FläktGroup®

SEMCO®

ENERGY EFFICIENT

AIR QUALITY

ELITEPRO SERIES

ENERGY RECOVERY SYSTEM & AIR HANDLING UNIT
SALES BROCHURE



MAXIMUM ENERGY RECOVERY PERFORMANCE

ELITEPRO PRE-CONDITIONER AND CONDITIONED UNITS

The FläktGroup® SEMCO® ElitePro Series pre-engineered and factory assembled energy recovery unit (ERU), offers the ultimate in the equally-balanced transfer of both latent and sensible performance. As with all of the FläktGroup® SEMCO® energy recovery systems, the ElitePro is capable of treating a building's exhaust and incoming air supply. The ElitePro ERU may be used as an outdoor air pre-conditioner for an existing conventional air handling system, or as part of an integrated system, which provides total space conditioning and humidity control — humidity control that competitors struggle to deliver.

The ElitePro Series delivers high-quality, outstanding performance you can rely on for a wide breadth of applications.



HIGH INDOOR AIR QUALITY FOR EVERY APPLICATION

- Certified total energy recovery performance — sensible & latent — up to 83% effectiveness.*
- Exceptional indoor air quality which keeps people safe and healthy — up to 99.95% effective at eliminating surface viruses and bacterias.
- Airflow capacity ranges from 3,000 SCFM to 20,000 SCFM

*Most common selections utilizing moderate face velocities would provide 75% efficiency.

CHALLENGE:
COMPACT UNIT WITH BIG PERFORMANCE

Need a compact, configurable, energy-efficient, unit to provide good indoor air quality for small to medium sized applications at a value.

SOLUTION:
THE ELITEPRO SERIES

The ElitePro Series is a compact energy recovery unit, that can be used as a pre-conditioner for a traditional HVAC system or to provide complete space and comfort control. The ElitePro supplies high quality air to applications (3,000 to 20,000 CFM). In addition to bringing in large amounts of air, the ElitePro, provides an equal transfer of latent and sensible heat saving money and energy.

CHALLENGE:
CONTAMINANTS

Keep dangerous germs and contaminants from polluting the air.

SOLUTION:
FLÄKTGROUP SEMCO WHEELS

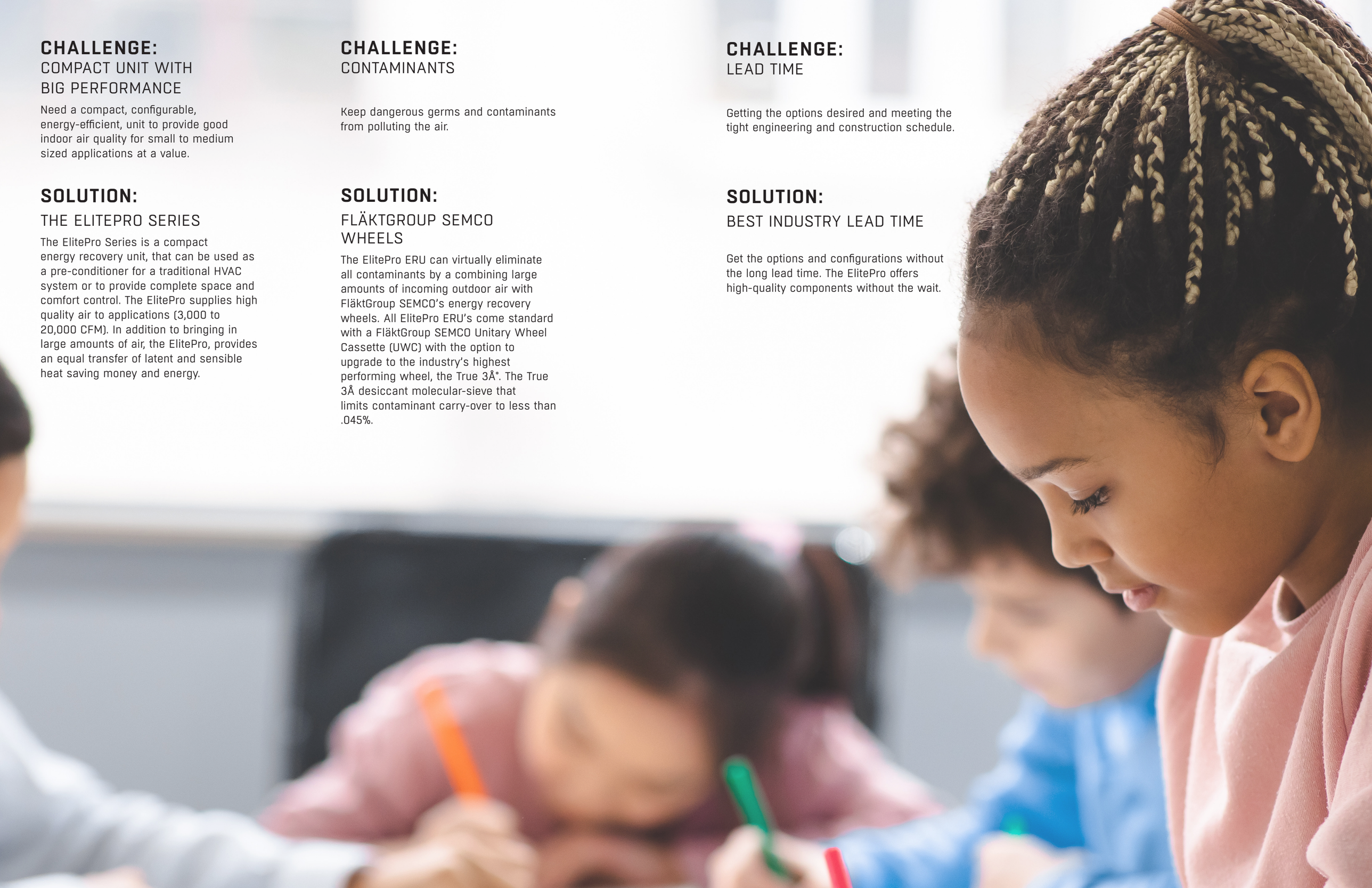
The ElitePro ERU can virtually eliminate all contaminants by a combining large amounts of incoming outdoor air with FläktGroup SEMCO's energy recovery wheels. All ElitePro ERU's come standard with a FläktGroup SEMCO Unitary Wheel Cassette (UWC) with the option to upgrade to the industry's highest performing wheel, the True 3Å*. The True 3Å desiccant molecular-sieve that limits contaminant carry-over to less than .045%.

