GILSON PIPETTE SPECIFICATIONS

SYSTEMATIC ERROR = ACCURACY
RANDOM ERROR = REPEATABILITY

Maximum Errors Tolerated by
Norm ISO 8655 and Gilson Specifications

ISO 8655 gives the technical specifications that must be respected by a pipette at the level of the nominal volume only, whereas Gilson gives tolerances fitted to all volumes. To guarantee optimum performance of its pipettes, Gilson has specifications that are much stricter than the ISO 8655 norm.

The performance of your pipette is defined for both the minimum and nominal volumes. Gilson strictly applies the methodology imposed by the norm but has different specifications as a function of the selected volume for a given model, contrary to the norm which specifies the same error, whatever volume is selected.

The norm is the result of a compromise reached by the members of the ISO technical committee. Gilson evaluated the maximum tolerated errors and considered that the maximum tolerated errors were not strict enough to guarantee the performance levels required by these precision instruments, especially for applications in the domains of research, diagnostics, and quality control. For this reason a note was added to **paragraph 9.4 of the final version of the ISO 8655-2 norm** and should be taken into account: *"It is recognized that the errors of measurement of intermediate volumes in the useful volume range of a variable-volume piston pipette may be considerably better than those specified for the nominal volume of the piston pipette."*

Thus, a pipette may conform to the ISO 8655 norm but not to conform to Gilson specifications. Therefore, we are not able to guarantee that a pipette performs in accordance with the tolerances given in ISO 8655 and, by extension, the coherence of our user's experimental results.

As a consequence we strongly recommend to have PIPETMAN®, PIPETMAN® L, MyPIPETMAN®, PIPETMAN® M, PIPETMAN® M Connected, MICROMAN® E, PLATEMASTER®, DISTRIMAN®, and DISPENSMAN® adjusted according to Gilson specifications.
In this document, you'll find tables comparing Gilson specifications with ISO 8655 so that you can take into account the loss of performance of your pipette if you estimate that you only need conformity with the norm ISO 8655.

If further clarification is needed, please reach out to your local Gilson representative.

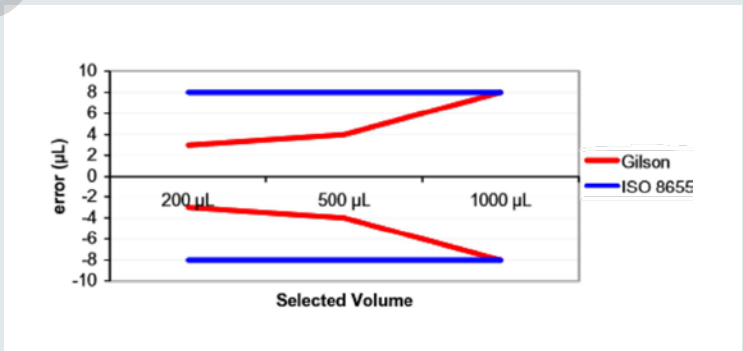


Figure 1
Maximum permissible errors - comparison of ISO 8655 and Gilson specifications

PIPETMAN P1000 has a systematic error of 3 µL at its minimum volume and 8 µL at its maximum (nominal) volume. ISO 8655 specifies a systematic error of 8 µL for a 1000 µL pipette regardless of the selected volume. This means that in the course of an experimental protocol comprising of 20 samples of 200 µL, the maximum error according to Gilson specifications will be 60 µL and 160 µL according to ISO 8655, a difference of 100 µL. To illustrate the above proposition we have included a graph showing the comparison between the maximum errors tolerated by Gilson and ISO 8655.

DOWNLOAD DUTSCHER SAS

GILSON PIPETTE SPECIFICATIONS

SYSTEMATIC ERROR = ACCURACY
RANDOM ERROR = REPEATABILITY

PIPETMAN® M & PIPETMAN® M CONNECTED SINGLE CHANNEL

Model	PIPETMAN® DIAMOND Tips		Part Number	Nominal Volume (µL)	Volume Range	Gilson Specifications – Standard PIPET Mode						ISO 8655-2 (Table 1) – REPETITIVE Mode				
						Vol. (µL)	Vol. (%)	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Volume Range	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
P10M	D10 DL10	DF10ST DFL10ST	**F81040**	10	0.5–10 µL	0.5 1 5 10	5.0 10 50 100	± 0.040 ± 0.025 ± 0.060 ± 0.080	≤ 0.013 ≤ 0.012 ≤ 0.020 ≤ 0.025	± 8.0 ± 2.5 ± 1.2 ± 0.8	≤ 2.6 ≤ 1.2 ≤ 0.4 ≤ 0.25	0.5–10 µL	N/A ± 0.120 ± 0.120 ± 0.120	N/A ≤ 0.080 ≤ 0.080 ≤ 0.080	N/A ± 12 ± 2.4 ± 1.2	N/A ≤ 8.0 ≤ 1.6 ≤ 0.8
P20M	D200	DF30ST	**F81041**	20	2–20 µL	2 10 20	10 50 100	± 0.075 ± 0.10 ± 0.15	≤ 0.025 ≤ 0.035 ≤ 0.050	± 3.75 ± 1.0 ± 0.75	≤ 1.25 ≤ 0.35 ≤ 0.25	2–20 µL	± 0.20 ± 0.20 ± 0.20	≤ 0.100 ≤ 0.100 ≤ 0.100	± 10 ± 2.0 ± 1.0	≤ 5.0 ≤ 1.0 ≤ 0.5
P100M	D200	DF100ST	**F81042**	100	5–100 µL	5 10 50 100	5.0 10 50 100	± 0.35 ± 0.30 ± 0.38 ± 0.40	≤ 0.10 ≤ 0.10 ≤ 0.12 ≤ 0.15	± 7.0 ± 3.0 ± 0.76 ± 0.4	≤ 2.0 ≤ 1.0 ≤ 0.24 ≤ 0.15	5–100 µL	N/A ± 0.80 ± 0.80 ± 0.80	N/A ≤ 0.300 ≤ 0.300 ≤ 0.300	N/A ± 8.0 ± 1.6 ± 0.80	N/A ≤ 3.0 ≤ 0.60 ≤ 0.30
P200M	D200 D300	DF200ST DF300ST	**F81043**	200	20–200 µL	20 100 200	10 50 100	± 0.40 ± 0.80 ± 1.00	≤ 0.15 ≤ 0.22 ≤ 0.26	± 2.0 ± 0.8 ± 0.5	≤ 0.75 ≤ 0.22 ≤ 0.13	5–200 µL	± 1.60 ± 1.60 ± 1.60	≤ 0.600 ≤ 0.600 ≤ 0.600	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P300M	D200 D300	DF200ST DF300ST	**F81044**	300	20–300 µL	20 30 150 300	6.7 10 50 100	± 0.80 ± 0.70 ± 0.90 ± 1.05	≤ 0.16 ≤ 0.20 ≤ 0.23 ≤ 0.30	± 4.0 ± 2.333 ± 0.6 ± 0.35	≤ 0.8 ≤ 0.667 ≤ 0.153 ≤ 0.1	10–300 µL	N/A ± 2.4 ± 2.4 ± 2.4	N/A ≤ 0.9 ≤ 0.9 ≤ 0.9	N/A ± 8.0 ± 1.6 ± 0.80	N/A ≤ 3.0 ≤ 0.60 ≤ 0.30
P1200M	D1000 D1200	DF1000ST DF1200ST	**F81045**	1200	100–1200 µL	100 120 600 1200	8.3 10 50 100	± 2.5 ± 2.4 ± 3.6 ± 6.0	≤ 0.4 ≤ 0.4 ≤ 0.8 ≤ 1.2	± 2.5 ± 2.0 ± 0.6 ± 0.5	≤ 0.4 ≤ 0.33 ≤ 0.13 ≤ 0.1	20–1200 µL	N/A ± 9.6 ± 9.6 ± 9.6	N/A ≤ 3.6 ≤ 3.6 ≤ 3.6	N/A ± 8.00 ± 1.60 ± 0.80	N/A ≤ 3.0 ≤ 0.6 ≤ 0.30
P5000M	D5000		**F81046**	5000	500–5000 µL	500 2500 5000	10 50 100	± 10 ± 15 ± 25	≤ 2 ≤ 4 ≤ 7	± 2.0 ± 0.6 ± 0.5	≤ 0.4 ≤ 0.16 ≤ 0.14	100–5000 µL	± 40.0 ± 40.0 ± 40.0	≤ 15.0 ≤ 15.0 ≤ 15.0	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P10mLM	D10mL		**F81047**	10000	1–10 mL	1000 5000 10000	10 50 100	± 25 ± 30 ± 50	≤ 4 ≤ 8 ≤ 12	± 2.5 ± 0.6 ± 0.5	≤ 0.4 ≤ 0.16 ≤ 0.12	200 µL–10 mL	± 60.0 ± 60.0 ± 60.0	≤ 30.0 ≤ 30.0 ≤ 30.0	± 6.0 ± 1.2 ± 0.60	≤ 3.0 ≤ 0.60 ≤ 0.30

