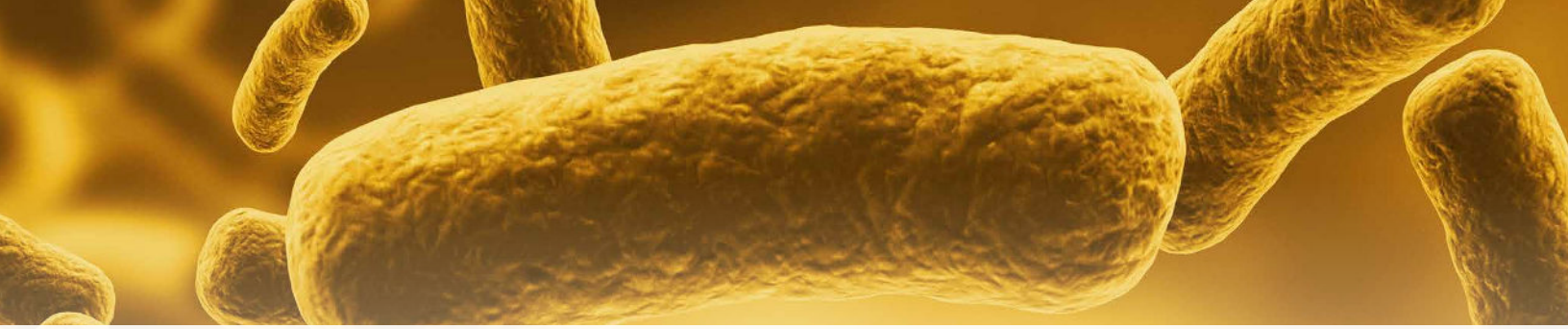
ThermoFisher SCIENTIFIC

Lab shakers

Solaris Orbital Shakers

Intelligent simplicity

thermo scientific



Solaris 2000 and 4000 Orbital Shakers

A new standard for reliability and technical innovation

As your sample preparation demands accelerate, you expect more from your lab equipment. Exceptional reliability is a top priority for orbital shakers—followed by flexible features with advanced programming that save you time and allow you to focus on your work. Thermo Scientific™ Solaris™ 2000 and 4000 Orbital Shakers accelerate the evolution of shaking by bringing it all together:

- Exceptional reliability with heavy-duty drive mechanism
- Cleanroom-compatible design offering key features that enhance particle and contamination control
- User programmability for easy setup and reproducibility
- Compact footprint designed to fit on your benchtop
- Connectivity for easy monitoring
- The ability to create, download, and share programs across multiple units
- Industry-leading warranty for peace of mind

Solaris Orbital Shakers help make life in the lab a little smoother each day.

Raising the bar in shaker performance

Solaris Orbital Shakers set a new standard for reliability and technical innovation

Ruggedly built for demanding applications in busy research and GLP/GMP labs, they combine a new ergonomic design with key feature enhancements that help save you time, protect your process, and drive your science forward.

Solaris Orbital Shakers offer a variety of platforms plus associated flask clamps and tube racks to support virtually any capacity you require. Solaris open air shakers come in two sizes and can operate in microbiological incubators, environmental chambers, or refrigerators to meet a wide range of application requirements. Solaris temperature-controlled benchtop orbital shakers are available in both small and large footprints with incubation and optional energy efficient Peltier chillers. They also offer ergonomic design features for easier usability with a touchscreen and lid.

