

All Weather Snowmaker

Product Data Sheet

October 2010

1. Features

The All Weather Snowmaker is capable of producing up to 1,720 m³/day (60,741 ft³/day) of high quality snow, at all ambient temperatures.

The All Weather Snowmaker is based on IDE's proven Vacuum Ice Maker (VIM) Technology, which has been operating worldwide for over 20 years.

The All Weather Snowmaker secures reliable snow production throughout the entire ski season.

2. Process Description

Inside the VIM freezer, water is exposed to deep vacuum. The vacuum forces a small part of the water to evaporate, while the remaining water freezes forming water-snow mixture.

The mixture is pumped out from the freezer to a snow separator that separates the water from the snow crystals and extracts high grade snow.

In order to maintain the deep vacuum in the freezer, the water vapor is continually sucked from the freezer, compressed and fed into a condenser by IDE's unique centrifugal compressor. Condensing of the vapor requires cooling water at 5°C (41°F), supplied from a standard water chiller.

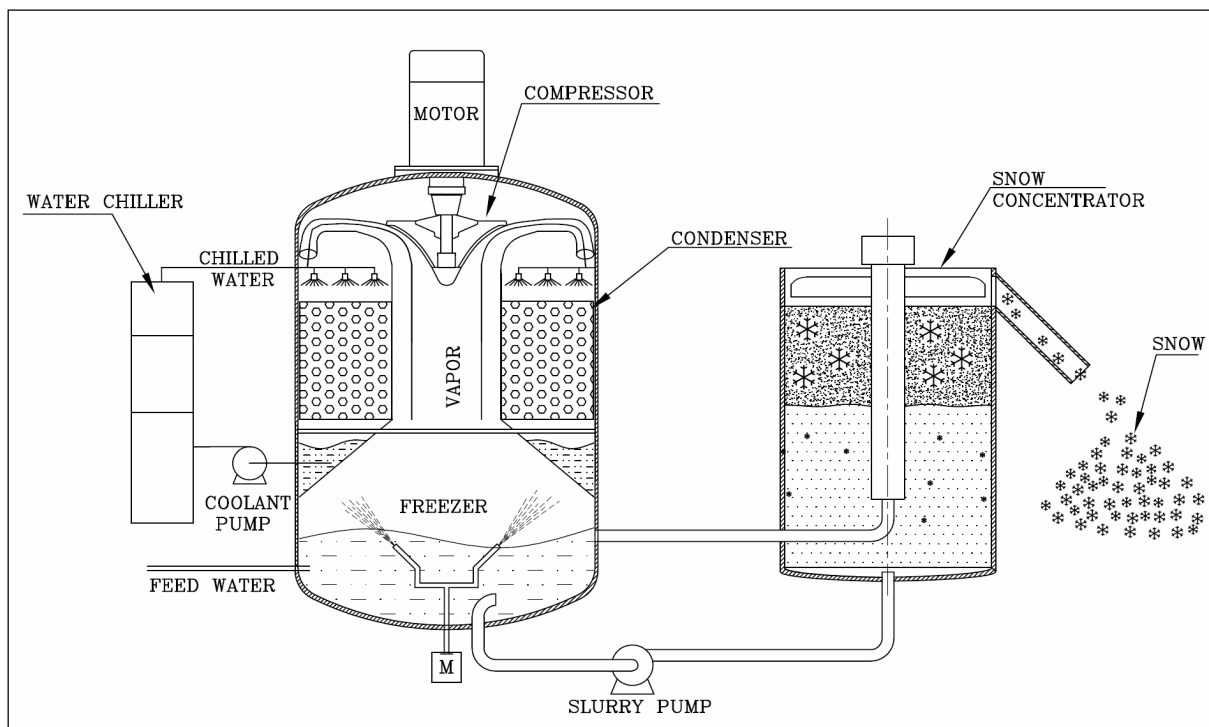


Figure 1: Flow Diagram

3. Technical Specifications

Specifications	VIM400 (Snow)	VIM850 (Snow)
Designed Cooling Capacity	1,750 kW	3,500 kW
Snowmaking Mass Capacity (at 4.5°C/40°F feed water temperature)	560 ton snow/day	1,120 ton snow/day
Snowmaking Volumetric Capacity ¹ (at 4.5°C/40°F feed water temperature)	860 m ³ /day 30,370 ft ³ /day	1,720 m ³ /day 60,741 ft ³ /day
Electrical supply	400V / 50Hz / 3 Phase or 480V / 60Hz / 3 Phase	
Designed Power Consumption ²	235 kW	397 kW
Specific Power per Mass	10.0 kWh/ton Snow	8.5 kWh/ton Snow
Specific Power per Volume ¹	6.6 kWh/m ³ 0.19 kWh/ft ³	5.5 kWh/m ³ 0.16 kWh/ft ³
Snow Quality:	"Spring Snow"	
Snow Grain Size	0.5 – 1.0 mm 0.02-0.04 inch	
Snow Density	600 – 700 kg/m ³ 37.5 – 43.7 lb/ft ³	
Freezer Type	Direct Contact Evaporator Chamber	
Refrigerant Type	Water	
Nominal Feed Water Flow Rate	23.3 m ³ /hr 103 US gal/min	46.6 m ³ /hr 205 US gal/min
Recommended Feed Water Temperature range ³	2°C - 6°C 35.6°F - 42.8°F	
Compressor	High speed centrifugal compressor with aluminum rotor and composite material blades	
Condenser Type	Direct contact	
Cooling Water Temperature	5°C (41°F)	
Cooling Water Flow Rate	480 m ³ /hr 2,113 US gal/min	670 m ³ /hr 2,950 US gal/min
Dimensions:		
VIM Dimensions DxH	3.8m x 11.4m 12.5ft x 37.4ft	5m x 12.6m 16.4ft x 41.3ft
Snow Concentrator Dimensions DxH	3.3m x 11.4m 10.8ft x 37.4ft	4m x 12.6m 13.1ft x 41.3ft
VIM Weight	32 tons	48 tons
Concentrator Weight	11 tons	15 tons

¹ Considering average snow density of 650 kg/m³ (40.6 lb/ft³) at the snow concentrator chute outlet. After being drained from any access water the snow density is typically 550 kg/m³ (34.3 lb/ft³).

² The above power consumption refers to the VIM unit only and does not include the supporting cooling system (Chiller, Cooling Tower and Cooling Tower circulation pump)

³ The VIM can be operated with any given feed water temperature. Each 1°C (1.8°F) increase in the temperature of the feed water reduces the snow production by 1.5%.

IDE Technologies

For further information please contact: info@ide-tech.com

www.ide-tech.com