

# V60, Respironics

## Технические характеристики

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# Specifications



\*The V60 Plus and software version 3.00 or greater is a modification to the existing FDA-cleared V60 ventilator and is therefore provided for use in accordance with FDA's guidance, "Enforcement Policy for Ventilators and Accessories and Other Respiratory Devices During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency," Section IV Policy for Modifications to FDA-Cleared Devices, issued March 2020. The V60 Plus ventilator is not FDA cleared or approved.

## 1. Patient Population

The Respironics V60/V60 Plus ventilator is intended to support pediatric patients (children and adolescents, weighing 20 kg [44 lb.] or greater), and adult patients. The V60 Plus ventilator is also intended for intubated patients meeting the same selection criteria as the noninvasive applications.

## 2. Modes/therapy

### Standard

HFT (high flow therapy), standard in V60 Plus\* and optional V60 Plus activation key for V60\*

CPAP (continuous positive airway pressure)

S/T (spontaneous with timed backup)

PCV (pressure control ventilation)

AVAPS (average volume assured pressure support)

### Optional

PPV (proportional pressure ventilation)\*\*

Auto-Trak\*\*

Note: Humidifier and humidifier accessories must be ordered separately

## 3. Settings

Settings	Range
Flow (for V60 Plus HFT Option)	10 – 80 l/min†
C-Flex	OFF, 1 – 3
CPAP	4 – 25 cmH <sub>2</sub> O
EPAP	4 – 25 cmH <sub>2</sub> O
IPAP	4 – 40 cmH <sub>2</sub> O
I-time (inspiratory time)	0.30 – 3.00 sec
Max P (AVAPS maximum IPAP)	6 – 40 cmH <sub>2</sub> O
Min P (AVAPS minimum IPAP)	5 – 30 cmH <sub>2</sub> O
O <sub>2</sub> (oxygen percent)	21 – 100%
Ramp time	OFF, 5 – 45 min
Rate (respiratory rate)	4 – 60 bpm
Rise (rise time)	1 – 5
Triggering and cycling	Auto-adaptive (Auto-Trak)
AVAPS target tidal volume	200 – 2,000 ml btps
Max E (PPV maximum elastance)	0 – 100 cmH <sub>2</sub> O/l
Max R (PPV maximum resistance)	0 – 50 cmH <sub>2</sub> O/l/s
PPV % assist	0 – 100%
Max P (maximum PPV pressure limit)	5 – 40 cmH <sub>2</sub> O
Max V (maximum PPV volume limit)	200 – 3,500 ml

#### 4. Modes/therapy with settings

	CPAP	S/T	PCV	AVAPS	PPV**	HFT
Rate		•	•	•	•	
I-time		•	•	•	•	
CPAP	•					
EPAP		•	•	•	•	
IPAP		•	•		•	
Rise		•	•	•	•	
Min P				•		
Max P				•	•	
Max V					•	
Max E					•	
Max R					•	
PPV%					•	
O <sub>2</sub>	•	•	•	•	•	•
V <sub>T</sub> (tidal volume)				•		
C-Flex	•					
Ramp time	•	•	•			
Flow						•

#### 5. Monitored parameters ‡

##### Patient data window

Breath phase/trigger indicator	Spont, timed, exhale
PIP	0 – 50 cmH <sub>2</sub> O
Patient/total leak	0 – 200 l/min btps
Patient trigger	0 – 100%
Respiratory rate	0 – 90 bpm
Ti/Ttot	0 – 91%
Minute volume	0 – 99.0 l/min btps
Estimated exhaled tidal volume	0 – 3,500 ml btps

‡ Note: There are no monitored parameters available in HFT

##### Waveform window ‡

Pressure waveform	0 – 50 cmH <sub>2</sub> O
Flow waveform	-240 – 240 l/min btps
Volume waveform	0 – 3,500 ml btps

‡ Note: Only a flow waveform is available in HFT

\*The V60 Plus and software version 3.00 or greater is a modification to the existing FDA-cleared V60 ventilator and is therefore provided for use in accordance with FDA's guidance, "Enforcement Policy for Ventilators and Accessories and Other Respiratory Devices During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency," Section IV Policy for Modifications to FDA-Cleared Devices, issued March 2020. The V60 Plus ventilator is not FDA cleared or approved.

\*\* May not be available in all markets.

† The maximum deliverable flow rate varies based on nasal cannula orifice size and on patient nasal passage resistance.

