



Actual size

A n I n f u s i o n S y s t e m T h a t W o n ' t S l o w Y o u D o w n

As a wholly owned subsidiary of Delphi Corporation, Delphi Medical Systems is well qualified to offer medical device manufacturers and distributors innovative new products. The Delphi IVantage volumetric ambulatory infusion system is our latest device introduction. It is designed to enhance existing product portfolios and expand business opportunities with clinical customers. The IVantage ambulatory infusion system offers a full line of disposables, supporting accessories, remote communications tools, flexible acquisition, rental, and warranty programs, and private labeling opportunities.

Delphi Medical Systems has access to Delphi's technological expertise, in-depth component and systems knowledge, world-class quality and reliability controls, and global resources. We are prepared and able to delight you and your customers with state-of-the-art systems that meet the demanding product and service requirements of today's challenging medical device market.

A smart and small package. With its innovative, disposable cassette design, IVantage provides optimum convenience, versatility, enhanced safety, ease of use, and cost effectiveness—all in a lightweight, compact package.

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R e d e f i n i n g E a s e o f U s e



IVantage is designed for a variety of clinical settings, but is especially well suited for hospital and alternate site use, including patient homes, nursing homes, and outpatient facilities. This reliable infusion system can provide many patients with levels of convenience and mobility that cannot be experienced with more traditional infusion pump products.

Designed for simplicity and performance.

The unique design of the IVantage ambulatory infusion system consists of a main pump unit and a disposable, compact rotary cassette with infusion line. The rotary cassette quickly and easily snaps and locks into the pump as a single unit. The cassette incorporates a patented slide device that must be activated before the cassette can be removed from the pump in order to prevent free-flow situations.

After the rotary cassette is installed, the pump can be programmed to deliver flow-rate ranges of 0.1 to 999 ml/h (accurate to ± 5 percent). A variety of internal alarms ensure safe and accurate delivery. Alarm settings such as air-in-line detection, occlusion pressure limits, and keep vein open (KVO) rates are adjustable to meet different patients' needs. Audible and visual alarm conditions are also supported, some with an auto-restart function. In addition, there are built-in pre-alarm conditions that signal the approaching end of infusion or a low battery condition. During the

infusion process, an indicator light allows easy verification of operation. The rotary cassette has a transparent case so that actual roller/pump operation can also be viewed. Flow rate, volume to be infused, and remaining infusion time are continuously displayed for a quick visual check of essential information.

Multiple modes of operation. Ideal for several clinical infusion therapies, IVantage has the following programmable operating modes:

- Continuous with optional secondary infusion
- Intermittent dosing infusion
- Total parenteral nutrition (TPN) with ramping feature
- Patient-controlled analgesia (PCA)

Built to go places. Weighing only 13 ounces (with battery), the pump is easy to carry or wear. It can be clipped onto an IV pole, hospital bed rail, or wheelchair. Patients can wear the pump via a belt clip, shoulder strap, fanny pack, or backpack.

Another key component of the pump's portability is its built-in battery. When fully charged, the battery can provide up to 24 hours of running time, eliminating the expense and inconvenience of carrying and changing disposable batteries. (When in use and connected to an AC power source, the battery recharges within four hours.)

Small Size, Big Benefits

Convenience

- Compact, lightweight design
- Rechargeable, built-in battery eliminates cost and handling of disposable batteries and enables increased mobility for up to 24 hours before recharging is necessary
- Rotating universal pole clamp
- Full array of patient-support accessories (belt clip, shoulder strap, backpack, and fanny pack)

Versatility

- Flow-rate range from 0.1 to 999 ml/h (± 5 percent accuracy)
- Multiple programmable modes
- Power source options: AC adaptor, built-in battery
- Various IV infusion line configurations

Enhanced Safety

- Multiple diagnostic and adjustable alarm and lock features including:
 - Variable occlusion pressure limits
 - Air-in-line detection alarm with selectable sensitivity
 - KVO rate programmable from 0.0 to 9.9 ml/h
 - PCA lockout interval (1- and 4-hour limitation) with bolus on demand
- Indicator light and transparent pump cover for visual verification of actual roller/pump operation
- “Snap and lock” rotary cassette with slide device to prevent free-flow situations
- Program and history recall for streamlined review process

Easy to Use

- Integrated disposable pump and infusion line
- Continuous display of key information
- Menu programming of essential parameters for quick startup
- Automatic priming—just follow the pump’s instructions

Cost Effective

- One pump serves multiple infusion therapies
- Reliable, state-of-the-art design
- Cost-effective disposables
- No replacement batteries to purchase
- Warranty exchange service
- Flexible acquisition and rental programs
- Remote programming and monitoring software
- Biomedical servicing and diagnostics software

IVantage Specifications	
Size	5.5 in. x 1.7 in. x 2.3 in.
Weight	13 ounces (with battery)
Operating principle	Rotary peristaltic
Power	AC or battery (NiMH)
Flow rate	0.1 to 999 ml/h
Flow-rate accuracy	$\pm 5\%$ nominal
Free-flow protection	Integrated within cassette/IV line
Volume	1 to 999 ml
KVO rate	0.0 to 9.9 ml/h
Occlusion pressure	Low, high, or auto range
Air-in-line protection sensitivity selections	100 microliters, 300 microliters, or OFF
Alarms	Occlusion Air-in-line Low battery Infusion complete Malfunction
History	1,000 events
Battery run time (approximate)	22 h at 20 ml/h 18 h at 100 ml/h 8 h at 999 ml/h
Battery charging time (approximate)	4 h (while in use and connected to AC power)
Optional therapy modes	Delayed start (dose and TPN mode) Ramp up/ramp down or both (TPN mode) Emergency taper now (TPN mode)
Technical options	Program lock Battery-saving mode
Additional options	Secondary infusion (continuous mode) mg, mcg, or ml dosing (PCA mode)
Operating conditions	5°C (41°F) to 40°C (104°F) Atmospheric pressure range 380 to 790 mm Hg

A New Way to Think About Medical Technology



Responding to customer needs. Clinicians and patients have long complained about traditional infusion pumps. They take up too much space. They're bulky. They're heavy. The battery doesn't last very long. We believe IVantage will delight clinicians in ways that have never been seen before. The combination of small size and weight, easy programming, and robust performance capabilities will redefine the infusion pump market in hospital and alternate care settings for years to come.

Infusion pumps and more. Delphi Medical Systems is also actively developing world-class technology, products, and services in other key medical device areas, including dialysis, mobility, respiratory care, and vital signs monitoring. For more information on Delphi Medical Systems products and services, please visit www.delphimedical.com, call 1.888.526.1426, or e-mail infusion@delphi.com.

Please refer to the Instruction Manual supplied with each pump for detailed instructions on warnings, cautions, specifications, and additional information.

Caution: Federal law restricts this device to sale by or on the order of a physician.

The IVantage ambulatory infusion system is intended for use in a health care facility as well as a home health care setting to pump standard IV fluids, medications, blood, and blood products into a patient in a controlled manner.

This infusion system is not recommended for the infusion of medications requiring a high degree of flow precision, such as short half-life vasoactive agents, due to the intermittent nature of the fluid delivery.

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