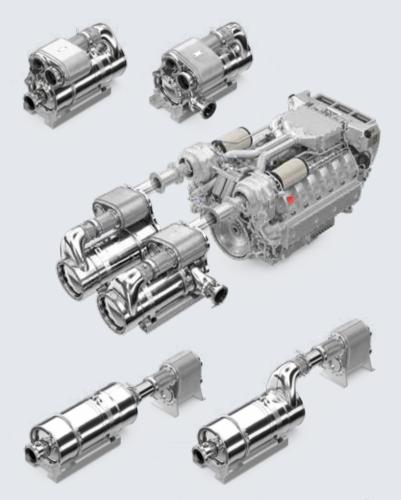




Dimensions

| Type designation | | SCR system |
|------------------------------|----|------------|
| | | |
| A-Overall width | mm | 500 |
| B-Overall length | mm | 950 |
| C-Overall height | mm | 655 |
| Average weight of SCR system | kg | 115 |

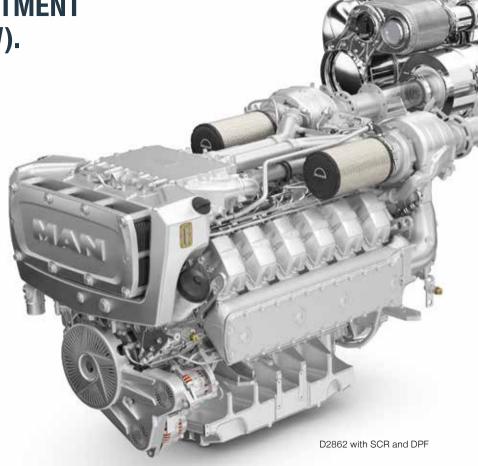
For detailed examinations of installation dimensions, please order drawings from our factory.



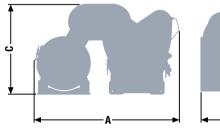
EXHAUST AFTERTREATMENT EU STAGE V (> 300 KW).

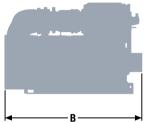
MAN Engines expands its commercial marine engine portfolio to EU Stage V engines for inland waterway transport in a range from 368 kW (500 PS) to 1,066 kW (1450 PS).

For power ratings above 300 kW MAN Engines relies on selective catalytic reduction (SCR) and diesel particulate filters (DPF) to achieve the emission standards complying with EU Stage V.









Dimensions EU Stage V

| Type designation | | SCR + DPF |
|------------------------------|----|-----------|
| | | |
| A-Overall width | mm | 960 |
| B-Overall length | mm | 950 |
| C-Overall height | mm | 620 |
| Average weight of SCR system | kg | 180 |

For detailed examinations of installation dimensions, please order drawings from our factory.

EXTENDED WARRANTY. MORE COMFORT FOR YOUR BUSINESS.

All MAN engines for working boats are delivered ex works with a one-year warranty. This warranty is valid for the entire scope of supply from MAN, and is therefore also valid for all engine parts. Wearing parts and components that have to be replaced at regular maintenance intervals are excluded from the warranty.

You have the option of taking out additional coverage for yourself and your investment beyond the one-year warranty: Work PLUS offers an extension of the warranty by up to four additional years, meaning that the total warranty would be up to 5 years. The operating hours of your engine will depend on the application.

For more information, please contact your local dealer.





Benefits

- Work PLUS extensions cover all MAN components in the engine room, including cost-intensive components such as the electronics and turbo charger
- The transferability of the extension increases the resale value of your vessel
- All repairs are carried out by an authorised MAN service partner
- You can be sure that only
 MAN Genuine Parts are used

MAN GENUINE PARTS. AVAILABLE 24/7 WORLDWIDE.



- High utilization of your ship and flexibility when organising your journeys
- Quick alternative in original manufacturer quality
- Standard two-year warranty on all MAN Genuine Parts and MAN Genuines Parts ecoline
- Delivery to 2,000 shipping addresses in 95 countries

Of course, the premium quality of MAN engines is also reflected in high-quality MAN Genuine Parts. And because "first class" doesn't only apply to our products here at MAN Engines, we ensure that our MAN Genuine Parts are available within 24 hours on working days. This is made possible by our global service network, external warehouses across all the continents, and the logistics network of our MAN utility vehicles. This round-the-clock availability for MAN Genuine Parts applies to working days, and is for all spare parts for maintenance work on MAN engines for commercial shipping, such as filters, turbochargers, seawater pumps, seals and many more.

