

PHILIPS

DreamStation 2

Auto CPAP Advanced

Adherence features guide



DreamStation 2 Auto CPAP Advanced adherence features



Helping improve patient care

Many patients with sleep apnea have trouble acclimating to PAP therapy. In fact, studies show half of all sleep apnea patients quit treatment within the first year. DreamStation 2 Advanced, our most rigorously researched sleep therapy platform ever, was designed to help improve patient care through all phases of treatment, including acclimation, 90-day adherence and day-to-day management for the long term. The DreamStation 2 Advanced adherence and comfort features, Ramp Plus, Opti-Start, FLEX, EZ-Start and CPAP-Check, are highly differentiated and adaptive algorithms that provide physicians with easy to use and customizable technologies that help struggling patients overcome the challenges associated with sleep apnea.

Breathing is believing. To feel the DreamStation 2 Advanced difference for yourself, schedule a breathing demonstration with your local sales representative. Also visit us at philips.com/dreamstation-2 to learn more about these features.

Already a believer in DreamStation 2 Advanced? Please prescribe DreamStation 2 Advanced by name without substitutions.

Ramp Plus

Opti-Start

FLEX

EZ-Start

CPAP-Check



DreamStation 2
Model/Mode



Overview



When
to use?



Who is
it for?



How does
it work?

**22% longer use of their
therapy devices per night***



DreamMapper

**Sleep therapy success* at your
patients' fingertips.**

When it comes to reaching sleep therapy goals, DreamMapper** is there for your patients with the tools, knowledge and resources they need to stay motivated.

Visit: www.philips.com/dreammapper



*4.9 hours per night average for DreamMapper users versus 3.8 hours of use per night average for the standard core users. A 22.45% increase. In a retrospective review conducted by Philips Respironics of the EncoreAnywhere database (William Hardy, RRT, Jeremy Powers, BS, Jeffrey G. Jasko, MS, Christy Stitt, MS, Gary Lotz, MBA, Mark S. Aloia, PhD, (2018). **DreamMapper: A mobile application and website to engage sleep apnea patients in PAP therapy and improve adherence to treatment.** [White Paper]) that compared DreamMapper patients (n=85,077) For users who did not use it (n=87,602).

**To see which therapy devices are compatible with DreamMapper, visit: www.dreammapper.com/compatible.



Philips Respironics is the most prescribed
PAP system by U.S. sleep physicians*

*2016 Philips blinded, incentivized survey of U.S. Sleep Physicians (n=180)

Ramp Plus





DreamStation 2
Model/Mode

Auto CPAP

Mode: Available in Fixed and Auto CPAP modes



Overview

Ramp Plus allows patients to select a comfortable starting pressure for falling asleep and may help eliminate callbacks on MIN pressure adjustments.



When to use?

Long term (ongoing use)



Who is it for?

- Patients who are having difficulty tolerating therapy pressure and want to fall asleep more comfortably at a selected lower or higher starting pressure.



How does it work?

- Selectable Ramp Plus pressure during therapy: 4-10 cmH₂O with live feedback delivered at a constant rate during set Ramp Plus time.
- Once activated and saved, the set Ramp Plus pressure automatically starts with subsequent therapy sessions.
- If the patient falls asleep and begins to have obstructive respiratory events, the device increases pressure to resolve those events by operating in the Auto titrating mode.
- At the conclusion of the Ramp Plus time, the device will automatically increase or decrease pressure by 1 cmH₂O per minute until minimum therapeutic pressure is reached.
- In the same therapy session, Ramp Plus can be reactivated by tapping the screen.

Opti-Start





DreamStation 2
Model/Mode

Auto CPAP

Mode: Available in Auto CPAP modes



Overview

An Auto CPAP algorithm that provides optimal starting pressure to enhance patient comfort and reduce the likelihood of residual events at the beginning of therapy and throughout the night.



When to use?

Long term (ongoing use)



Who is it for?

- Patients on Auto CPAP who generally require higher pressures and experience obstructive events when their PAP starts the night at lower pressure.
- Saves clinician time having to evaluate and reset the optimal Minimum Auto pressure.



How does it work?

- The device evaluates patient respiratory events every 30 hours of use, and establishes a new Opti-Start pressure for the next 30 hours of use.
- Device starts each new therapy session at the Opti-Start pressure if Ramp Plus is not enabled. Otherwise, a set Ramp Plus pressure will override the actual starting Opti-Start pressure.
- If the device titrates below the Opti-Start pressure, the auto algorithm is a little more responsive to obstructive respiratory events with increases in pressure.
- Empirically, Opti-Start pressure is typically close to 2/3rds of the patient's previous 90% pressure.
- If the patient is not comfortable falling asleep with the Opti-Start pressure, they have the option to adjust their pressure using the Ramp Plus feature.

