B. Braun Space

The New Standard

Automated Infusion Systems
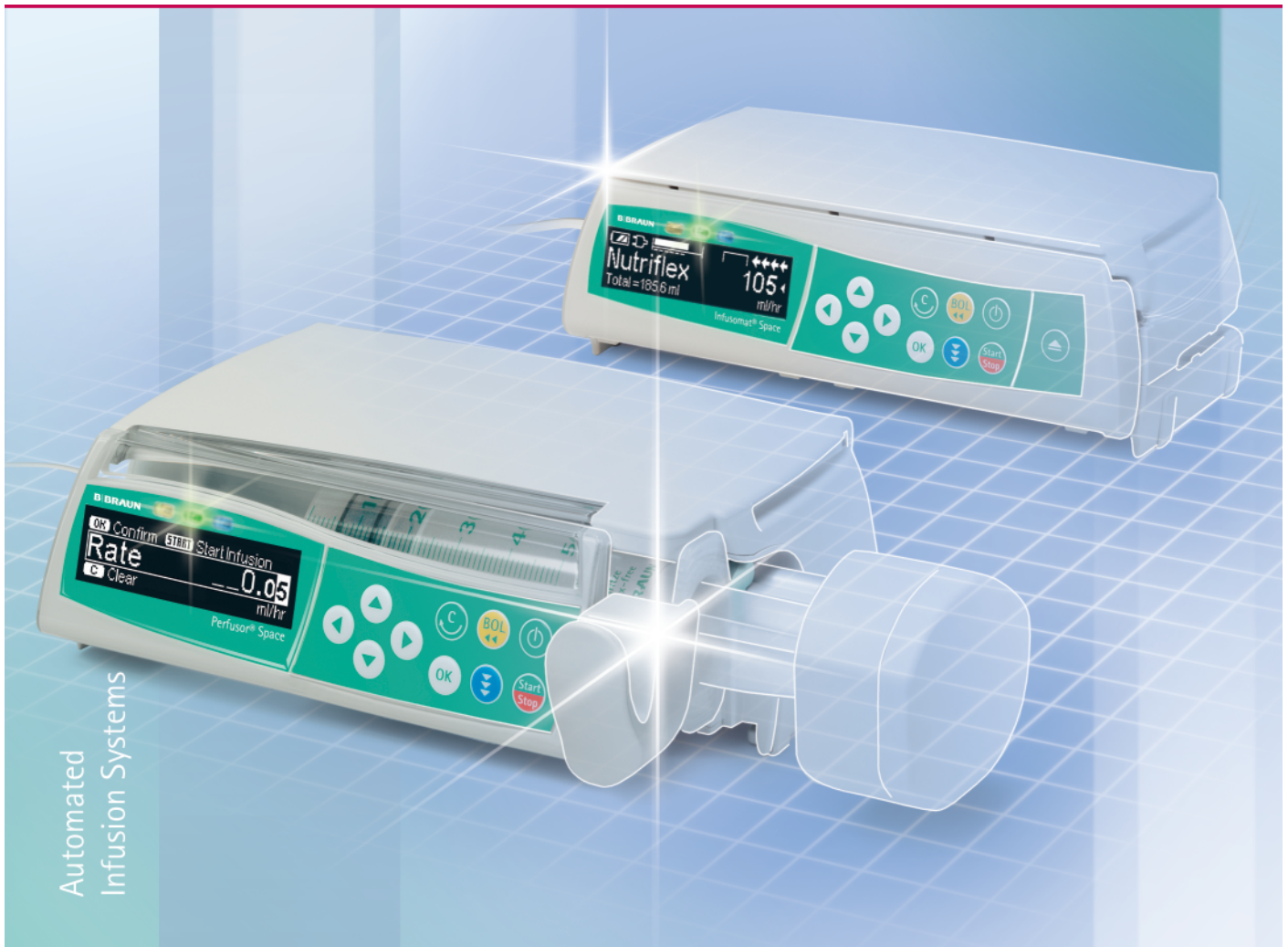
Smaller. Simpler. Safer.

