

Syringe Pumps Range

when accuracy matters

Fact:

The Archer Fish, which live in the Mangroves of South East Asia, are famed for their ability to shoot a highly accurate jet of water from their mouths in order to knock down prey.

THE DETAILS GIVEN IN THIS LEAFLET ARE CORRECT AT THE TIME OF GOING TO PRESS. THE COMPANY RESERVES THE RIGHT TO IMPROVE THE EQUIPMENT SHOWN.

For further information please call your local Smiths Medical distributor or Smiths Medical on +44 (0)1303 260551

smiths

Smiths Medical International Ltd

Hythe, Kent CT21 6JL UK

Tel: +44 (0)1303 260551 Fax: +44 (0)1303 266761

www.smiths-medical.com

Smiths, Diprivan flo-safer, Medfusion™ Syringe Pump, PharmGuard™ Safety Software, Flowstack, Omnifuse, Diprifusor, Omnistack and Graseby are registered trademarks of Smiths Group plc.
Literature No. LIT/MD2534

smiths

Smiths Medical - a part of Smiths Group plc





Medfusion™ Syringe Pump
Syringe pump with PharmGuard™ Safety Software



Specifications

Dimensions	10.5" wide x 5.1" high x 5.5" deep 27 cm x 13 cm x 14 cm
Weight (pump only)	3.8 lbs / 1.7 kg
Accuracy	Nominal +/-2% excluding syringe variations
Flow Rate Range	Dependent upon syringe size 0.01 ml/hr to 1130 ml/hr
Delivery Modes	ml/hr Body Weight Mass Volume Over Time Custom Dilution Intermittent
Delivery Options	13 options include Loading Dose, Bolus Dose, Standby, Volume Limit, and KVO Rate
Power Sources	100 to 240 VAC, 50/60 Hz, 30 VA Internal Rechargeable Battery Optional External DC Input Safety Class II-Type CF
Internal Battery Capacity	at 25° C 10 hours at 5.0 ml/hr with 60 ml syringe for daily (from fully charged battery)
User-Defined Delivery Libraries	Four libraries with 16 profiles per library One library is "E-Plate" for optional rapid setup
MRI Tested*	May be used in MRI rooms with static magnetic fields up to 150 gauss

* See operations manual for specific criteria.

Smiths Medical - Syringe Pump Range

Recognised in operating theatres, intensive care units and general wards across the world, the Smiths Medical range of Syringe Pumps have been trusted by healthcare professionals for over 20 years.

The recent introduction of the Medfusion™ Syringe Pump to the portfolio offers advanced medication error software – PharmGuard™ Safety Software. The Medfusion™ Syringe Pump is a small, lightweight and portable syringe pump, particularly suited for the paediatric market.

The Omnifuse Syringe Pumps incorporate drug protocol software designed to minimise the risk of medication errors during programming. Available as either a base or PCA (Patient Controlled Analgesia) variant, the Omnifuse Syringe Pump achieves a high degree of operational flexibility, providing the optimum balance between simplicity and sophistication.

Established on a strong foundation of reliability, accuracy and safety, the 3000 range of syringe pumps are dependable and intuitive to use. Designed to meet all delivery needs, the range provides pumps from general infusion through to anaesthesia and TCI applications.

Medfusion™ Syringe Pump

The Medfusion™ Syringe Pump with PharmGuard™ Safety Software is an intuitive system designed to enhance safety while maintaining simplicity. Customers benefit from streamlined implementation and improved work flow.

‘Intelligent’ Pressure Monitoring

Experience breakthrough rapid occlusion detection technology with FlowSentry™, a comprehensive array of pressure-related safety features. This includes rapid alarm response time (less than five minutes at 1.0 ml/hr with 60cc syringe) and reduced false alarms. An enhanced graphic display of pressure trend allows earlier opportunities for clinical intervention, and a post-occlusion bolus reduction feature decreases post-occlusion bolus to less than 0.3ml, without the use of expensive dedicated disposable sets.

Easy to Use

The rotating pole clamp allows the user to align the pole clamp for mounting on a vertical or horizontal pole, bedrail, or similar solid structure. The large, bright screen with adjustable backlighting complements an intuitive hardware interface.

Communications Enabled

The Medfusion™ Syringe Pump imports and exports data to assist in patient data management. A communication accessory will allow the pump to communicate in a number of modes including RS232 and wireless.

References

- 1. Occlusion response time is affected by syringe size, flow rate and pressure setting.



