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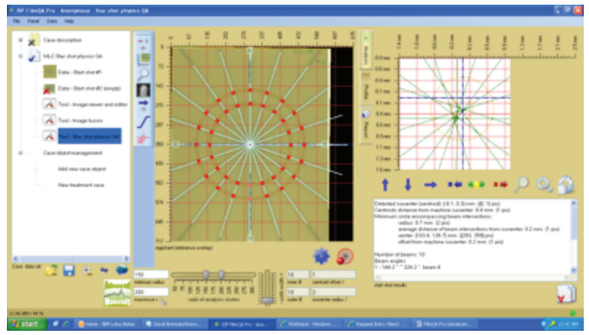
NEW Advanced Features

- Powerful new analytical tools
- Flexible profiling
- Automated Physics QA Tools
- Compatible with all major treatment planning systems and able to import an DICOM file.
- All charts, tables and images can be exported to XLS, DOC and PDF files.



Powerful, flexible and fully automated and customizable physics QA tools

Call today for more information about practical applications of FilmQA™ Pro software and other tools for your radiotherapy and radiology applications.

For Gafchromic™ QA dosimetry film and commissioning of radiotherapy equipment, ask about Gafchromic RTQA2 dosimetry film (available in convenient sizes):

Gafchromic RTQA2-1010 dosimetry film and Gafchromic RTQA2-1010P dosimetry film (Pre-scaled):
Recommended for light-field alignment, precision star shots, autoradiography, etc.
Both are sized 10" x 10", 25 sheets per package

Gafchromic RTQA2-111 dosimetry film:
Recommended for verifying brachytherapy source positioning.
Sized 1.25" x 11", 25 strips per package

Gafchromic RTQA2-1417 dosimetry film:
Designed for larger field sizes.
Sized 14" x 17", 10 sheets per package

Gafchromic™ Dosimetry Tools

Designed for a contemporary RT environment

High absolute dose accuracy achieved at a fraction of the cost of alternative systems

Gafchromic EBT2/3/3+ dosimetry film has been designed specifically as a time and cost-saving tool that addresses the needs of medical physicists and dosimetrists working in radiotherapy environments and supports the processor-less environment of the modern hospital.

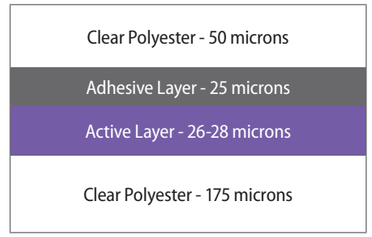
Benefits of Gafchromic EBT2/3/3+ dosimetry films:

- Superior resolution over array devices that meets the demand of increasing conformity requirements for new therapy modalities
- Wide dose range: 1 cGy to 40 Gy
- Response independent to radiation incident angle allowing film to measure the dose just like the patient would receive
- Energy-independent dose response
- Near tissue-equivalent
- Uniformity better than ±2% in dose
- Can be handled in room light – no need for a darkroom
- Water-resistant, water-immersible and usable with water phantoms
- Lowest starting expense and comparable continuing operating cost among all QA systems
- Saves time and money with improved accuracy and outstanding convenience
- Cut and shape the film to your needs
- Custom-cut sizes and shapes are also available

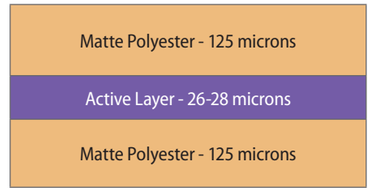
When used with specifically designed FilmQA™ Pro 3.0 software and following the OneScan Protocol, Gafchromic EBT2/3/3+ dosimetry film provides the most complete, quickest and most accurate dosimetric measurement.

Configurations and structures of Gafchromic EBT2/3/3+ dosimetry film

Gafchromic EBT2/3/3+ dosimetry film is made by laminating an active layer between two polyester layers. The polyester surface makes an exceptionally robust product and allows water immersion.



Structure of Gafchromic EBT2 dosimetry film (Actual thicknesses may vary slightly)



Structure of Gafchromic EBT3 dosimetry film (Actual thicknesses may vary slightly)

Although the active layers are the same between Gafchromic EBT2 and EBT3 dosimetry film, Gafchromic EBT3 dosimetry film is better than Gafchromic EBT2 dosimetry film because of its symmetrical structure (Gafchromic EBT3 dosimetry film can be scanned from either side) and its improved substrate (matte polyester prevents the formation of Newton's Rings).

Optimizing the sensitometric response of Gafchromic EBT2/3/3+ dosimetry film

The sensitometric responses of Gafchromic EBT2 and EBT3 dosimetry films are identical as they have same type and amount of active component.

