

#### Page 1 of 79

#### This information was generated by the HP KEYMARK database on 5 Mar 2021

| Summary of          | Aquantia PRO 12 -14 -16               | Reg. No.                | 041-K009-03 |  |
|---------------------|---------------------------------------|-------------------------|-------------|--|
| Certificate Holder  | -                                     |                         |             |  |
| Name                | Frigicoll                             | Frigicoll               |             |  |
| Address             | Blasco de Garay, 4 6                  | Zip                     | 08960       |  |
| City                | Sant Just Desvern                     | Country                 | Spain       |  |
| Certification Body  | BRE Global Limited                    | BRE Global Limited      |             |  |
| Subtype title       | Aquantia PRO 12 -14 -16               | Aquantia PRO 12 -14 -16 |             |  |
| Heat Pump Type      | Outdoor Air/Water                     |                         |             |  |
| Refrigerant         | R32                                   |                         |             |  |
| Mass Of Refrigerant | 1.84 kg                               |                         |             |  |
| Certification Date  | 04.03.2021                            |                         |             |  |
| Testing basis       | Heat Pump Keymark Scheme Rules Rev 08 |                         |             |  |



## Model: KHP-BI 12 DVR2 + KHPM-BI 16 DVR2

| 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 | 12.10 kW        | 12.00 kW           |
| El input    | 2.44 kW         | 3.87 kW            |
| СОР         | 4.95            | 3.10               |

### **Average Climate**



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 64 dB(A)        | 64 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 189 %           | 135 %              |
| Prated        | 12.00 kW        | 11.58 kW           |
| SCOP          | 4.81            | 3.45               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 10.61 kW        | 10.25 kW           |
| COP Tj = -7°C | 2.88            | 2.01               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 6.69 kW         | 6.52 kW            |
| COP Tj = +2°C | 4.65            | 3.44               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 4.44 kW         | 4.36 kW            |
| COP Tj = +7°C | 6.62            | 4.59               |
| Cdh           | 0.90            | 0.90               |





| Pdh Tj = 12°C                                       | 3.74 kW  | 3.30 kW  |
|---|----------|----------|
| COP Tj = 12°C                                       | 8.47     | 6.05     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = Tbiv                                       | 10.61 kW | 10.25 kW |
| COP Tj = Tbiv                                       | 2.88     | 2.01     |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 10.75 kW | 9.10 kW  |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.77     | 1.79     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 14 W     | 14 W     |
| РТО   | 24 W     | 24 W     |
| PSB   | 14 W     | 14 W     |
| PCK   | o w      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 1.26 kW  | 2.50 kW  |
| Annual energy consumption Qhe                       | 5152 kWh | 6927 kWh |
|   |          |          |

### Warmer Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 64 dB(A)        | 64 dB(A)           |





#### EN 14825

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| $\eta_{S}$  | 256 %           | 174 %              |
| Prated  | 11.11 kW        | 12.51 kW           |
| SCOP  | 6.53            | 4.43               |
| Tbiv  | 7 °C            | 7 °C               |
| TOL   | 2 °C            | 2 °C               |
| Pdh Tj = $+2$ °C                                    | 11.26 kW        | 12.08 kW           |
| COP Tj = +2°C                                       | 3.59            | 2.31               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = $+7^{\circ}$ C                             | 7.14 kW         | 8.04 kW            |
| $COP Tj = +7^{\circ}C$                              | 5.87            | 3.86               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = 12°C                                       | 3.56 kW         | 3.75 kW            |
| COP Tj = 12°C                                       | 7.94            | 5.70               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = Tbiv                                       | 7.14 kW         | 8.04 kW            |
| COP Tj = Tbiv                                       | 5.87            | 3.86               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.26 kW        | 12.08 kW           |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.59            | 2.31               |
| WTOL  | 65 °C           | 65 °C              |





| Poff                                       | 14 W     | 14 W     |
|--|----------|----------|
| РТО  | 24 W     | 24 W     |
| PSB  | 14 W     | 14 W     |
| PCK  | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input | electric | electric |
| Supplementary Heater: PSUP                 | 0 kW     | 0.44 kW  |
| Annual energy consumption Qhe              | 2292 kWh | 3776 kWh |

### Colder Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 64 dB(A)        | 64 dB(A)           |

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 160 %           | 118 %              |
| Prated     | 11.38 kW        | 10.32 kW           |
| SCOP       | 4.08            | 3.02               |
| Tbiv       | -15 °C          | -15 °C             |
| TOL        | -22 °C          | -22 °C             |





| This information was gene                             | rated by the Hi KETM | ARK database on 5 Mar 202 |
|---|----------------------|---------------------------|
| Pdh Tj = -7°C   | 7.05 kW              | 6.63 kW                   |
| COP Tj = -7°C   | 3.48                 | 2.63                      |
| Cdh   | 0.90                 | 0.90                      |
| Pdh Tj = +2°C   | 4.68 kW              | 4.07 kW                   |
| COP Tj = +2°C   | 4.96                 | 3.60                      |
| Cdh   | 0.90                 | 0.90                      |
| Pdh Tj = $+7$ °C                                      | 3.14 kW              | 2.78 kW                   |
| $COPTj = +7^{\circ}C$                                 | 6.10                 | 4.54                      |
| Cdh   | 0.90                 | 0.90                      |
| Pdh Tj = 12°C   | 3.57 kW              | 3.33 kW                   |
| COP Tj = 12°C   | 7.87                 | 6.25                      |
| Cdh   | 0.90                 | 0.90                      |
| Pdh Tj = Tbiv   | 9.28 kW              | 8.42 kW                   |
| COP Tj = Tbiv   | 2.59                 | 1.84                      |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh | 7.01 kW              | 4.20 kW                   |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh   | 1.98                 | 1.13                      |
| WTOL  | 65 °C                | 65 °C                     |
| Poff  | 14 W                 | 14 W                      |
| РТО   | 24 W                 | 24 W                      |
| PSB   | 14 W                 | 14 W                      |
| РСК   | o w                  | 0 W                       |
|   |                      |                           |



#### Page 8 of 79

#### This information was generated by the HP KEYMARK database on 5 Mar 2021

| Supplementary Heater: Type of energy input | electric | electric |
|--|----------|----------|
| Supplementary Heater: PSUP                 | 4.37 kW  | 6.12 kW  |
| Annual energy consumption Qhe              | 6870 kWh | 8419 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)              | 9.28     | 8.42     |
| COP Tj = -15°C (if TOL $<$ -20°C)          | 2.59     | 1.84     |
| Cdh  | 0.90     | 0.90     |



## Model: KHP-BI 16 DVR2 + KHPM-BI 16 DVR2

| 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 |

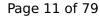
| EN 14511-2                         |          |          |  |
|------------------------------------|----------|----------|--|
| Low temperature Medium temperature |          |          |  |
| Heat output                        | 16.00 kW | 16.00 kW |  |
| El input                           | 3.56 kW  | 5.52 kW  |  |
| СОР                                | 4.50     | 2.90     |  |

#### **Average Climate**



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 182 %           | 133 %              |
| Prated        | 15.21 kW        | 13.02 kW           |
| SCOP          | 4.62            | 3.41               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 13.45 kW        | 11.52 kW           |
| COP Tj = -7°C | 2.72            | 1.99               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 8.57 kW         | 7.18 kW            |
| COP Tj = +2°C | 4.41            | 3.34               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 5.70 kW         | 4.68 kW            |
| COP Tj = +7°C | 6.56            | 4.61               |
| Cdh           | 0.90            | 0.90               |

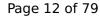




| 3.78 kW  | 3.32 kW   |
|----------|---|
| 8.51     | 6.07  |
| 0.90     | 0.90  |
| 13.45 kW | 11.52 kW  |
| 2.72     | 1.99  |
| 12.52 kW | 10.33 kW  |
| 2.48     | 1.80  |
| 65 °C    | 65 °C   |
| 14 W     | 14 W  |
| 24 W     | 24 W  |
| 14 W     | 14 W  |
| o w      | 0 W   |
| electric | electric  |
| 2.68 kW  | 2.67 kW   |
| 6804 kWh | 7895 kWh  |
|          | 8.51  0.90  13.45 kW  2.72  12.52 kW  2.48  65 °C  14 W  24 W  14 W  0 W  electric  2.68 kW |