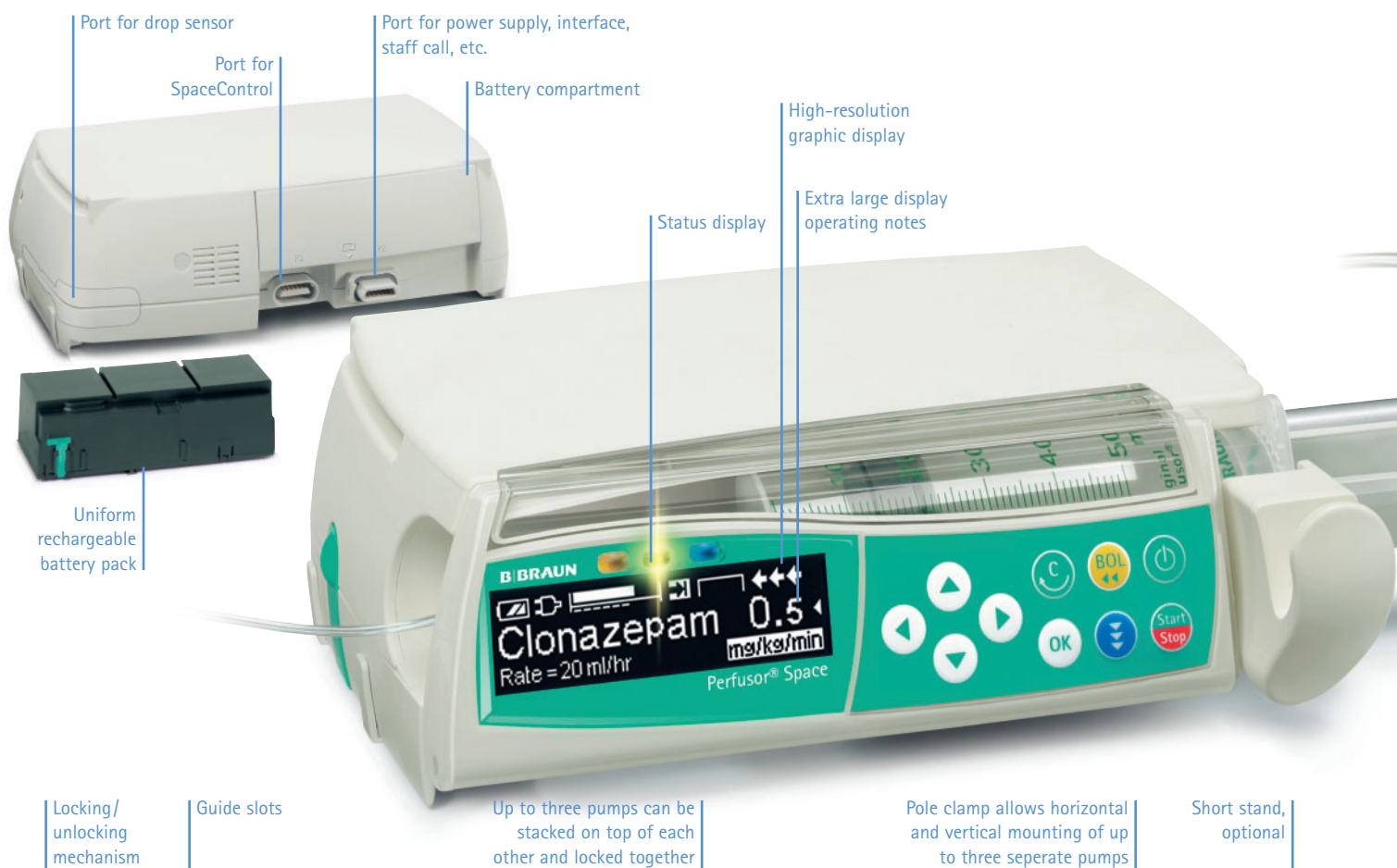**B | BRAUN**
SHARING EXPERTISE

Perfusor® Space & Infusomat® Space
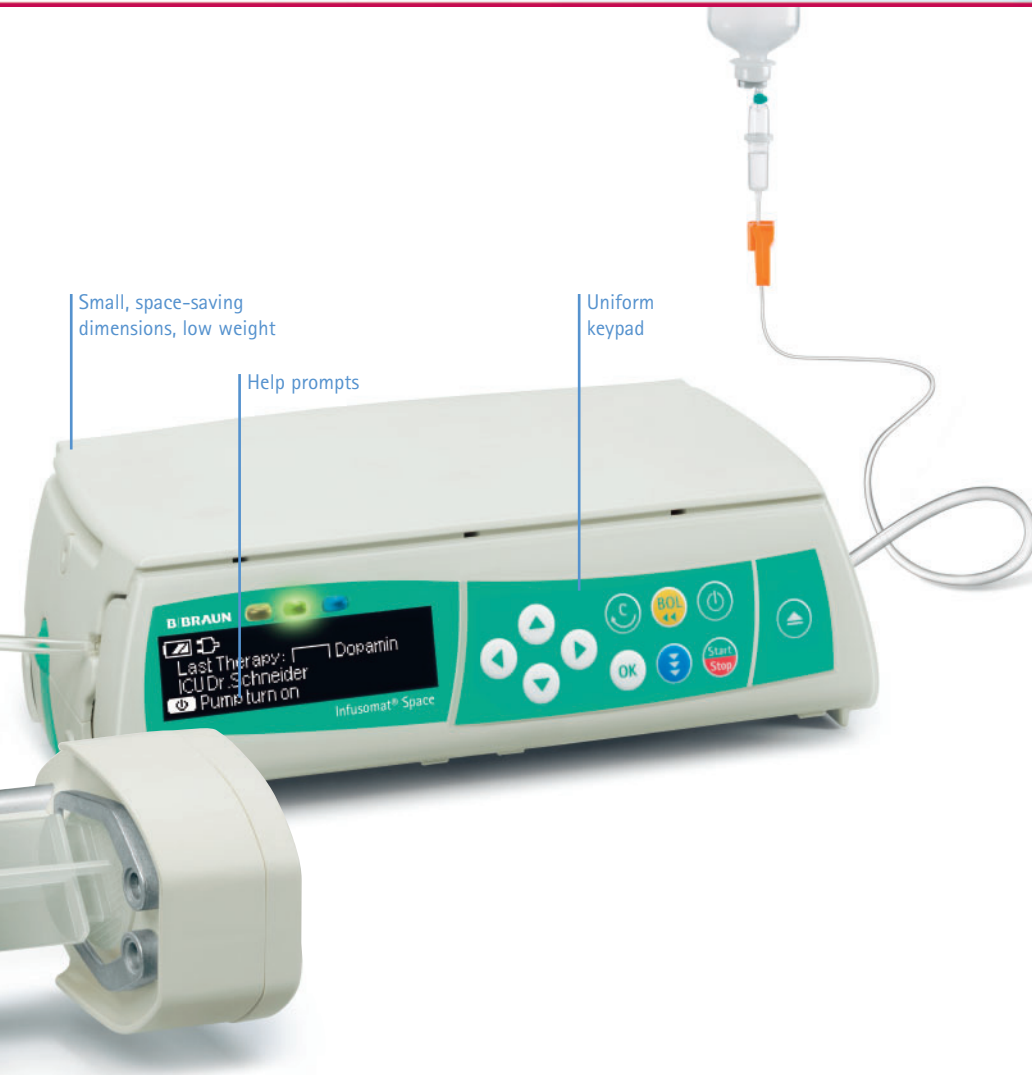
Two pump types – one concept

Smaller, lighter and safer to handle than any previously compar-able system. Perfusor® Space and Infusomat® Space are setting new standards in infusion technology.
The user interface for both pump types is identical. This unifor-mity lowers costs for medical and technical training, streamlines workflow and raises safety standards.

Perfusor® Space and Infusomat® Space offer universal solutions for a wide variety of therapeutic tasks, while raising standards for mobility and flexibility. For the first time, this allows the standardisation of infusion management systems across hospital and community settings. This efficient use of Investment pro-motes reduced costs for both business and administration.

Port for drop sensor

Port for SpaceControl

Port for power supply, interface, staff call, etc.

Battery compartment

High-resolution graphic display

Extra large display operating notes

Status display

Uniform rechargeable battery pack

B|BRAUN

Clonazepam 0.5
mg/kg/min
Rate = 20 ml/hr

Perfusor® Space

BOL

OK

Start Stop

Locking/ unlocking mechanism

Guide slots

Up to three pumps can be stacked on top of each other and locked together

Pole clamp allows horizontal and vertical mounting of up to three seperate pumps

Short stand, optional

Small, space-saving dimensions, low weight

Help prompts

Uniform keypad

B|BRAUN

Last Therapy: Dopamin
ICU Dr.Schneider
Pump turn on

Infusomat® Space

Carrying handle integrated in the pole clamp

Lighted keypad and display

VOL = 0.00 ml
ZEIT = 0.00 hh:mm
Ges. Vol. = 14.63 ml
10
ml/h

Ges. Vol. = 0.38 ml
5.5
ml/h

Custom-configurable functions

■ Dose Calculation

Automatically and accurately calculates delivery rates based on dosage guidelines, concentration, container size, and patient's body weight.

Stand.Mode   START
Concentr   2 mg/ml
P.Weight   70 kg
Dosage   1.2 mg/kg/hr

Enter variables for dose calculation

■ Drug Library

Select medications and infusion therapies quickly and easily with the Drug Library feature. Every pump is equipped with a memory capacity that stores up to 720 different drugs along with key infusion parameters.

Drug Library : all drugs
-- ABC --
Adrenalin
Aminoplasmal

Select medication from the Drug Library

Grenze: 0.001 ... 2 mg/kg/min
Dosis = 7.5 mg/kg/min ?   Ja
                           Nein

