

## KWB Multifire (E)D/ZI

Product specification sheet in accordance with EU Regulation 2015/1187 and 2015/1189

The required buffer volume for the boiler must be determined based on KWB planning documentation. All boilers already have integrated temperature controls, so every product is a "package".

| MF2 D/ZI   MF2 E D/ZI   | UNIT  | MF 2<br>D/ZI<br>20 KW | MF2<br>D/ZI<br>30 KW | MF2<br>D/ZI<br>30 KW | MF2<br>D/ZI<br>40 KW | MF2<br>(E)D/ZI<br>45 KW | MF2<br>(E)D/ZI<br>50 KW | MF2<br>(E)D/ZI<br>60 KW |  |
|---|---|-----------------------|----------------------|----------------------|----------------------|-------------------------|-------------------------|-------------------------|--|
| Stoking mode (manual/automatic)   |   |                       |                      | •                    | automatic            |                         |                         |                         |  |
| Share of partial load in relation to nominal load (30%/50%)                           | %   |                       |                      |                      | 30                   |                         |                         |                         |  |
| Temperature control integrated in the boiler (yes/no)                                 |   |                       |                      |                      | yes                  |                         |                         |                         |  |
| Temperature control class   |   |                       |                      |                      | VI                   |                         |                         |                         |  |
| Contribution of the temperature control to the energy efficiency index of the package | %   | 4                     |                      |                      |                      |                         |                         |                         |  |
| Factor II (Weighting primary solid fuel boiler and additional heating device)         |   |                       |                      |                      | 0                    |                         |                         |                         |  |
| Value for III (294/(11*Pr))   |   | 1.34                  | 0.89                 | 0.82                 | 0.67                 | 0.59                    | 0.54                    | 0.45                    |  |
| Value for IV (115/(11*Pr))  |   | 0.52                  | 0.35                 | 0.32                 | 0.26                 | 0.23                    | 0.21                    | 0.17                    |  |
| Condensing boiler (yes/no)  |   |                       | 1                    | n                    | 0                    |                         |                         |                         |  |
| Combination boiler for hot water and heating (yes/no)                                 |   |                       |                      | n                    | 0                    |                         |                         |                         |  |
| Solid Fuel cogeneration boiler  |   |                       |                      | n                    | 0                    |                         |                         |                         |  |
| Preferred fuel  |   |                       |                      | Wood                 | l chips              |                         |                         |                         |  |
| Rated power   | kW  | 20                    | 30                   | 32.5                 | 40                   | 45                      | 49.5                    | 60                      |  |
| Partial load  | kW  | 6.0                   | 9.0                  | 9.8                  | 12.0                 | 13.5                    | 14.9                    | 18.0                    |  |
| Boiler efficiency at rated power  | %   | 93.0                  | 93.6                 | 93.8                 | 94.2                 | 94.0                    | 93.9                    | 93.8                    |  |
| Boiler efficiency at partial load   | %   | 90.2                  | 91.6                 | 92.0                 | 93.0                 | 92.6                    | 92.6                    | 92.4                    |  |
| Electrical power consumption at maximum output  | kW  | 0.1400                | 0.1693               | 0.1774               | 0.2010               | 0.2840                  | 0.2980                  | 0.3290                  |  |
| Electrical power consumption at partial output  | kW  | 0.0760                | 0.0837               | 0.0858               | 0.0920               | 0.1850                  | 0.1840                  | 0.1840                  |  |
| Electrical power consumption at standby   | kW  | 0.0200                | 0.0200               | 0.0200               | 0.0200               | 0.2480                  | 0.0254                  | 0.0267                  |  |
| EU energy label   |   | A+                    | A+                   | A+                   | A+                   | A+                      | A+                      | A+                      |  |
| Energy efficiency index – boiler  |   | 112.0                 | 115.0                | 115.0                | 114.0                | 114.0                   | 115.0                   | 115.0                   |  |
| EU energy label - integration with heating circuit control                            |   | A+                    | A+                   | A+                   | A+                   | A+                      | A+                      | A+                      |  |
| Energy efficiency index - integration with heating circuit control                    |   | 116.0                 | 119.0                | 119.0                | 118.0                | 118.0                   | 119.0                   | 119.0                   |  |
| Seasonal space heating energy efficiency in active mode                               | %   | 75.0                  | 77.0                 | 77.0                 | 77.0                 | 77.0                    | 77.0                    | 77.0                    |  |
| Seasonal space heating emissions - PM   | mg/m <sup>3</sup> (10 % O <sub>2</sub> )    | <40                   | <40                  | <40                  | <40                  | <40                     | <40                     | <40                     |  |
| Seasonal space heating emissions - OGC  | mg/m <sup>3</sup> (10 % O <sub>2</sub> )    | <20                   | <20                  | <20                  | <20                  | <20                     | <20                     | <20                     |  |
| Seasonal space heating emissions - CO   | mg/m <sup>3</sup> (10 % O <sub>2</sub> )    | <500                  | <500                 | <500                 | <500                 | <500                    | <500                    | <500                    |  |
| Seasonal space heating emissions - NOx  | mg/m <sup>3</sup><br>(10 % O <sub>2</sub> ) | <200                  | <200                 | <200                 | <200                 | <200                    | <200                    | <200                    |  |