### Warmer Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |





#### EN 14825

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| $\eta_{s}$  | 249 %           | 176 %              |
| Prated  | 13.09 kW        | 13.78 kW           |
| SCOP  | 6.33            | 4.48               |
| Tbiv  | 7 °C            | 7 °C               |
| TOL   | 2 °C            | 2 °C               |
| Pdh Tj = +2°C                                       | 13.12 kW        | 13.38 kW           |
| COP Tj = +2°C                                       | 3.35            | 2.29               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = +7°C                                       | 8.42 kW         | 8.86 kW            |
| $COPTj = +7^{\circ}C$                               | 5.36            | 3.84               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = 12°C                                       | 3.88 kW         | 4.06 kW            |
| COP Tj = 12°C                                       | 8.11            | 5.86               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = Tbiv                                       | 8.42 kW         | 8.86 kW            |
| COP Tj = Tbiv                                       | 5.36            | 3.84               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 13.12 kW        | 13.38 kW           |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.35            | 2.29               |
| WTOL  | 65 °C           | 65 °C              |





| Poff                                       | 14 W     | 14 W     |
|--|----------|----------|
| РТО  | 24 W     | 24 W     |
| PSB  | 14 W     | 14 W     |
| PCK  | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input | electric | electric |
| Supplementary Heater: PSUP                 | 0.00 kW  | 0.40 kW  |
| Annual energy consumption Qhe              | 2781 kWh | 4112 kWh |

### Colder Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 158 %           | 122 %              |
| Prated     | 13.76 kW        | 11.79 kW           |
| SCOP       | 4.02            | 3.12               |
| Tbiv       | -15 °C          | -15 °C             |
| TOL        | -22 °C          | -22 °C             |
|            |                 |                    |





| This information was gene                           | rated by the HF KLTMA | TIN Gatabase on 5 Mai 202. |
|---|-----------------------|----------------------------|
| Pdh Tj = -7°C                                       | 8.31 kW               | 7.64 kW                    |
| $COPTj = -7^{\circ}C$                               | 3.37                  | 2.65                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = $+2$ °C                                    | 5.27 kW               | 4.43 kW                    |
| COP Tj = +2°C                                       | 4.86                  | 3.79                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = +7°C                                       | 3.62 kW               | 2.98 kW                    |
| $COPTj = +7^{\circ}C$                               | 6.49                  | 4.81                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = 12°C                                       | 3.35 kW               | 3.43 kW                    |
| COP Tj = 12°C                                       | 7.40                  | 6.29                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = Tbiv                                       | 11.22 kW              | 9.62 kW                    |
| COP Tj = Tbiv                                       | 2.43                  | 1.86                       |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.89 kW               | 5.22 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.97                  | 1.23                       |
| WTOL  | 65 °C                 | 65 °C                      |
| Poff  | 14 W                  | 14 W                       |
| РТО   | 24 W                  | 24 W                       |
| PSB   | 14 W                  | 14 W                       |
| РСК   | 0 W                   | o w                        |
|   | -                     | -                          |



# $$\operatorname{\textit{Page}}\ 15$$ of 79 This information was generated by the HP KEYMARK database on 5 Mar 2021

| Supplementary Heater: Type of energy input | electric | electric |
|--|----------|----------|
| Supplementary Heater: PSUP                 | 4.87 kW  | 6.57 kW  |
| Annual energy consumption Qhe              | 8431 kWh | 9309 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)              | 11.22    | 9.62     |
| COP Tj = -15°C (if TOL $<$ -20°C)          | 2.43     | 1.86     |
| Cdh  | 0.90     | 0.90     |



## Model: KHP-MO 12 DVR2

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

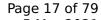
### Heating

| 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                        | 12.10 kW | 11.90 kW |  |
| El input                           | 2.44 kW  | 3.90 kW  |  |
| СОР                                | 4.95     | 3.05     |  |

#### **Average Climate**

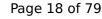
| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |





#### EN 14825

|               | Low temperature | Medium temperature |
|---------------|-----------------|--------------------|
| $\eta_{s}$    | 189 %           | 135 %              |
| Prated        | 12.00 kW        | 11.58 kW           |
| SCOP          | 4.81            | 3.45               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 10.61 kW        | 10.25 kW           |
| COP Tj = -7°C | 2.88            | 2.01               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 6.69 kW         | 6.52 kW            |
| COP Tj = +2°C | 4.65            | 3.44               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 4.44 kW         | 4.36 kW            |
| COP Tj = +7°C | 6.62            | 4.59               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = 12°C | 3.74 kW         | 3.30 kW            |
| COP Tj = 12°C | 8.47            | 6.05               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = Tbiv | 10.61 kW        | 10.25 kW           |
| COP Tj = Tbiv | 2.88            | 2.01               |





| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 10.75 kW | 9.10 kW  |
|---|----------|----------|
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.77     | 1.79     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 14 W     | 14 W     |
| РТО   | 24 W     | 24 W     |
| PSB   | 14 W     | 14 W     |
| PCK   | o w      | o w      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 1.26 kW  | 2.50 kW  |
| Annual energy consumption Qhe                       | 5152 kWh | 6927 kWh |

#### Warmer Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |

| EN 14825                        |          |          |  |
|---------------------------------|----------|----------|--|
| Low temperature Medium temperat |          |          |  |
| $\eta_{s}$                      | 256 %    | 174 %    |  |
| Prated                          | 11.11 kW | 12.51 kW |  |
| SCOP                            | 6.53     | 4.43     |  |





| The transfer |          | THE GALADASE OIL 2 MAI 202. |
|--|----------|-----------------------------|
| Tbiv   | 7 °C     | 7 °C                        |
| TOL  | 2 °C     | 2 °C                        |
| Pdh Tj = +2°C  | 11.26 kW | 12.08 kW                    |
| COP Tj = +2°C  | 3.59     | 2.31                        |
| Cdh  | 0.90     | 0.90                        |
| Pdh Tj = +7°C  | 7.14 kW  | 8.04 kW                     |
| $COP Tj = +7^{\circ}C$   | 5.87     | 3.86                        |
| Cdh  | 0.90     | 0.90                        |
| Pdh Tj = 12°C  | 3.56 kW  | 3.75 kW                     |
| COP Tj = 12°C  | 7.94     | 5.70                        |
| Cdh  | 0.90     | 0.90                        |
| Pdh Tj = Tbiv  | 7.14 kW  | 8.04 kW                     |
| COP Tj = Tbiv  | 5.87     | 3.86                        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh  | 11.26 kW | 12.08 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh  | 3.59     | 2.31                        |
| WTOL   | 65 °C    | 65 °C                       |
| Poff   | 14 W     | 14 W                        |
| РТО  | 24 W     | 24 W                        |
| PSB  | 14 W     | 14 W                        |
| РСК  | o w      | o w                         |
| Supplementary Heater: Type of energy input   | electric | electric                    |



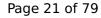


| Supplementary Heater: PSUP    | 0 kW     | 0.44 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 2292 kWh | 3776 kWh |

#### Colder Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |

| EN 14825      |                 |                    |  |
|---------------|-----------------|--------------------|--|
|               | Low temperature | Medium temperature |  |
| $\eta_{s}$    | 160 %           | 118 %              |  |
| Prated        | 11.38 kW        | 10.32 kW           |  |
| SCOP          | 4.08            | 3.02               |  |
| Tbiv          | -15 °C          | -15 °C             |  |
| TOL           | -22 °C          | -22 °C             |  |
| Pdh Tj = -7°C | 7.05 kW         | 6.63 kW            |  |
| COP Tj = -7°C | 3.48            | 2.63               |  |
| Cdh           | 0.90            | 0.90               |  |
| Pdh Tj = +2°C | 4.68 kW         | 4.07 kW            |  |
| COP Tj = +2°C | 4.96            | 3.60               |  |
| Cdh           | 0.90            | 0.90               |  |
|               |                 |                    |  |





| 3.14 kW  | 2.78 kW   |
|----------|---|
|          | 2.70 NVV  |
| 6.10     | 4.54  |
| 0.90     | 0.90  |
| 3.57 kW  | 3.33 kW   |
| 7.87     | 6.25  |
| 0.90     | 0.90  |
| 9.28 kW  | 8.42 kW   |
| 2.59     | 1.84  |
| 7.01 kW  | 4.20 kW   |
| 1.98     | 1.13  |
| 65 °C    | 65 °C   |
| 14 W     | 14 W  |
| 24 W     | 24 W  |
| 14 W     | 14 W  |
| 0 W      | 0 W   |
| electric | electric  |
| 4.37 kW  | 6.12 kW   |
| 6870 kWh | 8419 kWh  |
| 9.28     | 8.42  |
| 2.59     | 1.84  |
| 0.90     | 0.90  |
|          | 0.90 3.57 kW 7.87 0.90 9.28 kW 2.59 7.01 kW 1.98 65 °C 14 W 24 W 14 W 0 W electric 4.37 kW 6870 kWh 9.28 2.59 |



## Model: KHP-MO 14 DVR2

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

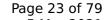
### Heating

| 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 | 14.50 kW        | 13.80 kW           |
| El input    | 3.15 kW         | 4.68 kW            |
| СОР         | 4.60            | 2.95               |

### **Average Climate**

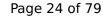
| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |





#### EN 14825

|               | Low temperature | Medium temperature |
|---------------|-----------------|--------------------|
| $\eta_{s}$    | 186 %           | 136 %              |
| Prated        | 13.73 kW        | 12.08 kW           |
| SCOP          | 4.72            | 3.47               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 12.14 kW        | 10.69 kW           |
| COP Tj = -7°C | 2.79            | 2.01               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 7.95 kW         | 6.86 kW            |
| COP Tj = +2°C | 4.52            | 3.43               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 5.20 kW         | 4.64 kW            |
| COP Tj = +7°C | 6.68            | 4.66               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = 12°C | 3.76 kW         | 3.32 kW            |
| COP Tj = 12°C | 8.52            | 6.13               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = Tbiv | 12.14 kW        | 10.69 kW           |
| COP Tj = Tbiv | 2.79            | 2.01               |





| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.48 kW | 9.19 kW  |
|---|----------|----------|
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.59     | 1.76     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 14 W     | 14 W     |
| РТО   | 24 W     | 24 W     |
| PSB   | 14 W     | 14 W     |
| PCK   | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 2.23 kW  | 2.91 kW  |
| Annual energy consumption Qhe                       | 6012 kWh | 7202 kWh |
|   |          |          |

### Warmer Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |

| EN 14825        |                                |  |
|-----------------|--------------------------------|--|
| Low temperature | Medium temperature             |  |
| 260 %           | 177 %                          |  |
| 12.11 kW        | 13.74 kW                       |  |
| 6.63            | 4.49                           |  |
|                 | Low temperature 260 % 12.11 kW |  |





|   | The state of the s | THE GALADASE OIL 2 Mai 202. |
|---|--|-----------------------------|
| Tbiv  | 7 °C   | 7 °C                        |
| TOL   | 2 °C   | 2 °C                        |
| Pdh Tj = +2°C                                       | 12.04 kW   | 13.05 kW                    |
| COP Tj = +2°C                                       | 3.44   | 2.20                        |
| Cdh   | 0.90   | 0.90                        |
| Pdh Tj = +7°C                                       | 7.78 kW  | 8.83 kW                     |
| $COP Tj = +7^{\circ}C$                              | 5.84   | 3.91                        |
| Cdh   | 0.90   | 0.90                        |
| Pdh Tj = 12°C                                       | 3.75 kW  | 4.09 kW                     |
| COP Tj = 12°C                                       | 8.25   | 5.90                        |
| Cdh   | 0.90   | 0.90                        |
| Pdh Tj = Tbiv                                       | 7.78 kW  | 8.83 kW                     |
| COP Tj = Tbiv                                       | 5.84   | 3.91                        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 12.04 kW   | 13.05 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.44   | 2.20                        |
| WTOL  | 65 °C  | 65 °C                       |
| Poff  | 14 W   | 14 W                        |
| РТО   | 24 W   | 24 W                        |
| PSB   | 14 W   | 14 W                        |
| РСК   | o w  | o w                         |
| Supplementary Heater: Type of energy input          | electric   | electric                    |





| Supplementary Heater: PSUP    | 0.07 kW  | 0.69 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 2457 kWh | 4088 kWh |

### Colder Climate

| EN 12102-1                         |          |          |  |
|------------------------------------|----------|----------|--|
| Low temperature Medium temperature |          |          |  |
| Sound power level outdoor          | 65 dB(A) | 65 dB(A) |  |

| EN 14825               |                 |                    |
|------------------------|-----------------|--------------------|
|                        | Low temperature | Medium temperature |
| $\eta_{s}$             | 160 %           | 119 %              |
| Prated                 | 12.64 kW        | 10.97 kW           |
| SCOP                   | 4.07            | 3.05               |
| Tbiv                   | -15 °C          | -15 °C             |
| TOL                    | -22 °C          | -22 °C             |
| Pdh Tj = -7°C          | 7.97 kW         | 6.89 kW            |
| $COP Tj = -7^{\circ}C$ | 3.44            | 2.66               |
| Cdh                    | 0.90            | 0.90               |
| Pdh Tj = +2°C          | 5.05 kW         | 4.32 kW            |
| COP Tj = +2°C          | 4.92            | 3.66               |
| Cdh                    | 0.90            | 0.90               |
|                        |                 |                    |





# $$\operatorname{\textit{Page}}\xspace$ 27 of 79 This information was generated by the HP KEYMARK database on 5 Mar 2021

| Pdh Tj = +7°C                                       | 3.16 kW  | 3.06 kW  |
|---|----------|----------|
| COP Tj = +7°C                                       | 6.11     | 4.72     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = 12°C                                       | 3.58 kW  | 3.33 kW  |
| COP Tj = 12°C                                       | 7.82     | 6.25     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = Tbiv                                       | 10.31 kW | 8.95 kW  |
| COP Tj = Tbiv                                       | 2.53     | 1.79     |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.57 kW  | 4.20 kW  |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.92     | 1.13     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 14 W     | 14 W     |
| РТО   | 24 W     | 24 W     |
| PSB   | 14 W     | 14 W     |
| PCK   | o w      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 5.07 kW  | 6.77 kW  |
| Annual energy consumption Qhe                       | 7667 kWh | 8866 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)                       | 10.31    | 8.95     |
| COP Tj = -15°C (if TOL<-20°C)                       | 2.53     | 1.79     |
| Cdh   | 0.90     | 0.90     |



## Model: KHP-MO 16 DVR2

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

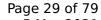
### Heating

| 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                        | 15.90 kW | 16.00 kW |  |
| El input                           | 3.53 kW  | 5.61 kW  |  |
| СОР                                | 4.50     | 2.85     |  |

### **Average Climate**

| EN 12102-1                         |          |          |  |
|------------------------------------|----------|----------|--|
| Low temperature Medium temperature |          |          |  |
| Sound power level outdoor          | 68 dB(A) | 68 dB(A) |  |





#### EN 14825

|               | Low temperature | Medium temperature |
|---------------|-----------------|--------------------|
| $\eta_{s}$    | 182 %           | 133 %              |
| Prated        | 15.21 kW        | 13.02 kW           |
| SCOP          | 4.62            | 3.41               |
| Гbіv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 13.45 kW        | 11.52 kW           |
| COP Tj = -7°C | 2.72            | 1.99               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 8.57 kW         | 7.18 kW            |
| COP Tj = +2°C | 4.41            | 3.34               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 5.70 kW         | 4.68 kW            |
| COP Tj = +7°C | 6.56            | 4.61               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = 12°C | 3.78 kW         | 3.32 kW            |
| COP Tj = 12°C | 8.51            | 6.07               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = Tbiv | 13.45 kW        | 11.52 kW           |
| COP Tj = Tbiv | 2.72            | 1.99               |



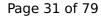


|   | -        |          |
|---|----------|----------|
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 12.52 kW | 10.33 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.48     | 1.80     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 14 W     | 14 W     |
| РТО   | 24 W     | 24 W     |
| PSB   | 14 W     | 14 W     |
| PCK   | 0 W      | o w      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 2.68 kW  | 2.67 kW  |
| Annual energy consumption Qhe                       | 6804 kWh | 7895 kWh |
|   |          |          |

### Warmer Climate

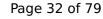
| EN 12102-1                         |          |          |
|------------------------------------|----------|----------|
| Low temperature Medium temperature |          |          |
| Sound power level outdoor          | 68 dB(A) | 68 dB(A) |

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 249 %           | 176 %              |
| Prated     | 13.09 kW        | 13.78 kW           |
| SCOP       | 6.33            | 4.48               |





|   |          | THE GALADASE OIL 2 Mai 202. |
|---|----------|-----------------------------|
| Tbiv  | 7 °C     | 7 °C                        |
| TOL   | 2 °C     | 2 °C                        |
| Pdh Tj = +2°C                                       | 13.12 kW | 13.38 kW                    |
| COP Tj = +2°C                                       | 3.35     | 2.29                        |
| Cdh   | 0.90     | 0.90                        |
| Pdh Tj = +7°C                                       | 8.42 kW  | 8.86 kW                     |
| $COP Tj = +7^{\circ}C$                              | 5.36     | 3.84                        |
| Cdh   | 0.90     | 0.90                        |
| Pdh Tj = 12°C                                       | 3.88 kW  | 4.06 kW                     |
| COP Tj = 12°C                                       | 8.11     | 5.86                        |
| Cdh   | 0.90     | 0.90                        |
| Pdh Tj = Tbiv                                       | 8.42 kW  | 8.86 kW                     |
| COP Tj = Tbiv                                       | 5.36     | 3.84                        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 13.12 kW | 13.38 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.35     | 2.29                        |
| WTOL  | 65 °C    | 65 °C                       |
| Poff  | 14 W     | 14 W                        |
| РТО   | 24 W     | 24 W                        |
| PSB   | 14 W     | 14 W                        |
| РСК   | o w      | o w                         |
| Supplementary Heater: Type of energy input          | electric | electric                    |



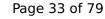


| Supplementary Heater: PSUP    | 0.00 kW  | 0.40 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 2781 kWh | 4112 kWh |

