

**General**

4-stroke direct injected, turbocharged and aftercooled diesel engine

Number of cylinders		6
No of valves		24
Displacement, total	litres in <sup>3</sup>	12,78 779,7
Firing order		1-5-3-6-2-4
Rotational direction, viewed from the front		Clockwise
Bore	mm in	131 5,16
Stroke	mm in	158 6,22
Compression ratio		16,7
Compression pressure at 240 rpm	MPa psi	N/A
Max. static forward inclination:	°	0
Max. static backward inclination:	°	10
Max. intermittent forward inclination while running:	°	5
Max. intermittent backward inclination while running:	°	17
Max. intermittent side inclination while running:	°	30
Idling speed	rpm	600 + 200/-50
Rated speed R5	rpm	2300
Propeller selection range R5	rpm	2300-2350
Dry weight engine BT	kg lb	1450 3197

<b>Performance</b>		<b>Rating</b>	<b>rpm</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1200</b>	<b>1400</b>	<b>1600</b>	<b>1800</b>	<b>2000</b>	<b>2100</b>	<b>2300</b>
Crankshaft power 1), 5)	5	kW	67	115	216	360	437	476	532	587	588	588	
		hp	91	156	293	489	594	647	723	798	800	800	
Propeller shaft power 1) (At full load) With drive	5	kW	62	108	205	344	417	455	508	562	562	562	
		hp	85	147	279	467	567	618	691	764	765	765	
Propellershaft power at prop. load x <sup>2.5</sup>	5	kW	20	40	70	111	163	227	305	397	448	562	
		hp	27	55	95	150	221	309	414	539	609	765	
Propellershaft power at prop. load x <sup>3</sup>	5	kW	10	24	46	80	127	189	270	370	428	562	
		hp	14	32	63	109	173	258	367	503	582	765	
Torque at crankshaft 2)	5	Nm	1066	1369	2058	2864	2978	2840	2820	2803	2674	2441	
		lbf ft	786	1010	1518	2112	2196	2094	2080	2067	1972	1801	
Mean piston speed		m/s	3,2	4,2	5,3	6,3	7,4	8,4	9,5	10,5	11,1	12,1	
		ft/s	10,4	13,8	17,3	20,7	24,2	27,6	31,1	34,6	36,3	39,7	
Effective mean pressure 2)	5	MPa	1,05	1,35	2,02	2,82	2,93	2,79	2,77	2,76	2,63	2,40	
		psi	152,1	195,3	293,5	408,5	424,8	405,1	402,3	399,8	381,4	348,2	
Max combustion pressure 2)	5	MPa	10,6	12,9	18,5	20,6	20,2	19,4	19,8	20,3	20,1	19,6	
		psi	1537	1871	2683	2988	2930	2814	2872	2944	2915	2843	

**Lubricating system**

Specific lubricating oil consumption.	g/kWh	0,05
Max. oil volume including filters for all allowed installation inclinations:	litres	45
	US gal	11,89
Max. oil volume excluding filters for all allowed installation inclinations:	litres	40
	US gal	10,57
Min. oil volume excluding filters for all allowed installation inclinations:	litres	32
	US gal	8,45

<b>Fuel system</b>	<b>Rating</b>	<b>rpm</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1200</b>	<b>1400</b>	<b>1600</b>	<b>1800</b>	<b>2000</b>	<b>2100</b>	<b>2300</b>
Specific fuel consumption 2)	5	g/kWh lb/hph	234 0,38	222 0,36	224 0,363	199 0,322	192 0,31	194 0,314	200 0,323	206 0,333	209 0,339	216 0,349
Fuel consumption, Test cycle E5	5	g/kWh lb/hph	214,5 0,35									
Fuel consumption, Test cycle E3		g/kWh lb/hph	211,9 0,34									
Fuel consumption at prop. load x <sup>2,5</sup>	5	l/h US gal/h	6,0 1,6	11,4 3,0	19,0 5,0	29,1 7,7	42,7 11,3	58,2 15,4	78,3 20,7	103,5 27,3	117,8 31,1	151,8 40,1
Fuel consumption at prop. load x <sup>3</sup>	5	l/h US gal/h	3,8 1,0	7,4 2,0	13,3 3,5	21,9 5,8	34,3 9,1	49,9 13,2	69,4 18,3	96,8 25,6	113,2 29,9	151,8 40,1
Fuel consumption at full load	5	l/h US gal/h	18,8 5,0	30,5 8,1	57,8 15,3	85,5 22,6	100,1 26,4	110,3 29,1	126,9 33,5	144,6 38,2	147,2 38,9	151,7 40,1

