

Precision Cut EBT3 GafChromic Film™ User Guide

Instructions for Use
1582 Series



SUN NUCLEAR
A MIRION MEDICAL COMPANY

User Guide, Precision Cut EBT3 GafChromic™ Film 1582 Series

©2023 by Computerized Imaging Reference Systems, Inc. (CIRS). All rights reserved.

The information contained in this guide is copyrighted and all rights reserved by CIRS. Copying, duplicating, selling, or otherwise distributing any part of this guide without the prior written consent of CIRS is prohibited.

All data used is best available at time of publication. CIRS reserves the right to make periodic modifications to this guide without obligation to notify any person or entity of such revision.

Sun Nuclear, the Sun Nuclear logo, and other trade names of Sun Nuclear products listed herein are registered trademarks or trademarks of Mirion Technologies, Inc. or its affiliates in the United States and other countries. GafChromic® is a registered trademark of International Specialty Products. Third party trademarks mentioned are the property of their respective owners.

6 July 2023



Ashland Advanced Materials
Building N
1005 US Hwy No 202/206
Bridgewater, NJ 08807 USA
+1 908-243-3500
www.ashland.com



CIRS
900 Asbury Ave
Norfolk, VA 23513 USA
+1 321-259-6862
www.sunnuclear.com



SUN NUCLEAR
A MIRION MEDICAL COMPANY



Computerized Imaging Reference Systems, Inc. has been certified by UL DQS Inc. to ISO 13485:2016. Certificate Registration No. 10000905-MP2016

Contents

Introduction	1	Support and Maintenance	7
Features of the Precision Cut		Contacting Sun Nuclear	
EBT3 GafChromic™ Film	1	Support	7
Benefits of Precision Cut		Sun Nuclear Support	
Film	1	Website	7
Film Configurations	1	Warranty	7
Additional Information	2		
Schematics and Ordering		Appendix A: Regulatory	
Information	3	Supplement	9
Operation	5	Operator Responsibility	10
Care and Handling	5	Reporting Health or Safety	
Excess Temperature		Related Issues or Concerns . .	10
Indicator	5	Modifications to Equipment . . .	10
Use of Film	5		

Introduction

Features of the Precision Cut EBT3 GafChromic™ Film

- Measures true 2D dose distribution within a region of interest.
- High spatial resolution and dynamic range for small field dosimetry.

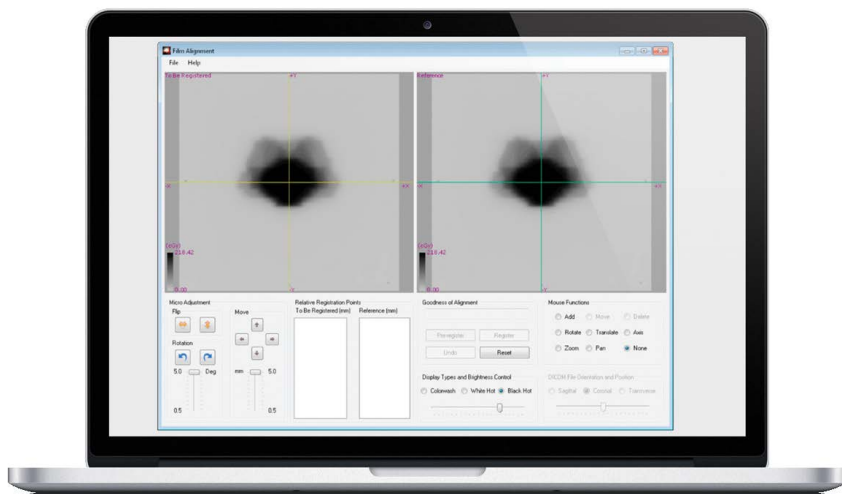


Figure 1. Example of Film Alignment Dialog Box, SNC Patient™ Software

Benefits of Precision Cut Film

Unlike dosimeters, radiochromic film provides a means of measuring true 2D dose distribution within a region of interest. For small field dosimetry, film offers a unique advantage because of its high spatial resolution and dynamic range¹. These qualities make film a popular solution in many radiotherapy departments.

However, cutting film for use in phantoms can be a tedious task. To save valuable time for clinicians and researchers, we offer Precision Cut radiochromic film.

Film Configurations

Our Precision Cut Film is laser cut and designed to fit within the constructs of a specified phantom. We currently offer film configurations for the following phantoms or its components:

- E2E SBRT Phantom, Model 036A², 036S & 036-01
- SRS Multi-Lesion QA Phantom, Model 037
- Stereotactic End-to-End Verification Phantom, Model 038

- IMRT Phantoms, Model 002 Series
- Dynamic Thorax Phantom, Model 008A

For schematics and orientation directions of films cut for these products, please see *Schematics and Ordering Information* on page 3. Additional film configurations can be cut on a custom basis.

Additional Information

For more information on EBT3 GafChromic Film including calibration process, material specification, and handling, please refer to the Ashland website:

<https://www.ashland.com/industries/medical/radiotherapy-films/new-channel>

-
1. *Martin J Butson, Peter K.N Yu, Tsang Cheung, Peter Metcalfe, Radiochromic film for medical radiation dosimetry, Materials Science and Engineering: R: Reports, Volume 41, Issues 3–5, 25 September 2003, Pages 61-120, ISSN 0927-796X, [http://dx.doi.org/10.1016/S0927-796X\(03\)00034-2](http://dx.doi.org/10.1016/S0927-796X(03)00034-2)*
 2. *Model 036A has been discontinued. However, film is available to order.*

Schematics and Ordering Information

Table 1. Schematics and Ordering Information




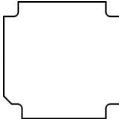





Part No.	Description	Schematic Orientation	Size
158200-02	Precision Cut EBT3 Film Kit for Model 036-01 (Set of 4 inserts plus 6 calibration strips)		5" x 7"
158200-04	Precision Cut EBT3 Film Kit for Model 036A (Set of 10 inserts plus 6 calibration strips)		5" x 2.5"
158200-07	Precision Cut EBT3 Film Kit for Model 037 (Set of 10 inserts plus 18 calibration strips)		7.5" x 6"
158200-09	Precision Cut EBT3 Film Kit for Model 038-05, 038-21, 002FC (Set of 25 inserts plus 6 calibration strips)		2.5" x 2.5"
158200-25	Precision Cut EBT3 Film Kit for Model 036S (Set of 18 spine inserts and 12 lung inserts plus 6 calibration strips)	036S lung film 	036S lung film: 5" x 2.6"
		036S spine film 	036S spine film: 3.75" x 2.4"
158200-26	Precision Cut EBT3 Film Kit for Model 008A-08 (Set of 12 inserts plus 6 calibration strips)		5.7" x 2.3"

Table 1. Schematics and Ordering Information

Part No.	Description	Schematic Orientation	Size
158200-27	Precision Cut EBT3 Film Kit for Model 008A-22 (Set of 12 inserts plus 6 calibration strips)		6.25" x 2"
158200-28	Precision Cut EBT3 Film Kit for Model 038-27 (Set of 30 inserts plus 6 calibration strips)		2" x 2"

Operation

Care and Handling

Great care is taken in handling all film, including maintaining film orientation, minimal exposure to UV light, and shielding from skin oils and environmental effects. While film can withstand limited exposure to interior light¹, it is recommended that film be stored in the provided envelopes and packaging to avoid noticeable effects.

Excess Temperature Indicator

Prior to using film, please refer to the Excess Temperature Indicator provided in the film packaging. If the small box in the center of the indicator is white, the film is acceptable for use. If the box is black, the film package has been overheated during transport. Please contact Sun Nuclear Support. See *Contacting Sun Nuclear Support* on page 7.

Use of Film

Each film package includes six calibration strips, which are manufactured from the same lot as Precision Cut film. Calibration of the film can be done once for all included films.

All calibration strips and film must be oriented in the same direction in order to ensure accurate measurements. Numbers on calibration strips are placed in the bottom left corner to identify the correct orientation. All other films should be positioned with the notch located in the bottom left corner. Refer to *Schematics and Ordering Information* on page 3 for the correct orientation of precision cut film.

1. Gafchromic™ Dosimetry Media, Type EBT3
https://www.ashland.com/file_source/Ashland/Documents/PHA18-128.2_Gafchromic_Film_Brochure.pdf.

This page is intentionally left blank.

Support and Maintenance

Contacting Sun Nuclear Support

You may request support in two ways:

- Submit a support request using our online form. See *Sun Nuclear Support Website* below.
- Contact the Sun Nuclear Support team by telephone:
 - U.S.A.: +1 321-259-6862, Option 3
 - Netherlands: +31 20 399 90 41, Option 1
 - Germany: +49 61 02 50 49 500, Option 2

Sun Nuclear Support Website

- 1 Navigate to www.sunnuclear.com/support.
- 2 Enter your email address and password and then click **Login**.
 - To download product information, click **Products and Devices**, select the product, and then select the download type.
 - To open a Support request, click **Open New Case**, complete the form, and then click **Create Case**.

Warranty

Film expiration date will be a minimum of 6 months from invoice date.

This page is intentionally left blank.

Appendix A: Regulatory Supplement

Sun Nuclear Corporation Symbols

The following symbols are used in this guide and in Sun Nuclear Corporation's product labels.



WARNING: This symbol indicates a hazard that could result in major injury or equipment damage. (EN ISO 7010, W001)



CAUTION: This symbol indicates a potential hazard that could result in minor injury or equipment damage. (EN ISO 15223-1, 5.4.4)



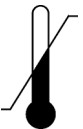
Note: Important or supporting information.



Manufacturer's Identification (name and address). (EN ISO 15223-1, 5.1.1)



Date of Manufacture. (EN ISO 15223-1, 5.1.3)



Temperature limitation. (EN ISO 15223-1, 5.3.7)



Humidity limitation. (EN ISO 15223-1, 5.3.8)



Atmospheric pressure limitation. (EN ISO 15223-1, 5.3.9)



Serial Number. (EN ISO 15223-1, 5.1.7)



Catalog Number. (EN ISO 15223-1, 5.1.6)



The entity responsible for repackaging the original medical device packaging (name and address). (EN ISO 7000, 3727)



UL Certified. (ISO 13485)



Consult instructions for use. This equipment must be used in accordance with the instructions in this manual. Read all instructions and safety labels before use. (EN ISO 15223-1, 5.4.3)



Do not throw in trash; dispose of in an environmentally friendly way. (EN 50419)

Operator Responsibility

The instructions in this guide are intended for trained clinical personnel. The operator is solely responsible for the accurate setup and use of the equipment.

Reporting Health or Safety Related Issues or Concerns

Any serious incident that has occurred in relation to the equipment should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

To report any safety or health related issues or concerns regarding the use of Sun Nuclear products, contact Sun Nuclear directly.

Modifications to Equipment

Any changes or modifications to the equipment that are not expressly approved by Sun Nuclear Corporation could void your warranty.

+1 321 259 6862 // sunnuclear.com

Sun Nuclear Corporation, 3275 Suntree Boulevard, Melbourne, FL 32940 USA



SUN NUCLEAR
A MIRION MEDICAL COMPANY