

Inverter

R513A



R134a

SYSCREW 380-1260 AIR EVO HSE

Air Cooled Water Chillers with Inverter Screw Compressors

366 to 1241 kW



SYSCREW 380-1260 AIR EVO HSE



Air Cooled Water Chillers with Inverter Screw Compressors

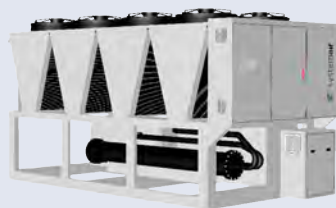


- Available in 12 sizes
- Three fan versions: Standard, High Temperature & High Pressure Fans
- Two acoustic variants: Standard & Super Low noise
- R513A and R134a refrigerant
- Cooling capacities from 366 to 1241 kW
- Low energy consumption
- Reduced sound emission
- Robust frame

SYSCREW 380-1260 AIR EVO HSE is a step ahead in terms of environmental sustainability and guarantees a rapid investment pay-back. Introducing all-round variable volume flow management thanks to inverter driven compressor technology, EC fan motors and electronic expansion valve, this solution optimizes seasonal cooling efficiency (SEER) and guarantees extended envelope operation and noise reduction.

BIM models

available at www.magiccloud.com



EC Driven



The preservation of the environment and energy savings are at the heart of the Systemair philosophy.

100%

of the units are factory tested

Product advantages

- High seasonal efficiency level exceeding **Erp 2021** requirements
- High durability painting process for casing and frame, offering **C4 corrosion category** in accordance with ISO 12944
- **Compressor metal box**, providing basic acoustic protection and resistance to atmospheric agents
- **Side panel** on coil ends, protecting from corrosion and damages
- **EC fan motors**, improving part load efficiency, extending envelope operation and reducing noise level in part load operation
- **Proprietary software logic**, optimizing unit efficiency in accordance with plant needs and protecting unit operation with preventing actions
- **Wide range of connectivity options** with Serial / Ethernet / USB ports standard included



Technical Documentation

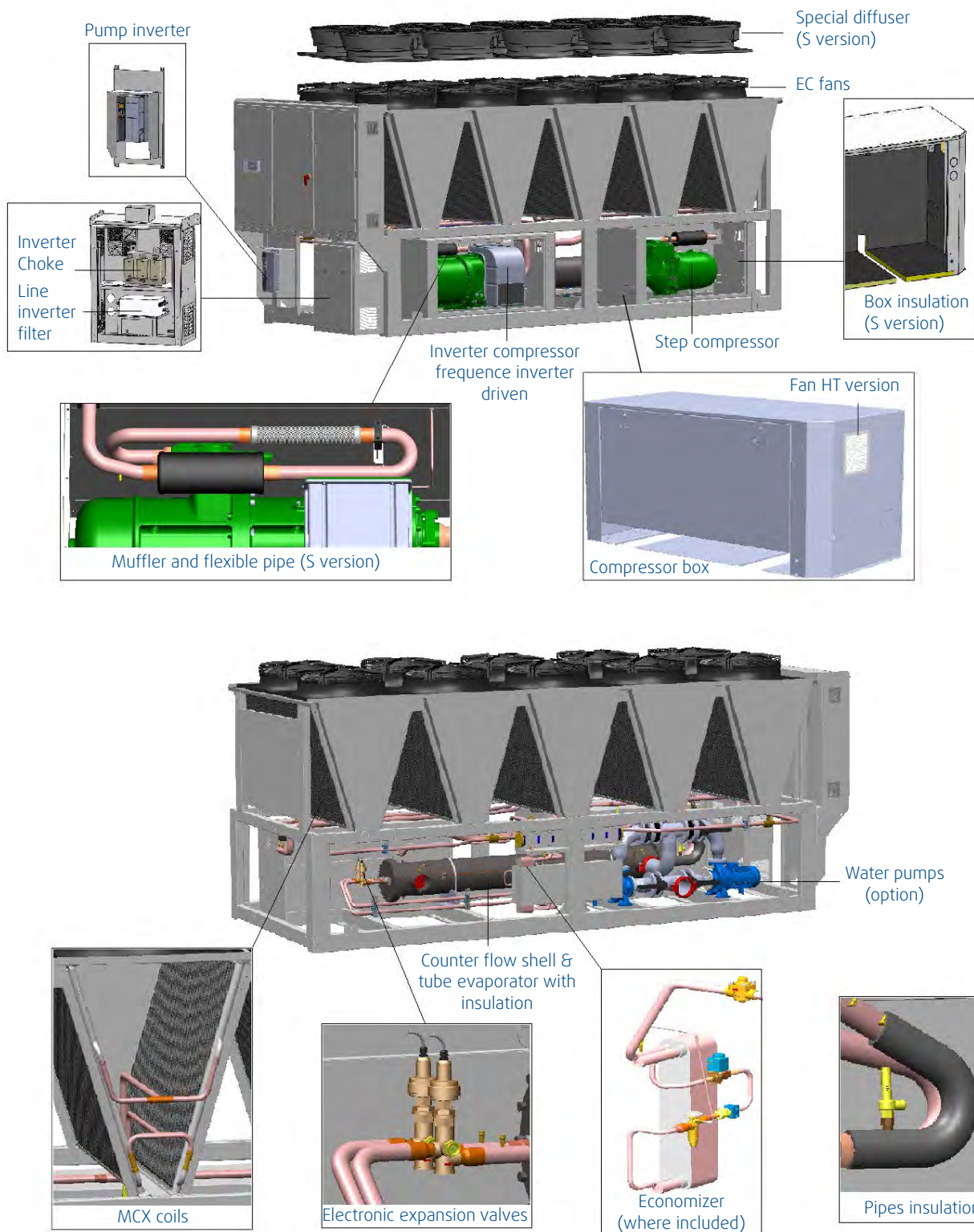
Find our complete documentation on the application **MEDIA CENTER** by Systemair



