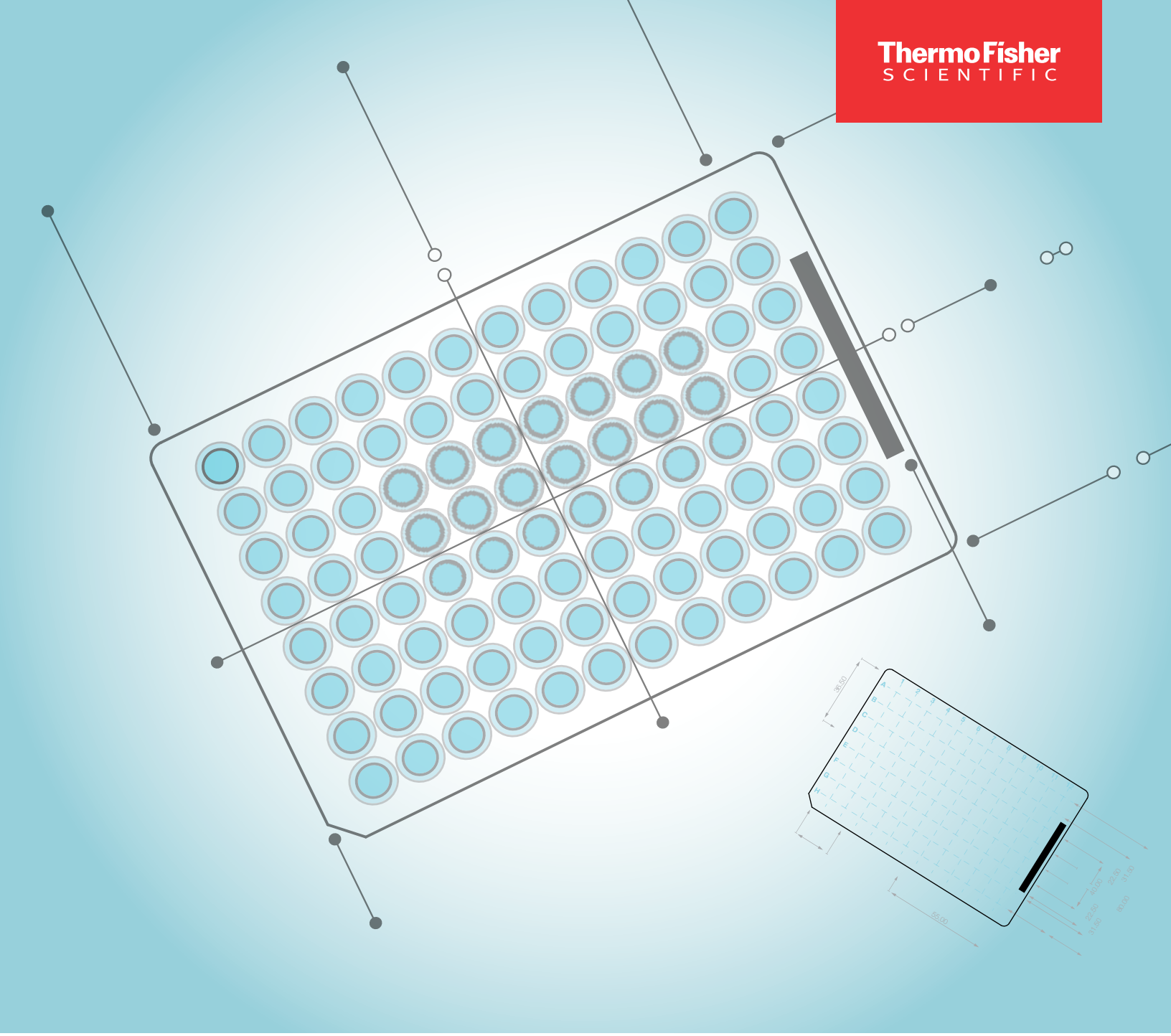


Precision manufacturing in plastics

Original equipment manufcaturer (OEM) PCR and qPCR plastics guide

Accuracy and reproducibility

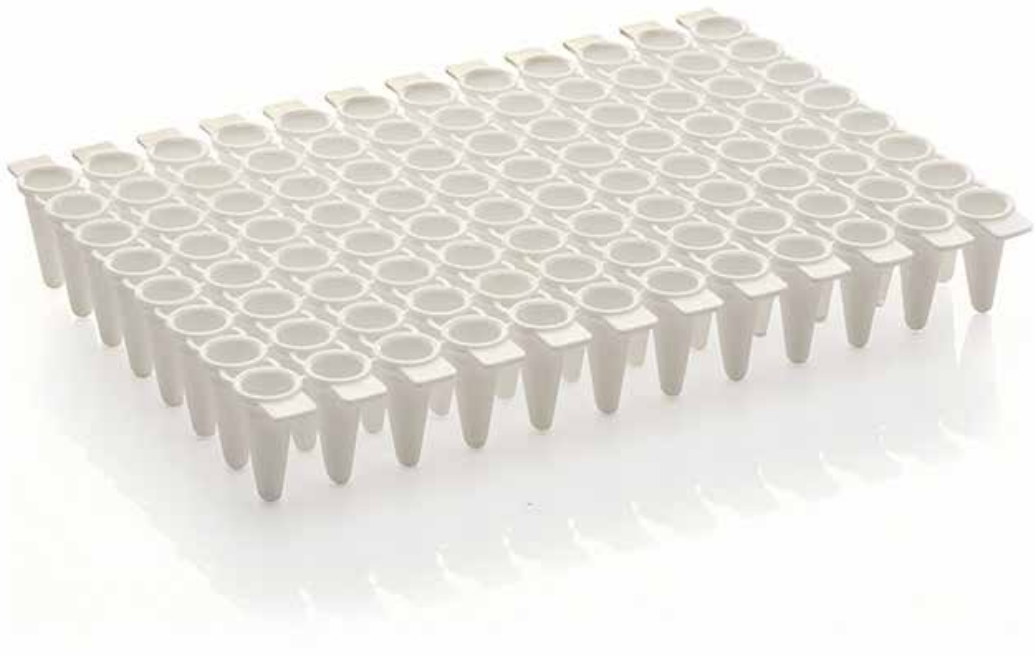
For more than 25 years, we've been at the forefront of innovation in the manufacturing of high-grade plastic consumables, with a focus on providing plastic solutions for molecular biology applications, including PCR and qPCR. The quality and reliability of our products enable you, our customer, to help ensure the accuracy, reproducibility, and validity of your biological data.

