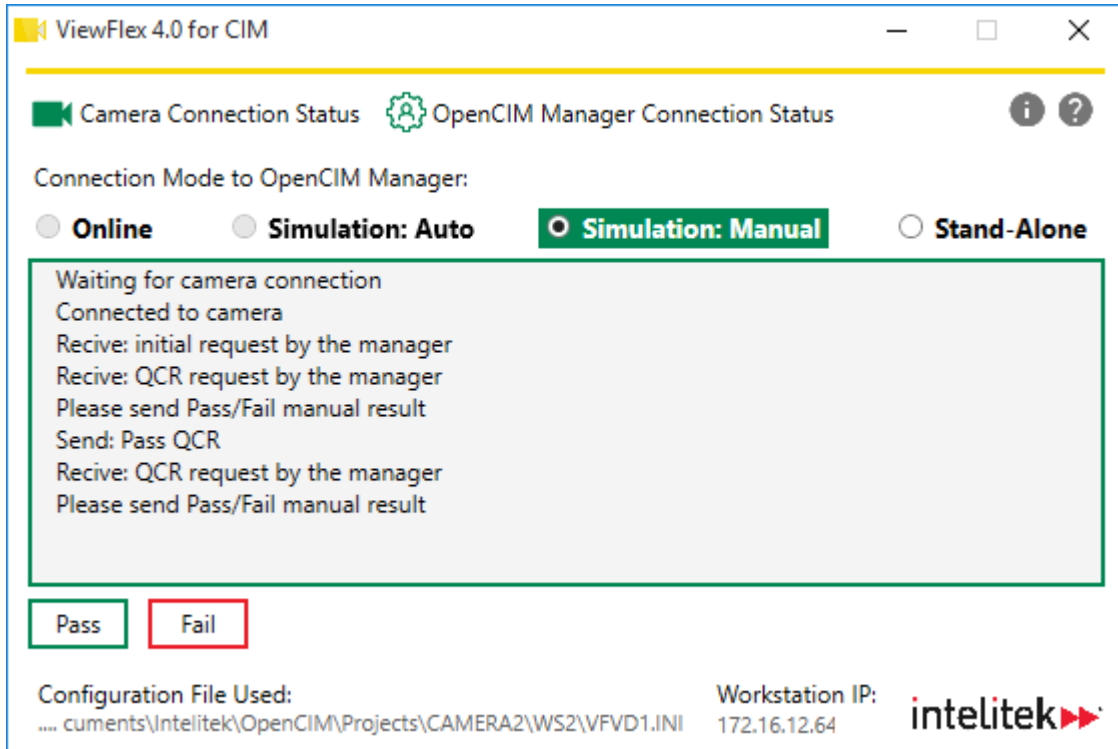


ViewFlex



USER MANUAL

For Version 4.0 and Higher

Catalog #34-8000-0013 Rev B





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ViewFlex User Manual

Cat. # 34-8000-0013 Rev B

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1. First Steps

ViewFlex is a quality control (QC) vision system that enables automated quality control applications, such as inspections, part counting and gauging.

The software uses QC camera hardware while integrating OpenCIM manufacturing control and simulation software. ViewFlex can also make use of QC files (.job files) created in Cognex In-Sight Explorer.

This manual provides instruction for OpenCIM and Cognex In-Sight Explorer only where relevant for ViewFlex. For more information and instruction about OpenCIM and In-Sight Explorer, refer to the specific user guides for those applications.

The sections in this describe the steps involved in installing ViewFlex.

1.1. SYSTEM REQUIREMENTS

For the best performance of ViewFlex with In-Sight, the following system is recommended:

- Intel® Celeron® 1000M processor running at 1.8GHz (or equivalent)
- 2GB of available RAM
- 4GB of available hard-disk space
- Video card that can display 1024 x 768 resolution at 24-bit color depth (the DPI Display setting must be set to 96 DPI)
- Network interface card (at least 100Mbps) for connecting to an In-Sight vision system
- One of the following operating systems:
 - Windows 7 Home Premium or higher (64 bit)
 - Windows 10 Professional or higher (64 bit only)

ⓘ **Note:** *Your operating system might have additional hardware requirements.*

1.2. INSTALLING THE SOFTWARE

If you are about to reinstall the software or install a newer version to an existing ViewFlex directory, it is recommended that you back up any existing user-created files before you begin the installation.

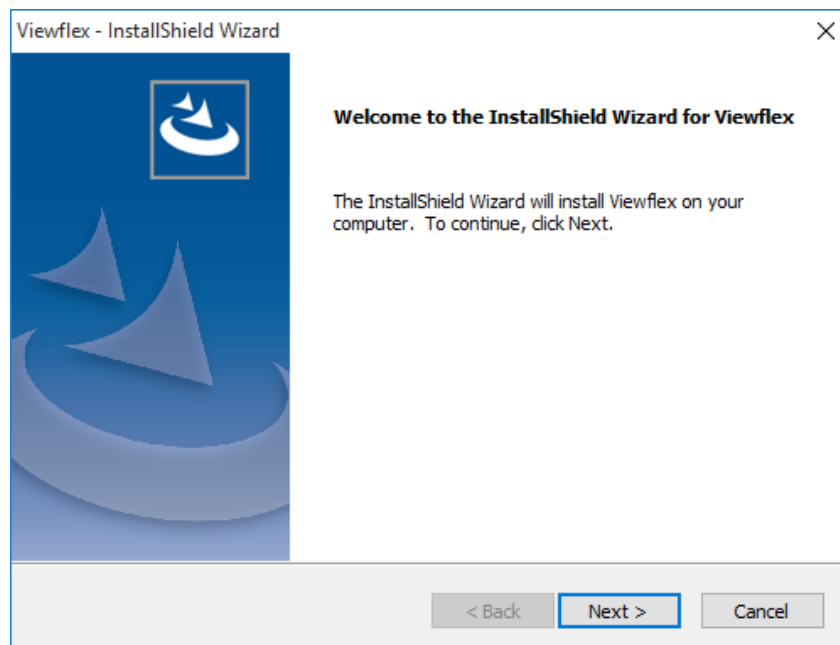
To install ViewFlex:

1. Double-click the **Viewflex 4 setup.exe** file to start the installation procedure.

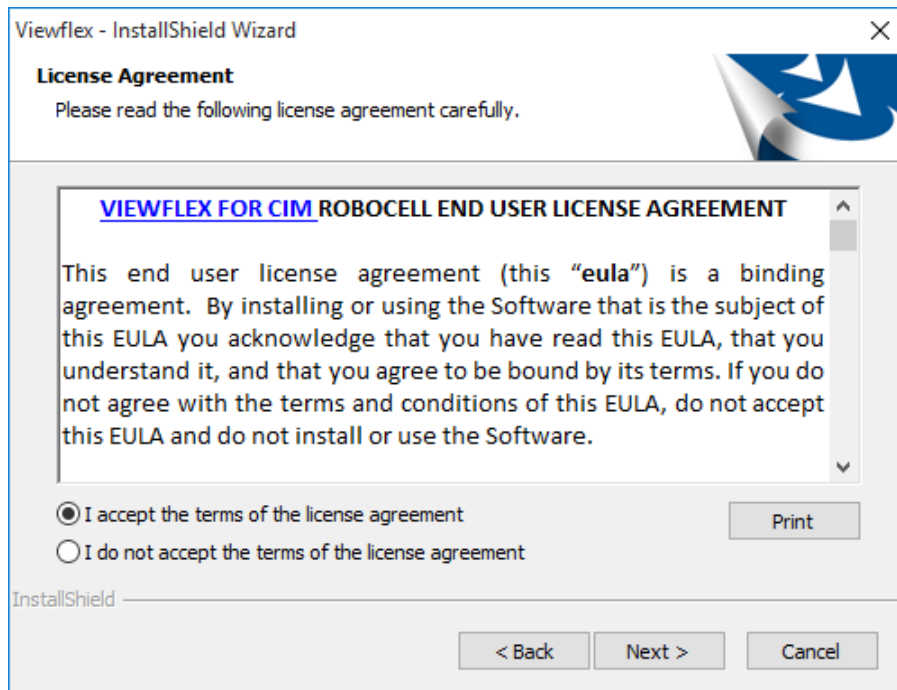


Viewflex 4 setup.exe

2. Wait until the Welcome window is displayed.

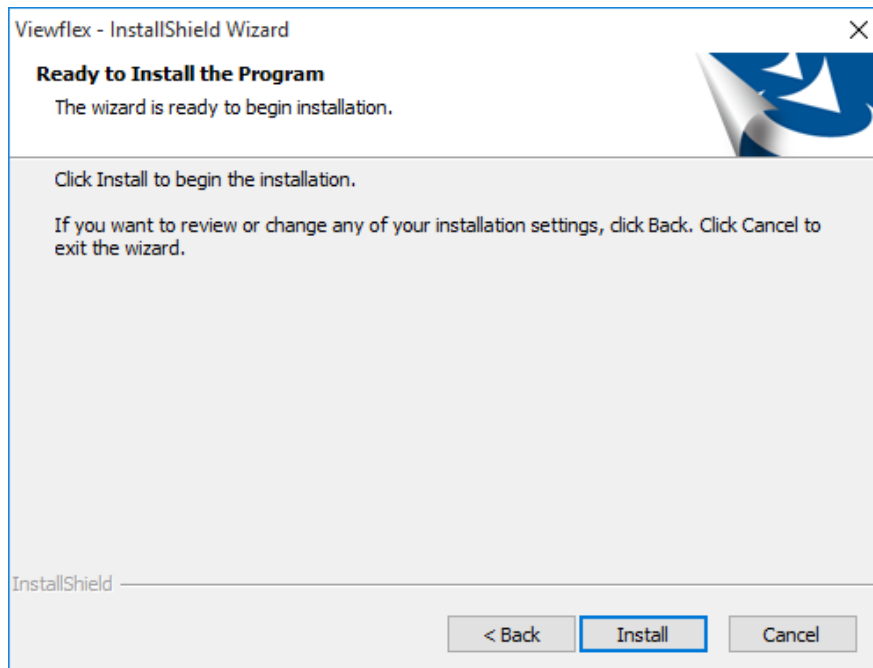


3. Click **Next**. The License Agreement window is displayed.

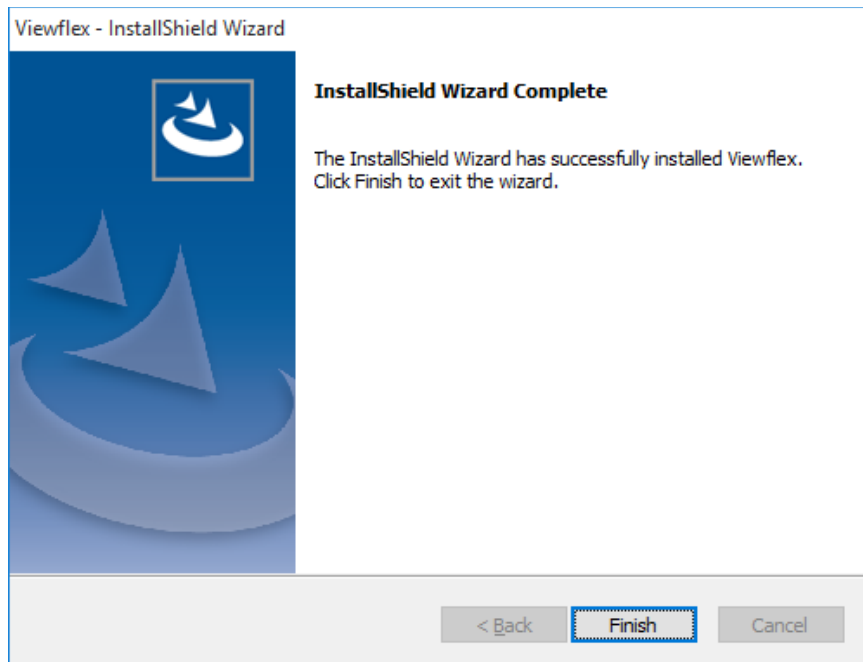


4. Review the Intelitek software license agreement. You must accept the terms of this agreement to proceed with the installation. To accept, select **I accept the terms of the license agreement**, and then click **Next**.

The InstallShield Wizard is ready to Install the program.



5. Click **Install**. The InstallShield Wizard installs the software.
6. Once the ViewFlex installation is complete, click **Finish**.



7. Download and install Cognex In-Sight Explorer on your computer if it is not already installed. The software can be downloaded via the following url:

<https://support.cognex.com/en/downloads/in-sight/software-firmware>

2. Getting Started with ViewFlex

This chapter discusses the steps required to begin operation of the ViewFlex system. An overview of the interface is also provided in this chapter, in section 2.4.

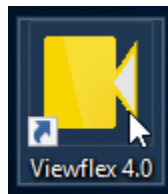
2.1. RUNNING VIEWFLEX

ViewFlex can be run either as a standalone application or via OpenCIM.

2.1.1. Running ViewFlex as a Stand-Alone Application

To run ViewFlex in Stand-Alone mode, run ViewFlex as you would any application:

- Double-click the ViewFlex icon, or



- Access the application from the Start/Search menu.

At this point, ViewFlex attempts to connect to a camera. If you are running ViewFlex as a stand-alone application for the first time, see section 2.3 Connecting to the Camera on page 12.

2.1.2. Running ViewFlex via OpenCIM

ViewFlex can be run in connection with OpenCIM. The OpenCIM Manager Connection Status icon indicates the status of the connection between ViewFlex and OpenCIM.

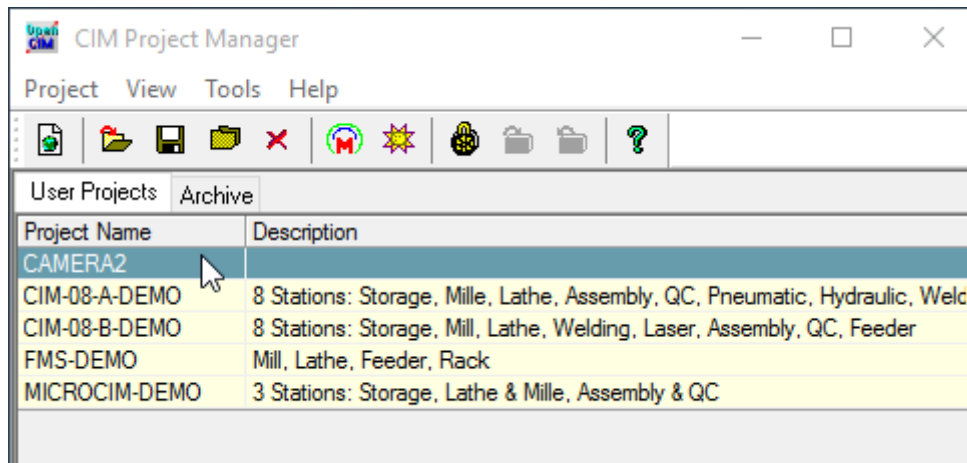
Refer to this chart for more information about the icon.

Icon Appearance	Color	Connection Status
	Yellow (outline)	Attempting to connect to OpenCIM
	Green	Connected to OpenCIM
	Grey (outline)	No active connection
	Red	Connection error

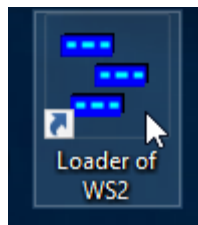
- ① **Note:** To run ViewFlex via OpenCIM, an OpenCIM workstation (WS) with ViewFlex must also be installed. See the OpenCIM User Guide for instructions on how to install a workstation.
- ② **Note:** The steps below involve operations in both in CIM Project Manager and the workstation where ViewFlex is installed. In your specific setup, these two items might be installed on two different computers.

