

# MEDIPIX3

*A pixel detector read-out chip for particle imaging and detection developed by the Medipix3 Collaboration.*

*Medipix3 is a CMOS pixel detector read-out chip designed to be connected to a segmented semiconductor sensor. Like its predecessor, Medipix2, it acts as a camera taking images based on the number of particles which hit the pixels when the electronic shutter is open. However, Medipix3 goes much further than Medipix2, permitting colour imaging and dead time-free operation. A novel charge summing and allocation scheme is implemented at the pixel level permitting proper binning of the energy of incoming photons overcoming the effects of fluorescence and charge diffusion.*

## TECHNOLOGY READINESS LEVEL

- Commercially available

## FEATURES

- Pixel size 55 $\mu$ m x 55 $\mu$ m or 110 $\mu$ m x 110 $\mu$ m.
- 256 x 256 or 128 x 128 pixels.
- Charge summing and allocation scheme – mitigating charge sharing.
- 2 thresholds per 55mm pixel each with 5 bits of local adjustment.
- High gain mode (HG, lower linearity, lower noise) or low gain mode (LG).
- Configurable counter depths: 2 x 1-bit, 2 x 4-bit, 2 x 12-bit, 1 x 24-bit.
- Continuous or sequential data acquisition and read-out.
- 3-side buttable (with a single 0.8mm dead edge).
- TSV ready.

## CONTACT

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Find out more at:

[kt.cern](http://kt.cern)

## APPLICATIONS

- Adaptive optics and other visible or near visible light applications
- Astrophysics
- Dosimetry
- Education
- Electron microscopy
- Life Sciences
- Non-destructive Testing



technology

Knowledge Transfer  
Accelerating Innovation

