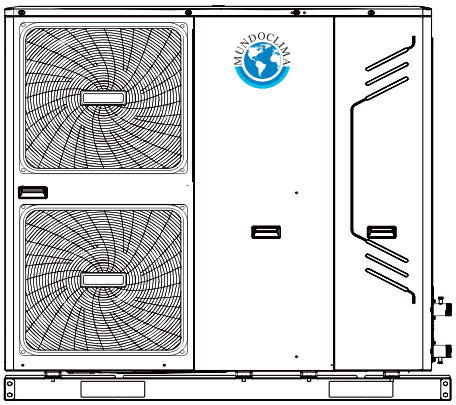
MUNDOCLIMA®
Aerotherm

# MONOBLOC AEROTHERM MAM-V9

## Technical data manual

R32



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Thank you very much for purchasing our product.
Before using your unit, please read this manual carefully and keep it for future reference.

SO30180 to SO30188
English

**Product fiche 1**

| Heat pump space heater | | unit | MAM-5-V9M | MAM-7-V9M | MAM-9-V9M | MAM-12-V9M | MAM-14-V9M | MAM-16-V9M | MAM-12-V9T | MAM-14-V9T | MAM-16-V9T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Indoor unit sound power (*) | | [dB(A)] | / | / | / | / | / | / | / | / | / |
| Outdoor unit sound power (*) | | [dB(A)] | 61 | 64 | 67 | 68 | 71 | 71 | 68 | 71 | 71 |
| Capacity of the back-up heater integrated in the unit | Psup back-up heater | [kW] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| off peak operation function integrated in Heat pump | | Y/N | No | No | No | No | No | No | No | No | No |
| Space heating | Energy efficiency class 35°C (Low temp. app.) | - | A+++ | A+++ | A+++ | A++ | A++ | A++ | A++ | A++ | A++ |
| Space heating | Energy efficiency class 55°C(Medium temp. app.) | - | A++ | A++ | A++ | A++ | A++ | A++ | A++ | A++ | A++ |
| Average climate (Design temperature= –10°C) | | | | | | | | | | | |
| Space heating 35°C | Prated(declared heating capacity) @–10°C | [kW] | 7 | 7 | 8 | 12 | 14 | 16 | 12 | 14 | 16 |
| | Seasonal space heating efficiency(ηs) | [%] | 176 | 176 | 177 | 169 | 168 | 169 | 169 | 168 | 169 |
| | Annual energy consumption | [kWh] | 3,071 | 3,071 | 3,844 | 5,726 | 6,819 | 7,687 | 5,726 | 6,819 | 7,687 |
| Space heating 55°C | Prated(declared heating capacity) @–10°C | [kW] | 7 | 7 | 7 | 13 | 14 | 15 | 13 | 14 | 15 |
| | Seasonal space heating efficiency(ηs) | [%] | 127 | 127 | 126 | 126 | 128 | 128 | 126 | 128 | 128 |
| | Annual energy consumption | [kWh] | 4,203 | 4,203 | 4,770 | 8,164 | 8,724 | 9,216 | 8,164 | 8,724 | 9,216 |
| Part load conditions space heating average climate low temperature application | | | | | | | | | | | |
| (A) condition (-7°C) | Pdh(declared heating capacity) | [kW] | 5.88 | 5.88 | 7.42 | 10.52 | 12.47 | 14.15 | 10.52 | 12.47 | 14.15 |
| | COPd (declared COP) | - | 2.91 | 2.91 | 2.80 | 2.88 | 2.84 | 2.72 | 2.88 | 2.84 | 2.72 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (B) condition (2°C) | Pdh(declared heating capacity) | [kW] | 3.64 | 3.64 | 4.83 | 6.50 | 7.48 | 8.92 | 6.50 | 7.48 | 8.92 |
| | COPd (declared COP) | - | 4.38 | 4.38 | 4.33 | 4.15 | 4.19 | 4.17 | 4.15 | 4.19 | 4.17 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (C) condition (7°C) | Pdh(declared heating capacity) | [kW] | 2.42 | 2.42 | 3.20 | 4.12 | 5.04 | 5.64 | 4.12 | 5.04 | 5.64 |
| | COPd (declared COP) | - | 5.89 | 5.89 | 6.20 | 5.74 | 5.99 | 5.86 | 5.74 | 5.99 | 5.86 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (D) condition (12°C) | Pdh(declared heating capacity) | [kW] | 1.03 | 1.03 | 1.55 | 2.23 | 2.23 | 2.47 | 2.23 | 2.23 | 2.47 |
| | COPd (declared COP) | - | 5.89 | 5.89 | 7.61 | 5.40 | 5.30 | 6.28 | 5.40 | 5.30 | 6.28 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |

## Product fiche 2

| Heat pump space heater | | unit | MAM-5-V9M | MAM-7-V9M | MAM-9-V9M | MAM-12-V9M | MAM-14-V9M | MAM-16-V9M | MAM-12-V9T | MAM-14-V9T | MAM-16-V9T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (E) Tol(temperature operating limit) | Tol (temperature operating limit) | [°C] | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| | Pdh (declared heating capacity) | [kW] | 6.62 | 6.62 | 6.64 | 12.01 | 12.72 | 12.93 | 12.01 | 12.72 | 12.93 |
| | COPd (declared COP) | - | 2.63 | 2.63 | 2.54 | 2.60 | 2.51 | 2.41 | 2.60 | 2.51 | 2.41 |
| | WTOL (Heating water Operation Limit) | [°C] | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| (F) Tbivalent temperature | Tbiv | [°C] | -7 | -7 | -7 | -7 | -7 | -7 | -7 | -7 | -7 |
| | Pdh (declared heating capacity) | [kW] | 5.88 | 5.88 | 7.42 | 10.52 | 12.47 | 14.15 | 10.52 | 12.47 | 14.15 |
| | COPd (declared COP) | - | 2.91 | 2.91 | 2.80 | 2.88 | 2.84 | 2.72 | 2.88 | 2.84 | 2.72 |
| Supplementary capacity at P_design | Psup (@Tdesignh:–10°C) | [kW] | 0.00 | 0.00 | 1.80 | 0.00 | 1.40 | 3.10 | 0.00 | 1.40 | 3.10 |
| Part load conditions space heating average climate medium temperature application | | | | | | | | | | | |
| (A) condition (-7°C) | Pdh (declared heating capacity) | [kW] | 5.83 | 5.83 | 6.58 | 11.29 | 12.18 | 12.90 | 11.29 | 12.18 | 12.90 |
| | COPd (declared COP) | - | 1.97 | 1.97 | 1.87 | 2.05 | 2.05 | 2.04 | 2.05 | 2.05 | 2.04 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (B) condition (2°C) | Pdh (declared heating capacity) | [kW] | 3.68 | 3.68 | 4.25 | 7.31 | 7.84 | 8.25 | 7.31 | 7.84 | 8.25 |
| | COPd (declared COP) | - | 3.22 | 3.22 | 3.19 | 3.14 | 3.18 | 3.21 | 3.14 | 3.18 | 3.21 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (C) condition (7°C) | Pdh (declared heating capacity) | [kW] | 2.47 | 2.47 | 2.80 | 4.96 | 5.21 | 5.45 | 4.96 | 5.21 | 5.45 |
| | COPd (declared COP) | - | 4.21 | 4.21 | 4.38 | 4.25 | 4.29 | 4.32 | 4.25 | 4.29 | 4.32 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (D) condition (12°C) | Pdh (declared heating capacity) | [kW] | 1.26 | 1.26 | 1.27 | 2.37 | 2.57 | 2.57 | 2.37 | 2.57 | 2.57 |
| | COPd (declared COP) | - | 4.91 | 4.91 | 5.04 | 4.94 | 5.14 | 5.12 | 4.94 | 5.14 | 5.12 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (E) Tol(temperature operating limit) | Tol (temperature operating limit) | [°C] | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| | Pdh (declared heating capacity) | [kW] | 5.86 | 5.86 | 5.53 | 11.88 | 11.68 | 11.16 | 11.88 | 11.68 | 11.16 |
| | COPd (declared COP) | - | 1.62 | 1.62 | 1.51 | 1.79 | 1.74 | 1.65 | 1.79 | 1.74 | 1.65 |
| | WTOL (Heating water Operation Limit) | [°C] | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| (F) Tbivalent temperature | Tbiv | [°C] | -7 | -7 | -7 | -7 | -7 | -7 | -7 | -7 | -7 |
| | Pdh (declared heating capacity) | [kW] | 5.83 | 5.83 | 6.58 | 11.29 | 12.18 | 12.90 | 11.29 | 12.18 | 12.90 |
| | COPd (declared COP) | - | 1.97 | 1.97 | 1.87 | 2.05 | 2.05 | 2.04 | 2.05 | 2.05 | 2.04 |
| Supplementary capacity at P_design | Psup (@Tdesignh:–10°C) | [kW] | 0.70 | 0.70 | 1.80 | 0.90 | 2.10 | 3.40 | 0.90 | 2.10 | 3.40 |

