



# Technical data sheet

Marine diesel engine

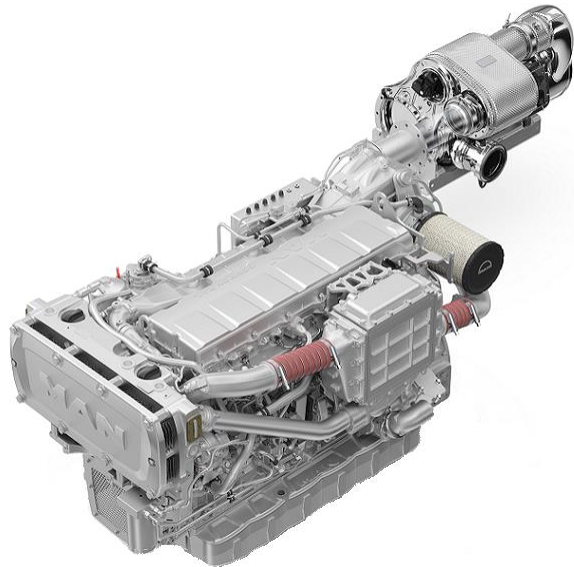
D2676LE438

04.07.2022

(Version 1)

## Performance data

|                         |           |       |
|-------------------------|-----------|-------|
| Rated power             | 412       | kW    |
| Rated power             | 560       | PS    |
| Speed                   | 2100      | rpm   |
| Bore/Stroke             | 126/166   | mm    |
| Displacement            | 12,42     | liter |
| Rated torque            | 1873      | Nm    |
| Maximum torque          | 2075      | Nm    |
| at speed                | 1300-1900 | rpm   |
| Compression ratio [ε]   | 18,0      | :1    |
| Mean effective pressure | 18,96     | bar   |
| Mean piston speed       | 11,62     | m/s   |



The engine illustrated may not entirely be identical to production standard engine

## Consumption data <sup>2</sup>

|  |     |       |
|--|-----|-------|
| Specific fuel consumption <sup>1</sup> | 213 | g/kWh |
| Absolute fuel consumption <sup>1</sup> | 104 | l/h   |
| Lowest fuel consumption <sup>3</sup>   | 201 | g/kWh |
| Absolute urea consumption <sup>1</sup> | 6   | l/h   |

## Engine description

|                   |  |
|-------------------|--|
| Application       | Main propulsion diesel for ships with fixed pitch propeller or variable pitch propeller            |
| Operation profile | Up to 3000 hours per year at a maximum of 50 % of time at full load   average load < 70 %          |
| Construction      | Four-stroke diesel with exhaust after-treatment system, direct injection, SAE 1 flywheel housing   |
| Cylinders         | 6 cylinders in line, wet replaceable cylinder liners   |
| Air system        | Single-stage turbocharger with charge air intercooler and wastegate                                |
| Cooling system    | Seawater cooled by rubber impeller pump or two-circuit-cooling system for hull cooling             |
| Oil system        | Force-feed lubrication by gear pump, lubricating oil cooler in cooling water circuit of the engine |
| Fuel system       | Common Rail injection system with EDC17 control, fuel according to DIN EN 590                      |
| Auxiliary PTO     | PTO for hydraulic pump 16 cm <sup>2</sup>  |
| Alternator        | Three-phase generator with rectifier and transistorized governor, 28 V, 110 A                      |
| Starting system   | Solenoid-operated electric starter, 24 V, 5.5 kW   |
| Service           | Oil change interval 500 operating hours, average TBO 12.000 operating hours*                       |
| Classification    | Engine according to classification requirements available => see MAN Marine Configurator           |

**Exhaust status** IMO Tier III

<sup>1</sup> Values at rated power

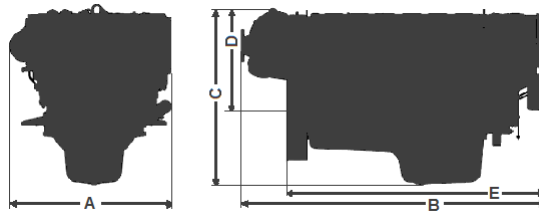
<sup>2</sup> Diesel fuel according to DIN EN 590 (tolerance +5% - ISO 3046), urea solution 32,5% according to ISO 22241 (tolerance +3%)

