Information for heat pump space heaters and heat pump combination heaters Warm climate and Medium temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 400V + CTC EcoZenith i350/ i350F | | | | | | |
|---------------------------------------|--|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 185 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | |
|--|--------------------|---------------------|---------------|---|-----------------|----------|------|--|
| Rated heat output (*) | Prated | 9 | kW | Seasonal space heating energy efficiency | η _s | 181 | % | |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | idoor temperat | ure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | |
| T j = – 7 °C | Pdh | na | kW | T j = – 7 °C | COPd | na | - 1 | |
| T j = + 2 °C | Pdh | 9,2 | kW | T j = +2 °C | COPd | 2,09 | - | |
| T j = + 7 °C | Pdh | 6,0 | kW | T j = +7 °C | COPd | 3,98 | - | |
| T j = + 12 °C | Pdh | 3,0 | kW | T j = +12 °C | COPd | 6,43 | - | |
| T j = bivalent temperature | Pdh | 9,2 | kW | T j = bivalent temperature | COPd | 2,10 | - | |
| T j = operation limit temperature | Pdh | 9,2 | kW | T j = operation limit temperature | COPd | 2,09 | - | |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - | |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C | |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - | |
| Degradation co-efficient (**) | Cdh | 0,99 | - | Heating water operating limit temperature | WTOL | 65 | °C | |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | _ | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,2 | kW | |
| Thermostat-off mode | Ρ _{ΤΟ} | 0,005 | kW | | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | | |
| Other items | | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | |
| Sound power level, indoors/ | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m3/h | |
| Annual energy consumption | Q _{HE} | 2722 | kWh | flow rate, outdoor heat exchanger | | 114 | məyn | |
| For heat pump combination heat | ater: | | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | $\eta_{\rm wh}$ | 122 | % | |
| Daily electricity consumption | Qelec | 6,232 | kWh | Daily fuel consumption | Qfuel | NA | kWh | |
| Annual electricity consumption | AEC | 1371 | kWh | Annual fuel consumption | AFC | NA | GJ | |
| | | | | | | 170904 | | |
| Contact details | nertech AB. Bo | x 309. SE-341 26 | o Liungby Tel | +46 372 88000 www.ctc.se | | | | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Low temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 400V + CTC EcoZenith i350/ i350F | | | | | | |
|---------------------------------------|--|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 247 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|--------------------------------|----------------------|
| Rated heat output (*) | Prated | 8 | kW | Seasonal space heating energy efficiency | η _s | 243 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at in | door temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | na | kW | T j = – 7 °C | COPd | na | - |
| T j = + 2 °C | Pdh | 7,5 | kW | T j = +2 °C | COPd | 3,34 | - |
| T j = + 7 °C | Pdh | 4,8 | kW | T j = +7 °C | COPd | 5,93 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 7,72 | - |
| T j = bivalent temperature | Pdh | 7,5 | kW | T j = bivalent temperature | COPd | 3,34 | - |
| T j = operation limit temperature | Pdh | 7,5 | kW | T j = operation limit temperature | COPd | 3,34 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,0 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m3/h |
| Annual energy consumption | Q _{HE} | 1631 | kWh | flow rate, outdoor heat exchanger | - | 114 | məyn |
| For heat pump combination heat | ater: | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 122 | % |
| Daily electricity consumption | Qelec | 6,232 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1371 | kWh | Annual fuel consumption | AFC | NA | GJ |
| Contact details | Enertech AB, Box | (309, SE-341 2) | 6 Ljungby Tel | +46 372 88000 www.ctc.se | | 170710 | |

Information for heat pump space heaters and heat pump combination heaters Average climate and Medium temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 400V + CTC EcoZenith i350/ i350F | | | | | | |
|---------------------------------------|--|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A++ | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 138 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | A++ | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Rated heat output (*)Prated7kWSeasonal space heating energy efficiency13.4%Declared capacity for heating for part load at indoor temperature 20*C and outdoor temperature 7 jDeclared coefficient of performance or primary energy ratio for part load at indoor temperature 20*C and outdoor temperature 20*CDeclared coefficient of performance or primary energy ratio for part load at indoor temperature 20*C and outdoor temperature 20*C and outdoor temperature 20*C Pdh $6,5$ kWT j = -7*C T j = +7*C C COPd $6,6$ $3,35$ -T j = -7*C T j = +2*C P dhPdh $6,5$ kWT j = +7*C T j = +7*C C COPd $6,6$ $6,6$ -T j = -7*C T j = +2*C P dhPdh $6,5$ kWT j = +7*C T j = +7*C C COPd $6,6$ $6,6$ -T j = -7*C T j = +2*C P dhPdh $6,5$ kWT j = +12*C C COPd $6,6$ $6,6$ -T j = operation limit temperaturePdh $6,5$ kWT j = tart a-water heat pumps: T j = -15*C (if TOL < -20*C) $COPd$ $1,55$ For air-to-water heat pumps: t p = 15*C (if TOL < -20*C)Pdh na kWCycling interval efficiency Pore for air-to-water heat pumps: T p = 15*C (if TOL < -20*C) $COPd$ na Degradation co-efficient (**)Cdh $0,98$ -Heating water operating limit temperature VOL $6,5$ Power consumption indoes other than active mode Off modePow $0,005$ kWSupplementary heater F_{1} F_{1} F_{2} Capacity control $L_$ | Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | | |
|--|--|--------------------|---------------------|---------------|---|----------------|----------|------|--|--|
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T JDeclared capacity for heating for part load at indoor temperature 20 °C part load at indoor temperature 20 °C and outdoor temperature T JT j = -7 °C T j = +7 °C T j = +7 °C T j = +7 °C T j = +7 °C P dh T j = +7 °C P dh T j = +12 °C P dh T j = +12 °C P dh T j = +12 °C P dh P dh <td>Rated heat output (*)</td> <td>Prated</td> <td>7</td> <td>kW</td> <td>Seasonal space heating energy efficiency</td> <td>η_s</td> <td>134</td> <td>%</td> | Rated heat output (*) | Prated | 7 | kW | Seasonal space heating energy efficiency | η _s | 134 | % | | |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | Declared capacity for heating for and outdoor temperature T j | or part load at in | idoor temperat | ure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | | |
| Tj = + 2 °C TPdh4,0 4,0KWTj = + 2 °C TCOPd3,35 | T j = – 7 °C | Pdh | 6,1 | kW | T j = – 7 °C | COPd | 1,90 | - | | |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | T j = + 2 °C | Pdh | 4,0 | kW | T j = +2 °C | COPd | 3,35 | - | | |
| T j = + 12 °CPdh3,0kWT j = +12 °CCOPd6,68T j = bivalent temperaturePdh6,5kWT j = bivalent temperatureCOPd1,55-T j = operation limit temperaturePdh6,5kWT j = operation limit temperatureCOPd1,55-For air-to-water heat pumps: T j = -15 °C (If TOL < - 20 °C) | T j = + 7 °C | Pdh | 2,5 | kW | T j = +7 °C | COPd | 5,08 | - | | |
| T j = bivalent temperaturePdh6,5KWT j = bivalent temperatureCOPd1,55-T j = operation limit temperaturePdh6,5kWT j = operation limit temperatureCOPd1,55-For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) | T j = + 12 °C | Pdh | 3,0 | kW | T j = +12 °C | COPd | 6,68 | - | | |
| T j = operation limit temperaturePdh6,5kWT j = operation limit temperatureCOPd1,55-For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) | T j = bivalent temperature | Pdh | 6,5 | kW | T j = bivalent temperature | COPd | 1,55 | - | | |
| For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)PdhnakWFor air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C)COPdna-Bivalent temperatureT biv-10°CFor air-to-water heat pumps: Operation limit temperatureTOL-10°CCycling interval capacity for heating P_{cych} nakWCycling interval efficiencyCOPcycna-Degradation co-efficient (**)Cdh0,98-Heating water operating limit temperatureWTOL655°CPower consumption in modes other than active mode0,015kWSupplementary heater Rated heat output (*)Psup0,5kWStandby mode P_{sa} 0,015kWType of energy inputElectricElectricCapacity controlVariableVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-6200m3/hSound power level, indoors/ outdoors L_{WA} na/60dB classAWater heating energy efficiency-naPer heat pump combination heater:Efficiency classAWater heating energy efficiencyNwh97%Daily electricity consumptionQelec7,880kWhAnnual fuel consumptionQfuelNAkWh | T j = operation limit temperature | Pdh | 6,5 | kW | T j = operation limit temperature | COPd | 1,55 | - | | |
| Bivalent temperature T_{biv} -10°CFor air-to-water heat pumps: Operation limit temperature TOL -10°CCycling interval capacity for heating P_{cych} nakWCycling interval efficiency $COPcyc$ na-Degradation co-efficient (**) Cdh $0,98$ -Heating water operating limit temperature $WTOL$ 65°CPower consumption in modes other than active mode $O,015$ kW Supplementary heater $Rated heat output (*)$ $Psup$ $0,5$ kW Off mode P_{orr} $0,015$ kW Supplementary heater $Rated heat output (*)$ $Psup$ $0,5$ kW Type of energy input $Electric$ $Electric$ $Electric$ $MarchMarchOther itemsP_{cx}0,000kWPromarch-water heat pumps:Rated air flow rate, outdoors 6200m3/hSound power level, indoors/outdoorsL_{WA}na/60dBBrowrate, outdoor heatexchanger naFor heat pump combination heater:EfficiencyA_{whh}Paily fleiconsumptionQ_{fuel}NADealared load profileXLEfficiencyA_{whh}Paily fleiconsumptionQ_{fuel}NAAnnual electricityconsumptionAEC1734kWhAnnual fuel consumptionAFCNA$ | For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - | | |
| Cycling interval capacity for heating P_{cych} nakWCycling interval efficiency $COPcyc$ na-Degradation co-efficient (**) Cdh 0.98 -Heating water operating limit temperature $WTOL$ 655 °CPower consumption in modes other than active mode $0,015$ kW Supplementary heaterSupplementary heaterOff mode P_{orf} $0,015$ kW Supplementary heaterRated heat output (*) $Psup$ $0,5$ kW Thermostat-off mode P_{or} $0,005$ kW Type of energy input $Electric$ $Electric$ Crankcase heater mode P_{cx} $0,000$ kW Type of energy input $Electric$ $m3/h$ Capacity controlVariable $Variable$ For air-to-water heat pumps: nated air flow rate, outdoors- 6200 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/60$ dB $Por water-/brine-to-water heat pumps:numps: Rated brine or waterflow rate, outdoor heatexchanger-nam3/hFor heat pump combination heater:EfficiencyAWater heating energy\Pi_{wh}977%Declared load profileXLEfficiencyclassAWater heating energyefficiency\Pi_{wh}gJ%Daily electricityconsumptionQelec7,880kWhDaily fuel consumptionAFCNAGJ$ | Bivalent temperature | T _{biv} | -10 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C | | |
| Degradation co-efficient (**) Cdh 0,98 - Heating water operating limit temperature WTOL 655 °C Power consumption in modes other than active mode Supplementary heater Supplementary heater Supplementary heater Rated heat output (*) Psup 0,5 kW Thermostat-off mode P ro 0,005 kW Rated heat output (*) Psup 0,5 kW Standby mode P se 0,015 kW Type of energy input Electric Electric For air-to-water heat pumps: For air-to-water heat pumps: - 6200 m3/h Capacity control Variable Variable GB For water-/brine-to-water heat pumps: - na m3/h Sound power level, indoors/ outdoors L wA na/60 dB Mater heating energy - na m3/h For heat pump combination heater: Efficiency A Water heating energy - na m3/h Daily electricity consumption Qelec 7,880 KWh Daily fuel consumption Qfuel NA KWh | Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - | | |
| Power consumption in modes other than active modeOff mode P_{orf} $0,015$ kW Off mode P_{orf} $0,015$ kW Thermostat-off mode P_{TO} $0,005$ kW Standby mode P_{58} $0,015$ kW Crankcase heater mode P_{CK} $0,000$ kW Other itemsFor air-to-water heat pumps: Rated air flow rate, outdoors $ 6200$ $m3/h$ Capacity controlVariableFor air-to-water heat pumps: pumps: Rated air flow rate, outdoors $ 6200$ $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/60$ dB dB $max = 10000 \text{ max}^2$ $ na$ $m3/h$ For heat pump combination heater:Efficiency class A $Mater heating energyefficiencyn_{wn}97\%Declared load profileXLEfficiencyclassAMater heating energyefficiencyn_{wn}97\%Daily electricityconsumptionQelec7,880kWhAnnual fuel consumptionAFCNAkWh$ | Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C | | |
| Off mode P_{OFF} $0,015$ kW Rated heat output (*) $Psup$ $0,5$ kW Thermostat-off mode P_{TO} $0,005$ kW Type of energy input $Electric$ $Electric$ Standby mode P_{SB} $0,015$ kW Type of energy input $Electric$ $Electric$ Crankcase heater mode P_{CK} $0,000$ kW Type of energy input $Electric$ $Electric$ Other items $Variable$ $Variable$ For air-to-water heat pumps: Rated air flow rate, outdoors- 6200 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/60$ dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat- na $m3/h$ For heat pump combination heater: $Efficiency$ classAWater heating energy efficiency n_{wh} 977 %Daily electricity consumptionQelec $7,880$ kWhDaily fuel consumptionQfuelNAkWhAnnual fuel consumptionAEC 1734 kWhAnnual fuel consumptionAFCNAGJ | Power consumption in modes of | other than active | e mode | | Supplementary heater | | | | | |
| Thermostat-off mode P_{TO} $0,005$ kW Type of energy input <i>Electric</i> Standby mode P_{SB} $0,015$ kW Type of energy input $Electric$ Crankcase heater mode P_{CK} $0,000$ kW Type of energy input $Electric$ Other items $0,000$ kW Type of energy input $Electric$ Capacity control $Variable$ $Variable$ For air-to-water heat pumps: Rated air flow rate, outdoors- 6200 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/60$ dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger- 6200 $m3/h$ For heat pump combination heater: $Variable$ kWh Water heating energy efficiency n_{wh} 97 %Daily electricity consumptionQelec $7,880$ kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC 1734 kWhAnnual fuel consumptionAFCNAGJ | Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,5 | kW | | |
| Standby mode P_{SB} $0,015$ kW Type of energy inputElectricCrankcase heater mode P_{CK} $0,000$ kW Type of energy input $Electric$ Other items P_{CK} $0,000$ kW Type of energy input $Electric$ Capacity control $Variable$ For air-to-water heat pumps: Rated air flow rate, outdoors- 6200 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/60$ dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger- 6200 $m3/h$ For heat pump combination heater: $Variable$ kWh $Water heating energy$ efficiency- na $m3/h$ Declared load profileXLEfficiency classA $Water heating energy$ efficiency n_{wh} 97 $\%$ Daily electricity consumptionQelec $7,880$ kWhDaily fuel consumption $Qfuel$ NAkWhAnnual electricity consumptionAEC 1734 kWhAnnual fuel consumptionAFCNA GJ | Thermostat-off mode | Р _{то} | 0,005 | kW | | | | | | |
| Crankcase heater mode P_{CK} $0,000$ kW Indicate the set of the set | Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | | | |
| Other items Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors 6200 m3/h Sound power level, indoors/ outdoors L MA na/60 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat na m3/h Annual energy consumption Q HE 4221 kWh KWh Mater heating energy efficiency na m3/h Declared load profile XL Efficiency class A Water heating energy efficiency na 977 % Daily electricity consumption Qelec 7,880 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1734 kWh Annual fuel consumption AFC NA GJ | Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | | | |
| Capacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors6200m3/hSound power level, indoors/ outdoorsL wAna/60dBFor water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger-6200m3/hAnnual energy consumptionQ HE4221kWhWater heating energy efficiency class-nam3/hFor heat pump combination heater:Efficiency classAWater heating energy efficiencyNmh97%Daily electricity consumptionQelec7,880kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1734kWhAnnual fuel consumptionAFCNAGJ | Other items | | | | | | | | | |
| Sound power level, indoors/ outdoorsL WAna/60dBFor water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchangernam3/hAnnual energy consumptionQ HE4221kWhWater heating energy efficiencynam3/hFor heat pump combination heater:Efficiency classAWater heating energy efficiencyNwh97%Daily electricity consumptionQelec7,880kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1734kWhAnnual fuel consumptionAFCNAGJ | Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | | |
| Annual energy consumption Q_{HE} 4221 kWh flow rate, outdoor heat exchangerIndIndIndFor heat pump combination heater:Declared load profileXLEfficiency classAWater heating energy efficiency | Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h | | |
| For heat pump combination heater: Declared load profile XL Efficiency class A Water heating energy efficiency η_{wh} 97 % Daily electricity consumption Qelec 7,880 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1734 kWh Annual fuel consumption AFC NA GJ | Annual energy consumption | Q _{HE} | 4221 | kWh | flow rate, outdoor heat exchanger | | | | | |
| Declared load profileXLEfficiency classAWater heating energy efficiencyNwh97%Daily electricity consumptionQelec7,880kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1734kWhAnnual fuel consumptionAFCNAGJ | For heat pump combination he | ater: | | | | | | | | |
| Daily electricity consumption Qelec 7,880 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1734 kWh Annual fuel consumption AFC NA GJ | Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 97 | % | | |
| Annual electricity AEC 1734 kWh Annual fuel consumption AFC NA GJ | Daily electricity consumption | Qelec | 7,880 | kWh | Daily fuel consumption | Qfuel | NA | kWh | | |
| | Annual electricity consumption | AEC | 1734 | kWh | Annual fuel consumption | AFC | NA | GJ | | |
| Contact details Enertech AB, Box 309, SE-341 26 Liungby Tel +46 372 88000 www.ctc.se | Contact details | Enertech AB. Boy | < 309. SF-341 26 | 6 Liunghy Tel | +46 372 88000 www.ctc.se | | 170904 | | | |

