

## Cartridge Style Low Temperature Printhead

### Product Description

The PH-41 is a cartridge style, low-temperature drop-on-demand printhead. It is designed for dispensing fluids at room temperature, or optionally up to 50°C. The reservoir attaches directly to the dispensing device, forming a replaceable assembly that allows quick change out and storage, permitting multiple fluids to be printed without having to clean or disassemble the printhead. An integrated filter enhances reliability. A broad range of materials can be dispensed using the PH-41, including bioactive, optically active, sensor, and other materials. Drop volumes ranging from 5 pL to as high as 0.5 nL have been dispensed.



### Standard Features

- MJ-AL dispensing device, filter, and reservoir form replaceable cartridge assembly for quick change out and storage, simplifying printing of multiple fluids. All parts cleanable / reusable.
- 2.5 mL capacity polypropylene reservoir; unused fluid recoverable; 0.5mL minimum load volume.
- Integrated, replaceable / removable 5µm stainless steel sintered filter.
- Compatible with Jetlab<sup>®</sup> II, and Jetlab<sup>®</sup> 4 family.

### Available Options

- MJ-AL devices available in orifice diameters 10-80µm.
- Filter material and pore size selectable.
- Optional heater element & thermocouple for operation to 50°C.

## Ordering Information

- PH-41** Cartridge style, low temperature drop-on-demand printhead. Includes one polypropylene reservoir. H for heated option.
- PH-41H**
- MJ-AL-01-xxx** Low-temperature device with Luer fluid fitting, xxx denotes orifice diameter in microns. Includes 5 $\mu$ m stainless steel sintered filter element.
- C-03** Five (5) 2.5 mL polypropylene reservoirs with caps.
- C-03a** C-03 plus one set insert & sleeve.

## Support Equipment

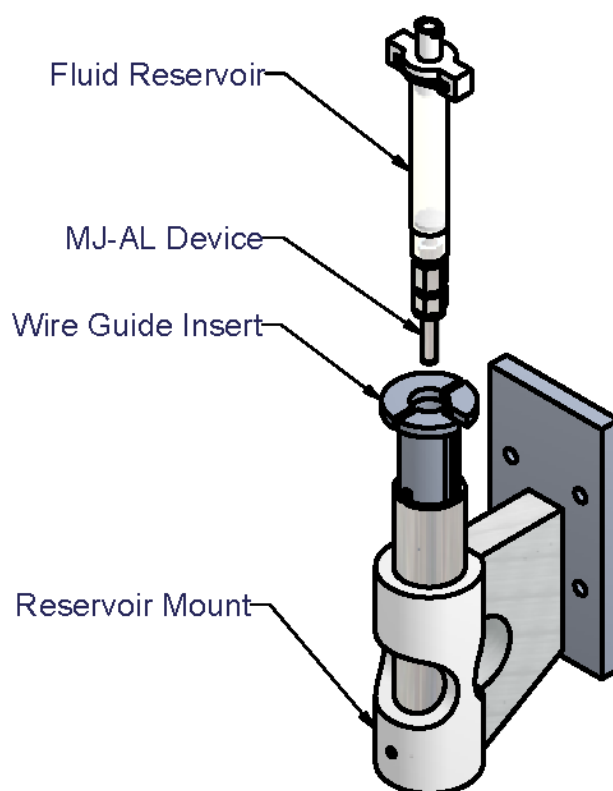
The PH-41 may be combined with the following components and subsystems to create a functional subsystem.

- CT-M5-01** JetDrive™ V controller, including command set and stand-alone control program. Includes built in strobe delay. Level 02 firmware (complex waveforms) included.
- CT-PT-21** Pressure / Thermal Controller with one manual pneumatic channel. Add one TS-01 temperature controller for the PH-41H.
- CT-PT-A1** Electronic Pressure Controller and Pressure Mode Selector, single channel.
- CM-VS-01** Basic Optics System: CCD camera, power supply, lens, fine focus, mounting block.

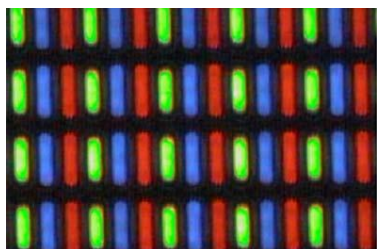
## Addition Information

Available at [microfab.com](http://microfab.com)

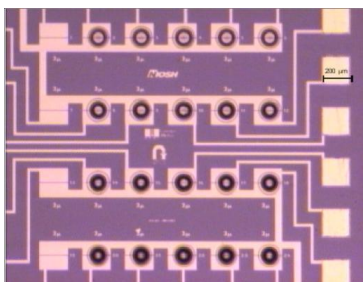
- Drawings with dimensions
- Equipment selection guide
- Integration Guide
- Cleaning Guide.



Polymer light-emitting diodes (PLED) printed into 100x300 $\mu$ m features.



Functional polymers printed onto 100 $\mu$ m sensor elements.



1.8mm diam. vascular stents coated with fluorescent dyes; (analog for antirestenotic drugs).

