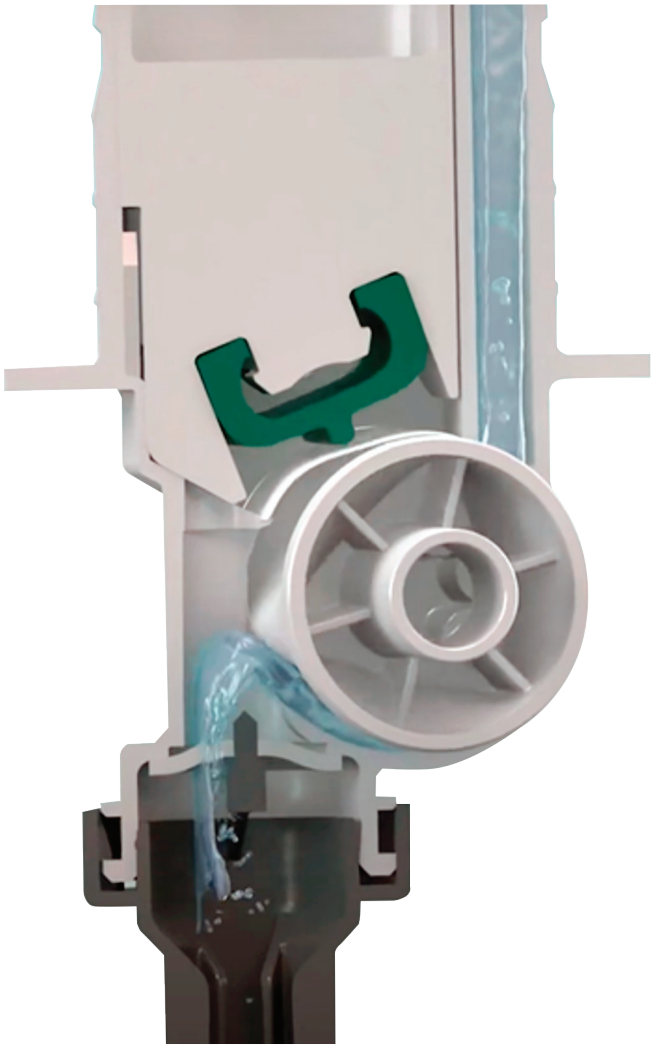
# Product Index - Quantex™

Quantex single use positive displacement rotary pumps are designed to be part of the disposable packaging or tube set. These pumps will out-perform conventional pumps used in enduring equipment.

Pump performance is assured over the life of the pack or reservoir source. Equipment maintenance is minimised as the only moving part required in the dispenser is a motor. The pumped fluid never makes contact with the dispenser so the potential for cross contamination is eliminated and cleaning regimes reduced.



To assist with your technical evaluation Quantex offers technical support consultancy. We supply evaluation kits to allow you to bench test our pumps with your fluids. Every customer's requirements are different so please contact Quantex to discuss the best pump configuration for your application (contact details below). Additionally, refer to the pump flow chart (page 3).

The pump works through a positive displacement rotary action. A combination of the flexible membrane, barrel spring and rotation of the turning element creates a vacuum which draws in the fluid. The fluid is then pumped through fixed volumes caused boluses. This fixed volume enables the pump to be accurate.

The flowrate is controlled through the speed or RPS of the rotor. The number of revolutions then gives the total flowrate pumped.

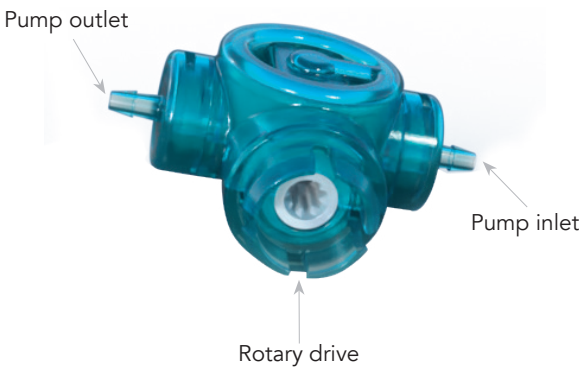
## How it works

# Pump Configurations

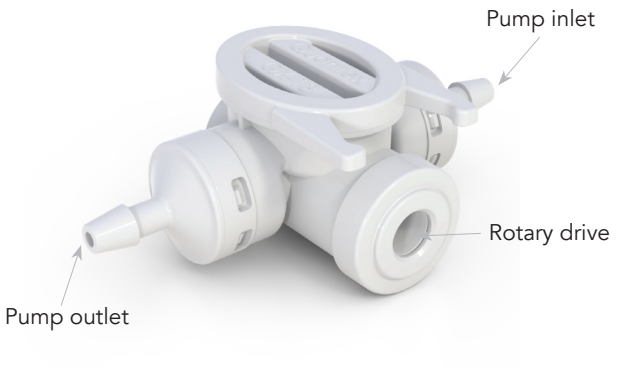
The Quantex product range comprises of four pump families shown below. Within each family there are pump variants.

These comprise of Standard – SD, High Pressure – HP, Dilution – DL, and High Speed – HS, pumps.ts.

