RayShield

ARE YOU SAFE FROM RADIATION EXPOSURE?

CVP-2: Experience the Innovation

The World's First Anti-Scattering radiation filter for C-ARM. CVP-2 dramatically decreases scattered radiation exposure for medical staff and patient without affecting quality of the c-arm fluoroscopic images during operation.

Patented in US, Europe, China, Japan and Korea.

RAYSHIELD, LLC

O: 480.272.8866
F: 480.393.7447
1437 W. Auto Drive
Tempe, AZ 85284
info@RayShieldLLC.com
www.RayShieldLLC.com

*CVP-2 can protect both patients and doctors from radiation exposure.

PROTECT STAFF & PATIENTS AGAINST RADIATION EXPOSURE

PAPER

Performances of a protector against scattered radiation during intraoperative use of a C-arm fluoroscope

Ki Hyuk Sungl .6. Young-Jun Jung2.6. Soon-Sun Kwon3. Gye Wang Lee4. Chin Youb Chungl. Kyoung Min Leel. Hyemi Cha2. Moon Seok Parkl .7.9 and Kisung Lee2.5.7.8

1 Department of Orthopaedic Surgery. Seoul National University Bundang Hospital. 300 Gumi-Dong. Bundang-Gu. Seongnam. Gyeonggi 13620. Korea
2 Department of Bio-convergence Engineering. Korea University. 145 Anam-ro. Seongbuk-gu. Seoul 02841. Korea
3 Department of Mathematics. College of Natural Sciences. Ajou University. 206 Worldcup-ro. Yeongtong-gu. Suwon. Gyeonggi 16499. Korea
4 Department of Orthopaedic Surgery. DK Dongcheon Hospital. 215 Oesolkeun-gil. Jung-gu. Ulsan 44495. Korea
5 School of Biomedical Engineering. Korea University. 145 Anam-ro. Seongbuk-gu. Seoul 02841. Korea

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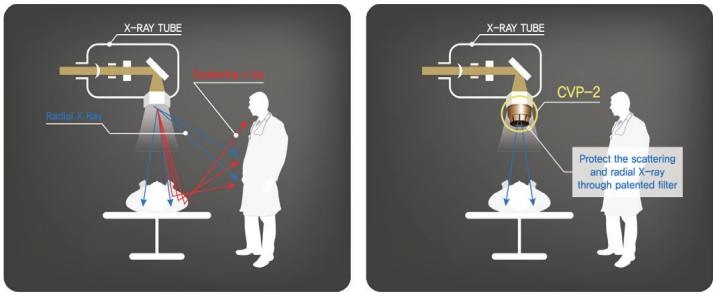
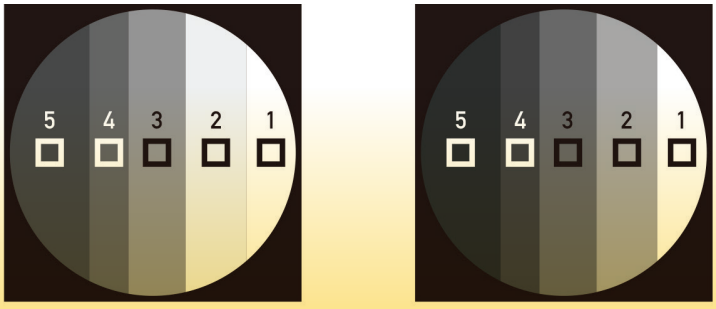
PRINCIPLES

The radiation exposure is reduced for the patient and doctor by filtering with a patented filter the scattered X-ray from the human body and the radical X-ray generated from the X-ray tube.



RESULT: Acryl Step Phantom (Imaging & Profile)

- A 25x25 pixel square was set for each row in the same image step and the internal pixel value were all added.
- The Image Contrast Resolution was obtained by comparing each added pixel value from adjacent steps.
- Through this. the effect on image resolution was evaluated for the CVP.