We have the essentials to help ensure that your development and manufacturing projects are a success

- State-of-the-art injection molding manufacturing facilities
- Custom development teams help rapidly take ideas from concept through design, prototyping, toolmaking, molding, quality control, and logistics
- Expertise in manufacturing with a wide range of polymers
- Product assembly and packing know-how to deliver what you need, with the option to either receive white-box products or to define your own requirements for custom manufacturing, barcoding, packaging, and/or labeling
- Quality systems to respond to your evolving requirements with rigorous documentation for the supply chain, manufacturing, and quality control processes
- Dedicated account representatives to provide you with world-class customer service

Manufacturing designed to eliminate contaminants at the source, providing you with peace of mind

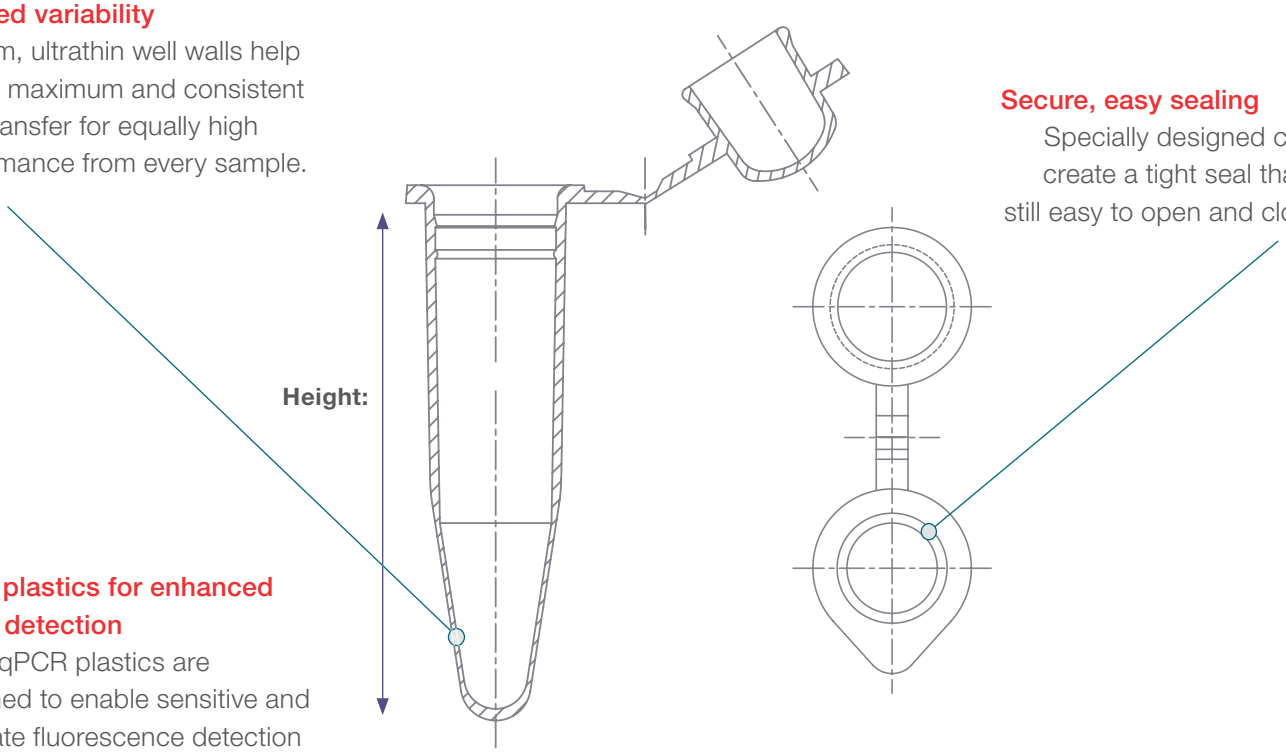
- All plastic consumables are produced in injection-molding facilities that meet 10,000 or 100,000 clean room (ISO 4 or 5 clean room) standards
- Virgin polypropylene
- Primary packaging is contained within a class 10,000 or 100,000 clean room
- Production runs 24/7 according to ISO 9001 guidelines, with complete traceability and process controls



Innovative product design

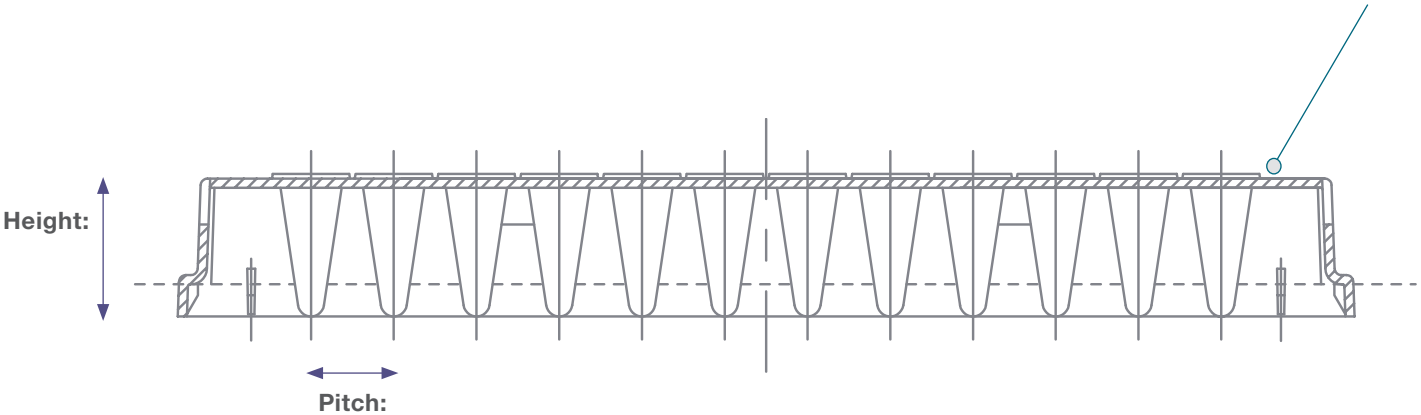
High efficiency and reduced variability
Uniform, ultrathin well walls help deliver maximum and consistent heat transfer for equally high performance from every sample.

Secure, easy sealing
Specially designed caps create a tight seal that is still easy to open and close.



White plastics for enhanced qPCR detection
White qPCR plastics are designed to enable sensitive and accurate fluorescence detection by preventing refraction out of the tube and increasing the signal-to-noise ratio.

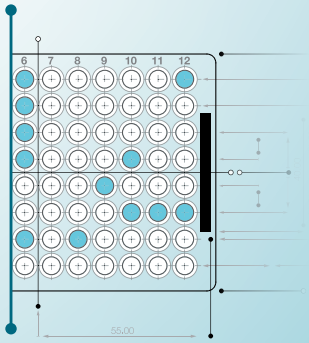
Evaporation protection
Raised rim design around each well enables secure sealing, and safeguards against evaporation.



Definitive quality control, adapted to your needs

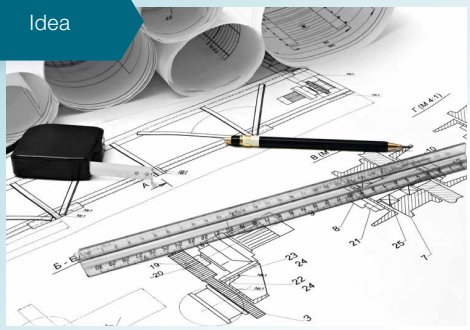
We are ISO 9001–registered, and our quality systems are the cornerstone of our business. Among our rigorous standards of product testing and process controls, we adhere to comprehensive standard operating procedures (SOPs). This includes referencing to assay testing; plastic integrity testing; 24/7 roving QC patrols to help ensure procedural adherence; equipment qualification; process verification; and validation. A controlled raw material supply chain and established vendor partnerships help ensure consistency and security of supply.

