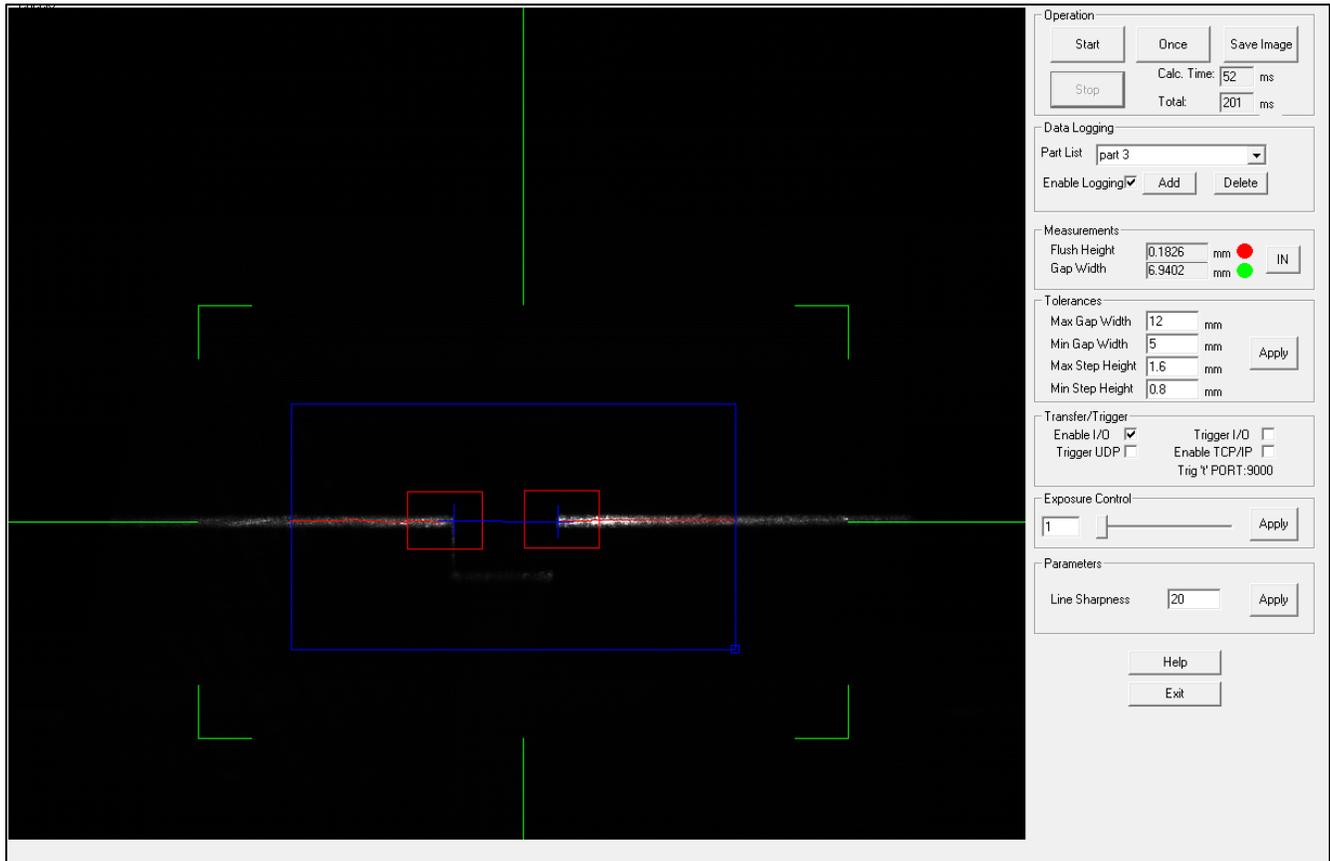


Lucana Gap Help

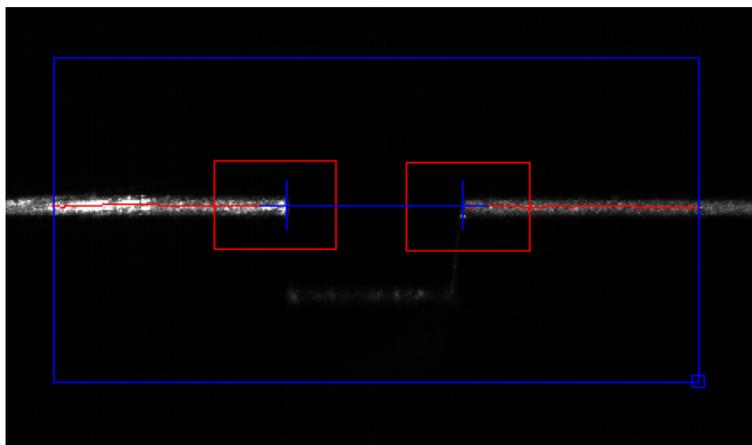


The screenshot displays the Lucana Gap software interface. On the left is a camera view showing a gap with a red laser line and two red boxes highlighting the gap edges. On the right is a control panel with the following sections:

