

Ionization chamber

VacuDAP 2002

Order-No. 159 00 08

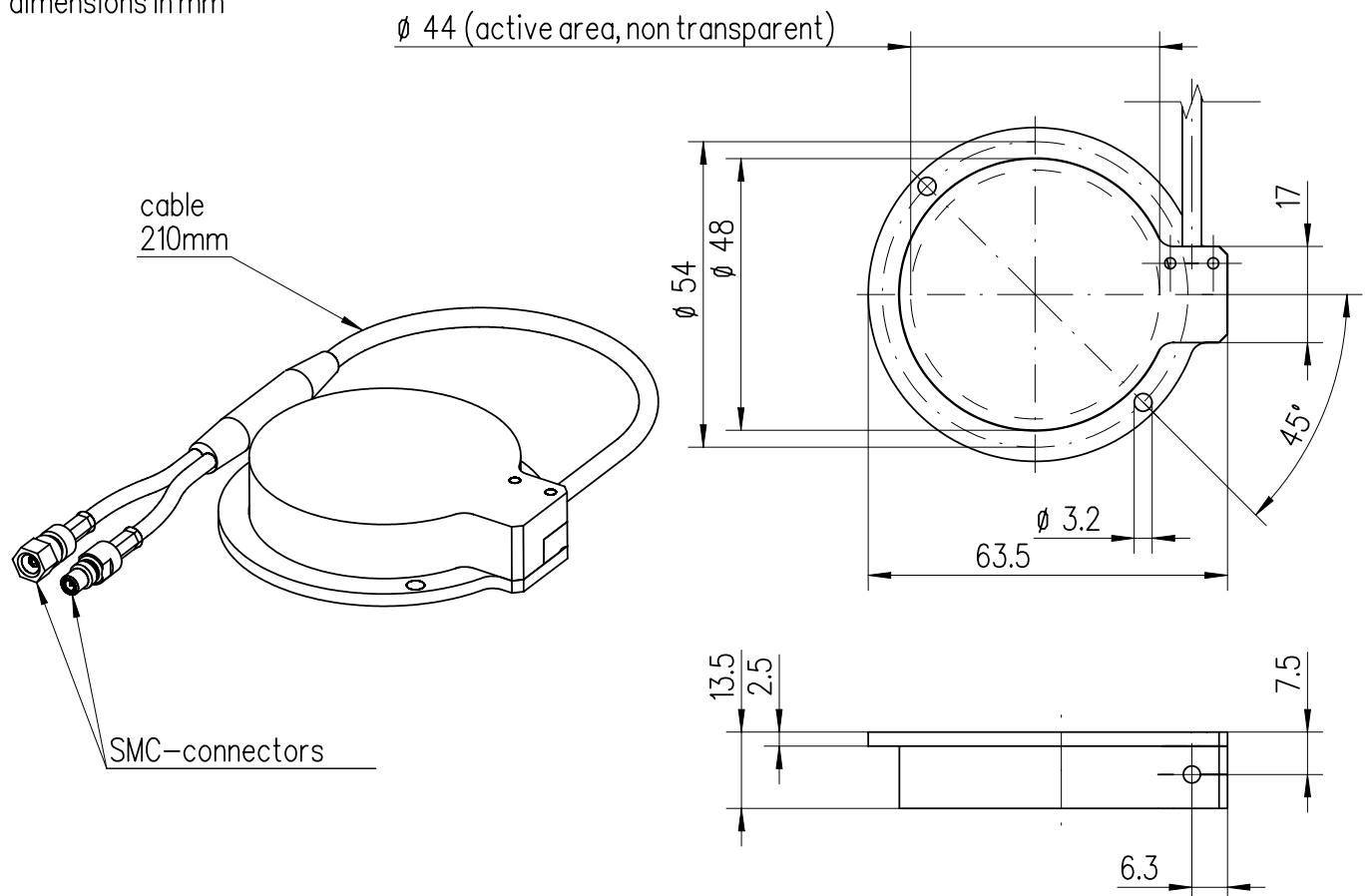
Application

The ionization chamber 159 00 08 measures the dose area product (DAP) in a radiological examination. It has been developed for installation in C-arm X-Ray units. The measuring system VacuDAP 2002 consists of the ionization chamber, the detector electronics of Type 70 921 and a display unit of Type 70 952 ... 70 956. The measuring system VacuDAP 2002 OEM works without a VacuTec display unit.

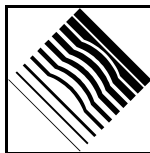
The chamber has been designed and calibrated for installation inside the collimator with an absorber of 2 mm plastic **behind** the ionization chamber in the beam line.

Mechanical data

dimensions in mm



Only values given with tolerance ranges, or limits are guaranteed. All other values are for information only. Subject to change.



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Technical data

All technical data are valid for the specified ambient conditions according to IEC 60580.

Absorber taken into account for callibration (behind the ionization chamber in the beam line)	2 mm plastic
Correcion factor with additional absorber (0.5 mm Al)	0.85
Response	50 pC / mGy·cm ²
Leakage current	≤ 0.1 pA
Response versus radiation quality	s. <i>Graph 1</i>
Quality equivalent filtration (70 kV)	0.50 mm Al
Attenuation equivalent (70 kV)	0.67 mm Al
Active area (max.)	Ø 44 mm
Chamber voltage	300 V
Distance of the electrodes	5 mm
Stabilization time	3 min
Weight	70 g
Rated range of use	
Radiation quality	(35 ... 150) kV
Atmospheric pressure	(80.0 ... 106.0) kPa
Temperature	(+10 ... +70) °C
Air humidity	(10 ... 80) % rel. humidity (max. 20 g/m ³)

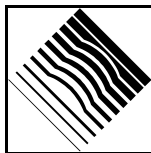


The ionization chamber must frame the radiation field at all times!

