

| Summary of                       | HA 7-6 O 230V   | Reg. No. | 40051133 |  |
|----------------------------------|---|----------|----------|--|
| Certificate Holder               |   |          |          |  |
| Name                             | Saunier Duval Brand Group   |          |          |  |
| Address                          |   | Zip      |          |  |
| City                             |   | Country  | Germany  |  |
| Certification<br>Body            | VDE Prüf- und Zertifizierungsinstitut GmbH  |          |          |  |
| Name of<br>testing<br>laboratory | VDE Prüf- und Zertifizierungsinstitut GmbH  |          |          |  |
| Subtype<br>title                 | HA 7-6 O 230V   |          |          |  |
| Heat Pump<br>Type                | Outdoor Air/Water   |          |          |  |
| Refrigerant                      | R290  |          |          |  |
| Mass Of<br>Refrigerant           | 0.9 kg  |          |          |  |
| Certification<br>Date            | 11.05.2020  |          |          |  |
| Testing<br>basis                 | DIN EN 14511-1:2019-07; EN 14511-1:2018 DIN EN 14511-2:2019-07; EN 14511-2:2018 DIN EN 14511-3:2019-07; EN 14511-3:2018 DIN EN 14511-4:2019-07; EN 14511-4:2018 DIN EN 14825:2016-10; EN 14825:2016 DIN EN 12102-1:2018-02; EN 12102-1:2017 |          |          |  |



# Model: HA 7-6 O 230V

| General Data |             |
|--------------|-------------|
| Power supply | 1x230V 50Hz |

# Heating

| EN 14511-2                         |           |           |  |
|------------------------------------|-----------|-----------|--|
| Low temperature Medium temperature |           |           |  |
| Heat output                        | 4.57 kW   | 4.95 kW   |  |
| El input                           | 0.95 kW   | 1.68 kW   |  |
| СОР                                | 4.79      | 2.93      |  |
| Indoor water flow rate             | 0.79 m³/h | 0.54 m³/h |  |

| EN 14511-4                                 |        |  |
|--|--------|--|
| Shutting off the heat transfer medium flow | passed |  |
| Complete power supply failure              | passed |  |
| Defrost test                               | passed |  |
| Starting and operating test                | passed |  |

## Average Climate



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 184 %           | 134 %              |
| Prated        | 6.60 kW         | 6.13 kW            |
| SCOP          | 4.68            | 3.43               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 5.84 kW         | 5.42 kW            |
| COP Tj = -7°C | 2.72            | 2.13               |
| Cdh           | 0.99            | 0.99               |
| Pdh Tj = +2°C | 3.72 kW         | 3.46 kW            |
| COP Tj = +2°C | 4.68            | 3.36               |
| Cdh           | 0.96            | 0.97               |
| Pdh Tj = +7°C | 3.18 kW         | 3.00 kW            |
| COP Tj = +7°C | 6.38            | 4.60               |
| Cdh           | 0.95            | 0.96               |
| Pdh Tj = 12°C | 3.74 kW         | 3.59 kW            |
|               |                 |                    |





| COP Tj = 12°C                              | 7.88        | 6.18        |
|--|-------------|-------------|
| Cdh  | 0.94        | 0.95        |
| Pdh Tj = Tbiv                              | 5.84 kW     | 5.42 kW     |
| COP Tj = Tbiv                              | 2.72        | 2.13        |
| Pdh Tj = TOL                               | 6.27 kW     | 4.88 kW     |
| COP Tj = TOL                               | 2.64        | 1.88        |
| WTOL                                       | 70 °C       | 70 °C       |
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 2912 kWh    | 3688 kWh    |

#### Warmer Climate

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 237 %           | 163 %              |
| Prated     | 6.77 kW         | 6.60 kW            |
| SCOP       | 5.99            | 4.14               |





| I his information was                      | generated by the HP K | LEYMARK database on 17 Dec 2020 |
|--|-----------------------|---------------------------------|
| Tbiv                                       | 2 °C                  | 2 °C                            |
| TOL  | 2 °C                  | 2 °C                            |
| Pdh Tj = +2°C                              | 6.77 kW               | 6.60 kW                         |
| COP Tj = +2°C                              | 3.23                  | 2.23                            |
| Cdh  | 0.99                  | 0.99                            |
| Pdh Tj = +7°C                              | 4.14 kW               | 4.52 kW                         |
| $COP Tj = +7^{\circ}C$                     | 5.52                  | 3.47                            |
| Cdh  | 0.96                  | 0.97                            |
| Pdh Tj = 12°C                              | 3.75 kW               | 3.56 kW                         |
| COP Tj = 12°C                              | 7.65                  | 5.68                            |
| Cdh  | 0.95                  | 0.96                            |
| Pdh Tj = Tbiv                              | 6.77 kW               | 6.60 kW                         |
| COP Tj = Tbiv                              | 3.23                  | 2.23                            |
| Pdh Tj = TOL                               | 6.77 kW               | 6.60 kW                         |
| COP Tj = TOL                               | 3.23                  | 2.23                            |
| WTOL                                       | 70 °C                 | 70 °C                           |
| Poff                                       | 8 W                   | 8 W                             |
| РТО  | 29 W                  | 29 W                            |
| PSB  | 29 W                  | 29 W                            |
| РСК  | o w                   | o w                             |
| Supplementary Heater: Type of energy input | electricity           | electricity                     |
| Supplementary Heater: Type of energy input | electricity           | electricity                     |





| Supplementary Heater: PSUP    | 0.00 kW  | 0.00 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 1510 kWh | 2128 kWh |