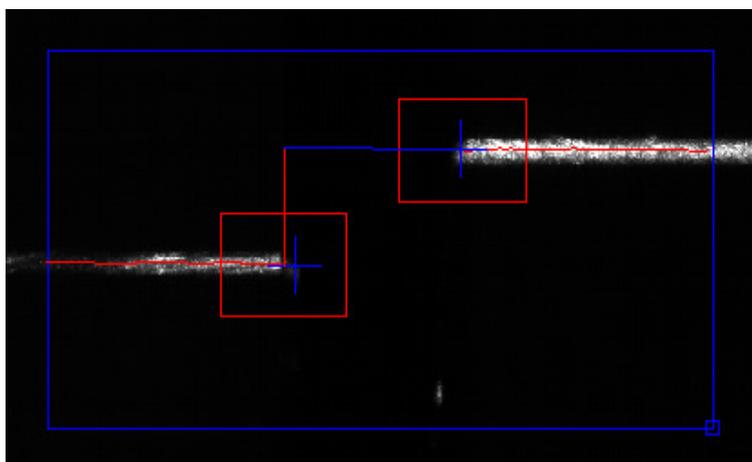
- Operation:** Start, Once, Save Image, Stop, Calc. Time: 52 ms, Total: 201 ms
- Data Logging:** Part List: part 3, Enable Logging: , Add, Delete
- Measurements:** Flush Height: 0.1826 mm (red dot), Gap Width: 6.9402 mm (green dot), IN
- Tolerances:** Max Gap Width: 12 mm, Min Gap Width: 5 mm, Max Step Height: 1.6 mm, Min Step Height: 0.8 mm, Apply
- Transfer/Trigger:** Enable I/O: , Trigger I/O: , Trigger UDP: , Enable TCP/IP: , Trig 'Y' PORT: 9000
- Exposure Control:** Slider set to 1, Apply
- Parameters:** Line Sharpness: 20, Apply
- Buttons:** Help, Exit

About Lucana Gap

Lucana Gap is an affordable device that can measure gap width and flush height between two surfaces. Lucana Gap can perform measurements automatically without calibration, setup or programming.