Solaris 2000
Open Air Shaker

Solaris 4000
Open Air Shaker

Solaris 2000 I
Incubated Shaker

Solaris 2000 R Incubated
and Refrigerated Shaker

Solaris 4000 I
Incubated Shaker

Solaris 4000 R Incubated
and Refrigerated Shaker

Efficient operation

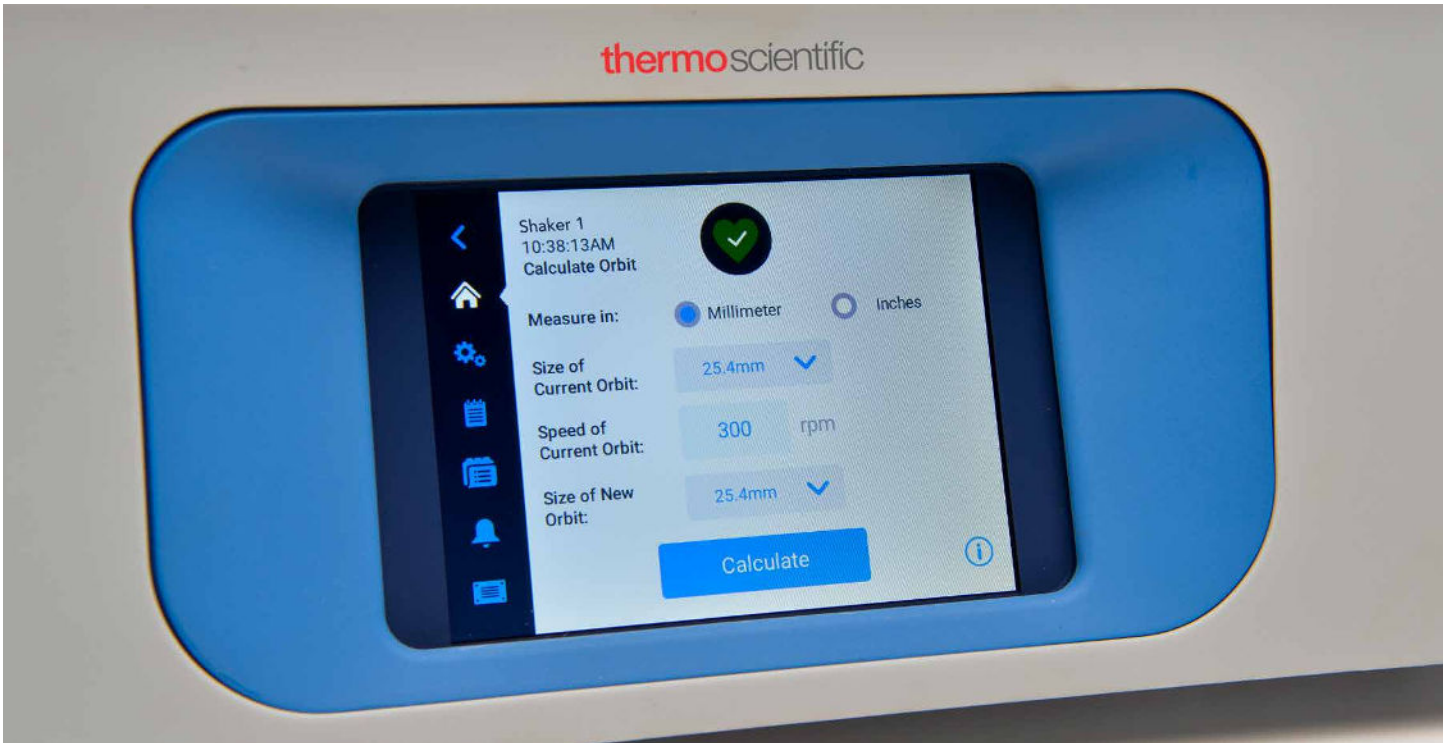
Advanced user interface and programming capabilities for fast and secure storage of protocols and setpoints

Programs can be downloaded, uploaded, or shared across other Solaris shakers in your laboratory, allowing for better reproducibility and efficiency. Access controls cater to processes with restricted access requirements, eliminating non-authorized changes to your Solaris shaker's settings.

- The best-in-class touchscreen is easy to read and simple to operate; its multilanguage system accommodates user preference to help avoid errors.
- The full-color display allows you to clearly view speed and run times concurrently, even from a distance. View historical monitoring of alerts, alarms, and interaction logs for greater security and reproducibility.
- Set, run, and monitor vital statistics at your fingertips; graphing capabilities allow you to monitor the history of your run.

Solaris Orbital Shakers include a built-in orbital calculator that gives you the ability to convert protocols designed with different orbits and estimate the set speed needed to obtain similar results.

The large, bright user interface lets you easily monitor set points and status conditions from across the lab.