Information for heat pump space heaters and heat pump combination heaters **Average climate and Low temperature**

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 400V + CTC EcoZenith i350/ i350F | | | | | | |
|---------------------------------------|--|---------------------------|------|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A++ | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 186 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | A+++ | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | |
|--|--------------------|---------------------|---------------|---|----------------|----------|------|--|
| Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | η _s | 182 | % | |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | ndoor temperat | ure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | |
| T j = – 7 °C | Pdh | 5,7 | kW | T j = – 7 °C | COPd | 2,75 | - | |
| T j = + 2 °C | Pdh | 3,6 | kW | T j = +2 °C | COPd | 4,53 | - | |
| T j = + 7 °C | Pdh | 2,7 | kW | T j = +7 °C | COPd | 6,84 | - | |
| T j = + 12 °C | Pdh | 3,1 | kW | T j = +12 °C | COPd | 8,50 | - | |
| T j = bivalent temperature | Pdh | 6,2 | kW | T j = bivalent temperature | COPd | 2,28 | - | |
| T j = operation limit temperature | Pdh | 6,2 | kW | T j = operation limit temperature | COPd | 2,28 | - | |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - | |
| Bivalent temperature | T _{biv} | -10 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C | |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - | |
| Degradation co-efficient (**) | Cdh | 0,97 | - | Heating water operating limit temperature | WTOL | 65 | °C | |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | _ | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,2 | kW | |
| Thermostat-off mode | P _{TO} | 0,005 | kW | | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | | |
| Crankcase heater mode | Р _{ск} | 0,000 | kW | | | | | |
| Other items | | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h | |
| Annual energy consumption | Q _{HE} | 2854 | kWh | flow rate, outdoor heat exchanger | | | | |
| For heat pump combination he | ater: | | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 97 | % | |
| Daily electricity consumption | Qelec | 7,880 | kWh | Daily fuel consumption | Qfuel | NA | kWh | |
| Annual electricity consumption | AEC | 1734 | kWh | Annual fuel consumption | AFC | NA | GJ | |
| | | | | | | 170904 | | |
| Contact details | Enertech AB, Bo | x 309, SE-341 26 | 5 Ljungby Tel | +46 372 88000 www.ctc.se | | | | |

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Medium temperature**





| Model(s): | CTC EcoAir 510M 400V + CTC EcoZenith i350/ i350F | | | | | | |
|---------------------------------------|--|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 115 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | | |
|--|--------------------|---------------------|---------------|---|----------------|----------|------|--|--|
| Rated heat output (*) | Prated | 8 | kW | Seasonal space heating energy efficiency | η _s | 111 | % | | |
| Declared capacity for heating f and outdoor temperature T j | or part load at in | door temperat | cure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | | |
| T j = − 7 °C | Pdh | 4,6 | kW | T j = – 7 °C | COPd | 2,33 | - | | |
| T j = + 2 °C | Pdh | 2,9 | kW | T j = +2 °C | COPd | 3,83 | - | | |
| T j = + 7 °C | Pdh | 2,5 | kW | T j = +7 °C | COPd | 5,47 | - | | |
| T j = + 12 °C | Pdh | 3,0 | kW | T j = +12 °C | COPd | 6,99 | - | | |
| T j = bivalent temperature | Pdh | 5,7 | kW | T j = bivalent temperature | COPd | 1,48 | - | | |
| T j = operation limit temperature | Pdh | 4,4 | kW | T j = operation limit temperature | COPd | 1,13 | - | | |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | 6,0 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 1,50 | - | | |
| Bivalent temperature | T _{biv} | -14 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | -20 | °C | | |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - | | |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C | | |
| Power consumption in modes | other than active | mode | | Supplementary heater | | | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 7,8 | kW | | |
| Thermostat-off mode | Р _{то} | 0,005 | kW | | | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | | | |
| Crankcase heater mode | Р _{ск} | 0,000 | kW | | | | | | |
| Other items | | | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | | |
| Sound power level, indoors/ | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m3/h | | |
| Annual energy consumption | Q _{HE} | 6754 | kWh | flow rate, outdoor heat exchanger | | nu | məyn | | |
| For heat pump combination he | eater: | | | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 82 | % | | |
| Daily electricity consumption | Qelec | 9,257 | kWh | Daily fuel consumption | Qfuel | NA | kWh | | |
| Annual electricity consumption | AEC | 2037 | kWh | Annual fuel consumption | AFC | NA | GJ | | |
| Contact details | Enertech AB, Box | (309, SE-341 2 | 6 Liungby Tel | +46 372 88000 www.ctc.se | | 170904 | | | |

Information for heat pump space heaters and heat pump combination heaters Cold climate and Low temperature





| Model(s): | CTC EcoAir 510M 400V + CTC EcoZenith i350/ i350F | | | | | | |
|---------------------------------------|--|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 142 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Heat pump combination heater:

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | | |
|--|--------------------|---------------------|---------------|---|---------------------|----------|------|--|--|
| Rated heat output (*) | Prated | 5 | kW | Seasonal space heating energy efficiency | n _s | 138 | % | | |
| Declared capacity for heating and outdoor temperature T j | for part load at i | ndoor temperat | ure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | | |
| T j = − 7 °C | Pdh | 3,2 | kW | T j = – 7 °C | COPd | 3,20 | - | | |
| T j = + 2 °C | Pdh | 2,0 | kW | T j = +2 °C | COPd | 4,48 | - | | |
| T j = + 7 °C | Pdh | 2,6 | kW | T j = +7 °C | COPd | 6,66 | - | | |
| T j = + 12 °C | Pdh | 3,0 | kW | T j = +12 °C | COPd | 7,81 | - | | |
| T j = bivalent temperature | Pdh | 4,3 | kW | T j = bivalent temperature | COPd | 1,73 | - | | |
| T j = operation limit temperature | Pdh | 3,5 | kW | T j = operation limit temperature | COPd | 1,77 | - | | |
| For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C) | Pdh | 4,4 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 2,26 | - | | |
| Bivalent temperature | T _{biv} | -19 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | -22 | °C | | |
| Cycling interval capacity for heating | P cych | na | kW | Cycling interval efficiency | СОРсус | na | - | | |
| Degradation co-efficient (**) | Cdh | 0,97 | - | Heating water operating limit temperature | WTOL | 65 | °C | | |
| Power consumption in modes | other than activ | e mode | | Supplementary heater | | | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 5,4 | kW | | |
| Thermostat-off mode | Р _{то} | 0,005 | kW | | | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | | | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | | | |
| Other items | | | | | | _ | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | | |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m3/h | | |
| Annual energy consumption | Q _{HE} | 3766 | kWh | flow rate, outdoor heat exchanger | | 110 | məyn | | |
| For heat pump combination he | eater: | | | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 82 | % | | |
| Daily electricity consumption | Q _{elec} | 9,257 | kWh | Daily fuel consumption | \mathbf{Q}_{fuel} | NA | kWh | | |
| Annual electricity consumption | AEC | 2037 | kWh | Annual fuel consumption | AFC | NA | GJ | | |
| | | | | | | 170904 | | | |
| Contact details | Enertech AB. Bo | x 309. SE-341 2 | b Liungby Tel | 1+46 3/2 88000 www.ctc.se | | | | | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Medium temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 230V + CTC EcoZenith i350 | | | | | | |
|---------------------------------------|---|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 165 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|--------------|--|------------------------------|-------------------------------|----------------------|
| Rated heat output (*) | Prated | 9 | kW | Seasonal space heating energy efficiency | η _s | 161 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | idoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | iry energy rat tdoor tempe | io for rature T j |
| T j = − 7 °C | Pdh | na | kW | T j = – 7 °C | COPd | na | - 1 |
| T j = + 2 °C | Pdh | 9,2 | kW | T j = +2 °C | COPd | 2,28 | - |
| T j = + 7 °C | Pdh | 6,0 | kW | T j = +7 °C | COPd | 3,65 | - |
| T j = + 12 °C | Pdh | 2,8 | kW | T j = +12 °C | COPd | 5,71 | - |
| T j = bivalent temperature | Pdh | 9,2 | kW | T j = bivalent temperature | COPd | 2,28 | - |
| T j = operation limit temperature | Pdh | 9,2 | kW | T j = operation limit temperature | COPd | 2,28 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,99 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes o | ther than active | e mode | | Supplementary heater | | | • |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,1 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Other items | | | | | | - | - |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m3/h |
| Annual energy consumption | Q _{HE} | 3003 | kWh | flow rate, outdoor heat exchanger | | 114 | məym |
| For heat pump combination hea | ater: | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 122 | % |
| Daily electricity consumption | Qelec | 6,232 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1371 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | 200 65 244 25 | anti-anti- | | | 160901 | |
| (ontact details | nertech AB. BO | x 309. SE-341 2t | o Liungov Te | 1 +40 372 88000 WWW.CTC.Se | | | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Low temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 230V + CTC EcoZenith i350 | | | | | | |
|---------------------------------------|---|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 222 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|---------------------------------|----------------------|
| Rated heat output (*) | Prated | 9 | kW | Seasonal space heating energy efficiency | η _s | 218 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | idoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempei | io for rature T j |
| T j = – 7 °C | Pdh | na | kW | T j = – 7 °C | COPd | na | - |
| T j = + 2 °C | Pdh | 9,2 | kW | T j = +2 °C | COPd | 3,01 | - |
| T j = + 7 °C | Pdh | 6,1 | kW | T j = +7 °C | COPd | 5,27 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 7,65 | - |
| T j = bivalent temperature | Pdh | 7,3 | kW | T j = bivalent temperature | COPd | 3,01 | - |
| T j = operation limit temperature | Pdh | 9,2 | kW | T j = operation limit temperature | COPd | 3,01 | - |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,1 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| Annual energy consumption | Q _{HE} | 2250 | kWh | flow rate, outdoor heat exchanger | | | |
| For heat pump combination he | ater: | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 122 | % |
| Daily electricity consumption | Qelec | 6,232 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1371 | kWh | Annual fuel consumption | AFC | NA | GJ |
| Contact details | Enertech AB. Box | x 309, SE-341 26 | 6 Ljungby Tel | +46 372 88000 www.ctc.se | | 160901 | |