#### 6. Alarm settings ‡

Alarm	Adjustable range
Hi Rate (high respiratory rate alarm)	5 – 90 bpm
Lo Rate (low respiratory rate alarm)	1 – 89 bpm
Hi V <sub>T</sub> (high tidal volume alarm)	200 – 3,500 ml
Lo V <sub>T</sub> (low tidal volume alarm)	Off, 5 – 1,500 ml
HIP (high inspiratory pressure alarm)	5 – 50 cmH <sub>2</sub> O
LIP (low inspiratory pressure alarm)	OFF, 1 – 40 cmH <sub>2</sub> O
Lo V <sub>E</sub> (low minute ventilation alarm)	OFF, 0.1 – 99 l/min
LIP T (low inspiratory pressure delay time)	5 – 60 sec

‡ Note: There are no patient parameter alarms available in HFT

#### 7. Other settings

Alarm volume	1 – 10 (relative scale)
Brightness	1 – 5 (relative scale)
Exhalation port selection	<ul style="list-style-type: none"> <li>• FEP (filterable exhalation port)</li> <li>• DEP (disposable exhalation port)</li> <li>• Whisper Swivel</li> <li>• Other</li> <li>• None (no circuit exhalation port)</li> </ul>
Interface selection	ET/Trach, 1, 2, 3, Other
Screen lock	Off, On
Auto-Trak Plus**	Optional
Trigger**	Normal, 1 – 7
E-cycle**	-2, -1, Normal, 1 – 6

#### 8. Environmental

<b>Temperature</b>	
Operating conditions	+5 – +40°C
Storage conditions	-20 – +50°C
<b>Relative humidity</b>	
Operating conditions	15 – 95% (noncondensing)
Storage conditions	10 – 95% (noncondensing)
<b>Barometric pressure</b>	
Operating conditions	79.9 – 101.1 kPa (600 – 765 mmHg)
Storage/transport	450 – 765 mmHG (approximately -200 – 14,000 feet relative to sea level)

## 9. Communication

Philips IntelliBridge EC10

Philips IntelliBridge EC40/80

Philips VueLink Open Interface

Other monitoring and patient information systems\*

## 10. Electrical

### External

AC voltage 100 – 240 VAC

AC frequency 50/60 Hz

AC power 300 VA

### Battery

Nominal voltage 14.4 V

Capacity 11.0 Ah

Battery chemistry Lithium-ion

Operating time 6 hours in normal conditions

## 11. Physical

Weight 12 kg (26 lb) with battery

Dimensions 33.7 cm (13.3 in) height  
39.4 cm (15.5 in) width  
42.9 cm (16.5 in) depth

\*The V60/V60 Plus ventilator can communicate with some non-Philips patient monitors and other devices through the serial port. For information about compatible devices, contact your Philips representative.

## 12. Regulatory compliance

### 3rd edition standards

IEC 60601-1; 2012, Ed. 3.1 Medical electrical equipment – Part 1: General requirements for basic safety and essential performance

IEC 60601-1-2; 2014, Ed. 4.0 Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – collateral standard: Electromagnetic disturbances – requirements and tests

AIM 7351731 Rev 2.00 2017 Medical Electrical Equipment & System Electromagnetic Immunity Test for RFID Readers

CSA C22.2 No. 60601-1; 2014 Medical electrical equipment – Part 1: General requirements for safety

IEC 60601-1-6; 2013, Ed. 3.1 Medical electrical equipment – Part 1-6: General requirements for basic safety and essential performance; collateral standard: usability

IEC 60601-1-8; 2012, Ed. 2.1 Medical electrical equipment – Part 1-8: General requirements for basic safety and essential requirements; collateral standard: alarm systems

IEC 62366-1; 2015, Ed. 1.0 Medical devices – Application of usability engineering to medical devices

ISO 14971; 2007 Medical devices – Application of risk management to medical devices

ISO 80601-2-12; 2011, Ed. 1.0 Medical electrical equipment – Particular requirements for basic safety and essential performance of critical care ventilators

IEC 60529; 2013, Ed. 2.2 Degrees of protection provided by enclosures (IPX1@zero degrees tilt)

ANSI/AAMI/IEC 62304: 2006 & A1:2016 Medical device software – Software life cycle processes

WEEE recycling directive Compliant with the WEEE recycling directive



# Simplicity and versatility

## Philips Respironics Trilogy 202 portable ventilator specifications

The Trilogy 202 is both a volume-control and pressure-control ventilator for invasive and noninvasive ventilation. The versatile breath delivery and setup options free you from burdensome equipment exchanges, providing greater continuity of care for your patients. Because the Trilogy 202 has the unique ability to compensate for leaks in both pressure and volume control modes, using simpler passive circuits may support significant time and cost savings. With one simple setting change, the Trilogy 202 supports either active or passive exhalation breathing circuits to accommodate changes in circuit preference.

