

The Cadent™ 6M Multi-Channel syringe pump offers compact, precision liquid handling for multi-probe requirements including sample transfers, dilutions, mixing, reagent additions, and plate reformatting. Available with 2, 4, 6, and 8 Kloehn™ syringes as standard configurations, additional configurations are available on request. The Cadent™ 6M is simple to incorporate into your systems where intensive pipetting is the norm.



- > **Programmable precision Multi-Channel syringe pump**
- > **Long-life product uses a 6cm stroke driven by a stepper motor and precision ball screw**
- > **Available in two mechanical resolutions: 24K, 48K**
- > **Each channel is pre-equipped with a 3/2 solenoid valve**
- > **Compatible syringes available from 250µL to 5mL**
- > **Flexible to meet a variety of system configurations**
- > **Capable of simple closed loop control of an external quantity or process**
- > **Suitable for use in analytical, biotechnology, medical device, and diagnostic applications**



Specifications

Physical

Overall Height:

11.67" (296.4mm)

Overall Width:

Maximum: 6.5" (165.1mm)

Minimum: 3.2" (81.3mm)

Overall Depth:

6.05" (153.7mm)

Weight:

5.25lbs (2.38kg)

Lifetime ⁽¹⁾:

> 5.7 Million cycles

[1 cycle = 1 full dispense and aspirate move]

Environmental

Operating Temperature:

2°C to 50°C (36°F to 122°F)

Operating Humidity:

<80% Relative Humidity at 5°C to 30°C and <50% at 31°C to 50°C

Storage Temperature:

-33°C to 71°C (-27°F to 160°F)

Compliance:

REACH & RoHS Compliant

UL & CE Compliant

CSA Certified

Mechanical

Mounting Holes:

Bottom

Resolutions:

24K, and 48K Increments

Speed:

0.0625 - 10,000 steps/sec

Syringe Size (60mm stroke):

250µL to 5mL (supplied separately)

Valve Type:

FAS MS-E 3/2 Solenoid Valve per channel

Performance

Precision:

0.50% CV at 1/10th dispense

0.05% CV at full stroke dispense

Accuracy:

±0.3% at 1/10th dispense

±0.2% at full stroke dispense

Communications Options:

RS-232, RS-485, CANbus

Power Requirements:

24V (with maximum power voltage ripple of 720mv peak-to-peak).

Power Consumption:

Unenergized: 3.5W

Energized: 62W (peak)

⁽¹⁾ Tested using DI water and a 2.5mL syringe at 30 psig

Syringe Pump:

Multi-Channel Syringe Pump (with EPDM valve)

24K resolution	48K resolution	Part number
X		102677-103050-2
X		102677-103050-4
X		102677-103050-6
X		102677-103050-8
	X	102678-103050-2
	X	102678-103050-4
	X	102678-103050-6
	X	102678-103050-8

Multi-Channel Syringe Pump (with FFKM valve)

24K resolution	48K resolution	Part number
X		102677-103051-2
X		102677-103051-4
X		102677-103051-6
X		102677-103051-8
	X	102678-103051-2
	X	102678-103051-4
	X	102678-103051-6
	X	102678-103051-8

Decals can be added to individual orders as required.

Starter Kit	RS-232	RS-485	CANbus
Starter Kit (includes all items listed below)	100904	100905	100906
Power Supply	100907	100907	100907
Power Cable	50603	50603	50603
Communications Cable	100883	100884	100885
USB Communications Adapter	28646	100917	100918

The Cadent™ Connect software can be downloaded at www.imi-precision.com/CadentConnect

Valve—3 Way Solenoid:

Part Number

102630

Orifice Diameter

1.2mm

Internal Volume

91µL

Rated Pressure

13.8 to 65.2 psig [0.95 to 4.5 barg]

Wetted Materials

PEEK, EPDM

Valve—3 Way Solenoid:

Part Number

103049

Orifice Diameter

1.2mm

Internal Volume

91µL

Rated Pressure

13.8 to 65.2 psig [0.95 to 4.5 barg]

Wetted Materials

PEEK, FFKM

PTFE Kloehn™ Syringe Assembly:
Thread Type

1/4-28 UNF-2A

Wetted Materials

Borosilicate glass, PCTFE, PTFE

Fine Tuning Adjustment

Zero dead volume only

Size	Orifice Size (in)	Standard Lubricated Syringe	Zero Dead Volume (Lubricated)
250µL	0.039	29439	29441
500µL	0.076	29442	29443
1.0mL	0.076	29447	29448
1.25mL	0.076	29451	29450
2.5mL	0.076	29454	29452
5.0mL	0.076	29456	29458

See PDS-0011 for additional syringe details.