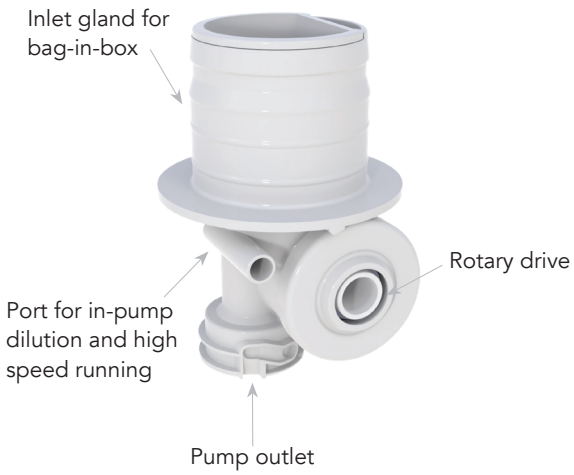
## Micro Dosing



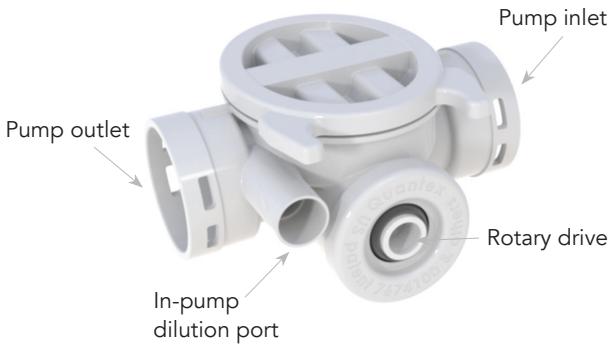

## Low flow




## Bag-in-Box




## High flow

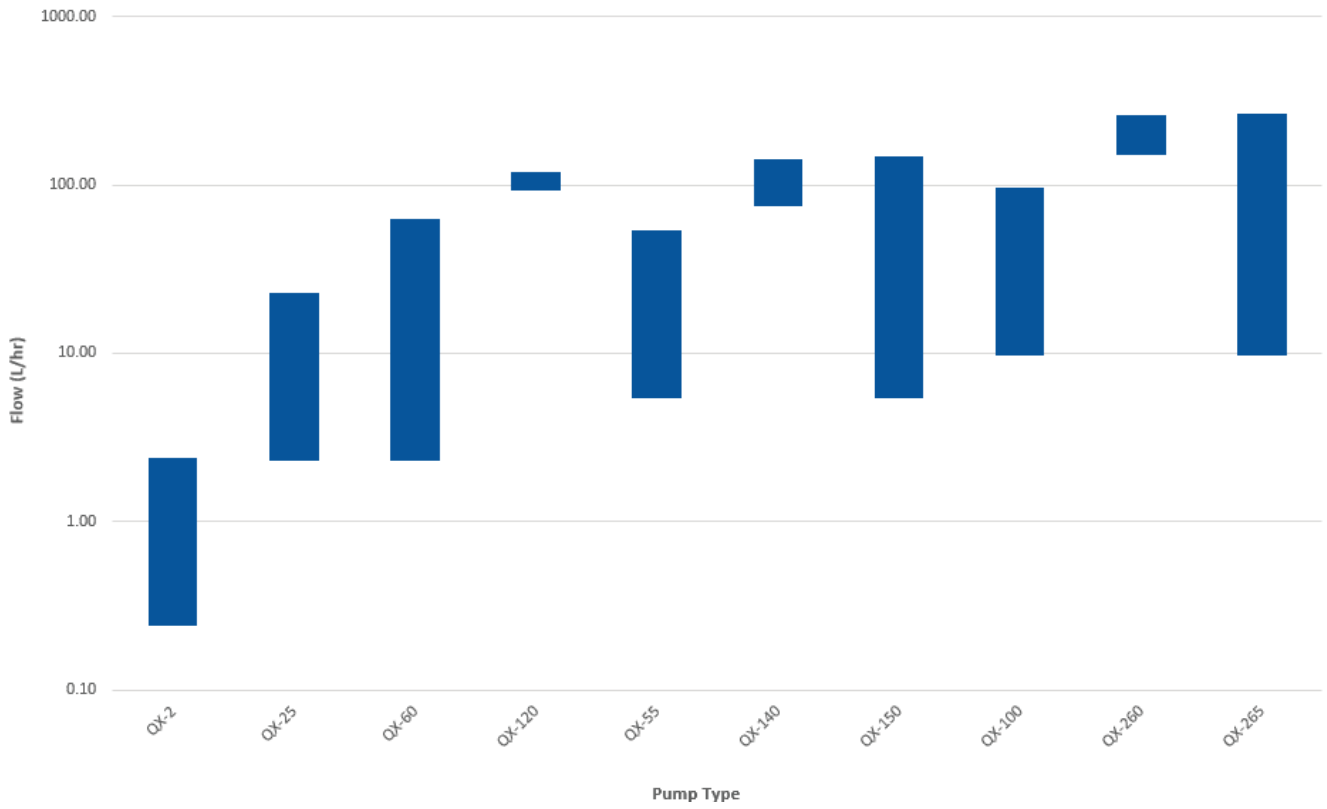


# Quantex Pump Comparison

| Product | QX2 | QX25 | QX60 | QX120 | QX55 | QX140 | QX150 | QX100 | QX260 | QX265 |
|---|---|---|---|---|---|---|---|---|---|---|
| Max Flow – LPH | 2.6 | 23 | 63 | 120 | 54 | 142 | 149 | 97 | 261 | 267 |
| Max Flow – mLPM | 43 | 384 | 1060 | 2000 | 900 | 2400 | 2460 | 1620 | 4360 | 4440 |
| Rotor size - mm | 6 | 13 | 13 | 13 | 19 | 19 | 19 | 20 | 20 | 20 |
| SD | ✓ | ✓ | - | - | ✓ | - | - | ✓ | - | - |
| HP | - | ✓ | - | - | ✓ | - | - | ✓ | - | - |
| DL | - | - | - | ✓ | - | ✓ | - | - | ✓ | - |
| HS | - | - | ✓ | - | - | - | ✓ | - | - | ✓ |

Standard – SD, High Pressure – HP, Dilution – DL, and High Speed – HS, pumps.

# Quantex Product Flow Rate Range



## QX2-SD

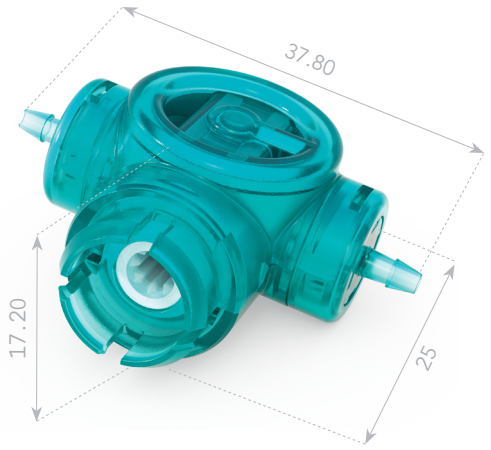
The 6mm rotor carries 3 cavities each with a volume of 24µl. This in-line pump features hose barbed connectors to attach tubing to the inlet and outlet. Pump is driven by a stepper or DC motor at a maximum operating speed of 10rps.

Alternatively, Quantex can provide a unique connector to suit the customers system.

The pump can be used in the food, beverage, consumer and industrial markets. The pump is available for evaluation only in the medical and biopharma markets.

The pump is available in one variants.

