

This information was generated by the HP KEYMARK database on 31 Jul 2022

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|                     |   |          |          |
|---------------------|---|----------|----------|
| Summary of          | VWF 87/4  | Reg. No. | 40046299 |
| Certificate Holder  |   |          |          |
| Name                | Vaillant Deutschland GmbH & Co KG   |          |          |
| Address             | Berghauser Straße 40  | Zip      | 42859    |
| City                | Remscheid   | Country  | Germany  |
| Certification Body  | VDE Testing and Certification Institute GmbH  |          |          |
| Subtype title       | VWF 87/4  |          |          |
| Heat Pump Type      | Brine/Water   |          |          |
| Refrigerant         | R410A   |          |          |
| Mass of Refrigerant | 2.4 kg  |          |          |
| Certification Date  | 28.04.2021  |          |          |
| Testing basis       | DIN EN 14511-1:2019-07; EN 14511-1:2018 DIN EN 14511-2:2019-07; EN 14511-2:2018 DIN EN 14511-3:2019-07; EN 14511-3:2018 DIN EN 14511-4:2019-07; EN 14511-4:2018 DIN EN 12102-1:2018-02; EN 12102-1:2017 |          |          |

## Model: VWF 87/4

| <b>Configure model</b>              |                                 |
|-------------------------------------|---------------------------------|
| Model name                          | VWF 87/4                        |
| Application                         | Heating (medium temp)           |
| Units                               | Indoor                          |
| Climate Zone                        | Colder Climate + Warmer Climate |
| Reversibility                       | No                              |
| Cooling mode application (optional) | n/a                             |

| <b>General Data</b> |             |
|---------------------|-------------|
| Power supply        | 3x400V 50Hz |

### Heating

| <b>EN 14511-4</b>  |        |
|--|--------|
| Operating range outdoor exchanger/indoor exchanger lower limit/lower limit | passed |
| Operating range outdoor exchanger/indoor exchanger upper limit/upper limit | passed |
| Shutting off the heat transfer medium flow                                 | passed |
| Complete power supply failure  | passed |
| Defrost test   | passed |

| <b>EN 14511-2</b> |                        |                           |
|-------------------|------------------------|---------------------------|
|                   | <b>Low temperature</b> | <b>Medium temperature</b> |
| Heat output       | 8.82 kW                | 8.94 kW                   |
| El input          | 1.82 kW                | 2.78 kW                   |
| COP               | 4.84                   | 3.22                      |

### Warmer Climate

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| <b>EN 12102-1</b>         |                        |                           |
|---------------------------|------------------------|---------------------------|
|                           | <b>Low temperature</b> | <b>Medium temperature</b> |
| Sound power level indoor  | 43 dB(A)               | 50 dB(A)                  |
| Sound power level outdoor | - dB(A)                | - dB(A)                   |

| <b>EN 14825</b> |                        |                           |
|-----------------|------------------------|---------------------------|
|                 | <b>Low temperature</b> | <b>Medium temperature</b> |
| $\eta_s$        | 205 %                  | 148 %                     |
| Prated          | 8.82 kW                | 8.94 kW                   |
| SCOP            | 5.32                   | 3.89                      |
| Tbiv            | 2 °C                   | 2 °C                      |
| TOL             | 2 °C                   | 2 °C                      |
| Pdh Tj = +2°C   | 8.82 kW                | 8.94 kW                   |
| COP Tj = +2°C   | 4.84                   | 3.22                      |
| Cdh Tj = +2 °C  | 1.00                   | 1.00                      |
| Pdh Tj = +7°C   | 8.81 kW                | 8.91 kW                   |
| COP Tj = +7°C   | 5.14                   | 3.59                      |
| Cdh Tj = +7 °C  | 1.00                   | 1.00                      |
| Pdh Tj = 12°C   | 8.79 kW                | 8.85 kW                   |
| COP Tj = 12°C   | 5.63                   | 4.33                      |
| Cdh Tj = +12 °C | 1.00                   | 1.00                      |

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|   |             |             |
|---|-------------|-------------|
| Pdh Tj = Tbiv                                       | 8.82 kW     | 8.94 kW     |
| COP Tj = Tbiv                                       | 4.84        | 3.22        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.82 kW     | 8.94 kW     |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.84        | 3.22        |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00        | 1.00        |
| WTOL  | 65 °C       | 65 °C       |
| Poff  | 7 W         | 7 W         |
| PTO   | 4 W         | 4 W         |
| PSB   | 7 W         | 7 W         |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe                       | 2215 kWh    | 3069 kWh    |