### Key advantages

- Compact design with long-life internal battery for intra-hospital transport.
- Supports active and passive circuits for invasive and noninvasive ventilation.
- Innovative leak compensated volume control ventilation.

# 1 Patient types

Pediatric ( $\geq 5$  kg)  
Adult

# 2 Modes

## Volume

Assist control (AC)  
Synchronized intermittent mandatory ventilation (SIMV)  
SIMV with pressure support (SIMV w/PS)  
Control ventilation (CV)

## Pressure

Pressure control (PC)  
Pressure control-SIMV (PC-SIMV)  
Spontaneous ventilation (S)  
Spontaneous ventilation with timed back-up (S/T)  
Timed ventilation (T)  
Continuous positive airway pressure (CPAP)  
Average volume assured pressure support (AVAPS)  
with passive circuit type, S, S/T, PC, and T modes only

# 3 Synchrony features

## Auto-Trak sensitivity

Auto-adaptive triggering, cycling, and leak compensation  
(available in all modes, passive circuit only)

## Adjustable flow triggering

1 – 9 l/min (available in all modes and circuit types)

# 4 Circuit types

Active exhalation valve with proximal  
airway pressure (PAP)  
Active exhalation valve with flow sensor  
Passive exhalation port

# 5 Controls

IPAP	4 – 50 cmH <sub>2</sub> O
EPAP/PEEP	0 – 25 cmH <sub>2</sub> O (active valve circuits) 4 – 25 cmH <sub>2</sub> O (passive leak port circuits)
CPAP	4 – 20 cmH <sub>2</sub> O (passive leak port circuits)
Pressure support	0 – 30 cmH <sub>2</sub> O
Tidal volume	50 – 2000 ml
Breath rate	0 – 60 BPM (AC mode) 1 – 60 BPM (all other modes)
Inspiratory time	0.3 – 5.0 s
Rise time	1 – 6 (relative scale)
Ramp start pressure	0 – 25 cmH <sub>2</sub> O (active circuits) 4 – 25 cmH <sub>2</sub> O (passive circuits) 4 – 19 cmH <sub>2</sub> O (CPAP mode)
Ramp time	Off, 5 – 45 min
C-Flex	Off, 1 – 3 (relative scale)
Flow trigger sensitivity	1 – 9 l/min
Flow cycle sensitivity	10 – 90%

# 6 Monitored parameters

Tidal volume	0 – 2000 ml
Minute ventilation	0 – 99 l/min
Estimated leak rate	0 – 200 l/min
Respiratory rate	0 – 80 BPM
Peak inspiratory flow	0 – 200 l/min
Peak inspiratory pressure	0 – 99 cmH <sub>2</sub> O
Mean airway pressure	0 – 99 cmH <sub>2</sub> O
% patient triggered breaths	0 – 100%
I:E ratio	9.9:1 – 1:9.9

## 7 Alarms

Circuit disconnect	Off, 10 – 60 s
Apnea	Off, 10 – 60 s and 4 – 60 BPM
High tidal volume	Off, 50 – 2000 ml
Low tidal volume	Off, 50 – 2000 ml
High minute ventilation	Off, 1 – 99 l/min
Low minute ventilation	Off, 1 – 99 l/min
High respiratory rate	Off, 4 – 80 BPM
Low respiratory rate	Off, 4 – 80 BPM

## 8 Oxygen

FiO <sub>2</sub>	21 – 100%
O <sub>2</sub> flush	2 min at 100%
O <sub>2</sub> input pressure range	276 – 600 kPa (40 – 87 psi)

## 9 Environmental

Operating temperature	5 – 40°C
Storage temperature	-20 – 60°C
Relative humidity	15 – 95%
Atmospheric pressure	60 – 110 kPa (450 – 825 mmHg)