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

### Colder Climate

| EN 14825               |                 |                    |
|------------------------|-----------------|--------------------|
|                        | Low temperature | Medium temperature |
| $\eta_{s}$             | 160 %           | 118 %              |
| Prated                 | 5.85 kW         | 5.39 kW            |
| SCOP                   | 4.07            | 3.03               |
| Tbiv                   | -15 °C          | -15 °C             |
| TOL                    | -20 °C          | -20 °C             |
| Pdh Tj = -7°C          | 3.51 kW         | 3.69 kW            |
| COP Tj = -7°C          | 3.31            | 2.53               |
| Cdh                    | 0.97            | 0.98               |
| Pdh Tj = +2°C          | 2.73 kW         | 2.55 kW            |
| $COP Tj = +2^{\circ}C$ | 5.01            | 3.62               |
| Cdh                    | 0.95            | 0.96               |
|                        |                 |                    |





| This information was g                     | cherated by the fir RETI | milit database on 17 Dec 202 |
|--|--------------------------|------------------------------|
| Pdh Tj = $+7^{\circ}$ C                    | 3.19 kW                  | 3.08 kW                      |
| $COP Tj = +7^{\circ}C$                     | 6.82                     | 5.05                         |
| Cdh  | 0.94                     | 0.95                         |
| Pdh Tj = 12°C                              | 3.78 kW                  | 3.64 kW                      |
| COP Tj = 12°C                              | 8.52                     | 6.54                         |
| Cdh  | 0.94                     | 0.95                         |
| Pdh Tj = Tbiv                              | 4.77 kW                  | 4.40 kW                      |
| COP Tj = Tbiv                              | 2.60                     | 1.90                         |
| Pdh Tj = TOL                               | 4.94 kW                  | 4.57 kW                      |
| COP Tj = TOL                               | 2.08                     | 1.53                         |
| WTOL                                       | 70 °C                    | 70 °C                        |
| Poff                                       | 8 W                      | 8 W                          |
| РТО  | 29 W                     | 29 W                         |
| PSB  | 29 W                     | 29 W                         |
| PCK  | 0 W                      | 0 W                          |
| Supplementary Heater: Type of energy input | electricity              | electricity                  |
| Supplementary Heater: PSUP                 | 0.00 kW                  | 0.00 kW                      |
| Annual energy consumption Qhe              | 3546 kWh                 | 4380 kWh                     |
| Pdh Tj = -15°C (if TOL<-20°C)              | 4.77                     | 4.40                         |
| COP Tj = -15°C (if TOL<-20°C)              | 2.60                     | 1.90                         |
| Cdh  | 0.98                     | 0.99                         |
|  |                          |                              |





| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

# Model: HA 7-6 O 230V B2

| General Data |             |
|--------------|-------------|
| Power supply | 1x230V 50Hz |

# Heating

| EN 14511-2             |                 |                    |  |
|------------------------|-----------------|--------------------|--|
|                        | Low temperature | Medium temperature |  |
| Heat output            | 4.57 kW         | 4.95 kW            |  |
| El input               | 0.95 kW         | 1.68 kW            |  |
| СОР                    | 4.79            | 2.93               |  |
| Indoor water flow rate | 0.79 m³/h       | 0.54 m³/h          |  |

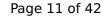
| EN 14511-4                                 |        |
|--|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure              | passed |
| Defrost test                               | passed |
| Starting and operating test                | passed |

## Average Climate



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 182 %           | 133 %              |
| Prated        | 6.60 kW         | 6.13 kW            |
| SCOP          | 4.63            | 3.41               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 5.84 kW         | 5.42 kW            |
| COP Tj = -7°C | 2.72            | 2.13               |
| Cdh           | 0.99            | 0.99               |
| Pdh Tj = +2°C | 3.72 kW         | 3.46 kW            |
| COP Tj = +2°C | 4.68            | 3.36               |
| Cdh           | 0.96            | 0.97               |
| Pdh Tj = +7°C | 3.18 kW         | 3.00 kW            |
| COP Tj = +7°C | 6.38            | 4.60               |
| Cdh           | 0.95            | 0.96               |
| Pdh Tj = 12°C | 3.74 kW         | 3.59 kW            |





| COP Tj = 12°C                              | 7.88        | 6.18        |
|--|-------------|-------------|
| Cdh  | 0.94        | 0.95        |
| Pdh Tj = Tbiv                              | 5.84 kW     | 5.42 kW     |
| COP Tj = Tbiv                              | 2.72        | 2.13        |
| Pdh Tj = TOL                               | 6.27 kW     | 4.88 kW     |
| COP Tj = TOL                               | 2.64        | 1.88        |
| WTOL                                       | 70 °C       | 70 °C       |
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | o w         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 2943 kWh    | 3718 kWh    |