## Product fiche 3

| Heat pump space heater | | unit | MAM-5-V9M | MAM-7-V9M | MAM-9-V9M | MAM-12-V9M | MAM-14-V9M | MAM-16-V9M | MAM-12-V9T | MAM-14-V9T | MAM-16-V9T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Colder climate (Design temperature = –22°C) | | | | | | | | | | | |
| Space heating 35°C | Prated (declared heating capacity) @ –22°C | [kW] | 5 | 7 | 8 | 13 | 14 | 16 | 13 | 14 | 16 |
| | Seasonal space heating efficiency (ηs) | [%] | 133 | 150 | 149 | 131 | 143 | 143 | 131 | 143 | 143 |
| | Annual energy consumption | [kWh] | 3,486 | 4,217 | 5,303 | 9,294 | 9,427 | 10,487 | 9,294 | 9,427 | 10,487 |
| Space heating 55°C | Prated (declared heating capacity) @ –22°C | [kW] | 5 | 7 | 8 | 12 | 14 | 15 | 12 | 14 | 15 |
| | Seasonal space heating efficiency (ηs) | [%] | 97 | 104 | 109 | 96 | 102 | 106 | 96 | 102 | 106 |
| | Annual energy consumption | [kWh] | 4,661 | 6,136 | 7,286 | 12,299 | 13,449 | 13,768 | 12,299 | 13,449 | 13,768 |
| Part load conditions space heating colder climate low temperature application | | | | | | | | | | | |
| condition (-15°C) | Pdh (declared heating capacity) | [kW] | 3.92 | 5.35 | 5.85 | 10.31 | 11.39 | 11.38 | 10.31 | 11.39 | 11.38 |
| | COPd (declared COP) | - | 2.43 | 2.48 | 2.42 | 2.38 | 2.32 | 2.33 | 2.38 | 2.32 | 2.33 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (A) condition (-7°C) | Pdh (declared heating capacity) | [kW] | 2.86 | 4.19 | 5.31 | 7.74 | 8.71 | 9.98 | 7.74 | 8.71 | 9.98 |
| | COPd (declared COP) | - | 3.09 | 3.22 | 3.22 | 3.18 | 3.17 | 3.15 | 3.18 | 3.17 | 3.15 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (B) condition (2°C) | Pdh (declared heating capacity) | [kW] | 1.74 | 2.59 | 3.35 | 4.32 | 5.48 | 5.83 | 4.32 | 5.48 | 5.83 |
| | COPd (declared COP) | - | 4.09 | 4.53 | 4.76 | 4.00 | 4.27 | 4.33 | 4.00 | 4.27 | 4.33 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (C) condition (7°C) | Pdh (declared heating capacity) | [kW] | 1.12 | 1.79 | 2.09 | 3.00 | 3.50 | 4.13 | 3.00 | 3.50 | 4.13 |
| | COPd (declared COP) | - | 4.52 | 6.13 | 6.34 | 5.69 | 5.89 | 6.12 | 5.69 | 5.89 | 6.12 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (D) condition (12°C) | Pdh (declared heating capacity) | [kW] | 0.69 | 1.03 | 1.03 | 1.81 | 1.84 | 2.57 | 1.81 | 1.84 | 2.57 |
| | COPd (declared COP) | - | 4.04 | 6.00 | 5.75 | 4.56 | 4.52 | 6.50 | 4.56 | 4.52 | 6.50 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (E) Tol(temperature operating limit) | Tol (temperature operating limit) | [°C] | -20 | -20 | -20 | -22 | -22 | -22 | -22 | -22 | -22 |
| | Pdh (declared heating capacity) | [kW] | 4.78 | 4.93 | 4.91 | 8.54 | 8.77 | 9.06 | 8.54 | 8.77 | 9.06 |
| | COPd (declared COP) | - | 2.10 | 2.10 | 2.08 | 1.80 | 1.84 | 1.88 | 1.80 | 1.84 | 1.88 |
| | WTOL (Heating water Operation Limit) | [°C] | 40 | 40 | 40 | 37 | 37 | 37 | 37 | 37 | 37 |
| (F) Tbivalent temperature | Tbiv | [°C] | -15 | -15 | -13 | -15 | -15 | -13 | -15 | -15 | -13 |
| | Pdh (declared heating capacity) | [kW] | 3.92 | 5.35 | 6.26 | 10.30 | 11.39 | 11.85 | 10.30 | 11.39 | 11.85 |
| | COPd (declared COP) | - | 2.43 | 2.48 | 2.53 | 2.38 | 2.32 | 2.39 | 2.38 | 2.32 | 2.39 |
| Supplementary capacity at P_design | Psup (@Tdesignh:–22°C) | [kW] | 1.10 | 3.00 | 4.50 | 4.10 | 5.20 | 6.50 | 4.10 | 5.20 | 6.50 |

**Product fiche 4**

| Heat pump space heater | | unit | MAM-5-V9M | MAM-7-V9M | MAM-9-V9M | MAM-12-V9M | MAM-14-V9M | MAM-16-V9M | MAM-12-V9T | MAM-14-V9T | MAM-16-V9T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Part load conditions space heating colder climate medium temperature application | | | | | | | | | | | |
| condition (-15°C) | Pdh (declared heating capacity) | [kW] | 3.86 | 5.42 | 5.49 | 10.09 | 10.82 | 10.74 | 10.09 | 10.82 | 10.74 |
| | COPd (declared COP) | - | 1.73 | 1.80 | 1.76 | 1.78 | 1.77 | 1.76 | 1.78 | 1.77 | 1.76 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (A) condition (-7°C) | Pdh (declared heating capacity) | [kW] | 2.97 | 4.15 | 5.41 | 7.34 | 8.86 | 9.64 | 7.34 | 8.86 | 9.64 |
| | COPd (declared COP) | - | 2.18 | 2.38 | 2.43 | 2.27 | 2.35 | 2.38 | 2.27 | 2.35 | 2.38 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (B) condition (2°C) | Pdh (declared heating capacity) | [kW] | 1.75 | 2.67 | 3.30 | 4.47 | 5.30 | 5.59 | 4.47 | 5.30 | 5.59 |
| | COPd (declared COP) | - | 2.94 | 3.05 | 3.40 | 2.90 | 3.16 | 3.31 | 2.90 | 3.16 | 3.31 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (C) condition (7°C) | Pdh (declared heating capacity) | [kW] | 1.16 | 1.71 | 2.17 | 2.88 | 3.28 | 3.95 | 2.88 | 3.28 | 3.95 |
| | COPd (declared COP) | - | 3.57 | 4.16 | 4.59 | 3.96 | 4.10 | 4.47 | 3.96 | 4.10 | 4.47 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (D) condition (12°C) | Pdh (declared heating capacity) | [kW] | 0.61 | 0.91 | 0.90 | 1.44 | 1.44 | 1.90 | 1.44 | 1.44 | 1.90 |
| | COPd (declared COP) | - | 2.93 | 4.28 | 4.28 | 3.22 | 3.20 | 4.05 | 3.22 | 3.20 | 4.05 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (E) Tol(temperature operating limit) | Tol (temperature operating limit) | [°C] | -18 | -18 | -18 | -18 | -18 | -18 | -18 | -18 | -18 |
| | Pdh (declared heating capacity) | [kW] | 4.10 | 4.05 | 4.17 | 7.66 | 7.65 | 6.72 | 7.66 | 7.65 | 6.72 |
| | COPd (declared COP) | - | 1.28 | 1.25 | 1.29 | 1.27 | 1.26 | 1.10 | 1.27 | 1.26 | 1.10 |
| | WTOL (Heating water Operation Limit) | [°C] | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| (F) Tbivalent temperature | Tblv | [°C] | -15 | -15 | -12 | -15 | -14 | -13 | -15 | -14 | -13 |
| | Pdh (declared heating capacity) | [kW] | 3.86 | 5.42 | 6.08 | 10.09 | 11.33 | 11.64 | 10.09 | 11.33 | 11.64 |
| | COPd (declared COP) | - | 1.73 | 1.80 | 1.98 | 1.78 | 1.85 | 1.88 | 1.78 | 1.85 | 1.88 |
| Supplementary capacity at P_design | Psup (@Tdesignh:–22°C) | [kW] | 2.70 | 4.60 | 6.30 | 6.80 | 8.70 | 9.60 | 6.80 | 8.70 | 9.60 |
| Warmer climate (Design temperature =2°C) | | | | | | | | | | | |
| Space heating 35°C | Prated (declared heating capacity) @ 2°C | [kW] | 5 | 7 | 8 | 12 | 14 | 16 | 12 | 14 | 16 |
| | Seasonal space heating efficiency (ηs) | [%] | 224 | 218 | 248 | 236 | 240 | 233 | 236 | 240 | 233 |
| | Annual energy consumption | [kWh] | 1,109 | 1,660 | 1,597 | 2,724 | 3,098 | 3,574 | 2,724 | 3,098 | 3,574 |
| Space heating 55°C | Prated (declared heating capacity) @ 2°C | [kW] | 5 | 7 | 9 | 12 | 14 | 16 | 12 | 14 | 16 |
| | Seasonal space heating efficiency (ηs) | [%] | 142 | 154 | 164 | 148 | 154 | 154 | 148 | 154 | 154 |
| | Annual energy consumption | [kWh] | 1,683 | 2,255 | 2,774 | 4,207 | 4,746 | 5,367 | 4,207 | 4,746 | 5,367 |

