

## Subtype M thermal A Series 8 10kW with 190L tank

|                     |                                                    |
|---------------------|----------------------------------------------------|
| Certificate Holder  | GD Midea Heating & Ventilating Equipment Co., Ltd. |
| Address             | Penglai Industry Road                              |
| ZIP                 | 528311                                             |
| City                | Beijiao, Shunde, Foshan                            |
| Country             | CN                                                 |
| Certification Body  | BRE Global Limited                                 |
| Subtype title       | M thermal A Series 8 10kW with 190L tank           |
| Registration number | 041-K007-07                                        |
| Heat Pump Type      | Outdoor Air/Water                                  |
| Refrigerant         | R32                                                |
| Mass of Refrigerant | 1.65 kg                                            |
| Certification Date  | 18.12.2020                                         |
| Testing basis       | Heat Pump Keymark Scheme Rules Rev 08              |

## Model MHA-V8W/D2N8-B+HBT-A100/190C\*\*\*\*GN8-B

|                                     |                                       |
|-------------------------------------|---------------------------------------|
| Model name                          | MHA-V8W/D2N8-B+HBT-A100/190C****GN8-B |
| Application                         | Heating + DHW + low temp              |
| Units                               | Indoor, Outdoor                       |
| Climate zone (for heating)          | Warmer Climate, Colder Climate        |
| Reversibility                       | Yes                                   |
| Cooling mode application (optional) | n/a                                   |
| Any additional heat sources         | n/a                                   |

### General data

|                  |             |
|------------------|-------------|
| Power supply     | 1x230V 50Hz |
| Off-peak product | n/a         |

### Outdoor Air/Water

#### EN 16147 | Average Climate

|                                 |            |
|---------------------------------|------------|
| Declared load profile           | L          |
| Efficiency $\eta_{DHW}$         | 125 %      |
| COP                             | 3.02       |
| Heating up time                 | 1:38 h:min |
| Standby power input             | 23.0 W     |
| Reference hot water temperature | 47.0 °C    |
| Mixed water at 40°C             | 200 l      |

#### EN 16147 | Colder Climate

|                                 |            |
|---------------------------------|------------|
| Declared load profile           | L          |
| Efficiency $\eta_{DHW}$         | 107 %      |
| COP                             | 2.61       |
| Heating up time                 | 1:32 h:min |
| Standby power input             | 25.0 W     |
| Reference hot water temperature | 47.0 °C    |
| Mixed water at 40°C             | 200 l      |

#### EN 16147 | Warmer Climate

|                                 |            |
|---------------------------------|------------|
| Declared load profile           | L          |
| Efficiency $\eta_{DHW}$         | 151 %      |
| COP                             | 3.66       |
| Heating up time                 | 1:30 h:min |
| Standby power input             | 21.0 W     |
| Reference hot water temperature | 47.0 °C    |
| Mixed water at 40°C             | 200 l      |

### EN 14511-4 | Heating

|                                            |        |
|--------------------------------------------|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure              | passed |

|                                                     |                 |                    |
|-----------------------------------------------------|-----------------|--------------------|
| Defrost test                                        | passed          |                    |
| Starting and operating test                         | passed          |                    |
| EN 14511-2   Heating                                |                 |                    |
|                                                     | Low temperature | Medium temperature |
| Heat output                                         | 8.30 kW         | 7.50 kW            |
| El input                                            | 1.60 kW         | 2.36 kW            |
| COP                                                 | 5.20            | 3.18               |
| EN 12102-1   Average Climate                        |                 |                    |
|                                                     | Low temperature | Medium temperature |
| Sound power level indoor                            | 42 dB(A)        | 42 dB(A)           |
| Sound power level outdoor                           | 59 dB(A)        | 59 dB(A)           |
| EN 14825   Average Climate                          |                 |                    |
|                                                     | Low temperature | Medium temperature |
| $\eta_s$                                            | 205 %           | 132 %              |
| Prated                                              | 8.12 kW         | 6.60 kW            |
| SCOP                                                | 5.21            | 3.36               |
| Tbiv                                                | -7 °C           | -7 °C              |
| TOL                                                 | -10 °C          | -10 °C             |
| Pdh Tj = -7°C                                       | 7.19 kW         | 5.84 kW            |
| COP Tj = -7°C                                       | 3.35            | 2.16               |
| Cdh Tj = -7 °C                                      | 0.90            | 0.90               |
| Pdh Tj = +2°C                                       | 4.65 kW         | 3.76 kW            |
| COP Tj = +2°C                                       | 5.09            | 3.30               |
| Cdh Tj = +2 °C                                      | 0.90            | 0.90               |
| Pdh Tj = +7°C                                       | 2.90 kW         | 2.43 kW            |
| COP Tj = +7°C                                       | 6.82            | 4.34               |
| Cdh Tj = +7 °C                                      | 0.90            | 0.90               |
| Pdh Tj = 12°C                                       | 1.63 kW         | 1.40 kW            |
| COP Tj = 12°C                                       | 8.35            | 5.33               |
| Cdh Tj = +12 °C                                     | 0.90            | 0.90               |
| Pdh Tj = Tbiv                                       | 7.19 kW         | 5.84 kW            |
| COP Tj = Tbiv                                       | 3.35            | 2.16               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 6.45 kW         | 4.91 kW            |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.04            | 1.84               |
| WTOL                                                | 65 °C           | 65 °C              |
| Poff                                                | 14 W            | 14 W               |
| PTO                                                 | 24 W            | 24 W               |
| PSB                                                 | 14 W            | 14 W               |
| PCK                                                 | 0 W             | 0 W                |
| Supplementary Heater: Type of energy input          | Electricity     | Electricity        |

