

SecurView®

Breast Imaging Workstation



SecurView® DX Workstation Quality Control Manual

MAN-11101 Revision 002

HOLOGIC®

SecurView® DX

Breast Imaging Workstation

Quality Control Manual

For Software Version 12.0

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HOLOGIC®

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Chapter 1 Introduction

This manual provides procedures developed to ensure the consistency of the brightness, contrast, and image presentation of the displays used with Hologic's SecurView® diagnostic review workstations.

Use the procedures and quality control (QC) forms in this manual to maintain an effective QC program that conforms to the rules of the United States Mammography Quality Standards Act (MQSA) or to become accredited by an accreditation body. This manual may also be used as a guide by facilities outside the United States to establish a QC program to conform to the applicable local standard acts and regulations. This manual is intended for use by Radiologic Technologists and Medical Physicists who are qualified to operate the SecurView system.

1.1 Descriptions of Warnings, Cautions, and Notes

Descriptions of Warnings, Cautions, and Notes used in this manual:



WARNING!

The procedures that you must follow accurately to prevent possible dangerous or fatal injury.



Warning:

The procedures that you must follow accurately to prevent injury.



Caution:

The procedures that you must follow accurately to prevent damage to equipment, loss of data, or damage to files in software applications.



Note

Notes show additional information.

1.2 Safety

Observe all electrical, mechanical, and radiation safety standards.



Caution:

Always obey Electrostatic Discharge (ESD) precautions when working with electronics and electronic components.



Note

It is recommended that you read through this document fully before starting to work.



Note

The Service Engineers must complete Hologic training courses before they operate or service a system.

1.3 Product Complaints

Any healthcare professional who has complaints or is dissatisfied with the quality, durability, reliability, safety, effectiveness, and/or performance of this product should notify Hologic.

If the device malfunctions and may have caused or contributed to a serious injury of a patient, notify Hologic immediately by telephone, fax, or written correspondence.

1.4 Terms and Definitions

Table 1: Terms and Definitions

| Terms | Definitions |
|-------------------|---|
| cd/m ² | Candela per square meter (cd/m ²), the standard unit of luminance. It represents a luminous intensity of one candela radiating from a surface whose area is one square meter. Luminance is used to specify the brightness of computer displays. |
| DICOM | Digital Imaging and Communications in Medicine – an international standard for the exchange of imaging and related information. |
| GSDF | Grayscale Standard Display Function, a mathematical function that adjusts pixel brightness in order to compensate for the nonlinearity of human visual perception. DICOM GSDF improves conspicuity of findings in the extremes of luminance and provides a mechanism to standardize the appearance of images on displays of different inherent brightness and with different response curves. |
| LCD | Liquid Crystal Display. The technology used for displays in notebook and other computers. Like light-emitting diode (LED) technology, LCDs allow displays to be much thinner than cathode ray tube (CRT) technology. |
| Luminance | Luminance is a photometric measure of the luminous intensity per unit area of light travelling in a given direction. It describes the amount of light that passes through or is emitted from a particular area and falls within a given solid angle. The International System of Units (SI) for luminance is candela per square meter (cd/m ²). |
| MQSA | Mammography Quality Standards Act. Created by the U.S. Food and Drug Administration (FDA) and approved by the U.S. Congress in 1994, MQSA establishes quality standards for mammography facilities. MQSA requires mammography facilities to be accredited by the FDA or an FDA-approved accreditation body, be certified by the FDA or the State, receive annual MQSA inspections, and display its FDA certification in a prominent area. |
| QA | Quality Assurance. Generally used to describe a program of policies, procedures, and practices intended to ensure that quality standards are developed, maintained, and adhered to. |
| QC | Quality Control. Refers to one or more procedures intended to ensure that a manufactured product or performed service complies with a defined set of quality criteria and meets the requirements of the client or customer. |
| USB | Universal Serial Bus. A specification to establish communication between devices and a host controller such as a computer. This interface can connect a computer and add-on devices, such as media players, keyboards, flash drives, and printers. |

Chapter 2 QC Activities for the Medical Physicist

Hologic provides QC software (choice of QAWeb Enterprise or MediCal QAWeb) that is used by Service Engineers and customers to establish and maintain the operating levels of the SecurView displays. The software analyzes the results of display calibration and compliance testing and indicates whether the displays meet the pre-programmed QC limits established by the manufacturer.



Caution:

Connecting a QAWeb agent to a QAWeb server may overwrite the required Hologic Policy Map. When connecting to a QAWeb server, contact Technical Support at +1.800.760.8342 to obtain the correct version of QAWeb that will maintain the required Hologic Policy Map.

During SecurView system installation, a Service Engineer uses the software to calibrate the displays. After installation, Radiologic Technologists use the software for the following two tests:

- **Weekly:** The Hologic Compliance Test within QAWeb verifies that the displays are performing within the preprogrammed limits. The Technologist records the results in the SecurView Weekly QC Form.
- **Semi-Annual Auto-Calibration:** The QAWeb software calibrates the displays twice per year to re-establish the operating levels. The Technologist records the results in the SecurView Weekly QC Form.



Note

For the Barco Uniti™, High-Brightness, Coronis, and Barco Nio MDNG-5221 displays, the QAWeb software runs the tests automatically. For the Barco Nio MDNG-6121 and MDNG-5121 displays, the Technologist must use a photometer and run the tests manually as explained in section [Manually Calibrating Displays](#) on page 31.

In addition, Hologic recommends using QAWeb software for the following test:

- **Annually:** The Medical Physicist checks the most recent results of the Hologic Compliance Test and records them in the SecurView Annual QC Forms. Refer to [Appendix A: SecurView Annual QC Form for Medical Physicists](#) on page 41.



Note

When displays are replaced or relocated the Medical Physicist needs to perform the Hologic Compliance Test results check.

2.1 QC Procedures for the Medical Physicist

Hologic recommends that a Medical Physicist check the performance of each SecurView diagnostic workstation display at least once per year using the procedure given below. Use the display QC software (QAWeb) provided with each SecurView workstation. For detailed instructions on using the software, refer to section [Testing the Displays](#) on page 13.

To run the annual QC check, do the following:

1. **Check performance records.** For each diagnostic workstation, review the [Appendix B: SecurView Weekly QC Form for Radiologic Technologists](#) on page 43 or alternative QC tracking documentation in use per local policy. Verify that the SecurView displays have been operating within the recommended tolerance limits.
2. **Review Hologic Compliance Test results.** Using the QC software, check the results of the most recent Hologic Compliance Test. If the test has not been run during the last week, then run the test.
3. **Verify results.** Ensure that the Hologic Compliance or Mammography Compliance Test results are within the recommended tolerance limits.
 - a. For each display, check:
 - White level
 - DICOM GSDF compliance (Luminance Response).
 - b. If the results do not meet specifications, refer to section [Corrective Action](#) on page 7.
4. **Record the results** in the following form(s):
 - [Appendix A: SecurView Annual QC Form for Medical Physicists](#) on page 41
 - [Appendix B: SecurView Weekly QC Form for Radiologic Technologists](#) on page 43
5. For Selenia® Dimensions® systems:
 - a. At the Acquisition Workstation, select **Admin > Quality Control > Physicist tab > Diagnostic Review Workstation Quality Control**.
 - b. Select **Mark Completed** to label the status of this procedure as finished.
 - c. To mark the QC procedure as completed, select **Yes**.

2.2 Corrective Action

If any display does not meet the performance criteria, adjust room lighting conditions and repeat the action that failed. If the action fails after the second attempt, correct the problem before performing mammographic image interpretation using the following instructions.

