

Hollow Fiber TFF Modules Re-Use Line

Low Binding m-PES
Membrane Enables Reliable
Crossflow, High Product Flux
and Easy Cleaning.



Executive Summary

Hollow Fiber TFF Modules | Re-use Line offers a modified polyethersulfone (m-PES) membrane which is gentle on your cells, biomolecules and viruses. Generate high yields and low hold-up volumes. The modules provide a linear and predictive scale-up process from laboratory and pilot-scale to manufacturing scale by using matching materials, fluid-path length, and performance characteristics. Re-use line modules are fully scalable with batch volumes from 10 mL up to 1,500 L with corresponding membrane surface areas from 0.056 ft² (0.0052 m²) up to 166.0 ft² (15.42 m²). Re-use line hollow fiber modules can be sanitized and cleaned in 0.1–1.0 N NaOH, and stored in 0.1 N NaOH between uses.

Features and Benefits

For those applications where cleaning and re-use is warranted, the Hollow Fiber TFF Modules | Re-use Line offer:

- Membrane offering from 3 kD to 750 kD MWCO and from 0.1 µm to 0.65 µm pore size
- Easy and reliable scale up and scale down
- Low hold up volume
- High product flux and total capacity
- Robust, strong, multi-use hollow fiber membranes
- Low binding m-PES membrane – high yield and easy to clean

Relevant Applications

Sartorius Hollow Fiber Modules are designed for biopharmaceutical processing. They can be used for the following applications:

Upstream

- Cell harvest
- Cell or lysate clarification

Downstream

- Concentration
- Diafiltration

Technical Specifications

Attribute	Hollow Fiber TFF Modules Re-Use Line
Biocompatibility	The module as assembled is USP Class VI compliant
Membrane	Modified Polyethersulfone (m-PES)
Housing	White Polysulfone
Encapsulant	Epoxy

Technical Specifications

Name	Scale	Fiber Length	Dimensions in inches (cm)	Membrane surface area ft ² (m ²)*	Recommended batch volume per module	Connections	
						Feed Retentate	Permeate
Discover	Lab	12 inch	0.38×12.88 (0.95×32.72)	0.056 (0.0052)	10–250 mL	Luer Lock	Luer Lock
		24 inch	0.38×24.38 (0.95×61.93)	0.115 (0.0107)	50–400 mL		
		41 inch	0.38×42.38 (0.95×107.65)	0.208 (0.0193)	80–850 mL		
Explorer	Lab	12 inch	0.50×12.28 (1.27×31.20)	0.17 (0.0155)	150–750 mL	½-inch TC	⅜-inch Hose Barb
		24 inch	0.50×23.82 (1.27×60.50)	0.35 (0.0321)	250–1500 mL		
		41 inch	0.50×41.18 (1.27×106.20)	0.62 (0.0579)	300–3000 mL		
Researcher	Lab Pilot	12 inch	0.75×12.28 (1.91×31.20)	0.48 (0.0444)	400–2000 mL	¾-inch TC	⅝-inch Hose Barb
		24 inch	0.75×23.66 (1.91×60.10)	1.01 (0.0940)	700–4000 mL		
		41 inch	0.75×41.77 (1.91×106.10)	1.85 (0.1716)	1000–8000 mL		
Researcher XL	Lab Pilot	12 inch	0.75×12.28 (1.91×31.20)	0.66 (0.0617)	0.56–2.8 L	¾-inch TC	⅝-inch Hose Barb
		24 inch	0.75×23.66 (1.91×60.10)	1.41 (0.1305)	0.98–5.6 L		
		41 inch	0.75×41.77 (1.91×106.10)	2.57 (0.2383)	1.40–11.2 L		
Investigator	Lab Pilot	12 inch	1.32×12.01 (3.34×30.50)	1.4 (0.13)	1–6 L	1½-inch TC	½-inch TC
		24 inch	1.32×23.50 (3.34×59.70)	3.0 (0.28)	2–12 L		
		41 inch	1.32×41.50 (3.34×105.4)	5.4 (0.51)	3–25 L		
Mini-Bioproducer	Pilot Production	12 inch	2.70×15.00 (6.86×38.10)	6.6 (0.61)	5–50 L	1½-inch TC	¾-inch TC
		24 inch	2.70×26.50 (6.86×67.30)	14.5 (1.35)	10–100 L		
		41 inch	2.70×44.49 (6.86×113.00)	26.9 (2.50)	25–250 L		
Bioproducer	Production	12 inch	3.50×15.00 (8.89×38.10)	13.1 (1.21)	25–100 L	1½-inch TC	1-inch TC
		24 inch	3.50×26.50 (8.89×67.30)	29.0 (2.69)	50–250 L		
		41 inch	3.50×44.49 (8.89×113.00)	53.8 (5.00)	100–500 L		
Maximizer	Production	24 inch	4.62×28.80 (11.73×73.15)	58.4 (5.42)	100–500 L	2-inch TC	1½-inch TC
		41 inch	4.62×46.50 (11.73×118.11)	104.9 (9.74)	250–1000 L		
Grand** (only with 1.0 and 2.0 mm Fiber IDs)	Production	24 inch	6.015×32.65 (15.28×82.93)	58.1 (5.4)	100–500 L	2½-inch TC***	1-inch TC***
		43 inch	6.105×51.65 (15.28×131.19)	110.6 (10.28)	250–1000 L		
Grand XL** (only with 1.0 and 2.0 mm Fiber IDs)	Production	24 inch	6.015×32.65 (15.28×82.93)	87.2 (8.10)	250–800 L	2½-inch TC***	1-inch TC***
		43 inch	6.015×51.65 (15.28×131.19)	166.0 (15.42)	400–1500 L		