CHALLENGE:
LEAD TIME

Getting the options desired and meeting the tight engineering and construction schedule.

SOLUTION:
BEST INDUSTRY LEAD TIME

Get the options and configurations without the long lead time. The ElitePro offers high-quality components without the wait.



HOW IT WORKS

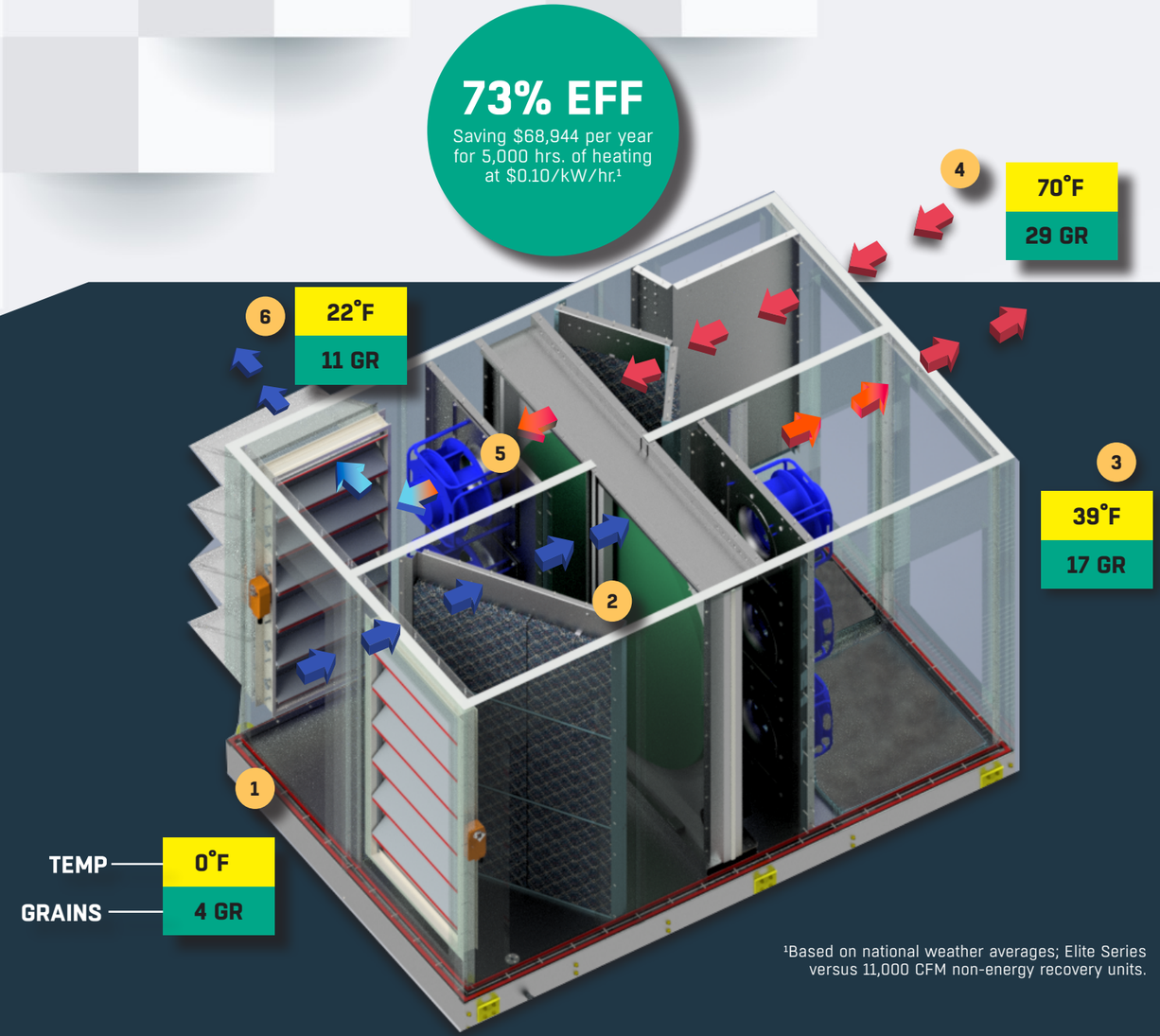
ELITEPRO PRE-CONDITIONER



¹Based on national weather averages; ElitePro Series versus 11,000 CFM non-energy recovery units.