- If any performance criterion is not met, use the Auto-calibration procedure to recalibrate the display. Then rerun the Hologic or Mammography Compliance Test and verify that the display performs within the recommended limits.
- A qualified Service Engineer may have to resolve any issues if display operating levels are not within recommended ranges.
- If the details of a test contain no results, the test shall be run manually after making sure the displays are correctly attached and turned on. A qualified Service Engineer may have to resolve any issues if the details of a test contain no results after the second attempt.
- While you resolve display calibration issues, SecurView systems can still receive images. Use an alternative diagnostic device (for example, a second diagnostic workstation or a DICOM printer) for mammography image interpretation until all issues are resolved and the displays perform within recommended ranges.

2.3 Reading Room Configuration Testing

A qualified in-person Medical Physicist performs testing when a reading room is initially configured and after each year of operation. If equipment is replaced between these scheduled tests without changing the reading room configuration, this replacement does not require in-person Medical Physicist testing and is subject to the Medical Physicist's oversight.

At the suggestion of the Lead Interpreting Physician, the Medical Physicist may set White Level to be other than the default shown in the Performance Criteria table in [Appendix A: SecurView Annual QC Form for Medical Physicists](#) on page 41.

Chapter 3 QC Activities for the Radiologic Technologist

Hologic provides QC software (QAWeb Enterprise or MediCal QAWeb) that is used by the Radiologic Technologist to maintain the operating levels of the SecurView displays. The software analyzes the results of display calibration and compliance testing and indicates whether the displays meet the pre-programmed QC limits established by the manufacturer.



Caution:

Connecting a QAWeb agent to a QAWeb server may overwrite the required Hologic Policy Map. When connecting to a QAWeb server, contact Technical Support at +1.800.760.8342 to obtain the correct version of QAWeb that will maintain the required Hologic Policy Map.

During SecurView system installation, a Service Engineer uses the software to calibrate the displays. After installation, Radiologic Technologists use the software for the following two tests:

- **Weekly:** The Hologic Compliance Test verifies that the displays are performing within the preprogrammed limits. The Technologist records the results in the SecurView Weekly QC Form.
- **Semi-Annual Auto-Calibration:** The QAWeb software calibrates the displays twice per year to re-establish the operating levels. The Technologist records the results in the SecurView Weekly QC Form.



Note

For the Barco Uniti, High-Brightness, Coronis, and Barco Nio MDNG-5221 displays, the MediCal QAWeb software runs the tests automatically. For the Barco Nio MDNG-6121 and MDNG-5121 displays, the Technologist must use a photometer and run the tests manually as explained in section [Manually Calibrating Displays](#) on page 31.

3.1 QC Procedures for the Radiologic Technologist

Hologic recommends that a Radiologic Technologist check the performance of SecurView diagnostic workstation displays using the following procedures. Use the QC software (choice of QAWeb Enterprise or MediCal QAWeb) provided with each workstation. For detailed instructions on using the software, refer to section [Testing the Displays](#) on page 13.

To run the weekly QC check:

1. Run the Hologic or Mammography Compliance Test.



Note

For displays that support scheduled Compliance Tests, verify successful completion of the tests the morning after the scheduled Compliance Tests occur. If the system failed one or more of the tests, the source of the problem must be identified, and corrective action taken, before the system is used for clinical purposes. Refer to section [Corrective Action](#) on page 11.

- For the Barco Uniti, High-Brightness, Coronis, and Barco Nio MDNG-5221 displays, QAWeb automatically runs the Compliance Test once per week. Verify that the test ran as scheduled and the Status displayed is “OK.”
 - For Barco Nio MDNG-6121 and MDNG-5121 displays, MediCal QAWeb prompts you to run the Hologic Compliance Test once per week. Run the test with the photometer and, when done, verify that the Action Result displayed is “OK.”
 - When the QC Check is done, verify that “Result: OK” displays.
 - If results are not “OK,” refer to section [Corrective Action](#) on page 11.
2. Record the results in the [Appendix B: SecurView Weekly QC Form for Radiologic Technologists](#) on page 43 or alternative QC tracking documentation in use per local policy.



Note

Hologic strongly recommends saving the MediCal QAWeb Action History monthly to prevent data loss in the event of a system failure. Hologic also recommends saving the Action History prior to a SecurView upgrade. Refer to section [Saving the MediCal QAWeb Action History](#) on page 37.

To run the semi-annual calibration:

1. If the displays have not been calibrated during the last six months, use the QC software (Auto-calibration) to calibrate them.
2. Record the results in the [Appendix B: SecurView Weekly QC Form for Radiologic Technologists](#) on page 43.

After completing the QC procedure, do the following for Selenia Dimensions systems only:

1. At the Acquisition Workstation, select **Admin > Quality Control > Technologist tab > Diagnostic Review Workstation Quality Control**.
2. Select **Mark Completed** to label the status of this procedure as finished.
3. To mark the QC procedure as completed, select **Yes**.

3.2 Corrective Action

If any display does not meet the performance criteria, adjust room lighting conditions and repeat the action that failed. If the action fails after the second attempt, correct the problem before performing mammographic image interpretation using the instructions below.

If any performance criterion is not met, use the Auto-calibration procedure to recalibrate the display. Then rerun the Hologic Compliance Test and verify that the display performs within the recommended limits.

A qualified Service Engineer may have to resolve any issues if display operating levels are not within recommended ranges.

If the details of a test contain no results, the test shall be run manually after making sure the displays are correctly attached and turned on. A qualified Service Engineer may have to resolve any issues if the details of a test contain no results after the second attempt.

While you resolve display calibration issues, SecurView systems can still receive images. Use an alternative diagnostic device (for example, a second diagnostic workstation or DICOM printer) for mammography image interpretation until all issues are resolved and the displays perform within recommended ranges.

Chapter 4 Testing the Displays

This section provides detailed QC procedures for various displays. There are two different QA software packages that can be used with Barco displays: QAWeb Enterprise or MediCal QAWeb. The newer QAWeb Enterprise can be used with the displays indicated in the following table.

| Display | Barco Model Number | Photometer | QC Software (QAWeb) | |
|--------------------------|--------------------|------------|---------------------|---------|
| | | | Enterprise | MediCal |
| Coronis Uniti | MDMC-12133 | Internal | ✓ | ✓ |
| High-Brightness | MDMG-5221 | Internal | ✓ | ✓ |
| Coronis | MDCG-10130 | Internal | X | ✓ |
| | MDMG-5121 | Internal | X | ✓ |
| | MFGD-5621 HD | Internal | X | ✓ |
| | MFGD-5421 | Internal | X | ✓ |
| Nio 5.8 MP Color Display | MDNC-6121 | Internal | ✓ | ✓ |
| Nio | MDNG-6121 | External | X | ✓ |
| | MDNG-5121 | External | X | ✓ |
| | MDNG-5221 | Internal | ✓ | ✓ |

4.1 Photometer Styles – Built-in vs. External

There are two types of display configurations:

- **Built-in photometer sensor displays - Barco Uniti, High-Brightness, Coronis, and Barco Nio MDNG-5221:** The QAWeb software automatically runs the Hologic Compliance Test and calibrates the Barco displays on a scheduled basis. The QAWeb software relies on a built-in photometer sensor. No user intervention is required; you only need to verify that the software ran the test as scheduled and that the results were within the tolerance ranges. The default scheduled time is between 12:00 midnight and 2:00 AM.
- **External photometer sensor displays - Barco Nio (MDNG-6121 and MDNG-5121):** The MediCal QAWeb software automatically alerts you to run the Hologic Compliance Test and calibrate these Barco Nio displays on a scheduled basis. You will use an external photometer to run the QC procedures. QAWeb Enterprise is not supported for these displays.



Important

When testing the displays, ensure that the room lighting conditions are similar to those used when reading studies.