Designed for easy maintenance

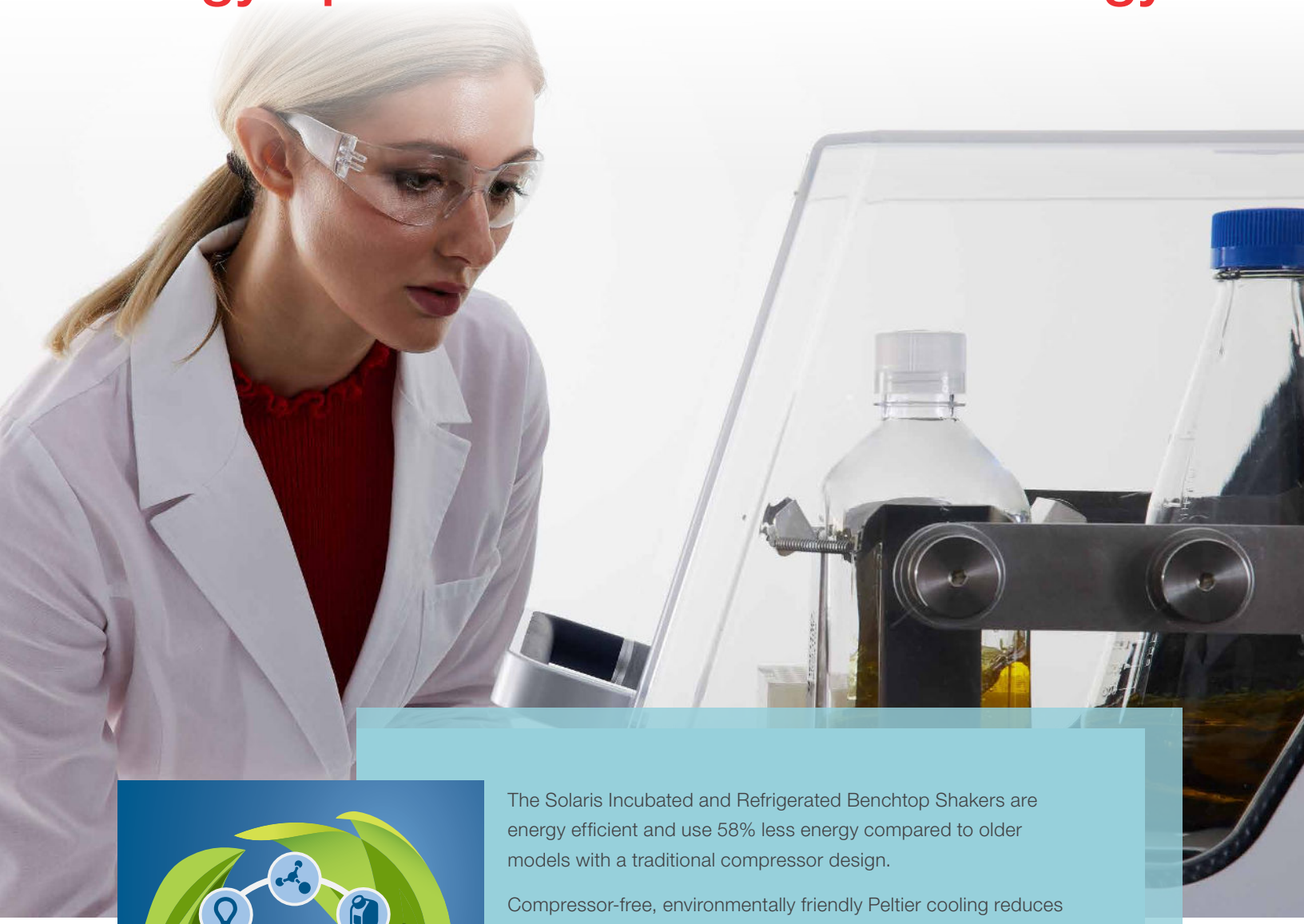
Solaris Orbital Shakers offer easy-to-remove platforms that make cleaning fast and simple

The shakers have rounded corners and removable platforms, so you can clean the unit quickly and completely with confidence. A sealed motor and shaker housing protects the drive mechanism from damaging spills, simplifies cleaning, and controls contamination. The sleek and thoughtful design results in a low-maintenance shaker with a longer service life.