ELITEPRO - COOLING SEASON

1. Hot and humid outside air is drawn in.
2. Fresh air is blown in through the slowly rotating energy recovery wheel. The desiccant - coated fluted media captures heat and moisture from the outdoor side and transfers it to the exhaust side.
3. The cooled and dehumidified air enters the HVAC system or is delivered directly to the occupied space.
4. Cool, dry return air that is exhausted from the building enters the ElitePro Series Energy Recovery System.
5. As return air passes through the energy recovery wheel, it removes the heat and humidity captured by the wheel from the fresh air stream.
6. Warm, humidified exhaust air is blown out.



¹Based on national weather averages; Elite Series versus 11,000 CFM non-energy recovery units.

ELITEPRO - HEATING SEASON

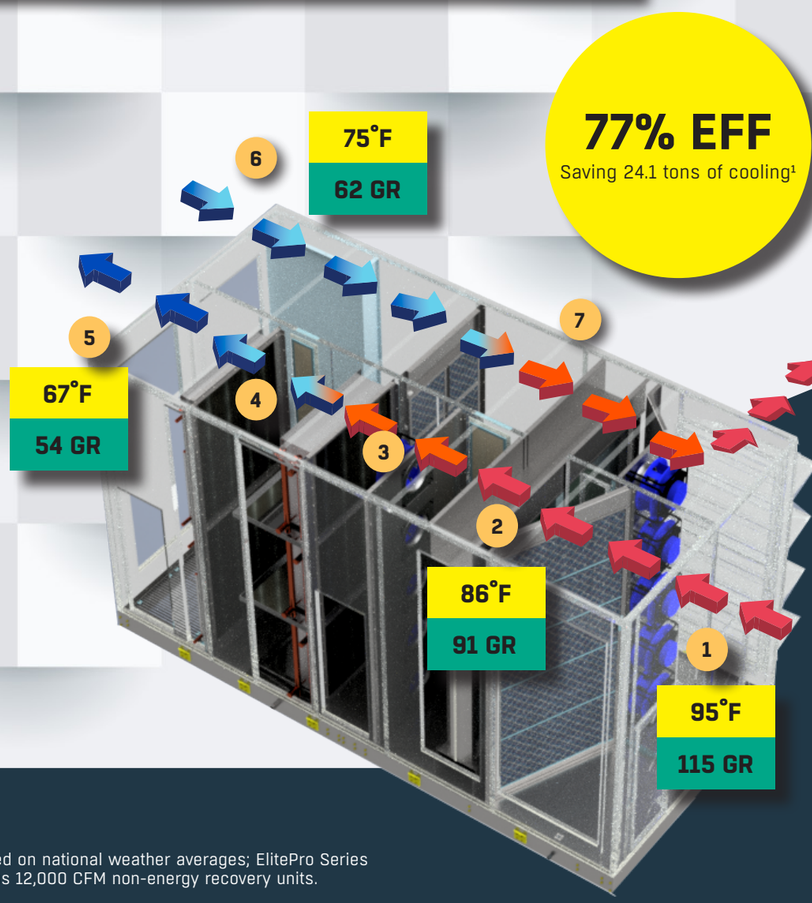
1. Cold and dry outside air is drawn in.
2. Fresh air is blown in through the slowly rotating energy recovery wheel. The desiccant - coated fluted media captures heat and moisture from the return side and transfers it to the supply side.
3. The warmed and humidified air enters the HVAC system or is delivered directly to the occupied space.
4. Warm, humid return air that is exhausted from the building enters the ElitePro Series Energy Recovery System.
5. As return air passes through the energy recovery wheel, it captures the heat and moisture to be transferred back to the supply air.
6. Cool, dry exhaust air is blown out.