Our genuine engines deserve MAN Genuine Parts with two-year warranty and worldwide around-the-clock availability.

MAN ENGINE ACADEMY. CUSTOMISED SERVICE CONCEPT.

Regular maintenance intervals for marine engines are essential for perfect functioning and a long service life. The MAN Engine Academy offers theoretical and practical training in operation, diagnostic strategies and maintenance. Technically experienced experts train certified service centers as well as the service personnel of sales partners and end customers at the MAN Engine Academy. Course participants have the opportunity to familiarize themselves with the engine in the Academy's modern training environment. The training courses can also be held online and individually adapted to the respective requirements of the participant.





AUXILIARY GENSETS.

Characteristics

■ Annual operating hours: ≤ 5,500 h

■ Average load application: ≤ 75 %

EMERGENCY GENSETS.

Characteristics

■ Annual operating hours: ≤ 1,000 h

Average load application: unlimited



Right: Blue Marjan Parsifal – driven by two MAN E3262





Characteristics

Cylinders and arrangement: 6 cylinders in-line

Operation mode: 4-stroke diesel engine, watercooled

Turbocharging: Turbocharger with charge air intercooler and wastegate

Number of valves: 4 valves per cylinder

■ Fuel system: Common Rail direct fuel injection with electronic control

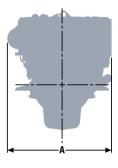
Engine block: High-strength casting with integrated oil and water ducts and replaceable cylinder liners

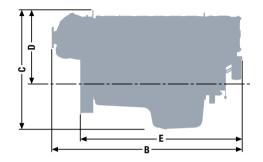
Engine lubrication:
 Force-feed lubrication, lubrication oil cooler in cooling water circuit of the engine

Type of cooling: Heat exchanger with engine and seawater circuit or for keel cooling

Engine control:
 Electronic engine monitoring including diagnostic unit

■ Fuel: DIN EN 590





Dimensions

| Ту | pe designation | LE 321/322/323/327/328/332 | |
|----|---|----------------------------|-------|
| | | | |
| Α | Overall width | mm | 983 |
| В | Overall length | mm | 1,763 |
| С | Overall height with standard oil pan | mm | 1,103 |
| D | Top of engine to crankshaft centre | mm | 686 |
| E | Length from front end to edge of flywheel housing | mm | 1,494 |
| | Average weight of engine ready for installation (dry) | kg | 1,251 |

For detailed examinations of installation dimensions, please order drawings from our factory.

Technical features

Auxiliary gensets

| | | | Auxilial y gel | 113613 | |
|----------------------------|----------|-------------|----------------|-------------|-------------|
| Type designation | | LE 332 | | LE 322 | |
| Rated speed | rpm (Hz) | 1,500 (50) | 1,800 (60) | 1,500 (50) | 1,800 (60) |
| Displacement | 1 | 12.42 | 12.42 | 12.42 | 12.42 |
| Nominal rating 1) | kW (hp) | 190 (258) | 220 (299) | 280 (381) | 330 (449) |
| Specific fuel consumption | | | | | |
| - at rated power | g/kWh | 210 | 208 | 203 | 199 |
| – at 75 % load 1) | g/kWh | 213 | 213 | 205 | 201 |
| Classifiable | | ─ | ✓ | ✓ | ✓ |
| Exhaust gas aftertreatment | | | | | - |
| Exhaust gas status | | IMO Tier II | IMO Tier II | IMO Tier II | IMO Tier II |
| | | | | | |

¹⁾ Tolerance +5% according to DIN ISO 3046-1

Technical features

| | | Auxiliary gensets | | | | | |
|----------------------------|----------|-----------------------------|-----------------------------|--------------|--------------|--|--|
| Type designation | | LE 328 | } | LE 327 | | | |
| Rated speed | rpm (Hz) | 1,500 (50) | 1,800 (60) | 1,500 (50) | 1,800 (60) | | |
| Displacement | | 12.42 | 12.42 | 12.42 | 12.42 | | |
| Nominal rating 1) | kW (hp) | 290 (394) | 290 (394) | 360 (490) | 410 (558) | | |
| Specific fuel consumption | | | | | | | |
| - at rated power | g/kWh | 197 | 201 | 195 | 202 | | |
| - at 75 % load 1) | g/kWh | 196 | 201 | 195 | 199 | | |
| Classifiable | | ✓ | ✓ | ─ | ✓ | | |
| Exhaust gas aftertreatment | | ✓ | ✓ | ─ | ✓ | | |
| Exhaust gas status | | IMO Tier III, EU Stage V | IMO Tier III, EU Stage V | IMO Tier III | IMO Tier III | | |