4.2 Testing with Built-in Photometer Sensor Displays

For built-in photometer sensor displays, QAWeb automatically runs the Hologic Compliance Test once per week and the Auto-calibration routine twice per year. Use this procedure as follows:

- **Radiologic Technologist:** Verify that the test(s) ran successfully.
- **Medical Physicist:** Review and record the numerical results from the most recent Hologic Compliance Test.



Note

Hologic recommends for displays older than five years that the Medical Physicist use an external photometer once per year for the luminance check to confirm that the internal photometer is still operating correctly. The luminance measured by the photometer must be within 15% of the calibrated luminance. The calibrated luminance for each display can be found in the configuration of QAWeb Agent or in the most recent compliance check results in the status.

4.3 Testing with External Photometer Sensor Displays

For external photometer sensor displays, MediCal QAWeb alerts you to run the Hologic Compliance Test once per week and the Auto-calibration procedure (refer to section [Manually Calibrating Displays](#) on page 31) twice per year. Use the procedure in this section as follows:

- **Radiologic Technologist:** Run the QC tests and verify that they ran successfully.
- **Medical Physicist:** Review and record the numerical results from the most recent Hologic Compliance Test.

To run the tests and calibrate the displays, users must have an external photometer as shown in the following figures.

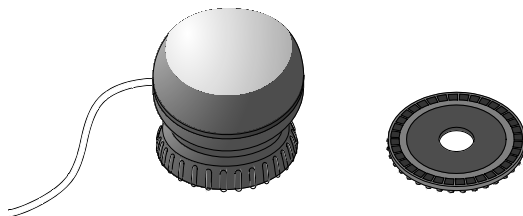


Figure 1: Barco Photometer Sensor and Felt Pad Attachment (previous model)



Figure 2: Barco Photometer Sensor (new model)

When performing test procedures, note the following:

- Verify that the Barco USB Photometer is plugged into the same USB port in which it was originally installed. If the sensor was removed for any reason, reconnect it as explained in section [Reconnecting the Photometer Sensor](#) on page 16 before continuing.
- Verify that the felt pad is attached to the photometer sensor. If the felt pad is not attached, reconnect it as explained in section [Attaching the Felt Pad to the Photometer Sensor](#) on page 16 before continuing.
- The new model of the sensor does not have a felt pad attachment. Verify that the photometer sensor is open by swiveling the unit up away from its cover.



Note

The only functional difference between the previous model and the new model of the Photometer Sensor is that the new model does not have the felt pad attachment. All other functions are similar.

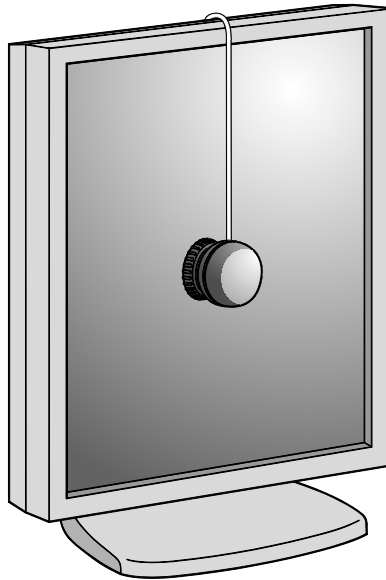


Figure 3: Using a Photometer to Calibrate the Display

4.3.1 Reconnecting the Photometer Sensor

The Barco photometer sensor is USB-port-specific and does not function if inserted into a different USB port than the one originally used when installed. After installation, there should be no need to remove the sensor from the original USB port. If the photometer is not connected to its USB port, then reconnect it as described here.

1. Log into Windows as Administrator.
2. Plug the Barco photometer sensor into an open USB port.
 - If a login prompt asks you to log into an account that is part of the Administrators group, select **Cancel**, then try a different USB port. When you plug into the correctly configured port, the system will not prompt you to log into another account.
 - If a *Found New Hardware Wizard* window opens after connecting the photometer sensor, select **Cancel**, then try a different USB port. When you plug into the correctly configured port, a *Found New Hardware Wizard* window should not open.
3. If you cannot find the correct USB port, contact Technical Support at +1.800.760.8342.



Note

The new model of the Photometer Sensor does not have a felt pad. The instructions to attach the felt pad to the Photometer Sensor apply only to the previous model.

4.3.2 Attaching the Felt Pad to the Photometer Sensor

The felt pad attachment is included with the display calibration kit. If you need to reconnect the felt pad, follow the instructions below.

1. If the suction cup attachment is installed, remove it by turning it approximately one-quarter turn counter-clockwise and then separating the attachment from the main portion of the photometer.

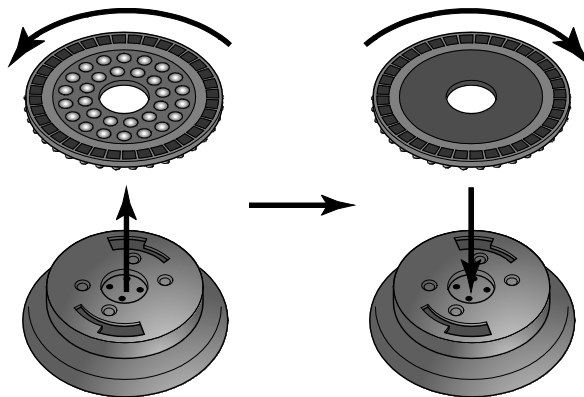


Figure 4: Removing the Suction Cup and Installing the Felt Pad

2. Install the felt pad by attaching it to the main portion of the photometer and turning it approximately one-quarter turn clockwise.

4.4 Testing Barco Display Performance using QAWeb Enterprise

Displays compatible with QAWeb Enterprise all have built-in photometers. The QAWeb Enterprise software automatically runs the Mammography Compliance Task and calibrates the Barco displays on a scheduled basis. No user intervention is required. You only need to verify that the software ran the test as scheduled and that the results were within the tolerance ranges. The default scheduled time is between 12:00 midnight and 2:00 AM.

QAWeb Enterprise automatically runs the Mammography constancy test once per week and the Calibration routine twice per year. Use this procedure as follows:



- **Radiologic Technologist:** Verify that the test(s) ran successfully.
- **Medical Physicist:** Review and record the numerical results from the most recent Mammography constancy test.



Note

Hologic recommends for displays older than five years that the Medical Physicist use an external photometer once per year for the luminance check to confirm that the internal photometer is still operating correctly. The luminance measured by the photometer must be within 15% of the calibrated luminance. The calibrated luminance for each display can be found in the active policy of the Policies section of QAWeb Enterprise or in the most recent Mammography constancy test results.

It is not necessary to log out of the SecurView DX application to check the performance of Barco displays:

1. To access the QC test results in the QAWeb Enterprise software, use an internet browser to log in to <https://qaweb.healthcare.barco.com>.
2. Navigate to the workstation details.
3. Select the **Reports** tab, then select the  icon, then select the type of report to generate (Mammography Compliance Report).
4. Wait for the report icon to turn green .