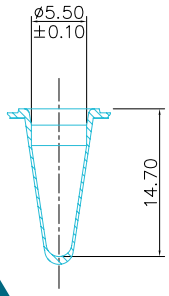
- Time-and-date batch segregation of every production run prior to QA release
- On-site coordinate-measuring machines help ensure that tools and moldings adhere to specified product tolerances
- Formalized change control process to help ensure consistency, compliance, and conformance of materials
- Raw material and vendor qualifications that provide security of supply
- Corrective and preventative action systems
- Application-specific testing helps ensure product performance in functional assays, e.g., qPCR and PCR testing, centrifugation, and sealing and storage conditions
- Our employees use these systems in day-to-day activities and take great pride in consistently meeting our customers' requirements and exceeding your expectations for service
- We encourage customers to tour and audit our OEM facilities



Make us a part of your team: contact our licensing and commerical supply specialists at **thermofisher.com/oemplastics**

1 Idea





2 Technical product drawing

3 3D prototype of product

4 Mold design and assembly

5 Manufacturing

6 Quality control

7 Custom packaging

8 Finished product

Custom products

Your product can be tailored to meet both the application and your customer's needs, from the product itself to the label on the box.

Product

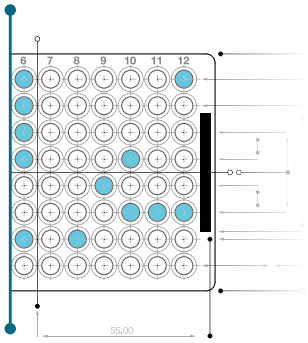
- Off-the-shelf options are available for most life science consumables: PCR tubes, strip tubes, 24- to 384-well PCR plates, and a wide range of plate seals
- Any of the off-the-shelf products can be customized to individual requirements, including colored lettering, unique adhesive seal formats, and additional colored stripes on tube strip end tabs, which can be used to indicate different diagnostic tests
- If none of the existing products match your instrument or application, our R&D team will work with you to understand all the product requirements and design a consumable that uniquely fits your platform

Product format

- Standard pack sizes are available for off-the-shelf products; individually wrapped, handy small pack sizes, or bulk options are available for high-throughput users
- All of the products can be supplied in any pack size, from a kit-ready custom component bag containing 5 seals bearing a lot number label to a pack of 5,000 strip tubes ready for reagent loading in your facility

Packaging

- Our standard products are supplied in white boxes with plain, nonbranded labels
- All OEM products can be supplied with any or all of the following customized components:
  - Labels printed in our manufacturing site or supplied to us ready for the final packaging stage
  - Unique lot numbers
  - Product information inserts
  - Certificates of conformity
  - Outer packaging from specific finish to box design



Make us a part of your team: contact our licensing and commerical supply specialists at **thermofisher.com/oemplastics**

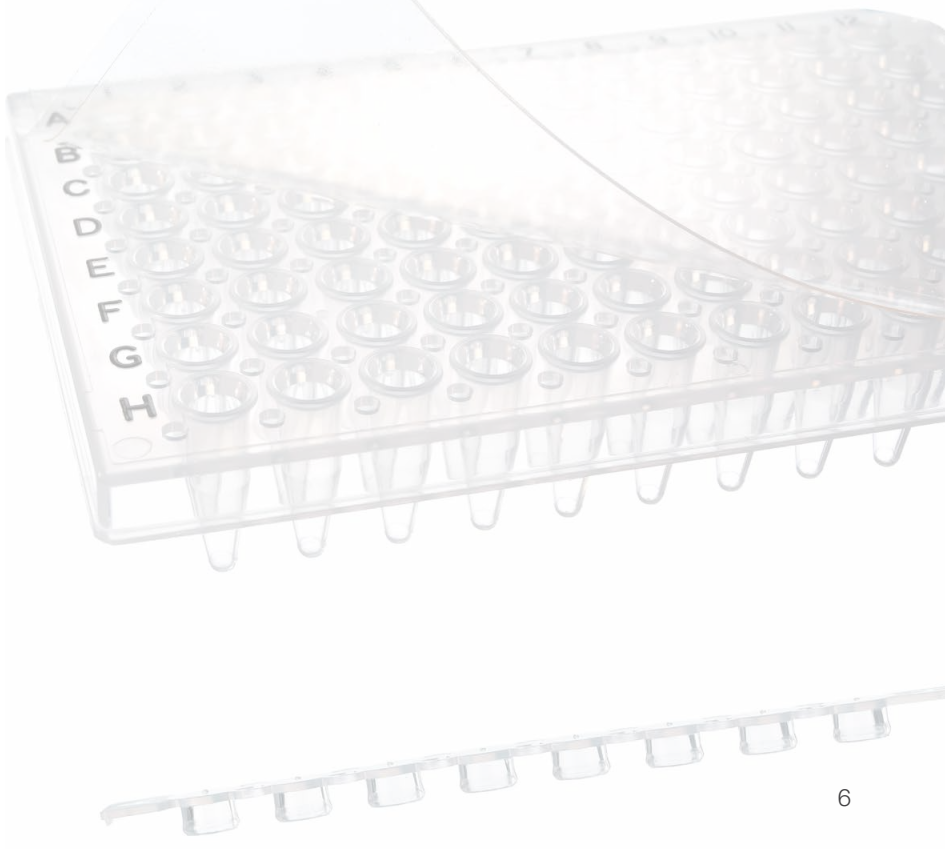
Custom design and prototypes

Existing clients spanning the diagnostics, therapeutics, and research markets value our expertise in new product design and prototyping. Our design team delivers creativity with the ability to produce reliable and accurate plastic solutions for scientific applications. The team has an excellent record in bringing innovative, profitable, and highly engineered products to market within customer-defined time frames. Communication is the key. Our designers, engineers, and molecular biologists are ready to listen to your team so we can develop products that meet—and perhaps exceed—your expectations.

Tools we use to design your products

- Premold conceptual designs using SOLIDWORKS™ 3D CAD software
- Computer-generated stereo lithography apparatus (SLA) to create solid, plastic, 3D objects from CAD drawings
- Rapid prototyping in polypropylene to provide fully functional samples before mold production
- Design for manufacture
- Mold flow analysis
- In-house prototype tooling and testing
- Risk management/FMEA

We develop integrative partnerships with our customers, providing high-quality products and tailored support services from concept through manufacturing scale-up. Whether you are a large corporation or a start-up company, we offer you quality plastics components, quickly and reliably, at any volume. Understanding your requirements is the foundation of our business.