To run ViewFlex via CIM Manager:

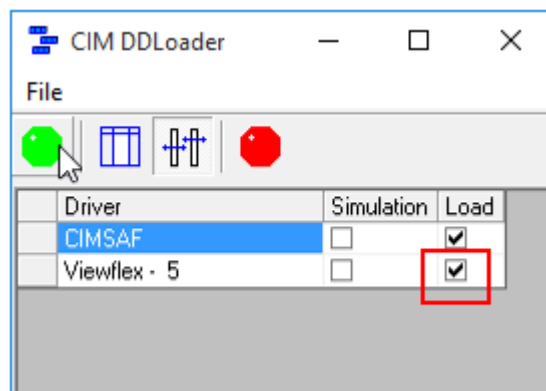
1. Run CIM Project Manager.
2. Open a project with a QC camera and ViewFlex.



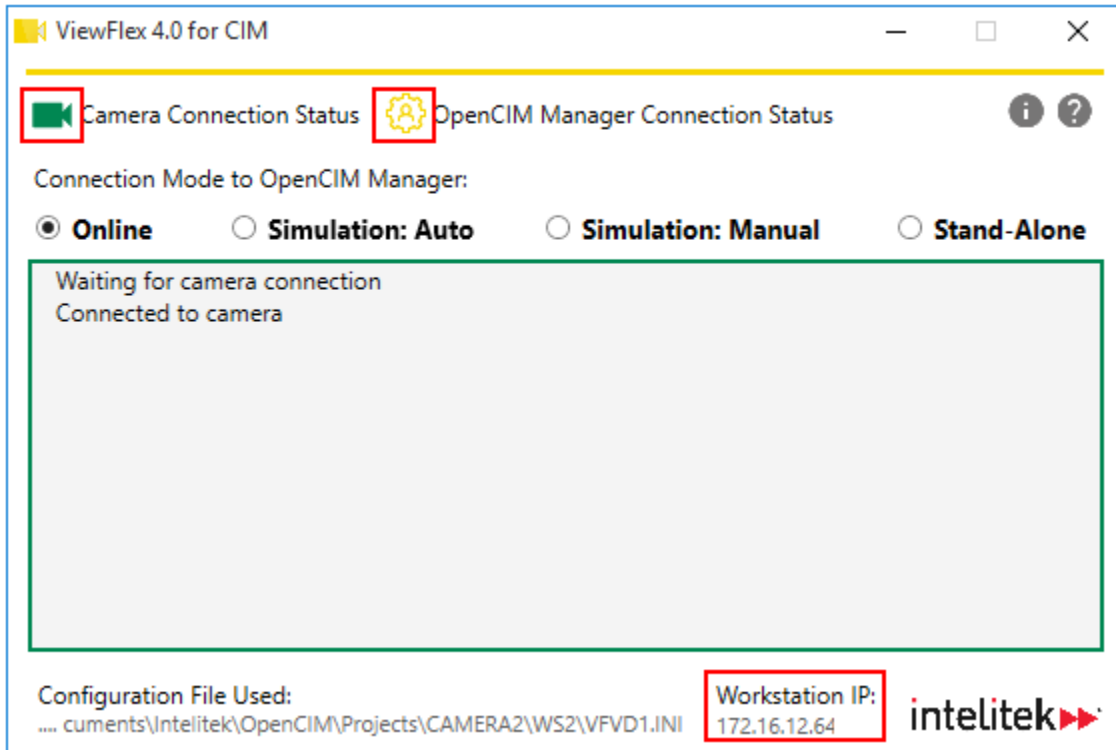
3. Run the loader of the OpenCIM workstation in the project where ViewFlex is installed.



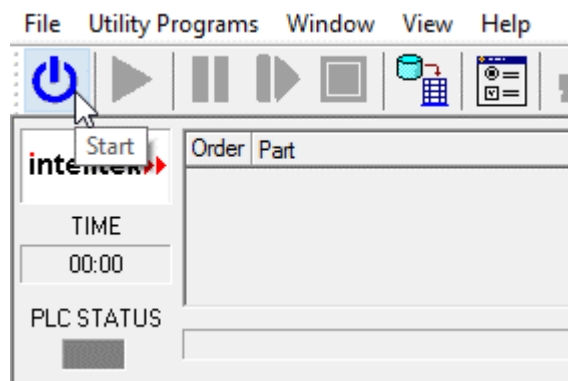
4. Check the **Load** checkbox for the ViewFlex driver, and then click the Load Selected Drivers (green) button.



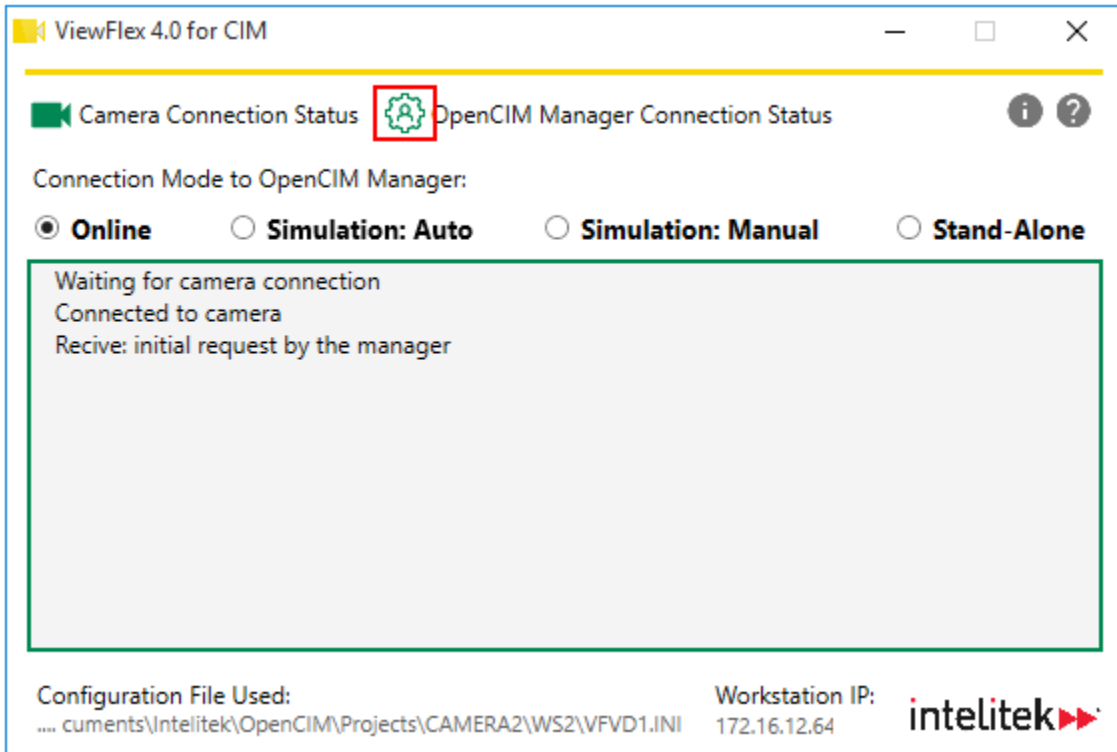
5. The ViewFlex window is displayed.
 - The camera should connect after several seconds. If you are running ViewFlex for the first time, see section 2.3 Connecting to the Camera on page 12.
 - The workstation IP is displayed at the bottom of the window.
 - OpenCIM Manager is not connected. The connection status icon is yellow.



6. In CIM Manager, load the work order by pressing the **Start** button.



ViewFlex is now connected to OpenCIM Manager as indicated by the green OpenCIM Manager Connection Status icon.



At this point, you can switch between all four connection modes. For more information about connection modes, see section 2.2 ViewFlex Connection Modes on page 11.

For instructions on how to prepare and select a job for use in a quality control test, see chapter 3 ViewFlex Jobs on page 14.

