icountBSplus

Bottle Sampler

In the lab or in the field monitoring

Parker Filtration's CE compliant icountBSplus is a unique and complete solution providing customers with laboratory fluid bottle sampling using proven on-board, laser based technology. icountBSplus is a next generation product from Parker's fluid particle analysis and monitoring programme and provides an effective alternative to external laboratory services.

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Product Features:

- Quick sample bottle analysis with variable test time options from 15 seconds and volume capacities from 25ml.
- Repeatable and re-producible result performance to ISO4406:1999, NAS1638 AS4509E and GOST 17216:2001 (Differential and Cumulative) particle count distributions.
- On-board compressor and 'shop' air capability.
- Environmentally controlled front-loading bottle chamber.
- Selectable 12-language instruction manual menu.
- Analysis of fluid moisture and temperature capability.
- icounBSplus has the capability for on-line fluid measurement configuration as well as off-line fluid sampling.
- Design concept allowing for portability. DC and rechargeable battery pack power option built in.
- CE compliant
- Fluid resistant touch type screen panel.
- On-board thermal printer.
- 500 test memory (fully downloadable).

icount Bottle Sampler: Advanced contamination testing

The revolutionary icountBSplus is an advanced, fully contained bottle sampling system that ensures fast, accurate and repeatable detection of contamination in hydraulic oils and hydrocarbon fuels.

Compact and portable, the icountBSplus is ideal for use in the laboratory and in on-line and off-line applications.

The system is fully accredited to all particle counting standards - ISO, NAS, AS and GOST - including the latest ISO medium dust certification and is backed by Parker Hannifin's global customer support network.

The icountBSplus uses proven laser particle detection technology, with intuitive touch screen control, integrated long life rechargeable battery and a robust easy to clean enclosure, to deliver exceptional product quality and performance.

The icountBSplus is quick to setup and use, delivers rapid test results and offers a wide range of features to help you improve the reliability, productivity and profitability of your production equipment.

The icountBSplus features a backlit 256 colour, high resolution touch screen and uses Windows® CE based menus.

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Hydraulic Filter Division Europe
FDHB500UK/icountBSplus

Wherever, whenever you need to be 100% sure of oil and fuel quality

The icountBSplus has been developed using the latest industrial design and manufacturing techniques, creating a system that integrates state of the art technology with dependable and precise measurement and analysis processes. Built by engineers, for engineers, the icountBSplus gives you a valuable and extremely effective tool for use in many different applications.

Agriculture: Designed for a wide range of agricultural machinery monitoring and testing procedures to ensure reduced downtime.

Defence: Designed for use in defence airfield fuel supply and storage points, military laboratories and equipment maintenance zones.

Aerospace: Monitoring of hydraulic ground support equipment, airframe laboratories and aerospace testing facilities.

Oil and Gas: Ideal for use in fuel refineries (DEF STAN 9191), fuel farm storage, fuel laboratories and airport fuel transfer.

Construction: Ideal for use in construction machinery development and test laboratories

Marine: Suitable for shipyard and dockyard diagnostic centres and marine service environments.

Power Generation: Suitable for monitoring hydraulic gearbox (wind energy pitch and braking systems) quality as part of a planned maintenance programme.

Industrial: Test rigs, hydraulic benches and hydraulic controlled production lines, as well as hydraulic system test laboratories, all benefit from the IBSplus.

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How the icountBSplus works

Our design, manufacturing and applications engineers have over 20 years experience working with advanced contamination and particle detection technologies. As a result, the latest version of the icountBSplus has been developed to meet the needs of customers throughout industry, both today and in the future.

