

# KrosFlo® TFDF® Lab System

## Set-up Guide



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Full User Guide available at  
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## Abbreviations

AC	Alternating current
CE	Conformité Européenne
cm	Centimeter
FAS	Field Application Specialist
Hz	Hertz
in	Inches
kg	Kilogram
lbs	Pounds
LPM	Liters per minute
PPE	Personal protective equipment
PSI	Pounds per square inch
TFDF	Tangential Flow Depth Filtration
UL	Underwriters Laboratories










## Intended use

The KrosFlo® TFDF® Lab System provides a complete solution for the separation of cells from media during cell culture processes. The technology combines hardware, software and a single-use filter to achieve the filtration result. Please direct questions regarding specific applications of the technology to your regional sales representative or field application scientist.

This Set-up Guide provides a condensed description of your KrosFlo® TFDF® Lab System. This document does not describe an installation process. It is highly recommended that the installation process be executed by a trained Repligen engineer.

For further documentation of the system, such as the KrosFlo® TFDF® Lab System User Guide, please visit [www.repligen.com/resources](http://www.repligen.com/resources). For further support with troubleshooting or process optimization, please contact your local Repligen Field Application Scientist.

## Safety notices

Warning:		<b>Pressure:</b> Do not allow pressure to exceed 5 PSI
Warning:		<b>Magnetic Field:</b> Pump head contain a high field strength magnet. Pacemaker may be influenced. Keep pacemakers and other magnets at a safe distance.
Warning:		<b>Moving parts:</b> Magnetic levitation and peristaltic pumps contain moving parts. Keep fingers away from pumps during operation. Stop pump before loading or unloading tubing.
Warning:		<b>Electric shock:</b> Remove power from the pump before attempting any maintenance.
Warning:		<b>Tubing:</b> Tubing breakage may result in fluid being sprayed from pump. Use appropriate measures to protect operator and equipment.
Warning:		<b>Lubricant:</b> Do not contaminate the lubricant in the container, on the shaft or on the seal with foreign material. Failure to observe this precaution may result in damage to the seal and premature failure of the seal.
Warning:		<b>Weight:</b> The controller instrument weight 36 lbs (16.2 kg). Two person lifting recommended.
Warning:		Wear standard laboratory PPE.
Warning:		Do not freeze.

## System specifications

### System output

Description	Specifications
Feed / recirculating pump type	Magnetic levitating pump
Feed / recirculating pump capacity	0 - 11000 RPM, 0 - 10 LPM @ 0.0 bar, 0.0 - 21.8 psi (1.5 bar)
Diafiltration and permeate pumps type	Peristaltic
Diafiltration and permeate pumps capacity	0.1 - 100 RPM (0.01 RPM resolution) Maximum 340 ml/min (4.8 mm ID and 1.6 mm thickness) 0.0002 - 35 ml/min/channel 3 channel, 8 rollers 14.5 psi (1.0 bar) max differential pressure
Display	Automation direct 12" LCD touchscreen
Retentate flow meter	Ultrasonic clamp-on flow meter 0 - 8000 ml/min, 2% accuracy ( $\pm 16$ ml/min) Calibrated for #15 PharmaPure® tubing
Recommended process volume	1 - 50 L
Number of pressure sensors supported	5
Pressure sensor range	-14 - 30 psi (-1 – 2 bar)
TFDF™ Filter surface area supported	2 - 150 cm <sup>2</sup>
Number of scales supported	2

### System input

Description	Specifications
Power requirements	120 VAC, 10 A 240 VAC, 5 A, 50/60 Hz

### System construction

Description	Specifications
Controller weight	36 lbs (16.2 kg)
Controller dimensions	16 x 13 x 21 in (40 x 33 x 53 cm)
Pump Station weight	16 lbs (7.3 kg)
Pump Station dimensions	11 x 11 x 19 in (min)/39 in (max) (28 x 28 x 48/99 cm)
Controller type	PLC
Controller and Pump Station rating	IP20