**SD** – A standard pressure, bi-directional, in-line pump with self priming

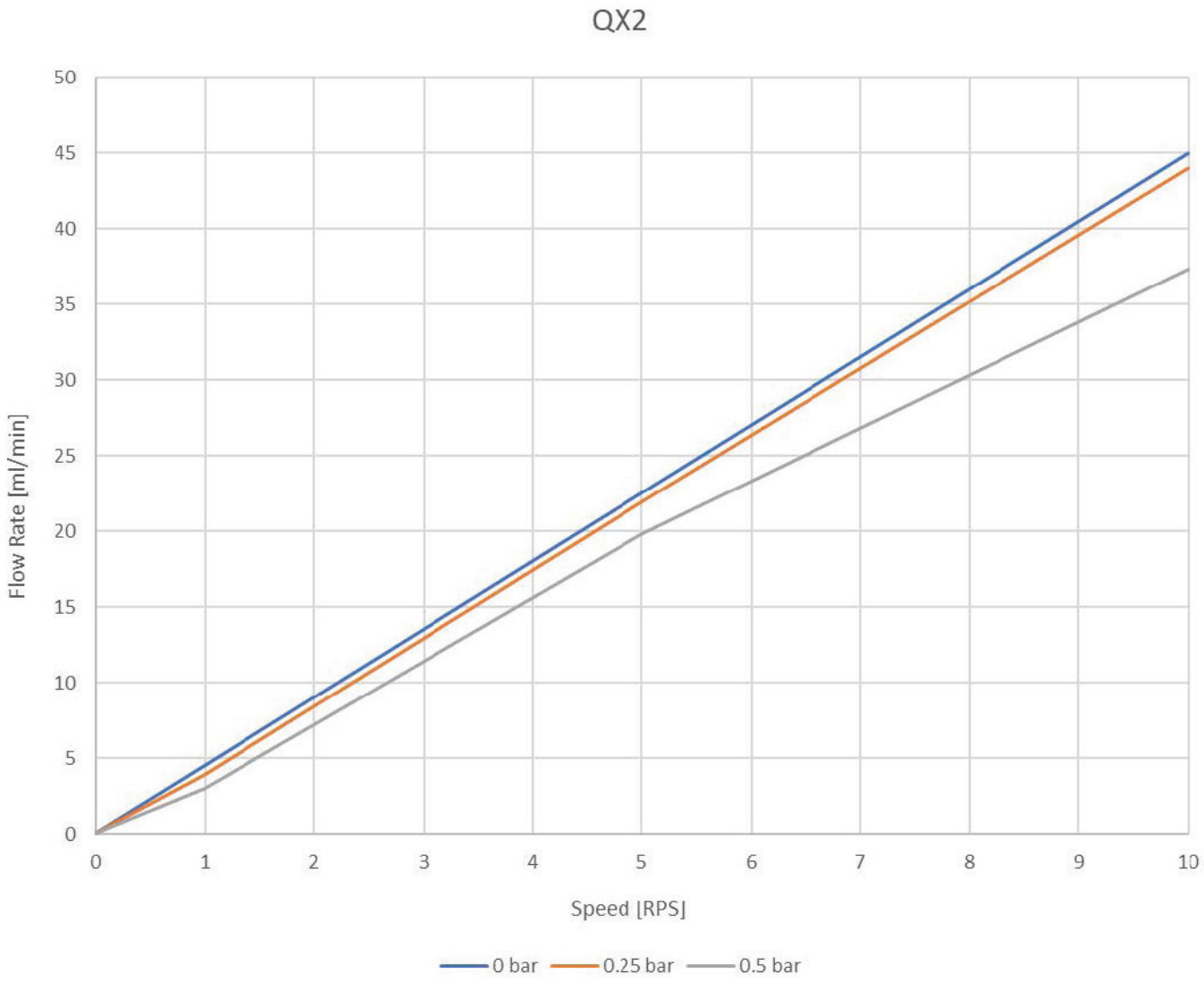



| | |
|---|---|
| **Max flowrate** | 43ml/min<br>2.6L/hr |
| **Resolution** | 24µl |
| **Operating speed** | 1 - 10rps |
| **Baseline accuracy** | ± 5% |
| **Max pressure** | 1 bar |
| **Max vacuum** | -0.9 bar |
| **Max torque** | 100mNm |
| **Max fluid viscosity** | 1000cP |
| **Dimensions** | 38W, 30L, 17W |
| **Weight** | 6.4g |
| **Operating temperature** | 2 - 40C |
| **Wetted materials** | MBS, HDPE, SIL |
| **Connector sizing** | Hose barb for pump inlet and outlet. For use with 2mm ID flexible tubing. |
| **Longevity** | Up to 20L (with water, without pressure & irradiation) |

# Microdosing pump

## QX2-SD

The chart below shows flowrate versus speed at three different pressure points.
For a standard pump the flow efficiency starts to drop with pressures above 0.5 bar.



# Low Flow Pump Range

The 13mm rotor carries 3 cavities each with a volume of 0.21ml. Inlet and outlet ports are attached to an in-line system. The pump can be driven by a stepper or DC motor.

As standard the product is supplied with hose barbs. Alternatively, Quantex can provide a unique connector to suit the customers system.

The pump can be used in the food, beverage, consumer and industrial markets. The pump is available for evaluation only in the medical and biopharma markets.

The pump is available in four variants:
**SD** – standard pressure, bi-directional pump with self priming.
**HP** – high pressure capable pump with self priming.
**DL** – in-pump dilution delivering mix ratios of 4:1 to 50:1.
**HS** – features an air inlet for high-speed running.

| | QX25-SD | QX25-HP | QX120-DL | QX60-HS |
|---|---|---|---|---|
| **Pump image** |  |  |  |  |
| **Max flowrate** | 384ml/min<br>23L/hr | | 120L/hr<br>(23L/hr concentrate | 63L/hr |
| **Resolution** | 0.21ml | | | |
| **Operating speed** | 1 - 10rps | | | 1 - 27.5rps |
| **Baseline accuracy** | ± 5% | | | |
| **Max pressure** | 1 bar | 4 bar | 2 bar | 1 bar |
| **Max vacuum** | -0.5 bar | | | |
| **Max torque** | 300mNm | | | |
| **Max fluid viscosity** | 1000cP | | | |
| **Operating temperature** | 2-40°C | | | |
| **Dimensions (mm)** | 39W, 39L, 25H | | 39W, 39L, 31H | |
| **Weight** | 8.2g | | | 7.3g |
| **Wetted materials** | PP, HDPE, NBR | PP, HDPE, NBR, SIL | | PP, HDPE, NBR |
| **Longevity** | 190 litres<br>(with water, without pressure & irradiation | | TBD | TBD |

# Low Flow Pump Range

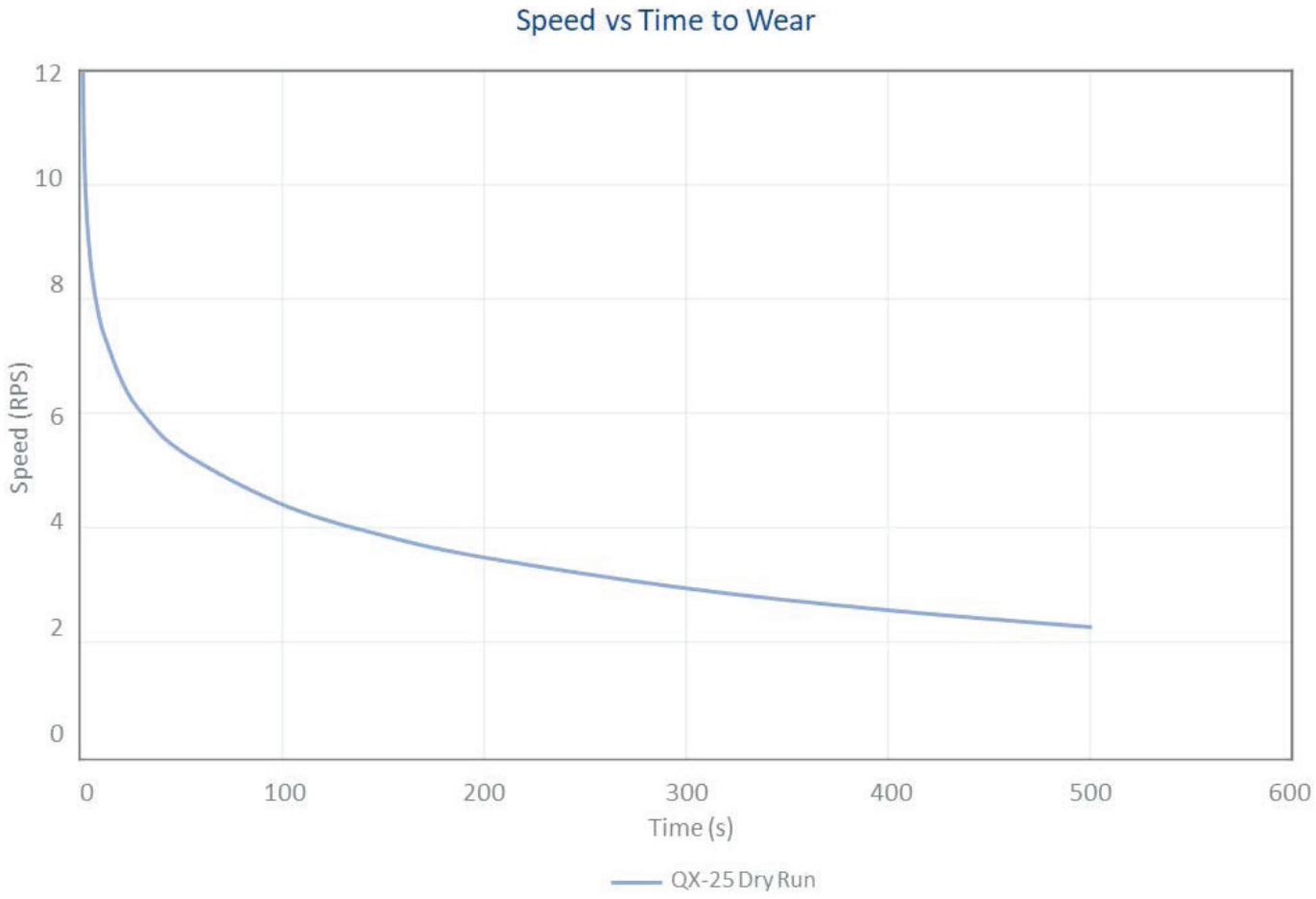
The pumps are designed to be compatible with various unique connector designs which can be attached to the core pump to suit customer needs.

