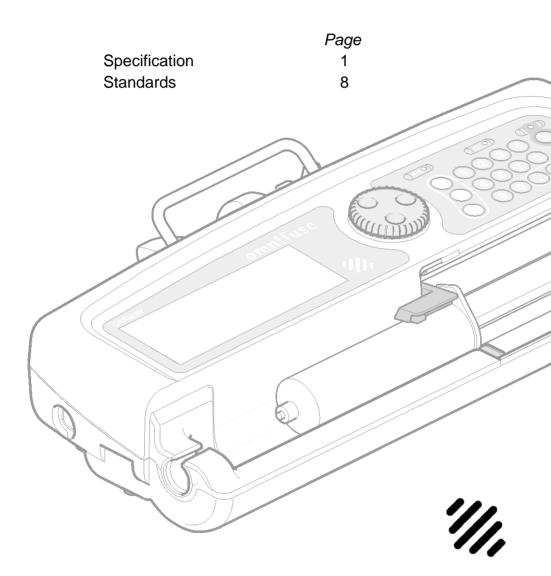
# Specification/Standards



# Specification

Weight	3.5 kg (approx)	
Dimensions	384 mm x 170 mm x 92 mm (not including pole clamp)	
Orientation	Horizontal, either mounted on a pole or flat on a stable horizontal surface	
Display	LCD super twist with viewable area of approximately 105 mm x 32 mm. Green backlight when connected to AC mains supply and for up to 3 minutes (configurable) following a key-press when operating on battery. Backlight flashes red during an alarm unless configured Off	
Data retention time	More than 12 months	
Operating temperature	5° to 40°C	
Storage temperature	-20° to 55°C	
Relative humidity	20% to 90% non-condensing (operating)	
Atmospheric pressure	700 - 1060 millibars (operating)	
Alarm volume	Louder than 65 dBA at 1 metre at maximum volume	
Software options	Extra Infusion modes and Mass Units	
	Drug Protocols	
	Graphics	
	Remote Control	

# Pump variants

Description	Part numbers
Omnifuse Syringe Pump:	
UK and Ireland Model	0159-0001
Australian Model	0159-0740
Canadian (English) Model	0159-0711
Omnifuse with In-line Occlusion Sensing:	
UK and Ireland Model	0152-0001
Australian Model	0152-0740
Canadian (English) Model	0152-0711
Omnifuse with Lockable Cover:	
UK and Ireland Model	0157-0001
Australian Model	0157-0740
Canadian (English) Model	0157-0711
Omnifuse with In-line Occlusion Sensing and Lockable Cover:	
UK and Ireland Model	0158-0001
Australian Model	0158-0740
Canadian (English) Model	0158-0711

# Power supply

AC power supply	100 - 240 V at 50/60 Hz. 50 W	
Battery type	Set of three $\operatorname{Cyclon}^{\operatorname{TM}}$ sealed lead-acid batteries	
Battery operating time	10 hours at 5 ml/h	
Battery charge time	10 hours	
Backup battery	Single 3 V lithium battery	

# Infusion flow rates

Range	0.1 to 800 ml/h dependent on syringe size	
Accuracy	±2% measured over the 2nd hour of an infusion at 1 ml/h and at 5 ml/h with a Braun Omnifix 50 ml syringe and 150 cm extension set	
Bolus accuracy	±5% with a Braun Omnifix 50 ml syringe and 150 cm extension set measured over 25 boluses of 1 ml each	
KVO rate	Between 0.05 ml/h and 2 ml/h	
Purge rate	50, 100, 200, 400, 800 ml/h (upper limit dependent on syringe size)	
Bolus rate	<ul> <li>0.1 to 800 ml/h (upper limit dependent on syringe size) in increments of:</li> <li>0.1 ml/h up to 100 ml/h</li> <li>1 ml/h above 100 ml/h</li> </ul>	

