

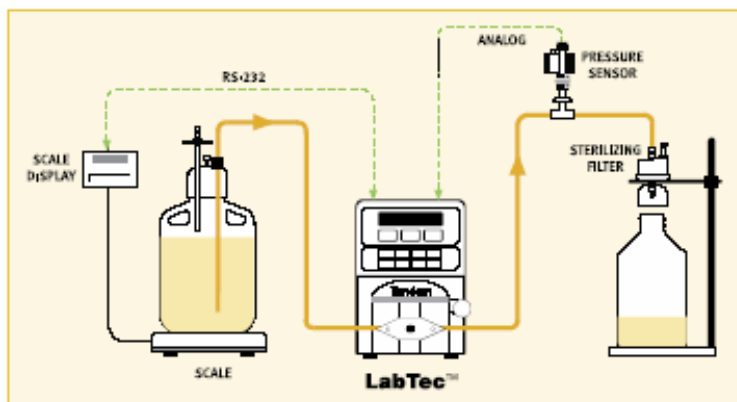
Automated Solution Dispensing & Related Accessories

LabTec Peristaltic Dispensing Pump:

The LabTec Peristaltic Dispensing System automates the dispensing and diluting of samples. The LabTec has three different dispensing capabilities:

Volumetric Dispensing: Programmable batch-volume dispensing, e.g. the LabTec dispenses 10.00 ml in three seconds with a typical precision of better than 1%. Easy to enter and change aliquot sizes.

Weight Dispensing: The LabTec can be interfaced with an electronic balance for dispensing solutions by weight rather than by volume. Dispensing liquids by weight eliminates the need for pump calibrations while, at the same time, providing a level of accuracy and precision.



Weight Ratio Dispensing: The LabTec can be connected to an electronic scale platform to automatically weigh and dilute samples. Example: for a sample weighing 11.0 grams, the LabTec will automatically dispense 99.0 grams of diluent if the user defined weight ratio is set at 9.00. The LabTec will take 15 seconds to weigh the sample and to dispense the diluent; the typical dispensing precision is better than 0.5%.

Advantages:

- Simple setup, fast and easy implementation.
- 10 Different Aliquots or Weight Ratios can be stored and easily retrieved.
- Precise, rapid auto-dispensing of solution by volume, weight or weight ratio.
- In-Line Filter Sterilization available.
- Optional Built-in Pressure Alarm alerts when to change sterilizing filter.
- GLP documentation of each aliquot to printer or to spreadsheet.
- Performance Validation sent with each LabTec.

AUTOCLAVABLE DILUENT SYSTEM:

Autoclavable Diluent System is available with 10 or 20 liter polypropylene carboys. System includes 10 or 20 liter autoclavable carboy with handles and special filling and venting closure with two built-in ¼" hose barbs. One barb is fitted with a sterile venting filter (0.22µ), a second barb is fitted with a six foot section of #24 PharMed tubing to go directly to your LabTec peristaltic dispensing pump.

Minimize Handling & Contamination: The whole system, as well as you diluent, can be sterilized in one step, and can be repeatedly autoclaved. Sterilize pump tubing, carboy, vent filter and diluent solution all at one time. Replace venting filter and pump tubing once every three autoclaves.

Typical Performance:

LabTec Performance Data: Gravimetric Solution Dispensing

Weight Entered	Avg. Dispensed Weight	RSD (%)	Dispensing Time Per Aliquot
200.00 gr	199.95 gr	0.03%	16 Sec
150.00 gr	150.01 gr	0.11%	14 Sec
100.00 gr	100.01 gr	0.11%	13 Sec
50.00 gr	49.96 gr	0.18%	12 Sec
25.00 gr	25.05 gr	0.25%	10 Sec

Note: The above data set was generated with a LabTec CP 200, 600 RPM Motor, Tandem 1082 peristaltic pump head, and #24 (thick-walled) pump tubing. A Mettler PG-5002-S, readability 0.01 gram, was connected to the LabTec.