Precision and repeatability

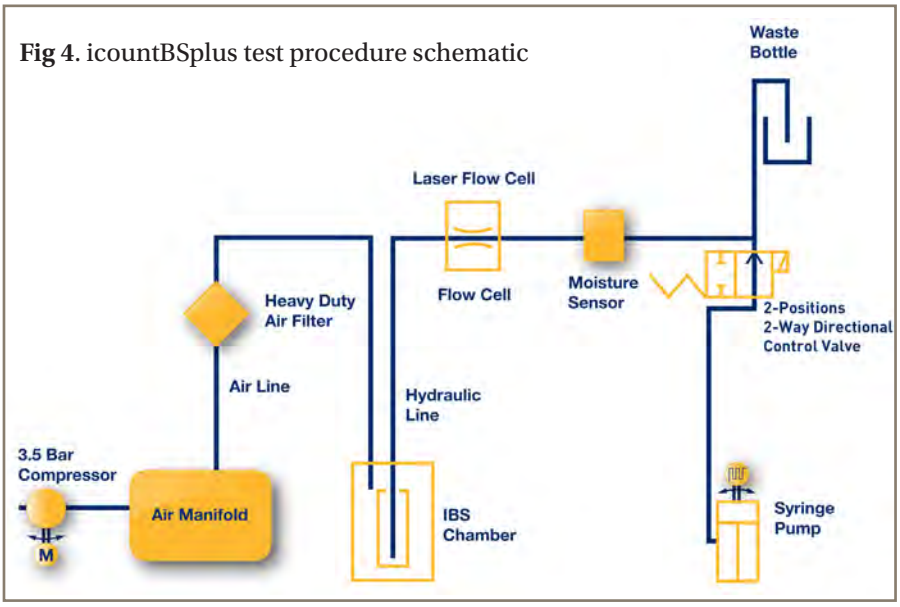
The icountBSplus is capable of entrapped gas suppression and automatically ensures that each oil sample is carefully regulated prior to test.

Every sample is degassed using suppressed, cleaned air and then delivered to the measurement cell through a fixed displacement pumping system.

This eliminates many of the variables associated with traditional methods of contamination monitoring. Control and accuracy is further enhanced with an easy to use interactive touch screen display.

The backlit 256 colour high resolution screen uses intuitive Windows® CE based menus for quick and simple stylus operation, with the stylus being stored neatly in the base of the icountBSplus.

Fig 4. icountBSplus test procedure schematic



Laser power

At the heart of the system is a sophisticated laser detector, using a light obscuration flow cell, providing continuous measurement of fluid flow passing through a sample tube.

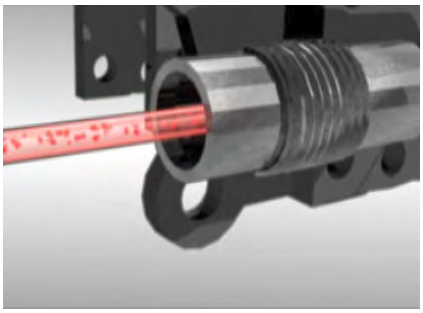


Fig 1. A controlled column of contaminated fluid enters the laser optical scanning chamber, which is designed to ensure balanced flow and fluid distribution for consistent results.

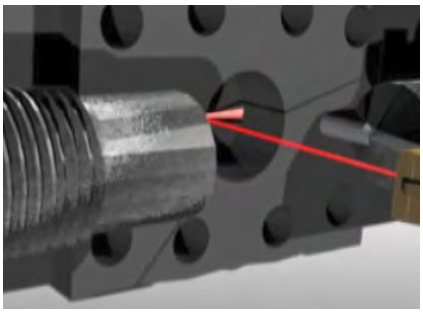


Fig 2. The laser is projected through the oil column onto a highly sensitive photo diode cell.

Fig 3. The shadow cast on the photo diode by contaminants in the oil creates a measurable change in the light intensity.

Tough and reliable

The icountBSplus is built to ensure a long and trouble free operating life. Its robust moulded enclosure will withstand constant use and is easy to clean.

Fig 4. The IBSplus oil sampling probe automatically lowers into the bottle once the test begins.

For optimum operational flexibility the icountBSplus can be powered either via an internal rechargeable lithium ion battery, or direct from a mains supply.

Internally, a high filtration air line filter removes impurities from air supply, while vane-type deflectors and drain valves improve efficiency still further.

Fig 5. IBSplus' high filtration air filter.

The integrated 12VDC compressor pressurises the sampling and measurement chambers quickly, with a compact syringe pump providing consistent oil or fuel samples.

Fig 6. IBSplus' intregrated 12VDC compresser.

