

**CTB-00657**

**Date:** January 7, 2019

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**Product:** Selenia Dimensions/  
3Dimensions

**Subsystem:** Detector

**Subject:** Explanation of Chest Wall Band Artifact Seen During CEDM Artifact  
Evaluation on Selenia Dimensions-3Dimensions Systems

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## Purpose

To provide information on the chest wall band artifact that may be seen during Contrast Enhanced Digital Mammography (CEDM) Artifact Evaluation for Mammography Quality Control (QC) on Selenia Dimensions and 3Dimensions Systems.

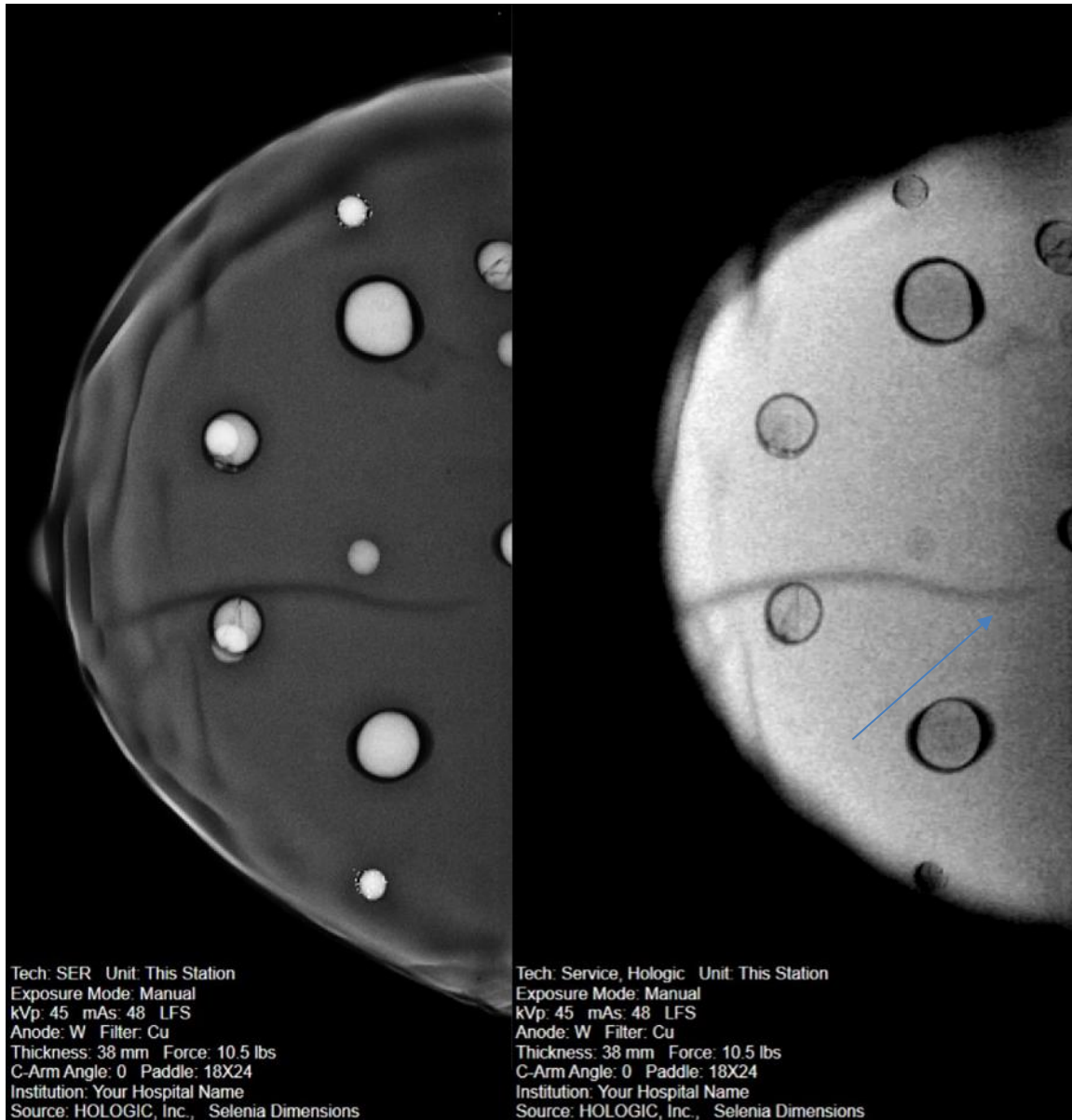
## Scope

This information applies to Selenia Dimensions, 3Dimensions systems.

# Customer Technical Bulletin (cont.)

## Discussion

During the CEDM Artifact Evaluation QC Test for Selenia Dimensions/3Dimensions systems, the “chest wall band artifact” may be observed in the image. Figure 1 shows an example of this in a breast phantom using the CEDM Flat Field View.