### Colder Climate

| EN 12102-1                |                 |                    |  |
|---------------------------|-----------------|--------------------|--|
|                           | Low temperature | Medium temperature |  |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |  |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 158 %           | 122 %              |
| Prated        | 13.76 kW        | 11.79 kW           |
| SCOP          | 4.02            | 3.12               |
| Tbiv          | -15 °C          | -15 °C             |
| TOL           | -22 °C          | -22 °C             |
| Pdh Tj = -7°C | 8.31 kW         | 7.64 kW            |
| COP Tj = -7°C | 3.37            | 2.65               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 5.27 kW         | 4.43 kW            |
| COP Tj = +2°C | 4.86            | 3.79               |
| Cdh           | 0.90            | 0.90               |
|               | 1               |                    |





|   | died by the Hi Kerma | THE GUILDUSC OIL S MAI 202 |
|---|----------------------|----------------------------|
| Pdh Tj = $+7^{\circ}$ C                             | 3.62 kW              | 2.98 kW                    |
| $COP Tj = +7^{\circ}C$                              | 6.49                 | 4.81                       |
| Cdh   | 0.90                 | 0.90                       |
| Pdh Tj = 12°C                                       | 3.35 kW              | 3.43 kW                    |
| COP Tj = 12°C                                       | 7.40                 | 6.29                       |
| Cdh   | 0.90                 | 0.90                       |
| Pdh Tj = Tbiv                                       | 11.22 kW             | 9.62 kW                    |
| COP Tj = Tbiv                                       | 2.43                 | 1.86                       |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.89 kW              | 5.22 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.97                 | 1.23                       |
| WTOL  | 65 °C                | 65 °C                      |
| Poff  | 14 W                 | 14 W                       |
| РТО   | 24 W                 | 24 W                       |
| PSB   | 14 W                 | 14 W                       |
| PCK   | o w                  | o w                        |
| Supplementary Heater: Type of energy input          | electric             | electric                   |
| Supplementary Heater: PSUP                          | 4.87 kW              | 6.57 kW                    |
| Annual energy consumption Qhe                       | 8431 kWh             | 9309 kWh                   |
| Pdh Tj = -15°C (if TOL<-20°C)                       | 11.22                | 9.62                       |
| COP Tj = $-15$ °C (if TOL< $-20$ °C)                | 2.43                 | 1.86                       |
| Cdh   | 0.90                 | 0.90                       |
|   | *                    | •                          |



## Model: KHP-BI 12 DTR2 + KHPM-BI 16 DVR2

| General Data |             |
|--------------|-------------|
| Power supply | 3x400V 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 |  |

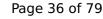
| EN 14511-2  |                 |                    |  |
|-------------|-----------------|--------------------|--|
|             | Low temperature | Medium temperature |  |
| Heat output | 12.10 kW        | 12.00 kW           |  |
| El input    | 2.44 kW         | 3.87 kW            |  |
| СОР         | 4.95            | 3.10               |  |

#### **Average Climate**



| EN 12102-1                |                 |                    |  |
|---------------------------|-----------------|--------------------|--|
|                           | Low temperature | Medium temperature |  |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |  |
| Sound power level outdoor | 64 dB(A)        | 64 dB(A)           |  |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 189 %           | 135 %              |
| Prated        | 12.00 kW        | 11.58 kW           |
| SCOP          | 4.81            | 3.45               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 10.61 kW        | 10.25 kW           |
| COP Tj = -7°C | 2.88            | 2.01               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 6.69 kW         | 6.52 kW            |
| COP Tj = +2°C | 4.65            | 3.44               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 4.44 kW         | 4.36 kW            |
| COP Tj = +7°C | 6.62            | 4.59               |
| Cdh           | 0.90            | 0.90               |





| Pdh Tj = 12°C                                       | 3.74 kW  | 3.30 kW  |
|---|----------|----------|
| COP Tj = 12°C                                       | 8.47     | 6.05     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = Tbiv                                       | 10.61 kW | 10.25 kW |
| COP Tj = Tbiv                                       | 2.88     | 2.01     |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 10.75 kW | 9.10 kW  |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.77     | 1.79     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 20 W     | 20 W     |
| РТО   | 30 W     | 30 W     |
| PSB   | 20 W     | 20 W     |
| PCK   | o w      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 1.26 kW  | 2.50 kW  |
| Annual energy consumption Qhe                       | 5153 kWh | 6928 kWh |
|   |          |          |

### Warmer Climate

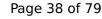
| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 64 dB(A)        | 64 dB(A)           |





#### EN 14825

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| $\eta_{s}$  | 256 %           | 174 %              |
| Prated  | 11.11 kW        | 12.51 kW           |
| SCOP  | 6.53            | 4.42               |
| Tbiv  | 7 °C            | 7 °C               |
| TOL   | 2 °C            | 2 °C               |
| Pdh Tj = +2°C   | 11.26 kW        | 12.08 kW           |
| COP Tj = +2°C   | 3.59            | 2.31               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = +7°C   | 7.14 kW         | 8.04 kW            |
| COP Tj = +7°C   | 5.87            | 3.86               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = 12°C   | 3.56 kW         | 3.75 kW            |
| COP Tj = 12°C   | 7.94            | 5.70               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = Tbiv   | 7.14 kW         | 8.04 kW            |
| COP Tj = Tbiv   | 5.87            | 3.86               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh | 11.26 kW        | 12.08 kW           |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh   | 3.59            | 2.31               |
| WTOL  | 65 °C           | 65 °C              |





| Poff                                       | 20 W     | 20 W     |
|--|----------|----------|
| PTO  | 30 W     | 30 W     |
| PSB  | 20 W     | 20 W     |
| PCK  | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input | electric | electric |
| Supplementary Heater: PSUP                 | 0.00 kW  | 0.44 kW  |
| Annual energy consumption Qhe              | 2296 kWh | 3780 kWh |

### Colder Climate

| EN 12102-1                |                 |                    |  |
|---------------------------|-----------------|--------------------|--|
|                           | Low temperature | Medium temperature |  |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |  |
| Sound power level outdoor | 64 dB(A)        | 64 dB(A)           |  |

|                 | <u> </u>                   |
|-----------------|----------------------------|
| Low temperature | Medium temperature         |
| 160 %           | 118 %                      |
| 11.38 kW        | 10.32 kW                   |
| 4.08            | 3.02                       |
| -15 °C          | -15 °C                     |
| -22 °C          | -22 °C                     |
|                 | 11.38 kW<br>4.08<br>-15 °C |





| This information was gener                          | <u> </u>     |         |
|---|--------------|---------|
| Pdh Tj = $-7^{\circ}$ C                             | 7.05 kW      | 6.63 kW |
| $COP Tj = -7^{\circ}C$                              | 3.48         | 2.63    |
| Cdh   | 0.90         | 0.90    |
| Pdh Tj = $+2^{\circ}$ C                             | 4.68 kW      | 4.07 kW |
| COP Tj = +2°C                                       | 4.96         | 3.60    |
| Cdh   | 0.90         | 0.90    |
| Pdh Tj = $+7^{\circ}$ C                             | 3.14 kW      | 2.78 kW |
| $COP Tj = +7^{\circ}C$                              | 6.10         | 4.54    |
| Cdh   | 0.90         | 0.90    |
| Pdh Tj = 12°C                                       | 3.57 kW      | 3.33 kW |
| COP Tj = 12°C                                       | 7.87         | 6.25    |
| Cdh   | 0.90         | 0.90    |
| Pdh Tj = Tbiv                                       | 9.28 kW      | 8.42 kW |
| COP Tj = Tbiv                                       | 2.59         | 1.84    |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.01 kW      | 4.20 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.98         | 1.13    |
| WTOL  | 65 °C        | 65 °C   |
| Poff  | 20 W         | 20 W    |
| РТО   | 30 W         | 30 W    |
| PSB   | 20 W         | 20 W    |
| РСК   | 0 W          | 0 W     |
|   | <del>'</del> | -       |



#### Page 40 of 79

#### This information was generated by the HP KEYMARK database on 5 Mar 2021

| Supplementary Heater: Type of energy input | electric | electric |
|--|----------|----------|
| Supplementary Heater: PSUP                 | 4.37 kW  | 6.12 kW  |
| Annual energy consumption Qhe              | 6871 kWh | 8420 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)              | 9.28     | 8.42     |
| COP Tj = -15°C (if TOL $<$ -20°C)          | 2.59     | 1.84     |
| Cdh  | 0.90     | 0.90     |



## Model: KHP-BI 14 DTR2 + KHPM-BI 16 DVR2

| General Data             |  |
|--------------------------|--|
| Power supply 3x400V 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 | 14.50 kW        | 13.80 kW           |  |
| El input    | 3.09 kW         | 4.60 kW            |  |
| СОР         | 4.70            | 3.00               |  |

