

# Quantum 600

## with ReNu SU Technology



Watson-Marlow Pumps

### FEATURES AND BENEFITS

- Flow rates from 5.33 ml/min to 20 L/min
- 4000:1 speed control range from 0.1 to 400rpm in 0.1rpm increments
- Patented ReNu SU cartridge technology
- Colour display and intuitive menu structures provide visual status indication and minimal key presses
- Keypad incorporates 3-level security PIN protection
- Paint free IP66/NEMA 12/13 pump housing
- Dual voltage, 115V/230V 50/60Hz

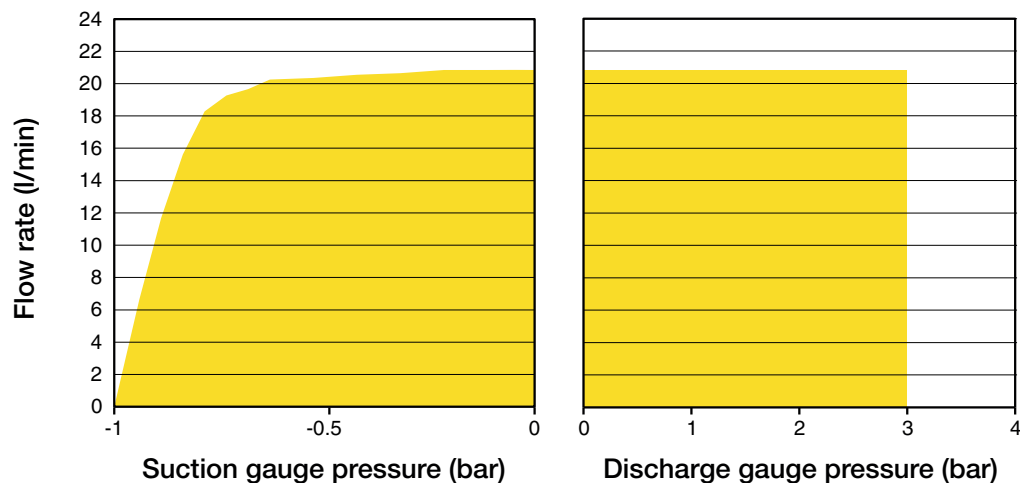


*Watson-Marlow... Innovation in Full Flow*

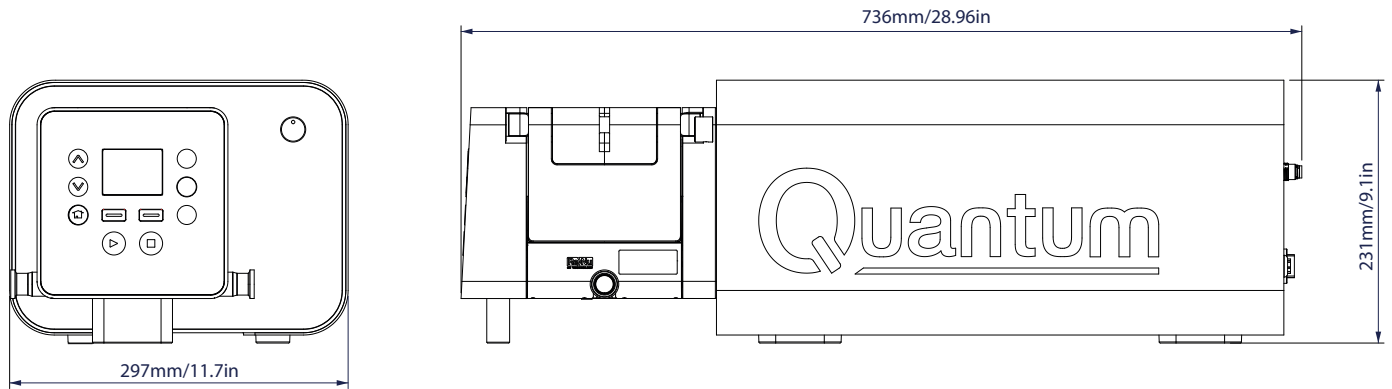
### TECHNICAL DATA

|   |
|---|
| <b>Pump drives</b>  |
| <b>Manual control</b>   |
| Intuitive keypad and colour display   |
| Choice of flow rate or speed display  |
| Full calibration with choice of flow units  |
| <b>Remote control</b>   |
| Configurable Start/Stop, leak detector input (via contact closure or 5V TTL or 24V industrial logic)  |
| Direction change and auto/manual toggle input (via contact closure or 5V TTL or 24V industrial logic) |
| Remote operation of MemoDose (foot/hand-switch or logic input)  |
| Four configurable digital status outputs through 24V, 30W relays                                      |
| <b>Analogue speed control</b>   |
| Fully configurable inputs; 0-10V or 4-20mA  |
| Analogue outputs; 0-10V, 4-20mA   |
| Tacho frequency output; 0 to 1067 Hz, 0 to 400RPM   |
| <b>Security</b>   |
| 3-level Security PIN lock   |

### PERFORMANCE



## DIMENSIONS



## TECHNICAL SPECIFICATION

|                                 | Universal  |
|---------------------------------|--|
| Ingress rating                  | IP66 / NEMA 12/13  |
| Enclosure                       | Water/dustproof  |
| Humidity (non-condensing)       | 80% up to 31C (88F) decreasing linearly to 50% at 40C (104F) |
| Temperature                     | 5C to 30C (41F to 86F)                                       |
| Pump weight                     | 38kg / 83.8 lb   |
| Speed control ratio             | 4000:1   |
| Noise                           | <70 dB(A)  |
| Standard                        | CE, cETLus, IEC61010-1                                       |
| Power supply                    | 100-120V/200-240V 1ph 50/60Hz 650VA                          |
