



# ENVISION™

Commercial 7 to 25 Tons  
Geothermal/Water Source Heat Pump



## ENVISION

WaterFurnace Envision 7-25 ton units are an exceptional choice for large zones in commercial and institutional applications. These units are available in both an NL group for water source heat pump applications, and an NX group for extended range geothermal applications. Available in 3 horizontal sizes and 7 vertical sizes, Envision units provide the user with high efficiency, excellent performance, flexibility and reliability.

Envision 7-25 ton units utilize R-410A refrigerant. A standard FX10 control is included for flexible integration into facilities with building automation systems. Vertical units can be ordered in left or right-hand return air, top or side discharge. Horizontal units are available with left or right-hand return, side or end discharge. Heavy gauge metal cabinets add durability to the system. Vertical units are painted with a long lasting white powder coat finish. Horizontal units are unpainted. Envision units are performance-certified to ARI ISO 13256-1 and are ETL listed.

High efficiency, coupled with additional upgrades make the Envision product line different from the company's Versatec products. These upgrades include: adjustable motor mount design, new access panel design, handles in access doors, filter rack doors, MERV 11 filter options, plastic drain pans (ASHRAE 62 compliant), flush mounted water lines, and field convertibility of vertical units for either top or side discharge.

By choosing or specifying WaterFurnace Envision products, you can be assured that the investment will provide an exceptional combination of performance, versatility, reliability and control.

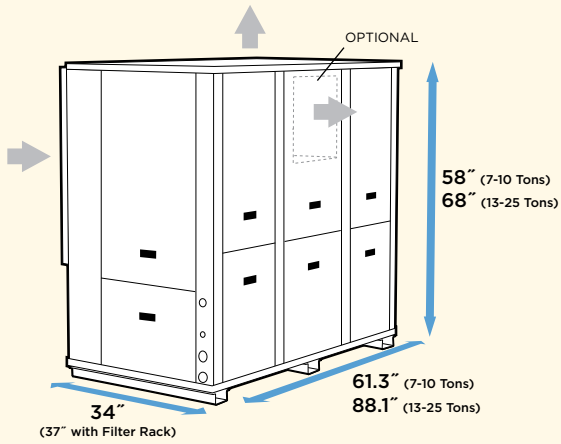
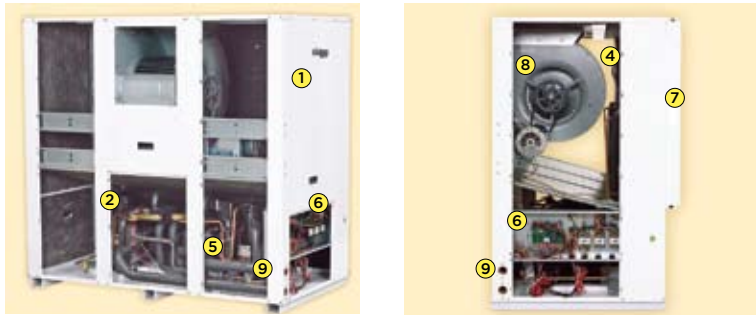


Continuing our long history of innovation, efficiency, quality and reliability for commercial products

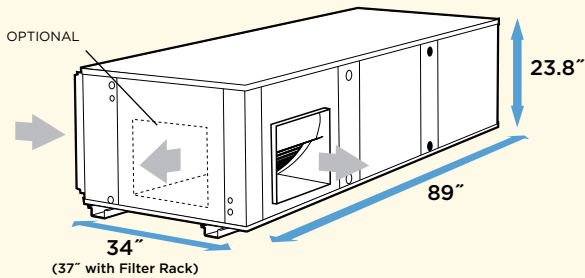
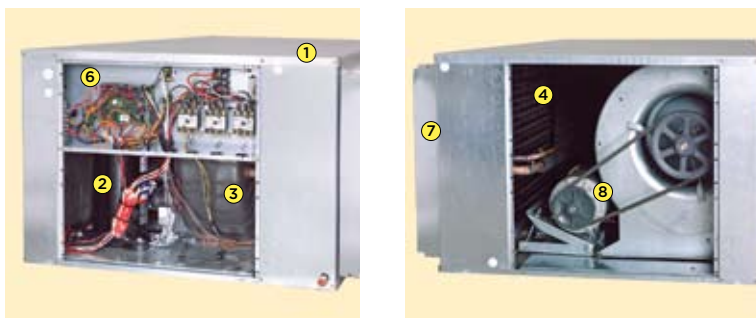
## KEY FEATURES

