

# Maxwell® Instruments for Forensic Laboratories

*Upgraded User Experience.  
Same Great Performance.*







***Simplified  
Laboratory  
Workflow  
for All Your  
Sample Types***

## **Maxwell® Instruments**

The Maxwell® Instruments, along with DNA IQ™ chemistry, offer easy-to-use, consistent, automated nucleic acid extraction from casework samples such as blood stains, semen stains, hairs, cigarette butts, tissues, skeletal remains and trace DNA samples.

The Maxwell® Instruments easily integrate into your laboratory workflow, and their compact size minimizes the impact on precious bench space. For batch sizes up to 16 samples, use the Maxwell® FSC Instrument. Use the Maxwell® RSC 48 Instrument for sample batches of up to 48 samples.

### **Streamline Lab Operations**

Gain efficiency with easy-to-use prefilled reagent cartridges.

### **Extract DNA from a Variety of Casework Samples**

Sample-specific preprocessing solutions ensure optimal yield from a range of challenging casework samples.

### **Set Up a Run Quickly**

Use the intuitive touch-screen interface and preprogrammed protocols to set up a run, minimize variability and save time. The Maxwell® RSC 48 instrument offers an integrated vision system with a large LED indicator to reduce the potential for user error by detecting proper cartridge placement and lets you know before a run starts if there is an issue.

### **Reduce Processing Time**

Easy-to-use spin baskets eliminate the need to manually transfer swabs. These baskets perform the sample lysis and separation of solid sample substrates (i.e., swabs, fabrics, etc.) in tandem in a single streamlined procedure.

