Innovent
Air Handling Equipment

LASER | Latent And Sensible Energy Reduction

Innovent LASER Packaged Fresh Air Conditioning Units

Innovent LASER units provide both sensible and latent control of outside air at greatly reduced energy costs compared to conventional systems.

Benefits of LASER Technology

Innovent offers a simple, economical solution to the challenge of meeting the ASHRAE design standard for more fresh air.

- Energy costs are reduced using the Innovent heat exchanger to provide "free" precooling and reheat.
- Tempered outside air is provided at low relative humidity.
- Outside air volume is constant and verifiable.
- Heating/Cooling equipment is selected based on the room load only, reducing the size of the equipment and associated duct systems.
- Humidity in duct work is lower than that for typical cooling equipment. This helps prevent bacteria growth in duct insulation.

LASER-1 units are designed to condition and deliver fresh air to either the space or the intake of a conventional air handler. **LASER-2 units** have an exhaust air blower and additional heat exchanger for energy recovery from the exhaust airstream.

Both **LASER-1** and **LASER-2 designs** have been pre-engineered over a wide range of airflows. Each unit is designed to incorporate DX or chilled water cooling and a wide variety of heating and filtration options. DX units are available with integral packaged air cooled and water cooled condensing units.

Heating Options	**Cooling Options**
Hot Water Coil	Chilled Water Coil
Steam Coil	DX Coil, Split System
Indirect Fired Gas	Air Cooled DX Coil
Electric Heater	Water Cooled DX Coil
Direct Fired Gas	Water Source Heat Pump

All units are fully wired for single point connection and are ETL listed.

Innovent LASER — Engineered Simplicity in Operation and Maintenance

Innovent products are designed to give long term high performance and low maintenance. The LASER product line continues that tradition.

Over half a decade ago, Innovent realized the necessity for double wall construction in our energy recovery air handlers. Although the market at that time was predominantly single wall, Innovent made the commitment to double wall construction. It is now the industry standard.

Double Wall Construction Provides:

- Protection for insulation
- Long unit life
- Cleanable interior

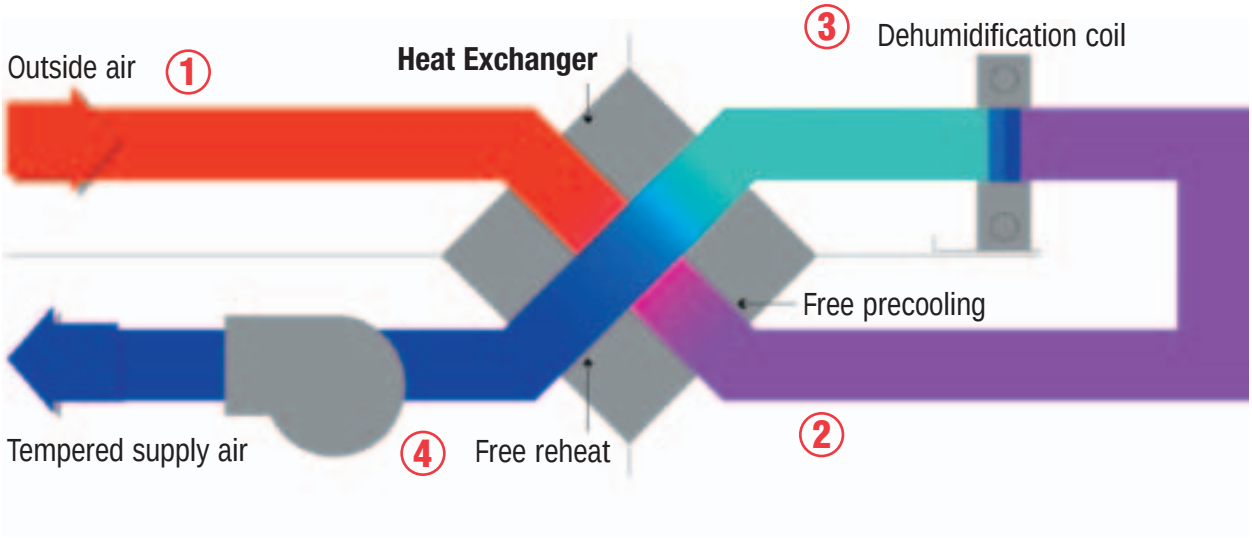
Innovent Double Wall *with Full Independent Frame* provides:

- Total maintenance access
- Modular design flexibility for retrofit
- Superior structural design
- Quiet operation
- Longer unit life

Many double wall units offered today are modified single wall units with a “liner” covering the insulation. These designs sacrifice maintenance access and structural integrity. Innovent LASER units are built with a full independent frame, flush mounted double wall casing, and fully hinged access doors.

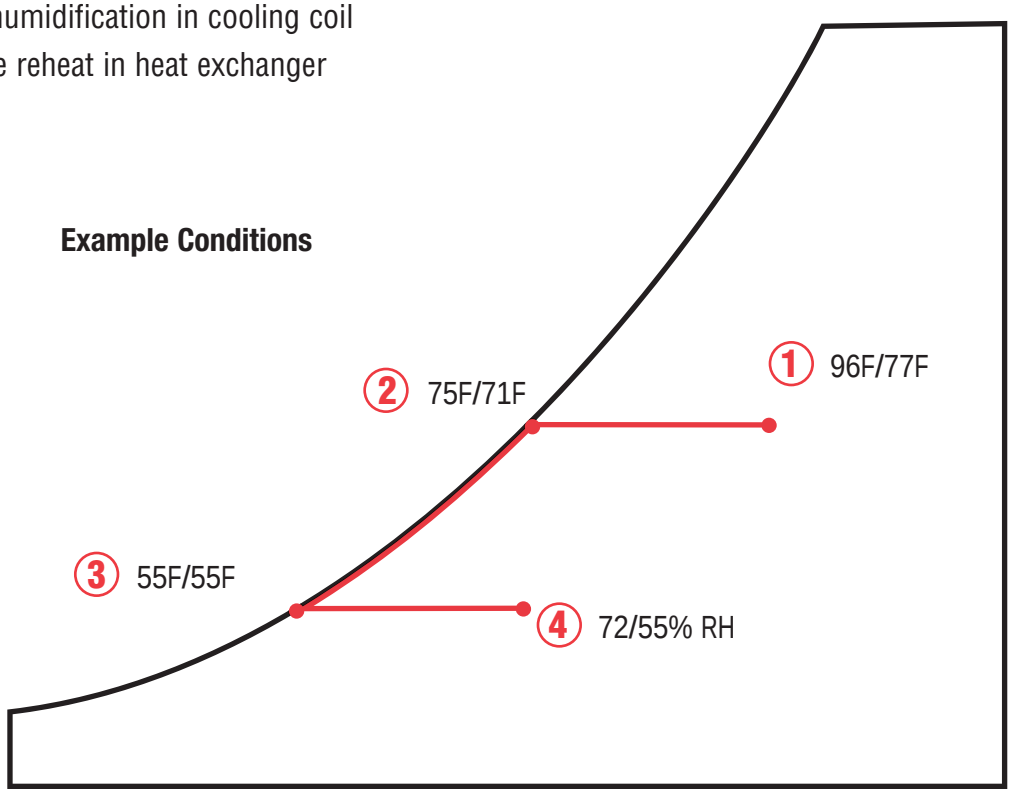
Engineered Simplicity in Heat Exchanger Design. Innovent’s exchanger is the least likely to foul, and the easiest to inspect and clean in the industry.

