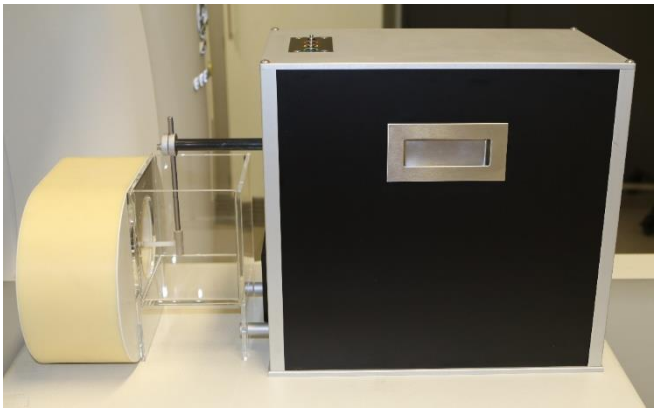
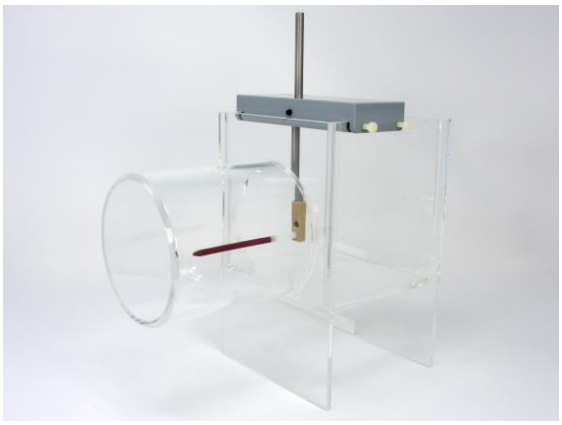
Coronary Artery Phantoms with Stenosis and Plaque for Dynamic Cardio Simulator: Type DX

The Coronary Artery Stenosis Phantoms are designed to perform CT-measurements of contrast enhanced (iodine) coronary arteries with implemented plaque and stenosis targets. Different types of coronary arteries are available. It can be used with a static holder inside a water tank and a thorax phantom or with a motion simulator, respectively.

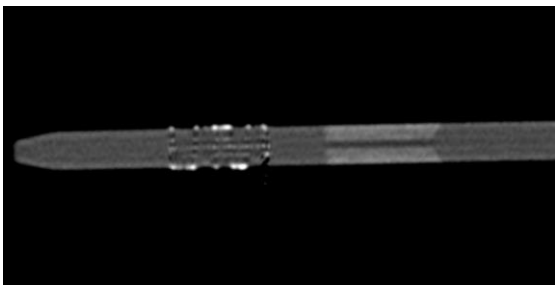


Sim4D-VL 3D-Motion Simulator with coronary artery phantom (left side: QRM-Thorax Phantom)



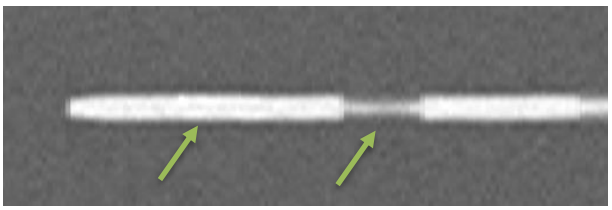
Static holder with coronary artery phantom in Water Tank (Holder: QRM-60109; Water Tank: QRM-10113)