**Product fiche 5**

| Heat pump space heater | | unit | MAM-5-V9M | MAM-7-V9M | MAM-9-V9M | MAM-12-V9M | MAM-14-V9M | MAM-16-V9M | MAM-12-V9T | MAM-14-V9T | MAM-16-V9T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Part load conditions space heating warmer climate low temperature application | | | | | | | | | | | |
| (B) condition (2°C) | Pdh (declared heating capacity) | [kW] | 4.80 | 6.76 | 7.58 | 12.03 | 14.13 | 15.25 | 12.03 | 14.13 | 15.25 |
| | COPd (declared COP) | - | 3.78 | 3.75 | 2.90 | 3.60 | 3.39 | 2.94 | 3.60 | 3.39 | 2.94 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (C) condition (7°C) | Pdh (declared heating capacity) | [kW] | 3.03 | 4.42 | 4.82 | 7.84 | 9.03 | 10.13 | 7.84 | 9.03 | 10.13 |
| | COPd (declared COP) | - | 5.29 | 5.53 | 5.46 | 5.45 | 5.38 | 5.32 | 5.45 | 5.38 | 5.32 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (D) condition (12°C) | Pdh (declared heating capacity) | [kW] | 1.45 | 1.89 | 2.44 | 3.49 | 4.30 | 4.91 | 3.49 | 4.30 | 4.91 |
| | COPd (declared COP) | - | 6.47 | 7.53 | 8.24 | 7.14 | 7.45 | 7.48 | 7.14 | 7.45 | 7.48 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (E) Tol(temperature operating limit) | Tol (temperature operating limit) | [°C] | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | Pdh (declared heating capacity) | [kW] | 4.80 | 6.76 | 7.58 | 12.03 | 14.13 | 15.25 | 12.03 | 14.13 | 15.25 |
| | COPd (declared COP) | - | 3.78 | 3.75 | 2.90 | 3.60 | 3.39 | 2.94 | 3.60 | 3.39 | 2.94 |
| | WTOL (Heating water Operation Limit) | [°C] | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| (F) Tbivalent temperature | Tblv | [°C] | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| | Pdh (declared heating capacity) | [kW] | 3.03 | 4.42 | 4.82 | 7.84 | 9.03 | 10.13 | 7.84 | 9.03 | 10.13 |
| | COPd (declared COP) | - | 5.29 | 5.53 | 5.46 | 5.45 | 5.38 | 5.32 | 5.45 | 5.38 | 5.32 |
| Supplementary capacity at P_design | Psup (@Tdesignh:2°C) | [kW] | 0.00 | 0.10 | 0.00 | 0.20 | 0.00 | 0.50 | 0.20 | 0.00 | 0.50 |
| Part load conditions space heating warmer climate medium temperature application | | | | | | | | | | | |
| (B) condition (2°C) | Pdh (declared heating capacity) | [kW] | 4.70 | 6.63 | 8.57 | 11.88 | 13.80 | 14.12 | 11.88 | 13.80 | 14.12 |
| | COPd (declared COP) | - | 2.27 | 2.18 | 2.15 | 2.18 | 2.17 | 2.14 | 2.18 | 2.17 | 2.14 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (C) condition (7°C) | Pdh (declared heating capacity) | [kW] | 2.94 | 4.26 | 5.55 | 7.61 | 8.95 | 10.10 | 7.61 | 8.95 | 10.10 |
| | COPd (declared COP) | - | 3.10 | 3.34 | 3.43 | 3.08 | 3.18 | 3.22 | 3.08 | 3.18 | 3.22 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (D) condition (12°C) | Pdh (declared heating capacity) | [kW] | 1.48 | 1.94 | 2.59 | 3.52 | 4.15 | 4.77 | 3.52 | 4.15 | 4.77 |
| | COPd (declared COP) | - | 4.56 | 4.99 | 5.57 | 4.94 | 5.26 | 5.46 | 4.94 | 5.26 | 5.46 |
| | Cdh(degradation coefficient) | - | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| (E) Tol(temperature operating limit) | Tol (temperature operating limit) | [°C] | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | Pdh (declared heating capacity) | [kW] | 4.70 | 6.63 | 8.57 | 11.88 | 13.80 | 14.12 | 11.88 | 13.80 | 14.12 |
| | COPd (declared COP) | - | 2.27 | 2.18 | 2.15 | 2.18 | 2.17 | 2.14 | 2.18 | 2.17 | 2.14 |
| | WTOL (Heating water Operation Limit) | [°C] | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |

## Product fiche 6

| Heat pump space heater | | unit | MAM-5-V9M | MAM-7-V9M | MAM-9-V9M | MAM-12-V9M | MAM-14-V9M | MAM-16-V9M | MAM-12-V9T | MAM-14-V9T | MAM-16-V9T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (F) Tbivalent temperature | Tblv | [°C] | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| | Pdh (declared heating capacity) | [kW] | 2.94 | 4.26 | 5.55 | 7.61 | 8.95 | 10.10 | 7.61 | 8.95 | 10.10 |
| | COPd (declared COP) | - | 3.10 | 3.34 | 3.43 | 3.08 | 3.18 | 3.22 | 3.08 | 3.18 | 3.22 |
| Supplementary capacity at P_design | Psup (@Tdesignh:2°C) | [kW] | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 1.60 | 0.00 | 0.10 | 1.60 |
| Ecodesign technical data | | | | | | | | | | | |
| Product description | Air-to-water heat pump | Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| | Water-to-water heat pump | Y/N | No | No | No | No | No | No | No | No | No |
| | Brine-to-water heat pump | Y/N | No | No | No | No | No | No | No | No | No |
| | Low-temperature heat pump | Y/N | No | No | No | No | No | No | No | No | No |
| | Equipped with a supplementary heater | Y/N | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes |
| | Heat pump combination heater | Y/N | No | No | No | No | No | No | No | No | No |
| Air to water unit | Rated airflow (outdoor) | [$m^3/h$] | 3050 | 3050 | 3050 | 6150 | 6150 | 6150 | 6150 | 6150 | 6150 |
| Brine/water to water unit | Rated water/brine flow (outdoor H/E) | [$m^3/h$] | / | / | / | / | / | / | / | / | / |
| Other | Capacity control | - | Inverter | Inverter | Inverter | Inverter | Inverter | Inverter | Inverter | Inverter | Inverter |
| | Poff (Power consumption Off mode) | [kW] | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 |
| | Pto (Power consumption Thermostat off mode) | [kW] | 0.009 | 0.006 | 0.010 | 0.015 | 0.026 | 0.041 | 0.015 | 0.026 | 0.041 |
| | Psb (Power consumption Standby mode) | [kW] | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 |
| | PCK (Power crankcase heater model) | [kW] | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | Qelec (Daily electricity consumption) | [kWh] | / | / | / | / | / | / | / | / | / |
| | Qfuel (Daily fuel consumption) | [kWh] | / | / | / | / | / | / | / | / | / |

Details and precautions on installation, maintenance and assembly can be found in the installation and or operation manuals.