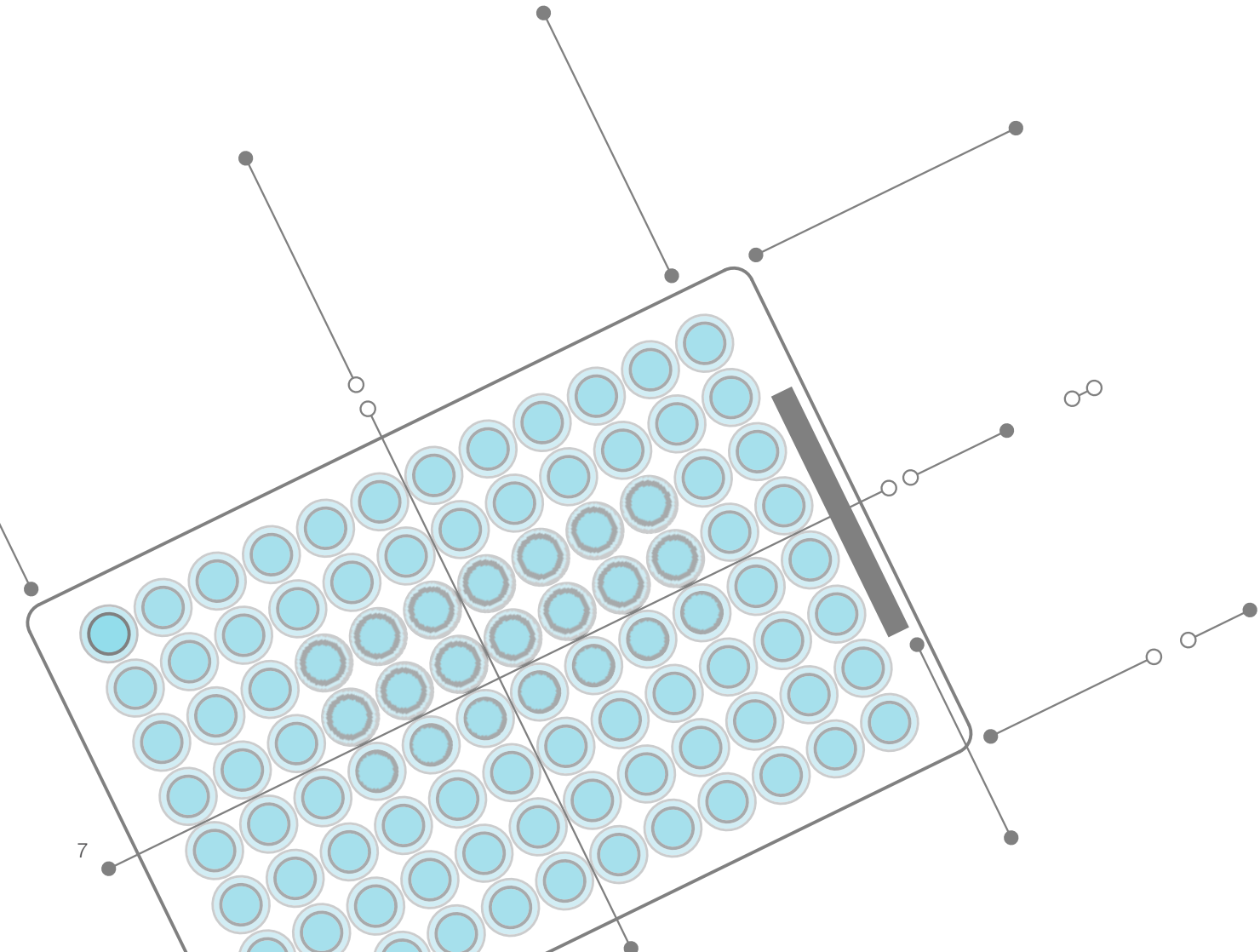


Custom manufacturing

Injection molding is the technique used for the reproducible production of identical, high-precision components. Our engineers are continually improving the technology we use to develop and manufacture products. Molds are made using the latest machine-cutting technology, before being hand-finished by our highly skilled craftsmen. Every new manufacturing project requires the development and creation of a new tool—and we've made hundreds.

We offer:

- Development of custom-made molds and automation, using a design team and tool team that work at the same site
- Trusted quality as pioneers in the manufacturing of thin-walled plastic consumables for PCR-based technologies
- A dedicated project management team to oversee development and maintain customer–client relationships



Custom barcoding services

Tracking of samples is important to many customers, so we offer the ability to have your plates produced with barcode sequences unique to your product, in any common barcode format.

Design the perfect barcoding* solution to fit your unique needs

Choose plates for the ultimate barcoding flexibility

Plate type

Any fully skirted or semi-skirted plate from the entire PCR range

Barcode format

Code 128, Code 39, or Interleaved 2 of 5, with flexible human-readable code position

Label size

Available in standard label sizes or customizable according to requirements

Barcode density

Range of dimensions available

Sequence

You determine start-to-end sequence and alphanumeric pattern

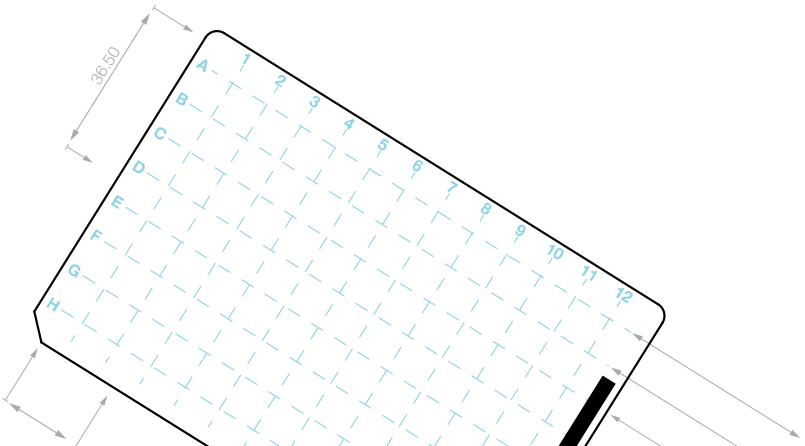
Positioning

Any code on any side, all the same code, or varied

* 1,000 plate minimum orders. Smaller quantities may be possible, but are subject to an order fee. Please inquire.