## Colder Climate

| <b>EN 12102-1</b>         |                        |                           |
|---------------------------|------------------------|---------------------------|
|                           | <b>Low temperature</b> | <b>Medium temperature</b> |
| Sound power level indoor  | 43 dB(A)               | 50 dB(A)                  |
| Sound power level outdoor | - dB(A)                | - dB(A)                   |

| <b>EN 14825</b> |  |  |
|-----------------|--|--|
|-----------------|--|--|

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|   | <b>Low temperature</b> | <b>Medium temperature</b> |
|---|------------------------|---------------------------|
| $\eta_s$  | 207 %                  | 149 %                     |
| Prated  | 8.82 kW                | 8.94 kW                   |
| SCOP  | 5.38                   | 3.94                      |
| Tbiv  | -22 °C                 | -22 °C                    |
| TOL   | -22 °C                 | -22 °C                    |
| Pdh Tj = -7°C                                       | 8.81 kW                | 8.90 kW                   |
| COP Tj = -7°C                                       | 5.25                   | 3.70                      |
| Cdh Tj = -7 °C                                      | 1.00                   | 1.00                      |
| Pdh Tj = +2°C                                       | 8.79 kW                | 8.87 kW                   |
| COP Tj = +2°C                                       | 5.54                   | 4.11                      |
| Cdh Tj = +2 °C                                      | 1.00                   | 1.00                      |
| Pdh Tj = +7°C                                       | 8.79 kW                | 8.84 kW                   |
| COP Tj = +7°C                                       | 5.77                   | 4.50                      |
| Cdh Tj = +7 °C                                      | 1.00                   | 1.00                      |
| Pdh Tj = 12°C                                       | 8.78 kW                | 8.82 kW                   |
| COP Tj = 12°C                                       | 5.83                   | 4.84                      |
| Cdh Tj = +12 °C                                     | 1.00                   | 1.00                      |
| Pdh Tj = Tbiv                                       | 8.82 kW                | 8.94 kW                   |
| COP Tj = Tbiv                                       | 4.84                   | 3.22                      |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.82 kW                | 8.94 kW                   |

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|   |             |             |
|---|-------------|-------------|
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.84        | 3.22        |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00        | 1.00        |
| WTOL  | 65 °C       | 65 °C       |
| Poff  | 7 W         | 7 W         |
| PTO   | 4 W         | 4 W         |
| PSB   | 7 W         | 7 W         |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe                       | 4041 kWh    | 5600 kWh    |
| Cdh Tj = -15 °C                                     | 1.00        | 1.00        |

## Average Climate

| <b>EN 12102-1</b>         |                        |                           |
|---------------------------|------------------------|---------------------------|
|                           | <b>Low temperature</b> | <b>Medium temperature</b> |
| Sound power level indoor  | 43 dB(A)               | 50 dB(A)                  |
| Sound power level outdoor | - dB(A)                | - dB(A)                   |

| <b>EN 14825</b> |                        |                           |
|-----------------|------------------------|---------------------------|
|                 | <b>Low temperature</b> | <b>Medium temperature</b> |
| $\eta_s$        | 202 %                  | 147 %                     |

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|   |         |         |
|---|---------|---------|
| Prated  | 8.82 kW | 8.94 kW |
| SCOP  | 5.26    | 3.86    |
| Tbiv  | -10 °C  | -10 °C  |
| TOL   | -10 °C  | -10 °C  |
| Pdh Tj = -7°C                                       | 8.82 kW | 8.93 kW |
| COP Tj = -7°C                                       | 4.90    | 3.33    |
| Cdh Tj = -7 °C                                      | 1.00    | 1.00    |
| Pdh Tj = +2°C                                       | 8.81 kW | 8.89 kW |
| COP Tj = +2°C                                       | 5.21    | 3.81    |
| Cdh Tj = +2 °C                                      | 1.00    | 1.00    |
| Pdh Tj = +7°C                                       | 8.80 kW | 8.86 kW |
| COP Tj = +7°C                                       | 5.52    | 4.19    |
| Cdh Tj = +7 °C                                      | 1.00    | 1.00    |
| Pdh Tj = 12°C                                       | 8.78 kW | 8.83 kW |
| COP Tj = 12°C                                       | 5.87    | 4.65    |
| Cdh Tj = +12 °C                                     | 1.00    | 1.00    |
| Pdh Tj = Tbiv                                       | 8.82 kW | 8.94 kW |
| COP Tj = Tbiv                                       | 4.84    | 3.22    |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.82 kW | 8.94 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.84    | 3.22    |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00    | 1.00    |