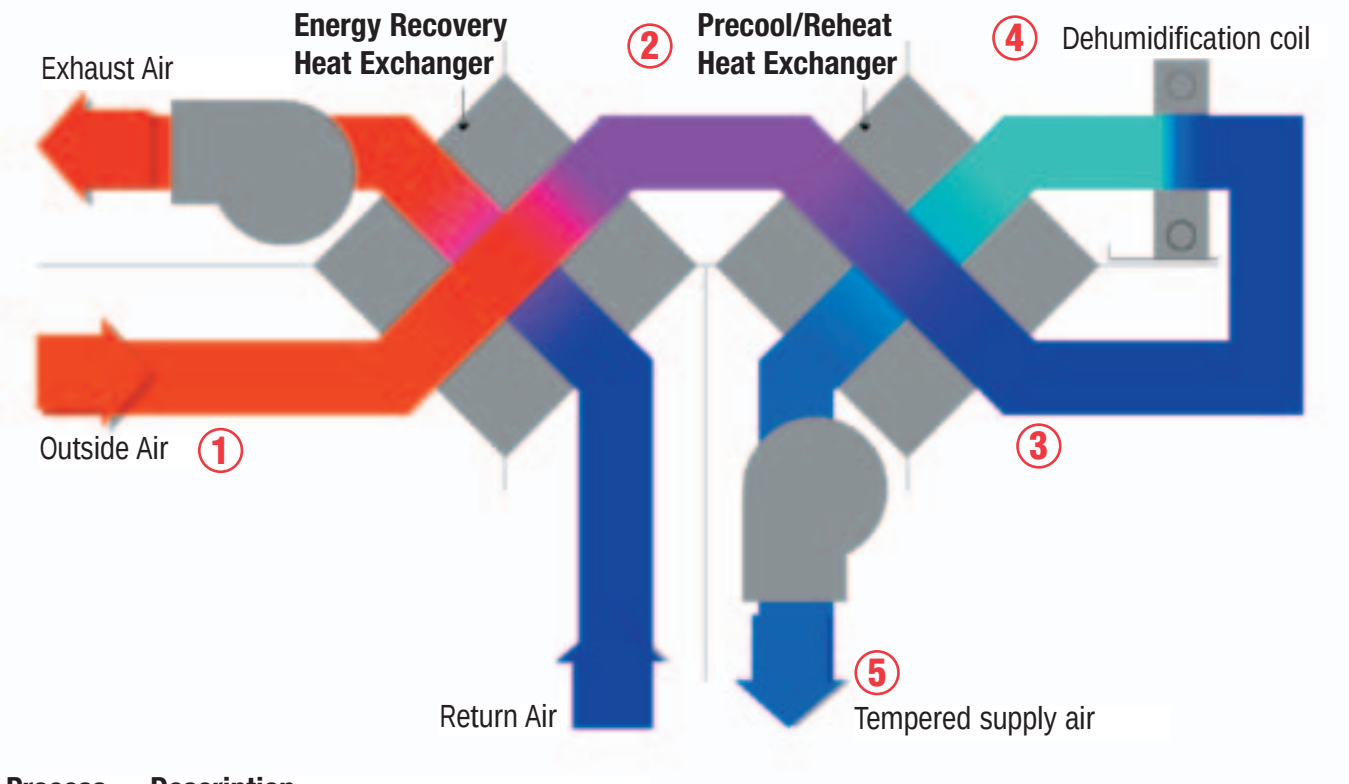
- Innovent’s LASER heat exchanger design HAS:
  - Lower pressure drops
  - Simple airflow pattern, 100% accessible surface
- Innovent’s LASER heat exchanger design does NOT have:
  - Speed controls, motor/drive sets
  - Refrigerants, secondary surface, high fin density
  - Dimples, corrugations, baffles



Process	Description
1 – 2	Precooling in heat exchanger
2 – 3	Dehumidification in cooling coil
3 – 4	Free reheat in heat exchanger