Drug-specific dosage limits prevent overdosing

■ Macro mode

Adapt the display screen

■ Help prompts

Operating instructions display in brief

■ Alarm volume settings

Adjust the volume of the audible alarm to be heard above the ambient noise level
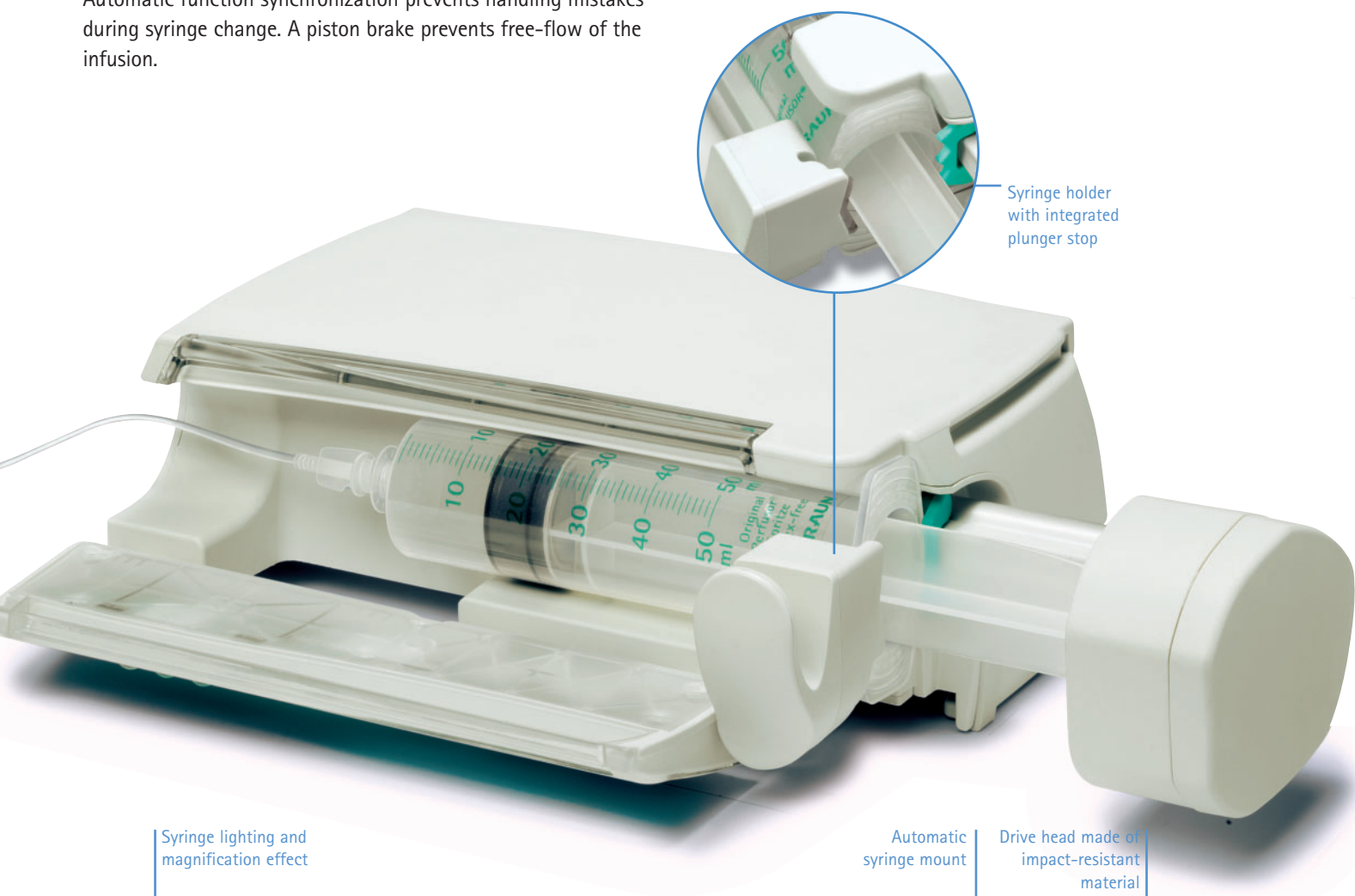
■ Data lock

Protects against unauthorized tampering

Perfusor®Space & Infusomat®Space

Perfusor® Space – changing syringes is now more convenient and safer than ever before
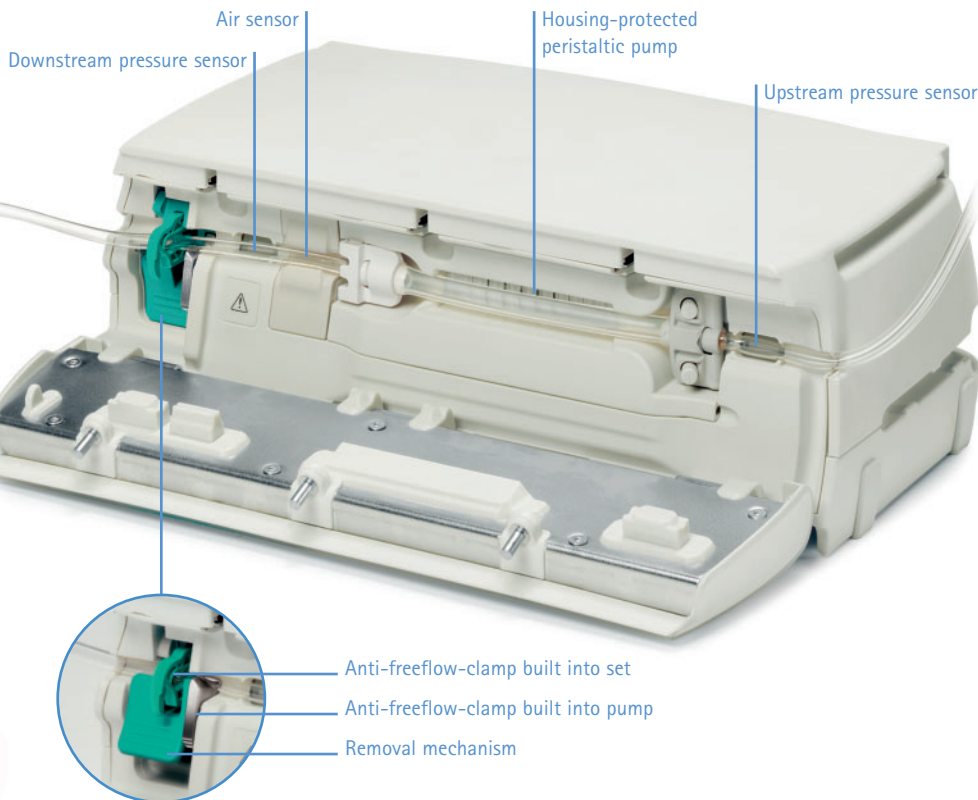
Perfusor® Space's innovative drive technology not only ensures excellent startup and delivery properties, but also delivers safety and unique convenience when changing syringes.
Automatic function synchronization prevents handling mistakes during syringe change. A piston brake prevents free-flow of the infusion.

Syringe holder with integrated plunger stop

Syringe lighting and magnification effect

Automatic syringe mount

Drive head made of impact-resistant material

Infusomat® Space – automatic freeflow protection when removing lines

The new Infusomat® Space features double the protection, with two anti-freeflow clamps. One within the pump and another directly on the Infusomat® Space Line. Freeflow is reliably prevented even if the roller clamp was not closed before removing the line.

Air sensor

Downstream pressure sensor

Housing-protected peristaltic pump

Upstream pressure sensor

Anti-freeflow-clamp built into set

Anti-freeflow-clamp built into pump

Removal mechanism

The Peristaltik cover can be removed for cleaning.