### **Average Climate**



| EN 12102-1                |                 |                    |  |
|---------------------------|-----------------|--------------------|--|
|                           | Low temperature | Medium temperature |  |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |  |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |  |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 186 %           | 136 %              |
| Prated        | 13.73 kW        | 12.08 kW           |
| SCOP          | 4.72            | 3.47               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 12.14 kW        | 10.69 kW           |
| COP Tj = -7°C | 2.79            | 2.01               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 7.95 kW         | 6.86 kW            |
| COP Tj = +2°C | 4.52            | 3.43               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 5.20 kW         | 4.64 kW            |
| COP Tj = +7°C | 6.68            | 4.66               |
| Cdh           | 0.90            | 0.90               |





| Pdh Tj = 12°C                                       | 3.76 kW  | 3.32 kW  |
|---|----------|----------|
| COP Tj = 12°C                                       | 8.52     | 6.13     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = Tbiv                                       | 12.14 kW | 10.69 kW |
| COP Tj = Tbiv                                       | 2.79     | 2.01     |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.48 kW | 9.19 kW  |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.59     | 1.76     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 20 W     | 20 W     |
| РТО   | 30 W     | 30 W     |
| PSB   | 20 W     | 20 W     |
| PCK   | o w      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 2.23 kW  | 2.91 kW  |
| Annual energy consumption Qhe                       | 6013 kWh | 7203 kWh |

### Warmer Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |





#### EN 14825

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| $\eta_{s}$  | 260 %           | 176 %              |
| Prated  | 12.11 kW        | 13.74 kW           |
| SCOP  | 6.63            | 4.48               |
| Tbiv  | 7 °C            | 7 °C               |
| TOL   | 2 °C            | 2 °C               |
| Pdh Tj = +2°C   | 12.04 kW        | 13.05 kW           |
| COP Tj = +2°C   | 3.44            | 2.20               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = $+7^{\circ}$ C                               | 7.78 kW         | 8.83 kW            |
| $COP Tj = +7^{\circ}C$                                | 5.84            | 3.91               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = 12°C   | 3.75 kW         | 4.09 kW            |
| COP Tj = 12°C   | 8.25            | 5.90               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = Tbiv   | 7.78 kW         | 8.83 kW            |
| COP Tj = Tbiv   | 5.84            | 3.91               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh | 12.04 kW        | 13.05 kW           |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh   | 3.44            | 2.20               |
| WTOL  | 65 °C           | 65 °C              |





| Poff                                       | 20 W     | 20 W     |
|--|----------|----------|
| РТО  | 30 W     | 30 W     |
| PSB  | 20 W     | 20 W     |
| PCK  | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input | electric | electric |
| Supplementary Heater: PSUP                 | 0.07 kW  | 0 kW     |
| Annual energy consumption Qhe              | 2462 kWh | 4092 kWh |

### Colder Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |

| EN 14825        |  |  |
|-----------------|--|--|
| Low temperature | Medium temperature                             |  |
| 160 %           | 119 %  |  |
| 12.64 kW        | 10.97 kW                                       |  |
| 4.06            | 3.05   |  |
| -15 °C          | -15 °C   |  |
| -22 °C          | -22 °C   |  |
|                 | Low temperature  160 %  12.64 kW  4.06  -15 °C |  |





| IIIIS IIIIOIIIIatioii was gene                      | rated by the HF KLTMP | TIN Gatabase on 5 Mai 202. |
|---|-----------------------|----------------------------|
| Pdh Tj = -7°C                                       | 7.97 kW               | 6.89 kW                    |
| $COPTj = -7^{\circ}C$                               | 3.44                  | 2.66                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = +2°C                                       | 5.05 kW               | 4.32 kW                    |
| COP Tj = +2°C                                       | 4.92                  | 3.66                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = +7°C                                       | 3.16 kW               | 3.06 kW                    |
| $COPTj = +7^{\circ}C$                               | 6.11                  | 4.72                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = 12°C                                       | 3.58 kW               | 3.33 kW                    |
| COP Tj = 12°C                                       | 7.82                  | 6.25                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = Tbiv                                       | 10.31 kW              | 8.95 kW                    |
| COP Tj = Tbiv                                       | 2.53                  | 1.79                       |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.57 kW               | 4.20 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.92                  | 1.13                       |
| WTOL  | 65 °C                 | 65 °C                      |
| Poff  | 20 W                  | 20 W                       |
| РТО   | 30 W                  | 30 W                       |
| PSB   | 20 W                  | 20 W                       |
| РСК   | 0 W                   | o w                        |
|   | !                     | -                          |



# $$\operatorname{\textit{Page}}\xspace$ 47 of 79 This information was generated by the HP KEYMARK database on 5 Mar 2021

| Supplementary Heater: Type of energy input | electric | electric |
|--|----------|----------|
| Supplementary Heater: PSUP                 | 5.07 kW  | 6.77 kW  |
| Annual energy consumption Qhe              | 7667 kWh | 8867 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)              | 10.31    | 8.95     |
| COP Tj = -15°C (if TOL $<$ -20°C)          | 2.53     | 1.79     |
| Cdh  | 0.90     | 0.90     |

## Model: KHP-BI 16 DTR2 + KHPM-BI 16 DVR2

| General Data |             |
|--------------|-------------|
| Power supply | 3x400V 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 | 16.00 kW        | 16.00 kW           |
| El input    | 3.56 kW         | 5.52 kW            |
| СОР         | 4.50            | 2.90               |

### **Average Climate**



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 182 %           | 133 %              |
| Prated        | 15.21 kW        | 13.02 kW           |
| SCOP          | 4.62            | 3.41               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 13.45 kW        | 11.52 kW           |
| COP Tj = -7°C | 2.72            | 1.99               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 8.57 kW         | 7.18 kW            |
| COP Tj = +2°C | 4.41            | 3.34               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 5.70 kW         | 4.68 kW            |
| COP Tj = +7°C | 6.56            | 4.61               |
| Cdh           | 0.90            | 0.90               |





|   | <u> </u> |          |
|---|----------|----------|
| Pdh Tj = 12°C                                       | 3.78 kW  | 3.32 kW  |
| COP Tj = 12°C                                       | 8.51     | 6.07     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = Tbiv                                       | 13.45 kW | 11.52 kW |
| COP Tj = Tbiv                                       | 2.72     | 1.99     |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 12.52 kW | 10.33 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.48     | 1.80     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 20 W     | 20 W     |
| РТО   | 30 W     | 30 W     |
| PSB   | 20 W     | 20 W     |
| PCK   | o w      | o w      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 2.68 kW  | 2.67 kW  |
| Annual energy consumption Qhe                       | 6805 kWh | 7896 kWh |
|   |          |          |

### Warmer Climate

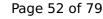
| EN 12102-1                |                 |                    |  |
|---------------------------|-----------------|--------------------|--|
|                           | Low temperature | Medium temperature |  |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |  |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |  |





#### EN 14825

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| $\eta_{s}$  | 248 %           | 176 %              |
| Prated  | 13.09 kW        | 13.78 kW           |
| SCOP  | 6.33            | 4.47               |
| Tbiv  | 7 °C            | 7 °C               |
| TOL   | 2 °C            | 2 °C               |
| Pdh Tj = +2°C                                       | 13.12 kW        | 13.38 kW           |
| COP Tj = +2°C                                       | 3.35            | 2.29               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = +7°C                                       | 8.42 kW         | 8.86 kW            |
| $COPTj = +7^{\circ}C$                               | 5.36            | 3.84               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = 12°C                                       | 3.88 kW         | 4.06 kW            |
| COP Tj = 12°C                                       | 8.11            | 5.86               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = Tbiv                                       | 8.42 kW         | 8.86 kW            |
| COP Tj = Tbiv                                       | 5.36            | 3.84               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 13.12 kW        | 13.38 kW           |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.35            | 2.29               |
| WTOL  | 65 °C           | 65 °C              |



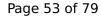


| Poff                                       | 20 W     | 20 W     |
|--|----------|----------|
| PTO  | 30 W     | 30 W     |
| PSB  | 20 W     | 20 W     |
| PCK  | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input | electric | electric |
| Supplementary Heater: PSUP                 | 0.00 kW  | 0.40 kW  |
| Annual energy consumption Qhe              | 2786 kWh | 4116 kWh |

### Colder Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 158 %           | 122 %              |
| Prated     | 13.76 kW        | 11.79 kW           |
| SCOP       | 4.02            | 3.12               |
| Tbiv       | -15 °C          | -15 °C             |
| TOL        | -22 °C          | -22 °C             |





|   | ated by the HF KETMA |         |
|---|----------------------|---------|
| Pdh Tj = $-7^{\circ}$ C                             | 8.31 kW              | 7.64 kW |
| $COP Tj = -7^{\circ}C$                              | 3.37                 | 2.65    |
| Cdh   | 0.90                 | 0.90    |
| Pdh Tj = +2°C                                       | 5.27 kW              | 4.43 kW |
| COP Tj = +2°C                                       | 4.86                 | 3.79    |
| Cdh   | 0.90                 | 0.90    |
| Pdh Tj = $+7^{\circ}$ C                             | 3.62 kW              | 2.98 kW |
| $COPTj = +7^{\circ}C$                               | 6.49                 | 4.81    |
| Cdh   | 0.90                 | 0.90    |
| Pdh Tj = 12°C                                       | 3.35 kW              | 3.43 kW |
| COP Tj = 12°C                                       | 7.40                 | 6.29    |
| Cdh   | 0.90                 | 0.90    |
| Pdh Tj = Tbiv                                       | 11.22 kW             | 9.62 kW |
| COP Tj = Tbiv                                       | 2.43                 | 1.86    |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.89 kW              | 5.22 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.97                 | 1.23    |
| WTOL  | 65 °C                | 65 °C   |
| Poff  | 20 W                 | 20 W    |
| РТО   | 30 W                 | 30 W    |
| PSB   | 20 W                 | 20 W    |
| РСК   | o w                  | o w     |
|   |                      |         |



