Trilogy EV300 *evolution of care*

simple, portable, reliable, adaptable

February 2020

innovation + you

Introduction

The Trilogy EV300 ventilator provides:

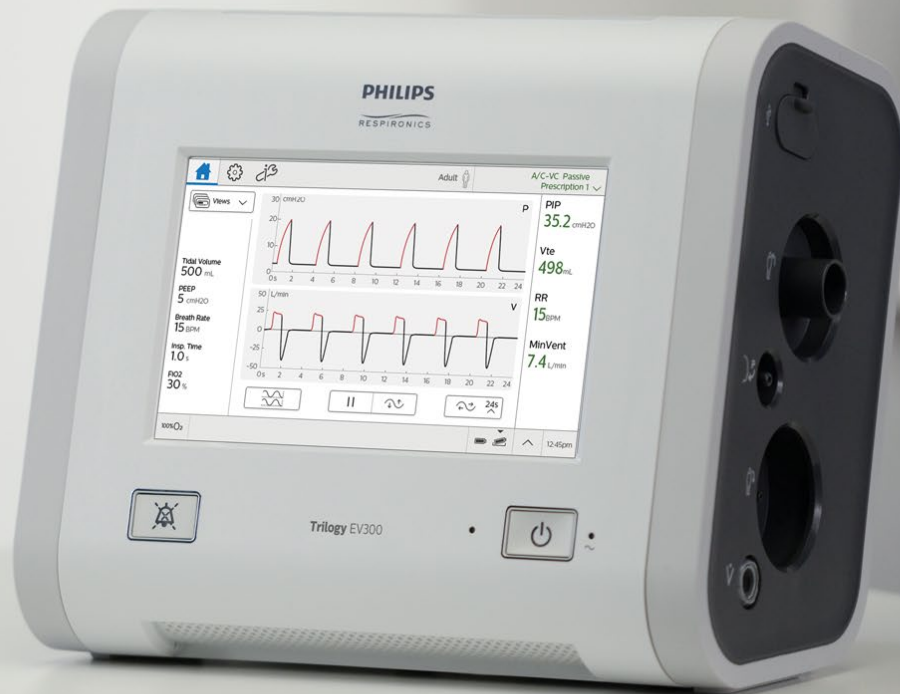Invasive and non-invasive positive pressure ventilation for the care of patients ≥2.5 kg through adults.

The ventilator can measure, display, record, and alarm SpO_2, FiO_2, CO_2, respiratory rate, and pulse rate data when integrated with the appropriate accessories.

The ventilator is suitable for use in the hospital transport setting[*]