## 10 Electrical

Input voltage	100 – 240 VAC, 50/60 Hz, 2.1 A
Detachable battery voltage	14.4 VDC
Internal battery life	3 h under normal conditions
Detachable battery life	3 h under normal conditions
External battery connection	12 VDC

## 11 Physical

Size (L x W x H)	21.13 x 28.45 x 23.52 cm
Weight (with internal battery)	5.6 kg (12.4 lb)

## 12 Compliance

IEC 60601-1	Medical electrical equipment Part 1: General requirements for safety
IEC 60601-1-2	General requirements for safety – collateral standard Electromagnetic compatibility – requirements and tests
IEC 60601-2-12	Medical electrical equipment Part 2-12: Particular requirements for the safety of lung ventilators – Critical Care ventilators

## Options

### 1.1 Detachable backup battery

Offering up to 3 hours additional operating time.

### 1.2 Hospital roll stand

Provides convenient accessory basket and humidifier mount.

### 1.3 DirectView

1 GB SD card data storage integrated into the ventilator software.



# Specifications

The Philips Respironics V60 ventilator combines Respironics' ventilation expertise with Philips focus on simplifying advanced health care. The result is exceptional noninvasive ventilation with an invasive ventilation fallback and an interactive display that helps simplify patient management.



## 1. Patient types

Adult

Pediatric ( $\geq 20\text{kg}$ )

## 2. Modes

Standard

CPAP (continuous positive airway pressure)

S/T (spontaneous with timed backup)

PCV (pressure control ventilation)

AVAPS (average volume assured pressure support)

Optional

PPV (proportional pressure ventilation)\*

## 3. Settings

Settings	Range
C-Flex	OFF, 1 – 3
CPAP	4 – 25cmH <sub>2</sub> O
EPAP	4 – 25cmH <sub>2</sub> O
IPAP	4 – 40cmH <sub>2</sub> O
I-time (inspiratory time)	0.30 – 3.00sec
Max P (AVAPS maximum IPAP)	6 – 40cmH <sub>2</sub> O
Min P (AVAPS minimum IPAP)	5 – 30cmH <sub>2</sub> O
O <sub>2</sub> (oxygen percent)	21 – 100%
Ramp time	OFF, 5 – 45min
Rate (respiratory rate)	4 – 60bpm
Rise (rise time)	1 – 5
Triggering and cycling	Auto-adaptive (Auto-Trak)
AVAPS target tidal volume	200 – 2,000ml btps
Max E	0 – 100cmH <sub>2</sub> O/l
Max R	0 – 50cmH <sub>2</sub> O/l/s
PPV%	0 – 100%
Max P (PPV maximum pressure limit)	5 – 40cmH <sub>2</sub> O
Max V (PPV maximum volume limit)	200 – 3,500ml



#### 4. Modes with settings

	CPAP	S/T	PCV	AVAPS	PPV
Rate		•	•	•	•
I-time		•	•	•	•
CPAP	•				
EPAP		•	•	•	•
IPAP		•	•		•
Rise		•	•	•	•
Min P				•	
Max P				•	•
Max V					•
Max E					•
Max R					•
PPV%					•
O <sub>2</sub>	•	•	•	•	•
V <sub>T</sub> (tidal volume)				•	
C-Flex	•				
Ramp time	•	•	•		

#### 5. Monitored parameters

##### Patient data window

Breath phase/trigger indicator	Spont, timed, exhale
PIP	0 – 50cmH <sub>2</sub> O
Patient/total leak	0 – 200l/min btps
Patient trigger	0 – 100%
Respiratory rate	0 – 90bpm
Ti/Ttot	0 – 91%
Minute volume	0 – 99.0l/min btps
Tidal volume	0 – 3,500ml btps

##### Waveform window

Pressure waveform	0 – 50cmH <sub>2</sub> O
Flow waveform	-240 – 240l/min btps
Volume waveform	0 – 3,500ml btps

#### 6. Alarms

Alarm	Adjustable range
Hi Rate (high respiratory rate alarm)	5 – 90bpm
Lo Rate (low respiratory rate alarm)	1 – 89bpm
Hi V <sub>T</sub> (high tidal volume alarm)	200 – 3,500ml
Lo V <sub>T</sub> (low tidal volume alarm)	Off, 5 – 1,500ml
HIP (high inspiratory pressure alarm)	5 – 50cmH <sub>2</sub> O
LIP (low inspiratory pressure alarm)	OFF, 1 – 40cmH <sub>2</sub> O
Lo V <sub>E</sub> (low minute ventilation alarm)	OFF, 0.1 – 99l/min
LIP T (low inspiratory pressure delay time)	5 – 60sec