Benefits

- Low cost solution for monitoring fluid life and reducing machine downtime
- Easy to set up and use this CE compliant instrument
- Selectable 12 language instruction manual menu
- Optional on-line fluid measurement capability
- Independent monitoring of contamination
- Calibration to ISO procedures

Contamination Standards Table

MTD	ACFTD
ISO 4406 : 1999	ISO 4406 : 1987
NAS 1638	ISO 4406 : 1991
AS4059E (Differential)	NAS 1638
AS4059E (Cumulative)	AS4059E (Differential)
MTD 8 Channel	AS4059E (Cumulative)
	GOST 17216 : 2001

- 8 fixed channel size analysis
- Integrated relative humidity moisture sensor
- Selectable test sample sizes: 25, 50, 75 and 100ml
- Selectable flush sample sizes: 25, 50, 75 and 100ml
- Selectable number of samples taken in one time: 1, 2, 3, 4 or 5 tests
- Mineral fluid/fuel compatible construction
- Percentage saturation reporting (for the moisture sensor option)
- Testing capability of up to 500 continuous tests (override auto warning option available)
- Data exporting method to USB (in XML format)
- Modular design for easy servicing
- On-board high quality pump and motor configuration
- High resolution colour touch-screen panel and the IBSplus comes complete with its own stylus
- Integrated printer (selectable on/off feature)
- Self-diagnostic software
- Power-saving sleep mode with integrated wake up/power button
- On- and off-line pressure capability: see Ordering Information for options
- Integration package into the Parker MiniLab Environment: see Ordering Information for options

Features that boost your productivity

1 Wake up switch

Power button wake up switch: momentary LED illuminated switch, battery charger indicator.

2 Printer access

Internal thermal printer which uses a thermal printer paper reel.

3 Stylus holder

Plastic stylus in holder.

4 Pressure chamber

Front door with polycarbonate window.

5 High resolution touch screen

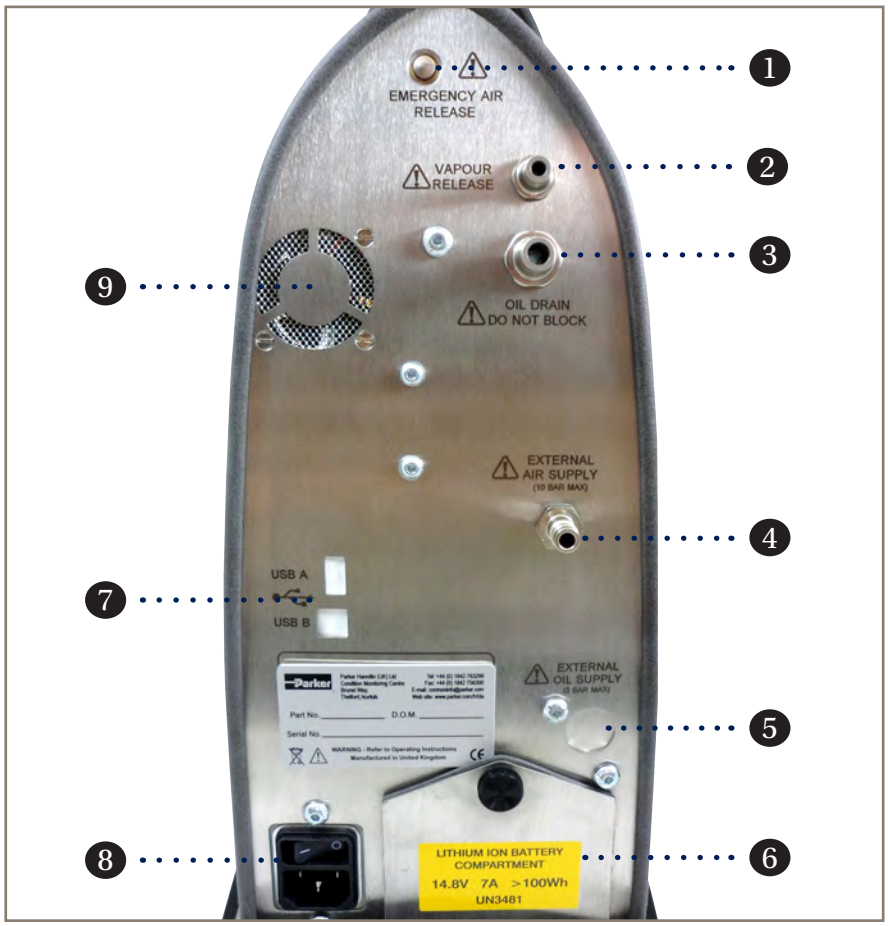
Intuitive touch screen display backlight 256 colour STN transmissive resolution – 302x3 (R.G.B) (H) X 240 (W) dots with active display area 115 (H) X 86 (W) mm. IBSplus operates on Windows® CE system.