5. Open the Mammography Compliance Report.

Mammography Compliance Report

Workstation name: [mymammosystem.somehospital](#)

Report creation: Jul/16/2020

Mammography acceptance test (latest)

Tested mammography displays:

Display 1:
Serial: 2590069380 (MDNC-6121)
Resolution (pixel format): 2096x2800

Display 2:
Serial: 2590069381 (MDNC-6121)
Resolution (pixel format): 2096x2800

Acceptance test result: ✔ > OK

Date & time: 06/23/20, 02:49 PM
Operator: Pieter
[QAWeb](#) Agent Version: 2.3

DICOM GSDF luminance response test

- Display 1: Max. deviation: 2% (limit: 10%)
- Display 2: Max. deviation: 3% (limit: 10%)

Calibrated white point luminance test

- Display 1: Measured L*: 477.68 cd/m² (including Lamb 0.21 cd/m²). Deviation: 1% (limit: 5%)
- Display 2: Measured L*: 489.71 cd/m² (including Lamb 0.21 cd/m²). Deviation: 1% (limit: 5%)

Visual test

Pattern: TG18-OIQ

| | Display 1 | Display 2 | Display 3 | Display 4 |
|---|-----------|-----------|-----------|-----------|
| All 16 luminance patches are visibly distinct? | <V> Yes | <V> Yes | | |
| Evaluate the low contrast letters, masking of bright areas is permitted. The alphanumeric characters CONTRO appear sharply focused and the final I is detectable? | <V> Yes | <V> Yes | | |
| Evaluate the overall appearance of the pattern. The pattern is free from non-uniformities and artefacts, especially at black-to-white and white-to-black transitions? | <V> Yes | <V> Yes | | |
| In all four corners, both horizontally and vertically oriented high-contrast line-pair patterns representing the Nyquist limit for the display are distinguishable? | <V> Yes | <V> Yes | | |
| In the center, both horizontally and vertically oriented high-contrast line-pair patterns representing the Nyquist limit for the display are distinguishable? | <V> Yes | <V> Yes | | |
| The 5% patch is visible? | <V> Yes | <V> Yes | | |
| The 95% patch is visible? | <V> Yes | <V> Yes | | |
| The ramp bars appear continuous without any contour lines? | <V> Yes | <V> Yes | | |

Multi-display uniformity

- White point luminance deviation between displays: 1% (limit: 10%)

Page Break

Mammography constancy test history

| Executed on | Result | Serial number | DICOM GSDF luminance response test | Calibrated white point luminance test | Luminance uniformity between displays |
|----------------------|--------|---------------|------------------------------------|---------------------------------------|---------------------------------------|
| 05/21/2020, 11:08 AM | ✔ | 9385406679 | ✔ 5% | ✔ 0% | ✔ 0% |
| | | 9385406721 | ✔ 4% | ✔ 1% | |
| 05/22/2020, 11:34 AM | ✔ | 9385406679 | ✔ 3% | ✔ 1% | ✔ 0% |
| | | 9385406721 | ✔ 4% | ✔ 0% | |

Figure 5: Sample Mammography Compliance Report

- Check that the latest Acceptance and Mammography constancy tests have a result of "OK" or a green check mark. Check that details are present for these tests.
- Record the value for **Action Result** in [Appendix B SecurView Weekly QC Form for Radiologic Technologists](#) on page 43.



Important

If the details of a test contain no results, follow the instructions in section [Corrective Action](#) on page 7.



Note

You may **Print** the results or **Save as PDF** for a local copy.

8. Log out of the QAWeb Enterprise or close the browser tab once finished.

Medical Physicist – To view the numerical results of the Hologic Compliance Test:

1. Using an internet browser, log in to <https://qaweb.healthcare.barco.com>.
2. Navigate to the workstation details.
3. On the *Tasks* tab, select the **Mammography constancy test**.

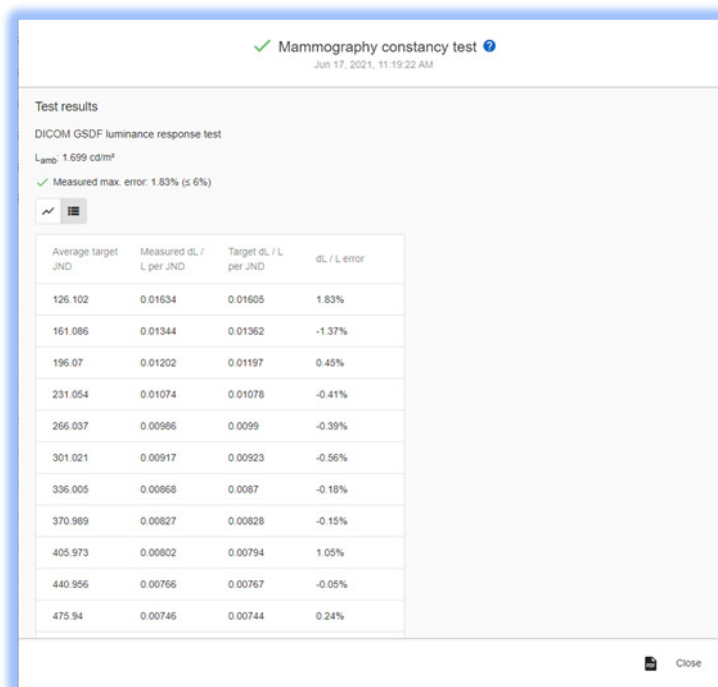



Figure 6: Sample Mammography Constancy Test

4. Verify that the results meet the performance criteria.
5. Record the results in [Appendix A SecurView Annual QC Form for Medical Physicists](#) on page 41.
6. Log out of the QAWeb Enterprise or close the browser tab once finished.

4.5 Testing Barco Display Performance using MediCal QAWeb

1. Log out of the SecurView DX application.
2. To start MediCal QAWeb, press the **Windows**  key, then select **Menu > Barco > MediCal QAWeb Agent**.

3. The *MediCal QAWeb Agent* window opens. Select the **Status** icon.

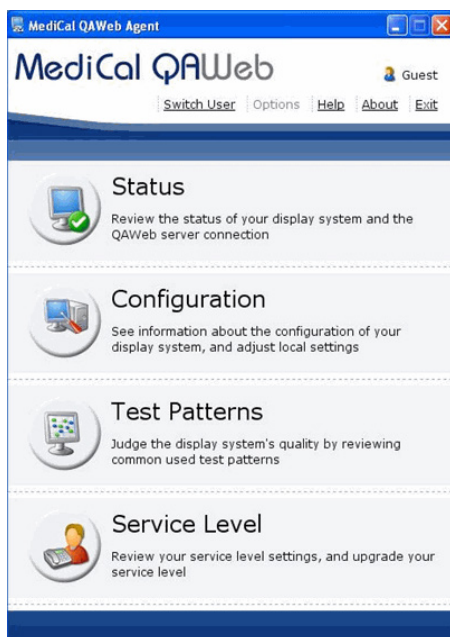


Figure 7: MediCal QAWeb Agent Window

4. The *Workstation > Status* window opens:

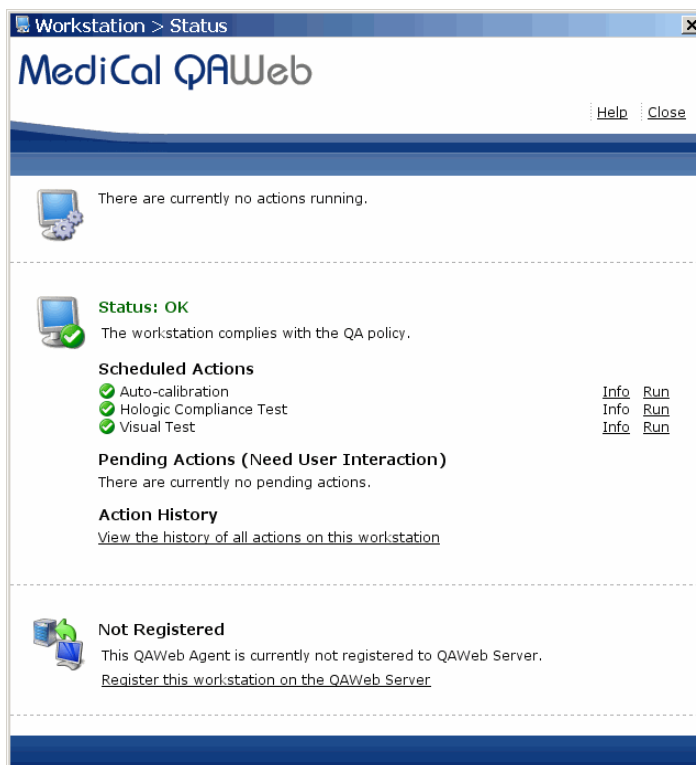


Figure 8: Workstation > Status Window

The *Workstation > Status* window indicates whether the workstation meets the recommended performance criteria. At any time, you can select **Run** to run a test manually (Auto-calibration, Hologic Compliance Test, or Visual Test).