*Not MRI compatible
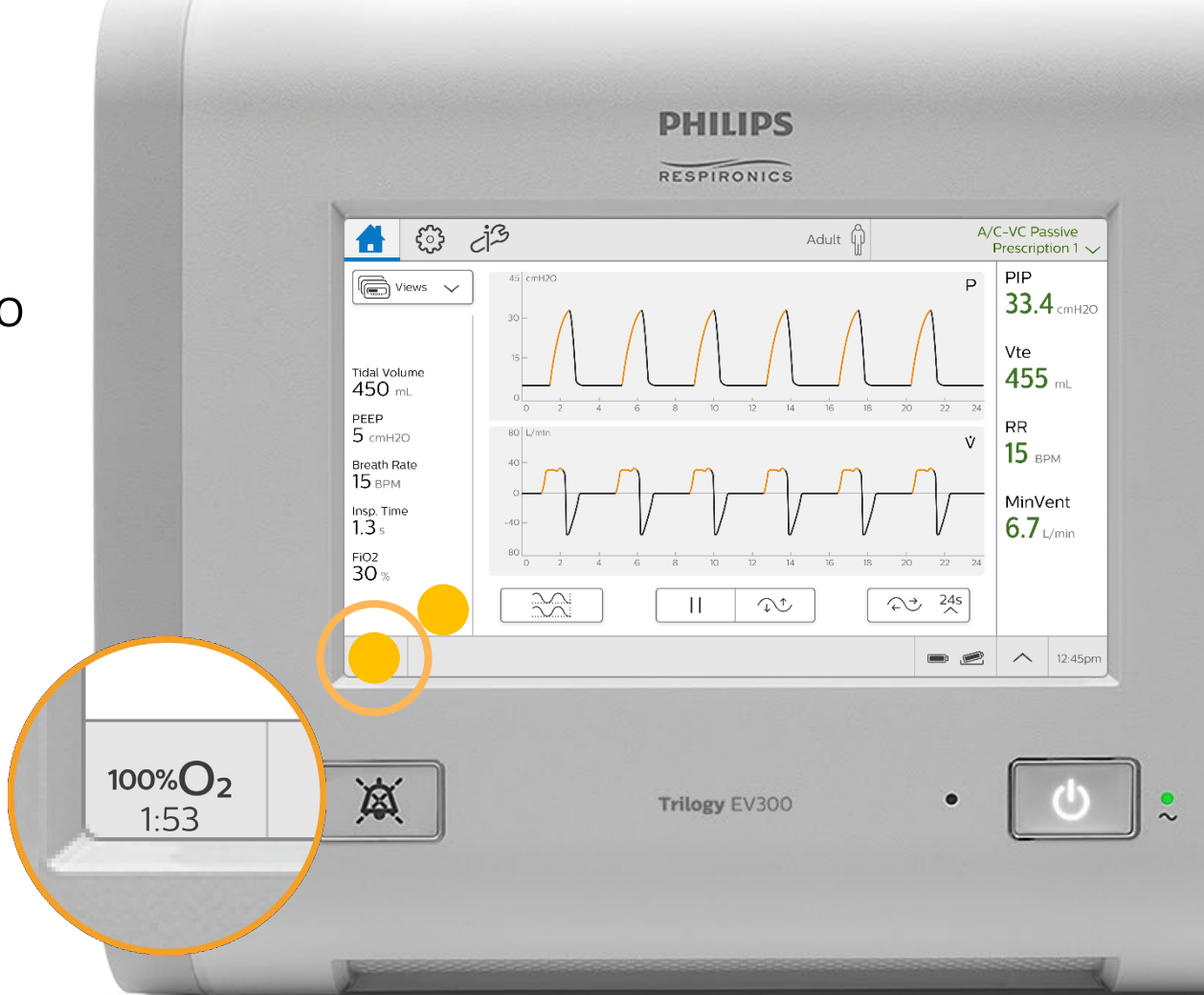
Simple

User-friendly platform

Patient-friendly performance

8" touchscreen

Simple

Quick access 100% oxygen flush button to deliver for 2 minutes

Simple

To prevent accidental therapy changes, use the **touchscreen lock**.

This is a temporary touchscreen lock, which can be changed back by tapping anywhere on the screen and following the onscreen instruction.