## Maximum infusion flow rates

Syringe Size (ml)	Flow Rate (ml/h)
2	50 ml/h
3	50 ml/h
5	100 ml/h
10	200 ml/h
20	400 ml/h
25	400 ml/h
30	600 ml/h
50/60	800 ml/h

#### **Programming ranges**

#### Continuous infusion rate programming ranges by infusion unit

Unit	Range	Increment
ml/h	0.1 to 800	0.1 up to 100, 1 above 100
ml/min	0.01 to 13.0	0.01 up to 10, 0.1 above 10
mg/kg/h	0.1 to 99.9	0.1
µg/kg/h	1 to 999	1
ng/kg/h	1 to 999	1
mg/h	0.1 to 500	0.1 up to 100, 1 above 100
μg/h	0.1 to 999	0.1 up to 100, 1 above 100
ng/h	0.1 to 999	0.1 up to 100, 1 above 100
mg/kg/min	0.01 to 99.9	0.01 up to 10, 0.1 above 10
μg/kg/min	0.1 to 999	0.1 up to 100, 1 above 100
ng/kg/min	1 to 999	1
mg/min	0.01 to 50.0	0.01 up to 10, 0.1 above 10
μg/min	0.01 to 99.9	0.01 up to 10, 0.1 above 10
ng/min	1.00 to 99.9	0.01 up to 10, 0.1 above 10

## Infusion pressure

Maximum	1250 mmHg
infusion pressure	<b>Note:</b> This value is approximate and is the pressure at the front face of the syringe plunger. It also assumes an ideal syringe with no stiction and a low infusion rate.

Alarm levels	Approximate pressure in mmHg
Level 1	180
Level 2	300
Level 3	500
Level 4	750
Level 5	1250
	<b>Note:</b> Approximate pressure at the front face of the syringe plunger assuming an ideal syringe with no stiction and a low infusion rate.

# **Occlusion sensing - pressure levels**

#### Occlusion sensing - time to occlusion

Alarm level and infusion rate	Number of minutes to occlusion	Bolus on occlusion release
Level <b>1</b> @ 1 ml/h	15	Less than 0.1 ml
Level <b>1</b> @ 5 ml/h	2.5	
Level <b>5</b> @ 1 ml/h	More than 100	Less than 1.0 ml
Level <b>5</b> @ 5 ml/h	21	
	<b>Note</b> : Values are approximate and are determined using the method described in EN 60601-2-24 clause 51.6b using a Braun Omnifix 50 ml syringe and a 150 cm line (part number 0128-0122).	
	<b>Note</b> : Values are for a 50 ml syringe. Values are reduced for smaller syringes.	

# Accessories

Flo-Safer™ extension sets	Length	Part number
Syringe extension sets	$150~{\rm cm}$	0128-0122
	$200~{\rm cm}$	0128-0198
Syringe extension sets with anti-syphon valve	$150~{ m cm}$	0128-0253
	$200~{\rm cm}$	0128-0254
Syringe extension set with pressure sensing disc	$150~{\rm cm}$	0130-0041
Polyethylene-lined syringe extension sets with anti-	$150~{\rm cm}$	0128-0257
syphon valve	$200~{\rm cm}$	0128-0258
Low-priming volume syringe extension set with anti- syphon valve	100 cm	0128-0259
Epidural syringe extension sets with anti-syphon	$150~{\rm cm}$	0128-0261
valve (Yellow)	$200~{\rm cm}$	0128-0262
Epidural syringe extension sets (Yellow)	$150~{ m cm}$	0128-0263
	200 cm	0128-0264

Software	Part number
Graseby Omnifuse Technician PC software	0151-0266
Omnifuse Drug Protocol Management System	0153-0084

Omnistack		Part number
Omnifuse pump stacking system		0156-0001
Wheelbase		0156-0096
Pole assembly for wheelbase	Long	0156-0097
	Short	0156-0098

# Supported syringe brands and sizes

Brand/Size	2	3	5	10	20	30	50/60
Brand/Size	2	3	5	10	20	30	50/60
BD Plastipak							
BD Precise							
Braun Euroject							
Braun Omnifix							
Braun Perfusor							
Codan							
Faulding Pharmaject*							
Fresenius Injectomat							
IMS Pumpjet*							
JMS							
Monoject							
Nipro							
Terumo							
ТОР							

\* Pre-filled syringe

**Note**: The syringes shown in the **Supported syringe brands and sizes** table are supported by Omnifuse with their critical dimensions but may not achieve the stated accuracy due to syringe variability (with the exception of the Braun Omnifix 50ml).

