



MakerBot[®]

MakerBot[®] Digitizer[™]

DESKTOP 3D SCANNER

FREQUENTLY ASKED QUESTIONS

FAQ

[Q] What is the MakerBot Digitizer Desktop 3D Scanner?

[A] The MakerBot Digitizer Desktop 3D Scanner quickly turns the things in your world into 3D models that you can modify, improve, share, and 3D print. It's a fast and easy way for anyone to create clean, watertight 3D models, optimized to work seamlessly with MakerBot Replicator Desktop 3D Printers, MakerBot MakerWare, and Thingiverse.

[Q] Why did MakerBot create the MakerBot Digitizer Desktop 3D Scanner?

[A] We wanted to give the world another tool for being creative. For more than four years we have made the best desktop 3D printers in the world to turn digital design files into real physical things. Now with the MakerBot Digitizer, you can turn physical things into digital design files!

[Q] Why is the MakerBot Digitizer Desktop 3D Scanner significant?

[A] The MakerBot Digitizer is a desktop 3D scanner that makes it easy and fast to create clean, watertight 3D models based on physical objects.

[Q] Who is the MakerBot Digitizer Desktop 3D Scanner for?

[A] The MakerBot Digitizer is for early adopters, experimenters, and visionaries who want to be pioneers in Desktop 3D Scanning. This includes, but is not limited to, architects, designers, creative hobbyists, educators, and artists.

[Q] Who is the MakerBot Digitizer Desktop 3D Scanner not for?

[A] Expectations should be realistic. You will not be able to, for example, scan a hamburger and then eat the digital design. Expectations for precision should be realistic, too. The MakerBot Digitizer is not ideal for engineers who require very high precision scanning. If you need a realistic reproduction of the tiny features on an insect's body, the MakerBot Digitizer is not the tool for you.

[Q] What about intellectual property and copyrights? Does scanning something violate those?

[A] The MakerBot Digitizer is a new technology in a new frontier. If you're interested in reading more about how copyright and other IP topics, check out writings from the public interest group [Public Knowledge](#).

[Q] What's special about the MakerBot Digitizer Desktop 3D Scanner?

[A] It's the fast and easy way for anyone to create clean, watertight 3D models, optimized to work seamlessly with MakerBot Replicator Desktop 3D Printers, MakerBot MakerWare, and Thingiverse.

FAQ

[Q] What kinds of things are difficult to scan or don't give good results?

[A] Objects with surfaces that are shiny, reflective or fuzzy do not scan well. In order to make a high quality 3D model, the camera must be able to see the laser line in the appropriate place. Shiny, reflective, and fuzzy surfaces prevent that. Objects that are very dark in color also do not scan very well, because the very dark surface absorbs much of the laser line. The MakerBot Digitizer cannot scan surfaces on objects that are hidden from the camera.

[Q] Why do some things scan poorly while other things scan very well?

[A] Like any technology, 3D scanning is limited by the laws of physics. In order to make a high quality 3D model, the camera must be able to see the laser line in the appropriate place. Objects that are very dark in color also do not scan very well because the very dark surface absorbs much of the laser line.

[Q] What is 3D scanning used for?

[A] 3D scanning with the MakerBot Digitizer is an ideal way to get started on a 3D design process without having to start from scratch, whether you are creating a prototype of a new product or a new 3D model to share on Thingiverse.com.

[Q] What is the resolution of scans from the MakerBot Digitizer Desktop 3D Scanner?

[A] The MakerBot Digitizer captures enough points to create about 200,000 triangles for each new 3D model. It can capture details as small as 0.5 mm, and surface depth as shallow as 0.5 mm. The dimensional accuracy of the MakerBot Digitizer's is ± 2 mm, meaning that when you scan an object, the dimensions of your 3D model will be within 2 mm of your original object.

[Q] What kind of scan quality can I expect from the MakerBot Digitizer?

[A] The MakerBot Digitizer produces 3D models that contain approximately 200,000 triangles. The 3D models are watertight, meaning they do not have holes of missing data, and the software automatically removes stray data that is not part of your object. Designers, educators, and artists can use the MakerBot Digitizer scans as starting points in their 3D creation process.

[Q] Is the MakerBot Digitizer Desktop 3D Scanner optimized for MakerBot Replicator Desktop 3D Printers?

