

29QQ miniature peristaltic pump with stepper motor.

Options:

- Rear or front panel mount
- Assembled driver
- Speed sensor
- Lid close sensor
- 4 tube materials
- 0.5, 1.0 or 2.0 mm ID tubing
- Full range of DC motors (separate datasheet)



Rear Mount

Front Mount

Technical Data

Flow per Revolution

ID Ø 0.5 mm tube	13 µl per revolution
ID Ø 1.0 mm tube	34 µl per revolution
ID Ø 2.0 mm tube	100 µl per revolution

RPM Range

0 to 500 rpm

Power Consumption

2.5 W

(with 2.0 mm ID tube, Pico driver with 0.4 A current limiter setting)

Tube Materials

Pharm-a-line / Silicone / Lagoprene / ED-Plex

Numbers of rollers

4

Mounting gasket

Supplied as standard (for both front and rear mount options)

Max pressure

1.0 bar

Max suction height (dry)

9.0 m H₂O

Typical Motor life

>10,000 hour

Weight

210 g

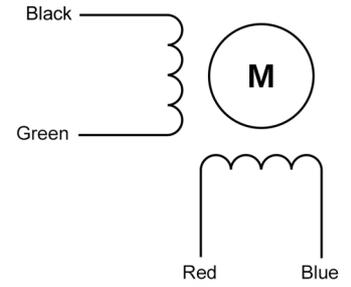
(+ 15 g for front mount, + 22 g for assembled Pico driver)

All data measured with 'run-in' Pharm-a-line tubing and H₂O.

Flow Data

Tube Size	Flow at 100 RPM	Flow at 300 RPM	Flow at 500 RPM
ID Ø 0.5 mm tube	1.3 ml /min	3.9 ml /min	6.5 ml /min
ID Ø 1.0 mm tube	3.4 ml /min	10.2 ml /min	17.0 ml /min
ID Ø 2.0 mm tube	10.0 ml /min	30.0 ml /min	50.0 ml /min

Motor Details



Specification

Type	2 phase, hybrid, bipolar
Size	Nema 11 / 28 mm
Step Angle	1.8 ° (200 steps per revolution)
Voltage	24 V
Phase 1 / Phase 2	Black - Green / Red - Blue (see diagram above)
Ambient temperature range	-20 to +50 °C
Max temperature rise	80 °C
Insulation resistance	100 MΩ
Insulation class	B
Rated current	0.67 A
Resistance per phase	6.8 Ω ±10%
Inductance per phase	4.9 mH ±20%
Wire gauge	26 AWG
Lead length	300 mm
Available drivers	→ Drivers
Recommended driver rating	0.7 or 0.4 A

A current limiter should be used for low speed operation to avoid excessive motor temperatures

Stepper Driver Option

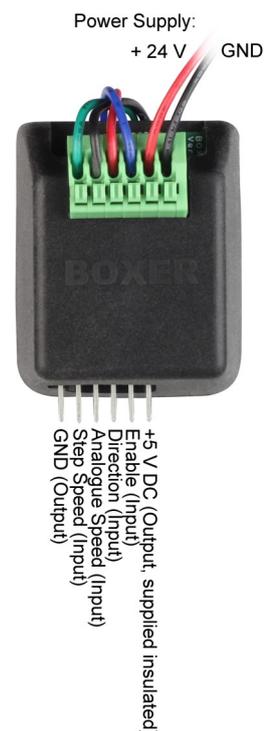
The 29QQ peristaltic pump with stepper motor is available with an assembled driver (Pico 1.4).



Rear Mount with Pico Driver



Front Mount with Pico Driver



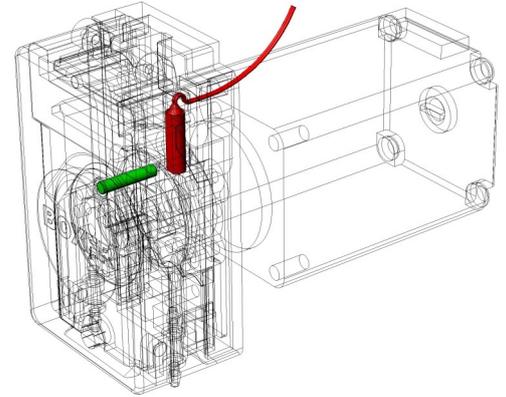
Full details of the Pico Driver: → [Datasheet](#)

Sensor / Encoder Options

The 29QQ peristaltic pump with stepper motor is available with a speed and lid close sensor.

