

# NEF

## N40 ENT

**FOR INDUSTRIAL APPLICATIONS**

4 CYLINDER IN-LINE - DIESEL CYCLE

107 kW (143 hp) @ 2300 rpm

490 Nm (361.4 lb.ft) @ 1200 rpm



T E C H N O L O G I C A L E X C E L L E N C E

**IVECO  
MOTORS**

## N40 ENT FOR INDUSTRIAL APPLICATIONS

|  |                                      |                         |
|--|--------------------------------------|-------------------------|
| Technical code                                     |                                      | <b>F4AE0484B *D1..</b>  |
| Thermodynamic cycle                                |                                      | Diesel 4 stroke - C.R.  |
| Aspiration   |                                      | TAA                     |
| Configuration                                      |                                      | 4L                      |
| Bore x Stroke                                      | mm (in.)                             | 102 X 120 (4.02 X 4.73) |
| Total displacement                                 | liters (cu. in.)                     | 3.9 (239.2)             |
| 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> (lbf <sup>2</sup> ) | 0.19 (4.51)             |
| Standard flywheel inertia                          | kgm <sup>2</sup> (lbf <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 | kg/h (lb/h)                | 725 (1598)           |
| Turbocharging pressure at full load/rated speed         | kPa (psi)                  | 140 (20.3)           |
| Turbocharging air max temperature (engine inlet)        | °C (°F)                    | 50 (122) @ 77°F amb. |
| Heat rejected to intercooler at maximum power           | kW (BTU/min)               | 56 (3188)            |
| Intercooler system max pressure drop                    | kPa (in. H <sub>2</sub> O) | 7 (28.1)             |

### Exhaust system

|  |              |            |
|--|--------------|------------|
| Max allowable backpressure                       | kPa (in. Hg) | 10 (2.95)  |
| Max exhaust temperature at full load/rated speed | °C (°F)      | 510 (950)  |
| Exhaust flow at max output                       | kg/h (lb/h)  | 755 (1664) |

### Lubrication system

|  |                 |             |
|--|-----------------|-------------|
| Minimum oil pressure at idle   | 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         | 35          |
| max left hand and right hand   | degrees         | 35          |
| Total system capacity including pipes, filters etc.                        | liters (quarts) | 12.8 (13.5) |

### Cooling system

|  |                             |                       |
|--|-----------------------------|-----------------------|
| Coolant capacity (engine only)                 | liters (quarts)             | 8.5 (9)               |
| Water pump flow at rated speed                 | m <sup>3</sup> /h (gal/min) | 11 (48.4)             |
| Heat rejected to coolant at max power          | kW (BTU/min)                | 56 (3187)             |
| Thermostat (operating range)                   | °C (°F)                     | 83 to 95 (181 to 203) |
| Cooling liquid max temperature                 | °C (°F)                     | 103 (217)             |
| Min/max pressure in the cooling circuit system | kPa (psi)                   | 30/100 (4.35/14.5)    |
| Radiator max pressure drop                     | kPa (psi)                   | 35 (5)                |

### Fuel system

|                            |                            |                      |
|----------------------------|----------------------------|----------------------|
| Injection system           |                            | Common Rail          |
| Fuel inlet max restriction | kPa (in. H <sub>2</sub> O) | 35 (140.4)           |
| Fuel inlet max temperature | °C (°F)                    | 70 (158) @ 77°F amb. |

### Electrical system

|         |   |    |
|---------|---|----|
| Voltage | V | 24 |
|---------|---|----|