Product fiche data according to energy label directive 2010/30/EC regulation (EU) 811/2013.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-5-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 6.6 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 5.8 | kW |
| Tj = 2℃ | Pdh | 3.7 | kW |
| Tj = 7℃ | Pdh | 2.5 | kW |
| Tj = 12℃ | Pdh | 1.3 | kW |
| Tj = bivalent temperature | Pdh | 5.8 | kW |
| Tj = operating limit | Pdh | 5.9 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.006 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 127 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 1.97 | - |
| Tj = 2℃ | COPd | 3.22 | - |
| Tj = 7℃ | COPd | 4.21 | - |
| Tj = 12℃ | COPd | 4.91 | - |
| Tj = bivalent temperature | COPd | 1.97 | - |
| Tj = operating limit | COPd | 1.62 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.7 | kW |
| Type of energy input | Electrical | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/61 | dB |
| Annual energy consumption | $Q_{HE}$ | 4203 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-5-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 4.7 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 3.0 | kW |
| Tj = 2℃ | Pdh | 1.8 | kW |
| Tj = 7℃ | Pdh | 1.2 | kW |
| Tj = 12℃ | Pdh | 0.6 | kW |
| Tj = bivalent temperature | Pdh | 3.9 | kW |
| Tj = operating limit | Pdh | 4.1 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 3.9 | kW |
| Bivalent temperature | $T_{biv}$ | -15 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.009 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 97 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.18 | - |
| Tj = 2℃ | COPd | 2.94 | - |
| Tj = 7℃ | COPd | 3.57 | - |
| Tj = 12℃ | COPd | 2.93 | - |
| Tj = bivalent temperature | COPd | 1.73 | - |
| Tj = operating limit | COPd | 1.28 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.73 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 2.7 | kW |
| Type of energy input | - | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/61 | dB |
| Annual energy consumption | $Q_{HE}$ | 4661 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-5-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 4.6 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 4.7 | kW |
| Tj = 7℃ | Pdh | 2.9 | kW |
| Tj = 12℃ | Pdh | 1.5 | kW |
| Tj = bivalent temperature | Pdh | 2.9 | kW |
| Tj = operating limit | Pdh | 4.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.009 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 142 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.27 | - |
| Tj = 7℃ | COPd | 3.10 | - |
| Tj = 12℃ | COPd | 4.56 | - |
| Tj = bivalent temperature | COPd | 3.10 | - |
| Tj = operating limit | COPd | 2.27 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.0 | kW |
| Type of energy input | - | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/61 | dB |
| Annual energy consumption | $Q_{HE}$ | 1683 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-7-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 6.6 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 5.8 | kW |
| Tj = 2℃ | Pdh | 3.7 | kW |
| Tj = 7℃ | Pdh | 2.5 | kW |
| Tj = 12℃ | Pdh | 1.3 | kW |
| Tj = bivalent temperature | Pdh | 5.8 | kW |
| Tj = operating limit | Pdh | 5.9 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.006 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 127 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 1.97 | - |
| Tj = 2℃ | COPd | 3.22 | - |
| Tj = 7℃ | COPd | 4.21 | - |
| Tj = 12℃ | COPd | 4.91 | - |
| Tj = bivalent temperature | COPd | 1.97 | - |
| Tj = operating limit | COPd | 1.62 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.7 | kW |
| Type of energy input | Electrical | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/64 | dB |
| Annual energy consumption | $Q_{HE}$ | 4203 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-7-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 6.6 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 4.2 | kW |
| Tj = 2℃ | Pdh | 2.7 | kW |
| Tj = 7℃ | Pdh | 1.7 | kW |
| Tj = 12℃ | Pdh | 0.9 | kW |
| Tj = bivalent temperature | Pdh | 5.4 | kW |
| Tj = operating limit | Pdh | 4.1 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 5.4 | kW |
| Bivalent temperature | $T_{biv}$ | -15 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.006 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 104 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.38 | - |
| Tj = 2℃ | COPd | 3.05 | - |
| Tj = 7℃ | COPd | 4.16 | - |
| Tj = 12℃ | COPd | 4.28 | - |
| Tj = bivalent temperature | COPd | 1.80 | - |
| Tj = operating limit | COPd | 1.25 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.80 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 4.6 | kW |
| Type of energy input | | - | |