HOW IT WORKS

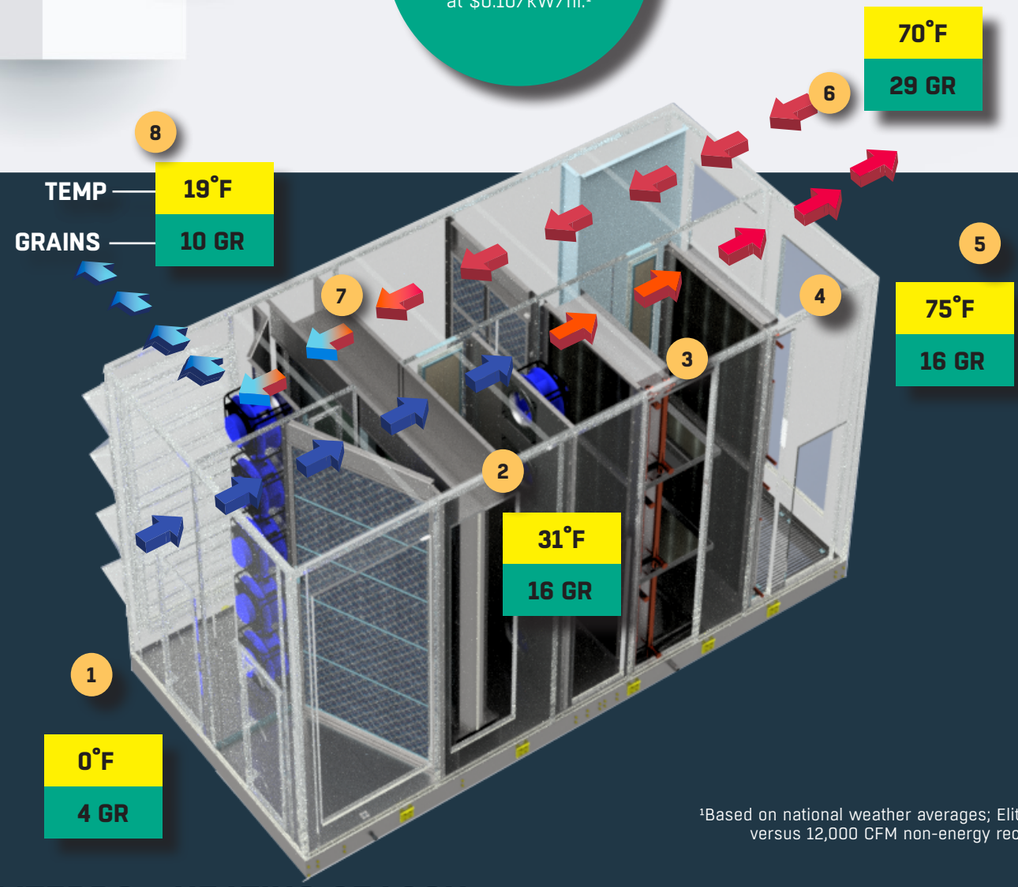
ELITEPRO SINGLE WHEEL CONDITIONED UNITS WITH HEATING & COOLING COILS

77% EFF
Saving 24.1 tons of cooling[1]

77% EFF
Saving $78,504 per year for 5,000 hrs. of heating at $0.10/kW/hr.[1]



[1]Based on national weather averages; ElitePro Series versus 12,000 CFM non-energy recovery units.



[1]Based on national weather averages; ElitePro Series versus 12,000 CFM non-energy recovery units.

ELITEPRO - COOLING SEASON

1. Hot and humid outside air is drawn in.
2. Fresh air is blown in through the slowly rotating energy recovery wheel. The desiccant - coated fluted media captures heat and moisture from the outdoor side and transfers it to the exhaust side.
3. The supply air passes through cooling coils to cool air further
4. Cooled supply air passes through the heating coils to warm it to a comfortable temperature.
5. The conditioned air is delivered directly to the occupied space.
6. Cool, dry return air that is exhausted from the building enters the ElitePro Series Energy Recovery System.
7. As return air passes through the energy recovery wheel, it removes the heat and humidity captured by the wheel from the fresh air stream.
8. Warm, humidified exhaust air is blown out.

ELITEPRO - HEATING SEASON

1. Cold and dry outside air is drawn in.
2. Fresh air is blown in through the slowly rotating energy recovery wheel. The desiccant - coated fluted media captures heat and moisture from the return side and transfers it to the supply side.
3. Supply air passes by the turned off cooling coils.
4. Supply air passes through the heating coils to warm the air further.
5. The conditioned air is delivered directly to the occupied space.
6. Warm, humid return air that is exhausted from the building enters the ElitePro Series Energy Recovery System
7. As return air passes through the energy recovery wheel, it captures the heat and moisture to be transferred back to the supply air
8. Cool, dry exhaust air is blown out.

DEFINITIONS

ELITEPRO ENERGY RECOVERY UNIT

See **FIGURE 1** on **PAGE 10** for an illustration with correlating numbers to the definitions below.

1 **ENTHALPY WHEEL -** A common term used to describe all rotating, wheel-shaped heat transfer devices that exchange sensible (temperature) and latent (water vapor) energy from one air-stream to another. The word, enthalpy, means heat content or total heat. The term, enthalpy exchanger, may be used.

2 **EXHAUST AIR -** The air from indoors that passed through the energy recovery wheel and is being ducted outdoors.

3 **OUTDOOR AIR -** The fresh outside air that is being drawn in through the UWC energy recovery wheel. Once it passes through the wheel it becomes the supply air.

4 **RETURN AIR -** Air from the indoor space that is pulled through the UWC energy recovery wheel. Once it passes through the wheel it is referred to as exhaust air.

5 **SUPPLY AIR -** Air provided to the indoor space. Outside air that passes through the UWC energy recovery wheel becomes supply air.

6 **EXHAUST AIR EC FAN -** high efficiency, single-sided intake EC fans equipped with rear-curved motor impellers and vaneless diffusers.

7 **SUPPLY AIR EC FAN -** high efficiency, single-sided intake EC fans equipped with rear-curved motor impellers and vaneless diffusers.

8 **COOLING AND/OR HEATING COILS -** chilled water, DX cooling coils, hot water or electric pre-heat coils, which allows for a full integration of heating and cooling options.

9 **RETURN AIR FILTER BANK -** 2" MERV 8 or MERV 13 air filters used to filter return air before traveling through the energy recovery wheel.

10 **OUTDOOR SUPPLY AIR FILTER BANK** - 2" MERV 8 or MERV 13 air filters used to filter incoming outdoor air before it reaches the energy recovery wheel.

