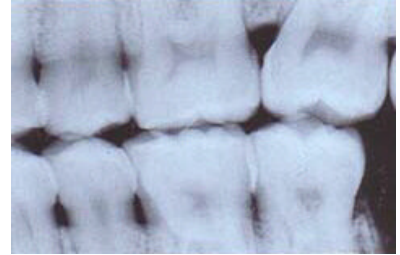


## Dental Range

Lower X-ray dose plus enhanced images are the advantages of using AST scintillators in your digital imaging system. The use of a digital CCD/CMOS sensor based system eliminates chemical processing from the dental surgery.



The capture and storage of digital images greatly simplifies patient record administration, improving efficiency of data handling and retrieval, information transfer and allowing improved long term care plans and 'one visit' patient strategies.

Patient confidence and understanding is greatly enhanced by enabling the dental practitioner to offer pictorial patient treatment plans via the digital system's display.

Thus digital capture methods based on CCDs or storage phosphor are more sensitive, require lower X-ray doses, eliminate chemical processing and facilitate immediate image display or retrieval from patient records.

### Solutions from Applied Scintillation Technologies

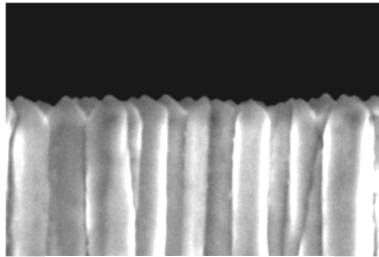
The most important dental imaging parameters are a good clean image with photographic quality resolution - the modulation transfer function (MTF) being 5-8 line pairs/mm at mid-range, 12 lp/mm at high resolution and >12lp/mm at ultra-fine resolution. AST has range of products bridging this entire resolution range.

This comprehensive range allows the system integrator to choose the level of price versus performance to meet their customers' requirements. The details of our range are given below, detailing the benefits each configuration brings, going from the premium Xio F1 product through to the cost effective MedeX Superfine screen solutions

The premium product is **Xio F1** – Caesium Iodide (CsI) on high quality fibre optic plates (FOP).

The advantages of using Xio F1 are its ultra high resolution, high X-ray attenuation and superior light output. AST's Xio F1 offers class leading image area with superior to the "edge" homogenous CsI coatings.

Xio F1 is suited for use with both CCD and CMOS devices, allowing reduced x-ray dose to the patient due to high x-ray attenuation within the FOP, coupled with high resolution images produced from the CsI columnar structure/FOP combination.

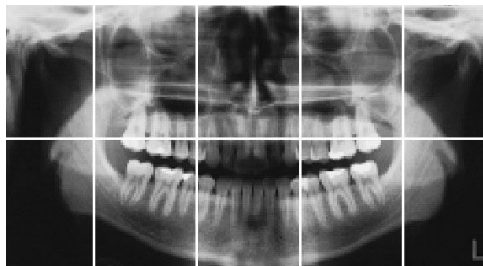


Columnar Caesium Iodide

**Xio G1** brings many of the high performance image characteristics of Xio F1 but for use with radiation hard CCDs and CMOS devices where the attenuation of the FOP is less important.

Xio G1 retains the high light output and resolution of the Xio F1 product but by depositing the CsI on thin graphite layers allows reduced sensor thickness owing to the thinner substrate material.

**FOP Intra-oral** consists of a rare earth based X-ray scintillator coating that is applied directly onto a fibre optic plate prior to bonding to CCD or CMOS devices. With good signal-to-noise performance and high absorption of low energy X-rays, FOP intra-oral minimises exposure of the patient to X-rays and is highly sensitive, facilitating the early detection of dental caries. Using fibre optic plates that have been directly coated with the X-ray scintillator has a number of benefits over the traditional method of bonding an X-ray screen to a substrate. These include higher resolution, contrast and light efficiency due to the elimination of light losses and optical distortion.



AST also provides a phosphor-based product for use in Panoramic/extra-oral systems.

**FOP Panoramic** uses a fast response X-ray scintillator coating optimised to eliminate potential image blur caused by patient movement during panoramic imaging of both soft and hard tissue.

The FOP Panoramic imaging receptor is constructed using an X-ray phosphor on a fibre optic plate, backed by a choice of reflective or absorber layers, prior to bonding to a CCD or CMOS device. This combination allows the ultimate in x-ray absorption whilst providing good image quality in dynamic systems.

**MedeX Superfine** and **MedeX Superfine Plus** are produced from rare earth phosphors, providing ultra fine, low coating weight screens used for imaging in both intra-oral and panoramic dental applications.

The high gain characteristics of these screens also minimises the exposure of the patient to X-rays. The use of an optical absorber layer provides enhanced resolution without compromising the signal-to-noise ratio. These screens can be directly bonded to, or used in compression with, radiation hard CCDs or CMOS devices to provide a high performance, cost effective solution to both intra-oral or panoramic applications.

## **Product differentiation and availability**

Applied Scintillation Technologies has the knowledge and expertise based on years of experience to partner you in the development of custom products for CCD, CMOS or FOP technologies.

Resolution, sensitivity, speed & colour of response are a few of the parameters that can be influenced in the production of a customised product that more closely relates to your customers' need.

- Exceed your initial expectations and enjoy continued product development and technical support through partnership
- Sample scintillator evaluation sets are available on request
- Product differentiation can provide unique product positioning versus competitors
- Formulations can be developed to meet your specific requirements
- In volume a customised product is often a more cost effective solution
- An ISO9001:2000 company – quality assurance is guaranteed through every delivery