Information for heat pump space heaters and heat pump combination heaters Average climate and Medium temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 230V + CTC EcoZenith i350 | | | | | | |
|---------------------------------------|---|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A++ | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 129 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | A++ | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|-------------------|---------------------|------------|--|-------------------------------|--------------------------------|----------------------|
| Rated heat output (*) | Prated | 8 | kW | Seasonal space heating energy efficiency | η _s | 125 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at i | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | ince or prima 20 °C and οι | ary energy rat Itdoor tempe | io for rature T j |
| T j = − 7 °C | Pdh | 7,0 | kW | T j = − 7 °C | COPd | 1,95 | - |
| T j = + 2 °C | Pdh | 4,4 | kW | T j = +2 °C | COPd | 3,14 | - |
| T j = + 7 °C | Pdh | 2,8 | kW | T j = +7 °C | COPd | 4,63 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 6,17 | - |
| T j = bivalent temperature | Pdh | 7,2 | kW | T j = bivalent temperature | COPd | 1,84 | - |
| T j = operation limit temperature | Pdh | 6,1 | kW | T j = operation limit temperature | COPd | 1,71 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | -8 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes o | ther than activ | e mode | | Supplementary heater | | | _ |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 1,9 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m3/h |
| Annual energy consumption | Q _{HE} | 5155 | kWh | flow rate, outdoor heat exchanger | | 110 | məyn |
| For heat pump combination hea | ater: | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 97 | % |
| Daily electricity consumption | Qelec | 7,880 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1734 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | | | · · · · · · · · · · · · · · · · · · · | | 160901 | |
| Contact details E | nertech AB. Bo | x 309. SE-341 26 | Liungby Te | I +46 372 88000 www.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters **Average climate and Low temperature**





| Model(s): | CTC EcoAir 510M 230V + CTC EcoZenith i350 | | | | | | |
|---------------------------------------|---|---------------------------|------|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A++ | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 175 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | A+++ | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | |
|--|--------------------|---------------------|---------------|---|----------------|----------|------|--|
| Rated heat output (*) | Prated | 4 | kW | Seasonal space heating energy efficiency | n _s | 171 | % | |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | idoor temperat | ure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | |
| T j = – 7 °C | Pdh | 3,9 | kW | T j = – 7 °C | COPd | 2,92 | - 1 | |
| T j = + 2 °C | Pdh | 2,5 | kW | T j = +2 °C | COPd | 4,70 | - | |
| T j = + 7 °C | Pdh | 2,6 | kW | T j = +7 °C | COPd | 5,93 | - | |
| T j = + 12 °C | Pdh | 1,3 | kW | T j = +12 °C | COPd | 7,59 | - | |
| T j = bivalent temperature | Pdh | 4,3 | kW | T j = bivalent temperature | COPd | 2,62 | - | |
| T j = operation limit temperature | Pdh | 4,3 | kW | T j = operation limit temperature | COPd | 2,62 | - | |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - | |
| Bivalent temperature | T _{biv} | -10 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C | |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - | |
| Degradation co-efficient (**) | Cdh | 0,97 | - | Heating water operating limit temperature | WTOL | 65 | °C | |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | _ | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,0 | kW | |
| Thermostat-off mode | P _{TO} | 0,009 | kW | | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | | |
| Other items | | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h | |
| Annual energy consumption | Q _{HE} | 2005 | kWh | flow rate, outdoor heat exchanger | | | məyn | |
| For heat pump combination he | ater: | | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 97 | % | |
| Daily electricity consumption | Qelec | 7,880 | kWh | Daily fuel consumption | Qfuel | NA | kWh | |
| Annual electricity consumption | AEC | 1734 | kWh | Annual fuel consumption | AFC | NA | GJ | |
| | | | | | | 160901 | | |
| Contact details | Enertech AB, Bo | < 309, SE-341 26 | 5 Ljungby Tel | +46 372 88000 www.ctc.se | | | | |

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Medium temperature**





| Model(s): | CTC EcoAir 510M 230V + CTC EcoZenith i350 | | | | | | |
|---------------------------------------|---|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 120 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|-------------------------------|----------------------|
| Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | η _s | 116 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | iry energy rat tdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | 3,6 | kW | T j = – 7 °C | COPd | 2,45 | - |
| T j = + 2 °C | Pdh | 2,1 | kW | T j = +2 °C | COPd | 3,80 | - |
| T j = + 7 °C | Pdh | 2,5 | kW | T j = +7 °C | COPd | 4,95 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 6,44 | - |
| T j = bivalent temperature | Pdh | 4,9 | kW | T j = bivalent temperature | COPd | 1,61 | - |
| T j = operation limit temperature | Pdh | 4,8 | kW | T j = operation limit temperature | COPd | 1,56 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | 4,7 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 1,80 | - |
| Bivalent temperature | T _{biv} | -17 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | _ |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 5,8 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| Annual energy consumption | Q _{HE} | 4791 | kWh | flow rate, outdoor heat exchanger | | 114 | məyn |
| For heat pump combination he | ater: | | | | | | |
| Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | $\eta_{\rm wh}$ | 82 | % |
| Daily electricity consumption | Qelec | 9,257 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 2037 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | | | | | 160901 | |
| Contact details | Enertech AB. Box | x 309. SE-341 26 | 5 Liungby Tel | +46 372 88000 www.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Low temperature**