PIPETMAN® M & PIPETMAN® M CONNECTED MULTICHANNEL

Model	PIPETMAN® DIAMOND Tips		Part Number	Nominal Volume (µL)	Volume Range	Gilson Specifications – Standard PIPET Mode						ISO 8655-2 (Table 2) – REPETITIVE Mode				
						Vol. (µL)	Vol. (%)	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Volume Range	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
P8x10M P12x10M	D10 DL10	DF10ST DFL10ST	**F81048** **F81049**	10	0.5–10 µL	0.5 1 5 10	5.0 10 50 100	± 0.05 ± 0.04 ± 0.08 ± 0.1	≤ 0.02 ≤ 0.02 ≤ 0.04 ≤ 0.06	± 10.0 ± 4.0 ± 1.6 ± 1.0	4.0 2.0 0.8 0.6	0.5–10 µL	N/A ± 0.24 ± 0.24 ± 0.24	N/A ≤ 0.16 ≤ 0.16 ≤ 0.16	N/A ± 24 ± 4.8 ± 2.4	N/A 1 ≤ 6 ≤ 3.2 ≤ 1.6
P8x20M P12x20M	DL10 D200	DFL10ST DF30ST	**F81050** **F81051**	20	1–20 µL	1 2 10 20	5.0 10 50 100	± 0.08 ± 0.09 ± 0.15 ± 0.25	≤ 0.05 ≤ 0.06 ≤ 0.10 ≤ 0.12	± 8.0 ± 4.5 ± 1.5 ± 1.25	≤ 5.0 ≤ 3.0 ≤ 1.0 ≤ 0.6	1–20 µL	N/A ± 0.40 ± 0.40 ± 0.40	N/A ≤ 0.20 ≤ 0.20 ≤ 0.20	N/A ± 20 ± 4.0 ± 2.0	N/A ≤ 10 ≤ 2.0 ≤ 1.0
P8x100M P12x100M	D200	DF100ST	**F81052** **F81053**	100	10–100 µL	10 50 100	10 50 100	± 0.25 ± 0.50 ± 0.80	≤ 0.14 ≤ 0.20 ≤ 0.25	± 2.5 ± 1.0 ± 0.8	≤ 1.4 ≤ 0.4 ≤ 0.25	5–100 µL	± 1.60 ± 1.60 ± 1.60	≤ 0.60 ≤ 0.60 ≤ 0.60	± 16 ± 3.2 ± 1.6	≤ 6.0 ≤ 1.2 ≤ 0.60
P8x200M P12x200M	D200 D300	DF100ST DF200ST DF300T	**F81054** **F81055**	200	20–200 µL	20 100 200	10 50 100	± 0.50 ± 1.00 ± 2.00	≤ 0.16 ≤ 0.30 ≤ 0.50	± 2.5 ± 1.0 ± 1.0	≤ 0.8 ≤ 0.3 ≤ 0.25	5–200 µL	± 3.20 ± 3.20 ± 3.20	≤ 1.20 ≤ 1.20 ≤ 1.20	± 16 ± 3.2 ± 1.6	≤ 6.0 ≤ 1.2 ≤ 0.60
P8x300M P12x300M	D200 D300	DF200ST DF300ST	**F81056** **F81057**	300	10–300 µL	10 30 150 300	3.3 10 50 100	± 1.00 ± 1.00 ± 1.50 ± 2.40	≤ 0.18 ≤ 0.18 ≤ 0.375 ≤ 0.45	± 10.0 ± 3.33 ± 1.0 ± 0.8	≤ 1.8 ≤ 0.6 ≤ 0.25 ≤ 0.15	10–300 µL	N/A ± 4.8 ± 4.8 ± 4.8	N/A ≤ 1.8 ≤ 1.8 ≤ 1.8	N/A ± 16 ± 3.2 ± 1.6	N/A ≤ 6.0 ≤ 1.2 ≤ 0.60
P8x1200M P12x1200M	D1200	DF1200ST	**F81058** **F81059**	1200	50–1200 µL	50 120 600 1200	4.2 10 50 100	± 4.0 ± 4.0 ± 6.0 ± 9.6	≤ 0.7 ≤ 0.7 ≤ 1.5 ≤ 1.8	± 8.0 ± 3.33 ± 1.0 ± 0.8	≤ 1.4 ≤ 0.58 ≤ 0.25 ≤ 0.15	50–1200 µL	N/A ± 19.2 ± 19.2 ± 19.2	N/A ≤ 7.2 ≤ 7.2 ≤ 7.2	N/A ± 16 ± 3.20 ± 1.6	N/A ≤ 6.0 ≤ 1.2 ≤ 0.60

*CV means Coefficient of Variation (%)

Gilson maximum permissible errors are guaranteed only when PIPETMAN® pipettes are used with the recommended PIPETMAN® DIAMOND Tips.
Under these conditions. Gilson volumetric specifications in standard pipetting (PIPET Mode) are guaranteed with a performance exceeding ISO 8655-2 recommendations for this Mode. In the absence of ISO recommendations for repetitive pipetting Mode for air displacement pipettes. Gilson volumetric specifications for repetitive pipetting (REPETITIVE Mode) are guaranteed within ISO 8655-2 recommendations for standard pipetting (Cf. ISO 8655-2 table 1).

