BUILDING PERFORMANCE EQUIPMENT, INC.

Energy recovery ventilation, engineered to outperform.

Partner deck for specifying high-efficiency, air-to-air energy recovery — the BPE-XE-MIR and BPE-SC-UNI lineups.

Sustainable, Reliable, and Energy-Efficient Ventilation Systems

ENERGY STAR Partner

BABA Compliant

Hillsdale, NJ

WHY BPE

Why specifiers choose BPE

A U.S. manufacturer focused on one thing — moving fresh air while throwing away as little energy as possible.

ENERGY STAR Partner

A recognized program partner with certified, third-party-tested recovery performance you can put on a submittal.

Build America, Buy America

BABA-compliant equipment, manufactured in Hillsdale, NJ — clears domestic-content requirements on public work.

Polymer fixed-plate core

Heat and humidity transfer with no moving core, no cross-contamination, and sensible efficiency over 90%.

Built for the toughest codes

Fan efficacy near 0.2 W/CFM — roughly 3× better than California Title 24's strictest ERV limit.

PERFORMANCE

Performance that clears the toughest codes

Over 90%

sensible thermal efficiency

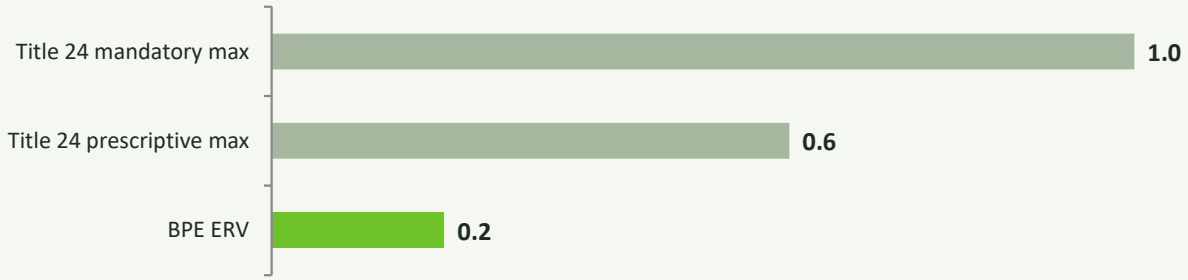
≈0.2

W/CFM fan efficacy

84

EER Btu/W (winter, ARI 1060)

Fan efficacy vs. California Title 24 (lower is better)



Why it matters

California Title 24 caps ERV fan efficacy at 1.0 W/CFM (mandatory) and 0.6 W/CFM (prescriptive) in recovery-required climate zones. Washington's energy code sets comparable targets. BPE units meet these with room to spare.

FAN ENERGY

How we get to 0.2 W/CFM

Total absorbed electrical power at the actual duty point — not a motor nameplate, not shaft horsepower.

THE ONLY FORMULA THAT TRAVELS

W/CFM = total absorbed watts at the duty point ÷ operating CFM

Read at the duty point

Fan power moves with the system curve. We measure at the exact CFM and static the unit will actually run.

Absorbed, not nameplate

An amp probe on the assembled unit captures real draw. Nameplate ratings assume a motor at full load, which never happens.

Absorbed, not shaft BHP

Brake horsepower ignores motor and drive losses. Quoting it inflates efficiency on paper.

MEASURED · BPE-SC-UNI-2000

Total CFM	Amps	in. w.g. at fan	W/CFM
1,259	0.69	0.40	**0.121**
1,194	0.73	0.31	**0.135**
1,244	0.82	0.36	**0.145**
1,250	0.85	0.36	**0.150**
1,332	0.92	0.42	**0.152**
1,318	0.96	0.50	**0.160**
1,511	1.21	0.52	**0.176**

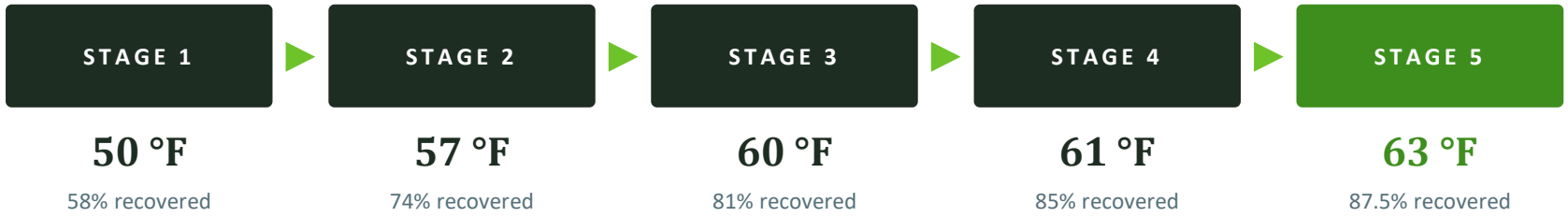
Every one of those points also held ≥ 80% sensible efficiency. Push the same cabinet to 2,255 CFM and it draws 4.50 A — 0.439 W/CFM. **Right-sizing the cabinet is the whole game.**

THERMAL EFFICIENCY

Recovery is transfer area per CFM

On the large units, core modules sit in series so the airstreams cross five recovery stages instead of one.