- 1 Cabinet**— Constructed of heavy gauge environmentally-responsible galvanized steel for maximum corrosion resistance. Vertical units are painted with a white powder coat finish. All interior surfaces are lined with 1/2" thick, dual density acoustic type fiber insulation, applied in a manner that prevents the introduction of glass fibers into the air stream. Multiple knockouts in various sizes facilitate power and low voltage wiring. Multiple access panels for ease of service.
  - 2 Scroll Compressors**— Includes two high efficiency Copeland Scroll compressors designed for heat pump operation. Dual level vibration system and internal overload protection.
  - 3 Coaxial Heat Exchangers**— Dual oversized convoluted heat exchangers with copper inner tube (optional cupronickel) and steel outer tube, designed for maximum heat transfer at normal and low water flow rates to minimize pressure drop and enhance freeze protection.
  - 4 Air Coil**— Large face, rifled copper tubes and enhanced corrugated lanced aluminum fins to provide high efficiencies at low face velocities. Optional FormiShield™ with low cure cathodic epoxy material, providing a minimum of 1,000 hours salt spray protection (2,000 hours on aluminum fins). Three rows deep (four rows deep on vertical 10 ton).
  - 5 Refrigerant Circuit**— Envision units utilize R-410A refrigerant in two sealed circuits. Metering is accomplished with a bi-flow thermostatic expansion valve to deliver optimum refrigerant flow over a wide range of conditions without troublesome check valves. Four-way solenoid activated reversing valve faults to heating, and is "cool brazed" at the factory.
  - 6 Controls**— Johnson Controls FX10 board provides operational control and monitoring of all functions. Includes input ports for communication protocols including Open N2, LonWorks and BACnet. Optional user interface, if selected, is factory-mounted on front of unit. The FX10 control directly monitors high pressure, low pressure, condensate overflow, freeze protection and more. Anti-short cycle, random start, low voltage protection, automatic intelligent reset, remote fault indication, emergency shutdown, compressor lead/lag, accessible alarm history and accessory relay.
  - 7 Filter Rack**— Units include a factory-installed 2" wide filter bracket. Filter removal can be done from either side. Optional MERV-11 filters available.
  - 8 Blower Motor**— Fan is belt driven, double width, double inlet forward curved with dynamically balanced wheel. Motors are permanently lubricated with thermal overload protection. Drive includes fixed pitch blower sheave and variable pitch motor sheave sized for 115% of fan brake horsepower.
  - 9 Piping**— Supply and return water connections are copper 1 1/4" or 2" NPT fittings, securely mounted flush to the cabinet corner post. All internal piping including coaxial heat exchanger is insulated to prevent condensation during operation with low entering water temperatures. Low temperature soldered to prevent misshaping or weakening.
- Additional Features**— All units are computer-run tested with water upon final assembly. Horizontal units include base rails and hanger brackets with rubber isolation grommets. Drain pan constructed of corrosion and mold resistant plastic, sloped in four directions to facilitate condensate removal.

## ENVISION VERTICAL 7 to 25 Tons



## ENVISION HORIZONTAL 7 to 10 Tons



# Envision Commercial Series ARI Data

ARI/ASHRAE/ISO 13256-1 English (IP) Units

Model	Capacity Modulation	Flow Rate		Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
				Cooling EWT 86°F		Heating EWT 68°F		Cooling EWT 59°F		Heating EWT 50°F		Cooling EWT 77°F		Heating EWT 32°F	
		gpm	cfm	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
NLH080	Single	22.0	2600	75,000	16.4	81,300	5.0	83,500	23.7	69,000	4.4	80,500	18.8	54,000	3.7
NLH095	Single	24.0	3200	91,000	16.5	96,000	5.0	99,800	24.0	82,400	4.4	96,000	19.0	64,500	3.7
NLH120	Single	28.0	3600	118,000	15.4	148,000	4.9	133,000	22.6	117,600	4.3	125,500	18.3	90,000	3.6
NLV080	Single	22.0	2600	79,700	17.4	89,000	5.4	87,400	25.3	74,500	4.7	85,000	20.7	57,700	3.9
NLV095	Single	24.0	2800	95,000	18.0	105,800	5.5	105,600	26.7	86,700	4.8	100,000	20.8	68,500	4.0
NLV120	Single	28.0	3600	115,000	16.2	142,600	5.4	135,000	25.0	113,700	4.7	126,000	19.0	87,500	3.8
NLV160*	Single	35.0	5000	166,000	18.9	154,000	5.1	178,000	25.3	130,000	4.6	171,000	21.0	97,000	3.7
NLV180*	Single	45.0	5600	180,000	17.1	190,000	5.0	187,000	22.2	149,000	4.3	185,000	18.5	109,000	3.4
NLV240*	Single	60.0	7600	240,000	16.3	296,000	5.2	264,000	22.5	237,000	4.6	246,000	17.4	184,000	3.8
NLV300*	Single	75.0	9500	284,000	17.3	353,000	5.4	314,000	24.5	286,000	4.8	291,000	19.0	224,000	4.2

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature

Heating capacities based upon 68°F DB, 59°F WB entering air temperature

All ratings based upon 208V operation.

