

## Operation Considerations

The indoor thermostat should be set at the desired comfort temperature (20°C is recommended) and not readjusted.

Continuous indoor fan operation can reduce the overall efficiency achieved by a heat pump system, unless a high-efficiency variable-speed fan motor is used. Operate this system with the "auto" fan setting on the thermostat.

Heat pumps have longer operation times than conventional furnaces because their heating capacity is considerably lower.

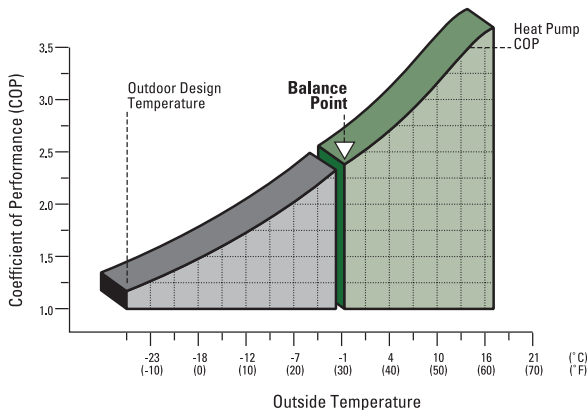
## Major Benefits of Air-Source Heat Pumps

### EFFICIENCY

At 10°C, the coefficient of performance (COP) of air-source heat pumps is typically about 3.3. This means that 3.3 kilowatt hours (kWh) of heat are transferred for every kWh of electricity supplied to the heat pump. At -8.3°C, the COP is typically 2.3.

The COP decreases with temperature because it is more difficult to extract heat from cooler air. Figure 6 shows how the COP is affected by cooler air temperature. Note, however, that the heat pump compares favourably with

**Figure 6:** Performance Characteristics of a Typical Air-Source Heat Pump



electric resistance heating (COP of 1.0) even when the temperature falls to -15°C.

Air-source heat pumps will operate with heating seasonal performance factors (HSPFs) that vary from 6.7 to 10.0, depending on their location in Canada and their rated performance. Figure 7 shows the range of performance of

**Figure 7:** Heating Seasonal Performance Factors (HSPFs) for Air-Source Heat Pumps for various locations in Canada



8.7 to 10.0	7.4 to 8.5	6.7 to 7.4
Chilliwack, B.C.	Kelowna, B.C.	Kamloops, B.C.
Nanaimo, B.C.	Nelson, B.C.	Prince Rupert, B.C.
Richmond, B.C.	Penticton, B.C.	Lethbridge, Alta.
Vancouver, B.C.	Chatham, Ont.	Medicine Hat, Alta.
Victoria, B.C.	Hamilton, Ont.	Maple Creek, Sask.
	Niagara Falls, Ont.	Barrie, Ont.
	Toronto, Ont.	Kingston, Ont.
	Windsor, Ont.	Kitchener, Ont.
	Halifax, N.S.	London, Ont.
	Yarmouth, N.S.	North Bay, Ont.
		Ottawa, Ont.
		Sault Ste. Marie, Ont.
		Sudbury, Ont.
		Montréal, Que.
		Québec, Que.
		Sherbrooke, Que.
		Moncton, N.B.
		Saint John, N.B.
		Amherst, N.S.
		Sydney, N.S.
		Charlottetown, P.E.I.
		Grand Bank, N.L.
		St. John's, N.L.

**Note:** Indicated values represent the range from "standard-efficiency" to "high-efficiency" equipment.