

WindCube Winter Kit



Features

- Tilted surface for low snow retention
- Active heating element with 2 selectable power modes (90 or 120W)
- Thermal switch mechanism ensuring heater activation when temperature drops
- Visual indicator (white LED) for heating activation
- Easy installation
- Internal strapping system for good retention in case of high wind
- Tested in harsh conditions with snow and ice at -20°C
- More than 20 units successfully tested during winter 2021-2022
- Suitable for remote and hard-to-reach places
- Reinforced Aluminum wiper included

The Winter Kit is an accessory for WindCube v2.1 standard version and designed to ensure continuity of technical availability while in harsh winter conditions.

Design

The Snow Shield is designed to reduce snow retention and increase temperature above the WindCube.

Five holes also ensure a correct light passage.

- The tilted surface combined with a PE Base material minimizes the adherence of snow on top of the Kit.
- The limited volume between the WindCube's window and the Snow Shield helps keeping heat locally.
- The hole's shapes are optimized to get the right balance between efficient light emission/reception and reduced ingress of snow or ice.

Heaters are installed around each hole of the Snow Shield in order to melt surrounding snow or ice efficiently and to avoid heat loss.

Minimized power consumption

Solution is designed to optimize the additional power draw required by the heating device. While a temperature sensor ensures heating is only activated when needed, a switch allows the user to select the maximum power delivered to the Winter kit during low temperature events: 90W or 120W.

Heating box is equipped with a white LED confirming its correct operation.

Ease of Installation and operations

The Winter Kit can be installed very smoothly on the WindCube. There is no need to move the Lidar for installing the Snow Shield and the Tent. A set of straps allows the user to easily fix the Kit to the WindCube and ensure a correct retention in case of high wind.

An installation notice is available to guide the user through each of the installation steps.

Tested for harsh conditions

Design has been first fully validated in test laboratory with simulation of heavy snow and ice at -20°C. Power and wiping functions of the WindCube were maintained during all test sequence and the use of the Kit significantly reduces WindCube restart time at -30°C.

Additionally, more than 20 kits have been successfully tested in real campaigns during winter 2021-2022 in various conditions (Japan, Northern Europe, North America) confirming the field applicability of the solution.

For harsh conditions - when Snow Shield's holes are blocked by ice - WindCube will recover measurement within a few hours after the snow event thanks to the active heating elements.

Enhanced Aluminum wiper

The Winter Kit also includes a reinforced Aluminum Wiper which can easily be installed on the WindCube. The Aluminum material brings additional strength to the wiping mechanism and reduces the impacts of potential ice or snow ingress within the Winter Kit.

Technical data

Mechanical specifications

Dimensions (L × W × H)

External Dimensions when installed	70 x 70 x 80 cm
Package without pallet	77 x 77 x 46 cm
Package with pallet (1 kit)	80 x 77 x 62 cm
Package with pallet (2 kits)	80 x 77 x 108 cm

Weight

Snow Shield	6,9 kg
Tent	3,8 kg
Connection box and wires	2,3 kg

Material

Snow Shield	PE Base and Aluminum cover
Tent	PES HT (High Tenacity), PVC Coated
Connection box	Aluminum

Electrical specification

Power Consumption	90W – Mode 1 120W – Mode 2
Input Power Supply	24.5-27VDC
Power Supply with the transformer supplied by Vaisala	100-240VAC -50/60Hz



Energy Yield Assessment installation, courtesy of JWD

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