

HDI CARBON G2



Quick Start Guide

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Getting Started

Congratulations on purchasing the all new Polyga HDI Carbon G2. This Quick Start Guide will be covering the following:

1. Overview of Carbon G2 and its parts
2. Assembly steps of Carbon G2
3. Setting up the Carbon G2 with FlexScan3D

FlexScan3D

- The Carbon G2 is powered by FlexScan3D, the software which is used to communicate with the 3D scanner. FlexScan3D enables you to capture data, processing 3D scans, and export to multiple 3D formats.
- FlexScan3D can be downloaded by navigating to the Polyga [accounts page](#) or by contacting your distributor.
- To learn more about FlexScan3D please refer our software [user manual](#).

Customer Support

- To access support resources and troubleshooting guides, visit our support [page](#).
- For other technical support, contact us at support@polyga.com or you can use our [contact page](#).

In the following pages, we will go through the steps of setting up your new Polyga Carbon G2.

Overview of Carbon G2 and its parts

- After opening the package, you will have the following parts of the Carbon G2.
- Please note that some of the parts might be pre-assembled for convenience purposes.
- Please make sure that you have received all the parts*. If not, please contact your distributor or our support center.

| Part | Description | Part | Description |
|---|---|--|--|
|  | Carbon G2 Rail |  | Projector Box |
|  | 2x Camera |  | <ul style="list-style-type: none"> • 2x Rail Mounts • 6x Mounting screws |
|  | <ul style="list-style-type: none"> • 2x Cameras Mounts • 6x Camera screws |  | 2x Lenses |
|  | 2x Trigger cables |  | 2x Projector mounting screws |
|  | Ethernet Cable |  | 2x Camera Power cables (USB 3 to Micro B) |

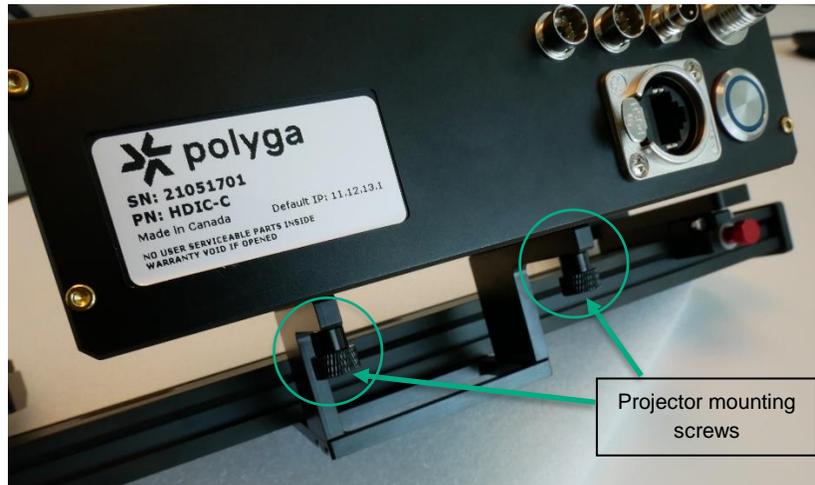
| | | | |
|---|--|--|---------------------------|
|  | <ul style="list-style-type: none">• 12V Power adapter• Power cord |  | Tripod |
|  | <ul style="list-style-type: none">• Calibration board• Calibration board holder |  | USB dongle for FlexScan3D |

*This is a complete list of the Carbon G2, and items might vary based upon order requests from customers. Please make sure you have received everything mentioned in your order.

Assembly Steps of the Carbon G2

Step 1 - Attaching the projector to the projector mount.

1. After the tripod and Carbon G2 rail has been fixed, the next step is to mount the projector to the rail.
2. Use the 2x projector mounting screws to fix the projector on the rail.



3. Note that you might receive the Carbon G2 pre-assembled with the projector.

Step 2 - Camera Assembly

1. The cameras will be assembled to the camera mounts when shipped, but for changes in future, please follow the mentioned procedure.
2. Attach the camera to the camera base plate using the 3x camera screws(M3).



3. Attach the mounting plate on top of the camera slider using the 3x mounting screws(M4).
4. We will be using these screws to adjust the camera angles during calibration.