DOWNLOADED BY DUTSCHER SAS

GILSON PIPETTE SPECIFICATIONS

SYSTEMATIC ERROR = ACCURACY
RANDOM ERROR = REPEATABILITY

MyPIPETMAN® SINGLE CHANNEL

Model	PIPETMAN® DIAMOND Tips		Nominal Volume (µL)	Volume (µL)	Volume (%)	Maximum Permissible Errors							
						Gilson				ISO 8655-2 (Table 1)			
						Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
MyPIPETMAN P2	D10 DL10	DF10ST DFL10ST	2	0.2 0.5 1 2	10 25 50 100	± 0.024 ± 0.025 ± 0.025 ± 0.030	≤ 0.012 ≤ 0.012 ≤ 0.012 ≤ 0.014	± 12.0 ± 5.0 ± 2.5 ± 1.5	≤ 6.0 ≤ 2.4 ≤ 1.2 ≤ 0.7	± 0.050 ± 0.050 ± 0.050 ± 0.050	≤ 0.040 ≤ 0.040 ≤ 0.040 ≤ 0.040	± 25 ± 10 ± 5.0 ± 2.5	≤ 20 ≤ 8 ≤ 4.0 ≤ 2.0
MyPIPETMAN P10	D10 DL10	DF10ST DFL10ST	10	1 5 10	10 50 100	± 0.025 ± 0.075 ± 0.100	≤ 0.012 ≤ 0.030 ≤ 0.040	± 2.5 ± 1.5 ± 1.0	≤ 1.2 ≤ 0.6 ≤ 0.4	± 0.120 ± 0.120 ± 0.120	≤ 0.080 ≤ 0.080 ≤ 0.080	± 12 ± 2.4 ± 1.2	≤ 8.0 ≤ 1.6 ≤ 0.8
MyPIPETMAN P20	D200	DF30ST	20	2 10 20	10 50 100	± 0.10 ± 0.10 ± 0.20	≤ 0.030 ≤ 0.050 ≤ 0.060	± 5.0 ± 1.0 ± 1.0	≤ 1.5 ≤ 0.5 ≤ 0.3	± 0.20 ± 0.20 ± 0.20	≤ 0.100 ≤ 0.100 ≤ 0.100	± 10 ± 2.0 ± 1.0	≤ 5.0 ≤ 1.0 ≤ 0.5
MyPIPETMAN P100	D200	DF100ST	100	10 50 100	10 50 100	± 0.35 ± 0.40 ± 0.80	≤ 0.10 ≤ 0.12 ≤ 0.15	± 3.5 ± 0.8 ± 0.8	≤ 1.0 ≤ 0.24 ≤ 0.15	± 0.80 ± 0.80 ± 0.80	≤ 0.300 ≤ 0.300 ≤ 0.300	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
MyPIPETMAN P200	D200 D300	DF200ST DF300ST	200	20 100 200	10 50 100	± 0.50 ± 0.80 ± 1.60	≤ 0.20 ≤ 0.25 ≤ 0.30	± 2.5 ± 0.8 ± 0.8	≤ 1.0 ≤ 0.25 ≤ 0.15	± 1.60 ± 1.60 ± 1.60	≤ 0.600 ≤ 0.600 ≤ 0.600	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
MyPIPETMAN P1000	D1000 D1200	DF1000ST DF1200ST	1000	100 500 1000	10 50 100	± 3.0 ± 4.0 ± 8.0	≤ 0.6 ≤ 1.0 ≤ 1.5	± 3.0 ± 0.8 ± 0.8	≤ 0.6 ≤ 0.2 ≤ 0.15	± 8.0 ± 8.0 ± 8.0	≤ 3.0 ≤ 3.0 ≤ 3.0	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
MyPIPETMAN P5000	D5000		5000	500 2500 5000	10 50 100	± 12 ± 15 ± 30	≤ 3 ≤ 5 ≤ 8	± 2.4 ± 0.6 ± 0.6	≤ 0.6 ≤ 0.2 ≤ 0.16	± 40.0 ± 40.0 ± 40.0	≤ 15.0 ≤ 15.0 ≤ 15.0	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
MyPIPETMAN P10mL	D10mL		10000	1000 5000 10000	10 50 100	± 30 ± 40 ± 60	≤ 6 ≤ 10 ≤ 16	± 3.0 ± 0.8 ± 0.6	≤ 0.6 ≤ 0.2 ≤ 0.16	± 60.0 ± 60.0 ± 60.0	≤ 30.0 ≤ 30.0 ≤ 30.0	± 6.0 ± 1.2 ± 0.60	≤ 3.0 ≤ 0.60 ≤ 0.30

MyPIPETMAN® MULTICHANNEL

Model	PIPETMAN® DIAMOND Tips		Nominal Volume (µL)	Volume (µL)	Volume (%)	Maximum Permissible Errors							
						Gilson				ISO 8655-2 (Table 2)			
						Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
MyPIPETMAN P8x10 MyPIPETMAN P12x10	D10 DL10	DF10ST DFL10ST	10	0.5 1 5 10	5.0 10 50 100	± 0.08 ± 0.08 ± 0.20 ± 0.20	≤ 0.04 ≤ 0.05 ≤ 0.10 ≤ 0.10	± 16.0 ± 8.0 ± 4.0 ± 2.0	≤ 8.0 ≤ 5.0 ≤ 2.0 ≤ 1.0	N/A ± 0.24 ± 0.24 ± 0.24	N/A ≤ 0.16 ≤ 0.16 ≤ 0.16	N/A ± 24 ± 4.8 ± 2.4	N/A ≤ 16 ≤ 3.2 ≤ 1.6
MyPIPETMAN P8x20 MyPIPETMAN P12x20	DL10 D200	DFL10ST DF30ST	20	2 10 20	10 50 100	± 0.10 ± 0.20 ± 0.40	≤ 0.08 ≤ 0.10 ≤ 0.20	± 5.0 ± 2.0 ± 2.0	≤ 4.0 ≤ 1.0 ≤ 1.0	± 0.40 ± 0.40 ± 0.4 0	≤ 0.20 ≤ 0.20 ≤ 0.20	± 20 ± 4.0 ± 2.0	≤ 10 ≤ 2.0 ≤ 1.0
MyPIPETMAN P8x200 MyPIPETMAN P12x200	D200 D300	DF200ST DF300ST	200	20 100 200	10 50 100	± 0.50 ± 1.00 ± 2.00	≤ 0.25 ≤ 0.40 ≤ 0.50	± 2.5 ± 1.0 ± 1.0	≤ 1.25 ≤ 0.40 ≤ 0.25	± 3.20 ± 3.20 ± 3.20	≤ 1.20 ≤ 1.20 ≤ 1.20	± 16 ± 3.2 ± 1.6	≤ 6.0 ≤ 1.2 ≤ 0.60
MyPIPETMAN P8x300 MyPIPETMAN P12x300	D200 D300	DF200ST DF300ST	300	20 30 150 300	6.7 10 50 100	± 1.00 ± 1.00 ± 1.50 ± 3.00	≤ 0.35 ≤ 0.35 ≤ 0.60 ≤ 1.00	± 5.0 ± 3.33 ± 1.0 ± 1.0	≤ 1.75 ≤ 1.17 ≤ 0.4 ≤ 0.33	N/A ± 4.8 ± 4.8 ± 4.8	N/A ≤ 1.8 ≤ 1.8 ≤ 1.8	N/A ± 16 ± 3.2 ± 1.6	N/A ≤ 6.0 ≤ 1.2 ≤ 0.60

