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Rigel Multi-Flo

The infusion pump analyzer that can double your test capacity

The Rigel Multi-Flo infusion pump analyzer offers ease of use, high accuracy readings and productivity improvements right from set-up.

With the choice of single or multi-channel configuration, the Multi-Flo can test up to four infusion devices simultaneously across a range of 10µL up to 1500mL per hour, with all results being stored in the large internal memory.

The Multi-Flo delivers unique accurate and instantaneous flow measurements even at low flow rates, enabling the user to test twice as many infusion devices within the same time period as other volumetric based analyzers.

To help save even more time and to reduce the risk of human error, the Multi-Flo can also be programmed with manufacturer specific test routines which can then be automatically executed by the user on the device itself or controlled from a PC using the Med-eBase software solution.

To meet the requirements of IEC 60601-2-24, the Multi-Flo also provides accurate back pressure simulations, occlusion alarm monitoring and bolus (PCA) measurements, and a large color graphics display presents the data in both numerical and graphical format.

A remote (PC) control interface is available via Rigel's test solution software, Med-eBase, allowing complete control of the Multi-Flo's features from the comfort of a PC. Requiring just a single USB connection per Multi-Flo, the total number of pumps under simultaneous test is limited only by the number of USB ports available. Perfect for high volume test environments.

*More than 100% faster than its nearest competitor when measuring typical flow rate at 10mL/hr at 1% accuracy.

Key Benefits

- **Double the test capacity per each channel compared to the nearest competitor.***
- **Saves time with accurate and instantaneous flow measurements**
- **Meet manufacturer's test requirements by creating (or sharing) test protocols for different models or applications**
- **Fully traceable results storage an automatic data capture reduces time and manual data errors**
- **Flexible purchase, with 1,2 or 4 channel configuration and optional future upgrade**
- **Saves time by analyzing multiple devices simultaneously**
- **Improved data analysis with high resolution data storage**
- **Provides peace of mind with full compliance test capability to IEC 60601-2-24**
- **Large graphic display with clear data viewing distance exceeding 10 feet / 3 meters**
- **Increased throughput with Med-eBase remote control function**
- **Get the most out of the Multi-Flo with Med-eBase test solution software**
- **Suitable for any test procedure with configurable pressure unit measurement options in mmHg, bar, PSI and kPar**

Analysis Functions

- Real-time flow measurement
- PCA/Bolus
- Back pressure simulation
- Occlusion alarm
- Trumpet curve analysis (Requires Med-eBase)
- Raw data download to MS Excel (Requires Med-eBase)
- Customizable test templates

Multi-Flo Applications

- Routine analysis of infusion devices
- Calibration of infusion devices
- End of production line testing for infusion devices
- Development tool for infusion device R&D
- Type testing tool for infusion devices
- Evaluation tool for application specific infusion devices

Download your **FREE** guide to infusion pump testing at **www.rigelmedical.com/guides**

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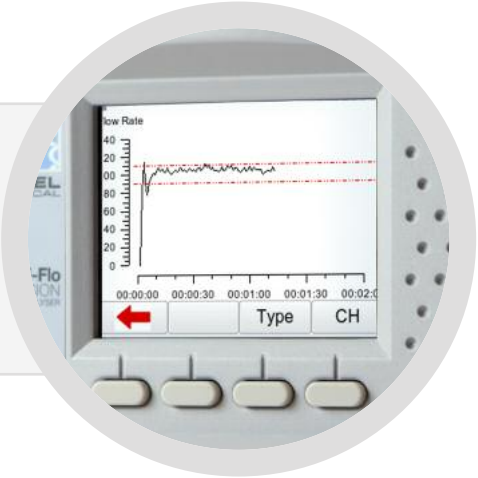
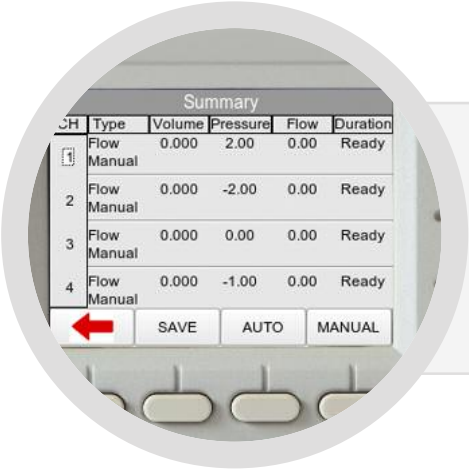
Instantaneous flow measurement

Instantly determine the accuracy of an infusion device, even at low flow rates, the Multi-Flo provides readings within 1% accuracy - faster than any alternative testing method or infusion device analyzer. It also indicates instantaneous flow behaviour on any infusion device.





1, 2 and 4 channel configurations

The multiple channel configurations enable increased throughput and improved efficiency; and the ability to upgrade to a maximum of 4 channels to meet future circumstances offers flexibility at time of purchase.

Automatic test and data acquisition

Program the Multi-Flo with manufacturer-specific test routines and then run automatically. Capturing the results in the internal memory saves time and reduces the risk of data and user error.

