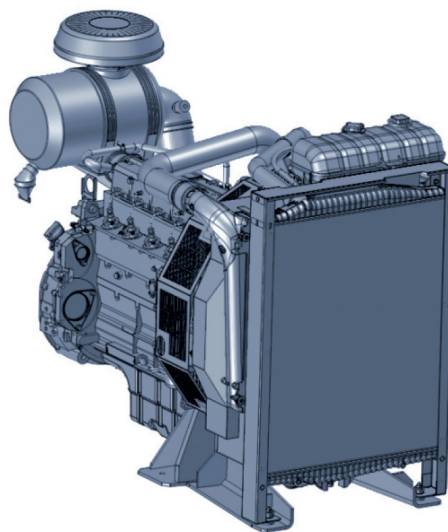


# DEUTZ BFM 1013

For generator sets ■ 81 - 225 kW | 109 - 302 hp at 1500/1800 min<sup>-1</sup>|rpm ■ EU Stage II / US EPA Tier 2

- Water-cooled 4 and 6-cylinder inline engines with turbocharging and charge air cooling.
- The robust engine design allows worldwide operation even with high sulphur fuels.
- Easy, inexpensive installation due to minimum weight and small installation space.
- Best cold starting performance even under extreme conditions.
- Low noise emissions due to acoustically optimized components with very smooth running and high durability.
- Also available with an electronic motor regulator (EMR) to allow easy integration into the electronic device control and monitoring system.
- A very good load response ensures an immediate power supply.



## TECHNICAL DATA

| Engine type                      |           | BF4M 1013 EC        | BF4M 1013 FC        | BF6M 1013 EC        | BF6M 1013 FC        |
|----------------------------------|-----------|---------------------|---------------------|---------------------|---------------------|
| No. of cylinders                 |           | 4                   | 4                   | 6                   | 6                   |
| Bore/stroke                      | mm   in   | 108/130   4.25/5.12 | 108/130   4.25/5.12 | 108/130   4.25/5.12 | 108/130   4.25/5.12 |
| Displacement                     | l   cu in | 4.8   291           | 4.8   291           | 7.2   436           | 7.2   436           |
| Weight (incl. cooler and fan)    | kg   lb   | 560   1235          | 560   1235          | 770   1698          | 770   1698          |
| Governing standard <sup>1)</sup> |           | G2                  | G2                  | G2                  | G2                  |

## 50 Hz / 1500 min<sup>-1</sup> | rpm

| Power                                      |         | BF4M 1013 EC             | BF4M 1013 FC  | BF6M 1013 EC  | BF6M 1013 FC  |
|--------------------------------------------|---------|--------------------------|---------------|---------------|---------------|
| Continuous Power COP <sup>2)</sup>         | kW   hp | 81.0/92.0   108.6/123.4  | 106.0   142.1 | 139.0   186.4 | 166.0   222.6 |
| Prime Power PRP <sup>3)</sup>              | kW   hp | 85.0/97.0   114.0/130.1  | 117.0   156.9 | 146.0   195.8 | 183.0   245.4 |
| Limited Time Power LTP <sup>4)</sup>       | kW   hp | 89.0/102.0   119.4/136.8 | 129.0   173.0 | 153.0   205.2 | 201.0   269.5 |
| Fan power consumption                      | kW   hp | 5.9   7.9                | 5.0   6.7     | 7.2   9.7     | 7.2   9.7     |
| Typical Generator Output COP <sup>5)</sup> | kVA     | 85/97                    | 116           | 152           | 183           |
| Typical Generator Output PRP <sup>5)</sup> | kVA     | 89/103                   | 129           | 160           | 202           |
| Typical Generator Output LTP <sup>5)</sup> | kVA     | 94/108                   | 143           | 168           | 223           |