Barcode format options

		Barcode type		
		Code 128	Code 39	Interleaved 2 of 5
Multiplier	7 mils	A0000002	A0000002	00000001
	10 mils	A0000002	A00002	00000001
	13 mils	A0000002	A002	00000001



PCR tubes and strips

SP-0019, SP-0018

Individual tubes

- Compatible with standard 0.2 or 0.5 mL thermal cycler blocks
- Caps form a secure seal, yet are easy to open and close
- Height: 20.7 mm, 0.2 mL tube
- Height: 29.75 mm, 0.5 mL tube

Ordering information

0.2 mL individual tubes

SP-0018	w/Flat Caps	Clear
SP-0019	w/Domed Caps	Clear

Pack size: 1,000 tubes

0.5 mL individual tubes

SP-0021	w/Flat Caps	Clear

Pack size: 1,000 tubes

From top to bottom: SP-1182, SP-0020

0.2 mL strip tubes

- Compatible with 0.2 mL thermal cycler blocks
- Caps form a secure seal, yet are easy to apply and remove
- 8 tubes per strip
- Height: 20.7 mm
- Pitch: 9 mm

Ordering information

0.2 mL strip tubes

SP-1182	w/Flat Caps	Clear
SP-0020	w/Domed Caps	Clear

Pack size: 250 tube strips/cap strips

SP-0085

Low-profile strip tubes

- Ideal strip for reaction volumes below 20 µL
- Compatible with 0.2 mL thermal cycler blocks
- Low profile to help reduce dead space and increase PCR efficiency
- Labeled A–H end tabs
- Height: 15.5 mm
- Pitch: 9 mm

Ordering information

Low-profile strip tubes

SP-0085	Strips of 8 Low-Profile Tubes	Clear

Pack size: 120 tube strips

SP-0036, SP-0035

24- and 48-Well Semi-Skirted

- Conveniently pre-cut into 24- or 48-well segments
- Semi skirt adds rigidity and allows for labeling or barcoding
- Height: 18.65 mm
- Pitch: 9 mm

Ordering information

24-Well Semi-Skirted (Pre-Cut)

SP-0036	Clear

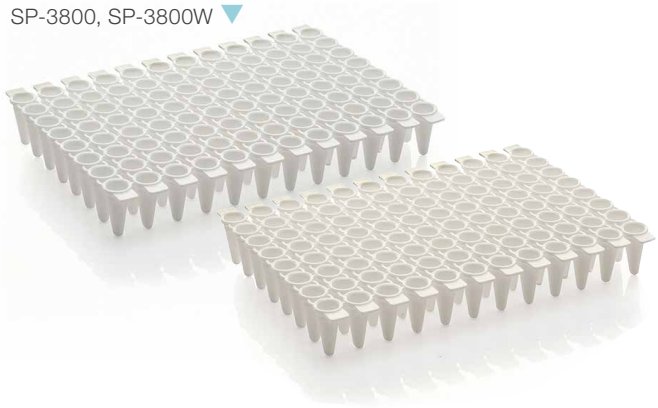
Pack size: 50 plates

48-Well Semi-Skirted (Pre-Cut)

SP-0035	Clear

Pack size: 50 plates

SP-3800, SP-3800W



Available as kit component only.

96-Well PCR Strip Tube Plate

- Strip of eight tubes linked to each other forming the familiar 12 x 8 or 96-well ANSI format
- Tear points between strips enable single or multiple strip requirements for customized experiments
- Maximum fill volume of 0.2 mL

Ordering information

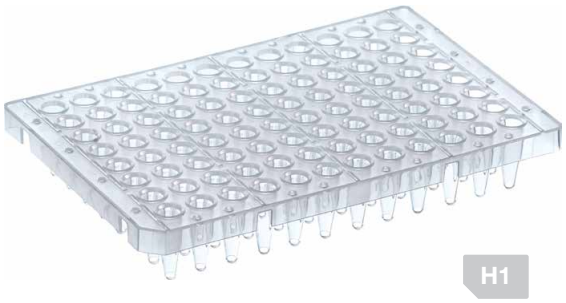
96-Well PCR Strip Tube Plate, Low Profile	
SP-3800	Clear
SP-3800/W	White

Pack size: 25 plates

96-Well PCR Strip Tube Plate, Frame, Skirted
SP-3805 White

Pack size: 25 frames

SP-0127



96-Well Semi-Skirted, Segmented

- Proprietary segmented plate design allows plates to be cut into 24- and 48-well sections
- Semi skirt adds rigidity and allows for labeling or barcoding
- Cut corner: H1
- Height: 18.65 mm
- Pitch: 9 mm

Ordering information

96-Well Semi-Skirted, Segmented	
SP-0127	Clear

Pack Size: 25 plates

SP-4896

96-Well Non-Skirted, Flexi-Plate

- Segmented into 12 breakable strips
- Standard profile
- Height: 19.3 mm
- Pitch: 9 mm

Ordering information

96-Well Non-Skirted, Flexi-Plate	
SP-4896	Clear

Pack size: 25 plates

Thermo Scientific™ Armadillo™ PCR plates / strip plates

- Easily and safely breakable into 8-tube strips
- Certified DNA-, DNase-, and RNase-free
- Optically clear skirt aids in visualization of liquids

Ordering information

Armadillo 96-well PCR Strip Plates	
SP-2396	Full skirt, clear frame, clear wells
SP-3396	Full skirt, clear frame, white wells
SP-2496	Low profile, semi-skirt, clear frame, clear wells
SP-3496	Low profile, semi-skirt, clear frame, white wells
SP-2596	Semi-skirt, clear frame, clear wells
SP-3596	Semi-skirt, clear frame, white wells

Pack size: 25 plates

Armadillo 384-well PCR Plates	
SP-2384	Clear frame, clear wells
SP-3384	Clear frame, white wells