Solaris Orbital Shakers feature a small footprint that helps save valuable benchtop space. Engineered to perform with a reduced noise level in a wide range of environments, the units operate in a temperature range of 5°C to 40°C and humidity conditions from 20% to 80% noncondensing.

Full 10-year warranty on the drive mechanism, five-year warranty on parts, and two years on labor.

Energy-optimized with Peltier technology



Green benefits

- Energy efficient: uses 58% less energy than prior model
- Less hazardous: uses refrigerant-free cooling system

The Solaris Incubated and Refrigerated Benchtop Shakers are energy efficient and use 58% less energy compared to older models with a traditional compressor design.

Compressor-free, environmentally friendly Peltier cooling reduces costly energy consumption and is less hazardous.

The refrigerant-free cooling system of Solaris Incubated and Refrigerated Benchtop Shakers uses solid-state Peltier elements that maintain temperature conditions by heating and cooling as necessary for your protocol. By applying the correct current for the temperature selected, the Peltier elements generate precise temperatures for consistent results.

A refrigerant-free cooling system is more efficient than the traditional compressor-based heating and cooling system. Traditional systems rely on constantly switching between full power heating and cooling to continually adjust the interior environment, resulting in higher energy consumption. Peltier elements also eliminate the noisy moving parts associated with loud compressor systems, resulting in units that operate quietly in the lab.

The perfect fit for your applications

Solaris Orbital Shakers offer critical flexibility to meet virtually any application requirement. They have also high compatibility with GLP/GMP operations. The Solaris Open Air models are specially engineered to support operation inside a range of lab equipment, including environmental chambers, incubators, and lab refrigerators for added flexibility.*

* User is responsible for safe operation of Solaris shakers in combination with any lab equipment.

Cell and gene therapy

Solaris Incubated and Refrigerated Benchtop Shakers allow for the precise temperature control necessary for vector construction and plasmid production procedures. Password-protected protocols, data monitoring alerts, and audible alarms offer a security-conscious choice for sensitive applications.

Molecular biology/cloning and biochemistry applications

Solaris Orbital Shakers are your benchtop workhorses utilizing a reliable triple-eccentric drive mechanism that can operate across many applications, including mixing, staining, hybridization, and washing.

Bioprocessing

Solaris Open Air Shakers are GLP/GMP-compatible with an ergonomic design, along with sealed electronics to protect from accidental spills and help protect against contamination. They are equipped with a heavy-duty tribalanced drive mechanism to handle heavy loads, and are protected by an overload sensor that turns the unit off if weight capacity is exceeded.

Specification and ordering tables

Open Air Shaker specifications

Model	Speed range*	Orbit diameter in. (cm)	Max. load* lb (kg)	Overall dimensions in. (cm) without platform			Electrical requirements	Regulatory certifications	Cat. No.
				L	W	H			
Solaris 2000	15–525 ± 1 rpm	1 (2.54)	55 (25)	18.5 (46.9)	14.3 (36.4)	5.5 (14.1)	100–240 V ± 10%, 50/60 Hz	CE Cert, UL (Canada/US) File E311968, UK Mark	SK2000
Solaris 4000	15–525 ± 1 rpm	1 (2.54)	95 (43)	25.5 (64.8)	22.6 (57.3)	7 (17.7)	100–240 V ± 10%, 50/60 Hz	CE Cert, UL (Canada/US) File E311968, UK Mark	SK4000

* Maximum speed is dependent on load and platform. Please see the manual for maximum speed by weight information, and for additional information on speed and load limitation for dual stack platforms.