**System environment**

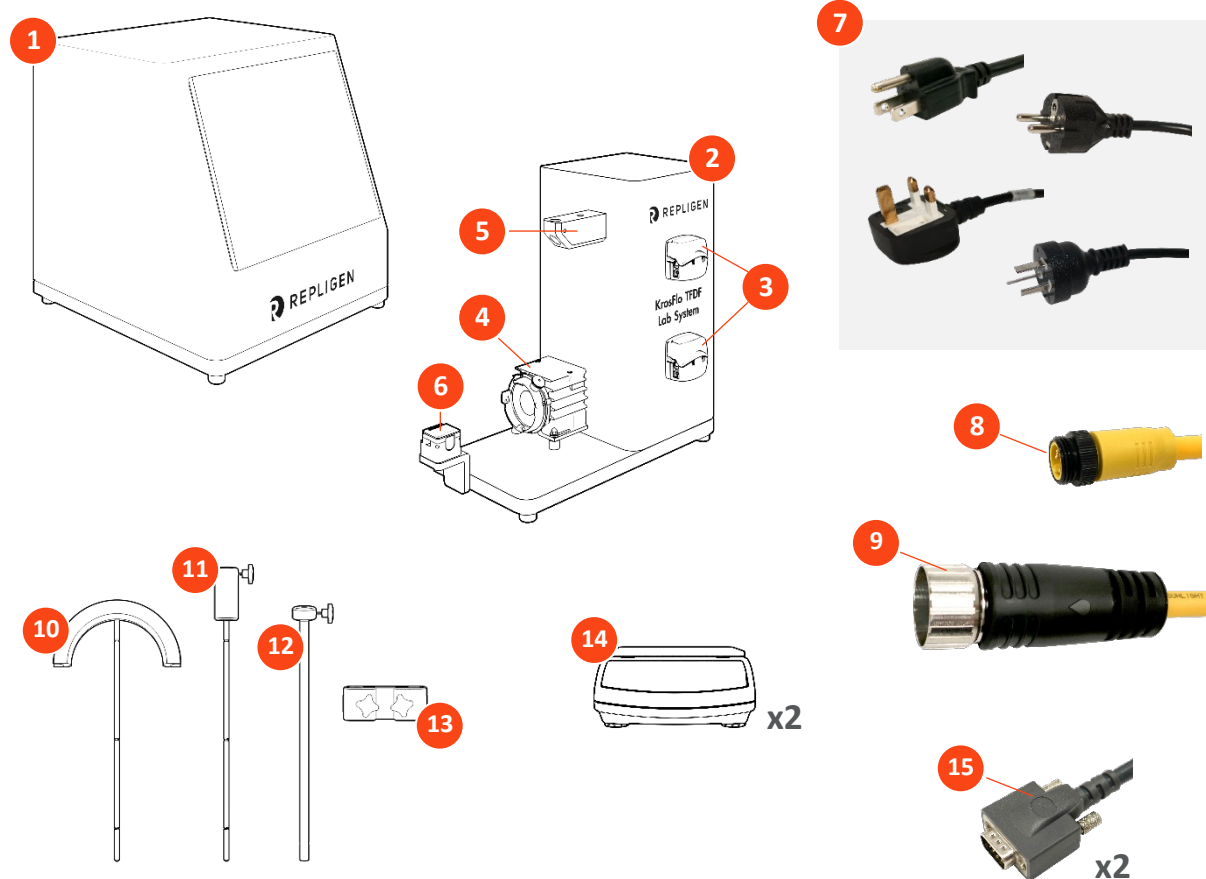
Description	Specifications
Temperature, operating	4° to 40° C (39° to 104° F)
Humidity (non-condensing)	15% - 95% 10% - 50%
Altitude	Less than 2000 m
Noise level	< 75 dBa @ 1 meter
Pollution degree	Pollution Degree 2
Chemical resistance	<b>Housing:</b> Powder-coated aluminum <b>Filter stand:</b> Delrin and powder-coated/anodized aluminum <b>Flow path components:</b> polypropylene, polycarbonate, polysulfone, and C-Flex/PharmaPure® materials

**Materials of construction**

Description	Specifications
Enclosure	Delrin and powder coated/anodized aluminum

### Unboxing checklist

Box	Dimensions	Weight	Included components	
Controller Box	22.6 x 25.2 x 22.8 in (56.5 x 63 x 57 cm)	36 lbs (16.2 kg)	1	Controller with housing-connected cables [ ]
Pump Station Box	21.5 x 22.5 x 17.2 in (53.75 x 56.25 x 43.075 cm)	19 lbs (8.6 kg)	2	Pump Station [ ]
			Pump Station attachments	
			3	• Peristaltic pumps <b>x2</b> [ ] [ ]
			4	• Magnetic levitation pump [ ]
			5	• Stand mount with locking knob [ ]
			6	• Flow meter [ ]
			7	A/C Power cables (US, UK, EU and China versions included) [ ]
			8	Pump Station power cable (5 pin) [ ]
			9	Controller-Pump Station communication cable (26 pin) [ ]
			10	Tubing guide rod [ ]
			11	Extension rod with locking knob [ ]
			12	Rod sleeve with locking knob [ ]
			13	Filter clamp with 2 locking knobs [ ]
			14	Digital scales (1 per box) <b>x2</b> [ ] [ ]
			15	Powered RS232 communication cables <b>x2</b> [ ] [ ]

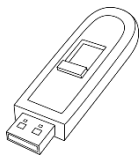


### Configurable components

For more information, please contact your local Repligen FAS.