For automatic touchscreen lock, go to the Options screen then Device Options and select Automatic Touchscreen Lock On.
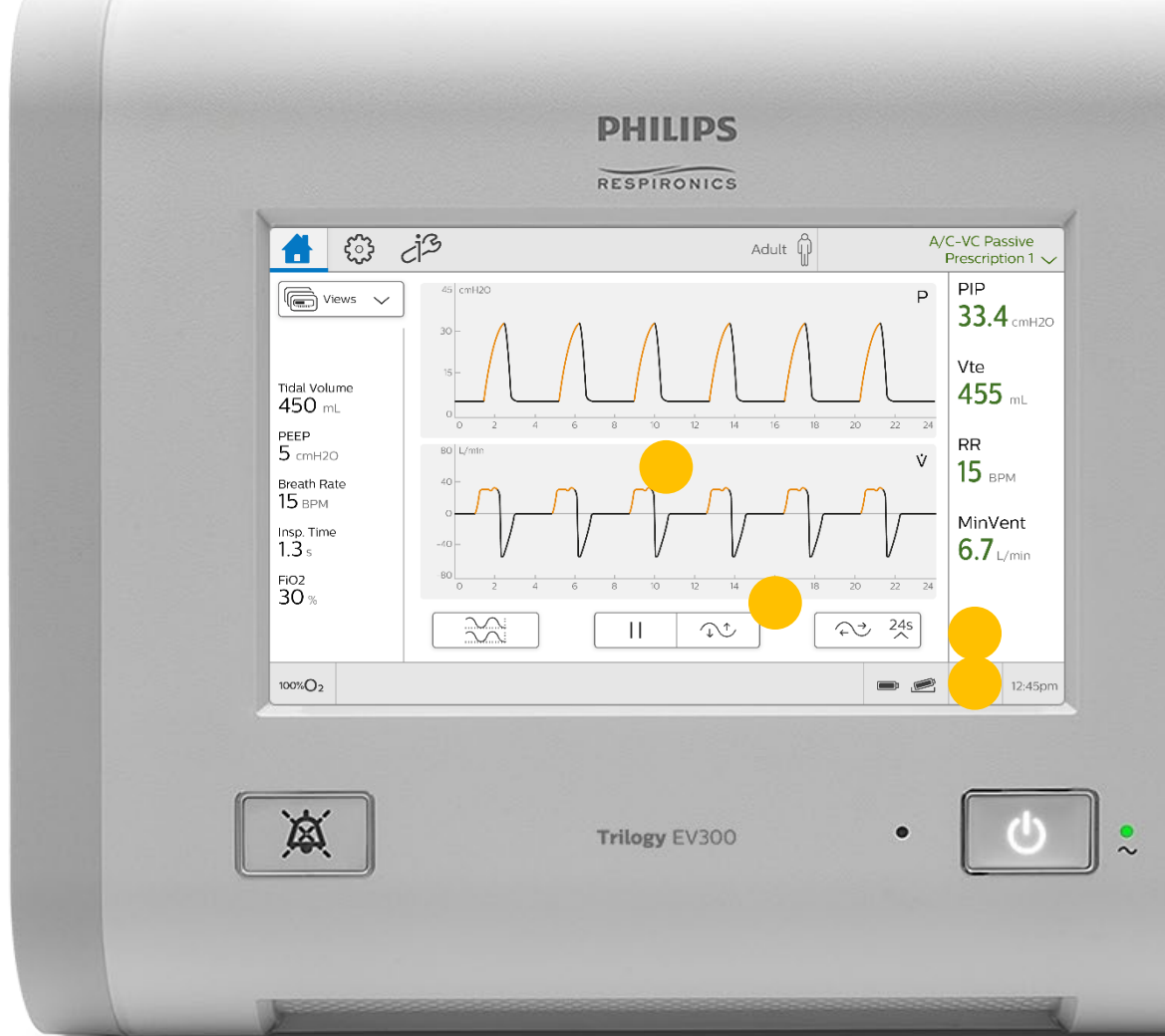
Simple

Quick start up. Ideal body weight (IBW) is calculated based on height and gender.

This information is used to establish default therapy and alarm settings, including tidal volume and alarms based on tidal volume. This information also limits setting ranges.

Simple

Adjust alarms as needed.

Simple
Modes and settings: **Trilogy 202 to Trilogy EV300**

Trilogy 202	Trilogy EV300	Description
AC	**A/C - VC**	**Assist Control (Volume Control) mode** provides volume-controlled mandatory or assist-control breaths. The set inspiratory time applies to all breaths.
CV		If you want to replicate **CV mode** where the ventilator triggers and cycles all breaths then set the trigger type to OFF.
PC	**A/C - PC**	**Assist Control (Pressure Control) mode** provides pressure-controlled mandatory or assist-control breaths. The set inspiratory time applies to all breaths. *Optional AVAPS.*
T		If you want to replicate **T mode** where the ventilator triggers and cycles all breaths then set the trigger type to OFF.
SIMV	**SIMV-VC**	**Synchronized Intermittent Mandatory Ventilation (Volume Control) mode** is similar to SIMV-PC, but with volume control.
PC-SIMV	**SIMV-PC**	**Synchronized Intermittent Mandatory Ventilation (Pressure Control) mode** is a pressure control mode that provides a mixture of mandatory, assist-control and spontaneous breaths with optional pressure support. It guarantees one mandatory breath in each cycle. The breath rate determines the length of the cycle. *Optional: Inspiratory Time min/max. for the spontaneous breaths.*