*CV means Coefficient of Variation (%)
Gilson maximum permissible errors are guaranteed only when PIPETMAN® pipettes are used with the recommended PIPETMAN® DIAMOND Tips.

NOTE The data given in this table conform to the ISO 8655-2 standard. With a precise pipetting technique, the P2 model can be used to aspirate volumes as low as 0.1 µL and the P10 model as low as 0.5 µL.

DOMINIQUE DUTSCHER SAS

GILSON PIPETTE SPECIFICATIONS

SYSTEMATIC ERROR = ACCURACY
RANDOM ERROR = REPEATABILITY

PIPETMAN® L SINGLE CHANNEL—VARIABLE VOLUME

Model	PIPETMAN® DIAMOND Tips		Part Number		Nominal Volume (µL)	Volume (µL)	Volume (%)	Maximum Permissible Errors							
								Gilson				ISO 8655-2 (Table 1)			
			With Stainless Steel Ejector	With Plastic Ejector				Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
P2L	D10 DL10	DF10ST DFL10ST	FA10001M	FA10001P	2	0.2 0.5 1 2	10 25 50 100	± 0.024 ± 0.025 ± 0.027 ± 0.030	≤ 0.012 ≤ 0.012 ≤ 0.013 ≤ 0.014	± 12.0 ± 5.0 ± 2.7 ± 1.5	≤ 6.0 ≤ 2.4 ≤ 1.3 ≤ 0.7	± 0.050 ± 0.050 ± 0.050 ± 0.050	≤ 0.040 ≤ 0.040 ≤ 0.040 ≤ 0.040	± 25 ± 10 ± 5.0 ± 2.5	≤ 20 ≤ 8 ≤ 4.0 ≤ 2.0
P10L	D10 DL10	DF10ST DFL10ST	FA10002M	FA10002P	10	0.5 1 5 10	5 10 50 100	± 0.040 ± 0.025 ± 0.075 ± 0.100	≤ 0.016 ≤ 0.012 ≤ 0.030 ≤ 0.040	± 8.0 ± 2.5 ± 1.5 ± 1.0	≤ 3.2 ≤ 1.2 ≤ 0.6 ≤ 0.4	N/A ± 0.120 ± 0.120 ± 0.120	N/A ≤ 0.080 ≤ 0.080 ≤ 0.080	N/A ± 12 ± 2.4 ± 1.2	N/A ≤ 8.0 ≤ 1.6 ≤ 0.8
P20L	D200	DF30ST	FA10003M	FA10003P	20	2 10 20	10 50 100	± 0.10 ± 0.10 ± 0.20	≤ 0.030 ≤ 0.050 ≤ 0.060	± 5.0 ± 1.0 ± 1.0	≤ 1.5 ≤ 0.5 ≤ 0.3	± 0.20 ± 0.20 ± 0.20	≤ 0.100 ≤ 0.100 ≤ 0.100	± 10 ± 2.0 ± 1.0	≤ 5.0 ≤ 1.0 ≤ 0.5
P100L	D200	DF100ST	FA10004M	FA10004P	100	10 50 100	10 50 100	± 0.35 ± 0.40 ± 0.80	≤ 0.10 ≤ 0.12 ≤ 0.15	± 3.5 ± 0.8 ± 0.8	≤ 1.0 ≤ 0.24 ≤ 0.15	± 0.80 ± 0.80 ± 0.80	≤ 0.300 ≤ 0.300 ≤ 0.300	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P200L	D200 D300	DF200ST DF300ST	FA10005M	FA10005P	200	20 100 200	10 50 100	± 0.50 ± 0.80 ± 1.60	≤ 0.20 ≤ 0.25 ≤ 0.30	± 2.5 ± 0.8 ± 0.8	≤ 1.0 ≤ 0.25 ≤ 0.15	± 1.60 ± 1.60 ± 1.60	≤ 0.600 ≤ 0.600 ≤ 0.600	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P1000L	D1000 D1200	DF1000ST DF1200ST	FA10006M	FA10006P	1000	100 500 1000	10 50 100	± 3.0 ± 4.0 ± 8.0	≤ 0.6 ≤ 1.0 ≤ 1.5	± 3.0 ± 0.8 ± 0.8	≤ 0.6 ≤ 0.2 ≤ 0.15	± 8.0 ± 8.0 ± 8.0	≤ 3.0 ≤ 3.0 ≤ 3.0	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P5000L	D5000		FA10007		5000	500 2500 5000	10 50 100	± 12 ± 15 ± 30	≤ 3 ≤ 5 ≤ 8	± 2.4 ± 0.6 ± 0.6	≤ 0.6 ≤ 0.2 ≤ 0.16	± 40.0 ± 40.0 ± 40.0	≤ 15.0 ≤ 15.0 ≤ 15.0	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P10mLL	D10mL		FA10008		10000	1000 5000 10000	10 50 100	± 30 ± 40 ± 60	≤ 6 ≤ 10 ≤ 16	± 3.0 ± 0.8 ± 0.6	≤ 0.6 ≤ 0.2 ≤ 0.16	± 60.0 ± 60.0 ± 60.0	≤ 30.0 ≤ 30.0 ≤ 30.0	± 6.0 ± 1.2 ± 0.60	≤ 3.0 ≤ 0.60 ≤ 0.30