Measures Gap Width



Measures Flush Height

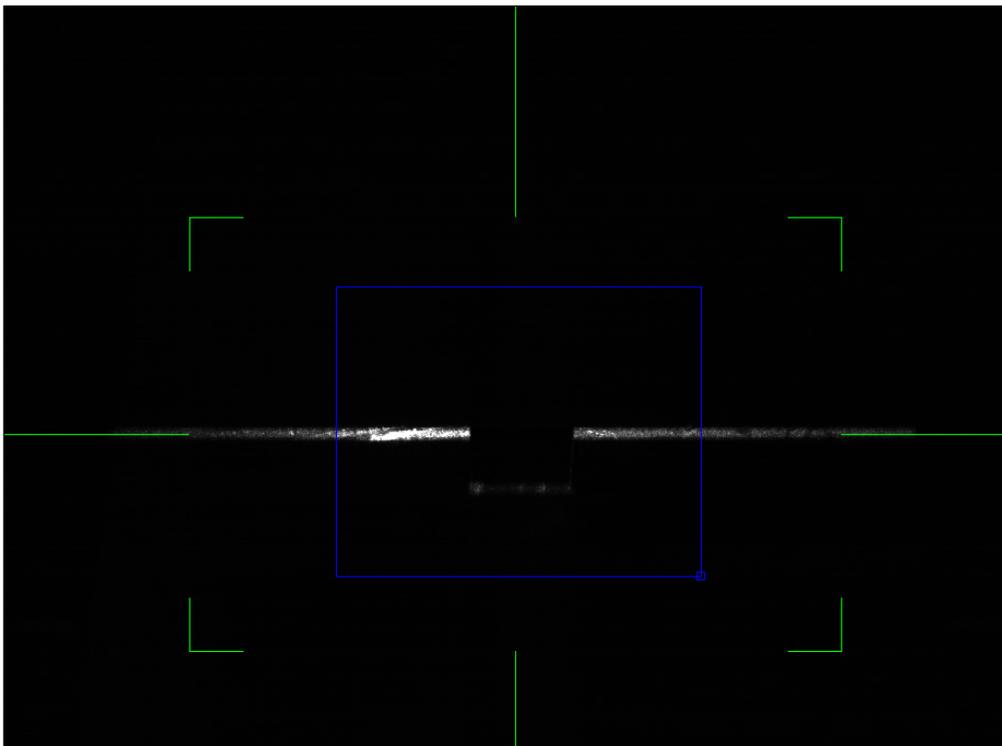
Camera Connection

Lucana hardware can be connected to a computer through a USB 2.0 port. The application will fail if Lucana is opened without a camera connected. This will cause an error message to be displayed. If the camera is disconnected while Lacuna is running, the program will pause and you will be notified. Operation will resume when communication is re-established.

Region of Interest

The Region of Interest (ROI) can be moved over the desired area of the image, resulting in more accurate measurements. To select a region, first select STOP, Lucana must not be in the live image capture mode. Move the ROI by pressing anywhere within the blue box and dragging it to the desired area. To resize the ROI, press the small box in the lower, right corner, and adjust to fit the gap. For best results, position the ROI to fit closely around the red boxes surrounding the cross-hairs. Once you are in live image capture mode, the ROI box will turn red indicating that you cannot alter the ROI until you stop the capture. For the most accurate measurements, align the laser with the horizontal green reference line displayed on the screen and stay within the confines of the green box.

Note: The object of interest should be placed *perpendicular* to the laser.



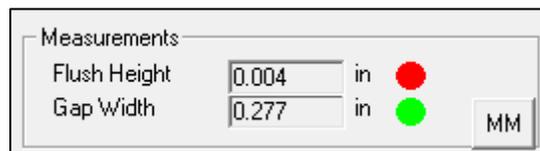
Camera Operation

There are two options to view the objects. The camera can be operated in a live feed mode by choosing the START button once the ROI is over the desired gap. While in live mode, a continuous image feed is displayed. The ROI box will turn red and smaller red boxes will appear around blue cross-hairs indicating points of measure. Measurements of gap width and flush height are calculated and displayed in units of inches / millimeters.

A second option is to capture a single image using the ONCE button. Measurements are then calculated and displayed for the gap width and flush height.

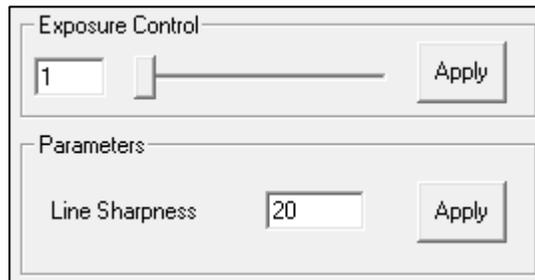


The measurements can be displayed in inches or millimeters and can be adjusted by selecting the button next to the measurement display. Once tolerances are set, an indicator displays whether the measurement are within specified tolerances (red: not within specified tolerances or green: within specified tolerances).



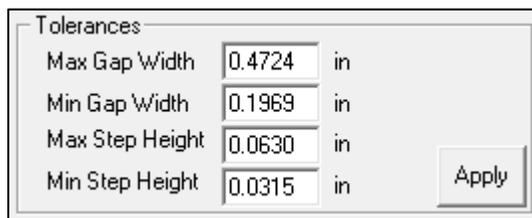
Exposure Control

The exposure can be controlled by adjusting the slider to a desired time or manually entering a value in milliseconds. Changing the exposure until a clear image of the laser is observed will allow for better performance and more accurate readings. Line Sharpness, found under Parameters, can be adjusted in conjunction with exposure control. It is important that the laser is not saturated. It is therefore typical for a lighter object to have lower exposure time and line sharpness. An ideal image of the laser would result in the edges being a dull gray color as shown in previous images.



