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# APPLICATION NOTE

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## Typical energy correction for R25 and R100 when measuring with Cu filtration

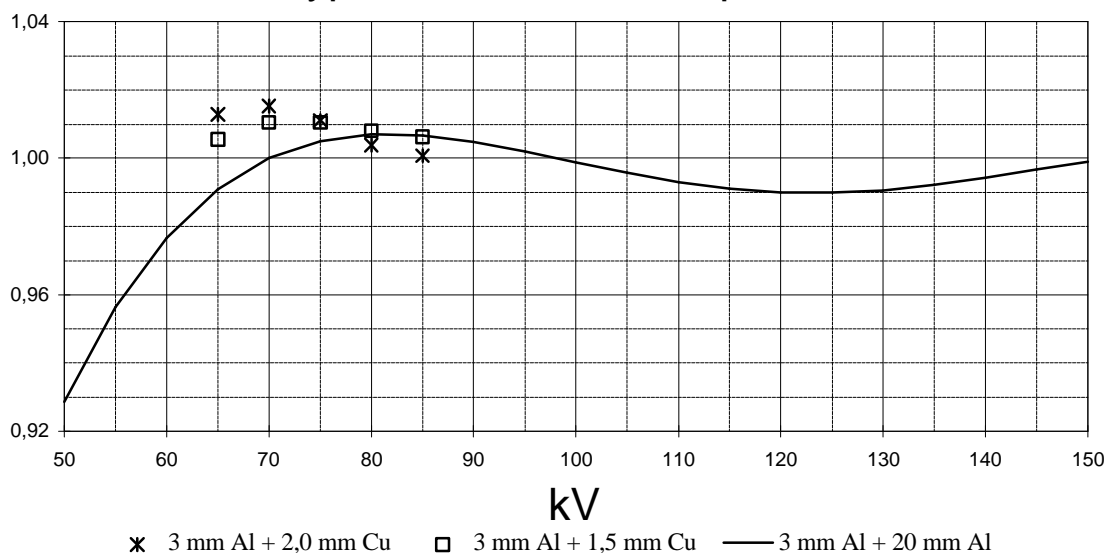
This application note describes the energy dependence for R25 and R100 when measuring with 1,5 or 2,0 mm Cu added to 3 mm Al inherent filtration. The corrections are relative to the reference point for radiation quality A (70 kV, 20 + 3,0 mm Al).

By

R&D and Sales Department, RTI Electronics AB  
Sören Sturesson, M.Sc.Ph., Med. Phys.

<b>R100</b>		<b>Typical Energy Correction</b>		<b>8/A</b>																									
<b>kV</b>	<b>Cq</b>	<b>Application:</b> Image Intensifier and Low Dose/Rate Measurements <b>kV range:</b> 50-150 kV <b>Reference point:</b> 70 kV <b>Anode:</b> W <b>Filtration:</b> 3 mm Al + 20 mm Al 3 mm Al + 1,5 and 2,0 mm Cu																											
50	0,929	<table border="1" style="width: 100%;"> <tr> <td colspan="2" style="text-align: center;"><b>3 mm Al + 1,5 mm Cu</b></td> <td rowspan="6"> <b>Example:</b>                              Measured or set kVp = 60 kV                              Measured dose = 0,50 mGy                              Correction factor Cq = 0,977 for 60 kV                              Corrected dose = 0,977 x 0,50 = 0,49 mGy   <b>Inaccuracy:</b>                              The inaccuracy of the typical correction factor is less than ±4 %.   <b>Note:</b>                              Check your manual to verify when you have to do the correction manually.                         </td> </tr> <tr> <td style="text-align: center;">65</td> <td style="text-align: center;">1,006</td> </tr> <tr> <td style="text-align: center;">70</td> <td style="text-align: center;">1,010</td> </tr> <tr> <td style="text-align: center;">75</td> <td style="text-align: center;">1,011</td> </tr> <tr> <td style="text-align: center;">80</td> <td style="text-align: center;">1,008</td> </tr> <tr> <td style="text-align: center;">85</td> <td style="text-align: center;">1,006</td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>3 mm Al + 2,0 mm Cu</b></td> </tr> <tr> <td style="text-align: center;">65</td> <td style="text-align: center;">1,013</td> </tr> <tr> <td style="text-align: center;">70</td> <td style="text-align: center;">1,015</td> </tr> <tr> <td style="text-align: center;">75</td> <td style="text-align: center;">1,011</td> </tr> <tr> <td style="text-align: center;">80</td> <td style="text-align: center;">1,004</td> </tr> <tr> <td style="text-align: center;">85</td> <td style="text-align: center;">1,001</td> </tr> </table>			<b>3 mm Al + 1,5 mm Cu</b>		<b>Example:</b> Measured or set kVp = 60 kV Measured dose = 0,50 mGy Correction factor Cq = 0,977 for 60 kV Corrected dose = 0,977 x 0,50 = 0,49 mGy  <b>Inaccuracy:</b> The inaccuracy of the typical correction factor is less than ±4 %.  <b>Note:</b> Check your manual to verify when you have to do the correction manually.	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
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Typical Correction Graph



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