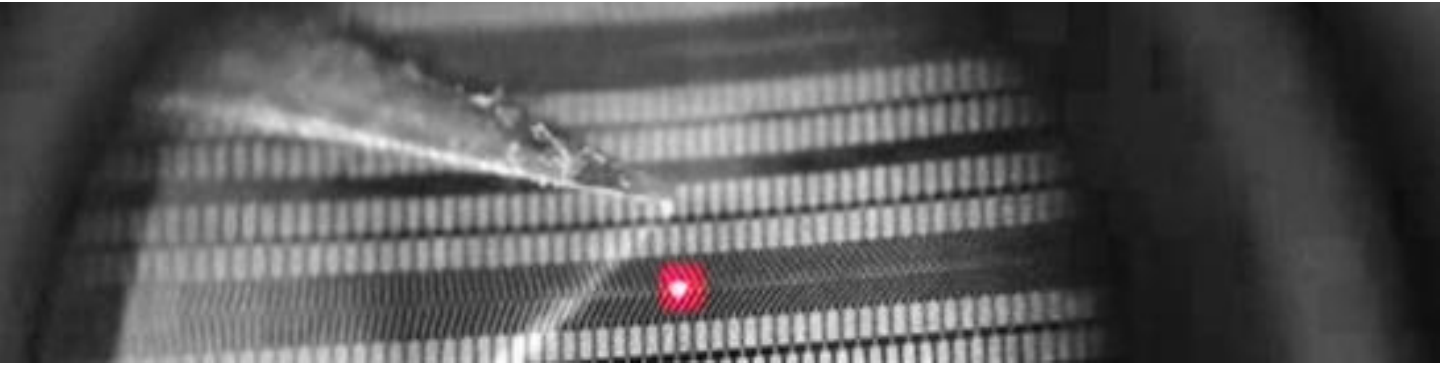


# Monolithic LED Arrays

## Technology Overview

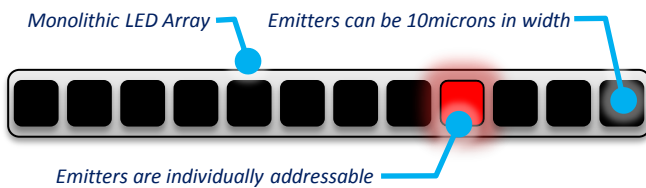


### What are Monolithic LED Arrays?

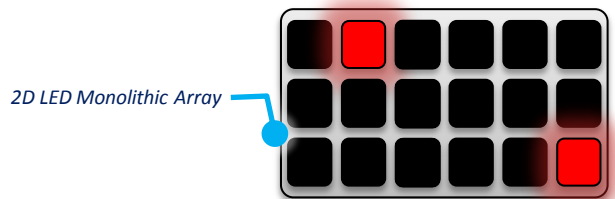
Monolithic LED Arrays are single LED chips comprising multiple emitters. Each emitter has a separately addressable connection or is arranged in an X,Y addressable matrix.

The emitting area can vary in size from 10 microns in width, while the formats, shapes and spacing can be produced to meet specific requirements.

Monolithic LED Arrays are produced in a similar manner to ICs on a complete epitaxial wafer. The area of material used for each chip is relatively small so the uniformity of emissive power and wavelength across a chip can be matched to within a few percent as processed; this can be further improved by the inclusion of either active matching using previously stored coefficients, or passively by the use of pre-determined resistor networks.



Monolithic LED Array



2D Monolithic LED Array

# Applications

Monolithic LED chips can be mounted within a variety of packages including optical components (such as lenses) and electronic components to provide local LED drivers or output matching.

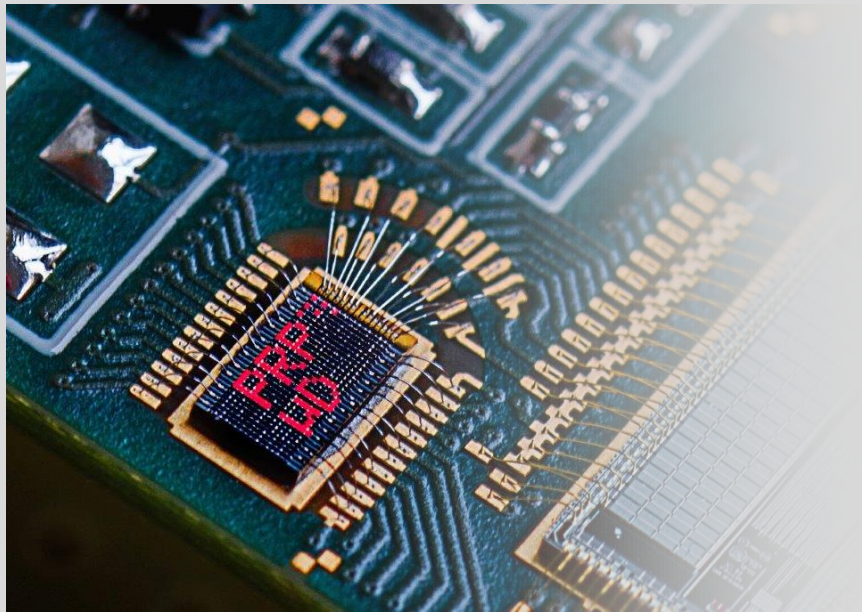
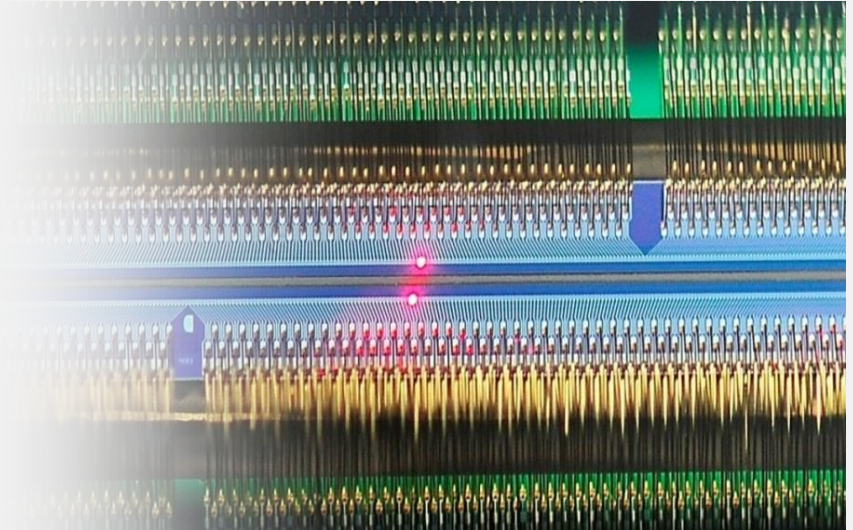
Many Monolithic LED Array applications use one or two chips per device; some large width printing applications leverage the scalability of PRP's Monolithic LED Array technology by using a higher number of arrays.

## Print Heads

PRP integrates its Monolithic LED Arrays into a range of customised print heads ranging from single chip to high chip density devices.

Monolithic technology enables PRP to produce precise, scalable print heads suitable for small scale PCB printing through to high volume, high quality industrial document printing.

PRP currently produces 600 and 1200dpi Monolithic LED Array chips for printing applications.



## Micro-Display

Micro-Display uses PRP's Monolithic LED Array technology to provide clear, bright and easy to integrate micro LED displays. It has been designed with optical sights, scopes and range-finders in mind.

Placing Micro-Display in the optical path enables scrollable menus and icons to be viewed within the eyepiece.

Each individually addressable red LED pixel within the micro array is 70 microns wide with a pixel to pixel pitch of 100 microns.