



HIGHLIGHTS

- Utilizes an internal blower with a specially designed flow control valve removing the need for using compressed air without compromising performance
- Patented flow system provides very fast response and pressurization capabilities
- Advanced modes and non invasive support
- Small overall size and weight make it very portable
- 7" TFT display with intuitive user interface
- Low power consumption enables battery operation for up to 4 hours
- Hot swappable batteries extend operation time on batteries
- Flexible communication capabilities incorporated
- Supports an additional external control panel which can be used when the ventilator panel is not easily accessible
- Designed from the ground up with low COGS in mind, easy assembly, low maintenance and automated testing to reduce overall manufacturing costs

The Panther 3 ventilator is a portable ventilator with real acute level performance.

The ventilator utilizes a patented advanced rapid response flow system. Unlike other blower based ventilators, this design provides both high flow delivery, extremely fast response to patient demand and very fast and stable pressurization during pressure breaths.

The capability to achieve a high level of control enables ventilation in advanced modes as well as the standard modes.

Because an internal blower is used, there is no need for compressed air, making it both highly versatile and transportable.

Utilizing a 7" TFT display with a touch screen provides a very clear and easy to use interface for control and monitoring along with easy to operate functionality. Common gestures used in daily devices such as phones and tablets are used to make usage as intuitive as possible.

A range of accessories enable enhancing the user experience by connecting the ventilator to additional displays. These include the options to connect a standard larger HDMI monitor which will show much more information or an external 15" control panel for high end control and monitoring. Both can be connected via a cable or over the network.

An additional accessory aimed at home patients is a 7" control panel which runs a user interface identical to that of the ventilator, especially used for cases such as patients in wheelchairs which have no access to the ventilator's control panel.

The high integration of the design utilizes very low power enabling the ventilator to run off its internal battery for up to 4 hours. With its built in hot swap capabilities, the ventilator can run indefinitely from batteries.

External DC power can be connected being the lighter in the car or the wheelchair's battery. The ventilator will utilize this external source of power and conserve the internal batteries.

The design of the ventilator takes into account the growing needs for communications, remote access, program updates and more. By utilizing different communication methods and modes, SD card and USB slots, the Panther 5 can answer any communication and remote access demands.

Designed for cost effectiveness, the Panther3 design was focused not just on low COGS, but also on ease of assembly, automated built in tests as well as automated external programs that reduce the total cost of manufacturing and maintenance of the ventilator. This provides a very capable solution at a very low cost.

The versatile design enables easy and low cost adaptation of the ventilator to changing market needs.

Ventilation Modes

Controlled ventilation

PC - Pressure Control

VC - Volume Control

Adaptive Pressure Control

Support Ventilation

CPAP/PSV

VS - Volume Support

Combined controlled and support

SIMV with either VC, PC or adaptive pressure control

Support breaths can be PSV or VS

Additional modes

Bi-Vent	Pressure control ventilation switching between two pressure levels
Smart Mode	Promotes spontaneous breaths and switches to corresponding controlled breaths automatically

Non Invasive

PC

PSV

Direct function functions

100 O₂, Inspiratory hold, Expiratory hold, Manual breath, P_{0.1} maneuver

Display Subsystem

7" TFT with projective capacitive touch screen

Waveform View

Real time view of 3 waveforms. Auto and manual scaling are supported with swipe motion and double click support

Cursor support for measuring values in "Display Capture" Mode

Loops View

Displays a Volume/Pressure loop, a Flow/Volume loop and one real time waveform which can be selected by the user

Cursor support for measuring values in "Display Capture" Mode

Trend View

Displays four trends simultaneously. Each trend can be assigned a parameter from all trended parameters

Trends are stored for up to 24 hours

Cursor support for measuring values in "Display Capture" Mode

Log View

Logs are maintained and include patient related alarms, ventilator related alarms, changes in ventilator settings and operation related alarms

Alarm view can be filtered to show a specific type of alarm

Logs can be saved to SD Card and to USB memory as well as sent over the Ethernet and USB communications channels

Parameter Ranges

	Min	Max		Min	Max
Inspiratory Volume (ml)	20	3000	PSV Maximal Inspiratory Time (sec)	0.1	3
Adaptive Volume (ml)	20	3000	PSV Flow Threshold (%)	10	70
Respiratory Rate (bpm)	1	99	PSV/PCV Slope	1	10
Maximal set pressure (cmH ₂ O)		75	Flow Trigger (lpm)	0.1	20
PEEP (cmH ₂ O)	0	40	Pressure Trigger (cmH ₂ O)	-0.1	-9.9
Maximal Inspiratory Flow (lpm)		180	Inspiratory Pause (sec)	0	3
Inspiratory Time (sec)	0.1	3	Expiratory Pause (sec)	0	30
Apnea time Range (sec)	5	45	Compliance Compensation	OFF	ON
Smart Mode Range (sec)	3	15			

Monitored Parameters

Total Respiratory Rate	Auto PEEP
Spontaneous Respiratory Rate	Static Compliance
Peak Airway Pressure	Dynamic Compliance
PPlateau	Inspiratory Resistance
Mean Airway Pressure	Expiratory Resistance
End expiratory pressure	Time Constant
Inspired Tidal Volume	P _{0.1}
Expired Tidal Volume	Work Of Breath Patient
Inspired Spontaneous Tidal Volume	Work Of Breathing Ventilator
Expired Spontaneous Tidal Volume	Shallow Breathing Index (SBI)
Total Inspired Minute Volume	FiO ₂
Total Expired Minute Volume	Barometric Pressure
Spontaneous Inspired Minute Volume	O ₂ Inlet Pressure
Spontaneous Expired Minute Volume	
Last breath inspiratory time	

Alarms

High Peak Airway Pressure	High Expired Minute Volume
Low Airway Pressure	Low Expired Minute Volume
High Expired Tidal Volume	Apnea
Low Expired Tidal Volume	High Baseline
High Expired Spontaneous Tidal Volume	Low Baseline
Low Expired Spontaneous Tidal Volume	High FiO ₂
High Respiratory Rate	Low FiO ₂
Low Respiratory Rate	Battery Alarms
+ Additional technical alarms	

Communications Interfaces

Serial

- Serial RS232 sending automatic data to nurse call station. Can be configured to send the required data. Software plug-ins easily adapt to required protocols
- USB device/ RS232 for providing remote control and programming as well as log downloads

Ethernet

Ethernet for sending automatic data as well as providing online monitoring, log reading and remote control.

Software enables connection to dedicated control/monitoring software that run on remote computers/tablets/phones or standard control centers

Memory Cards

- USB Host connection for saving of logs, screen images and uploading software updates from standard USB memory sticks
- SD Card interface for saving of logs, screen images and uploading software updates

Expansion

- RS485 bus for connecting external advanced modules

Remote Alarm

Dry contact remote alarm connections with/without cable disconnection detection

Environmental

Operating Temperature	-10°C to +40°C
Operating Humidity	10% - 90% Non Condensing
Power Consumption	Normal operation: 40W, Maximal: 100W
Power Supply	110V – 220V, 50/60Hz Automatic
External DC power	10V – 24V
Size (WxDxH)	220mm x 140mm x 280mm
Weight	7 Kg