6 Power supply

Long life regulated 12 VDC power supply, with an M12, 4 pin connector, plus a rechargeable Lithium ion battery unit for use onsite or in remote locations.

7 Body panels

Body panels are made of resin composite.



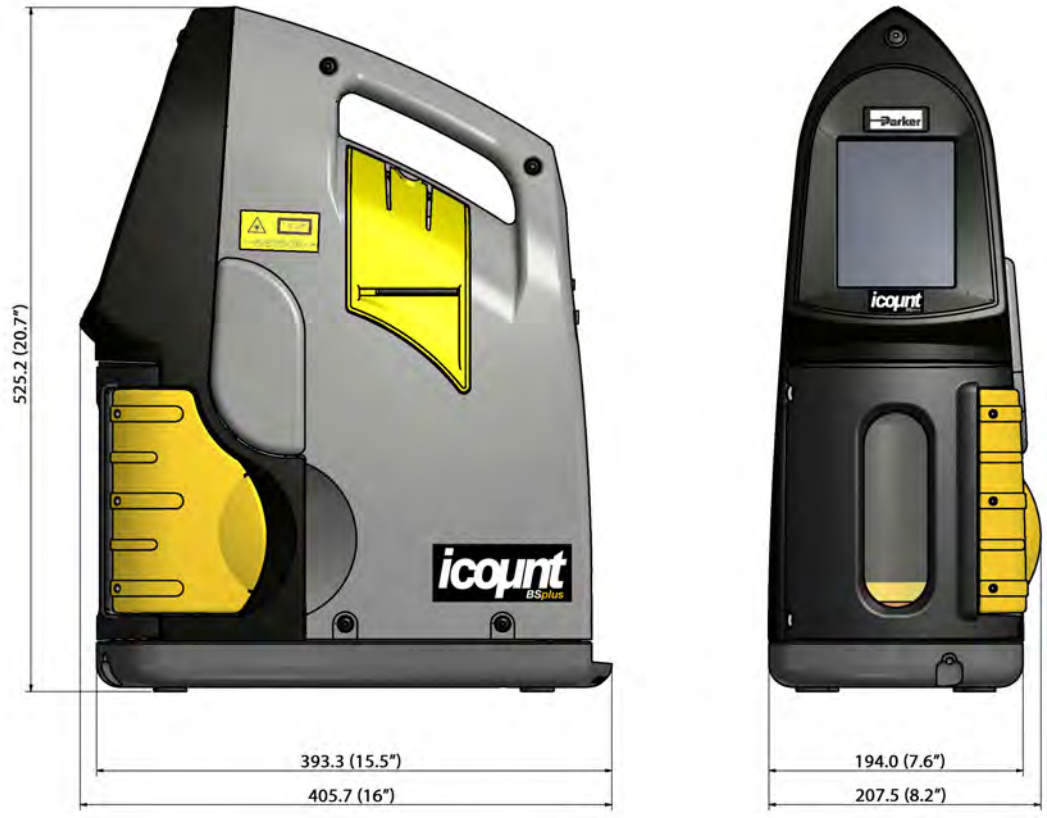
Control Panel

KEY

1. Emergency air release
2. 4mm vapour release port
3. 6mm oil drain port
4. External air supply
5. External on-line oil supply (if fitted)
6. Long life Lithium Ion battery
7. USB connections A and B
8. Mains on/off and power socket
9. Ventilation fan (DO NOT BLOCK)

Product Specification

Dimensions are given in mm (inches)



Sample handling and preparation

Bottle cleanliness

Bottles should have sealing screw caps, with both parts cleaned to a suitable level in accordance with ISO3722.
Standard Parker Hannifin bottles (supplied in pairs as part number ACC6NW001) are supplied clean to ISO 13/11 or better in a Class 10,000 Clean Room. The bottle should remain capped until the time of sample filling and be re-capped immediately afterwards.

Sample mixing

Sedimentation of contaminant in a sample will occur, the rate of which is dependent upon both the fluid and particle characteristics.

Other methods of sample agitation have not been provided, as they are likely inconsistently to distort the analysis of results. Where facilities are available, mixing can be achieved using 'paint shakers' and/or an ultrasonic bath. Take care when using ultrasonic baths to avoid distortion of the result by prolonged use, which could cause the breakdown of contaminants.