* Membrane surface valid for all fiber IDs. For number of fibers per module please consider the Validation Guide.

** Grand and Grand XL dimension are with adaptors.

*** Grand and Grand XL need adaptor kit: BAADAPTGRAXXTC

The adapter kit includes two 6-inch (15.24 cm) × 2½-inch (6.35 cm) TC adaptor end caps, two 6-inch (15.24 cm) TC platinum cured silicone gaskets, and two 6-inch (15.24 cm) TC white nylon clamps.

Available MWCO and Pore Sizes for Different Fiber IDs

The tables stated below are valid for all sizes and lengths, if not stated otherwise.

Fiber ID	MWCO									Pore Size			
	3 kD	5 kD	10 kD	30 kD	50 kD	100 kD	300 kD	500 kD	750 kD	0.1 µm	0.2 µm	0.45 µm	0.65 µm
0.5 mm*	■	■	■	■	■	■	■	■	■	—	—	—	—
1.0 mm	■	■	■	■	■	■	■	■	■	■	■	■	■

* Not available for Grand XL

Ordering Information

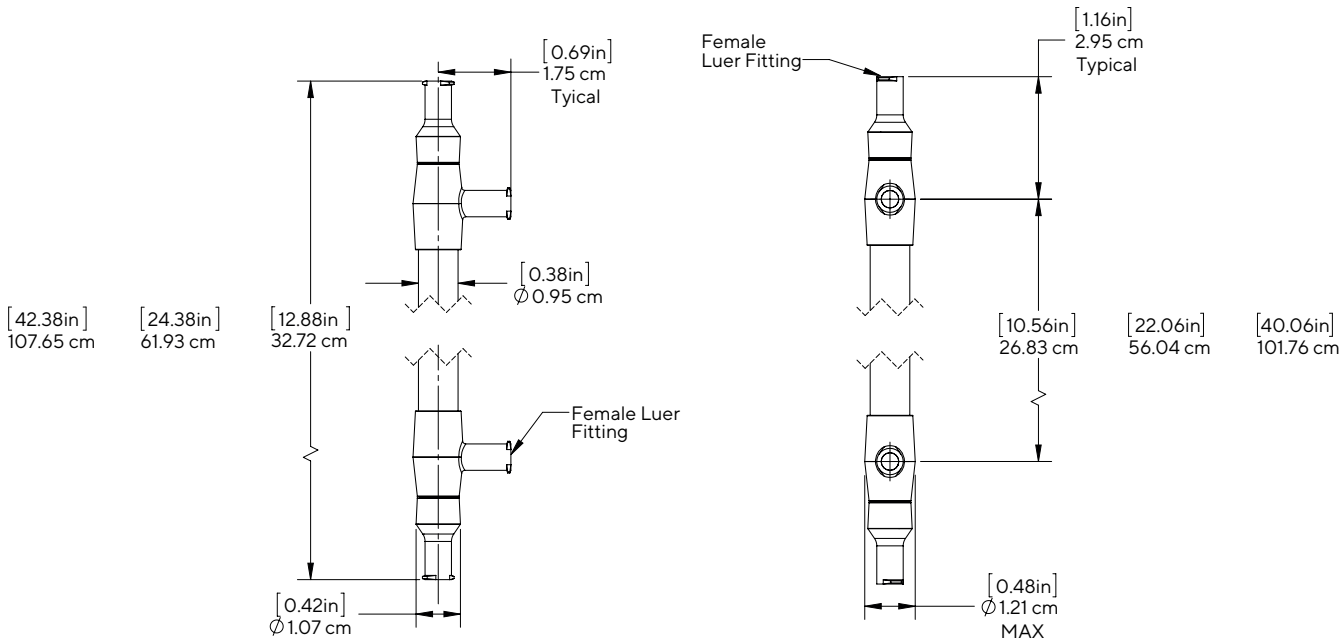
Product Designator		Fiber Lumen Diameter (mm)		Fiber Length		Package Size	
WA = Re-use Line Discover (Investigator) BA = Re-use Line Mini Bioproducer (Grand)		05 = 0.5 mm 10 = 1.0 mm		12 = 12 inches 24 = 24 inches 41 = 41 inches 43 = 43 inches (only Grand & Grand XL)		O = 1-pack for Explorer, Investigator, Researcher, Researcher XL L = 1-pack for Discover, Grand, Grand XL G = 1-pack for Bioproducer, Mini Bioproducer H = 1-pack for Maximizer	
WA	910	05	DIS	12	L	L	
MWCO & Pore Size 003 = 3 kD 005 = 5 kD 010 = 10 kD 030 = 30 kD 050 = 50 kD 100 = 100 kD 300 = 300 kD 500 = 500 kD 750 = 750 kD 910 = 0.10 µm 920 = 0.20 µm 945 = 0.45 µm 965 = 0.65 µm		Cartridge Type DIS = Discover EXP = Explorer RES = Researcher RXL = Researcher XL INV = Investigator MPR = Mini Bioproducer PRO = Bioproducer MAX = Maximizer GRA = Grand or Grand XL		Type of Connector (Discover & Bioproducer) L = Luer Lock (only Discover) S = Sanitary Surface area (only for Grand) 1 = Grand 43 10 m ² 8 = Grand 24 5 m ² 5 = Grand 43 XL 15 m ² 8 = Grand 24 XL 8 m ²			

Please consult the specification table on page 3 to learn more about the possible combinations.