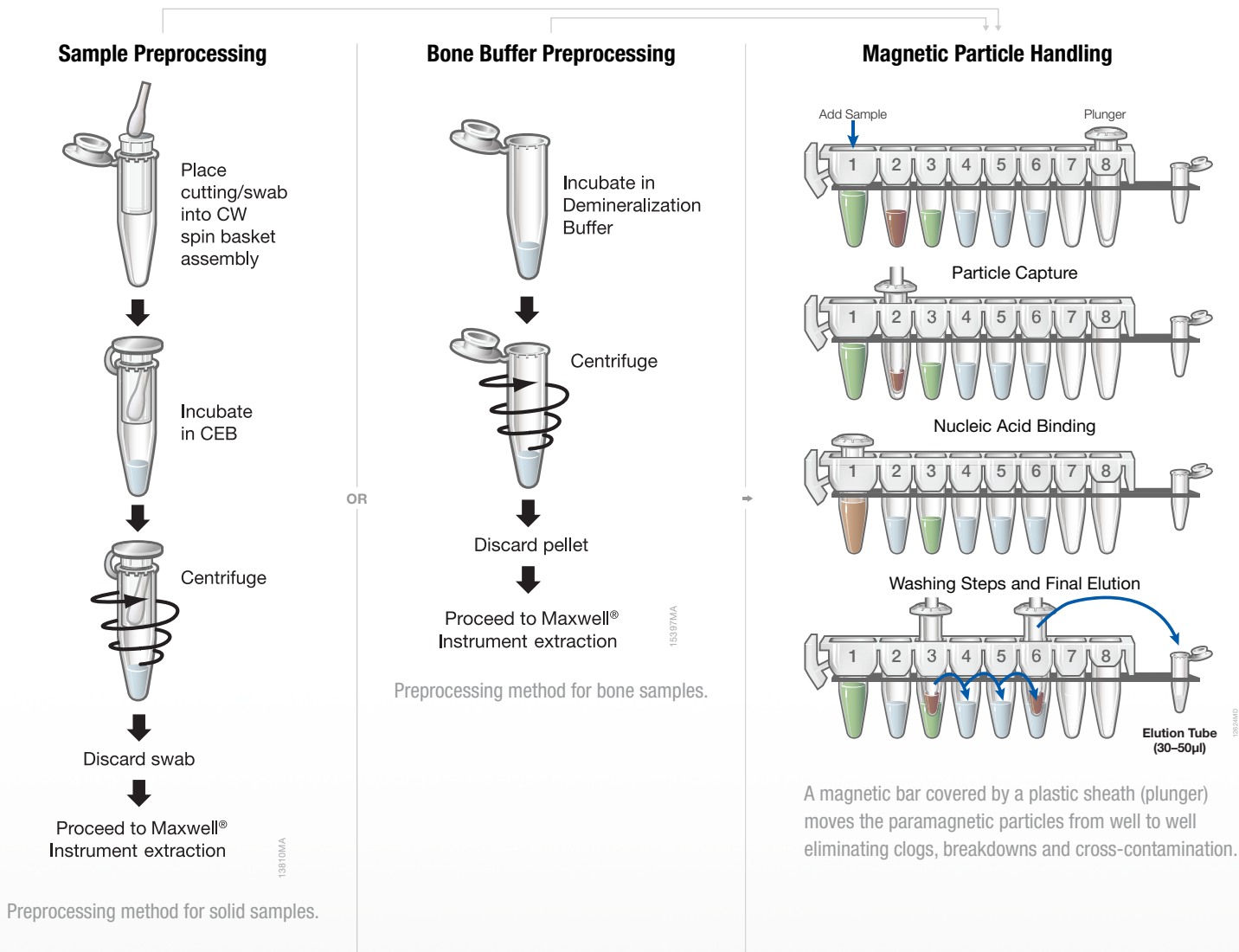
### **Track Samples Easily**

Critical details such as sample ID, kit ID and kit lot number all can be recorded with the integrated bar code reader.



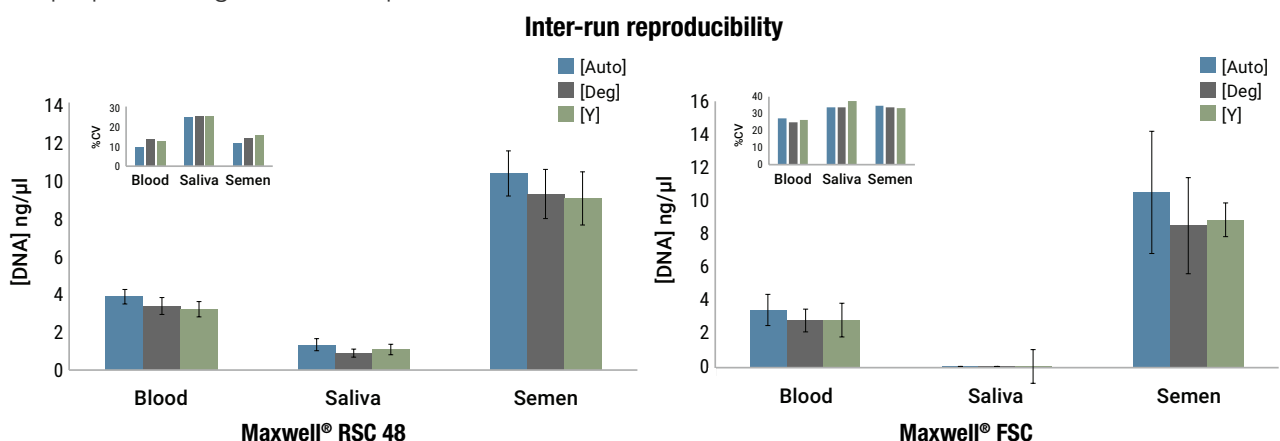
# Be Confident in Your Results

Using Maxwell® prefilled cartridges, the Maxwell® Instruments provide the same consistent, reliable purification of DNA from a variety of sample types. Both instruments are magnetic particle movers, which ensures a minimal risk of cross-contamination.



# High-Quality DNA from Casework Samples

The Maxwell® Instruments work with the Maxwell® FSC DNA IQ™ Casework Kit to extract DNA from casework samples. The kit includes cartridges prefilled with DNA IQ™ purification reagents and a separate bottle of Elution Buffer. Prior to performing DNA extraction with the Maxwell® FSC DNA IQ™ Casework Kit, customers should use the Casework Extraction Kit or Bone DNA Extraction Kit, Custom, for preprocessing of their samples.



**DNA concentration variability within runs and between runs.** DNA from 10μl of blood, saliva or semen was extracted in quadruplicate using the Casework Extraction Kit for preprocessing and purified using the Maxwell® FSC DNA IQ™ Casework Kit on the Maxwell® RSC 48 (**Panel A**) and Maxwell® FSC (**Panel B**) Instruments. The extracted DNA was quantified using the PowerQuant® System. Average concentration and standard deviation is shown for each sample type, along with %CV to show inter-run variation (inset).