Main features



- Two refrigerant circuits with hybrid combination between inverter driven and fixed speed Screw compressors
- Pure countercurrent shell and tubes direct expansion heat exchanger
- Axial type EC fan motors
- Micro-channels condensers
- Electronic expansion valve
- Hydronic / heat recovery options

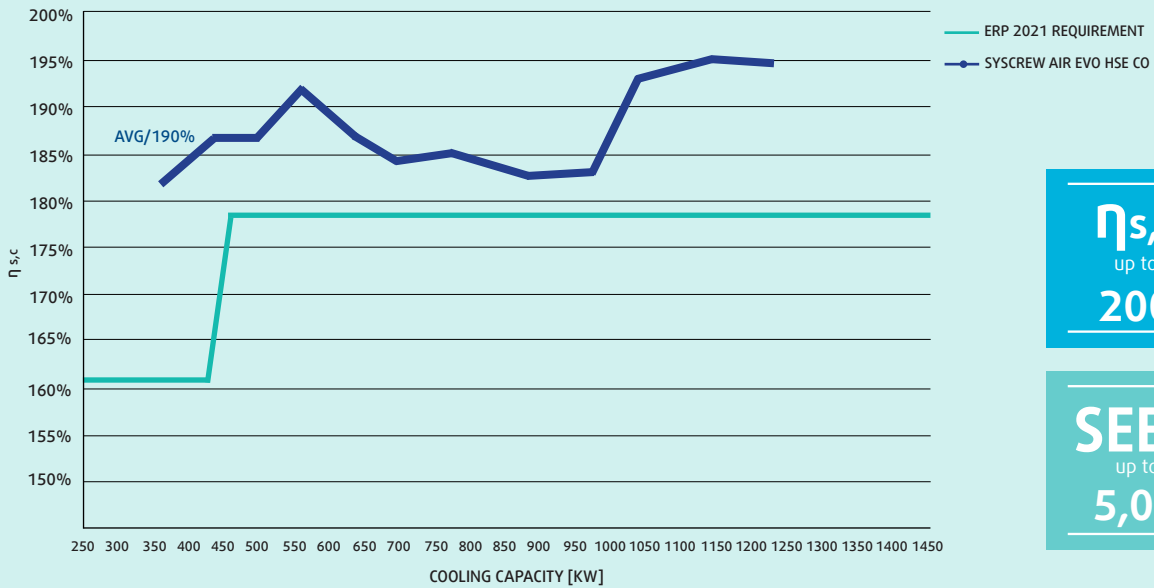


Environmental sustainability

Seasonal efficiency exceeding Erp 2021 requirements thanks to variable speed technology



