



For online information about
GAFCHROMIC® EBT, FilmQA™
and the **IMRT QA System Solution**
please visit:

gafchromic.com

For an informative FilmQA™ tutorial please visit:
3cognition.com



visit
gafchromic.com

QD+
Quality Dosimetry Plus

IMRT QA System Solution
with the

GAFCHROMIC® QD+
Quickstart Package



INTERNATIONAL SPECIALTY PRODUCTS

In the United States, contact:
ISP/Advanced Materials
973-628-3688 or 973-628-3531

For international customers, please visit our
website for the information of your local distributor:

gafchromic.com

Installation and Training

We will come to your department and
implement the GAFCHROMIC® QD+
Quickstart Package or
IMRT QA System Solution.

We personally train your staff on site.

Call today for more information,
and to discuss ways in which the
GAFCHROMIC® QD+
Quickstart Package
or
IMRT QA System Solution
can work for you.



Save time, effort and money!

Take advantage of the most comprehensive, reliable, economical and easy-to-use film-based IMRT QA products – perfect for the processor-less environment

THE FILM

GAFCHROMIC® EBT

Film for processor-less radiotherapy environment

- Attractive price, *plus no \$20k scanner needed!*
- Self-develops w/o processor or dark room!
No processor noise or drift artifacts!
- Energy independent/near tissue equivalent
No 'over response' from x-ray scatter
- Stable, uniform, can be handled in room light
- Low post exposure density growth –
Over 95% develops upon exposure
- 8" x 10" sheet size
- Wide dose range (1cGy to 800cGy)

SOFTWARE

FILM QA™

Fast! IMRT plan verification software

- A 7-field IMRT case analysis in under 5 minutes
- Quantitative evaluation includes dynamic profiles, isodose maps, plus gamma, DTA and dose difference histograms
- Learns any fiducial mark pattern and registers multiple films with "1-click"
- Corrects for scanner field flatness and processor drift
- Customizable reports can be shared via web browser
- Optimized for GAFCHROMIC® EBT film and Epson 1680 scanners
- Comprehensive tutorial available at 3cognition.com

High absolute dose accuracy can be achieved

... at a fraction of the cost of alternative systems.



Actual test film showing instant real-time result of dosimetry

Every GAFCHROMIC® QD+ Quickstart Package includes installation plus one day of on-site training!



THE GAFCHROMIC® QD+ QUICKSTART PACKAGE:

INCLUDES FILM, SCANNER, INSTALLATION & TRAINING

Four 25-sheet boxes of 8" x 10" GAFCHROMIC® EBT film



Epson Expression 1680 flatbed color scanner*

Note: The GAFCHROMIC® QD+ QUICKSTART DELUXE PACKAGE comes with a larger scanner with increased scanning area.

* Or comparable scanner depending on country of installation

Installation and Training

We come to your department and implement the GAFCHROMIC® QD+ Quickstart Package and personally train the members of your staff on site, including a comprehensive workshop.

ACCURATE, RELIABLE, AND EXCEPTIONALLY ECONOMICAL PRODUCTS!

OUR IMRT QA SYSTEM SOLUTION:

THE GAFCHROMIC® QD+ QUICKSTART PACKAGE PLUS FILMQA™ SOFTWARE

The GAFCHROMIC® QD+ Quickstart Package plus FilmQA™ software is an exceptionally high quality IMRT QA dosimetry system with the lowest start-up and operating costs in the industry. Our system solution costs just a *fraction* of conventional film-based IMRT QA, diode and ion chamber arrays.

The GAFCHROMIC® QD+ Quickstart Package (consisting of EBT film, scanner and training) with FilmQA™ delivers outstanding results better than other alternatives.

THE FILM

The system's anchor is GAFCHROMIC® EBT film, an ideal medium for quantitative dosimetry, with spatial resolution better than 0.1mm and response that is energy and fractionation independent. EBT film is self-developing and can be handled in room light. And for applications where qualitative results are sufficient, GAFCHROMIC® RTQA film is even more economical, yet has many of the same attributes of EBT film. Both films are durable and water-immersible.

**CALL NOW FOR
A VERY ECONOMICAL
YET HIGH PERFORMANCE
IMRT QA SYSTEM**



EBT FILM



FILMQA

Furthermore, because GAFCHROMIC® films are blue, there are inherent advantages when incorporating a color scanner in the verification process. Since Epson 48 bit RGB transparency film scanners also work with reflective media, they are perfect for EBT and RTQA films.

See additional EBT Film features in the bulleted items found on page 3.

THE SOFTWARE

FilmQA™ validation software by 3Cognition LLC is the fastest, easiest-to-use software for image evaluation and IMRT plan validation. It works with all treatment planning systems and uniquely performs simultaneous automated image registration of multiple fields. Interactive evaluations of images and plan are done with a selection of both qualitative and quantitative features including dynamic isodose maps and profiles, and various analysis tools such as dose-difference, gamma and distance-to-agreement functions, etc. Once the analysis is complete, the results are presented for output in customized, browser-readable reports.

FilmQA™ is the only leading analysis tool specifically designed to carry out sophisticated correction of scanner artifacts. (See actual results in the comparative reports that follow.) As a result, FilmQA™ dramatically increases the accuracy of scan measurements with all scanners, including Vidar scanners.

EBT FILM FEATURES A PRECISION FIVE LAYER LAMINATED COMPOSITION

A	clear polyester97 microns	} Approximate thicknesses. Actual values may vary slightly.
B	active substrate layer17 microns	
C	interior laminate6 microns	
D	active substrate layer17 microns	
E	clear polyester97 microns	



EBT film is engineered with our proprietary technology including an exclusive bonding inter layer (C).

This correction is critical because the images in both conventionally processed films and radiochromic films are composed of particles dispersed in a matrix having a different refractive index. Hence both types of film scatter light. In many scanners this leads to a variation in response in a direction parallel to the light source.

FilmQA™ is the only available software that carries out background correction for this artifact with a single mouse click. Because FilmQA™ was co-developed with GAFCHROMIC® EBT film, the marriage of these outstanding tools provides the most accurate verification process available, with an exceptionally high degree of data integrity.

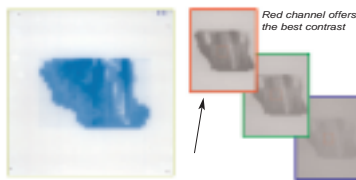
See actual profiles, reproduced on pages 6 and 7, showing results with and without background correction using GAFCHROMIC® EBT film. Additional FilmQA™ features are found in the bulleted copy located on page 3 of this brochure.

THE SCANNER

Conventional CCD film scanners have a long diffuse light source when compared to flat-bed scanners, which have a light source closer to the film. The length of the light source and its distance from the film are factors in the light scatter artifact. As a result, conventional scanners generally produce greater artifacts from scattered light than many flat bed scanners.

EPSON 1680 FLAT BED COLOR SCANNER PERFORMANCE

with GAFCHROMIC® EBT film and FILMQA™ plan verification software



With peak absorption at 635 nm, EBT film is best evaluated in the red channel of a flatbed scanner.

Among flat bed scanners, the Epson 1680 Expression scanner with 48 bit RGB output (16 bit per channel) is recommended for GAFCHROMIC® films. It features a 210 mm x 297 mm scan format with spatial resolution of 0.02mm, and offers both full-color and reflective scan modes. Its full-color functionality makes for best contrast in the red channel. (See the comparative analysis shown below.)

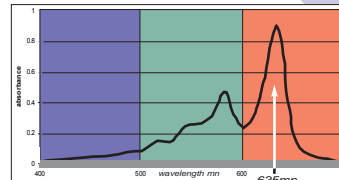
In addition, the Epson 1680 has stability and noise response characteristics equal to conventional film scanners costing as much as 20x more.*

The deluxe GAFCHROMIC® QD+ Quickstart Package includes upgrade to a larger scanner.

INSTALLATION AND TRAINING

GAFCHROMIC® QD+Quickstart Packages include installation plus one full day of on-site training. We personally provide you with hands-on instruction and easy-to-understand manuals and literature that expand on your existing training and help maximize patient care. Call to discuss how our IMRT QA system solution can work for you!

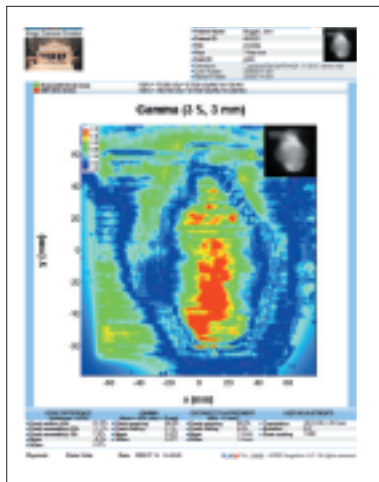
* Additional comparative information, including measurement consistency and single pixel noise comparisons of Epson and Vidar scanners, is available at www.gafchromic.com Click on "System Performance Examples."



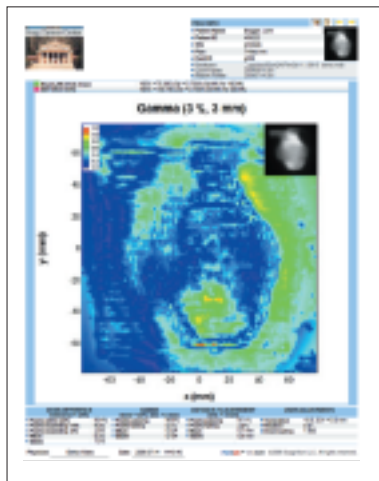
GAFCHROMIC® EBT film with net absorbance at 1.2 Gy

**THE
IMPORTANCE
OF BACKGROUND
CORRECTION
ACTUAL CASE
STUDIES**

EBT on EPSON 1680 scanner
without background correction

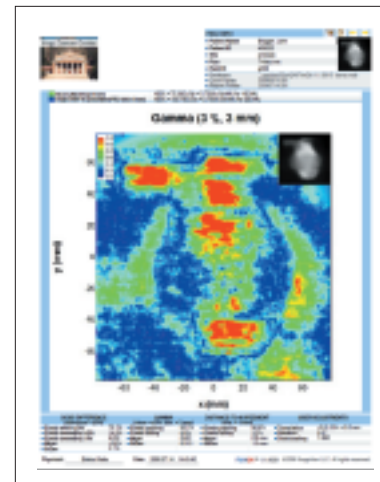


EBT on EPSON 1680 scanner
with background correction



**THE
IMPORTANCE
OF BACKGROUND
CORRECTION
ACTUAL CASE
STUDIES**

EBT on Vidar VXR-16 scanner
without background correction



EBT on Vidar VXR-16 scanner
with background correction