Front cover with motorized closing mechanism

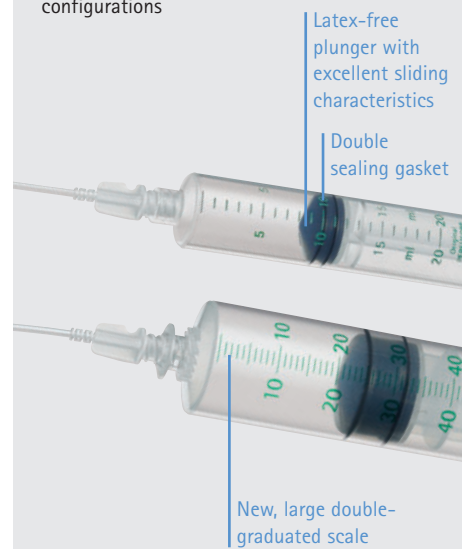■ **Original Perfusor® Syringes**

Sizes: 20 ml and 50 ml

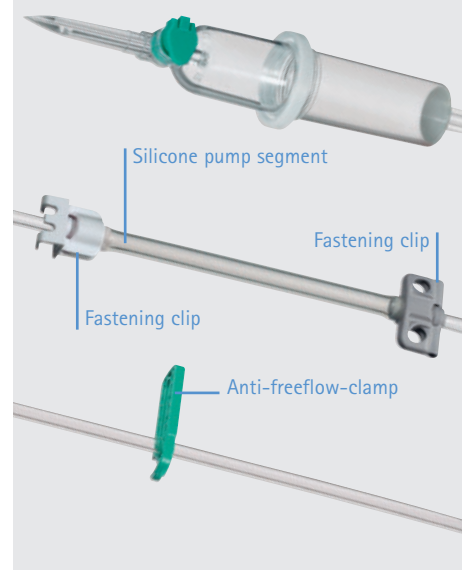■ **Omnifix® Syringes**

Sizes: 2/3, 5, 10, 20, 30, 50/60 ml

■ **Original Perfusor® Lines**

Supplied in various materials, lengths and configurations

Latex-free plunger with excellent sliding characteristics

Double sealing gasket

New, large double-graduated scale

■ **Original-Infusomat® Space-Lines**

In various designs

Silicone pump segment

Fastening clip

Fastening clip

Anti-freeflow-clamp

B. Braun SpaceControl

Operating convenience and safety

The B. Braun SpaceControl extends the functionality of infusion pumps to adapt them to a wider range of therapies. Touchscreen technology guides you comfortably to your therapeutic goal. The large, graphic user interface is straightforward and easy-to-understand, providing all the information needed to make reliable decisions.

Central control unit

When used with a SpaceStation the SpaceControl forms the central control panel. Allowing the management of each Space infusion device from a single interface. The touch of a button connects any Space workstation pump with SpaceControl.

Large, user-friendly color touchscreen display

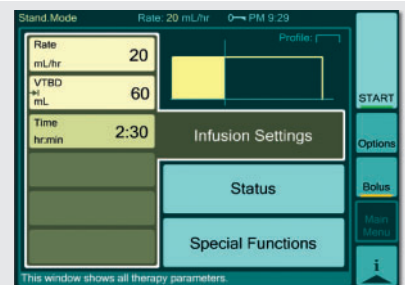Barcode reader port

Pump connection port
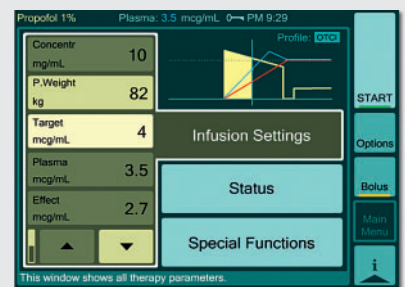
For a versatile range of treatments

SpaceControl expands the range of uses for every infusion pump. With an extensive selection of therapy-specific infusion profiles, Perfusor®Space and Infusomat®Space conveniently solve the tasks encountered in hospital and homecare settings.
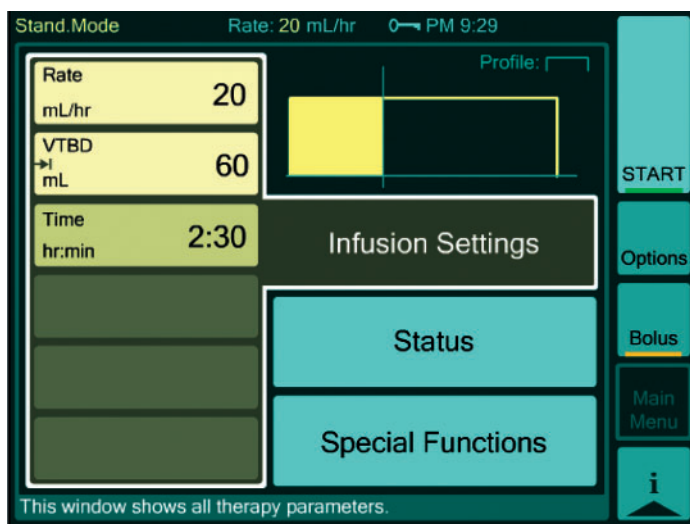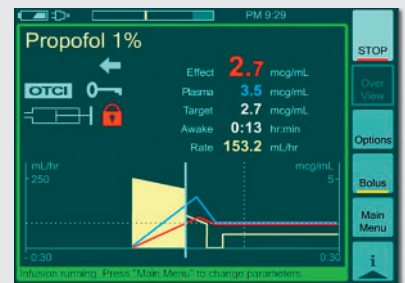

Standardmodus,
Therapieauswahl

User-friendly central
operations for intensive care

User-friendly central
operations for anesthesia

■ **Standard mode, treatment selection**
■ **Future Therapy options[3]**

■ **PCA[3]**

■ **TCI Mode[2]**
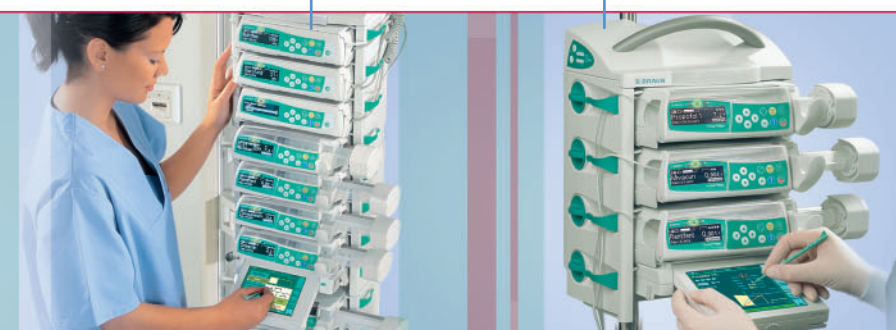
[2] available in Q1 2007
[3] available in 2007

B. Braun SpaceStation & SpaceCover

Customised systems – all it takes is a click

SpaceStation allows flexible configuration of your workstations.

Up to four Space infusion pumps can be placed in one docking station, in any configuration. All it takes is a click to integrate them into the system. Removal is just as quick and easy. For complex therapies, up to six SpaceStations can be conveniently combined into one system. The power is always supplied to the system via a single cable.

A SpaceCover with integrated carrying handle converts the B. Braun SpaceStation into a portable unit. The integrated visual and audible alarms of the SpaceCover Comfort centrally identify the status of the Space infusion devices, with alarm and pre-alarm conditions.

