



With over 30 years experience providing Radiation Protection Advice, IRS is your one-stop solution to all your radiation protection needs.

Computed Radiography service specification:

IRS will provide advice and scientific and technical support to enable the client to comply with current legislative requirements. IRS has been recognised as an RPA Body by the Health and Safety Executive (HSE)

The service provision will be to test and assess the performance of the CR Plate and the reader performance to facilitate detection of artefacts and to monitor the image quality and sensitivity. The tests are split into:

- Commissioning Tests
- Annual QA Checks

Commissioning Tests

- Monitor and laser printer set up
To test that devices used to view image data are of sufficient quality to maximise the information available to the observer.
- Dark Noise
To assess the level of noise inherent in the system
- Erasure cycle efficiency
To test that minimal residual signal (ghosting) remains on a plate after readout and erasure
- Sensitivity Index Calibration
To assess the accuracy of the plate exposure values calculated using exposure indicators
- Sensitivity Index Consistency
To assess variation of sensitivity between plates and set a baseline for monitoring system sensitivity for future QA testing
- Uniformity
To assess the uniformity of the recorded signal from a uniformly exposed plate.
- Scaling factors
To assess the accuracy of software distance indicators and check for distortion

- Blurring
To test for any localised distortion or blurring of the image
- Limiting spatial resolution
To test the high contrast limit of the systems ability to resolve detail
- Threshold Contrast Detail Detectability
To monitor image quality by assessing the visibility of low contrast detail
- Laser Beam Function
To assess laser beam scanline integrity and jitter
- Moire Patterns
To test for the presence of Moire pattern artefacts caused by grids

Annual QA Tests

The following routine QA tests should be performed approximately annually:

- Monitor set up/laser film set up
- Erasure cycle efficiency
- Sensitivity index consistency/sensitivity (for 1 plate of each size)
- Uniformity
- Scaling errors
- Blurring
- Limiting resolution (45deg only)
- TCDD (only 4 Gy)

Routine QA Tests

These are a series of tests to assess CR plate and reader performance. The tests are intended to monitor image quality and sensitivity.

- Sensitivity Index Monitoring
To monitor system sensitivity and consistency of relationship between cassette exposure and sensitivity index. (Frequency: 1-3 months)
- Uniformity
To monitor image quality by assessing the uniformity of the system (Frequency: 1-3 months)
- Threshold Contrast Detectability of the system
To monitor image quality by assessing the visibility of low contrast detail (Frequency: 3-6 months)
- Limiting Spatial Resolution
To monitor image quality by assessing the resolution of the system (Frequency: 3-6 months)

Direct Digital Radiography service specification:

IRS will provide advice and scientific and technical support to enable the client to comply with current legislative requirements. IRS has been recognised as an RPA Body by the Health and Safety Executive (HSE).

The service provision will be to perform the checks necessary to test and assess the performance the Digital Detector to facilitate detection of artefacts and to monitor image quality and sensitivity. The tests are split into:

- Commissioning Tests
- Annual QA Checks

Commissioning

- Monitor and laser printer set up
To test that devices used to view image data are of sufficient quality to maximise the information available to the observer.
- Image Retention
To test that any detectable residual signal (Ghosting) that remains in subsequent images is minimal
- Sensitivity Index Consistency
To assess variation of sensitivity between exposures and set a baseline for monitoring system sensitivity for future QA testing
- Uniformity
To assess the uniformity of the recorded signal from a uniformly exposed detector.
- Scaling factors
To assess the accuracy of software distance indicators and check for distortion
- Blurring and stitching artefacts
To test for any localised distortion or blurring and to highlight any stitching artefacts if the system is formed from more than one detector element.
- Limiting spatial resolution
To test the high contrast limit of the systems ability to resolve detail.
- Threshold Contrast Detail Detectability
To monitor image quality by assessing the visibility of low contrast detail.

Annual QA Tests

The following routine QA tests should be performed approximately annually:

- Monitor set up/laser film set up
- Sensitivity index consistency
- Uniformity
- Blurring and stitching artefacts
- Limiting resolution (45deg only)
- TCDD (only 4mGy)

Routine QA Tests

These are a series of tests to assess digital detector performance. The tests are intended to detect artefacts and test image quality and sensitivity.

- **Sensitivity Index Monitoring**
To monitor system sensitivity and consistency of relationship between detector exposure and sensitivity index. (Frequency: 1-3 months).
- **Uniformity**
To monitor image quality by assessing the uniformity of the system (Frequency: 1-3 months).
- **Threshold Contrast Detectability of the system**
To monitor image quality by assessing the visibility of low contrast detail (Frequency: 3-6 months).
- **Limiting Spatial Resolution**
To monitor image quality by assessing the resolution of the system (Frequency: 3-6 months).