Simple
Modes and settings: **Trilogy 202 to Trilogy EV300**

Trilogy 202	Trilogy EV300	Description
S	**PSV**	**Pressure Support Ventilation mode** is patient-triggered, pressure-limited, and flow-cycled. The patient determines the breath rate and timing so it is recommended to set back-up ventilation. *Optional: AVAPS and Ti min/max.*
S/T	**S/T**	**Spontaneous/Timed** is a bi-level therapy mode where each breath is patient-triggered and patient-cycled, or ventilator-triggered and ventilator-cycled.
CPAP	**CPAP**	In **Continuous Positive Airway Pressure mode**, all breaths are spontaneous with the CPAP set pressure delivered in both inhalation and exhalation.
AVAPS-AE	**AVAPS-AE**	**AVAPS-Auto EPAP mode** automatically adjusts pressure support, to maintain the target tidal volume, and EPAP, to maintain a patent airway, within the set min/max ranges; and simplifies the set-up of the backup breath rate when set to auto. *Note: auto back-up rate maximum is 20bpm. Optional: Inspiratory Time min/max.*

Simple
Modes and settings: **Trilogy 202 to Trilogy EV300**

Trilogy 202	Trilogy EV300	Description
-	**Inspiratory Time Min/Max**	Once enabled, this setting treats inspiration time as a variable value for patient-initiated, patient-cycled breaths. It is available in S/T, PSV, SIMV-PC, SIMV-VC, and AVAPS-AE modes, under **Advanced** in the **Prescription Settings** window.
AVAPS Rate	**AVAPS Speed**	This sets the maximum rate of change in pressure between the min and max values while AVAPS is seeking a volume target.
-	**PC Breath (AVAPS-AE)**	Available in AVAPS-AE mode. When PC Breath is on, the set inspiratory time applies to all breaths.
Sigh	**Sigh**	In Trilogy EV300, available in A/C-VC mode under **Advanced** in the Prescription window. Sigh volume can be set between 1.5 – 2.5 times the set volume and the frequency every 50 – 250 breaths. While in Trilogy, sigh was fixed at 1.5 times the set volume every 100 breaths.
-	**Back-up Ventilation**	Available under **Advanced** in the Prescription window. When turned on an Apnea interval needs to be set in the alarm settings tab. Within the apnea interval; if no breaths are triggered by the patient, the vent delivers breaths at the set pressure of volume based on the Backup Rate and Backup Insp Time.

Simple
Onscreen help

Entering a new prescription or placing a new circuit on the ventilator is simple thanks to the addition of onscreen help.