| I/O connectors                  | 3 x M12 chassis male 8-way<br>1 x M12 chassis female 8-way   |
| Max operating pressure and flow | Refer to cartridge   |

## MATERIALS OF CONSTRUCTION

| Component                 | Material                     |
|---------------------------|------------------------------|
| Pump drive body/cover     | Aluminium (anodised)         |
| Pumphead Casework         | Aluminium (anodised)         |
| Guard track               | Aluminium (anodised)         |
| Rollers                   | Stainless steel 316          |
| HMI/keypad overlay        | Polyester film               |
| Case seals                | Silicone                     |
| Drive body feet           | Silicone                     |
| ReNu Single Use cartridge | Refer to cartridge datasheet |
| Head foot                 | Aluminium                    |

## ORDER INFORMATION



### Plug options\*

- U: UK mains plug
- E: EU mains plug
- A: American mains plug
- K: Australia mains plug
- R: Argentina mains plug
- C: Swiss mains plug
- D: India/South Africa mains plug

\*IP66 / NEMA 12/13 pumps are supplied with a 2.5m/8.2ft lead attached to an American, Australia, Argentina, Swiss or South Africa mains plug

**NOTE:** Each pump is supplied with 1 bolt down bracket.

### ReNu SU Technology Product Codes

| Description  | Partcode       |
|--|----------------|
| ReNu SU 600 20/3P  | 33-1061-000001 |
| ReNu SU CONNECTION KIT, BRAIDED PLATINUM-CURED SILICONE HOSE, 3/4" TC E/E, 0.5 MTR | 33-1069-000001 |
| ReNu SU CONNECTION KIT, BRAIDED PLATINUM-CURED SILICONE HOSE, 3/4" TC E/E, 1 MTR   | 33-1069-000002 |
| ReNu SU CONNECTION KIT, BRAIDED PLATINUM-CURED SILICONE HOSE, 3/4" TC E/E, 3 MTR   | 33-1069-000003 |

All flow rates shown were obtained pumping water at 20C (68F) with zero suction and delivery heads. Watson-Marlow, Pumpsil, PureWeld XL, Bioprene and Marprene are trademarks of Watson-Marlow Limited. Disclaimer: The information contained in this document is believed to be correct but Watson-Marlow Limited accepts no liability for any errors it contains, and reserves the right to alter specifications without notice. GORE and STA-PURE are trademarks of W. L. Gore & Associates. Please state the product code when ordering pumps and tubing.