Overview

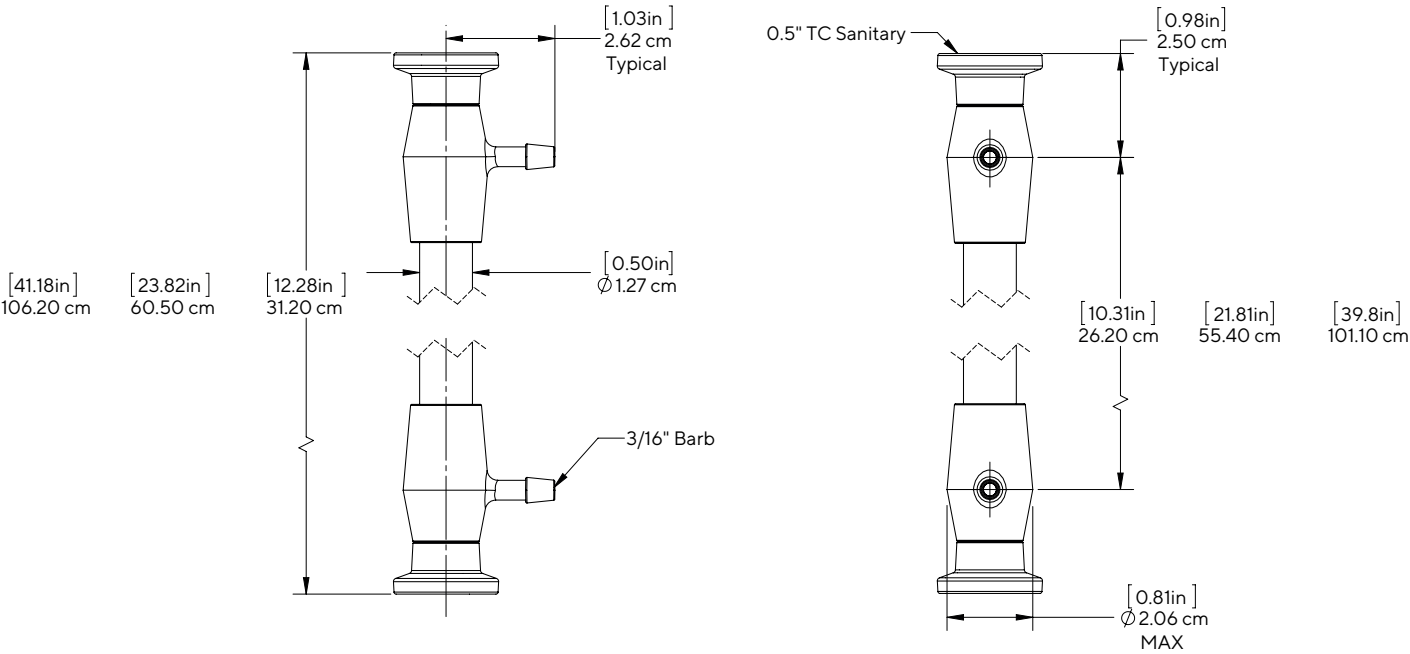
Discover

Exact length for different Fiber length: 12, 24 or 41 inch