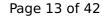
#### Warmer Climate

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 231 %           | 160 %              |
| Prated     | 6.77 kW         | 6.60 kW            |
| SCOP       | 5.85            | 4.07               |





| Tbiv                                       | 2 °C        | 2 °C        |
|--|-------------|-------------|
| TOL  | 2 °C        | 2 °C        |
| Pdh Tj = +2°C                              | 6.77 kW     | 6.60 kW     |
| COP Tj = +2°C                              | 3.23        | 2.23        |
| Cdh  | 0.99        | 0.99        |
| Pdh Tj = +7°C                              | 4.14 kW     | 4.52 kW     |
| $COP Tj = +7^{\circ}C$                     | 5.52        | 3.47        |
| Cdh  | 0.96        | 0.97        |
| Pdh Tj = 12°C                              | 3.75 kW     | 3.56 kW     |
| COP Tj = 12°C                              | 7.65        | 5.68        |
| Cdh  | 0.95        | 0.96        |
| Pdh Tj = Tbiv                              | 6.77 kW     | 6.60 kW     |
| COP Tj = Tbiv                              | 3.23        | 2.23        |
| Pdh Tj = TOL                               | 6.77 kW     | 6.60 kW     |
| COP Tj = TOL                               | 3.23        | 2.23        |
| WTOL                                       | 70 °C       | 70 °C       |
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |



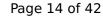


| Supplementary Heater: PSUP    | 0.00 kW  | 0.00 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 1546 kWh | 2164 kWh |

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

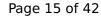
### Colder Climate

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 159 %           | 118 %              |
| Prated        | 5.85 kW         | 5.39 kW            |
| SCOP          | 4.05            | 3.02               |
| Tbiv          | -15 °C          | -15 °C             |
| TOL           | -20 °C          | -20 °C             |
| Pdh Tj = -7°C | 3.51 kW         | 3.69 kW            |
| COP Tj = -7°C | 3.31            | 2.53               |
| Cdh           | 0.97            | 0.98               |
| Pdh Tj = +2°C | 2.73 kW         | 2.55 kW            |
| COP Tj = +2°C | 5.01            | 3.62               |
| Cdh           | 0.95            | 0.96               |





|  | Theraced by the Hi KETH | ANN database on 17 Dec 2020 |
|--|-------------------------|-----------------------------|
| Pdh Tj = +7°C                              | 3.19 kW                 | 3.08 kW                     |
| $COP Tj = +7^{\circ}C$                     | 6.82                    | 5.05                        |
| Cdh  | 0.94                    | 0.95                        |
| Pdh Tj = 12°C                              | 3.78 kW                 | 3.64 kW                     |
| COP Tj = 12°C                              | 8.52                    | 6.54                        |
| Cdh  | 0.94                    | 0.95                        |
| Pdh Tj = Tbiv                              | 4.77 kW                 | 4.40 kW                     |
| COP Tj = Tbiv                              | 2.60                    | 1.90                        |
| Pdh Tj = TOL                               | 4.94 kW                 | 4.57 kW                     |
| COP Tj = TOL                               | 2.08                    | 1.53                        |
| WTOL                                       | 70 °C                   | 70 °C                       |
| Poff                                       | 8 W                     | 8 W                         |
| РТО  | 29 W                    | 29 W                        |
| PSB  | 29 W                    | 29 W                        |
| PCK  | 0 W                     | o w                         |
| Supplementary Heater: Type of energy input | electricity             | electricity                 |
| Supplementary Heater: PSUP                 | 0.00 kW                 | 0.00 kW                     |
| Annual energy consumption Qhe              | 3565 kWh                | 4398 kWh                    |
| Pdh Tj = -15°C (if TOL<-20°C)              | 4.77                    | 4.40                        |
| COP Tj = $-15$ °C (if TOL< $-20$ °C)       | 2.60                    | 1.90                        |
| Cdh  | 0.98                    | 0.99                        |
|  |                         |                             |





| EN 12102-1                         |          |          |  |
|------------------------------------|----------|----------|--|
| Low temperature Medium temperature |          |          |  |
| Sound power level outdoor          | 53 dB(A) | 55 dB(A) |  |



# Model: HA 8-6 O 230V B3

| General Data             |  |
|--------------------------|--|
| Power supply 1x230V 50Hz |  |