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MARLOW  
Pumps**

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# ReNu SU Technology cartridge

# Quantum

Watson-Marlow Pumps

## FEATURES AND BENEFITS

- Choose from a range of industry standard aseptic connectors
- Maintain batch integrity
- Assemblies available with  $10^{-6}$  sterility assurance level
- Maximise manufacturing flexibility and eliminate operator error
- Suitable for use with the Quantum pump
- Pressures up to 3 bar and flows up to 20 litres/min



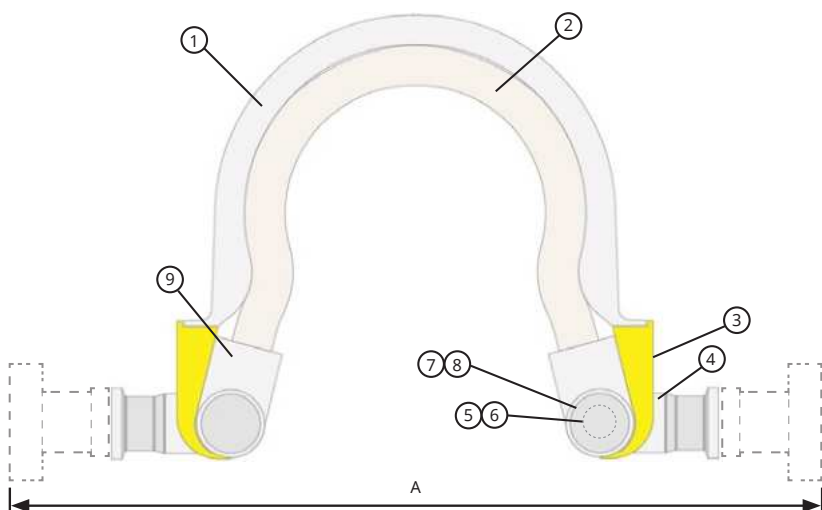
**ReNu**  
SU TECHNOLOGY

*Watson-Marlow...Innovation in Full Flow*

## TECHNICAL DATA

| Characteristic                         | Universal  |
|--|--|
| Part number                            | 33-1061-000001   |
| Connection type                        | 3/4" TC  |
| Operating temp range (°C)              | 5 - 37   |
| Max Flow                               | 20 litres/min (1200 litres/hr)   |
| Min flow                               | 2 litres/min (120 litres/hr)<br>Recommended lower operational limit (lower flows are possible)                               |
| Tube ID                                | 8.8mm  |
| Life (Hrs)                             | 3 Bar, 20 litres/min, 24 hrs   |
| Static pressure limit                  | Do not exceed 6 Bar  |
| Total cartridge volume (ml)            | 139  |
| Wetted surface area (cm <sup>2</sup> ) | Total area = 416 cm <sup>2</sup><br>Tubing (polyurethane) 297 cm <sup>2</sup><br>Manifolds (HDPE USP VI) 119 cm <sup>2</sup> |
| Priming                                | Self priming   |
| Validation                             | USP 85,88,87,788, ISO 10993 - 4/6/10/11 Extractables test data available   |
| BSE/TSE Safe                           | Yes, Compliant with EMEA 410/01 Rev 3  |
| Tube gas Q permeability for oxygen     | 21 [m <sup>2</sup> /(sPa)×10 <sup>-18</sup> ]  |
| Shelf life (years)                     | 2  |
| Traceability                           | All material fully traceable back to raw materials   |
| Dry running time (mins)                | Do not exceed 2 mins   |