# $$\operatorname{\textit{Page}}\xspace$ 54 of 79 This information was generated by the HP KEYMARK database on 5 Mar 2021

| Supplementary Heater: Type of energy input | electric | electric |
|--|----------|----------|
| Supplementary Heater: PSUP                 | 4.87 kW  | 6.57 kW  |
| Annual energy consumption Qhe              | 8431 kWh | 9310 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)              | 11.22    | 9.62     |
| COP Tj = -15°C (if TOL $<$ -20°C)          | 2.43     | 1.86     |
| Cdh  | 0.90     | 0.90     |



## Model: KHP-MO 12 DTR2

| General Data             |  |
|--------------------------|--|
| Power supply 3x400V 50Hz |  |

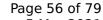
### Heating

| 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 | 12.10 kW        | 11.90 kW           |
| El input    | 2.44 kW         | 3.90 kW            |
| СОР         | 4.95            | 3.05               |

### **Average Climate**

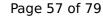
| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |





#### EN 14825

|                | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| η <sub>s</sub> | 189 %           | 135 %              |
| Prated         | 12.00 kW        | 11.58 kW           |
| SCOP           | 4.81            | 3.45               |
| Tbiv           | -7 °C           | -7 °C              |
| TOL            | -10 °C          | -10 °C             |
| Pdh Tj = -7°C  | 10.61 kW        | 10.25 kW           |
| COP Tj = -7°C  | 2.88            | 2.01               |
| Cdh            | 0.90            | 0.90               |
| Pdh Tj = +2°C  | 6.69 kW         | 6.52 kW            |
| COP Tj = +2°C  | 4.65            | 3.44               |
| Cdh            | 0.90            | 0.90               |
| Pdh Tj = +7°C  | 4.44 kW         | 4.36 kW            |
| COP Tj = +7°C  | 6.62            | 4.59               |
| Cdh            | 0.90            | 0.90               |
| Pdh Tj = 12°C  | 3.74 kW         | 3.30 kW            |
| COP Tj = 12°C  | 8.47            | 6.05               |
| Cdh            | 0.90            | 0.90               |
| Pdh Tj = Tbiv  | 10.61 kW        | 10.25 kW           |
| COP Tj = Tbiv  | 2.88            | 2.01               |





| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh       2.77       1.79         WTOL       65 °C       65 °C         Poff       20 W       20 W         PTO       30 W       30 W         PSB       20 W       20 W         PCK       0 W       0 W         Supplementary Heater: Type of energy input       electric       electric         Supplementary Heater: PSUP       1.26 kW       2.50 kW  |   |          |          |
|--|---|----------|----------|
| WTOL  65 °C  65 °C  20 W  20 W  PTO  30 W  30 W  PSB  20 W  20 W  PCK  0 W  0 W  Supplementary Heater: Type of energy input  electric  supplementary Heater: PSUP  1.26 kW  20 W  20 W | Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 10.75 kW | 9.10 kW  |
| Poff 20 W 20 W  PTO 30 W 30 W  PSB 20 W 20 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input electric electric  Supplementary Heater: PSUP 1.26 kW 2.50 kW  | COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.77     | 1.79     |
| PTO 30 W 30 W  PSB 20 W 20 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input electric electric  Supplementary Heater: PSUP 1.26 kW 2.50 kW  | WTOL  | 65 °C    | 65 °C    |
| PSB 20 W 20 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input electric electric  Supplementary Heater: PSUP 1.26 kW 2.50 kW   | Poff  | 20 W     | 20 W     |
| PCK 0 W 0 W  Supplementary Heater: Type of energy input electric electric  Supplementary Heater: PSUP 1.26 kW 2.50 kW  | РТО   | 30 W     | 30 W     |
| Supplementary Heater: Type of energy input electric electric  Supplementary Heater: PSUP 1.26 kW 2.50 kW   | PSB   | 20 W     | 20 W     |
| Supplementary Heater: PSUP 1.26 kW 2.50 kW   | PCK   | o w      | 0 W      |
|  | Supplementary Heater: Type of energy input          | electric | electric |
| Annual energy consumption Qhe 5153 kWh 6928 kWh  | Supplementary Heater: PSUP                          | 1.26 kW  | 2.50 kW  |
|  | Annual energy consumption Qhe                       | 5153 kWh | 6928 kWh |

### Warmer Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{S}$ | 256 %           | 174 %              |
| Prated     | 11.11 kW        | 12.51 kW           |
| SCOP       | 6.53            | 4.42               |
|            | ·               |                    |





| The transfer |          | THE UNITED ASE OF SHALL 202. |
|--|----------|------------------------------|
| Tbiv   | 7 °C     | 7 °C                         |
| TOL  | 2 °C     | 2 °C                         |
| Pdh Tj = +2°C  | 11.26 kW | 12.08 kW                     |
| COP Tj = +2°C  | 3.59     | 2.31                         |
| Cdh  | 0.90     | 0.90                         |
| Pdh Tj = +7°C  | 7.14 kW  | 8.04 kW                      |
| $COP Tj = +7^{\circ}C$   | 5.87     | 3.86                         |
| Cdh  | 0.90     | 0.90                         |
| Pdh Tj = 12°C  | 3.56 kW  | 3.75 kW                      |
| COP Tj = 12°C  | 7.94     | 5.70                         |
| Cdh  | 0.90     | 0.90                         |
| Pdh Tj = Tbiv  | 7.14 kW  | 8.04 kW                      |
| COP Tj = Tbiv  | 5.87     | 3.86                         |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh  | 11.26 kW | 12.08 kW                     |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh  | 3.59     | 2.31                         |
| WTOL   | 65 °C    | 65 °C                        |
| Poff   | 20 W     | 20 W                         |
| РТО  | 30 W     | 30 W                         |
| PSB  | 20 W     | 20 W                         |
| РСК  | o w      | o w                          |
| Supplementary Heater: Type of energy input   | electric | electric                     |





| Supplementary Heater: PSUP    | 0.00 kW  | 0.44 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 2296 kWh | 3780 kWh |

### Colder Climate

| EN 12102-1                         |          |          |  |
|------------------------------------|----------|----------|--|
| Low temperature Medium temperature |          |          |  |
| Sound power level outdoor          | 65 dB(A) | 65 dB(A) |  |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 160 %           | 118 %              |
| Prated        | 11.38 kW        | 10.32 kW           |
| SCOP          | 4.08            | 3.02               |
| Tbiv          | -15 °C          | -15 °C             |
| TOL           | -22 °C          | -22 °C             |
| Pdh Tj = -7°C | 7.05 kW         | 6.63 kW            |
| COP Tj = -7°C | 3.48            | 2.63               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 4.68 kW         | 4.07 kW            |
| COP Tj = +2°C | 4.96            | 3.60               |
| Cdh           | 0.90            | 0.90               |
|               | '               | 1                  |





| 1   |          | The database of 5 Mai 2021 |
|---|----------|----------------------------|
| Pdh Tj = +7°C                                       | 3.14 kW  | 2.78 kW                    |
| $COP Tj = +7^{\circ}C$                              | 6.10     | 4.54                       |
| Cdh   | 0.90     | 0.90                       |
| Pdh Tj = 12°C                                       | 3.57 kW  | 3.33 kW                    |
| COP Tj = 12°C                                       | 7.87     | 6.25                       |
| Cdh   | 0.90     | 0.90                       |
| Pdh Tj = Tbiv                                       | 9.28 kW  | 8.42 kW                    |
| COP Tj = Tbiv                                       | 2.59     | 1.84                       |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.01 kW  | 4.20 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.98     | 1.13                       |
| WTOL  | 65 °C    | 65 °C                      |
| Poff  | 14 W     | 14 W                       |
| РТО   | 30 W     | 30 W                       |
| PSB   | 20 W     | 20 W                       |
| PCK   | o w      | 0 W                        |
| Supplementary Heater: Type of energy input          | electric | electric                   |
| Supplementary Heater: PSUP                          | 4.37 kW  | 6.12 kW                    |
| Annual energy consumption Qhe                       | 6871 kWh | 8420 kWh                   |
| Pdh Tj = -15°C (if TOL<-20°C)                       | 9.28     | 8.42                       |
| COP Tj = $-15$ °C (if TOL< $-20$ °C)                | 2.59     | 1.84                       |
| Cdh   | 0.90     | 0.90                       |