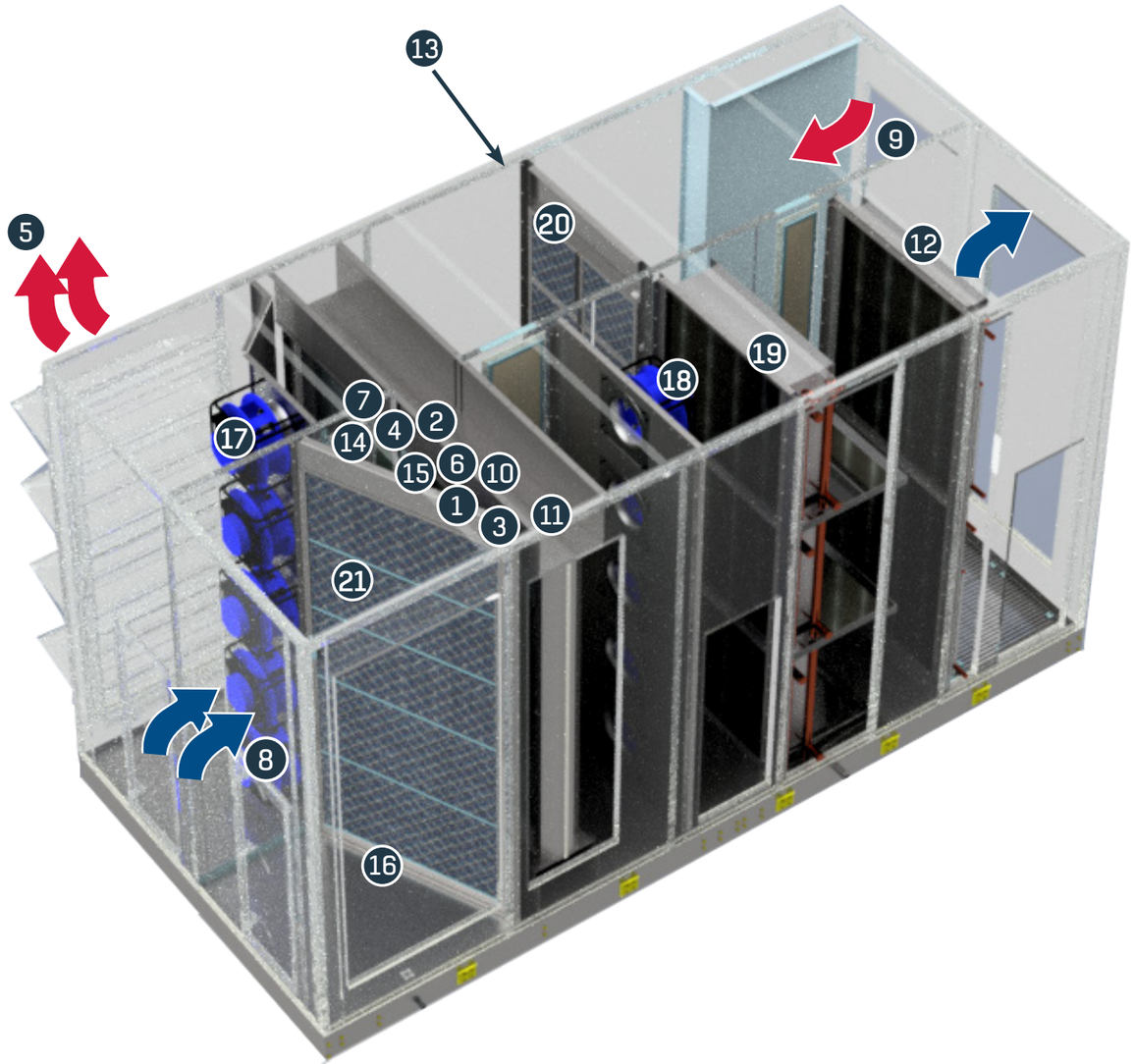


FIGURE 1

See **PAGE 10** for definitions correlating to the numbers above.

TOP-NOTCH AIR HANDLING

ELITEPRO AIR HANDLING UNITS

For applications where energy recovery is not appropriate, FläktGroup® SEMCO® offers the ElitePro air handling unit (AHU). The ElitePro Series AHU offers a lower first time investment cost (first cost) alternative to the ElitePro ERU, and should be considered for applications needing a bigger influx of outdoor air and where a lower first cost is weighted more heavily than future energy savings and lifetime return on investment. The ElitePro AHU offers the same compact size and construction as an ElitePro ERU, without the added benefit of energy recovery and savings.

Unlike the ElitePro ERU, the AHU is only capable of treating a building's incoming air supply. The ElitePro AHU may be used as an outdoor air pre-conditioner for an existing conventional air handling system or as part of an integrated system which provides total space conditioning and partial humidity control — for increased humidity control, a wrap-around heat pipe may be selected. AHUs may also be utilized as a part of an integrated system, in which they provide supplemental space conditioning of recirculated air for dedicated outdoor air systems (DOAS). Offered in many configurations from a makeup air unit to an economizer with power exhaust configuration and anything in between, there is an ElitePro AHU solution.



COMFORTABLE AIR AT
A LOWER FIRST COST



Low first time investment cost alternative

Airflow capacity ranges from 2,000 SCFM to 25,000 SCFM

Optional wrap-around heat pipe for increased dehumidification and/or single air stream reheat.

CHALLENGE:
REDUCING CONTAMINANTS

More outdoor air is needed dilute the contaminants that form while air is recirculated around a building to maintain good indoor air quality and to comply to ASHRAE 62.1.

SOLUTION:
THE ELITEPRO AHU

The ElitePro AHU will help an existing HVAC system decontaminate air and comply with ASHRAE 62.1 and other building codes, by increasing the volume of outdoor air being funneled into the building to increase the outdoor ventilation rate.

CHALLENGE:
WASTED ENERGY

The AHU walls will allow untreated outdoor air to enter the unit and conditioned air to leak out of the AHU causing the unit to work harder and wasting energy.