PIPETMAN® L MULTICHANNEL

Model	PIPETMAN® DIAMOND Tips		Part Number	Nominal Volume (µL)	Volume (µL)	Volume (%)	Maximum Permissible Errors							
							Gilson				ISO 8655-2 (Table 2)			
							Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
P8x10L	D10 DL10	DF10ST DFL10ST	FA10013	10	0.5 1 5 10	5.0 10 50 100	± 0.08 ± 0.08 ± 0.20 ± 0.20	≤ 0.04 ≤ 0.05 ≤ 0.10 ≤ 0.10	± 16.0 ± 8.0 ± 4.0 ± 2.0	≤ 8.0 ≤ 5.0 ≤ 2.0 ≤ 1.0	N/A ± 0.24 ± 0.24 ± 0.24	N/A ≤ 0.16 ≤ 0.16 ≤ 0.16	N/A ± 24 ± 4.8 ± 2.4	N/A ≤ 16 ≤ 3.2 ≤ 1.6
P12x10L			FA10014											
P8x20L	DL10 D200	DFL10ST DF30ST	FA10009	20	2 10 20	10 50 100	± 0.10 ± 0.20 ± 0.40	≤ 0.08 ≤ 0.10 ≤ 0.20	± 5.0 ± 2.0 ± 2.0	≤ 4.0 ≤ 1.0 ≤ 1.0	± 0.40 ± 0.40 ± 0.40	≤ 0.20 ≤ 0.20 ≤ 0.20	± 20 ± 4.0 ± 2.0	≤ 10 ≤ 2.0 ≤ 1.0
P12x20L			FA10010											
P8x200L	D200 D300	DF200ST DF300ST	FA10011	200	20 100 200	10 50 100	± 0.50 ± 1.00 ± 2.00	≤ 0.25 ≤ 0.40 ≤ 0.50	± 2.5 ± 1.0 ± 1.0	≤ 1.25 ≤ 0.4 ≤ 0.25	± 3.20 ± 3.20 ± 3.20	≤ 1.20 ≤ 1.20 ≤ 1.20	± 16 ± 3.2 ± 1.6	≤ 6.0 ≤ 1.2 ≤ 0.60
P12x200L			FA10012											
P8x200LVR	D200 D300	DF200ST DF300ST	FA10035	200	20 100 200	10 50 100	± 0.50 ± 1.00 ± 2.00	≤ 0.25 ≤ 0.40 ≤ 0.50	± 2.5 ± 1.0 ± 1.0	≤ 1.25 ≤ 0.4 ≤ 0.25	± 3.20 ± 3.20 ± 3.20	≤ 1.20 ≤ 1.20 ≤ 1.20	± 16 ± 3.2 ± 1.6	≤ 6.0 ≤ 1.2 ≤ 0.60
P12x200LVR			FA10036											
P8x300L	D200 D300	DF200ST DF300ST	FA10015	300	20 30 150 300	6.7 10 50 100	± 1.00 ± 1.00 ± 1.50 ± 3.00	≤ 0.35 ≤ 0.35 ≤ 0.60 ≤ 1.00	± 5,0 ± 3,33 ± 1.0 ± 1.0	≤ 1.75 ≤ 1.17 ≤ 0.4 ≤ 0.33	N/A ± 4.8 ± 4.8 ± 4.8	N/A ≤ 1.8 ≤ 1.8 ≤ 1.8	N/A ± 16 ± 3.2 ± 1.6	N/A ≤ 6.0 ≤ 1.2 ≤ 0.60
P12x300L			FA10016											
P8x300LVR	D200 D300	DF200ST DF300ST	FA10037	300	20 30 150 300	6.7 10 50 100	± 1.00 ± 1.00 ± 1.50 ± 3.00	≤ 0.35 ≤ 0.35 ≤ 0.60 ≤ 1.00	± 5,0 ± 3,33 ± 1.0 ± 1.0	≤ 1.75 ≤ 1.17 ≤ 0.4 ≤ 0.33	N/A ± 4.8 ± 4.8 ± 4.8	N/A ≤ 1.8 ≤ 1.8 ≤ 1.8	N/A ± 16 ± 3.2 ± 1.6	N/A ≤ 6.0 ≤ 1.2 ≤ 0.60
P12x300LVR			FA10038											
P8x1200L	D1200	DF1200ST	FA10039	1200	100 120 600 1200	8.33 10 50 100	± 6.0 ± 6.0 ± 8.0 ± 10.0	≤ 0.9 ≤ 0.9 ≤ 1.2 ≤ 1.5	± 6.0 ± 5.0 ± 1.33 ± 0.83	≤ 0.9 ≤ 0.75 ≤ 0.2 ≤ 0.13	N/A ± 19.2 ± 19.2 ± 19.2	N/A ≤ 7.2 ≤ 7.2 ≤ 7.2	N/A ± 16 ± 3.2 ± 1.6	N/A ≤ 6.0 ≤ 1.2 ≤ 0.60
P12x1200L			FA10040											

*CV means Coefficient of Variation (%)
Gilson maximum permissible errors are guaranteed only when PIPETMAN® pipettes are used with the recommended PIPETMAN® DIAMOND Tips.
For a pipette with a plastic tip ejector, the part number ends with the letter P.
For a pipette with a stainless steel tip ejector, the part number ends with the letter M.
P5000L and P10mLL are equipped with plastic tip ejectors.

DOMINIQUE DUTSCHER SAS

GILSON PIPETTE SPECIFICATIONS

SYSTEMATIC ERROR = ACCURACY
RANDOM ERROR = REPEATABILITY



PIPETMAN® L FIXED VOLUME

Model	PIPETMAN® DIAMOND Tips		Part Number	Nominal Volume (µL)	Volume (µL)	Volume (%)	Gilson				ISO 8655-2 (Table 1)			
							Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
F1L	D10 DL10	DF10ST DFL10ST	**FA10017**	1	1	100	± 0.020	≤ 0.015	± 2.0	≤ 1.5	± 0.025	≤ 0.020	± 2.5	≤ 2.0
F2L	D10 DL10	DF10ST DFL10ST	**FA10018**	2	2	100	± 0.050	≤ 0.020	± 2.5	≤ 1.0	± 0.050	≤ 0.040	± 2.5	≤ 2.0
F5L	D10 DL10	DF10ST DFL10ST	**FA10019**	5	5	100	± 0.050	≤ 0.025	± 1.0	≤ 0.5	± 0.125	≤ 0.075	± 2.5	≤ 1.5
F10L	D10 DL10	DF10ST DFL10ST	**FA10020**	10	10	100	± 0.060	≤ 0.030	± 0.6	≤ 0.3	± 0.120	≤ 0.080	± 1.2	≤ 0.8
F20L	D200	DF30ST	**FA10021**	20	20	100	± 0.10	≤ 0.050	± 0.5	≤ 0.25	± 0.20	≤ 0.100	± 1.0	≤ 0.5
F25L	D200	DF30ST	**FA10022**	25	25	100	± 0.20	≤ 0.070	± 0.8	≤ 0.28	± 0.25	≤ 0.125	± 1.0	≤ 0.5
F50L	D200	DF100ST	**FA10023**	50	50	100	± 0.35	≤ 0.120	± 0.7	≤ 0.24	± 0.50	≤ 0.250	± 1.0	≤ 0.5
F100L	D200	DF100ST	**FA10024**	100	100	100	± 0.55	≤ 0.15	± 0.6	≤ 0.15	± 0.80	≤ 0.300	± 0.80	≤ 0.30
F200L	D200	DF200ST	**FA10025**	200	200	100	± 1.2	≤ 0.30	± 0.6	≤ 0.15	± 1.60	≤ 0.600	± 0.80	≤ 0.30
F250L	D300	DF300ST	**FA10026**	250	250	100	± 1.5	≤ 0.75	± 0.6	≤ 0.30	± 2.0	≤ 0.75	± 0.80	≤ 0.30
F300L	D1000	DF1000ST	**FA10027**	300	300	100	± 2.40	≤ 0.50	± 0.8	≤ 0.17	± 2.4	≤ 0.9	± 0.80	≤ 0.30
F400L	D1000	DF1000ST	**FA10028**	400	400	100	± 2.40	≤ 0.80	± 0.6	≤ 0.2	± 3.2	≤ 1.2	± 0.80	≤ 0.30
F500L	D1000	DF1000ST	**FA10029**	500	500	100	± 3.00	≤ 0.80	± 0.6	≤ 0.16	± 4.0	≤ 1.5	± 0.80	≤ 0.30
F1000L	D1000	DF1000ST	**FA10030**	1000	1000	100	± 5.0	≤ 1.3	± 0.5	≤ 0.13	± 8.0	≤ 3.0	± 0.80	≤ 0.30
F5000L	D5000		**FA10031**	5000	5000	100	± 20	≤ 7	± 0.4	≤ 0.14	± 40.0	≤ 15.0	± 0.80	≤ 0.30