The off the shelf connector offerings are shown below.

| PUMP COMPATIBILITY | CONNECTOR DESCRIPTION | PRODUCT IMAGE |
|---|---|---|
| **QX25-SD-AA**<br>**QX25-HP-AA**<br>**QX120-DL-AA**<br>**QX60-HS-AA** | **'AA' Connector**<br>Hose barb for pump inlet and outlet<br>10mm OD barb fitting<br>For use with 5/16" or 8mm flexible tubing |  |
| **QX25-SD-BB**<br>**QX25-HP-BB**<br>**QX120-DL-BB**<br>**QX60-HS-BB** | **'BB' Connector**<br>Hose barb for pump inlet and outlet<br>5.5mm OD barb fitting<br>For use with 3/16" or 5mm flexible tubing |  |
| **QX25-SD-CC**<br>**QX25-HP-CC**<br>**QX120-DL-CC**<br>**QX60-HS-CC** | **'CC' Connector**<br>Hose barb for pump inlet and outlet<br>3.3mm OD barb fitting<br>For use with 3/32" or 2.5mm flexible tubing |  |
| **QX25-SD-DD**<br>**QX25-HP-DD**<br>**QX120-DL-DD**<br>**QX60-HS-DD** | **'DD' Connector**<br>Hose barb for pump inlet and outlet<br>5.5mm OD barb fitting<br>For use with 3/16" or 5mm flexible tubing |  |

# Low Flow Pump Range

Chart showing that dry priming/running needs to be limited. Wear can occur quickly at high dry running speeds.

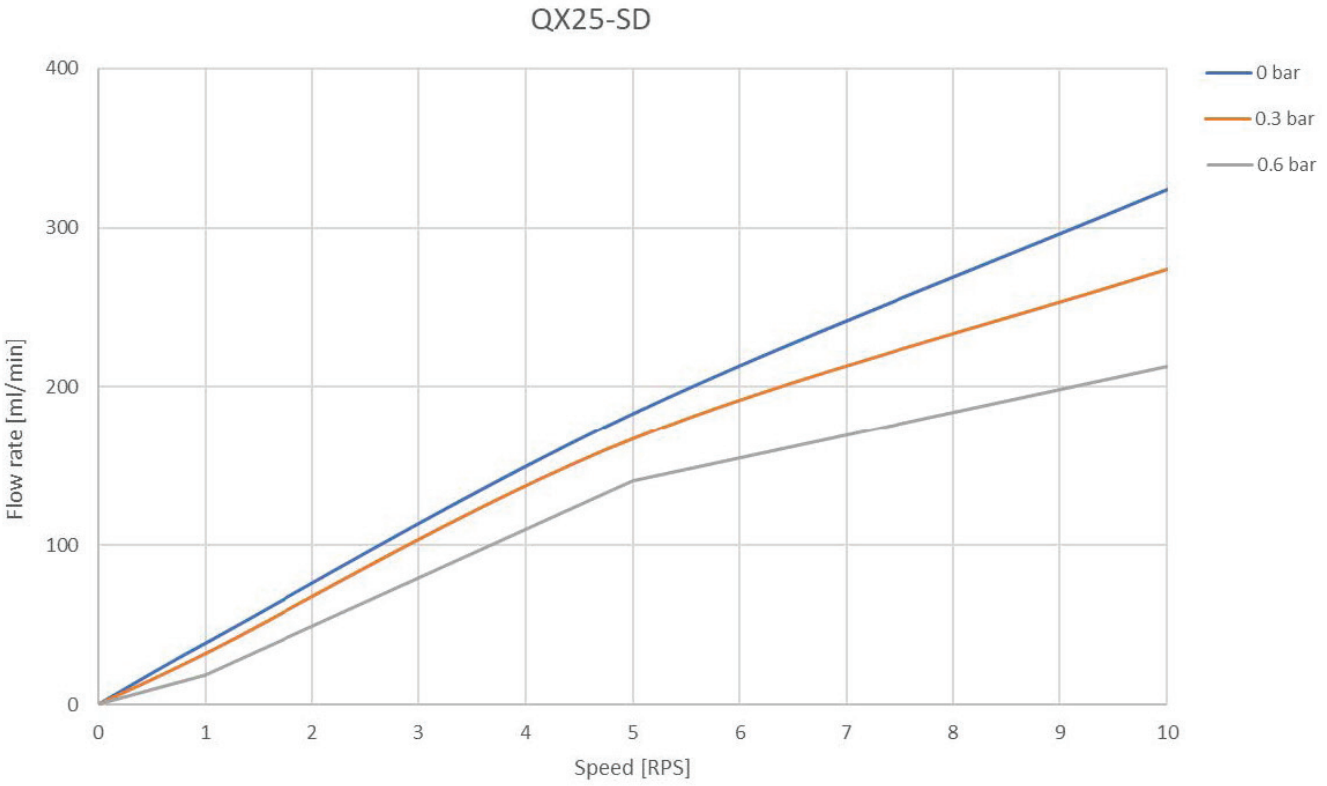


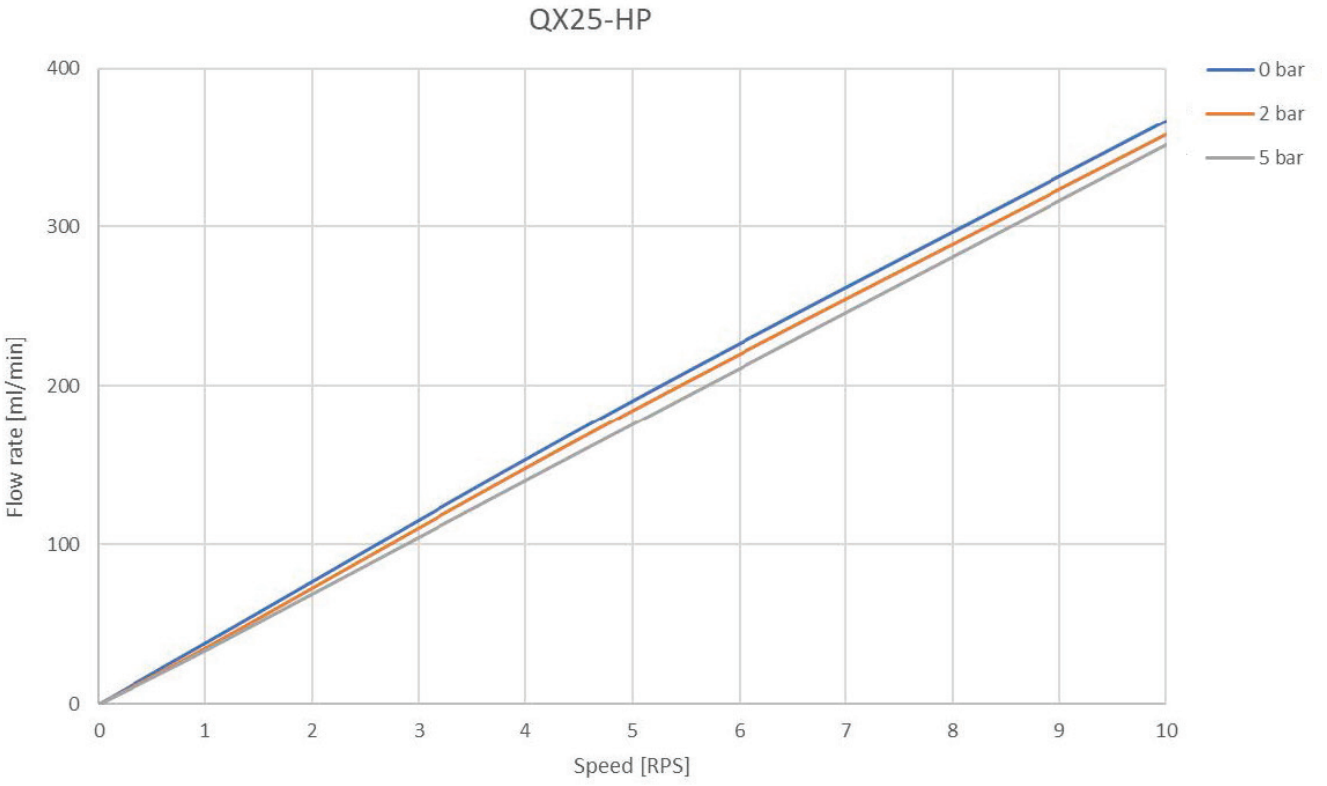
# Low Flow Pump Range

## QX25

The chart below shows flowrate versus speed at three different pressure points.