$\eta_{s,c}$ / Erp 2021 & SYSCREW AIR EVO HSE



$\eta_{s,c}$
up to
200

SEER
up to
5,07

R513A, a safe refrigerant reducing environmental impact

- **A greener solution** → Global warming potential 56% lower than R134a
- **A safe solution** → A1 classification (according ASHRAE) meaning not toxic / not flammable
- **A plug & play solution** → Alternative slightly flammable / low GWP refrigerants generate capacity loss with equivalent components



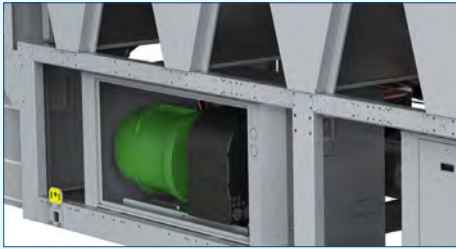
While limiting CO2 emission within the environment, the combination of variable speed technology with a greener refrigerant represent a competitive advantage for the customer, meeting environmental protocols and raising the value of the building.

Technologic Innovation


All-round variable volume flow management




Improved part load efficiency
Continuous capacity control
Flexible offer in plant integration



REFRIGERANT
Inverter driven compressor technology and electronic expansion valve



AIR
EC brushless fan motor technology



WATER
Inverter driven pump technology

Robustness

Screw compressor technology, proprietary software logic and heavy construction



Screw compressor operating with low pressure refrigerant

- Ideal combination for heavy duty use
- Innovative design adapting internal geometry to the optimal performance

Proprietary software logic

- Optimized load management to boost seasonal efficiency
- Active control algorithms to operate safe in borderline conditions

Heavy construction

- Strong design of metal profiles to fit challenging transportation and lifting
- Double refrigerant circuit on all the sizes

Technical Data

SYSCREW AIR EVO HSE R513A (STD/HT/HPF)