*CV means Coefficient of Variation (%)

DOMINIQUE DUTSCHER SAS

GILSON PIPETTE SPECIFICATIONS

SYSTEMATIC ERROR = ACCURACY
RANDOM ERROR = REPEATABILITY

PIPETMAN® SINGLE CHANNEL

Model	PIPETMAN® DIAMOND Tips		Part Number	Nominal Volume (µL)	Volume (µL)	Volume (%)	Maximum Permissible Errors							
							Gilson				ISO 8655-2 (Table 1)			
							Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
P2	D10 DL10	DF10ST DFL10ST	F144054M	2	0.2 0.5 1 2	10 25 50 100	± 0.024 ± 0.025 ± 0.025 ± 0.030	≤ 0.012 ≤ 0.012 ≤ 0.012 ≤ 0.014	± 12.0 ± 5.0 ± 2.5 ± 1.5	≤ 6.0 ≤ 2.4 ≤ 1.2 ≤ 0.7	± 0.050 ± 0.050 ± 0.050 ± 0.050	≤ 0.040 ≤ 0.040 ≤ 0.040 ≤ 0.040	± 25 ± 10 ± 5.0 ± 2.5	≤ 20 ≤ 8 ≤ 4.0 ≤ 2.0
P10**	D10 DL10	DF10ST DFL10ST	F144055M	10	1 5 10	10 50 100	± 0.025 ± 0.075 ± 0.100	≤ 0.012 ≤ 0.030 ≤ 0.040	± 2.5 ± 1.5 ± 1.0	≤ 1.2 ≤ 0.6 ≤ 0.4	± 0.120 ± 0.120 ± 0.120	≤ 0.080 ≤ 0.080 ≤ 0.080	± 12 ± 2.4 ± 1.2	≤ 8.0 ≤ 1.6 ≤ 0.8
P20	D200	DF30ST	F144056M	20	2 5 10 20	10 25 50 100	± 0.10 ± 0.10 ± 0.10 ± 0.20	≤ 0.030 ≤ 0.040 ≤ 0.050 ≤ 0.060	± 5.0 ± 2.0 ± 1.0 ± 1.0	≤ 1.5 ≤ 0.8 ≤ 0.5 ≤ 0.3	± 0.20 ± 0.20 ± 0.20 ± 0.20	≤ 0.100 ≤ 0.100 ≤ 0.100 ≤ 0.100	± 10 ± 4.0 ± 2.0 ± 1.0	≤ 5.0 ≤ 2.0 ≤ 1.0 ≤ 0.5
P100	D200	DF100ST	F144057M	100	10 50 100	10 50 100	± 0.35 ± 0.40 ± 0.80	≤ 0.10 ≤ 0.12 ≤ 0.15	± 3.5 ± 0.8 ± 0.8	≤ 1.0 ≤ 0.24 ≤ 0.15	± 0.80 ± 0.80 ± 0.80	≤ 0.300 ≤ 0.300 ≤ 0.300	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P200	D200 D300	DF200ST DF300ST	F144058M	200	20 100 200	10 50 100	± 0.50 ± 0.80 ± 1.60	≤ 0.20 ≤ 0.25 ≤ 0.30	± 2.5 ± 0.8 ± 0.8	≤ 1.0 ≤ 0.25 ≤ 0.15	± 1.60 ± 1.60 ± 1.60	≤ 0.600 ≤ 0.600 ≤ 0.600	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P1000	D1000 D1200	DF1000ST DF1200ST	F144059M	1000	100 500 1000	10 50 100	± 3.0 ± 4.0 ± 8.0	≤ 0.6 ≤ 1.0 ≤ 1.5	± 3.0 ± 0.8 ± 0.8	≤ 0.6 ≤ 0.2 ≤ 0.15	± 8.0 ± 8.0 ± 8.0	≤ 3.0 ≤ 3.0 ≤ 3.0	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P5000***	D5000		F144066	5000	500 2500 5000	10 50 100	± 12 ± 15 ± 30	≤ 3 ≤ 5 ≤ 8	± 2.4 ± 0.6 ± 0.6	≤ 0.6 ≤ 0.2 ≤ 0.16	± 40.0 ± 40.0 ± 40.0	≤ 15.0 ≤ 15.0 ≤ 15.0	± 8.0 ± 1.6 ± 0.80	≤ 3.0 ≤ 0.60 ≤ 0.30
P10mL***	D10mL		F144067	10000	1000 5000 10000	10 50 100	± 30 ± 40 ± 60	≤ 6 ≤ 10 ≤ 16	± 3.0 ± 0.8 ± 0.6	≤ 0.6 ≤ 0.2 ≤ 0.16	± 60.0 ± 60.0 ± 60.0	≤ 30.0 ≤ 30.0 ≤ 30.0	± 6.0 ± 1.2 ± 0.60	≤ 3.0 ≤ 0.60 ≤ 0.30