For a standard pump the flow efficiency starts to drop with pressure.The efficiency of the high pressure pump remains much higher with high back pressure.



# Bag-in-Box Pump Range

The 19mm rotor carries 3 cavities each with a volume of 0.50ml. This pump fits directly into a standard Bag-in-Box (BiB) gland and is compatible with most bag making and filling lines. The pump can be driven by a stepper or DC motor.

The product can be supplied with a selection of nozzles for preferred dosing applications. Alternatively, Quantex can provide a unique connector to suit the customers system.

The pump can be used in the food, beverage, consumer and industrial markets.

The pump is available in four variants:
**SD** – standard pressure.
**HP** – high pressure.
**DL** – in-pump dilution delivering mix ratios of 2:1 to 25:1.
**HS** – features an air inlet for high-speed running.

| | QX55-SD | QX55-HP | QX140-DL | QX150-HS |
|---|---|---|---|---|
| **Pump image** |  |  |  |  |
| **Max flowrate** | 54L/hr | | 142L/hr (54L/hr concentrate) | 148.5L/hr |
| **Resolution** | 0.50ml | | | |
| **Operating speed** | 1 - 10rps | | | 1 - 27.5rps |
| **Baseline accuracy** | ± 5% | | | |
| **Max pressure** | 1 bar | 4 bar | 2 bar | 1 bar |
| **Max torque** | 700mNm | | | |
| **Max fluid viscosity** | 25,000cP | | | |
| **Operating temperature** | 2-40°C | | | |
| **Dimensions (mm)** | 57H, 40W, 40D | | | |
| **Weight** | 17.5g | | 17.6g | 15.8g |
| **Wetted materials** | PP, HDPE, NBR | PP, HDPE, NBR, SIL | | PP, HDPE, NBR |

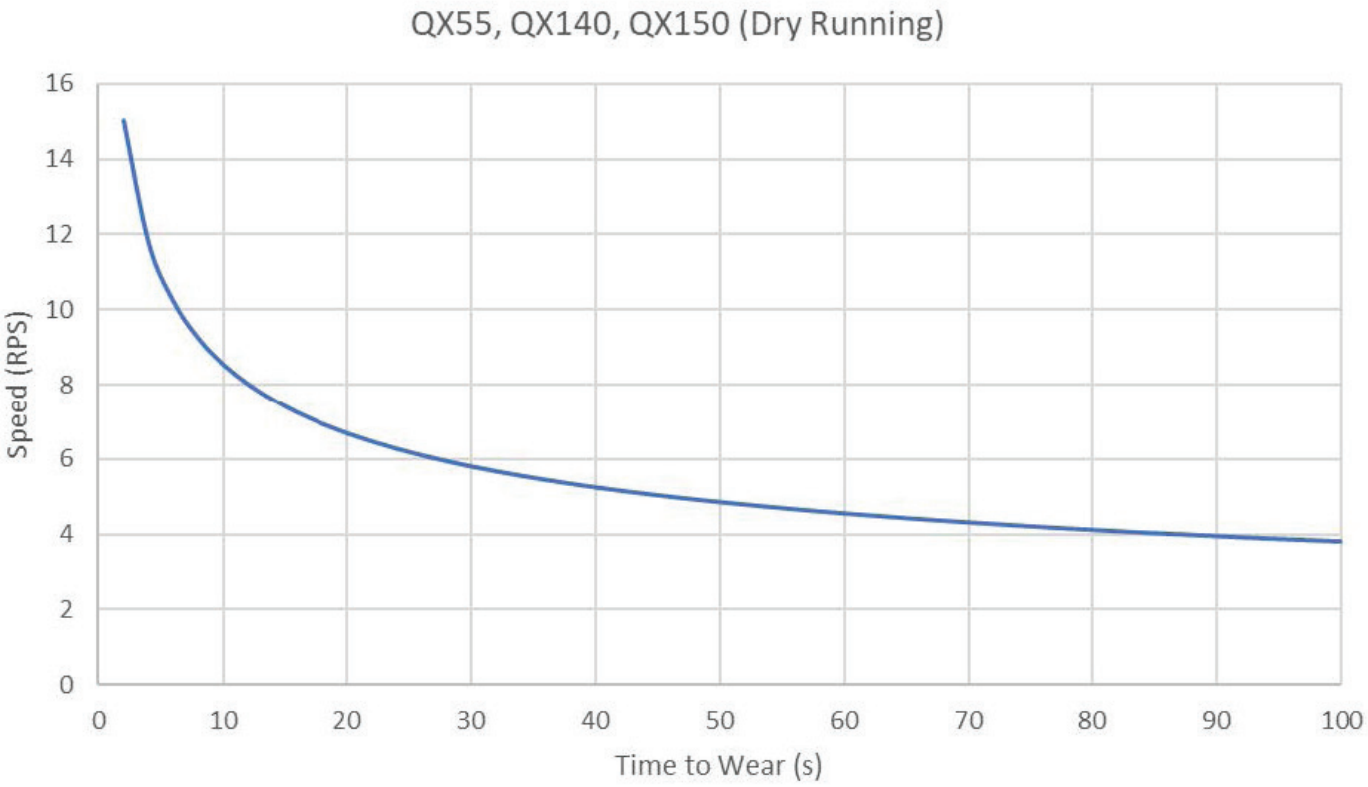
# Bag in Box Pump Range

The pumps are designed to be compatible on the inlet with a standard bag gland. On the outlet various unique connector designs can be attached to the core pump to suit customer needs.

The off the shelf connector offerings are shown below.

| PUMP COMPATIBILITY | CONNECTOR DESCRIPTION | PRODUCT IMAGE |
|---|---|---|
| **QX55-SD-B**<br>**QX55-HP-B**<br>**QX140-DL-B** | BiB laminar nozzle<br>Outlet connector for laminar flow |  |

Chart showing that dry priming/running needs to be limited. Wear can occur quickly at high dry running speeds.