[A] We optimized the MakerBot Digitizer to work seamlessly with our existing MakerBot MakerWare software and our line of MakerBot Replicator Desktop 3D Printers. This optimization means you can go from scan to print in just a matter of minutes.

FAQ

[Q] Is the MakerBot Digitizer Desktop 3D Scanner compatible with other 3D printers?

[A] Yes, the MakerBot Digitizer outputs an STL file that lets you print models on other 3D printers. We optimized the MakerBot Digitizer to work seamlessly with our own software, MakerBot MakerWare, and our MakerBot Replicator Desktop 3D Printers. Using MakerBot tools, you can go from scan to print with just a few clicks.

[Q] How do I get the best scans possible with the MakerBot Digitizer Desktop 3D Scanner?

[A] There are limitations in scanning objects that reflect light or are dark in color. There are several good techniques for optimizing objects for scanning, such as dusting them with cornstarch, and using the correct shade setting in the MakerBot Digitizer software. Videos explaining these techniques will be available soon.

[Q] Does the MakerBot Digitizer Desktop 3D Scanner capture the color of the surface of my object as it scans?

[A] The MakerBot Digitizer does not capture the color of the surface of an object as it scans.

[Q] What lighting environment do I need to use the MakerBot Digitizer Desktop 3D Scanner?

[A] The MakerBot Digitizer can perform its scans in normal interior lighting, with no special settings required. It does not work well in sunlight. For best results, the MakerBot Digitizer should be oriented so that no light source is shining directly at the camera.

[Q] Can I scan living things, such as my child or pet, or a body part such as my hand?

[A] The MakerBot Digitizer is intended for scanning non-living, stationary objects. It is not intended for scanning living things.

[Q] Can the MakerBot Digitizer Desktop 3D Scanner scan machines or items with moving parts?

[A] When you scan something with the MakerBot Digitizer you get a medium-quality rendering of its outer surface. The MakerBot Digitizer is not able to reproduce moving parts.

[Q] After I scan something with the MakerBot Digitizer Desktop 3D Scanner, can I modify the 3D model?

[A] Yes, that's the fun part! The 3D model that the MakerBot Digitizer makes of your object is composed of tens of thousands of points and facets. Many 3D modeling programs let you move these points and facets to transform your object into something new. You can also combine separate models, cut them into pieces, or subtract material from your model.

FAQ

[Q] What 3D modeling software should I use with the MakerBot Digitizer Desktop 3D Scanner?

[A] The MakerBot Digitizer outputs an STL file, so the best programs are 3D sculpting and mesh modeling programs that import STLs. The most appropriate software for you depends on your skill level and preference. Free software like Autodesk's MeshMixer and Pixologic's Sculpttris are great options for beginners; Autodesk's Mudbox and Pixologic's ZBrush and are suitable for more advanced users.

[Q] Is software included?

[A] Yes! MakerBot MakerWare for Digitizer software is included in the purchase. This simple, yet sophisticated software creates clean, watertight 3D models with just two clicks, and delivers a digital design file in approximately 12 minutes. MakerWare for Digitizer is not a 3D modeling program.

[Q] How does the MakerBot Digitizer Desktop 3D Scanner differ from other scanning options?

[A] The MakerBot Digitizer is an awesome tool for delivering a medium-quality, 3D-printable model and getting scans of objects up to 8" diameter x 8" high. The MakerBot Digitizer is also a desktop 3D scanner and provides stability and accuracy in a fast and easy-to-use platform that is compatible to a MakerBot Replicator 2 Desktop 3D Printer, MakerWare, and other 3D printers.

[Q] What if my object doesn't sit firmly on the turntable?

[A] Many objects do not have a flat surface on the bottom. Many users have found that a small amount of modeling clay can help stabilize an object.

[Q] Are the lasers safe?

[A] The lasers on the MakerBot Digitizer are Class 1 lasers which are safe for humans and pets when used as directed.

[Q] Can I buy the MakerBot Digitizer Desktop 3D Scanner bundled with the MakerBot Replicator 2 Desktop 3D Printer?

[A] The MakerBot Digitizer is sold separately from MakerBot Replicator Desktop 3D Printers, but the two machines work great together.

[Q] Where is the MakerBot Digitizer Desktop 3D Scanner manufactured?

[A] The MakerBot Digitizer is manufactured at the MakerBot Factory in Brooklyn, New York.