ACRIN 6678
Quality Control Parameters for CT Scan Tumor Volumetric Measurements

DICOM Tag #	Parameter	GE Ultra 8-slice/0.5 sec.	GE LS 16 16-slice/0.5 sec.	GE VCT(64) 64-slice/0.5 sec.	Philips Brilliance 16 16 slice/0.5 sec. 16 X 0.75	Philips Brilliance 64 64 slice/0.5 sec. 64 X 0.75	SIEMENS Sensation 16 16 X 0.75	SIEMENS Sensation 40 40 X 0.6 (beam collimation 20 X 0.6)	SIEMENS Sensation 64 64 X 0.6 (beam collimation 32 X 0.6)	TOSHIBA Aquilion 16-slice/0.5 sec.
0018,0050	Nominal Reconstructed Slice Width[1]	1 – 1.5 mm			1 – 1.5 mm		1 – 1.5 mm			1 – 1.5 mm
0020,1041	Reconstruction Interval[1]	0 – 20% overlap			0–20% overlap		0–20% overlap			0–20% overlap
0028,0030	Voxel Size[1]	0.55 – 0.75 mm			0.55 – 0.75 mm		0.55 – 0.75 mm			0.55–0.75 mm
-	Motion/Breathing Artifact[1]	None			None		None			None
-	Intravenous Contrast Media[1]	None			None		None			None
Scanner dependant	mAs (Regular–Large)[2]	X-ray Tube Current × Exposure time 135-220	95-245	95-245	Exposure 120-310	100-260	Exposure 120-310	100-260	100-260	X-ray Tube Current × Exposure time 120-310
0018,0060	KVP[2]	120			120		120			120
0018,1210	Reconstruction Algorithm[2]	STD			B		B30			FC10

[1] Violation of values/value ranges disqualifies CT scan series.

[2] Violation of values/value ranges may not disqualify CT scan series (unless violation is excessive).

If there were a minor violation of the recommended range that would not disqualify the series, the follow-up series should use the same parameters used for the previous series. For example, a KVP of 140 is NOT recommended, but if used for the first series (and the series could not be repeated with the appropriate KVP), the same KVP of 140 should, therefore, be used for the follow-up of the same subject.