| MF2 D/ZI   MF2 E D/ZI   | UNIT                                     | MF 2<br>(E) D/ZI<br>65 KW | MF2<br>(E) D/ZI<br>70 KW | MF2<br>(E) D/ZI<br>80 KW | MF2<br>(E) D/ZI<br>100 KW | MF2<br>(E)D/ZI<br>108 KW | MF2<br>(E)D/ZI<br>120 KW |  |  |
|---|--|---------------------------|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|--|--|
| Stoking mode (manual/automatic)   |  | automatic                 |                          |                          |                           |                          |                          |  |  |
| Share of partial load in relation to nominal load (30%/50%)                           | %  | 30                        |                          |                          |                           |                          |                          |  |  |
| Temperature control integrated in the boiler (yes/no)                                 |  | yes                       |                          |                          |                           |                          |                          |  |  |
| Temperature control class   |  |                           |                          | \                        | /I                        |                          |                          |  |  |
| Contribution of the temperature control to the energy efficiency index of the package | %  | 4                         |                          |                          |                           |                          |                          |  |  |
| Factor II (Weighting primary solid fuel boiler and additional heating device)         |  | 0 -                       |                          |                          |                           |                          |                          |  |  |
| Value for III (294/(11*Pr))   |  | 0.41                      | 0.38                     |                          |                           | -                        |                          |  |  |
| Value for IV (115/(11*Pr))  |  | 0.16                      | 0.15                     |                          |                           | -                        |                          |  |  |
| Condensing boiler (yes/no)  |  |                           |                          | 'n                       | 0                         |                          |                          |  |  |
| Combination boiler for hot water and heating (yes/no)                                 |  |                           |                          | n                        | 0                         |                          |                          |  |  |
| Solid Fuel cogeneration boiler  |  | no                        |                          |                          |                           |                          |                          |  |  |
| Preferred fuel  |  |                           |                          | Wood                     | l chips                   |                          |                          |  |  |
| Rated power   | kW                                       | 65                        | 69.5                     | 80                       | 100                       | 108                      | 120                      |  |  |
| Partial load  | kW                                       | 19.5                      | 20.9                     | 24.0                     | 30.0                      | 32.4                     | 36.0                     |  |  |
| Boiler efficiency at rated power  | %  | 93.8                      | 93.7                     | 93.6                     | 93.8                      | 93.9                     | 94.0                     |  |  |
| Boiler efficiency at partial load   | %  | 92.3                      | 92.3                     | 92.1                     | 93.3                      | 93.7                     | 94.4                     |  |  |
| Electrical power consumption at maximum output  | kW                                       | 0.3440                    | 0.3580                   | 0.3890                   | 0.3870                    | 0.3860                   | 0.3850                   |  |  |
| Electrical power consumption at partial output  | kW                                       | 0.1830                    | 0.1830                   | 0.1820                   | 0.1830                    | 0.1840                   | 0.1850                   |  |  |
| Electrical power consumption at standby   | kW                                       | 0.0274                    | 0.0280                   | 0.0290                   | 0.0322                    | 0.0336                   | 0.0340                   |  |  |
| EU energy label   |  | A+                        | A+                       | _                        | _                         | -                        | -                        |  |  |
| Energy efficiency index - boiler  |  | 115.0                     | 115.0                    | -                        | -                         | -                        | -                        |  |  |
| EU energy label - integration with heating circuit control                            |  | A+                        | A+                       | -                        | _                         | -                        | _                        |  |  |
| Energy efficiency index - integration with heating circuit control                    |  | 119.0                     | 119.0                    | -                        | -                         | -                        | -                        |  |  |
| Seasonal space heating energy efficiency in active mode                               | %  | 77.0                      | 77.0                     | 77.0                     | 77.0                      | 77.0                     | 77.0                     |  |  |
| Seasonal space heating emissions - PM   | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <40                       | <40                      | <40                      | <40                       | <40                      | <40                      |  |  |
| Seasonal space heating emissions - OGC  | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <20                       | <20                      | <20                      | <20                       | <20                      | <20                      |  |  |
| Seasonal space heating emissions - CO   | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <500                      | <500                     | <500                     | <500                      | <500                     | <500                     |  |  |
| Seasonal space heating emissions - NOx  | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <200                      | <200                     | <200                     | <200                      | <200                     | <200                     |  |  |