Winter design: 25 °F outdoor air in, 68 °F room air as the heat source



Supply-air temperature leaving each stage · cumulative sensible recovery

87.5%
sensible recovery

Measured on a BPE-XE-MIR-2000 at 1,000 CFM: 25 °F outdoor air leaves the unit at 63 °F.

58%
what one stage buys

Recovery follows ε = NTU / (1 + NTU). Every stage in series adds NTU to the same airstream.

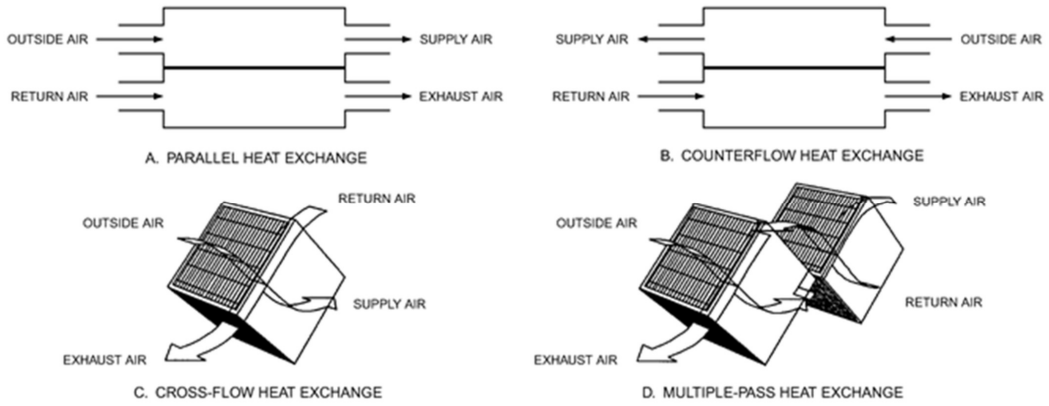
0.19–0.28
in. w.g. core loss

Low face velocity keeps each stage cheap in static — which is how five of them fit a 0.2 W/CFM budget.

CORE GEOMETRY

Parallel and Counterflow ERV

How the two airstreams travel through the core sets the ceiling on how much heat can be recovered.



Four air-to-air heat exchange configurations

Parallel

Both streams enter at the same end. Temperatures converge early and transfer stops.

Counterflow

Streams run in opposite directions, holding a temperature difference across the entire core.

Cross-flow and multiple pass

Stacking cross-flow passes in series makes the core behave like true counterflow.

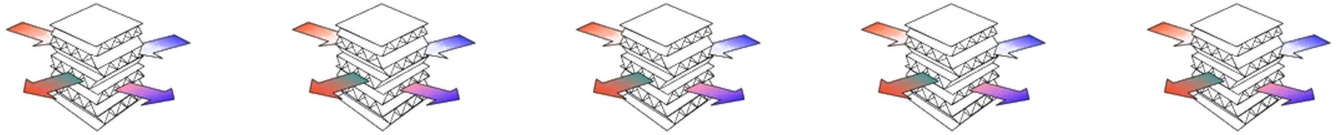
BPE cores run counterflow with multiple passes in series — five stages reach 87.5% sensible where one cross-flow pass stops near 58%.

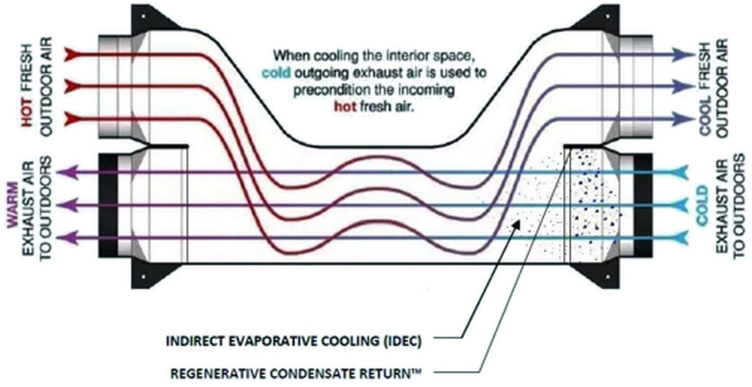
TANDEM DESIGN

Five ERMs engineered in tandem

Aligning the exhaust tubes puts five standard air-to-air modules on one simple flow-through path.

FIVE STANDARD AIR-TO-AIR ERMs





What if five ERMs were engineered in tandem?

Hot outdoor air enters one end and cold exhaust air runs against it, so every module in the string preconditions the supply a little further before it reaches the space.

INDIRECT EVAPORATIVE COOLING (IDEC)

Exhaust-side evaporation drops exhaust temperature, pulling more heat from the incoming air in cooling season.

REGENERATIVE CONDENSATE RETURN™

Condensate captured in the core returns to the evaporative section instead of being drained away.