Note

The Uniti display calibrates with SteadyColor Calibration by default. SteadyColor Calibration will show colors in the most optimum and consistent way, and it will show all grayscales with as little hue variation as possible. To manually calibrate the Uniti display without SteadyColor Calibration, navigate to **Configuration > Calibration**, select **Calibrate**, type the password **advanced** (case sensitive), select **Advanced**, then deselect **SteadyColor Calibration**. Select **Calibrate**.

Be sure to select **Run** next to the Auto-Calibration after changing any calibration configuration settings.



Note

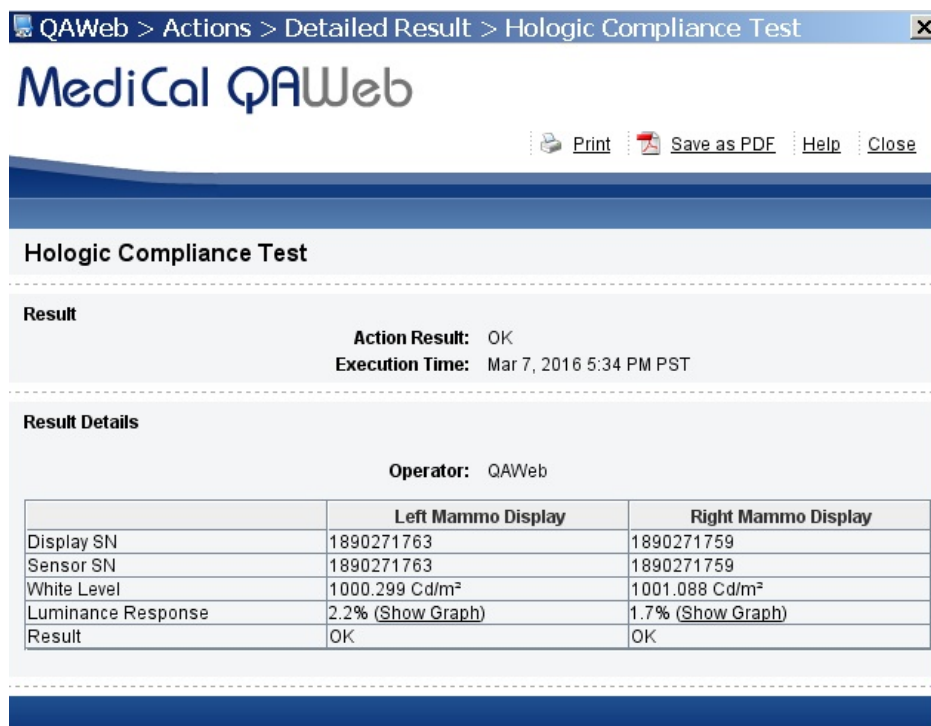
When you manually run the Auto-calibration Test, you may be prompted for a password. By default, the password is **advanced** (case sensitive).

5. **Radiologic Technologist** – To complete the tests and view results:
 - a. Verify that “Status: OK” displays.
 - b. Select **Info** next to ‘Hologic Compliance Test’. The most recent results for the test display.
 - c. Verify that “Action Result: OK” displays.



Figure 9: Hologic Compliance Test Window

- d. Select **View Detailed Result**. A window opens with the detailed results.



MediCal QAWeb

Print Save as PDF Help Close

Hologic Compliance Test

Result

Action Result: OK
Execution Time: Mar 7, 2016 5:34 PM PST

Result Details

Operator: QAWeb

| | Left Mammo Display | Right Mammo Display |
|--------------------|----------------------------|----------------------------|
| Display SN | 1890271763 | 1890271759 |
| Sensor SN | 1890271763 | 1890271759 |
| White Level | 1000.299 Cd/m ² | 1001.088 Cd/m ² |
| Luminance Response | 2.2% (Show Graph) | 1.7% (Show Graph) |
| Result | OK | OK |

Figure 10: Hologic Compliance Test – View Detailed Result Window

- e. Record the value for **Action Result** in [Appendix B: SecurView Weekly QC Form for Radiologic Technologists](#) on page 43.



Important

If the details of a test contain no results, follow the instructions in section [Corrective Action](#) on page 11.



Note

You may **Print** the results or **Save as PDF** for a local copy from this window. Select **Close** once you are finished.

- f. Select **Close** to return to the *Hologic Compliance Test* window.
- g. Close all open *MediCal QAWeb* windows.

6. **Medical Physicist** – To view the numerical results of the Hologic Compliance Test:
 - a. On the *Workstation > Status* window, select **Info** next to 'Hologic Compliance Test'. The most recent results for the test display as shown in the following example.



Figure 11: Hologic Compliance Test Window

- b. Select **View Detailed Result**. A window opens with the detailed results.

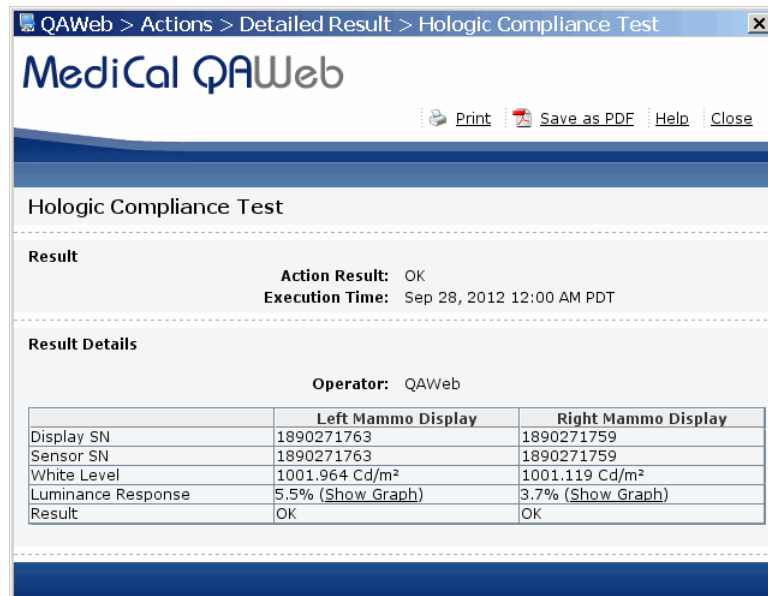



Figure 12: Hologic Compliance Test – View Detailed Result Window

- c. Verify that the results meet the performance criteria.
- d. Record the results in the [Appendix A: SecurView Annual QC Form for Medical Physicists](#) on page 41.
- e. Select **Close** twice to return to the *Workstation > Status* window.
- f. Close all open *MediCal QAWeb* windows.

To test the displays:

1. Log out of the SecurView DX application.
2. To start MediCal QAWeb, press the **Windows**  key, then select **Menu > Barco > MediCal QAWeb Agent**.
3. The *MediCal QAWeb Agent* window opens. Select the **Status** icon.