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## KWB Multifire (E)R D/ZI

Product specification sheet in accordance with EU Regulation 2015/1187 and 2015/1189

The required buffer volume for the boiler must be determined based on KWB planning documentation. All boilers already have integrated temperature controls, so every product is a "package".

| MF2 R D/ZI   MF2 ER D/ZI  | UNIT                                     | MF2<br>(E)R D/ZI<br>40 KW | MF2<br>(E)R D/ZI<br>45 KW | MF2<br>(E)R D/ZI<br>50 KW | MF2<br>(E)R D/ZI<br>60 KW | MF2<br>(E)R D/ZI<br>65 KW |
|---|--|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Stoking mode (manual/automatic)   |  |                           | '                         | automatic                 |                           |                           |
| Share of partial load in relation to nominal load (30%/50%)                           | %  |                           |                           | 30                        |                           |                           |
| Temperature control integrated in the boiler (yes/no)                                 |  |                           |                           | yes                       |                           |                           |
| Temperature control class   |  |                           |                           | VI                        |                           |                           |
| Contribution of the temperature control to the energy efficiency index of the package | %  |                           |                           | 4                         |                           |                           |
| Factor II (Weighting primary solid fuel boiler and additional heating device)         |  |                           |                           | 0                         |                           |                           |
| Value for III (294/(11*Pr))   |  | 0.67                      | 0.59                      | 0.54                      | 0.45                      | 0.41                      |
| Value for IV (115/(11*Pr))  |  | 0.26                      | 0.23                      | 0.21                      | 0.17                      | 0.16                      |
| Condensing boiler (yes/no)  |  |                           | ,                         | no                        |                           |                           |
| Combination boiler for hot water and heating (yes/no)                                 |  |                           |                           | no                        |                           |                           |
| Solid Fuel cogeneration boiler  |  |                           |                           | no                        |                           |                           |
| Preferred fuel  |  |                           |                           | Wood pellets              |                           |                           |
| Rated power   | kW                                       | 40                        | 45                        | 49.5                      | 60                        | 65                        |
| Partial load  | kW                                       | 12.0                      | 13.5                      | 14.9                      | 18.0                      | 19.5                      |
| Boiler efficiency at rated power  | %  | 94.3                      | 94.4                      | 94.5                      | 94.6                      | 94.9                      |
| Boiler efficiency at partial load   | %  | 93.1                      | 93.3                      | 93.8                      | 93.8                      | 94.3                      |
| Electrical power consumption at maximum output  | kW                                       | 0.1730                    | 0.1820                    | 0.1910                    | 0.2010                    | 0.2190                    |
| Electrical power consumption at partial output  | kW                                       | 0.1120                    | 0.1110                    | 0.1110                    | 0.1100                    | 0.1090                    |
| Electrical power consumption at standby   | kW                                       | 0.0240                    | 0.0249                    | 0.0255                    | 0.0261                    | 0.0273                    |
| EU energy label   |  | A+                        | A+                        | A+                        | A+                        | A+                        |
| Energy efficiency index - boiler  |  | 118.0                     | 118.0                     | 118.0                     | 119.0                     | 120.0                     |
| EU energy label - integration with heating circuit control                            |  | A+                        | A+                        | A+                        | A+                        | A+                        |
| Energy efficiency index – integration with heating circuit control                    |  | 122.0                     | 122.0                     | 122.0                     | 123.0                     | 124.0                     |
| Seasonal space heating energy efficiency in active mode                               | %  | 79.0                      | 80.0                      | 80.0                      | 80.0                      | 81.0                      |
| Seasonal space heating emissions - PM   | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <40                       | <40                       | <40                       | <40                       | <40                       |
| Seasonal space heating emissions - OGC  | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <20                       | <20                       | <20                       | <20                       | <20                       |
| Seasonal space heating emissions - CO   | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <500                      | <500                      | <500                      | <500                      | <500                      |
| Seasonal space heating emissions - NOx  | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <200                      | <200                      | <200                      | <200                      | <200                      |

| MF2 D/ZI   MF2 E D/ZI   | UNIT                                     | MF2<br>(E)R D/ZI | MF2<br>(E)R D/ZI | MF2<br>(E)R D/ZI    | MF2<br>(E)R D/ZI | MF2<br>(E)R D/ZI |
|---|--|------------------|------------------|---------------------|------------------|------------------|
| Stoking mode (manual/automatic)   |  | 70 KW            | 80 KW            | 100 KW<br>automatic | 108 KW           | 120 KW           |
| Share of partial load in relation to nominal load (30%/50%)                           | %  |                  |                  | 30                  |                  |                  |
| Temperature control integrated in the boiler (yes/no)                                 | 70                                       |                  |                  | yes                 |                  |                  |
| Temperature control class   |  |                  |                  | VI                  |                  |                  |
| Contribution of the temperature control to the energy efficiency index of the package | %  |                  |                  | 4                   |                  |                  |
| Factor II (Weighting primary solid fuel boiler and additional heating device)         |  |                  |                  | -                   |                  |                  |
| Value for III (294/(11*Pr))   |  |                  |                  | -                   |                  |                  |
| Value for IV (115/(11*Pr))  |  |                  |                  | -                   |                  |                  |
| Condensing boiler (yes/no)  |  |                  |                  | no                  |                  |                  |
| Combination boiler for hot water and heating (yes/no)                                 |  |                  |                  | no                  |                  |                  |
| Solid Fuel cogeneration boiler  |  |                  |                  | no                  |                  |                  |
| Preferred fuel  |  |                  |                  | Wood pellets        |                  |                  |
| Rated power   | kW                                       | 69.5             | 80               | 100                 | 108              | 120              |
| Partial load  | kW                                       | 20.9             | 24.0             | 30.0                | 32.4             | 36.0             |
| Boiler efficiency at rated power  | %  | 95.0             | 95.2             | 94.9                | 94.7             | 94.5             |
| Boiler efficiency at partial load   | %  | 94.5             | 95.0             | 94.7                | 94.5             | 94.0             |
| Electrical power consumption at maximum output  | kW                                       | 0.2280           | 0.2740           | 0.2530              | 0.2560           | 0.2640           |
| Electrical power consumption at partial output  | kW                                       | 0.1080           | 0.1070           | 0.1160              | 0.1200           | 0.1320           |
| Electrical power consumption at standby   | kW                                       | 0.0279           | 0.0290           | 0.0312              | 0.0322           | 0.0340           |
| EU energy label   |  | -                | _                | _                   | _                | _                |
| Energy efficiency index - boiler  |  | -                | -                | -                   | -                | -                |
| EU energy label - integration with heating circuit control                            |  | -                | _                | _                   | _                | _                |
| Energy efficiency index - integration with heating circuit control                    |  | -                | -                | -                   | -                | -                |
| Seasonal space heating energy efficiency in active mode                               | %  | 81.0             | 81.0             | 81.0                | 81.0             | 81.0             |
| Seasonal space heating emissions - PM   | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <40              | <40              | <40                 | <40              | <40              |
| Seasonal space heating emissions - OGC  | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <20              | <20              | <20                 | <20              | <20              |
| Seasonal space heating emissions - CO   | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <500             | <500             | <500                | <500             | <500             |
| Seasonal space heating emissions - NOx  | mg/m <sup>3</sup> (10 % O <sub>2</sub> ) | <200             | <200             | <200                | <200             | <200             |

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