2.2. VIEWFLEX CONNECTION MODES

ViewFlex has four distinct connection modes. This table summarizes each of the modes.

Mode Name	Connected to OpenCIM?	Description
Online	Yes	<ul style="list-style-type: none"> • OpenCIM sends quality control requests (QCRs) to ViewFlex. • The camera performs a test automatically when QCRs are sent. • The pass/fail results of the tests are based on the criteria of the selected job file.
Simulation: Auto	Yes	<ul style="list-style-type: none"> • OpenCIM sends quality control requests (QCRs) to ViewFlex. • ViewFlex performs a test automatically when QCRs are sent. • A pass test result is returned.
Simulation: Manual	Yes	<ul style="list-style-type: none"> • OpenCIM sends quality control requests (QCRs) to ViewFlex. • ViewFlex performs a test automatically when QCRs are sent. • The pass/fail results of the tests are entered manually and on a case-by-case basis by the operator.
Stand-Alone	No	<ul style="list-style-type: none"> • The operator initializes a QC test. • The pass/fail result of the tests are based on the criteria of the selected job file.

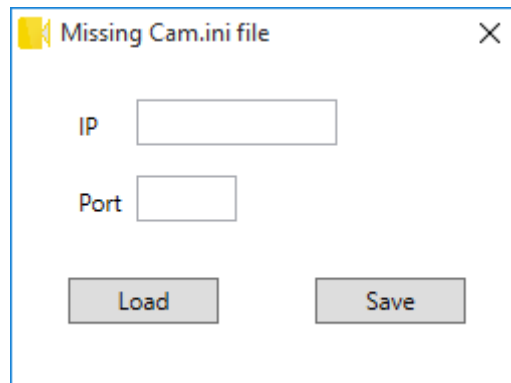
2.3. CONNECTING TO THE CAMERA

The first time that you run ViewFlex, you are prompted to connect to a QC camera. If you do not have a QC camera installed on your computer or if there is a connection problem, ViewFlex returns a camera connection error.

To connect to a camera:

1. Run ViewFlex, either in stand-alone mode or via CIM Manager.

The first time that the application is opened in online or stand-alone mode, the Missing Cam.ini file popup window is displayed.



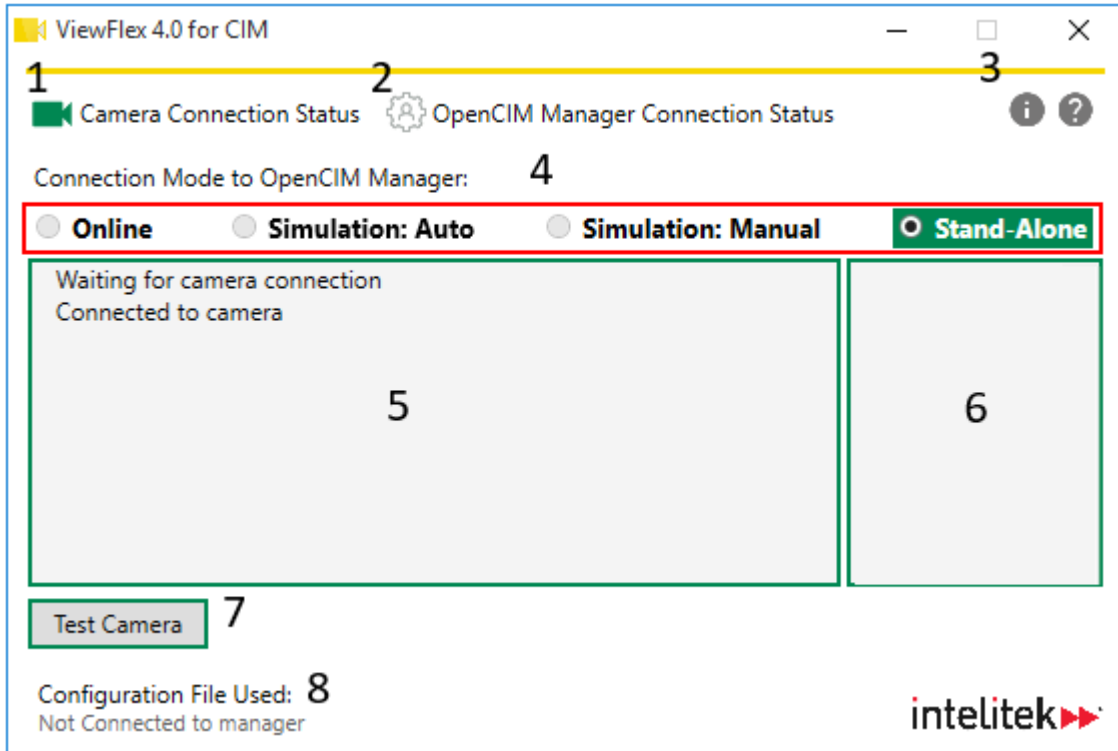
2. If you already have an .ini (configuration file), click **Load**, and then browse to and select the desired .ini file. If you do not have an .ini file, skip to the next step.
3. In the **IP** field, enter your camera's IP address.
4. In the **Port** field, enter any numerical value between 1 – 65535. It is recommended that you enter 3000, as this is the default value for In-Sight Explorer job files. For more information about In-Sight Explorer job files, see section 3.1 Preparing a Job for ViewFlex on page 14.
5. Click **Save**.

At this point, ViewFlex attempts to connect to the camera. The message area displays camera connection information. In addition, the Camera Connection Status icon indicates the connection status of the camera. Refer to the chart below for an explanation of the icon colors.

Icon Appearance	Color	Camera Connection Status
	Yellow (outline)	Attempting to connect
	Green	Connected
	Grey (outline)	Not active
	Red	Connection error

2.4. THE VIEWFLEX INTERFACE

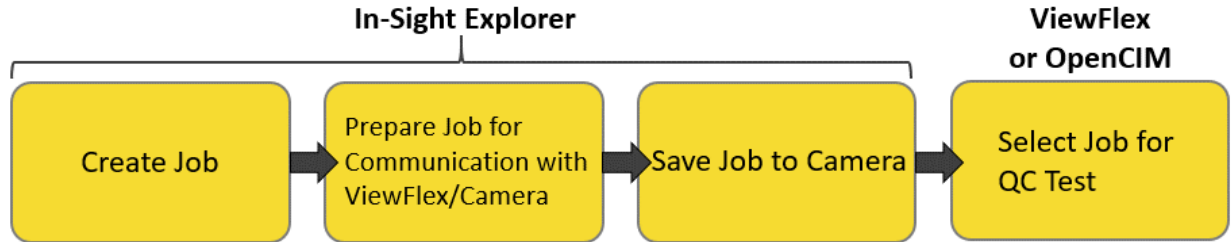
The ViewFlex window provides connectivity and quality control (QC) test information. Refer to the figure and table below for a description of the elements in the window.



Area	Name	Description
1	Camera Connection Status	Displays the camera connection status. Green: connected. Red: connection error. Yellow outline: Trying to connect. Grey outline: not active (for simulation modes). For more information, see section 2.3 Connecting to the Camera on page 12.
2	OpenCIM Manager Connection Status	Displays the OpenCIM Manager connection status. Green: connected. Yellow: Trying to connect. Red: Connection Error Grey: not active (for stand-alone mode).
3	About/Help	Displays information about your version of ViewFlex and the user guide.
4	Connection Mode	Displays the connection mode. Select the desired connection mode in this area. For more information about connection modes, see section 2.2 ViewFlex Connection Modes on page 11.
5	Message Area	Displays messages for your information.
6	Job File Area	Displays .job files that you can select for quality control. For more information about jobs, see chapter 3 ViewFlex Jobs on page 14.
7	Input Area	Displays input options that are relevant to the connection mode.
8	Configuration File	Displays the name of the .ini file that was used in configuration. See section 2.3 Connecting to the Camera on page 12 for more information.
9	Workstation IP	Displays the workstation IP address where ViewFlex is installed (when connected to OpenCIM Manager).

