

Comparison of Ventilation Efficiency Technologies in Commercial Buildings

Comparison of Ventilation Efficiency Technology



	Capability	HLR	ERV	DCV
Economics	HVAC CAPEX Savings*	0-12%	-	-
	HVAC OPEX Savings*	20-30%	12-18%	5-10%
Indoor Air Quality (IAQ)	24/7 IAQ Monitoring	✓	-	✓
	Addresses All Contaminants	✓	-	-
	Zero Byproducts or Cross Contamination	✓	-	✓
Compliance and Market Presence	ASHRAE/Building Code Compliant	✓	✓	✓
	USGBC LEED Accepted	✓	✓	✓
	Well-established	-	✓	✓

* Varies by building
 HLR: HVAC Load Reduction
 ERV: Energy Recovery Ventilator
 DCV: Demand Control Ventilation

HLR Advantages Over DCV



HLR Advantage	Details
Higher energy savings	<ul style="list-style-type: none">• 60-80% reduction in outside air instead of just 15-30% for DCV on average
CAPEX Savings	<ul style="list-style-type: none">• DCV does not reduce peak HVAC load because highest occupancy can be at same time as peak days/times.
Better IAQ	<ul style="list-style-type: none">• Higher reduction in outside air pollutants (highways, downtown, etc)• No increase in building-related contaminant concentrations• No reliance on sensors, which can go out of calibration
Fewer control points	<ul style="list-style-type: none">• HLR every ~20K sq ft vs. DCV CO₂ sensor in every "room" (each ~4K sq ft)
Lower Maintenance	<ul style="list-style-type: none">• Only annual maintenance vs. every 6 months on DCV CO₂
IAQ Management	<ul style="list-style-type: none">• 24/7 monitoring and visibility on enVerid Cloud• Ability to react to contaminant level fluctuations
LEED	<ul style="list-style-type: none">• Provides significant points in IEQ, energy optimization, and innovation credits (up to 17)

HLR Advantages Over ERV



HLR Advantages	Details
100% Efficiency	<ul style="list-style-type: none">• ERV only recovers portion of energy (60-70%) for outside air. HLR has 100% efficiency because it reduces outside air.
CAPEX Savings	<ul style="list-style-type: none">• HLR modules enable CAPEX savings on HVAC systems
Better IAQ	<ul style="list-style-type: none">• Reduced outside air pollutants (highways, downtown, etc)• No cross contamination between exhaust and intake
Construction Flexibility	<ul style="list-style-type: none">• Exhaust and OA do not need to be co-located
Reliability & Lower Maintenance	<ul style="list-style-type: none">• Not a single point of failure for building• No large motors, belts, fans, wheels• No decline in efficiency
IAQ Management	<ul style="list-style-type: none">• 24/7 monitoring and visibility on enVerid Cloud• Ability to react to contaminant level fluctuations
LEED	<ul style="list-style-type: none">• Provides significant points in IEQ, energy optimization, and innovation credits (up to 17)