DNA purified using the Maxwell® Instruments and their associated reagents is ideal for downstream applications such as quantification and STR analysis.

	Sample Description	[Auto] (ng/μl)	[Deg] (ng/μl)	[Y] (ng/μl)	[Auto]/[Y]	STR Data (% Expected Contributor Profile)
Maxwell® FSC	Cell Phone Swab	0.0022	0.0003	—	—	Single source ♀ (39%)
	Blood on Denim	0.3681	0.3796	0.3533	1.04	Single source ♂ (100%)
	Blood in Soil	0.9067	0.6724	—	—	Single source ♀ (100%)
	Envelope Flap Cutting (~1 × 1cm)	0.0194	0.0126	—	—	Single source ♀ (100%)
	Golden Cigarette Filter Paper with 25μl of Saliva	0.9639	0.3642	—	—	Single source ♀ (100%)
	Buccal Swab with Semen—Non-Sperm Fraction	17.4023	15.2312	3.9420	4.41*	Mixture. Major ♀ (100%)
Maxwell® RSC 48	Swab of Gun	0.3737	0.0309	0.1552	2.41*	Mixture. Major ♂ (90%)
	Swab of Knife Handle	0.4749	0.0550	0.2022	2.35*	Mixture. Major ♂ (98%)
	Cutting of Chewing Gum	3.3524	1.8196	0.0002	17,486.03*	Single source ♀ (100%)
	Swab ♂ Saliva from ♀ Skin	2.1542	1.1128	1.6795	1.28	Mixture. Major ♂ (90%)
	Vaginal Swab with Semen	38.6281	10.5650	1.9611	19.7*	Mixture. Major ♀ (100%) and Minor ♂ (74%)
	Cutting ♀ Blood and Semen from Pink Cotton Cloth	12.1606	6.8451	2.5315	4.8*	Mixture. Major ♀ (100%) and Minor ♂ (74%)

**Casework sample quantification and STR results.** STR data generated with the PowerPlex® Fusion System using single-source or mixed composition samples. The percent profile obtained of the known source contributor is indicated.

\*Flagged quality threshold using the PowerQuant® System.



## Support and Service Options

The Maxwell® Instruments are backed by a comprehensive one-year standard warranty, an expert service team and a full line of additional service products. Installation Qualification (IQ), Operational Qualification (OQ) and Preventive Maintenance (PM) services ensure that your instrument is fully functional and provide documentation that the instrument is operating to defined specifications.

- Fixed-Cost Service Products: Predictable support expenditures for simplified budgeting.
- Factory-Trained Service Specialists: Our team offers consistent and reliable service.
- Comprehensive Service and Support: Promega helps ensure that your equipment is working properly and is ready when you need it.

Service Agreement Benefit	Standard	Premier
Period	Renewable annually	Renewable annually
Parts and Labor	Yes	Yes
Shipping	Yes	Yes
Loaner Instrument	Yes, 5–7 business days	Yes, 24 hours*
Field Support	No	Yes, 48 hours*
Annual Preventive Maintenance	No	Yes, 1 per 12 months

*Our standard and premier service packages allow you to choose your level of support after the warranty period expires.*

\*Where available



# Specifications and Ordering Information

## Specifications

Specifications	Maxwell® RSC 48 Instrument	Maxwell® FSC Instrument
Processing Time	23 minutes	23 minutes
Number of Samples	Up to 48 samples; two 24-position, removable trays	Up to 16 samples
Weight	70lbs (31.75 kg)	24.2lbs (11kg)
Dimensions	21 × 20 × 12.5 in. (533 × 508 × 317.5mm) (W × D × H)	13 × 13.6 × 11.8 in. (330.2 × 345.2 × 299.7mm) (W × D × H)
Power Requirements	100–240V AC, 50/60Hz; autosensing; 4A	100–240V AC, 50/60Hz, 2.5A
Fuse	250V AC, 4A, low breaking capacity, time-lag fuse (AC250V, T4AL, 5 × 20mm)	250V AC, 2.5A, low breaking capacity, time-lag fuse (AC250V, T2.5AL, 5 × 20mm)
UV Bulb	Average lifetime approximately 9,000 hours	Average lifetime approximately 6,000 hours

