



MARINE COMMON RAIL ENGINES

4LV Series - 230/250

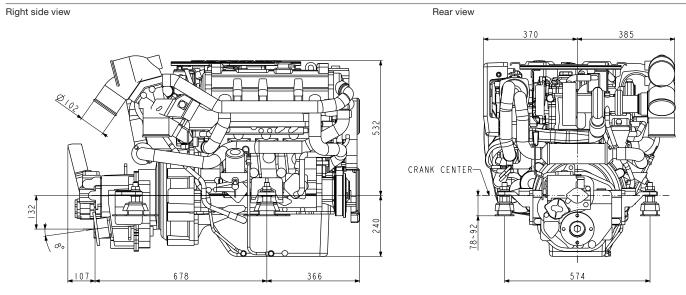
Configuration	4-stroke, vertical, water-cooled diesel engine					
Maximum output at crankshaft*	169kW @3800	[230 mhp@3800 rpm]				
	184kW @3800	[250 mhp@3800 rpm]				
Displacement	2.755 L	[168 cu in]				
Bore x stroke	92 mm x 103.6 mm	[3.6 in x 4 in]				
Cylinders	4 in-line					
Combustion system	Direct injection with Denso common rail system					
Low idle rpm	700 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



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

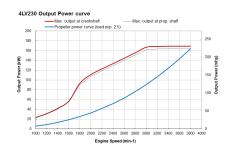
^{**} Including damper disk

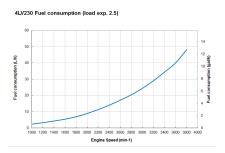


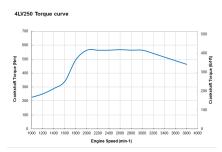


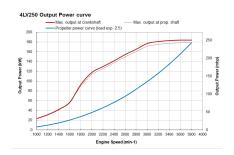
PERFORMANCE CURVES

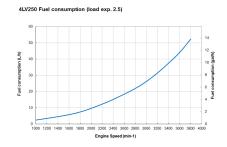
4LV230 Torque curve











MARINE GEARS*

Model	KMH50A [down angle: 8°]			KMH50V [V-drive, angle: 12°]			
Туре	Hydraulic, multi disk clutch		Hydraulic, multi disk clutch				
Dry Weight**	52 kg [115 lbs]		75 kg [165 lbs]				
Reduction Ratio [fwd/asn]	1.67/1.67	2.13/2.13	2.43/2.43	1.22/1.22	1.58/1.58	2.08/2.08	2.47/2.47
Propeller speed [fwd/asn]	2275/2275	1784/1784	1564/1564	3115/3115	2405/2405	1827/1827	1538/1538
Direction of rotation [viewed from stern]	Clockwise & counterclockwise		Clockwise & counterclockwise				
Dry weight - engine & gear	384 kg [846 lbs]		407 kg [897 lbs]				
Length engine and gear/drive	1151 mm [45.3 in]		1151 mm [45.3 in]				

^{*}For other configurations, consult your local Yanmar distributor.
**Dry weight includes cooler and brackets

ACCESSORIES

Standard Package

- Exhaust mixing elbow [L-type]
- Alternator 12V 130A
- B25 panel
- Oil sensor for instrument panel
- · Mechanical throttle sensor
- Set of flexible engine mounts
- Fresh water expansion tank
- Belt safety cover
- Engine topcover for protection
- Operation manual

- High-riser mixing elbow [instead of L-elbow]
- Secondary alternator 12V 150A or 24V 80A
- Multistage secondary alternator 12V 130A or 24V 110A
- Hot water connection
- · Opposite dipstick
- Fuel pre-filter with water separator
- Extension harness [3m, 5m, 10m]
- C35 panel
- Sidemount control head
- VC10 Vessel Control System
- Second station
- NMEA2000 Engine monitoring system