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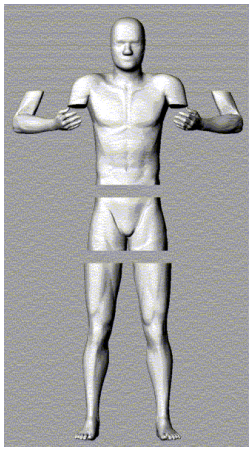
MCL-T whole-body SAM phantom

The MCL-T whole-body phantom is based on the same dataset of human dimensions that was used to construct the SAM head. It is available in either standing or seated configurations, as shown below.

The shell is 3 ± 0.3 mm thickness GRP, except for the head which meets the SAM/CTIA specification, so is 2 ± 0.2 mm over the defined regions. The body is usually made in sections – each body is made to a customer's specific requirements. The usual body sections are shown in the exploded CAD graphic below:



The upper torso and head is one section, the pelvic region another and the arms and legs also are removable.

Each section can be separately filled with tissue-equivalent liquid. There are bellows in each section to allow for liquid expansion, and an external pressure-relief system for the main torso section is supplied.

A CAD file describing the phantom's shape is also available, and this can be imported into computational models.

Each complete body phantom is supplied with a wooden filling and transport rig, which allows the torso & head section to be safely supported upside down for filling, and to be carried when full. Transporting this section (when full) without the rig is not recommended.

It is recommended that the pressure-release reservoirs are left connected to the phantom when it is not is use, if it is left filled, and at any time when it may be subject to significant temperature fluctuations.

It is recommended that the MCL-T broadband (30 MHz – 6 GHz) tissue-equivalent liquid is used with this phantom. Other liquid formulations may be used, but they will have narrower frequency ranges and may have high mass densities. Please consult MCL-T for more advice.

Annex - key dimensions

	Volume (litres)	Empty weight (kg)
Head & Torso	38	4
Torso Lower - Seated	17	1.8
Torso Lower - Seated with dry cavity	11.4	2.4
Stub Leg**	3	0.9
Whole Leg - seated	7.5	2
Arm	1.9	1
Total body	68 with dry cavity 73 without	12.4 with dry cavity 11.8 without

*The dry cavity is an option that should be chosen when the whole body phantom is to b used with an internal SAR measurement system. The motors for the SAR robot are housed in this cavity. See our datasheet on the *in situ* SAR measurement system for more details.

** the stub leg is a short section of thigh, truncated above the knee, which can be used with the seated body when space is at a premium, for example inside vehicles with limited leg room

Dimensions	cm
Shoulder width	53
Elbow-elbow	68
Elbow-top of shoulder	30
Elbow-finger-tip	36
Shoulder-top of head	27
Seated:	
Height	145
Front of knee-back of torso (horizontal)	65
Front of knee-tip of toe (horizontal)	124
Front of thigh cut-off to back of torso	31
Width at knees	49
Height of waist above floor (break between upper & lower torso sections)	65
Toe-toe horizontal	62
Standing:	
Height	187 (200 on stand)
Height of waist above floor (break between upper & lower torso sections)	106
Toe-toe horizontal	23
Leg length	83
Circumference at waist (break between upper & lower torso sections)	89
Circumference at chest	98