

The image features a background of a circuit board with various traces and circular components. A solid black horizontal bar spans the middle of the image, serving as a backdrop for the title text.

ACR Quick Guide



ACR GUIDANCE FOR BLOCKHEADS

GE CT SCANNERS



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<https://uwgect.wiscweb.wisc.edu/uw>

Computed Tomography

ACR Clinical Data Form Instructions

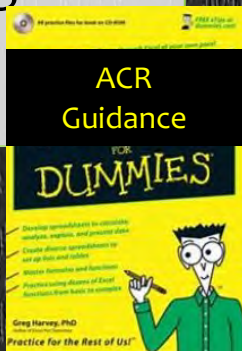
Is it that time again to fill out your ACR accreditation forms?

Having trouble understanding what they are asking for?

Need simple steps to make your job go faster?

Don't want to fail ACR and have to pay another fee?

This power point will explain step-by-step on how to fill out the proper documentation for the American College of Radiology (ACR).



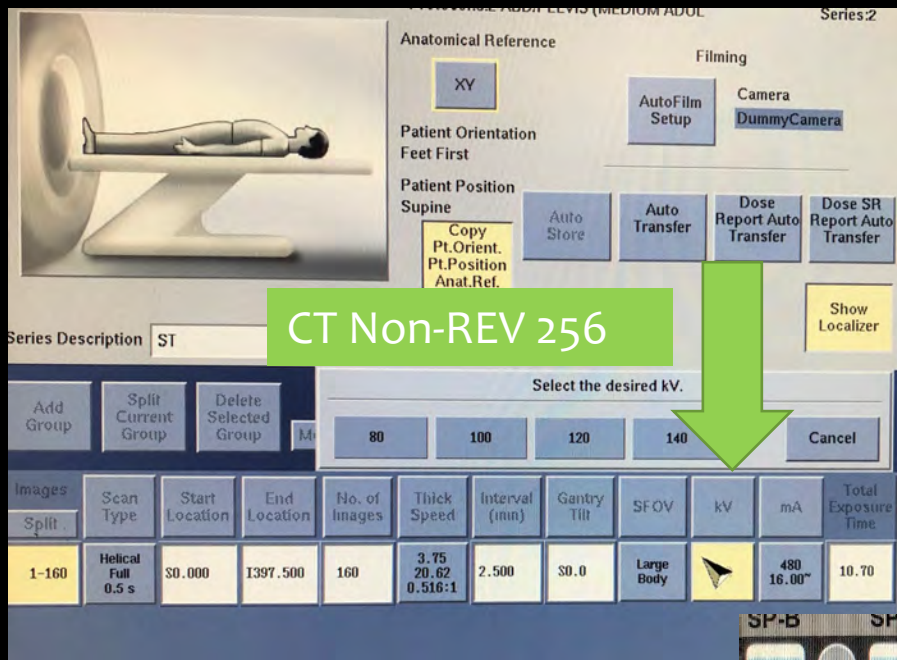
For this presentation we will cover the acquisition parameters

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CTAP # _____ Unit # _____ Site's CT scanner Serial number: _____
CT scanner manufacturer: _____ Model name: _____
Type of exam: _____ Date of exam: _____
Reason for exam: _____
Patient Age: _____ Gender: _____ Patient height: _____ ft _____ in _____ Patient weight: _____
If used: Contrast media used (volume): _____ cc Contrast media used (concentration): _____ mg/ml
Test media/ Scan delay: ☐ Empiric, ☐ Test injection, ☐ Automatic Triggering _____

Acquisition Series only (not reformatted series)	Sequence 1	Scan Sequence 2	Scan Sequence 3	Scan Sequence 4
KV				
mA				
Time per rotation (s)				
mAs (calculated by the System)				
Effective mAs (or mAs per slice) as displayed by scanner				
Scan FOV (cm) <i>Must be reported in cm. Please contact the scanner manufacturer</i>				
Display FOV (cm)				
Reconstruction Algorithm				
Axial (A) or Helical (H)				
# Data Channels used in a single rotation (N)				
Z-axis collimation (T) in mm				
Table Increment (I): Axial Scans (mm) or Helical Table Speed (mm/rotation)				
Reconstructed Image Width (mm)				
Reconstructed Image Interval (mm)				
Dose Reduction Technique used				
CTDIvol (recorded after scanning, not before, for each Scan Sequence) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>				
DLP (Dose length product) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>				

UPDATED



If used: Contrast media used (volume): _____ cc Contrast media used (rate): _____ cc/sec Contrast media/ Scan delay: ☐ Error

Acquisition Series only (not reformatted series)	Scan Sequence 1	Scan Sequence 2
kVp		
mA (do not use mAs, effective mAs of mAs per slice)		

Time per rotation (s)

Effective mAs (or mAs displayed by scanner)