#### 7. Other settings

Alarm volume	1 – 10 (relative scale)
Brightness	1 – 5 (relative scale)
Exhalation port selection	<ul style="list-style-type: none"><li>• DEP (disposable exhalation port)</li><li>• Whisper Swivel</li><li>• PEV (plateau exhalation valve)</li><li>• Other</li><li>• None (no inline circuit exhalation port)</li></ul>
Interface selection	ET/Trach, 1, 2, 3, Other
Screen lock	Off, On
Auto-Trak Plus	Optional*
Trigger*	Normal, 1 – 7
E-cycle*	-2, -1, Normal, 1 – 6

#### 8. Environmental

##### Temperature

Operating conditions	+5 – +40°C
Storage conditions	-20 – +50°C

##### Relative humidity

Operating conditions	15 – 95% (non-condensing)
Storage conditions	10 – 95% (non-condensing)

##### Barometric pressure

Operation and storage	79.9 – 101.1kPa (600 – 765mmHg)
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##### Altitude

Operation and storage	600 to 765 mmHg (approximately -61 to 1951m (-200 to 6400 ft) relative to sea level)
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## 9. Communication

Philips IntelliBridge EC10

Philips IntelliBridge EC40/80

Philips VueLink Open Interface

Respi-Link remote diagnostic system

Bernoulli® management system

Capsule DataCaptor™ device interface driver

GE Healthcare (Centricity Critical Care)

Cerner CareAware® iBus™

Other monitoring and patient information systems

RS232 digital and analog

## 10. Electrical

### External

AC voltage 100 – 240 VAC

AC frequency 50/60Hz

AC power 300 VA

### Battery (optional)

Nominal voltage 14.4V

Capacity 11.0Ah

Battery chemistry Lithium-ion

Operating time 6 hours in normal conditions

## 11. Physical

Weight 11.7kg (25.7lb) with optional battery  
10.6kg (23.3lb) without optional battery

Dimensions 33.7cm (13.3in) height  
39.4cm (15.5in) width  
42.9cm (16.5in) depth

## 12. Regulatory compliance

### 2nd edition standards

EN 60601-1-2 Electromagnetic Compatibility Requirements and Tests

EN 55011 Radiated and Conducted RF Disturbance Characteristics--Limits and Methods of Measurement (Level A)

EN 55014-1 Electromagnetic Compatibility Requirements. Part 1: Emissions

EN 61000-3-2 Limits for Harmonic Current Emissions

EN 61000-3-3 Limitation of Voltage Changes, Fluctuations, and Flicker Emissions

EN 61000-4-2 Electrostatic Discharge Immunity Test (8/15KV)

EN 61000-4-3 Radiated Electromagnetic Field Immunity Test (10V/M)

EN 61000-4-4 Electrical Fast Transient/Burst Immunity Test

EN 61000-4-5 Surge Immunity Test

EN 61000-4-6 Immunity to Conducted RF Disturbances (10V)

EN 61000-4-8 Power Frequency Magnetic Field Immunity Test

EN 61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations Immunity Tests

MIL-STD 461E RE101 Electromagnetic Field Generation (Army Level)

ANSI/AAMI ES 60601-1 Medical electrical equipment – Part 1: General requirements for basic safety and essential performance

WEEE recycling directive Compliant with the WEEE recycling directive

### 3rd edition standards

IEC 60601-1; Ed. 3.1 Medical electrical equipment – Part 1: General requirements form basic safety and essential performance

IEC 60601-1-2; Ed. 3.0 Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral Standard: Electromagnetic disturbances

IEC 60601-1-6; 2013 Medical electrical equipment – Part 1-6: General requirements for safety

IEC 60601-1-8; Ed. 2.1 Medical electrical equipment – Part 1-8: General requirements for safety

IEC 62366; 2007 + A1: 2004 Medical devices – Application of usability engineering to medical devices

ISO 14971; 2007 Medical devices – Application of risk management to medical devices

EN ISO 14971; 2012 Medical devices – Application of risk management to medical devices

ISO 80601-2-12; 2011 Medical electrical equipment – Particular requirements for basic safety and essential performance of critical care ventilators

ISO 60529; Ed. 2.1 Degrees of protection provided by enclosures (IPX1 @ 0° tilt)

IEC 62304; Ed. 1.0 Medical device software – Software life cycle processes

ANSI/AAMI ES 60601-1 Medical electrical equipment – Part 1: General requirements for basic safety and essential performance

WEEE recycling directive Compliant with the WEEE recycling directive

Bernoulli is a registered trademark of Cardiopulmonary Corp.  
DataCaptor is a trademark of CapsuleTech.  
CareAware, and iBusare trademarks of Cerner Corp.