## 60 Hz / 1800 min<sup>-1</sup> | rpm

| Power                                      |         | BF4M 1013 EC             | BF4M 1013 FC  | BF6M 1013 EC  | BF6M 1013 FC  |
|--------------------------------------------|---------|--------------------------|---------------|---------------|---------------|
| Continuous Power COP <sup>2)</sup>         | kW   hp | 86.0/100.0   115.3/134.1 | 112.0   150.2 | 148.0   198.5 | 186.0   249.4 |
| Prime Power PRP <sup>3)</sup>              | kW   hp | 90.0/105.0   120.7/140.8 | 124.0   166.3 | 155.0   207.9 | 204.0   273.6 |
| Limited Time Power LTP <sup>4)</sup>       | kW   hp | 95.0/110.0   127.4/147.5 | 136.0   182.4 | 163.0   218.6 | 224.9   301.6 |
| Fan power consumption                      | kW   hp | 10.2   13.7              | 8.7   11.7    | 8.7   11.7    | 12.4   16.6   |
| Typical Generator Output COP <sup>5)</sup> | kWe     | 68/81                    | 93            | 128           | 160           |
| Typical Generator Output PRP <sup>5)</sup> | kWe     | 72/85                    | 104           | 135           | 176           |
| Typical Generator Output LTP <sup>5)</sup> | kWe     | 76/90                    | 115           | 142           | 196           |

1) According to ISO 8528-5.

2) Continuous Power: No time limitation, plus 10% additional power for governing purpose only.

3) Prime Power: Average power output ≤ 80%, no time limitation, plus 5% additional power for governing purpose only.

4) Limited Time Running Power: For up to 500 h/year, thereof a maximum of 300 h/year continuous running.

5) In consideration of a generator efficiency level of 90 - 92 % and a power factor of 0.8.

**50 Hz / 1500 min<sup>-1</sup> | rpm**

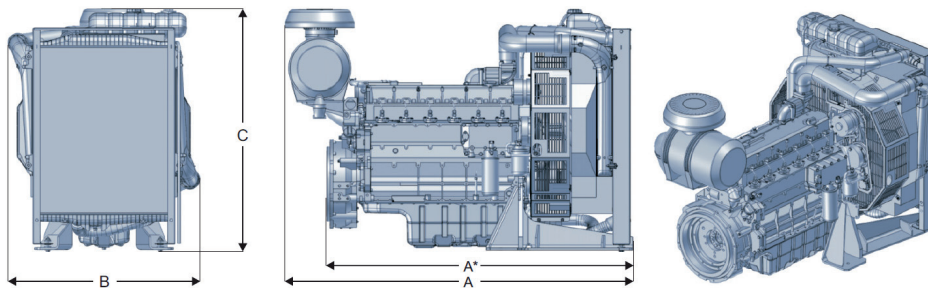
| Fuel Consumption PRP <sup>1)</sup>               |                         | BF4M 1013 EC |           | BF4M 1013 FC |      | BF6M 1013 EC |      | BF6M 1013 FC |       |
|--------------------------------------------------|-------------------------|--------------|-----------|--------------|------|--------------|------|--------------|-------|
| Fuel consumption 25% load                        | g/kWh   lb/hph          | 246/237      | 0.40/0.39 | 221          | 0.36 | 234          | 0.38 | 222          | 0.36  |
| Fuel consumption 50% load                        | g/kWh   lb/hph          | 215/214      | 0.35/0.35 | 204          | 0.34 | 213          | 0.35 | 210          | 0.35  |
| Fuel consumption 75% load                        | g/kWh   lb/hph          | 210/211      | 0.35/0.35 | 203          | 0.33 | 209          | 0.34 | 208          | 0.34  |
| Fuel consumption 100% load                       | g/kWh   lb/hph          | 209/212      | 0.34/0.35 | 210          | 0.35 | 209          | 0.34 | 212          | 0.35  |
| Heat balance & cooling system                    |                         | BF4M 1013 EC |           | BF4M 1013 FC |      | BF6M 1013 EC |      | BF6M 1013 FC |       |
| Heat dissipation (engine radiator) <sup>2)</sup> | kW   hp                 | 47.8/52.5    | 64.1/70.4 | 62.7         | 84.1 | 68.4         | 91.7 | 96.1         | 128.9 |
| Heat dissipation CAC <sup>2)</sup>               | kW   hp                 | 9.9/13.1     | 13.3/17.6 | 23.7         | 31.8 | 24.0         | 32.2 | 42.0         | 56.3  |
| Heat dissipation (convection)                    | kW   hp                 | 9.0/10.0     | 12.0/13.0 | 13.0         | 17.0 | 15.5         | 20.8 | 20.0         | 26.8  |
| Cooling air flow                                 | m <sup>3</sup> /h   cfm | 6100         | 3590      | 9000         | 5297 | 10800        | 6357 | 11520        | 6780  |
| Inlet & exhaust data                             |                         | BF4M 1013 EC |           | BF4M 1013 FC |      | BF6M 1013 EC |      | BF6M 1013 FC |       |
| max. intake depression                           | mbar   psi              | 25           | 0.36      | 25           | 0.36 | 25           | 0.36 | 25           | 0.36  |
| Combustion air volume                            | m <sup>3</sup> /h   cfm | 329/365      | 194/215   | 482          | 284  | 639          | 376  | 746          | 439   |
| max. exhaust gas temperature                     | °C   °F                 | 540/560      | 1004/1040 | 530          | 986  | 535          | 995  | 530          | 986   |
| Exhaust gas flow                                 | m <sup>3</sup> /h   cfm | 951/1102     | 560/649   | 1389         | 818  | 1799         | 1059 | 2112         | 1243  |