Scan FOV (cm)
Must be reported in cm

Optima CT660 SYS#ct03 A 263 UW Hosp. Madison, WI. CT3

Ex: 8759

Se: 2

XY S2

Im: 1

DFOV

STND/

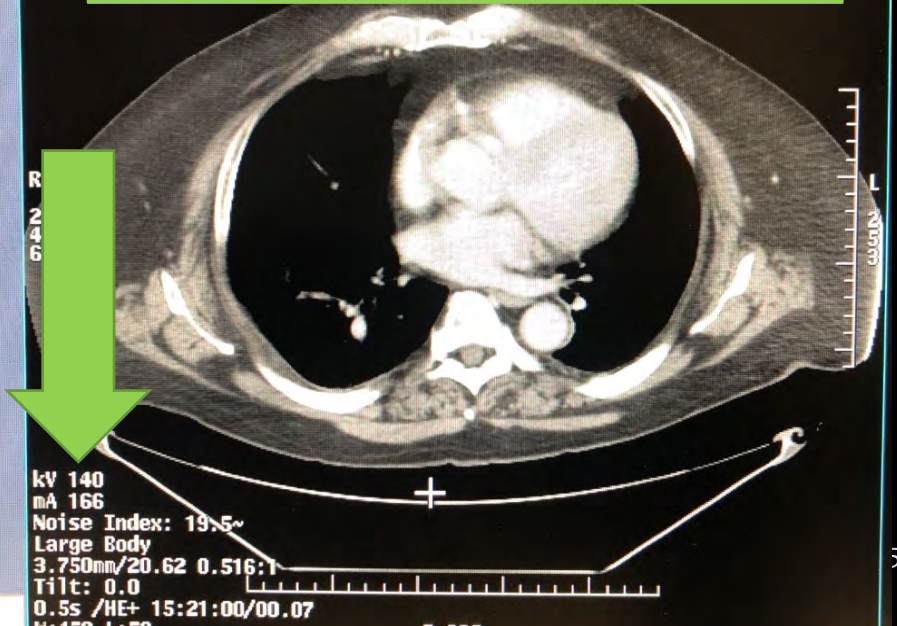
ANON8759

8759

2019

512

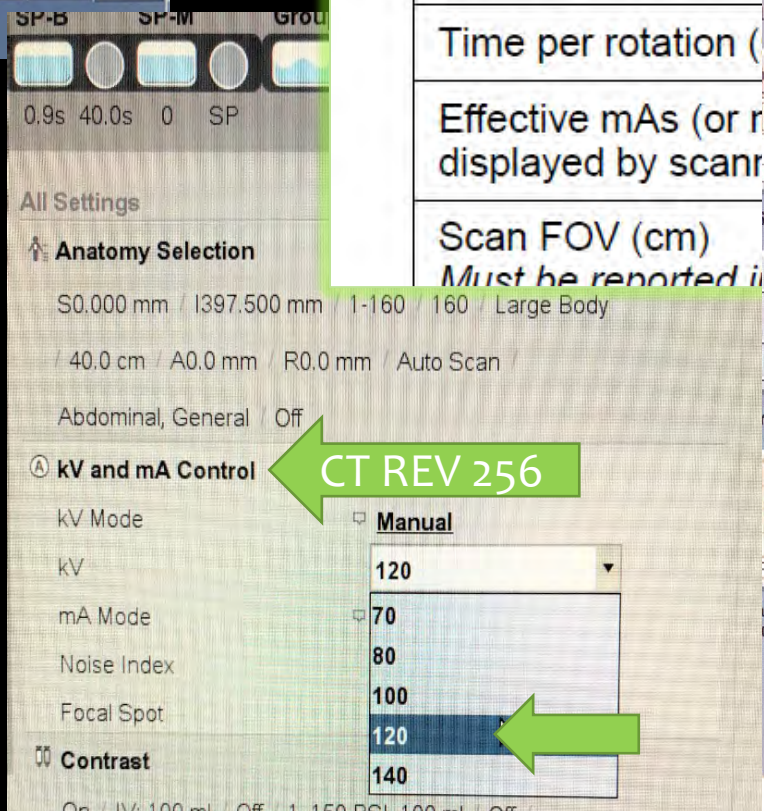
McKesson PACS