Explorer

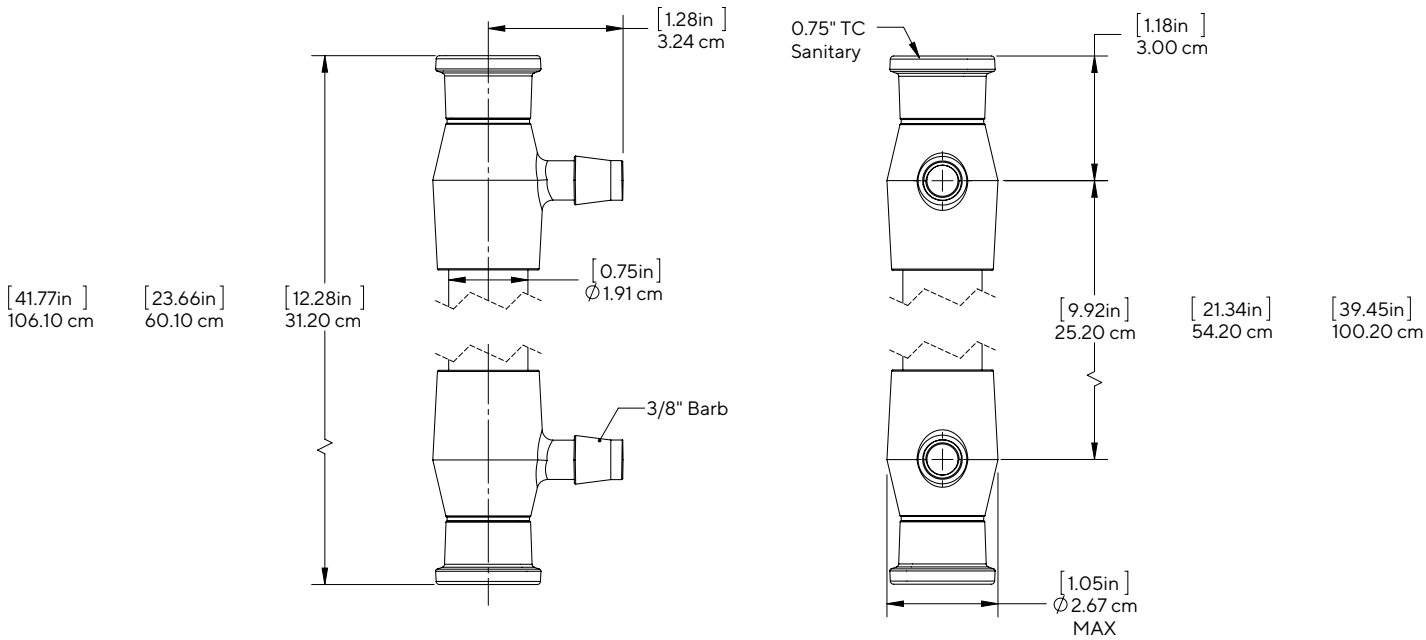
Exact length for different Fiber length: 12, 24 or 41 inch



