

Dentron Sensor

CCD area image sensor Size #1 and Size #2

Front-illuminated FFT-CCDs for X-ray imaging



The Dentron image sensor is ideal for intra-oral X-ray imaging in dental diagnosis. The size #2 (1700 × 1200) pixels & size #1 (1500 × 1000) pixels size of 20 × 20 μm. The fiber optic plate (FOP) used as an input window is as thin as 1.5 mm but highly resistant to X-ray irradiation, making the Dentron sensor very reliable even over a long-term operation. The scintillator coated on the FOP is optimized to have high X-ray sensitivity and high resolution (20 Lp/mm).

The Dentron sensor is an easy-to-use X-ray imaging module which is adapted for both AC and DC X-ray sources.

Features

- Sensor has X-ray monitoring photodiode
- Compactness
5.1 mm thickness excluding I/O connector part
- High dynamic range: 12 bit
- Long-term stability
For use under 100,000 shots
(60 kVp, 30 mR X-ray irradiation)
- Resolution: 20 Lp/mm
- 1700 (H) × 1200 (V) pixel format - size #2
- 1500 (H) × 1000 (V) pixel format - size #1
- Pixel size: 20 × 20 μm
- Coupled with FOS for X-ray imaging
- 100 % fill factor
- Low dark signal
- Low readout noise
- MPP operation
- AC/DC X-ray source adapted

Applications

- Intra-oral X-ray imaging in dental diagnosis

■ Selection guide

Type No.	Cooling	Number of total pixels	Number of active pixels	Active area [mm (H) × mm (V)]
Size #1	Non-cooled	1508 × 1002	1500 × 1000	30 × 20
Size #2		1708 × 1202	1700 × 1200	34 × 24

■ General ratings

Parameter	Size #1	Size #2
CCD structure	Full frame transfer	
Fill factor	100 %	
Number of active pixels	1500 (H) × 1000 (V)	1700 (H) × 1200 (V)
Pixel size	20 (H) × 20 (V) μm	
Active area	30 (H) × 24 (V) mm	34 (H) × 24 (V) mm
Vertical clock phase	2 phase	
Horizontal clock phase	2 phase	
Output circuit	Emitter follower without load resistance	
Dimensional outline	38.7 (H) × 26.3 (V) mm	42.6 (H) × 30.6 (V) mm
Reliability	100,000 shots at 60 kVp, 30 m Roentgen	
Window	Scintillator on 1.5 mm FOP	
Other	MPP mode (low dark current operation)	