

# NEF 400

N60 ENT M40

**FOR MARINE APPLICATIONS  
6 CYLINDER IN-LINE - DIESEL CYCLE**

294 kW (394 hp) @ 3000 rpm (A1)

272 kW (365 hp) @ 3000 rpm (B)

243 kW (326 hp) @ 3000 rpm (C)

199 kW (267 hp) @ 3000 rpm (D)



**IVECO  
MOTORS**



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Thermodynamic cycle		Diesel 4 stroke - C.R.
Aspiration		TAA
Configuration		6L
Bore x Stroke	mm (in.)	102 X 120 (4.02 X 4.73)
Total displacement	liters (cu. in.)	5.9 (360)
Valves per cylinder		4
Cooling		liquid
Direction of rotation (viewed facing flywheel)		CCW
Compression ratio		17.5 : 1
Rotation mass moment of inertia (without flywheel)	kgm <sup>2</sup> (lbft <sup>2</sup> )	0.31 (7.36)
Standard flywheel inertia	kgm <sup>2</sup> (lbft <sup>2</sup> )	0.71 (16.85)

### Air induction

Max suggested intake restriction with clean air filter	kPa (in. H <sub>2</sub> O)	3.5 (14)
Max allowable restriction with dirty air filter	kPa (in. H <sub>2</sub> O)	6.5 (26)
Air requirement for combustion at 100% load/rated speed (comb. + ventilation)	kg/h (lb/h)	7200 (15,873)
Turbocharging pressure at full load/rated speed	kPa (psi)	230 (33.4)
Turbocharging air max temperature (engine inlet)	°C (°F)	50 (122) @ 77°F amb.

### Exhaust system

Max allowable backpressure	kPa (in. Hg)	7 (2.067)
Max exhaust temperature at full load/rated speed	°C (°F)	660 (1220)
Exhaust flow at max output	kg/h (lb/h)	1780 (3924)

### Lubrication system

Minimum oil pressure at idle at 100°C (212°F)	kPa (psi)	70 (10.15)
Max oil temperature at full load/rated speed	°C (°F)	120 (248)
Engine angularity limits continuous operation: max front up and front down	degrees	18°
max left hand and right hand	degrees	22° 30'
Total system capacity including pipes, filters etc.	liters (quarts)	16.5 (17.4)

### Sea water cooling system (open circuit)

Max intake restriction	kPa (in. Hg)	20 (5.90)
Sea water pump flow	m <sup>3</sup> /h (gal/min)	12.8 (56.4)
Heat rejected (total) at max power	kW (BTU/min)	237.2 (13,501)
Sacrificial zinc anodes	n°	2

### Cooling system(closed circuit)

Coolant capacity (engine only)	liters (quarts)	24.5 (25.9)
Water pump flow at rated speed	m <sup>3</sup> /h (gal/min)	15.5 (68.2)
Thermostat (operating range)	°C (°F)	72 to 87 (161.6 to 188.6)
Cooling liquid max temperature	°C (°F)	106 (222.8)
Min/Max inner pressure in the cooling circuit (for keel cooling)	kPa (psi)	10/100 (1.45/14.5)
External cooling system max pressure drop (for keel cooling)	kPa (psi)	35 (5.0)

### Fuel system

Injection system		Common Rail
Fuel inlet max intake restriction	kPa (in. H <sub>2</sub> O)	35 (140.4)
Fuel inlet max intake temperature	°C (°F)	70 (158) @ 77°F amb.
Max fuel backpressure to tank	kPa (in. H <sub>2</sub> O)	20 (80.2)