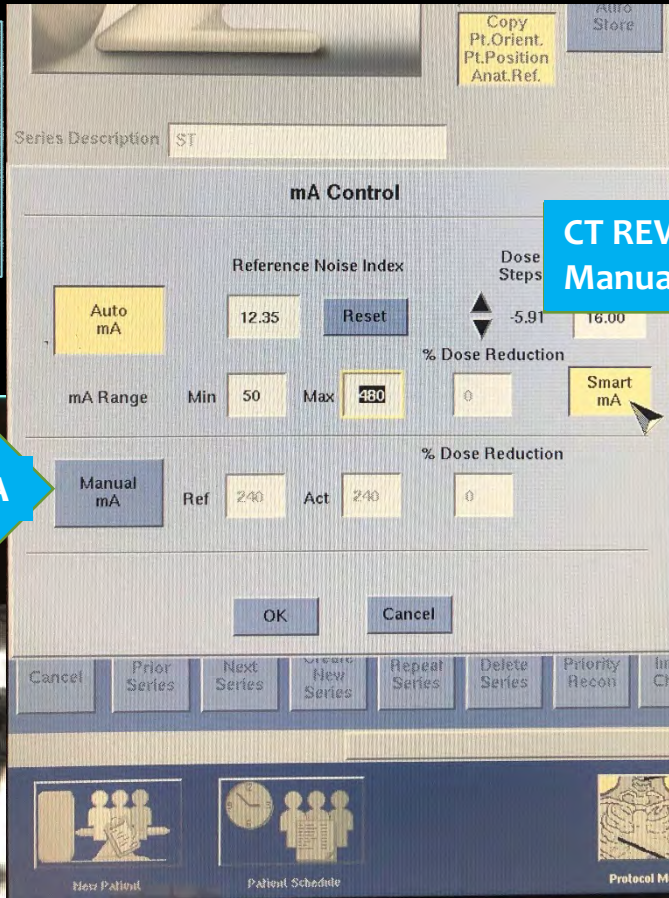


kVp

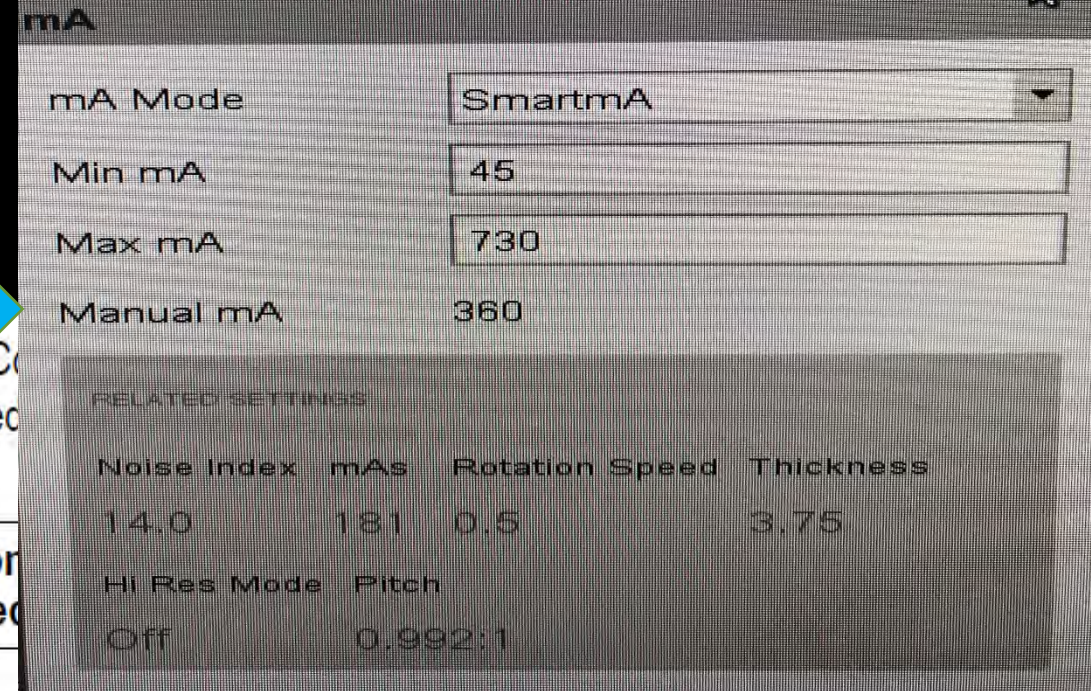
The kVp settings are found on:

- The axial image in your PACS.
- In the protocol on your scanner.





CT REV 256
Manual mA



mA (do not use mAs, effective
mAs of mAs per slice)

Time per rotation (s)

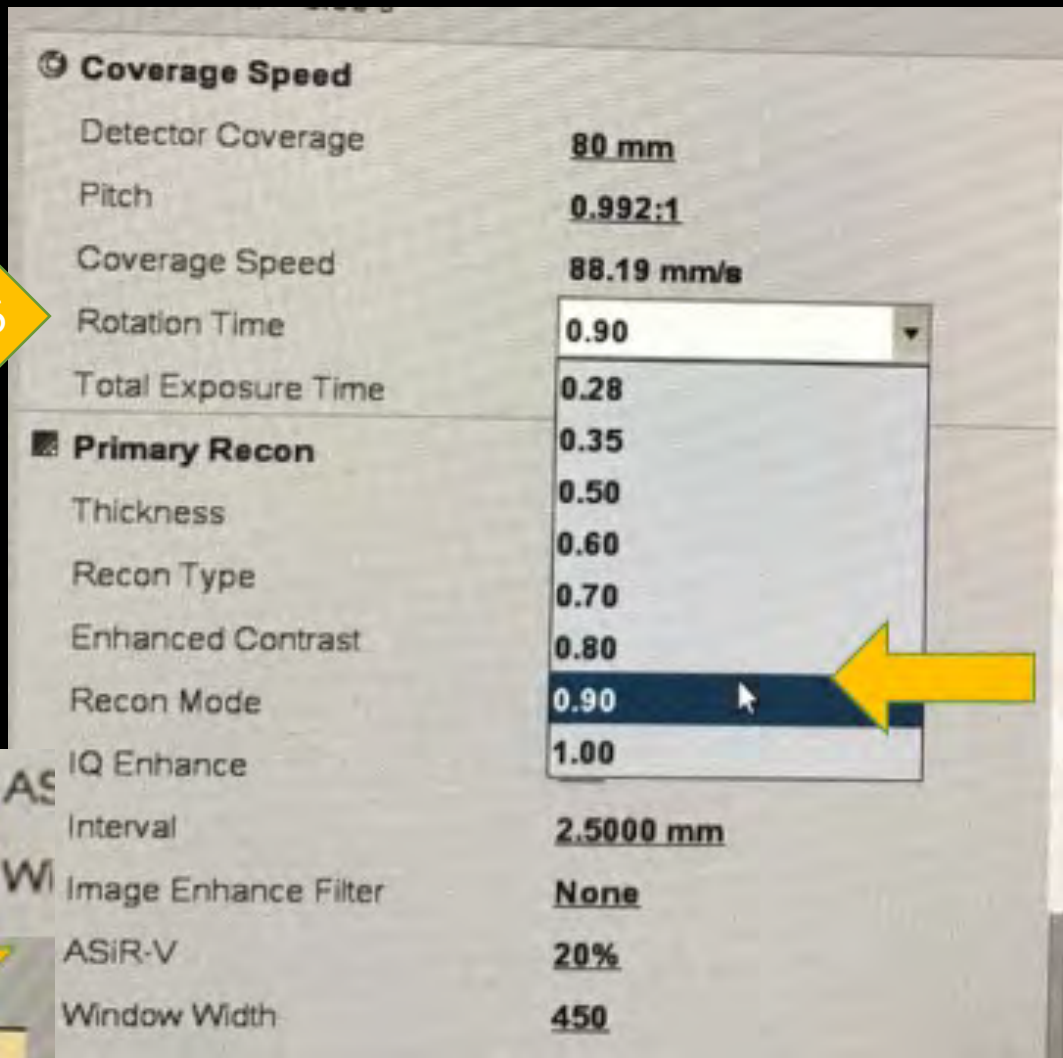
CT Non-Rev 256 Manual mA

Auto
mA/
Smart
mA

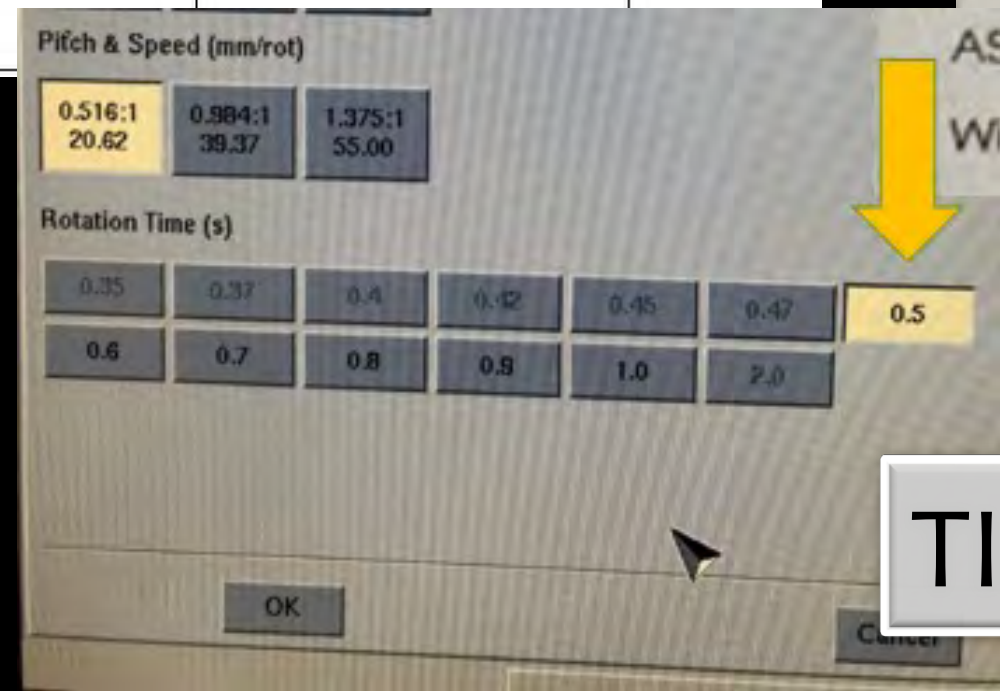
If using Auto mA or Smart mA= Take the highest number and the lowest number, add them together and divide by 2, enter that result in this column.
Using Manual mA = This will be a constant number.

Acquisition Series only (not reformatted series)	Scan Sequence 1	Scan Sequence 2
kVp		
mA (do not use mAs, effective mAs of mAs per slice)		
Time per rotation (s)		
Effective mAs (or mAs per slice) as displayed by scanner		
Scan FOV (cm) <i>Must be reported in cm.</i>		
Display FOV (cm)		

CT REV 256



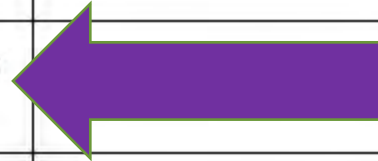
CT Non-REV 256



TIME PER ROTATION

sec

Acquisition Series only (not reformatted series)	Scan Sequence 1	Scan
kVp		
mA (do not use mAs, effective mAs or mAs per slice)		
Time per rotation (s)		
Effective mAs (or mAs per slice) as displayed by scanner		
Scan FOV (cm) <i>Must be reported in cm.</i>		
Display FOV (cm)		
Reconstruction Algorithm		
Axial (A) or Helical (H)		
Number of slices per tube rotation:		



Effective mAs

Leave blank for GE scanners, this only applies to Toshiba/Canon Scanners

Scan FOV (cm)

must be reported in cm

Below are the most common scan FOV, this will depend on your scanner make and model

Large Body = 50 cm

Medium Body = 36 cm

Small Body = 32 cm

Peds Body = 32 cm

Head 580 Wide bore = 25 cm

Head all other scanners= 32 cm

Acquisition Series only (not reformatted series)	Scan Sequence
kVp	
mA (do not use mAs, effective mAs of mAs per slice)	
Time per rotation (s)	
Effective mAs (or mAs per slice) as displayed by scanner	
Scan FOV (cm) <i>Must be reported in cm.</i>	
Display FOV (cm)	
Reconstruction Algorithm	
Axial (A) or Helical (H)	
Number of slices per tube rotation:	