Gafchromic EBT2/3/3+ dosimetry film is engineered with Ashland Specialty Ingredients technology including a special marker dye in the active layer that enables proprietary multi-channel dosimetry analysis built in to FilmQA Pro software.

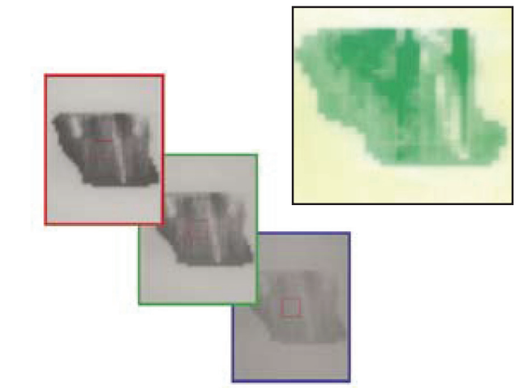
ASHLAND

ASHLAND
With good chemistry great things happen.™

Versatile Performance

Gafchromic™ EBT2/3/3+ dosimetry film can also be read with a film scanner or digitizer. As with densitometers, the response of the film can be enhanced if the spectral response of the scanner is matched to the absorbance of the film.

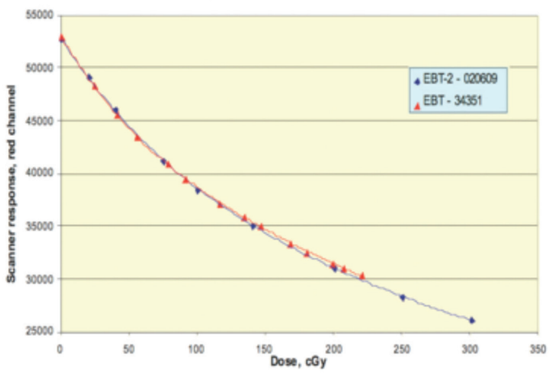
Many high-quality scanners are available to digitize colored films. The minimum requirements for scanner are those capable of 48-bit color depth. The Epson* 10000XL PHOTO flatbed color scanner, which is designed to digitize film up to 12.5" x 16" in size, is recommended to scan Gafchromic EBT2/3/3+ dosimetry film.



Scanned image using Gafchromic EBT2/3 dosimetry film and separation of image into each RGB color channel

The main advantages of using a flat bed color scanners is to fully utilize the properties inherent to Gafchromic EBT2/3/3+ dosimetry film. The multiple sets of the color data obtained from a single scan can be used with FilmQA Pro software. FilmQA Pro software allows automatic correction so it reduces the effects of film non-uniformity, scanner and other artifacts and provides the most accurate dosimetric results. Furthermore, the difference in color channel response allows the extended dynamic range of the film from 1 cGy to 40 Gy.

Response of Gafchromic EBT2 dosimetry film Compared with EBT
Epson 10000XL, red channel*

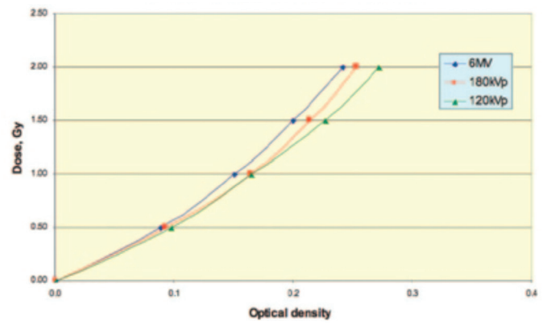


Responses of Gafchromic EBT2 dosimetry film and Gafchromic EBT dosimetry film

Energy independence of Gafchromic EBT2/3/3+ dosimetry film

Gafchromic EBT2/3/3+ dosimetry film has been designed to measure absorbed dose from high-energy radiation used in RT. The response of photons has been found to be highly energy-independent in the MeV range and measurements at lower energies show that the response changes by only ten percent, even down to keV range.

Energy Dependence Gafchromic EBT2 dosimetry film - Lot# 020609



Energy Dependence of Gafchromic EBT3 dosimetry film

Dose fractionation

Gafchromic EBT2/3/3+ dosimetry films exposed to a single fraction yields the equivalent amount of response as the film given fractionated exposure thus establishing Gafchromic EBT2/3/3+ dosimetry film as an effective dose integrator.

Post-exposure density growth

Gafchromic EBT2/3/3+ dosimetry film self develops in real time. The time interval between the exposure and the scan should be kept approximately the same for all films in an analysis. The effect of the post-exposure density growth can be mitigated effectively using our OneScan Protocol.