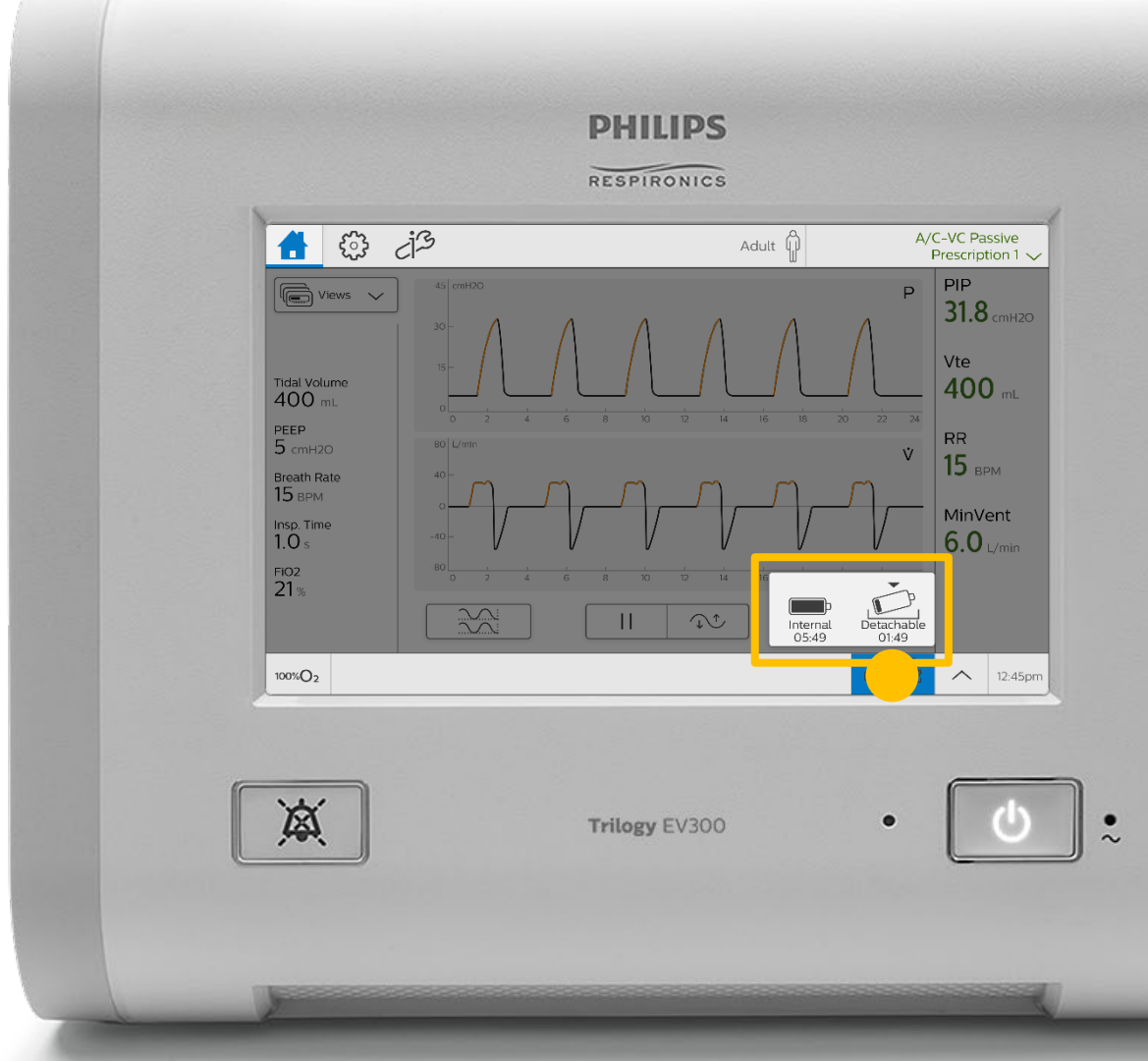Simply tap the help icon ⑦ for more information regarding that prescription setting or alarm situation.

Simple
Onscreen battery indicator

During ventilation you can check the battery status.

Tap the battery icons in the toolbar to see the status of each battery.

Simple
Portable
Reliable
Adaptable

Portable

Ultimate Portability

15 hours of battery.*

Hot swappable detachable
battery provides
uninterrupted therapy.**

*Nominal run time per method in International Electrotechnical Commission (7.5 hr/battery). Detachable battery charge time 0% to 80% is 2.5 hours, Internal battery charge time 0% to 100% is 3.5 hours. A/C-VC mode ActivePAP circuit, PEEP 3cmH2O and Vt 800ml.