| Model | | 380 | 440 | 510 | 590 | 660 | 730 |
|---|-------------------|--------------------------------------|----------|----------|----------|----------|----------|
| Nominal cooling capacity ¹ | kW | 365,7 | 443,0 | 500,2 | 565,8 | 643,5 | 704,3 |
| Input power ¹ | kW | 123,9 | 142,9 | 165,6 | 181,1 | 206,2 | 228,6 |
| EER ¹ / Energy Efficiency Class | | 2,95/B | 3,10/A | 3,02/B | 3,12/A | 3,12/A | 3,08/B |
| EER _{CONDITION B} (74%) | | 3,95 | 4,01 | 3,99 | 4,02 | 3,93 | 3,95 |
| EER _{CONDITION C} (47%) | | 4,66 | 4,81 | 4,81 | 5,03 | 4,76 | 4,66 |
| EER _{CONDITION D} (21%) | | 6,14 | 6,31 | 6,33 | 6,65 | 6,62 | 6,23 |
| SEER ² | | 4,53 | 4,66 | 4,65 | 4,80 | 4,66 | 4,56 |
| $\eta_{s,c}^2$ | % | 178 | 183 | 183 | 189 | 183 | 179 |
| Number of refrigerant circuits | | 2 | | | | | |
| Total capacity steps* | % | 22%÷100% | 18%÷100% | 16%÷100% | 14%÷100% | 13%÷100% | 15%÷100% |
| Compressor | | | | | | | |
| Number/ Type | | 2 / 1 variable speed + 1 fixed speed | | | | | |
| N° of loading stages | | Continuous capacity control | | | | | |
| Evaporator | | | | | | | |
| Number/ Type | | 1/Shell&Tube | | | | | |
| Water flow | m ³ /h | 63,0 | 76,4 | 86,2 | 97,5 | 111,0 | 121,4 |
| Pressure drop | kPa | 17 | 24 | 19 | 24 | 31 | 30 |
| Water volume | l | 149 | 142 | 246 | 246 | 228 | 276 |
| Antifreeze Heater | W | 200 | 200 | 300 | 300 | 300 | 300 |
| Air cooled condenser | | | | | | | |
| Number of coils | | 8 | 10 | 10 | 12 | 14 | 14 |
| Total coil face area per coil | m ² | 2,3 | | | | | |
| Fans | | | | | | | |
| Number of fans | | 8 | 10 | 10 | 12 | 14 | 14 |
| Nominal speed | rpm | 900 | 900 | 900 | 900 | 900 | 900 |
| Total airflow | m ³ /h | 183.960 | 230.040 | 230.040 | 276.120 | 321.840 | 321.840 |
| Total input power | kW | 12,0 | 15,0 | 15,0 | 18,0 | 21,0 | 21,0 |
| Total input power** | kW | 20,5 | 25,6 | 25,6 | 30,7 | 35,8 | 35,8 |
| Total input power*** | kW | 24,0 | 30,0 | 30,0 | 36,0 | 42,0 | 42,0 |
| External static pressure*** | Pa | 0 - 120 Pa | | | | | |
| Water Connections (Evaporator) | | | | | | | |
| Type | | Victaulic | | | | | |
| Inlet Diameter/Outlet Diameter | inch | 6/6 | 6/6 | 8/8 | 8/8 | 8/8 | 8/8 |
| Water Connections (Desuperheater) | | | | | | | |
| Type | | Male GAS Threaded | | | | | |
| Inlet Diameter/Outlet Diameter | inch | 2"/2" | 2"/2" | 2"/2" | 2"/2" | 2"/2" | 2"/2" |
| Weight | | | | | | | |
| Shipping | kg | 3.747 | 4.117 | 4.651 | 4.995 | 5.392 | 5.931 |
| Operating | kg | 3.896 | 4.259 | 4.897 | 5.241 | 5.620 | 6.207 |
| Additional weight | | | | | | | |
| Desuperheater versions | kg | 76 | 86 | 100 | 100 | 114 | 114 |
| Dimensions | | | | | | | |
| Length | mm | 4.660 | 5.712 | 5.712 | 6.764 | 7.816 | 7.816 |
| Width | mm | 2.192 | 2.192 | 2.192 | 2.192 | 2.192 | 2.192 |
| Height | mm | 2.510 | 2.510 | 2.510 | 2.510 | 2.510 | 2.510 |
| Acoustic Data | | | | | | | |
| Sound power level ³ | dB(A) | 97 | 98 | 100 | 100 | 100 | 101 |
| Sound power level ^{3**/***} | dB(A) | 102 | 103 | 104 | 104 | 104 | 105 |
| Sound pressure level at 10 m ⁴ | dB(A) | 65 | 66 | 68 | 68 | 68 | 68 |
| Sound pressure level at 10 m ^{4**/***} | dB(A) | 70 | 71 | 72 | 72 | 72 | 72 |

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard

² According to commission regulation (EU) N° 2281/2016 for comfort chillers

³ Sound levels are at fully loaded conditions. Sound power level values refer to ISO standard 3744

⁴ Sound pressure levels refer to ISO Standard 3744, parallelepiped shape

* This value can change for BC version or other special applications

** High Temperature Units (HT), data with fans at max speed (1100 Rpm)

*** HPF Units, data with fans at max speed (1100 Rpm)

Technical Data

SYSREW AIR EVO HSE R513A (STD/HT/HPF)