Specifications

PharmGuard™ Safety Software	PharmGuard™ Safety Software v3.0.6
Optional override near empty	YES
Optional override empty	YES
Automatic bolus rate reduction	YES
Large font for drug name, dose and rate	YES
Ability to have blank fields for numeric data	YES
Ability to use tall man lettering	YES
Optional hospital security pass code	YES
Available delivery modes	17
Rapid occlusion reduction – FlowSentry™	YES
Number of available libraries	64
Available profiles (area specific custom configurations)	1
Number of drug categories per profile	4
Number of drug entries per categories	16
Number of drug ID characters displayed during infusion	15

PharmGuard™ Safety Software is the application for the Medfusion™ Syringe Pump. It provides comprehensive management and analysis capabilities and its purpose is to improve patient safety by reducing user error.

Through the PharmGuard™ Safety Software Toolbox it is possible to:

- Securely create and deploy custom configurations.
- Collect data for analysis of Drug Programme usage and variations from the Drug Programme custom infusion parameters.
- Collect history data for analysis of a single pump's operational, infusion and alarm history.
- View data in a printer-friendly format using Standard Reports, installed with the PharmGuard™ Safety Software toolbox. Custom Reports can be created with compatible software.

All library entries can be configured with upper and lower limits for the parameters that will be entered when setting up an infusion – dose, delivery rate, bolus and loading dose. When dose limits have been set, the user of the library template will be alerted if a value is entered that exceeds the programmed limits.

Libraries can also be generated by 'cloning' pumps – transferring libraries from one pump to another using serial communications (infrared or RS232). The library also allows blank fields, which promote more accurate patient-specific data entry.

With the V3.06 software a maximum of 4 drug categories per profile, containing 16 drug entries per category, resulting in a maximum of 64 available libraries.



Omnifuse PCA

	Product Codes
Omnifuse PCA	0153-0001
Omnifuse Drug Protocol Management System	0153-0084

Note: These part-numbers refer to the UK variant.

Specifications

Dose Range	0.1ng – 99.9mg
Duration	1 second – 15 minutes
Clinician Override Dose Range	0.1ng – 99.9mg
Loading Dose Range	0.1ng – 99.9mg
Background Dose Rate Range	0.1ng/h – 500mg/h
Background Rate Range (with boluses)	0.1 – 20ml/h
Background Rate Range (no boluses)	0.1 – 800ml/h
Bolus Rate Range	0.1 – 800ml/h
Bolus Rate Range (timed)	1 second – 15minutes
Dose Limit Range by Mass	1ng – 9999mg
Dose Limit Range by Volume	1 – 9999ml
Dose Limit Range by Demands	1ng – 50 demands
Dose Limit Period	1 – 8 hours or variable
Accuracy	Volumetric: ± 2% Linear: ± 0.25% using the Braun Omnifix 50ml syringe

Syringe Sizes	2ml – 60ml
Purge Rate	0 – 800ml/h
KVO Rate	0 – 2ml/h
Occlusion Pressure Alarm Limits	5 levels between 180 & 1250mmHg
History	3000 events
Battery Type	Sealed Lead Acid
Battery Life	10 hours (@ 5ml/h)
Battery Charge Time	10 hours to full charge
AC Power Supply	100 – 240V at 50/60Hz 50W
Weight	3.5kg (not including pole clamp)
Dimension	384 x 170 x 92mm (not including locking pole clamp)
Fluid Ingress Protection	IPX4
Electrical Safety	Class 1, Type CF
Design Standards	EN 60601-1, EN 60601-1-2 EN 60601-1-4, EN 60601-2-24

Omnifuse PCA

Designed with safety in mind, Omnifuse PCA breaks new ground in syringe pump design. Specifically developed for Patient Controlled Analgesia (PCA), Omnifuse PCA meets the needs of today’s demanding pain management therapies.

Graphical Infusion Display

The large display screen can be set to illustrate the current infusion profile in a graphical format. A complete summary of the infusion history can be viewed showing the times of patient and clinician override boluses, pump alarm history and syringe changes over the duration of the infusion period. Alternatively, infusion history can be viewed over one hour periods.

Charting of Pain, Nausea and Sedation Scores

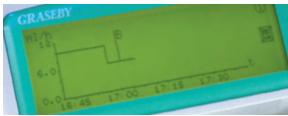
Recognising the increasing need to audit acute pain services, and to assist in understanding patient requirements more clearly, Omnifuse PCA can display a graphical representation of patient profiles when pain, nausea and sedation parameters are entered into the pump.