|                                           |          |          |
|-------------------------------------------|----------|----------|
| Supplementary Heater: PSUP                | 1.68 kW  | 1.69 kW  |
| Annual energy consumption Q <sub>he</sub> | 3223 kWh | 4056 kWh |

#### EN 12102-1 | Colder Climate

|                           | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level indoor  | 42 dB(A)        | 42 dB(A)           |
| Sound power level outdoor | 59 dB(A)        | 59 dB(A)           |

#### EN 14825 | Colder Climate

|                                                                                                                             | Low temperature | Medium temperature |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| $\eta_s$                                                                                                                    | 170 %           | 112 %              |
| Prated                                                                                                                      | 6.98 kW         | 5.78 kW            |
| SCOP                                                                                                                        | 4.32            | 2.88               |
| T <sub>biv</sub>                                                                                                            | -15 °C          | -15 °C             |
| TOL                                                                                                                         | -22 °C          | -22 °C             |
| P <sub>dh</sub> T <sub>j</sub> = -7°C                                                                                       | 4.46 kW         | 3.86 kW            |
| COP T <sub>j</sub> = -7°C                                                                                                   | 3.66            | 2.48               |
| C <sub>dh</sub> T <sub>j</sub> = -7 °C                                                                                      | 0.90            | 0.90               |
| P <sub>dh</sub> T <sub>j</sub> = +2°C                                                                                       | 2.70 kW         | 2.21 kW            |
| COP T <sub>j</sub> = +2°C                                                                                                   | 5.20            | 3.35               |
| C <sub>dh</sub> T <sub>j</sub> = +2 °C                                                                                      | 0.90            | 0.90               |
| P <sub>dh</sub> T <sub>j</sub> = +7°C                                                                                       | 1.66 kW         | 1.44 kW            |
| COP T <sub>j</sub> = +7°C                                                                                                   | 6.53            | 4.11               |
| C <sub>dh</sub> T <sub>j</sub> = +7 °C                                                                                      | 0.90            | 0.90               |
| P <sub>dh</sub> T <sub>j</sub> = 12°C                                                                                       | 1.66 kW         | 1.47 kW            |
| COP T <sub>j</sub> = 12°C                                                                                                   | 7.96            | 5.92               |
| C <sub>dh</sub> T <sub>j</sub> = +12 °C                                                                                     | 0.90            | 0.90               |
| P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>                                                                           | 5.69 kW         | 4.71 kW            |
| COP T <sub>j</sub> = T <sub>biv</sub>                                                                                       | 2.83            | 1.90               |
| P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub> | 4.06 kW         | 2.80 kW            |
| COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>                         | 1.95            | 1.22               |
| WTOL                                                                                                                        | 65 °C           | 65 °C              |
| P <sub>off</sub>                                                                                                            | 14 W            | 14 W               |
| PTO                                                                                                                         | 24 W            | 24 W               |
| PSB                                                                                                                         | 14 W            | 14 W               |
| PCK                                                                                                                         | 0 W             | 0 W                |
| Supplementary Heater: Type of energy input                                                                                  | Electricity     | Electricity        |
| Supplementary Heater: PSUP                                                                                                  | 2.91 kW         | 2.99 kW            |
| Annual energy consumption Q <sub>he</sub>                                                                                   | 3978 kWh        | 4950 kWh           |
| P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL                                                                              | 5.69            | 4.71               |
| COP T <sub>j</sub> = -15°C (if TOL                                                                                          | 2.83            | 1.90               |
| C <sub>dh</sub> T <sub>j</sub> = -15 °C                                                                                     | 0.90            | 0.90               |