PIPETMAN® MULTICHANNEL

Model	PIPETMAN® DIAMOND Tips		Part Number	Nominal Volume (µL)	Volume (µL)	Volume (%)	Maximum Permissible Errors							
							Gilson				ISO 8655-2 (Table 2)			
							Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
P8x10	D10 DL10	DF10ST DFL10ST	F144068	10	1 5 10	10 50 100	± 0.08 ± 0.20 ± 0.20	≤ 0.05 ≤ 0.10 ≤ 0.10	± 8.0 ± 4.0 ± 2.0	≤ 5.0 ≤ 2.0 ≤ 1.0	± 0.24 ± 0.24 ± 0.24	≤ 0.16 ≤ 0.16 ≤ 0.16	± 24 ± 4.8 ± 2.4	≤ 16 ≤ 3.2 ≤ 1.6
P12x10			F144069											
P8x20	DL10 D200	DFL10ST DF30ST	F144070	20	2 10 20	10 50 100	± 0.10 ± 0.20 ± 0.40	≤ 0.08 ≤ 0.10 ≤ 0.20	± 5.0 ± 2.0 ± 2.0	≤ 4.0 ≤ 1.0 ≤ 1.0	± 0.40 ± 0.40 ± 0.40	≤ 0.20 ≤ 0.20 ≤ 0.20	± 20 ± 4.0 ± 2.0	≤ 10 ≤ 2.0 ≤ 1.0
P12x20			F144071											
P8x200	D200 D300	DF200ST DF300ST	F144072	200	20 100 200	10 50 100	± 0.50 ± 1.00 ± 2.00	≤ 0.25 ≤ 0.40 ≤ 0.50	± 2.5 ± 1.0 ± 1.0	≤ 1.25 ≤ 0.40 ≤ 0.25	± 3.20 ± 3.20 ± 3.20	≤ 1.20 ≤ 1.20 ≤ 1.20	± 16 ± 3.2 ± 1.6	≤ 6.0 ≤ 1.2 ≤ 0.60
P12x200			F144073											
P8x300	D200 D300	DF200ST DF300ST	F144074	300	30 150 300	10 50 100	± 1.00 ± 1.50 ± 3.00	≤ 0.35 ≤ 0.60 ≤ 1 .00	± 3.33 ± 1.0 ± 1.0	≤ 1.17 ≤ 0.4 ≤ 0.33	± 4.8 ± 4.8 ± 4.8	≤ 1.8 ≤ 1.8 ≤ 1.8	± 16 ± 3.2 ± 1.6	≤ 6.0 ≤ 1.2 ≤ 0.60
P12x300			F144075											

*CV means Coefficient of Variation (%)
Gilson maximum permissible errors are guaranteed only when PIPETMAN® pipettes are used with the recommended PIPETMAN® DIAMOND Tips.
**P10 model can be used up to 0.5 µL.
***P5000 and P10mL do not have tip ejectors.

DOMINIQUE DUTSCHER SAS

GILSON PIPETTE SPECIFICATIONS

SYSTEMATIC ERROR = ACCURACY
RANDOM ERROR = REPEATABILITY

MICROMAN® E

	Model	Capillary Piston	Part Number	Nominal Volume (µL)	Volume (µL)	Volume (%)	Maximum Permissible Errors							
							Gilson				ISO 8655-2 (Table 3)			
							Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
	M10E	CP10 CP10ST	**FD10001**	10	1 5 10	10 50 100	± 0.090 ± 0.100 ± 0.150	≤ 0.030 ≤ 0.030 ≤ 0.060	± 9.0 ± 2.0 ± 1.5	≤ 3.00 ≤ 0.60 ≤ 0.60	± 0.200 ± 0.200 ± 0.200	≤ 0.100 ≤ 0.100 ≤ 0.100	± 20 ± 4.0 ± 2.0	≤ 10 ≤ 2.0 ≤ 1.0
	M25E	CP25 CP25ST	**FD10002**	25	3 10 25	12.0 40.0 100	± 0.25 ± 0.27 ± 0.30	≤ 0.080 ≤ 0.080 ≤ 0.100	± 8.3 ± 2.7 ± 1.2	≤ 2.67 ≤ 0.80 ≤ 0.40	± 0.35 ± 0.35 ± 0.35	≤ 0.15 ≤ 0.15 ≤ 0.15	± 11.67 ± 3.5 ± 1.4	≤ 5.0 ≤ 1.5 ≤ 0.60
	M50E	CP50 CP50ST	**FD10003**	50	20 50	40.0 100	± 0.34 ± 0.70	≤ 0.20 ≤ 0.30	± 1.7 ± 1.4	≤ 1.00 ≤ 0.60	± 0.70 ± 0.70	≤ 0.30 ≤ 0.30	± 3.5 ± 1.4	≤ 1.5 ≤ 0.60
	M100E	CP100 CP100ST	**FD10004**	100	10 50 100	10 50 100	± 0.50 ± 0.75 ± 1.00	≤ 0.20 ≤ 0.30 ≤ 0.40	± 5.0 ± 1.5 ± 1.0	≤ 2.00 ≤ 0.60 ≤ 0.40	± 1.4 ± 1.4 ± 1.4	≤ 0.6 ≤ 0.6 ≤ 0.6	± 14 ± 2.8 ± 1.4	≤ 6.0 ≤ 1.2 ≤ 0.60
	M250E	CP250 CP250ST	**FD10005**	250	50 100 250	20.0 40.0 100	± 1.50 ± 1.70 ± 2.50	≤ 0.30 ≤ 0.30 ≤ 0.50	± 3.0 ± 1.7 ± 1.0	≤ 0.60 ≤ 0.30 ≤ 0.20	± 3.0 ± 3.0 ± 3.0	≤ 1.0 ≤ 1.0 ≤ 1.0	± 6.0 ± 3.0 ± 1.2	≤ 2.0 ≤ 1.0 ≤ 0.40
	M1000E	CP1000 CP1000ST	**FD10006**	1000	100 500 1000	10 50 100	± 3.0 ± 5.0 ± 8.0	≤ 1.6 ≤ 2.5 ≤ 4.0	± 3.0 ± 1.0 ± 0.8	≤ 1.60 ≤ 0.50 ≤ 0.40	± 12 ± 12 ± 12	≤ 4.0 ≤ 4.0 ≤ 4.0	± 12 ± 2.4 ± 1.2	≤ 4.0 ≤ 0.80 ≤ 0.40

*CV means Coefficient of Variation (%)

DISTRIMAN®

Description	Part Number
DISTRIMAN (1 µL to 1.25 mL)	**F164001**

WITH DISTRITIPS®

DISTRITIPS (Pack of 50)	Aliquot Range	Part Number	Volume (µL)	Volume (%)	Maximum Permissible Errors							
					Gilson				ISO 8655-5 (Table 2)			
					Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
125 µL Micro Micro Pre-Sterile*	1–12.5 µL	**F164100** **F164130**	2 5 10	1.6 4.0 8.0	± 0.1 ± 0.125 ± 0.2	≤ 0.08 ≤ 0.075 ≤ 0.1	± 5.0 ± 2.5 ± 2.0	≤ 4.00 ≤ 1.50 ≤ 1.00	± 0.5 ± 1.25 ± 1.25	≤ 0.5 ≤ 1.25 ≤ 1.25	± 25.0 ± 25.0 ± 12.5	≤ 25.00 ≤ 25.00 ≤ 12.5
1250 µL Mini Mini Pre-Sterile*	10–125 µL	**F164110** **F164140**	20 50 100	1.6 4.0 8.0	± 0.8 ± 1 ± 1	≤ 0.2 ≤ 0.4 ≤ 0.6	± 4.0 ± 2.0 ± 1.0	≤ 1.00 ≤ 0.80 ≤ 0.60	± 5.0 ± 10.0 ± 10.0	≤ 5.0 ≤ 5.0 ≤ 5.0	± 25.0 ± 20.0 ± 10.0	≤ 25.0 ≤ 10.0 ≤ 5.0
12.5 mL Maxi Maxi Pre-Sterile*	0.1–1.25 mL	**F164120** **F164150**	200 500 1000	1.6 4.0 8.0	± 6 ± 7.5 ± 10	≤ 1 ≤ 1.5 ≤ 2.5	± 3.0 ± 1.5 ± 1.0	≤ 0.50 ≤ 0.30 ≤ 0.25	± 50.0 ± 62.5 ± 62.5	≤ 37.5 ≤ 37.5 ≤ 37.5	± 25.0 ± 12.5 ± 6.25	≤ 18.75 ≤ 7.50 ≤ 3.75

CV means Coefficient of Variation (%)

*Pre-sterile refers to sterility assurance level between $SAL10^{-2}$ and $SAL10^{-5}$ (individually wrapped).

