

## GENERAL DESCRIPTION

Low-flow, accurate peristaltic pumps provide repeatable results across multiple channels. Choose from two speed options with either 8, 12, 16, or 24 channels of synchronous flow. The planetary driven gear technology reduces tubing wear, provides low spallation and longer tubing life when compared to non-driven rollers. The built in roller positioning system ensures dispense repeatability by stopping each dispense at expected intervals. Use with Ismatec® 2-stop tubing sets to suit your flow rate, chemical compatibility, and fluid compliance requirements.



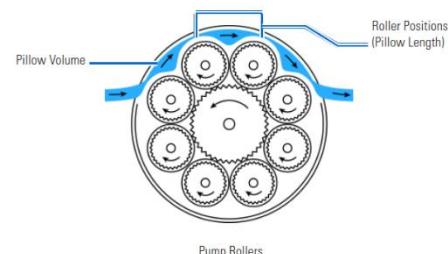
Model MFLX78006-22

## APPLICATION

Ideal for low shear and clean fluid transfer across multiple channels including auto-analysis, cell seeding, multi-reactor studies, protein purification, dissolution testing, drug discovery, research, and process optimization.

## FEATURES & BENEFITS

- 5" capacitive touch screen provides access to multiple features
- Roller positioning feedback system for improved dispense repeatability
- Planetary gear driven rollers create low pulsation and long tubing life
- Save & recall up to 50 programs to speed set-up and reduce errors
- Lock out critical pump settings with 3-Level User Authentication feature
- Variety of remote control options including serial (RS-232), analog, and EtherNet/IP
- Included Click N' Go Cartridges provide automatic occlusion for faster tubing changes while optional pressure lever cassettes provide higher pressure capabilities

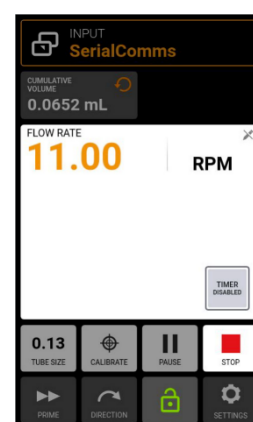
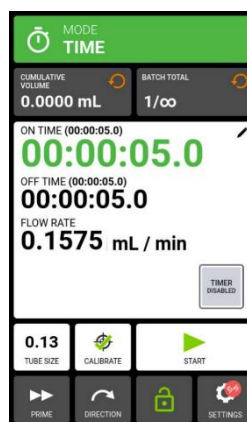
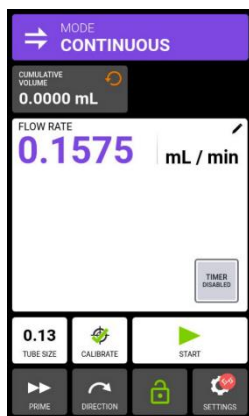


Planetary Gear Driven Rollers

## OPERATION MODES

Select from continuous run, volume dispense, and time dispense modes for local operation - batch control and interval/off time are featured in Volume and Time modes and can be utilized with a foot switch. Remote control options allow for connection to various control system (serial/RS-232, Analog I/O, or EtherNet/IP).

User Interface Screenshots



## SPECIFICATIONS

Series		IPC 11	IPC 45
<b>Performance specifications</b>			
Flow capacity (per channel)		0.0004 to 11 ml/min	0.0016 to 45 ml/min
RPM		0.11 to 11.25	0.4 to 45
Number of channels		Model Specific: 8, 12, 16, or 24 channel	Model Specific: 8, 12, 16, or 24 channel
Number of rollers		8	8
Max pressure		1 Bar (14.7 PSI) with Click N Go Cartridge, 2 Bar (Pressure LVR)	
Max suction lift		>15" in Hg (tubing formulation and size dependent)	
Modes of operation		Continuous, Volume Dispense, Time Dispense, Remote	
Reversible		Yes	
Remote connectivity		EtherNet/IP (RJ45), Serial (RS-232 via 9-pin Sub D or USB-A), Analog I/O (25-pin Sub D)	
External control	Input	0 to 20 mA, 4 to 20 mA, 0 to 10V, 0 to 5 V Start/Stop, Direction (CW/CCW), Prime via contact closure	
	Output	0 to 20 mA, 4 to 20 mA, 0 to 10V to 5 V Tach output 5V TTL pulse, Drive running; Alarm status	
Wireless (WiFi) connectivity		Yes	
Tubing sizes accepted		Ismatec® 2-Stop tubing assemblies (mm inner diameter): 0.13, 0.19, 0.25, 0.38, 0.51, 0.76, 1.02, 1.42, 1.52, 1.85, 2.03, 2.29, 2.79, 3.17	
<b>Electrical specifications</b>			
Voltage VAC (50/60 Hz)		90 to 260 VAC power adaptor (24V DC)	
Current		1.2 A @ 120 VAC; 0.6 A @ 230 VAC	
Motor Type		Brushed PMDC motor	
Display		5-inch capacitive touch screen	
Speed regulation		±1% full scale	
<b>Physical specifications</b>			
Housing material		ABS plastic, anodized aluminum	
Roller materials		Stainless steel rollers and anodized aluminum	
Ingress protection		IP31	
Agency listings		UL, cUL, CE, RoHS	
Tubing Cassettes		POM Click'N'Go cartridges (PVDF & pressure lever cassettes optional accessories)	
Operating temperature		0 to 40°C (32 to 104°F)	
Storage temperature		-25 to 65°C (-13 to 149°F)	
Noise Level		<55 dBA @ 1 m (39")	