Speed Sensor / Encoder

A micro reed sensor (shown in red) is located on the pump back-plate. A permanent magnet (shown in green) is located on the rotor. The contacts of the micro reed sensor close when the magnet moves through the upper portion of the rotation.



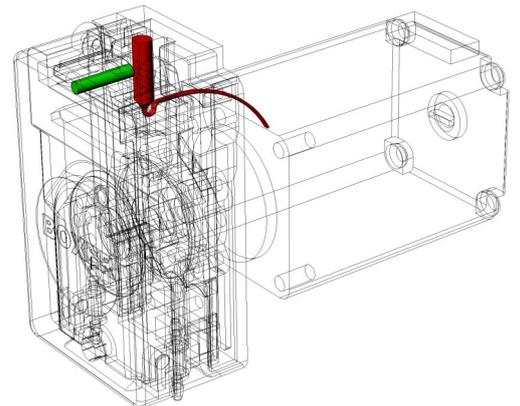
Specification

Reed sensor type	Normally open, single pole, single throw
Contact closure	Once per revolution
Max. switching current	0.5 A
Max. switching voltage	170 V
Lead cross section area	0.06 mm ²
Lead length	27 cm

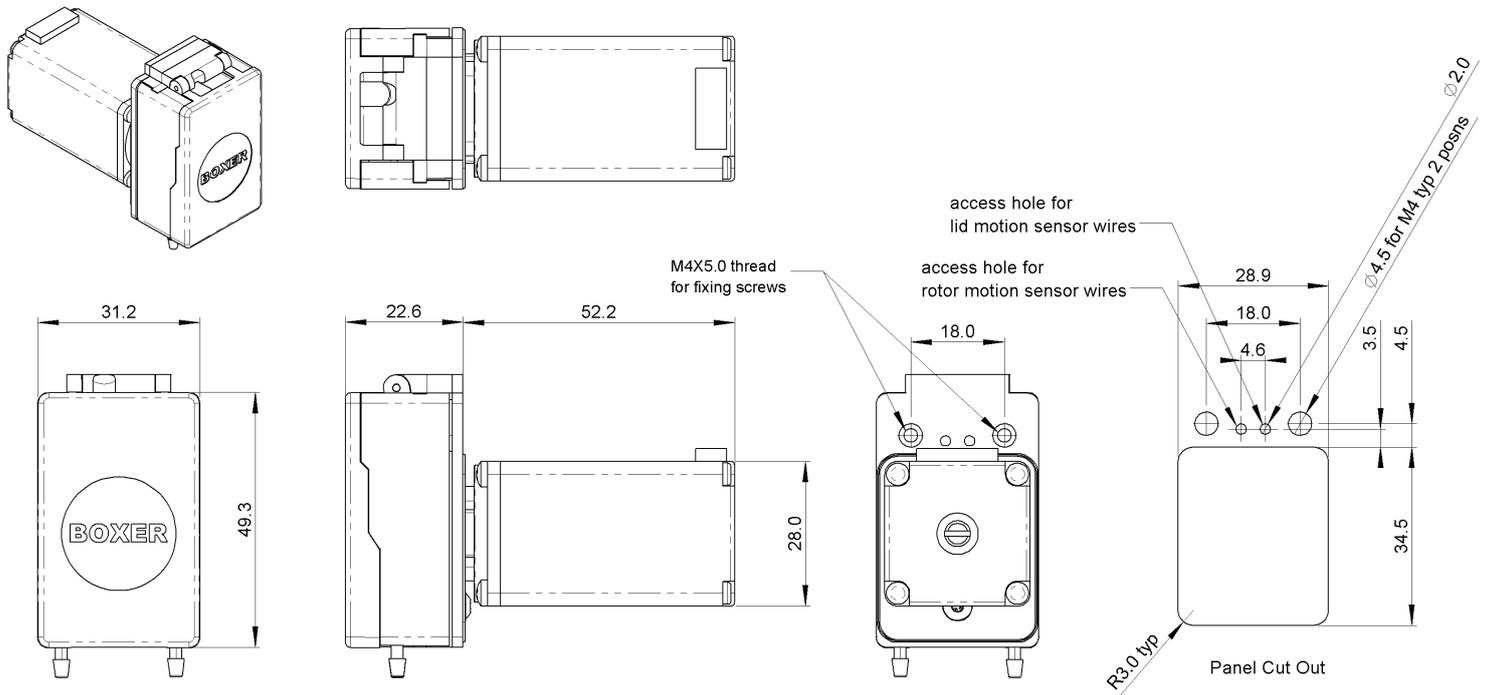
Lid Close Sensor

A micro reed sensor (shown in red) is located on the pump back-plate. A permanent magnet (shown in green) is located on the lid closing mechanism. The contacts of the reed sensor close when the lid is in the closed position. The signal can be used as a safety feature to ensure the pump does not operate unless the pump is fully closed.