| Other items | | | |
|---|---|---|---|
| Capacity control | | variable | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/64 | dB |
| Annual energy consumption | $Q_{HE}$ | 6136 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | | - | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-7-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 6.6 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 6.6 | kW |
| Tj = 7℃ | Pdh | 4.3 | kW |
| Tj = 12℃ | Pdh | 1.9 | kW |
| Tj = bivalent temperature | Pdh | 4.3 | kW |
| Tj = operating limit | Pdh | 6.6 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.006 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 154 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.18 | - |
| Tj = 7℃ | COPd | 3.34 | - |
| Tj = 12℃ | COPd | 4.99 | - |
| Tj = bivalent temperature | COPd | 3.34 | - |
| Tj = operating limit | COPd | 2.18 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.0 | kW |
| Type of energy input | - | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/64 | dB |
| Annual energy consumption | $Q_{HE}$ | 2255 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-9-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 7.4 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 6.6 | kW |
| Tj = 2℃ | Pdh | 4.3 | kW |
| Tj = 7℃ | Pdh | 2.8 | kW |
| Tj = 12℃ | Pdh | 1.3 | kW |
| Tj = bivalent temperature | Pdh | 6.6 | kW |
| Tj = operating limit | Pdh | 5.5 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.010 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 126 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 1.87 | - |
| Tj = 2℃ | COPd | 3.19 | - |
| Tj = 7℃ | COPd | 4.38 | - |
| Tj = 12℃ | COPd | 5.04 | - |
| Tj = bivalent temperature | COPd | 1.87 | - |
| Tj = operating limit | COPd | 1.51 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 1.8 | kW |
| Type of energy input | Electrical | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/67 | dB |
| Annual energy consumption | $Q_{HE}$ | 4770 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-9-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 8.2 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 5.4 | kW |
| Tj = 2℃ | Pdh | 3.3 | kW |
| Tj = 7℃ | Pdh | 2.2 | kW |
| Tj = 12℃ | Pdh | 0.9 | kW |
| Tj = bivalent temperature | Pdh | 6.1 | kW |
| Tj = operating limit | Pdh | 4.2 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 5.5 | kW |
| Bivalent temperature | $T_{biv}$ | -12 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.010 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 109 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.43 | - |
| Tj = 2℃ | COPd | 3.40 | - |
| Tj = 7℃ | COPd | 4.59 | - |
| Tj = 12℃ | COPd | 4.28 | - |
| Tj = bivalent temperature | COPd | 1.98 | - |
| Tj = operating limit | COPd | 1.29 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.76 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 6.3 | kW |
| Type of energy input | - | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/67 | dB |
| Annual energy consumption | $Q_{HE}$ | 7286 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-9-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 8.6 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 8.6 | kW |
| Tj = 7℃ | Pdh | 5.6 | kW |
| Tj = 12℃ | Pdh | 2.6 | kW |
| Tj = bivalent temperature | Pdh | 5.6 | kW |
| Tj = operating limit | Pdh | 8.6 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.010 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 164 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.15 | - |
| Tj = 7℃ | COPd | 3.43 | - |
| Tj = 12℃ | COPd | 5.57 | - |
| Tj = bivalent temperature | COPd | 3.43 | - |
| Tj = operating limit | COPd | 2.14 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.0 | kW |
| Type of energy input | - | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/67 | dB |
| Annual energy consumption | $Q_{HE}$ | 2774 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 3050 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-12-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 12.8 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 11.3 | kW |
| Tj = 2℃ | Pdh | 7.3 | kW |
| Tj = 7℃ | Pdh | 5.0 | kW |
| Tj = 12℃ | Pdh | 2.4 | kW |
| Tj = bivalent temperature | Pdh | 11.3 | kW |
| Tj = operating limit | Pdh | 11.9 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.015 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 126 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.05 | - |
| Tj = 2℃ | COPd | 3.14 | - |
| Tj = 7℃ | COPd | 4.25 | - |
| Tj = 12℃ | COPd | 4.94 | - |
| Tj = bivalent temperature | COPd | 2.05 | - |
| Tj = operating limit | COPd | 1.79 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.9 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/68 | dB |
| Annual energy consumption | $Q_{HE}$ | 8164 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-12-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 12.4 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 7.3 | kW |
| Tj = 2℃ | Pdh | 4.5 | kW |
| Tj = 7℃ | Pdh | 2.9 | kW |
| Tj = 12℃ | Pdh | 1.4 | kW |
| Tj = bivalent temperature | Pdh | 10.1 | kW |
| Tj = operating limit | Pdh | 7.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 10.1 | kW |
| Bivalent temperature | $T_{biv}$ | -15 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.015 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 96 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.27 | - |
| Tj = 2℃ | COPd | 2.90 | - |
| Tj = 7℃ | COPd | 3.96 | - |
| Tj = 12℃ | COPd | 3.22 | - |
| Tj = bivalent temperature | COPd | 1.78 | - |
| Tj = operating limit | COPd | 1.27 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.78 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 6.8 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/68 | dB |
| Annual energy consumption | $Q_{HE}$ | 12299 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-12-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 11.8 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 11.9 | kW |
| Tj = 7℃ | Pdh | 7.6 | kW |
| Tj = 12℃ | Pdh | 3.5 | kW |
| Tj = bivalent temperature | Pdh | 7.6 | kW |
| Tj = operating limit | Pdh | 11.9 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.015 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 148 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.18 | - |
| Tj = 7℃ | COPd | 3.08 | - |
| Tj = 12℃ | COPd | 4.94 | - |
| Tj = bivalent temperature | COPd | 3.08 | - |
| Tj = operating limit | COPd | 2.18 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.0 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/68 | dB |
| Annual energy consumption | $Q_{HE}$ | 4207 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-14-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 13.8 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 12.2 | kW |
| Tj = 2℃ | Pdh | 7.8 | kW |
| Tj = 7℃ | Pdh | 5.2 | kW |
| Tj = 12℃ | Pdh | 2.6 | kW |
| Tj = bivalent temperature | Pdh | 12.2 | kW |
| Tj = operating limit | Pdh | 11.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.026 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 128 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.05 | - |
| Tj = 2℃ | COPd | 3.18 | - |
| Tj = 7℃ | COPd | 4.29 | - |
| Tj = 12℃ | COPd | 5.14 | - |
| Tj = bivalent temperature | COPd | 2.05 | - |
| Tj = operating limit | COPd | 1.74 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 2.1 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 8724 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-14-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 14.3 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 8.9 | kW |
| Tj = 2℃ | Pdh | 5.3 | kW |
| Tj = 7℃ | Pdh | 3.3 | kW |
| Tj = 12℃ | Pdh | 1.4 | kW |
| Tj = bivalent temperature | Pdh | 11.3 | kW |
| Tj = operating limit | Pdh | 7.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 10.8 | kW |
| Bivalent temperature | $T_{biv}$ | -14 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.026 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 102 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.35 | - |
| Tj = 2℃ | COPd | 3.16 | - |
| Tj = 7℃ | COPd | 4.10 | - |
| Tj = 12℃ | COPd | 3.20 | - |
| Tj = bivalent temperature | COPd | 1.85 | - |
| Tj = operating limit | COPd | 1.26 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.77 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 8.7 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 13449 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Declared load profile | - | | | Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily electricity consumption | $Q_{clec}$ | - | kWh | Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh | Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-14-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 13.9 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 13.8 | kW |
| Tj = 7℃ | Pdh | 9.0 | kW |
| Tj = 12℃ | Pdh | 4.2 | kW |
| Tj = bivalent temperature | Pdh | 9.0 | kW |
| Tj = operating limit | Pdh | 13.8 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.026 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 154 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.17 | - |
| Tj = 7℃ | COPd | 3.18 | - |
| Tj = 12℃ | COPd | 5.26 | - |
| Tj = bivalent temperature | COPd | 3.18 | - |
| Tj = operating limit | COPd | 2.17 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.1 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 4746 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-16-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 14.6 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 12.9 | kW |
| Tj = 2℃ | Pdh | 8.3 | kW |
| Tj = 7℃ | Pdh | 5.5 | kW |
| Tj = 12℃ | Pdh | 2.6 | kW |
| Tj = bivalent temperature | Pdh | 12.9 | kW |
| Tj = operating limit | Pdh | 11.2 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.041 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 128 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.04 | - |
| Tj = 2℃ | COPd | 3.21 | - |
| Tj = 7℃ | COPd | 4.32 | - |
| Tj = 12℃ | COPd | 5.12 | - |
| Tj = bivalent temperature | COPd | 2.04 | - |
| Tj = operating limit | COPd | 1.65 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 3.4 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 9216 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Declared load profile | - | | | Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily electricity consumption | $Q_{clec}$ | - | kWh | Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh | Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-16-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 15.2 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 9.6 | kW |
| Tj = 2℃ | Pdh | 5.6 | kW |
| Tj = 7℃ | Pdh | 4.0 | kW |
| Tj = 12℃ | Pdh | 1.9 | kW |
| Tj = bivalent temperature | Pdh | 11.6 | kW |
| Tj = operating limit | Pdh | 6.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 10.7 | kW |
| Bivalent temperature | $T_{biv}$ | -13 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.041 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 106 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.38 | - |
| Tj = 2℃ | COPd | 3.31 | - |
| Tj = 7℃ | COPd | 4.47 | - |
| Tj = 12℃ | COPd | 4.05 | - |
| Tj = bivalent temperature | COPd | 1.88 | - |
| Tj = operating limit | COPd | 1.10 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.76 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 9.6 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 13768 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Declared load profile | - | | | Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily electricity consumption | $Q_{clec}$ | - | kWh | Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh | Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-16-V9M |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 15.7 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 14.1 | kW |
| Tj = 7℃ | Pdh | 10.1 | kW |
| Tj = 12℃ | Pdh | 4.8 | kW |
| Tj = bivalent temperature | Pdh | 10.1 | kW |
| Tj = operating limit | Pdh | 14.1 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.041 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 154 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.14 | - |
| Tj = 7℃ | COPd | 3.22 | - |
| Tj = 12℃ | COPd | 5.46 | - |
| Tj = bivalent temperature | COPd | 3.22 | - |
| Tj = operating limit | COPd | 2.14 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 1.6 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 5367 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-12-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 12.8 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 11.3 | kW |
| Tj = 2℃ | Pdh | 7.3 | kW |
| Tj = 7℃ | Pdh | 5.0 | kW |
| Tj = 12℃ | Pdh | 2.4 | kW |
| Tj = bivalent temperature | Pdh | 11.3 | kW |
| Tj = operating limit | Pdh | 11.9 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.015 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 126 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.05 | - |
| Tj = 2℃ | COPd | 3.14 | - |
| Tj = 7℃ | COPd | 4.25 | - |
| Tj = 12℃ | COPd | 4.94 | - |
| Tj = bivalent temperature | COPd | 2.05 | - |
| Tj = operating limit | COPd | 1.79 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.9 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/68 | dB |
| Annual energy consumption | $Q_{HE}$ | 8164 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-12-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 12.4 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 7.3 | kW |
| Tj = 2℃ | Pdh | 4.5 | kW |
| Tj = 7℃ | Pdh | 2.9 | kW |
| Tj = 12℃ | Pdh | 1.4 | kW |
| Tj = bivalent temperature | Pdh | 10.1 | kW |
| Tj = operating limit | Pdh | 7.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 10.1 | kW |
| Bivalent temperature | $T_{biv}$ | -15 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.015 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 96 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.27 | - |
| Tj = 2℃ | COPd | 2.90 | - |
| Tj = 7℃ | COPd | 3.96 | - |
| Tj = 12℃ | COPd | 3.22 | - |
| Tj = bivalent temperature | COPd | 1.78 | - |
| Tj = operating limit | COPd | 1.27 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.78 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 6.8 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/68 | dB |
| Annual energy consumption | $Q_{HE}$ | 12299 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-12-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 11.8 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 11.9 | kW |
| Tj = 7℃ | Pdh | 7.6 | kW |
| Tj = 12℃ | Pdh | 3.5 | kW |
| Tj = bivalent temperature | Pdh | 7.6 | kW |
| Tj = operating limit | Pdh | 11.9 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.015 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 148 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.18 | - |
| Tj = 7℃ | COPd | 3.08 | - |
| Tj = 12℃ | COPd | 4.94 | - |
| Tj = bivalent temperature | COPd | 3.08 | - |
| Tj = operating limit | COPd | 2.18 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.0 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/68 | dB |
| Annual energy consumption | $Q_{HE}$ | 4207 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-14-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 13.8 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 12.2 | kW |
| Tj = 2℃ | Pdh | 7.8 | kW |
| Tj = 7℃ | Pdh | 5.2 | kW |
| Tj = 12℃ | Pdh | 2.6 | kW |
| Tj = bivalent temperature | Pdh | 12.2 | kW |
| Tj = operating limit | Pdh | 11.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.026 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 128 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.05 | - |
| Tj = 2℃ | COPd | 3.18 | - |
| Tj = 7℃ | COPd | 4.29 | - |
| Tj = 12℃ | COPd | 5.14 | - |
| Tj = bivalent temperature | COPd | 2.05 | - |
| Tj = operating limit | COPd | 1.74 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 2.1 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 8724 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Declared load profile | - | | | Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily electricity consumption | $Q_{clec}$ | - | kWh | Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh | Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and hea he design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-14-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 14.3 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 8.9 | kW |
| Tj = 2℃ | Pdh | 5.3 | kW |
| Tj = 7℃ | Pdh | 3.3 | kW |
| Tj = 12℃ | Pdh | 1.4 | kW |
| Tj = bivalent temperature | Pdh | 11.3 | kW |
| Tj = operating limit | Pdh | 7.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 10.8 | kW |
| Bivalent temperature | $T_{biv}$ | -14 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.026 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 102 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.35 | - |
| Tj = 2℃ | COPd | 3.16 | - |
| Tj = 7℃ | COPd | 4.10 | - |
| Tj = 12℃ | COPd | 3.20 | - |
| Tj = bivalent temperature | COPd | 1.85 | - |
| Tj = operating limit | COPd | 1.26 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.77 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 8.7 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 13449 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-14-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 13.9 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 13.8 | kW |
| Tj = 7℃ | Pdh | 9.0 | kW |
| Tj = 12℃ | Pdh | 4.2 | kW |
| Tj = bivalent temperature | Pdh | 9.0 | kW |
| Tj = operating limit | Pdh | 13.8 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.026 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 154 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.17 | - |
| Tj = 7℃ | COPd | 3.18 | - |
| Tj = 12℃ | COPd | 5.26 | - |
| Tj = bivalent temperature | COPd | 3.18 | - |
| Tj = operating limit | COPd | 2.17 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 0.1 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 4746 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Declared load profile | - | | | Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily electricity consumption | $Q_{clec}$ | - | kWh | Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh | Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-16-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | AVERAGE |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 14.6 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 12.9 | kW |
| Tj = 2℃ | Pdh | 8.3 | kW |
| Tj = 7℃ | Pdh | 5.5 | kW |
| Tj = 12℃ | Pdh | 2.6 | kW |
| Tj = bivalent temperature | Pdh | 12.9 | kW |
| Tj = operating limit | Pdh | 11.2 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | -7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.041 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 128 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.04 | - |
| Tj = 2℃ | COPd | 3.21 | - |
| Tj = 7℃ | COPd | 4.32 | - |
| Tj = 12℃ | COPd | 5.12 | - |
| Tj = bivalent temperature | COPd | 2.04 | - |
| Tj = operating limit | COPd | 1.65 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -10 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 3.4 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 9216 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Declared load profile | - | | | Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily electricity consumption | $Q_{clec}$ | - | kWh | Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh | Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-16-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | COLDER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 15.2 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | 9.6 | kW |
| Tj = 2℃ | Pdh | 5.6 | kW |
| Tj = 7℃ | Pdh | 4.0 | kW |
| Tj = 12℃ | Pdh | 1.9 | kW |
| Tj = bivalent temperature | Pdh | 11.6 | kW |
| Tj = operating limit | Pdh | 6.7 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | 10.7 | kW |
| Bivalent temperature | $T_{biv}$ | -13 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.041 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 106 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | 2.38 | - |
| Tj = 2℃ | COPd | 3.31 | - |
| Tj = 7℃ | COPd | 4.47 | - |
| Tj = 12℃ | COPd | 4.05 | - |
| Tj = bivalent temperature | COPd | 1.88 | - |
| Tj = operating limit | COPd | 1.10 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | 1.76 | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | -18 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 44 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 9.6 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 13768 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | | | | | |
|---|---|---|---|---|---|---|---|
| Declared load profile | - | | | Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily electricity consumption | $Q_{clec}$ | - | kWh | Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh | Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