| Model | | 810 | 900 | 980 | 1060 | 1160 | 1260 |
|--|-------------------|--------------------------------------|----------|----------|----------|----------|----------|
| Nominal cooling capacity ¹ | kW | 778,1 | 896,9 | 983,5 | 1047,4 | 1154,0 | 1240,5 |
| Input power ¹ | kW | 253,4 | 290,2 | 322,3 | 332,0 | 370,4 | 408,1 |
| EER ¹ / Energy Efficiency Class | | 3,07/B | 3,09/B | 3,05/B | 3,15/A | 3,12/A | 3,04/B |
| EER _{CONDITION B} (74%) | | 3,89 | 3,82 | 3,98 | 4,10 | 4,14 | 4,20 |
| EER _{CONDITION C} (47%) | | 4,72 | 4,68 | 4,72 | 5,10 | 5,06 | 5,02 |
| EER _{CONDITION D} (21%) | | 6,62 | 6,32 | 6,22 | 6,69 | 6,70 | 6,68 |
| SEER ² | | 4,62 | 4,56 | 4,60 | 4,87 | 4,86 | 4,85 |
| $\eta_{s,c}^2$ | % | 182 | 179 | 181 | 192 | 191 | 191 |
| Number of refrigerant circuits | | 2 | | | | | |
| Total capacity steps* | % | 13%÷100% | 14%÷100% | 13%÷100% | 17%÷100% | 15%÷100% | 14%÷100% |
| Compressor | | | | | | | |
| Number/ Type | | 2 / 1 variable speed + 1 fixed speed | | | | | |
| N° of loading stages | | Continuous capacity control | | | | | |
| Evaporator | | | | | | | |
| Number/ Type | | 1/Shell&Tube | | | | | |
| Water flow | m ³ /h | 134,2 | 154,5 | 169,5 | 180,5 | 199,0 | 213,9 |
| Pressure drop | kPa | 36 | 21 | 24 | 27 | 33 | 32 |
| Water volume | l | 276 | 379 | 367 | 356 | 356 | 431 |
| Antifreeze Heater | W | 300 | 300 | 300 | 300 | 300 | 300 |
| Air cooled condenser | | | | | | | |
| Number of coils | | 16 | 18 | 20 | 22 | 24 | 24 |
| Total coil face area per coil | m ² | 2,3 | | | | | |
| Fans | | | | | | | |
| Number of fans | | 16 | 18 | 20 | 22 | 24 | 24 |
| Nominal speed | rpm | 900 | 900 | 900 | 900 | 900 | 900 |
| Total airflow | m ³ /h | 367.920 | 414.000 | 460.080 | 506.160 | 552.240 | 552.240 |
| Total input power | kW | 24,0 | 27,0 | 30,0 | 33,0 | 36,0 | 36,0 |
| Total input power** | kW | 41,0 | 46,1 | 51,2 | 56,3 | 61,4 | 61,4 |
| Total input power*** | kW | 48,0 | 54,0 | 60,0 | 66,0 | 72,0 | 72,0 |
| External static pressure*** | Pa | 0 - 120 Pa | | | | | |
| Water Connections (Evaporator) | | | | | | | |
| Type | | Victaulic | | | | | |
| Inlet Diameter/Outlet Diameter | inch | 8/8 | 8/8 | 10/10 | 10/10 | 10/10 | 10/10 |
| Water Connections (Desuperheater) | | | | | | | |
| Type | | Male GAS Threaded | | | | | |
| Inlet Diameter/Outlet Diameter | inch | 2"/2" | 2"/2" | 2"/2" | 2"/2" | 2"/2" | 2"/2" |
| Weight | | | | | | | |
| Shipping | kg | 6.255 | 6.947 | 7.397 | 8.124 | 8.508 | 8.643 |
| Operating | kg | 6.531 | 7.326 | 7.764 | 8.491 | 8.875 | 9.074 |
| Additional weight | | | | | | | |
| Desuperheater versions | kg | 147 | 147 | 180 | 180 | 216 | 216 |
| Dimensions | | | | | | | |
| Length | mm | 8.868 | 9.920 | 10.972 | 12024 | 13.076 | 13.076 |
| Width | mm | 2.192 | 2.192 | 2.192 | 2.192 | 2.192 | 2.192 |
| Height | mm | 2.510 | 2.510 | 2.510 | 2.510 | 2.510 | 2.510 |
| Acoustic Data | | | | | | | |
| Sound power level ³ | dB(A) | 101 | 102 | 102 | 103 | 103 | 103 |
| Sound power level ^{3**/****} | dB(A) | 105 | 106 | 106 | 107 | 108 | 108 |
| Sound pressure level at 10 m ⁴ | dB(A) | 68 | 69 | 69 | 70 | 70 | 70 |
| Sound pressure level at 10 m ^{4**/****} | dB(A) | 72 | 73 | 73 | 74 | 75 | 75 |

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard

² According to commission regulation (EU) N° 2281/2016 for comfort chillers

³ Sound levels are at fully loaded conditions. Sound power level values refer to ISO standard 3744

⁴ Sound pressure levels refer to ISO Standard 3744, parallelepiped shape

* This value can change for BC version or other special applications

** High Temperature Units (HT), data with fans at max speed (1100 Rpm)

*** HPF Units, data with fans at max speed (1100 Rpm)

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Systemair - LEAF SYSREW 380-1260 AIR EVO HSE TGB (12.19)
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