| Model(s): | CTC EcoAir 510N | 1 230V + CTC EcoZenith i350 | | | |
|---------------------------------------|-----------------|-----------------------------|-----|---|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | |
| Water-to-water heat pump: | No | Controller class: | VI | - | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | |
| Low-temperature heat pump: | No | Package efficiency: | 158 | % | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | |
| Heat pump combination heater: | Yes | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Rated heat output (*)Proted6kWSeasonal space heating energy efficiency n_s 15.4%Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature 7 jDeclared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature 7 jDeclared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C coPrdSolad Solad. $T = -7^{\circ}C$ Pdh $3,7$ $2,2$ WWKW $T = -7^{\circ}C$ $1 = +2^{\circ}C$ COPrd $5,08$ $5,28$. $T = -2^{\circ}C$ Pdh $2,6$ $2,9$ KWKW $T = -7^{\circ}C$ $1 = +2^{\circ}C$ COPrd $5,22$ $5,28$. $T = 1 = 7^{\circ}C$ Pdh $2,6$ $2,9$ KWKW $T = -7^{\circ}C$ $1 = +2^{\circ}C$ COPrd $5,22$ $2,24$. $T = -15^{\circ}C (f TOL < -20^{\circ}C)Pdh2,65,1KWT = -15^{\circ}C (f TOL < -20^{\circ}C)2,49.For air-to-water heat pumps:T = -15^{\circ}C (f TOL < -20^{\circ}C)Pdh5,1KWFor air-to-water heat pumps:T = -15^{\circ}C (f TOL < -20^{\circ}C)0^{\circ}CCycling interval capacity forheatingP_{ocr}0,015KWCycling interval efficiencyCOPycnaDegradation co-efficient (**)Cdh0,97-Heating water operating limitWTOLCOCCycling interval capacity forheatingP_{ocr}0,015kWCycling interval efficiencyCOPycnaOff modeP_{ocr}0,$ | Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|--|--------------------|---------------------|---------------|--|------------------------------|--------------------------------|----------------------|
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature TT j = -7 °CPdh3,7kWT j = -7 °CPdh2,6KWT j = -7 °CPdh2,6KWT j = +7 °CPdh2,6KWT j = +7 °CPdh2,9KWT j = +7 °CPdh2,9KWT j = +2 °CCOPd5,08T j = bivalent temperaturePdh2,9KWT j = ta 2 °CCOPdT j = operation limitCOPd2,24t emperaturePdh2,9KWT j = operation limitCOPdt emperaturePdh5,1KWT j = operation limitCOPdt j = -15 °C (ff TOL < -20 °C) | Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | η _s | 154 | % |
| TJPTT <th< td=""><td>Declared capacity for heating for and outdoor temperature T j</td><td>or part load at in</td><td>door temperat</td><td>ure 20 °C</td><td>Declared coefficient of performa part load at indoor temperature</td><td>nce or prima 20 °C and ou</td><td>iry energy rat tdoor tempei</td><td>io for rature T j</td></th<> | Declared capacity for heating for and outdoor temperature T j | or part load at in | door temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | iry energy rat tdoor tempei | io for rature T j |
| T j = + 2 °CPdh2,2KWT j = + 2 °CCOPd5,08-T j = + 12 °CPdh2,6KWT j = + 12 °CCOPd6,27-T j = + 12 °CPdh2,9KWT j = + 12 °CCOPd7,59-T j = operation limit temperaturePdh2,9KWT j = operation limit temperatureCOPd1,91-T j = operation limit temperaturePdh5,1KWT j = operation limit temperatureCOPd2,49-For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) | T j = – 7 °C | Pdh | 3,7 | kW | T j = − 7 °C | COPd | 3,16 | - |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | T j = + 2 °C | Pdh | 2,2 | kW | T j = +2 °C | COPd | 5,08 | - |
| T j = + 12 °CPdh2,9kWT j = + 12 °CCOPd7,59-T j = bivalent temperaturePdh5,4kWT j = operation limit temperatureCOPd2,24-T j = operation limit temperaturePdh2,9kWT j = operation limit temperatureCOPd1,91-For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C) | T j = + 7 °C | Pdh | 2,6 | kW | T j = +7 °C | COPd | 6,27 | - |
| T j = bivalent temperature Pdh 5,4 kW T j = bivalent temperature COPd 2,24 - T j = operation limit Pdh 2,9 kW T j = operation limit COPd 1,91 - For air-to-water heat pumps: T j = operation limit COPd 2,49 - For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C) | T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 7,59 | - |
| T j = operation limit temperature Pdh 2,9 kW T j = operation limit temperature COPd 1,91 - For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) | T j = bivalent temperature | Pdh | 5,4 | kW | T j = bivalent temperature | COPd | 2,24 | - |
| For air-to-water heat pumps: T = -15 °C (if TOL < -20 °C) Pdh 5,1 kW For air-to-water heat pumps: $T = -15 °C (if TOL < -20 °C)$ COPd 2,49 - Bivalent temperature T_{biv} -17 °C For air-to-water heat pumps: Operation limit temperature TOL 0 °C Cycling interval capacity for heating P_{cych} na kW Cycling interval efficiency $COPcyc$ na - Degradation co-efficient (**) Cdh 0,97 - Heating water operating limit temperature $WTOL$ 65 °C Power consumption in modes other than active mode 0,015 kW KW Supplementary heater Rated heat output (*) Psup 3,1 kW Thermostat-off mode P_{orc} 0,015 kW Type of energy input Electric Electric Crankcase heater mode P_{cx} 0,023 kW For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 $m3/h$ Sound power level, indoors/ L_{WA} na/60 dB dB Dumps: Rated brine or water - na $m3/h$ For heat pump combination heater: | T j = operation limit temperature | Pdh | 2,9 | kW | T j = operation limit temperature | COPd | 1,91 | - |
| Bivalent temperature T_{biv} -17 °C For air-to-water heat pumps: Operation limit temperature TOL 0 °C Cycling interval capacity for heating P_{cych} na kW Cycling interval efficiency $COPcyc$ na Degradation co-efficient (**) Cdh 0,97 - Heating water operating limit temperature $WTOL$ 65 °C Power consumption in modes other than active mode 0,015 kW Supplementary heater Rated heat output (*) $Psup$ $3,1$ kW Thermostat-off mode P_{crc} $0,009$ kW Type of energy input $Electric$ $Electric$ Crankcase heater mode P_{crc} $0,023$ kW Type of energy input $Electric$ $m3/h$ Sound power level, indoors/ outdoors L_{WA} na/60 dB max | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | 5,1 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 2,49 | - |
| Cycling interval capacity for heating P cych na kW Cycling interval efficiency COPcyc na - Degradation co-efficient (**) Cdh 0,97 - Heating water operating limit wTOL 655 °C Power consumption in modes other than active mode Supplementary heater Supplementary heater Supplementary heater Off mode P orr 0,015 kW Rated heat output (*) Psup 3,1 kW Type of energy input Electric - | Bivalent temperature | T _{biv} | -17 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Degradation co-efficient (**) Cdh 0,97 - Heating water operating limit temperature WTOL 65 *C Power consumption in modes other than active mode Off mode Porf 0,015 kW Supplementary heater Supplementary heater Supplementary heater Rated heat output (*) Psup 3,1 kW Thermostat-off mode P ro 0,009 kW Type of energy input Electric Electric Electric For air-to-water heat pumps: 650 m3/h Capacity control Variable Variable For air-to-water heat pumps: - 6200 m3/h Sound power level, indoors/ outdoors L wA na/60 dB kWh For water-/brine-to-water heat pumps: - na m3/h For heat pump combination heater: Efficiency A KWh Water heating energy n_wh 82 % Daily electricity consumption Q _{elec} 9,257 kWh Annual fuel consumption AFC NA KWh Annual electricity AEC 2037 kWh Annual fuel consumption AFC NA GJ | Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Power consumption in modes other than active mode Supplementary heater Off mode P orr 0,015 kW Thermostat-off mode P ro 0,009 kW Standby mode P se 0,015 kW Crankcase heater mode P cx 0,023 kW Other items Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/60 dB row rate, outdoors - na m3/h For heat pump combination heater: Declared load profile XL Efficiency class A Water heating energy efficiency n _{wh} 82 % Daily electricity consumption Q _{elec} 9,257 kWh Annual fuel consumption AFC NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA KWh | Degradation co-efficient (**) | Cdh | 0,97 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Off mode P orf 0,015 kW Rated heat output (*) Psup 3,1 kW Thermostat-off mode P ro 0,009 kW Type of energy input Electric Electric Standby mode P ss 0,015 kW Type of energy input Electric Electric Crankcase heater mode P cx 0,023 kW Type of energy input Electric Electric Other items - - 6200 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/60 dB for water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h For heat pump combination heater: - - na m3/h Declared load profile XL Efficiency class A Water heating energy efficiency NA kWh Annual electricity consumption Qelec 9,257 kWh Daily fuel consumption Qiuel NA kWh Annual fuel consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ | Power consumption in modes of | other than active | mode | | Supplementary heater | | | _ |
| Thermostat-off mode P TO 0,009 kW Type of energy input Electric Standby mode P SB 0,015 kW Type of energy input Electric Crankcase heater mode P CK 0,023 kW Type of energy input Electric Other items - 6200 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/60 dB For water-/brine-to-water heat pumps: Rated bine or water flow rate, outdoor heat exchanger - na m3/h For heat pump combination heater: - Image: Classic classic class A Water heating energy efficiency n_wh 82 % Daily electricity consumption Q_elec 9,257 kWh Daily fuel consumption Q_{fuel} NA kWh Annual electricity AEC 2037 kWh Annual fuel consumption AFC NA GJ | Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 3,1 | kW |
| Standby mode P 58 0,015 kW Type of energy input Electric Crankcase heater mode P cx 0,023 kW Type of energy input Electric Other items - 6200 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/60 dB B pumps: Rated brine or water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h Annual energy consumption Q HE 3780 kWh Water heating energy efficiency n _{wh} 82 % Daily electricity consumption Q _{elec} 9,257 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ | Thermostat-off mode | Ρ _{ΤΟ} | 0,009 | kW | | | | |
| Crankcase heater mode P ck 0,023 kW Other items Other items For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L WA na/60 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h For heat pump combination heater: 3780 kWh Water heating energy efficiency n_wh 82 % Daily electricity consumption Q _{elec} 9,257 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ | Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Other items Variable For air-to-water heat pumps: Rated air flow rate, outdoors 6200 m3/h Sound power level, indoors/ outdoors L _{WA} na/60 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - 6200 m3/h Annual energy consumption Q _{HE} 3780 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h For heat pump combination heater: 3780 kWh Water heating energy efficiency n_wh 82 % Daily electricity consumption Q _{elec} 9,257 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ | Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L _{WA} na/60 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - 6200 m3/h Annual energy consumption Q _{HE} 3780 kWh Power level, indoor heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h For heat pump combination heater: Beclared load profile XL Efficiency class A Water heating energy efficiency Nwh 82 % Daily electricity consumption Q _{elec} 9,257 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ | Other items | | | | | | | |
| Sound power level, indoors/ outdoors L WA na/60 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat na m3/h Annual energy consumption Q HE 3780 kWh For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h For heat pump combination heater: Efficiency class A Water heating energy efficiency Nwh 82 % Daily electricity consumption Q _{elec} 9,257 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ Context class AEC 20037 kWh Munual fuel consumption AFC NA GJ | Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Annual energy consumption Q _{HE} 3780 kWh flow rate, outdoor heat exchanger Image: Constraint of the sector of the se | Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | | m2/h |
| For heat pump combination heater: Declared load profile XL Efficiency class A Water heating energy efficiency η_{wh} 82 % Daily electricity consumption Q_{elec} 9,257 kWh Daily fuel consumption Q_{fuel} NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ | Annual energy consumption | Q _{HE} | 3780 | kWh | flow rate, outdoor heat exchanger | | IId | məyn |
| Declared load profile XL Efficiency class A Water heating energy efficiency n _{wh} 82 % Daily electricity consumption Q _{elec} 9,257 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ | For heat pump combination he | ater: | | | | | | |
| Daily electricity consumption Q _{elec} 9,257 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ Interview of the set | Declared load profile | XL | Efficiency class | Α | Water heating energy efficiency | η_{wh} | 82 | % |
| Annual electricity consumption AEC 2037 kWh Annual fuel consumption AFC NA GJ 160901 | Daily electricity consumption | Q _{elec} | 9,257 | kWh | Daily fuel consumption | \mathbf{Q}_{fuel} | NA | kWh |
| 160901 | Annual electricity consumption | AEC | 2037 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | Courte et dete lle | Enortach AD De- | 200 CE 244 24 | E Liunghu Tel | | | 160901 | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Medium temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510N | A 230V+ CTC EcoLogic | | | |
|---------------------------------------|-----------------|---------------------------|-----|---|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | |
| Water-to-water heat pump: | No | Controller class: | VI | - | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | |
| Low-temperature heat pump: | No | Package efficiency: | 165 | % | |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - | |
| Heat pump combination heater: | No | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|------------------------------|----------------------|
| Rated heat output (*) | Prated | 9 | kW | Seasonal space heating energy efficiency | η _s | 161 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ry energy rat tdoor tempe | io for rature T j |
| T j = − 7 °C | Pdh | na | kW | T j = − 7 °C | COPd | na | - |
| T j = + 2 °C | Pdh | 9,2 | kW | T j = +2 °C | COPd | 2,28 | - |
| T j = + 7 °C | Pdh | 6,0 | kW | T j = +7 °C | COPd | 3,65 | - |
| T j = + 12 °C | Pdh | 2,8 | kW | T j = +12 °C | COPd | 5,71 | - |
| T j = bivalent temperature | Pdh | 9,2 | kW | T j = bivalent temperature | COPd | 2,28 | - |
| T j = operation limit temperature | Pdh | 9,2 | kW | T j = operation limit temperature | COPd | 2,28 | - |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,99 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | _ |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,1 | kW |
| Thermostat-off mode | P _{TO} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m2/h |
| Annual energy consumption | Q _{HE} | 3003 | kWh | flow rate, outdoor heat exchanger | - | IId | 1113/11 |
| For heat pump combination heat | ater: | | | | | | |
| Declared load profile | na | Efficiency class | na | Water heating energy efficiency | η_{wh} | na | % |
| Daily electricity consumption | Qelec | na | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | na | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | 200 65 244 25 | | . 40 272 00000 | | 160825 | |
| Contact details | nertech AB. Bo | x 309. SE-341 26 | o Liungby Tel | +40 372 88000 WWW.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Low temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510N | 1 230V+ CTC EcoLogic | | | |
|---------------------------------------|-----------------|---------------------------|-----|---|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | |
| Water-to-water heat pump: | No | Controller class: | VI | - | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | |
| Low-temperature heat pump: | No | Package efficiency: | 222 | % | |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - | |
| Heat pump combination heater: | No | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|--------------------------------|----------------------|
| Rated heat output (*) | Prated | 9 | kW | Seasonal space heating energy efficiency | η _s | 218 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at in | idoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | na | kW | T j = – 7 °C | COPd | na | - |
| T j = + 2 °C | Pdh | 9,2 | kW | T j = +2 °C | COPd | 3,01 | - |
| T j = + 7 °C | Pdh | 6,1 | kW | T j = +7 °C | COPd | 5,27 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 7,65 | - |
| T j = bivalent temperature | Pdh | 7,3 | kW | T j = bivalent temperature | COPd | 3,01 | - |
| T j = operation limit temperature | Pdh | 9,2 | kW | T j = operation limit temperature | COPd | 3,01 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | _ |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,1 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| Annual energy consumption | Q _{HE} | 2250 | kWh | flow rate, outdoor heat exchanger | | | |
| For heat pump combination he | ater: | | | | | | |
| Declared load profile | na | Efficiency class | na | Water heating energy efficiency | η_{wh} | na | % |
| Daily electricity consumption | Qelec | na | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | na | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | | ··· · - · | | | 160825 | |
| Contact details | Enertech AB, Boy | k 309, SE-341 26 | 5 Ljungby Tel | +46 372 88000 www.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters Average climate and Medium temperature





| Model(s): | CTC EcoAir 510N | 1 230V+ CTC EcoLogic | | | |
|---------------------------------------|-----------------|---------------------------|-----|---|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A++ | - | |
| Water-to-water heat pump: | Νο | Controller class: | VI | - | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | |
| Low-temperature heat pump: | No | Package efficiency: | 129 | % | |
| Equipped with a supplementary heater: | No | Package efficiency class: | A++ | - | |
| Heat pump combination heater: | No | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|---------------------------------|---------------------|
| Rated heat output (*) | Prated | 8 | kW | Seasonal space heating energy efficiency | η _s | 125 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempei | io for ature T j |
| T j = − 7 °C | Pdh | 7,0 | kW | T j = – 7 °C | COPd | 1,95 | - |
| T j = + 2 °C | Pdh | 4,4 | kW | T j = +2 °C | COPd | 3,14 | - |
| T j = + 7 °C | Pdh | 2,8 | kW | T j = +7 °C | COPd | 4,63 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 6,17 | - |
| T j = bivalent temperature | Pdh | 7,2 | kW | T j = bivalent temperature | COPd | 1,84 | - |
| T j = operation limit temperature | Pdh | 6,1 | kW | T j = operation limit temperature | COPd | 1,71 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | -8 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 1,9 | kW |
| Thermostat-off mode | P _{TO} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{ск} | 0,023 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| Annual energy consumption | Q _{HE} | 5155 | kWh | flow rate, outdoor heat exchanger | | | |
| For heat pump combination hea | ater: | | | | | | |
| Declared load profile | na | Efficiency class | na | Water heating energy efficiency | $\eta_{\rm wh}$ | na | % |
| Daily electricity consumption | Qelec | na | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | na | kWh | Annual fuel consumption | AFC | NA | GJ |
| Contact details | Enertech AB, Bo | x 309, SE-341 26 | 5 Ljungby Tel | +46 372 88000 www.ctc.se | | 100825 | |

Information for heat pump space heaters and heat pump combination heaters **Average climate and Low temperature**





| Model(s): | CTC EcoAir 510N | 1 230V+ CTC EcoLogic | | |
|---------------------------------------|-----------------|---------------------------|------|---|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A++ | - |
| Water-to-water heat pump: | No | Controller class: | VI | - |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % |
| Low-temperature heat pump: | No | Package efficiency: | 175 | % |
| Equipped with a supplementary heater: | No | Package efficiency class: | A+++ | - |
| Heat pump combination heater: | No | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|-------------|--|------------------------------|---------------------------------|----------------------|
| Rated heat output (*) | Prated | 4 | kW | Seasonal space heating energy efficiency | η _s | 171 | % |
| Declared capacity for heating f and outdoor temperature T j | or part load at in | door temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempei | io for rature T j |
| T j = – 7 °C | Pdh | 3,9 | kW | T j = – 7 °C | COPd | 2,92 | - |
| T j = + 2 °C | Pdh | 2,5 | kW | T j = +2 °C | COPd | 4,70 | - |
| T j = + 7 °C | Pdh | 2,6 | kW | T j = +7 °C | COPd | 5,93 | - |
| T j = + 12 °C | Pdh | 1,3 | kW | T j = +12 °C | COPd | 7,59 | - |
| T j = bivalent temperature | Pdh | 4,3 | kW | T j = bivalent temperature | COPd | 2,62 | - |
| T j = operation limit temperature | Pdh | 4,3 | kW | T j = operation limit temperature | COPd | 2,62 | - |
| For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | -10 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P cych | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,97 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes | other than active | mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,0 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,023 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| Annual energy consumption | Q _{HE} | 2005 | kWh | flow rate, outdoor heat exchanger | | | |
| For heat pump combination he | eater: | | | · · · · · | | | |
| Declared load profile | na | Efficiency class | na | Water heating energy efficiency | η_{wh} | na | % |
| Daily electricity consumption | Qelec | na | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | na | kWh | Annual fuel consumption | AFC | NA | GJ |
| Contact details | Enertech AB, Bo | 309, SE-341 26 | Ljungby Tel | +46 372 88000 www.ctc.se | | 160825 | |