## Ordering Information

Product	Size	Cat.#
Maxwell® RSC 48 Instrument	1 each	<a href="#">AS8500</a>
Maxwell® RSC 48 Front Deck Tray	1 each	<a href="#">AS8401</a>
Maxwell® RSC 48 Back Deck Tray	1 each	<a href="#">AS8402</a>
Maxwell® FSC Instrument	1 each	<a href="#">AS4600</a>
Maxwell® FSC DNA IQ™ Casework Kit	48 preps	<a href="#">AS1550</a>
Maxwell® FSC Deck Tray	1 each	<a href="#">AS4016</a>
CW Spin Baskets	50/pk	<a href="#">AS8101</a>
CW Microfuge Tubes, 1.5ml	50/pk	<a href="#">AS8201</a>
Casework Extraction Kit	100 preps	<a href="#">DC6745</a>
Bone DNA Extraction Kit, Custom	100 preps	<a href="#">AX6780</a>

For more information visit:

[promega.com/MaxwellForForensics](http://promega.com/MaxwellForForensics)

# The Power to Solve...from Sample to Analysis

## DNA Isolation



### Maxwell® FSC Instrument

A compact, plug-and-play instrument for automated DNA extraction

### Maxwell® RSC 48 Instrument

Compact, automated nucleic acid purification platform that processes up to 48 samples simultaneously to yield high-quality nucleic acids

### Maxwell® FSC DNA IQ™ Casework Kit

Optimal extraction of DNA from forensic casework samples

### Casework Extraction Kit

Preprocessing reagents to assist in DNA IQ™ chemistry extraction of DNA from challenging samples

### Differex™ System

Easy separation of sperm and epithelial fractions

### DNA IQ™ System

Manual and large platform automatable purification of DNA free of PCR inhibitors

### Casework Direct Kit, Custom

Rapid screening of sexual assault evidence and processing of Touch DNA samples prior to quantification of human DNA using the PowerQuant® System and amplification using PowerPlex® Systems

### Bone DNA Extraction Kit, Custom

Preprocessing reagents to assist the DNA IQ™ System in extracting DNA from skeletal remains.

## Quantification



### Plexor® HY System

Quantitative PCR for both total human and male DNA in a single reaction

### PowerQuant® System

A 5-dye, 4-target hydrolysis probe-based quantitative PCR assay for assessing total human and male DNA concentrations, degradation levels and the presence of inhibitors

## STR Amplification

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### PowerPlex® Fusion System

A rapid 24-plex suitable for casework, paternity and database testing and designed to meet the new CODIS recommendations

### PowerPlex® Fusion 6C System

A rapid 27-plex, including SE33, suitable for casework and databasing testing and designed to meet the new CODIS recommendations

### PowerPlex® Y23 System

Male-specific STR genotyping kit with 23 Y-STR loci; includes protocols for both casework and databasing

### PowerPlex® ESX and ESI Fast Systems

Rapid human identification STR assays that meet ENFSI recommendations for use in casework, paternity and database testing

### PowerPlex® 35GY 8C System\*

An 8-color multiplex containing autosomal and Y-STR loci designed for use on the Spectrum CE System

## Analysis



### Spectrum CE System\*

8- or 24-capillary electrophoresis instrument that combines state-of-the-art STR analysis with increased run flexibility and 4-plate capacity

### Spectrum Compact CE System\*

Benchtop, 4-capillary electrophoresis instrument capable of Sanger sequencing and fragment analysis

## Massively Parallel Sequencing

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### PowerSeq™ 46GY System\*

Amplification of autosomal and Y-STR loci in a single multiplex for massively parallel sequencing on an Illumina MiSeq® platform

### PowerSeq™ CRM Nested System, Custom

Amplification and library preparation of mitochondrial control region for massively parallel sequencing on an Illumina MiSeq® platform

## MPS Library Quantification



### PowerSeq™ Quant MS System

Quantification of prepared MPS libraries for Illumina platforms, enabling efficient pooling and flow cell representation

 **Identity Automation™:** Fully developed and tested high-throughput solutions with Promega installation, training and support.

 **Direct Amp Compatible**

\*Product in development

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