

Imaging Applications

RMD Structured Cesium Iodide (CsI) imaging applications typically involve an x-ray tube, an object that is imaged, the CsI sensor, a CCD camera (or other means to detect the light produced by the CsI sensor) and storage and display of the image.

Applications

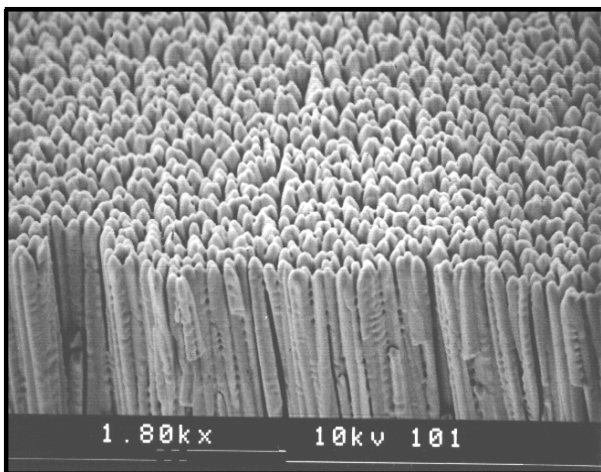
- Mammography
- Oral Radiology
- Chest Radiography
- Non-Destructive Testing
- Crystallography, including Structural Biology

Benefits of RMD Structured CsI

- High Resolution, High MTF
- High Light Output
- Increased X-ray Stopping Power
- Uniform Response Across Sensor

Sensor Products

Each application warrants a sensor optimal for the application. RMD manufactures structured cesium iodide sensors in a variety of configurations and performance parameters. Sensor manufacturing takes place in Watertown, Massachusetts. Sensors are typically built for a customer's specific application. Sensor configurations and performance features are given below.



CsI Thickness

- as required for optimal sensor performance
- typical applications in the range of 30 to 500 microns
- up to 1000 micron capability



Active Area

- 10 cm x 10 cm, typical
- sensor capability includes 44 cm x 44 cm

Substrates include fiber optic faceplate, graphite, aluminum, and Teflon.

Reflective and **protective** layers are also incorporated by RMD for optimal sensor performance.

Production Department also receives advances from R&D Department

Separate from the above production activities, the RMD Research and Development Department has several programs involving structured cesium iodide sensors and imaging applications. The R&D involves, or sets, the current trends in imaging and provides advances to the RMD Production Department on challenging applications. Recent R&D activity includes a "High Speed X-ray Imaging Camera for Time Resolved Diffraction Studies" in which x-ray images were acquired at a rate of greater than 2,000 frames per second. Another activity involves the "Performance of a small field digital detector for Soft X-ray imaging" and demonstrated improved system detective quantum efficiency (DQE).