## ORDERING INFORMATION

Model (RPM)	Flowrate (per channel)	Number of Channels	Model Number
IPC 45 (0.45 to 45)	0.0016 to 44 ml/min	8	MFLX78006-22
		12	MFLX78006-24
		16	MFLX78006-26
		24	MFLX78006-28
IPC 11 (0.11 to 11.25)	0.0004 to 11 ml/min	8	MFLX78006-42
		12	MFLX78006-44
		16	MFLX78006-46
		24	MFLX78006-48

## DIMENSIONS

Channels	8	12	16	24
Height (H)	7.8 in. (200.5 mm)			
Width (W)	7.6 in. (193 mm)			
Length (L)	13.8 in. (351.2 mm)	15.4 in. (391.2 mm)	16.9 in. (431.2 mm)	20 in. (511.2 mm)
Weight	11.8 lbs (5.4 Kg)	13.4 lbs (6.1 Kg)	14.9 lbs (6.8 Kg)	18 lbs (8.2 KG)



## TUBING OPTIONS (required for complete system)




Using the table below, determine the prefix by locating your desired tubing type and its corresponding model number (for example, MFLX96449). Combine the prefix and suffix for the desired tubing Inner Diameter for a complete Tubing Part Number (for example, -12 becomes MFLX96449-12). Multiple tubing sizes can be used in the same pump at once to create a ratio of different flowrates.

- A length of Two-Stop Tubing is 40.6 cm (16") – for use within the pump head and cartridge.
- A length of Tubing Extension is 15.2 m (50 ft) – for connecting pump tubing to process.

Formulation		Qty	Prefix	0.13	0.19	0.25	0.38	0.51	0.76	1.02	1.42	1.52	1.85	2.03	2.29	2.79	3.17
E-LFL	2-STOP	12	MFLX96449	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-	-	-
	Extension	1	MFLX06449	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
PharMed BPT	2-STOP	12	MFLX95723	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
	Extension	1	MFLX95809	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
Chem-Durance Bio	2-STOP	12	MFLX96327	-	-	-	-14	-18	-24	-	-34	-36	-	-42	-	-	-
	Extension	1	MFLX96329	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
E-Lab	2-STOP	12	MFLX96460	-09	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-49
	Extension	1	MFLX06460	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-49
E-Food	2-STOP	12	MFLX96457	-	-	-12	-	-18	-	-	-34	-	-	-42	-	-48	-
	Extension	1	MFLX06457	-	-10	-12	-	-18	-	-	-34	-	-	-42	-	-48	-
Viton	2-STOP	12	MFLX97628	-	-	-	-	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
	Extension	1	MFLX97632	-	-	-	-	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
Puri-Sil	2-STOP	12	MFLX95422	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
	Extension	1	MFLX95412	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
Puri-Flex	2-STOP	12	MFLX96518	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
	Extension	1	MFLX96418	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
Puri-Prene	2-STOP	12	MFLX05635	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
	Extension	1	MFLX05637	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-
Puri-Clear LL	2-STOP	12	MFLX95663	-09	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-49
	Extension	1	MFLX95679	-09	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-49
Versilon 2001	2-STOP	12	MFLX96465	-	-	-	-14	-	-	-28	-	-36	-	-42	-	-48	-
	Extension	1	MFLX96467	-	-	-	-14	-	-	-28	-	-36	-	-42	-	-48	-
Solva	2-STOP	12	MFLX95606	-09	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-49
	Extension	1	MFLX95712	-	-10	-12	-14	-18	-24	-28	-34	-36	-40	-42	-44	-48	-

## FITTING OPTIONS

### Barb Adapter Fitting

Color-Coded Stops		Tube ID (mm)	Ismatec Size	Ismatec Straight Connectors (Stainless Steel & PETG) 2/PK	Polypropylene Hose Barb (10/pk)
	ORANGE/BLACK	0.13	-9	MFLX34002-09	–
	ORANGE/RED	0.19	-10	MFLX34002-10	–
	ORANGE/BLUE	0.25	-12	MFLX34002-12	–
	ORANGE/GREEN	0.38	-14	MFLX34002-14	–
	ORANGE/YELLOW	0.51	-18	MFLX34002-18	–
	ORANGE/WHITE	0.64	-22	MFLX34002-22	–
	BLACK/BLACK	0.76	-24	MFLX34002-24	–
	ORANGE/ORANGE	0.89	-26	MFLX34002-26	–
	WHITE/WHITE	1.02	-28	–	1/16" Hose Barb MFLX40612-43
	RED/RED	1.14	-30	–	
	GREY/GREY	1.33	-32	–	
	YELLOW/YELLOW	1.42	-34	–	
	YELLOW/BLUE	1.52	-36	–	
	BLUE/BLUE	1.65	-38	–	
	GREEN/GREEN	1.85	-40	–	
	PURPLE/PURPLE	2.03	-42	–	
	PURPLE/BLACK	2.29	-44	–	
	PURPLE/WHITE	2.79	-48	–	1/8" Hose Barb MFLX40612-47
	BLACK/WHITE	3.17	-49	–	