3. ViewFlex Jobs

ViewFlex performs quality control (QC) tests based on criteria defined in job files. These job files are created and prepared for ViewFlex using In-Sight Explorer software. From In-Sight Explorer, the job files are saved to the camera. Once the job files are saved to the camera, they can be selected for use either within ViewFlex itself (in stand-alone mode) or in OpenCIM.



This chapter details the procedures required for preparing, saving, and selecting job files for use in ViewFlex.

3.1. PREPARING A JOB FOR VIEWFLEX

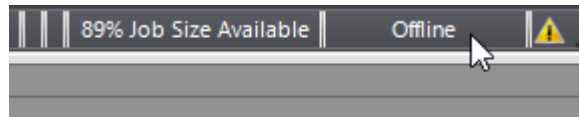
For ViewFlex to make use of an In-Sight Explorer job file, the job file must be defined with specific communication settings and must be saved in a way that allows ViewFlex to recognize the file. The next two subsections detail how to accomplish this.

3.1.1. Job Communication Settings

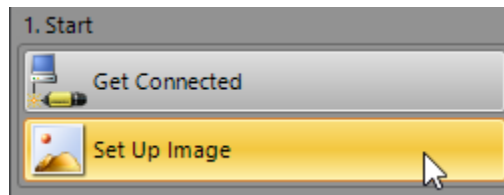
Note: Modifying a job for in In-Sight Explorer requires that you first create a job in In-Sight Explorer. For instructions on how to create a job in In-Sight Explorer, see the In-Sight Explorer Help.

To modify a job for the purposes of communicating with ViewFlex:

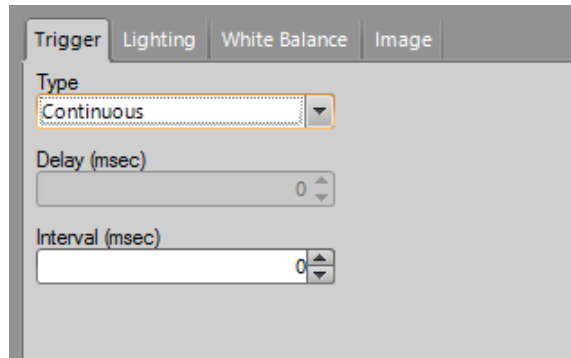
1. Ensure that In-Sight Explorer is in Offline mode.



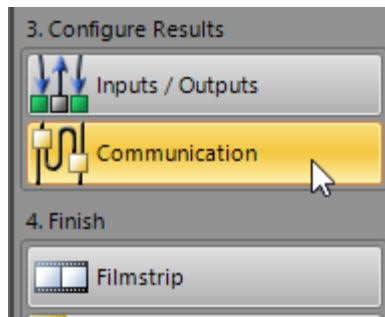
2. In the Application Steps, select **Set Up Image**.



3. At the panel in the bottom of the screen, navigate to the **Trigger** tab. Ensure that **Type** is set to **Continuous**.



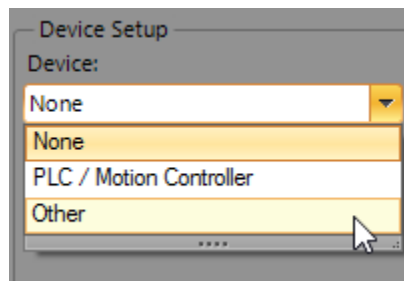
4. In the Application Steps, select **Communication**.



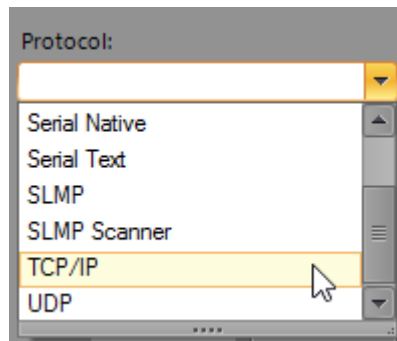
5. In the Communications area, select **Add Device**.



6. In the Device Setup area, in the Device dropdown menu, select **Other**.



7. In the Protocol dropdown menu, select **TCP/IP**.

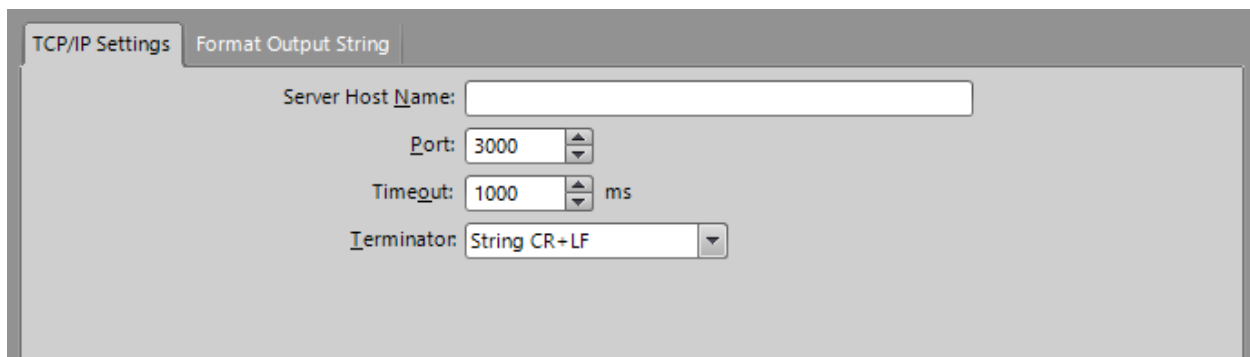


8. Click **OK**.

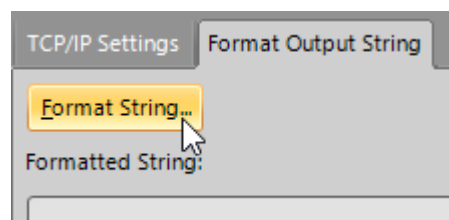


9. The TCP/IP Settings are displayed. In the TCP/IP Settings tab, complete the fields as follows:

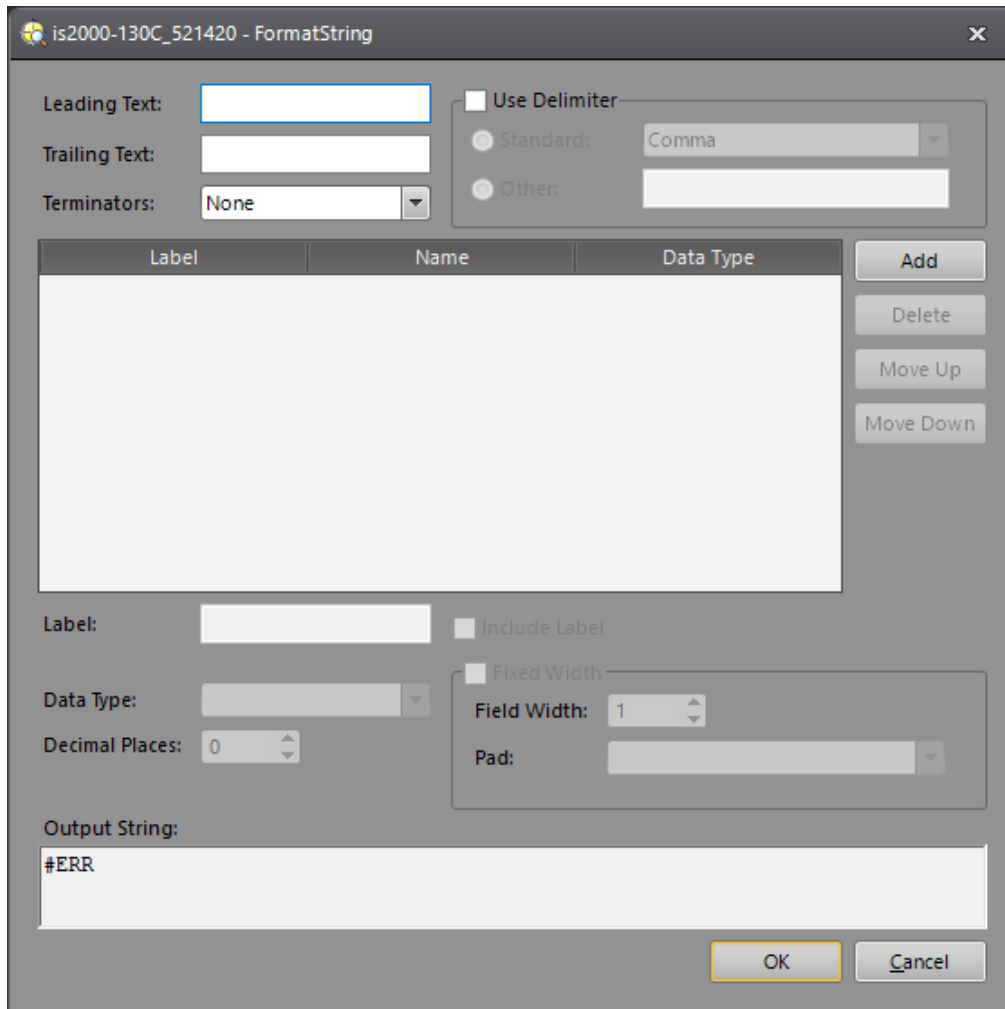
- **Server Host Name:** Leave blank.
- **Port:** Enter the value that you entered when setting up the camera's .ini file. See 2.3 Connecting to the Camera on page 12 for more information.
- **Timeout:** Leave as default.
- **Terminator:** Leave as default.



