









Discover the CE you've been missing.

Designed for STR analysis, the Spectrum CE System is built to streamline and support your forensic and paternity workflow needs. Spectrum CE System combines state-of-the-art STR analysis functionality with increased run flexibility, auto-analysis, user-friendly software, and the service and support you've come to trust from Promega. Spectrum is designed for use with existing 4-, 5- and 6-dye STR kits from Promega, Applied Biosystems and Qiagen.

More Efficient Operation

Choose from 8-capillary and 24-capillary array configurations. With four 96-well plate positions and continuous plate accessibility, Spectrum offers more scheduling flexibility while maintaining productivity and assuring no efficiency loss with partial plate runs.

Integrated data collection and analysis software provides automatic data quality assessment, reducing the time needed to screen for reinjections.



Spectrum has four 96-well plate positions, and provides continuous access to those plates. This means that you can run partial plates and add samples during a run—gaining scheduling flexibility while still maintaining productivity.





Advanced Multiplexing Capabilities: More Information from Challenging Samples

Spectrum supports the next generation of PowerPlex[®] 8-dye STR Systems. These new PowerPlex[®] Systems enable amplification and detection of more loci from challenging casework samples, resulting in more meaningful analyses.

Labs using the 8-dye systems can also expect more consistent results from variable database and reference samples due to the narrower range of product amplicon sizes.





Majority of Autosomal STRs are Less Than 325bp

The PowerPlex[®] 35GY 8C System allows co-amplification and fluorescent detection of the 20 CODIS Core Loci plus Amelogenin and DYS391 for gender discrimination. Penta D, Penta E and SE33 also are included to increase discrimination and allow searching of databases that contain profiles with these loci.

Additionally, we've designed the layout to allow smaller amplicon sizes for these particularly informative loci: SE33, D21S11 and D2S1338. Ten additional Y-STR loci are included to assist with forensic casework on sexual assault evidence or to enable familial searching, a technique known for its ability to provide investigative leads.



Configuration of the PowerPlex® 35GY 8C System. The PowerPlex® 35GY 8C System allows co-amplification and detection of 35 loci, 24 autosomal, and 11 Y-STR loci (represented by lighter shades): CSF1PO, D3S1358, D5S818, D7S820, D8S1179, D13S317, D16S539, D18S51, D21S11, FGA, TH01, TPOX, vWA, D1S1656, D2S441, D2S1338, D10S1248, D12S391, D19S433 and D22S1045, SE33, Penta D, Penta E and Amelogenin; DYS391, DYS385a/b, DYS390, DYS438, DYS448, DYS456, DYS458, DYS481, DYS635 and DYS643.



High Quality Results from All Your Samples

Designed to work exclusively on the Spectrum CE System, the PowerPlex[®] 35GY 8C System is compatible with both extracted DNA and direct amplification samples.

The kit offers optimized protocols for various sample types, including direct amplification from FTA® cards and pretreated non FTA® card punches or swabs in both full-volume (25µl) and half-volume (12.5µl) reactions. The figure below shows results from a cotton swab buccal sample in which the DNA from that swab was amplified directly using a half-volume reaction.



DNA from a buccal swab in Swab Solution was amplified with the prototype PowerPlex[®] 35GY 8C System for 25 cycles in a 12.5µl reaction. Amplification products were separated on the Spectrum CE system. Analytical thresholds for each dye color were determined based on average noise + 10 SD.



Detect Inhibitors with an IPC

New in the 8-color PowerPlex[®] systems is the inclusion of an Internal PCR Control (IPC) to assess the presence of inhibitors, designed to minimize the need to repeat unusable or poor STR analyses which resulted from inhibited DNA. The IPC can provide more information about the sample, allowing you to make better decisions.



2800M Control DNA (1ng) was amplified with the prototype PowerPlex® 35GY 8C System. Amplification products were separated using the Spectrum CE System.



Compatible with the Kits You Already Love

Spectrum CE System is the only CE to support 8-dye technology, but if your laboratory is satisfied with an existing 4-, 5- or 6-color kit you've already brought online, the Spectrum CE System has got you covered. You'll be able to continue using those same multiplexes and still benefit from the increased throughput and flexibility that Spectrum CE enables.

The following figures demonstrate the solid performance of the Spectrum CE System when running samples amplified with the GlobalFiler® PCR Amplification Kit and the PowerPlex® Fusion 6C System.



2800M Control DNA (1ng) was amplified with PowerPlex® Fusion 6C System. Amplification products were separated using the Spectrum CE System.



The Spectrum CE System works well with existing 4, 5, or 6 color STR multiplexes.



2800M Control DNA (1ng) was amplified with GlobalFiler® PCR Amplification Kit. Amplification products were separated using the Spectrum CE System.



Full Complement of Consumables and Accessories

We've designed the Spectrum CE System to provide simplified setup and operation. Related consumables, such as pre-filled buffer and polymer, will be offered in convenient, ready-to-use packaging. Complementary consumables including plates, septa mats, and formamide are also available for purchase.

