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## 12. Warranty Information

The pipettes are warranted for one year against defects in materials and workmanship. Should it fail to function in any period of time, please contact your local representative immediately. The warranty will not cover defects caused by normal wear or by using the pipette against the instructions given in this manual.

Each pipette is tested before shipping by the manufacturer.

The Quality Assurance Procedure is your guarantee that the pipette you have purchased is ready for use.

## 13. Performance indicators

Adjustable volume pipette

| Range                  | Measuring volume ( $\mu\text{l}$ ) | Maximum allowable system error (inaccuracy) |               | Allow maximum random error (imprecision) |               |
|------------------------|------------------------------------|---------------------------------------------|---------------|------------------------------------------|---------------|
|                        |                                    | %                                           | $\mu\text{l}$ | %                                        | $\mu\text{l}$ |
| 0.1-2.5 $\mu\text{l}$  | 2.5                                | 2.50%                                       | 0.0625        | 2.00%                                    | 0.05          |
|                        | 1.25                               | 3.00%                                       | 0.0375        | 3.00%                                    | 0.0375        |
|                        | 0.25                               | 12.00%                                      | 0.03          | 6.00%                                    | 0.015         |
| 0.5-10 $\mu\text{l}$   | 10                                 | 1.00%                                       | 0.1           | 0.80%                                    | 0.08          |
|                        | 5                                  | 1.50%                                       | 0.075         | 1.50%                                    | 0.075         |
|                        | 1                                  | 2.50%                                       | 0.025         | 1.50%                                    | 0.015         |
| 2-20 $\mu\text{l}$     | 20                                 | 0.90%                                       | 0.18          | 0.40%                                    | 0.08          |
|                        | 10                                 | 1.20%                                       | 0.12          | 1.00%                                    | 0.1           |
|                        | 2                                  | 3.00%                                       | 0.06          | 2.00%                                    | 0.04          |
| 5-50 $\mu\text{l}$     | 50                                 | 0.60%                                       | 0.3           | 0.30%                                    | 0.15          |
|                        | 25                                 | 0.90%                                       | 0.225         | 0.60%                                    | 0.15          |
|                        | 5                                  | 2.00%                                       | 0.1           | 2.00%                                    | 0.1           |
| 10-100 $\mu\text{l}$   | 100                                | 0.80%                                       | 0.8           | 0.15%                                    | 0.15          |
|                        | 50                                 | 1.00%                                       | 0.5           | 0.40%                                    | 0.2           |
|                        | 10                                 | 3.00%                                       | 0.3           | 1.50%                                    | 0.15          |
| 20-200 $\mu\text{l}$   | 200                                | 0.60%                                       | 1.2           | 0.15%                                    | 0.3           |
|                        | 100                                | 0.80%                                       | 0.8           | 0.30%                                    | 0.3           |
|                        | 20                                 | 3.00%                                       | 0.6           | 1.00%                                    | 0.2           |
| 50-200 $\mu\text{l}$   | 200                                | 0.60%                                       | 1.2           | 0.15%                                    | 0.3           |
|                        | 100                                | 0.80%                                       | 0.8           | 0.30%                                    | 0.3           |
|                        | 50                                 | 1.00%                                       | 0.5           | 0.40%                                    | 0.2           |
| 100-1000 $\mu\text{l}$ | 1000                               | 0.60%                                       | 6             | 0.20%                                    | 2             |
|                        | 500                                | 0.70%                                       | 3.5           | 0.25%                                    | 1.25          |
|                        | 100                                | 2.00%                                       | 2             | 0.70%                                    | 0.7           |
| 200-1000 $\mu\text{l}$ | 1000                               | 0.60%                                       | 6             | 0.20%                                    | 2             |
|                        | 500                                | 0.70%                                       | 3.5           | 0.25%                                    | 1.25          |

|             |       |       |     |       |     |
|-------------|-------|-------|-----|-------|-----|
|             | 200   | 0.90% | 1.8 | 0.30% | 0.6 |
| 1000-5000µl | 5000  | 0.50% | 25  | 0.15% | 7.5 |
|             | 2500  | 0.60% | 15  | 0.30% | 7.5 |
|             | 1000  | 0.70% | 7   | 0.30% | 3   |
|             |       | %     | µl  | %     | µl  |
| 2-10        | 10000 | 0.60% | 60  | 0.20% | 20  |
|             | 5000  | 1.20% | 60  | 0.30% | 15  |
|             | 2000  | 3.00% | 60  | 0.60% | 12  |