Electronic Patient Handset

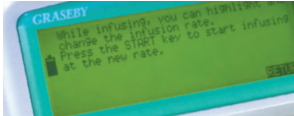
Omnifuse PCA is supplied with an ergonomically-designed electronic patient handset which illuminates when a bolus is available. An adjustable wrist strap or clip is also supplied to attach the handset to the patient’s gown, preventing misplacement.



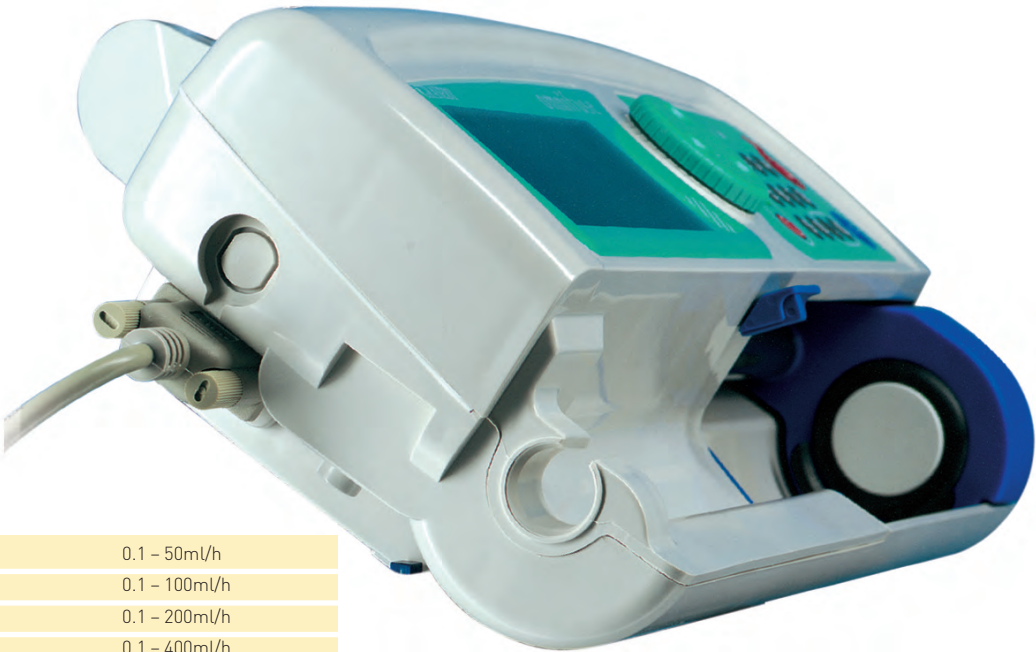
Red flashing screen on alarm



Graphical presentation



Help at the touch of a button



Syringe Sizes and Rate Range:

2ml syringe	0.1 – 50ml/h
5ml syringe	0.1 – 100ml/h
10ml syringe	0.1 – 200ml/h
20ml syringe	0.1 – 400ml/h
30ml syringe	0.1 – 600ml/h

Omnifuse

	Product Codes
Omnifuse	0159-0001
Omnifuse with security cover	0157-0001
Omnifuse with in-line pressure monitoring	0152-0001
Omnifuse with in-line pressure monitoring and security cover	0158-0001

Note: These part-numbers refer to the UK variant.

Specifications

Bolus Rate Range	0.1–800ml/h
Purge Rate	Configurable up to 0 – 800ml/h
Accuracy	Volumetric: ± 2% Linear: ± 0.25% using the Braun Omnifix® 50ml syringe
Infusion Modes	Continuous, Preset Time, Preset Volume, Intermittent, Circadian Rhythm
Occlusion Alarm Thresholds	5 levels between 180 & 1250mmHg (independent of syringe size)
Battery Type	Sealed lead acid

Battery Life	10 hours (@ 5ml/h) (22°C)
Battery Charge Time	10 hours to full charge
AC Power Supply	100 – 240V at 50/60Hz 50W
Weight	3.5kg (not including pole clamp)
Dimension	384 x 170 x 92mm (not including locking pole clamp)
Fluid Ingress Protection	IPX4
Electrical Safety	Class 1, Type CF
Design Standards	EN 60601–1, EN 60601–1-2 EN 60601–1–4, EN 60601–2–24

Omnifuse

The widely-varying requirements of today’s health care environment need not mean an ever-increasing number of pump varieties and variants. The Omnifuse core design philosophy is to provide a single pump which can be used throughout the hospital from intensive care to general wards.