¹⁾ Tolerance +5% according to DIN ISO 3046-1

| ensets | Emergency ge | isets | Auxiliary gen |
|-------------|--------------|-------------|---------------|
| | LE 323 | | LE 321 |
| 1,800 (60) | 1,500 (50) | 1,800 (60) | 1,500 (50) |
| 12.42 | 12.42 | 12.42 | 12.42 |
| 445 (605) | 375 (510) | 445 (605) | 375 (510) |
| 198 | 200 | 198 | 200 |
| 197 | 200 | 197 | 200 |
| ✓ | <u> </u> | <u> </u> | <u> </u> |
| - | | | |
| IMO Tier II | IMO Tier II | IMO Tier II | IMO Tier II |



Characteristics

Cylinders and arrangement:
 12 cylinders in 90° V arrangement

Operation mode: 4-stroke diesel engine, watercooled

Turbocharging: Turbocharger with charge air intercooler and wastegate

Number of valves: 4 valves per cylinder

■ Fuel system: Common Rail direct fuel injection with electronic control

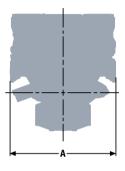
Engine block: High-strength casting with integrated oil and water ducts and replaceable cylinder liners

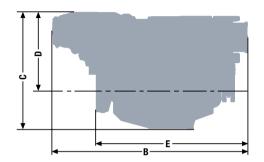
Engine lubrication:
 Closed system with forced feeding, oil cooling and filtering

Type of cooling:
 Plate heat exchanger, seawater circuit or for keel cooling

Engine control: Electronic engine monitoring including diagnostic unit

■ Fuel: DIN EN 590





Dimensions

| Ту | pe designation | | LE 321/323 | LE 327/32A/32D | LE 322 | LE 328/32B/32E |
|-------|---|----|------------|----------------|--------|----------------|
| A | Overall width | mm | 1,273 | 1,151 | 1,273 | 1,151 |
| В | Overall length | mm | 2,129 | 2,003 | 2,119 | 2,023 |
| С | Overall height with standard oil pan | mm | 1,282 | 1,268 | 1,305 | 1,281 |
| D | Top of engine to crankshaft centre | mm | 815 | 803 | 838 | 816 |
| E | Length from front end to edge of flywheel housing | mm | 1,629 | 1,608 | 1,629 | 1,608 |
| | Average weight of engine ready for installation (dry) | kg | 2,280 | 2,280 | 2,280 | 2,280 |

For detailed examinations of installation dimensions, please order drawings from our factory.

Technical features

| | | Auxiliary gensets | | | | | |
|----------------------------|----------|-------------------|-------------|--------------|--------------|--|--|
| Type designation | | LE 322 | | LE 328 | | | |
| Rated speed | rpm (Hz) | 1,500 (50) | 1,800 (60) | 1,500 (50) | 1,800 (60) | | |
| Displacement | 1 | 24.24 | 24.24 | 24.24 | 24.24 | | |
| Nominal rating 1) | kW (hp) | 600 (816) | 700 (952) | 600 (816) | 700 (952) | | |
| Specific fuel consumption | | | | | | | |
| - at rated power | g/kWh | 196 | 200 | 195 | 199 | | |
| - at 75 % load 1) | g/kWh | 198 | 202 | 196 | 199 | | |
| Classifiable | | ─ | ─ | ✓ | ✓ | | |
| Exhaust gas aftertreatment | | | | ✓ | ✓ | | |
| Exhaust gas status | | IMO Tier II | IMO Tier II | IMO Tier III | IMO Tier III | | |

