

PHILIPS

Oncology solutions

DynaCAD Lung



Advanced visualization with DynaCAD Lung

Specifications

DynaCAD Lung from Philips is a vendor-neutral, medical imaging software system that provides fast, efficient viewing as well as quantification, manipulation, communication and reporting of multi-slice CT exams of the chest.

With flexible report templates and automated image registration, DynaCAD Lung helps facilitate synchronous display and navigation of multiple patient exams for initial review and easy follow-up comparison of current and prior study findings – helping to reduce manual tasks so you can make the best use of your time. transformation journey with the aim to improve your decision-making in precision diagnostics.

DynaCAD Lung 2.3 recommended software specifications

	Client	Server ^{1,2}
Operating system	Windows 10 64 bit	Windows 10 64 bit Windows Server 2012 R2 64 bit Windows Server 2016 64 bit Windows Server 2019 64 bit

DynaCAD Lung 2.3 recommended hardware specifications

	Client	Server
Processor	Quad Core CPU	Quad Core CPU
Memory	8 GB	8 GB
Hard drive	Hard drive 1 (system + data): 10 GB	Hard drive 1 (system): 250GB (7200rpm)
	n/a	Hard drive 2 (data): 1 TB (7200rpm)
	n/a	Hard drive 3 (database): 250GB (7200rpm)
Graphics card	OpenGL compatible (version >= 2.0), 512MB PCIe x16	n/a
Display	2 displays, landscape orientation, 1920 x 1080 resolution	n/a

Network connection >= 1 Gbit/s required

1. Virtualization possible 2. High end RAID controller required

DynaCAD Lung 2.3 scanning protocol recommendations

Detector parameters	4 or more rows
Field of view	Minimum of 18 cm Must include entire organ under review
Patient orientation	Head First Supine (HFS) Feet First Supine (FFS)
Scan range	Apex to lung bases No image gaps Image spacing is less than or equal to slice thickness <i>Note: Additional slices outside this range could impede successful segmentation of the lung and subsequent CAD processing.</i>
Slice thickness	3mm or less for nodule assessment Constant throughout scan
Gantry tilt	Gantry tilt is not allowed
Contrast agent support	Nodule CAD supports with or without contrast
Image/pixel size	Must remain the same during the scan
Reconstruction properties Convolution Kernel	Reconstruction with either a standard, lung or bone algorithm See notes below for the choice of a suitable Convolution Kernel
Image type	Lossless compression accepted
Scan technique	Minimize motion by single breath hold scan Cardiac gating is accepted
Matrix size	Any recommended square, e.g.: 256 x 256 512 x 512
Data type	12 bit unsigned 16 bit signed/unsigned

Convolution Kernel

Reconstruction in the lung window in general requires the use of a sharpening lung kernel. However, for thin-layer acquisition with low doses (HRCT), excessive emphasis of the edges should be avoided.

Examples: In the Siemens “Application Guides” for the “Lung LowDose” protocol, in contrast to the routine thorax protocol, the ‘B50’ kernel is recommended instead of ‘B70’. GE’s instruction manuals also state that for thin-layer lung images, the less edge-stressing ‘Bone’ kernel should be used instead of the ‘Lung’ kernel.

Manufacturer	Lung routine	Low dose / HRCT
GE	Lung	Bone
Philips	L, Resolution “High”	L, Resolution “High”
Siemens	B70	B50
Toshiba	FC 51	FC 85 (FC 50)

Metal artifacts

Metal artifacts (e.g. caused by pacemaker, metal implants or contrast agent bolus that has not yet reached the heart) may lead to image distortions that affect image quality and successful CAD processing. Please also consider shielding.