SOLUTION:
DUAL WALL FOAM PANELS

All ElitePro Series AHUs are built with dual-wall foam panels, eliminating any conditioned air leakage or any untreated air from unexpectedly seeping in. The dual-wall foam panels will assure that the ElitePro AHU isn't expending any additional energy. As an added benefit, the dual-wall foam panels dampen mechanical sounds, making the ElitePro AHU incredibly quiet.

CHALLENGE:
LONG LEAD TIMES

It will take too long to get an AHU on site.

SOLUTION:
BEST INDUSTRY LEAD TIMES

FläktGroup SEMCO has the best AHU lead times in the industry. Get all of the options your job requires when you need it. Rest assured that the ElitePro AHU will be on site and ready to install when you need it.

CHALLENGE:
UNCOMFORTABLE INDOOR AIR QUALITY

Building air is too humid, hot, or cold making occupants uncomfortable.

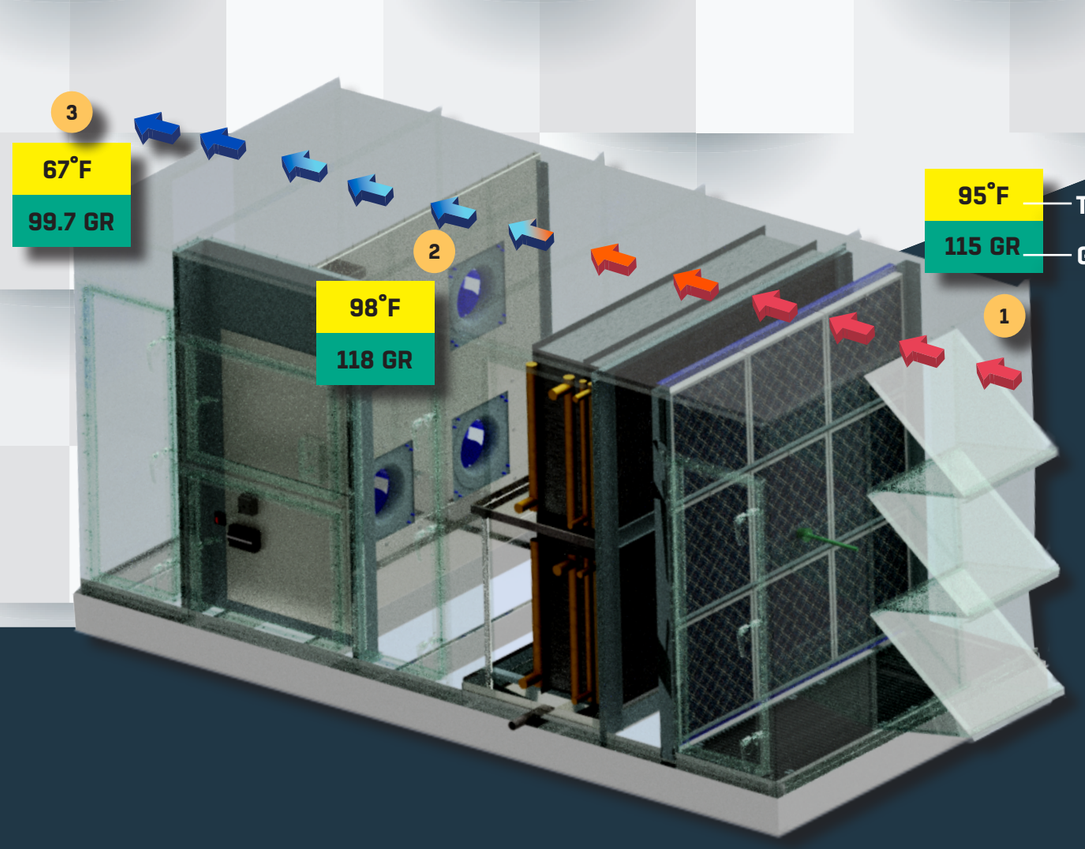
SOLUTION:
AHU CONDITIONED AIR

The ElitePro AHU dehumidifies and conditions incoming outdoor air to the desired space temperature with coils, gas burners, and wrap-around heat pipes. When the air enters the building it will be evenly conditioned, without hot and cold pockets, creating a comfortable indoor environment.