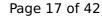
# Heating

| EN 14511-4                                 |        |  |
|--|--------|--|
| Shutting off the heat transfer medium flow | passed |  |
| Complete power supply failure              | passed |  |
| Defrost test                               | passed |  |
| Starting and operating test                | passed |  |

| EN 14511-2             |                 |                    |  |
|------------------------|-----------------|--------------------|--|
|                        | Low temperature | Medium temperature |  |
| Heat output            | 7.37 kW         | 7.58 kW            |  |
| El input               | 1.66 kW         | 2.65 kW            |  |
| СОР                    | 4.42            | 2.85               |  |
| Indoor water flow rate | 1.28 m³/h       | 0.83 m³/h          |  |

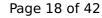
## **Average Climate**

| EN 14825 |                 |                    |
|----------|-----------------|--------------------|
|          | Low temperature | Medium temperature |
|          |                 |                    |





|                         | <u> </u> | TARK database 011 17 Dec 202 |
|-------------------------|----------|------------------------------|
| $\eta_{s}$              | 187 %    | 135 %                        |
| Prated                  | 7.21 kW  | 6.39 kW                      |
| SCOP                    | 4.75     | 3.44                         |
| Tbiv                    | -7 °C    | -7 °C                        |
| TOL                     | -10 °C   | -10 °C                       |
| Pdh Tj = -7°C           | 6.38 kW  | 5.66 kW                      |
| $COPTj = -7^{\circ}C$   | 2.93     | 2.17                         |
| Cdh                     | 0.99     | 0.99                         |
| Pdh Tj = +2°C           | 3.83 kW  | 3.49 kW                      |
| COP Tj = +2°C           | 4.73     | 3.32                         |
| Cdh                     | 0.97     | 0.97                         |
| Pdh Tj = $+7^{\circ}$ C | 3.21 kW  | 3.06 kW                      |
| $COP Tj = +7^{\circ}C$  | 6.33     | 4.67                         |
| Cdh                     | 0.95     | 0.96                         |
| Pdh Tj = 12°C           | 3.72 kW  | 3.62 kW                      |
| COP Tj = 12°C           | 7.79     | 6.23                         |
| Cdh                     | 0.94     | 0.95                         |
| Pdh Tj = Tbiv           | 6.38 kW  | 5.66 kW                      |
| COP Tj = Tbiv           | 2.93     | 2.17                         |
| Pdh Tj = TOL            | 6.00 kW  | 5.09 kW                      |
| COP Tj = TOL            | 2.66     | 1.92                         |
|                         | ·        | •                            |



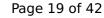


| WTOL                                       | 55 °C       | 55 °C       |
|--|-------------|-------------|
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 3139 kWh    | 3837 kWh    |

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 58 dB(A)        | 57 dB(A)           |

### Warmer Climate

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 228 %           | 162 %              |
| Prated     | 6.87 kW         | 7.06 kW            |
| SCOP       | 5.78            | 4.13               |
| Tbiv       | 2 °C            | 2 °C               |
| TOL        | 2 °C            | 2 °C               |





|  |             | THIN database on 17 Dec 2020 |
|--|-------------|------------------------------|
| Pdh Tj = +2°C                              | 6.87 kW     | 7.06 kW                      |
| COP Tj = +2°C                              | 3.18        | 2.31                         |
| Cdh  | 0.99        | 0.99                         |
| Pdh Tj = +7°C                              | 4.38 kW     | 4.71 kW                      |
| $COP Tj = +7^{\circ}C$                     | 5.29        | 3.44                         |
| Cdh  | 0.97        | 0.98                         |
| Pdh Tj = 12°C                              | 3.68 kW     | 3.56 kW                      |
| COP Tj = 12°C                              | 7.37        | 5.62                         |
| Cdh  | 0.95        | 0.96                         |
| Pdh Tj = Tbiv                              | 6.87 kW     | 7.06 kW                      |
| COP Tj = Tbiv                              | 3.18        | 2.31                         |
| Pdh Tj = TOL                               | 6.87 kW     | 7.06 kW                      |
| COP Tj = TOL                               | 3.18        | 2.31                         |
| WTOL                                       | 55 °C       | 55 °C                        |
| Poff                                       | 8 W         | 8 W                          |
| РТО  | 29 W        | 29 W                         |
| PSB  | 29 W        | 29 W                         |
| PCK  | 0 W         | o w                          |
| Supplementary Heater: Type of energy input | electricity | electricity                  |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW                      |
| Annual energy consumption Qhe              | 1586 kWh    | 2284 kWh                     |
|  |             |                              |



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 58 dB(A)        | 57 dB(A)           |

