



Getting Started with Datugram3D

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# Facts, Answers, and Questions

## Q. What are the necessary computer specifications?

A. While most Windows based computers will run the Datagram3D software, we would recommend a Windows 7 or 8 operating system, with a minimum of 8Gb of RAM, and a 64BIT Operating System. Your Hard drive should be proficient to handle a large number of photos.

## Q. What type of camera do I need?

A. Almost any digital camera will work however range and function will be limited depending upon what is used. We generally recommend a camera with at least 18-20 megapixels and a fixed (no manual focus) wide angle 12-18 mm lens. These can be purchased at most box retailers for around \$450.00

## Q. What are the jobsite control requirements?

A. Each photo that is taken needs to be anchored with a minimum of four control points. Generally these are taken with a reflectorless total station and will be things like the tops of telephone poles, building corners and soffit intersections, window corners, fire hydrants etc. GPS and other prism pole shots can also be used, but remember the quality of the photo drafted data will depend on the quality of the control points so good survey practice is required.

## Q. Are special targets or checker boards needed?

A. There are no requirements for targets. As stated above, any identifiable point in the picture can be used. Some clients do find it advantageous however to make their own targets that can easily be picked out of the images.

## What are the best types of jobs?

Jobs that may be unsafe such as; intersections, cliff walls, toll booths, on/off ramps etc..

Jobs requiring a lot of detail such as architectural structures or as-built surveys

Forensic or Accident Reconstructions, where a lot of detail is needed along with a good photo record of the site.



# Taking the Photos

## Some important things to remember

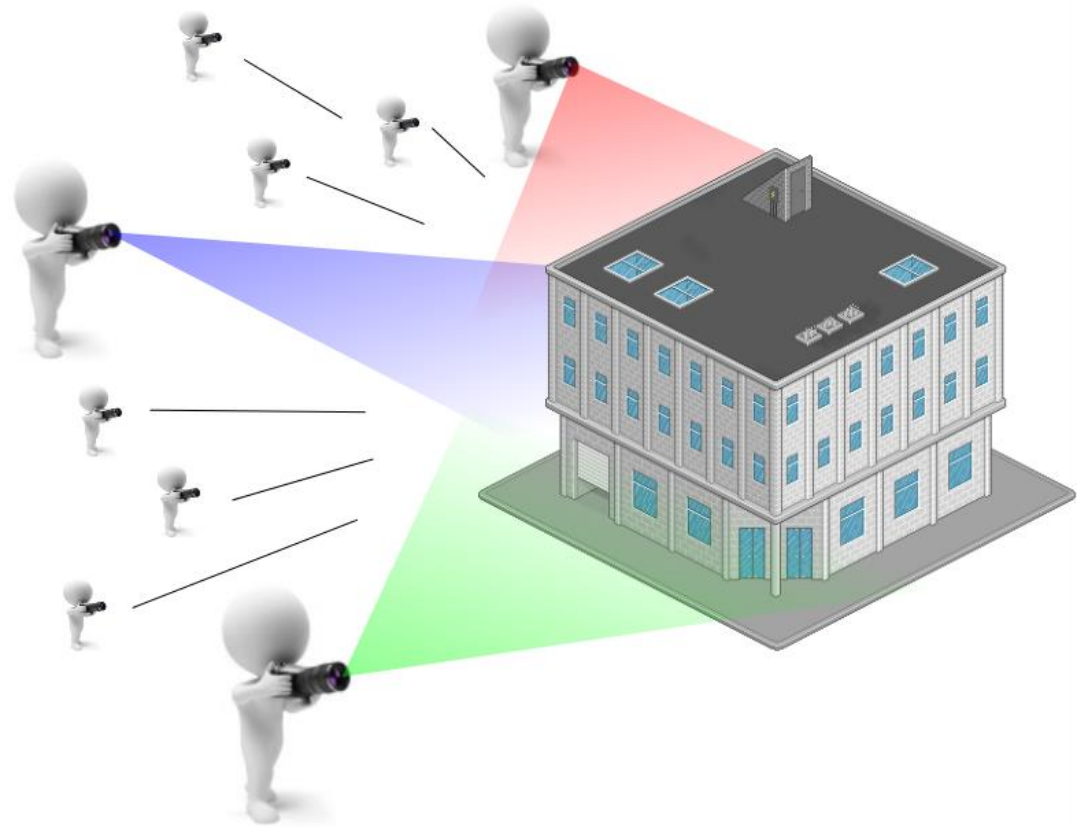
ANGLES, ANGLES, ANGLES the software is all about geometry. Make sure you take the photos of the areas of interest from as many varying angles as possible. Try to achieve 90 degree angles to each area of interest, horizontally and vertically.

To achieve varying vertical angles use a 15 or 25 foot survey pole with your camera mounted on top.

Move the camera up and down between each shot. Even one foot of movement helps.

Lighting is important. The system works off of contrast to recognize different pixels, so make sure you are there at the best time of day to achieve the best lighting.

Take MORE photos than you will ever need. It takes just seconds to click a photo and the more you have the better. To create a single 3D point the software requires that it be in at least three photos, so go crazy shooting images.



# Shooting the Anchor Points

## Some important things to remember

The anchor points need to “cube” the area of interest. This might mean shooting items on neighboring properties or placing your own markers.

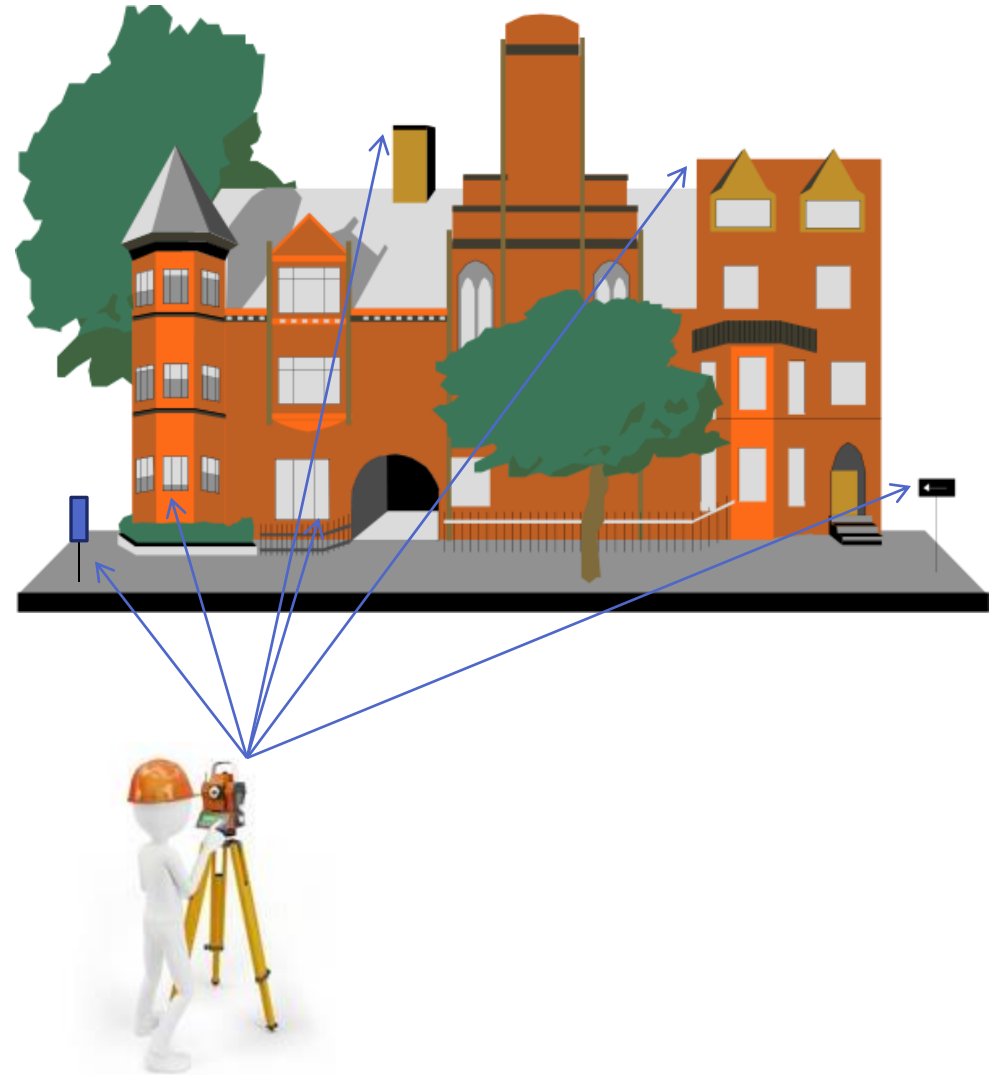
Each photo will need at least 4 anchor points. They do not have to be the same four from photo to photo.