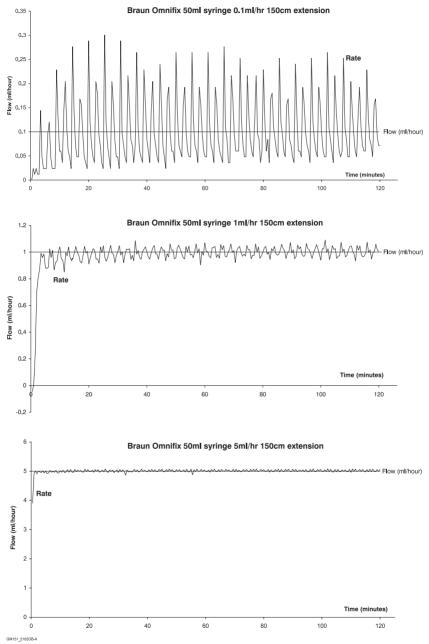
# Symbols

Symbol	Meaning
	The applied part is <b>Type CF</b>
Å	Identifies the <b>Potential Equalisation Terminal</b> located on the body of the pole clamp
~	The pump should be operated from an <b>AC power</b> source

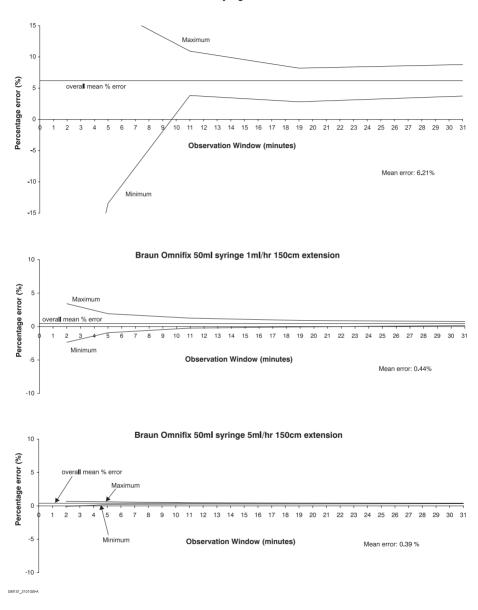
# Standards

Electrical safety	Classified as Internally Powered Equipment: Class 1, Type CF insulation on all inputs			
Fluid ingress protection	IPX4 Splash-proof			
CE marking	The CE mark demonstrates that the pump conforms to the requirements of European Council Directive 93/42/ EEC concerning medical devices. The number 0473 identifies the Notified Body under which the Quality Systems operated within Graseby Medical Ltd. are assessed			
Design standards	EN60601-1, EN60601-1-2, EN60601-1-4, EN60601-2-24			
Disposal	When the time comes to dispose of the pump, its batteries or any of its accessories, do so in the best way to minimise any negative impact on the environment. You may be able to use recycling or disposal schemes. To find out about these, contact your local waste disposal service.			
	Separate any other parts of the equipment where arrangements can be made for their recovery; either by recycling or energy recovery.			
	The only pump components which are potentially harmful enough to require separate disposal according to manufacturer's instructions or local regulations are:			
	• Main batteries (lead acid)			
	• Back-up battery on main PCB (lithium)			
	• LCD display (contains harmful chemicals and may explode if incinerated)			
	<b>Note:</b> Existing national or local regulations concerning waste disposal must take precedence over the above advice			
Patents	Applied for			

# Startup curves



# Trumpet curves



Braun Omnifix 50ml syringe 0.1ml/hr 150cm extension