Omnifuse Offers Safety as Standard

Omnifuse is provided with drug protocol software as standard to help minimise medication errors during programming. Drug Pro software enables the clinician to develop up to 50 user-defined drug libraries within set parameters on a PC, then upload to the pump for quick and trouble-free programming (see page 5 for more details). Password-protected keypad and lockable security cover provide increased confidence and safety on the ward.

Sleep Mode

Unique to Omnifuse is the ‘ASLEEP’ function, allowing the pump to be programmed and left in a dormant state awaiting use. Infusion can commence immediately following connection to the patient and confirmation of the infusion settings.

Flexibility

Omnifuse performance can be tailored to provide the desired balance between simplicity and sophistication. Using the PIN protected configuration menu, a wide range of features can be enabled or disabled depending on whether quick set-up or specialised protocols are required. These features include:

- Drug protocols.
- Advanced infusion modes.
- Infusion programming in mass units.

Safety

Volumetric accuracy of ±2.0%, rapid start-up performance and occlusion detection with a minimal bolus on release of occlusion all contribute to safety.

Hardware Enhancements

Omnifuse is available with a range of hardware enhancements:

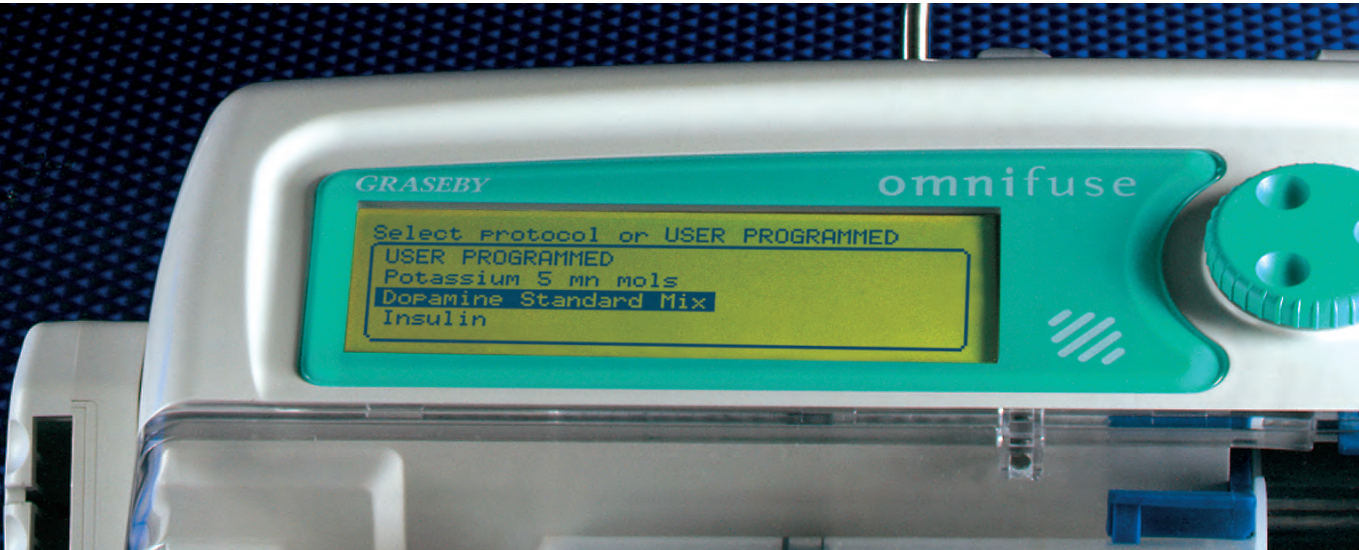
- In-line pressure sensing.
- Transparent security cover.

Paediatrics / Neonatal

This specialised area requires a high level of pump performance and safety.

Omnifuse:

- Is compatible with 2ml syringes.
- Can be capped to a rate no greater than 50 ml/h.
- Can be used with in-line pressure sensing.
- Can be programmed in a variety of mass units including nano-grams.
- Can be used in combination with a range of Flo-Safer™ low-priming volume extension sets.



	Product Codes
Omnifuse Technician Pack	0151-0266
Omnifuse Protocol Support Software CD	0153-0084

Introducing Omnifuse Drug Protocols – a Quick Route to Safer Infusion.

Dose error is known to account for a significant number of adverse incidents involving infusion pumps. Omnifuse drug protocol software will assist with medication error prevention.

Using Omnifuse with Drug Protocols:

- Simplifies the programming of the pump at the bedside.
- Up to 50 drug protocols may be stored in the pump.
- May help to reduce pump programming errors.