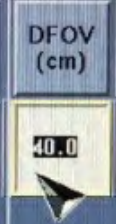
Select the desired SFOV

Ped Head	Ped Body	Head	Small Body	Large Body			
Scan Type	Start Location	End Location	No. of Images	Thick Speed	Interval (mm)	Gantry Tilt	SFOV
Helical Full 0.5 s	50.000	1397.500	160	3.75 20.62 0.516:1	2.500		Large Body

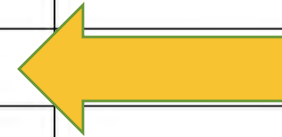
Display FOV (cm)

Found
under the
body card

Show
Localizer



Acquisition Series only (not reformatted series)	Scan Sequence 1
kVp	
mA (do not use mAs, effective mAs of mAs per slice)	
Time per rotation (s)	
Effective mAs (or mAs per slice) as displayed by scanner	
Scan FOV (cm) <i>Must be reported in cm.</i>	
Display FOV (cm)	
Reconstruction Algorithm	
Axial (A) or Helical (H)	



SP-B SP-M Group 1

0.9s 40.0s 0 SP

All Settings

Anatomy Selection

Start **S0.000 mm**

End **I397.500 mm**

Range **1-160**

Number of Images **160**

SFOV **Large Body**

DFOV **40.0**

Anterior Center **A0.0 mm**

Posterior Center **R0.0 mm**

Anterior Scan **On**

Central Identifier **Abdominal, General**

Smart Plan **Off**

kV and mA Control

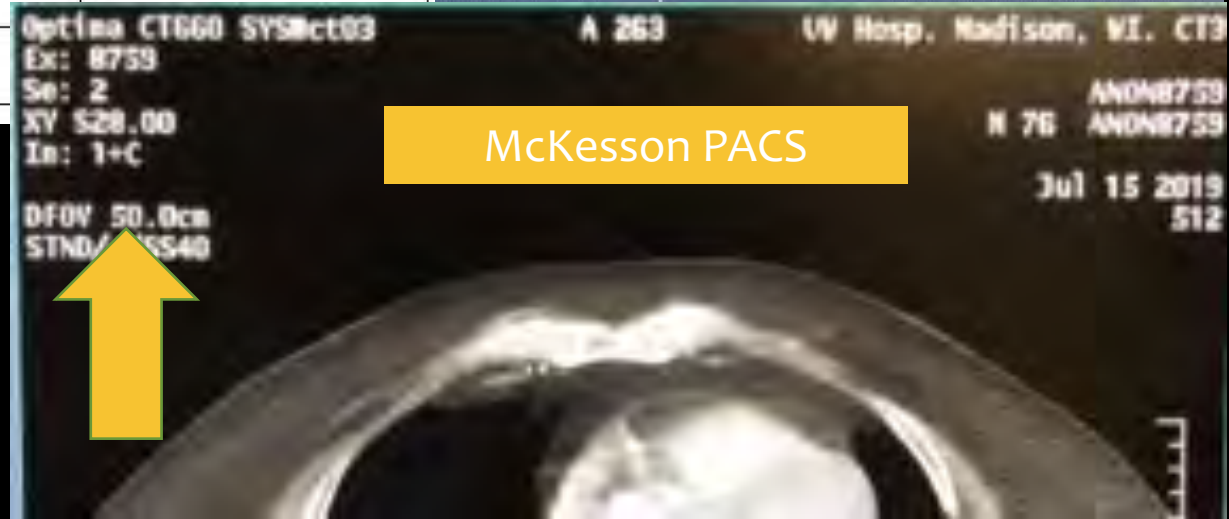
kV Mode **Manual**

kV **120 kV**

mA Mode **SmartmA 70-690**

Noise Index **11.0**

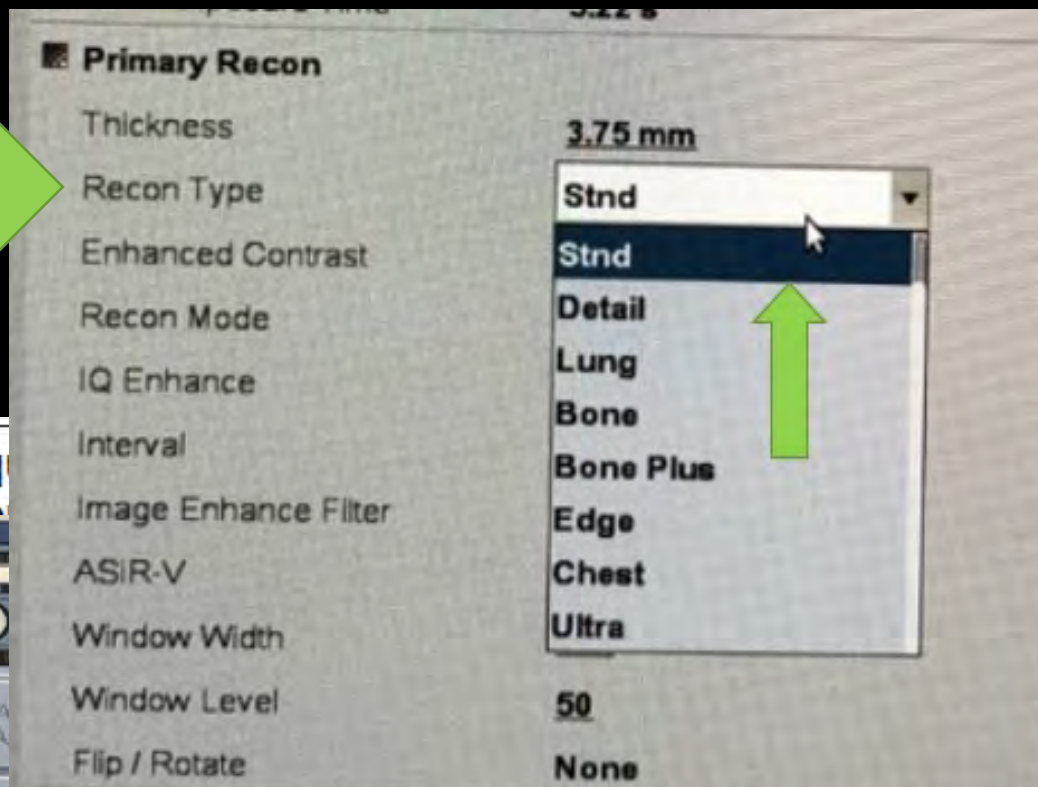
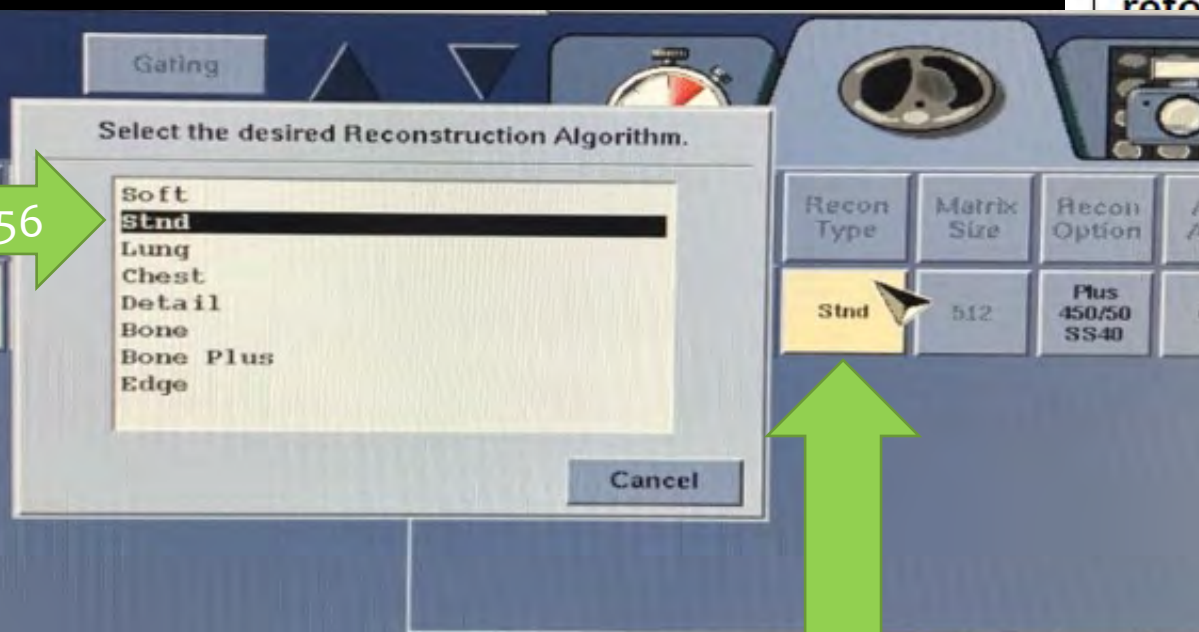
McKesson PACS



Reconstruction Algorithm

CT REV 256

CT Non-Rev 256



