General

4-stroke direct injected, turbocharged and aftercooled diesel engine

Number of cylinders		6
No of valves		24
Displacement, total	litres in³	10,84 661,3
Firing order		1-5-3-6-2-4
Rotational direction, viewed from the front		Clockwise
Bore	mm in	123 4,84
Stroke	mm in	152 5,98
Compression ratio		16,5:1
Max. static forward inclination:	°	0
Max. static backward inclination:	°	7
Max. intermittent forward inclination while running:	°	10
Max. intermittent backward inclination while running:	°	17
Max. intermittent side inclination while running:	°	30
Idling speed	rpm	600 (+50)
Rated speed R5	rpm	2450
Propeller selection range R5	rpm	2450-2500
Dry weight engine BT	kg lb	1145 2524

Performance	**Rating**	**rpm**	**700**	**900**	**1100**	**1300**	**1600**	**1900**	**2100**	**2300**	**2400**	**2450**
Crankshaft power 1), 5)	5	kW	71	120	180	288	375	445	493	493	493	493
		hp	97	163	245	392	510	605	670	670	670	670
Propeller shaft power 1) (At full load)	5	kW	69	116	175	279	364	432	478	478	478	478
With drive Reverse gear		hp	94	158	237	380	495	587	650	650	650	650
Propellershaft power at prop. load $x^{2,5}$	5	kW	21	39	65	98	165	253	325	408	454	478
With drive Reverse gear		hp	28	53	88	133	224	344	442	555	618	650
Torque at crankshaft 2)	5	Nm	968,6	1273	1563	2116	2238	2237	2242	2047	1962	1922
		lbf ft	714	939	1153	1560	1651	1650	1653	1510	1447	1417
Mean piston speed		m/s	3,5	4,6	5,6	6,6	8,1	9,6	10,6	11,7	12,2	12,4
		ft/s	11,6	15,0	18,3	21,6	26,6	31,6	34,9	38,2	39,9	40,7
Effective mean pressure 2)	5	MPa	1,12	1,48	1,81	2,45	2,60	2,59	2,60	2,37	2,27	2,23
		psi	162,9	214,1	262,8	355,8	376,4	376,2	377,0	344,3	329,9	323,2
Max combustion pressure 2)	5	MPa	15	16,5	17,5	19	19	20	20,5	19,5	19	19
		psi	2176	2393	2538	2756	2756	2901	2973	2828	2756	2756

Lubricating system

Specific lubricating oil consumption.	g/kWh	0,1
Max. oil volume including filters for all allowed installation inclinations:	litres US gal	30 7,93
Max. oil volume excluding filters for all allowed installation inclinations:	litres US gal	25 6,60
Min. oil volume excluding filters for all allowed installation inclinations:	litres US gal	21 5,55

Fuel system	**Rating**	**rpm**	**700**	**900**	**1100**	**1300**	**1600**	**1900**	**2100**	**2300**	**2400**	**2450**
Specific fuel consumption 2)	5	g/kWh	243	243	232	217	199	202	209	216	219	221
		lb/hph	0,394	0,394	0,376	0,352	0,322	0,327	0,339	0,35	0,355	0,358
Fuel consumption, Test cycle E5	5	g/kWh	222									
		lb/hph	0,36									
Fuel consumption at prop. load $x^{2,5}$	5	l/h	6,4	11,6	19,7	25,8	40,5	63,9	84,5	108,6	122,6	129,5
		US gal/h	1,7	3,1	5,2	6,8	10,7	16,9	22,3	28,7	32,4	34,2
Fuel consumption at full load	5	l/h	20,6	34,9	50,0	74,8	89,3	107,6	123,3	127,4	129,2	130,4
		US gal/h	5,5	9,2	13,2	19,8	23,6	28,4	32,6	33,7	34,1	34,4

Intake and exhaust system	Rating	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Specific exhaust heating effect in percent of crankshaft power	5	%	76	67	66	66	74	79	82	84	83	84
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger.	5	°C	507	650	652	630	495	479	504	497	499	499
		°F	945	1202	1206	1166	923	894	939	927	930	930
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa							Max		15	
		psi									2,2	
		kPa							Min			
		psi										
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.	5	m³/min	4	6,4	8,9	14,8	22,4	29,1	33,2	35,6	36,7	37,2
		cu.ft./min	141,3	226	314,3	522,7	791	1028	1172	1257	1296	1314
Charge air pressure Inlet manifold	5	kPa	18	45	67	136	190	220	233	229	228	226
		psi	2,6	6,5	9,7	19,7	27,6	31,9	33,8	33,2	33,1	32,8
Exhaust gas flow	5	m³/min	12	22	31	49	60	73	83	87	90	90
		cu.ft./min	423,8	776,9	1095	1730	2119	2578	2931	3072	3178	3178

Cooling system	Rating	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Radiated heat in percent of crankshaft power.	5	%	4,2	3,8	3,4	1,8	1,2	1,1	1,1	1,1	1,1	1,1
Heat rejection to charge air cooler in percent of crankshaft power.	5	%	4	7	8	14	18	20	21	22	23	23
Coolant heat rejection to HE, incl. engine oil cooler and excl. charge air cooler, in percent of crankshaft power.	5	%	51	74	74	46	29	32	36	42	54	54
Coolant flow with fully open thermostat and std cooling system		l/min	249	342	400	477	591	693	742	750	738	735
		cu.ft./min	8,8	12,1	14,1	16,8	20,9	24,5	26,2	26,5	26,1	26,0
Max. permissible temperature on coolant in engine outlet		°C	98									
		°F	208									
Coolant volume engine, including heat exchanger and charge air cooler		litres	46									
		US gal.	12,15									
Max. additional coolant for cabin heater etc. with std. Expansion tank		litres	40									
		US gal.	10,57									
Maximum coolant flow to cabin heater etc.		l/min	76									
		cu.ft./min	2,68									
Thermostat, start open at		°C	76									
		°F	169									
Thermostat, fully open at		°C	86									
		°F	187									

Raw water circuit	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Nominal raw water design flow	l/min	91	99	121	141	174	204	227	249	258	263
	cu.ft/min	3,2	3,5	4,3	5,0	6,1	7,2	8,0	8,8	9,1	9,3
Maximum raw water pump suction head	kPa	-10									
	psi	-1,5									
Maximum raw water temperature entering heat exchanger	°C	32									
	°F	90									

Emissions	Rating	rpm	700	900	1100	1300	1600	1900	2100	2300	2400	2450
Smoke at prop. load $x^{2,5}$	5	*BSU	0,0	0,2	0,3	0,6	0,5	0,2	0,2	0,2	0,3	0,4
Noise at prop. load $x^{2,5}$. 4)	5	dBA	103,1	106,3	109	110,3	111,1	113,8	115,3	116,9	117,8	118,2

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