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Medium temperature**





| Model(s): | CTC EcoAir 510N | 1 230V+ CTC EcoLogic | | | |
|---------------------------------------|-----------------|---------------------------|-----|---|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | |
| Water-to-water heat pump: | No | Controller class: | VI | - | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | |
| Low-temperature heat pump: | No | Package efficiency: | 120 | % | |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - | |
| Heat pump combination heater: | No | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | |
|--|--------------------|---------------------------------------|---------------|--|------------------------------|--------------------------------|----------|
| Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | η _s | 116 | |
| Declared capacity for heating for and outdoor temperature T j | or part load at ii | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat itdoor tempe | ic ra |
| T j = – 7 °C | Pdh | 3,6 | kW | T j = – 7 °C | COPd | 2,45 | 1 |
| T j = + 2 °C | Pdh | 2,1 | kW | T j = +2 °C | COPd | 3,80 | 1 |
| T j = + 7 °C | Pdh | 2,5 | kW | T j = +7 °C | COPd | 4,95 | 1 |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 6,44 | |
| T j = bivalent temperature | Pdh | 4,9 | kW | T j = bivalent temperature | COPd | 1,61 | |
| T j = operation limit temperature | Pdh | 4,8 | kW | T j = operation limit temperature | COPd | 1,56 | |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | 4,7 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 1,80 | |
| Bivalent temperature | T _{biv} | -17 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | |
| Power consumption in modes of | other than activ | e mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 5,8 | |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0.015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Рск | 0.023 | kW | | | | |
| Other items | · cr | 0,010 | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | |
| Sound power level, indoors/ | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | |
| Annual energy consumption | Q _{HE} | 4791 | kWh | flow rate, outdoor heat exchanger | | | |
| For heat pump combination he | ater: | · · · · · · · · · · · · · · · · · · · | | | | • | |
| Declared load profile | na | Efficiency class | na | Water heating energy efficiency | η_{wh} | na | |
| Daily electricity consumption | Qelec | na | kWh | Daily fuel consumption | Qfuel | NA | |
| Annual electricity consumption | AEC | na | kWh | Annual fuel consumption | AFC | NA | |
| | | | | | | 160825 | _ |
| Contact details | Enertech AB, Bo | x 309, SE-341 20 | 6 Ljungby Tel | +46 372 88000 www.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Low temperature**

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510N | 1 230V+ CTC EcoLogic | | | |
|---------------------------------------|-----------------|---------------------------|-----|---|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | |
| Water-to-water heat pump: | No | Controller class: | VI | - | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | |
| Low-temperature heat pump: | No | Package efficiency: | 158 | % | |
| Equipped with a supplementary heater: | No | Package efficiency class: | | - | |
| Heat pump combination heater: | No | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | • |
|--|--------------------|---------------------|---------------|--|------------------------------|-------------------------------|---|
| Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | η _s | 154 | |
| Declared capacity for heating for and outdoor temperature T j | or part load at ii | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | iry energy rat tdoor tempe | i |
| T j = – 7 °C | Pdh | 3,7 | kW | T j = – 7 °C | COPd | 3,16 | 1 |
| T j = + 2 °C | Pdh | 2,2 | kW | T j = +2 °C | COPd | 5,08 | |
| T j = + 7 °C | Pdh | 2,6 | kW | T j = +7 °C | COPd | 6,27 | |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 7,59 | |
| Г ј = bivalent temperature | Pdh | 5,4 | kW | T j = bivalent temperature | COPd | 2,24 | |
| T j = operation limit temperature | Pdh | 2,9 | kW | T j = operation limit temperature | COPd | 1,91 | |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | 5,1 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 2,49 | |
| Bivalent temperature | T _{biv} | -17 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | |
| Cycling interval capacity for neating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | |
| Degradation co-efficient (**) | Cdh | 0,97 | - | Heating water operating limit temperature | WTOL | 65 | |
| Power consumption in modes o | other than active | e mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 3,1 | |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Рск | 0.023 | kW | | | | |
| Other items | c.r. | | | | | | - |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | Ī |
| L Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | |
| Annual energy consumption | Q _{HE} | 3780 | kWh | flow rate, outdoor heat exchanger | | | |
| For heat pump combination he | ater: | • | | | | • | 1 |
| Declared load profile | na | Efficiency class | na | Water heating energy efficiency | η_{wh} | na | |
| Daily electricity consumption | Q_{elec} | na | kWh | Daily fuel consumption | \mathbf{Q}_{fuel} | NA | |
| Annual electricity consumption | AEC | na | kWh | Annual fuel consumption | AFC | NA | |
| | | | | | | 160825 | - |
| Contact details | Enertech AB, Bo | x 309, SE-341 2 | 6 Ljungby Tel | +46 372 88000 www.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Medium temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 400V + EcoZenith i250 | | | | | | |
|---------------------------------------|---------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 156 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|-------------------------|---|------------------------------|-------------------------------|----------------------|
| Rated heat output (*) | Prated | 9 | kW | Seasonal space heating energy efficiency | η _s | 152 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at ir | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | iry energy rat tdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | na | kW | T j = – 7 °C | COPd | na | - |
| T j = + 2 °C | Pdh | 8,7 | kW | T j = +2 °C | COPd | 1,58 | - |
| T j = + 7 °C | Pdh | 5,8 | kW | T j = +7 °C | COPd | 3,34 | - |
| T j = + 12 °C | Pdh | 3,0 | kW | T j = +12 °C | COPd | 5,66 | - |
| T j = bivalent temperature | Pdh | 8,7 | kW | T j = bivalent temperature | COPd | 1,58 | - |
| T j = operation limit temperature | Pdh | 8,7 | kW | T j = operation limit temperature | COPd | 1,58 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,99 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,026 | kW | Rated heat output (*) | Psup | 0,1 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,026 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ | L _{WA} | na/58 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m2/h |
| Annual energy consumption | Q _{HE} | 3027 | kWh | flow rate, outdoor heat exchanger | | 114 | 113/11 |
| For heat pump combination he | ater: | | | | | | - |
| Declared load profile | L | Efficiency class | na | Water heating energy efficiency | N^{wh} | 67 | % |
| Daily electricity consumption | Qelec | 6,958 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1531 | kWh | Annual fuel consumption | AFC | NA | GJ |
| • • • • • • • | Therete also a | | 1 to see the set of the | | | 160203 | |
| Contact details | Enertech AB. BO | x 309. SE-341 2t | D LIUNGDV 1 E | 1 +40 372 88000 WWW.CTC.Se | | | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Low temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 400V + EcoZenith i250 | | | | | | |
|---------------------------------------|---------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 204 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|--------------------------------|----------------------|
| Rated heat output (*) | Prated | 7 | kW | Seasonal space heating energy efficiency | η _s | 200 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at in | idoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | na | kW | T j = – 7 °C | COPd | na | - |
| T j = + 2 °C | Pdh | 7,3 | kW | T j = +2 °C | COPd | 2,55 | - |
| T j = + 7 °C | Pdh | 4,7 | kW | T j = +7 °C | COPd | 4,97 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 6,58 | - |
| T j = bivalent temperature | Pdh | 7,3 | kW | T j = bivalent temperature | COPd | 2,55 | - |
| T j = operation limit temperature | Pdh | 7,3 | kW | T j = operation limit temperature | COPd | 2,55 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,99 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,026 | kW | Rated heat output (*) | Psup | 0,0 | kW |
| Thermostat-off mode | P _{TO} | 0,005 | kW | | | | |
| Standby mode | P _{SB} | 0,003 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/58 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | 22 | m3/h |
| Annual energy consumption | Q _{HE} | 1922 | kWh | flow rate, outdoor heat exchanger | | 114 | məyn |
| For heat pump combination he | ater: | | | | | | |
| Declared load profile | L | Efficiency class | na | Water heating energy efficiency | $\eta_{\rm wh}$ | 67 | % |
| Daily electricity consumption | Qelec | 6,958 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1531 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | | | · | | 160203 | |
| Contact details | Enertech AB. Box | 309. SE-341 26 | 5 Liungby Tel | +46 372 88000 www.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters Average climate and Medium temperature





| Model(s): | CTC EcoAir 510M 400V + EcoZenith i250 | | | | | | |
|---------------------------------------|---------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A+ | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 118 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | A+ | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|---------------------------------|----------------------|
| Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | η _s | 114 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at in | idoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempei | io for rature T j |
| T j = − 7 °C | Pdh | 5,7 | kW | T j = – 7 °C | COPd | 1,64 | - |
| T j = + 2 °C | Pdh | 3,5 | kW | T j = +2 °C | COPd | 2,93 | - |
| T j = + 7 °C | Pdh | 2,3 | kW | T j = +7 °C | COPd | 4,20 | - |
| T j = + 12 °C | Pdh | 3,0 | kW | T j = +12 °C | COPd | 6,04 | - |
| T j = bivalent temperature | Pdh | 5,7 | kW | T j = bivalent temperature | COPd | 1,64 | - |
| T j = operation limit temperature | Pdh | 4,8 | kW | T j = operation limit temperature | COPd | 1,34 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | -7 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P cych | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,026 | kW | Rated heat output (*) | Psup | 1,6 | kW |
| Thermostat-off mode | P _{TO} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,026 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{ск} | 0,000 | kW | | | | |
| Other items | | 11 | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/58 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| Annual energy consumption | Q _{HE} | 4506 | kWh | flow rate, outdoor heat exchanger | | 114 | 113/11 |
| For heat pump combination he | ater: | | | | | | |
| Declared load profile | L | Efficiency class | В | Water heating energy efficiency | $\eta_{\rm wh}$ | 53 | % |
| Daily electricity consumption | Qelec | 8,570 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1885 | kWh | Annual fuel consumption | AFC | NA | GJ |
| Contact details | Enertech AB. Boy | < 309. SE-341 26 | 6 Liungby Tel | +46 372 88000 www.ctc.se | | 160203 | |

Information for heat pump space heaters and heat pump combination heaters **Average climate and Low temperature**





| Model(s): | CTC EcoAir 510N | TC EcoAir 510M 400V + EcoZenith i250 | | | | | |
|---------------------------------------|-----------------|--------------------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A++ | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 155 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | A++ | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | |
|--|--------------------|---------------------|---------------|---|----------------|----------|------|--|
| Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | η _s | 151 | % | |
| Declared capacity for heating for and outdoor temperature T j | or part load at in | door temperat | ure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | |
| T j = – 7 °C | Pdh | 5,5 | kW | T j = – 7 °C | COPd | 2,27 | - | |
| T j = + 2 °C | Pdh | 3,5 | kW | T j = +2 °C | COPd | 3,74 | - | |
| T j = + 7 °C | Pdh | 2,6 | kW | T j = +7 °C | COPd | 5,88 | - | |
| T j = + 12 °C | Pdh | 3,0 | kW | T j = +12 °C | COPd | 7,36 | - | |
| T j = bivalent temperature | Pdh | 5,5 | kW | T j = bivalent temperature | COPd | 2,27 | - | |
| T j = operation limit temperature | Pdh | 3,0 | kW | T j = operation limit temperature | COPd | 1,91 | - | |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - | |
| Bivalent temperature | T _{biv} | -7 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C | |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - | |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C | |
| Power consumption in modes of | other than active | mode | | Supplementary heater | | | - | |
| Off mode | P _{OFF} | 0,026 | kW | Rated heat output (*) | Psup | 0,2 | kW | |
| Thermostat-off mode | P _{TO} | 0,005 | kW | | | | | |
| Standby mode | P _{SB} | 0,026 | kW | Type of energy input | | Electric | | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | | |
| Other items | | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | |
| Sound power level, indoors/ outdoors | L _{WA} | na/58 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h | |
| Annual energy consumption | Q _{HE} | 3276 | kWh | flow rate, outdoor heat exchanger | | | | |
| For heat pump combination he | ater: | | | | | | | |
| Declared load profile | L | Efficiency class | В | Water heating energy efficiency | η_{wh} | 53 | % | |
| Daily electricity consumption | Qelec | 8,570 | kWh | Daily fuel consumption | Qfuel | NA | kWh | |
| Annual electricity consumption | AEC | 1885 | kWh | Annual fuel consumption | AFC | NA | GJ | |
| | | | | | | 160406 | | |
| Contact details | Enertech AB, Boy | (309, SE-341 26 | 5 Ljungby Tel | +46 372 88000 www.ctc.se | | | | |

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Medium temperature**





| Model(s): | CTC EcoAir 510M 400V + EcoZenith i250 | | | | | | |
|---------------------------------------|---------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 102 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | |
|--|--------------------|---------------------|---------------|---|----------------|----------|---------|--|
| Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | η _s | 98 | % | |
| Declared capacity for heating f and outdoor temperature T j | or part load at in | door temperat | ure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | |
| T j = − 7 °C | Pdh | 3,6 | kW | T j = – 7 °C | COPd | 2,05 | - | |
| T j = + 2 °C | Pdh | 2,4 | kW | T j = +2 °C | COPd | 3,32 | - | |
| T j = + 7 °C | Pdh | 2,3 | kW | T j = +7 °C | COPd | 4,83 | - | |
| T j = + 12 °C | Pdh | 3,0 | kW | T j = +12 °C | COPd | 6,22 | - | |
| T j = bivalent temperature | Pdh | 4,1 | kW | T j = bivalent temperature | COPd | 1,64 | - | |
| T j = operation limit temperature | Pdh | 2,7 | kW | T j = operation limit temperature | COPd | 1,03 | - | |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | 4,5 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 0,76 | - | |
| Bivalent temperature | T _{biv} | -11 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C | |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - | |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C | |
| Power consumption in modes | other than active | mode | | Supplementary heater | | | _ | |
| Off mode | P _{OFF} | 0,026 | kW | Rated heat output (*) | Psup | 6,0 | kW | |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | | |
| Standby mode | P _{SB} | 0,026 | kW | Type of energy input | | Electric | | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | | |
| Other items | | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | |
| Sound power level, indoors/ | L _{WA} | na/58 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h | |
| Annual energy consumption | Q _{HE} | 5844 | kWh | flow rate, outdoor heat exchanger | | | 1110/11 | |
| For heat pump combination he | eater: | | | | | | | |
| Declared load profile | L | Efficiency class | na | Water heating energy efficiency | η_{wh} | 47 | % | |
| Daily electricity consumption | Qelec | 9,856 | kWh | Daily fuel consumption | Qfuel | NA | kWh | |
| Annual electricity consumption | AEC | 2168 | kWh | Annual fuel consumption | AFC | NA | GJ | |
| | | 200 05 044 5 | <u></u> | 46.272.00000 | | 160203 | | |
| Contact details | Enertech AB, Box | 309, SE-341 20 | 6 Ljungby Tel | +46 372 88000 www.ctc.se | | | | |

