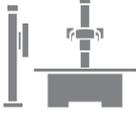




Improving Quality of Life

- 
X-Ray Grid
- 
Radiography System
- 
Software
- 
Computed Radiography
- 
Processor



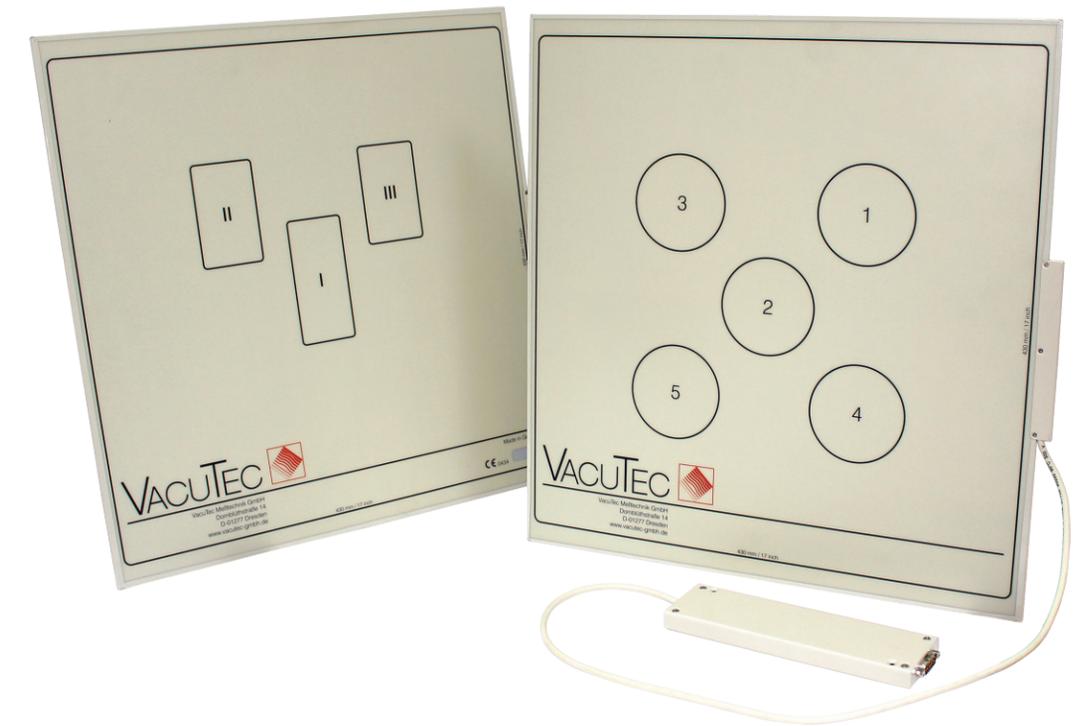
X-Ray Accessories



RF Treatment



Diagnostics



AEC Chamber

Automatic X-Ray Exposure Control

General > During an X-ray exposure a dose equivalent ionization current is generated in the AEC Sensor and a corresponding cut-off signal is created and transferred to the X-ray generator. The AEC sensor ensures a reproducible optimal exposure independently of beam quality, patient thickness and any other factors. Using an AEC sensor avoids over or underexposure of the image and helps to reduce patient dose.

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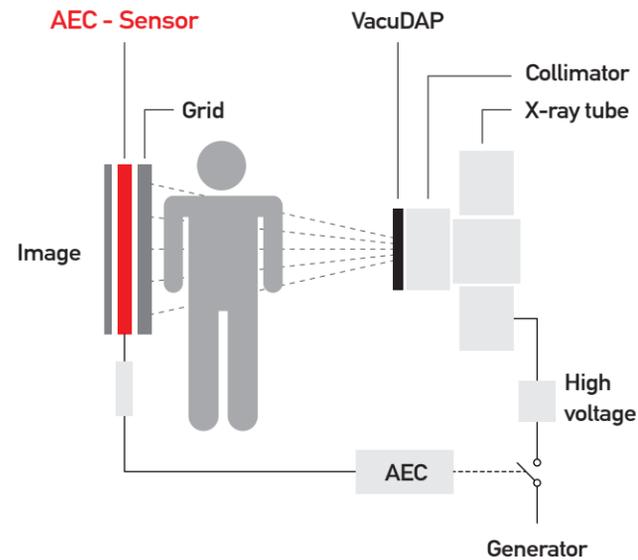


REF JSA-06-42[Rev.0]

Configuration > The ionization chambers for AEC are air-filled parallel-plate chambers with typically one, three or five independent sensor fields. Several different outer dimensions are available. Each VacuTec ionization chamber is equipped with a preamplifier and electronics, which converts the low ionization current into EMC stable digital signals (see figure below). Additionally it supplies the voltage for the chamber operation and allows selection of the sensor fields. Optionally the digital output signal can be transformed into an analogue voltage by using an additional ramp module.