Overview

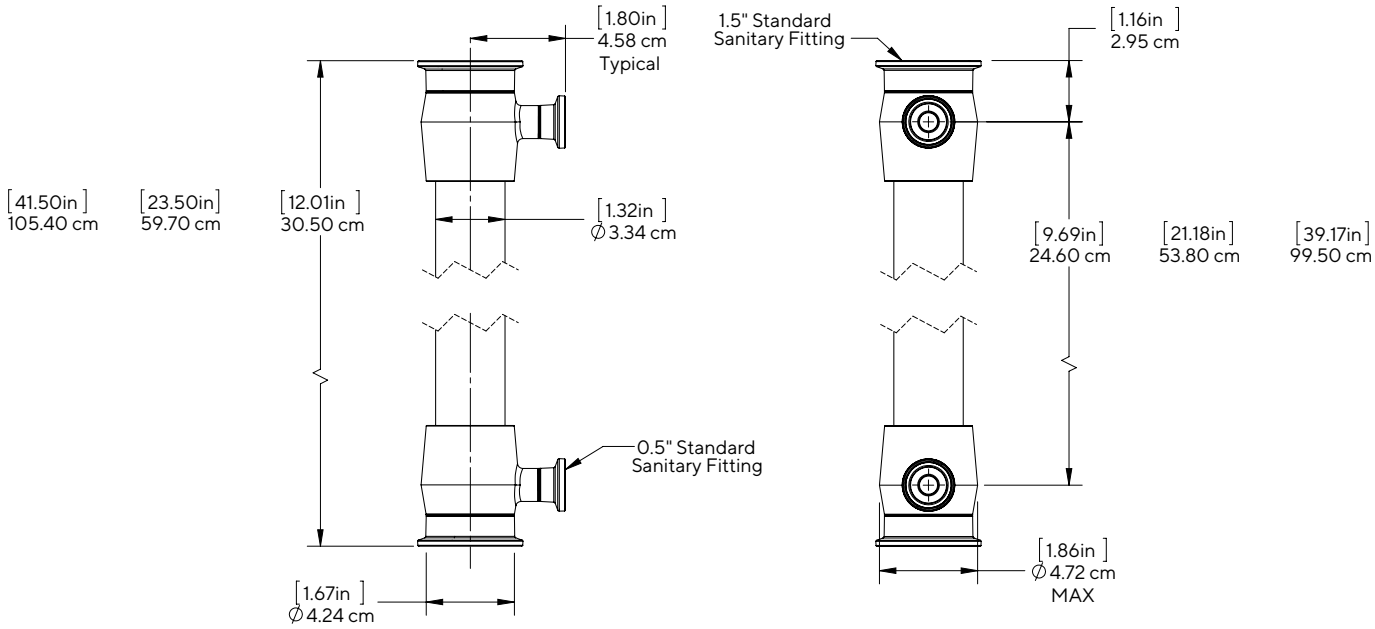
Researcher & Researcher XL

Exact length for different Fiber length: 12, 24 or 41 inch



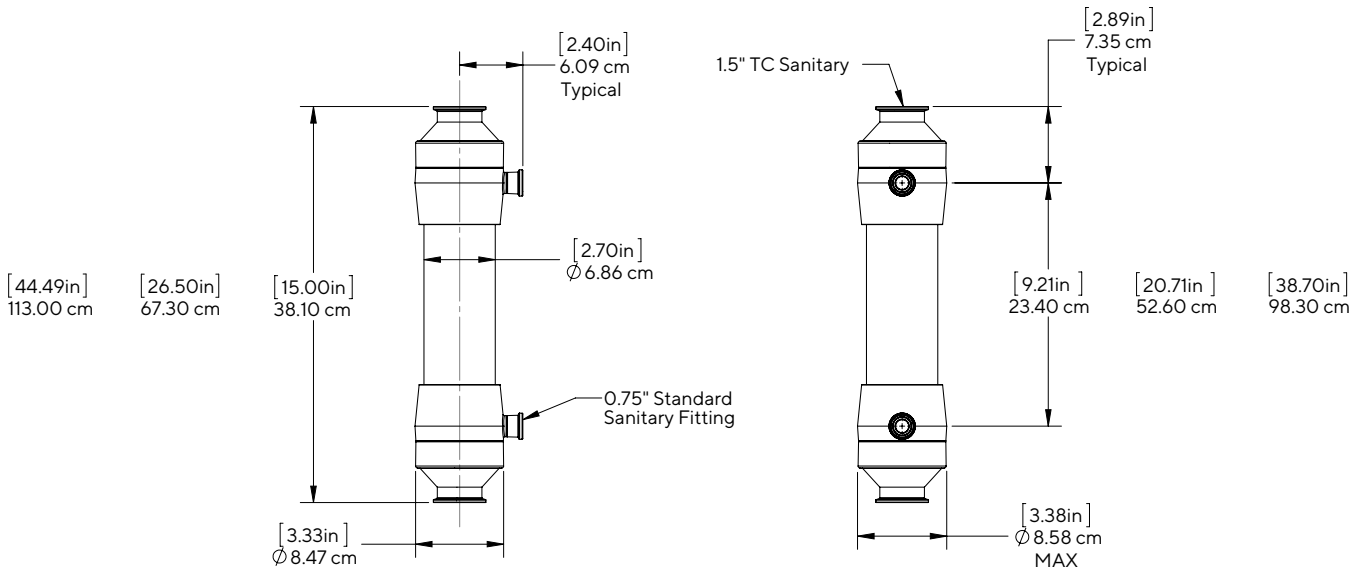