Create Your Own Drug Protocols:

- In accordance with drug prescribing instructions.
- Infusion parameters can be 'variable' – i.e. the parameter values are user-adjustable within specified limits allowing, for example, the flexibility to titrate to effect.
- Infusion parameters can be 'fixed' – i.e. the parameter values are determined when the protocol is created allowing maximum control.

Manage Bespoke Drug Protocol Libraries:

- Drug protocol libraries can be tailored to different wards within the hospital, reflecting their own particular requirements.
- The drug protocol libraries are managed using the Omnifuse Drug Protocol Management System on a PC.
- The Omnifuse Drug Protocol Management System is also used to send the drug protocol library to the Omnifuse.

An Innovative Approach to Pump Management

The Omnifuse Technician Software package assists the hospital technician, allowing the creation of a bespoke electronic log for all Omnifuse pumps in use, indexed by serial number.

Using the Intuitive Interface the Technician Can:

- Store and download configuration settings to the Omnifuse.
- Download, store and view pump history.
- Perform a full set of tests and sensor calibrations simply and quickly by following the on-screen instructions.
- Log the replacement of specific important parts during the lifetime of the pump.



Specifications

AC Power Supply	220-240V or 100-120V, 50/60Hz
Battery Type	Sealed Lead Acid (Cyclon)
Battery Life	3 hours (fully charged and under normal operating conditions)
Syringe Types	BD Plastipak 20, 30, 50/60ml Braun Omnifix 20, 30, 50/60ml Braun Perfusor 50ml (optional) Monoject 20, 30, 50/60ml Terumo 20, 30, 50/60ml Fresenius 50ml
Infusion Range	0.1 – 199.9ml/hr
Volume Infused Counter	0 – 999.9mls (in 0.1ml increments)
Weight	3.5kg (including pole clamp + batteries)
Dimension	350 x 195 x 115mm (with pole clamp fitted and plunger clamp closed)
Operating Temperature	+5 to 40 °C
Drive Accuracy	+/- 2% over a complete syringe length

Product Code
Graseby® 3100 syringe pump
0131-0001

Safety and simplicity

Fast Occlusion Alarm

The 3100’s internal occlusion pressure detector has a time to alarm response which makes it suitable for neonatal risk infusions.

Adjustable Occlusion Pressure

The Graseby® 3100 is suitable for a range of applications from routine ward use to neonatal infusions.

Excellent Flow-Rate Accuracy

The high level of short and long-term flow-rate accuracy makes the 3100 suitable for neonatal and high risk infusions.

0.1 – 199.9ml/hr Infusion

Rate allows a wide range of drug therapies.

The internal battery provides more than two and a half hours’ power for patient transportation, or in the event of AC power failure.

The totaliser allows volume infused to be recorded.

Automatic Syringe Size-Sensing

Automatic sensing of 20ml, 30ml and 50/60ml size syringes.
 The Graseby® 3100 accepts syringes from all major manufacturers.



Product Code
Graseby® 3150 syringe pump
0137-0001

AC Power Supply	100-240V at 50/60Hz
Battery Type	Sealed Lead Acid (Cyclon)
Battery Life	2 1/2 hours (fully charged and under normal operating conditions)
Syringe Types	BD Plastipak 5, 10, 20, 30, 50/60ml Braun Omnifix 5, 10, 20, 30, 50/60ml Braun Perfusor 50ml (optional) Monoject 5, 10, 20, 30, 50/60ml Terumo 5, 10, 20, 30, 50/60ml Fresenius Injectomat 10, 50ml IMS Pumpjet 30ml (prefilled)

Infusion Range	0.05 – 200.0ml/hr 0.01 – 999.0mg/hr 0.01 – 999.0mg/kg/hr 0.01 – 999.0µg/hr 0.01 – 999.0µg/kg/min 0.01 – 999.0µg/kg/hr 0.01 – 999.0mg/kg/min
Mass Unit Programming Range	Patient Weight 0.4 – 200.0kg Drug mass 1µg – 999.0mg Drug Volume. 1ml – 60ml
Volume Infused Counter	0 – 999.9mls (in 0.1 ml increments)
Electrical Safety	Class II; Type CF; Drip-proof IPX1
Design Standards	IEC 601–1, IEC 601–1–2

Complete History Log – Flexible Infusion Pump with Memory

Excellent Flow-Rate Accuracy

The precision components and patented design ensure high accuracy across the whole infusion range.

Clinician / Technician Menu

A wide range of parameters:
 Syringe size/brand lock, maximum allowable infusion rate, selectable infusion modes including intermittent and pre-set volume, mass unit infusion rate options, rate change whilst infusing, bolus whilst infusing, pressure sensing method, pressure display units and format, alarm volume.