FLEX





DreamStation 2 Model/Mode

Auto CPAP

Mode: Available in Fixed and Auto CPAP modes



Overview

FLEX technology is a comfort feature that provides pressure relief during inhalation and exhalation during therapy. In Auto mode, FLEX is as effective and does not differ from fixed CPAP therapy as it strongly correlates to the identified AHI of PSG.¹ FLEX in Fixed CPAP mode was as effective as CPAP therapy in treating OSA while patients preferred this mode of therapy.²



When to use?

Long term (ongoing use)



Who is it for?

- Patients who may find it difficult to tolerate their prescribed pressure.



How does it work?

- The Digital Auto-Trak algorithm detects the onset of inspiration and exhalation to properly initiate pressure relief through the breathing cycle.
- FLEX is unique because it adapts to each breath. It varies the level of pressure relief based on the patient's expiratory flow, so users get more relief with deeper breaths, and less relief with smaller breaths.
- Users can choose from three FLEX settings, so they can select the level of pressure relief that feels most comfortable for them.

¹Frederic Gagnadous, MD, PhD, Dirk Pevernagie, Poul Jennum, Nian Ion, Corinne Loiodice, Renaud Tamisier, MD, PhD, Petra van Mierlo, Wojciech Trzepiaur, MD, PhD, Martina Nedderman, Annika Machleit, Jeffrey Jasko, Jean Louis Pepin, MD, PhD, Validation of the System One REMstar Auto A-FLEX for Obstructive Sleep Apnea treatment and Detection of Residual Apnea-hypopnea Index: A European Randomized Trial, JCSM, Volume 13, Issue 02, 2017

²Krawietz, Monida et al, CPAP with pressure relief during exhalation (C-FLEX+) is as effective as CPAP in the treatment of Obstructive Sleep Apnea, Journal of Sleep Disorders and Therapy, 2017

EZ-Start





DreamStation 2 Model/Mode

Auto CPAP

Mode: Available in Fixed and Auto CPAP modes



Overview

EZ-Start is an acclimation algorithm for Fixed and Auto CPAP. It can help patients gradually adapt to their prescribed level of therapy using an innovative pressure acclimation algorithm with automatic, personalized adjustments to CPAP pressure over the first 30 days.



When to use?

Short term (first 30-day acclimation)



Who is it for?

- Patients who may find it difficult to tolerate their prescribed pressure initially.
- Saves clinician time manually adjusting pressure down and slowly increasing it over time to acclimate patient.



How does it work?

- EZ-Start reduces the prescribed CPAP pressure in half on the first night (Fixed CPAP mode) or reduces the maximum Auto pressure to 1 cmH₂O above the minimum Auto pressure (Auto CPAP mode).
- If the patient gets 4+ hours of sleep, the next night the pressure will go up 1 cmH₂O. If the patient gets <4 hours of sleep, the next night the pressure will remain unchanged. So patients get more pressure only when they seem able to tolerate it. After 30 days the device will increase pressure 1 cmH₂O per night for each subsequent night until prescribed pressure is achieved.
- In a clinical study,³ it took patients an average of 14 days to reach their prescribed pressure.

³Lankford, et al: Automated Graduated CPAP (AGPAP) For Improved Adherence in Newly Diagnosed OSA Patient – Multicenter Trial: SLEEP 2015:38: Abstract Supplement: A184

CPAP-Check





DreamStation 2
Model/Mode

Auto CPAP

Mode: Available in Fixed CPAP mode.



Overview

A fixed CPAP algorithm that recognizes long-term changes in patients' pressure needs and automatically adjusts the fixed pressure to improve treatment. This can save the clinician time since the pressures are changed automatically.



When to use?

Long term (ongoing use)



Who is it for?

- Patients whose condition may change in the long term, such as with weight changes.
- Patients who did not have a good titration.



How does it work?

- Assesses therapy every 30 hours to determine if CPAP pressure is optimal.
- If not, it automatically adjusts the fixed pressure to reduce obstructive events for the next 30 hours of use.
- Any single pressure change is limited to ± 1 cmH₂O. Often the device will not need to change pressure at all.
- The maximum allowed pressure change range is ± 3 cmH₂O from the prescribed pressure.

