



# **MARINE COMMON RAIL ENGINES**

# **4LV** Series - 230 / 250

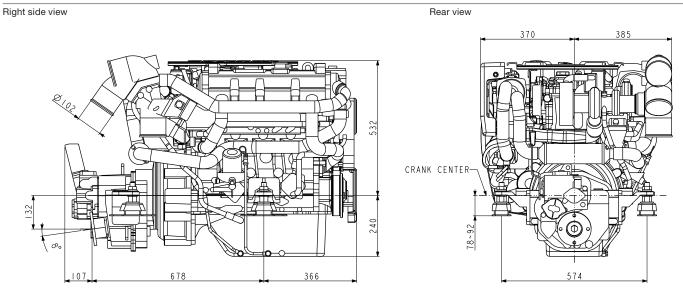
Configuration	4-stroke, vertical, water-cooled diesel engine				
Maximum output at crankshaft*	169kW @3800	[230 mhp@3800 rpm]			
	184kW @3800	[250 mhp@3800 rpm]			
Displacement	2.755 L	[168 cu in]			
Bore x stroke	92 mm x 103.6 mm	[3.6 in x 4 in]			
Cylinders	4 in-line				
Combustion system	Direct injection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



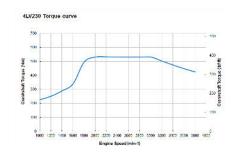
 $<sup>^{\</sup>star}$  Fuel temperature 40  $^{\circ}\text{C}$  at the inlet of the fuel injection pump [ISO 8665: 2006]

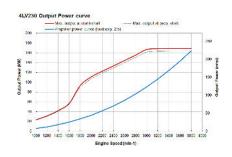
<sup>\*\*</sup> Including damper disk

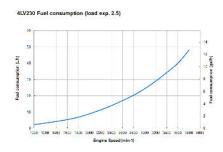


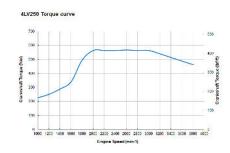


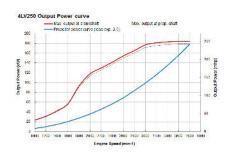
#### PERFORMANCE CURVES

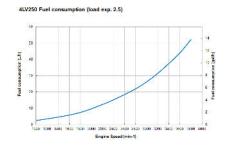












## MARINE GEARS\*

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]				

<sup>\*</sup>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

#### Optional

- High-riser mixing elbow [instead of L-elbow]
- Secondary alternator 12V 150A or 24V 85A
- Multistage secondary alternator 12V 130A or 24V - 110A
- Semi 2-Pole Electrical Installation
- Hot water connection
- Opposite dipstick
- Fuel pre-filter with water separator
- C-Type Trolling Valve KMH50
- Extension harness [3m, 5m, 10m, 20m]
- C35 panel
- Mechanical sidemount control head

- VC10 Vessel Control System
- Second station
- NMEA2000 Engine monitoring system
- Electronic Side Mount CH instead of Top Mount
- SOLAS including Certificate (Factory fit only)
- Man Over Board Switch (single)
- On Board Spare Parts Kit 4LV
- Second station
- NMEA2000 Engine monitoring system
- JC20 Inboard Joystick