#### EN 12102-1 | Warmer Climate

|                           | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level indoor  | 42 dB(A)        | 42 dB(A)           |
| Sound power level outdoor | 59 dB(A)        | 59 dB(A)           |

#### EN 14825 | Warmer Climate

|                                                     | Low temperature | Medium temperature |
|-----------------------------------------------------|-----------------|--------------------|
| $\eta_s$                                            | 273 %           | 176 %              |
| Prated                                              | 8.12 kW         | 7.56 kW            |
| SCOP                                                | 6.99            | 4.47               |
| Tbiv                                                | 7 °C            | 7 °C               |
| TOL                                                 | 2 °C            | 2 °C               |
| Pdh Tj = +2°C                                       | 7.57 kW         | 7.55 kW            |
| COP Tj = +2°C                                       | 3.98            | 2.59               |
| Cdh Tj = +2 °C                                      | 0.900           | 0.900              |
| Pdh Tj = +7°C                                       | 5.22 kW         | 4.86 kW            |
| COP Tj = +7°C                                       | 6.26            | 3.92               |
| Cdh Tj = +7 °C                                      | 0.900           | 0.900              |
| Pdh Tj = 12°C                                       | 2.45 kW         | 2.32 kW            |
| COP Tj = 12°C                                       | 9.02            | 5.55               |
| Cdh Tj = +12 °C                                     | 0.900           | 0.900              |
| Pdh Tj = Tbiv                                       | 5.22 kW         | 4.86 kW            |
| COP Tj = Tbiv                                       | 6.26            | 3.92               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.57 kW         | 7.55 kW            |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.98            | 2.59               |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh |                 |                    |
| WTOL                                                | 65 °C           | 65 °C              |
| Poff                                                | 14 W            | 14 W               |
| PTO                                                 | 24 W            | 24 W               |
| PSB                                                 | 14 W            | 14 W               |
| PCK                                                 | 0 W             | 0 W                |
| Supplementary Heater: Type of energy input          | Electricity     | Electricity        |
| Supplementary Heater: PSUP                          | 0.55 kW         | 0.01 kW            |
| Annual energy consumption Qhe                       | 1569 kWh        | 2259 kWh           |

## Model MHA-V10W/D2N8-B+HBT-A100/190C\*\*\*\*GN8-B

|                                     |                                        |
|-------------------------------------|----------------------------------------|
| Model name                          | MHA-V10W/D2N8-B+HBT-A100/190C****GN8-B |
| Application                         | Heating + DHW + low temp               |
| Units                               | Indoor, Outdoor                        |
| Climate zone (for heating)          | Warmer Climate, Colder Climate         |
| Reversibility                       | Yes                                    |
| Cooling mode application (optional) | n/a                                    |
| Any additional heat sources         | n/a                                    |

## General data

|                  |             |
|------------------|-------------|
| Power supply     | 1x230V 50Hz |
| Off-peak product | n/a         |

## Outdoor Air/Water

## EN 16147 | Average Climate

|                                 |            |
|---------------------------------|------------|
| Declared load profile           | L          |
| Efficiency $\eta_{DHW}$         | 125 %      |
| COP                             | 3.02       |
| Heating up time                 | 1:38 h:min |
| Standby power input             | 23.0 W     |
| Reference hot water temperature | 47.0 °C    |
| Mixed water at 40°C             | 200 l      |

## EN 16147 | Colder Climate

|                                 |            |
|---------------------------------|------------|
| Declared load profile           | L          |
| Efficiency $\eta_{DHW}$         | 107 %      |
| COP                             | 2.61       |
| Heating up time                 | 1:31 h:min |
| Standby power input             | 25.0 W     |
| Reference hot water temperature | 47.0 °C    |
| Mixed water at 40°C             | 200 l      |

## EN 16147 | Warmer Climate

|                                 |            |
|---------------------------------|------------|
| Declared load profile           | L          |
| Efficiency $\eta_{DHW}$         | 151 %      |
| COP                             | 3.66       |
| Heating up time                 | 1:30 h:min |
| Standby power input             | 21.0 W     |
| Reference hot water temperature | 47.0 °C    |
| Mixed water at 40°C             | 200 l      |