Battery status display and volume control for the audible alarm

Locking mechanism

Port for power supply and pump data transfer

Line guide for a structured workplace

Mechanism for unlocking the pumps

Data transfer from SpaceStation to SpaceStation

Power supply from SpaceStation to SpaceStation

Easy plug-in

Dobutamin
Rate = 20 ml/hr

SpaceCover Comfort with loudspeaker that signals a central alarm

Stand clamp for attachment to infusion stands, wall mountings and ceiling suspension units

Visual alarm display and light sensor for pump lighting control

Space Control

B. Braun Space workstations

No tools are needed to connect up to 6 SpaceStations quickly and easily to create a workstation for up to 24 infusion pumps. The system configuration can thus consist of up to 3 columns, with 1 SpaceCover over each pillar.
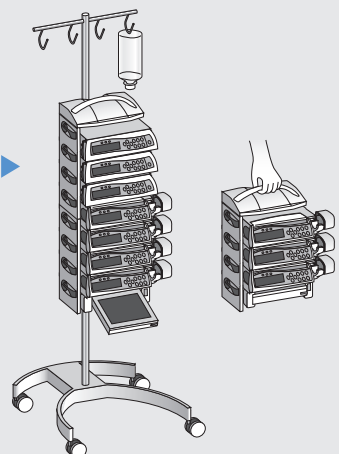
■ B. Braun Space intensive care, stationary

Adapted to ceiling supply units.
2 x 3 SpaceStations each connected to 1 pillar with SpaceCover for up to 24 infusion pumps.
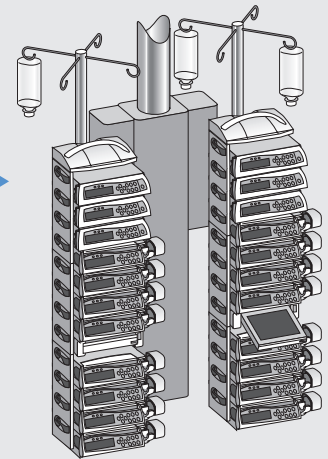
■ B. Braun Space intensive care, mobile

2 SpaceStations connected with SpaceCover for up to 8 infusion pumps.

■ B. Braun Space surgery, mobile

1 SpaceStation with SpaceCover for 3 infusion pumps with SpaceControl.

B. Braun SpaceCom

State-of-the-art data communications

Optionally integrate a SpaceCom into a SpaceStation and facilitate modern information technology capabilities.

All conventional interfaces are available for linking B. Braun Space Systems to the hospital network or to an external CIS[3]. USB[4] memory sticks can be used for network-free data transfer and storage. The data can then be analyzed with EXCEL running on a normal PC.

Low entry-level costs – web server applications

Investment in expensive hardware and software is reduced as integration into the hospital network is so easy, making SpaceCom an unbeatable platform for central data management. Use any standard Internet browser to access infusion data, medical histories or the servicing information of all Space workstations connected to the network. Infusion pump data are presented on configurable HTML pages.

Wireless mobility and no lost data

Wireless LAN[5], the communication technology of the future, is standard equipment on SpaceCom. This feature also makes online data connection, for example to the CIS, possible during transport throughout the hospital.
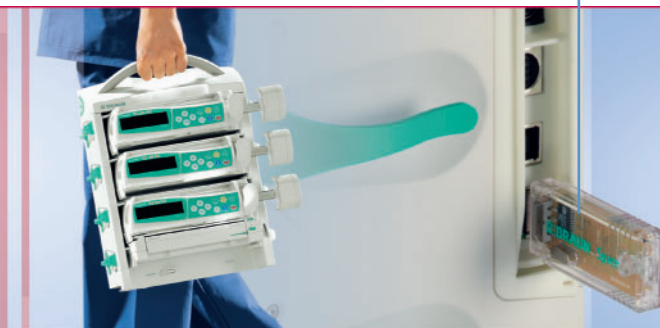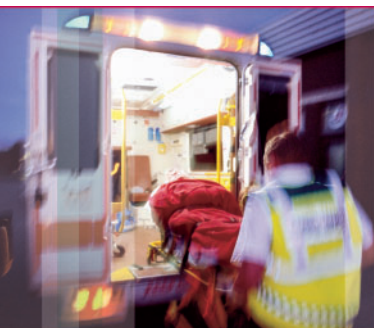
[3] Clinical Information System
[4] Universal Serial Bus
[5] Local Area Network

Ethernet RJ45

PS/2 for
Barcode reader

RS232

USB slave port

USB master port
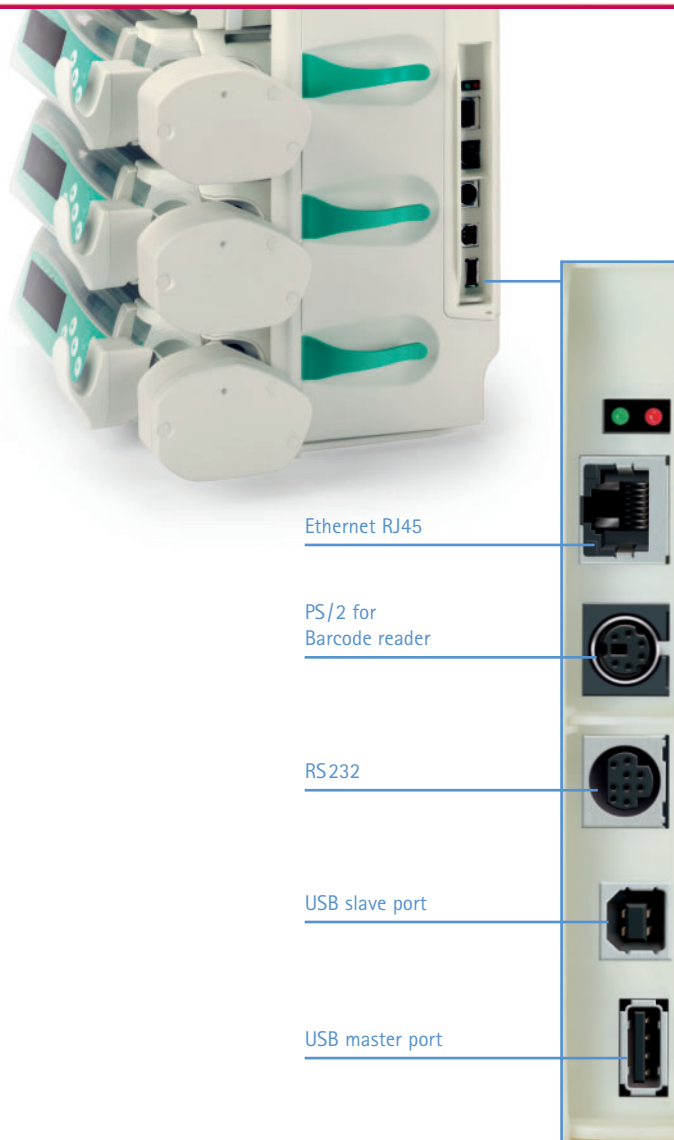
USB stick for
storing data