¹⁾ Tolerance +5% according to DIN ISO 3046-1

Technical features

| | | | Auxiliary ge | nsets | |
|----------------------------|----------|-----------------------------|-----------------------------|-------------|-------------|
| Type designation | | LE 32B | LE 32E | LE 321 | |
| Rated speed | rpm (Hz) | 1,500 (50) | 1,800 (60) | 1,500 (50) | 1,800 (60) |
| Displacement | | 24.24 | 24.24 | 24.24 | 24.24 |
| Nominal rating 1) | kW (hp) | 600 (816) | 700 (952) | 700 (952) | 800 (1088) |
| Specific fuel consumption | | | | | |
| - at rated power | g/kWh | 196 | 198 | 197 | 198 |
| - at 75 % load 1) | g/kWh | 196 | 198 | 198 | 201 |
| Classifiable | | ✓ | ✓ | ✓ | ✓ |
| Exhaust gas aftertreatment | | ✓ | ✓ | _ | - |
| Exhaust gas status | | IMO Tier III, EU Stage V | IMO Tier III, EU Stage V | IMO Tier II | IMO Tier II |

¹⁾ Tolerance +5 % according to DIN ISO 3046-1

| ensets | Emergency ge | | Auxiliary gensets | | | | | |
|-------------|--------------|-----------------------------|-----------------------------|--------------|-------------|--|--|--|
| } | LE 323 | LE 32D | LE 32A | | LE 327 | | | |
| 1,800 (60) | 1,500 (50) | 1,800 (60) | 1,500 (50) | 1,800 (60) | 1,500 (50) | | | |
| 24.24 | 24.24 | 24.24 | 24.24 | 24.24 | 24.24 | | | |
| 800 (1088) | 700 (952) | 800 (1088) | 700 (952) | 800 (1088) | 700 (952) | | | |
| 198 | 197 | 200 | 198 | 202 | 199 | | | |
| 201 | 198 | 198 | 197 | 201 | 197 | | | |
| ✓ | <u> </u> | ✓ | <u> </u> | | <u> </u> | | | |
| - | _ | ✓ | ✓ | ✓ | ✓ | | | |
| IMO Tier II | IMO Tier II | IMO Tier III, EU Stage V | IMO Tier III, EU Stage V | IMO Tier III | MO Tier III | | | |

E3262



Characteristics

Cylinders and arrangement:
 12 cylinders in 90° V arrangement

Operation mode: 4-stroke spark-ignition gas engine

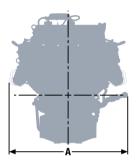
Turbocharging:
 Oil lubricated turbochargers with wet bearing block and wet turbine housing

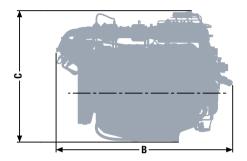
Number of valves: 4 valves per cylinder

Exhaust pipes:
Dry exhaust pipes with heat insulation cover and cover against direct contact

■ Fuel: Natural gas

E3262





Dimensions

| Ту | oe designation | | LE 262 |
|----|---|----|--------|
| | | | |
| Α | Overall width | mm | 1,242 |
| В | Overall length | mm | 1,851 |
| С | Overall height with standard oil pan | mm | 1,268 |
| | Average weight of engine ready for installation (dry) | kg | 1,986 |

For detailed examinations of installation dimensions, please order drawings from our factory.

Technical features

| | | | Auxiliary genset | |
|--|----------|------------|-----------------------------|--|
| Type designation | | LE 262 | | |
| Rated speed | rpm (Hz) | 1,500 (50) | 1,800 (60) | |
| Bore | | 132 | 132 | |
| Stroke | mm | 157 | 157 | |
| Displacement | | 25.78 | 25.78 | |
| ISO standard power 1) | kW (hp) | 500 (680) | 525 (714) | |
| Air-fuel ratio | λ | 1.69 | 1.71 | |
| Coolant heat ²⁾ | kW | 269 | 315 | |
| Exhaust heat based on 120 °C ²⁾ | kW | 288 | 329 | |
| Efficiency ²⁾ : | | | | |
| - mechanical | % | 40.3 | 38.0 | |
| - thermal | % | 49.3 | 46.6 | |
| - total | % | 89.6 | 84.6 | |
| Classifiable | | ✓ | ✓ | |
| Exhaust gas status | | EU Stage V | IMO Tier III, EU Stage V | |

¹⁾ Tolerance +5 % according to DIN ISO 3046-1

²⁾ At 100 % load

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conditions.

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