Temperature Controlled Benchtop Shaker specifications

Model	Speed range*	Orbit diameter in. (cm)	Max. load* lb (kg)	Temperature setting range (°C)	Overall dimensions in. (cm)			Height with lid open in. (cm)	Electrical requirements	Regulatory certifications	Cat. No.
					L	W	H				
Solaris 2000 I	15–525 ± 1 rpm	1 (2.54)	35 (16)	30 to 60	27.6 (70)	14.2 (36)	18.1 (46)	30.8 (79)	100–120, 200–240 V ± 10%, 50/60 Hz	CE Cert, UL (Canada/US) File E311968, UK Mark	SK2001
Solaris 2000 R	15–525 ± 1 rpm	1 (2.54)	35 (16)	5 to 60	27.6 (70)	14.2 (36)	18.1 (46)	30.8 (79)	100–240 V ± 10%, 50/60 Hz	CE Cert, UL (Canada/US) File E311968, UK Mark	SK2002
Solaris 4000 I	15–525 ± 1 rpm	1 (2.54)	70.5 (32)	30 to 60	30.3 (77)	22.4 (57)	21.7 (55)	36.7 (94)	100–120, 200–240 V ± 10%, 50/60 Hz	CE Cert, UL (Canada/US) File E311968, UK Mark	SK4001
Solaris 4000 R	15–525 ± 1 rpm	1 (2.54)	70.5 (32)	4 to 60	30.3 (77)	22.4 (57)	21.7 (55)	36.7 (94)	100–240 V ± 10%, 50/60 Hz	CE Cert, UL (Canada/US) File E311968, UK Mark	SK4002

* Maximum speed is dependent on load and platform. Please see the manual for maximum speed by weight information, and for additional information on speed and load limitation for dual stack platforms.

Ordering information

Shakers

Description	Model	Cat. No.
Small Open Air Shaker with 12” x 14” platform	Solaris 2000	SK2000
Large Open Air Shaker with 18” x 30” platform	Solaris 4000	SK4000
Incubated Benchtop Shaker with 11” x 14” platform	Solaris 2000 I	SK2001
Incubated and Refrigerated Benchtop Shaker with 11” x 14” platform	Solaris 2000 R	SK2002
Incubated Benchtop Shaker with 18” x 18” platform	Solaris 4000 I	SK4001
Incubated and Refrigerated Benchtop Shaker with 18” x 18” platform	Solaris 4000 R	SK4002

Shaker and accessory bundles

Description	Model	Cat. No.
Open Air Shaker with 12” x 14” platform and Flask Clamp Starter Kit***	Solaris 2000	SK2000PR
Open Air Shaker with 18” x 30” platform and Flask Clamp Starter Kit***	Solaris 4000	SK4000PR
Incubated Benchtop Shaker with 11” x 14” platform and Flask Clamp Starter Kit***	Solaris 2000 I	SK2001CPKG
Incubated Benchtop Shaker with 11” x 14” platform and Adhesive Sticky Mats**	Solaris 2000 I	SK2001MPKG
Incubated and Refrigerated Benchtop Shaker with 11” x 14” platform and Flask Clamp Starter Kit***	Solaris 2000 R	SK2002CPKG
Incubated and Refrigerated Benchtop Shaker with 11” x 14” platform and Adhesive Sticky Mats**	Solaris 2000 R	SK2002MPKG
Incubated Benchtop Shaker with 18” x 18” platform and Flask Clamp Starter Kit***	Solaris 4000 I	SK4001CPKG
Incubated Benchtop Shaker with 18” x 18” platform and Adhesive Sticky Mats**	Solaris 4000 I	SK4001MPKG
Incubated and Refrigerated Benchtop Shaker with 18” x 18” platform and Flask Clamp Starter Kit***	Solaris 4000 R	SK4002CPKG
Incubated and Refrigerated Benchtop Shaker with 18” x 18” platform and Adhesive Sticky Mats**	Solaris 4000 R	SK4002MPKG

** Bundles with adhesive mats include 1 pack each of Cat. No. 75004127 and Cat. No. 75004111

*** Flask Clamp Starter Kit includes 2 x Cat. No. 30153, 4 x Cat. No. 30154bi, 4 x Cat. No. 30156bi, 2 x Cat. No. 30157bi, 2 x Cat. No. 30158, 1 x Cat. No. 30175