Just like when taking photos, geometry is important. Think of this as a resection or GPS localization.

Sometimes taking the photos back to the office and printing them out, then putting marks on the print outs can help assure the right points are acquired.

Take more anchor points than required. If you are shooting with a reflectorless total station the shots are quick and easy. It is better to have too many than not enough.

Draw a good diagram showing what you shot. It is the easiest way to recall the point information.





# Calibrating your Camera

## Some important things to remember

Print the A0 target from the calibration section listed under “Tools” then “Calibrate...” in the Datugram3D Software.

Carefully measure the long and short sides of the checkerboard from the top checker to the bottom checker.

You need to take photos of the printed checkerboard from the same vantage point at approximately 45 degrees.

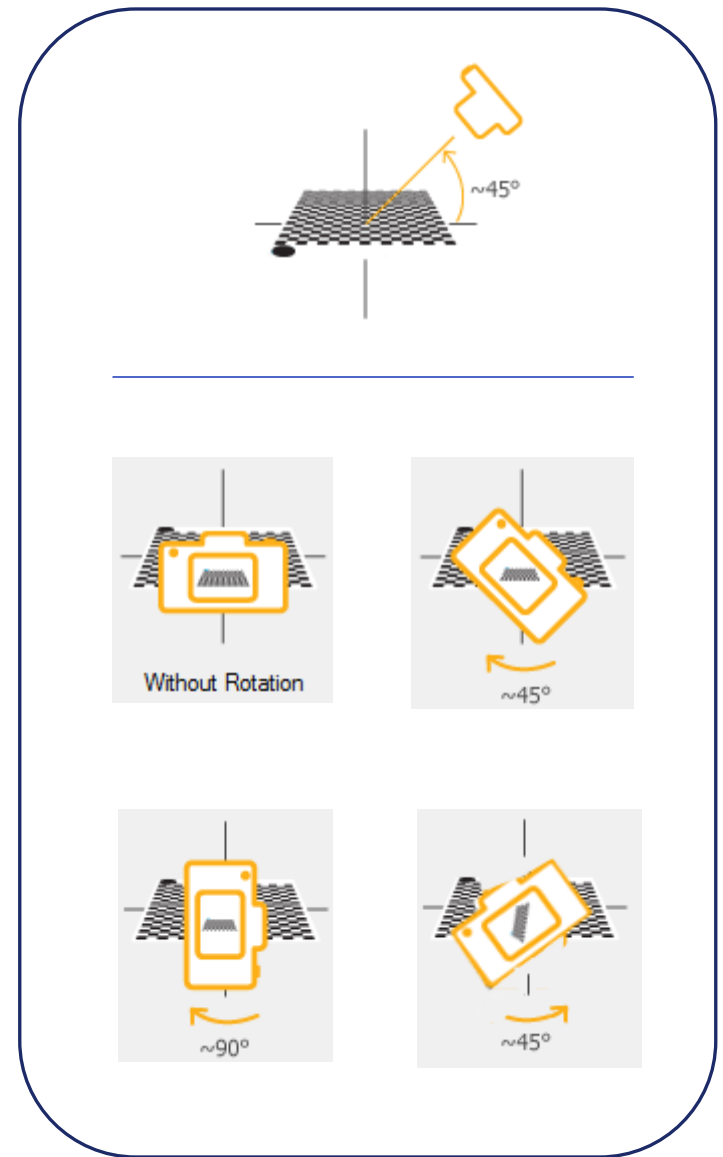
Take four photos, one with the camera flat, then rotate 45 degrees, then to 90 degrees, then to the opposite 45 degrees.

Make sure the checkerboard target is completely in the camera frame.

Select the “circle” from each photo by clicking on the photo of the checkerboard, and then on the circle.

From there the software will do the rest.

Make sure you get the “Green Circle” before continuing. If you do not, retake the photos of the checker board and try again.



## Using the Software

### YouTube Video

We have prepared a YouTube video for you that will walk you step by step on how to anchor your photos, draw points, lines, and areas, then how to export the data:

<http://youtu.be/mMp4xOIOIX4>

Should you have any questions please contact us at:

770-695-3361 or [www.egps.net](http://www.egps.net)

