



SE3

#### Features:

- 35 picoliter calibrated drop size
- Durable non-wetting coating
- 128 individually addressable, inline nozzles
- Lightweight and highly stackable
- Superb jet straightness
- Excellent channel to channel uniformity
- High frequency continuous operation
- Permits high viscosity jetting fluids
- Orientation independent
- Designed for long service life
- Dual ported for ease of flushing
- Optional temperature control

*The SE3 is a high performance jetting assembly that features Silicon MEMS technology, has a non-wetting coating, and is ideally suited for high throughput printing of functional fluids for color filter and electronics. It sets the industry standard for drop placement accuracy and uniformity.*

The SE3 is a highly compact and light-weight jetting assembly designed specifically for deposition applications requiring multiple piezoelectric micropumps packed tightly together. These modules are ideal for high productivity, high performance printer carriage designs. General compatibility with a wide range of fluids makes the SE3 jetting assembly extremely versatile.

The SE3 can be used with optional electronics capable of individually adjusting the output of each of the 128 channels. This enables dispensing fluids with unprecedented precision.

Two electrically independent piezoelectric slices, each with 64 addressable channels, are combined to provide a total of 128 jets. The nozzles are arranged in a single line with a 508 micron (0.020 inch) spacing between nozzles.

The fluid interface and electrical connection are at the top of the jetting assembly and several mounting configurations are possible. This arrangement permits for extremely tight packing in the print process direction. The dual ported fluid interface facilitates flushing for quick change-overs and for displacing drying fluids with inert fluids during periods of non-use.

By using an optional Head Interface Board, image data can be daisy-chained into one serial stream to reduce the data interface hardware requirements. A high voltage fire pulse with controlled slew rates is used to actuate the pumping chambers within each channel.

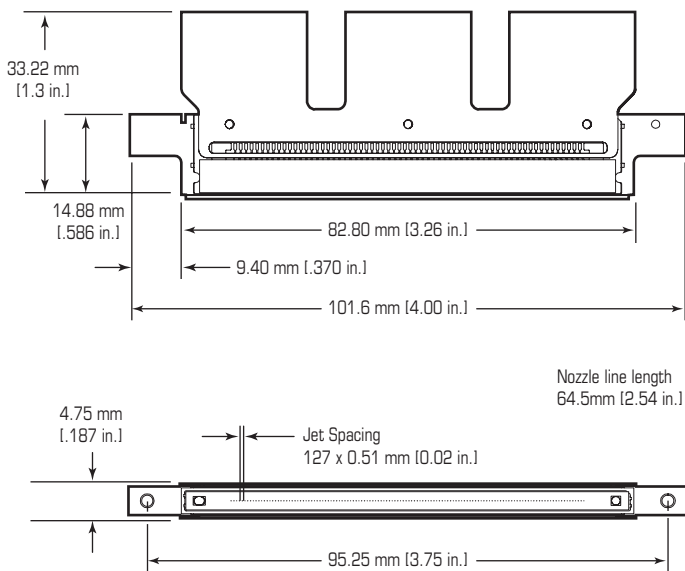
Optional temperature control components are available for precise control of fluid viscosity. Optional deaeration hardware can be provided.

Parameter	SE3
Number of addressable jets	128
Nozzle structure	Silicon with proprietary non-wetting coating
Nozzle spacing	508 microns (0.020 in)
Nozzle size	42 microns
Calibrated drop size	35 picoliters
Adjustable drop size range	30-40 picoliters
Drop volume variation with jet trimming	< 2%
Spot location (all error sources)	± 10 microns at 1 mm standoff
Nominal drop velocity	8 m/sec
Drop velocity variation, 1 sigma* (without tuning)	± 10%
Crosstalk, maximum	5%
Operating temperature range	Up to 70°C (158°F)
Fluid viscosity range (at jetting temperature)	10-14 cps
Compatible jetting fluids	Organic solvents, UV curable electronic fluids
Maximum operating frequency**	15 kHz
External coating	Parylene

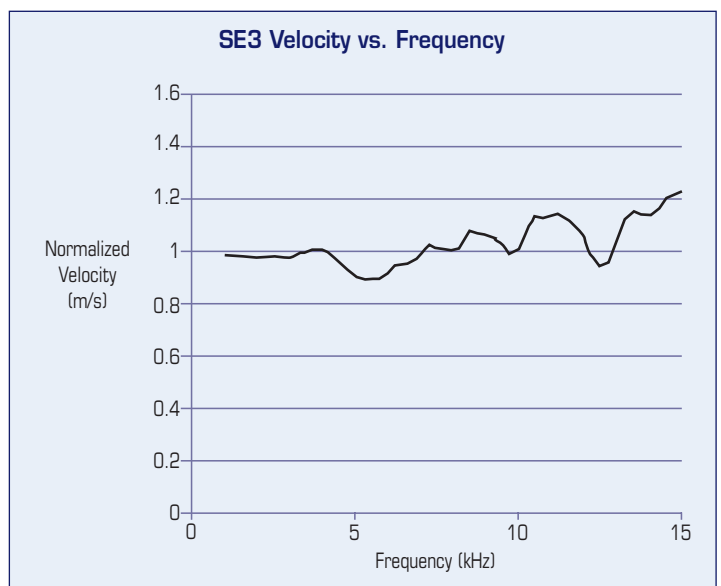
\* at constant frequency

\*\* to maintain tolerances as listed above

### Physical Dimensions



### Deposition Characteristics



Product data presented above are for guideline purposes only. For design and engineering work using this product, please contact Dimatix Technical Support for the appropriate Product Manual containing full Product Specifications.



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