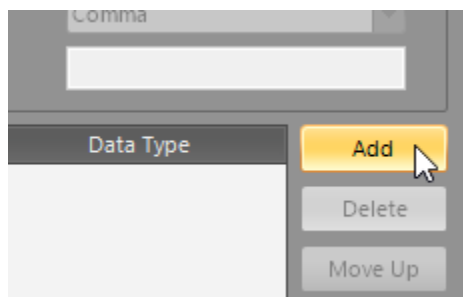
10. In the Format Output String tab, click **Format String...**



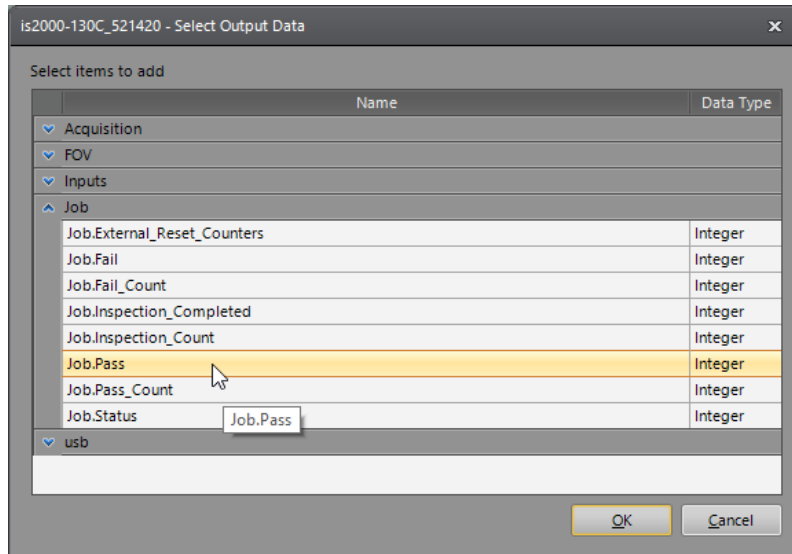
The FormatString window is displayed. The output string defines the message that ViewFlex will display after a QCR test.



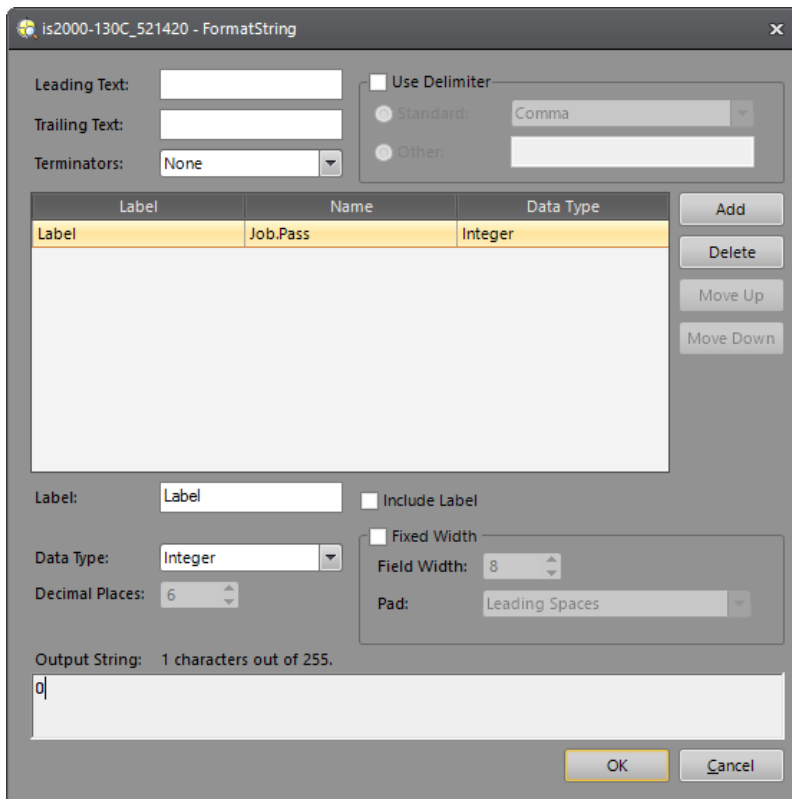
11. Click **Add**.



- The Select Output Data window is displayed. In this window, you select the conditions for displaying the pass or fail output string (label). For novice users, it is recommended that you select **Job > Job.Pass** label, as this option displays the pass/fail result for the entire job.



- Click **OK**. The label is added to the FormatString window's list of labels.

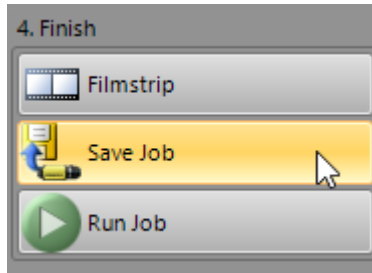


- ① **Note:** Do not add any more labels. One label is the limit for ViewFlex jobs.
 - ① **Note:** Do not add any additional strings. Leave the Output String field as 0 or 1.
14. Click **OK** to confirm the output string.

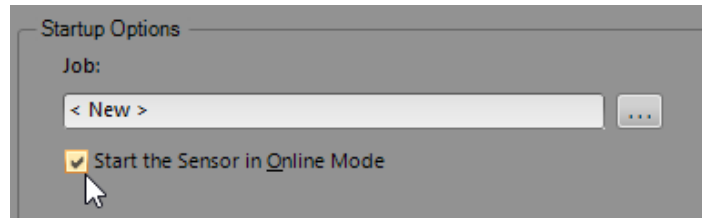
3.1.2. Saving a Job

To save an In-Sight job file to be used by ViewFlex:

1. In the Application Steps, select **Save Job**.

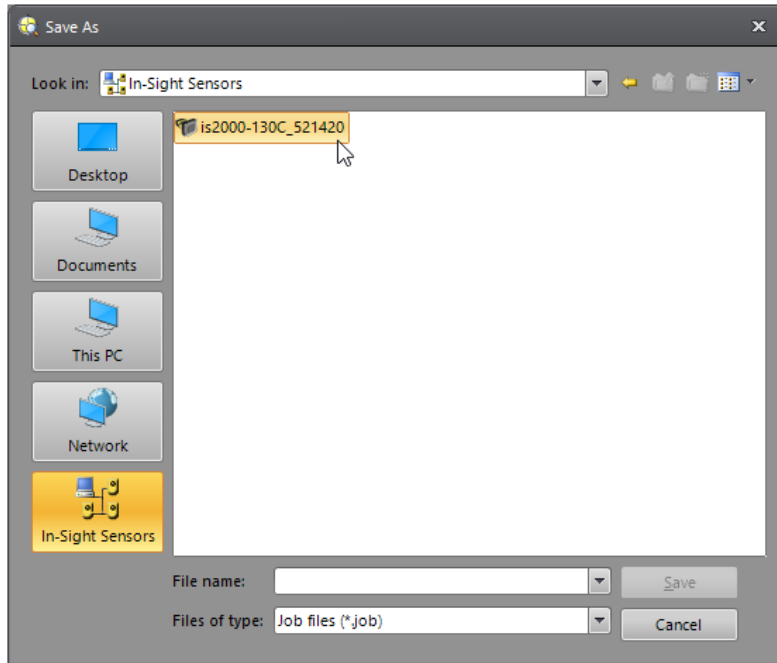


2. In the Startup Options area, check the **Start the Sensor in Online Mode** checkbox.



3. Click **Save** or **Save As..**

4. Select the camera itself as the save location. The camera is in the **In-Sight Sensors** area.



Note: The file name of the job must begin with a number between 0 and 999. Each job must begin with a unique number.

5. Enter the desired file name and click **Save** to confirm.

3.2. SELECTING A JOB

Job files determine the criteria for the results of QC tests.

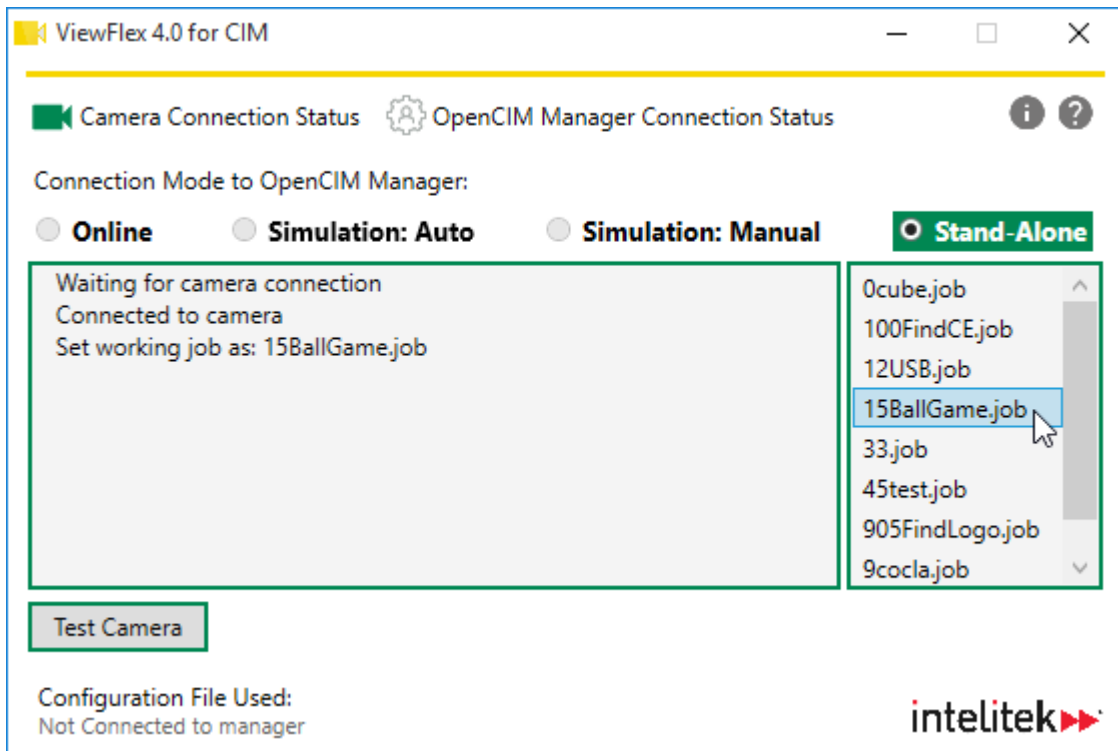
Jobs are selected differently in stand-alone mode than they are when ViewFlex is connected to OpenCIM Manager.

For information about performing quality control requests and testing the camera, see section 4 Performing QC Tests on page 22.

3.2.1. Selecting a Job in Stand-Alone Mode

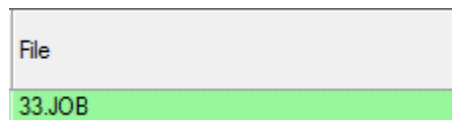
In stand-alone mode, job files are listed in the job file area on the right side of the ViewFlex window.

Double-click a job file to select the job and make it active.



3.2.2. Selecting a Job When Connected to OpenCIM Manager

When ViewFlex is connected to OpenCIM manager, job files must be entered into the **File** column in the Machine Definition tab of the active project.



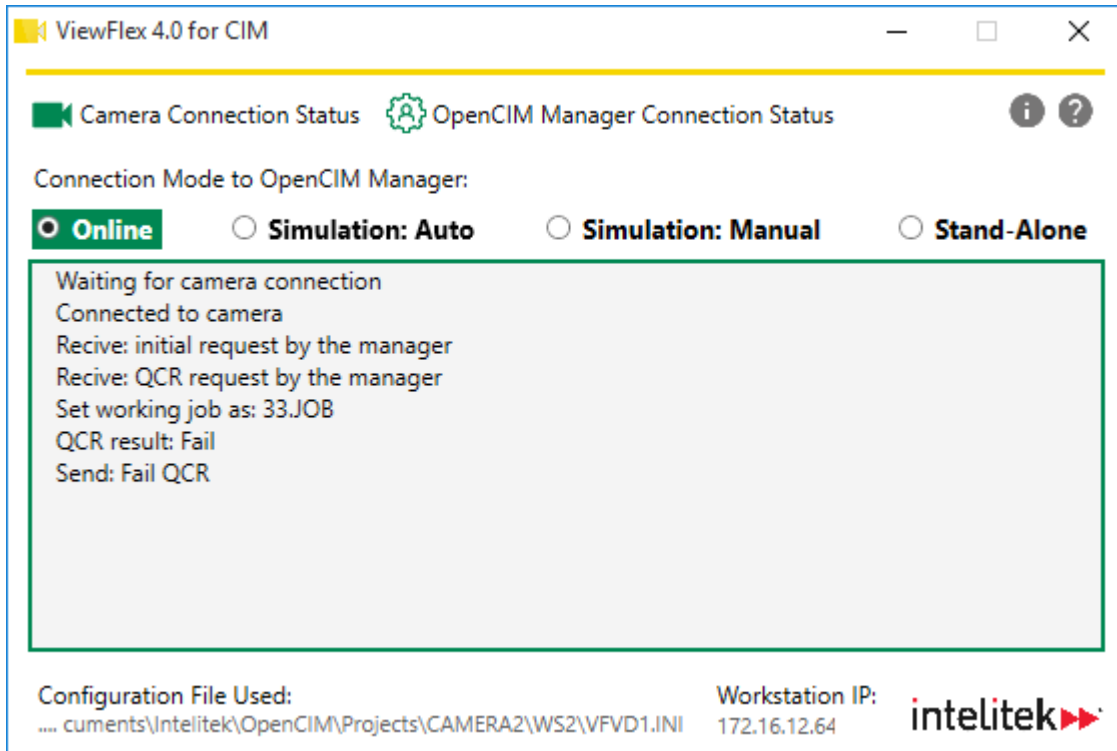
For more information about selecting job files in OpenCIM, see the OpenCIM user guide.

4. Performing QC Tests

When ViewFlex receives a quality control request (QCR) either from OpenCIM or when operating in stand-alone mode, the application performs - or prompts you to help it perform - a quality control test.

