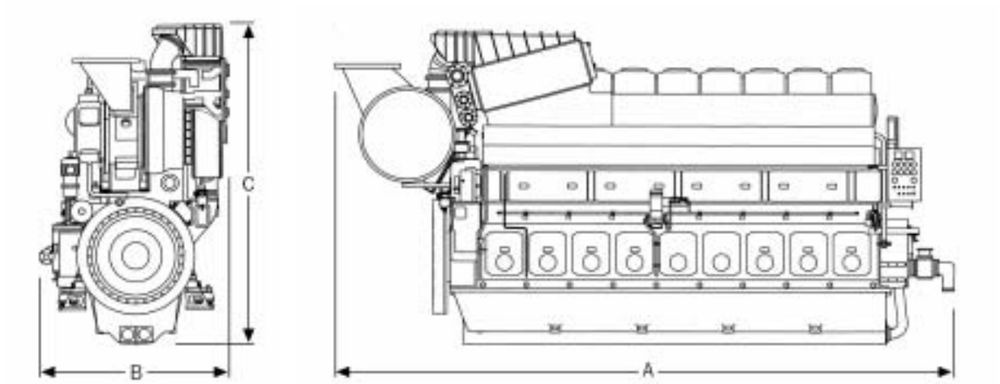
645

2550-4140 kW at 600-650 min^{-1}

➢ Dimensions



Engine type		A	B	C
TBD645 L6	mm	5660	2210	3570
TBD645 L8	mm	6640	2210	3570
TBD645 L9	mm	7130	2210	3570

Engine type		TBD645 L6	TBD645 L8	TBD645 L9
Weight (without flywheel)	t	26.5	34.0	37.6

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WÄRTSILÄ

Total Service

WÄRTSILÄ DEUTZ marine engines

Characteristics

- Water-cooled 6, 8, and 9-cylinder in-line engines.
- Cylinder heads with four-valve technology and exhaust valve cages.
- High-pressure fuel injection.
- Mechanical-hydraulic or electronic speed governing.
- PEARL® exhaust system (Pulse Energy Advanced Recovery Line).
- Suitable for heavy fuel oil operation up to RMK 55 according to ISO 8217.

Benefits

- Electronic engine monitoring enhances safety and reliability of your engine.
- Optimized engine components ensure long ‘time between overhaul’ and thus save considerable costs.
- Operating cost reduction due to low fuel consumption.
- Active contribution toward environmental protection due to compliance with IMO MARPOL 73/78 annexes VI.
- Complies with SOLAS requirements.

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➢ Engine description

Crankcase	The crankcase with cast-on mounting straps is made of nodular cast iron and has suspended main bearing caps. The main bearing caps are mounted with four vertical and two horizontal bolts.
Crankshaft	The crankshaft is drop forged and has bolted counterweights. It is fitted in the crankcase in underslung arrangement.
Torsional vibration damper	The torsional vibration damper is of the viscous-fluid type.
Cylinder liner	The cylinder liner is water-cooled and has an anti-polishing / fire ring.
Connecting rod	The connecting rod has been split diagonally and has a serrated joint. The big end bearing is a slide bearing of the rillen-type. The oil to the small-end bearing and piston is supplied via an oilway in the connecting rod.
Piston	The piston crown is made of steel and the piston skirt is made of light metal. The piston is cooled with lubricating oil and makes use of the shaker cooling principle.
Cylinder head	The cylinder head is made of nodular cast iron and is mounted hydraulically. The inlet and exhaust valves have a valve rotator for heavy fuel oil operation.
Camshaft	The camshaft is made in one-piece and has hydraulically fitted cams.
Injection pump	Single injection pump, i.e. each cylinder has its own fuel injection pump.
Governor	Mechanical-hydraulic or electronic speed governing.
Lubricating oil system	Forced oil circulation by engine driven lubricating oil gear pump. A second lubricating oil pump is optional. A self-cleaning filter (with indication) is mounted on the engine. A self-cleaning main filter is mounted in the external system.
Starting system	The engine is started with a compressed air starter motor.
Cooling water system	Single circuit mixed cooling. Cooling water pumps are optional and can be mounted on the engine.
Exhaust gas system	PEARL® system.
Turbocharging	The turbocharger is located at driving end. The charge air cooler is located at driving end.
Classification	By all established classification societies.

➢ Technical Data

Engine type		TBD 645L6	TBD 645L8	TBD 645L9
Model		in-line	in-line	in-line
Number of cylinders		6	8	9
Bore / stroke	mm	330/450	330/450	330/450
Displacement	l	231	308	346
Compression ratio		13.5	13.5	13.5
Direction of rotation		clockwise / counter-clockwise	counter-clockwise	clockwise / counter-clockwise
Power ratings for marine propulsion units				
Acc. to power category A[1]				
At 600 min^{-1}	kW	2550	3400	3825
At 650 min^{-1}	kW	2760	3680	4140
Power ratings for on board generating sets				
Continuous power[2]				
At 600 min^{-1}	kW	2550	3400	3825
Mean effective pressure	bar	5.196	3.897	3.461
Specific fuel consumption[3]				
At 600 min^{-1}	g/kWh	178	178	178
At 650 min^{-1}	g/kWh	182	181	181
Specific lubricating oil consumption	g/kWh	0.6	0.6	0.6
IMO NO_x limit val.[4]		fulfilled	fulfilled	fulfilled

1) Net brake fuel stop power for continuous operation unlimited in time, SCFN to ISO 3046-7.
   Application: Workboats. Running time: unlimited.
2) Continuous power for generating sets, exceedable by 10% for 1 hour within an operating period of 12 hours.
   SCXN to ISO 3046-7.
   Application: On-board generating sets. Running time: unlimited.
3) At rated power point. Refers to power category A, consumption-optimized version to ISO 3046-1, without engine-driven pumps.
4) NO_x limit value to IMO MARPOL 73/78 Annex VI.

Power declarations based on the following ambient conditions:
intake air temperature of 45 °C, charge air coolant temperature of 40 °C, barometric pressure of 1000 mbar.

The values given in this data sheet are for information purposes only and not binding.
The data provided in the offer is decisive.