The reed sensor specification is as above (speed sensor).



Drawing: 29QQ with Stepper Motor, Rear Mount

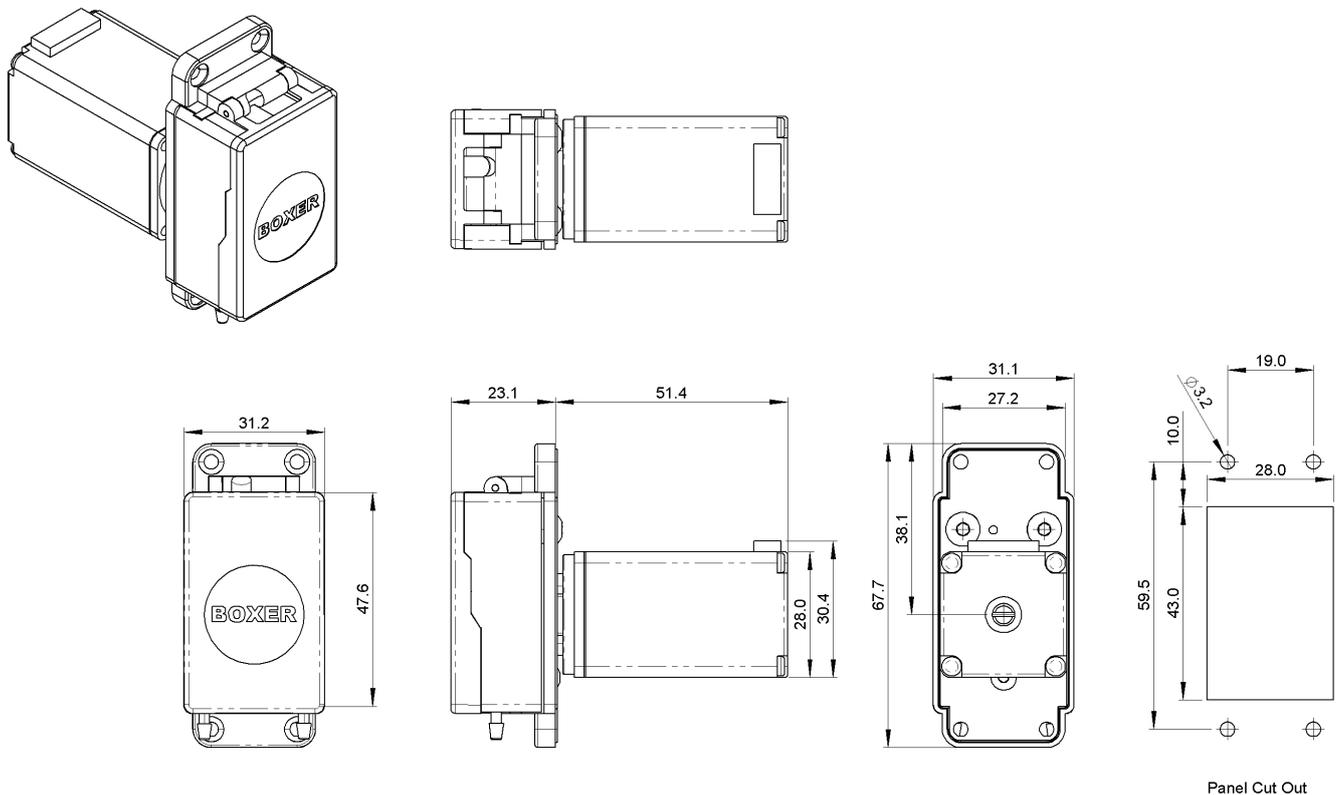


Links to Drawing and STEP file:

→ [Drawing \(.png\)](#)

→ [STEP \(.zip\)](#)

Drawing: 29QQ with Stepper Motor, Front Mount



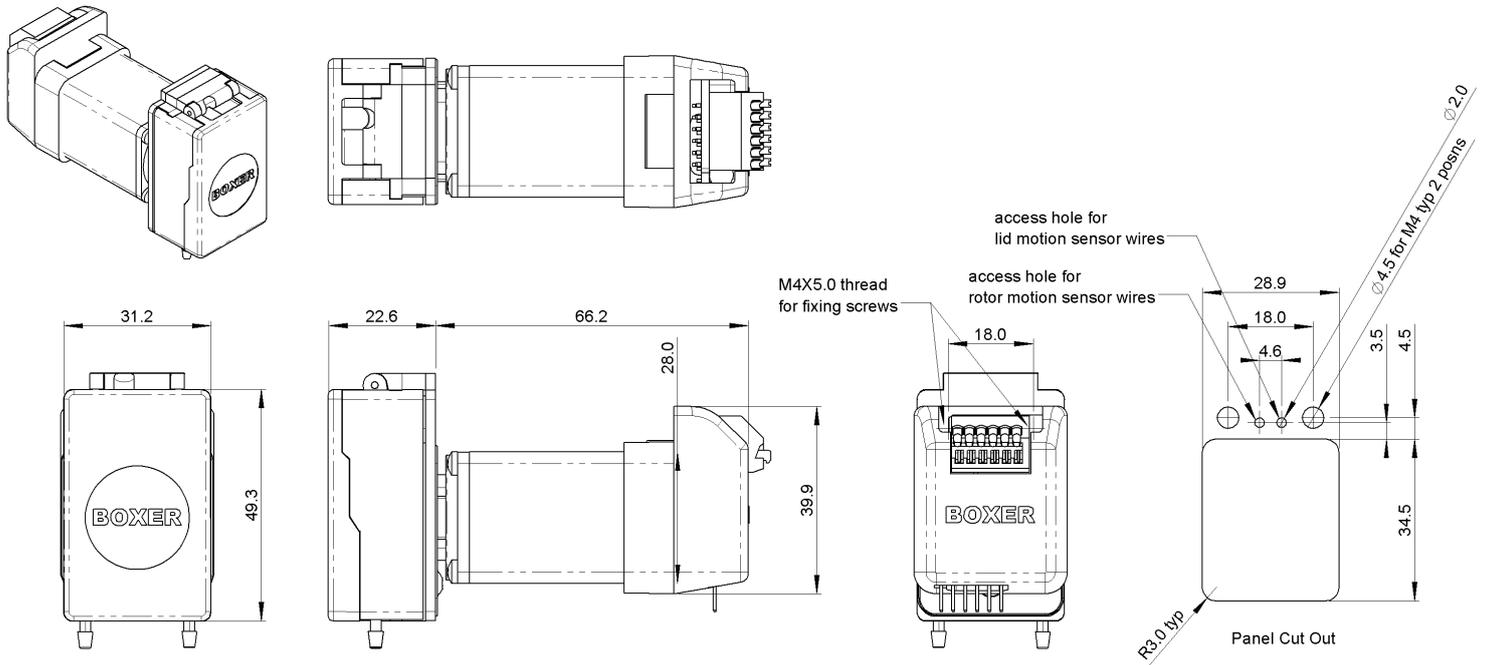
Links to Drawing and STEP file:

→ [Drawing \(.png\)](#)

→ [STEP \(.zip\)](#)