PRODUCT LINES

Two product lines, one recovery core

BPE-XE-MIR

Energy Recovery Module

- The core recovery unit — nothing more, nothing less
- No fans, filter box, or controls included
- Pair with your own fans and controls, or reuse existing ones
- Ideal for custom builds and retrofit integrations
- Sizes up to 3,000 CFM

BPE-SC-UNI

MOST POPULAR

Complete System

- Everything in one factory-configured package
- Includes quiet EC fans, filter box + filters, and transitions
- Includes controls — plug-and-play on site
- Fastest path to spec and install
- To 3,000 CFM single · 20,000+ CFM paired

Naming BPE-XE-MIR-#### and BPE-SC-UNI-#### — where #### is the design airflow in CFM (200, 500, 1000, 2000, 3000 …).

SIZING & SCALE

Scales from a single room to a whole facility

Both lines share the same size steps. Each step up is a physically larger unit — and above 3,000 CFM, units simply pair together.



Single unit — 200 to 3,000 CFM

Beyond 3,000 CFM

Units pair together with no ceiling on capacity — a **4,000 is two 2,000s**, scaling toward 20,000+ CFM.

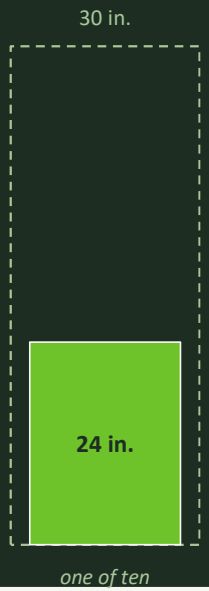
XE-MIR module tops out at 3,000 CFM.

INSTALLATION

20,000 CFM through a 30-inch door

Every unit ships as crated core modules and assembles in place — no crane, no roof opening, no knocked-out wall.

SHIPPING MODULE vs. STANDARD DOOR



BPE-SC-UNI-20000

- Ten crated modules, 56″ L × 24″ W × 32.5″ H
- Roughly 200 lb each — a pallet jack, not a rigging crew
- 2,020 lb assembled / 2,100 lb shipping
- Assembles to 64″ W × 56″ D × 120″ H in place

Rated 14,000–20,000 CFM · 80% sensible at 14,000 CFM · fixed-plate polymer core

What the modular build wins on the bid

Retrofits that were off the table

Existing mechanical rooms, basements and penthouses reached by door, stair or freight elevator.

No rigging line item

Takes the crane, the roof penetration and the temporary wall opening out of the installed cost.

One core module, every size

The same module scales the line, so spares, service parts and lead times stay predictable.

Plan 4 ft of clearance

Recommended service space around the unit — about 23 ft × 23 ft with hoods and transitions.

SPECIFICATIONS

BPE-SC-UNI lineup at a glance

Model	Airflow (CFM)	EER Btu/W (S/W)	Net wt.	Dimensions L×W×H (in)	Power
BPE-SC-UNI-500	250 – 500	38.9 / 81.3	140 lb	72 × 12 × 48 *	120 V · 1-ph
BPE-SC-UNI-1000	500 – 1,100	38.9 / 81.3	140 lb	101 × 17.5 × 32.5	120 V · 1-ph
BPE-SC-UNI-2000	500 – 2,250	35.4 / 82.4	202 lb	101 × 24 × 32.5	115 V · 1-ph
BPE-SC-UNI-3000	500 – 3,500	47.8 / 83.8	300 lb	72 × 28 × 48	115 V · 1-ph

** 500-size dimensions are shipping. ARI 1060 (summer 95 °F / winter 10 °F). Sensible thermal efficiency reaches over 90% across the flow range. The matching BPE-XE-MIR module is available in each size without fans, filter box, or controls.*

Polymer fixed-plate core

R-5 insulated cabinet

Galvanized steel

CONFIGURATION

Configure for any climate or spec

Fans

BPE S8 / T8 / T10 / T12 and Ziehl-Abegg — quiet, EC-motor, PWM-controlled inline fans.

Controls

Controller 67 & 69 Pro — scheduling, temp/RH & VPD triggers, Bluetooth + Wi-Fi.

Heat pump

MRCOOL Universal Series add-on — 2 / 2.5 / 3 / 5 ton.

Electric heat

Optional resistive heat kits — 5 / 8 / 10 / 15 / 20 kW.

Filter box & filters

Factory filter box with filters, included on every SC-UNI build.

Transitions

Duct transitions sized to the job — 8" to 12" connections for easy install.

Send BPE your design CFM and conditions — we return the equipment and fan selection.

TRACK RECORD

Proven in the field

2012 EBie Award

“Reformed Gas Guzzler”

145 Talmadge Road, Edison, NJ.
A deep-energy retrofit that turned an aging building into an efficiency showcase — with BPE energy recovery at the center of the mechanical overhaul.

ENERGY STAR Success Story

Hopewell Valley Regional School District.
A district-wide partnership featured by ENERGY STAR — healthier, better-ventilated schools delivered with far lower ventilation energy.

Let's spec your next project.

Send the design airflow (CFM) and design conditions — BPE returns the equipment and fan selection, ready to drop into your submittal.

(201) 722-1414

info@BPEquip.com

80 Broadway, Hillsdale, NJ 07642

ENERGY STAR Partner

BABA Compliant

Made in the USA