Storage and handling

Gafchromic EBT2/3/3+ dosimetry film is designed to be handled in interior room light, however it is recommended that the film be kept in darkness when not in use. Exposure to sunlight should be avoided. The film may be stored at room temperature (20° - 25°C), but the best practice is to store the film at refrigerator temperature. It can tolerate brief exposures (e.g. < 1 min.) to temperatures up to 70°C, or more prolonged exposure (e.g. < 1 day) at temperatures of 50°C. However, it is recommended that the film be handled, exposed and measured at room ambient temperature (20° - 25° C).

Gafchromic™ EBT3+ dosimetry film is a specially formatted Gafchromic EBT3 dosimetry film to be used with the FilmQA™ Pro software and the OneScan protocol. The convenience of the Gafchromic EBT3+ dosimetry films combines the measurement films with the calibration thus eliminating many inter-scan variables. The Gafchromic EBT3+ dosimetry films are sheets of Gafchromic EBT3 dosimetry film scored with a perforation to allow each piece to be separated into an 8" x 9.5" sheet and a matching 8" x 1.5" strip. The sheet is intended for exposure with the treatment plan while the strip is for exposure of a reference dose. With this arrangement the reference and treatment films are in perfect correspondence. By scanning these films together with a strip of unexposed film (also included in a box) and using the FilmQA Pro 3.0 film dosimetry software, all the advantages of the OneScan Protocol are available.

Order Gafchromic dosimetry film by product name:

- EBT2 – 8" x 10" boxed in packages of 25 sheets
- EBT2 – 14" x 17" boxed in packages of 10 sheets
- EBT3 – 8" x 10" boxed in packages of 25 sheets
- EBT3 – 14" x 17" boxed in packages of 10 sheets
- EBT3+--8"x 11" boxed in packages of 20 sheets

Plus 10 strips - Custom sizes are available by special order

Maximize your throughput of Gafchromic EBT2/3/3+ dosimetry film with the Gafchromic EBT2/3/3+ easel. Designed for the Epson* 10000XL PHOTO scanner, this easel correctly positions Gafchromic EBT2/3/3+ dosimetry film for accurate scans.

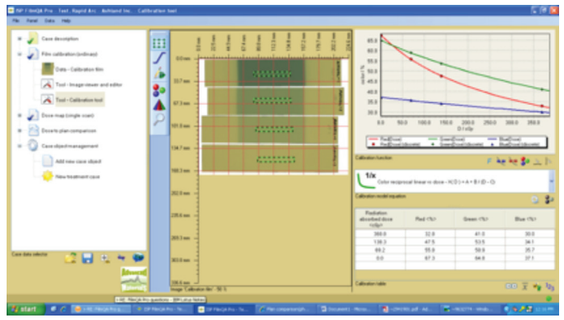
Call today for more information about practical applications of Gafchromic EBT2/3/3+ dosimetry film and other tools for your radiotherapy and radiology applications.

FilmQA Pro 3.0 software

State of the art radiotherapy verification software powered by proprietary multi-channel dosimetry

Unique Multichannel Dosimetry:

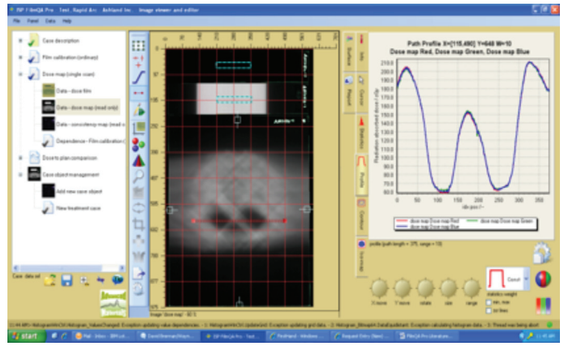
- Multichannel optimization - the dose map is calculated using all three color channels. It separates the dose-dependent parts of an image from the dose-independent artifacts. The resulting dose-map contains only information on absorbed dose, free from the effects of film thickness differences, fingerprints and dirt/dust/scratches.
- Advanced case object management for quick changes of parameters and rapid evaluation of multiple scenarios
- Rational function for calibration curve fitting that mimics the response of the film so fewer points are needed.
- Post-exposure response is no longer a factor that gets between you and your results.



Calibration curves are produced quickly for all color channels and fitted into a rational function.

One-Scan Protocol (Patent Pending)

- It's an efficient protocol that improves dosimetry by combining calibration and measurement in a single scan. Because we use an asymptotic fitting function that behaves like film, just four films are needed to define the specific shape of the dose-response curve. For measurement, the patient film is scanned with an unexposed film patch plus a reference patch exposed to a known dose. Using measurements from the two film patches, the calibration fitting function is re-scaled and adapted specifically for that scan. This eliminates scan-to-scan variability and error is reduced below 1%.
- Results come in minutes – an analysis can be done any time even at a moment's notice.



OneScan protocol allows quicker and more accurate results.