## NOMINAL FLOWRATES

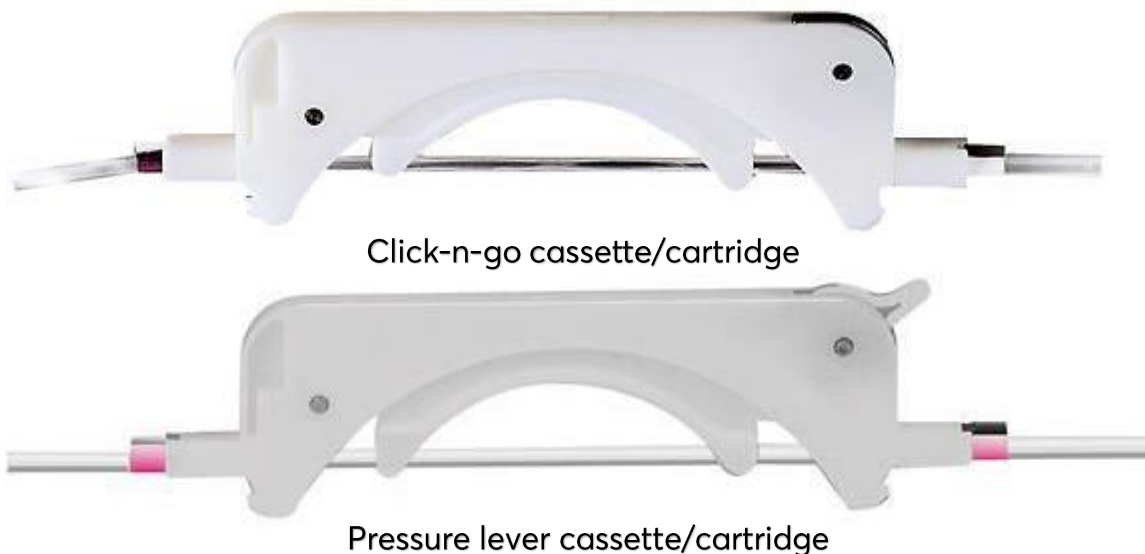
Flowrates by tubing ID (ml/min)		IPC 11		IPC 45	
Tube ID mm	Color-Code	Min	Max	Min	Max
		0.11 RPM	11.25 RPM	0.45 RPM	45 RPM
0.13	orange-black	0.0004	0.040	0.0016	0.16
0.19	orange-red	0.0007	0.068	0.0027	0.27
0.25	orange-blue	0.0010	0.10	0.0041	0.41
0.38	orange-green	0.0022	0.23	0.009	0.90
0.51	orange-yellow	0.0038	0.39	0.016	1.55
0.64	orange-white	0.0058	0.59	0.024	2.37
0.76	black-black	0.0081	0.83	0.033	3.31
0.89	orange-orange	0.011	1.13	0.045	4.50
1.02	white-white	0.014	1.43	0.057	5.73
1.14	red-red	0.017	1.74	0.070	6.95
1.33	grey-grey	0.022	2.25	0.090	9.00
1.42	yellow-yellow	0.026	2.66	0.11	10.6
1.52	yellow-blue	0.030	3.07	0.12	12.3
1.65	blue-blue	0.035	3.58	0.14	14.3
1.85	green-green	0.043	4.40	0.18	17.6
2.03	purple-purple	0.052	5.32	0.21	21.3
2.29	purple-black	0.063	6.44	0.26	25.8
2.79	purple-white	0.089	9.10	0.36	36.4
3.17	black-white	0.11	11.3	0.45	45.0

## PUMP ACCESSORIES

Model	Description
MFLX07523-92	Footswitch for momentary start stop control, 25 pin connector
MFLX78006-90	USB Serial Cable USB-A to USB-A
MFLX22050-54	RS-232 Serial Cable DB9 F/F
MFLX78001-91	2-Stop cassettes w/ pressure lever (POM) 4/PK
MFLX78001-97	2-Stop cassettes w/ pressure lever (PVDF) 4/PK
MFLX07618-67	Replacement tubing retainers (4/PK)
MFLX78001-95	Replacement Click-n-go cassette/cartridge (POM-C) (1/EA)

## CASSETTES

IPC Multichannel pumps include with ClickN'GO cassettes and inserts for easy tubing changes. Optional Pressure lever cassettes have an adjustable occlusion for higher pressure and vacuum for high viscosity and pressure applications.



## COMPLETE SYSTEM

Order components for complete system. Use only Masterflex® Ismatec® 2-stop pump tubing for optimal performance.

- Pump system (Page 3)
- Pump tubing and extension tubing (Page 4)
- Tubing connectors (Page 5)
- Optional accessories (this page)