** When the internal battery is charged, batteries can be replaced without the ventilator pausing therapy.

Simple
Portable
Reliable
Adaptable

Reliable

Low Total Cost of Ownership

Trilogy EV300

Trilogy 202

Trilogy Evo Service Solution
Avg. 21 mins

Preventive maintenance time

Trilogy Service Solution
Avg. 1 hour 40 mins

1,200 cycles

Battery cycles

475 cycles

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1 year*
*Inspection, cleaning and filter replacement only

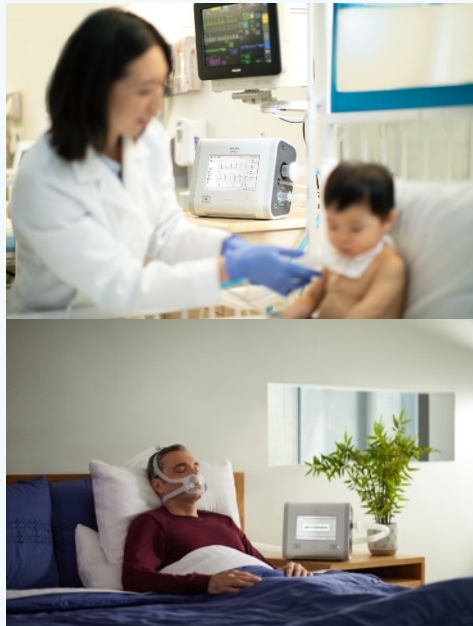**Service interval**

10,000 hours / 2 years

Simple
Portable
Reliable
Adaptable

Adaptable
Seamlessly transition across care environments
utilizing the same clinical technology

Different care settings

Same clinical technology

Adaptable
Evolution of ventilator technology

- ✓ Oxygen blender and FiO_2 cell
- ✓ 5 prescriptions
- ✓ 4 circuits: single and dual limb
- ✓ Circuit Calibration
- ✓ Tubing Compliance Compensation
- ✓ Ti min/max

- ✓ Flow Trigger 0.5
- ✓ Rise Time 0
- ✓ Dynamic Parameters
- ✓ AVAPS updates
- ✓ AVAPS-AE updates
- ✓ End-tidal CO_2 (optional)

Adaptable
Oxygen

FiO$_2$ sensor access
on back panel

Up to 30Lpm low flow O$_2$

Oxygen Blending Module

Adaptable
Prescriptions

Program up to 5 Prescriptions (presets).

Example:

Patient on A/C-VC mode undergoes daily weaning trials on CPAP

Adaptable
Circuits

	Passive	Active PAP	Active Flow	Dual Limb
Infant (9-13mm)				✓
Ped (14-18mm)	✓	✓	✓	✓
Adult/Ped (19mm)	✓	✓	✓	✓
Adult (20-22mm)	✓	✓	✓	✓
Min Set VT	50 ml	50 ml	35 ml	35 ml
External Flow Sensor Required			✓	✓

Adaptable
Tubing compliance compensation

Trilogy EV300 excludes any losses in tidal volume due to the circuit.

Trilogy EV300 includes a default calibration providing automatic tubing compensation for the recommended circuits in the accessory guide.

Adaptable
Circuit calibration

Volume losses in circuit tubing can be calculated and programmed into the Trilogy EV300 using the calibration method.

Adaptable
Ti min/max

Available in S/T, PSV, SIMV-PC, SIMV-VC, and AVAPS-AE modes

Access under **Advanced**

Applicable to spontaneous breaths only

Control / mandatory breaths retain set **Insp. Time**

Adaptable
Flow trigger

Flow trigger can be set to 0.5 L/min to offer increased sensitivity for your weakest patients.

Adaptable
Rise Time

Rise Time is now even faster than Trilogy, and can be set to 0 to adapt to the needs of your patients.

Note: You can tap on the Help icon whenever it is visible and a screen will appear for information concerning that section.

Adaptable
AVAPS

Available in A/C-PC, S/T, and PSV modes

AVAPS Speed
- Replaced AVAPS Rate (of change) on Trilogy

AVAPS Startup
- First minute not limited by Speed setting

- Next session starts with the previous sessions final inspiratory pressure

Adaptable

AVAPS

Available in A/C-PC, S/T, and PSV modes

Algorithm resets to pressure midpoint when:

- AVAPS restart icon (AVAPS) is tapped
- Changing to another pre-set prescription, then changing back

Algorithm does not reset to pressure midpoint when:

- Changing the target tidal volume
- Changing the insp. pressure ranges

Adaptable
AVAPS-AE additional flexibility

PC Breath – On/Off

Adaptable
AVAPS-AE additional flexibility

PS Min/Max can go to 0

Please note that PS Min/Max will change to PC Min/Max when PC Breath is set to On.

