CR – 35

HIGH-SENSITIVITY IMAGING PLATE SCANNER

COMPACT HIGH-SPEED SCANNER FOR ALL FLEXIBLE TYPES OF IMAGE PLATES / READ PHOSPHOR SCREENS UP TO 35 X 50 CM

- WHOLE-BODY RADIO-LUMINOGRAPHY
- <= 50 µM RESOLUTION
- HIGH SCANNING SPEED COMBINED WITH HIGH SENSITIVITY
- INTEGRATED ERASING UNIT
- EASY TO USE

CR-35 is a compact, high-speed scanner for all flexible types of imaging plates / storage phosphor screens up to the size of 35x50cm. In combination with the corresponding imaging plate, it can be used for a variety of different nuclides, such as H^{3}, C^{11}, C^{14}, F^{18}, P^{32}, P^{33}, S^{35}, Fe^{59}, Ga^{68}, mTc^{99}, In^{111}, I^{125}, I^{131}, Cs^{137}, Lu^{177}, At^{211} etc.

ELYSIA RAYTEST

Its novel design offers compact size and high-speed scanning. The laser is focusable up to 30 µm. An integrated erasing unit allows to read and erase the imaging plate in one step. The CR-35 scanner is the first system for radio-luminography certified by BAM, Berlin, for the tests according to DIN EN 14784, class B.

Additional features are:

- Easy to use
- Low operating noise
- Red LED laser 635 nm focused to 30 µm
- 16-bit dynamic range

Technical specifications

Laser	Red LED laser 635 nm, focused to required resolution
Pixel size	25-50-100 µm
Max. size for screens	W35cm x L50cm
Interface	LAN cable.
Operating noise	<39 dB (A).
Eraser	integrating erasing unit with high performance red LEDs.
Grayscale resolution	16-bit dynamic range (65,536 gray levels).
Data acquisition	CR-Reader software worked on 16-bit.
Data analysis	AIDA software worked on network or in standalone: optimized modules for TLC analysis and whole-body autoradiography analysis.

Physical specifications

Dimensions	370 mm W x 470 mm D x 400 mm H
Weight	max 18kg
Elysia prod. reference	22200002

Software: CR-Reader and AIDA (Advanced Image Data Analyzer)

CR-Reader software is used for instrument control and data acquisition, while AIDA allows data evaluation.

CR-35 can be used as standalone with touchscreen control, and images are stored on a SDHC card of 32Gb. However, the CR-Reader software allows complete control of the device with a direct data storage on a computer. Acquisitions are launched via CR-Reader and several methods are available (resolution (25-50-100µm), sensitivity (standard or sensitive) and a fast scan option). Then the image storage is available in 16-bit greyscale in different formats: default format (.xyz and .dat), PNG format and Tiff format.

Data analysis software is AIDA Advanced Image Data Analyzer, that is used for the evaluation and annotation of images obtained from the CR-35 scanner. Several evaluation modules in 1- or 2-dimensional exist in AIDA, such as 1D/2D TLC, 2D Densitometry, Whole Body Autoradiography etc. These modules are defined by an AIDA license specific to each computer. In this license, the following GLP function is available: different operator accounts can be created (system administrator, administrator and normal user), and an audit trail records the GLP relevant changes (recording of the raw data treatment).

Computer Specifications:

Operating System	Windows 7 or Windows 10
Installed Physical Memory	8.0 GB minimum (RAM)
Port	LAN port

Advanced Image Data Analyzer AIDA

Elysia product reference:

CR-Reader software	22200012
Aida software	15000083 & 15000085 & 15000002

Accessories

CR-35 DARK BOX

- Complete dark environment to avoid background signal
- Space saving in the laboratory: compact and tailored to the scanner
- No need for a dark room

The CR-35 dark box is a dark cabinet for CR-35, to reduce light exposition during imaging plate reading. It is specifically designed to accommodate the CR-35 scanner and reduce the background.

The CR-35 Dark Box is a steel cabinet designed to vertically host the CR-35 NDT Plus or the CR-35 Bio Plus. Thanks to the box door, covered with a light protection film, the image plate scanner is completely immersed in a dark environment, which allows to avoid light exposure during measurements. Light rays cannot enter the scan slot of the imager during the reading of the imaging plates. In a room with direct sunlight, the Dark box can reduce the background up to 200 times.

As the device is suspended in the box, this vertical configuration allows to save space on the laboratory bench. This cabinet is especially useful in laboratories exposed to natural light and lacking light protection (large windows without curtains). A dark room is no longer required.

Measurement procedure: after exposition to the radioactive sample, the imaging plate is placed at the entrance of the scan slot of the scanner. The box door is closed to have a completely dark environment during the reading. When the measurement is launched, the CR-35 motor and its small wheels move the screen downwards to be scanned. At the end of the reading, as the height position of the scanner can be adjusted, the imaging plate is safely dropped in the curved base of the box. In this way, exposition to light during acquisition and damage to the plate is prevented.

Physical Specifications

Dimensions	605 mm W x 520 mm D x 1130 mm
Weight	55 kg
Elysia prod. ref.	22200015

Imaging Plates and Cassettes

Phosphor imaging plates for CR-35 acquisition are stored in a rigid opaque envelope (Cassette).

The Imaging Plate is a flexible storage plate with a layer made of a phosphorescence substance, which is excited by radiation from radioisotopes during the exposure time. Depending on the applications and its use, an imaging plate can typically be exposed and erased up to 1000 times. Several formats of plates with different sensibilities are available.

As the photo-stimulated luminescence units are sensitive to light, it is recommended to stock the imaging plates in their cassettes. During radiation exposure time, placing the imaging plates inside the cassette allows to reduce light exposure. The cassettes have aluminum housing with latch closure.

Physical Specifications et Elysia product references:

- Imaging plates

Dimensions	Type	Max. SRb (Basic spatial resolution)	Minimum radiation dose for max SRb	Elysia Product Reference
20x25cm	HCR	63 µm	3.3 mSv	22200020
20x40cm	HCR	63 µm	3.3 mSv	22200021
23x25cm	HCR	63 µm	3.3 mSv	22200022
23x40cm	HCR	63 µm	3.3 mSv	22200023
35x43cm	HCR	63 µm	3.3 mSv	22200024

- Cassettes

Dimensions	Elysia Product Reference
20x25cm	8000213
20x40cm	8000212
35x43cm	8000216

The imaging plates and cassettes can be ordered in different dimensions on request.

Imaging Plates

Cassette

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