<b>Intake and exhaust system</b>	<b>Rating</b>	<b>rpm</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1200</b>	<b>1400</b>	<b>1600</b>	<b>1800</b>	<b>2000</b>	<b>2100</b>	<b>2300</b>	
Specific exhaust heating effect in percent of crankshaft power	5	%	57	65	74	66	61	61	64	71	73	78	
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger.	5	°C	445	523	631	547	455	413	422	478	480	500	
		°F	833	973	1168	1017	851	775	792	892	896	932	
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa psi								Max	15		
		kPa psi								Min	2,2		
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.	5	m³/min	3,9	6,3	10,9	19,5	27,6	33,8	38,8	40,8	41,7	42,3	
		cu.ft./min	138,3	223,7	383,8	686,9	972,9	1192	1368	1439	1472	1495	
Charge air pressure Inlet manifold	5	kPa psi	16 2,3	37 5,4	90 13,1	183 26,5	241 35,0	269 39,0	281 40,8	264 38,3	257 37,3	237 34,4	
Exhaust gas flow	5	m³/min cu.ft./min	10,4 366,1	18,5 653,3	36,0 1270	56,2 1985	68,1 2404	76,3 2693	86,5 3056	97,1 3429	99,2 3504	102,7 3625	

<b>Cooling system</b>	<b>Rating</b>	<b>rpm</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1200</b>	<b>1400</b>	<b>1600</b>	<b>1800</b>	<b>2000</b>	<b>2100</b>	<b>2300</b>
Radiated heat in percent of crankshaft power.	5	%	7,5	7	7	6,1	6	6,1	6,2	6,3	6,5	6,6
Heat rejection to charge air cooler in percent of crankshaft power.	5	%	2,2	4,4	8,3	14,6	19,8	23,7	25,9	24,5	25,2	25,2
Coolant heat rejection to HE, incl. engine oil cooler and excl. charge air cooler, in percent of crankshaft power.	5	%	105,8	75,4	64,2	48,1	42,1	39,7	41,5	43,7	44,9	47,8
Coolant flow with fully open thermostat and std cooling system		l/min cu.ft./min	90 3,2	150 5,3	252 8,9	282 10,0	335 11,8	380 13,4	480 17,0	516 18,2	528 18,6	600 21,2
Extra water pump flow through charge air cooler		l/min cu.ft./min	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Max. pump pressure at extra pump pressure side (pressure set system)		kPa psi	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Max. permissible temperature on coolant in engine outlet		°C °F	98 208									
Coolant volume engine, including heat exchanger and charge air cooler		litres US gal.	51 13,47									
Max. additional coolant for cabin heater etc. with std. Expansion tank		litres US gal.	15 3,96									
Maximum coolant flow to cabin heater etc.		l/min cu.ft./min	42 1,48									
Thermostat, start open at		°C °F	82 180									
Thermostat, fully open at		°C °F	92 198									

<b>Raw water circuit</b>	<b>rpm</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1200</b>	<b>1400</b>	<b>1600</b>	<b>1800</b>	<b>2000</b>	<b>2100</b>	<b>2300</b>
Nominal raw water design flow	l/min cu.ft./min	157 5,5	208 7,3	261 9,2	317 11,2	365 12,9	408 14,4	442 15,6	443 15,6	437 15,4	424 15,0
Nominal raw water pump pressure head at design flow. (measured before and after pump)	kPa psi	18 2,6	30 4,4	45 6,5	65 9,4	84 12,2	104 15,1	123 17,8	123 17,8	120 17,4	113 16,4
Maximum raw water pump suction head	kPa psi	30 4,4									
Maximum additional pressure drop excl. reverse gear oil cooler	kPa psi	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pressure drop over reverse gear oil cooler (optional equipment)	kPa psi	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maximum raw water temperature entering heat exchanger	°C °F	30 86									

<b>Emissions</b>	<b>Rating</b>	<b>rpm</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1200</b>	<b>1400</b>	<b>1600</b>	<b>1800</b>	<b>2000</b>	<b>2100</b>	<b>2300</b>
Smoke at prop. load $x^{2,5}$	5	*BSU	0,0	0,1	0,2	0,1	0,5	0,1	0,1	0,1	0,1	0,4
Smoke at prop. load $x^3$	5	*BSU	0,0	0,0	0,1	0,2	0,3	0,1	0,1	0,1	0,1	0,4
Noise at prop. load $x^{2,5} \cdot 4)$	5	dBA	102,0	104,0	107,0	110,0	111,0	112,0	113,0	115,0	116,0	117,0

\*NB.! BSU are calculated values. Measured values are acc. to ISO 10054 in FSN units