

JIS Z 4930 - Phantoms

JIS Z 4930 - Phantoms for performance evaluation of X-ray bone densitometer

The Japanese Industrial Standard - JIS Z 4930 specifies the phantoms and method to evaluate the performance of table type and peripheral bone type X-ray bone densitometers (e.g. Dual X-ray Absorptiometry - DXA).

The phantoms are designed according to the specifications of JIS Z 4930:2011. The following tests can be performed with the JIS phantoms:

- reproducibility
- linearity
- uniformity
- body thickness dependence
- height dependence

The housing and core material of the phantoms is made of a soft tissue-equivalent plastic (polyurethane resin).

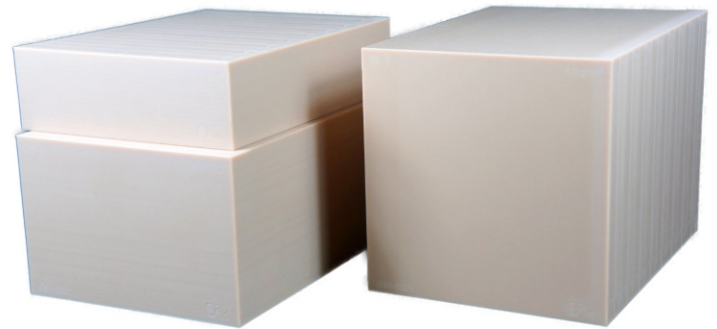
The inserts of low, medium and high density bone-equivalent substance are based on a water-equivalent material enriched with a well-defined amount of CaHA (calcium hydroxyapatite).

The bone mineral content (BMC) can be traced back to our calibrated BMD reference phantoms.

The bone area of the inserts is derived from the manufactured dimensions and the area bone mineral density (area BMD) is calculated by using the calibrated volumetric bone mineral density (volumetric BMD).

References

- [1] Japanese Industrial Standard JIS Z 4930:2011 (JIRA/JSA) – Phantoms for performance evaluation of X-ray bone densitometer



QRM-JIS Lumbar Phantoms T-1, T-3









JIS Heel Phantom



QRM-JIS Forearm Phantom (PF-1, PF-2 and PF-3)

JIS-Z 49301 - Phantoms

Models (Ref)

QRM-50140	JIS Lumbar Spine (T-1)	
QRM-50144	JIS Uniform Lumbar Phantom (T-2)	
QRM-50141 QRM-50142	JIS Lumbar Phantom Block 50 and 100 (T-3)	
QRM-50147	JIS Lumbar Stand 25 and 50 (T-4)	
QRM-50139	JIS Forearm Phantom (PF-1, PF-2 and PF-3)	
QRM-50143	JIS Heel Phantom (PH-1, PH-2 and PH-3)	

Available Phantoms

Lumbar phantoms (vertebrae)

- Phantom for table type T-1 (Spine)
- Phantom for table type T-2 (uniformity)
- Phantom for table type T-3 (plate 50/100)
- Phantom for table type T-4 (stand 25/50)

Peripheral phantoms (forearm)

- Phantom for peripheral bone type PF-1 (high)
- Phantom for peripheral bone type PF-2 (medium)
- Phantom for peripheral bone type PF-3 (low)

Peripheral phantoms (heel bone, calcaneus)

- Phantom for peripheral bone type PH-1 (high)
- Phantom for peripheral bone type PH-2 (medium)
- Phantom for peripheral bone type PH-3 (low)

Please note:

The bone mineral content is calcium-hydroxyapatite. The area bone mineral density (area BMD) of the inserts has been calculated from the volumetric bone mineral density (volumetric BMD). The volumetric BMD has been calibrated against our internationally accepted reference standards for BMD.

For the DXA measurement, it should be noted that the housing material also contributes to the area BMD

The calibration protocol contains the following values: Mass density, specified area BMD, calibrated volumetric BMD

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