rotation (s)	
mAs (or mAs per slice) as d by scanner	
V (cm) reported in cm.	
Display FOV (cm)	
Reconstruction Algorithm	
Axial (A) or Helical (H)	

Images	Scan Type	Start Location	End Location	No. of Images	Thick
Split					
1-160	Helical Full 0.5 s	S0.000	I397.500	160	

Scan Type

Cardiac Mode

Rotation Time

Rotation Length

Shuttle Mode

OK

Acquisition reformat

kVp

mA (do not mAs of m

Time per

Effective displayed

Scan FOV

Must be

Display FOV (cm)

Reconstruction Algorithm

Axial (A) or Helical (H)

Noise Index 11.0

Focal Spot S

Scan Type

Scan Type

Hi Res Mode

Scan Type

Hi Res Mode

Rotation Time 0.90 s

Axial (A) vs Helical (H)

Z-axis collimation (T) in mm

Number of slices per tube rotation: # data channels used (N))	
Z-axis collimation (T) in mm	0.625 (for GE 64 slice)
Table Increment/Speed (mm)	
Reconstructed Scan Width (mm)	
Reconstructed Scan Interval (mm)	
Dose Reduction Technique used	
CTDIvol (recorded after scanning, not before, for each Scan Sequence) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>	
DLP (Dose length product) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>	

This is often misconstrued to be the total beam width. (In GE language the "Detector Coverage".)

It is not.

It is the effective width of a single data channel.

This is always 0.625 mm for GE 256, 128, and 64 slice scanners.