Response correction

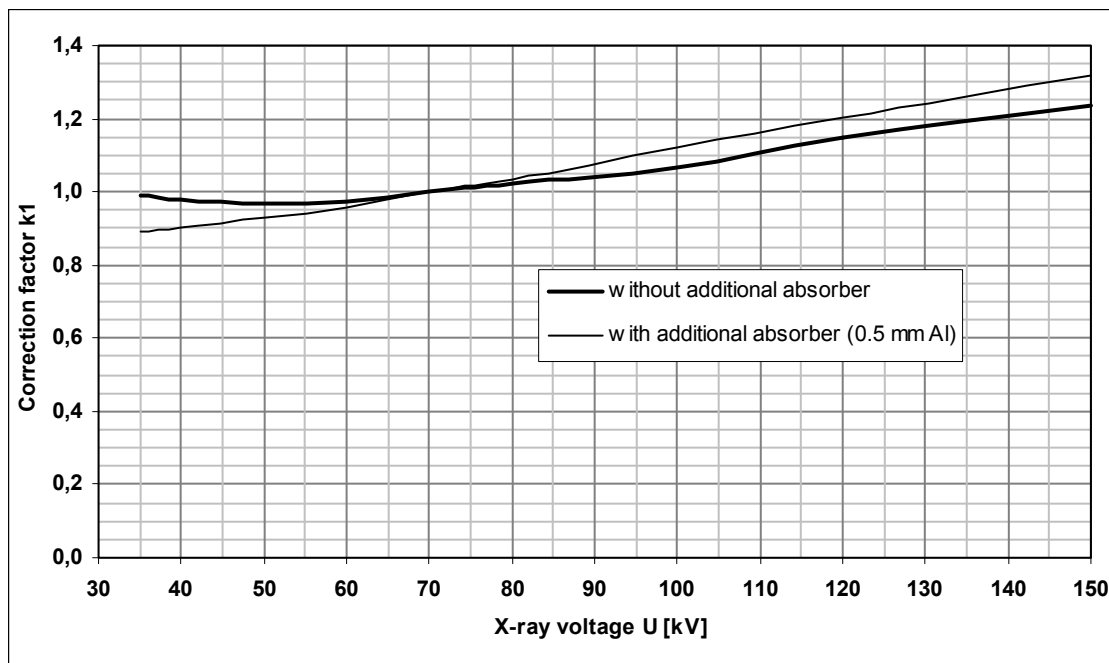
The response of the ionization chamber is affected by the radiation quality and the air density. *Graphs 1* and *2* show the respective correction factors.

In order to increase the accuracy of the measurement it is recommended to correct the systematic error caused by the change of air density depending on the altitude. That can be done by taking the respective correction factor k_2 from *Graph 2* and correcting the calibration factor of the display unit.

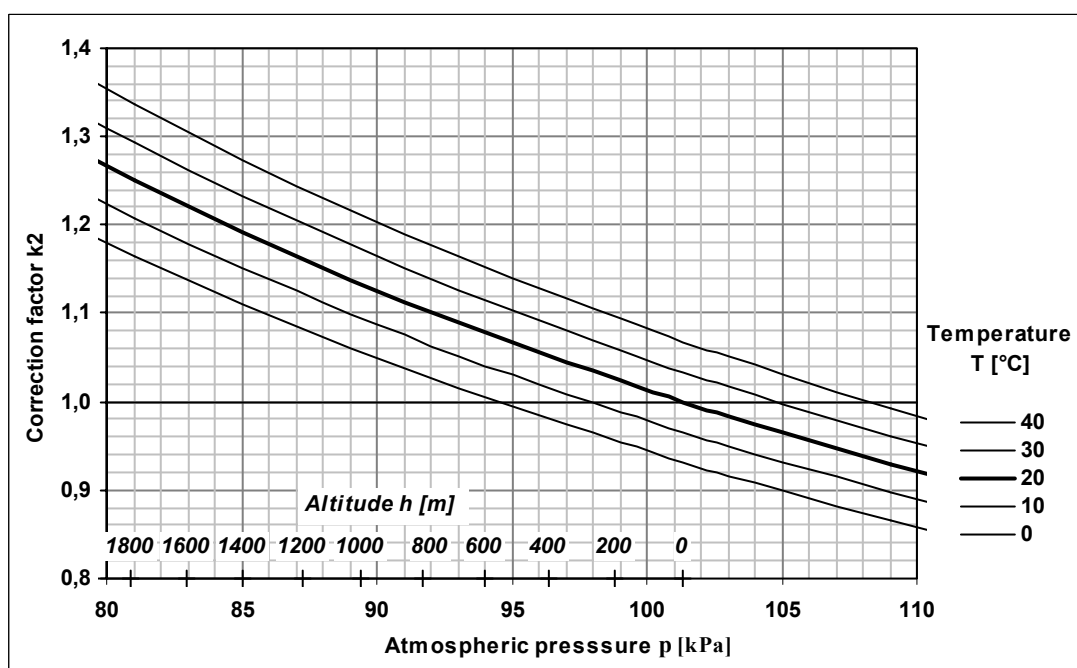


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Graph 1: Response correction versus radiation quality



Graph 2: Response correction versus air density