Component	
Turbidity sensor with 718 Minifast 5-pin cable	[ ]
Depth-station-based flow meter	[ ]
Depth-station-based pressure sensor	[ ]

### Customer-provided components

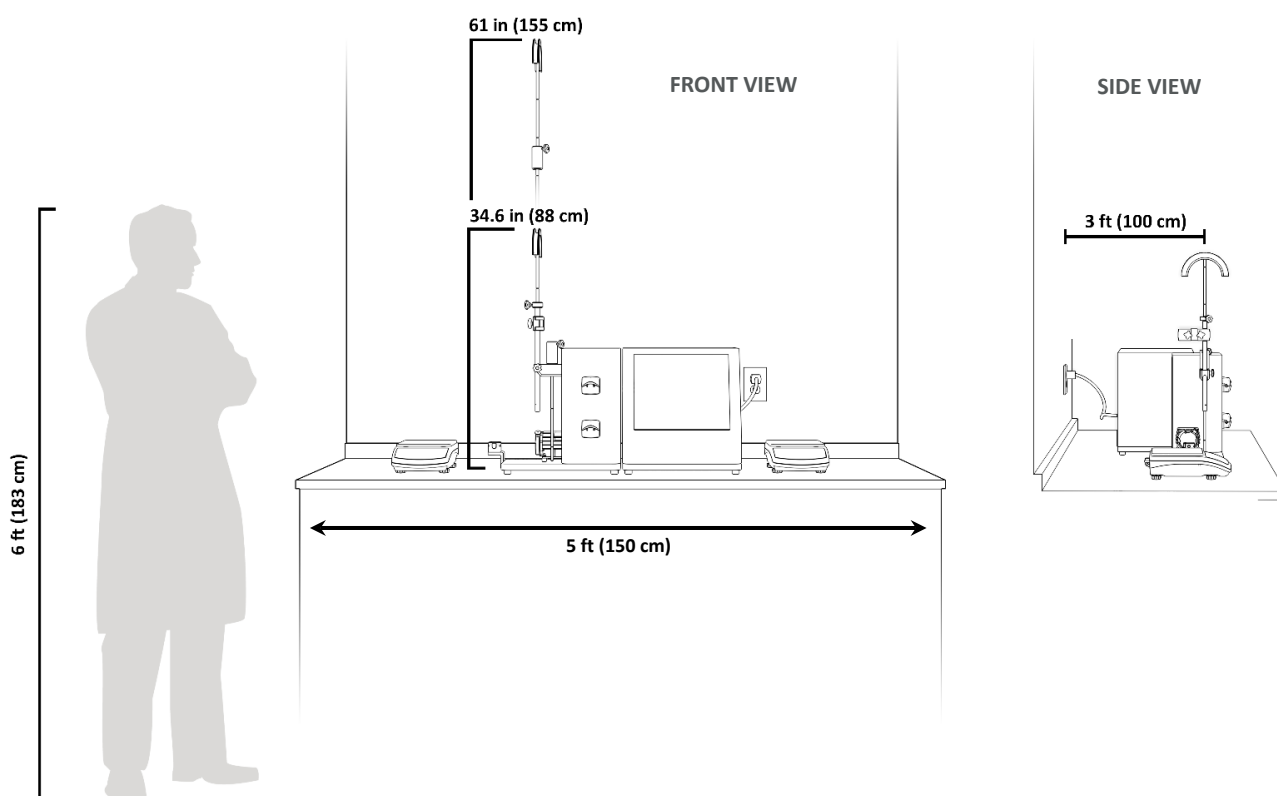


USB-A memory stick