Boxer Pumps > Products > Peristaltic Pump

Drawing: 29QQ with Stepper Motor + Pico Driver, Rear Mount

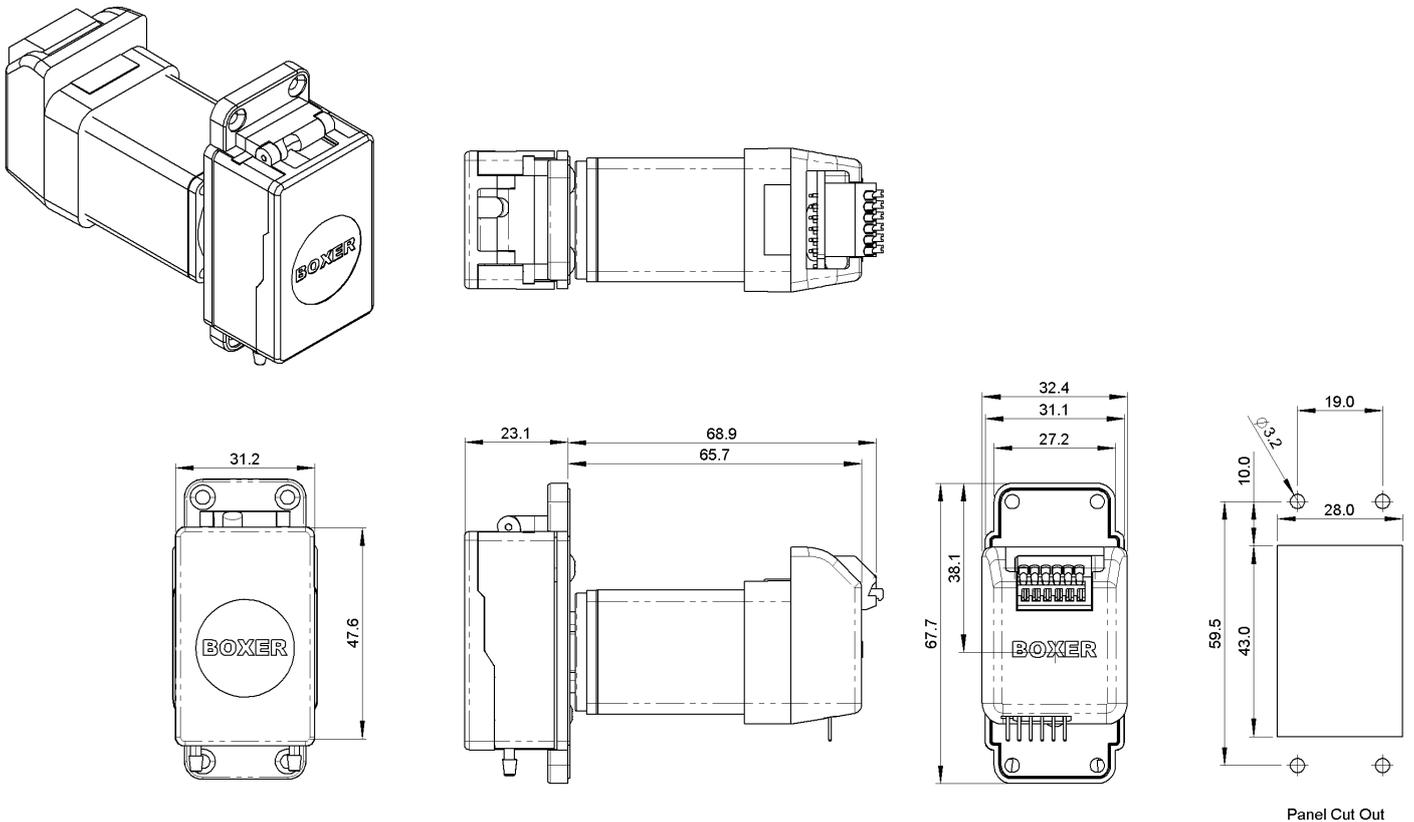


Links to Drawing and STEP file:

→ [Drawing \(.png\)](#)

→ [STEP \(.zip\)](#)

Drawing: 29QQ with Stepper Motor + Pico Driver, Front Mount



Panel Cut Out

Links to Drawing and STEP file:

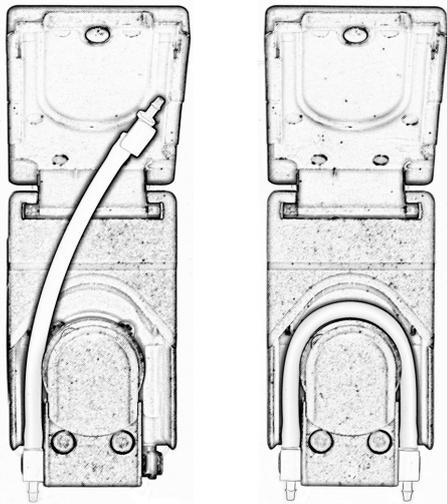
→ [Drawing \(.png\)](#)

→ [STEP \(.zip\)](#)

Tube Loading / Unloading

The 29QQ peristaltic pump is designed to be used with dedicated tube sets. See page 7 for details.

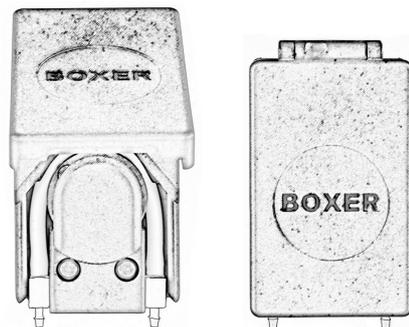
- 2 Insert one end of the tube set into the mating clip in the pump. Place the tube around the rotor ensuring it lies centrally across the rollers. Insert the other end of the tube set into the second clip. Ensure both clips are fully engaged.