Optional platforms

Description	Compatible model	Cat. No.
Solaris 11” x 14” Universal Platform for Solaris Temperature Controlled SK2001 and SK2002 Shakers	Solaris 2000 I | 2000 R	SK1114
Solaris 12” x 14” Universal Platform	Solaris 2000	SK1214
Solaris 12” x 14” Dual Stack Universal Platform	Solaris 2000	SK1214D
Solaris 12” x 14” Dual Stack Universal Platform—upgrade kit (one 12 x 14 platform, screws, supporting rods)	Solaris 2000	SK1214DK
Solaris 18” x 18” Universal Platform for SK2000, SK4001, and SK4002	Solaris 2000 | 4000 I | 4000 R	SK1818
Solaris 18” x 18” Dual Stack Universal Platform	Solaris 2000	SK1818D
Solaris 18” x 18” Dual Stack Universal Platform—upgrade kit (one 18 x 18 platform, screws, supporting rods)	Solaris 2000	SK1818DK
Solaris 18” x 24” Universal Platform	Solaris 2000	SK1824
Solaris 18” x 30” Universal Platform	Solaris 4000	SK1830
Solaris 18” x 30” Dual Stack Universal Platform	Solaris 4000	SK1830D
Solaris 18” x 30” Dual Stack Universal Platform—upgrade kit (one 18 x 30 platform, screws, supporting rods)	Solaris 4000	SK1830DK
Solaris 36” x 24” Universal Platform	Solaris 4000	SK3624

Accessories for Solaris Orbital Shakers

Solaris Orbital Shakers are compatible with a wide variety of platforms, clamps, and racks. Mix and match accessories to meet your application needs. Clamps are purchased separately.

We are continuously expanding our line of clamps and accessory offerings. Visit **thermofisher.com/solaris** for more information.

Miscellaneous accessories—spare parts and trays

Description	Compatible model	Cat. No.
Clamp screw kit (screws)	Solaris Shakers	SK0010
Screwdriver for accessories	Solaris Shakers	75004131
Platform spare part kit for SK2000 (platform screws, tool, and threadlocker)	Solaris 2000	SK0100
Platform spare part kit for SK4000 (platform screws, tool, and threadlocker)	Solaris 4000	SK0101
Adhesive mat applicator	Solaris Shakers	75004124
Spare part set of o-rings	Solaris Shakers	75004132
Utility tray for Solaris Shaker 11” x 14” or 12” x 14” platforms	Solaris Shakers	75004123
Utility tray for Solaris Shaker 18” x 18”, 18” x 24”, 18” x 30”, and 36” x 24” platforms	Solaris Shakers	75004122
Gassing manifold	Solaris 2000 I | 2000 R	SK2000-8GM
Gassing manifold	Solaris 4000 I | 4000 R	SK4000-8GM

Accessories—adhesive mats

Description	Maximum rpm*	Cat. No.
High adhesion sticky mat, 200 mm x 200 mm	400	75004126
High adhesion sticky mat, 280 mm x 170 mm	400	75004127
Low adhesion sticky mat, 200 mm x 200 mm	200	75004111
Low adhesion sticky mat, 280 mm x 170 mm	200	75004117
Sticky mat, 140 mm x 140 mm	225	88881126
Sticky mat, 230 mm x 230 mm	250	300349

* See Manual for suitability of your labware material at maximum shaking speed.

Specification and ordering tables

Accessories—shaker flask clamps and fit recommendations

Description	12" x 14" SK1214	18" x 18" SK1818	18" x 24" SK1824	18" x 30" SK1830	36" x 24" SK3624	12" x 14" DS SK1214D	18" x 18" DS SK1818D	18" x 30" DS SK1830D	11" x 14" SK1114†	18" x 18" SK1818†	Cat. No.
10 mL Erlenmeyer flask clamp	72	113	157	203	187	140	226	402	59	113	30150BI
25 mL Erlenmeyer flask clamp	42	64	80	112	187	80	124	220	35	64	30151
50 mL Erlenmeyer flask clamp	42	64	80	112	187	80	124	220	35	64	30152BI
125 mL Erlenmeyer flask clamp	15	32	40	46	83	30	62	92	15	32	30153
250 mL Erlenmeyer flask clamp	9	16	24	34	40	16	32	68	7	16	30154BI
300 mL Erlenmeyer flask clamp	9	16	20	28	40	16	32	56	7	16	30155
500 mL Erlenmeyer flask clamp	9	16	20	28	40	16	32	56	7	16	30156BI
1 L Erlenmeyer flask clamp	4	9	11	14	20	8	16	28	4	9	30157BI
2 L Erlenmeyer flask clamp	3	5	6	8	11	NA	NA	16	2	6	30158
4 L Erlenmeyer flask clamp	1	4	4	6	8	NA	NA	NA	NA	NA	30159
5 L Erlenmeyer flask clamp	1	2	4	5	8	NA	NA	NA	NA	NA	30159B
6 L Erlenmeyer flask clamp	1	2	2	3	6	NA	NA	NA	NA	NA	30160
2,800 mL Fernbach flask clamp	1	4	4	6	8	NA	NA	12	1	4	30162
2.5 L Low Form Culture flask clamp	1	2	2	3	6	NA	NA	6	1	1	30161