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|  |             |             |
|--|-------------|-------------|
| WTOL                                       | 65 °C       | 65 °C       |
| Poff                                       | 7 W         | 7 W         |
| PTO  | 4 W         | 4 W         |
| PSB  | 7 W         | 7 W         |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 3469 kWh    | 4781 kWh    |



## Model: VWF 88/4

| <b>Configure model</b>              |                                 |
|-------------------------------------|---------------------------------|
| Model name                          | VWF 88/4                        |
| Application                         | Heating (medium temp)           |
| Units                               | Indoor                          |
| Climate Zone                        | Colder Climate + Warmer Climate |
| Reversibility                       | No                              |
| Cooling mode application (optional) | n/a                             |

| <b>General Data</b> |             |
|---------------------|-------------|
| Power supply        | 3x400V 50Hz |

### Heating

| <b>EN 14511-4</b>  |        |
|--|--------|
| Operating range outdoor exchanger/indoor exchanger lower limit/lower limit | passed |
| Operating range outdoor exchanger/indoor exchanger upper limit/upper limit | passed |
| Shutting off the heat transfer medium flow                                 | passed |
| Complete power supply failure  | passed |
| Defrost test   | passed |

| <b>EN 14511-2</b> |                        |                           |
|-------------------|------------------------|---------------------------|
|                   | <b>Low temperature</b> | <b>Medium temperature</b> |
| Heat output       | 8.82 kW                | 8.94 kW                   |
| El input          | 1.82 kW                | 2.78 kW                   |
| COP               | 4.84                   | 3.22                      |

### Warmer Climate

| <b>EN 12102-1</b>         |                        |                           |
|---------------------------|------------------------|---------------------------|
|                           | <b>Low temperature</b> | <b>Medium temperature</b> |
| Sound power level indoor  | 43 dB(A)               | 50 dB(A)                  |
| Sound power level outdoor | - dB(A)                | - dB(A)                   |

| <b>EN 14825</b> |                        |                           |
|-----------------|------------------------|---------------------------|
|                 | <b>Low temperature</b> | <b>Medium temperature</b> |
| $\eta_s$        | 205 %                  | 148 %                     |
| Prated          | 8.82 kW                | 8.94 kW                   |
| SCOP            | 5.32                   | 3.89                      |
| Tbiv            | 2 °C                   | 2 °C                      |
| TOL             | 2 °C                   | 2 °C                      |
| Pdh Tj = +2°C   | 8.82 kW                | 8.94 kW                   |
| COP Tj = +2°C   | 4.84                   | 3.22                      |
| Cdh Tj = +2 °C  | 1.00                   | 1.00                      |
| Pdh Tj = +7°C   | 8.81 kW                | 8.91 kW                   |
| COP Tj = +7°C   | 5.14                   | 3.59                      |
| Cdh Tj = +7 °C  | 1.00                   | 1.00                      |
| Pdh Tj = 12°C   | 8.79 kW                | 8.85 kW                   |
| COP Tj = 12°C   | 5.63                   | 4.33                      |
| Cdh Tj = +12 °C | 1.00                   | 1.00                      |

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|   |             |             |
|---|-------------|-------------|
| Pdh Tj = Tbiv                                       | 8.82 kW     | 8.94 kW     |
| COP Tj = Tbiv                                       | 4.84        | 3.22        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.82 kW     | 8.94 kW     |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.84        | 3.22        |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00        | 1.00        |
| WTOL  | 65 °C       | 65 °C       |
| Poff  | 7 W         | 7 W         |
| PTO   | 4 W         | 4 W         |
| PSB   | 7 W         | 7 W         |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe                       | 2215 kWh    | 3069 kWh    |

## Colder Climate

| <b>EN 12102-1</b>         |                        |                           |
|---------------------------|------------------------|---------------------------|
|                           | <b>Low temperature</b> | <b>Medium temperature</b> |
| Sound power level indoor  | 43 dB(A)               | 50 dB(A)                  |
| Sound power level outdoor | - dB(A)                | - dB(A)                   |