#### Colder Climate

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 159 %           | 119 %              |
| Prated        | 6.03 kW         | 5.59 kW            |
| SCOP          | 4.05            | 3.06               |
| Tbiv          | -15 °C          | -15 °C             |
| TOL           | -20 °C          | -20 °C             |
| Pdh Tj = -7°C | 3.71 kW         | 3.77 kW            |
| COP Tj = -7°C | 3.42            | 2.54               |
| Cdh           | 0.97            | 0.98               |
| Pdh Tj = +2°C | 2.80 kW         | 2.59 kW            |
| COP Tj = +2°C | 5.04            | 3.70               |
| Cdh           | 0.95            | 0.96               |
| Pdh Tj = +7°C | 3.25 kW         | 3.12 kW            |
| COP Tj = +7°C | 6.63            | 5.08               |
| Cdh           | 0.95            | 0.96               |



 $$\operatorname{\textsc{Page}}\xspace$  21 of 42 This information was generated by the HP KEYMARK database on 17 Dec 2020

| Pdh Tj = 12°C                              | 3.73 kW     | 3.67 kW     |
|--|-------------|-------------|
| COP Tj = 12°C                              | 7.71        | 6.80        |
| Cdh  | 0.94        | 0.95        |
| Pdh Tj = Tbiv                              | 4.92 kW     | 4.56 kW     |
| COP Tj = Tbiv                              | 2.57        | 1.92        |
| Pdh Tj = TOL                               | 3.66 kW     | 3.29 kW     |
| COP Tj = TOL                               | 2.19        | 1.56        |
| WTOL                                       | 55 °C       | 55 °C       |
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | o w         | o w         |
| Supplementary Heater: Type of energy input | electricity | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 3665 kWh    | 4506 kWh    |
| Pdh Tj = -15°C (if TOL<-20°C)              | 4.92        | 4.56        |
| COP Tj = -15°C (if TOL<-20°C)              | 2.57        | 1.92        |
| Cdh  | 0.98        | 0.99        |





| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 58 dB(A)        | 57 dB(A)           |



# **Model: HA 6-6 O 230V**

| General Data |             |  |
|--------------|-------------|--|
| Power supply | 1x230V 50Hz |  |

# Heating

| EN 14511-2             |                 |                    |  |
|------------------------|-----------------|--------------------|--|
|                        | Low temperature | Medium temperature |  |
| Heat output            | 4.48 kW         | 4.94 kW            |  |
| El input               | 0.94 kW         | 1.69 kW            |  |
| СОР                    | 4.78            | 2.93               |  |
| Indoor water flow rate | 0.78 m³/h       | 0.54 m³/h          |  |

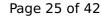
| EN 14511-4                                 |        |  |
|--|--------|--|
| Shutting off the heat transfer medium flow | passed |  |
| Complete power supply failure              | passed |  |
| Defrost test                               | passed |  |
| Starting and operating test                | passed |  |

## Average Climate



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 187 %           | 131 %              |
| Prated        | 5.87 kW         | 4.40 kW            |
| SCOP          | 4.75            | 3.35               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 5.19 kW         | 3.89 kW            |
| COP Tj = -7°C | 3.10            | 2.19               |
| Cdh           | 0.98            | 0.98               |
| Pdh Tj = +2°C | 3.01 kW         | 2.57 kW            |
| COP Tj = +2°C | 4.73            | 3.25               |
| Cdh           | 0.96            | 0.96               |
| Pdh Tj = +7°C | 3.09 kW         | 2.95 kW            |
| COP Tj = +7°C | 6.17            | 4.48               |
| Cdh           | 0.95            | 0.96               |
| Pdh Tj = 12°C | 3.66 kW         | 3.56 kW            |





| COP Tj = 12°C                              | 7.60        | 6.06        |
|--|-------------|-------------|
| Cdh  | 0.94        | 0.95        |
| Pdh Tj = Tbiv                              | 5.19 kW     | 3.89 kW     |
| COP Tj = Tbiv                              | 3.10        | 2.19        |
| Pdh Tj = TOL                               | 5.37 kW     | 4.84 kW     |
| COP Tj = TOL                               | 2.78        | 1.89        |
| WTOL                                       | 55 °C       | 55 °C       |
| Poff                                       | 8 W         | 8 W         |
| PTO  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 2551 kWh    | 2710 kWh    |

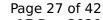
#### Warmer Climate

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 206 %           | 164 %              |
| Prated     | 6.73 kW         | 6.10 kW            |
| SCOP       | 5.22            | 4.16               |





| Tbiv                                       | 2 °C        | 2 °C        |
|--|-------------|-------------|
| TOL  | 2 °C        | 2 °C        |
| Pdh Tj = +2°C                              | 5.71 kW     | 6.10 kW     |
| COP Tj = +2°C                              | 3.29        | 2.29        |
| Cdh  | 0.98        | 0.99        |
| Pdh Tj = +7°C                              | 3.73 kW     | 4.28 kW     |
| $COP Tj = +7^{\circ}C$                     | 5.59        | 3.58        |
| Cdh  | 0.96        | 0.98        |
| Pdh Tj = 12°C                              | 3.64 kW     | 3.51 kW     |
| COP Tj = 12°C                              | 7.36        | 5.59        |
| Cdh  | 0.95        | 0.96        |
| Pdh Tj = Tbiv                              | 6.73 kW     | 6.10 kW     |
| COP Tj = Tbiv                              | 3.23        | 2.29        |
| Pdh Tj = TOL                               | 6.73 kW     | 6.10 kW     |
| COP Tj = TOL                               | 3.23        | 2.29        |
| WTOL                                       | 55 °C       | 55 °C       |
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | o w         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |





| Supplementary Heater: PSUP    | 0.00 kW  | 0.00 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 1724 kWh | 1956 kWh |

