

MRidium™ 3860 MRI IV Pump System with integrated Masimo SET® SpO₂ Monitoring

The next generation of MR Infusion and Monitoring Technology to meet the changing needs of the MR Environment.

Operation with all 0.2 to 3.0 Tesla MRI Systems

The MRI suite is a harsh place for medical devices, and proper patient care requires carefully designed equipment.

With new MRI Procedures growing every day and different staff entering the MRI; safe infusion delivery is becoming even more critical and the **MRidium™** MRI Infusion System with its unique non-magnetic ultrasonic motor provides accurate dependable fluid delivery and monitoring from infants to adults.



MRidium™ 3860+ MRI IV Pump System with integrated Masimo SET® SpO₂ Monitoring



Designed for the MRI Environment

Iradimed Corp. is an innovative company with vast experience in MRI safe products. Our founder is the pioneering developer of the world's first and best selling MRI compatible monitoring system. Our staff has a combined 60+ years developing MRI safe products.

The MRidium 3860+MRI IV pump with SpO₂ Monitoring, comprehensively meet the needs of the MR with added features such as wireless remote control, Vented Syringe Adapter Set, Modular additional Second Channel "Side Car," and our unique Bypass Infusion Set. Our expanded rate range supports all Pediatric needs, while the 1400 ml per hour provides faster delivery for emergency medication. With integrated SpO₂ Monitoring, the clinician can seamlessly transfer patients both to the MR, provide monitoring during the scan, and then back for recovery.

Features

- Intuitive Smart IV Pump Technology & Real Time SpO₂ Monitoring
- 10 digit Keypad Entry for Ease of Programming
- Ease of Use with conventional IV pump design and proven human factors engineering
- Nonmagnetic design allows for placement up to the 10,000 Gauss Line
- Large LCD display providing highly visible and explanatory feedback
- Expanded Delivery Range of 0.1 to 1400 mL per hour
- Highly flexible – easily expandable to a second channel with add-on SideCar™ module
- Operates on long life Lithium Polymer battery
- Vented 1057 Syringe Set with low priming volume for anesthetic and other syringe-based Drug Delivery
- Unique 1055 Bypass IV set allows for minimal waste of fluids and convenient patient transfer to the MRidium™ MRI IV Pump



3865 MRidium™ Wireless Remote Control

The 3865 Wireless Remote allows for complete control and monitoring of the MRidium™ MR IV Pump from locations outside of the magnet room. The MR compatible wireless link relays all commands and display information bi-directionally between the 3860+ MR IV Pump with SpO₂ Monitoring and the 3865 Remote Control. Utilizing the same user interface and large bright display as the MRidium™ Pump, the wireless Remote Control unit allows adjustment of all pump and SpO₂ Monitoring parameters, rates, dose, volume, pump run/stop, alarms adjust or reset, as well as real time titration. The 3865 Remote Control also serves as a battery charger for a MRidium™ battery pack, or even a spare. It utilizes a proven MR compatible 2.4 Ghz FH spread spectrum radio technology for easy installation and artifact free operation.

Infant, Pediatric and Adult Anesthesia

The 3860+MRidium MRI IV Pump with SpO₂ Monitoring offers users the unique ability to have SpO₂ monitoring and IV delivery combined. This simple but unique feature offers users the ability to start sedations outside of the MRI, transport to the scan, and back to recovery without having to discontinue monitoring on the patient.

MRidium™ Vented Syringe Adapter Set

The MRidium™ Syringe Adapter IV Set allows for accurate delivery of IV fluids directly from standard 10 to 60 cc Syringes, without having to add additional IV tubing or extension sets. Providing critical medication delivery at low flow rates and bolusing just got easier with our new expanded rate range from 0.1 to 1400 ml per hour. Ideal for Cardiac Medications, Anesthesia, and Pediatric drug delivery, the low priming volume of 4 ml allows for minimal waste of medication.