# Noninvasive airway management for **low-acuity patients**

22% of adults presenting for inpatient surgery screened as high risk for obstructive sleep apnea (OSA).<sup>1</sup> Patients with OSA present workflow and clinical challenges on low-acuity wards, which may lack a frequent respiratory therapist presence, and where caregivers may be unfamiliar with respiratory devices.

The Philips Respironics BiPAP V30 Auto airway management system was designed specifically for these situations. A noninvasive (NIV) system that provides auto-titrating CPAP and BiPAP, autoSV, and AVAPS AE modes, the V30 Auto allows cost-effective treatment of OSA patients hospitalized on low-acuity wards. It also effectively serves OSA patients in interventional suites or PACU and respiratory-insufficiency patients.

#### **Auto-titration limits guesswork**

Because 85-90% of OSA cases are undiagnosed, many patients with OSA will arrive at your facility without ever having completed a sleep study, and thus be unaware of their treatment needs.<sup>2</sup> Patients with diagnosed OSA may have new pressure requirements due to surgery and other procedures, as well as the health issues that necessitated their hospital stays.

The V30 Auto helps take the guesswork out of titration by using Philips proprietary technology to automatically titrate pressure to each patient's needs. The features of adaptive servo ventilation (ASV) include the application of auto EPAP to maintain upper airway stability during sleep, inspiratory support for patients with unstable and fluctuating tidal volumes or breathing patterns, and a backup breath rate for patients who experience central apnea at night. These three features together, applied in the right pattern, smooth out the fluctuations in nighttime breathing, decreasing the patient's overall Apnea-Hypopnea Index (AHI), and improving sleep efficiency for patients with complicated breathing patterns.

## Versatile and effective airway management throughout your hospital

The V30 Auto is an excellent choice for NIV applications where minimal or no oxygen supplementation is needed, such as:

- OSA patients on low-acuity wards
- PACU and interventional areas, during and after procedures, for patients with potential OSA and those with diagnosed OSA who may have new pressure needs because of the effect of analgesics or sedatives
- Patients with compromised control and regulation of breathing



### Advanced technology, accessible design

Like other members of our NIV family, the V30 Auto uses Auto-Trak, our proprietary algorithm that improves patient-system synchrony by automatically adapting to changing breathing patterns and dynamic leaks so that you don't need to manually adjust trigger and cycling sensitivity.

V30 Auto provides an optional remote alarm that sounds in locations away from the bedside, so you can monitor patient breathing, even when you're not in the room.

Small and non-imposing, the V30 Auto features convenient battery operation and a roll stand that makes it easy to position the device for patient comfort and convenience. Patient comfort elements, such as easily adjustable exhalation relief settings and ramp, as well as the familiarity gained from using the system in the hospital, may help patients transition easily to home CPAP or BiPAP therapy.



## A practical solution to NIV system inventory management

The increase in patients with OSA has strained the resources of many respiratory therapy departments. The V30 Auto provides noninvasive airway management for low-acuity patients at a lower price point than NIV devices for high-acuity patients, and its versatility means it can serve many care areas.