## EN 14825

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|   | <b>Low temperature</b> | <b>Medium temperature</b> |
|---|------------------------|---------------------------|
| $\eta_s$  | 207 %                  | 149 %                     |
| Prated  | 8.82 kW                | 8.94 kW                   |
| SCOP  | 5.38                   | 3.94                      |
| Tbiv  | -22 °C                 | -22 °C                    |
| TOL   | -22 °C                 | -22 °C                    |
| Pdh Tj = -7°C                                       | 8.81 kW                | 8.90 kW                   |
| COP Tj = -7°C                                       | 5.25                   | 3.70                      |
| Cdh Tj = -7 °C                                      | 1.00                   | 1.00                      |
| Pdh Tj = +2°C                                       | 8.79 kW                | 8.87 kW                   |
| COP Tj = +2°C                                       | 5.54                   | 4.11                      |
| Cdh Tj = +2 °C                                      | 1.00                   | 1.00                      |
| Pdh Tj = +7°C                                       | 8.79 kW                | 8.84 kW                   |
| COP Tj = +7°C                                       | 5.77                   | 4.50                      |
| Cdh Tj = +7 °C                                      | 1.00                   | 1.00                      |
| Pdh Tj = 12°C                                       | 8.78 kW                | 8.82 kW                   |
| COP Tj = 12°C                                       | 5.83                   | 4.84                      |
| Cdh Tj = +12 °C                                     | 1.00                   | 1.00                      |
| Pdh Tj = Tbiv                                       | 8.82 kW                | 8.94 kW                   |
| COP Tj = Tbiv                                       | 4.84                   | 3.22                      |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.82 kW                | 8.94 kW                   |

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|   |             |             |
|---|-------------|-------------|
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.84        | 3.22        |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00        | 1.00        |
| WTOL  | 65 °C       | 65 °C       |
| Poff  | 7 W         | 7 W         |
| PTO   | 4 W         | 4 W         |
| PSB   | 7 W         | 7 W         |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe                       | 4041 kWh    | 5600 kWh    |
| Cdh Tj = -15 °C                                     | 1.00        | 1.00        |

## Average Climate

| <b>EN 12102-1</b>         |                        |                           |
|---------------------------|------------------------|---------------------------|
|                           | <b>Low temperature</b> | <b>Medium temperature</b> |
| Sound power level indoor  | 43 dB(A)               | 50 dB(A)                  |
| Sound power level outdoor | - dB(A)                | - dB(A)                   |

| <b>EN 14825</b> |                        |                           |
|-----------------|------------------------|---------------------------|
|                 | <b>Low temperature</b> | <b>Medium temperature</b> |
| $\eta_s$        | 202 %                  | 147 %                     |

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|   |         |         |
|---|---------|---------|
| Prated  | 8.82 kW | 8.94 kW |
| SCOP  | 5.26    | 3.86    |
| Tbiv  | -10 °C  | -10 °C  |
| TOL   | -10 °C  | -10 °C  |
| Pdh Tj = -7°C                                       | 8.82 kW | 8.93 kW |
| COP Tj = -7°C                                       | 4.90    | 3.33    |
| Cdh Tj = -7 °C                                      | 1.00    | 1.00    |
| Pdh Tj = +2°C                                       | 8.81 kW | 8.89 kW |
| COP Tj = +2°C                                       | 5.21    | 3.81    |
| Cdh Tj = +2 °C                                      | 1.00    | 1.00    |
| Pdh Tj = +7°C                                       | 8.80 kW | 8.86 kW |
| COP Tj = +7°C                                       | 5.52    | 4.19    |
| Cdh Tj = +7 °C                                      | 1.00    | 1.00    |
| Pdh Tj = 12°C                                       | 8.78 kW | 8.83 kW |
| COP Tj = 12°C                                       | 5.87    | 4.65    |
| Cdh Tj = +12 °C                                     | 1.00    | 1.00    |
| Pdh Tj = Tbiv                                       | 8.82 kW | 8.94 kW |
| COP Tj = Tbiv                                       | 4.84    | 3.22    |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 8.82 kW | 8.94 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.84    | 3.22    |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00    | 1.00    |

This information was generated by the HP KEYMARK database on 31 Jul 2022

|  |             |             |
|--|-------------|-------------|
| WTOL                                       | 65 °C       | 65 °C       |
| Poff                                       | 7 W         | 7 W         |
| PTO  | 4 W         | 4 W         |
| PSB  | 7 W         | 7 W         |
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe              | 3469 kWh    | 4781 kWh    |