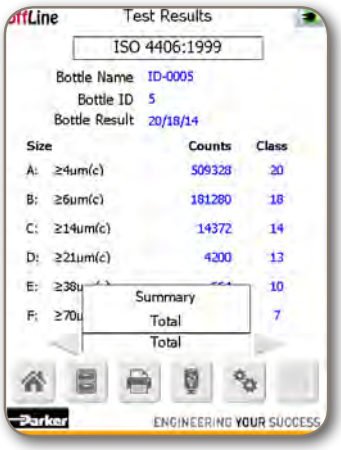
Bottle samples can be sufficiently stirred by swirling and tumbling by hand, end-over-end. Samples should be analysed, without delay, once agitated.

Results

The first result from a bottle sample should be disregarded, as it could be distorted by fluid from a previous sample. Samples from different parts of a system will give different results.

Consideration should be given to what monitoring is desired and where to extract samples from for suitable trend monitoring to be performed.

It is important that whatever practices you adopt, you must perform them consistently.



CMC Service Centres: Global Support for CMC products

Parker's fluid Condition Monitoring Service Centres can be found in ten locations around the globe, on almost every continent. Our experience and expertise in fluid condition monitoring and analysis ensure we are the authority within our industry.

Each location offers first class aftermarket support for condition monitoring products giving:

- Direct contact for end users.
- Quick and confident technical support to help you maintain an efficient and trouble free monitoring process.
- Faster turn around for annual calibration verifiation, eliminating the need for product to be returned to the country of manufacture.

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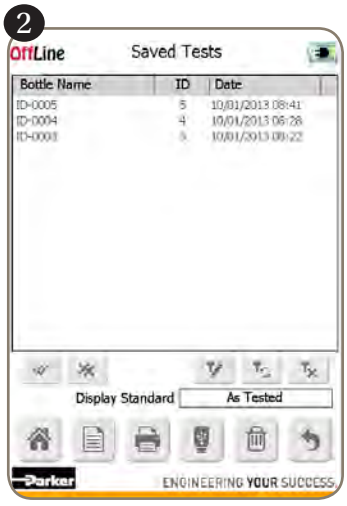
Viewing/Exporting test results

1

Select **Browse Tests** from the main **Test Set-up** screen.

2



List of **Saved Tests** is shown.

3

Select individual results and show date. You can double-click the test name to view that test result.

4

Click **Browse Tests** to view more test results.

5

Export results: Highlight the test result(s) you would like to export using the stylus.

6

Plug in USB in the back of the icountBSplus.

7

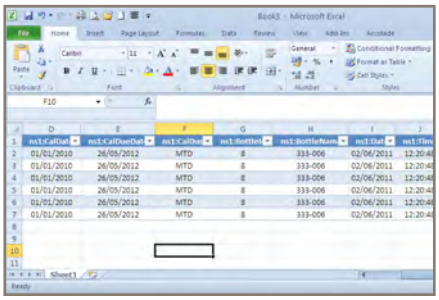
Press **Export**. The **Export Complete** message confirms a successful export.

Test results (Importing data)

You can import the test results from the bottle sampler into a spreadsheet.

Please Note: The example shown is for Microsoft Excel®. Other spreadsheet software is available. Please contact Parker Hannifin for advice.

Plug USB drive from IBSplus into your PC.



Open your PC speadsheet programme (for example Microsoft Excel®).