DreamStation 2 Advanced device configurations

	DreamStation 2 Auto CPAP Advanced
Modes	Fixed CPAP Auto-CPAP
Features	EZ-Start Auto-Trial Opti-Start
Pressure range	4 to 20 cmH ₂ O
FLEX comfort	C-FLEX+ A-FLEX
Humidification modes (3)	Adaptive Heated Tube
Mask type resistance control	Standard
Ramp Plus	Pressure: off, 4-10 cmH ₂ O Time: 15, 30, 45 minutes
Altitude compensation	Automatic
Advanced event detection	Standard
Flow waveforms	Standard
Modem compatibility	Cell modem fully integrated
Built-in Bluetooth connectivity	Standard
DreamMapper compatibility	Standard (by mobile app or web)
Oximetry compatibility	Standard via Bluetooth
Check mask fit feature	Standard
Performance check	Standard

Sleep therapy sample prescription guide

When prescribing Auto CPAPs, consider:

DreamStation 2 Auto CPAP Advanced

Auto CPAP modes:

Min pressure: _____cmH₂O (4-20)

Max pressure: _____cmH₂O (4-20)

With FLEX

With Ramp Plus

With Opti-Start

With DreamMapper

(Self Patient Management System)

EZ-Start

EZ-Start is an acclimation algorithm for fixed CPAP. It can help patients gradually adapt to their prescribed level of therapy using an innovative pressure acclimation algorithm with automatic, personalized adjustments to CPAP pressure over the first 30 days.

PR Unique Feature

Ramp Plus

Ramp Plus allows patients to select a comfortable pressure for falling asleep and may help eliminate callbacks on MIN pressure adjustments.

PR Unique Feature

CPAP-Check

A fixed CPAP algorithm that recognizes long-term changes in a patient's pressure needs and automatically adjusts the fixed pressure to improve treatment. This can save the clinician time since the pressures are changed automatically.

FLEX (Pressure relief)

FLEX technology is a patient-controlled comfort feature that provides pressure relief during therapy. 3 levels of comfort – 1, 2, 3.

PR Unique Feature




Opti-Start

Provides optimal starting pressure to enhance patient comfort and reduce the likelihood of residual events at the beginning of therapy and throughout the night.

DreamMapper

Saving you time, helping your bottom line by giving patients greater insight into their therapy data and giving them tools like the ability to troubleshoot issues to common problems, DreamMapper can reduce the time your staff spends answering common questions, giving you more time to manage those patients who may need extra attention.

DreamStation 2 Advanced adherence features chart

	Feature	Ramp Plus	Opti-Start
	DreamStation 2 Model/Mode	Auto CPAP Mode: Available in Fixed and Auto CPAP modes	Auto CPAP Mode: Available in Auto CPAP modes
	Overview	Ramp Plus allows patients to select a comfortable starting pressure for falling asleep and may help eliminate callbacks on MIN pressure adjustments.	An Auto CPAP algorithm that provides optimal starting pressure to enhance patient comfort and reduce the likelihood of residual events at the beginning of therapy and throughout the night.
	When to use?	Long term (ongoing use)	Long term (ongoing use)
	Who is it for?	<ul style="list-style-type: none"> • Patients who are having difficulty tolerating therapy pressure and want to fall asleep more comfortably at a selected lower or higher starting pressure. 	<ul style="list-style-type: none"> • Patients on Auto CPAP who generally requires higher pressures and experience obstructive events when their PAP starts the night at lower pressure. • Saves clinician time having to evaluate and reset the optimal minimum Auto pressure.
	How does it work?	<ul style="list-style-type: none"> • Selectable Ramp Plus pressure during therapy: 4-10 cmH₂O with live feedback delivered at a constant rate during set Ramp Plus time. • Once activated and saved, the set Ramp Plus pressure automatically starts with subsequent therapy sessions. • If the patient falls asleep and begins to have obstructive respiratory events, the device increases pressure to resolve those events by operating in the Auto titrating mode. • At the conclusion of the Ramp Plus time, the device will automatically increase or decrease pressure by 1 cmH₂O per minute until minimum therapeutic pressure is reached. • In the same therapy session, Ramp Plus can be reactivated by tapping the screen. 	<ul style="list-style-type: none"> • The device evaluates patient respiratory events every 30 hours of use, and establishes a new Opti-Start pressure for the next 30 hours of use. • Device starts each new therapy session at the Opti-Start pressure if Ramp Plus is not enabled. Otherwise, a set Ramp Plus pressure will override the actual starting Opti-Start pressure. • If the device titrates below the Opti-Start pressure, the auto algorithm is a little more responsive to obstructive respiratory events with increases in pressure. • Empirically, Opti-Start pressure is typically close to 2/3rds of the patient's previous 90% pressure. • If the patient is not comfortable falling asleep with the Opti-Start pressure, they have the option to adjust their pressure using the Ramp Plus feature.
	Sample Rx	DreamStation 2 Auto CPAP with Ramp Plus	DreamStation 2 Auto CPAP ____ cmH ₂ O to ____ cmH ₂ O with Opti-Start

The suggested guidelines are intended to serve only as a reference. They should be used only in conjunction with the instructions and/or protocol(s) set forth by the physician and institution in which the assist device is being used. The guidelines are not intended to supersede established medical protocols. These protocols are recommended for adult patients only.