4.1. TESTING IN ONLINE MODE

In OpenCIM online mode, OpenCIM sends a QCR request to ViewFlex. The test result of the QCR corresponds to the criteria that were defined in the In-Sight Explorer job file.

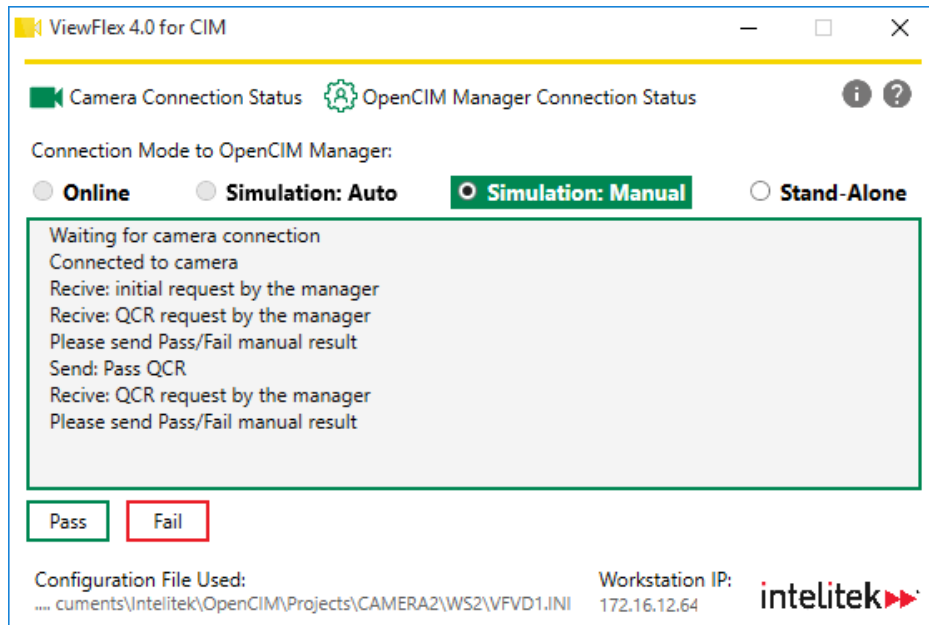


4.2. TESTING IN THE SIMULATION MODES

4.2.1. Manual Simulation

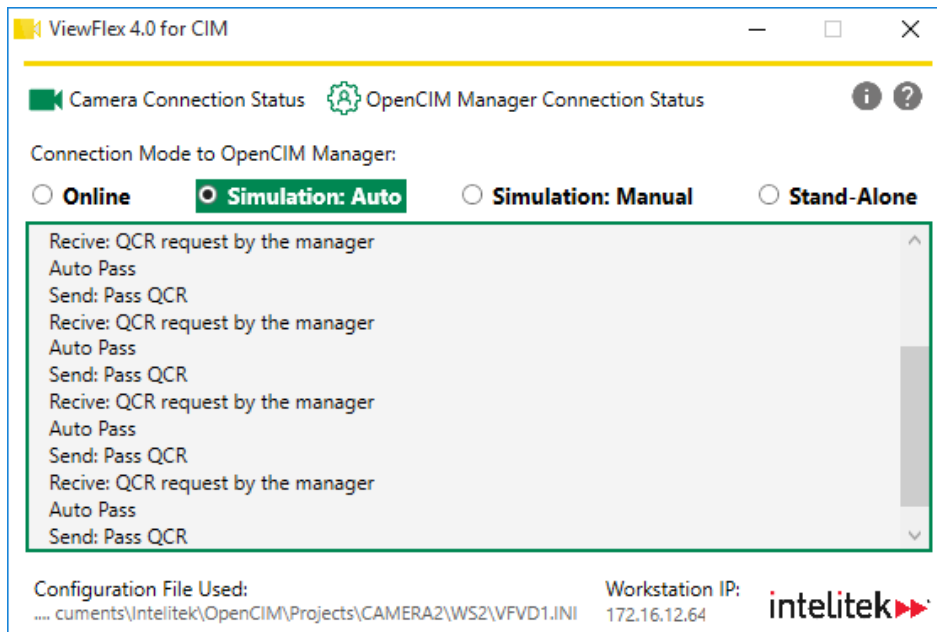
In OpenCIM Simulation: Manual mode, you are prompted to complete the QCR request for ViewFlex.

- To submit a pass QCR result, click **Pass**.
- To submit a fail QCR result, click **Fail**.



4.2.2. Automatic Simulation

In Simulation: Auto mode, the test result of the QCR is always returned as a pass result.

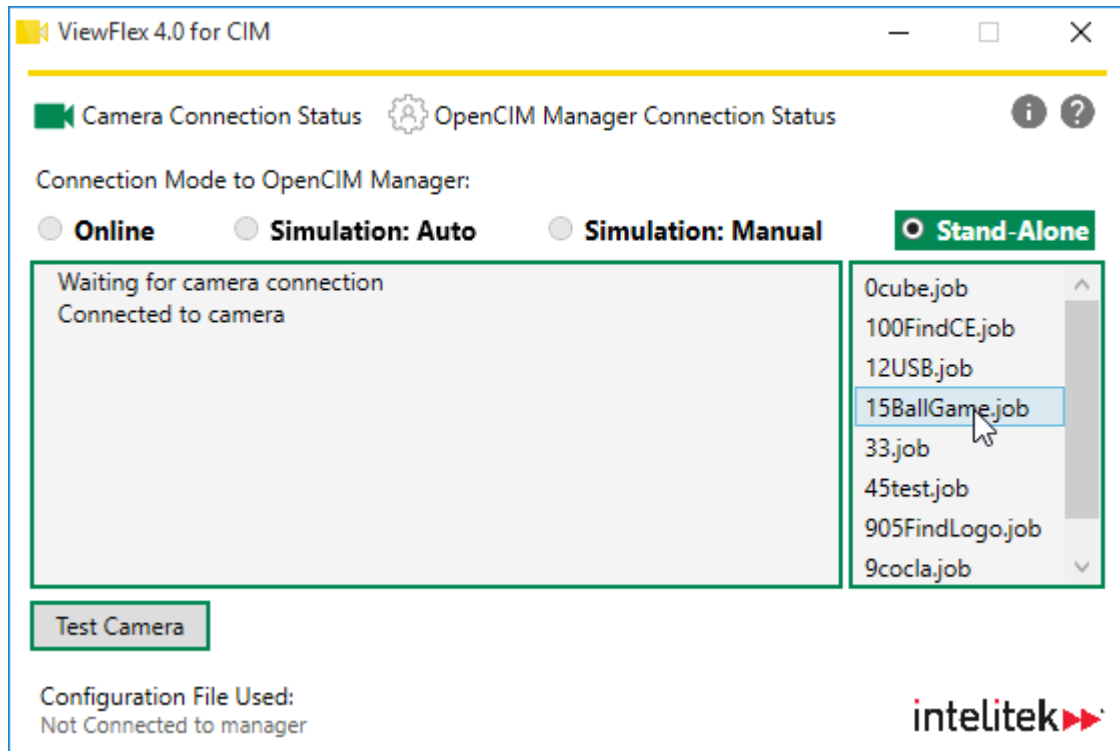


4.3. TESTING IN STAND-ALONE MODE

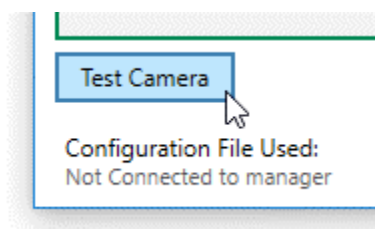
In OpenCIM online mode, you manually send a QCR request to ViewFlex. The test result of the QCR corresponds to the criteria that were defined in the In-Sight Explorer job file.

To request a QCR in stand-alone mode:

1. Double-click a job in the job file area to select it.



2. Click **Test Camera**.



The result of the test is displayed in the message area.