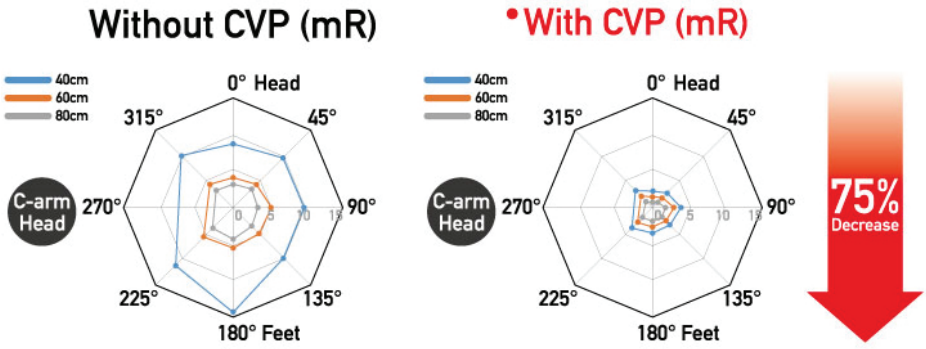
Without

With

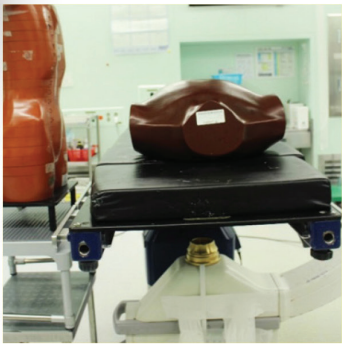
RADIATION PROTECTION TECHNOLOGY

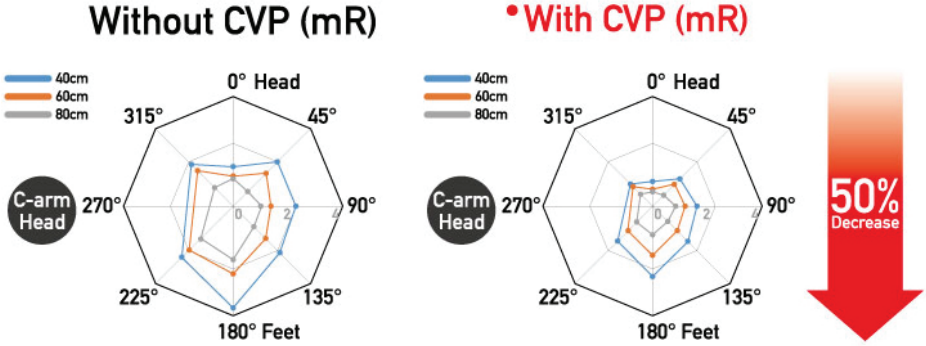
SCATTER MAP RESULT

AP Position



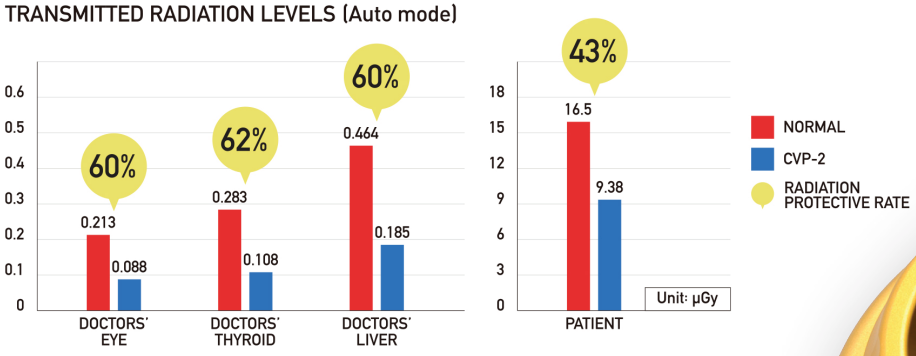
PA Position



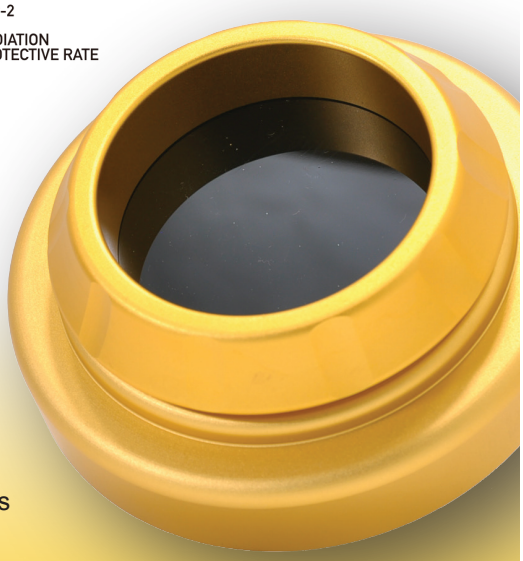


PERFORMANCE

TRANSMITTED RADIATION LEVELS (Auto mode)



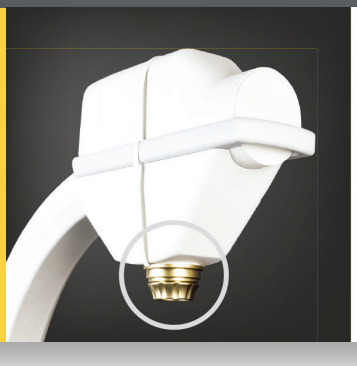
- Results may differ depending on operating conditions and environment.
- *"RADIATION PROTECTIVE RATE" has a margin of error of ±10%

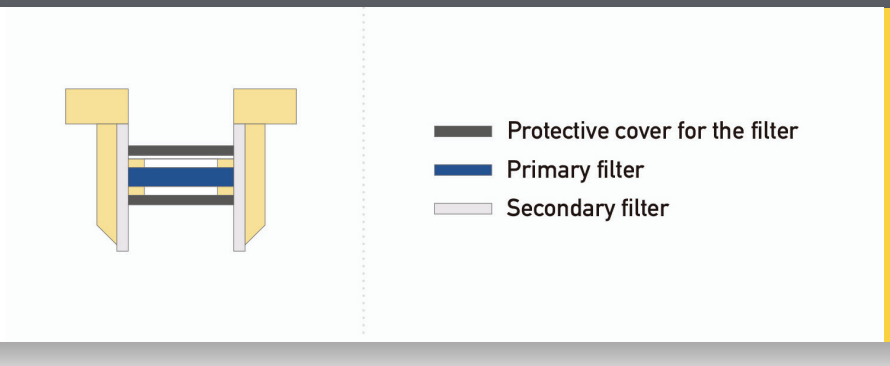


FDA, ISO, & CE APPROVED.

CVP-2 Anti-scattering Radiation Filter device was made to promote a healthier environment when using the C-arm by significantly reducing the amount of radiation exposure to not only the patient but also the medical staff. It also enhances the protection level for the Apron and other lead shields during treatments or operations. On top of that, it will protect areas that are not shielded (hands, eyes, skin, scalp, etc.)

The scattered radiation protector for mobile x-ray systems. CVP-2 has been recently developed. We aim to investigate the effects of the scattered radiation protector on the equivalent doses from scattered radiation delivered to radiosensitive organs while simulating spine surgery using a C-arm fluoroscope. Chest and rando phantoms were used to simulate a patient and a surgeon in this study. The equivalent dose from scattered radiation to radiosensitive organs was measured in four different situations according to the use of the scattered radiation protector and the C-arm configuration. The equivalent dose from the scattered radiation to the surgeon's eye, thyroid, and gonad decreased significantly Society for Radiological Protection by using the scattered radiation protector for both the Posteroanterior (PA) ($p < 0.001$) and Anteroposterior (AP) ($p < 0.001$) C-arm configurations. The installation of the scattered radiation protector also reduced the direct radiation dose to the chest phantom. A scattered map showed that scattered radiation doses decreased by approximately 50% for the PA configuration and 75% for the AP configuration by using the scattered radiation protector. The scattered radiation protector was effective in reducing not only the equivalent dose from scattered radiation to the surgeon's radiosensitive organs, but also the direct radiation dose to the patient. This was all achieved without decreasing the quality of the C-arm fluoroscopic images.





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