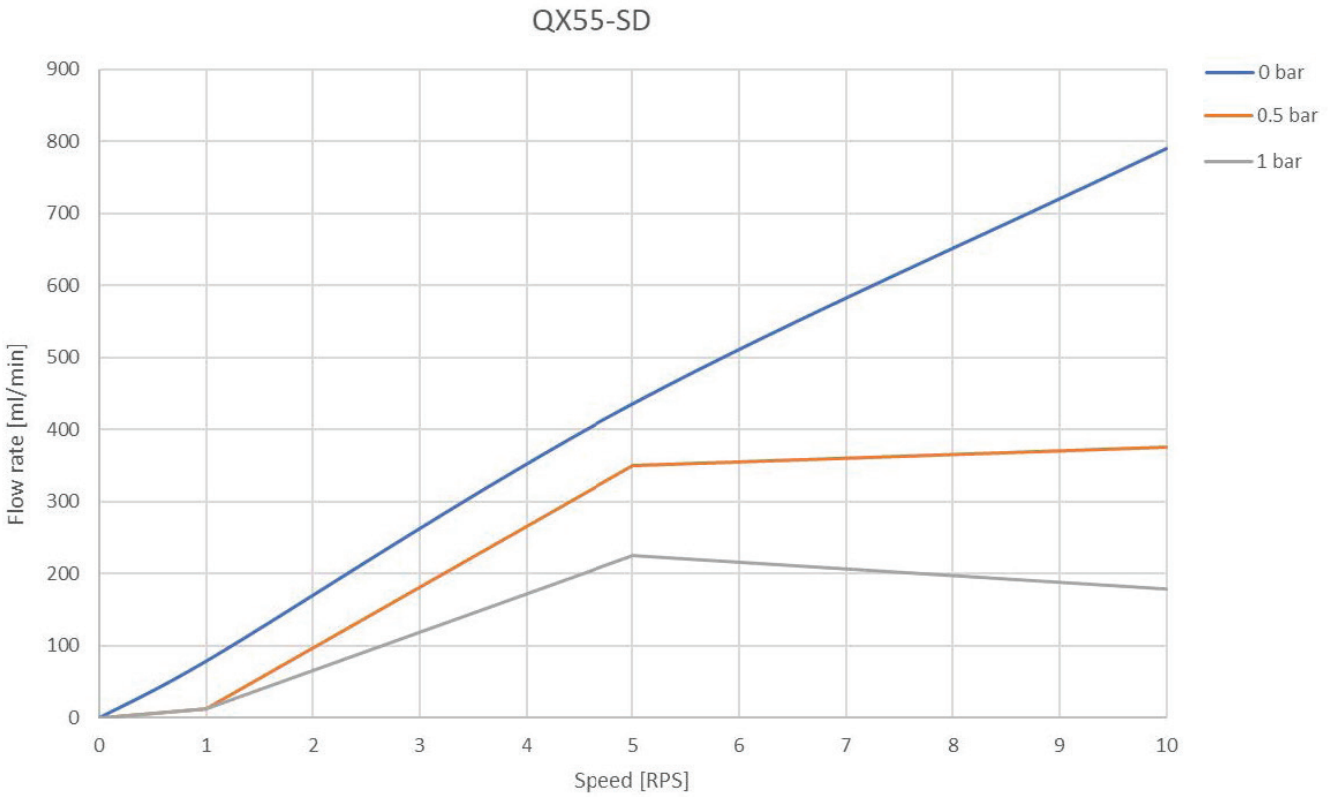


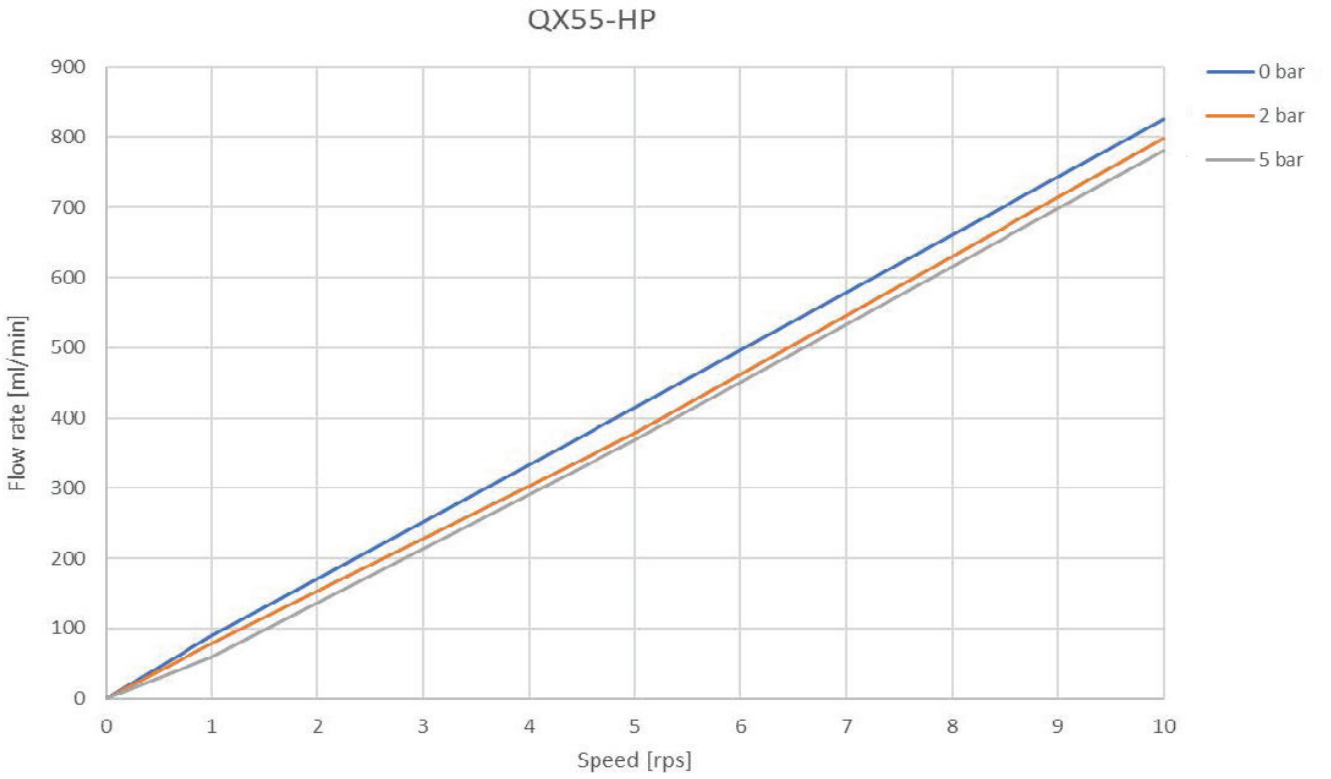
# Bag in Box Pump Range

## QX55

The chart below shows flowrate versus speed at three different pressure points.

For a standard pump the flow efficiency starts to drop with pressure. The efficiency of the high pressure pump remains much higher with high back pressure.



# High Flow Pump Range

The 20mm rotor carries 2 cavities each with a volume of 1.35ml. . Suitable for high viscosity liquids and soft particulates. The pump can be driven by a stepper or DC motor.

Inlet and outlet ports are attached to an in-line system and as standard the product is supplied with hose barbs. Alternatively, Quantex can provide a unique connector to suit the customers system.

The pump can be used in the food, beverage, consumer and industrial markets.

The pump is available in four variants:
**SD** – standard pressure, bi-directional pump with self priming.
**HP** – high pressure capable pump with self priming.
**DL** – in-pump dilution delivering mix ratios of 2:1 to 25:1.
**HS** – features an air inlet for high-speed running.

| | QX100-SD | QX100-HP | QX260-DL | QX265-HS |
|---|---|---|---|---|
| **Pump image** |  |  |  |  |
| **Max flowrate** | 97L/hr | | 261L/hr (97L/hr concentrate) | 267L/hr |
| **Resolution** | 1.35ml | | | |
| **Operating speed** | 1 - 10rps | | | 1 - 27.5rps |
| **Baseline accuracy** | ± 5% | | | |
| **Max pressure** | 1 bar | 4 bar | 2 bar | 1 bar |
| **Max vacuum** | -0.5 bar | | | |
| **Max torque** | 500mNm | | | |
| **Max fluid viscosity** | 50,000cP | | | |
| **Operating temperature** | 2-40°C | | | |
| **Dimensions (mm)** | 63W, 51L, 34H | | | 63W, 51L, 40H |
| **Weight** | 26.4g | 26.3g | 26.7g | 22.9g |
| **Wetted materials** | PP, HDPE, NBR | PP, HDPE, NBR, SIL | | PP, HDPE, NBR |