† Platform fit recommendations are specific to Solaris Temperature Controlled Shaker models.

Cat. No. 30129 - Flask Clamp Starter Kit includes 2 x Cat. No. 30153, 4 x Cat. No. 30154bi, 4 x Cat. No. 30156bi, 2 x Cat. No. 30157bi, 2 x Cat. No. 30158, 1 x Cat. No. 30175

Accessories—square media bottle clamps and fit recommendations

Description	12" x 14" SK1214	18" x 18" SK1818	18" x 24" SK1824	18" x 30" SK1830	36" x 24" SK3624	12" x 14" DS SK1214D	18" x 18" DS SK1818D	18" x 30" DS SK1830D	11" x 14" SK1114†	18" x 18" SK1818†	Cat. No.
125 mL square media bottle clamp	12	16	24	28	54	21	32	56	9	16	75004106
250 mL square media bottle clamp	9	16	22	28	52	18	32	56	7	16	75004107
500 mL square media bottle clamp	6	9	12	15	24	11	18	30	3	9	75004108
1,000 mL square media bottle clamp	4	9	12	15	24	8	18	28	2	9	75004109

† Platform fit recommendations are specific to Solaris Temperature Controlled Shaker models.

Accessories—test tube racks and fit recommendations

Description	12" x 14" SK1214	18" x 18" SK1818	18" x 24" SK1824	18" x 30" SK1830	36" x 24" SK3624	12" x 14" DS SK1214D	18" x 18" DS SK1818D	18" x 30" DS SK1830D	11" x 14" SK1114†	18" x 18" SK1818†	Cat. No.
10–13 mm 6 x 12 array test tube racks (full)	3	7	9	12	20	6	13	24	3	7	30180BI
14–16 mm 6 x 12 array test tube racks (full)	3	4	6	9	12	6	8	16	2	4	30182
17–20 mm 4 x 10 array test tube racks (full)†††	3	5	7	9	15	6	8	18	2	5	30184
21–25 mm 4 x 10 array test tube racks (full)	2	3	5	6	9	4	6	12	1	3	30186
26–30 mm 3 x 8 array test tube racks (full)†††	3	4	5	7	10	5	8	13	2	4	30188
1.5 mL MCT 8 x 12 array tube racks (full)	3	4	7	9	12	6	8	17	2	5	30190
10–13 mm 6 x 6 array test tube racks (half)	8	12	15	21	32	14	22	40	6	12	30181
14–16 mm 6 x 6 array test tube racks (half)	5	9	11	13	20	9	16	24	2	8	30183
17–20 mm 4 x 5 array test tube racks (half)†††	7	11	14	18	20	12	20	34	4	10	30185
21–25 mm 4 x 4 array test tube racks (half)	6	9	11	14	22	10	16	26	2	8	30187
26–30 mm 3 x 3 array test tube racks (half)†††	6	9	12	15	24	11	17	30	4	9	30189
1.5 mL MCT 4 x 6 array tube racks (half)	6	10	13	18	24	11	19	34	3	8	30191
10–13 mm 72 place adjustable tube rack	3	4	6	7	14	6	8	14	2	4	236090
16–20 mm 40 place adjustable tube rack†††	3	4	6	7	14	5	8	14	2	3	236091
21–25 mm 40 place adjustable tube rack	3	3	4	5	9	5	6	10	1	3	236092
26–30 mm 24 place adjustable tube rack†††	3	3	4	6	9	5	6	12	1	3	236093

