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Frequently Asked Questions (FAQ) about FilmQA™Pro

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- *What are the recommended scanner settings?*

- *How many calibration films do I need to generate a proper calibration curve?*

- *What is the best dose sequence on the calibration films?*

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- *What does it mean when the doses for the three color channels of a Dose Map are not in close agreement?*

- *When the color channels are in close agreement with triple-channel dosimetry which color channel should I select?*

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- *I cannot load a DICOM image into FilmQA Pro? What could be the problem?*

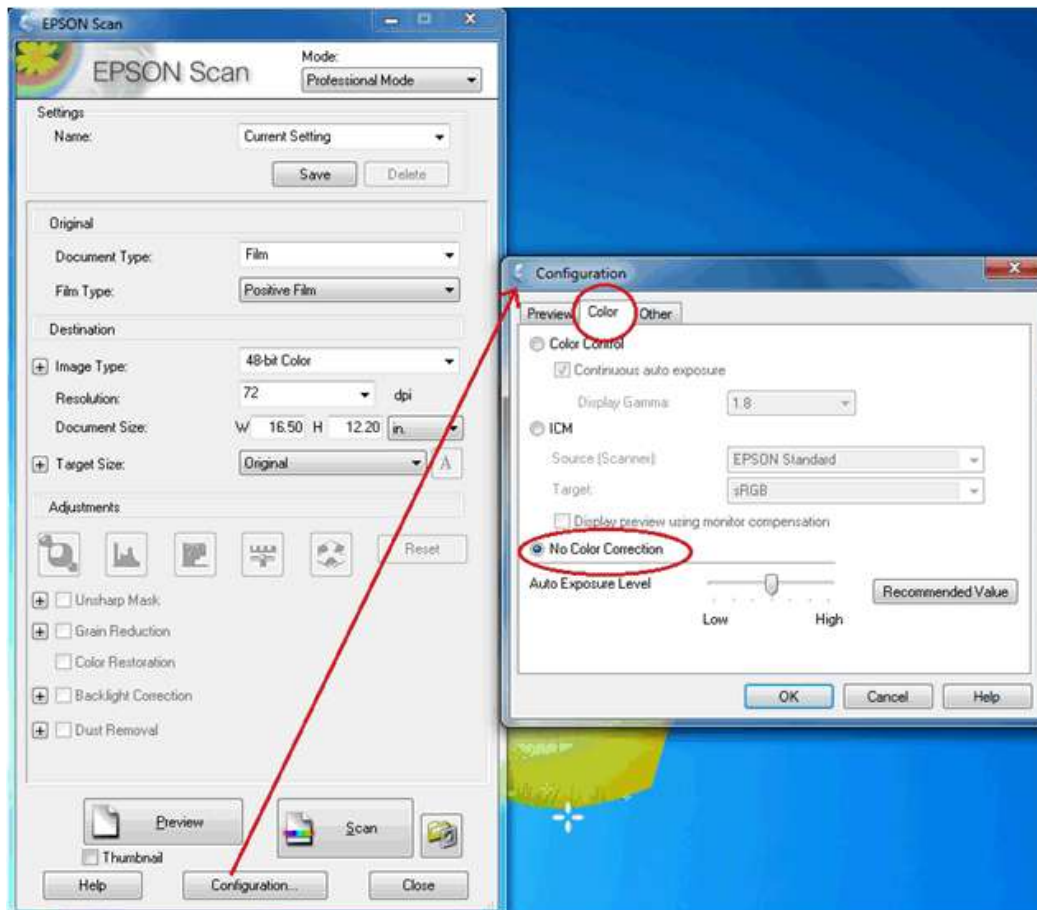- *Are any training sessions provided with FilmQAPro?*

How do I place the calibration films on the scanner?

Place the calibration films on the center of the scan bed and align them along the central axis parallel to the long side of the scan bed.

What are the recommended scanner settings?

The figure below shows the scanner settings recommended for most GAFChromic film scanning:

How many calibration films do I need to generate a proper calibration curve?