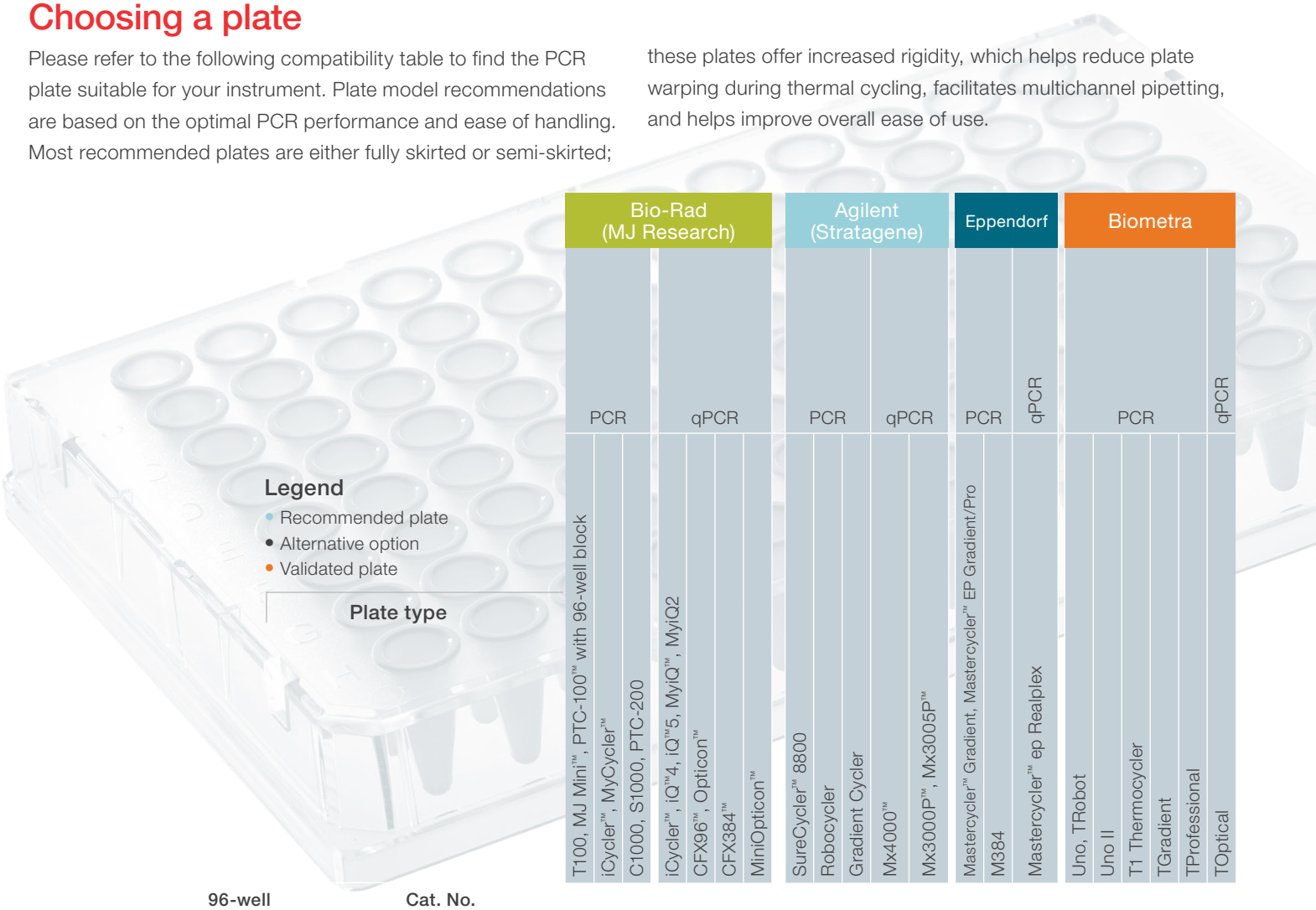
Pack size: 50 plates

Armadillo 96-well PCR Strip Plates	
SP-2696	Low-Profile PCR Strip Plate, 96 well, clear
SP-3696	Low-Profile PCR Strip Plate, 96 well, clear, white well
SP-2796	PCR Strip Plate, 96 well, clear
SP-3796	PCR Strip Plate, 96 well, clear, white well

Pack size: 25 plates

Choosing a plate

Please refer to the following compatibility table to find the PCR plate suitable for your instrument. Plate model recommendations are based on the optimal PCR performance and ease of handling. Most recommended plates are either fully skirted or semi-skirted; these plates offer increased rigidity, which helps reduce plate warping during thermal cycling, facilitates multichannel pipetting, and helps improve overall ease of use.



Legend

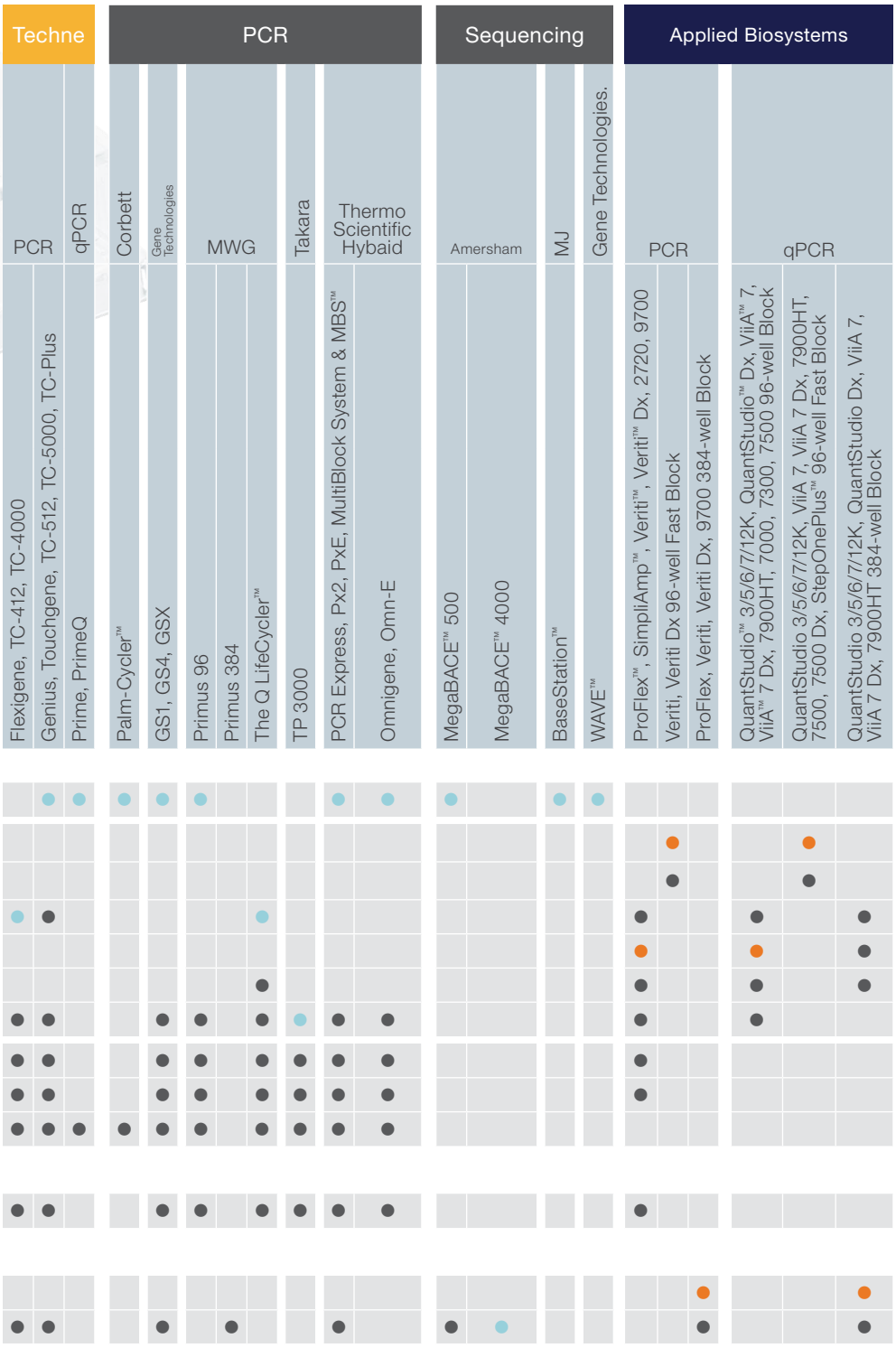
- Recommended plate
- Alternative option
- Validated plate