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

### Colder Climate

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 162 %           | 117 %              |
| Prated        | 4.25 kW         | 3.92 kW            |
| SCOP          | 4.11            | 3.00               |
| Tbiv          | -20 °C          | -20 °C             |
| TOL           | -20 °C          | -20 °C             |
| Pdh Tj = -7°C | 2.81 kW         | 2.28 kW            |
| COP Tj = -7°C | 3.51            | 2.43               |
| Cdh           | 0.97            | 0.97               |
| Pdh Tj = +2°C | 2.71 kW         | 2.53 kW            |
| COP Tj = +2°C | 5.06            | 3.72               |
| Cdh           | 0.95            | 0.96               |



# $$\operatorname{\textit{Page}}\xspace$ 28 of 42 This information was generated by the HP KEYMARK database on 17 Dec 2020

| Pdh Tj = +7°C                              | 3.10 kW     | 3.01 kW     |
|--|-------------|-------------|
| $COP Tj = +7^{\circ}C$                     | 6.39        | 4.89        |
| Cdh  | 0.95        | 0.96        |
| Pdh Tj = 12°C                              | 3.69 kW     | 3.58 kW     |
| COP Tj = 12°C                              | 7.84        | 6.44        |
| Cdh  | 0.94        | 0.95        |
| Pdh Tj = Tbiv                              | 4.03 kW     | 3.71 kW     |
| COP Tj = Tbiv                              | 2.20        | 1.59        |
| Pdh Tj = TOL                               | 4.03 kW     | 3.71 kW     |
| COP Tj = TOL                               | 2.20        | 1.59        |
| WTOL                                       | 55 °C       | 55 °C       |
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 2549 kWh    | 3219 kWh    |
|  |             |             |





 $$\operatorname{\textit{Page}}\xspace$  29 of 42 This information was generated by the HP KEYMARK database on 17 Dec 2020

|                           | EN 12102-1      |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |



# Model: HA 6-6 O 230V B2

| General Data |             |
|--------------|-------------|
| Power supply | 1x230V 50Hz |

# Heating

| EN 14511-2             |                 |                    |
|------------------------|-----------------|--------------------|
|                        | Low temperature | Medium temperature |
| Heat output            | 4.48 kW         | 4.94 kW            |
| El input               | 0.94 kW         | 1.69 kW            |
| СОР                    | 4.78            | 2.93               |
| Indoor water flow rate | 0.78 m³/h       | 0.54 m³/h          |

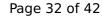
| EN 14511-4                                 |        |
|--|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure              | passed |
| Defrost test                               | passed |
| Starting and operating test                | passed |

## Average Climate



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 185 %           | 130 %              |
| Prated        | 5.87 kW         | 4.40 kW            |
| SCOP          | 4.70            | 3.31               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 5.19 kW         | 3.89 kW            |
| COP Tj = -7°C | 3.10            | 2.19               |
| Cdh           | 0.98            | 0.98               |
| Pdh Tj = +2°C | 3.01 kW         | 2.57 kW            |
| COP Tj = +2°C | 4.73            | 3.25               |
| Cdh           | 0.96            | 0.96               |
| Pdh Tj = +7°C | 3.09 kW         | 2.95 kW            |
| COP Tj = +7°C | 6.17            | 4.48               |
| Cdh           | 0.95            | 0.96               |
| Pdh Tj = 12°C | 3.66 kW         | 3.56 kW            |





|  | •           |             |
|--|-------------|-------------|
| COP Tj = 12°C                              | 7.60        | 6.06        |
| Cdh  | 0.94        | 0.95        |
| Pdh Tj = Tbiv                              | 5.19 kW     | 3.89 kW     |
| COP Tj = Tbiv                              | 3.10        | 2.19        |
| Pdh Tj = TOL                               | 5.37 kW     | 4.84 kW     |
| COP Tj = TOL                               | 2.78        | 1.89        |
| WTOL                                       | 55 °C       | 55 °C       |
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 2581 kWh    | 2740 kWh    |
|  |             |             |