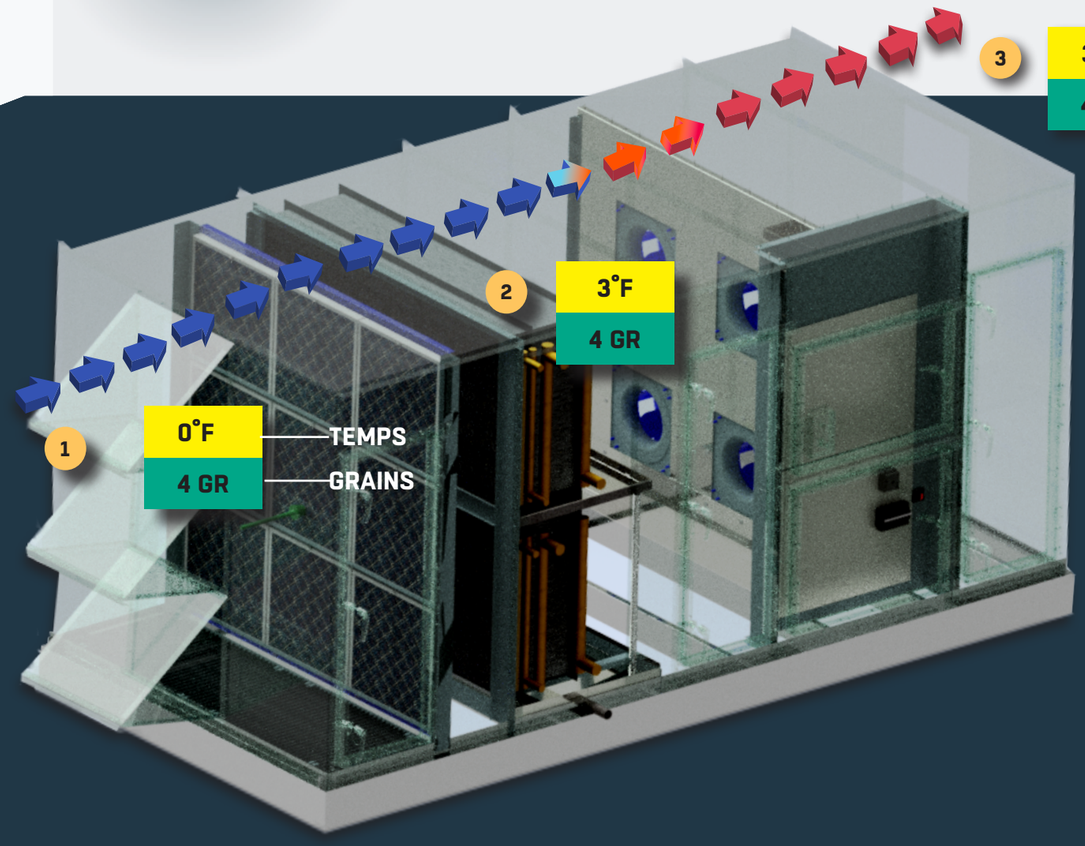
HOW IT WORKS

ELITEPRO AIR HANDLING UNIT



ELITEPRO - COOLING SEASON

1. Hot and humid outside air is drawn in.
2. Fresh air is blown in through the unit and the cooling coils, where the air is cooled to a more desirable temperature.
3. The cooled air enters the HVAC system or is delivered directly to the occupied space.



ELITEPRO - HEATING SEASON

1. Cold and dry outside air is drawn in.
2. Fresh air is blown in through the unit and the heating coils, where the air is warmed to a more desirable temperature.
3. The warmed air then enters the HVAC system or is delivered directly to the occupied space.

FEATURES & BENEFITS

EFFICIENCY STANDARD WITH OPTIONAL UPGRADES

SEMCO® IS RENOWNED FOR PERFORMING AT OR **ABOVE** PUBLISHED **PERFORMANCE** LEVELS **EVERY TIME.***

*Within the accuracy limits of field measured performance.



THE ENERGY RECOVERY WHEEL*

- The FläktGroup® SEMCO® unitary wheel cassette comes standard with all Elite Series pre-conditioners and single wheel units with the option to upgrade to a FläktGroup® SEMCO® Fusion® or True 3Å® wheel.
- The True 3Å® wheel has a contaminant carry-over of 0.45%
- Uniquely designed fluted media generates highest certified heat transfer efficiency and simultaneously reduces pressure loss parameters.
- Independently certified wheel performance in accordance with ASHRAE Standard 84 and AHRI Standard 1060.
- Media crafted from aluminum coated with a corrosion resistant desiccant. Coating extends the life of the aluminum media substrate and enhances its structural integrity, hybrid brush/barrier perimeter and face contact seals to minimize air leakage and wheel bypass.
- Media supported by light weight aluminum extrusions (hubs, spokes and rims) — combining strength with precision.
- Non-contact seal on the Fusion® and True 3Å® wheels.
- Easy to maintain with a slide out cassette.

EXTENDED SERVICE WARRANTY

- 18 month standard warranty
- 3 and 5 year wheel warranty options



STANDARD CONTROL PACKAGE

- Variable speed wheel control*
- Frost protection via proportional heating control*
- Touch-pad display
- Airflow measurement
- Constant volume airflow control
- Filter monitoring
- Wheel rotation monitoring**
- Fan fault monitoring
- BACnet communications

OPTIONS

- Supply duct pressure control
- Electric preheat for frost control

ELECTRICAL PACKAGE

- Single point connection — *except electric preheat*
- Integrated easily accessible control and electrical panels with non-fused disconnect.
- 480 V/3PH/60HZ single-point connections available — *except electric preheat*



SMOKE & FLAME SPREAD SAFETY RATINGS*

- Wheel media independently certified to pass NFA 90A requirements for flame spread and smoke generation based upon ASTM E84 fire test method.

SUPPLY & EXHAUST* AIR EC FANS

- Mounted, balanced, tested and internally isolated for vibration.
- 0-10 VDC variable speed control

FILTER SECTIONS

- ERU filters that are 2" MERV 8 efficient are standard provided for outdoor and return** air streams. 2" MERV 13 are optional.
- The AHU pre-filters are 2"-4" MERV 8, the second set of filters is 12" MERV 13, optional add on 12" final filter MERV 13-15.

UV LIGHTS***

- Ultraviolet germicidal irradiation (UVGI) lamps installed downstream on the sides of pre and post cooling coils designed to help aid filters decontaminate outdoor air. *AHU only*

FLÄKTGROUP® SEMCO® PANEL SYSTEMS

- Dual-wall foam panel construction (2 inches thick) eliminates exposed insulation (R-13) and the associated risk of bacterial growth.
- Dual-wall removable panels provided for large internal components.
- Gasketed dual-wall access doors for compartments.
- Secondary roof of continuous standing-seam panels standard on units designed for outdoor installation.