DOMINIQUE DUTSCHER SAS

GILSON PIPETTE SPECIFICATIONS

SYSTEMATIC ERROR = ACCURACY
RANDOM ERROR = REPEATABILITY

PLATEMASTER®

Model	PIPETMAN® DIAMOND Tips			Part Number	Nominal Volume (µL)	Volume (µL)	Volume (%)	Maximum Permissible Errors							
								Gilson				ISO 8655-2 (Table 2)			
								Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
P20	D200 DS200**	D200ST DS200ST**	DF100ST DF200ST DFS200ST**	**F110761**	20	0.5 10 20	2.5 50 100	± 0.12 ± 0.12 ± 0.2	≤ 0.1 ≤ 0.1 ≤ 0.18	± 24.0 ± 1.2 ± 1.0	± 20.00 ± 1.00 ± 0.90	N/A ± 0.4 ± 0.4	N/A ≤ 0.2 ≤ 0.2	N/A ± 4 ± 2.0	N/A ≤ 2 ≤ 1.0
P220	D200 DS200* D300	D200ST	DF200ST DFS200ST** DF300ST	**F110762**	220	2 5 20 100 200 220	0.9 2.3 9.1 45.5 90.9 100	± 0.12 ± 0.25 ± 0.4 ± 1 ± 1.6 ± 1.8	≤ 0.15 ≤ 0.175 ≤ 0.3 ≤ 0.8 ≤ 0.8 ≤ 0.8	± 6.0 ± 5.0 ± 2.0 ± 1.0 ± 0.8 ± 0.8	≤ 7.50 ≤ 3.50 ≤ 1.50 ≤ 0.80 ≤ 0.40 ≤ 0.36	N/A N/A N/A ± 3.52 ± 3.52 ± 3.52	N/A N/A N/A ≤ 1.32 ≤ 1.32 ≤ 1.32	N/A N/A N/A ± 3.52 ± 1.76 ± 1.6	N/A N/A N/A ≤ 1.32 ≤ 0.66 ≤ 0.60

*CV means Coefficient of Variation (%)
**Validated for use with 384-well plates

PIPETMAN® M96

Model	PIPETMAN® DIAMOND Tips	Volume Range (µL)		Volume Test Control		GILSON			
		Standard Pipette Mode	Repetitive Mode	(µL)	(%)	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
20	D200	2-20 µL	1-20 µL	2 10 20	10 50 100	± 0.12 ± 0.12 ± 0.20	≤ 0.100 ≤ 0.100 ≤ 0.180	± 6.00 ± 1.20 ± 1.00	≤ 5.0 ≤ 1.0 ≤ 0.9
200	D200	10-200 µL	5-200 µL	20 100 200	10 50 100	± 0.4 ± 1.00 ± 1.60	≤ 0.2 ≤ 0.60 ≤ 0.80	± 2.00 ± 1.00 ± 0.80	≤ 1.25 ≤ 0.60 ≤ 0.40

*CV means Coefficient of Variation (%)

DISPENSMAN®

Model	Part Number	Volume Range (mL)	Scaling (mL)	Nominal Volume (µL)	Volume (%)	Maximum Permissible Errors							
						Gilson				ISO 8655-5 (Table 1)			
						Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (CV)*
DISPENSMAN 2.5 mL	**F110101**	0.25–2.5	0.05	2500	10 50 100	± 12.0 ± 12.0 ± 12.0	≤ 2.0 ≤ 2.0 ≤ 2.0	± 4.8 ± 1.0 ± 0.5	≤ 0.80 ≤ 0.16 ≤ 0.08	± 15.0 ± 15.0 ± 15.0	≤ 5.0 ≤ 5.0 ≤ 5.0	± 6.0 ± 1.2 ± 0.6	≤ 2.0 ≤ 0.4 ≤ 0.2
DISPENSMAN 5.0 mL	**F110102**	0.5–5	0.10	5000	10 50 100	± 30.0 ± 30.0 ± 30.0	≤ 5.0 ≤ 5.0 ≤ 5.0	± 6.0 ± 1.2 ± 0.6	≤ 1.00 ≤ 0.20 ≤ 0.10	± 30.0 ± 30.0 ± 30.0	≤ 10.0 ≤ 10.0 ≤ 10.0	± 6.0 ± 1.2 ± 0.6	≤ 2.0 ≤ 0.4 ≤ 0.2
DISPENSMAN 10 mL	**F110103**	1–10	0.20	10000	10 50 100	± 60.0 ± 60.0 ± 60.0	≤ 10.0 ≤ 10.0 ≤ 10.0	± 6.0 ± 1.2 ± 0.6	≤ 1.00 ≤ 0.20 ≤ 0.10	± 60.0 ± 60.0 ± 60.0	≤ 20.0 ≤ 20.0 ≤ 20.0	± 6.0 ± 1.2 ± 0.6	≤ 2.0 ≤ 0.4 ≤ 0.2
DISPENSMAN 25 mL	**F110104**	2.5–25	0.50	25000	10 50 100	± 150.0 ± 150.0 ± 150.0	≤ 25.0 ≤ 25.0 ≤ 25.0	± 6.0 ± 1.2 ± 0.6	≤ 1.00 ≤ 0.20 ≤ 0.10	± 150.0 ± 150.0 ± 150.0	≤ 50.0 ≤ 50.0 ≤ 50.0	± 6.0 ± 1.2 ± 0.6	≤ 2.0 ≤ 0.4 ≤ 0.2
DISPENSMAN 50 mL	**F110105**	5–50	1.00	50000	10 50 100	± 300.0 ± 300.0 ± 300.0	≤ 50.0 ≤ 50.0 ≤ 50.0	± 6.0 ± 1.2 ± 0.6	≤ 1.00 ≤ 0.20 ≤ 0.10	± 300.0 ± 300.0 ± 300.0	≤ 100.0 ≤ 100.0 ≤ 100.0	± 6.0 ± 1.2 ± 0.6	≤ 2.0 ≤ 0.4 ≤ 0.2

*CV means Coefficient of Variation (%)

DOMINIQUE DUTSCHER SAS