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Low temperature**





| Model(s): | CTC EcoAir 510M 400V + EcoZenith i250 | | | | | | |
|---------------------------------------|---------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 132 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Rated heat output (*)Proted5kWSeasonal space heating energy efficiency128%Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature 7 jDeclared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature 20 °C part load at indoor temperature 20 °C and outdoor temperature 20 °C and outdoor temperature 20 °C part load at indoor temperature 20 °C and outdoor temperature 20 °C part load at indoor temperature 20 °C and outdoor temperature 20 °C and outdoor temperature 20 °C and outdoor temperature 20 °C and outdoor temperature 20 °C part load at indoor temperature 20 °C and outdoor temperature 20 °C and outdoor temperature 20 °C and outdoor temperature 20 °C and information inmit part is brief informance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature 20 °C and information inmit part is brief information inmodes other than active mode off mode%Off mode Capacity controlPare Pare O,0205it with Rated brief or water for air-to-water heat pumps: rated brief or water part is brief information inmit energy part is brief information inmit energy for air-to-water heat pumps: rated brief or water part is brief information inmit energy for air-to-water heat pumps: rated brief or water if or air-to-water heat pu | Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--|---------------------|---------------------|----------------|---|------------------------------|--------------------------------|----------------------|
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature 7 jT j = -7 °C T j = + 2 °C C C C C Drd T j = + 2 °C C C C Drd T j = + 2 °C C C C Drd T j = + 2 °C C Drd T j = + 2 °C C Drd T j = + 2 °C C Drd T j = + 1 °C C C Drd T j = + 1 °C C Drd T j = - 1 °C C Drd T j = - 1 °C C Drd T j = - 1 °C (if T OL < - 2 °C) P °C P °C <br< th=""><th>Rated heat output (*)</th><th>Prated</th><th>5</th><th>kW</th><th>Seasonal space heating energy efficiency</th><th>η_s</th><th>128</th><th>%</th></br<> | Rated heat output (*) | Prated | 5 | kW | Seasonal space heating energy efficiency | η _s | 128 | % |
| TJPTTJTTJTJTTJTTJJTJJTJJJ <th< td=""><td>Declared capacity for heating for and outdoor temperature T j</td><td>or part load at ii</td><td>ndoor temperat</td><td>ure 20 °C</td><td>Declared coefficient of performa part load at indoor temperature</td><td>nce or prima 20 °C and ou</td><td>ary energy rat Itdoor tempe</td><td>io for rature T j</td></th<> | Declared capacity for heating for and outdoor temperature T j | or part load at ii | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempe | io for rature T j |
| T T J =+ 2 °CPdh2,0 2,6KWT J =+ 12 °CCOPd4,34 6,37- - - - - T J =+ 12 °CCOPd4,34 6,37- | T j = − 7 °C | Pdh | 3,0 | kW | T j = − 7 °C | COPd | 2,88 | - 1 |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | T j = + 2 °C | Pdh | 2,0 | kW | T j = +2 °C | COPd | 4,34 | - |
| T j = + 12 °CPdh2,9kWT j = +12 °CCOPd7,30-T j = bivalent temperaturePdh4,1kWT j = bivalent temperatureCOPd1,64-T j = operation limit temperaturePdh4,0kWT j = operation limit temperatureCOPd1,15-For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C) | T j = + 7 °C | Pdh | 2,6 | kW | T j = +7 °C | COPd | 6,37 | - |
| T j = bivalent temperaturePdh4,1KWT j = bivalent temperature $COPd$ 1,64-T j = operation limit temperaturePdh4,0kWT j = operation limit temperature $COPd$ 1,15-For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) | T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 7,30 | - |
| T j = operation limit temperature Pdh 4,0 kW T j = operation limit temperature COPd 1,15 - For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) | T j = bivalent temperature | Pdh | 4,1 | kW | T j = bivalent temperature | COPd | 1,64 | - |
| For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) Pdh 4,0kWFor air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) $COPd$ 1,77-Bivalent temperature T_{biv} -16°CFor air-to-water heat pumps: Operation limit temperature TOL 0°CCycling interval capacity for heating P_{cych} nakWCycling interval efficiency $COPcyc$ na-Degradation co-efficient (**) Cdh 0,98-Heating water operating limit temperature $WTOL$ 65°CPower consumption in modes other than active mode $0,005$ kW Supplementary heaterRated heat output (*) $Psup$ $4,9$ kW Crankcase heater mode P_{cx} $0,005$ kW Type of energy input $Electric$ $Electric$ Capacity controlVariableVariableFor air-to-water heat pumps: Rated air flow rate, outdoors- 6200 $m3/h$ Sound power level, indoors/ outdoors L_{WA} na/58 dB class MW Pair teating energy n_{wh} 47 %Declared load profileLEfficiency classnaMater heating energy efficiency n_{wh} 47 %Daily electricity consumption Q_{esc} $9,856$ kW/hDaily fuel consumption Q_{uel} NAkW/hAnnual electricityAEC 2168 kW/hAnnual fuel consumptionAFCNAKW | T j = operation limit temperature | Pdh | 4,0 | kW | T j = operation limit temperature | COPd | 1,15 | - |
| Bivalent temperature T_{biv} -16°CFor air-to-water heat pumps: Operation limit temperature TOL 0°CCycling interval capacity for heating P_{cych} nakWCycling interval efficiency $COPcyc$ na-Degradation co-efficient (**) Cdh $0,98$ -Heating water operating limit emperature $WTOL$ 65°CPower consumption in modes other than active mode $O,026$ kW Supplementary heaterRated heat output (*) $Psup$ $4,9$ kW Thermostat-off mode P_{oor} $0,026$ kW Type of energy input $Electric$ $Electric$ Crankcase heater mode P_{cx} $0,000$ kW Type of energy input $Electric$ $m3/h$ Capacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-6200 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/58$ dB kWh $Por air-to-water heat pumps:Rated brine or waterflow rate, outdoors heatexchanger-nam3/hFor heat pump combination heater:Declared load profileLEfficiencyclassnaWater heating energyefficiencyN_{wh}477%Daily electricityconsumptionQ_{eliec}9,856kWhAnnual fuel consumptionQ_{elied}NAkWhAnnual electricityconsumptionAEC2168kWhAnnual fuel consumptionAFCNAKWh$ | For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | 4,0 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 1,77 | - |
| Cycling interval capacity for heating P cych na kW Cycling interval efficiency COPcyc na - Degradation co-efficient (**) Cdh 0,98 - Heating water operating limit temperature WTOL 65 °C Power consumption in modes other than active mode 0,026 kW Supplementary heater Rated heat output (*) Psup 4,9 kW Thermostat-off mode P orr 0,026 kW Type of energy input Electric Electric Crankcase heater mode P or 0,000 kW Type of energy input Electric m3/h Capacity control Variable For air-to-water heat pumps: 6200 m3/h Sound power level, indoors/ L wA na/58 dB pumps: Rated brine or water flow rate, outdoors - na m3/h Annual energy consumption Q HE 3686 kWh Paily fuel consumption Q tuet NA kW Daily electricity consumption Q elec 9,856 kWh Daily fuel consumption AFC NA KW Annual electricity AEC 2168 k | Bivalent temperature | T _{biv} | -16 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Degradation co-efficient (**) Cdh 0,98 - Heating water operating limit temperature WTOL 65 °C Power consumption in modes other than active mode Off mode P orr 0,026 kW Supplementary heater Rated heat output (*) Psup 4,9 kW Thermostat-off mode P orr 0,0005 kW Type of energy input Electric Electric Crankcase heater mode P cx 0,000 kW Type of energy input Electric m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/58 dB MWh - na m3/h For heat pump combination heater: Efficiency class na Efficiency class na Water heating energy efficiency n_wh 47 % Daily electricity consumption Q _{elec} 9,856 kWh Daily fuel consumption Afcuel NA KWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption Afc NA GJ <td>Cycling interval capacity for heating</td> <td>P _{cych}</td> <td>na</td> <td>kW</td> <td>Cycling interval efficiency</td> <td>СОРсус</td> <td>na</td> <td>-</td> | Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Power consumption in modes other than active mode Supplementary heater Off mode P off 0,026 kW Thermostat-off mode P ro 0,005 kW Standby mode P ss 0,026 kW Crankcase heater mode P cx 0,000 kW Other items Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/58 dB For water-/brine-to-water heat pumps: Rated air flow rate, outdoors - na m3/h For heat pump combination heater: Jacks na Sages na Water heating energy efficiency Nwh 47 % Daily electricity consumption Q _{elec} 9,856 kWh Annual fuel consumption AFC NA kWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA KWh | Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Off mode P_{OFF} $0,026$ kW Rated heat output (*) $Psup$ $4,9$ kW Thermostat-off mode P_{TO} $0,005$ kW Type of energy input $Electric$ $Electric$ Standby mode P_{SB} $0,026$ kW Type of energy input $Electric$ $Electric$ Crankcase heater mode P_{CK} $0,000$ kW Type of energy input $Electric$ $Electric$ Other items $Variable$ $For air-to-water heat pumps:Rated air flow rate, outdoors-6200m3/hSound power level, indoors/outdoorsL_{WA}na/58dBBro water-/brine-to-water heatpumps: Rated brine or waterflow rate, outdoor heatexchanger-nam3/hFor heat pump combination heater:EfficiencyclassnaWater heating energyefficiencyn_{wh}47%Daily electricity consumptionQ_{elec}9,856kWhDaily fuel consumptionQ_{tuel}NAkWhAnnual electricityconsumptionAEC2168kWhAnnual fuel consumptionAFCNAkWh$ | Power consumption in modes of | ther than activ | e mode | | Supplementary heater | | | |
| Thermostat-off mode P TO 0,005 kW Standby mode P SB 0,026 kW Type of energy input Electric Crankcase heater mode P CK 0,000 kW Type of energy input Electric Other items - 6200 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L WA na/58 dB For water-/brine-to-water heat pumps: Rated brine or water - na m3/h For heat pump combination heater: - Efficiency class na ma m3/h Daily electricity consumption Q _{elec} 9,856 kWh Annual fuel consumption Q _{fuel} NA kWh Annual electricity AEC 2168 kWh Annual fuel consumption AFC NA GJ | Off mode | P _{OFF} | 0,026 | kW | Rated heat output (*) | Psup | 4,9 | kW |
| Standby mode P 58 0,026 kW Type of energy input Electric Crankcase heater mode P ck 0,000 kW Type of energy input Electric Other items - 6200 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/58 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h Annual energy consumption Q HE 3686 kWh exchanger - na m3/h Por heat pump combination heater: Efficiency na class na efficiency n_wh 47 % Daily electricity consumption Q_elec 9,856 kWh Daily fuel consumption Qruel NA kWh Annual electricity AEC 2168 kWh Annual fuel consumption AFC NA GJ Daily bloch in Celectricity AEC 2168 kWh Annual fuel consumption AFC NA GJ | Thermostat-off mode | P _{TO} | 0,005 | kW | | | | |
| Crankcase heater mode P cx 0,000 kW Other items - 6200 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/58 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - na m3/h For heat pump combination heater: 3686 kWh Water heating energy efficiency n_wh 47 % Daily electricity consumption Q _{elec} 9,856 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA GJ | Standby mode | P _{SB} | 0,026 | kW | Type of energy input | | Electric | |
| Other items Variable For air-to-water heat pumps: Rated air flow rate, outdoors 6200 m3/h Sound power level, indoors/ outdoors L na/58 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger - na m3/h For heat pump combination heater: 3686 kWh Water heating energy efficiency - na m3/h Declared load profile L Efficiency class na Water heating energy efficiency n _{wh} 47 % Daily electricity consumption Q _{elec} 9,856 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA GJ | Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | |
| Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L _{WA} na/58 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h Annual energy consumption Q _{HE} 3686 kWh Por water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h For heat pump combination heater: Variable Efficiency class na Water heating energy efficiency n_wh 47 % Daily electricity consumption Q _{elec} 9,856 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA GJ | Other items | | | | | | | |
| Sound power level, indoors/ outdoors L wa na/58 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat na m3/h Annual energy consumption Q HE 3686 kWh Row rate, outdoor heat exchanger - na m3/h For heat pump combination heater: Efficiency class na Water heating energy efficiency η_{wh} 47 % Daily electricity consumption Q_{elec} 9,856 kWh Daily fuel consumption Q_{fuel} NA kWh Annual electricity AEC 2168 kWh Annual fuel consumption AFC NA GJ | Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Annual energy consumption Q _{HE} 3686 kWh flow rate, outdoor heat exchanger Ind Ind Ind For heat pump combination heater: For heat pump combination heater: Vater heating energy efficiency η_{wh} 47 % Daily electricity consumption Q_{elec} 9,856 kWh Daily fuel consumption Q_{fuel} NA kWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA GJ | Sound power level, indoors/ | L _{WA} | na/58 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| For heat pump combination heater: Declared load profile L Efficiency class na Water heating energy efficiency η_{wh} 47 % Daily electricity consumption Q_{elec} 9,856 kWh Daily fuel consumption Q_{fuel} NA kWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA GJ | Annual energy consumption | Q _{HE} | 3686 | kWh | flow rate, outdoor heat exchanger | | 110 | məyn |
| Declared load profile L Efficiency class na Water heating energy efficiency N _{wh} 47 % Daily electricity consumption Q _{elec} 9,856 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA GJ | For heat pump combination hea | ater: | | | | | | |
| Daily electricity consumption Q _{elec} 9,856 kWh Daily fuel consumption Q _{fuel} NA kWh Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA GJ 160203 | Declared load profile | L | Efficiency class | na | Water heating energy efficiency | η_{wh} | 47 | % |
| Annual electricity consumption AEC 2168 kWh Annual fuel consumption AFC NA GJ 160203 | Daily electricity consumption | Q_{elec} | 9,856 | kWh | Daily fuel consumption | \mathbf{Q}_{fuel} | NA | kWh |
| 160203 | Annual electricity consumption | AEC | 2168 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | • • • • • • • | in out only A.D. D. | - 200 CE 244 24 | 1 to a sheet 7 | | | 160203 | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Medium temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 230V+ EcoZenith i250 | | | | | | |
|---------------------------------------|--------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 143 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|---------------------|---------------------|---------------|--|------------------------------|--------------------------------|----------------------|
| Rated heat output (*) | Prated | 8 | kW | Seasonal space heating energy efficiency | η _s | 139 | % |
| Declared capacity for heating f and outdoor temperature T j | for part load at in | door temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | na | kW | T j = – 7 °C | COPd | na | - |
| T j = + 2 °C | Pdh | 8,2 | kW | T j = +2 °C | COPd | 1,72 | - |
| T j = + 7 °C | Pdh | 5,7 | kW | T j = +7 °C | COPd | 3,01 | - |
| T j = + 12 °C | Pdh | 2,8 | kW | T j = +12 °C | COPd | 4,94 | - |
| T j = bivalent temperature | Pdh | 8,2 | kW | T j = bivalent temperature | COPd | 1,72 | - |
| T j = operation limit temperature | Pdh | 8,2 | kW | T j = operation limit temperature | COPd | 1,72 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,99 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes | other than active | mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,0 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | - | na | m3/h |
| Annual energy consumption | Q _{HE} | 3078 | kWh | flow rate, outdoor heat exchanger | | | |
| For heat pump combination he | eater: | | | | | | |
| Declared load profile | L | Efficiency class | na | Water heating energy efficiency | η_{wh} | 68 | % |
| Daily electricity consumption | Qelec | 6,856 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1508 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | | | | | 171005 | |
| Contact details | Enertech AB, Box | 309, SE-341 20 | 5 Ljungby Tel | +46 372 88000 www.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters Warm climate and Low temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 230V+ EcoZenith i250 | | | | | | |
|---------------------------------------|--------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | Νο | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 195 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|---------------|--|------------------------------|-------------------------------|----------------------|
| Rated heat output (*) | Prated | 9 | kW | Seasonal space heating energy efficiency | n _s | 191 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at in | door temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | iry energy rat tdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | na | kW | T j = − 7 °C | COPd | na | - |
| T j = + 2 °C | Pdh | 8,8 | kW | T j = +2 °C | COPd | 2,38 | - |
| T j = + 7 °C | Pdh | 6,0 | kW | T j = +7 °C | COPd | 4,31 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 6,51 | - |
| T j = bivalent temperature | Pdh | 8,8 | kW | T j = bivalent temperature | COPd | 2,38 | - |
| T j = operation limit temperature | Pdh | 8,8 | kW | T j = operation limit temperature | COPd | 2,38 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Bivalent temperature | T _{biv} | 2 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | mode | | Supplementary heater | | | _ |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,2 | kW |
| Thermostat-off mode | P _{TO} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | | 22 | m3/h |
| Annual energy consumption | Q _{HE} | 2475 | kWh | flow rate, outdoor heat exchanger | | 114 | məyn |
| For heat pump combination he | ater: | - | | | | | |
| Declared load profile | L | Efficiency class | na | Water heating energy efficiency | η_{wh} | 68 | % |
| Daily electricity consumption | Qelec | 6,856 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 1508 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | | | | | 171005 | |
| Contact details | Enertech AB. Box | (309, SE-341 26 | 5 Liungby Tel | +46 372 88000 www.ctc.se | | | |

