Optimised therapy even in the most challenging patient conditions

When already-compromised patients develop arrhythmias or tachycardia, the AC3 Optimus IABP is at its best. Its ability to deliver accurate and safe timing means patients who were not previously considered candidates can benefit from IABP therapy.

Proprietary algorithms drive accuracy and precision

The remarkable performance of the AC3 Optimus IABP is based upon AutoPilot Mode, which uses a trio of proprietary algorithms. Individually, they help address key challenges; together, they help improve the clinical efficacy of IABP therapy and simplicity with which it's delivered.[5]

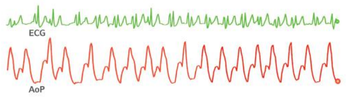
- WAVE Inflation Timing
- Deflation timing management
- Best signal analysis

ProActive CounterPulsation Technology
Exclusive ProActive CounterPulsation Technology determines individual AV closure points to provide intra-beat inflation timing accuracy during IABP support, even in patients with severe arrhythmias.[7-9]

Accurate inflation timing results in optimal IABP performance

With its proprietary WAVE Algorithm, the AC3 Optimus IABP sets the inflation point in real time, within the beat – even during severe arrhythmias. The WAVE Algorithm has been shown to deliver 98% timing accuracy[1] – in the illustration below, inflation was timed properly for 16 out of 16 beats.[3,6] The combination of WAVE Technology and FiberOptix Sensor Technology eliminates delays associated with fluid-filled systems for fast reactions and accurate timing during early, unexpected beats.

WAVE Inflation Timing on arrhythmic patient

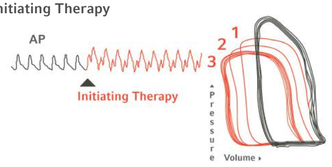


*Representative of study. Individual results may vary.

Effective IABP therapy improves left ventricular performance

Once the IABP is turned on, the PV loop indicates lower pressure and increased stroke volume. The IABP acutely improves LV performance, primarily by afterload reduction and subsequent reduction in preload.[4,6] Simply turning the pump on increases stroke volume by as much as 18%–22% within just 4 beats which subsequently improves cardiac output.[4,6] This direct patient benefit is evident in the PV loop shown below.

Initiating Therapy



Accurate deflation timing

Among the most real-time, comprehensive, and accurate timing methods available today. Automated deflation timing management ensures accurate and safe deflation timing.

Up to 200 bpm

Provides precise and accurate support for patients with the most severe arrhythmias and heart rates as high as 200 bpm.[1]

Teleflex is a global provider of medical technologies designed to improve the health and quality of people's lives. We apply purpose driven innovation – a relentless pursuit of identifying unmet clinical needs – to benefit patients and healthcare providers. Our portfolio is diverse, with solutions in the fields of vascular and interventional access, surgical, anesthesia, cardiac care, urology, emergency medicine and respiratory care. Teleflex employees worldwide are united in the understanding that what we do every day makes a difference. For more information, please visit teleflex.com.

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Arrow

AC3 Optimus Intra-Aortic Balloon Pump

Greater precision with increased simplicity; an evolution in IABP performance

Unmatched simplicity, right from the start

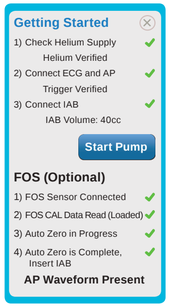
The AC3 Optimus Intra-Aortic Balloon Pump is up and running with the push of a button. Set up is fast and easy, guided by visual prompts on the large high-definition touchscreen – including confirmation that therapy can be initiated. In AutoPilot Mode, the AC3 Optimus IABP automatically adjusts timing and triggering parameters, freeing clinicians to focus on the patient rather than the pump. A simple touch of the waveform provides access to controls, including the option to adjust volume.

More than advanced, approachable

With a highly-advanced software platform and proprietary suite of algorithms, the AC3 Optimus Intra-Aortic Balloon Pump delivers outstanding haemodynamic support across a wide range of patient conditions. A user-friendly design, intuitive interface, and state-of-the-art AutoPilot Mode makes it incredibly simple to use. With this powerful combination, Teleflex has elevated counterpulsation therapy while making it more accessible than ever.

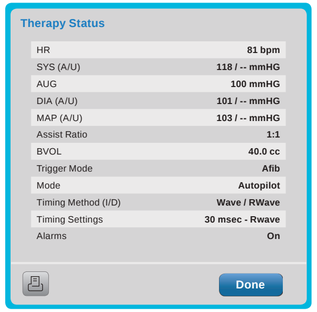
- **Alarm history and trends feedback**
  Allows quick review of past alarms and ability to assess repeated alarms
- **Touchscreen**
  Allows for fast and easy interaction. Action bar combines assessment and action in a single location
- **Waveform**
  New touchscreen access to waveform controls
- **Graphics**
  Simple green, yellow, and red graphics allow for clear communication of parameter status
- **Routine tasks**
  Startup checklist provides simple and quick confirmation that setup is complete. The therapy status report provides a fast, single page summary of patient and pump settings for simple and accurate charting

Key actions and assessments made easy and accessible:



Dynamic Startup Checklist

An interactive review of the three step startup and confirmation when the pump is ready to start.



Therapy Report

One-button summary of patient haemodynamics (response to IABP therapy) and therapy settings. Allows for one key stroke charting, with ability to print reports.

Third-generation AutoPilot Mode – dynamic and adaptive for intra-beat adjustments

Patient conditions can be ever-changing – maintaining optimal therapy requires continuous monitoring and adjustment. The third-generation AutoPilot Mode of the AC3 Optimus IABP makes it easy to track, sense, and adapt to changing conditions without any clinician intervention. Our exclusive Best Signal Analysis identifies the best signal for triggering and timing and implements adjustments with speed and precision beyond that of a manual operator.

AutoPilot Mode is automatically activated when therapy is initiated, providing full support from the first beat. It begins with full-assist and full volume at startup, and immediately begins monitoring and managing signals.

As innovators in intra-aortic balloon pumping technology, we continue to advance the performance and reliability of automated therapy.

Advanced alarms for enhanced safety and confidence

Understanding and managing alarms is crucial to patient safety and clinician productivity. The AC3 Optimus IABP offers an advanced configuration to deliver on both counts.

- 360° visibility of alarm severity
- Expanded alarm history review
- New corner switch to identify IABP alarming and alarm priority
- Alarms are active at all pump speeds offering faster response in AutoPilot Mode than user in Operator mode

Enhancing outcomes, optimising value

Beyond its obvious clinical value, the AC3 Optimus IABP offers low cost of ownership. As budget pressures continue to grow, the cost-effective features like these become increasingly appealing:

- Pneumatic drive system with no scheduled replacement parts
- Low component replacement costs
- Minimal service required

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2. Hoeksel S, Jansen JRC, Blom J, et al. Detection of dicrotic notch in arterial pressure signals. *J Clin Monit.* 1997;13(5):309-316. Study sponsored by Teleflex.
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4. Schreuder J, Maisano F, Donelli A, et al. Beat-to-beat effects of intra-aortic balloon pump timing on left ventricular performance in patients with low ejection fraction. *Ann Thorac Surg.* 2005;79(3):872-880. Study sponsored by Teleflex.
5. Torracca, L. Overcoming electro-surgical inference in IABP therapy with the combined use of AutoPilot and FiberOptix IAB sensor signal. 2007. *(case report, data on file).* Study sponsored by Teleflex.
6. Data on file.