Spectrum uses Radio Frequency Identification (RFID) to track key consumables with minimal "hard stops" limited to situations where there is a risk of instrument damage.

Spectrum Consumables

Spectrum Capillary Array

- 8-Capillary and 24-Capillary
- RFID-tagged for automatic consumable recording

Spectrum Plate Base & Retainer, 96-Well

• Barcode cut-out designed for integrated automatic barcode reading

Spectrum Buffer

- Pre-filled, ready-to-use anode and cathode cartridges
- RFID-tagged for automatic consumable recording

Spectrum Cathode Septa Mat

• 72-well septa mat specific for the Spectrum cathode buffer cartridge

Spectrum Polymer4

- 384-well and 960-well fill sizes for different throughput needs
- RFID-tagged for automatic consumable recording

Spectrum Wash Solution

- Ready-to-use, pre-filled pouch for up to five system washes
- RFID-tagged for automatic consumable recording



Universal Consumables

Plate, Barcoded, Semi-Skirted, 96-Well

- Barcoded 96-well plates for PCR, qPCR and CE
- Compatible with most AB instruments, including sequencers

Formamide, CE-Grade, 25ml

- Highly deionized, Low conductivity, <5µS.
- Used for electrokinetic injection on CE instruments

Optical Plate Seals

- Encapsulated ThermalSeal® Film for qPCR Reactions
- Reduces the chance of well-to-well contamination and sample evaporation when applied to a microplate

Strip Cap, 8-Well

- 8-Strip domed caps for PCR plates and tubes to prevent evaporation and contamination
- Certified RNase- and DNase-Free

Septa Mat, 96-Well

- Autoclavable and reusable up to 5 times for a more cost effective alternative to other sealing methods
- Compatible with AB Sequencers and Genetic Analyzers



One-Click Sample Tracking

Spectrum features automatic recording of plate barcodes and auto-import of plate map files with matching barcode information making import of sample names a one-click process. There is less opportunity for error, with an exact record of plates analyzed, and easier, faster operation.



Promega Support – Now in Instrument Form

Promega chemistry and hardware are integrated to provide optimized results for the Spectrum CE System. We offer on-site installation and training for the instrument, software and STR kits, as well as timely on-site repair and preventative maintenance service to ensure minimal interruption of your laboratory operations.

Promega staff will provide a range of validation services, designed to meet your laboratory's needs and your preferred scope of work:

- Phone-based and on-site consultation
- On-site bench work tailored to your requirements
- Rapid turnaround of data analyses and summary reports



Easy-to-use Instrument Control and Data Software

System Software

The Spectrum Control Software provides a simple user interface with a clear display of useful features including run scheduling, consumables and array usage information, as well as system maintenance reminders.

Analysis Software

The Spectrum CE System creates both .fsa and .promega output files for sample analysis. The instrument's .fsa output for existing 4-, 5- or 6-color multiplexes is compatible with GeneMapper® ID-X and GeneMarker®HID-Spectrum software analysis packages. Labs can generate .promega output for 4-, 5- or 6-color multiplexes, new 8-color multiplexes and use it with GeneMarker®HID-Spectrum analysis software.

GeneMarker®HID-Spectrum software is designed for human identification and forensics applications and includes "expert system" functionality—delivering accurate STR sizing and allele calling in both user-mediated and fully automated expert system analysis approaches. In addition to fast, accurate and user-friendly STR analysis, the software provides modules for mixture analysis, contamination checks, and kinship analysis.





System Components

The Spectrum CE System is supplied as follows:

- Capillary electrophoresis instrument
- Forensic workflow reagents
 - » Capillary array (8- or 24-capillary)
 - » Polymer
 - » Buffer
 - » Wash solution
 - » Cathode septa mats
- » Plates
- » Plate bases and retainers
- » Formamide
- » Reagents necessary for installation
- Computer workstation and high-definition, flat-screen monitor
- Includes one (1) license each: Spectrum Control Software and instrument workstation-specific version of GeneMarker®HID Software for Spectrum CE System
- On-site service for installation and initial user training
- 12 months of on-site repair service, including one preventative maintenance visit





Specifications



Approximate Dimensions	Overall: 68cm W × 67cm D × 77cm H Footprint: 62cm W × 48cm D
Weight	Less than 250 lbs (113kg)
Main Power Voltage	95-240VAC, 50-60Hz (global compatibility) 15 amps
Operating Environment	15°C – 30°C
Plate Capacity	Up to 4 plates, with semi-continuous accessibility
STR Chemistry	Optimized for use with existing STR kits Supports next generation of 8-dye PowerPlex® Systems
Service and Warranty	1-year limited warranty on parts and labor Service installation On-site application training Extended service contracts will also be available separately—please inquire
Validation Support	Available separately—please inquire



To learn more, visit: www.promega.com/MeetSpectrum



To learn more about GeneMarker®HID Software, visit: www.softgenetics.com

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