

## Subtype F1x45-15

|                     |  |
|---------------------|--|
| Certificate Holder  | Nibe AB                                |
| Address             | Box 14                                 |
| ZIP                 | S-28521                                |
| City                | Markaryd                               |
| Country             | SE                                     |
| Certification Body  | RISE CERT                              |
| Subtype title       | F1x45-15                               |
| Registration number | 012-045                                |
| Heat Pump Type      | Brine/Water                            |
| Refrigerant         | R407c                                  |
| Mass of Refrigerant | 2 kg                                   |
| Certification Date  | 15.06.2017                             |
| Testing laboratory  | Austrian Institute of Technology (AIT) |

## Model F1145-15

|                                     |                       |
|-------------------------------------|-----------------------|
| Model name                          | F1145-15              |
| Application                         | Heating (medium temp) |
| Units                               | Indoor                |
| Climate zone (for heating)          | Colder Climate        |
| Cooling mode application (optional) | n/a                   |
| Any additional heat sources         | n/a                   |

## General data

|                  |             |
|------------------|-------------|
| Power supply     | 3x400V 50Hz |
| Off-peak product | No          |

## Brine/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

|                               |        |
|-------------------------------|--------|
| Complete power supply failure | passed |
|-------------------------------|--------|

### EN 14511-2 | Heating

|             | Low temperature | Medium temperature |
|-------------|-----------------|--------------------|
| Heat output | 15.42 kW        | 14.83 kW           |
| El input    | 3.63 kW         | 5.05 kW            |
| COP         | 4.25            | 2.94               |

### EN 12102-1 | Average Climate

|                          | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 43 dB(A)        | 43 dB(A)           |

### EN 14825 | Average Climate

|                | Low temperature | Medium temperature |
|----------------|-----------------|--------------------|
| $\eta_s$       | 175 %           | 138 %              |
| Prated         | 18.00 kW        | 18.00 kW           |
| SCOP           | 4.57            | 3.65               |
| Tbiv           | -6 °C           | -5 °C              |
| TOL            | -10 °C          | -10 °C             |
| Pdh Tj = -7°C  | 15.40 kW        | 14.60 kW           |
| COP Tj = -7°C  | 4.52            | 3.16               |
| Cdh Tj = -7 °C |                 |                    |
| Pdh Tj = +2°C  | 15.60 kW        | 14.80 kW           |
| COP Tj = +2°C  | 4.70            | 3.72               |
| Cdh Tj = +2 °C |                 |                    |
| Pdh Tj = +7°C  | 15.70 kW        | 15.10 kW           |
| COP Tj = +7°C  | 4.82            | 4.01               |
| Cdh Tj = +7 °C |                 |                    |
| Pdh Tj = 12°C  | 15.80 kW        | 15.40 kW           |

|   |             |             |
|---|-------------|-------------|
| COP Tj = 12 °C                                      | 4.73        | 4.27        |
| Cdh Tj = +12 °C                                     |             |             |
| Pdh Tj = Tbiv                                       | 15.50 kW    | 14.60 kW    |
| COP Tj = Tbiv                                       | 4.55        | 3.27        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 15.40 kW    | 14.60 kW    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.41        | 2.96        |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 0.980       | 0.990       |
| WTOL  | 65 °C       | 65 °C       |
| Poff  | 2 W         | 2 W         |
| PTO   | 60 W        | 60 W        |
| PSB   | 7 W         | 7 W         |
| PCK   | 35 W        | 35 W        |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 2.60 kW     | 3.40 kW     |
| Annual energy consumption Qhe                       | 8134 kWh    | 10194 kWh   |

#### EN 12102-1 | Colder Climate

|                          | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 43 dB(A)        | 43 dB(A)           |

#### EN 14825 | Colder Climate

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| $\eta_s$  | 180 %           | 141 %              |
| Prated  | 18.00 kW        | 18.00 kW           |
| SCOP  | 4.70            | 3.72               |
| Tbiv  | -17 °C          | -15 °C             |
| TOL   | -22 °C          | -22 °C             |
| Pdh Tj = -7 °C                                      | 15.60 kW        | 14.70 kW           |
| COP Tj = -7 °C                                      | 4.73            | 3.60               |
| Pdh Tj = +2 °C                                      | 15.70 kW        | 15.00 kW           |
| COP Tj = +2 °C                                      | 4.85            | 3.95               |
| Pdh Tj = +7 °C                                      | 15.80 kW        | 15.30 kW           |
| COP Tj = +7 °C                                      | 4.84            | 4.21               |
| Pdh Tj = 12 °C                                      | 15.80 kW        | 15.50 kW           |
| COP Tj = 12 °C                                      | 4.49            | 4.35               |
| Pdh Tj = Tbiv                                       | 15.50 kW        | 14.60 kW           |
| COP Tj = Tbiv                                       | 4.58            | 3.29               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 15.40 kW        | 14.60 kW           |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.41            | 2.96               |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 0.98            | 0.99               |

|  |             |             |
|--|-------------|-------------|
| WTOL                                       | 65 °C       | 65 °C       |
| Poff                                       | 2 W         | 2 W         |
| PTO  | 60 W        | 60 W        |
| PSB  | 7 W         | 7 W         |
| PCK  | 35 W        | 35 W        |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP                 | 2.60 kW     | 3.40 kW     |
| Annual energy consumption Qhe              | 9454 kWh    | 11893 kWh   |