FLEX

Auto CPAP

Mode: Available in Fixed and Auto CPAP modes

FLEX technology is a comfort feature that provides pressure relief during inhalation and exhalation during therapy. In Auto mode, FLEX is as effective and does not differ from fixed CPAP therapy as it strongly correlates to the identified AHI of PSG.¹ FLEX in Fixed CPAP mode was as effective as CPAP therapy in treating OSA while patients preferred this mode of therapy.²

Long term (ongoing use)

- Patients who may find it difficult to tolerate their prescribed pressure.
- The Digital Auto-Trak algorithm detects the onset of inspiration and exhalation to properly initiate pressure relief through the breathing cycle.
- FLEX is unique because it adapts to each breath. It varies the level of pressure relief based on patient's expiratory flow, so users get more relief with deeper breaths, and less relief with smaller breaths.
- Users can choose from three FLEX settings, so they can select the level of pressure relief that feels most comfortable for them.

DreamStation 2 Auto CPAP with FLEX

EZ-Start

Auto CPAP

Mode: Available in Fixed and Auto CPAP modes

EZ-Start is an acclimation algorithm for Fixed and Auto CPAP. It can help patients gradually adapt to their prescribed level of therapy using an innovative pressure acclimation algorithm with automatic, personalized adjustments to CPAP pressure over the first 30 days.

Short term
(first 30-day acclimation)

- Patients who may find it difficult to tolerate their prescribed pressure initially.
- Saves clinician time manually adjusting pressure down and slowly increasing it over time to acclimate patient.
- EZ-Start reduces the prescribed CPAP pressure in half on the first night (Fixed CPAP mode) or reduces the maximum Auto pressure to 1 cmH₂O above the minimum Auto pressure (Auto CPAP mode).
- If the patient gets 4+ hours of sleep, the next night the pressure will go up 1cm H₂O. If the patient gets <4 hours of sleep, the next night the pressure will remain unchanged. So patients get more pressure only when they seem able to tolerate it. After 30 days the device will increase pressure 1 cmH₂O per night for each subsequent night until prescribed pressure is achieved.
- In a clinical study,³ it took patients an average of 14 days to reach their prescribed pressure.

DreamStation 2 Auto CPAP of ____ cmH₂O with EZ-Start

CPAP-Check

Auto CPAP

Mode: Available in Fixed CPAP mode

A fixed CPAP algorithm that recognizes long-term changes in patient's pressure needs and automatically adjusts the fixed pressure to improve treatment. This can save the clinician time since the pressures are changed automatically.

Long term (ongoing use)

- Patients whose condition may change in the long term, such as with weight changes.
- Patients who did not have a good titration.
- Assesses therapy every 30 hours to determine if CPAP pressure is optimal.
- If not, it automatically adjusts the fixed pressure to reduce obstructive events for the next 30 hours of use.
- Any single pressure change is limited to +/-1 cmH₂O. Often the device will not need to change pressure at all.
- The maximum allowed pressure change range is +/- 3 cmH₂O from the prescribed pressure.

DreamStation 2 Auto CPAP ____ cmH₂O with CPAP-Check +/- 3 cmH₂O



References: 1. Frederic Gagnadous, MD, PhD, Dirk Pevernagie, Poul Jennum, Nian Ion, Corinne Loiodice, Renauld Tamsier, MD, PhD, Petra van Mierio, Wojciech Trzepiaur, MD, PhD, Martina Nedderman, Annika Machleit, Jeffrey Jasko, Jean Louis Pepin, MD, PhD, Validation of the System One REMstar Auto A-FLEX for Obstructive Sleep Apnea treatment and Detection of Residual Apnea-hypopnea Index: A European Randomized Trial, JCSM, Volume 13, Issue 02, 2017. 2. Krawietz, Monida et al, CPAP with pressure relief during exhalation (C-FLEX+) is as effective as CPAP in the treatment of Obstructive Sleep Apnea, Journal of Sleep Disorders and Therapy, 2017. 3. Lankford, et al: Automated Graduated CPAP (AGPAP) For Improved Adherence in Newly Diagnosed OSA Patient – Multicenter Trial: SLEEP 2015:38: Abstract Supplement: A184.

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Caution: US federal law restricts these devices to sale by or on the order of a physician.

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