## Technical parameters

| | |
|---|---|
| Model(s): | MAM-16-V9T |
| Air-to-water heat pump: | YES |
| Water-to-water heat pump: | NO |
| Brine-to-water heat pump: | NO |
| Low-temperature heat pump: | NO |
| Equipped with a supplementary heater: | NO |
| Heat pump combination heater: | NO |
| Declared climate condition: | WARMER |

Parameters are declared for medium-temperature application.

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Rated heat output (*) | Prated | 15.7 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | Pdh | - | kW |
| Tj = 2℃ | Pdh | 14.1 | kW |
| Tj = 7℃ | Pdh | 10.1 | kW |
| Tj = 12℃ | Pdh | 4.8 | kW |
| Tj = bivalent temperature | Pdh | 10.1 | kW |
| Tj = operating limit | Pdh | 14.1 | kW |
| For air-to-water heat pumps: Tj = -15℃ | Pdh | - | kW |
| Bivalent temperature | $T_{biv}$ | 7 | °C |
| Cycling interval capacity for heating | $P_{cych}$ | - | kW |
| Degradation co-efficient (**) | $C_{dh}$ | 0.9 | -- |
| Power consumption in modes other than active mode | | | |
| Off mode | $P_{off}$ | 0.009 | kW |
| Standby mode | $P_{sb}$ | 0.009 | kW |
| Thermostat-off mode | $P_{to}$ | 0.041 | kW |
| Crankcase heater mode | $P_{ck}$ | 0.000 | kW |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 154 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7℃ | COPd | - | - |
| Tj = 2℃ | COPd | 2.14 | - |
| Tj = 7℃ | COPd | 3.22 | - |
| Tj = 12℃ | COPd | 5.46 | - |
| Tj = bivalent temperature | COPd | 3.22 | - |
| Tj = operating limit | COPd | 2.14 | - |
| For air-to-water heat pumps: Tj = -15℃ | COPd | - | - |
| For air-to-water heat pumps: Operation limit temperature | TOL | 2 | °C |
| Cycling interval efficiency | $COP_{cyc}$ | - | - |
| Heating water operating limit temperature | $W_{TOL}$ | 60 | °C |
| Supplementary heater | | | |
| Rated heat output (**) | $P_{sup}$ | 1.6 | kW |
| Type of energy input | Electrical Heating | | |

| Other items | | | |
|---|---|---|---|
| Capacity control | variable | | |
| Sound power level, indoors/outdoors | $L_{WA}$ | -/71 | dB |
| Annual energy consumption | $Q_{HE}$ | 5367 | kWh |

| | | | |
|---|---|---|---|
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 6150 | $m^3/h$ |
| For water-or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | - | $m^3/h$ |

| For heat pump combination heater: | | | |
|---|---|---|---|
| Declared load profile | - | | |
| Daily electricity consumption | $Q_{clec}$ | - | kWh |
| Annual electricity consumption | AEC | - | kWh |