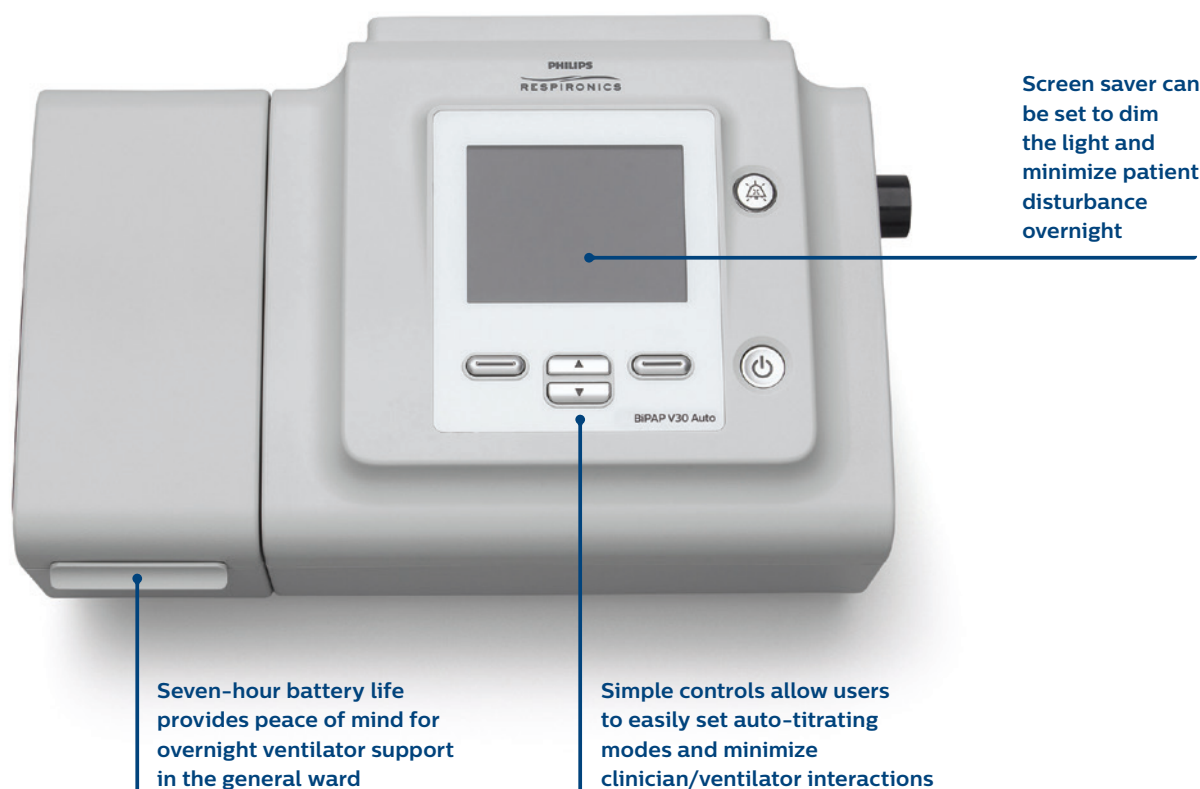
In addition, the V30 Auto uses the same NIV accessories as high-acuity devices, reducing the need for dedicated inventory. This includes bacteria filters, external humidifiers, NIV circuits, and masks. Because the V30 Auto uses terminology that is identical to the Philips Respironics Trilogy 202 and V60 ventilators, caregivers who are familiar with one can easily use the others, reducing the training time.

## Nine therapy modes for enhanced flexibility

CPAP modes	Example patient types*
CPAP	For OSA patients
Auto CPAP	For OSA patients
<b>Bi-level modes</b>	
Auto Bi-level (with Bi-Flex)	For OSA and CPAP rescue patients
S (with AVAPS)	For OSA patients
S/T (with AVAPS)	For COPD, obesity hypoventilation, and neuromuscular disorder patients
autoSV (with Bi-Flex)	For complex patients with central or mixed apneas and periodic breathing
T (with AVAPS)	For COPD and neuromuscular disorder patients
PC (with AVAPS)	For neuromuscular disorder patients (ALS)
<b>AVAPS-AE mode</b>	
AVAPS-AE (found in Trilogy series ventilators )	For respiratory-insufficiency patients (COPD, OHS, and NMD)

\*Examples serve as a reference and should be used only in conjunction with the instruction and/or protocols set forth by the physician and institution in which the device is used. See manual for intended use.

# Streamlined design and easy operation



## Hospital grade patient alarms

Patient alarms	
Disconnect alarm	Off, 15, 60 seconds
Apnea alarm	Off, 10, 20, 30 seconds
Low minute ventilation alarm	Off, 1-99 l/min
High respiratory rate alarm	Off, 4-60 BPM
Low tidal volume alarm	AVAPS required – settable

1. Lockhart, EM, Willingham MD, Abdallah AB, Bedair BA, Thomas J, Avidan MS. Obstructive sleep apnea screening and postoperative mortality in a large surgical cohort. Sleep Med. May 2013;14(5):407-15.

2. Young, T., et al. The Occurrence of Sleep-Disordered Breathing among Middle-Aged Adults. The New England Journal of Medicine. 1993;328:1230-1235.



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