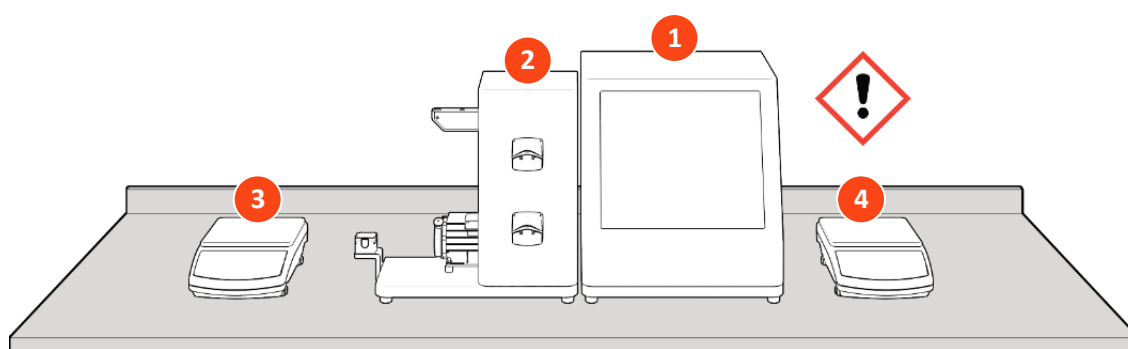
## Set-up

### Space requirements



### System arrangement

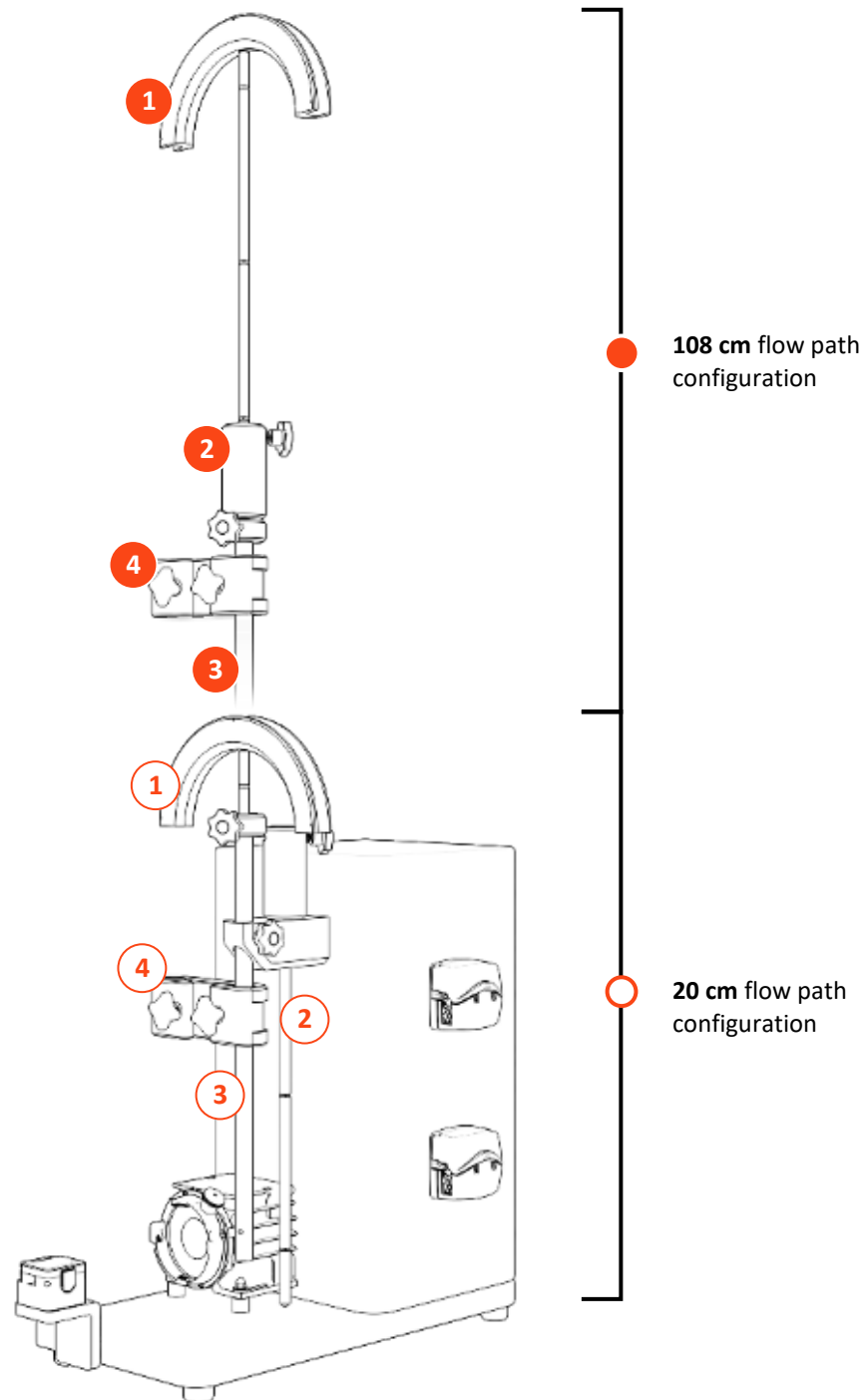
1. Controller
2. Pump station
3. Scale (for bioreactor)
4. Scale (for permeate)