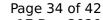
### Warmer Climate

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 201 %           | 161 %              |
| Prated     | 6.73 kW         | 6.10 kW            |
| SCOP       | 5.11            | 4.09               |





|  |             | milit database on 17 Dec 2021 |
|--|-------------|-------------------------------|
| Tbiv                                       | 2 °C        | 2 °C                          |
| TOL  | 2 °C        | 2 °C                          |
| Pdh Tj = +2°C                              | 5.71 kW     | 6.10 kW                       |
| COP Tj = +2°C                              | 3.29        | 2.29                          |
| Cdh  | 0.98        | 0.99                          |
| Pdh Tj = +7°C                              | 3.73 kW     | 4.28 kW                       |
| $COP Tj = +7^{\circ}C$                     | 5.59        | 3.58                          |
| Cdh  | 0.96        | 0.98                          |
| Pdh Tj = 12°C                              | 3.64 kW     | 3.51 kW                       |
| COP Tj = 12°C                              | 7.36        | 5.59                          |
| Cdh  | 0.95        | 0.96                          |
| Pdh Tj = Tbiv                              | 6.73 kW     | 6.10 kW                       |
| COP Tj = Tbiv                              | 3.23        | 2.29                          |
| Pdh Tj = TOL                               | 6.73 kW     | 6.10 kW                       |
| COP Tj = TOL                               | 3.23        | 2.29                          |
| WTOL                                       | 55 °C       | 55 °C                         |
| Poff                                       | 8 W         | 8 W                           |
| РТО  | 29 W        | 29 W                          |
| PSB  | 29 W        | 29 W                          |
| РСК  | o w         | o w                           |
| Supplementary Heater: Type of energy input | electricity | electricity                   |
|  |             |                               |





| Supplementary Heater: PSUP    | 0.00 kW  | 0.00 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 1760 kWh | 1993 kWh |

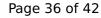
| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |

### Colder Climate

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 160 %           | 116 %              |
| Prated        | 4.25 kW         | 3.92 kW            |
| SCOP          | 4.08            | 2.98               |
| Tbiv          | -20 °C          | -20 °C             |
| TOL           | -20 °C          | -20 °C             |
| Pdh Tj = -7°C | 2.81 kW         | 2.28 kW            |
| COP Tj = -7°C | 3.51            | 2.43               |
| Cdh           | 0.97            | 0.97               |
| Pdh Tj = +2°C | 2.71 kW         | 2.53 kW            |
| COP Tj = +2°C | 5.06            | 3.72               |
| Cdh           | 0.95            | 0.96               |



|  | · · · · · · · · · · · · · · · · · · · |             |
|--|---------------------------------------|-------------|
| Pdh Tj = +7°C                              | 3.10 kW                               | 3.01 kW     |
| $COP Tj = +7^{\circ}C$                     | 6.39                                  | 4.89        |
| Cdh  | 0.95                                  | 0.96        |
| Pdh Tj = 12°C                              | 3.69 kW                               | 3.58 kW     |
| COP Tj = 12°C                              | 7.84                                  | 6.44        |
| Cdh  | 0.94                                  | 0.95        |
| Pdh Tj = Tbiv                              | 4.03 kW                               | 3.71 kW     |
| COP Tj = Tbiv                              | 2.20                                  | 1.59        |
| Pdh Tj = TOL                               | 4.03 kW                               | 3.71 kW     |
| COP Tj = TOL                               | 2.20                                  | 1.59        |
| WTOL                                       | 55 °C                                 | 55 °C       |
| Poff                                       | 8 W                                   | 8 W         |
| РТО  | 29 W                                  | 29 W        |
| PSB  | 29 W                                  | 29 W        |
| PCK  | 0 W                                   | 0 W         |
| Supplementary Heater: Type of energy input | electricity                           | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW                               | 0.00 kW     |
| Annual energy consumption Qhe              | 2567 kWh                              | 3237 kWh    |





| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 53 dB(A)        | 55 dB(A)           |



# Model: HA 6-6 O 230V B3

| General Data             |  |
|--------------------------|--|
| Power supply 1x230V 50Hz |  |

# Heating

| EN 14511-2             |                 |                    |  |
|------------------------|-----------------|--------------------|--|
|                        | Low temperature | Medium temperature |  |
| Heat output            | 5.12 kW         | 5.80 kW            |  |
| El input               | 1.10 kW         | 2.00 kW            |  |
| СОР                    | 4.66            | 2.89               |  |
| Indoor water flow rate | 0.90 m³/h       | 0.64 m³/h          |  |

| EN 14511-4                                 |        |  |
|--|--------|--|
| Shutting off the heat transfer medium flow | passed |  |
| Complete power supply failure              | passed |  |
| Defrost test                               | passed |  |
| Starting and operating test                | passed |  |

## Average Climate



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 50 dB(A)        | 57 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 186 %           | 136 %              |
| Prated        | 6.73 kW         | 6.26 kW            |
| SCOP          | 4.71            | 3.47               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 5.96 kW         | 5.54 kW            |
| COP Tj = -7°C | 3.01            | 2.14               |
| Cdh           | 0.99            | 0.99               |
| Pdh Tj = +2°C | 3.67 kW         | 3.63 kW            |
| COP Tj = +2°C | 4.62            | 3.39               |
| Cdh           | 0.97            | 0.97               |
| Pdh Tj = +7°C | 3.12 kW         | 3.01 kW            |
| COP Tj = +7°C | 6.36            | 4.67               |
| Cdh           | 0.95            | 0.96               |
| Pdh Tj = 12°C | 3.69 kW         | 3.57 kW            |





|  | <u> </u>    |             |
|--|-------------|-------------|
| COP Tj = 12°C                              | 7.82        | 6.19        |
| Cdh  | 0.94        | 0.95        |
| Pdh Tj = Tbiv                              | 5.96 kW     | 5.54 kW     |
| COP Tj = Tbiv                              | 3.01        | 2.14        |
| Pdh Tj = TOL                               | 5.52 kW     | 5.05 kW     |
| COP Tj = TOL                               | 2.77        | 1.90        |
| WTOL                                       | 55 °C       | 55 °C       |
| Poff                                       | 8 W         | 8 W         |
| РТО  | 29 W        | 29 W        |
| PSB  | 29 W        | 29 W        |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | electricity | electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 2951 kWh    | 3731 kWh    |
|  |             |             |