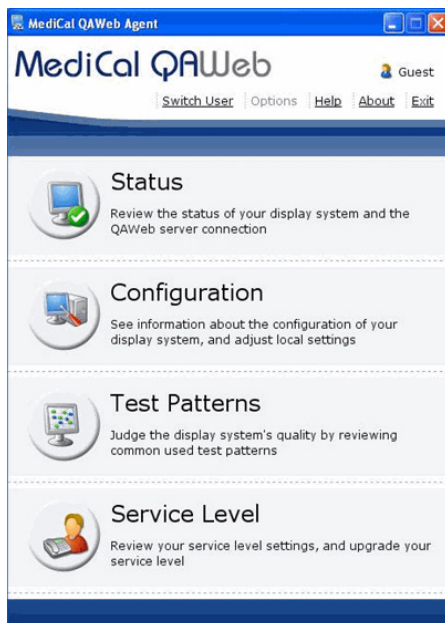


Figure 13: MediCal QAWeb Agent Window

4. The *Workstation > Status* window opens:

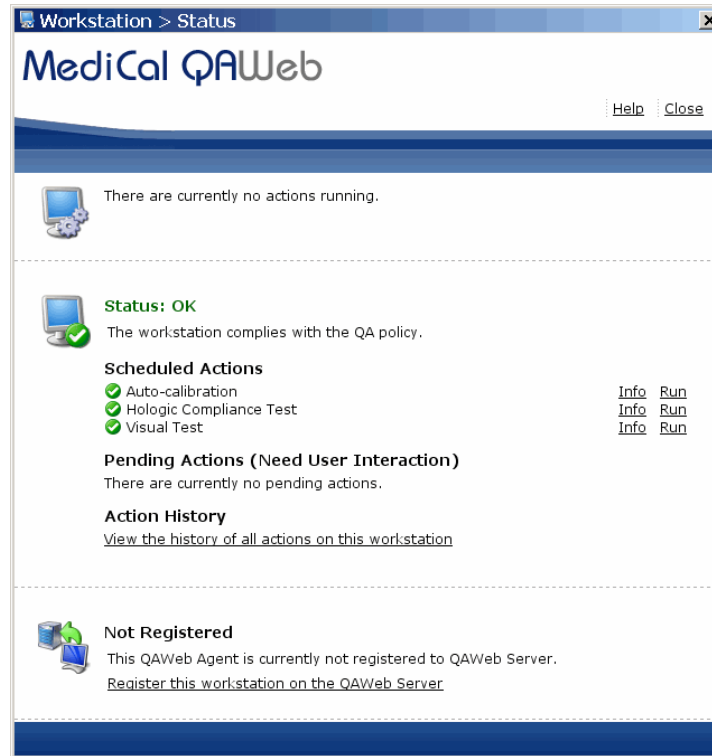


Figure 14: *Workstation > Status* Window

The *Workstation > Status* window indicates whether the displays meet the recommended performance criteria. At any time, you can select **Run** to run a test manually (Auto-calibration, Hologic Compliance Test, or Visual Test).



Note

When you manually run the Auto-calibration Test, you may be prompted for a password. By default, the password is **advanced** (case-sensitive).

5. **Radiologic Technologist** – To run the Hologic Compliance Test and view results:



Important

When testing the displays, ensure that the room lighting conditions are similar to those used when reading studies.

- a. Select **Run** next to 'Hologic Compliance Test'. Follow the on-screen instructions.
- b. After the test ends, verify that "Status: OK" displays.

- c. Select **Info** next to 'Hologic Compliance Test'. The most recent results for the test display.
- d. Verify that "Action Result: OK" displays.



Figure 15: Hologic Compliance Test Window

- e. Select **View Detailed Result**. A window opens with the detailed results.

QAWeb > Actions > Detailed Result > Hologic Compliance Test

MediCal QAWeb

Print Save as PDF Help Close

Hologic Compliance Test

Result

Action Result: OK
Execution Time: Mar 7, 2016 5:34 PM PST

Result Details

Operator: QAWeb

| | Left Mammo Display | Right Mammo Display |
|--------------------|----------------------------|----------------------------|
| Display SN | 1890271763 | 1890271759 |
| Sensor SN | 1890271763 | 1890271759 |
| White Level | 1000.299 Cd/m ² | 1001.088 Cd/m ² |
| Luminance Response | 2.2% (Show Graph) | 1.7% (Show Graph) |
| Result | OK | OK |

Figure 16: Hologic Compliance Test – View Detailed Result Window

- f. Record the value for **Action Result** in [Appendix B: SecurView Weekly QC Form for Radiologic Technologists](#) on page 43.



Important

If the details of a test contain no results, follow the instructions in section [Corrective Action](#) on page 11.



Note

You may **Print** the results or **Save as PDF** for a local copy from this window. Select **Close** once you are finished.

- g. Select **Close** to return to the *Hologic Compliance Test* window.
- h. Close all open *MediCal QAWeb* windows.

6. **Medical Physicist** – To view the numerical results of the Hologic Compliance Test:
 - a. On the *Workstation > Status* window, select **Info** next to 'Hologic Compliance Test'. The most recent results for the test display as shown in the following example.



Figure 17: Hologic Compliance Test Window

- b. Select **View Detailed Result**. A window opens with the detailed results.

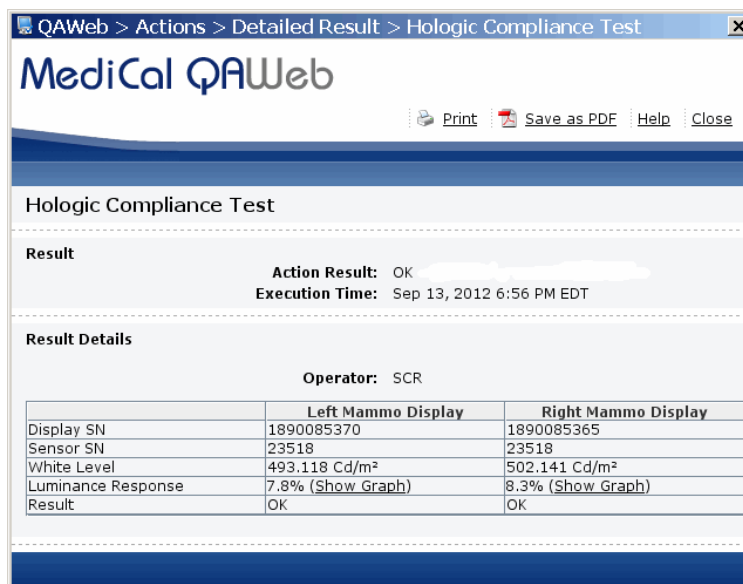


Figure 18: Hologic Compliance Test – View Detailed Result Window

- c. Verify that the results meet the performance criteria.
- d. Record the results in the [Appendix A: SecurView Annual QC Form for Medical Physicists](#) on page 41.
- e. Select **Close** twice to return to the *Workstation > Status* window.
- f. Close all open *MediCal QAWeb* windows.

Chapter 5 Manually Calibrating Displays

5.1 Manually Calibrating Displays using QAWeb Enterprise

This section requires a user to access the Windows desktop. This may be accomplished in one of two ways: (1) via the SecurView Application login prompt, or (2) via the Windows login prompt.

5.1.1 Access the Desktop via SecurView Application

1. Log out of the SecurView DX application.
2. Log into SecurView as an Administrator user.



Note

If not customized, the default SecurView administrator credentials are:

Username: **admin**

Password: **admin**

3. Select the **Exit to Windows** tab. Wait until the application has fully closed.
4. Skip to the section [Launch the Local QAWeb Application](#) on page 32.

5.1.2 Access the Desktop via Windows Login

1. At the task bar, select **Start**, select the User icon, then select **Sign Off**.
2. Log into Windows as the customer administrator.



Note

If not customized, the default customer Windows credentials are:

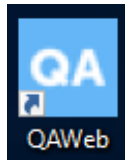
Username: **customer**

Password: **Simply-The-Best**

3. Continue to the next section.

5.1.3 Launch the Local QAWeb Application

1. From the Windows desktop, double-click the QAWeb icon:



2. The *QAWeb Workstation details* window opens. Select **Tasks** on the left side menu.
3. Select the **Calibration** test, then select the down arrow to view the Calibration details.