8-channel adjustable pipette

| Range    | Measuring volume (µl) | Maximum allowable system error (inaccuracy) |       | Allow maximum random error (imprecision) |       |
|----------|-----------------------|---------------------------------------------|-------|------------------------------------------|-------|
|          |                       | %                                           | µl    | %                                        | µl    |
| 0.5-10µl | 10                    | 1.50%                                       | 0.15  | 1.50%                                    | 0.15  |
|          | 5                     | 2.50%                                       | 0.125 | 2.50%                                    | 0.125 |
|          | 1                     | 4.00%                                       | 0.04  | 4.00%                                    | 0.04  |
| 5-50µl   | 50                    | 1.00%                                       | 0.5   | 0.50%                                    | 0.25  |
|          | 25                    | 1.50%                                       | 0.375 | 1.00%                                    | 0.25  |
|          | 5                     | 3.00%                                       | 0.15  | 2.00%                                    | 0.1   |
| 50-300µl | 300                   | 0.70%                                       | 2.1   | 0.25%                                    | 0.75  |
|          | 150                   | 1.00%                                       | 1.5   | 0.50%                                    | 0.75  |
|          | 50                    | 1.50%                                       | 0.75  | 0.80%                                    | 0.4   |

12-channel adjustable pipette

| Range    | Measuring volume (µl) | Maximum allowable system error (inaccuracy) |       | Allow maximum random error (imprecision) |       |
|----------|-----------------------|---------------------------------------------|-------|------------------------------------------|-------|
|          |                       | %                                           | µl    | %                                        | µl    |
| 0.5-10µl | 10                    | 1.50%                                       | 0.15  | 1.50%                                    | 0.15  |
|          | 5                     | 2.50%                                       | 0.125 | 2.50%                                    | 0.125 |
|          | 1                     | 4.00%                                       | 0.04  | 4.00%                                    | 0.04  |
| 5-50µl   | 50                    | 1.00%                                       | 0.5   | 0.50%                                    | 0.25  |
|          | 25                    | 1.50%                                       | 0.375 | 1.00%                                    | 0.25  |
|          | 5                     | 3.00%                                       | 0.15  | 2.00%                                    | 0.1   |
| 50-300µl | 300                   | 0.70%                                       | 2.1   | 0.25%                                    | 0.75  |
|          | 150                   | 1.00%                                       | 1.5   | 0.50%                                    | 0.75  |
|          | 50                    | 1.50%                                       | 0.75  | 0.80%                                    | 0.4   |

Fixed volume pipette

| Range | Measuring volume (µl) | Maximum allowable system error (inaccuracy) |       | Allow maximum random error (imprecision) |      |
|-------|-----------------------|---------------------------------------------|-------|------------------------------------------|------|
|       |                       | %                                           | µl    | %                                        | µl   |
| 5µl   | 5µl                   | 1.3%                                        | 0.065 | 1.2%                                     | 0.06 |

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|              |              |      |       |       |       |
|--------------|--------------|------|-------|-------|-------|
| 10 $\mu$ l   | 10 $\mu$ l   | 0.8% | 0.08  | 0.8%  | 0.08  |
| 20 $\mu$ l   | 20 $\mu$ l   | 0.6% | 0.12  | 0.5%  | 0.1   |
| 25 $\mu$ l   | 25 $\mu$ l   | 0.5% | 0.125 | 0.3%  | 0.075 |
| 50 $\mu$ l   | 50 $\mu$ l   | 0.5% | 0.25  | 0.3%  | 0.15  |
| 100 $\mu$ l  | 100 $\mu$ l  | 0.5% | 0.5   | 0.3%  | 0.3   |
| 200 $\mu$ l  | 200 $\mu$ l  | 0.4% | 0.8   | 0.2%  | 0.4   |
| 250 $\mu$ l  | 250 $\mu$ l  | 0.4% | 1.0   | 0.2%  | 0.5   |
| 500 $\mu$ l  | 500 $\mu$ l  | 0.3% | 1.5   | 0.2%  | 1.0   |
| 1000 $\mu$ l | 1000 $\mu$ l | 0.3% | 3.0   | 0.2%  | 2.0   |
| 2000 $\mu$ l | 2000 $\mu$ l | 0.3% | 6.0   | 0.15% | 3.0   |
| 5000 $\mu$ l | 5000 $\mu$ l | 0.3% | 15    | 0.15% | 7.5   |