### Warmer Climate

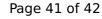
| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 50 dB(A)        | 57 dB(A)           |

| EN 14825 |                 |                    |
|----------|-----------------|--------------------|
|          | Low temperature | Medium temperature |





|                         |         | Title database on 17 Bee 2020 |
|-------------------------|---------|-------------------------------|
| $\eta_{s}$              | 229 %   | 162 %                         |
| Prated                  | 5.31 kW | 5.98 kW                       |
| SCOP                    | 5.81    | 4.12                          |
| Tbiv                    | 2 °C    | 2 °C                          |
| TOL                     | 2 °C    | 2 °C                          |
| Pdh Tj = +2°C           | 5.31 kW | 5.98 kW                       |
| COP Tj = +2°C           | 3.46    | 2.33                          |
| Cdh                     | 0.98    | 0.99                          |
| Pdh Tj = $+7^{\circ}$ C | 4.12 kW | 3.72 kW                       |
| $COP Tj = +7^{\circ}C$  | 5.49    | 3.50                          |
| Cdh                     | 0.96    | 0.97                          |
| Pdh Tj = 12°C           | 3.67 kW | 3.52 kW                       |
| COP Tj = 12°C           | 7.40    | 5.58                          |
| Cdh                     | 0.95    | 0.96                          |
| Pdh Tj = Tbiv           | 5.31 kW | 5.98 kW                       |
| COP Tj = Tbiv           | 3.46    | 2.33                          |
| Pdh Tj = TOL            | 5.31 kW | 5.98 kW                       |
| COP Tj = TOL            | 3.46    | 2.33                          |
| WTOL                    | 55 °C   | 55 °C                         |
| Poff                    | 8 W     | 8 W                           |
| РТО                     | 29 W    | 29 W                          |
|                         |         |                               |





| PSB  | 29 W        | 29 W       |
|--|-------------|------------|
| PCK  | o w         | o w        |
| Supplementary Heater: Type of energy input | electricity | electricty |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW    |
| Annual energy consumption Qhe              | 1222 kWh    | 1938 kWh   |

#### Colder Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 50 dB(A)        | 57 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 162 %           | 121 %              |
| Prated        | 5.97 kW         | 5.51 kW            |
| SCOP          | 4.13            | 3.10               |
| Tbiv          | -15 °C          | -15 °C             |
| TOL           | -20 °C          | -20 °C             |
| Pdh Tj = -7°C | 3.58 kW         | 3.27 kW            |
| COP Tj = -7°C | 3.45            | 2.55               |
| Cdh           | 0.97            | 0.98               |





|  | enerated by the Hi KETI | ANN database on 17 Dec 2020 |
|--|-------------------------|-----------------------------|
| Pdh Tj = +2°C                              | 2.75 kW                 | 2.58 kW                     |
| $COP Tj = +2^{\circ}C$                     | 5.17                    | 3.80                        |
| Cdh  | 0.95                    | 0.96                        |
| Pdh Tj = +7°C                              | 3.16 kW                 | 3.07 kW                     |
| $COP Tj = +7^{\circ}C$                     | 6.64                    | 5.07                        |
| Cdh  | 0.94                    | 0.96                        |
| Pdh Tj = 12°C                              | 3.69 kW                 | 3.60 kW                     |
| COP Tj = 12°C                              | 7.77                    | 6.57                        |
| Cdh  | 0.94                    | 0.95                        |
| Pdh Tj = Tbiv                              | 4.87 kW                 | 4.50 kW                     |
| COP Tj = Tbiv                              | 2.57                    | 1.91                        |
| Pdh Tj = TOL                               | 4.10 kW                 | 3.76 kW                     |
| COP Tj = TOL                               | 2.23                    | 1.58                        |
| WTOL                                       | 55 °C                   | 55 °C                       |
| Poff                                       | 8 W                     | 8 W                         |
| РТО  | 29 W                    | 29 W                        |
| PSB  | 29 W                    | 29 W                        |
| PCK  | 0 W                     | o w                         |
| Supplementary Heater: Type of energy input | electricity             | electricity                 |
| Supplementary Heater: PSUP                 | 0.00 kW                 | 0.00 kW                     |
| Annual energy consumption Qhe              | 3560 kWh                | 4385 kWh                    |
|  |                         |                             |