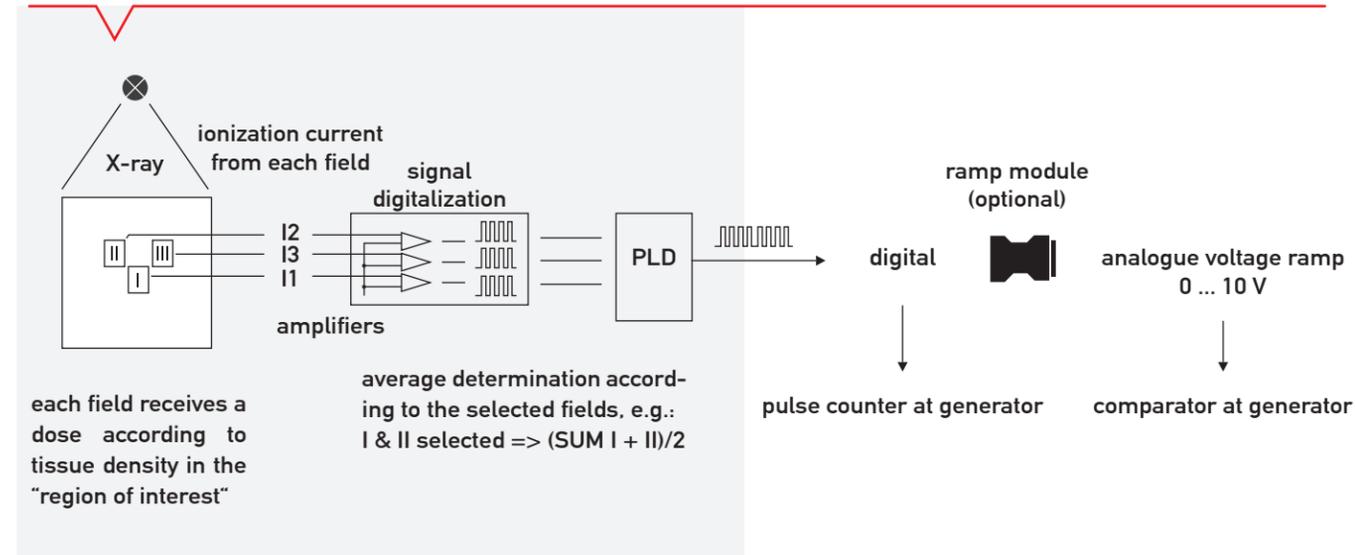
The positioning of the AEC sensor is close to the image detector. If an anti-scatter grid is used, the sensor has to be placed between the grid and the image detector. The AEC sensor has to be connected to an automatic exposure controller at the generator site.

Calibration > Each VacuTec AEC chamber is factory calibrated to radiation quality RQA5.



Implementation of DAP meter and AEC sensor in the beam path

Output digital pulses according to the master gain setting



Selection of common AEC chamber types with digital interface

Part No	No. of Measuring fields	Connector	size (mm)
142 00 17	1	Sub-D 9 pin	140 x 140
142 00 13	1	Sub-D 9 pin	374 x 374
142 00 14	1	RJ45	374 x 374
141 00 18	3	Sub-D 9 pin	374 x 374
141 00 19	3	RJ45	374 x 374
145 00 44	3	Sub-D 9 pin	450 x 450
145 00 45	3	RJ45	450 x 450
151 00 21	3	Sub-D 9 pin	450 x 450
151 00 22	3	RJ45	450 x 450
139 00 03	5	Sub-D 15 pin separate electronics	450 x 450



Selection of ramp modules (for Sub-D type AEC chambers)

Part No	Description
902 00 42	for 1 and 3 field AEC chambers
902 00 11	for 1 and 3 field AEC chambers, with cable extension
903 00 11	for 5 field AEC chamber, with cable extension

Specifications

Energy Range / Tube Voltage	(40 ... 150) kV
Dose Rate Range	(0.5 ... 1000) μ Gy
Exposure Dose Range ¹⁾	(1 ... 100) μ Gy
Digital Resolution (Selectable)	0.025 μ Gy
Exposure Time Range ¹⁾	1 ms ... 10 s
Sensitivity Difference Between Sensor Fields	< 5%
Attenuation Factor ¹⁾	< 4%
Aluminium Equivalent	< 0.75 mm Al
Supply Voltage (Positive and Negative)	\pm (11.5 ... 16) V DC
Digital Output	Differential signal (RS 422), pulse width 2 μ s
Ramp Output (with Ramp Module)	0 ... 10 V

¹⁾According to DIN 6815 dose measurement is carried out as follows: the air kerma (in Gy) is measured immediately downstream of the combined scattered-ray grid/measuring chamber using a radiation quality attained at a high-voltage of (70...80) kV and an Al attenuation layer thickness of 25 mm

For detailed technical information please require our documents.