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| Heat pump model | Master Therm | BA22ISC-1 |
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|------------------------------|-----------|
| Heat pump type | Air/Water |
| Supplementary heater | Yes |
| Heat pump combination heater | Yes |

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|--------------------------------|----------------------------------|----------------------|----------------------|-------------------------|
| Reference heating season | | Average | | |
| Reference water temperature | | LOW, 35°C | | |
| Full load heating | Prated [kW] | 4.51 | | |
| Seasonal efficiency | η_s [%] | 172 | | |
| Annual electricity consumption | Q_{HE} [kWh] | 2128 | | |
| Average 35°C | Outdoor heat exchanger | Declared capacity | COP at part load | Degradation Coefficient |
| | Outdoor air | | | |
| | T_j [°C] | Pd _h [kW] | COP _d (-) | Cdh (-) |
| A | -7 | 3.99 | 2.74 | 0.900 |
| B | 2 | 2.58 | 4.16 | 0.900 |
| C | 7 | 1.64 | 6.22 | 0.900 |
| D | 12 | 2.08 | 7.50 | 0.938 |
| TOL (E) | -10 | 3.64 | 2.61 | 0.900 |
| Tbivalent (F) | -7 | 3.99 | 2.74 | 0.900 |

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|--------------------------------|----------------------------------|----------------------|----------------------|-------------------------|
| Reference heating season | | Average | | |
| Reference water temperature | | High, 55°C | | |
| Full load heating | Prated [kW] | 4.44 | | |
| Seasonal efficiency | η_s [%] | 130 | | |
| Annual electricity consumption | Q_{HE} [kWh] | 2759 | | |
| Average 55°C | Outdoor heat exchanger | Declared capacity | COP at part load | Degradation Coefficient |
| | Outdoor air | | | |
| | T_j [°C] | Pd _h [kW] | COP _d (-) | Cdh (-) |
| A | -7 | 3.93 | 2.03 | 0.900 |
| B | 2 | 2.45 | 3.15 | 0.900 |
| C | 7 | 1.69 | 4.74 | 0.900 |
| D | 12 | 1.96 | 5.73 | 0.950 |
| TOL (E) | -10 | 3.68 | 1.90 | 0.900 |
| Tbivalent (F) | -7 | 3.93 | 2.03 | 0.900 |

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|--------------------------------|----------------------------------|----------------------|----------------------|-------------------------|
| Reference heating season | | Warmer | | |
| Reference water temperature | | Low, 35°C | | |
| Full load heating | Prated [kW] | 5.32 | | |
| Seasonal efficiency | η_s [%] | 239 | | |
| Annual electricity consumption | Q_{HE} [kWh] | 1176 | | |
| Warmer 35°C | Outdoor heat exchanger | Declared capacity | COP at part load | Degradation Coefficient |
| | Outdoor air | | | |
| | T_j [°C] | Pd _h [kW] | COP _d (-) | Cdh (-) |
| B | 2 | 5.32 | 3.34 | 0.900 |
| C | 7 | 3.78 | 5.20 | 0.976 |
| D | 12 | 1.58 | 7.76 | 0.900 |
| TOL (E) | 2 | 5.32 | 3.34 | 0.900 |
| Tbivalent (F) | 2 | 5.32 | 3.34 | 0.900 |

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|--------------------------------|------------------------|----------------------------------|----------------------|-------------------------|
| Reference heating season | | Warmer | | |
| Reference water temperature | | High, 55°C | | |
| Full load heating | | Prated [kW] | 5.08 | |
| Seasonal efficiency | | η_s [%] | 164 | |
| Annual electricity consumption | | Q_{HE} [kWh] | 1626 | |
| Warmer 55°C | Outdoor heat exchanger | Declared capacity | COP at part load | Degradation Coefficient |
| | Outdoor air | | | |
| | T_j [°C] | Pd _h [kW] | COP _d (-) | Cdh (-) |
| B | 2 | 5.08 | 2.25 | 0.900 |
| C | 7 | 3.54 | 3.52 | 0.900 |
| D | 12 | 1.95 | 5.56 | 0.951 |
| TOL (E) | 2 | 5.08 | 2.25 | 0.900 |
| Tbivalent (F) | 2 | 5.08 | 2.25 | 0.900 |

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|--------------------------------|------------------------|----------------------------------|----------------------|-------------------------|
| Reference heating season | | Colder | | |
| Reference water temperature | | Low, 35°C | | |
| Full load heating | | Prated [kW] | 6.55 | |
| Seasonal efficiency | | η_s [%] | 134 | |
| Annual electricity consumption | | Q_{HE} [kWh] | 4717 | |
| Colder 35°C | Outdoor heat exchanger | Declared capacity | COP at part load | Degradation Coefficient |
| | Outdoor air | | | |
| | T_j [°C] | Pd _h [kW] | COP _d (-) | Cdh (-) |
| A | -7 | 3.97 | 2.91 | 0.900 |
| B | 2 | 2.61 | 4.47 | 0.900 |
| C | 7 | 1.56 | 6.42 | 0.900 |
| D | 12 | 2.08 | 7.50 | 0.938 |
| TOL (E) | -22 | 2.64 | 2.34 | 0.900 |
| Tbivalent (F) | -7 | 3.97 | 2.91 | 0.900 |
| G | -15 | 3.15 | 2.56 | 0.900 |

