



# VACUTEC

VacuTec Meßtechnik GmbH  
Phone: +49 (0) 351 31724-0  
E-Mail: [info@vacutec-gmbh.de](mailto:info@vacutec-gmbh.de)  
[www.vacutec-gmbh.de](http://www.vacutec-gmbh.de) ■

## AEC CHAMBERS – PATIENT SAFETY

### General

The AEC chamber is an accessory for X-ray systems (projection radiography). The AEC chamber provides a signal proportional to the image receptor dose, enabling X-ray imaging with optimal diagnostic image quality with minimal patient radiation exposure. The AEC chamber is designed for continuous operation in professional health care facilities (clinics, hospitals, medical practices).

### Configuration



The AEC chambers are air-filled parallel-plate ionization chambers with typically one or three independent sensor fields. Several different outer dimensions are available. Each VacuTec AEC chamber is equipped with a preamplifier and electronics, which converts the low ionization current into EMC stable digital signals. Additionally it supplies the voltage for the chamber operation and allows selection of the sensor fields.

### Selection of AEC chambers with digital interface

REF	No. of Measuring fields	Connector	Size (mm)
140 00 13	3	Sub-D 9 pin	374 × 354
141 00 18	3	Sub-D 9 pin	374 × 374
141 00 20	3	Sub-D 9 pin	320 × 320
142 00 13	1	Sub-D 9 pin	374 × 374
143 00 06	3	Sub-D 9 pin	374 × 450
145 00 44	3	Sub-D 9 pin	450 × 450
145 00 45	3	RJ45	450 × 450
151 00 18	3	Sub-D 9 pin	450 × 450
151 00 21	3	Sub-D 9 pin	450 × 470
151 00 22	3	RJ45	450 × 470
145 00 97	3	Sub-D 9 pin*	450 × 450

\* position of amplifier at the bottom of the AEC chamber

Optionally the digital output signal can be transformed into an analogue voltage by using an additional ramp module.

# Selection of ramp modules

(for Sub-D type AEC chambers)

REF	Description
902 00 42	for 1 and 3 field AEC chambers
902 00 11	for 1 and 3 field AEC chambers, with cable extension

## Specification

Energy range / tube voltage	40 ... 150 kV
Dose rate range	0.5 ... 1000 $\mu\text{Gy/s}$
Exposure dose range	1 ... 100 $\mu\text{Gy}$
Digital resolution (selectable)	0.025 $\mu\text{Gy}$
Exposure time range	1 ms ... 10 s
Sensitivity tolerance between sensor fields	< 5 %
Attenuation factor	< 1.04
Aluminum equivalent	< 0.75 mm Al
Supply voltage AEC chamber	+12 ... +16 V DC
Power consumption	max. 2 W
Digital output	Differential signal (RS 422), pulse width 2 $\mu\text{s}$

## When using ramp module

Supply voltage	$\pm(12 \dots 16) \text{ V DC}$
Ramp output	0 ... 10 V

## Flowchart AEC