## EN 14511-4 | Heating

|                                            |        |
|--------------------------------------------|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure              | passed |

|                                                     |                 |                    |
|-----------------------------------------------------|-----------------|--------------------|
| Defrost test                                        | passed          |                    |
| Starting and operating test                         | passed          |                    |
| EN 14511-2   Heating                                |                 |                    |
|                                                     | Low temperature | Medium temperature |
| Heat output                                         | 10.00 kW        | 9.50 kW            |
| El input                                            | 2.00 kW         | 3.06 kW            |
| COP                                                 | 5.00            | 3.10               |
| EN 12102-1   Average Climate                        |                 |                    |
|                                                     | Low temperature | Medium temperature |
| Sound power level indoor                            | 42 dB(A)        | 42 dB(A)           |
| Sound power level outdoor                           | 60 dB(A)        | 60 dB(A)           |
| EN 14825   Average Climate                          |                 |                    |
|                                                     | Low temperature | Medium temperature |
| $\eta_s$                                            | 205 %           | 137 %              |
| Prated                                              | 9.17 kW         | 7.67 kW            |
| SCOP                                                | 5.19            | 3.49               |
| Tbiv                                                | -7 °C           | -7 °C              |
| TOL                                                 | -10 °C          | -10 °C             |
| Pdh Tj = -7°C                                       | 8.11 kW         | 6.78 kW            |
| COP Tj = -7°C                                       | 3.23            | 2.24               |
| Cdh Tj = -7 °C                                      | 0.90            | 0.90               |
| Pdh Tj = +2°C                                       | 5.18 kW         | 4.29 kW            |
| COP Tj = +2°C                                       | 5.01            | 3.42               |
| Cdh Tj = +2 °C                                      | 0.90            | 0.90               |
| Pdh Tj = +7°C                                       | 3.32 kW         | 2.77 kW            |
| COP Tj = +7°C                                       | 7.08            | 4.52               |
| Cdh Tj = +7 °C                                      | 0.90            | 0.90               |
| Pdh Tj = 12°C                                       | 1.65 kW         | 1.58 kW            |
| COP Tj = 12°C                                       | 8.58            | 5.68               |
| Cdh Tj = +12 °C                                     | 0.90            | 0.90               |
| Pdh Tj = Tbiv                                       | 8.11 kW         | 6.78 kW            |
| COP Tj = Tbiv                                       | 3.23            | 2.24               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.40 kW         | 5.39 kW            |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.96            | 1.83               |
| WTOL                                                | 65 °C           | 65 °C              |
| Poff                                                | 14 W            | 14 W               |
| PTO                                                 | 24 W            | 24 W               |
| PSB                                                 | 14 W            | 14 W               |
| PCK                                                 | 0 W             | 0 W                |
| Supplementary Heater: Type of energy input          | Electricity     | Electricity        |

|                                           |          |          |
|-------------------------------------------|----------|----------|
| Supplementary Heater: PSUP                | 1.76 kW  | 2.28 kW  |
| Annual energy consumption Q <sub>he</sub> | 3647 kWh | 4539 kWh |

#### EN 12102-1 | Colder Climate

|                           | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level indoor  | 42 dB(A)        | 42 dB(A)           |
| Sound power level outdoor | 60 dB(A)        | 60 dB(A)           |

#### EN 14825 | Colder Climate

|                                                                                                                             | Low temperature | Medium temperature |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| $\eta_s$                                                                                                                    | 170 %           | 116 %              |
| Prated                                                                                                                      | 7.75 kW         | 6.71 kW            |
| SCOP                                                                                                                        | 4.32            | 2.99               |
| T <sub>biv</sub>                                                                                                            | -15 °C          | -15 °C             |
| TOL                                                                                                                         | -22 °C          | -22 °C             |
| P <sub>dh</sub> T <sub>j</sub> = -7°C                                                                                       | 4.83 kW         | 4.27 kW            |
| COP T <sub>j</sub> = -7°C                                                                                                   | 3.60            | 2.54               |
| C <sub>dh</sub> T <sub>j</sub> = -7 °C                                                                                      | 0.90            | 0.90               |
| P <sub>dh</sub> T <sub>j</sub> = +2°C                                                                                       | 2.94 kW         | 2.57 kW            |
| COP T <sub>j</sub> = +2°C                                                                                                   | 5.26            | 3.51               |
| C <sub>dh</sub> T <sub>j</sub> = +2 °C                                                                                      | 0.90            | 0.90               |
| P <sub>dh</sub> T <sub>j</sub> = +7°C                                                                                       | 1.92 kW         | 1.66 kW            |
| COP T <sub>j</sub> = +7°C                                                                                                   | 7.08            | 4.37               |
| C <sub>dh</sub> T <sub>j</sub> = +7 °C                                                                                      | 0.90            | 0.90               |
| P <sub>dh</sub> T <sub>j</sub> = 12°C                                                                                       | 1.66 kW         | 1.48 kW            |
| COP T <sub>j</sub> = 12°C                                                                                                   | 7.96            | 5.96               |
| C <sub>dh</sub> T <sub>j</sub> = +12 °C                                                                                     | 0.90            | 0.90               |
| P <sub>dh</sub> T <sub>j</sub> = T <sub>biv</sub>                                                                           | 6.32 kW         | 5.48 kW            |
| COP T <sub>j</sub> = T <sub>biv</sub>                                                                                       | 2.64            | 2.00               |
| P <sub>dh</sub> T <sub>j</sub> = TOL or P <sub>dh</sub> T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub> | 4.63 kW         | 2.80 kW            |
| COP T <sub>j</sub> = TOL or COP T <sub>j</sub> = T <sub>designh</sub> if TOL < T <sub>designh</sub>                         | 1.97            | 1.22               |
| WTOL                                                                                                                        | 65 °C           | 65 °C              |
| P <sub>off</sub>                                                                                                            | 14 W            | 14 W               |
| PTO                                                                                                                         | 24 W            | 24 W               |
| PSB                                                                                                                         | 14 W            | 14 W               |
| PCK                                                                                                                         | 0 W             | 0 W                |
| Supplementary Heater: Type of energy input                                                                                  | Electricity     | Electricity        |
| Supplementary Heater: PSUP                                                                                                  | 3.13 kW         | 3.91 kW            |
| Annual energy consumption Q <sub>he</sub>                                                                                   | 4424 kWh        | 5540 kWh           |
| P <sub>dh</sub> T <sub>j</sub> = -15°C (if TOL                                                                              | 6.32            | 5.48               |
| COP T <sub>j</sub> = -15°C (if TOL                                                                                          | 2.64            | 2.00               |
| C <sub>dh</sub> T <sub>j</sub> = -15 °C                                                                                     | 0.90            | 0.90               |

#### EN 12102-1 | Warmer Climate

|                           | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level indoor  | 42 dB(A)        | 42 dB(A)           |
| Sound power level outdoor | 60 dB(A)        | 60 dB(A)           |

#### EN 14825 | Warmer Climate

|                                                     | Low temperature | Medium temperature |
|-----------------------------------------------------|-----------------|--------------------|
| $\eta_s$                                            | 279 %           | 180 %              |
| Prated                                              | 8.58 kW         | 8.63 kW            |
| SCOP                                                | 7.12            | 4.58               |
| Tbiv                                                | 7 °C            | 7 °C               |
| TOL                                                 | 2 °C            | 2 °C               |
| Pdh Tj = +2°C                                       | 8.44 kW         | 8.06 kW            |
| COP Tj = +2°C                                       | 3.84            | 2.59               |
| Cdh Tj = +2 °C                                      | 0.90            | 0.90               |
| Pdh Tj = +7°C                                       | 5.52 kW         | 5.55 kW            |
| COP Tj = +7°C                                       | 6.18            | 4.10               |
| Cdh Tj = +7 °C                                      | 0.90            | 0.90               |
| Pdh Tj = 12°C                                       | 2.62 kW         | 2.53 kW            |
| COP Tj = 12°C                                       | 9.04            | 5.82               |
| Cdh Tj = +12 °C                                     | 0.90            | 0.90               |
| Pdh Tj = Tbiv                                       | 5.52 kW         | 5.55 kW            |
| COP Tj = Tbiv                                       | 6.18            | 4.10               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.44 kW         | 8.16 kW            |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.84            | 2.61               |
| WTOL                                                | 65 °C           | 65 °C              |
| Poff                                                | 14 W            | 14 W               |
| PTO                                                 | 24 W            | 24 W               |
| PSB                                                 | 14 W            | 14 W               |
| PCK                                                 | 0 W             | 0 W                |
| Supplementary Heater: Type of energy input          | Electricity     | Electricity        |
| Supplementary Heater: PSUP                          | 0.14 kW         | 0.48 kW            |
| Annual energy consumption Qhe                       | 1628 kWh        | 2516 kWh           |