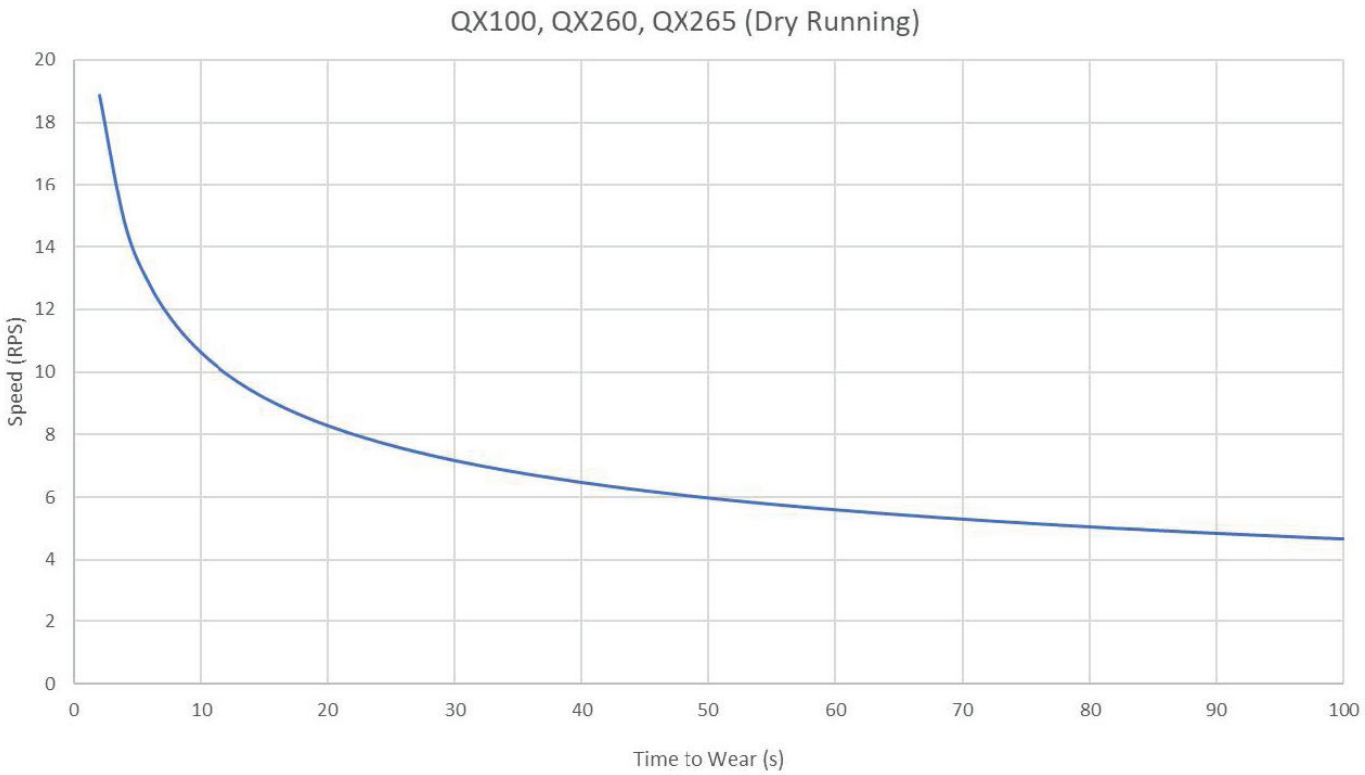
# High Flow Pump Range

The pumps are designed to be compatible with various unique connector designs which can be attached to the core pump to suit customer needs.

The off the shelf connector offerings are shown below.

| PUMP COMPATIBILITY | CONNECTOR DESCRIPTION | PRODUCT IMAGE |
|---|---|---|
| **QX100-SD-AA**<br>**QX100-HP-AA**<br>**QX260-DL-AA**<br>**QX265-HS-AA** | **'AA' Connector**<br>Barb fitting compatible with inlet and outlet side of the pump<br>For use with 3/8" or 10mm ID flexible hose tubing |  |
| **QX100-SD-BA**<br>**QX100-HP-BA**<br>**QX260-DL-BA**<br>**QX265-HS-BA** | **'BA' Connector**<br>Inlet fitting<br>Foiled bag piercing gland fitting<br>Compatible with 16mm bag gland |  |

Chart showing that dry priming/running needs to be limited. Wear can occur quickly at high dry running speeds.