Service Information Log

Records pump usage and reliability data.
 RS232 Serial Port for connection to a printer or remote monitoring system.

Flexible Power Supply

The 3150 can be used on AC power supplies from 100 - 240V AC, 50/60 Hz, or can operate via their internal batteries which provide more than three hours’ power for patient transportation, or in the event of AC power failure.
 Note: 3150 available in English language version only.



Specifications

AC Power Supply	100-240V at 50/60Hz
Battery Type	Sealed Lead Acid (Cyclon)
Battery Life	2 1/2 hours (fully charged and under normal operating conditions)
Syringe Types	BD Plastipak 5, 10, 20, 30, 50/60ml Braun Omnifix 5, 10, 20, 30, 50/60ml Braun Perfusor 50ml (optional) Monoject 5, 10, 20, 30, 50/60ml Terumo 5, 10, 20, 30, 50/60ml Fresenius Injectomat 10, 50ml IMS Pumpjet 30ml (prefilled)
Infusion Range	0.05 - 200.0ml/hr 0.01 - 999.0mg/kg/hr

Product Code	
Graseby® 3200 syringe pump	0130-0001
	0.01 - 999.0µg/kg/hr 0.01 - 999.0mg/kg/min 0.01 - 999.0mg/hr 0.01 - 999.0µg/hr
Mass Unit Programming Range	
Patient Weight	0.4 - 200.0kg
Drug mass	1µg - 999.0mg
Drug volume	1ml - 60ml
Volume Infused Counter	0 - 999.9mls (in 0.1 ml increments)
In-line Occlusion Pressure Range	0 - 1000 mmHg 0 - 1355 cmH ₂ O 0 - 133.3 kPa 0 - 1316 mBar 0 - 19.34 psi

In-line Pressure Monitoring – Plus Complete History Log

Mass Rate Infusion Units

The choice of infusion units simplifies new drug infusion protocols. The mass unit infusion regime can be displayed as a ml/hr infusion rate if desired.

Intermittent Infusion Mode

Allows infusion of a volume of drug over a set delivery time (e.g. 5ml over 15 minutes), with unique Repeat Option, (e.g. 5mls every 2 hours), simplifying repeated drug administration.

Configurable to your Specific Needs

The 3200 gives you control over which features are made available, allowing faster, simpler control of regular infusions.

Preset Volume or Preset Timed (VTBI) Infusion

Allows the safe administration of a pre-determined volume of drug (e.g. 10ml at 4ml/hr, or 10ml over 20 minutes).

Wide Range of Syringe Sizes and Types

The 3200 accepts syringe sizes from 5ml to 60ml, from all major syringe brands, with automatic size detection.



Specifications

AC Power Supply	220-240V or 100-120V at 50/60Hz
Battery Type	Sealed Lead Acid (Cyclon)
Battery Life	8 hours (fully charged and under normal operating conditions)
Syringe Types	BD Plastipak 20, 30, 50/60ml Braun Omnifix 20, 30, 50/60ml Braun Perfusor 50ml (optional) Monoject 20, 30/35, 50/60ml Terumo 20, 30/35, 50/60ml Fresenius Injectomat 50ml IMS Pumpjet 30ml (prefilled) DBL Rapiject 50ml (prefilled)
Concentration	1µg/ml - 99.5mg/ml
Loading Dose	0µg - 99.5mg/ml
PCA (Bolus) Dose	0µg - 99.5mg/ml
Dose Duration	STAT or 1-15 minutes
Lock-out Period	0-360 minutes

Product Code	
Graseby® 3300 syringe pump	0128-0001
Dose Limit Range	1-8 hours
Continuous Infusion	0-20 ml/hr (with bolus)
Weight	Not exceeding 3.5kg inc batteries and pole clamp
Dimensions	335mm x 195mm x 130mm
Operating Temperatures	5 to 40°C (IEC 601-1)
Drive Accuracy	+/- 2%
Electrical Safety	Class II, Type CF, Drip proof
Design standards	BS 5724 Part 1 IEC 601 Part 1 VFG 1046/1984
Printer/Monitor Port	D-type 9 way connector (RS232)
Language Versions	English, French, German, Italian, Dutch, Spanish
UK Patent no.	2229497

Keeping Pain Under Their Control

Safe

The locking syringe cover provides additional security to the standard syringe tampering alarms.