Investigator

Exact length for different Fiber length: 12, 24 or 41 inch



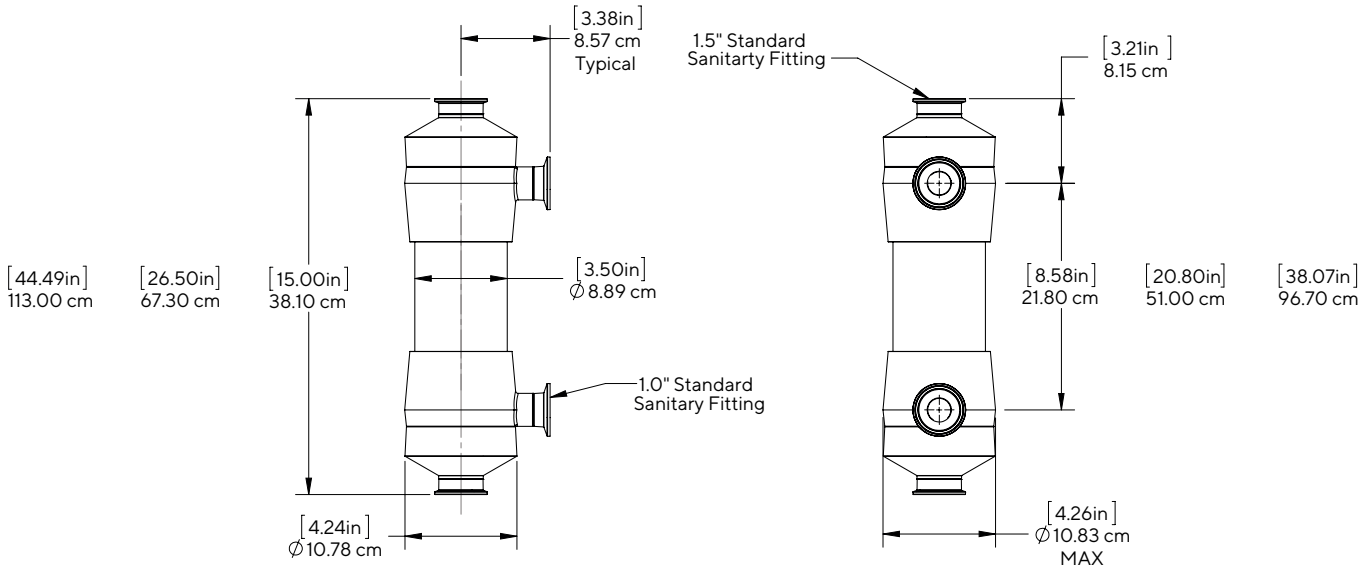
Mini Bioproducer