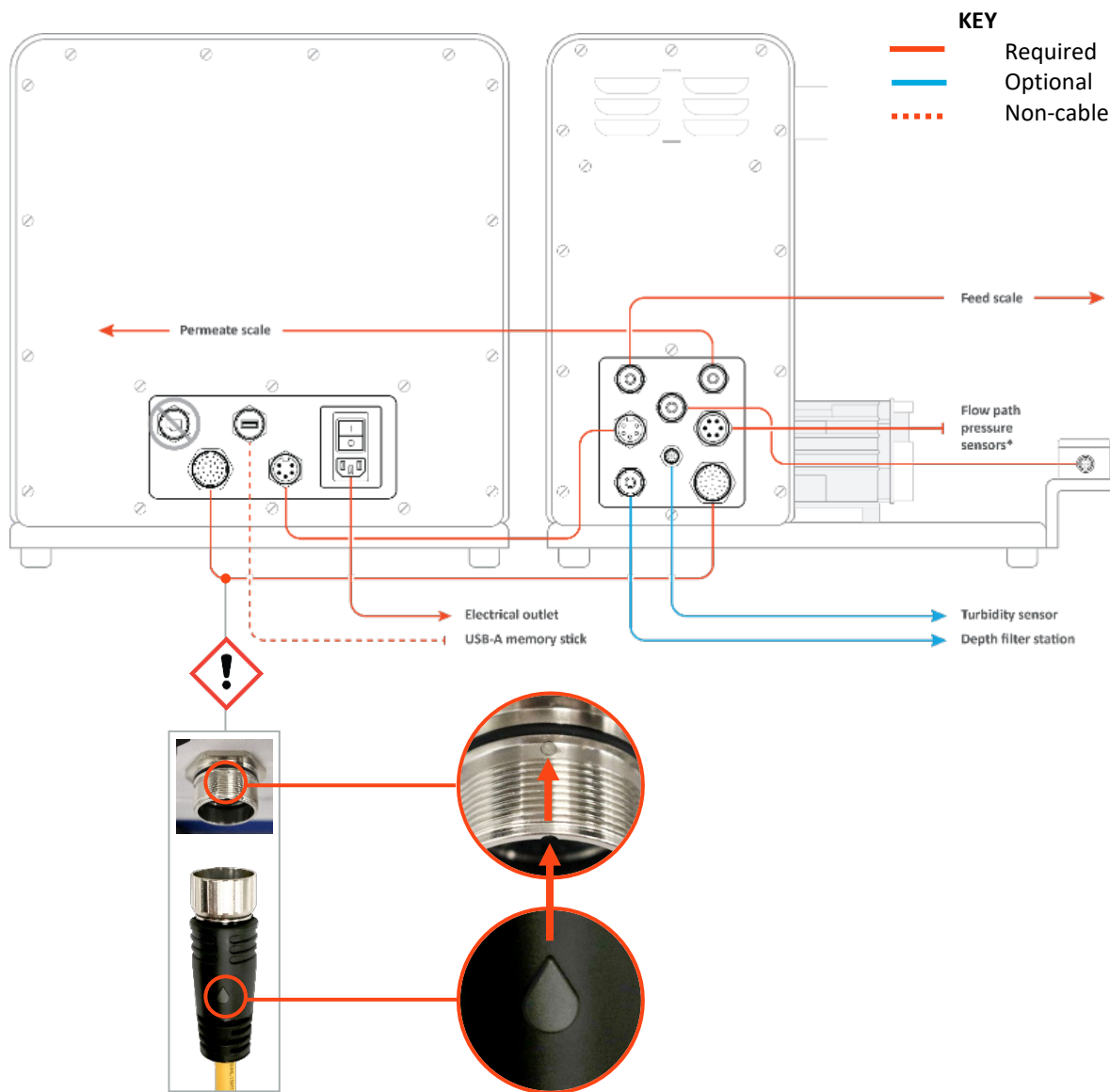
**WARNING!** The controller weight is 36 lbs. Two people are recommended to lift the controller out of the box and place it on the bench top.

**Stand assembly**

1. Tubing guide rod
2. Extension rod (required only for 108 cm flow path)
3. Sleeve
4. Filter clamp



System cable connections



**NOTE:** Use tear drop to align pins with socket. Communication cable pins are delicate.

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