Adaptable
AVAPS-AE additional flexibility
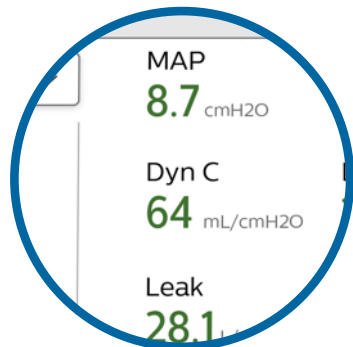
AVAPS Automatic algorithm restart

- AVAPS restarts at pressure midpoint

- EPAP returns to EPAPmin for 100 breaths

- AutoBUR (if enabled) restarts

Adaptable

Dynamic parameters

MAP **8.7** cmH2O	PIF **38.0** L/min	I:E Ratio **1:3.3**	%Spont Trig **0** %
Dyn C **64** mL/cmH2O	Dyn R **10** cmH2O/L/s	Dyn Pplat **14** cmH2O	AutoPEEP **0** cmH2O
Leak **28.1**			

Dyn C

Static Compliance of respiratory system (lungs + chest wall), measured dynamically. Ratio between the change in volume to the change in pressure.
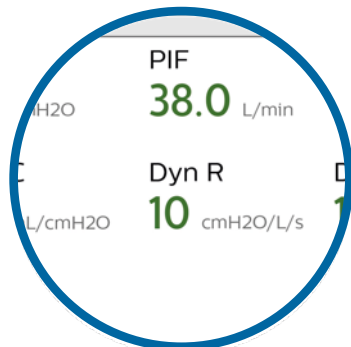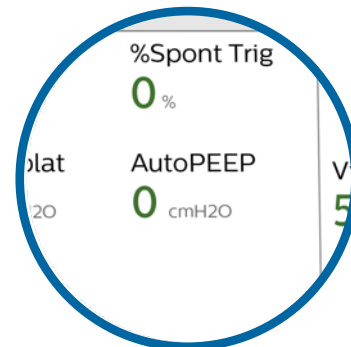
Dyn R

Airway Resistance Estimate of the change in pressure divided by the air flow through the airways.
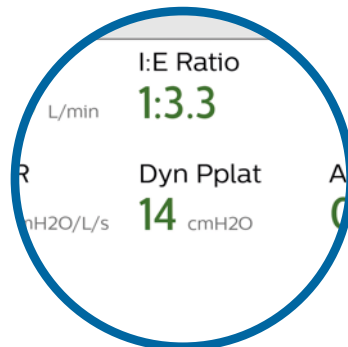
Dyn P$_{plat}$

Plateau pressure is the maximum pressure applied to small airways and alveoli during positive-pressure mechanical ventilation.

AutoPEEP

Estimate of the pressure (above PEEP) that exists in the patient airway at the end of exhalation.

Adaptable
Dynamic parameters

|	Passive	Active PAP	Active Flow	Dual Limb
Dynamic Parameters*	✓		✓	✓
A/C-VC	✓		✓	✓
A/C-PC	✓		✓	✓
SIMV-VC	✓		✓	✓
SIMV-PC	✓		✓	✓

* During ventilator-initiated mandatory breaths and patient-initiated mandatory breaths

Adaptable

Pediatric Trached Patient Example:

Pediatric patient with tracheostomy tube on Trilogy EV300
had an increase in resistance noted over a 300 second
period that was resolved after suctioning.
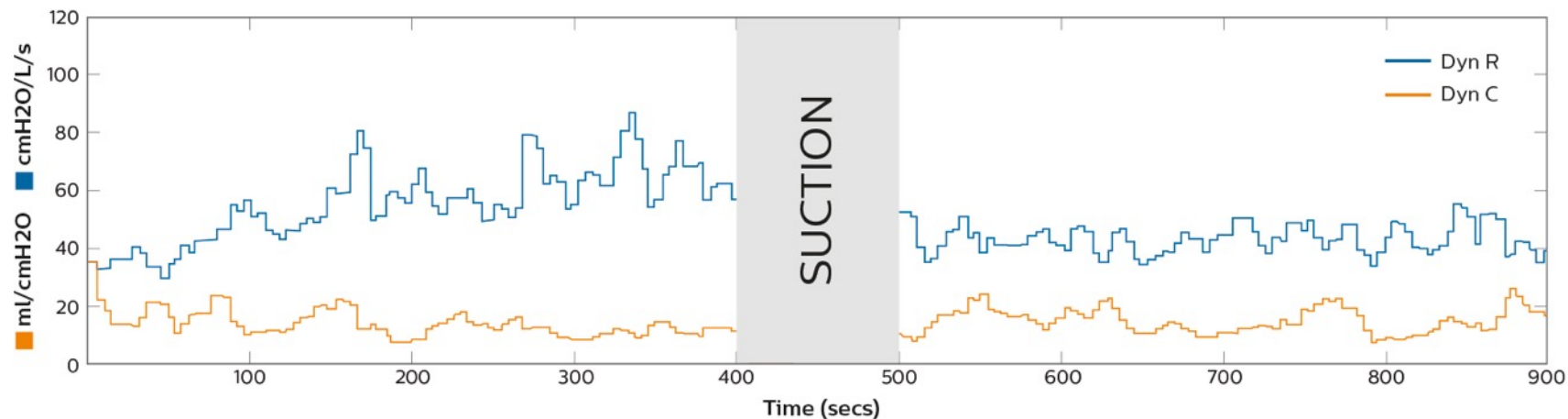
	Trilogy EV300	Trilogy 202
Intended Use (weight)	>2.5 kg patient intended use (15 mL pressure modes / 35 mL volume modes)	>5 kg patient intended use
Battery	~7.5 internal + ~7.5 detachable	~3 internal + ~3 detachable
Circuits	Passive, Active PAP, Active Flow, Dual Limb	Passive, Active PAP, Active Flow, (MPV)
Pre-sets	5 pre-set prescriptions	2 pre-set prescriptions
Standby	✓	✗
Modes	Pressure - CPAP, S/T, PSV, A/C-PC, SIMV-PC, AVAPS-AE Volume - A/C-VC, SIMV-VC	Pressure - CPAP, S, S/T, T, PC, PC-SIMV, AVAPS-AE, PC-MPV Volume - AC, CV, SMIV, AC-MPV
AVAPS	First minute not limited by speed setting	Always limited by rate of change setting
Peak Pressure	60 cmH$_2$O	30 cmH$_2$O
Ti Min/Max	Spont. breaths (S/T, PSV, SIMV-PC, SIMV-VC, and AVAPS-AE modes)	Only set Ti
Flow Trigger	0.5 – 9 Lpm	1 – 9 Lpm

	Trilogy EV300	Trilogy 202
Rise Time	0 - 6	1 - 6
Backup Ventilation	✓	✗
Dynamic lung parameters with no insp/exp hold	Dyn C, Dyn R, P_{plat}, autoPEEP	✗
FiO$_2$ sensor	✓	✗
Enhanced monitoring	Waveforms, SpO$_2$, EtCO$_2$	Waveforms
Memory/Data transfer	Internal Memory (2GB) Data Transfer via USB	No internal memory Data Transfer via SD card
Circuit compensation	Circuit and humidifier selection Circuit calibration (optional)	✗
Touch Screen GUI	Touch Screen GUI	Non-touch screen GUI
On screen Alarm Guidance	✓	✗
Service/Maintenance	1 year interval (Inspection, cleaning and filter replacement only)	10,000; 17,500; (alternating every 10K and 7.5K blower hrs)

Simple
Easy-to-learn user interface, configurable to the care environment

Portable
15 hours of battery life, mobile stand for easy transport, easily mounts on wheelchairs

Reliable
The most robust and durable device we've ever created

Adaptable
Stays with patients as their care settings and needs change