Tolerances

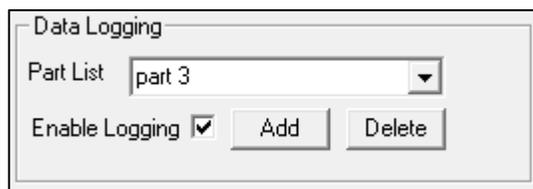
A range of acceptable values for gap width and flush height can be set by indicating the minimum and maximum values in millimeters or inches. You ***must*** press APPLY for new variables to be considered. If a single image is being captured and tolerances are changed after the image has been taken, the ONCE button must be pushed again after the tolerances have been applied for them to take effect.



Data Logging

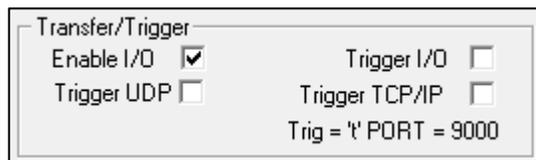
To log the data to a text file, select from the drop down menu the part ID that you are examining. If the part is not there, you can add it by entering the part ID into the list and pushing ADD. After you have selected the part from the drop down menu, check the "Enable Logging" checkbox to record the data. Push STOP and uncheck the "Enable Logging" box when data logging is completed. The logs will be located in a folder in C:\gaplogs. The logs are organized by part ID and by date.

To delete a part, select the part from the list and press DELETE. Press OK on the confirmation.



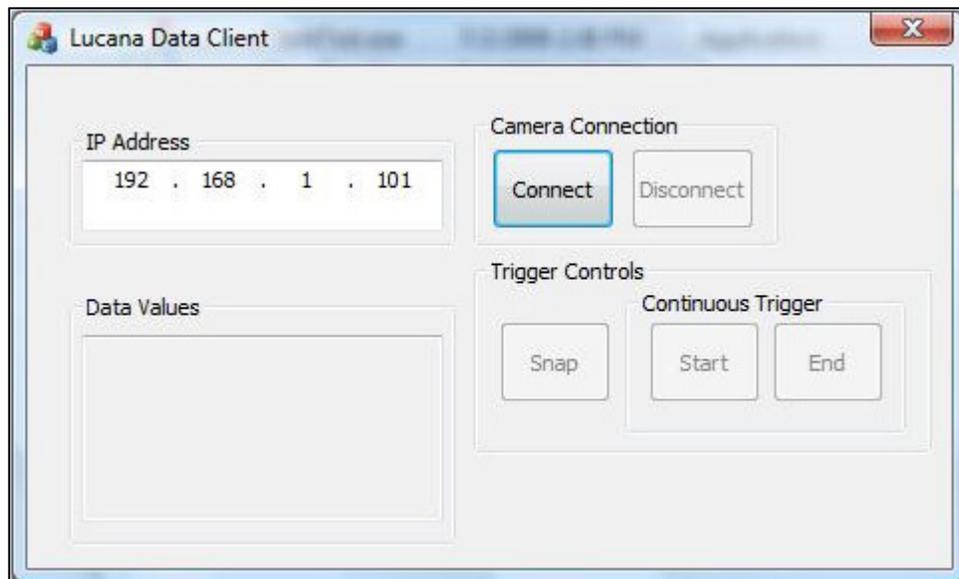
Transfer/Trigger

These options determine in what way the data is transferred between the computer running Lucana and the computer receiving data, as well as if a trigger will be used. Data can be transferred through UDP, TCP/IP, or through I/O console.



Transfer Client using UDP

To test the transfer of data through a UDP connection, Lucana Data Client is provided. After installing on Lucana Data Client on the “communicating” computer (client computer), Lucana Data Client will communicate with the Lucana (host computer). To connect, enter the IP address for the computer which is running Lucana (the server computer). NOTE: To connect properly, make sure that Lucana is running. After you press START on Lucana GUI, press the CONNECT button on Lucana Data Client. This will establish the connection. SNAP will trigger Lucana by sending the string ‘t’. Once Lucana receives the trigger string, it will measure and send measurement data back to the client. START, in Continuous Trigger box, will cause to continuously trigger and receive data.



Transfer Client using TCP/IP

To transfer data via TCP/IP connection, you must first set up a TCP/IP connection between the server and client computer. NOTE: Use port 9000 for connection. Press the “Trigger TCP/IP” check box before establishing a connection. After connecting, send “t” to the server. The configuration is network specific. Please advise your IT staff if you encounter any problems.

Using an I/O device

To use an I/O device, plug in the device so it is on the network. Change the IP address of the I/O device to 192.168.0.100. After the device is on the network, check the “Enable I/O” check box and press START. NOTE: Be sure to check the “Enable I/O” checkbox before pressing START.