



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.¹ By improving therapy adherence, iVAPS may positively influence these outcomes.²
- 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.

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.³ Auto algorithms, such as iVAPS and AutoEPAP, can help clinicians better control and adjust to patients' changing needs.

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 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
Indications for use	Life support for patients over 5 kg*	Life support for patients over 5 kg†
Circuit		
Single circuit with leak	•	•
Single circuit with valve	•	•
Double circuit		•
Therapy		
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
Pressure range and settings		
Delivered pressure (cm H ₂ O)	2–50 (leak circuit) 0–50 (valve circuit)	2–50 (leak circuit) 0–50 (valve circuit)
Delivered tidal volume (cm H ₂ 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
Data		
SpO ₂ monitoring	Optional	Optional
FiO ₂ 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
Alarms	A wide range of settable alarms are available, including FiO ₂ and SpO ₂ when connected.	
Dimensions		
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***
IEC 60601-1 CLASSIFICATIONS:	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.