Easy link to an
external CIS
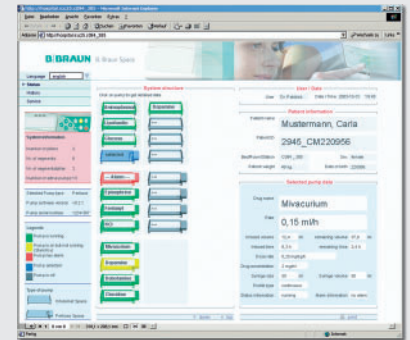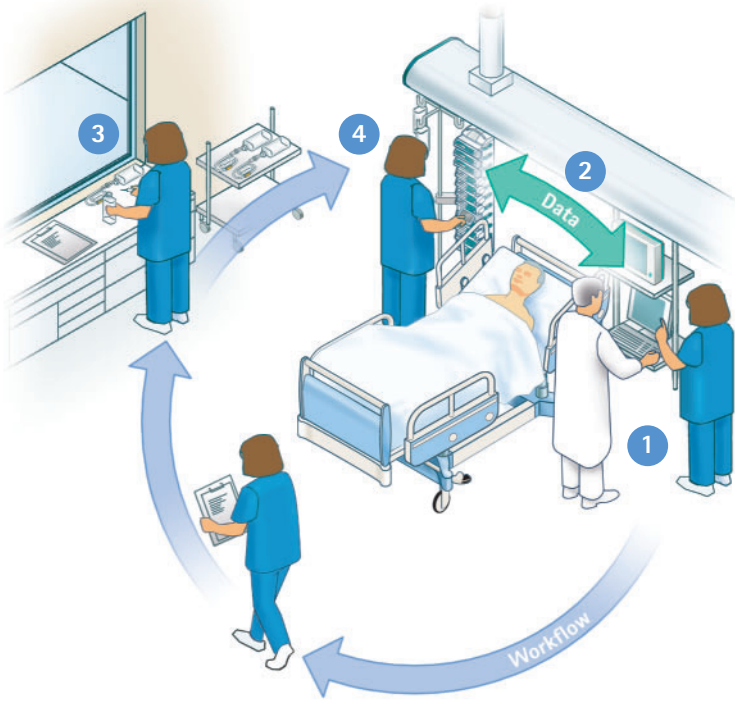
"Space Online" – the innovative web server application
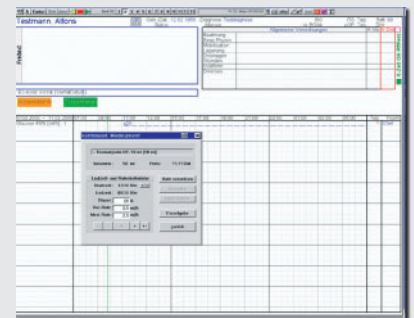
Prescription CIS
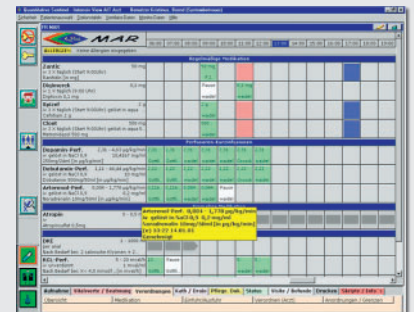
CIS

1. With CIS, prescriptions are planned and added to the CIS Drug Library.

2. The prescription is transferred to B. Braun Space.

3. The medication is prepared.

4. The prescription can be read on the system and allocated to the appropriate pumps, together with all the required data, such as dose rate, bolus and delivery rate limits.

Intranet access with web server applications

Technical data

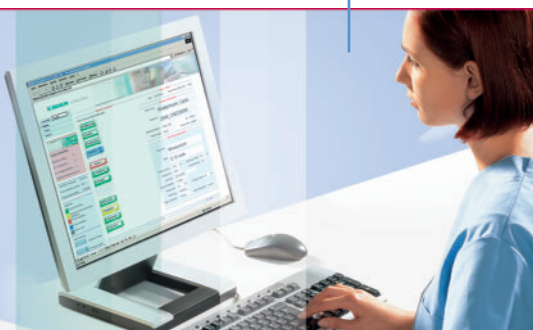|	Perfusor® Space	Infusomat® Space
Product specifications		
Type of device	Infusion syringe pump	Volumetric infusion pump
Classification	💗 defibrillation-proof, CF type, ☐ class II protection rating, in compliance with IEC/EN 60601-1 Class IIb in compliance with Council Directive 93/42/EEC	
Moisture protection	IP 22 (drip protected for horizontal usage)	
EMC	IEC/EN 60601-1-2, IEC/EN 60601-2-24, EN 55011	
Operating conditions	+5 ... + 40 °C	+10 ... + 40 °C
	Relative humidity: 30% ... 90% (without condensation), atmospheric pressure: 500 ... 1060 mbar	
Size, weight	249 x 68 x 152 mm (W x H x D, drive parked), approx. 1.4 kg	214 x 68 x 124 mm (W x H x D), approx. 1.4 kg
Performance data		
Approved disposables	Syringe types: B. Braun Perfusor®/Omnifix®; B-D, Terumo, Monoject Sizes: 2/3, 5, 10, 20, 30, 50/60 ml	Original-Infusomat® Space-Line
Delivery rate range	0.01- 999.9 ml/h	0.1- 1200 ml/h
	0.01- 99.99 ml/h in 0.01 ml/h increments 100.0 - 999.9 ml/h in 0.1 ml/h increments	0.1- 99.99 ml/h in 0.01 ml/h increments 100.0- 999.9 ml/h in 0.1 ml/h increments 1000 - 1200 ml/h in 1 ml/h increments
	Online rate modification without delivery interruption	
Accuracy of set delivery rate	± 2% in compliance with IEC/EN 60601-2-24	± 5% over 96 h with Original-Infusomat® Space-Line
Bolus delivery	Delivery rate 1 - 1800 ml/h	Delivery rate 1 - 1200 ml/h
	Max. bolus volume 99.99 ml - Bolus on demand - Bolus with volume/dose pre-selection - Bolus over time (1 min - 24 h)	
Volume pre-selection	0.1 - 9999 ml	
	0.1 - 99.99 ml in 0.01 ml increments 100.0 - 999.0 ml in 0.1 ml increments 1000 - 9999 ml in 1 ml increments	
Time pre-selection	1 min - 99 h 59 min	
Rate calculation	Automatic rate calculation by calculating volume over time or by dose	

	Perfusor® Space	Infusomat® Space
Performance data		
Dose rate calculation	Automatic calculation of the delivery rate based on dose entries in mg, µg, IE or mmol, weight- and/or time-related (e.g. mg per kg/min; mg/kg/h; mg/kg/24h), bolus application in mg, µg, IE, mmol per kg and/or per time unit (min) with automatic calculation of the bolus rate for one bolus infusion	
KVO – Keep Vein Open	Default settings: - Rate ≥ 10 ml/h: KVO Rate 3 ml/h - Rate < 10 ml/h: KVO Rate 1 ml/h - Rate < 1 ml/h: KVO Rate = set rate User-defined configuration or deactivation of KVO rates possible	
Standby (Pause) mode	Selectable by pressing one button (ON/OFF button short) Standby-time adjustable from 1 min up to 24 h in 1 min increments	
Drug Library	Drug selection in startup menu or options - Up to 720 drugs including all parameters in drug library - Up to 15 user-defined drug categories - Medication errors are prevented by drug-specific dose limits defined in the drug library	
Operator interface		
User interface	Standardized user interface for all infusion pumps in the Space Family	
Display	Backlit graphic display	
Keypad	Clearly structured, backlit keypad with 10 keys for fast and intuitive operation	Clearly structured, backlit keypad with 11 keys for fast and intuitive operation

