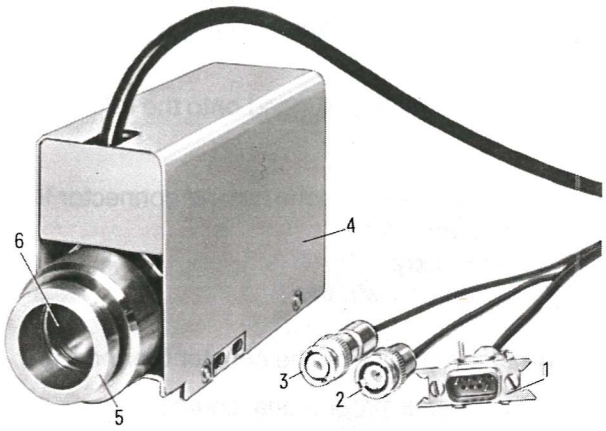
3.5 Detector

3.5.1 Scintillation Counter



1 9-pin connector (voltage supply for the pre-amplifier)
2 Signal line BNC connector
3 High-voltage supply MHV connector (red ring)
4 Removable cover
5 Socket for inserting the scintillation counter into the detector holder
6 Radiation inlet window

Fig. 3-25 Scintillation counter

Normally, a scintillation counter (Fig. 3-1.6 and 3-25) which enables X-ray measurement in the wavelength range between 0.05 and 0.3 nm is used as a detector (Fig. 3-26).

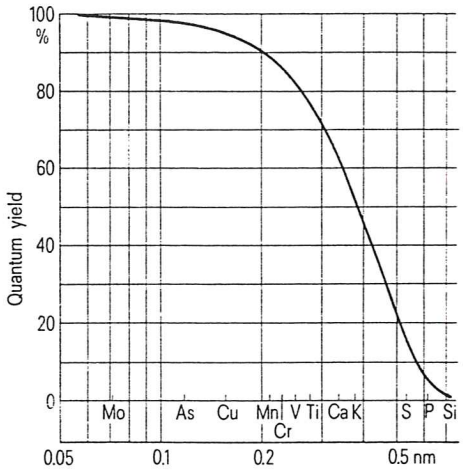
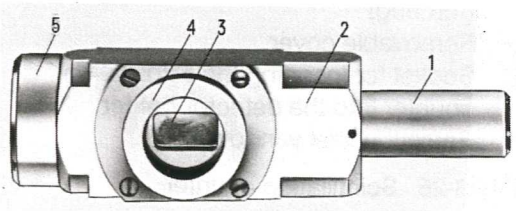


Fig. 3-26 Quantum yield of the scintillation counter

3.5.2 Proportional Counter

The type E proportional counter (Figs. 3-27 and 3-28) may also be used for measuring low-energy X-rays with a wavelength between 0.1 and 0.3 nm. In contrast to the scintillation counter which has a virtually unlimited service life, the proportional counter shows aging phenomena from approximately 10^{10} pulses.

The proportional counter requires a pre-amplifier (Fig. 3-29) which is plugged onto the counter.



1 Protective sleeve on the coaxial connector for the pre-amplifier
2 Counter body
3 Radiation inlet window
4 Socket
5 Protective sleeve on the counter filler nozzle

Fig. 3-27 Type E proportional counter

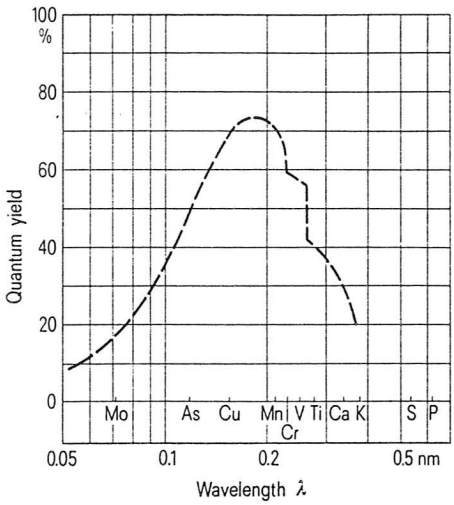
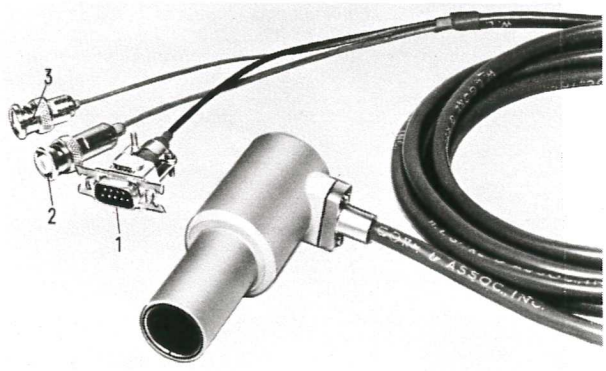


Fig. 3-28 Quantum yield of the type E proportional counter



1 9-pin connector (voltage supply for the pre-amplifier)
2 High-voltage supply MHV connector (red ring)
3 Signal line BNC connector

Fig. 3-29 Charge-sensitive pre-amplifier for the proportional counter