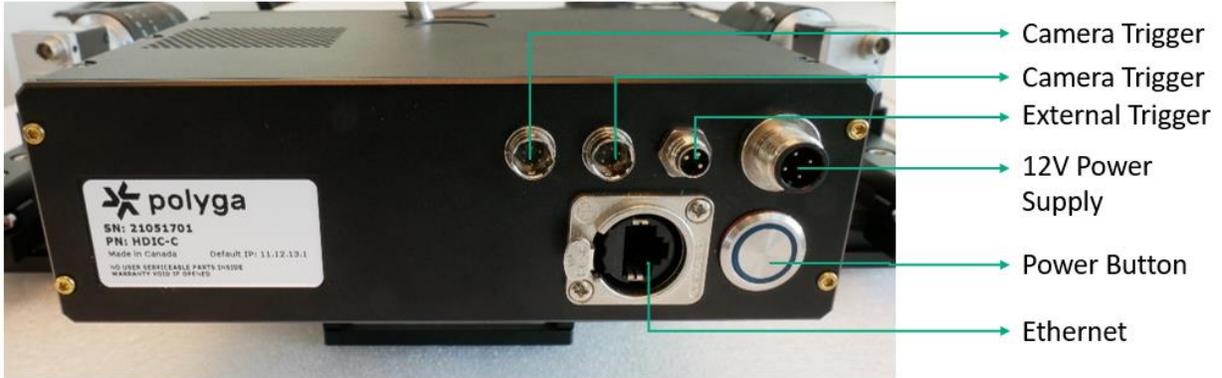


5. Attach the camera lenses on the cameras using the threads as shown below.



Step 3 - Interconnections

1. The Carbon G2 has the following connection ports on the projector box:



2. Following are the steps to interconnect the scanner components.



Attach the first trigger cable



Attach the second trigger cable



Attach the ethernet cable



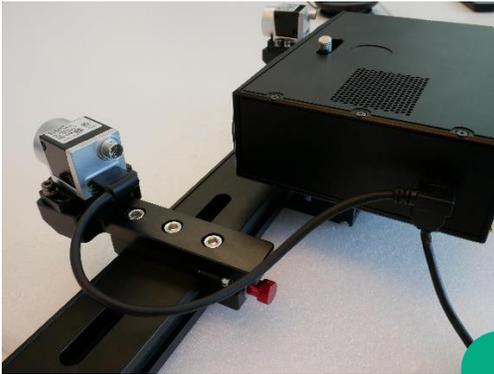
Connect the 12V power source



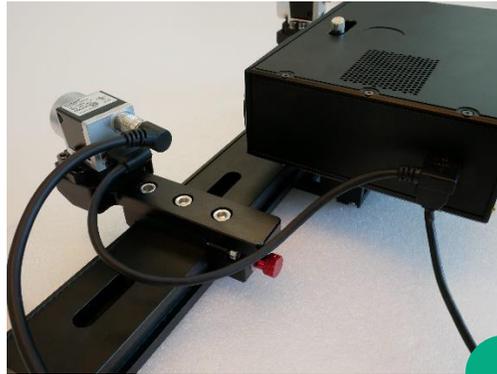
Connect the first USB3.0 cable



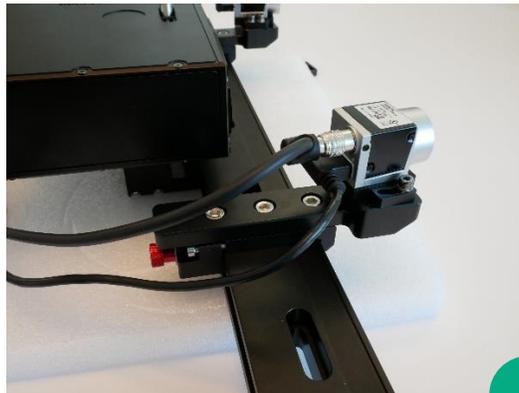
Connect the second USB3.0 cable



Connect the microB
end to the camera



Connect the other end of the
trigger cable to camera.



