



## Product Description

This rigid coronary tree phantom is designed to realistically and accurately simulate the complex geometries of the human coronary arteries. The right and the left coronary arteries can be filled independently, used as a static phantom or as a flow phantom.

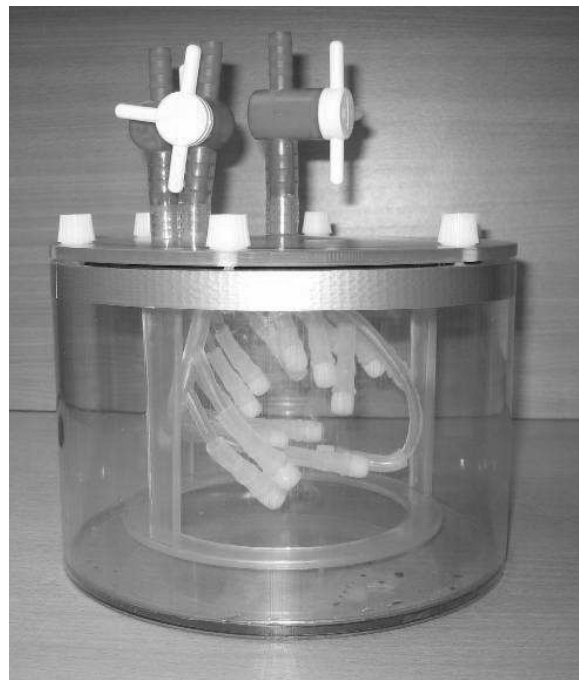
*Customers can determine the number of stenosis, as well as the position and type of stenosis. Or the model can be manufactured with out stenosis.*

The coronary tree phantom is manufactured using stereolithography. A CAD model has been derived from anatomical data collected by averaging 100 in vivo coronarographies. The phantom is an exact replica of its digital twin and is ideal for MRI and X-ray imaging techniques.

The phantom is designed with a cage that protects the vasculature and allows for easy positioning of the model in its reservoir. Stopcocks are connected to the phantom inlets allowing for control of fluid flow and each vascular branch possesses a clipping device and plugs to allow the phantom to be used for fluid flow or static experiments.

## Applications

- Calibration of MRA, X-ray angiography and CTA.
- Single-photo-emission-computed-tomographic flow studies.
- Research and product development requiring geometrically accurate and complex vascular and lumens.
- Statistical Model for 2D and 3D reconstruction studies, labeling techniques or expert systems.
- Comparisons between finite-element modeling and *in vitro* measurements.
- Validation of endovascular techniques (i.e. measurements, positioning, simulations and assessments).
- Validation of different 3D reconstruction or quantification algorithms (i.e. stenosis analysis, image segmentation analysis, image registration studies).
- Coronary arteriography quantification.



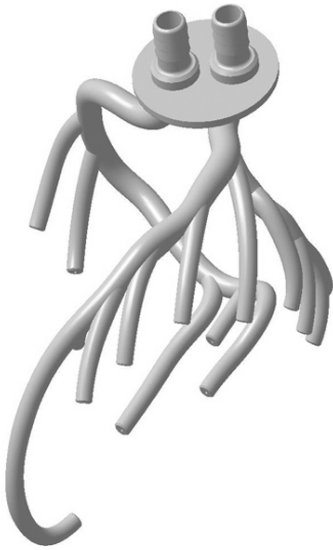
## Features

- This rigid phantom is realistic and reproduces the anatomy of the human coronary tree.
- The entire coronary tree and optional stenosis are precisely manufactured to within 0.1 mm.
- Diameters of the inner lumen are distributed between 1 and 5 mm.
- The branches of the coronary tree can be filled with contrast agents and other fluids.
- Used as a fluid flow or static phantom.
- It is well suited for 2D or 3D x-ray angiography when injected with iodinated solutions.
- Dynamic MR imaging is possible after injecting gadolinium chelates.
- Flux scintigraphy can be performed after injecting radiosotopes.
- Customer can specify the type and number of stenosis to be incorporated in the phantom.

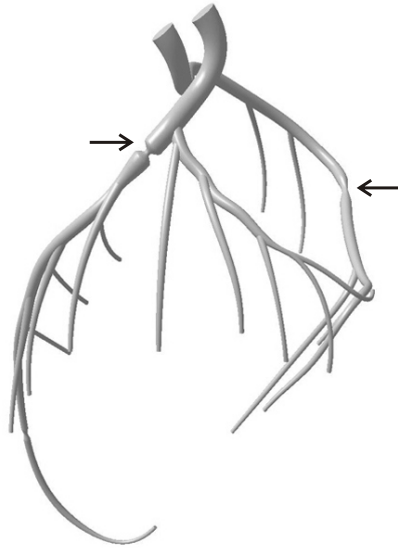




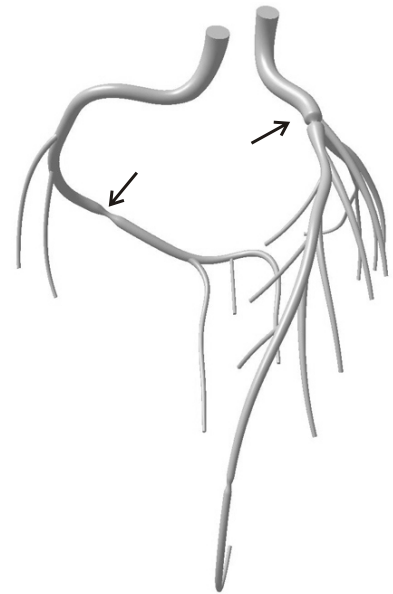
*Coronary Tree Phantom  
External View*



*Coronary Tree Phantom  
Internal View #1*



*Coronary Tree Phantom  
Internal View #2*



Average dimensions of the coronary tree:

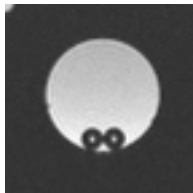
Height: 125 mm

Width: 120 mm

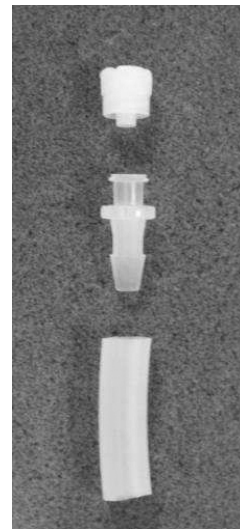
Length: 112 mm

Wall Thickness: 2 mm

Intern Radius: 2 to 5 mm



MRI image of samples of vessel wall material.



Connection Assembly with plugs