Effective

With features like clinician override, loading dose and a comprehensive alarm system, the Graseby® 3300 is suitable for all types of patient in any clinical situation.

Flexible

The 3300 PCA Pump is suitable for use with strong and weak analgesics for both adults and children. A range of syringe brands may be used and a variety of external devices can be connected via the RS232.

Easy to Use

The 4 step programme sequence allows for quick and simple programming. The clear LCD display gives the user comprehensive messages and prompts.

Unique

The unique Patient Activated Timed Infusion Mode makes a background infusion of morphine safe. This helps to control a patient's pain at night to enable better rest and recovery.

Patient History Key

The history can be viewed on-screen by a summarised or extended format – during or after the infusion.



Specifications

AC Power Supply	220-240V, 100 -120V, 50/60Hz, 40VA
Battery Type	Sealed Lead Acid (Cyclon)
Battery Life	10+ hours (fully charged at 400ml/hr)
Syringe Types	BD Plastipak 5, 10, 20, 30, 50/60ml Braun Omnifix 5, 10, 20, 30, 50/60ml Braun Perfusor 50ml (optional) Monoject 5, 10, 20, 30/35, 50/60ml Terumo 5, 10, 20, 30/35, 50/60ml Fresenius Injectomat 50ml IMS Pumpjet 30ml (prefilled)
Flow Rate	Maintenance infusion: 0.1 – 400ml/hr, in 0.1ml increments
Bolus infusion	0.1 – 1200ml/hr, in 0.1ml increments
Mass unit programming	Units available: µg/kg/hr, µg/kg/min mg/kg/hr, mg/kg/min, µg/kg, mg/kg ml/hr

	Product Code
Graseby® 3400 syringe pump	0132-0001
Volume Infused Totaliser	0- 999.9ml
Weight	Not exceeding 3.5kg inc batteries and pole clamp
Dimensions	325mm x 195mm x 115mm with pole clamp fitted and plunger clamp closed
Operating Temperatures	5 to 40°C (IEC 601-1)
Drive Accuracy	+/- 2%
Electrical Safety	Class II, Type CF, Drip proof IPX1
Design standards	EN 60601-1-1990 EN 60601-2-1993



Specifications

AC Power Supply	100 –250V, 50/60Hz, 40VA
Battery Type	Sealed Lead Acid (Cyclon)
Battery Life	10+ hours (fully charged) 10% @ 1200ml/hr 90% @ 400ml/hr
Syringe Types	BD Plastipak 5, 10, 20, 30, 50/60ml Braun Omnifix 5, 10, 20, 30, 50/60ml *Braun Perfusor 50ml (optional) Monoject 5, 10, 20, 30, 50/60ml Terumo 5, 10, 20, 30, 50/60ml Fresenius 50ml IMS Pumpjet 30ml (prefilled) Zeneca PFS 50ml 1% and 2% Nipro 5, 10, 20, 30, 50/60ml JMS 5, 10, 20, 30, 50/60ml
*non-TCI pumps only	
Flow Rate	Maintenance infusion: 0.1 – 400ml/hr, in 0.1ml increments

	Product Code
Graseby® 3500 syringe pump	0138-0001
Bolus infusion	0.1 - 1200ml/hr, in 0.1ml increments
Mass unit programming	Units available: µg/kg/hr, µg/kg/min mg/kg/hr, mg/kg/min, µg/kg, mg/kg ml/hr
Volume Infused Totaliser	0- 999.9ml (in 0.1ml increments) 0- 99999.999ml (in 000.1ml increments)
Weight	Not exceeding 3.5kg inc batteries and pole clamp
Dimensions	325mm x 195mm x 115mm with pole clamp fitted and plunger clamp closed
Operating Temperatures	5 to 40°C
Drive Accuracy	+/- 2% measured over a complete syringe
Diprifusor™ Patient Details	Age: 16 - 100, Weight: 30 - 150kg Target: 0.1 - 15µg/ml
Electrical Safety	Class II, Type CF, Drip proof IPX1
Design standards	IEC 601-1-2

Simplicity and Safety in Anaesthesia and Intensive Care

Wide infusion Rate Range

0.1 – 400 ml/hr for maintenance infusions.

0.1 – 1200 ml/hr for bolus infusions.

Tailor-made performance for the wide range of drugs used in anaesthesia and intensive care.

Preset Hands-free Bolus

Allows a predetermined bolus to be set and delivered, automatically.

Mass Rate Infusion Units

Choice of infusion units (ml/hr, mg/kg/hr, mg/kg/min, µg/kg/hr, µg/kg/min, mg/hr, µg/hr) simplifies drug infusion protocols. The mass unit infusion regime can be displayed as a ml/hr infusion rate.

