

Technical Data Volvo Penta IPS350

Rating 5 260 hp (191 kW)

General

4-stroke direct injected, turbocharged and aftercooled diesel engine

| | | |
|---|-----------------|--------------------|
| Number of cylinders | | 4 |
| No of valves | | 16 |
| Displacement, total | litres | 3,67 |
| | in ³ | 223,7 |
| Firing order | | 1-3-4-2 |
| Rotational direction, viewed from the front | | Clockwise |
| Bore | mm | 103 |
| | in | 4,06 |
| Stroke | mm | 110 |
| | in | 4,33 |
| Compression ratio | | 17,5:1 |
| Compression pressure at 240 rpm | MPa | |
| | psi | |
| Maximum forward inclination installed: | ° | 0 |
| Maximum backward inclination installed: | ° | 10 |
| Max. intermittent forward inclination while running: | ° | 10 |
| Max. intermittent backward inclination while running: | ° | 20 |
| Max. intermittent side tilt while running: | ° | 30 for max 30 sec. |
| Idling speed | rpm | 700 - 750 |
| Rated speed | rpm | 3500 |
| Propeller selection range | rpm | 3400-3600 |
| Dry weight with IPS: | kg | 780 |
| | lb | 1720 |

| Performance | Rating | r/min | 1500 2000 2500 3000 3500 | | | | | | | | |
|---|--------|--------|--------------------------|-------|-------|-------|-------|--|--|--|--|
| | | | | | | | | | | | |
| Crankshaft power 1), 5) | 5 | kW | 87 | 128 | 161 | 187 | 191 | | | | |
| | | hp | 118,3 | 174,1 | 219 | 254,3 | 259,8 | | | | |
| Propellershaft power 1) For IPS (At full load) | 5 | kW | 82,65 | 121,6 | 153 | 177,7 | 181,5 | | | | |
| | | hp | 112,4 | 165,4 | 208 | 241,6 | 246,8 | | | | |
| Propellershaft power at prop.load x ^{2,5} For IPS | | kW | 22 | 44 | 78 | 123 | 181 | | | | |
| | | hp | 30 | 60 | 106 | 167 | 246 | | | | |
| Torque at crankshaft 2) | 5 | Nm | 553,9 | 611,2 | 615 | 595,2 | 521,1 | | | | |
| | | lbf ft | 409 | 451 | 454 | 439 | 384 | | | | |
| Mean piston speed | | m/s | 5,5 | 7,3 | 9,2 | 11,0 | 12,8 | | | | |
| | | ft/s | 18,0 | 24,1 | 30,1 | 36,1 | 42,1 | | | | |
| Effective mean pressure 2) | 5 | MPa | 1,90 | 2,09 | 2,11 | 2,04 | 1,79 | | | | |
| | | psi | 275,3 | 303,8 | 305,7 | 295,9 | 259,1 | | | | |
| Max combustion pressure 2) | 5 | MPa | 17,5 | 17,4 | 17,6 | 17,6 | 17 | | | | |
| | | psi | 2538 | 2524 | 2553 | 2553 | 2466 | | | | |

Lubricating system

| | | | |
|--|----|--------|------|
| Specific lubricating oil consumption. | | g/kWh | 0,2 |
| Max oil volume incl. filters at following inclination: | 0° | litres | 12,5 |
| | | US gal | 3,30 |
| Min oil volume incl. filters at following inclination: | 0° | litres | 11 |
| | | US gal | 2,91 |

1) ISO 3046, fuel temp 40°C.

ISO 8665 (=SAE J 1228=ICOMIA 28-83)

2) At power according to 1).

3) If reverse gear is used, 4% in heat rejection will be added for its oil cooler.

4) Acc. to ISO 3744

5) At installed back pressure

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| Fuel system | Rating | r/min | 1500 | 2000 | 2500 | 3000 | 3500 | | | | |
|---|--------|----------|-------|-------|-------|-------|-------|--|--|--|--|
| Specific fuel consumption 2) | 5 | g/kWh | 230 | 219 | 209 | 214 | 231 | | | | |
| | | lb/hph | 0,373 | 0,355 | 0,339 | 0,347 | 0,374 | | | | |
| Fuel consumption at prop. load x ^{2,5} | 5 | l/h | 6,4 | 12,3 | 21,3 | 33,6 | 52,3 | | | | |
| | | US gal/h | 1,7 | 3,2 | 5,6 | 8,9 | 13,8 | | | | |
| Fuel consumption at prop. load x ³ | 5 | l/h | 4,3 | 9,7 | 18,3 | 31,1 | 52,3 | | | | |
| | | US gal/h | 1,1 | 2,6 | 4,8 | 8,2 | 13,8 | | | | |
| Fuel consumption at full load | 5 | l/h | 23,74 | 33,25 | 39,92 | 47,47 | 52,34 | | | | |
| | | US gal/h | 6,3 | 8,8 | 10,5 | 12,5 | 13,8 | | | | |

| Intake and exhaust system | Rating | r/min | 1500 | 2000 | 2500 | 3000 | 3500 | | | | |
|--|--------|------------|------|------|------|------|-------|-----|--|--|--|
| Exhaust temperature at the exhaust pipe connecting flange after the turbo charger. At prop.load exp. 2,5 | 5 | °C | 250 | 330 | 370 | 365 | 432 | | | | |
| | | °F | 482 | 626 | 698 | 689 | 810 | | | | |
| Permitted back pressure in the exhaust line at rated speed. (Installed back pressure) | | kPa | | | | | Max | 25 | | | |
| | | psi | | | | | Min | 3,6 | | | |
| Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%. | 5 | kPa | | | | | 15 | | | | |
| | | psi | | | | | 529,7 | | | | |
| Turbo charge pressure. At prop.load exp.2,5 | 5 | kPa | 10 | 21 | 60 | 127 | 194 | | | | |
| | | psi | 1,5 | 3,0 | 8,7 | 18,4 | 28,1 | | | | |
| Exhaust gas flow | 5 | m³/min | | | | | 31 | | | | |
| | | cu.ft./min | | | | | 1095 | | | | |

| Cooling system | Rating | r/min | 1500 | 2000 | 2500 | 3000 | 3500 | | | | |
|--|--------|-----------|------|------|------|------|------|--|--|--|--|
| Sea water pump flow. | | m³/h | | | | | 9,0 | | | | |
| | | foot³/h | | | | | 318 | | | | |
| Coolant content engine, incl. heat exchangers and air cooler | | litres | | | | | 13 | | | | |
| | | U.S. gal. | | | | | 3,43 | | | | |
| Thermostat, start open at | | °C | | | | | 82 | | | | |
| | | °F | | | | | 180 | | | | |
| Thermostat, fully open at | | °C | | | | | 92 | | | | |
| | | °F | | | | | 198 | | | | |

| Emissions | Rating | r/min | 1500 | 2000 | 2500 | 3000 | 3500 | | | | |
|--------------------------------------|--------|-------|------|------|------|------|------|--|--|--|--|
| Smoke at prop. load x ^{2,5} | 5 | BSU | 0,3 | 0,2 | 0,2 | 0,2 | 0,7 | | | | |
| Smoke at prop. load x ³ | 5 | BSU | 0,3 | 0,2 | 0,2 | 0,2 | 0,7 | | | | |

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