| | | | |
|---|---|---|---|
| Water heating energy efficiency | $\eta_{wh}$ | - | % |
| Daily fuel consumption | $Q_{fuel}$ | - | kWh |
| Annual fuel consumption | AFC | - | GJ |

| | |
|---|---|
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) |

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-5-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 4.9 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 186 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 4.9 | kW | Tj=+35°C | $EER_d$ | 3.01 | - |
| Tj=+30°C | $P_{dc}$ | 3.6 | kW | Tj=+30°C | $EER_d$ | 4.36 | - |
| Tj=+25°C | $P_{dc}$ | 2.2 | kW | Tj=+25°C | $EER_d$ | 5.61 | - |
| Tj=+20°C | $P_{dc}$ | 1.0 | kW | Tj=+20°C | $EER_d$ | 5.14 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.004 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 3050 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/61 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-5-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 4.6 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 301 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 4.6 | kW | Tj=+35°C | $EER_d$ | 4.97 | - |
| Tj=+30°C | $P_{dc}$ | 3.4 | kW | Tj=+30°C | $EER_d$ | 6.96 | - |
| Tj=+25°C | $P_{dc}$ | 2.2 | kW | Tj=+25°C | $EER_d$ | 9.40 | - |
| Tj=+20°C | $P_{dc}$ | 1.1 | kW | Tj=+20°C | $EER_d$ | 8.50 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.004 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 3050 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/61 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-7-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 6.2 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 196 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 6.2 | kW | Tj=+35°C | $EER_d$ | 2.78 | - |
| Tj=+30°C | $P_{dc}$ | 4.7 | kW | Tj=+30°C | $EER_d$ | 4.21 | - |
| Tj=+25°C | $P_{dc}$ | 3.0 | kW | Tj=+25°C | $EER_d$ | 6.10 | - |
| Tj=+20°C | $P_{dc}$ | 1.4 | kW | Tj=+20°C | $EER_d$ | 6.65 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.002 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 3050 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/64 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-7-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 6.4 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 340 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 6.4 | kW | Tj=+35°C | $EER_d$ | 4.72 | - |
| Tj=+30°C | $P_{dc}$ | 4.9 | kW | Tj=+30°C | $EER_d$ | 6.80 | - |
| Tj=+25°C | $P_{dc}$ | 3.1 | kW | Tj=+25°C | $EER_d$ | 10.70 | - |
| Tj=+20°C | $P_{dc}$ | 1.6 | kW | Tj=+20°C | $EER_d$ | 12.16 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.002 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 3050 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/64 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-9-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 7.9 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 194 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 7.9 | kW | Tj=+35°C | $EER_d$ | 2.39 | - |
| Tj=+30°C | $P_{dc}$ | 5.9 | kW | Tj=+30°C | $EER_d$ | 3.86 | - |
| Tj=+25°C | $P_{dc}$ | 3.9 | kW | Tj=+25°C | $EER_d$ | 5.95 | - |
| Tj=+20°C | $P_{dc}$ | 1.7 | kW | Tj=+20°C | $EER_d$ | 7.47 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.003 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 3050 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/67 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-9-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 7.9 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 312 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 7.9 | kW | Tj=+35°C | $EER_d$ | 4.17 | - |
| Tj=+30°C | $P_{dc}$ | 6.1 | kW | Tj=+30°C | $EER_d$ | 6.14 | - |
| Tj=+25°C | $P_{dc}$ | 3.8 | kW | Tj=+25°C | $EER_d$ | 9.80 | - |
| Tj=+20°C | $P_{dc}$ | 2.0 | kW | Tj=+20°C | $EER_d$ | 11.53 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.003 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 3050 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/67 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-12-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 11.3 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 191 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 11.3 | kW | Tj=+35°C | $EER_d$ | 2.90 | - |
| Tj=+30°C | $P_{dc}$ | 8.1 | kW | Tj=+30°C | $EER_d$ | 4.05 | - |
| Tj=+25°C | $P_{dc}$ | 5.2 | kW | Tj=+25°C | $EER_d$ | 5.42 | - |
| Tj=+20°C | $P_{dc}$ | 2.5 | kW | Tj=+20°C | $EER_d$ | 6.73 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.012 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/68 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-12-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 12.6 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 297 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 12.6 | kW | Tj=+35°C | $EER_d$ | 4.74 | - |
| Tj=+30°C | $P_{dc}$ | 8.9 | kW | Tj=+30°C | $EER_d$ | 6.50 | - |
| Tj=+25°C | $P_{dc}$ | 5.9 | kW | Tj=+25°C | $EER_d$ | 8.65 | - |
| Tj=+20°C | $P_{dc}$ | 3.0 | kW | Tj=+20°C | $EER_d$ | 9.00 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.012 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/68 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-14-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 12.9 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 186 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 12.9 | kW | Tj=+35°C | $EER_d$ | 2.71 | - |
| Tj=+30°C | $P_{dc}$ | 9.6 | kW | Tj=+30°C | $EER_d$ | 3.90 | - |
| Tj=+25°C | $P_{dc}$ | 6.0 | kW | Tj=+25°C | $EER_d$ | 5.37 | - |
| Tj=+20°C | $P_{dc}$ | 2.9 | kW | Tj=+20°C | $EER_d$ | 6.71 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.022 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/71 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-14-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 14.2 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 283 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 14.2 | kW | Tj=+35°C | $EER_d$ | 4.42 | - |
| Tj=+30°C | $P_{dc}$ | 10.5 | kW | Tj=+30°C | $EER_d$ | 6.14 | - |
| Tj=+25°C | $P_{dc}$ | 6.6 | kW | Tj=+25°C | $EER_d$ | 8.44 | - |
| Tj=+20°C | $P_{dc}$ | 2.9 | kW | Tj=+20°C | $EER_d$ | 8.43 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.022 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/71 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-16-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 13.9 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 178 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 13.9 | kW | Tj=+35°C | $EER_d$ | 2.53 | - |
| Tj=+30°C | $P_{dc}$ | 10.5 | kW | Tj=+30°C | $EER_d$ | 3.81 | - |
| Tj=+25°C | $P_{dc}$ | 6.4 | kW | Tj=+25°C | $EER_d$ | 5.16 | - |
| Tj=+20°C | $P_{dc}$ | 3.1 | kW | Tj=+20°C | $EER_d$ | 6.49 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.031 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/71 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-14-V9M |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 15.3 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 268 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 15.3 | kW | Tj=+35°C | $EER_d$ | 4.19 | - |
| Tj=+30°C | $P_{dc}$ | 11.3 | kW | Tj=+30°C | $EER_d$ | 5.94 | - |
| Tj=+25°C | $P_{dc}$ | 7.2 | kW | Tj=+25°C | $EER_d$ | 7.98 | - |
| Tj=+20°C | $P_{dc}$ | 3.4 | kW | Tj=+20°C | $EER_d$ | 8.27 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.031 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/71 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-12-V9T |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 11.3 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 191 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 11.3 | kW | Tj=+35°C | $EER_d$ | 2.90 | - |
| Tj=+30°C | $P_{dc}$ | 8.1 | kW | Tj=+30°C | $EER_d$ | 4.05 | - |
| Tj=+25°C | $P_{dc}$ | 5.2 | kW | Tj=+25°C | $EER_d$ | 5.42 | - |
| Tj=+20°C | $P_{dc}$ | 2.5 | kW | Tj=+20°C | $EER_d$ | 6.73 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.012 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/68 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-12-V9T |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 12.6 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 297 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 12.6 | kW | Tj=+35°C | $EER_d$ | 4.74 | - |
| Tj=+30°C | $P_{dc}$ | 8.9 | kW | Tj=+30°C | $EER_d$ | 6.50 | - |
| Tj=+25°C | $P_{dc}$ | 5.9 | kW | Tj=+25°C | $EER_d$ | 8.65 | - |
| Tj=+20°C | $P_{dc}$ | 3.0 | kW | Tj=+20°C | $EER_d$ | 9.00 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.012 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/68 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-14-V9T |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 12.9 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 186 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 12.9 | kW | Tj=+35°C | $EER_d$ | 2.71 | - |
| Tj=+30°C | $P_{dc}$ | 9.6 | kW | Tj=+30°C | $EER_d$ | 3.90 | - |
| Tj=+25°C | $P_{dc}$ | 6.0 | kW | Tj=+25°C | $EER_d$ | 5.37 | - |
| Tj=+20°C | $P_{dc}$ | 2.9 | kW | Tj=+20°C | $EER_d$ | 6.71 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.022 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/71 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-14-V9T |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 14.2 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 283 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 14.2 | kW | Tj=+35°C | $EER_d$ | 4.42 | - |
| Tj=+30°C | $P_{dc}$ | 10.5 | kW | Tj=+30°C | $EER_d$ | 6.14 | - |
| Tj=+25°C | $P_{dc}$ | 6.6 | kW | Tj=+25°C | $EER_d$ | 8.44 | - |
| Tj=+20°C | $P_{dc}$ | 2.9 | kW | Tj=+20°C | $EER_d$ | 8.43 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.022 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/71 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-16-V9T |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 13.9 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 178 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 13.9 | kW | Tj=+35°C | $EER_d$ | 2.53 | - |
| Tj=+30°C | $P_{dc}$ | 10.5 | kW | Tj=+30°C | $EER_d$ | 3.81 | - |
| Tj=+25°C | $P_{dc}$ | 6.4 | kW | Tj=+25°C | $EER_d$ | 5.16 | - |
| Tj=+20°C | $P_{dc}$ | 3.1 | kW | Tj=+20°C | $EER_d$ | 6.49 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.031 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/71 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Low temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

