



MARINE COMMON RAIL ENGINES

4LV Series - 230Z / 250Z

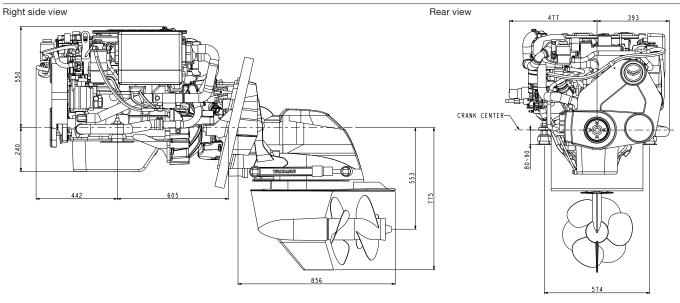
Configuration	4-stroke, vertical, water-cooled diesel engine		
Maximum output at crankshaft*	169kW @3800	[230 mhp@3800 rpm]	
	184kW @3800	[250 mhp@3800 rpm]	
Displacement	2.755 L	[168 cu in]	
Bore x stroke	92 mm x 103.6 mm	[3.6 in x 4 in]	
Cylinders	4 in-line		
Combustion system	Direct injection with Denso common rail system		
Low idle rpm	750 rpm		
Aspiration	Turbocharger with charge-air cooler		
Starting sytem	Electric starting 12V – 2 kW		
Alternator	Denso 12V - 130A		
Cooling system	Fresh water cooling by centrifugal fresh water pump Sea water cooling by rubber impeller seawater pump		
Lubrication system	Enclosed, forced lubricating system		
Direction of rotation [crankshaft]	Counterclockwise viewed from stern		
Dry weight without gear**	332 kg	[732 lbs]	
Emission compliance	EU: RCD 2, BSO II, EMC	US: EPA Tier 3	
Engine mounting	Rubber type flexible mounting		

NOTE:

Fuel condition: Density at $15^{\circ}\text{C} = 0.84 \text{ g/cm}^3$: 1 kW = 1.3596 mhp = 1.3410 HP

Technical data is according to ISO 8665: 2006

DIMENSIONS



4LV 230Z / 250Z

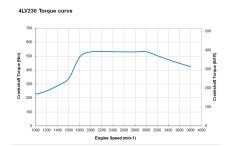
 $^{^{\}star}$ Fuel temperature 40 $^{\circ}\text{C}$ at the inlet of the fuel injection pump [ISO 8665: 2006]

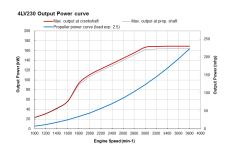
^{**} Including damper disk

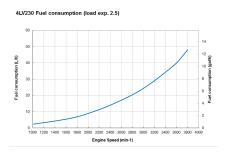


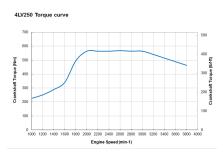


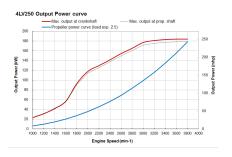
PERFORMANCE CURVES

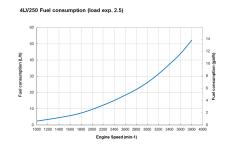












MARINE GEARS*

Model	ZT370 [Steerable Z-drive with dual prop]		
Туре	Hydraulic actuated multi-friction disc clutch		
Dry weight with propellers**	112 kg [247 lbs]		
Reduction ratio [fwd/rev]	1.65 / 1.65	1.78 / 1.78	1.97 / 1.97
Propellor speed	2303 / 2303	2134 / 2134	1928 / 1928
Direction of rotation viewed from the stern	Clockwise [rear prop] & Counterclockwise [front prop]		
Lube oil specifications	Quick Silver HPGL		
Dry weight engine with sterndrive	446 kg [983 lbs]		
Shift control	Mechanical or electro-magnetic		
Trim range	-6° - +10°		
Trailer limit	51°		

^{*}For other configurations, consult your local Yanmar distributor.

ACCESSORIES

Standard Package

- Through drive exhaust
- Alternator 12V 130A
- VC10 Vessel Control System
- Electronic CAN-bus control head
- Set of flexible engine mounts
- Fresh water expansion tank
- Belt safety cover
- Engine topcover for protection
- Operation manual

Optional

- Through drive exhaust
- Secondary alternator 12V -150A or 24V 85A
- Multistage secondary alternator 12V 130A or 24V - 110A
- SOLAS including Certificate (Factory fit only)
- Hot water kit
- Power steering
- Internal tie-bar
- Opposite dipstick
- Extension harness [3m, 5m, 10m]
- JC10 joystick control

- Second station
- NMEA2000 Engine monitoring system
- Man Over Board Switch (single)
- On Board Spare Parts Kit 4LV

^{**}Dry weight includes cooler and brackets