Technical data

	Perfusor® Space	Infusomat® Space
Safety system		
Freeflow-protection	Integrated piston brake to prevent freeflow during syringe change	Device- and set-based anti-freeflow clamp for maximum security when pump door is opened or infusion line removed
Occlusion alarm	9 occlusion pressure levels selectable (approx. 0.1 – 1.2 bar)	9 occlusion pressure levels selectable (approx. 0.3 – 1.2 bar)
Bolus reduction	Automatic bolus reduction triggered by occlusion alarm	
Upstream pressure detection		Upstream pressure sensor detects closed roller clamp when used without drop sensor
Drop control		Operation selectable with or without drip sensor
Data lock	Data lock on 2 safety levels (parameters and disposables lockable)	
Alarm indicators	Optical alarm signal with clear text in display and LED Double-channel audible alarm system for maximum security Audible alarm for selected drug	
Alarms	Syringe empty, reminder alarm, pressure too high, battery empty, standby, syringe holder open, syringe not fixed properly, technical alarm, etc.	Pressure too high alarm, upstream alarm, drop alarm, air alarm, KVO alarm, reminder alarm, battery empty, standby, infusion line not or incorrectly inserted, technical alarm, etc.
Pre-alarms	Pre-alarm when syringe almost empty, 3 min before preset target (VTBI/time) near-end, battery nearly empty	Pre-alarms for preselected volume and preselected time shortly before target (VTBI/time) near end, battery pre-alarm
Power supply		
Mains power supply	Power supplied by the B.Braun SpaceStation or an optional AC adaptor (rated voltage 100 ... 240V AC~, 50/60 Hz) for stand-alone operation	
External low voltage	11 ... 16V DC⎓; supplied by external power supply 12V, or by SpaceStation, with connecting lead 12V	
Battery type	Rechargeable NiMH battery pack, quick and easy exchange without opening device	
Battery operating time	Approx. 8 h at 25 ml/h with 50 ml syringe	Approx. 4 h at 100 ml/h
	When prompted, display shows battery status in h and min	
Battery recharging	Internal battery charger recharges the battery when the pump is connected to external low voltage; recharging time approx. 6 h (external battery charger optionally available)	

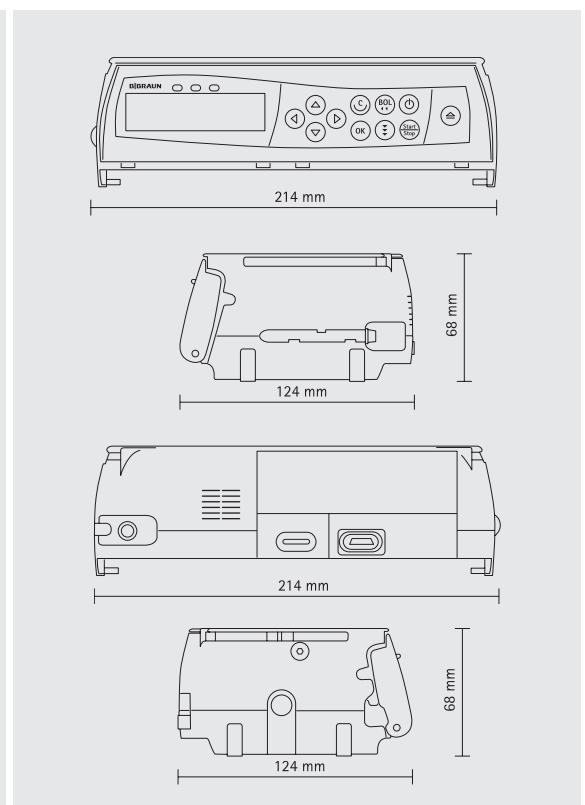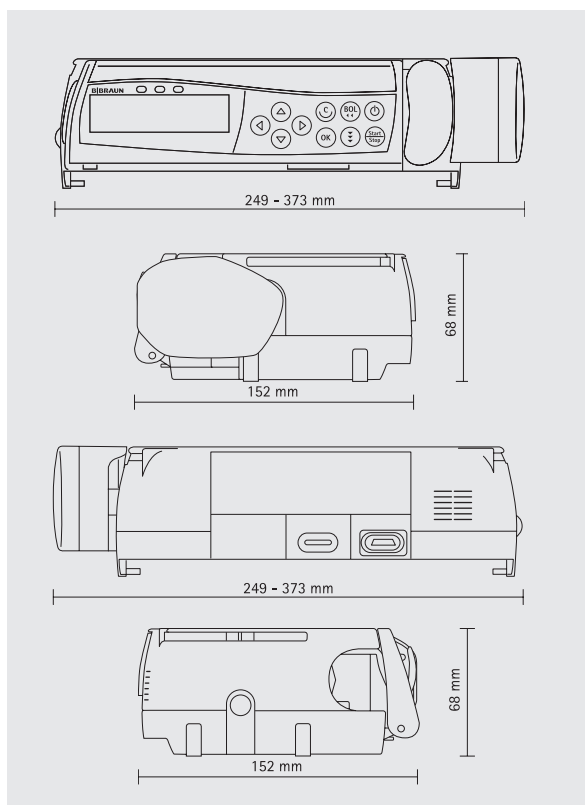| Perfusor® Space	Infusomat® Space
History and interfaces	
History	The last 1000 events can be stored in real-time memory
Interface type	CAN-bus for connection to B.Braun SpaceStation with SpaceCom, B.Braun SpaceControl, PC with USB interface via interface lead SP
Staff call	Connection lead staff call systems (max. 24V/0,5A/24VA; according to VDE 0834)
System configuration and update	
Customizing	User-specific configuration of startup sequence and available menu items via PC program
Software updates	Via USB interface (without opening device) or centrally[2] in connection with B. Braun SpaceStation
Warranty, Technical Safety Check (TSC)	
Warranty	2 years
TSC interval	2 years

Perfusor® Space dimensions: 249 – 373 mm (width), 152 mm, 68 mm

Infusomat® Space dimensions: 214 mm (width), 124 mm, 68 mm
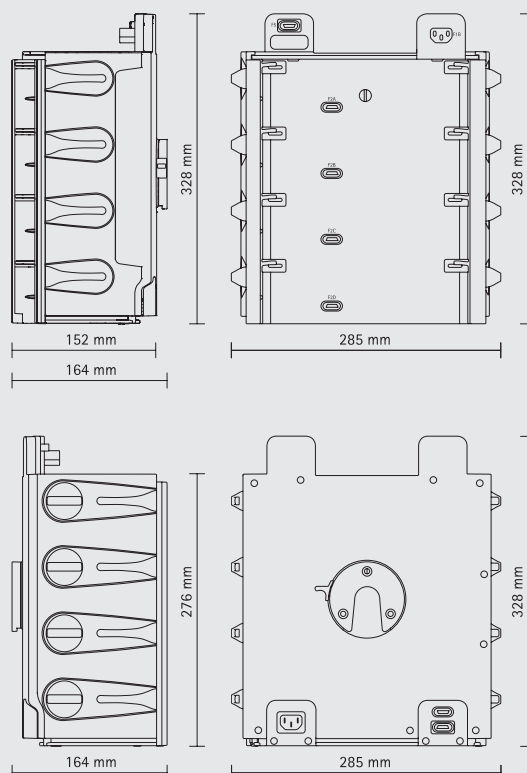
Technical data

B. Braun SpaceControl

Type of device	Control unit for infusion pumps
Classification	♥ defibrillation-proof, CF type, ☐ class II protection rating, in compliance with IEC/EN 60601-1, Class IIb in compliance with Council Directive 93/42/EEC
Moisture protection	IP 22
Interfaces	CAN-Bus interface for pump communication, PS/2 port for optional barcode reader
Power supply	11 ... 16V DC⎓ (supplied by physically connected pump)
Size, weight	212 x 46 x 142 mm (W x H x D), 0.85 kg
Display	5.7" LCD touchscreen display with VGA graphic card
Warranty	2 years
TSC interval	2 years