Internal Battery

Provides minimum of 10 hours’ power for patient transportation.

Adjustable Occlusion Pressure

From 250 – 850 mmHg (33-113 KPa). Allows use over a range of applications from intravenous to spinal infusions.

RS 232 Communications

The Graseby® 3400 has an Open Communications Protocol* to allow the pump to be remotely controlled and/or monitored. This makes it ideal for use with pharmacokinetic model-driven systems or by other types of equipment requiring controlled drug delivery.

* available on request.

Convenience and Control in IV Anaesthesia

Rate

Covers the widest range of drug applications and patient types.

Bolus

Hands free: programmed dose lets you concentrate on the patient not the pump. Hands on – for precise control in dose / response situations. Bolus volume dose and dose duration are calculated automatically.

Mass Units Infusion

Wide choice of units with rate displayed in mass unit and ml/hr.

Totaliser

Records volume infused in ml and/or mass unit.

RS232 Interface

Remote computer control and monitoring for research applications.

Power Supply

Flexible – can be used worldwide.

Batteries

Give more than 10 hours life from full charge.

Internally Adjustable Occlusion Pressure

Suitable for a range of applications.

Optional TCI Capability

- With the Astra Zeneca Diprifusor module the 3500 pump can perform Target Controlled Infusions of Diprivan™ (propofol).
- Makes controlling the depth of anaesthesia as easy as using a vaporiser.*
- Effect site concentration available at the touch of a button.
- Clear display of predicted blood concentration of propofol.
- Compensation for interrupted infusion.
- Time to (configurable) ‘wake up’.
- Time to target.



Specifications

PVC Extension Sets & R Clamp

Length (cm)	Priming	Product Codes
50	0.5ml	0128-0196
100	1.0ml	0128-0197
150	1.5ml	0128-0122
200	2.0ml	0128-0198

Sets supplied in packs of 50

Specifications

PVC Extension Sets & ASV & R Clamp

Length (cm)	Priming	Product Codes
50	0.5ml	0128-0251
100	1.0ml	0128-0252
150	1.5ml	0128-0253
200	2.0ml	0128-0254

Sets supplied in packs of 50

Specifications

PE Lined Extension Sets & ASV & R Clamp

Length (cm)	Priming	Product Codes
50	0.5ml	0128-0255
100	1.0ml	0128-0256
150	1.5ml	0128-0257
200	2.0ml	0128-0258

Sets supplied in packs of 50

Specifications

PE Lined Extension Sets (narrowbore 0.5mm) + ASV + R Clamp

Length (cm)	Priming	Product Codes
100	0.25ml	0128-0259
150	0.4ml	0128-0260

Sets supplied in packs of 50

Specifications

Yellow Epidural PU Extension Sets + ASV + R Clamp

Length (cm)	Priming	Product Codes
150	1.5ml	0128-0261
200	2.0ml	0128-0262

Sets supplied in packs of 50

Specifications

Yellow Epidural PU Extension Sets + S Clip

Length (cm)	Priming	Product Codes
150	1.5ml	0128-0263
200	2.0ml	0128-0264

Sets supplied in packs of 50

Specifications

150cm PVC Extension Sets + Y Set + ASV + Non-Return Valve and Loop

		Product Code
Primary Line - 2.8ml / Secondary Line - 0.5ml		0128-0121

Sets supplied in packs of 50

Specifications

150cm PVC Extension Sets + Pressure Sensing Disc

Priming	Product Code
2.2ml	0130-0041

Sets supplied in packs of 50

Note: These part-numbers refer to the UK variant.

Flo-Safer™ Extension Set System

Commencing an infusion requires not only the correct equipment, training, drug protocol and patient management, but also the appropriate disposal.

Smith Medical can offer a range of extension sets to suit every individual patient requirement.

- Includes line clamps with an option of an integral Anti-Syphon Valve.
- Available with a fluid path of PVC or PE medical grade plastics.
- Yellow extension sets that are colour-coded to conform with the internationally recognised colour for epidural use.
- Wastage and consequent drug expenditure reduced by low volume sets that incorporate narrow bore tubing, reducing priming volume by 75%.
- Integral Roberts Clamp giving the confidence of a safer and convenient method of flow control.

ASV – Anti-Syphon Valve
PVC – Polyvinylchloride
PE – Polyethylene

PU – Polyurethane
R Clamp – Roberts Clamp
S Clip – Slip Clip