Cardiac Stress Testing, Intraoperative MRI, and Neurology

New procedures in the MRI are increasing at an exponential rate; MRidium offers a unique and effective way to offer delivery of critical IV Fluids safely and accurately every time. Our integrated drug library allows users to program their own default settings for critical medications like Adenosine and Dobutamine.



Everywhere you want it to be in the MRI.

Specifications



VOLUMETRIC INFUSION PUMP / MONITOR

ELECTRICAL CHARACTERISTICS

| | |
|--|--|
| HI/LO Line Voltage Requirements | 100 to 240 VAC +/-10%, 50/60 Hz |
| Power Sources Available | Internal battery power with separate AC charger/power supply |
| Power Consumption | < 18 Volt-Amperes @ 120 VAC nominal at 125 mL/hr (<100 VA maximum during charging) |
| Battery Type | Rechargeable Lithium Ion Pack, 14.8 v at 5.8 Ah |
| Battery Capacity | > 12 Hours at ≤125 mL/hr Rate |
| Battery Charge Time | < 9 hours to 95% capacity |
| Battery Cycle Life | > 300 charge/discharge cycles |
| Leakage Current | < 20 µA RMS (Patient), < 300 µA RMS (Chassis) |
| Chassis Ground Impedance to Earth Ground | < 0.1 ohms (with power supply) |

MECHANICAL CHARACTERISTICS

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|---|---|
| Dimensions D x W x H, Total Weight | 6 x 8 x 9 Inches (15.25 x 20.3 x 22.9 cm), 11.5 lbs. (5.2 Kg) with battery |
| Temperature Range | +10° to +44° C (Operating), -40° to +70° C |
| Relative Humidity Range | 0% to 80% RH, non-condensing |
| Pole Clamp Mounting (Pole Diameter) Range | 1.0 to 1.5 inch (25 to 38 mm) diameter |

PERFORMANCE CHARACTERISTICS

| | |
|------------------------------------|---|
| Flow Rate Range | 0.1 to 1400 mL/hr 0.1 to 99.9 mL/hr in 0.1 mL/hr increments, 100 to 1400 mL/hr in 1 mL increments |
| Flow Rate Display Range | 0.1 to 99.9, 100 to 1400 mL/hr |
| Flow Rate Accuracy | +/-10% (0.1 to 0.9 mL/Hr), +/-5% (1 to 1400 mL/Hr) |
| Volume To Be Infused (VTBI) Range | 0.1 to 999 mL |
| Total Volume Infused (VI) Range | 0.1 to 9,999 mL in 0.1 mL increments |
| Keep Vein Open (KVO) Rate Range | Adjustable, 1 to 5 mL/hr, or Set Rate, whichever is less |
| Downstream (proximal) Occlusion | 1 to 10 psi, user-adjustable, +/- 10% Detection Range |
| Occlusion Detection (no flow) Time | Typically < 30 sec, dependent on selected Flow Rate |
| Inlet Pressure Detector | Detects inlet side occlusions |
| Air-in-Line Detection Method | Ultrasonic bubble detector, > 100 µL |
| MRI Performance | |
| MRI Magnet Compatibility | 0.2 to 3.0 Tesla MRI Systems |
| Magnetic Field Limit | 10,000 Gauss line (1T magnetic field line) – Minimal ferrous material used inside Pump (<15 grams); non-magnetic motor used inside Pump |
| Compliance with Standards | IEC 60601-1-1, IEC 60601-1-2, IEC 60601-2-24, ISO 9919, AAMI ID 26, UL2601 |

PERFORMANCE CHARACTERISTICS

| | |
|----------------|---|
| Sensor Type | Fiberoptic MRI SpO ₂ sensor with no RF conductive components |
| Sensor Length | 90 inches (2.3 m) |
| Accuracy | 70 – 99 % SpO ₂ +/- 3 digits Adult/Pediatric/Infant, Heart Rate +/- 3 BPM (no motion) |
| Display Ranges | Pulse Oximeter: 70 - 99 % SpO ₂ , Heart Rate: 40-240 BPM |



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