



# Astral™ series

Life support ventilators

## iVAPS with optional AE

Our latest set of clinical enhancements includes iVAPS™\* (intelligent Volume-Assured Pressure Support) with optional AutoEPAP\*\* (AE). iVAPS targets a patient's alveolar ventilation while AE maintains a patient's upper airway at a comfortable pressure. That's why Astral™, already renowned for its portability and intuitive color touch screen, now features a suite of intelligent technologies that deliver adaptive ventilation to suit each patient's individual needs.



## The smarter choice

- Unlike other volume assurance modes, iVAPS is designed to maintain patients' unique alveolar ventilation target, even when their respiratory rate changes throughout the night.
- Research shows that 1 year non-invasive ventilation (NIV) is accompanied by improvement in gas exchange.<sup>1</sup> By improving therapy adherence, iVAPS may positively influence these outcomes.<sup>2</sup>
- The intelligent Backup Rate (iBR) is a feature of iVAPS that provides backup breaths only when needed to allow maximum opportunity for spontaneous breathing.
- AE automatically adjusts expiratory pressure in response to either a flow limitation or a partial or full upper airway obstruction. EPAP is adjusted within Min EPAP and Max EPAP settings with the response depending on the degree of the upper airway obstruction.

## How does iVAPS stack up?

iVAPS mode combines the benefits of pressure-targeted ventilation with the assurance of a volume guarantee – a mode that is particularly popular for treating COPD patients.

AVAPS AE prescription		iVAPS suggested settings	
Vt	6mL/kg	Target alveolar ventilation	6mL/kg
Min PS	5	Min PS	5
Max PS	20	Max PS	20
Min EPAP	5	Min EPAP	5***
Max EPAP	15	Max EPAP	15
Resp Rate	Auto	Target Patient Rate	15

## iVAPS and AutoEPAP

A recent study using the Astral device shows that AutoEPAP in iVAPS mode treats upper airway obstruction in adult patients with respiratory failure just as effectively as manual EPAP.<sup>3</sup> Auto algorithms, such as iVAPS and AutoEPAP, can help clinicians better control and adjust to patients' changing needs.



\*iVAPS mode is intended for patients weighing more than 66 lbs (30 kg).  
 \*\*AutoEPAP is contraindicated when using an invasive interface. AutoEPAP is only available in iVAPS mode.  
 \*\*\*May increase EPAP if AHI is found to be elevated on EPAP 5



## Astral specifications

	Astral 100	Astral 150
<b>Indications for use</b>	Life support for patients over 5 kg*	Life support for patients over 5 kg†
<b>Circuit</b>		
Single circuit with leak	•	•
Single circuit with valve	•	•
Double circuit		•
<b>Therapy</b>		
Valve circuit therapy: CPAP, (A)CV, P(A)CV, P-SIMV, V-SIMV, PS	•	•
Leak circuit therapy: CPAP, (S)T, P(A)C, iVAPS** with optional AE**, PS	•	•
Manual breath		•
Sigh breath (recruitment)		•
Apnea ventilation	Volume and pressure	Volume and pressure
Preset programs	2	4
<b>Pressure range and settings</b>		
Delivered pressure (cm H <sub>2</sub> O)	2–50 (leak circuit) 0–50 (valve circuit)	2–50 (leak circuit) 0–50 (valve circuit)
Delivered tidal volume (cm H <sub>2</sub> O)	Adult: 100 to 2500 mL Pediatric: 50 to 300 mL	Adult: 100 to 2500 mL Pediatric: 50 to 300 mL
Respiratory rate	Adult: Off, 2 to 50 bpm Pediatric: Off, 5 to 80 bpm	Adult: Off, 2 to 50 bpm Pediatric: Off, 5 to 80 bpm
<b>Data</b>		
SpO <sub>2</sub> monitoring	Optional	Optional
FiO <sub>2</sub> monitoring	Optional	Standard
On screen	30 days of summary data Real-time pressure and flow (25 Hz)	30 days of summary data Real-time pressure and flow (25 Hz)
ResScan™ (via download)	365 days of summary data 7 days of detailed data	365 days of summary data 7 days of detailed data
AirView™ (RCM required)	365 days of summary data 7 days of detailed data	365 days of summary data 7 days of detailed data
<b>Alarms</b>	A wide range of settable alarms are available, including FiO <sub>2</sub> and SpO <sub>2</sub> when connected.	
<b>Dimensions</b>		
Weight	3.2 kg	3.2 kg
Dimensions (L x W x H)	285 mm x 215 mm x 93 mm	285 mm x 215 mm x 93 mm
Internal battery	Lithium-Ion battery, 14.4 V, 6.6 Ah, 95 Wh. Up to 8 hours of backup power	Lithium-Ion battery, 14.4 V, 6.6 Ah, 95 Wh. Up to 8 hours of backup power
Sound power level	43 ± 3 dBA***	43 ± 3 dBA***
Sound pressure level	35 ± 3 dBA***	35 ± 3 dBA***
<b>IEC 60601-1 CLASSIFICATIONS:</b>	Class II (double insulation) Type BF Continuous operation Suitable for use with oxygen	
Medical electrical equipment - general requirements for basic safety and essential performance.		

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\*\*\*As measured according to ISO 80601-2-12:2011.



1 Köhnelein T et al. Non-invasive positive pressure ventilation for the treatment of severe stable chronic obstructive pulmonary disease: a prospective, multicentre, randomised, controlled clinical trial. *Lancet Respir Med.* 2014;2:698–705.

2 Jaye J et al. Initiation of nocturnal ventilation using an intelligent auto-titrating non-invasive ventilator: Impact on ventilatory efficiency, sleep and adherence. *Eur Resp J* 2012;40(56):2852.

3 Wolfe L et al. The Evaluation of the Astral iVAPS AutoEPAP Treatment Algorithm. ResMed Science Center. 2018.

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## Product and accessory codes



Astral 150  
**27003**  
Astral 100  
**27001**



Device trolley  
**279001**



Astral mobility bag  
**27917**



Astral SlimFit mobility bag  
**27949**



Astral table stand  
**27915**



External battery  
**27919**



Astral Remote Alarm II  
(does not include cable)  
**27903**



Single circuit smooth  
bore 15 mm  
QuickConnect™ circuit  
**21312**



ResMed Connectivity Module  
(requires rental agreement)  
**27201**

See the ventilation accessories catalog for the full suite of ResMed accessories.