Repeat the same connections
on the second camera

3. Connect the ethernet cable to the PC/Laptop.

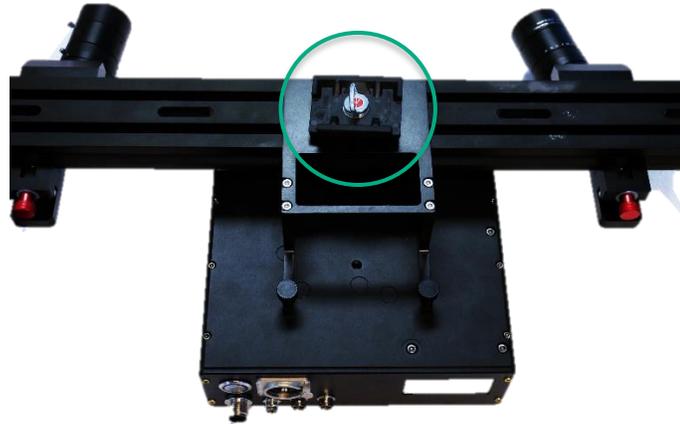
4. Lastly connect the 12V power cable* to the power supply.

5. This completes the connections of the Carbon G2.

*Make sure to use prescribed voltage for the power supply to avoid damage to the scanner.

Step 4 - Setting up the Tripod and Scanner.

1. Attach the mounting plate to the base of the Carbon G2 rail as shown:



2. Expand the legs of the tripod and set it up on a flat surface with appropriate height.
3. Fix the mounting plate on the tripod head with the Carbon G2 rail fixed on it. Adjust the position and orientation of the tripod head using the adjustment knobs provided on the tripod.



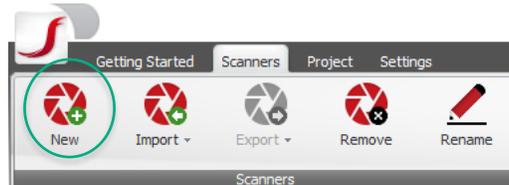
Setting up Carbon G2 with FlexScan3D

Step 1 - Downloading FlexScan3D

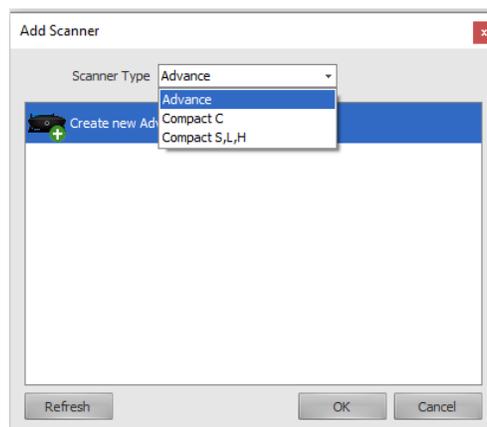
1. Download FlexScan3D by navigating to the Polyga [accounts page](#) or by contacting your distributor.
2. After downloading FlexScan3D use the provided license key to activate the software.
3. If you have a dongle provided, simply plug in the dongle, and open the software.
4. If you face any licensing issues, please contact support@polyga.com.

Step 2 - Adding the Carbon G2 in FlexScan3D

1. To add Carbon G2 in FlexScan3D, power up the scanner using the power button on the projector box and wait till you see projector light.
2. Projector should be displaying a focus pattern upon a successful boot-up.
3. After a successful boot-up, open FlexScan3D and navigate to the Scanners tab.
4. Select the 'Add New' option on the top pane to add your new Carbon G2.



5. Select the 'Advance' option to add the scanner.



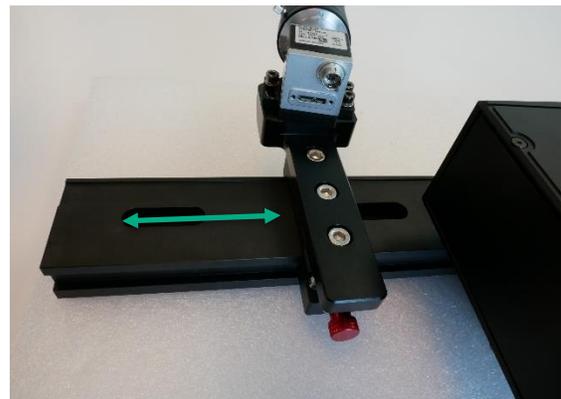
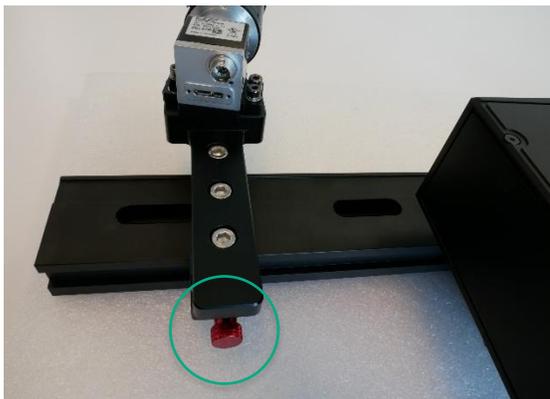
6. Please note that if the Scanner is calibrated for the desired field of view (FoV), the scanner can be added later by using the 'Compact S, L, H' option.

Step 3 - Calibration Set-up

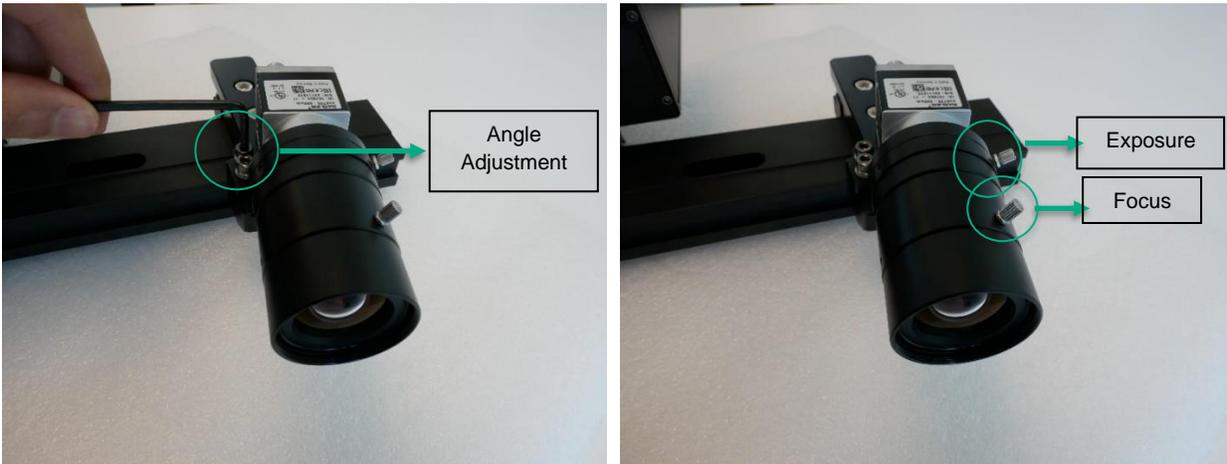
1. After booting up the CarbonG2 and adding it in FlexScan3D, the next step is to calibrate the scanner for the required FoV.
2. To do this, the user needs to place the scanner unit at the calculated distance from the middle volume of the FoV.
3. Next, adjust the projector focus. This can be done with the help of the focus adjustment knob on the projector box as shown:



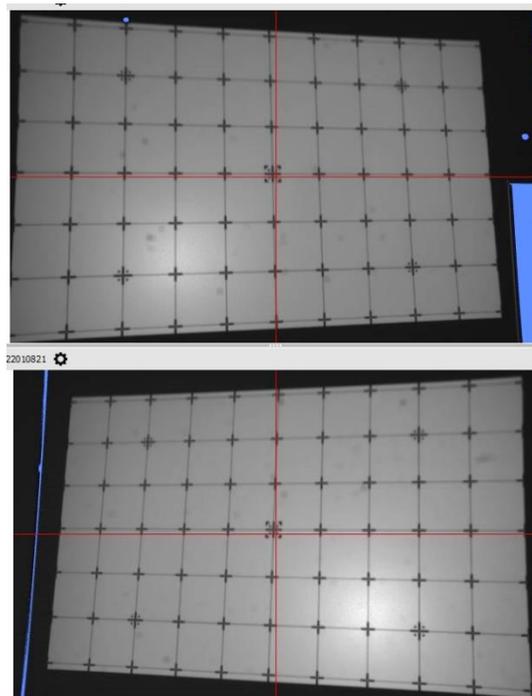
4. After adjusting the projector focus, adjust the camera position, focus and exposure.
5. To adjust the camera positions, use the adjustment knob provided on the rail mounts.



6. The camera angles can also be changed by adjusting the bolts.
7. The camera focus and exposure are adjusted using the 2 knobs provided on the camera lens.



8. The aim is to make sure the red cross hairs (camera focus) on FlexScan3D for both cameras are coinciding with the projector focus.



9. After setting up the scanner, the Carbon G2 is now ready to be calibrated.
10. To learn how to calibrate the scanner, refer our [Calibration document](#).