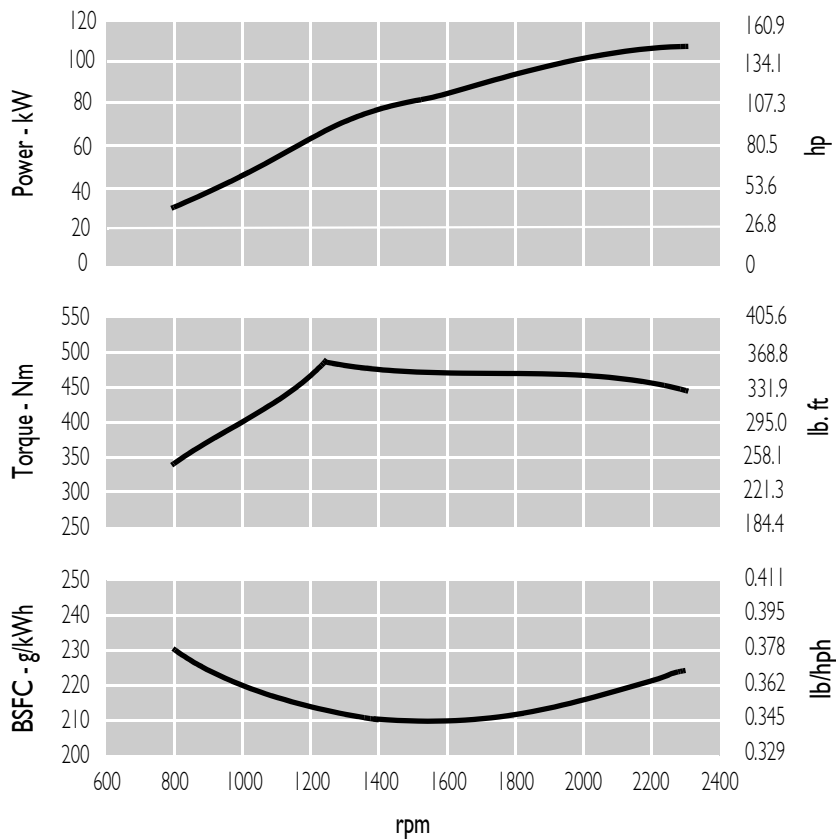
# N40 ENT FOR INDUSTRIAL APPLICATIONS

|   |                          |                               |
|---|--------------------------|-------------------------------|
| Maximum rating *  | kW(hp)                   | 107 (143)                     |
| At speed  | rpm                      | 2300                          |
| Maximum torque  | Nm (lb. ft)              | 490 (361.4)                   |
| At speed  | rpm                      | 1200                          |
| Maximum no load governed speed                          | rpm                      | 2450                          |
| Minimum idle speed                                      | rpm                      | 750                           |
| Mean piston speed at rated rpm                          | m/s (ft./s)              | 9.2 (30.2)                    |
| BMEP at max torque                                      | kg/cm <sup>2</sup> (psi) | 16,08 (228,86)                |
| Available certifications                                |                          | EPA Tier 2 - EC 97/68 Phase 2 |
| BSFC  | g/kWh (lb/hp h) @ rpm    | 209 (0.344) @ 1400 / 1600     |
| Oil consumption at max rating                           | (% of fuel consumption)  | 0.1                           |
| Noise at rated power (ISO 3744)                         | dBA                      | 91                            |
| Minimum starting temperature without aids               | °C (°F)                  | -25 (-13)                     |
| Oil and oil filter maintenance interval for replacement | hours                    | 500                           |
| Dry weight (standard configuration)                     | kg (lb)                  | 410 (904)                     |

**FOR INFORMATION ON THE AVAILABLE RATINGS NOT LISTED IN THIS DOCUMENT PLEASE CONTACT THE IVECO MOTORS. SALES NETWORK.**

\* Power at flywheel according to 97168 EC (without fan), after 50 hours running, 3% tolerance, fuel Diesel EN 590

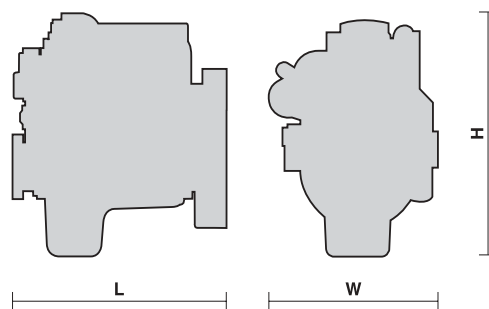
**Test conditions :** ISO 3046/1, 25 °C air temperature, 100 kPa atmospheric pressure, 30 % relative humidity - Applicable also to DIN 6271, BS 5514, SAE J1349 Standards.