Fully compliant with IEC 60601-2-24

The compact Multi-Flo is an all-in-one solution to meeting the infusion device testing requirements of IEC 60601-2-24; with back pressure simulations, occlusion alarm monitoring, bolus (PCA) measurement and the creation of trumpet curves.

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Designed for ease-of-use

The Multi-Flo is easy to use and navigate featuring a large color display, simple push button operation and intuitive menu driven interface. The highly visible display is legible from distances exceeding 10 feet.

Control multiple Multi-Flo analyzers on a PC

The Multi-Flo is compatible with Rigel Medical's Med-eBase test solution software, enabling even greater productivity improvements through a remote control interface.

Control as many Multi-Flo analyzers as there are USB ports on your PC with Med-eBase software, using the PC screen as a dashboard to aggregate the activity from each Multi-Flo .

Comprehensive data management

Use Med-eBase software to quickly and easily produce real-time and high resolution graphs, including trumpet curves, store test data and create certificates. Med-eBase builds a complete history for each asset and enables a total solution from test and inspection through to record management and data traceability.

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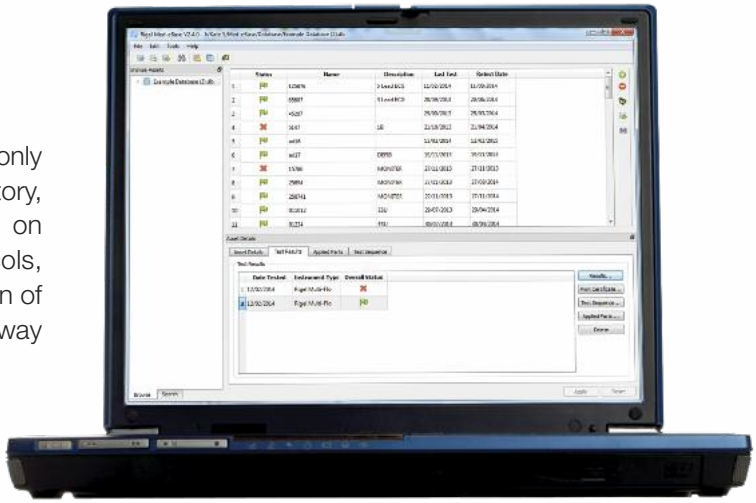
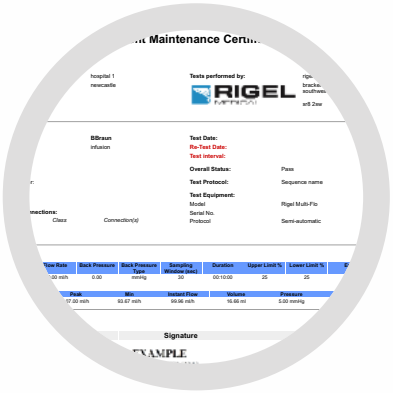
Med-eBase Compatibility



Test solution software

Med-eBase is a universal test solution software that not only allows the download and management of test result history, it also allows for easy scheduling of workload based on (re)test dates, configuration of test equipment protocols, comparing and analysing downloaded data, and creation of customizable test certificates to give you flexibility in the way you want to manage your assets.

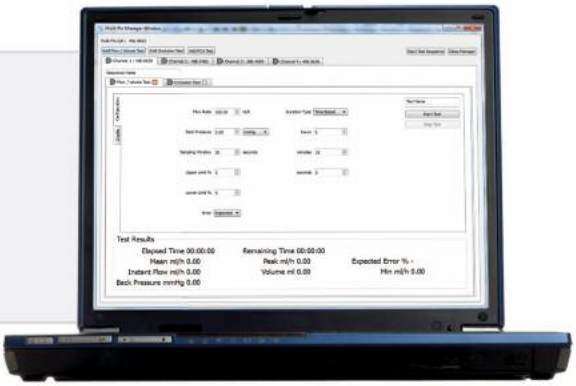


Customizable test certificates

Produce customizable test certificates with logos and electronic signatures for individual assets or multiple results. The certificates can be produced in PDF or HTML format.

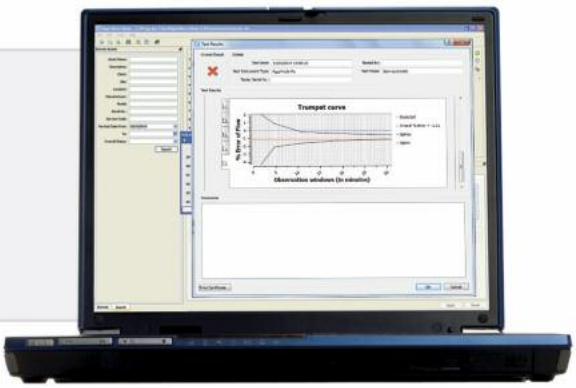
Multi-Flo remote control

Med-eBase V2.4 incorporates a remote control feature for use with the Rigel Multi-Flo, enabling the user to operate the Multi-Flo using a PC as a control dashboard.