FilmQA Pro uses simple, asymptotic, rational calibration functions that behave similarly to the way radiochromic film behaves. The response asymptotes to a constant value at a high dose similar to the way film responds to increasing exposure/dose. Six to eight dose points (including zero dose) are usually sufficient for defining the behavior of a batch/lot of radiochromic film. One or two more points could be added if the dose range is much larger – say 0 to 20 Gy

What is the sufficient dose sequence on the calibration films?

By their nature the asymptotic fitting functions used for calibration in FilmQA Pro software work well when the doses (except for zero) are in geometric progression, e,g. 0, 75, 150 and 300 cGy, rather than arithmetic progression.

What is the proper size of the calibration films?

The calibration films are best sized to all fit and be scanned together. The film sizes could be 1.25" x 8" strips. When cutting strips be certain that the orientation is known with respect to the sheet from which they were obtained. The optimum protocol requires the calibration films to be scanned together in a single scan with the exposed areas all located along the central axis of the scanner

What is the accuracy of dose map created in FilmQA™Pro?

The reliability of absolute dosimetry created in FilmQA Pro software is enhanced by carefully sticking to a specific protocol. Following this well-established protocol can provide accurate and reliable results with an uncertainty below 1% of the absolute dose delivered.

What is the recommended resolution for scanning the dose film and the treatment plan?

Scanning GAFChromic films at 50-72 dpi is usually sufficient for radiotherapy dosimetry, but the scanner and films are capable of far higher resolution if needed. It is good practice to scan dose map films at a resolution 2-4 times greater than the treatment plan.

How to register patient specific QA film?

With FilmQA Pro you can register the application film in three ways:
1. Register fiducial marks on a dose map towards isocenter position on the plan image
2. Register fiducials marks on a dose map towards a similar fiducial pattern on the plan image
3. Methods to detect fiducials automatically on an image using the Registration Template created based on a specialized phantom

What does it mean when the doses for the three color channels of a Dose Map are not in close agreement?

FilmQAPro software executes triple channel dosimetry -see Lewis, et al., Med. Phys., 39(10), 2012, pp 6339- with GAFChromic films. This provides the ability to compare dose measurement results from three color channels with the key advantage of establishing the consistency of those dose values. A poor correspondence of the values equates to substantial dose uncertainty and points towards faulty application of the protocol, whereas high consistency of the dose values builds confidence in the measurement results.

When the color channels are in close agreement with triple-channel dosimetry which color channel should I select?

Good consistency between the three color channels indicates reliable dosimetry. A good approach would be to average the results from the three channels

Can FilmQA™Pro analyze EPID images?

EPID images can be analyzed with FilmQA™Pro software. The portal image should be saved in DICOM file format. Before the analysis the size of the EPID image should be rescaled to its real size, i.e. the real size of the MLC.

What type of Treatment Planning Software can I load into FilmQAPro?

The following is a list of Treatment Planning Software and formats that can be loaded.

```
BrainLab (*.dat; *.txt; *.flu)
Pinnacle (*.header; *.txt)
Memorial Sloan-Kettering  (*.DOSE_binfile)
Sun Nuclear (ascii) (*.snc)
Tomotherapy (*.header; *.img)
Xio (ascii) (*.txt)
DICOM (*.dcm)
Eclipse (*.dcm)
Pinnacle (ascii) (*.txt)
```

I cannot load a DICOM image into FilmQA Pro? What could be the problem?

In order to open any DICOM file with FilmQA Pro, the modality of the DICOM file is to be chosen as "RTDOSE". Please check the modality and, if necessary, re-export the treatment plan with a "RTDOSE" modality. Additionally, DICOM preamble (File Header) is required. If the header is missing it may cause the same problem.

Are any training sessions provided with FilmQAPro?

You can download FilmQA Pro and receive a free trial license at http://www.filmqapro.com/FilmQA_Pro_files/Installation.htm . With a trial we provide a one hour introduction session via phone and web support. Additionally, we have an extensive collection of training videos. These videos cover every aspect of FilmQA Pro's operation in detail.