<sup>3</sup> Values on propeller curve

\*TBO 12.000 operating hours for non or low particulate matters (PM) regulated jurisdictions (IMO, Canada, EU Stage IIIA)

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|                                    |         |
|------------------------------------|---------|
| A - overall width.....             | 986 mm  |
| B - overall length.....            | 1795 mm |
| C - overall height.....            | 1096 mm |
| D - above crank shaft.....         | 674 mm  |
| E - length to flywheel.....        | 1527 mm |
| Engine weight, dry.....            | 1251 kg |
| (depending on the scope of supply) |         |



### Combustion parameters <sup>1</sup>

|  |                        |
|--|------------------------|
| Intake air temperature (max)                               | 45 °C                  |
| Intake air vacuum (min/max)                                | 30/60 mbar             |
| Intake air volume flow                                     | 1975 m <sup>3</sup> /h |
| Exhaust gas temperature                                    | 488 °C                 |
| Exhaust gas volume flow                                    | 5150 m <sup>3</sup> /h |
| Exhaust gas mass flow                                      | 2320 kg/h              |
| Exhaust back pressure (min/max) downstream of SCR catalyst | 20/60 mbar             |

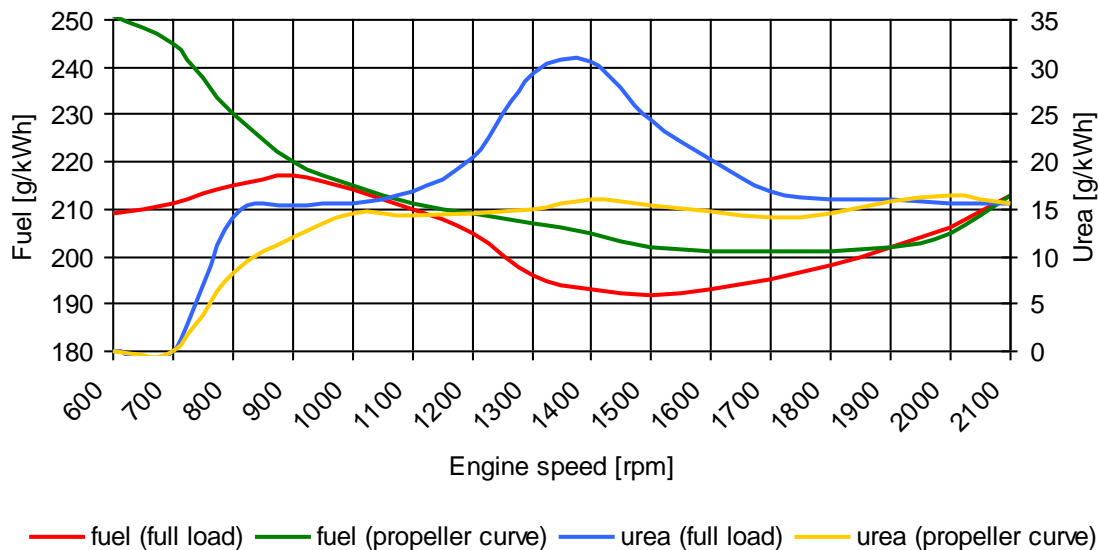
### Heat balance <sup>1</sup>

|                    |        |
|--------------------|--------|
| Exhaust gas heat   | 320 kW |
| Cooling water heat | 190 kW |
| Intercooler heat   | 100 kW |
| Radiation heat     | 27 kW  |

### Noise emission (sound power) <sup>1</sup>

|                            |             |
|----------------------------|-------------|
| Engine surface noise (Lwa) | 113,2 dB(A) |
| Free exhaust noise (Lwa)   | 111,0 dB(A) |

### Specific consumption<sup>2</sup>



< The rated power is based on reference conditions according to ISO 3046-1 (2002) >

< Intake air temperature, max. 45°C | sea water temperature, max. 32°C >

< Barometric pressure 1000 mbar | air humidity 60% >

< Exponent for propeller curve 2,7 >

**< Engine specifications are subjected to change without prior notice >**

<sup>1</sup> Values at rated power

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