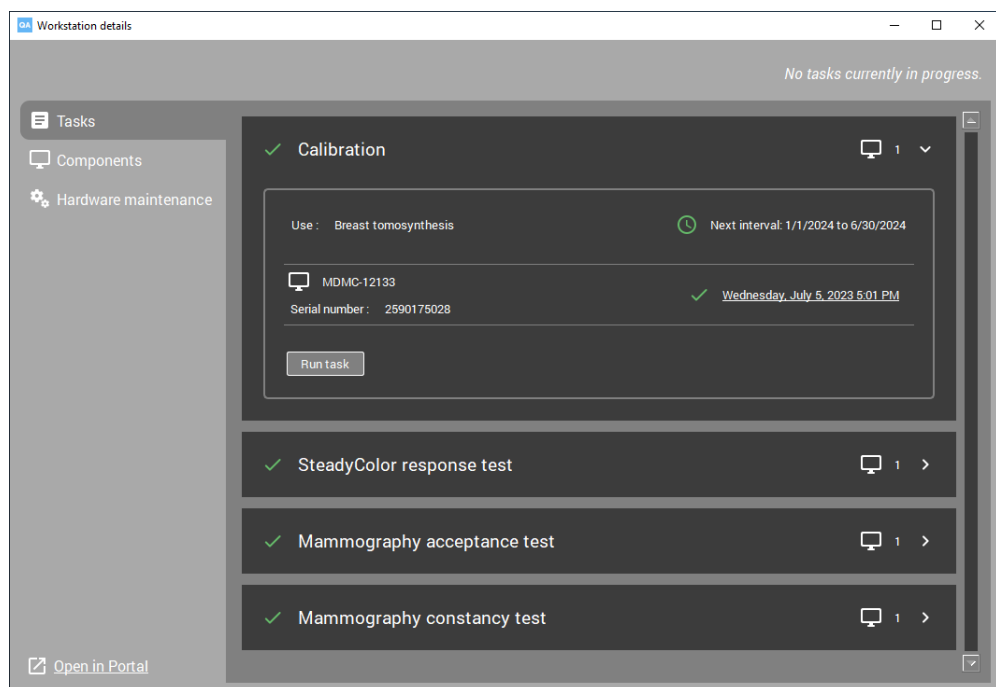


Figure 19: Workstation Details Window

4. Select **Run task** to start the Calibration process. **Calibration** will display in the upper left-hand side of the window.
5. When the calibration procedure ends, the results display as shown in the following example. The check mark next to each display icon indicates that the calibration ran successfully.

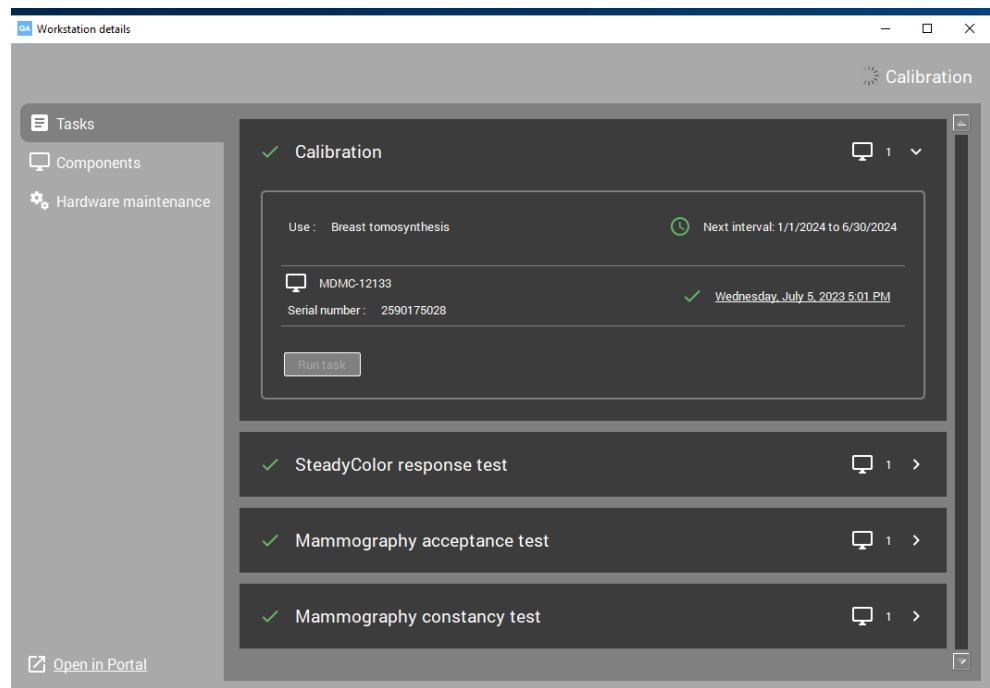


Figure 20: Calibration Test Results

- To view the calibration details, select the date and time next to the green check mark to display the calibration report. See the following example.

Page 1 of 1

Calibration

Test executed on: Jul 5, 2023 5:01 PM
Time zone on report: UTC -04:00
Workstation: HOLOGIC-50086V5
Display(s): MDMC-12133 (2590175028)

Passed

Calibration method: Default

Workstation: HOLOGIC-50086V5
Display: MDMC-12133
Serial number: 2590175028
Sensor: Barco Display Systems Internal (2590175028)

Automatically triggered

Parameters

Ambient light: 35 lx

Target values

Gamma: Native
Luminance response function: DICOM GSDF
Black point luminance: Recommended
White point luminance: Recommended
White point chromaticity: Recommended
SteadyColor: Standard

Passed

Gamma: Native
Luminance response function: DICOM GSDF
Black point luminance: Recommended
White point luminance: 999.33 cd/m²
White point chromaticity: Bluebase
SteadyColor: Standard

Figure 21: Sample Calibration Report

- For two-monitor systems, repeat for the second display.
- Record the results in the [Appendix B: SecurView Weekly QC Form for Radiologic Technologists](#) on page 43.
- Close all open QAWeb windows.
- Restart the SecurView Application.

5.2 Manually Calibrating Displays using MediCal QAWeb

- Log out of the SecurView DX application.
- Set up the displays and start MediCal QAWeb as described in section [Testing Barco Display Performance using QAWeb Enterprise](#) on page 13.



Note

If you are calibrating external photometer sensor displays, attach the photometer sensor as described in section [Testing with External Photometer Sensor Displays](#) on page 14.

- From the *MediCal QAWeb Agent* window, select the **Status** icon. The *Workstation > Status* window opens.

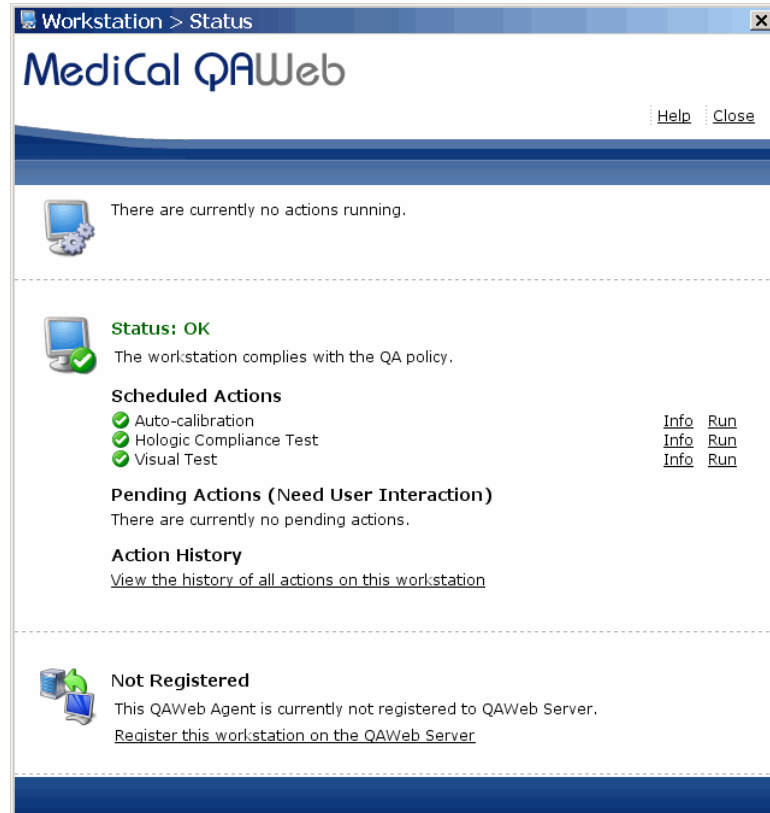


Figure 22: Workstation > Status Window

4. On the *Workstation > Status* window, select **Run** next to 'Auto-calibration'.

**Note**

When you manually run the Auto-calibration Test, you may be prompted for a password. By default, the password is **advanced**.