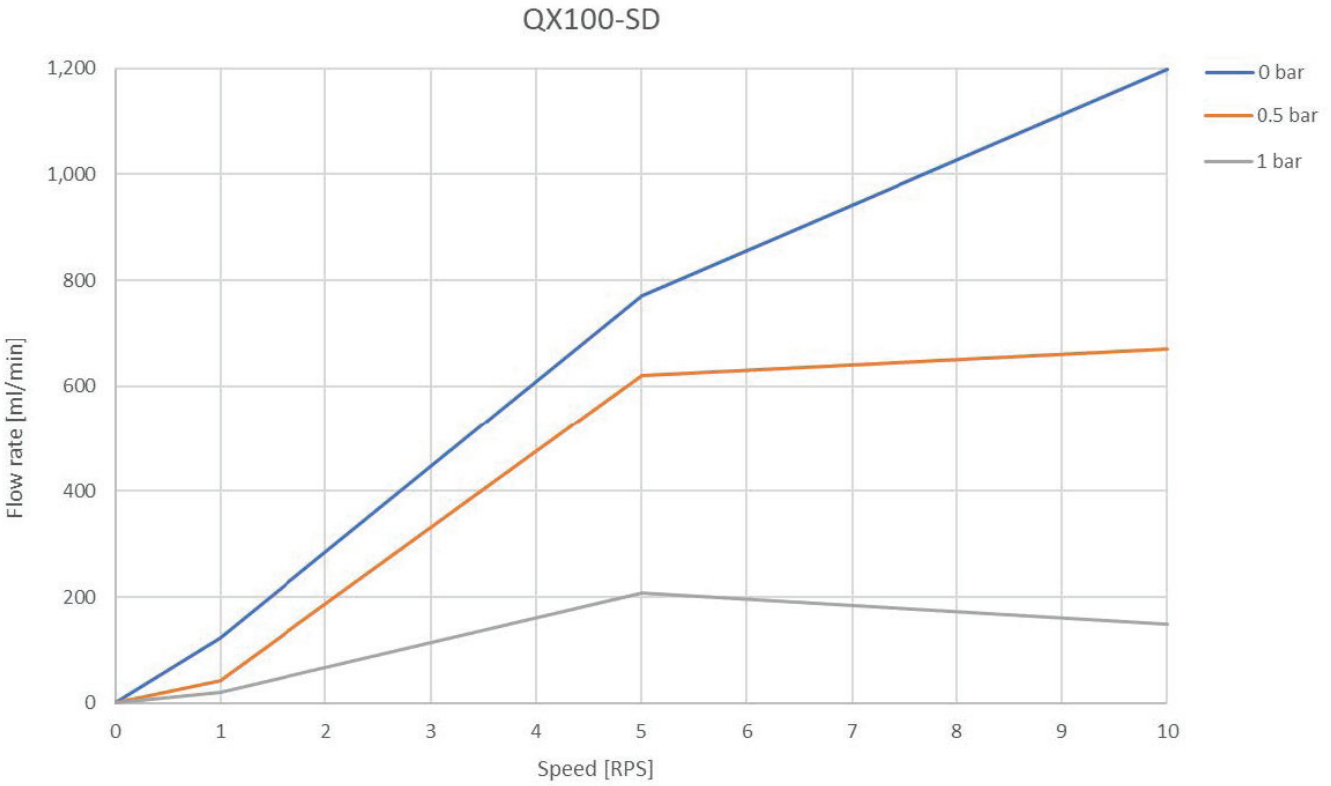


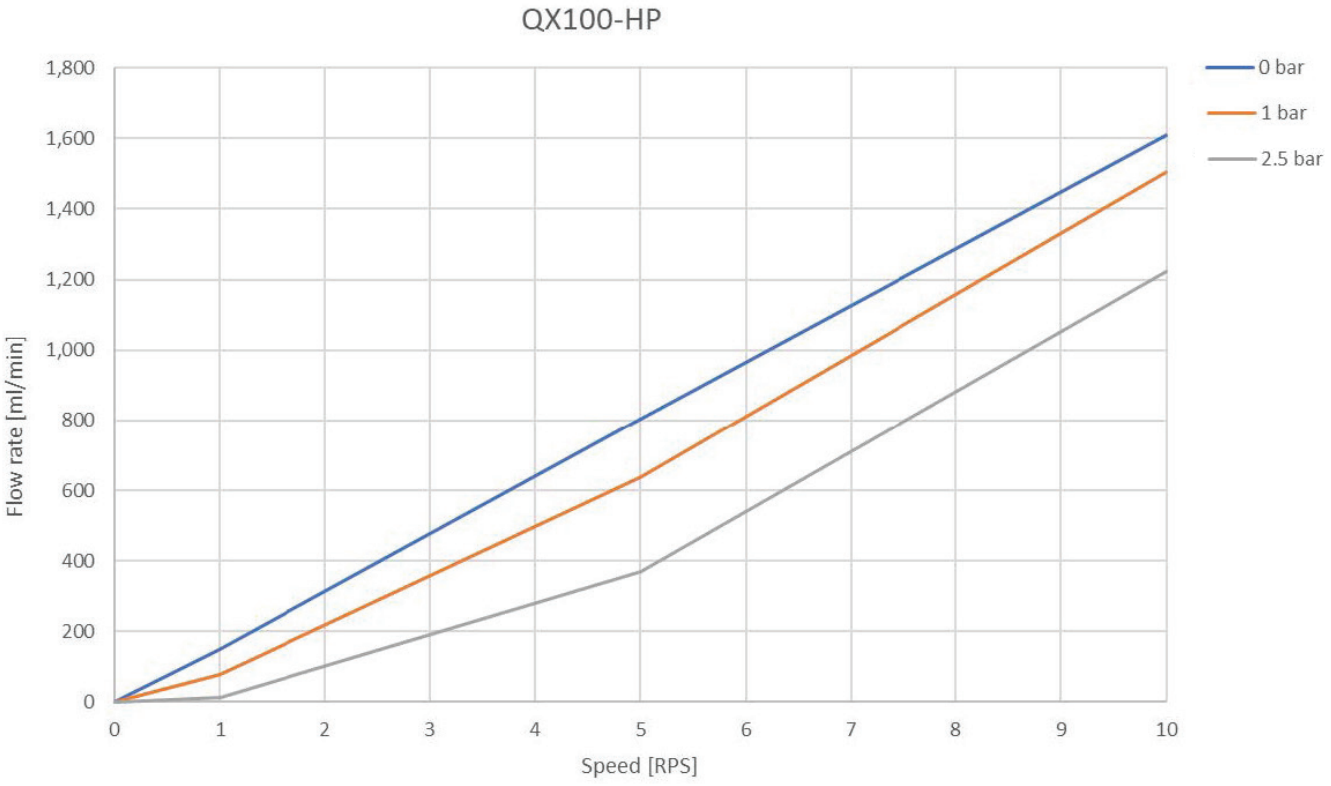
# High Flow Pump Range

## QX100

The chart below shows flowrate versus speed at three different pressure points.

For a standard pump the flow efficiency starts to drop with pressure. The efficiency of the high pressure pump remains much higher for higher speeds particularly.



Drive devices allow for testing of products in production settings. Additionally they can be used for evaluation testing of pump samples.

| PUMP COMPATIBILITY | PART SPECIFICATION | PRODUCT IMAGE |
|---|---|---|
| **QX2-SD**<br>**QX25-SD**<br>**QX25-HP** | **Q-Drive-Alpha**<br>A fully integrated drive device for evaluation and laboratory use.<br>Features a stainless steel body and a full size sophisticated touch screen for direct programming of desired functions such as speed, flow, dose volume, cycling, reverse.<br>Power:<br>100v-240v, 50-60Hz, Single phase<br>Includes:<br>• Fully integrated stepper motor control<br>• Control through high resolution touch screen<br>• Adaptor chassis<br>• Power supply<br>• Country specific plug |  |

# Evaluation Kits

Kits are available to allow pumps to be bench tested. The kit drives the pump using a stepper motor and mains power supply.

| PUMP COMPATIBILITY | PART SPECIFICATION | PRODUCT IMAGE |
|---|---|---|
| **QX25**<br>**QX120** | **EVK-B1**<br>Evaluation kit device with custom drive and chassis for running and retaining the pump.<br>Stepper motor and motor controller can be programmed to adjust motor speed and revolutions.<br>Motor speed and revs are proportional to the pump flowrate and dose volume.<br>Input: 24V DC; 3.75A<br>Single Phase: 115V - 240V<br>TMCL programmable<br>Includes:<br>• Stepper motor<br>• Motor controller<br>• Drive module<br>• Chassis<br>• USB device with a range of programming software<br>• Power supply<br>• UK/US/EU plug<br>Additionally includes a solenoid allowing for using QX120 for dilution of concentrate with regulated mains water. |  |
| **QX25**<br>**QX60** | **EVK-B2**<br>Evaluation kit device with custom drive and chassis for running and retaining the pump.<br>Stepper motor and motor controller can be programmed to adjust motor speed and revolutions.<br>Motor speed and revs are proportional to the pump flowrate and dose volume.<br>Input: 24V DC; 3.75A<br>Single Phase: 115V - 240V<br>TMCL programmable<br>Includes:<br>• Stepper motor<br>• Motor controller<br>• Drive module<br>• Chassis<br>• USB device with a range of programming software<br>• Power supply<br>• UK/US/EU plug<br>Additionally includes an internal air pump to pressurise QX60 for high speed running. |  |

| PUMP COMPATIBILITY | PART SPECIFICATION | PRODUCT IMAGE |
|---|---|---|
| **QX55**<br>**QX140** | **EVK-C1**<br>Evaluation kit device with custom drive and chassis for running and retaining the pump.<br>Stepper motor and motor controller can be programmed to adjust motor speed and revolutions.<br>Motor speed and revs are proportional to the pump flowrate and dose volume.<br>Input: 48V DC; 3.13A<br>Single Phase: 115V - 240V<br>TMCL programmable<br>Includes:<br>• Stepper motor<br>• Motor controller<br>• Drive module<br>• Chassis<br>• USB device with a range of programming software<br>• Power supply<br>• UK/US/EU plug<br>Additionally includes a solenoid allowing for using QX140 for dilution of concentrate with regulated mains water. |  |
| **QX55**<br>**QX150** | **EVK-C2**<br>Evaluation kit device with custom drive and chassis for running and retaining the pump.<br>Stepper motor and motor controller can be programmed to adjust motor speed and revolutions.<br>Motor speed and revs are proportional to the pump flowrate and dose volume.<br>Input: 48V DC; 3.13A<br>Single Phase: 115V - 240V<br>TMCL programmable<br>Includes:<br>• Stepper motor<br>• Motor controller<br>• Drive module<br>• Chassis<br>• USB device with a range of programming software<br>• Power supply<br>• UK/US/EU plug<br>Additionally includes an internal air pump to pressurise QX150 for high speed running. |  |

| PUMP COMPATIBILITY | PART SPECIFICATION | PRODUCT IMAGE |
|---|---|---|
| **QX100**<br>**QX260** | **EVK-D1**<br>Evaluation kit device with custom drive and chassis for running and retaining the pump.<br>Stepper motor and motor controller can be programmed to adjust motor speed and revolutions.<br>Motor speed and revs are proportional to the pump flowrate and dose volume.<br>Input: 48V DC; 3.13A<br>Single Phase: 115V - 240V<br>TMCL programmable<br>Includes:<br>• Stepper motor<br>• Motor controller<br>• 20 pumps<br>• Drive module<br>• Chassis<br>• USB device with a range of programming software<br>• Power supply<br>• UK/US/EU plug<br>Additionally includes a solenoid allowing for using QX260 for dilution of concentrate with regulated mains water. |  |
| **QX100**<br>**QX265** | **EVK-D2**<br>Evaluation kit device with custom drive and chassis for running and retaining the pump.<br>Stepper motor and motor controller can be programmed to adjust motor speed and revolutions.<br>Motor speed and revs are proportional to the pump flowrate and dose volume.<br>Input: 48V DC; 3.13A<br>Single Phase: 115V - 240V<br>TMCL programmable<br>Includes:<br>• Stepper motor<br>• Motor controller<br>• 20 pumps<br>• Drive module<br>• Chassis<br>• USB device with a range of programming software<br>• Power supply<br>• UK/US/EU plug<br>Additionally includes an internal air pump to pressurise QX265 for high speed running. |  |

**All Quantex™ products to be ordered at PSG Germany:**

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Where Innovation Flows

quantex™

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