SapphireLab

System Specifications

SapphireLab is a laboratory instrument that uses microfluidics to help you analyze fluid interactions and measure fluid properties at high pressures (up to 1,034 bar/15,000 psi) and temperatures (up to 200°C/400°F) at the micro and nano scale.

SapphireLab shows how fluids behave and interact under real-life operating pressures, temperatures, and pore space, and provides deeper insights than with traditional fluid testing instruments such as core floods, slim tubes, and bottle tests.

With SapphireLab, you can *see* it and *measure* it.

Specifications	SapphireLab Storage	SapphireLab Flow	SapphireLab Pro	SapphireLab Pro Plus
Maximum Pressure	150 bar (2,175 psi)[1]	515 bar (7,500 psi)	890 bar (12,900 psi)	1,034 bar (15,000 psi)
Temperature Range	Room temperature to 200°C (390°F)[2]	Room temperature to 200°C (390°F)[2]	Room temperature to 200°C (390°F)[2]	Room temperature to 200°C (390°F)[2]
Support for Live Oils	No[3]	Yes	Yes	Yes
Software	Benchtop automation Image analysis Project management	Benchtop automation Image analysis Project management	Benchtop automation Image analysis Project management	Benchtop automation Image analysis Project management
Density and Viscosity Sensor	Not included	Not included	Included	Included
Heating Control	Chip holder	Chip holder Sample cylinders Lines Valves	Chip holder Sample cylinders Lines Valves	Chip holder Sample cylinders Lines Valves
Safety features	Burst disks Temperature overlimit switch	Burst disks Temperature overlimit switch	Burst disks Temperature overlimit switch Acrylic cover	Burst disks Temperature overlimit switch Acrylic cover

Specifications	SapphireLab Storage	SapphireLab Flow	SapphireLab Pro	SapphireLab Pro Plus
Width	91 cm (36 in)	91 cm (36 in)	91 cm (36 in)	91 cm (36 in)
Depth	81 cm (32 in)	81 cm (32 in)	81 cm (32 in)	81 cm (32 in)
Height	165 cm (65 in)	165 cm (65 in)	165 cm (65 in)	165 cm (65 in)
Working Height	91 cm (36 in)	91 cm (36 in)	91 cm (36 in)	91 cm (36 in)
Weight	386 kg (850 lbs)	386 kg (850 lbs)	420 kg (925 lbs)	420 kg (925 lbs)
Chip Holder	Screw Top	Liquid Confined	Liquid Confined	Liquid Confined
Pumps	3x high precision 10 ml syringe pumps	2x high precision 3 ml syringe pumps 2x high precision 10 ml syringe pumps	4x high precision 10 ml syringe pumps	4x high precision 10 ml syringe pumps
Pressure sensors	5x quartz pressure sensors	5x quartz pressure sensors	6x quartz pressure sensors	6x quartz pressure sensors
Microscope	Upright epifluorescence with motorized stage	Upright epifluorescence with motorized stage	Upright epifluorescence with motorized stage	Upright epifluorescence with motorized stage
Light Source	Cooled LED light source with adjustable output	Cooled LED light source with adjustable output	Cooled LED light source with adjustable output	Cooled LED light source with adjustable output
Camera	CMOS 7 MP sensor with extended dynamic range	CMOS 7 MP sensor with extended dynamic range	CMOS 7 MP sensor with extended dynamic range	CMOS 7 MP sensor with extended dynamic range
Sample Cylinders	2x 50 ml cylinders with integrated valves and mixing ring[4]	3x 50 ml cylinders with integrated valves and mixing ring[4]	4x 50 ml cylinders with integrated valves and mixing ring[4]	4x 50 ml cylinders with integrated valves and mixing ring[4]

Notes:

1. Maximum pressure will be limited to the pressure capacity of the microfluidic chip, which varies between designs.
2. Add-on accessories are available if cooling below room temperature is required.
3. Model includes heating for the chip holder only. Support for live oils requires heating of full path of fluid flow. Refer to other models if required.
4. While the sample cylinder comes with an internal mixing ring, an external rocker is still required for complete mixing of sample cylinders.

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