**Figure 1 – CEDM Breast Phantom Using CEDM Flat Field View**

## Customer Technical Bulletin (cont.)

The cause of this issue is a change in intensity of off-focal radiation due to a change in tube heat (loading). The band is created by the shadow of the chest wall collimator blade in the low level off-focal radiation field. As the tube temperature rises with usage, a slight change of signal count over the band region relative to the surrounding region is seen. During CEDM Artifact Evaluation, if the tube loading state is notably different from the state during gain calibration, this band may become visible since the change in signal count is not completely compensated by the gain map.

While the off-focus radiation band is typically hidden by the gain correction in FFDM and DBT imaging, the rapid change in tube loading and the extreme sensitivity of the dual energy subtraction process can result in a visible band in these CEDM images. Hologic recognizes that the presence of this band is suboptimal. Although there has been no clinical concern with the presence of this band, we have addressed this in the latest software versions Selenia Dimensions 1.10 and 3Dimensions 2.1 in the dual-energy subtracted patient views.

This band artifact will not be observed using CEDM patient views as this anomaly is processed out. Figure 2 shows an example of the same breast phantom using the RCC CEDM view.

## Customer Technical Bulletin (cont.)

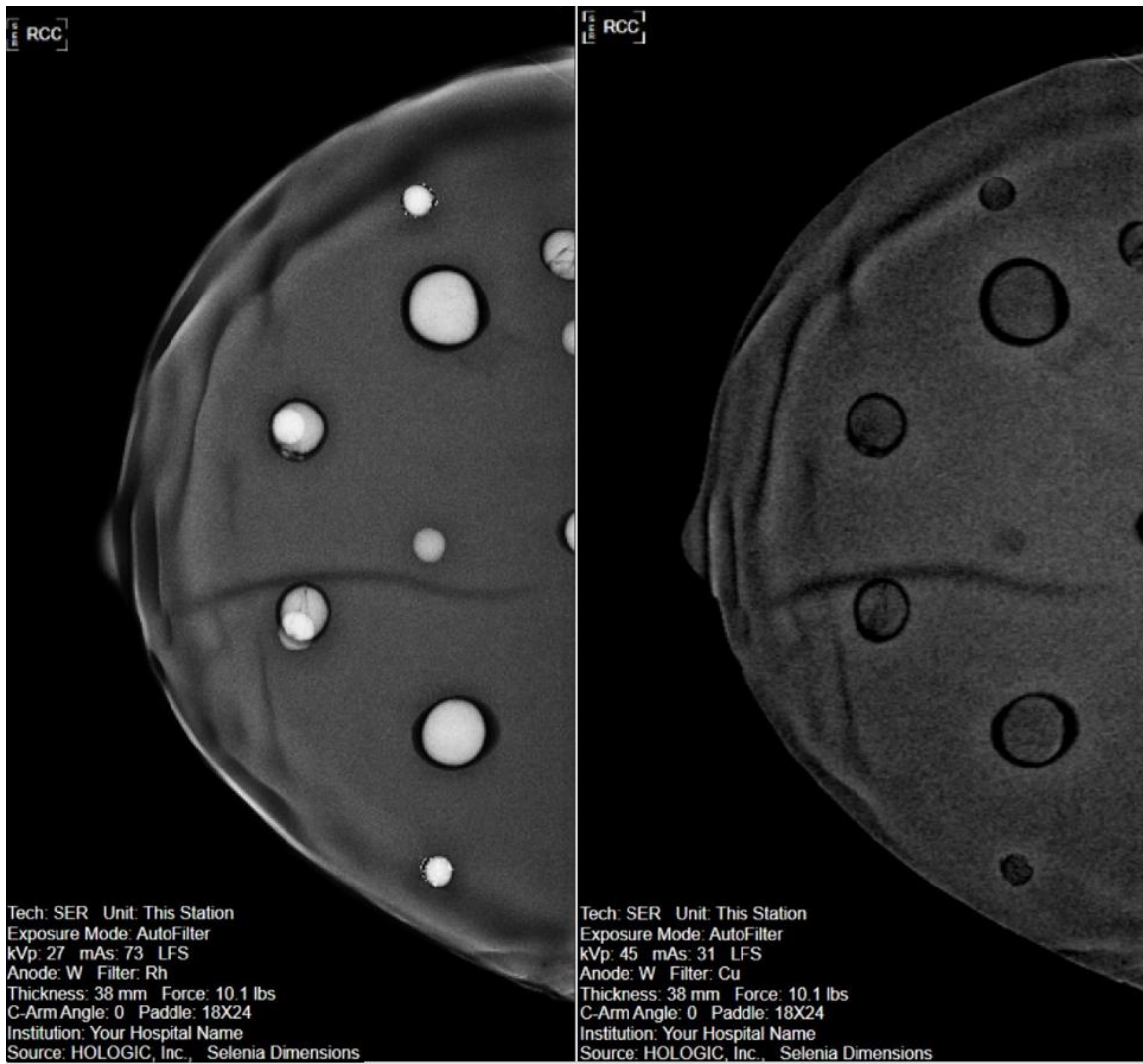


Figure 2 – CEDM Breast Phantom Using CEDM RCC View