Information for heat pump space heaters and heat pump combination heaters Average climate and Medium temperature

Enertech AB 341 26 Ljungby



| Model(s): | CTC EcoAir 510M 230V+ EcoZenith i250 | | | | | | |
|---------------------------------------|--------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A+ | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | Νο | Package efficiency: | 115 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | A+ | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | |
|--|--------------------|---------------------|---------------|---|----------------|----------|------|--|
| Rated heat output (*) | Prated | 7 | kW | Seasonal space heating energy efficiency | n _s | 111 | % | |
| Declared capacity for heating for and outdoor temperature T j | or part load at in | idoor temperat | ure 20 °C | Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T j | | | | |
| T j = – 7 °C | Pdh | 6,0 | kW | T j = – 7 °C | COPd | 1,67 | - | |
| T j = + 2 °C | Pdh | 3,9 | kW | T j = +2 °C | COPd | 2,63 | - | |
| T j = + 7 °C | Pdh | 2,5 | kW | T j = +7 °C | COPd | 3,99 | - | |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 5,40 | - | |
| T j = bivalent temperature | Pdh | 6,0 | kW | T j = bivalent temperature | COPd | 1,67 | - | |
| T j = operation limit temperature | Pdh | 4,9 | kW | T j = operation limit temperature | COPd | 1,51 | - | |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - | |
| Bivalent temperature | T _{biv} | -6 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C | |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - | |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C | |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | - | - | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,3 | kW | |
| Thermostat-off mode | P _{TO} | 0,009 | kW | | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | | |
| Other items | | 11 | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h | |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | - | na | m3/h | |
| Annual energy consumption | Q _{HE} | 5134 | kWh | flow rate, outdoor heat exchanger | | | | |
| For heat pump combination he | ater: | | | | | | | |
| Declared load profile | L | Efficiency class | В | Water heating energy efficiency | η_{wh} | 52 | % | |
| Daily electricity consumption | Qelec | 8,897 | kWh | Daily fuel consumption | Qfuel | NA | kWh | |
| Annual electricity consumption | AEC | 1957 | kWh | Annual fuel consumption | AFC | NA | GJ | |
| | | | | | | 171005 | | |
| Contact details | Enertech AB, Bo | k 309, SE-341 26 | 5 Ljungby Tel | +46 372 88000 www.ctc.se | | | | |

Information for heat pump space heaters and heat pump combination heaters **Average climate and Low temperature**





| Model(s): | CTC EcoAir 510M 230V+ EcoZenith i250 | | | | | | |
|---------------------------------------|--------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | A+ | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 153 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | A++ | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Rated heat output (*)Praced4kWSeasonal space heating energy n_S 1.4.9%Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T jDeclared coefficient of performance or primary energy rotio for part load at indoor temperature 20 °C and outdoor temperature T jDeclared coefficient of performance or primary energy rotio for part load at indoor temperature 20 °C and outdoor temperature T jT j = -7 °C T j = + 27 °C T j = + 27 °C T j = + 7 °C T j = + 7 °C P dh3.6 2.3 4.0KW T j = -7 °C C C OPd 4.972.4 4.97T j = + 7 °C T j = + 7 °C T j = bivalent temperature temperatureP dh 4.0KW KWT j = hivalent temperature temperatureC OPd 4.97 2.252.44 4.97 7 7T j = operation limit temperatureP dh 4.0kW KWT j = operation limit temperatureC OPd 2.252.25 4.7Sivalent temperatureP dh 4.0kWFor air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C)C OPd 4.972.25Bivalent temperatureT biv 4.0-7°COperation limit temperature 4.0O°COperation limit temperatureP or 7.00.015KWCycling interval efficiency 4.00C OPcyc 4.015naBivalent temperatureP or 7.00.015KWCycling interval efficiency 4.000C OPcycna-Operation limit temperatureC OP 7.00.015KWCycling interval efficiency 4.000OPcycna- </th <th>Item</th> <th>Symbol</th> <th>Value</th> <th>Unit</th> <th>Item</th> <th>Symbol</th> <th>Value</th> <th>Unit</th> | Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--|--------------------|---------------------|---------------|--|------------------------------|--------------------------------|----------------------|
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature 7 jT j = -7 °C T j = + 2 °C T j = + 2 °C T j = + 2 °C P dh T j = + 2 °C P dh P dh <b< td=""><td>Rated heat output (*)</td><td>Prated</td><td>4</td><td>kW</td><td>Seasonal space heating energy efficiency</td><td>η_s</td><td>149</td><td>%</td></b<> | Rated heat output (*) | Prated | 4 | kW | Seasonal space heating energy efficiency | η _s | 149 | % |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | Declared capacity for heating for and outdoor temperature T j | or part load at in | idoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempe | io for rature T j |
| T j = + 2 °CPdh2,3kWT j = + 2 °CCOPd3,91-T j = + 12 °CPdh2,5kWT j = + 7 °CCOPd4,97-T j = + 12 °CCOPd6,45T j = + 12 °CCOPd6,45T j = operation limitPdh4,0kWT j = operation limitCOPd2,25-T j = operation limitPdh4,0kWT j = operation limitCOPd2,25-For air-to-water heat pumps:PdhnakWFor air-to-water heat pumps:COPdna-Bivalent temperatureT biv-7°CFor air-to-water heat pumps:COPdna-Bivalent temperatureT biv-7°CFor air-to-water heat pumps:COPdna-Bivalent temperatureT biv-7°CFor air-to-water heat pumps:COPdna-Degradation co-efficient (**)Cdh0,97-Heating water operating limitWTOL65°CPower consumption in modes other than active mode0,015kWRated heat output (*)Psup0,1kWCrankcase heater modeP civ0,0015kWRated heat output (*)Psup0,1kWCapacity controlVariable-For air-to-water heat pumps:-6200m3/hSound power level, indoors/ outdoorsL wana/60dBma/hma/hm3/h< | T j = – 7 °C | Pdh | 3,6 | kW | T j = – 7 °C | COPd | 2,44 | - |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | T j = + 2 °C | Pdh | 2,3 | kW | T j = +2 °C | COPd | 3,91 | - |
| T j = + 12 °CPdh1,3kWT j = +12 °CCOPd6,45-T j = bivalent temperaturePdh4,0kWT j = operation limit temperatureCOPd2,25-T j = operation limit temperaturePdh4,0kWT j = operation limit temperatureCOPd2,25-For air-to-water heat pumps: T j = -15 °C (if TOL < -20 °C) | T j = + 7 °C | Pdh | 2,5 | kW | T j = +7 °C | COPd | 4,97 | - |
| T j = bivalent temperature Pdh $4,0$ kWT j = bivalent temperature $COPd$ $2,25$.T j = operation limit temperature Pdh $4,0$ kWT j = operation limit temperature $COPd$ $2,25$.For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) | T j = + 12 °C | Pdh | 1,3 | kW | T j = +12 °C | COPd | 6,45 | - |
| T j = operation limit temperature Pdh $4,0$ kWT j = operation limit temperature $COPd$ $2,25$ -For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) | T j = bivalent temperature | Pdh | 4,0 | kW | T j = bivalent temperature | COPd | 2,25 | - |
| For air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) Pdh nakWFor air-to-water heat pumps: T j = -15 °C (if TOL < - 20 °C) $COPd$ na-Bivalent temperature T_{biv} -7°C°CFor air-to-water heat pumps: Operation limit temperature TOL 0°CCycling interval capacity for heating P_{cych} nakWCycling interval efficiency $COPcyc$ na-Degradation co-efficient (**) Cdh 0.97 -Heating water operating limit temperature $WTOL$ 65°CPower consumption in modes other than active mode $0,015$ kW Supplementary heaterRated heat output (*) $Psup$ $0,1$ kW Crankcase heater mode P_{orr} $0,000$ kW Type of energy input $Electric$ $Electric$ Capacity controlVariableVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-6200 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/60$ dB $Mare heating energy$ n_{wh} 52 %Declared load profileLEfficiency classBWater heating energy efficiency n_{wh} 52 %Daily electricity consumption $Qelec$ $8,897$ KWhAnnual fuel consumption AFC NAKWhAnnual electricity consumption AEC 1957KWhAnnual fuel consumption AFC NAKWh | T j = operation limit temperature | Pdh | 4,0 | kW | T j = operation limit temperature | COPd | 2,25 | - |
| Bivalent temperature T_{blv} -7 $^{\circ}$ CFor air-to-water heat pumps: Operation limit temperature TOL 0 $^{\circ}$ CCycling interval capacity for heating P_{cych} nakW $Cycling interval efficiency$ $COPcyc$ na $-$ Degradation co-efficient (**) Cdh $0,97$ $-$ Heating water operating limit wmore $WTOL$ 65 $^{\circ}$ CPower consumption in modes other than active mode $O,015$ kW Supplementary heater Rated heat output (*) $Psup$ $0,1$ kW Thermostat-off mode P_{ore} $0,009$ kW Type of energy input $Electric$ $Electric$ Capacity controlVariable $Variable$ For air-to-water heat pumps: Rated air flow rate, outdoors $ 6200$ $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/60$ dB $Powret_{outdoors}$ $ na$ $m3/h$ For heat pump combination heater:Efficiency B Water heating energy | For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | na | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | na | - |
| Cycling interval capacity for heating P cych na kW Cycling interval efficiency COPCyc na Degradation co-efficient (**) Cdh 0,97 Heating water operating limit imperature WTOL 65 °C Power consumption in modes other than active mode 0,015 kW Supplementary heater Rated heat output (*) Psup 0,1 kW Thermostat-off mode P cor 0,009 kW Type of energy input Electric Electric Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L wA na/60 dB For air-to-water heat pumps: Rated air flow rate, outdoors - na m3/h Annual energy consumption Q HE 2229 kWh Water heating energy - na m3/h Declared load profile L Efficiency B Water heating energy Nwh S2 % Daily electricity consumption Qelec 8,897 kWh Annual fuel consumption AFC NA KWh Annual fuel consum | Bivalent temperature | T _{biv} | -7 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Degradation co-efficient (**) Cdh $0,97$ -Heating water operating limit temperature $WTOL$ 65 °CPower consumption in modes other than active modeSupplementary heaterSupplementary heaterSupplementary heaterRated heat output (*) $Psup$ $0,1$ kW Marco Marc | Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Power consumption in modes other than active modeSupplementary heater Rated heat output (*)Psup0,1kWOff mode P_{orF} 0,015kWRated heat output (*)Psup0,1kWThermostat-off mode P_{ro} 0,009kWType of energy inputElectricElectricStandby mode P_{sB} 0,015kWType of energy inputElectricm3/hCrankcase heater mode P_{cx} 0,000kWType of energy inputElectricOther itemsVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-6200m3/hSound power level, indoors/ outdoors L_{WA} na/60dBMarer-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger-nam3/hFor heat pump combination heater:Efficiency classBWater heating energy efficiency n_{wh} 52%Daily electricity consumptionQelec8,897kWhAnnual fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1957kWhAnnual fuel consumptionAFCNAGJ171005 | Degradation co-efficient (**) | Cdh | 0,97 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Off modeP orF0,015kWRated heat output (*)P sup0,1kWThermostat-off modeP ro0,009kWType of energy inputElectricElectricStandby modeP ss0,015kWType of energy inputElectricElectricCrankcase heater modeP cx0,000kWType of energy inputElectricElectricOther items-6200m3/hm3/hm3/hCapacity controlVariable-For air-to-water heat pumps: Rated air flow rate, outdoors-6200m3/hSound power level, indoors/ outdoorsL WAna/60dBFor water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger-nam3/hFor heat pump combination heater:Efficiency classBWater heating energy efficiencyn_wh52%Declared load profileLEfficiency classBWater leasing energy efficiencyn_wh52%Daily electricity consumptionQelec8,897kWhAnnual fuel consumptionAFCNAGJAnnual electricity consumptionAEC1957kWhAnnual fuel consumptionAFCNAGJ | Power consumption in modes of | other than active | mode | | Supplementary heater | | | _ |
| Thermostat-off mode P_{TO} $0,009$ kW Type of energy inputElectricStandby mode P_{SB} $0,015$ kW Type of energy input $Electric$ Crankcase heater mode P_{CK} $0,000$ kW Type of energy input $Electric$ Other items P_{CK} $0,000$ kW $Type of energy input$ $Electric$ Capacity control $Variable$ $Variable$ For air-to-water heat pumps: Rated air flow rate, outdoors- 6200 $m3/h$ Sound power level, indoors/ outdoors L_{WA} $na/60$ dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger- na $m3/h$ Annual energy consumption Q_{HE} 2229 kWh Poiltor theating energy efficiency n_{wh} 52 %Declared load profileLEfficiency classBWater heating energy efficiency n_{wh} 52 %Daily electricity consumptionQelec $8,897$ kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1957kWhAnnual fuel consumptionAFCNAGJ | Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 0,1 | kW |
| Standby mode P SB 0,015 kW Type of energy input Electric Crankcase heater mode P CK 0,000 kW Type of energy input Electric Other items 0,000 kW Type of energy input Electric Image: construct of the state of the sta | Thermostat-off mode | P _{TO} | 0,009 | kW | | | | |
| Crankcase heater mode P cx 0,000 kW Other items Other items For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Capacity control Variable For air-to-water heat pumps: Rated air flow rate, outdoors - 6200 m3/h Sound power level, indoors/ outdoors L WA na/60 dB For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat - na m3/h Annual energy consumption Q HE 2229 kWh Water heating energy efficiency - na m3/h For heat pump combination heater: Efficiency class B Water heating energy efficiency nwh 52 % Daily electricity consumption Qelec 8,897 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1957 kWh Annual fuel consumption AFC NA GJ | Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Other items Variable For air-to-water heat pumps: Rated air flow rate, outdoors 6200 m3/h Sound power level, indoors/ outdoors L NA Ma/60 dB B For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger na m3/h For heat pump combination heater: 2229 kWh Water heating energy efficiency na m3/h Declared load profile L Efficiency class B Water heating energy efficiency na m3/h Daily electricity consumption Qelec 8,897 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1957 kWh Annual fuel consumption AFC NA GJ | Crankcase heater mode | Р _{ск} | 0,000 | kW | | | | |
| Capacity controlVariableFor air-to-water heat pumps: Rated air flow rate, outdoors-6200m3/hSound power level, indoors/ outdoorsL WAna/60dB kWhFor water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger-6200m3/hAnnual energy consumptionQ HE2229kWhPor water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger-nam3/hFor heat pump combination heater:-Efficiency classBWater heating energy efficiencyNwh52%Daily electricity consumptionQelec8,897kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1957kWhAnnual fuel consumptionAFCNAGJ171005 | Other items | | 11 | | | | | |
| Sound power level, indoors/ outdoorsL WAna/60dB dBFor water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchangernam3/hAnnual energy consumptionQ HE2229kWhFor water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchangernam3/hFor heat pump combination heater:Efficiency classBWater heating energy efficiencyNwh52%Daily electricity consumptionQelec8,897kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1957kWhAnnual fuel consumptionAFCNAGJ171005 | Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Annual energy consumption Q _{HE} 2229 kWh flow rate, outdoor heat exchanger Ind Ind Ind For heat pump combination heater: Peclared load profile L Efficiency class B Water heating energy efficiency η_{wh} 52 % Daily electricity consumption Qelec 8,897 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1957 kWh Annual fuel consumption AFC NA GJ | Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| For heat pump combination heater: Declared load profile L Efficiency class B Water heating energy efficiency η_{wh} 52 % Daily electricity consumption Qelec 8,897 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1957 kWh Annual fuel consumption AFC NA GJ | Annual energy consumption | Q _{HE} | 2229 | kWh | flow rate, outdoor heat exchanger | | | moyn |
| Declared load profileLEfficiency classBWater heating energy efficiency η_{wh} 52%Daily electricity consumptionQelec8,897kWhDaily fuel consumptionQfuelNAkWhAnnual electricity consumptionAEC1957kWhAnnual fuel consumptionAFCNAGJ171005 | For heat pump combination he | ater: | | | | | | |
| Daily electricity consumption Qelec 8,897 kWh Daily fuel consumption Qfuel NA kWh Annual electricity consumption AEC 1957 kWh Annual fuel consumption AFC NA GJ | Declared load profile | L | Efficiency class | В | Water heating energy efficiency | η_{wh} | 52 | % |
| Annual electricity AEC 1957 kWh Annual fuel consumption AFC NA GJ | Daily electricity consumption | Qelec | 8,897 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| 171005 | Annual electricity consumption | AEC | 1957 | kWh | Annual fuel consumption | AFC | NA | GJ |
| Contact details Enertech AB, Box 309, SE-341 26 Liungby Tel +46 372 88000 www.ctc.se | Contact details | Enertech AB. Boy | < 309. SF-341 26 | 6 Liunghy Tel | +46 372 88000 www.ctc.se | | 1/1005 | |