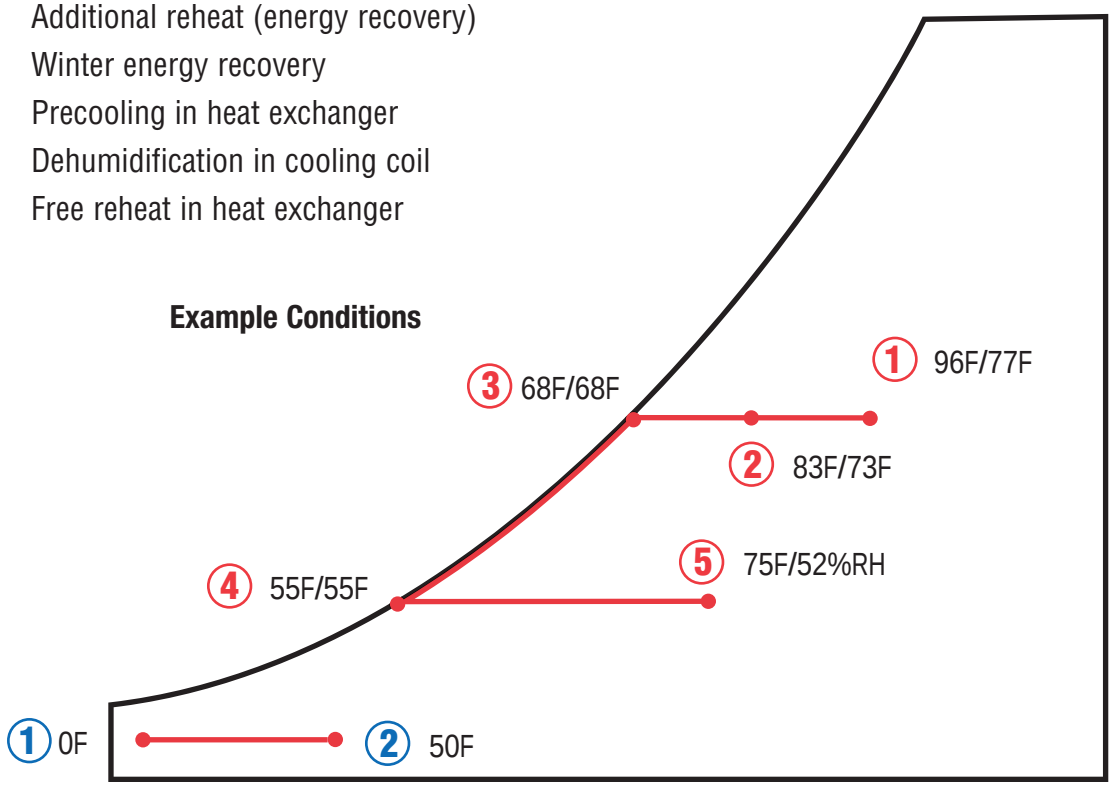
Example Conditions



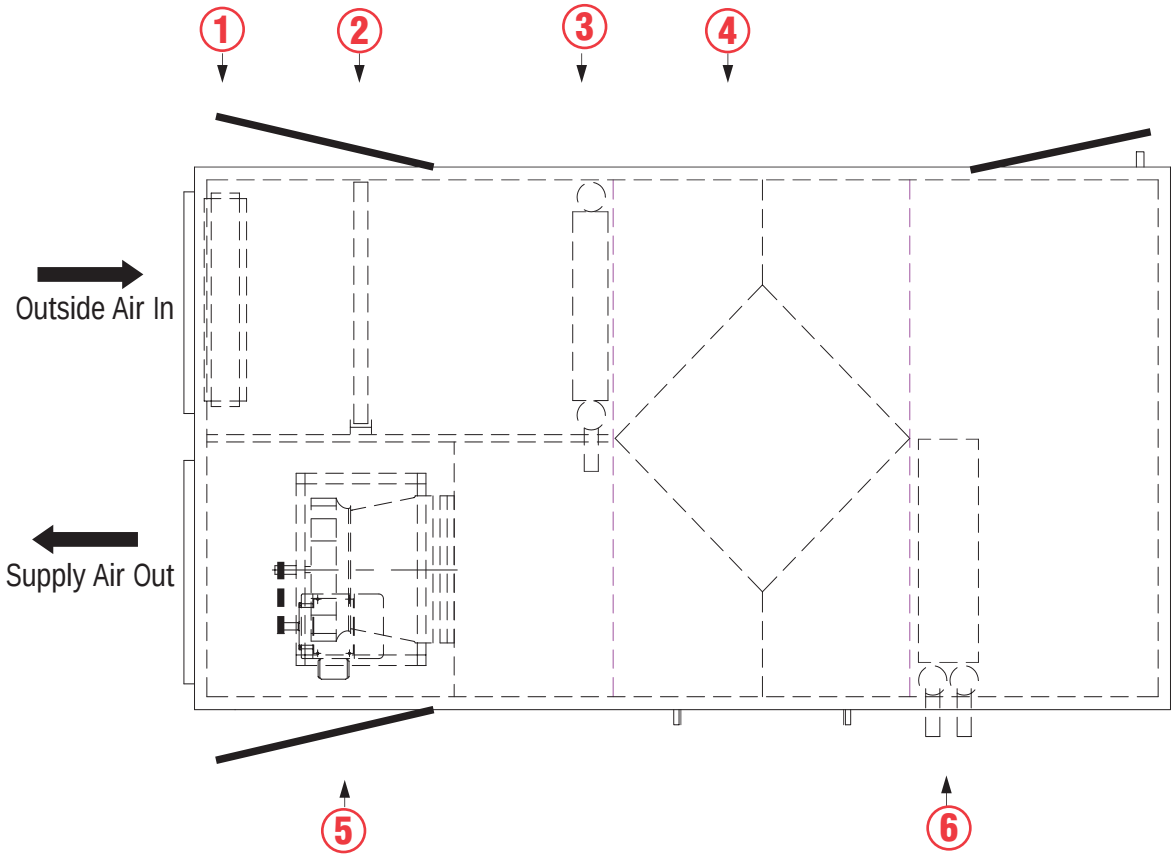


Process	Description
1 – 2	Additional reheat (energy recovery)
1 – 2	Winter energy recovery
2 – 3	Precooling in heat exchanger
3 – 4	Dehumidification in cooling coil
4 – 5	Free reheat in heat exchanger