Plate type

			Bio-Rad (MJ Research)							Agilent (Stratagene)					Eppendorf			Biometra					
			PCR			qPCR				PCR		qPCR			PCR		qPCR	PCR					qPCR
			T100, MJ Mini™, PTC-100™ with 96-well block	iCycler™, MyCycler™	C1000, S1000, PTC-200	iCycler™, iQ™4, iQ™5, MyiQ™, MyiQ2	CFX96™, Opticon™	CFX384™	MiniOpticon™	SureCycler™ 8800	Robocycler	Gradient Cycler	Mx4000™	Mx3000P™, Mx3005P™	Mastercycler™ Gradient, Mastercycler™ EP Gradient/Pro	M384	Mastercycler™ ep Realplex	Uno, TRobot	Uno II	T1 Thermocycler	TGradient	TProfessional	TOptical
96-well		**Cat. No.**																					
Fully skirted	Low-profile	SP-0037, SP-3805*	●		●		●					●			●		●	●		●	●	●	●
Semi-skirted	Fast block	W4346906, W4346907																					
		SP-1900															●						
	Flat deck	SP-0824	●	●	●	●							●				●			●	●		
	Raised skirt	W8010560																					
		SP-0446											●				●			●	●		
	Segmented	SP-0127	●	●	●	●						●	●	●	●		●	●	●	●	●		
Non-skirted	Standard	SP-0074	●	●	●	●				●	●	●	●	●			●	●	●	●	●	●	
	Standard-flexi	SP-4896	●	●	●	●				●	●	●	●	●			●	●	●	●	●	●	
	Low-profile	SP-0029, SP-3800	●		●		●		●	●		●	●	●	●		●	●	●	●	●	●	●
24- or 48-well																							
Semi-skirted	Standard	SP-0036, SP-0035	●	●	●	●						●	●	●	●		●	●	●	●	●		
384-well																							
Standard	Standard	W4309849																					
		SP-1384			●			●				●			●	●				●		●	

* SP-3800 or SP-3800/W also required.

Additional instruments



Tip

Low-profile versions help minimize the air space above the PCR reaction, further reducing evaporation effects. We recommend that you choose the low-profile options where available.

PCR plates

SP-0037

H1

96-Well Fully Skirted, Low Profile

- ANSI footprint and stackable for use in automated systems
- Low profile to help reduce dead space and increase PCR efficiency
- Available in a rigid version providing 4x more rigidity for superior robotic handling
- Cut corner: H1
- Height: 14 mm
- Pitch: 9 mm

Ordering information

96-Well Fully Skirted, Low Profile	
SP-0037	Clear

Pack size: 25 plates

SP-1900

A1

96-Well Semi-Skirted, Fast Block

- Raised plate deck to aid in spill prevention
- Compatible with Fast blocks including Applied Biosystems™ instruments—no adapters necessary
- Cut corner: A1
- Height: 14.4 mm
- Pitch: 9 mm

Ordering information

96-Well Semi-Skirted, Fast Block	
SP-1900	Clear

Pack size: 25 plates

SP-0824

A12

96-Well Semi-Skirted, Flat Deck

- Flat plate deck facilitates sealing and handling
- Compatible with Applied Biosystems instruments—no adapters necessary
- Cut corner: A12
- Height: 19.3 mm
- Pitch: 9 mm

Ordering information

96-Well Semi-Skirted, Flat Deck	
SP-0824	Clear
SP-0824-L	Clear w/black letters

Pack size: 25 plates

SP-0446

96-Well Semi-Skirted, Raised Deck

- Available in a rigid version providing 4x more rigidity for superior robotic handling
- Compatible with Applied Biosystems instruments—no adapters necessary
- Cut corner: A12
- Height: 19.3 mm
- Pitch: 9 mm

Ordering information

96-Well Semi-Skirted, Raised Deck	
SP-0446	Clear

Pack size: 25 plates

SP-0029

96-Well Non-Skirted, Low Profile

- Low profile to help reduce dead space and increase PCR efficiency
- Available with black alphanumeric lettering
- Improved access for liquid handling
- Maximum well volume: 0.2 mL
- Cut corner: H12
- Height: 13.98 mm
- Pitch: 9 mm

Ordering information

96-Well Non-Skirted, Low Profile	
SP-0029	Clear

Pack size: 25 plates

SP-0074

96-Well Non-Skirted, Standard

- Non-skirted format compatible with most thermal cyclers
- Available with black alphanumeric lettering
- Cut corner: H1
- Height: 19.3 mm
- Pitch: 9 mm

Ordering information

96-Well Non-Skirted, Standard	
SP-0074	Clear
SP-0074-L	Clear w/black letters

Pack size: 25 plates

SP-1384

384-Well Plates, Fully Skirted, Standard

- Compatible with all leading 384-block thermal cyclers
- Maximum well volume: 40 µL
- Cut corner: A24
- Height: 8 mm
- Pitch: 4.5 mm

Ordering information

384-Well Fully Skirted, Standard	
SP-1384	Clear

Pack size: 50 plates

Sealing options

We offer a wide range of robust sealing options to suit any application. All of our sealing products are designed for ease of use while providing the ultimate in sample protection.

The qPCR sealing options are optically clear to help deliver maximum and consistent signal transmission, which is critical for accurate qPCR results.

Legend
- • Successfully tested
- ✖ Not recommended

		PCR cap strips*					Adhesive seals		
		Flat cap strips	Domed cap strips	Optical qPCR cap strips	Flat cap mats	Ultra Clear cap mats	PCR foil seal	PCR film seal	Optical qPCR seal
	Cat. No.	SP-0361 (8 caps per strip)	SP-0075 (8 caps per strip)	SP-0100 (8 caps per strip)	SP-3815 (12 x 8 strips)	SP-3820 (12 x 8 strips)	SP-0028	SP-0027	SP-0605
	Pack size	250 strips	250 strips	120 strips	25 mats	25 mats	100 sheets	100 sheets	50 sheets
Applications	PCR (including waterbath)	•	•	•	•	•	•	•	•
	qPCR	✖	✖	•	✖	•	✖	✖	•
	Sealing temp range	–20°C ± 120°C	–20°C ± 120°C	–20°C ± 120°C	–20°C ± 120°C	–20°C ± 120°C	–40°C ± 120°C	–20°C ± 120°C	–80°C ± 110°C
	Long-term storage	•	•	•	•	•	•	•	✖
Mechanical properties	Pierceable	✖	✖	✖	✖	✖	8.1 N	✖	✖
	Peelable	•	•	•	•	•	•	•	•
	Resealable	•	•	•	•	•	•	•	
	Thickness**						75 µm	255 µm	100 µm
Resistance	DMSO (100%)	•	•	•	•	•	•	✖	•
	Ethanol (100%)	•	•	•	•	•	✖	✖	•
	Isopropanol (100%)	•	•	•	•	•	✖	✖	•
	Autoclavable	•	•	•	•	•			
	UV irradiation	•	•	•	•	•			
	Gamma irradiation	•	•	•	•	•			
Compatible products	Applicator tools	SP-0078	SP-0078	SP-0078			SP-1391	SP-1391	SP-1391
	Tubes/plates	8-strip PCR tubes 96-well PCR plates	8-strip PCR tubes 96-well PCR plates	8-strip PCR tubes 96-well PCR plates	8-strip PCR tubes 96-well PCR plates	8-strip PCR tubes 96-well PCR plates	All plates	All plates	All plates

* Choose cap shape according to the instrument manufacturer's recommendation.
** Does not include release liner.