Real time data analysis

Real time graphical and numerical data during remote testing enables the user to see instantaneous readings with specific limits indicated and provides data for analysis of results and trumpet curves.



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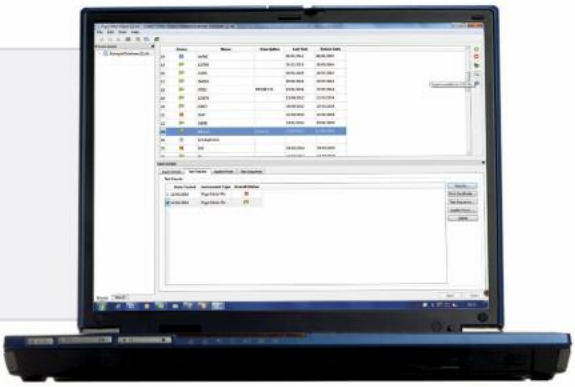
Automatic test sequences

Creating test sequences in Med-eBase reduces setup time and increases accuracy and efficiency ofthe test process. Test sequences can be easily shared between testers and PCs helping to ensure commonality of the test process across multiple facilities and technicians.

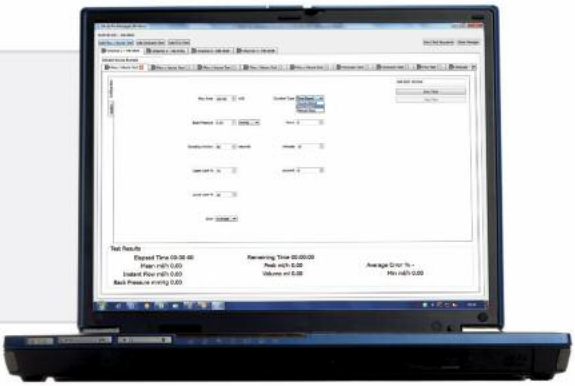
Export to MS Excel

Raw test data can be exported to a Microsoft Excel file for specific and detailed inspection and analysis particular aspects of the infusion process, leading to unsurpassed quality assurance.



Automatic data collection

The option for volume, time or user-based test durations provides an easy way to automatically record test data at the completion of each test without human interaction. A choice of pressure units allows testing in accordance with specific infusion manufacturers or geographic preferences.



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Technical Specifications

Flow Measurement

Display Range	0.010 to 1500ml/h
Max. Display Resolution	10µl/h
Measured Range	0.100 to 1450ml/h

Flow Rate	**Accuracy**
701-1500ml/hr	(1+x)% of reading where x = 0.0033% x (flow rate -700ml/hr)
10-700ml/hr	1% of reading
0.1-9.9ml/hr	1% of reading + 0.005 ml/hr

Volume	0.001 to 9999ml
Flow Update Rate	1Hz

Occlusion/Back Pressure Measurement

Pressure Measurement Range	-500 to 2500mmHg
Back Pressure Setting Range	-200 to 600mmHg

Accuracy	-500 to 1000mmHg ± 10mmHg 1000 to 2500mmHg ± 1% of reading
Unit Selection	mmHg, PSI, Bar, kPa
Max. Resolution	1mmHg

PCA / Bolus Measurements (Volume)

Display Range	0.1 to 100ml
Measuring Range	0.5 to 100ml
Accuracy	± 1% of the reading
Max. Resolution	10µl
Basal Flow Rate	1ml to 30ml/h
Pressure	Max. 2500mmHg

Service and Warranty

Multi-Flo comes with a free upgraded 24 month warranty (subject to terms and conditions, available at www.rigelmedical.com/registerproduct)

A range of Med-eCare plans are also available

General Specifications

Storage	15 x 24h of testing at 1 second sampling rate
Dimensions	300 x 204 x 220mm/11.8 x 8 x 8.6” (w x d x h)
Weight	5kg/11lbs (1 channel) 6kg/13lbs (2 channel) 8kg/18lbs (4 channel)
Mains Supply	90-264VAC, 50/60 Hz, 60W
Mains Cable	Standard IEC 10A connector

Storage Environment	0–50°C / 32–122°F
Operating Conditions	15–40°C / 59–104°F
Environmental Protection	IP40
PC Communication	USB B
Keyboard Communication	USB A
Display	LCD color graphic display ¼” VGA

Environmental Conditions

The Rigel Multi-Flo has been designed to perform tests and measurements in a dry environment.

Maximum barometric elevation for making measurements is 2000m.

Protective system IP40 according to IEC 60529.

Electromagnetic compatibility (EMC). Interference immunity and emitted interference conforming to IEC 61326-1.

Operating temperature range of 15–40°C / 59–104°F, without moisture condensation. The Multi-Flo can be stored at any temperature in the range 0–50°C / 32–122°F.

Disclaimer: While every care has been taken in ensuring the accuracy of the information in this document, Rigel Medical accepts no responsibility for errors or omissions.

Rev 2.1

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