Exact length for different Fiber length: 12, 24 or 41 inch



Bioproducer

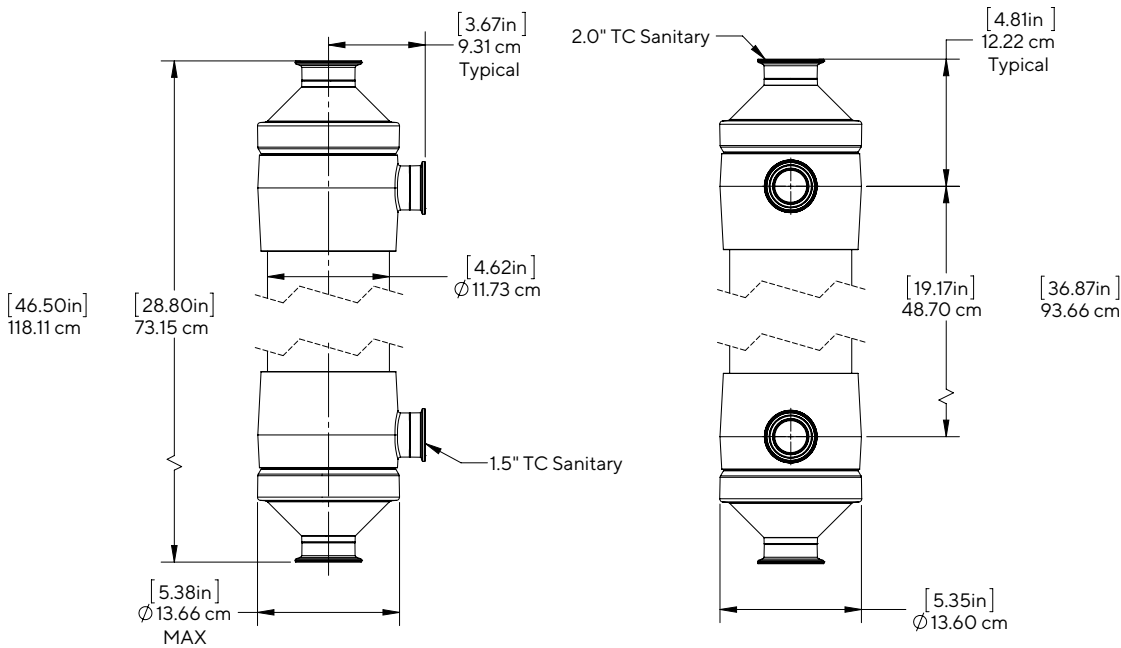
Exact length for different Fiber length: 12, 24 or 41 inch