# Information requirements for comfort chillers

| | |
|---|---|
| Model(s): | MAM-16-V9T |
| Outdoor side heat exchanger of chiller: | Air to water |
| Indoor side heat exchanger chiller: | Water |
| Type: | Compressor driven vapour compression |
| Driver of compressor: | Electric motor |

| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit |
|---|---|---|---|---|---|---|---|
| Rated cooling capacity | $P_{rated,c}$ | 15.3 | kW | Seasonal space cooling energy efficiency | $\eta_{s,c}$ | 268 | % |
| Declared cooling capacity for part load at given outdoor temperature Tj | | | | Declared energy efficiency ratio for part load at given outdoor temperature Tj | | | |
| Tj=+35°C | $P_{dc}$ | 15.3 | kW | Tj=+35°C | $EER_d$ | 4.19 | - |
| Tj=+30°C | $P_{dc}$ | 11.3 | kW | Tj=+30°C | $EER_d$ | 5.94 | - |
| Tj=+25°C | $P_{dc}$ | 7.2 | kW | Tj=+25°C | $EER_d$ | 7.98 | - |
| Tj=+20°C | $P_{dc}$ | 3.4 | kW | Tj=+20°C | $EER_d$ | 8.27 | - |
| Degradation co-efficient for chillers (*) | $C_{dc}$ | 0.9 | - | | | | |
| Power consumption in modes other than "active mode" | | | | | | | |
| Off mode | $P_{OFF}$ | 0.009 | kW | Crankcase heater mode | $P_{CK}$ | 0.000 | kW |
| Thermosat-off mode | $P_{TO}$ | 0.031 | kW | Standby mode | $P_{SB}$ | 0.009 | kW |
| Other items | | | | | | | |
| Capacity control | variable | | | For air-to-water comfort chillers: air flow rate, outdoor measured | - | 6150 | $m^3/h$ |
| Sound power level, indoors / outdoors | $L_{WA}$ | -/71 | dB | | | | |
| Emissions of nitrogen oxides (if applicable) | $NO_x$ (**) | - | mg/kWh input GCV | For water / brine-to-water chillers: Rated brine or water flow rate, outdoor side heat exchanger | - | - | $m^3/h$ |
| GWP of the refrigerant | - | 675 | kg $CO_2$ eq (100years) | | | | |
| Standard rating conditions used | Medium temperature application | | | | | | |
| Contact details | SALVADOR ESCODA SA<br>PROVENA 392 P2 08025 BARCELONA (SPAIN) | | | | | | |

(*) If $C_{dc}$ is not determined by measurement then the default degradation coefficient of chillers shall be 0,9.
(**) From 26 September 2018.

| Model | Mode | Heating | | | | | Cooling | |
|---|---|---|---|---|---|---|---|---|
| | Ambient temperature | 7/6 | | | 2/1 | -7/-8 | 35/24 | |
| | Water temperature | 30-35 | 40-45 | 47-55 | 30-35 | 30-35 | 23-18 | 12-7 |
| MAM-5-V9M | Capacity /W | 4650 | 4800 | 4650 | 4600 | 4900 | 4600 | 4850 |
| | Power input /W | 930 | 1333 | 1768 | 1156 | 1639 | 954 | 1628 |
| | COP / EER | 5.00 | 3.60 | 2.63 | 3.98 | 2.99 | 4.82 | 2.98 |
| MAM-7-V9M | Capacity /W | 6650 | 6700 | 6800 | 6200 | 6450 | 6450 | 6300 |
| | Power input /W | 1348 | 1879 | 2424 | 1590 | 2164 | 1387 | 2274 |
| | COP / EER | 4.94 | 3.57 | 2.81 | 3.90 | 2.98 | 4.65 | 2.77 |
| MAM-9-V9M | Capacity /W | 8600 | 8600 | 8600 | 7100 | 7500 | 8000 | 7950 |
| | Power input /W | 1870 | 2500 | 3127 | 2034 | 2534 | 1923 | 3149 |
| | COP / EER | 4.60 | 3.44 | 2.75 | 3.49 | 2.96 | 4.16 | 2.53 |
| MAM-12-V9M | Capacity /W | 12300 | 12400 | 11900 | 12200 | 12000 | 12200 | 10900 |
| | Power input /W | 2557 | 3518 | 4281 | 3406 | 4290 | 2552 | 3739 |
| | COP / EER | 4.81 | 3.53 | 2.78 | 3.58 | 2.80 | 4.78 | 2.92 |
| MAM-14-V9M | Capacity /W | 14100 | 14100 | 14200 | 13000 | 12800 | 14000 | 12900 |
| | Power input /W | 3065 | 4063 | 5173 | 3657 | 4602 | 3101 | 4615 |
| | COP / EER | 4.60 | 3.47 | 2.75 | 3.56 | 2.78 | 4.52 | 2.80 |
| MAM-16-V9M | Capacity /W | 16300 | 16200 | 16100 | 15000 | 13500 | 15500 | 13800 |
| | Power input /W | 3663 | 4723 | 5908 | 4492 | 4913 | 3643 | 5208 |
| | COP / EER | 4.45 | 3.43 | 2.73 | 3.34 | 2.75 | 4.26 | 2.65 |
| MAM-12-V9T | Capacity /W | 12300 | 12400 | 11900 | 12200 | 12000 | 12200 | 10900 |
| | Power input /W | 2541 | 3454 | 4235 | 3351 | 4221 | 2528 | 3720 |
| | COP / EER | 4.84 | 3.59 | 2.81 | 3.64 | 2.84 | 4.83 | 2.93 |
| MAM-14-V9T | Capacity /W | 14100 | 14100 | 14200 | 13000 | 12800 | 14000 | 12900 |
| | Power input /W | 3045 | 3989 | 5099 | 3627 | 4548 | 3111 | 4615 |
| | COP / EER | 4.63 | 3.54 | 2.79 | 3.58 | 2.81 | 4.50 | 2.80 |
| MAM-16-V9T | Capacity /W | 16300 | 16200 | 16100 | 15000 | 13500 | 15500 | 13800 |
| | Power input /W | 3634 | 4702 | 5833 | 4449 | 4845 | 3634 | 5188 |
| | COP / EER | 4.49 | 3.45 | 2.76 | 3.37 | 2.79 | 4.27 | 2.66 |

NOTE

MUNDOCLIMA®
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**ASK FOR MORE INFORMATION**
Phone: (+34) 93 446 27 81
eMail: info@mundoclima.com

**TECHNICAL ASSISTANCE**
Phone: (+34) 93 652 53 57

规格：A4
材料：封面、封底为105g铜版纸
　　内页为100g双胶纸

更改记录（本页不打印）
N81120281　V1.0-V2.0
1、材料内页改为100g双胶纸
2、封底升级版本
3、所以页面均有参数变更