HOODS & DAMPERS

- Low-leakage motorized fresh air damper and exhaust air damper.
- Outdoor units are provided with intake and exhaust hoods with bird screen.

GAS BURNER

- Allows the unit to treat supply air with odorless and smokeless flames.

WRAP-AROUND HEAT PIPE***

- Precools and removes moisture from the incoming airstream, while providing free reheat downstream.

COILS

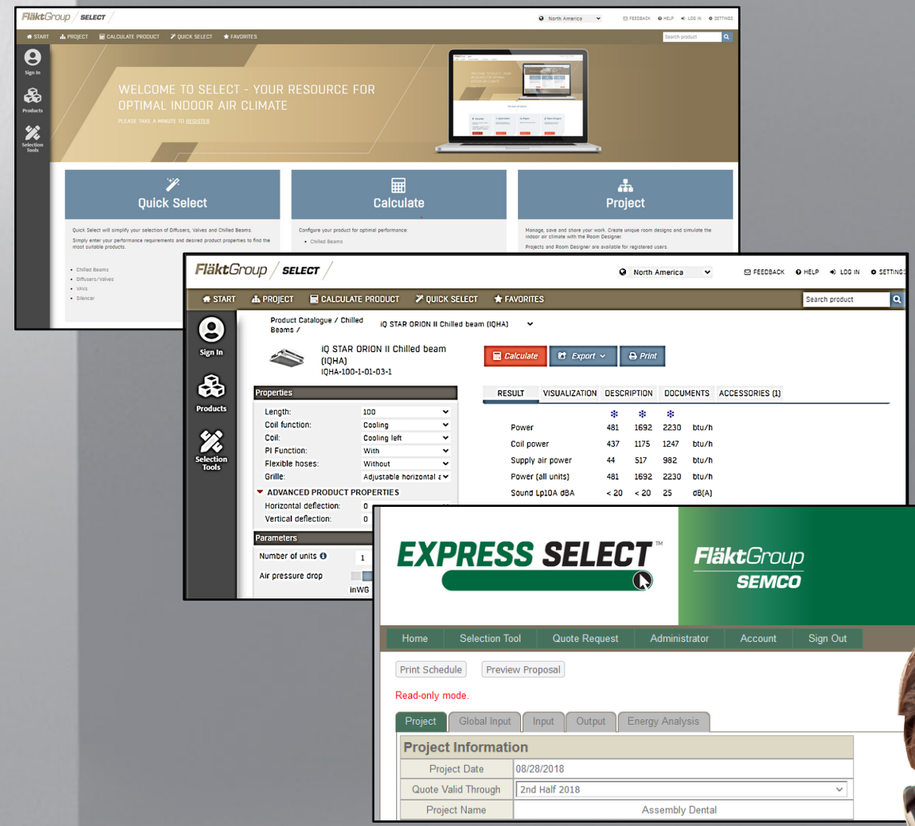
- Fully integrated cooling option with chilled water, electric heat*** or DX coils.
- Fully integrated heating option with hot water.

Not applicable to ElitePro air handling units
*** Not applicable to ElitePro energy recovery units*

SERVICE & SUPPORT

While FläktGroup SEMCO products are relatively maintenance free throughout their lifecyle — we have a knowledgable and dedicated service team available to help anytime you require it.

FläktGroup SEMCO takes pride in supplying exceptional sales support and service.
Our experienced sales team, is always just a phone call away, to help guide you through the selection process, and make sure the most efficient products for your project specifications and budget are selected.



WHO WE ARE & WHAT WE DO

INNOVATION HAS
BEEN AT THE CORE
OF FLÄKTGROUP SEMCO'S
60 YEAR HISTORY





A business unit of FläktGroup, which is owned & backed by Triton Partners — a $17 billion annual investment firm, we are headquartered in Columbia, Missouri, with 275,00 SQ FT of manufacturingspace in 3 plants in Arkansas and Virginia.

ENERGY & ENVIRONMENTAL FOCUS

All of our products are energy efficient, saving customers money while also helping to save the environment.

PATENTED & CERTIFIED PRODUCTS

Our innovative, industry leading patented products meet many AHRI, ASTM, and ASHRAE standards.

ENGINEERED AIR DISTRIBUTION & SOUND SOLUTIONS

Our duct, panel and sound products offer high quality customizable solutions a large range of applications.

ENGINEERED AIR QUALITY & DATA CENTER SOLUTIONS

Our energy recovery, chilled beam, and data center products offer the highest air quality on the market for a large range of applications.

OEM, KEY ACCOUNT & SALES REP ROUTE TO MARKET



We have a vast network of knowledgable third-party sales reps throughout the United States and Canada, as well as an experienced in house sales team.

AWARD WINNING

FläktGroup SEMCO has won numerous awards including multiple AHRI Innovation, Green Building, Dealer Design, School/College Planning & Management Awards.

FläktGroup® SEMCO® delivers smart, energy-efficient, air-quality solutions to support every building application. We offer our customers innovative technologies, high-quality products and outstanding performance supported by more than fifty years of accumulated industry experience. The broadest offering on the market and a strong market presence in 65 countries worldwide guarantees that we are always by your side, ready to deliver: Excellence in Solutions.

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To learn more about FläktGroup® SEMCO® offerings and to contact your nearest representative please visit

www.semcohvac.com



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