**60 Hz / 1800 min<sup>-1</sup> | rpm**

| Fuel Consumption PRP <sup>1)</sup>               |                         | BF4M 1013 EC |           | BF4M 1013 FC |      | BF6M 1013 EC |      | BF6M 1013 FC |       |
|--------------------------------------------------|-------------------------|--------------|-----------|--------------|------|--------------|------|--------------|-------|
| Fuel consumption 25% load                        | g/kWh   lb/hph          | 270/251      | 0.44/0.41 | 235          | 0.39 | 253          | 0.42 | 231          | 0.38  |
| Fuel consumption 50% load                        | g/kWh   lb/hph          | 228/219      | 0.37/0.36 | 212          | 0.35 | 220          | 0.36 | 215          | 0.35  |
| Fuel consumption 75% load                        | g/kWh   lb/hph          | 217/213      | 0.36/0.35 | 211          | 0.35 | 214          | 0.35 | 214          | 0.35  |
| Fuel consumption 100% load                       | g/kWh   lb/hph          | 215/212      | 0.35/0.35 | 219          | 0.36 | 214          | 0.35 | 221          | 0.36  |
| Heat balance & cooling system                    |                         | BF4M 1013 EC |           | BF4M 1013 FC |      | BF6M 1013 EC |      | BF6M 1013 FC |       |
| Heat dissipation (engine radiator) <sup>2)</sup> | kW   hp                 | 51.8/53.3    | 69.5/71.5 | 68.1         | 91.3 | 73.5         | 98.6 | 109.8        | 147.2 |
| Heat dissipation CAC <sup>2)</sup>               | kW   hp                 | 17.3/21.0    | 23.2/28.2 | 30.7         | 41.2 | 33.7         | 45.2 | 50.9         | 68.3  |
| Heat dissipation (convection)                    | kW   hp                 | 9.5/11.0     | 12.7/14.8 | 13.5         | 18.1 | 16.0         | 21.5 | 22.5         | 30.2  |
| Cooling air flow                                 | m <sup>3</sup> /h   cfm | 7600         | 4473      | 11520        | 6780 | 11500        | 6769 | 14760        | 8687  |
| Inlet & exhaust data                             |                         | BF4M 1013 EC |           | BF4M 1013 FC |      | BF6M 1013 EC |      | BF6M 1013 FC |       |
| max. intake depression                           | mbar   psi              | 25           | 0.36      | 25           | 0.36 | 25           | 0.36 | 25           | 0.36  |
| Combustion air volume                            | m <sup>3</sup> /h   cfm | 425/466      | 250/274   | 576          | 339  | 801          | 472  | 946          | 557   |
| max. exhaust gas temperature                     | °C   °F                 | 490/520      | 914/968   | 530          | 986  | 480          | 896  | 530          | 986   |
| Exhaust gas flow                                 | m <sup>3</sup> /h   cfm | 1160/1316    | 683/775   | 1653         | 973  | 2097         | 1234 | 2666         | 1569  |

1) Refers to diesel with a density of 0.835 kg/dm<sup>3</sup> at 15°C | 6.96 lb/US gallon at 60°F.

2) The heat quantities are valid for the dimensioning of the cooling system.

**DIMENSIONS**

| Engine type     |         | A         | A*        | B         | C         |
|-----------------|---------|-----------|-----------|-----------|-----------|
| BF4M 1013 EC/FC | mm   in | 1479   58 | 1250   49 | 728   29  | 1151   45 |
| BF6M 1013 EC    | mm   in | 1870   74 | 1641   65 | 866   34  | 1239   49 |
| BF6M 1013 FC    | mm   in | 1923   76 | 1694   67 | 1003   39 | 1586   62 |

\* Note: The engine dimensions and weights vary depending on the scope of delivery.

The data on this data sheet are for information purposes only and are not binding values. For more information please contact your responsible sales partner.

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