
Flat Detector to Visualize Urinary Stones in Endourology in High Quality



- Cios Fusion enables the use of flat detector technology in combination with the Modularis lithotripter
- A larger field of view for X-ray imaging and the SmartView function for combined imaging with endoscopy and ultrasound
- Siemens Healthineers offers all components as an integrated system with smooth interfaces and simplified operation

At this year's congress of the German Society of Urology in Leipzig, Siemens Healthineers will be presenting the combination of the Modularis urological shock wave unit and the flat detector technology of the mobile C-arm Cios Fusion. With its 30 cm x 30 cm field of view, it can cover 160 percent more of the anatomical environment than the standard image intensifier with no need to reposition the C-arm. The urologist can work more efficiently and also gets a faster overview of the urinary tract in a single image. Thanks to a Retina imaging chain and optimized dose management, X-rays are created with especially high image quality, yet at a lower radiation dose. Other imaging sources like ultrasound or endoscopy can be connected via the SmartView function, thus providing visual support for procedures. The displayed images can be stored directly in a central digital patient folder.

A solution for endourology and lithotripsy

With the improved imaging, complex endourological examinations, such as ureterorenoscopy (URS), a visual inspection of the ureters and the renal pelvis, can now be performed on Modularis with greater precision. Here the urologist introduces an endoscope into the kidney via the ureter, in order to remove kidney stones. The larger field of view and better grayscale differentiation in the flat detector technology make this procedure easier. Moreover, the high-resolution display with up to 1500 by 1500 pixels offers better visualization of urinary stones. "Image quality is very good. I find the image using the flat detector significantly better than the C-arm image intensifier we've been using up until now. I can reliably view and assess stones, anatomical structures, and areas not filled by contrast medium. And with the larger field of view I can now see three-quarters of the urinary system on the screen, while before it was only a fraction of that," explains Guido Bendl, Senior Physician at the urological clinic of Prosper-Hospital in Recklinghausen, Germany.

Cios Fusion is especially well suited for combined use with the Modularis shock wave unit for non-invasive crushing of kidney and ureter stones with shock waves, known as extracorporeal shock wave lithotripsy (ESWL). This combination of devices makes it possible to treat stones efficiently by precisely aiming and shooting at the stone with the aid of an especially large focus area and a digital crosshair.

Just one control for all components

Siemens Healthineers offers all components, including the associated services, from a single source, thus creating a fully integrated system that can be entirely controlled from a single central control unit. That permits smooth operation and reduces the potential sources of error in operating the system. Bendl appreciates the advantage: "Having to constantly switch between two or even three different control units would be complicated and potentially lead to error. Modularis' central control unit solves the problem."

Many clinics are developing stone therapy capabilities with a primary focus on endourological procedures. That makes it increasingly unprofitable to provide a large stationary lithotripsy system. The combination of a modular lithotripsy system and a mobile flat detector C-arm, by contrast, offers the flexibility to respond to changing daily clinical requirements – because in addition to lithotripsy, all of the individual components, whether the therapy unit or the patient table or the mobile flat detector C-arm and the ultrasound system, can be used flexibly in other rooms and for other applications, such as endourology.

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