

# APPLICATION NOTE

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## Typical Energy Correction for R100B/Piranha Dose Probe when measuring after Cu filtration.

This application note describes the energy dependence for R100B and Piranha Dose Probe (PDP) when measuring after 1.5 or 2.0 mm Cu added to 3 mm Al inherent filtration. These filtrations are typically used when measuring low doses and rates at Image Intensifiers. The corrections are relative to the reference point for radiation quality R2 (70 kV, 20 + 3.0 mm Al)



Piranha Dose Probe (PDP)



R100B Dose Probe

## Correction Factors

The energy correction for at different filtrations is displayed in table 1 below.

kV	C <sub>q</sub>
<b>3 mm Al + 20 mm Al</b>	
50	0.929
55	0.956
60	0.977
65	0.991
70	1.00
75	1.005
80	1.007
85	1.007
90	1.005
95	1.002
100	0.999
105	0.996
110	0.993
115	0.991
120	0.990
125	0.990
130	0.991
135	0.992
140	0.994
145	0.997
150	0.999

kV	C <sub>q</sub>
<b>3 mm Al + 1.5 mm Cu</b>	
65	1.006
70	1.010
75	1.011
80	1.008
85	1.006
<b>3 mm Al + 2.0 mm Cu</b>	
65	1.013
70	1.015
75	1.011
80	1.004
85	1.001

**Example:**

Total Filtration = 23 mm Al

Measured or set kVp = 60 kV  
 Measured dose = 0.5 mGy  
 Correction factor C<sub>q</sub> = 0.977 for 60 kV  
 Corrected dose = 0.977 x 0.5 = 0.49 mGy

**Inaccuracy:**

The inaccuracy of the typical correction factor is less than ±4 %

Table 1. Typical energy correction for R100B/PDP when measuring after different filtrations in the radiography range.