Example Conditions



LASER 1 Plan View

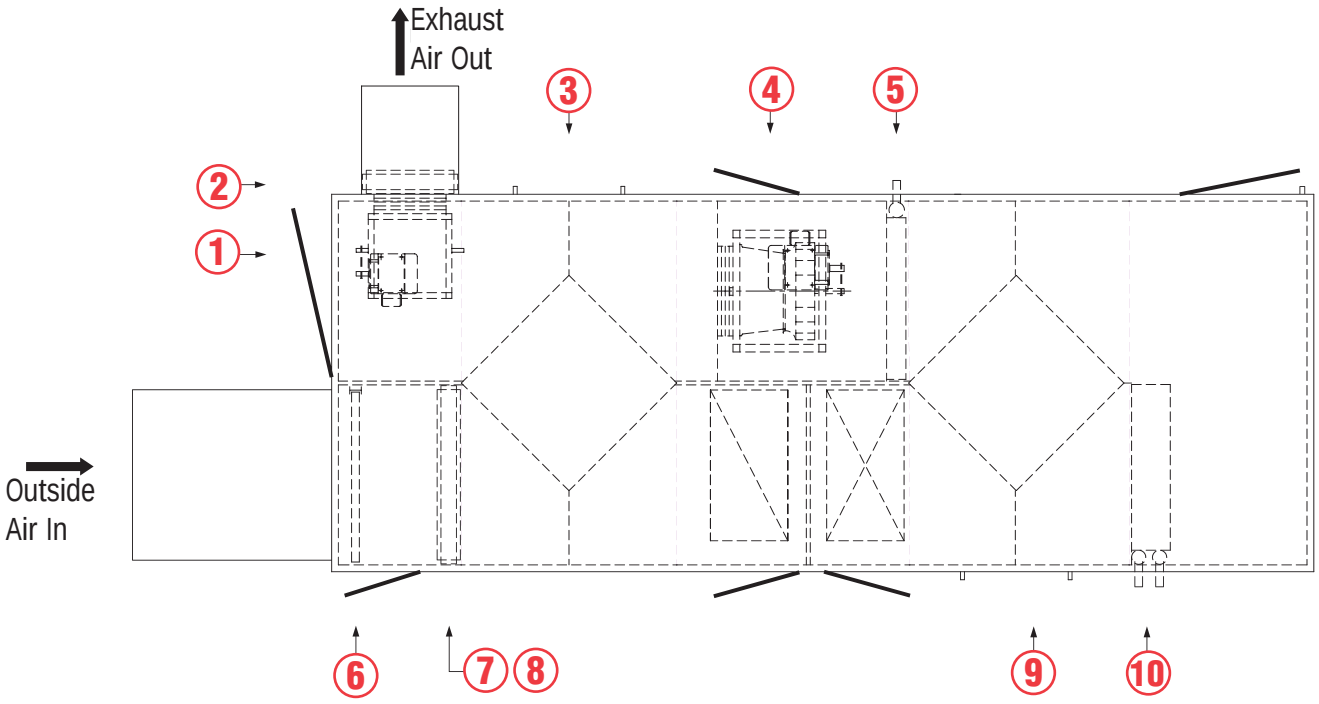


1 Outside air damper
2 Filter
3 Hot Water Coil
4 Heat Exchanger
5 Supply Fan
6 Dehumidification coil

Unit Physical Dimensions* (*in inches and pounds*)

CFM	Model	Length	Height	Width	Weight
2000-3500	Laser-1	125 3/16	53 1/4	73 3/4	2500 lb.
4000-5500	Laser-1	134 1/8	64 1/4	83 5/8	3200 lb.
5500-6500	Laser-1	143 3/16	64 1/4	97 5/8	4400 lb.
6500-7500	Laser-1	148 1/8	78	97 5/8	5300 lb.
7500-10000	Laser-1	170 1/16	89 7/8	109 7/16	6600 lb.
10000-15000	Laser-1	193 7/8	101 5/8	131 3/8	9100 lb.
15000+	**Contact Innovent Representative**				

*Dimensions given are for the layout shown above, which is one of several possible arrangements. The optimal arrangement will depend on the outlet condition desired, mounting location, and accessories required. Please fill out the design information sheet on the back cover and contact your Innovent representative for the layout that best meets your requirements.



1 Exhaust fan
2 Exhaust damper
3 Energy recovery heat exchanger
4 Supply fan
5 Hot water coil
6 Filter
7 Outside air face damper
8 Outside air bypass damper
9 Precool/Reheat heat exchanger
10 Dehumidification coil

Unit Physical Dimensions* (*in inches and pounds*)

S/A CFM	Length	Height	Width	Weight
1000-1500	225	47 1/4	49	3000
1500-2000	235	47 1/4	60	3900
2000-3500	235	53 1/4	73 3/4	4800
3500-4500	235	64 1/4	73 3/4	5200
4500-5500	235	64 1/4	83 5/8	6000

S/A CFM	Length	Height	Width	Weight
5500-6500	257	64 1/4	97 5/8	7100
6500-7500	257	78	97 5/8	8300
7500-11000	298	89 7/8	109 7/16	10900
11000-15000	298	101 7/8	124 1/4	12200
15000-20000	351	123 7/8	136 7/8	13900
20000+	**Contact Innovent Representative**			

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Project Information		
Project name		
Tag number		
Project location		
Altitude (if above 2,000 ft)		
Design Information		
Outside air flow (cfm)		
Outside air temperature	Summer (DB/WB):	Winter (DB/%RH):
Return air flow (cfm) – LASER 2 Only		
Return air temperature – LASER 2 Only	Summer (DB/%RH):	Winter (DB/%RH):
External static pressure (inches wc)	Supply:	Exhaust (LASER 2 only):

Equipment Information			
Location of unit	☐ Indoor	☐ Outdoor	
Mounting	☐ Roof curb	☐ Structural Steel	☐ Concrete Slab
	☐ Other (please describe):		
Electrical Service	☐ 208/3	☐ 230/3	☐ 480/3
Connections	☐ Floor	☐ End	
Cooling coil type	☐ DX air cooled	☐ DX water cooled	
	☐ DX split system	☐ Chilled water (indicate water temp):	
Heating type	☐ Indirect gas	☐ Steam (indicate pressure):	
	☐ Electric	☐ Hot Water (indicate temperatures):	
Cooling/Heating additional information	☐ Refrigerant type (R 22 is standard):		
	☐ % glycol (ethylene or polypropylene):		

Other Notes:

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