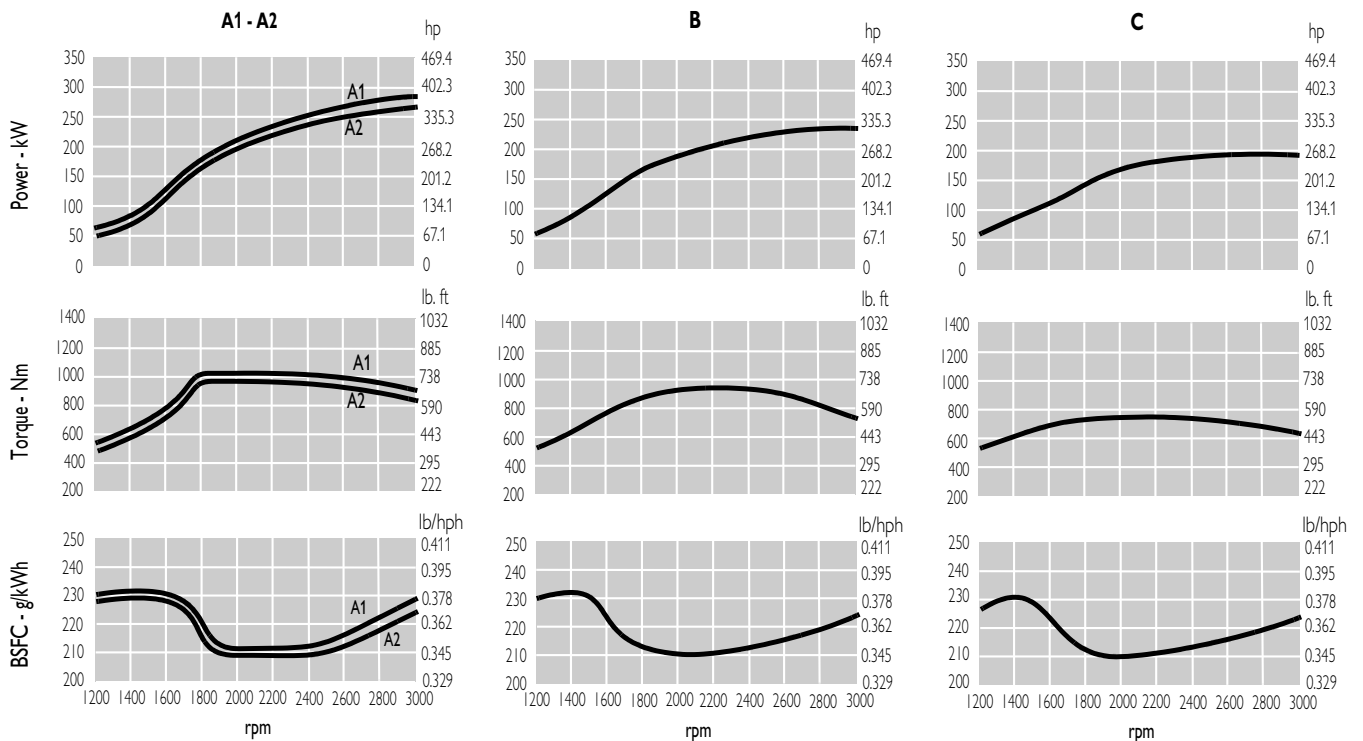
### Electrical system

Voltage	V	12
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Rating type		A1	A2	B	C
Maximum power *	kW(hp)	294 (394)	272 (365)	243 (326)	199 (267)
At speed	rpm	3000	3000	3000	3000
Maximum no load governed speed at max rating	rpm			3150	
Minimum idling speed	rpm			600	
Mean piston speed at rated rpm	m/s (ft./s)			12.0 (39.4)	
BMEP at max torque	kg/cm <sup>2</sup> (psi)	22.6 (321.4)	20.9 (297.3)	18.6 (264.5)	15.2 (216.2)
BSFC at full load (best value)	g/kWh (lb/hp h) @ rpm		210 (0.345) @ 2000		
Oil consumption at max rating	(% of fuel consumption)		< 0.2		
Minimum starting temperature without aids	°C (°F)		-10 (+14)		
Oil and oil filter maintenance interval for replacement	hours		600		
Dry weight (without marine gear)	kg (lb)		595 (1312)		

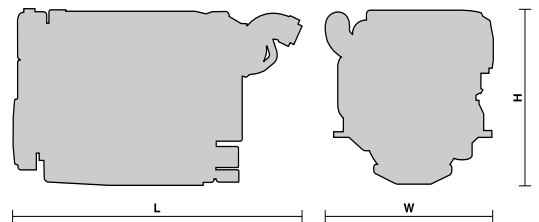
\* **Net Power** at flywheel according to ISO 3046/1, after 50 hours running, fuel Diesel EN 590. Power tolerance 5%.  
**Test conditions** : ISO 3046/1, 25 °C air temperature, 100 kPa atmospheric pressure, 30 % relative humidity.



A1 = High performance crafts.  
 A2 = Pleasure/commercial vessels.  
 Full throttle operation restricted within 10% of total use period.  
 Cruising speed at engine rpm < 90% of rated speed setting - Maximum useage :  
 - 300 hours per year (A1 service)  
 - 1000 hours per year (A2 service).

B = Light duty.  
 Full throttle operation restricted within 10% of total use period.  
 Cruising speed at engine rpm < 90% of rated speed setting - Maximum useage 1500 hours per year.

C = Medium duty.  
 Full throttle operation < 25% of use period.  
 Cruising speed at engine rpm < 90% of rated speed setting - Maximum useage 3000 hours per year.



L = 1333 mm (52.5 in)  
 W = 805 mm (31.7 in)  
 H = 774 mm (30.5 in)

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### Standard configuration

Flywheel housing	SAE	3
Flywheel diameter	in.	11.5
Air filter		rear side
Turbocharger		cooled
Heat exchanger		tube type
Exhaust cooled elbow		included
Water charge tank		included
Fuel filter		1 - left side
Fuel prefilter		included (loose)
Fuel pump		included
Oil filter		1 - right side
Oil sump		aluminium
Oil vapors blow-by circuit		rear
Oil heat exchanger		built in the crankcase
Oil filler		on valve cover frontward
Starting motor		12 V - 3 kW
Alternator		12 V - 90 A
Engine shut-off		by electronic central unit
Wiring harness		with EDC (Electronic Diesel Control)
Painting	color	white "ICE"

### Not included in the standard configuration

Battery - minimum capacity recommended	120 Ah
Battery - minimum cold cranking capacity recommended	900 CCA

**IVECO MOTORS OFFERS THE WIDEST AVAILABILITY OF ENGINE BUILD OPTIONS TO CUSTOMER SPECIFIC REQUIREMENTS WITHIN THE ENGINE SUPPLY. TO FIND OUT MORE ABOUT THE CONFIGURATIONS AND ACCESSORIES WHICH ARE AVAILABLE, CONTACT THE IVECO MOTORS SALES NETWORK.**

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