



# Ultra-Wide Dynamic Range Commercial PAD

FOCUSING ON THE FUTURE

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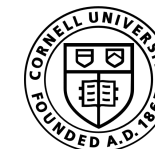
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COMPLEX MEASUREMENTS—CRITICAL RESULTS

Support from the U.S. government's SBIR/STTR program allowed Sydor Technologies to bring two Cornell University integrating detectors to the light source community:

1. Keck-PAD (single-bunch imaging)
2. **MM-PAD (wide dynamic range)**



Cornell University

MM-PAD is ideally suited for fast SAXS, CDI, and ptychography experiments where the ability to measure high and low flux signals in the same image is essential.

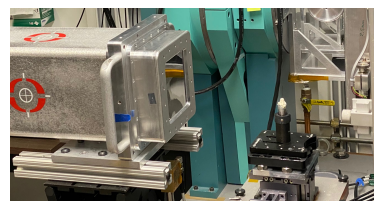
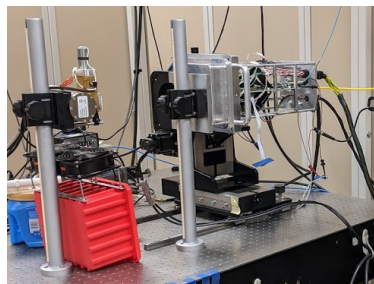
## PRESENT

### Specs

- Dynamic range beyond that achievable with traditional integrating detectors
  - $< 10^7$  photons/pixel
- Single photon resolution
- Up to 1,100 frames per second
- 4-side tileable modular design
  - 512 x 512 pixel array
  - ~ 80 x 80 mm active area

### Testing

- Sydor x-ray test facility
- Geometric calibrations
- Imaging
- APS beamline testing



## FUTURE (Current Developments)

### Single Module Units

- Small, integrated solution, 128 x 256 pixels

### Mega-PAD

- Increased active area
  - 1024 x 1024 pixels, ~ 160 x 160 mm

### Testing

- Beyond proof of concept
- Research application demonstrations