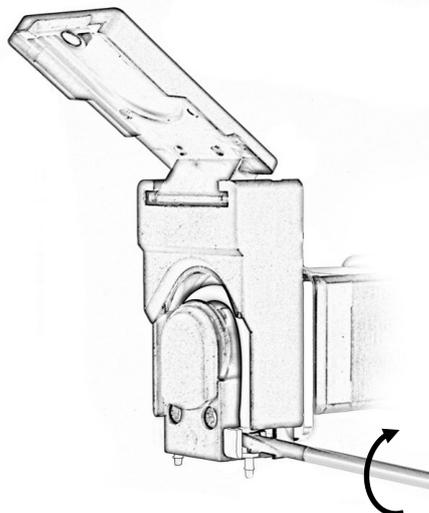
- 1 Rotate the lid to the upper position.



- 3 Close the lid to the lower position.



- 4 To remove the tube set, repeat the process in the reverse order. A small screwdriver can be used to assist in disengaging the clips.



The 29QQ is designed for 1.0 mm wall tubing from ID of 0.5 mm to 2.0mm mm. Only tubing suitable for peristaltic pumps should be used.

Boxer Pumps > Products > Peristaltic Pump

Order Information

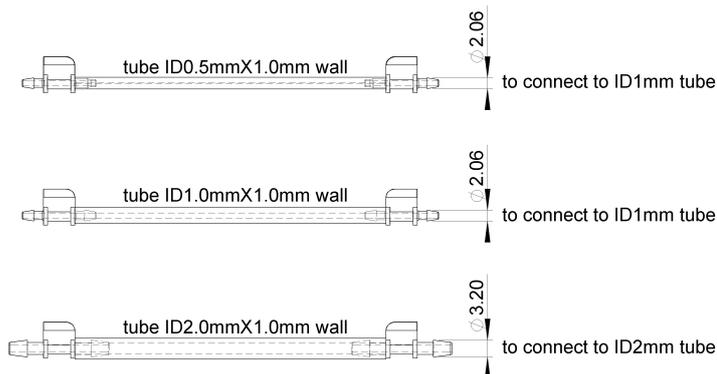
Pump part number matrix (Configuration X with or without Driver):

Configuration	Motor Only	Motor + Pico Driver
29QQ 24 V Stepper / Rear Mount	29600.940	29700.940
29QQ 24 V Stepper / Front Mount	29600.941	29700.941
29QQ 24 V Stepper / Rear Mount / Speed Sensor	29601.940	29701.940
29QQ 24 V Stepper / Front Mount / Speed Sensor	29601.941	29701.941
29QQ 24 V Stepper / Rear Mount / Lid Sensor	29603.940	29703.940
29QQ 24 V Stepper / Front Mount / Lid Sensor	29603.941	29703.941
29QQ 24 V Stepper / Rear Mount / Speed Sensor / Lid Sensor	29604.940	29704.940
29QQ 24 V Stepper / Front Mount / Speed Sensor / Lid Sensor	29604.941	29704.941

Tube Sets Part Numbers (ordered separately):

Material / Size

PHI Ø 0.5 mm with PP Connectors	29000.105
PHI Ø 1.0 mm with PP Connectors	29000.110
PHI Ø 2.0 mm with PP Connectors	29000.120
Silicone Ø 0.5 mm with PP Connectors	29000.305
Silicone Ø 1.0 mm with PP Connectors	29000.310
Silicone Ø 2.0 mm with PP Connectors	29000.320
Lagoprene Ø 1.0 mm with PP Connectors	29000.410
Lagoprene Ø 2.0 mm with PP Connectors	29000.420
ED-Plex Ø 1.0 mm with PP Connectors	29000.510
ED-Plex Ø 2.0 mm with PP Connectors	29000.520



BOX-it (Webshop for online purchase)

Sample quantities are available for direct online purchase:



(Select configuration from drop-down menu)

Additional Information (Links):

→ [29QQ webpage](#)

→ [Boxer peristaltic pump overview](#)

All data is representative for initial selection purposes. It is the responsibility of the user to determine suitability for the intended use. Technical changes reserved. These peristaltic pumps are not suitable for in-vivo applications.