LabTec Performance Data: High Speed Volumetric Dispensing


Dispensed Volume (ml)	Tubing Size:	Pump Speed:	Slow Factor:	Typical Precision:	Dispensing Time/Aliquot
5.00 ml	#15	100%	2.50 ml	1.7%	2.1 Sec
10.00 ml	#15	100%	2.50 ml	0.5%	2.0 Sec
25.00 ml	#15	100%	2.50 ml	0.20%	2.7 Sec
25.00 ml	#24	100%	4.75 ml	0.15%	2.9 Sec
50.00 ml	#24	100%	4.75 ml	0.50%	3.9 Sec
100.00 ml	#24	100%	4.75 ml	0.35%	6.3 Sec
100.00 ml	#35	100%	5.00 ml	<0.5 %	4.5 Sec
200.00 ml	#35	100%	5.00 ml	<0.5 %	6.0 Sec
450.00 ml	#35	100%	5.00 ml	<0.5 %	12.0 Sec

Note: This performance data was generated with a 600 RPM pump motor and Tandem 1082 peristaltic pump head. The pump tubing was made of Silicone

DOCUMENTATION:

The LabTec generates data for each dispense performed. This data can be captured with a printer, or archived on your PC with HyperTerminal. SciLog's SciDoc Documentation Package can also automatically place that data into a Custom Excel Spreadsheet to simplify your inventory control and GLP documentation:

MT		SC	DV	CV	P1	ST	AL	Aliquot	Error	% Error
8:32:57	1	50.03	50.00	0.0	FINISH		50.00	0.03	0.06	
8:33:04	2	50.02	100.00	0.0	FINISH		50.00	0.02	0.04	
8:33:11	3	50.02	150.10	0.0	FINISH		50.00	0.02	0.04	
8:33:18	4	50.02	200.10	0.0	FINISH		50.00	0.02	0.04	
8:33:25	5	50.04	250.10	0.0	FINISH		50.00	0.04	0.08	
8:33:33	6	50.03	300.20	0.0	FINISH		50.00	0.03	0.06	
8:33:40	7	50.03	350.20	0.0	FINISH		50.00	0.03	0.06	
8:33:47	8	50.03	400.20	0.0	FINISH		50.00	0.03	0.06	
8:33:54	9	50.03	450.20	0.0	FINISH		50.00	0.03	0.06	
8:34:01	10	50.03	500.30	0.0	FINISH		50.00	0.03	0.06	
8:34:08	11	50.03	550.30	0.0	FINISH		50.00	0.03	0.06	
8:34:15	12	50.02	600.30	0.0	FINISH		50.00	0.02	0.04	
8:34:22	13	50.02	650.30	0.0	FINISH		50.00	0.02	0.04	
8:34:29	14	50.03	700.40	0.0	FINISH		50.00	0.03	0.06	
8:34:36	15	50.03	750.40	0.0	FINISH		50.00	0.03	0.06	
8:34:43	16	50.04	800.40	0.0	FINISH		50.00	0.04	0.08	
8:34:51	17	50.03	850.50	0.0	FINISH		50.00	0.03	0.06	
8:34:58	18	50.03	900.50	0.0	FINISH		50.00	0.03	0.06	
8:35:05	19	50.02	950.50	0.0	FINISH		50.00	0.02	0.04	
8:35:12	20	50.03	1000.50	0.0	FINISH		50.00	0.03	0.06	



6/9/4; 08:32 DILU2.30; Volume; Exec 1; Volume set= 50.00ml; Count= 20; Rate= 90.0%; CW; Tubing=15; Units=psi; Alarms:HP=2; Limits; HP=20.0; Slow Factor = 3.00;

Setup Data Sheet Setup Operator Info

Clear Data Volume Dispense Mode

Operator	A Dawson
Date	06/09/2004
Time	08:30
Product Batch Number	123456
Product Description	Distilled Water
Conditions	72F
Target Aliquot Size	50.0 ml
Target Sample Weight	n/a
Target Diluent Weight	n/a
Weight Ratio	n/a
Filter Mfr. / Model Number	n/a
Filter Size / Surface Area	n/a