UHMW-PE Kloehn™ Syringe Assembly:
Thread Type

1/4-28 UNF-2A

Wetted Materials

Borosilicate glass, PCTFE, PTFE, UHMW-PE

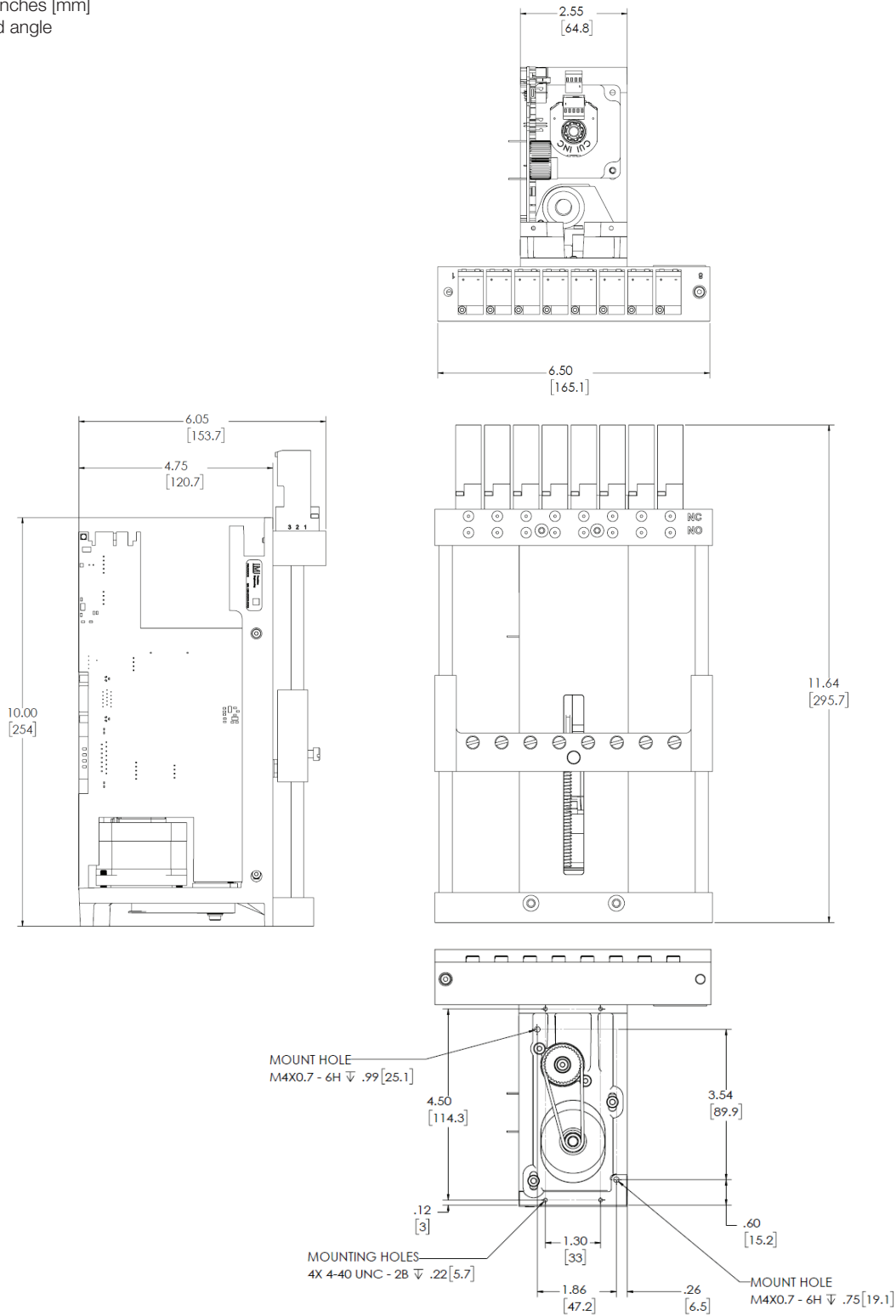
Fine Tuning Adjustment

Zero dead volume only

Size	Orifice Size (in)	Standard Lubricated Syringe	Zero Dead Volume (Lubricated)
250µL	0.039	29440	29861
500µL	0.076	29444	29863
1.0mL	0.076	29445	29446
1.25mL	0.076	29864	29449
2.5mL	0.076	29455	29453
5.0mL	0.076	29457	29459

See PDS-0011 for additional syringe details.

Dimensions in inches [mm]
Projection/Third angle



Warning

Improper selection, misuse, age or malfunction of components used in systems can cause failure in various modes. The system designer is warned to consider the failure modes of all component parts and to provide adequate safeguards to prevent personal injury or damage to equipment or property in the event of such failure modes. System designers and end-users are cautioned to consult instruction sheets and specifications available from the factory. The system designer/end-user is responsible for verifying that all requirements for the application are met. Due to unlimited application, system conditions and chemistries, it is the buyers responsibility to validate the product within their specific application.

Proposition 65: These products may contain chemicals known to the state of California to cause cancer, or birth defects, or other reproductive harm.