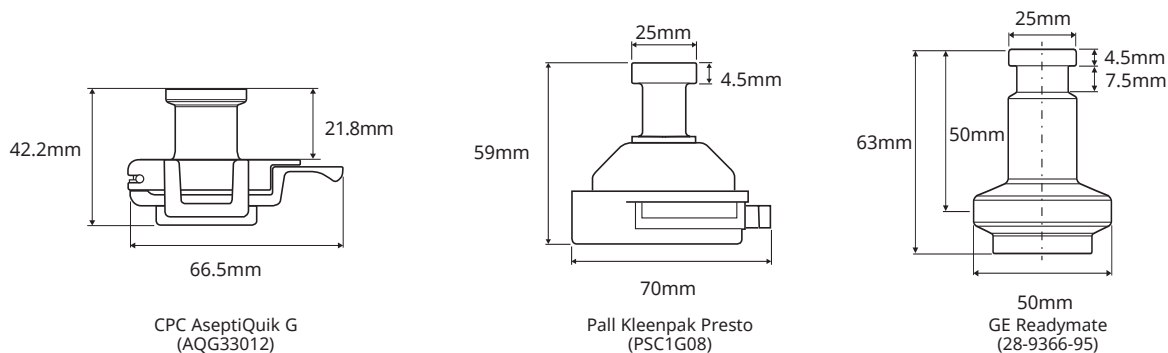
## DIMENSIONS



| Component | Material              |                  |
|-----------|-----------------------|------------------|
| 1         | Quantum track liner   | HDPE (USPVI)     |
| 2         | Quantum tube element  | Polyurethane     |
| 3         | Label, Product        | Paper            |
| 4         | Quantum manifold      | HDPE (USPVI)     |
| 5         | Quantum end cap       | HDPE (USPVI)     |
| 6         | Magnet                | Neodymium, N35SH |
| 7         | Quantum cover plate   | HDPE (USPVI)     |
| 8         | Label, end cap        | Paper            |
| 9         | Quantum collet/joiner | Nylon 66         |

| Aseptic connector                               | Dimension A (mm) |
|---|------------------|
| Kleenpak Presto Sterile Connector, 3/4" TC      | 313.0            |
| Readymate Disposable Aseptic Connector, 3/4" TC | 313.0            |
| AseptiQuik G Genderless Connector, 3/4" TC      | 277.5            |
| Cartridge only (no connectors)                  | 195.0            |

### Standard Aseptic Connectors



| ReNu SU Cartridge Product Codes - RENU SU CARTRIDGE 600 20/3P |  |  |  |
|---|--|--|--|
| Partcode  | Description  | Additional details   | End termination  |
| 33-1061-000001  | RENU SU CARTRIDGE 600 20/3P                          | Not gamma irradiated   | 2 x 3/4" TC sealed with Bioendcap                                |
| 33-1061-000002  | RENU SU CARTRIDGE 600 20/3P, IRRADIATED              | Gamma irradiated and released based on an exposure of 25 kGy to 45 kGy                 |  |
| 33-1062-000002  | RENU SU 600 20/3P GAMMA WITH PRESTO IN/OUT-STR       | Gamma irradiated at 25kGy to 45kGy and certified (SAL) level of $1 \times 10^{-6}$ CFU | 2 x Kleenpak Presto Sterile Connector, 3/4" TC (PSC1G08)         |
| 33-1062-000003  | RENU SU 600 20/3P GAMMA WITH READYMATE IN/OUT-STR    | Gamma irradiated at 25kGy to 45kGy and certified (SAL) level of $1 \times 10^{-6}$ CFU | 2 x Readymate Disposable Aseptic Connector, 3/4" TC (28-9366-95) |
| 33-1062-000004  | RENU SU 600 20/3P GAMMA WITH ASEPTIQUIK G IN/OUT-STR | Gamma irradiated at 25kGy to 45kGy and certified (SAL) level of $1 \times 10^{-6}$ CFU | 2 x AseptiQuik G Genderless Connector, 3/4" TC (AQQ33012)        |

- 1 This assembly has been gamma irradiated and released based on an exposure of 25 kGy to 45 kGy.
  - 2 A sterilisation validation study has been conducted according to the ISO11137-2, Method VDmax25 to verify that that a master assembly will meet a sterility assurance level (SAL) of  $10^{-6}$ , when irradiated to a minimum of 25 kGy. This product has been released on the basis of being a section of the master assembly validation study.
  - 3 Installation recommendations— Avoid sharp bends in pipework. Recommended minimum exit hose length is 2 meters.
- STR Denotes that this product is supplied with sterility assurance

## ORDER INFORMATION

### ReNu SU Technology Product Codes - Cartridge Assemblies

| Partcode       | Description  | Assembly tubing length | Additional details   | End termination   |
|----------------|--|------------------------|--|---|
| 33-1063-000001 | RENU SU 600 20/3P GAMMA ASEPTIQUIK G IN/OUT, 0.5/0.5 MTR STR | 0.5m (x2)              | Gamma irradiated at 25kGy to 45kGy and certified (SAL) level of 1 x 10 <sup>-6</sup> CFU | 2 x AseptiQuik G Genderless Connector, 3/4" TC (AQG33012) |
| 33-1063-000002 | RENU SU 600 20/3P GAMMA ASEPTIQUIK G IN/OUT, 1.0/1.0 MTR STR | 1.0m (x2)              | Gamma irradiated at 25kGy to 45kGy and certified (SAL) level of 1 x 10 <sup>-6</sup> CFU |   |
| 33-1063-000003 | RENU SU 600 20/3P GAMMA ASEPTIQUIK G IN/OUT, 2.0/2.0 MTR STR | 2.0m (x2)              | Gamma irradiated at 25kGy to 45kGy and certified (SAL) level of 1 x 10 <sup>-6</sup> CFU |   |
| 33-1063-000004 | RENU SU 600 20/3P GAMMA ASEPTIQUIK G IN/OUT, 3.0/3.0 MTR STR | 3.0m (x2)              | Gamma irradiated at 25kGy to 45kGy and certified (SAL) level of 1 x 10 <sup>-6</sup> CFU |   |

### ReNu SU Connection Kit Product Codes

| Partcode       | Description  | Assembly tubing length | Additional details | End termination                  |
|----------------|--|------------------------|--------------------|----------------------------------|
| 33-1069-000001 | RENU SU CONNECTION KIT, BRAID TUBING, 3/4" TC, 0.5 MTR-NON | 0.5m                   | NA                 | 2 x 3/4 TC sealed with Bioendcap |
| 33-1069-000002 | RENU SU CONNECTION KIT, BRAID TUBING, 3/4" TC, 1 MTR-NON   | 1.0m                   | NA                 |                                  |
| 33-1069-000003 | RENU SU CONNECTION KIT, BRAID TUBING, 3/4" TC, 3 MTR-NON   | 3.0m                   | NA                 |                                  |
| 33-1069-000004 | RENU SU CONNECTION KIT, BRAID TUBING, 3/4" TC, 2 MTR-NON   | 2.0m                   | NA                 |                                  |

Kits comprise of:  
 1 x tubing (Biopure 15.9mm ID Pt Silicone single braided hose) ends terminated with BioBarb™ 5/8" Mini.  
 Fittings (supplied loose):  
 2 x Q-Clamp Tamper Evident Cover, Yellow  
 2 x Q-Clamp, 1/2" - 3/4" TC  
 2 x Sanitary Gasket, 3/4" Unflanged

**Packing/Sterility details:** All components are manufactured and assembled in ISO 14644 class 7 (class 10,000, Grade C) cleanrooms of production facilities operating ISO 9001 quality management systems. The cleanrooms are air conditioned to ensure temperature and humidity.

## MATERIALS OF CONSTRUCTION (CARTRIDGE ASSEMBLIES AND CONNECTION KITS)

| Component                                       | Material                                      |
|---|---|
| Biopure Pt Silicone single braided hose         | Platinum cured braid-reinforced silicone hose |
| BioBarb 5/8" Mini                               | Polypropylene                                 |
| Q-Clamp Tamper Evident Cover, Yellow            | Polypropylene                                 |
| Q-Clamp, 1/2" - 3/4" TC                         | Glass Reinforced Nylon                        |
| Sanitary Gasket, 3/4" Unflanged                 | Silicone                                      |
| BioEndCap                                       | Polypropylene                                 |
| Kleenpak Presto Sterile Connector, 3/4" TC      | See manufacturers data - Pall (PSC1G08)       |
| Readymate Disposable Aseptic Connector, 3/4" TC | See manufacturers data - GE (28-9366-95)      |
| AseptiQuik G Genderless Connector, 3/4" TC      | See manufacturers data - CPC (AQG33012)       |

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