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|--------------------------------|------------------------|----------------------------------|----------------------|-------------------------|
| Reference heating season | | Colder | | |
| Reference water temperature | | High, 55°C | | |
| Full load heating | | Prated [kW] | 6.49 | |
| Seasonal efficiency | | η_s [%] | 110 | |
| Annual electricity consumption | | Q_{HE} [kWh] | 5643 | |
| Colder 55°C | Outdoor heat exchanger | Declared capacity | COP at part load | Degradation Coefficient |
| | Outdoor air | | | |
| | T_j [°C] | Pd _h [kW] | COP _d (-) | Cdh (-) |
| A | -7 | 3.93 | 2.33 | 0.900 |
| B | 2 | 2.50 | 3.53 | 0.900 |
| C | 7 | 1.73 | 5.18 | 0.948 |
| D | 12 | 1.99 | 6.12 | 0.947 |
| TOL (E) | -22 | 2.84 | 1.88 | 0.900 |
| Tbivalent (F) | -7 | 3.93 | 2.33 | 0.900 |
| G | -15 | 3.26 | 2.05 | 0.900 |

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| Power consumption in modes other than "active mode" | | |
| Off mode | P_{OFF} [kW] | 0.018 |
| Thermostat off mode | P_{TO} [kW] | 0.017 |
| Standby mode | P_{SB} [kW] | 0.018 |
| Crankcaseheater mode | P_{CK} [kW] | - |

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| Supplementary heater capacity | P_{sup} [kW] | 4.5 |
| Supplementary heater type | [-] | electricity |

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| Capacity control | | Variable |
| Sound power level Indoor | L_{WA} [dBA] | 48 |
| Sound power level Outdoor | L_{WA} [dBA] | 62 |
| Rated airflow | [m ³ /h] | max.3000 |

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| Declared load profile / Tapping cycle | | L |
| Daily electricity consumption | Q_{elec} [kWh] | 3.129 |
| Water heating energy efficiency | η_{wh} [%] | 90 |

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| Temperature controller | | |
| Type | Carel pCO5/pCO5+/uPC, Master Therm custom SW | |
| Class | II | |
| Contribution | % | 2.0 |

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| Temperature controller + Room Terminal | | |
| Type | Carel pCO5/pCO5+/uPC + pAD, Master Therm custom SW | |
| Class | VI | |
| Contribution | % | 4.0 |

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Information sheet

| Temperature application | | Low, 35°C | High, 55°C |
|---|-----|-----------|------------|
| Space heating energy efficiency class, Average climate | - | A++ | A++ |
| Nominal heating capacity Pdesign, Average climate | kW | 5 | 4 |
| Space heating seasonal efficiency, Average climate | % | 172 | 130 |
| Space heating annual electricity consumption, Average cl. | kWh | 2128 | 2759 |

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|--|-----|------|------|
| Nominal heating capacity Pdesign, Colder climate | kW | 7 | 6 |
| Space heating seasonal efficiency, Colder climate | % | 134 | 110 |
| Space heating annual electricity consumption, Colder cl. | kWh | 4717 | 5643 |

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|--|-----|------|------|
| Nominal heating capacity Pdesign, Warmer climate | kW | 5 | 5 |
| Space heating seasonal efficiency, Warmer climate | % | 239 | 164 |
| Space heating annual electricity consumption, Warmer cl. | kWh | 1176 | 1626 |

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| Sound power level Lwa Outdoor | dBA | 62 | |
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Information sheet for energy efficiency Set with Temperature controller

| Temperature application | | Low, 35°C | High, 55°C |
|--|---|-----------|------------|
| Controller Carel pCO5/pCO5+/uPC, Class | - | II | II |
| Controller Carel pCO5/pCO5+/uPC, Contribution | % | 2.0 | 2.0 |
| Set Space heating seasonal efficiency, Average climate | % | 174 | 132 |
| Set Space heating energy efficiency class, Average climate | - | A++ | A++ |
| Set Space heating seasonal efficiency, Colder climate | % | 136 | 112 |
| Set Space heating seasonal efficiency, Warmer climate | % | 241 | 166 |

Information sheet for energy efficiency Set with Temperature controller + Room Terminal

| Temperature application | | Low, 35°C | High, 55°C |
|--|---|-----------|------------|
| Controller Carel pCO5/pCO5+/uPC + pAD, Class | - | VI | VI |
| Controller Carel pCO5/pCO5+/uPC, +pAD, Contribution | % | 4.0 | 4.0 |
| Set Space heating seasonal efficiency, Average climate | % | 176 | 134 |
| Set Space heating energy efficiency class, Average climate | - | A+++ | A++ |
| Set Space heating seasonal efficiency, Colder climate | % | 138 | 114 |
| Set Space heating seasonal efficiency, Warmer climate | % | 243 | 168 |