

**AMERICAN NATIONAL
STANDARD**

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EIA STANDARD

Recommended Practice for Measurement of X-Radiation from Non-Raster-Scanned Direct-View Cathode Ray Tubes

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RECOMMENDED PRACTICE FOR MEASUREMENT
OF X-RADIATION FROM
NON-RASTER-SCANNED DIRECT-VIEW CATHODE RAY TUBES

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RECOMMENDED PRACTICE FOR MEASUREMENT
OF X-RADIATION FROM
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(From EIA Standards Proposal No. 2149, formulated under the cognizance of EIA JT-32 Committee on Electron Tube Safety.)

1.0 PURPOSE

The purpose of this Standard is to obtain the x-radiation characteristics of non-raster-scanned direct-view data display cathode ray tubes in order to predict the levels emitted by tubes when electrical characteristics of the application are known.

1.1 Scope

This test method applies to the measurement of x-radiation emitted from non-raster-scanned direct-view cathode ray tubes. For some applications the test procedures described in Recommended Standard EIA-501, "Recommended Practice for the Measurement of X-Radiation from Raster-Scanned Direct-View Data Display Cathode Ray Tubes," or EIA-503, "Recommended Practice for Measurement of X-Radiation from Direct-View Television Picture Tubes," may be more appropriately used than those described herein.

CAUTION

SAFETY CONSIDERATIONS

Measuring instruments should be properly grounded.

Caution should be taken to avoid shock hazard, particularly in the vicinity of the anode connection and the voltage metering systems.

Safety equipment should be worn at all times during the measurement procedure.

X-ray film badges should be worn in accordance with established plant safety practices for monitoring radiation dosage.

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2.0 APPARATUS

2.1 X-Radiation Detection Instruments

2.1.1 Search Instruments

A rapid response instrument, designed to detect low energy x-radiation, is recommended to locate the position of maximum radiation. (Examples: G-M tube instruments such as the Texas Nuclear Model 2652; the Johnson TV X-1; or the Victoreen Model 491). Thin window ion chamber survey meters may also be used. See EIA-Consumer Products Engineering Bulletin No. 3, "Measurement Instrumentation for X-Radiation from Television Receivers".

2.1.2 X-Radiation Measuring Instrument

The principal x-radiation measuring instrument shall comply with the requirements of Title 21, Code of Federal Regulations (CFR), Chapter I, Subchapter J, Section 1020.10, subparagraph (c)-(2), and with EIA Consumer Products Engineering Bulletin No. 3 (CPEB-3).

The instrument shall provide x-radiation measurements (mR/h) in the range of the applicable limit.

The x-radiation sensitive volume shall have a cross section parallel to the external surface of the hypothetical cabinet with an area of 10 cm² and no dimension larger than 5 cm.

Measurements deviations due to instruments imprecision, energy dependence and other sources of error shall be commensurate with current instrument art.

An example of an instrument which fulfills these requirements is the Victoreen 440 RF/C.