For GE 32 and 16 slice scanners it is either 0.625 mm or 1.25 mm.

For GE 4 and 8 slice scanners it is 1.25 mm

T = 0.625 is the Z-axis collimation in mm for all 256, 128, and 64 slice GE Scanners.

For 32 slice GE scanners:

T = 0.625 using 10 mm beam width

T = 1.25 using 20 mm beam width

For 16 slice GE scanners:

T = 0.625 using 10 mm beam width

T = 1.25 using 20 mm beam width

For 4 and 8 slice GE scanners:

T = 1.25



Number of Data Channels used in a single rotation (N)

Data Channels used in a single rotation (N)

To determine N:

Take the detector coverage in mm and divide by the Z axis Collimation (T) in mm.

Examples for 64, 128, or 256 slice scanners:

$$20 / 0.625 = 32$$

$$40 / 0.625 = 64$$

$$80 / 0.625 = 128$$

$$160 / 0.625 = 256$$

For 32 slice scanners it should always be 32:

$$20 / 0.625 = 32$$

$$40 / 1.25 = 32$$

For 16 slice scanners it should always be 16:

$$10 / 0.625 = 16$$

$$20 / 1.25 = 16$$

The screenshot shows a software interface for selecting image thickness. At the top, it says "Select the desired Image Thickness". Below this, there are several parameters:

- Detector Coverage (mm):** 20.0 and 40.0 (40.0 is selected).
- Coverage Time:** 20.4 s
- Helical Thickness (mm):** 0.625, 2.5, 3.75 (3.75 is selected).
- Coverage Speed:** 41.25 mm/s
- Pitch & Speed (mm/s):** 0.516:1, 20.62, 1.375:1, 55.00 (0.516:1, 20.62 is selected).
- Rotation Time:** 0.90 s
- Coverage Speed:** 0.35, 0.6 (0.6 is selected).
- Detector Coverage:** 80 (selected in the dropdown menu).
- Pitch:** 40
- Coverage Speed:** 80
- Rotation Time:** 0.90 s
- Total Exposure Time:** 5.22 s

A red arrow points to the "40.0" value under "Detector Coverage (mm)". Another red arrow points to the "80" value in the "Detector Coverage" dropdown menu.

Table increment/speed (I):

Axial Scans (mm) or Helical Table Speed (mm/rotation)

- Axial: I = the table increment
- Helical:
 $I = \text{the detector coverage (mm)} \times \text{the pitch}$

Detector coverage helical options

- 16 channel = 10 mm or 20 mm
- 32 channel = 20 mm or 40 mm
- 64 channel = 20 mm or 40 mm
- 256 channel = 40 mm or 80 mm

Example:

for a 40 mm detector coverage and a pitch of 0.516:
 $I = 40 \times 0.516 = 20.62 \text{ mm/rotation}$

Number of slices per tube rotation:
data channels used (N))

Acquisition slice thickness -
Z-axis collimation (T, in mm)

Table Increment (I): Axial Scans (mm) or Helical Table Speed (mm/rotation)

Detector Coverage (mm)

20.0

40.0

CT Non
REV 256

Helical Thickness (mm)

0.625

1.25

2.5

3.75

5.0

7.5

10.0

Scan Type

Pitch & Sp

Scan Type

Hi Res Mode

Rotation Time

☐ Helical

Off

CT REV 256

③ Coverage Speed

Detector Coverage

Pitch

Coverage Speed

Rotation Time

Total Exposure Time

80 mm

0.992:1

0.508:1

0.992:1

1.375:1

1.531:1

Reconstructed Image width (mm)

Primary Recon

Thickness **3.75**

Recon Type **0.625**

Enhanced Contrast **1.25**

Recon Mode **2.5**

IQ Enhance **3.75**

Interval **5.0**

Image Enhance Filter **2.5000 mm**

ASIR-V **None**

Window Width **20%**

Window Level **450**

Flip / Rotate **50**

None

Images	Scan Type	Start Location	End Location	No. of Images	Thick Speed	Interval (mm)	Gantry Tilt	SFOV
Split								
1-160	Helical Full 0.5 s	50.000	1397.500	160	3.75 20.62 0.516:1	2.500	50.0	Large Body

Number of slices per tube rotation: # data channels used (N))		
Acquisition slice thickness - Z-axis collimation (T, in mm)		
Table Increment/Speed (mm)		
Reconstructed Image Width (mm)		
Reconstructed Scan Interval (mm)		
Dose Reduction Technique used		
CTDIvol (recorded after scanning, not before, for each Scan Sequence) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>		
DLP (Dose length product) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>		

Reconstructed Image Interval (mm)

Number of slices # data channels	Rotation: (N))		
Acquisition speed Z-axis collimation	Speed - (mm)		
Table Increment (mm)			
Reconstructed slice Width (mm)			
Reconstructed Image Interval (mm)			
Dose Reduction Technique used			
CTDIvol (recorded after scanning, not before, for each Scan Sequence) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>			
DLP (Dose length product) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>			

Primary Recon

Thickness **3.75 mm**

Recon Type **Std**

Enhanced Contrast **Off**

Recon Mode **Helical Plus**

IQ Enhance **Off**

Interval **2.5000**

Image Enhance Filter **None**

ASIR-V **20%**

Window Width **450**

Images	Scan Type	Start Location	End Location	No. of Images	Thick Speed	Interval (mm)	Gantry Tilt	SFOV
Split								
1-160	Helical Full 0.5 s	50.000	1397.500	160	3.75 20.62 0.516:1	2.500	50.0	Large Body