212 mm
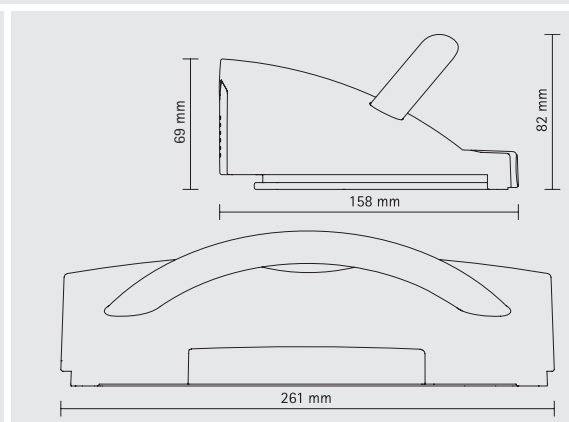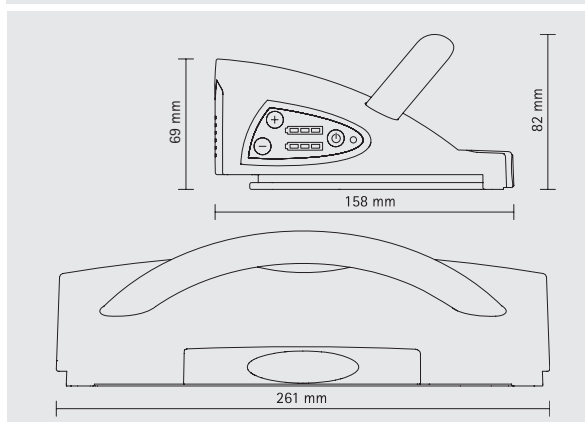46 mm
142 mm
142 mm
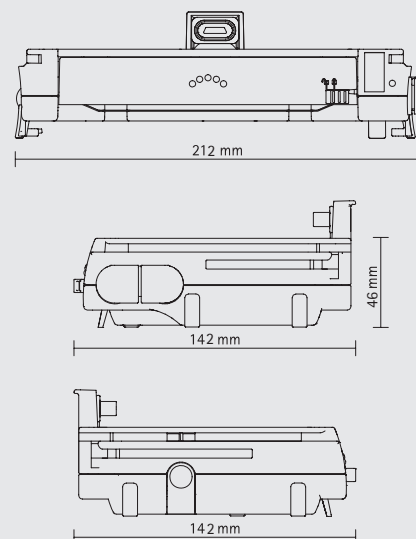
B. Braun SpaceStation

Type of device	Rack for infusion pumps and control devices
Classification	♥ defibrillation-proof, CF type, class I protection rating, in compliance with IEC/EN 60601-1, Class IIb in compliance with Council Directive 93/42/EEC
Moisture protection	IP 22
Power supply	Built-in AC adapter. Primary: 100 ... 120V AC∿ 50/60 Hz, 200 ... 240V AC∿ 50/60 Hz, 110V 0.6 A/220V 0.3 A; Secondary: 12V DC⎓/35 W
External low voltage	11 ... 16V DC⎓ (via connecting lead 12V)
Pump integration	4 sockets for connecting Perfusor® Space, Infusomat® Space and B. Braun SpaceControl
Connections for peripherals	Staff call system, PCA button, connecting lead 12V
Size, weight	285 x 328 x 164 mm (W x H x D), 3.1 kg (without SpaceCover, without stand clamp) 3.4 kg (without SpaceCover, with stand clamp)
Warranty	2 years
TSC interval	2 years

328 mm
328 mm
152 mm
164 mm
285 mm
276 mm
328 mm
164 mm
285 mm

	B. Braun SpaceCover Comfort	B. Braun SpaceCover Standard
Type of device	System cover with additional functions	System cover
Loud speaker	Signals central audible alarm	
LED fields	Display central optical status	
Display and control unit	– Display SpaceCover battery status – Display SpaceCom battery status – Display battery operation/mains power operation – On/off switch on system during battery operation – Battery care	
Optional battery	Battery type: rechargeable NiMH (4 x 1.2 V / 2.0 Ah) Operating time: approx. 1 h with SpaceCom, approx. 10 h without SpaceCom Charging time: approx. 6 h	
Size, weight	261 x 82 x 158 mm (W x H x D), 0.85 kg	261 x 82 x 158 mm (W x H x D), 0.6 kg
Warranty	2 years	
TSC interval	2 years	

69 mm 82 mm 158 mm 261 mm

69 mm 82 mm 158 mm 261 mm

	B. Braun SpaceCom
Type of device	Data communication interface
Mounting	Invisibly integrated in the B. Braun SpaceStation
Interfaces	Ethernet, RS 232, USB master/slave, Wireless LAN, PS/2
Weight	0.3 kg
Warranty	2 years
TSC interval	2 years

Ordering data

Main components	Brief description	Code No. (REF)
Perfusor® Space	Syringe pump for intravenous and intra-arterial infusions and enteral nutrition. Equipment supplied: 1 Perfusor® Space, 1 rechargeable battery, 1 Instruction for use.	8713030
Infusomat® Space	Volumetric pump for Infusomat® Space line. For intravenous and intra-arterial infusions and for enteral nutrition. Equipment supplied: 1 Infusomat® Space, 1 rechargeable battery, 1 Instruction for use.	8713050
B. Braun SpaceControl[8]	Extended-function user interface and extended performance for Perfusor® Space and Infusomat® Space. Can be used as a programming station for one pump and/or as a central user interface for pumps connected to one system.	8713090
B. Braun SpaceStation	Station for up to 4 pumps.	8713140
B. Braun SpaceCover Comfort	Cover for the uppermost SpaceStation. With built-in handle and central alarm management and alarm LEDs. Required for use with B. Braun SpaceCom.	8713145
B. Braun SpaceCover Standard	Cover for the uppermost SpaceStation, with built-in carrying handle.	8713147
B. Braun SpaceCom	Data communication interface can be optionally integrated into a SpaceStation. Allows data communication protocols for up to 24 pumps. Interfaces: Ethernet, RS 232, USB master/slave, wireless LAN, PS/2 for barcode scanner.	8713160

[8] available in November 2006

Accessories	Brief description	Code No. (REF)
Power Supply SP	Power supply for 1 pump when stand-alone operation is required.	
	Euro plug	8713110 A
	UK plug	8713111 A
	US plug	8713112 A
	Australian plug	8713113 A
	Universal plug	8713114 A
	South Africa plug	8713115 A
Pole Clamp SP	Universal clamp with built-in handle for transporting up to 3 pumps. Rotating assembly for vertical and horizontal mounting of pump on infusion stands and wall railing systems.	8713130
Short Stand SP	Short infusion stand for Infusomat®Space	8713135
Charger SP²	External battery charger with intelligent charging switch for charging 2 battery-packs.	8713170
Battery-Pack SP (NiMH)	Rechargeable battery for Infusomat®/Perfusor®Space, SpaceCover Comfort and SpaceStation.	8713180
Drop Sensor SP	Optional drop sensor for Infusomat®Space.	8713175
Extension Lead SP (60 cm)	Cable for connecting SpaceStations when stacked in columns next to each other. Length: 60 cm.	8713210
Extension Lead SP (120 cm)	For connecting SpaceStations when stacked in columns next to each other. Length: 120 cm.	8713215
Interface Lead CAN SP	Interface cable for connection with PC.	8713230
Connecting Lead SP (12 V)	For connecting to 12V port.	8713231
Combi Lead SP (12 V)	For connecting up to 3 pumps (12V port).	8713133
Connecting Lead for Staff Call SP	For connecting to staff call system.	8713232