# PROPULSION ENGINE

## N13.650 CR3 HD

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power at crankshaft</td>
<td>478 kW [650 hp]</td>
</tr>
<tr>
<td>Displacement</td>
<td>12.7 l [775 in³]</td>
</tr>
<tr>
<td>Configuration</td>
<td>6 cylinders in line</td>
</tr>
<tr>
<td>Operation type</td>
<td>4 stroke Diesel</td>
</tr>
<tr>
<td>Bore &amp; Stroke</td>
<td>130 x 160 mm [5.1 x 6.3 in]</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>17.3 : 1</td>
</tr>
<tr>
<td>Rated speed</td>
<td>2100 rpm</td>
</tr>
<tr>
<td>Idling speed</td>
<td>600 rpm</td>
</tr>
<tr>
<td>Peak torque</td>
<td>2981 Nm</td>
</tr>
<tr>
<td>Peak torque speed</td>
<td>1400 rpm</td>
</tr>
<tr>
<td>Engine base</td>
<td>Scania</td>
</tr>
<tr>
<td>Fuel system</td>
<td>Extra High Pressure Injection (XPI)</td>
</tr>
<tr>
<td>Air intake</td>
<td>Turbocharged with after cooler</td>
</tr>
<tr>
<td>Cooling</td>
<td>Closed cooling with heat exchanger and charge air cooler</td>
</tr>
<tr>
<td>Max mounting angle</td>
<td>12° Front down</td>
</tr>
<tr>
<td></td>
<td>12° Front up</td>
</tr>
<tr>
<td>Alternator</td>
<td>24 Volt 100 Amp</td>
</tr>
<tr>
<td>Rating</td>
<td>M1.S</td>
</tr>
<tr>
<td>Emission compliance</td>
<td>US tier 3</td>
</tr>
<tr>
<td></td>
<td>IMO Tier II</td>
</tr>
<tr>
<td></td>
<td>EU Stage IIIA</td>
</tr>
<tr>
<td></td>
<td>RCD2</td>
</tr>
<tr>
<td>Dry weight</td>
<td>1285 kg [2833 lbs]</td>
</tr>
</tbody>
</table>
N13.650 CR3 HD
478 kW [650 hp] at 2100 rpm

TECHNICAL DESCRIPTION

ENGINE BLOCK
- Extra high pressure fuel injection system, XPI
- Turbocharger
- Protection covers

FUEL SYSTEM
- Scania Engine Management System, EMS
- Fuel pre-filter with water separator
- Fuel filter

LUBRICATION SYSTEM
- Oil filter, full flow
- Centrifugal oil cleaner
- Oil cooler, integrated in block
- Oil filter
- Oil draining with plug
- Deep oil sump
- Oil dipstick

COOLING SYSTEM
- Sea water pump

ELECTRICAL SYSTEM & INSTRUMENTATION
- Starter, 2-pole 7.0 kW
- Alternator, 2-pole 24V / 100A

OTHER FEATURES
- Housing SAE 1
- Flywheel SAE 14"
- Silumin flywheel housing, SAE 1 flange
- Front-mounted engine brackets
- Closed crankcase ventilation
- Air cleaner
- Flexible engine mounting
- Damper pulley

OPTIONAL SYSTEMS & ACCESSORIES
- Hydraulic pump
- Side-mounted PTO (SAE A)
- Axial front-mounted PTO
- Exhaust connections
- Engine heater
- Stiff rubber suspension
- Oil draining with pump
- Oil level sensor
- Bilge pump

RATINGS

M1.S
- Unlimited annual operating hours
- Load factor up to 80%
- Full power for no more than 1 hour out of each 3 hours of operation. The remaining operation time must be at or below cruising speed

TRANSMISSIONS
- Contact your Nanni representative for more details and availability about transmissions types and models range.

PERFORMANCE CURVES

POWER AT CRANKSHAFT

TORQUE AT CRANKSHAFT

FUEL CONSUMPTION

DIMENSIONS

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