Overview

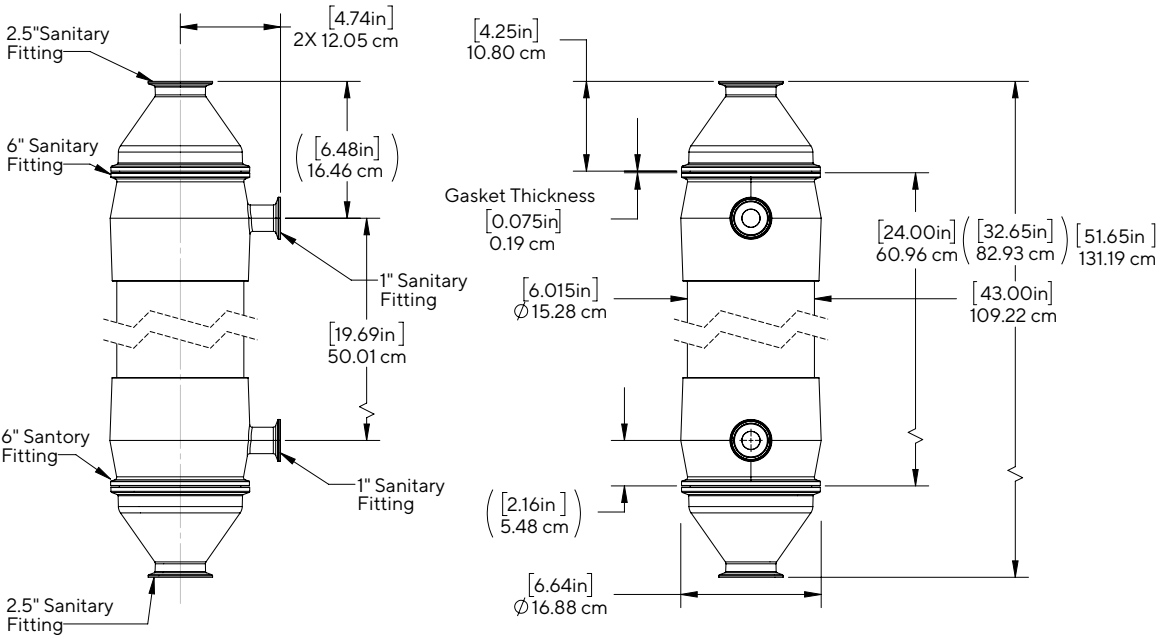
Maximizer

Exact length for different Fiber length: 24 or 41 inch



Grand XL*

Exact length for different Fiber length: 24 or 43 inch



* Shown with removable adaptors

Note: If you need 2½ inch connectors, please make sure to order: BAADAPTGRAXXTC in addition.
The adapter kit includes two 6-inch (15.24 cm) × 2½ inch (6.35 cm) TC adaptor end caps, two 6-inch (15.24 cm) TC platinum cured silicone gaskets, and two 6-inch (15.24 cm) TC white nylon clamps.

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