† Platform fit recommendations are specific to Solaris Temperature Controlled Shaker models.
††† 17-20mm and 16mm-20mm test tube racks will fit a 15mL conical tube. 26-30mm test tube racks will fit a 50mL conical tube

Accessories—beaker racks and fit recommendations

Description	12" x 14" SK1214	18" x 18" SK1818	18" x 24" SK1824	18" x 30" SK1830	36" x 24" SK3624	12" x 14" DS SK1214D	18" x 18" DS SK1818D	18" x 30" DS SK1830D	11" x 14" SK1114†	18" x 18" SK1818†	Cat. No.
30 mL - 36 position - 11" x 14" rack	1	NA	NA	NA	NA	2	NA	NA	1	NA	75004116
50 mL - 28 position - 11" x 14" rack	1	NA	NA	NA	NA	2	NA	NA	1	NA	75004129
100 mL - 16 position - 11" x 14" rack	1	NA	NA	NA	NA	2	NA	NA	1	NA	75004118
250 mL - 9 position - 11" x 14" rack	1	NA	NA	NA	NA	2	NA	NA	1	NA	75004119
400 mL - 8 position - 11" x 14" rack	1	NA	NA	NA	NA	2	NA	NA	1	NA	75004120
600 mL - 5 position - 11" x 14" rack	1	NA	NA	NA	NA	2	NA	NA	1	NA	75004121
30 mL - 32 position - 9" x 18" rack	NA	2	2	3	4	NA	4	6	NA	2	75004110
50 mL - 24 position - 9" x 18" rack	NA	2	2	3	4	NA	4	6	NA	2	75004128
100 mL - 15 position - 9" x 18" rack	NA	2	2	3	4	NA	4	6	NA	2	75004112
250 mL - 8 position - 9" x 18" rack	NA	2	2	3	4	NA	4	6	NA	2	75004113
400 mL - 6 position - 9" x 18" rack	NA	2	2	3	4	NA	4	6	NA	2	75004114
600 mL - 4 position - 9" x 18" rack	NA	2	2	3	4	NA	4	6	NA	2	75004115

† Platform fit recommendations are specific to Solaris Temperature Controlled Shaker models.

Accessories—vessel clamps and fit recommendations

Description	12" x 14" SK1214	18" x 18" SK1818	18" x 24" SK1824	18" x 30" SK1830	36" x 24" SK3624	12" x 14" DS SK1214D	18" x 18" DS SK1818D	18" x 30" DS SK1830D	11" x 14" SK1114†	18" x 18" SK1818†	Cat. No.
Single height adjustable clamp 11" x 14"	NA	NA	NA	NA	NA	NA	NA	NA	1	NA	75004104
Dual height adjustable clamp 12" x 14"	1	1	1	2	2	NA	2	4	NA	1	75004102
Dual height adjustable clamp 18" x 18"	NA	1	1	1	2	NA	NA	2	NA	1	75004103
Single vessel adjustable clamp	4	4	6	8	12	6	8	16	2	4	75004101
Separatory funnel—horizontal	2	3	4	5	7	2	5	9	NA	NA	75004125
Separatory funnel—vertical mount	4	4	6	8	12	NA	NA	NA	NA	NA	75004125

† Platform fit recommendations are specific to Solaris Temperature Controlled Shaker models.

Accessories—plate rack and fit recommendations

Description	12" x 14" SK1214	18" x 18" SK1818	18" x 24" SK1824	18" x 30" SK1830	36" x 24" SK3624	12" x 14" DS SK1214D	18" x 18" DS SK1818D	18" x 30" DS SK1830D	11" x 14" SK1114†	18" x 18" SK1818†	Cat. No.
Microplate/Deep-well Plate	7	12	16	23	36	14	24	42	6	10	30175

† Platform fit recommendations are specific to Solaris Temperature Controlled Shaker models.

Learn more at **thermofisher.com/solaris**

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