Plastics for Applied Biosystems instruments

Applied Biosystems™ PCR plastics are optimized to provide unmatched temperature accuracy and uniformity for fast and efficient PCR and qPCR applications. Only these plastics are validated and "Engineer-Approved" for use with Applied Biosystems instruments, for optimal fit and performance.

Features of Applied Biosystems plastics:

- All plastics are produced in injection-molding, state-of-the-art facilities that meet 10,000 clean room standards
- ISO 9001– and ISO 13485–certified facilities
- Six Sigma and lean manufacturing processes to help enable the highest quality and lower costs
- Custom or no-label packaging
- Production runs 24/7 with complete traceability and process controls
- Customized QC, quantities, and configurations

Tube strips

W4316567 ▼

8-tube strips, 0.2 mL

- Designed for precise PCR and qPCR applications and optimal fit on Applied Biosystems instruments
- Polished surface and conical bottom enable maximum sample recovery
- 8 tubes per strip
- Height: 20.84 mm
- Pitch: 9 mm

Ordering information

0.2 mL tube strips	
W4316567	Optical

Pack size: 125 tube strips

Plates

W4309849 ▼

384-well plate with barcode

- Maximum well volume: 40 µL
- Cut corner: A24
- Height: 9.71 mm
- Pitch: 4.5 mm

Ordering information

384-well plate with barcode	
W4309849	Optical

Pack size: 50 plates

Plates cont.

W8010560

96-well plate with no barcode

- Validated to work with Applied Biosystems™ 96-well qPCR systems and thermal cyclers for consistent, reliable results
- Optimized for well-to-well temperature uniformity
- Maximum well volume: 0.2 mL
- Cut corner: A12
- Height: 20.84 mm
- Pitch: 9 mm

Ordering information

96-well plate with no barcode	
W8010560	Optical

Pack size: 10 plates

W4346907
W4346906

Fast 96-well plate

- Validated to work with Applied Biosystems™ Fast 96-well instruments
- Optimized for well-to-well temperature uniformity
- Maximum well volume: 0.1 mL
- Cut corner: A12
- Height: 15.94 mm
- Pitch: 9 mm

Ordering information

Fast 96-well plate	
W4346907	Optical

Pack size: 10 plates

Fast 96-well plate with barcode	
W4346906	Optical

Pack size: 20 plates

Sealing options

W8010535
W4323032

8-cap strips

- Designed to fit on Applied Biosystems™ MicroAmp™ reaction tube strips and 96-well plates; the domed profile is suitable for endpoint PCR, and the optical profile cap strips can be used for both endpoint and qPCR applications
- Provide a tight seal to minimize evaporation

Ordering information

8-cap strips		
W8010535	Domed caps	Clear
W4323032	Optical caps	Clear

Pack size: 300 strips

W4306311
W4311971

Adhesive film

- Designed to fit on MicroAmp 96-well and 384-well plates
- Reduces the chance of well-to-well contamination and sample evaporation, and helps enable reliable PCR and qPCR results
- Available as Clear (standard PCR use) or Optical (for qPCR analysis)

Ordering information

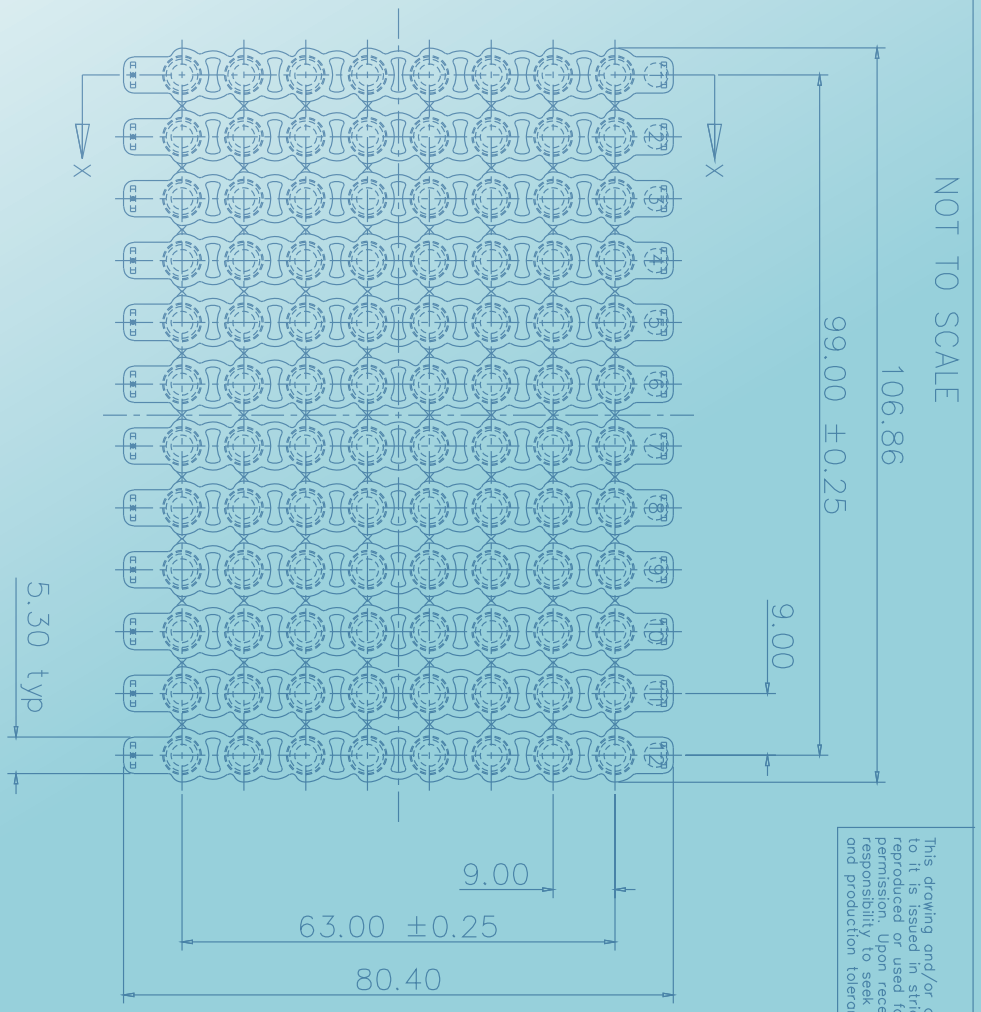
Adhesive film	
W4306311	PCR
W4311971	qPCR

Pack size: 100 seals

Customer service

Because maintaining long-term relationships with customers is our goal, we focus on delivering the standard of service that only highly experienced staff members can provide. Committed to communication, we're responsive and we deliver on our promises.

- Your business will be assigned a team with the experience and organizational contacts to accomplish your requirements
- We provide prompt, accurate responses to questions, documentation requests, and technical support
- We take your confidentiality very seriously



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TITLE
Ultra Clear cap mats

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