

Clarity. Dose. Quality.

Smart Noise Cancellation for Superb Image Quality.

To support maximum safety for your patients, you know how important it is to keep the dose they receive “as low as reasonably achievable.” But reduced dose can result in noisy images and reduced clarity – compromising diagnostic confidence. And even traditional noise suppression can’t always prevent a loss of fine detail.

Smart Noise Cancellation enables customers to lower radiation dose without loss in image quality. Performance validated in an internal study with **50%** dose reduction from 220 IEC EI on average.*



Advantages at a Glance

- Applies advanced algorithms to cancel image noise while retaining fine spatial detail.
- Provides clear, easier-to-read images for improved diagnostic confidence.
- Allows your facility full control over the amount of noise cancellation and exposure applied to meet your desired image clarity and to better optimize radiation dose.

*These statements were validated using Carestream CsI detectors in reader studies conducted by board-certified radiologists. Pairwise comparisons were performed between images at nominal exposure dose without SNC and at 50% reduced dose with SNC. The reduced-dose images included live patient images with simulated dose reduction, as well as images of human cadavers and anthropomorphic phantoms obtained using actual reduced-dose X-ray exposures. SNC performance was further confirmed using a CDRAD phantom. IEC EI values on average at nominal and reduced dose were 220 and 110, respectively.

Achieve a New Level of Clarity in Digital Radiography.

Carestream's Eclipse Engine leverages deep, convolutional, neural network technology to provide superb CNN-based noise reduction – yielding improved image quality, preservation of fine detail, better contrast-to-noise ratio and easier-to-read radiographs. Smart Noise Cancellation is designed to provide major benefits for:

- General radiography, to improve the clarity of anatomical features in the processed images.
- Gridless imaging, when used in conjunction with software-based scatter suppression (e.g. SmartGrid), where the removal of scatter usually leads to an increase in noise.
- Neonatal imaging, as imaging at the lowest possible dose is critical.

Smart Noise Cancellation Added Benefits:

Easy to Integrate: No change is required to the radiographer's existing workflow.

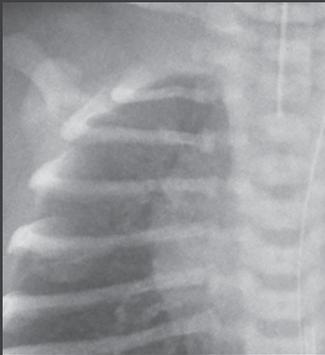
Fast: The full-resolution image with SNC applied is displayed within seconds of the non-enhanced preview image.

A visual indicator shows when Noise Cancellation is in progress and when it's been applied.

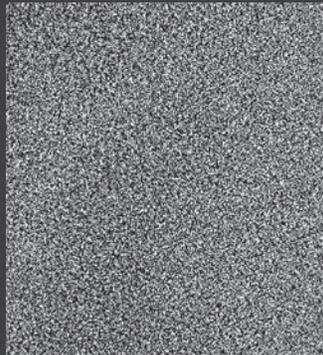
Versatile: SNC supports all patient sizes, body parts and projections on CARESTREAM DRX-1, DRX Plus and Lux 35 Detectors.

Improved Signal-to-Noise Ratio.

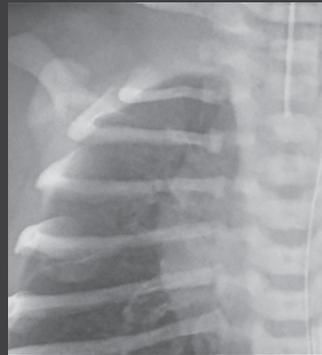
Clear Presentation of Fine Detail.



Original image of spine and ribcage with significant obscuring noise



The noise field isolated from the image



The image with the noise removed, for better clarity and easier reading

In Carestream's Clinical Reader Studies with board-certified radiologists, results of SNC have shown a significant improvement in image clarity and ease of reading, with 56% of the diagnostic quality ratings improved from "limited" or "diagnostic" to "exemplary," based upon the RadLex rating scale.

A reader study using Carestream detectors was performed by board-certified radiologists comparing pairwise images taken at nominal dose (Csl ISO 400 speed / GOS ISO 320 speed) and reduced dose (Csl ISO 800 speed / GOS ISO 500 speed) with SNC. The study verified that SNC enables customers to lower radiation dose without loss in image quality and provides improved diagnostic quality, preservation of fine detail and better contrast-to-noise ratio for images acquired at clinically nominal exposures.

Contact your local Carestream representative for the systems that support Smart Noise Cancellation.



Nominal dose at 400 speed with default EVP Plus processing. Image acquired at 75 kVp, 28 mAs, 80 In/cm 12:1 grid, IEC EI 272



Reduced dose at 800 speed with SNC and EVP Plus processing. Image acquired at 75 kVp, 14 mAs, 80 In/cm 12:1 grid, IEC EI 134



Eclipse: Harness the Power of Decades of Innovation.

Carestream's Eclipse is the engine behind our innovative imaging software. It uses AI technology and proprietary algorithms to significantly increase the value of the entire imaging chain, from capture to diagnosis.

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Rx only

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