L = 810 mm (31.9 in)

W = 678 mm (26.7 in)

H = 901 mm (35.5 in)



## N40 ENT FOR INDUSTRIAL APPLICATIONS

### Standard configuration

|   |          |   |
|---|----------|---|
| Flywheel housing                            | SAE      | 3                                       |
| Flywheel diameter                           | in.      | 11.5                                    |
| Intake manifold location                    |          | left side / forward inlet               |
| Exhaust manifold / turbocharger orientation |          | right side / forward outlet             |
| Turbocharger                                |          | waste gate controlled                   |
| Turbocharger location                       |          | low                                     |
| Fan drive ratio                             |          | 1.41 : 1                                |
| Distance from fan to crankshaft center      | mm (in.) | 296 (11.66)                             |
| Fuel filter                                 |          | 1 - left side                           |
| Fuel prefilter                              |          | included                                |
| Fuel pump                                   |          | included                                |
| Oil filter                                  |          | 1 - right side                          |
| Oil sump                                    |          | sheet steel / front sump                |
| Oil vapors blow-by circuit                  |          | on flywheel housing                     |
| Oil heat exchanger                          |          | built in the crankcase                  |
| Oil filler                                  |          | on valve cover forward                  |
| Exhaust mounting flange                     |          | included                                |
| Starter motor                               |          | 24 V - 4 kW                             |
| Alternator                                  |          | 24 V - 70 A                             |
| Engine shut-off                             |          | electronic control                      |
| Wiring harness                              |          | interface wiring loom with accessories  |
| Power take off (PTO)                        |          | optional                                |
| PTO transmission ratio                      |          | 1.03 : 1                                |
| PTO maximum available torque                |          | 240 Nm (177.0 lb ft) - (SAE B 13 teeth) |
| Painting                                    | color    | grey                                    |

### Not included in the standard configuration

|  |                |
|--|----------------|
| Battery - minimum capacity recommended               | 130 Ah (24 V)  |
| Battery - minimum cold cranking capacity recommended | 500 CCA (24 V) |

**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.**

### HEAD OFFICE AND BRANCHES

#### IVECO S.p.A.

Iveco Motors  
Lungo Stura Lazio, 49 - 10156 Torino  
Tel. +39 (011) 0076245 - Fax +39 (011) 0076275  
www.iveco.com

#### Italy

#### IVECO S.p.A.

Iveco Motors  
Viale dell'Industria, 15/17 - 20010 Pregnana Milanese - Milano  
Tel. +39 (02) 935101 - Fax +39 (02) 93590029

#### Italy

#### IVECO FRANCE S.A.

Iveco Motors  
50 Rue Ampère - B.P. 103 - 69685 Chassieu Cedex  
Tel. +33 (04) 72472222 - Fax +33 (04) 78905990

#### France

#### IVECO N.V.

Iveco Motors - Liaison office-India  
52 Okhla - Industrial Estate Phase III  
110020 New Delhi  
Tel. +91 98 10403881/82 - Fax +91 11 51613573

#### India

#### IVECO MAGIRUS A.G.

Iveco Motors  
Heiner Fleischmann-Strasse, 9 - 74172 Neckarsulm  
Tel. +49 (07132) 97690 - Fax +49 (07132) 976935

#### Germany

#### IVECO FIAT Representative Office in P.R. China

10/F Jining Hotel  
World Trade Center 2 Hanzhong Road - 210005 Nanjing,  
Tel. +86 25 4710981 - Fax +86 25 4701105

#### China

#### IVECO U.K. Ltd

Iveco Motors  
Road One - Industrial Estate CW7 3QP Winsford  
Tel. +44 (01606) 541027 - Fax +44 (01606) 541124

#### Great Britain

#### IVECO L.A.

Iveco Motors  
Rua Alameda da Serra, 222  
Vale do Sereno - Brazil 34000 - 000 Nova Lima (MG)  
Tel. +55 31 3286 3732/33/34 - Fax +55 31 3286 3735

#### Brazil

#### IVECO SWEDEN A.B.

Iveco Motors  
Lergökgatan, 12 - 42150 Västra Frölunda  
Tel. +46 (31) 492450 - Fax +46 (31) 492457

#### Sweden

#### IVECO Motors of N.A. North America

245 E. North Avenue Carol Stream, IL 60188 - 2021 USA  
Tel. +1 630 260 4226 - Fax +1 630 260 4267

Local Distributor