## Model: KHP-MO 14 DTR2

| General Data             |  |
|--------------------------|--|
| Power supply 3x400V 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 | 14.50 kW        | 13.80 kW           |
| El input    | 3.15 kW         | 4.68 kW            |
| СОР         | 4.60            | 2.95               |

### **Average Climate**

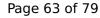
| EN 12102-1                |                 |                    |  |
|---------------------------|-----------------|--------------------|--|
|                           | Low temperature | Medium temperature |  |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |  |





#### EN 14825

|               | Low temperature | Medium temperature |
|---------------|-----------------|--------------------|
| $\eta_{s}$    | 186 %           | 136 %              |
| Prated        | 13.73 kW        | 12.08 kW           |
| SCOP          | 4.72            | 3.47               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 12.14 kW        | 10.69 kW           |
| COP Tj = -7°C | 2.79            | 2.01               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 7.95 kW         | 6.86 kW            |
| COP Tj = +2°C | 4.52            | 3.43               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 5.20 kW         | 4.64 kW            |
| COP Tj = +7°C | 6.68            | 4.66               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = 12°C | 3.76 kW         | 3.32 kW            |
| COP Tj = 12°C | 8.52            | 6.13               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = Tbiv | 12.14 kW        | 10.69 kW           |
| COP Tj = Tbiv | 2.79            | 2.01               |





| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.48 kW | 9.19 kW  |
|---|----------|----------|
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.59     | 1.76     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 20 W     | 20 W     |
| РТО   | 30 W     | 30 W     |
| PSB   | 20 W     | 20 W     |
| PCK   | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 2.23 kW  | 2.91 kW  |
| Annual energy consumption Qhe                       | 6013 kWh | 7203 kWh |
|   |          |          |

### Warmer Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 260 %           | 176 %              |
| Prated     | 12.11 kW        | 13.74 kW           |
| SCOP       | 6.63            | 4.48               |





| The management of the second o |          | THE GALADASE OIL 2 Mail 2021 |
|--|----------|------------------------------|
| Tbiv   | 7 °C     | 7 °C                         |
| TOL  | 2 °C     | 2 °C                         |
| Pdh Tj = +2°C  | 12.04 kW | 13.05 kW                     |
| COP Tj = +2°C  | 3.44     | 2.20                         |
| Cdh  | 0.90     | 0.90                         |
| Pdh Tj = +7°C  | 7.78 kW  | 8.83 kW                      |
| $COP Tj = +7^{\circ}C$   | 5.84     | 3.91                         |
| Cdh  | 0.90     | 0.90                         |
| Pdh Tj = 12°C  | 3.75 kW  | 4.09 kW                      |
| COP Tj = 12°C  | 8.25     | 5.90                         |
| Cdh  | 0.90     | 0.90                         |
| Pdh Tj = Tbiv  | 7.78 kW  | 8.83 kW                      |
| COP Tj = Tbiv  | 5.84     | 3.91                         |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh  | 12.04 kW | 13.05 kW                     |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh  | 3.44     | 2.20                         |
| WTOL   | 65 °C    | 65 °C                        |
| Poff   | 20 W     | 20 W                         |
| РТО  | 30 W     | 30 W                         |
| PSB  | 20 W     | 20 W                         |
| РСК  | o w      | o w                          |
| Supplementary Heater: Type of energy input   | electric | electric                     |





| Supplementary Heater: PSUP    | 0.07 kW  | 0 kW     |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 2462 kWh | 4092 kWh |

#### Colder Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 160 %           | 119 %              |
| Prated        | 12.64 kW        | 10.97 kW           |
| SCOP          | 4.06            | 3.05               |
| Tbiv          | -15 °C          | -15 °C             |
| TOL           | -22 °C          | -22 °C             |
| Pdh Tj = -7°C | 7.97 kW         | 6.89 kW            |
| COP Tj = -7°C | 3.44            | 2.66               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 5.05 kW         | 4.32 kW            |
| COP Tj = +2°C | 4.92            | 3.66               |
| Cdh           | 0.90            | 0.90               |
|               | 1               |                    |





| Pdh Tj = $+7^{\circ}$ C                             | 3.16 kW  | 3.06 kW  |
|---|----------|----------|
| COP Tj = +7°C                                       | 6.11     | 4.72     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = 12°C                                       | 3.58 kW  | 3.33 kW  |
| COP Tj = 12°C                                       | 7.82     | 6.25     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = Tbiv                                       | 10.31 kW | 8.95 kW  |
| COP Tj = Tbiv                                       | 2.53     | 1.79     |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.57 kW  | 4.20 kW  |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.92     | 1.13     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 20 W     | 20 W     |
| РТО   | 30 W     | 30 W     |
| PSB   | 20 W     | 20 W     |
| PCK   | o w      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 5.07 kW  | 6.77 kW  |
| Annual energy consumption Qhe                       | 7667 kWh | 8867 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)                       | 10.31    | 8.95     |
| COP Tj = -15°C (if TOL<-20°C)                       | 2.53     | 1.79     |
| Cdh   | 0.90     | 0.90     |



## Model: KHP-MO 16 DTR2

| General Data |             |
|--------------|-------------|
| Power supply | 3x400V 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 | 15.90 kW        | 16.00 kW           |
| El input    | 3.53 kW         | 5.61 kW            |
| СОР         | 4.50            | 2.85               |

### **Average Climate**

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |





#### EN 14825

|               | Low temperature | Medium temperature |
|---------------|-----------------|--------------------|
| $\eta_{s}$    | 182 %           | 133 %              |
| Prated        | 15.21 kW        | 13.02 kW           |
| SCOP          | 4.62            | 3.41               |
| Гbіv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 13.45 kW        | 11.52 kW           |
| COP Tj = -7°C | 2.72            | 1.99               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 8.57 kW         | 7.18 kW            |
| COP Tj = +2°C | 4.41            | 3.34               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 5.70 kW         | 4.68 kW            |
| COP Tj = +7°C | 6.56            | 4.61               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = 12°C | 3.78 kW         | 3.32 kW            |
| COP Tj = 12°C | 8.51            | 6.07               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = Tbiv | 13.45 kW        | 11.52 kW           |
| COP Tj = Tbiv | 2.72            | 1.99               |





| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 12.52 kW | 10.33 kW |
|---|----------|----------|
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.48     | 1.80     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 20 W     | 20 W     |
| PTO   | 30 W     | 30 W     |
| PSB   | 20 W     | 20 W     |
| PCK   | o w      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 2.68 kW  | 2.67 kW  |
| Annual energy consumption Qhe                       | 6805 kWh | 7896 kWh |

### Warmer Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |

| EN 14825   |                 |                    |
|------------|-----------------|--------------------|
|            | Low temperature | Medium temperature |
| $\eta_{s}$ | 248 %           | 176 %              |
| Prated     | 13.09 kW        | 13.78 kW           |
| SCOP       | 6.33            | 4.47               |





| The transfer and general                            |          | THE GALADASE OIL 2 Mai 202. |
|---|----------|-----------------------------|
| Tbiv  | 7 °C     | 7 °C                        |
| TOL   | 2 °C     | 2 °C                        |
| Pdh Tj = +2°C                                       | 13.12 kW | 13.38 kW                    |
| COP Tj = +2°C                                       | 3.35     | 2.29                        |
| Cdh   | 0.90     | 0.90                        |
| Pdh Tj = +7°C                                       | 8.42 kW  | 8.86 kW                     |
| $COP Tj = +7^{\circ}C$                              | 5.36     | 3.84                        |
| Cdh   | 0.90     | 0.90                        |
| Pdh Tj = 12°C                                       | 3.88 kW  | 4.06 kW                     |
| COP Tj = 12°C                                       | 8.11     | 5.86                        |
| Cdh   | 0.90     | 0.90                        |
| Pdh Tj = Tbiv                                       | 8.42 kW  | 8.86 kW                     |
| COP Tj = Tbiv                                       | 5.36     | 3.84                        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 13.12 kW | 13.38 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 3.35     | 2.29                        |
| WTOL  | 65 °C    | 65 °C                       |
| Poff  | 20 W     | 20 W                        |
| РТО   | 30 W     | 30 W                        |
| PSB   | 20 W     | 20 W                        |
| РСК   | o w      | o w                         |
| Supplementary Heater: Type of energy input          | electric | electric                    |



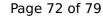


| Supplementary Heater: PSUP    | 0.00 kW  | 0.40 kW  |
|-------------------------------|----------|----------|
| Annual energy consumption Qhe | 2786 kWh | 4116 kWh |