coronary artery phantom with two different circular stenosis



sagittal view: X-ray image of phantom with stent attached

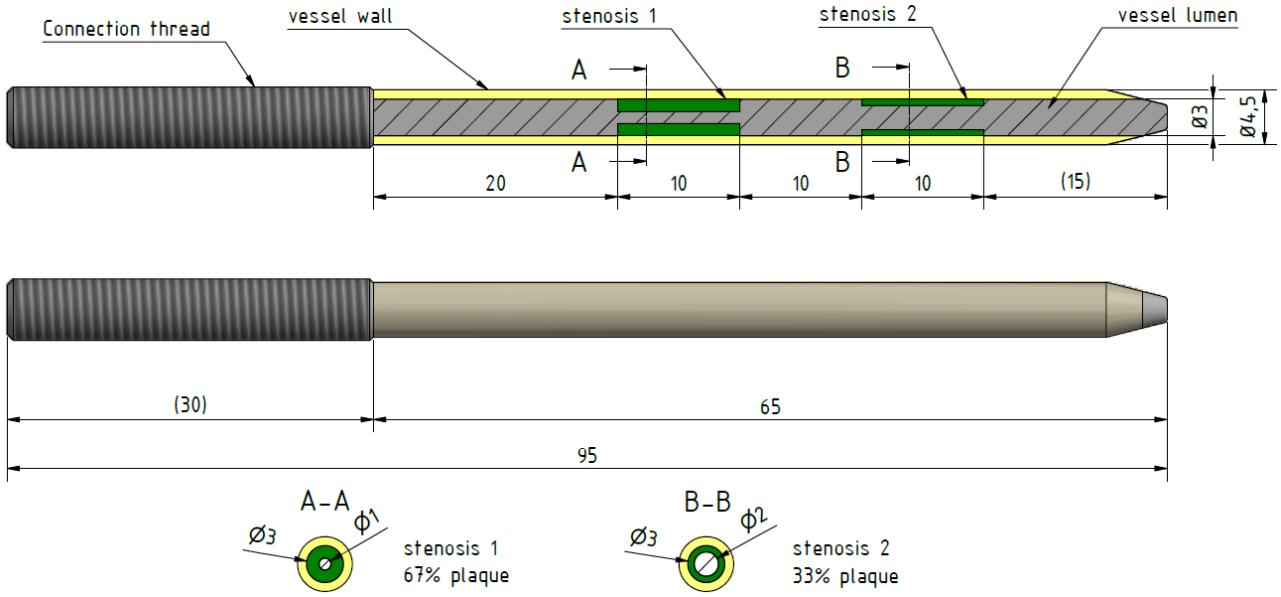
different types of plaque-, QA-phantoms and connectors for Sim4D-VL



sagittal view: two circular stenosis: CaHA and fibro-fat at iodinated vessel

Model DX - Set:

Six coronary artery stenosis phantoms with concentric plaques (narrowed by 67% and 33%): three with iodinated blood-equivalent lumen (approx. 300 HU/120 kV) and three with blood-equivalent lumen.



QRM coronary phantom DX - measures in mm

Plaque #	Plaque thickness	Plaque length	Lumen diameter	Stenosis (lumen reduction by diameter)	Stenosis (lumen reduction by area)
1 (A-A)	2.0 mm	10 mm	3.0 mm	**67 %**	89 %
2 (B-B)	1.0 mm			**33 %**	56 %

Phantom #	Vessel lumen	Vessel wall	Plaques
1	ICRU Blood[(1)] + Iodine[(2)] (300 HU)	✓	CaHA[(3)]
2	ICRU Blood[(1)] + Iodine[(2)] (300 HU)	✓	Lipid[(2)] (-25 HU)
3	ICRU Blood[(1)] + Iodine[(2)] (300 HU)	✓	Fibro-fat[(2)] (100 HU)
4	ICRU Blood[(1)]	✓	CaHA[(3)]
5	ICRU Blood[(1)]	✓	Lipid[(2)] (-25 HU)
6	ICRU Blood[(1)]	✓	Fibro-fat[(2)] (100 HU)

[(1)] material according to: International Commission on Radiation Units and Measurements (ICRU), "Photon, Electron, Proton and Neutron Interaction Data for Body Tissues", Report 46 (1992)
[(2)] given HU valid at 120 kV (accuracy ± 5 HU)
[(3)] water-equivalent material enriched with 370 mg CaHA/cm³
All measurements are carried out on a Siemens CT-Scanner using a dedicated CT scan protocol. Cylindrical sample probes are measured using a state-of-the-art CT system with a dedicated CT scan protocol in a standard test environment (20 cm water-filled phantom at 20°C room temperature level). Please note that the actual HU-value depends on target size, scanner setup and X-ray spectrum and may vary on different CT-systems and setups.

Spectral-CT capable. Iodine and CaHA can be adjusted on customer's needs.

*A customer-owned **stent** can be attached (slide on) to the coronary artery phantoms.*