

# NATIONAL PHYSICAL LABORATORY

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## Certificate of Calibration

### Determination of the shielding properties of Lead vinyl samples

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**FOR:**

Kemmetech Ltd  
Unit 4 Arnold Business Park  
Branbridges Road  
East Peckham  
Kent  
TN12 5HE

**DESCRIPTION:**



Determination of Lead equivalence of Lead vinyl samples in accordance with BS EN 61331-1:2002

**DATE OF MEASUREMENTS:** 4 June 2013

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**Reference:** 2013070243-12

**Date of Issue:** 15 July 2013

**Checked by:**   


**Signed:** 

**Name:** G A Bass

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(Authorised signatory)

on behalf of NPLML

**CONDITIONS:**

Distance from x-ray tube to target sample: 0.5m  
 Distance from x-ray tube to detector: 1.1m  
 Ionisation chamber used: TS100M

All equipment associated with the measurements performed in this report has direct traceability to UK national standards or UKAS accredited calibration facilities. The samples were circular in cross section with a diameter of approximately 110mm.

**Table I**  
61331-1:2002 X-ray beam qualities

X-ray Tube Voltage kV	Additional filtration mmCu
60*	0.075
80	0.15
100	0.25
120*	0.35

\*These qualities are in addition to BS EN 61331-1:2002

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Continuation Sheet

## RESULTS:

**Table II**

Lead Scanner Curtain vinyl sheet, 0.175mm nominal Lead equivalent

<b><u>kV</u></b>	<b><u>Equivalent Lead thickness</u> mm</b>	<b><u>Attenuation</u> %</b>
60	0.1913	95.9
80	0.1948	85.4
100	0.1991	73.6
120	0.1994	66.3

**Table III**

Lead Scanner Curtain vinyl sheet, 0.25mm nominal Lead equivalent

<b><u>kV</u></b>	<b><u>Equivalent Lead thickness</u> mm</b>	<b><u>Attenuation</u> %</b>
60	0.2719	98.2
80	0.2778	91.2
100	0.2803	82.1
120	0.2791	76.4

**Table IV**

Lead Scanner Curtain vinyl sheet, 0.35mm nominal Lead equivalent

<b><u>kV</u></b>	<b><u>Equivalent Lead thickness</u> mm</b>	<b><u>Attenuation</u> %</b>
60	0.3673	99.3
80	0.3909	95.4
100	0.3913	89.1
120	0.3920	85.5

Reference: 2013070243-12

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Checked by: