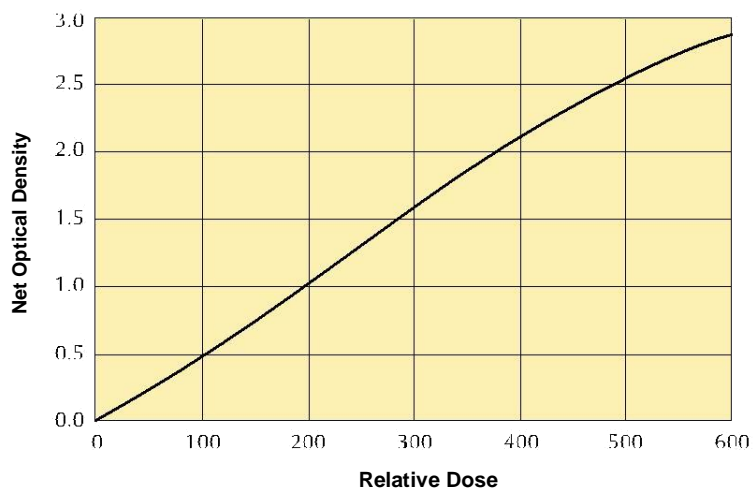


# KODAK EDR2 Film

## Extended Dose Range (EDR) READY-PACK Film for Monitoring and Evaluation of Exposures at Therapy Energies

### KODAK Extended Dose Range Film (EDR2)



The curve above shows the approximate relative dose response for EDR2 film. The curve is representative only—the exact results will depend on the exposing, processing, and scanning conditions at each facility. EDR2 film will saturate in direct exposure at ~700 cGy.

#### KODAK EDR2 Film

EDR2 film is the new addition to Kodak's award-winning family of products designed specifically for oncology applications. Compared to most x-ray films, it is relatively insensitive to x-ray energies and, hence, has a response which extends to very high exposures.

Intended for direct exposure applications, EDR2 film extends the current line of Kodak Ready-Pack products which includes PPL, XTL, and XV films. It is not suitable for portal imaging radiographs.

#### EDR2 Features

Film is a convenient means for calibration and monitoring of exposures.

- Large area
- Low cost, widely available
- Excellent for relative dosimetry (e.g., field uniformity, equipment characterization: field shapes, port openings, MLCs)
- With appropriate calibration film may be applicable to absolute dosimetry (e.g., high-dose treatment strategies such as IMRT)

#### Features of EDR2 direct exposure applications

- Wide response range
- Approximately linear
- Robust processing

*"Kodak's EDR2 Ready-Pack film, with extended dose range capability and improved exposure linearity, truly advances the state of the art for all film dosimetry applications. It is particularly useful for IMRT, stereotactic, and advanced MLC applications. In most high-dose applications, it has eliminated the need for radiochromic film."*

**Dan Ritt, President**  
Radiological Imaging Technology

*"Kodak's new EDR2 film is the media of choice for high-quality, cost-effective film dosimetry. I am impressed with its ability to accurately measure both absolute dose and isodoses for IMRT quality assurance without the attendant inaccuracies which other film types exhibit."*

**Arthur Olch, Ph.D., DABMP**  
Chief of Physics, Radiation Oncology Program  
Childrens Hospital, Los Angeles



# KODAK EDR2 Film

## Dose Response for Evaluation

Exact dose responses are a function of facility dependent factors including processing conditions (processing time, processing temperature, processing equipment, processing chemistry), the density sampling (digitizer equipment and calibration), and exposure monitoring equipment. The exact response relationship should be measured and verified for the local conditions. The films should be processed using recommendations found in Kodak Service Bulletin #30 (refer to EC film guidelines). This document is available through the automated Kodak Health Imaging Faxback System (1-800-336-4722). The document number is 800210. A copy can also be ordered at no charge through your dealer of Kodak products or by calling Kodak Customer Support at 1-800-677-9933 and requesting Kodak publication N-923 or Kodak part #632661.

## Measurement Technique

The dose response of a film should be measured using appropriate amounts of build-up and backscatter material. Many references have discussed methodology for measuring the response of a film. A few of these are:

- M. D. C. Evans and L. J. Schreiner, "A simple technique for film dosimetry," *Radiother. Oncol.* Vol 23, pages 265–267, 1992.
- J. I. Hale, A. T. Kerr, and P. C. Shragge, "Calibration of film for accurate megavoltage photon dosimetry," *Med. Dosimetry* Vol 19, pages 43–46, 1994.
- Inhwan J. Yeo, C-K Chris Wang, and Sandra E. Burch, "A filtration method for improving film dosimetry in photon radiation therapy," *Medical Physics* Vol 24, pages 1943–1953, December 1997.
- J. L. Robar and B. G. Clark, "The use of radiographic film for linear accelerator stereotactic radiosurgical dosimetry," *Medical Physics* Vol 26, pages 2144–2150, 1999.

## Other KODAK Films

The selection of the appropriate film depends on the application and the exposure range of interest.

The table below summarizes the approximate active ranges and saturation points for Kodak Ready-Pack films commonly used in radiation therapy departments. This information may be helpful when considering their use in various applications including relative and absolute dosimetric measurements:

Film	Responsive Range	Approximate Saturation Exposure
PPL	0.25–5 cGy	10 cGy
XTL	1–15 cGy	30 cGy
XV-2	5–100 cGy	200 cGy
EDR2	25–400 cGy	700 cGy

## Ordering Information

Kodak EDR2 film comes in two different sizes:

- Product size: 10 x 12 in. CAT No. 809 7214
- Product size: 35 x 43 cm CAT No. 116 1769

EDR2 film is available through your local authorized distributor of Kodak products. Please contact your regional Kodak Oncology manager or Customer Support at 1-877-297-5307, ext. 22 for additional product information.

[www.kodak.com/go/oncology](http://www.kodak.com/go/oncology)

Health Imaging Division  
EASTMAN KODAK COMPANY  
Rochester, New York 14650 1-877-297-5307, ext. 22

Outside the U.S., please contact your local Kodak company.