Technical Specifications

Feature	Specification
Principle of operation	Laser diode optical detection of actual particulates
Dimensions	H 530mm x W 210mm x D 410mm
Weight	Approx 18kg
Operating temperature and humidity	+5°C to +60°C (-41°F to +140°F) 20-85% RH (tested at 30°C (86°F), non-condensing)
Storage temperature and humidity	-40°C to +90°C (-40°F to +194°F) 10-90% RH (tested at 30°C (86°F), non-condensing)
Moisture sensor calibration	±5% RH (over a compensated temperature range of +10°C to +80°C (+50°F to +176°F)
Moisture sensor stability	±2% RH typical at 50% RH in one year
International codes	ISO 7 to 21, NAS 0 to 12, AS 0 to 12
Contamination standards	Refer to Parker 'Guide to Contamination Standards' (DD0000015) on CD **MTD :** ISO 4406:1999; NAS 1638; AS4059E (Differential); AS4509E (Cumulative) **ACFTD :** ISO 4406:1987; ISO4406:1991; NAS 1638; AS4509E (Differential); AS4509E (Cumulative); GOST 17216 : 2001
Channel sizes	See tables below
Calibration	**MTD :** via a certified primary ISO 11171 automatic particle detector using ISO 11943 principles, with particle distribution reporting to ISO 4406:1996 **ACFTD :** fully traceable to gravimetric first principles
Recalibration	Contact Parker Hannifin for advice
Fluid compatibility	Mineral-based oils and petroleum-based fuel - Contact Parker Hannifin for advice
Fluid management	Selectable on screen between 25ml to 100ml
Viscosity range	1 to 300cSt
Working pressure	3 bar maximum input pressure, if used on-line. Contact Parker Hannifin for further advice
Flow range through icountBSplus	Test: 60ml/min
Connection interface (On Line)	INLET: 6mm push-fit, DRAIN: 4mm push-fit
Fluid operating temperature (Oil)	+5°C to +70°C (-41°F to 176°F)
Fluid operating temperature (Fuel)	+20°C to +70°C (-4°F to 158°F)
Sample bottle size	See Parker ACC Spares list. Contact Parker Hannifin for advice
Flush sample size	Selectable option within the icountBS Software: 25ml to 100ml
Memory storage	500 tests (Integrated Warning Level)
Printer	Thermal dot line printer - see ACC spares list for replacement paper
Battery type	Polymer Lithium Ion Battery pack (ACC6NW032)
Power requirements	Intergrated supply into the icountBSplus unit
Certification	CE Certified. Supplied with EC Declaration of Conformity Certificate

Channel Sizes: MTD µm(c)

ISO 4406:1999	NAS 1638	AS4059E (cum)	AS4059E (diff)	MTD 8 Channel
>4 µm (c)	4-6 µm (c)	<4 µm (c)	4-6 µm (c)	>4 µm (c)
>6 µm (c)	6-14 µm (c)	<6 µm (c)	6-14 µm (c)	>6 µm (c)
>14 µm (c)	14-21 µm (c)	<14 µm (c)	14-21 µm (c)	>14 µm (c)
>21 µm (c)	21-38 µm (c)	<21 µm (c)	21-38 µm (c)	>21 µm (c)
>38 µm (c)	38-70 µm (c)	<38 µm (c)	38-70 µm (c)	>25 µm (c)
>70 µm (c)	>70 µm (c)	<70 µm (c)	>70 µm (c)	>30 µm (c)
				>38 µm (c)
				>70 µm (c)

Channel Sizes: ACFTD µm

ISO 4406:1991	NAS 1638	AS4059E (cum)	AS4059E (diff)	GOST 17216:2001
>2 µm	2-5 µm			>2-5 µm
>5 µm	5-15 µm	<5 µm	5-15 µm	>5-10 µm
>15 µm	15-25 µm	<15 µm	15-25 µm	>10-25 µm
>25 µm	25-50 µm	<25 µm	25-50 µm	>25-50 µm
>50 µm	50-100 µm	<50 µm	50-100 µm	>50-100 µm
>100 µm	>100 µm	<100 µm	>100 µm	>100-200 µm

Ordering Information

The icountBSplus is supplied with the following components:

- 250ml Bottle Kit (x2)
- Vapour/Waste Bottle (1000ml)
- 4mm and 6mm Blanking Plug
- CD manual
- UK, US and EUR Power Leads
- Spare Printer Roll
- Stylus Pen
- Battery with battery compartment panel
- Drip Tray

Key	Version		Options		Region	Part number
IBS	plus	3	Online	000	Global	IBS3000
IBS	plus	3	Online	100	Global	IBS3100

Accessory Part Numbers

Description	Part number
Power pack (UK 2m cable)	ACC6NW023
Power pack (US 2m cable)	ACC6NW024
Power pack (EUR 2m cable)	ACC6NW025

250ml Sample bottle kit (x2)	ACC6NW001
250ml Sample bottle kit (x50)	ACC6NW002

Vapour / waste bottle ACC6NW003

Printer paper reel ACC6NW005

On-line adaptor kit* ACC6NW022

*The icountBSplus is supplied configured for on-line fluid measurement but if this is a requirement, the on-line adaptor kit option will be required.

Description	Part number
icountBSplus manual on CD	ACC6NW012

Verification Fluid SERMISC049

Battery Pack ACC6NW032

VTC Pen Drive ACC6NW033

Transit Case ACC6NW020

A robust plastic storage/ presentation case is available to order as an optional accessory. *Supplied as standard with IBS3000 and IBS3100.

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