5. Follow the on-screen instructions. Repeat for the second display. When the calibration procedure ends, the results display as shown in the following example. The check mark next to each display icon indicates that the calibration ran successfully.



Figure 23: Auto-Calibration Window

6. Record the results in the [Appendix B: SecurView Weekly QC Form for Radiologic Technologists](#) on page 43.
7. Close all open *MediCal QAWeb* windows.

**Note**

The Next Execution Time for the Auto-calibration will be six months after the last day the test was manually run. It is important to continue monitoring the dates the tests are due for semi-annual documentation. The monitors may require calibration in between the six-month time frames if the Hologic Compliance Test fails.

Chapter 6 Additional MediCal QAWeb Procedures

6.1 Saving the MediCal QAWeb Action History




Caution:

Connecting a QAWeb agent to a QAWeb server may overwrite the required Hologic Policy Map. When connecting to a QAWeb server, contact Technical Support at +1.800.760.8342 to obtain the correct version of QAWeb that will maintain the required Hologic Policy Map.

Hologic strongly recommends saving the MediCal QAWeb Action History monthly to prevent data loss in the event of a system failure. Hologic also recommends saving the Action History prior to a SecurView upgrade.

Printing the Action History provides a hardcopy record of all of the actions run on the SecurView workstation during a given month. Hologic recommends retaining the printed Action History as proof of compliance. Use the following procedure to save the Action History to a USB drive and then transfer it to a different computer for printing.

1. Log out of the SecurView DX application.
2. Insert a USB drive into the SecurView workstation.
3. To start MediCal QAWeb, press the **Windows**  key, then select **Menu > Barco > MediCal QAWeb Agent**.
4. The *MediCal QAWeb Agent* window opens. Select the **Status** icon.
5. The *Workstation > Status* window opens. In the 'Action History' section, select the **View the history of all actions on this workstation** link. The *Action History* window opens. This window displays all of the actions run on the workstation during one month.



Note

Use the **From** and **To** calendar menu to specify a date range for the Action History results.

Figure 24: Action History Window

6. Select **View as PDF**.




Note

The SecurView workstation must have Adobe Acrobat Reader installed in order to view the Action History as a .pdf file.

7. The *QAWeb Action History .pdf* file opens. Select **File > Save As...**
8. Navigate to the USB drive where you want to save the QAWeb Action History .pdf file. Select **Save**.
9. Select **Close** twice to return to the *Workstation > Status* window.
10. Close all open *MediCal QAWeb* windows.
11. Remove the USB drive from the SecurView workstation.
12. Insert the USB drive into a computer with Adobe Acrobat Reader installed and printer capabilities.
13. Open the QAWeb Action History .pdf file, then select **File > Print**.
14. The *Print* dialog box opens. Specify the printing options, then select **Print**.

6.2 Scheduling the MediCal QAWeb Hologic Compliance Test

By default, the Hologic Compliance Test automatically runs weekly (except on systems using external photometer sensor displays). Use this procedure to change the time/day of the scheduled Hologic Compliance Test.

1. Log out of the SecurView DX application.
2. To start MediCal QAWeb, press the **Windows**  key, then select **Menu > Barco > MediCal QAWeb Agent**.
3. The *MediCal QAWeb Agent* window opens. Select the **Status** icon.
4. The *Workstation > Status* window opens. Select **Info** next to 'Hologic Compliance Test'.
5. The *Hologic Compliance Test* window opens. Select **Modify** next to 'Frequency'.
6. The *MediCal QAWeb login* window opens. By default, the User is 'Advanced'. Type **advanced** (case sensitive) in the 'Password' field, then select **OK**.
7. The *Modify Hologic Compliance Test Frequency* window opens. Select **Custom** from the Frequency: drop-down menu, then select **Properties**.
8. The *Modify Custom Frequency of Hologic Compliance Test* window opens. In the 'Timing' section, select the test start time, then select the day(s) you want the test to run. Select **OK**.
9. At the *Modify Hologic Compliance Test Frequency* window, select **OK**.
10. Close all open windows.

Appendix A SecurView Annual QC Form for Medical Physicists

Complete this form once per year for each SecurView diagnostic workstation.

Table 2: Annual QC Form for Medical Physicists

| System Information | | | | |
|-------------------------|-----------------------|------------------|----------------------|------------------|
| SecurView SN | | | | |
| Photometer SN | | | | |
| Barco Display | Left Display | Pass/Fail | Right Display | Pass/Fail |
| Serial Number | | | | |
| White Level Performance | cd/m ² | | cd/m ² | |
| Luminance Response | % | | % | |
| Barco Display | Single Display | | Pass/Fail | |
| Serial Number | | | | |
| White Level Performance | cd/m ² | | | |
| Luminance Response | % | | | |
| Comments: | | | | |
| Signature: | | | Date: | |

Table 3: Performance Criteria

| Barco Display | White Level Luminance | White Level Performance | DICOM GSDF Performance |
|--------------------------------|------------------------------|-------------------------|------------------------|
| Coronis Uniti MDMC-12133 | 600 - 1000 cd/m ² | ± 6% | ± 10% |
| High-Brightness MDMG-5221 | 600 - 1000 cd/m ² | ± 6% | ± 10% |
| Coronis Fusion 10MP MDCG-10130 | 500 cd/m ² | ± 6% | ± 10% |
| Coronis 5MP MDMG-5121 | 600 cd/m ² | ± 6% | ± 10% |
| Coronis 5MP MFGD-5621 HD | 600 cd/m ² | ± 6% | ± 10% |
| Coronis 5MP MFGD-5421 | 500 cd/m ² | ± 6% | ± 10% |
| Nio 5.8MP Color MDNC-6121 | 500 - 600 cd/m ² | ± 6% | ± 10% |
| Nio 5MP MDNG-6121 | 500 cd/m ² | ± 6% | ± 10% |
| Nio 5MP MDNG-5121 | 500 cd/m ² | ± 6% | ± 10% |
| Nio 5MP MDNG-5221 | 500 cd/m ² | ± 6% | ± 10% |

Appendix B SecurView Weekly QC Form for Radiologic Technologists

Table 4: Weekly QC Form for Radiologic Technologists

| | | | | | | | | | |
|-------------------------|------|-----------|----------|--|---------------|-------------------------|-----------|----------|--|
| SecurView SN: | | | | | SecurView SN: | | | | |
| Date | Time | Pass/Fail | Initials | | Date | Time | Pass/Fail | Initials | |
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| | | | | | | | | | |
| Semi-Annual Calibration | | | | | | Semi-Annual Calibration | | | |
| | | | | | | | | | |
| Date | | Comments | | | | | Initials | | |
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