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Medium temperature**





| Model(s): | CTC EcoAir 510M 230V+ EcoZenith i250 | | | | | | |
|---------------------------------------|--------------------------------------|---------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 107 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Heat pump combination heater: Yes
Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps,
parameters shall be declared for low temperature application.

| parameters shall be declared f | or low-tempera | ture application. | • | | | | |
|--|-------------------|---------------------|-----------|--|------------------------------|--------------------------------|----------------------|
| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
| Rated heat output (*) | Prated | 4 | kW | Seasonal space heating energy efficiency | η _s | 103 | % |
| Declared capacity for heating f and outdoor temperature T j | or part load at i | ndoor temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and οι | ary energy rat itdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | 2,6 | kW | T j = – 7 °C | COPd | 2,17 | - |
| T j = + 2 °C | Pdh | 1,6 | kW | T j = +2 °C | COPd | 3,29 | - |
| T j = + 7 °C | Pdh | 2,3 | kW | T j = +7 °C | COPd | 4,31 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 5,67 | - |
| T j = bivalent temperature | Pdh | 3,6 | kW | T j = bivalent temperature | COPd | 1,57 | - |
| T j = operation limit temperature | Pdh | 2,8 | kW | T j = operation limit temperature | COPd | 1,39 | - |
| For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | Pdh | 3,3 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 1,76 | - |
| Bivalent temperature | T _{biv} | -16 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,98 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes | other than activ | e mode | | Supplementary heater | | | |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 4,2 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | _ | na | m3/h |
| Annual energy consumption | Q _{HE} | 3903 | kWh | flow rate, outdoor heat exchanger | | ilu | moyn |
| For heat pump combination he | eater: | | | | | | |
| Declared load profile | L | Efficiency class | na | Water heating energy efficiency | $\boldsymbol{\eta}_{wh}$ | 50 | % |
| Daily electricity consumption | Qelec | 9,380 | kWh | Daily fuel consumption | Qfuel | NA | kWh |
| Annual electricity consumption | AEC | 2064 | kWh | Annual fuel consumption | AFC | NA | GJ |
| | | 200.05.044.04 | | | | 171005 | |

Contact details Enertech AB, Box 309, SE-341 26 Ljungby Tel +46 372 88000 www.ctc.se

Information for heat pump space heaters and heat pump combination heaters **Cold climate and Low temperature**





| Model(s): | CTC EcoAir 510N | CTC EcoAir 510M 230V+ EcoZenith i250 | | | | | |
|---------------------------------------|-----------------|--------------------------------------|-----|---|--|--|--|
| Air-to-water heat pump: | Yes | Energy efficiency class: | | - | | | |
| Water-to-water heat pump: | No | Controller class: | VI | - | | | |
| Brine-to-water heat pump: | No | Controller contribution: | 4 | % | | | |
| Low-temperature heat pump: | No | Package efficiency: | 137 | % | | | |
| Equipped with a supplementary heater: | Yes | Package efficiency class: | | - | | | |
| Heat pump combination heater: | Yes | | | | | | |

Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low- temperature heat pumps, parameters shall be declared for low-temperature application.

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|--|--------------------|---------------------|------------------|--|------------------------------|--------------------------------|----------------------|
| Rated heat output (*) | Prated | 6 | kW | Seasonal space heating energy efficiency | n _s | 133 | % |
| Declared capacity for heating for and outdoor temperature T j | or part load at in | door temperat | ure 20 °C | Declared coefficient of performa part load at indoor temperature | nce or prima 20 °C and ou | ary energy rat Itdoor tempe | io for rature T j |
| T j = – 7 °C | Pdh | 3,4 | kW | T j = – 7 °C | COPd | 2,68 | - |
| T j = + 2 °C | Pdh | 2,1 | kW | T j = +2 °C | COPd | 4,29 | - |
| T j = + 7 °C | Pdh | 2,5 | kW | T j = +7 °C | COPd | 5,31 | - |
| T j = + 12 °C | Pdh | 2,9 | kW | T j = +12 °C | COPd | 6,45 | - |
| T j = bivalent temperature | Pdh | 4,8 | kW | T j = bivalent temperature | COPd | 2,06 | - |
| T j = operation limit temperature | Pdh | 2,4 | kW | T j = operation limit temperature | COPd | 1,91 | - |
| For air-to-water heat pumps: T j = - 15 °C (if TOL < - 20 °C) | Pdh | 4,7 | kW | For air-to-water heat pumps: T j = – 15 °C (if TOL < – 20 °C) | COPd | 2,29 | - |
| Bivalent temperature | T _{biv} | -16 | °C | For air-to-water heat pumps: Operation limit temperature | TOL | 0 | °C |
| Cycling interval capacity for heating | P _{cych} | na | kW | Cycling interval efficiency | СОРсус | na | - |
| Degradation co-efficient (**) | Cdh | 0,97 | - | Heating water operating limit temperature | WTOL | 65 | °C |
| Power consumption in modes of | other than active | e mode | | Supplementary heater | | | _ |
| Off mode | P _{OFF} | 0,015 | kW | Rated heat output (*) | Psup | 3,2 | kW |
| Thermostat-off mode | Р _{то} | 0,009 | kW | | | | |
| Standby mode | P _{SB} | 0,015 | kW | Type of energy input | | Electric | |
| Crankcase heater mode | Р _{СК} | 0,000 | kW | | | | |
| Other items | | | | | | | |
| Capacity control | | Variable | | For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6200 | m3/h |
| Sound power level, indoors/ outdoors | L _{WA} | na/60 | dB | For water-/brine-to-water heat pumps: Rated brine or water | - | na | m3/h |
| Annual energy consumption | Q _{HE} | 4066 | kWh | flow rate, outdoor heat exchanger | | | |
| For heat pump combination he | eater: | | | | | | |
| Declared load profile | L | Efficiency class | na | Water heating energy efficiency | η_{wh} | 50 | % |
| Daily electricity consumption | Q _{elec} | 9,380 | kWh | Daily fuel consumption | \mathbf{Q}_{fuel} | NA | kWh |
| Annual electricity consumption | AEC | 2064 | kWh | Annual fuel consumption | AFC | NA | GJ |
| • • • • • • | Frank AD D | 200 CE 244 24 | 1 Dama da como d | 46 272 22000 | | 171005 | |
| Contact details | Enertech AB, Box | (309, SE-341 26 | s Ljungby Tel | +46 372 88000 WWW.ctc.se | | | |