Dose Reduction Technique

mA Control

Auto mA: 12.35 [Reset] Dose Steps: 5.91 Noise Index: 16.00

mA Range: Min 50 Max 480 % Dose Reduction: 0 [Smart mA]

Manual mA: Ref 2/40 Act 2/40 % Dose Reduction: 0

ASiR Setup

[None] [Slice]

SS10 Slice 10%
SS20 Slice 20%
SS30 Slice 30%
SS40 Slice 40%
SS50 Slice 50%

Primary Recon

Thickness: 3.75 mm
Recon Type: Std
Enhanced Contrast: Off
Recon Mode: Helical Plus
IQ Enhance: Off
Interval: 2.5000 mm
Image Enhance Filter: None
ASiR-V: 20%
Window Width: 20%
Window Level: 30%
Flip / Rotate: 40%
Gating And Trace: 50%
Off: 60%
70%
80%
90%

ASiR-V: DLIR
MAR: Low
Window Width: Off
Window Level: Low
Medium
High

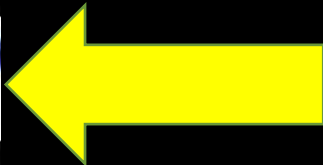
Number of slices per tube rotation: # data channels used (N))	
Acquisition slice thickness - Z-axis collimation (T, in mm)	
Table Increment/Speed (mm)	
Reconstructed Scan Width (mm)	
Reconstructed Scan Interval (mm)	
Dose Reduction Technique used	Smart mA & ASiR
CTDIvol (recorded after scanning, not before, for each Scan Sequence) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>	
DLP (Dose length product) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>	

DLIR - for CT REV 256 only

CTDIVOL

Dose Report					
Series	Type	Scan Range (mm)	CTDIvol (mGy)	DLP (mGy*cm)	Phantom cm
SCOUT					
1	Scout	S150-I150	0.02	0.86	Body 32
1	Scout	S150-I150	0.02	1.72	Body 32
THIN ST					
2	Helical	I115.383-S100.867	10.00	246.11	Head 16
Total Exam DLP:				248.69	

Number of slices per tube rotation: # data channels used (N))	
Acquisition slice thickness - Z-axis collimation (T, in mm)	
Table Increment/Speed (mm)	
Reconstructed Scan Width (mm)	
Reconstructed Scan Interval (mm)	
Dose Reduction Technique used	
CTDIvol (recorded after scanning, not before, for each Scan Sequence) <i>If your scanner is incapable of reporting dose, enter "0" in this field.</i>	



Only the enter the CTDIvol
for the series, do not include
the scouts.

DLP

Dose Report					
Series	Type	Scan Range (mm)	CTDIvol (mGy)	DLP (mGy*cm)	Phantom cm
SCOUT					
1	Scout	S150-I150	0.03	0.86	Body 32
1	Scout	S150-I150	0.06	1.72	Body 32
THIN ST					
2	Helical	I115.383-S100.867	10.00	246.11	Head 16
Total Exam DLP:				248.69	

CTDIvol (recorded after scanning, not before, for each Scan Sequence)
If your scanner is incapable of reporting dose, enter "0" in this field.

DLP (Dose length product)
If your scanner is incapable of reporting dose, enter "0" in this field.

Enter the DLP in mGy*cm

Upload your images to Triad

2. Adult Chest Module

Adult Chest	
A. Technique Parameters	
Required series	IV contrast may be used but is not required
Reconstructed slice width	≤ 5 mm
Reconstructed algorithm	Standard or equivalent
CTDIvol	Reference Value: 21 mGy* Radiation dose reduction methods such as Automatic Exposure Control methods (e.g. Tube Current Modulation) are encouraged.
B. Anatomic Coverage	
Coverage	Lung apex to below the lung bases

3. Adult Abdomen Module

Adult Abdomen	
A. Technique Parameters	
Required series	IV contrast enhanced. Should be timed to portal venous phase.
Reconstructed slice width	≤ 5 mm
Reconstructed algorithm	Standard or soft tissue (or appropriate body kernel)
Oral contrast	Oral contrast material must be present with barium or neutral contrast agents
CTDIvol	Reference value: 25 mGy* Pass/Fail criteria: 30 mGy*
B. Anatomical Coverage	
Coverage	Diaphragm to iliac crest to include the entire liver; May include pelvis

Adult Coronary CTA

A. Technique Parameters	
Required series	Best phase of contrast enhanced axial images*
Dose reduction	Required (dose modulation, prospective gating or automatic dose reduction)
Reconstructed slice width	≤ 1 mm
Reconstruction algorithm	Standard
CTDIvol	≤ 50 mGy prospective gating ≤ 150 mGy retrospective gating CTDIvol information on dose received is required.
Gating	The use of prospective gating is encouraged whenever possible.***
B. Anatomic Coverage	
Coverage**	Scan must cover the entire coronary circulation and heart**
Required Screen Shots*	CTDIvol and DLP Scout with locations displayed Curved or straight reformat of 2 cm of LAD Curved or straight reformat of 2 cm of LCX Curved or straight reformat of 2 cm of OM1 or first large OM or RCA

Only submit the one best phase set of axial images and the required screen shots. Additional cardiac phases, multiplanar views and reconstructions should not be submitted.