\* Ratings for models NLV/NXV160-300 are outside the scope of the ARI Water to Air/Brine to Air Heat Pumps Certification Program.

11/05/07

## Physical Characteristics

Model	Horizontal			Vertical						
	080	095	120	080	095	120	160	180	240	300
Compressor (2 each)	Copeland Scroll			Copeland Scroll						
Factory Charge R410A, oz [kg] (per circuit)	72 [2.04]	82 [2.32]	114 [3.23]	80 [2.26]	92 [2.60]	114 [3.23]	160 [4.54]	162 [4.59]	246 [6.97]	250 [7.09]
<b>PSC Fan Motor &amp; Blower</b>										
Fan Motor- hp [W]	1.5 [1120]	2.0 [1492]	3.0 [2238]	1.0 (746)	1.5 (1120)	2.0 (1492)	1.5 (1120)	1.5 (1120)	2.0 (1492)	3.0 (2238)
Blower Wheel Size (Dia x W), in. [mm]	12 x 12 [305 x 305]	12 x 12 [305 x 305]	12 x 12 [305 x 305]	15 x 11 [381 x 280]	15 x 11 [381 x 280]	15 x 11 [381 x 280]	15 x 11 (2) [381 x 280]	15 x 11 (2) [381 x 280]	15 x 11 (2) [381 x 280]	15 x 11 (2) [381 x 280]
<b>Coax and Water Piping</b>										
Water Connections Size - FPT - in [mm]	1 1/4 [31.75]	1 1/4 [31.75]	1 1/4 [31.75]	1 1/4 [31.75]	1 1/4 [31.75]	1 1/4 [31.75]	2 [50.8]	2 [50.8]	2 [50.8]	2 [50.8]
HWG Connection Size - FPT - in [mm]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Coax & Piping Water Volume - gal [l]	2.87 [10.85]	3.20 [12.13]	3.46 [13.11]	2.87 [10.85]	3.20 [12.13]	3.46 [13.11]	6.50 [24.61]	6.50 [24.61]	7.00 [26.50]	7.00 [26.50]
<b>Air Coil &amp; Filters</b>										
Air Coil Dimensions (H x W), in. [mm]	20 x 35 [508 x 889]	20 x 40 [508 x 1016]	20 x 40 [508 x 1016]	28 x 25 (711 x 635)	32 x 25 (813 x 635)	36 x 25 (915 x 635)	40 x 40 (2) [1016 x 1016]	40 x 40 (2) [1016 x 1016]	40 x 40 (2) [1016 x 1016]	40 x 40 (2) [1016 x 1016]
Air Coil Total Face Area, ft <sup>2</sup> [m <sup>2</sup> ]	9.74 [0.91]	11.11 [1.03]	11.11 [1.03]	9.72 (0.90)	11.10 (1.03)	12.50 (1.16)	22.22 [2.06]	22.22 [2.06]	22.22 [2.06]	22.22 [2.06]
Air Coil Tube Size, in [mm]	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
Air Coil Number of rows	3	3	3	3	3	4	3	3	3	3
Filter Standard - 2" [50.8], in [mm]	20 x 20 (3) [508 x 508] 20 x 25 (1) [508 x 635]	20 x 20 (3) [508 x 508] 20 x 25 (1) [508 x 635]	20 x 20 (3) [508 x 508] 20 x 25 (1) [508 x 635]	28 x 36 (2) (711 x 914)	28 x 36 (2) (711 x 914)	28 x 36 (2) (711 x 914)	40 x 42 (2) (1016 x 1067)	40 x 42 (2) (1016 x 1067)	40 x 42 (2) (1016 x 1067)	40 x 42 (2) (1016 x 1067)
Weight - Operating, lb [kg]	700 [318]	796 [361]	843 [382]	644 [292]	762 [346]	849 [385]	1175 [533]	1195 [542]	1350 [612]	1400 [635]
Weight - Packaged, lb [kg]	690 [313]	785 [356]	830 [376]	620 [281]	735 [333]	820 [372]	1180 [535]	1200 [544]	1355 [614]	1405 [637]



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