### Colder Climate

| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level outdoor | 68 dB(A)        | 68 dB(A)           |

| EN 14825               |                 |                    |
|------------------------|-----------------|--------------------|
|                        | Low temperature | Medium temperature |
| $\eta_{s}$             | 158 %           | 122 %              |
| Prated                 | 13.76 kW        | 11.79 kW           |
| SCOP                   | 4.02            | 3.12               |
| Tbiv                   | -15 °C          | -15 °C             |
| TOL                    | -22 °C          | -22 °C             |
| Pdh Tj = $-7$ °C       | 8.31 kW         | 7.64 kW            |
| $COP Tj = -7^{\circ}C$ | 3.37            | 2.65               |
| Cdh                    | 0.90            | 0.90               |
| Pdh Tj = +2°C          | 5.27 kW         | 4.43 kW            |
| COP Tj = +2°C          | 4.86            | 3.79               |
| Cdh                    | 0.90            | 0.90               |
|                        |                 |                    |





| Pdh Tj = +7°C                                       | 3.62 kW  | 2.98 kW  |
|---|----------|----------|
| Tull 1] = +7 C                                      | J.02 KW  | 2.90 KW  |
| COP Tj = +7°C                                       | 6.49     | 4.81     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = 12°C                                       | 3.35 kW  | 3.43 kW  |
| COP Tj = 12°C                                       | 7.40     | 6.29     |
| Cdh   | 0.90     | 0.90     |
| Pdh Tj = Tbiv                                       | 11.22 kW | 9.62 kW  |
| COP Tj = Tbiv                                       | 2.43     | 1.86     |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.89 kW  | 5.22 kW  |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.97     | 1.23     |
| WTOL  | 65 °C    | 65 °C    |
| Poff  | 20 W     | 20 W     |
| РТО   | 30 W     | 30 W     |
| PSB   | 20 W     | 20 W     |
| PCK   | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input          | electric | electric |
| Supplementary Heater: PSUP                          | 4.87 kW  | 6.57 kW  |
| Annual energy consumption Qhe                       | 8431 kWh | 9310 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)                       | 11.22    | 9.62     |
| COP Tj = -15°C (if TOL<-20°C)                       | 2.43     | 1.86     |
| Cdh   | 0.90     | 0.90     |

## Model: KHP-BI 14 DVR2 + KHPM-BI 16 DVR2

| 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 |  |

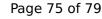
| EN 14511-2  |                 |                    |
|-------------|-----------------|--------------------|
|             | Low temperature | Medium temperature |
| Heat output | 14.50 kW        | 13.80 kW           |
| El input    | 3.09 kW         | 4.60 kW            |
| СОР         | 4.70            | 3.00               |

### **Average Climate**



| EN 12102-1                |                 |                    |
|---------------------------|-----------------|--------------------|
|                           | Low temperature | Medium temperature |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |

| EN 14825      |                 |                    |
|---------------|-----------------|--------------------|
|               | Low temperature | Medium temperature |
| $\eta_{s}$    | 186 %           | 136 %              |
| Prated        | 13.73 kW        | 12.08 kW           |
| SCOP          | 4.72            | 3.47               |
| Tbiv          | -7 °C           | -7 °C              |
| TOL           | -10 °C          | -10 °C             |
| Pdh Tj = -7°C | 12.14 kW        | 10.69 kW           |
| COP Tj = -7°C | 2.79            | 2.01               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +2°C | 7.95 kW         | 6.86 kW            |
| COP Tj = +2°C | 4.52            | 3.43               |
| Cdh           | 0.90            | 0.90               |
| Pdh Tj = +7°C | 5.20 kW         | 4.64 kW            |
| COP Tj = +7°C | 6.68            | 4.66               |
| Cdh           | 0.90            | 0.90               |





|   | · · · · · · · · · · · · · · · · · · · |          |
|---|---------------------------------------|----------|
| Pdh Tj = 12°C                                       | 3.76 kW                               | 3.32 kW  |
| COP Tj = 12°C                                       | 8.52                                  | 6.13     |
| Cdh   | 0.90                                  | 0.90     |
| Pdh Tj = Tbiv                                       | 12.14 kW                              | 10.69 kW |
| COP Tj = Tbiv                                       | 2.79                                  | 2.01     |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 11.48 kW                              | 9.19 kW  |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 2.59                                  | 1.76     |
| WTOL  | 65 °C                                 | 65 °C    |
| Poff  | 14 W                                  | 14 W     |
| РТО   | 24 W                                  | 24 W     |
| PSB   | 14 W                                  | 14 W     |
| PCK   | 0 W                                   | 0 W      |
| Supplementary Heater: Type of energy input          | electric                              | electric |
| Supplementary Heater: PSUP                          | 2.23 kW                               | 2.91 kW  |
| Annual energy consumption Qhe                       | 6012 kWh                              | 7202 kWh |
|   |                                       |          |

### Warmer Climate

| EN 12102-1                |                 |                    |  |
|---------------------------|-----------------|--------------------|--|
|                           | Low temperature | Medium temperature |  |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |  |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |  |





#### EN 14825

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| $\eta_{s}$  | 260 %           | 177 %              |
| Prated  | 12.11 kW        | 13.74 kW           |
| SCOP  | 6.63            | 4.49               |
| Tbiv  | 7 °C            | 7 °C               |
| TOL   | 2 °C            | 2 °C               |
| Pdh Tj = +2°C   | 12.04 kW        | 13.05 kW           |
| COP Tj = +2°C   | 3.44            | 2.20               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = $+7^{\circ}$ C                               | 7.78 kW         | 8.83 kW            |
| COP Tj = +7°C   | 5.84            | 3.91               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = 12°C   | 3.75 kW         | 4.09 kW            |
| COP Tj = 12°C   | 8.25            | 5.90               |
| Cdh   | 0.90            | 0.90               |
| Pdh Tj = Tbiv   | 7.78 kW         | 8.83 kW            |
| COP Tj = Tbiv   | 5.84            | 3.91               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh | 12.04 kW        | 13.05 kW           |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh   | 3.44            | 2.20               |
| WTOL  | 65 °C           | 65 °C              |





| Poff                                       | 14 W     | 14 W     |
|--|----------|----------|
| РТО  | 24 W     | 24 W     |
| PSB  | 14 W     | 14 W     |
| PCK  | 0 W      | 0 W      |
| Supplementary Heater: Type of energy input | electric | electric |
| Supplementary Heater: PSUP                 | 0.07 kW  | 0.69 kW  |
| Annual energy consumption Qhe              | 2457 kWh | 4088 kWh |

### Colder Climate

| EN 12102-1                |                 |                    |  |
|---------------------------|-----------------|--------------------|--|
|                           | Low temperature | Medium temperature |  |
| Sound power level indoor  | 43 dB(A)        | 43 dB(A)           |  |
| Sound power level outdoor | 65 dB(A)        | 65 dB(A)           |  |

| EN 14825        |  |  |
|-----------------|--|--|
| Low temperature | Medium temperature                             |  |
| 160 %           | 119 %  |  |
| 12.64 kW        | 10.97 kW                                       |  |
| 4.07            | 3.05   |  |
| -15 °C          | -15 °C   |  |
| -22 °C          | -22 °C   |  |
|                 | Low temperature  160 %  12.64 kW  4.07  -15 °C |  |





| This information was gene                           | rated by the HF KLTMP | ANN database on 5 Mai 202. |
|---|-----------------------|----------------------------|
| Pdh Tj = -7°C                                       | 7.97 kW               | 6.89 kW                    |
| $COPTj = -7^{\circ}C$                               | 3.44                  | 2.66                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = +2°C                                       | 5.05 kW               | 4.32 kW                    |
| COP Tj = +2°C                                       | 4.92                  | 3.66                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = +7°C                                       | 3.16 kW               | 3.06 kW                    |
| $COPTj = +7^{\circ}C$                               | 6.11                  | 4.72                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = 12°C                                       | 3.58 kW               | 3.33 kW                    |
| COP Tj = 12°C                                       | 7.82                  | 6.25                       |
| Cdh   | 0.90                  | 0.90                       |
| Pdh Tj = Tbiv                                       | 10.31 kW              | 8.95 kW                    |
| COP Tj = Tbiv                                       | 2.53                  | 1.79                       |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 7.57 kW               | 4.20 kW                    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 1.92                  | 1.13                       |
| WTOL  | 65 °C                 | 65 °C                      |
| Poff  | 14 W                  | 14 W                       |
| РТО   | 24 W                  | 24 W                       |
| PSB   | 14 W                  | 14 W                       |
| РСК   | 0 W                   | o w                        |
|   | !                     | -                          |



# $$\operatorname{\textit{Page}}\ 79$$ of 79 This information was generated by the HP KEYMARK database on 5 Mar 2021

| Supplementary Heater: Type of energy input | electric | electric |
|--|----------|----------|
| Supplementary Heater: PSUP                 | 5.07 kW  | 6.77 kW  |
| Annual energy consumption Qhe              | 7667 kWh | 8866 kWh |
| Pdh Tj = -15°C (if TOL<-20°C)              | 10.31    | 8.95     |
| COP Tj = -15°C (if TOL $<$ -20°C)          | 2.53     | 1.79     |
| Cdh  | 0.90     | 0.90     |