

Automating the Reverse Engineering Process

Roland's new LPX-600 3D laser scanner saves designers hours of manual reverse engineering work. With the touch of a button, the desktop device samples an object, scans objects up to 16 inches tall and 10 inches in diameter. Then it automatically generates a detailed model with a 0.008 inch resolution and a watertight surface.

The tedious editing process is now a thing of the past. Engineers can capture incredibly detailed surfaces without any special training. Bundled LPX EZ Studio reverse engineering software automatically scans, aligns and merges 3D models. The software supports a wide range of data output formats, including STL, PIX and 3DM. STL files are used by the industry's most popular rapid prototyping systems, including those manufactured by Roland, 3D Systems, Stratasys, Z-Corp and Solidscap.

The LPX-600 allows designers to quickly and easily generate 3D CAD models for a wide variety of CAD and computer graphics applications. The LPX-600 captures complex data for hand-held consumer products, blister package design, hand-sculpted characters for feature animation, and face models for anaplastologists.

The Chamberlain Group, for example, creates anatomically accurate medical models using a Roland desktop 3D laser scanner and Z-Corp 3D printer. With the consistency and response of living tissue, the company's models include hearts, abdomens, tracheas, hips.

"We recently digitized a sculpted human heart," said Eric Chamberlain, president of the Chamberlain Group. "The Roland scanner enables us to produce incredibly lifelike models that surgeons can use to practice their operating skills. After we print the models with a Z-Corp machine in silicone, the finished hearts actually pump!"

Using bundled PixForm PRO software, Chamberlain exported the scanned model as an STL file ready for production. "The Roland scanner is well engineered," added Chamberlain. "This technology is going to open up lots of new possibilities."

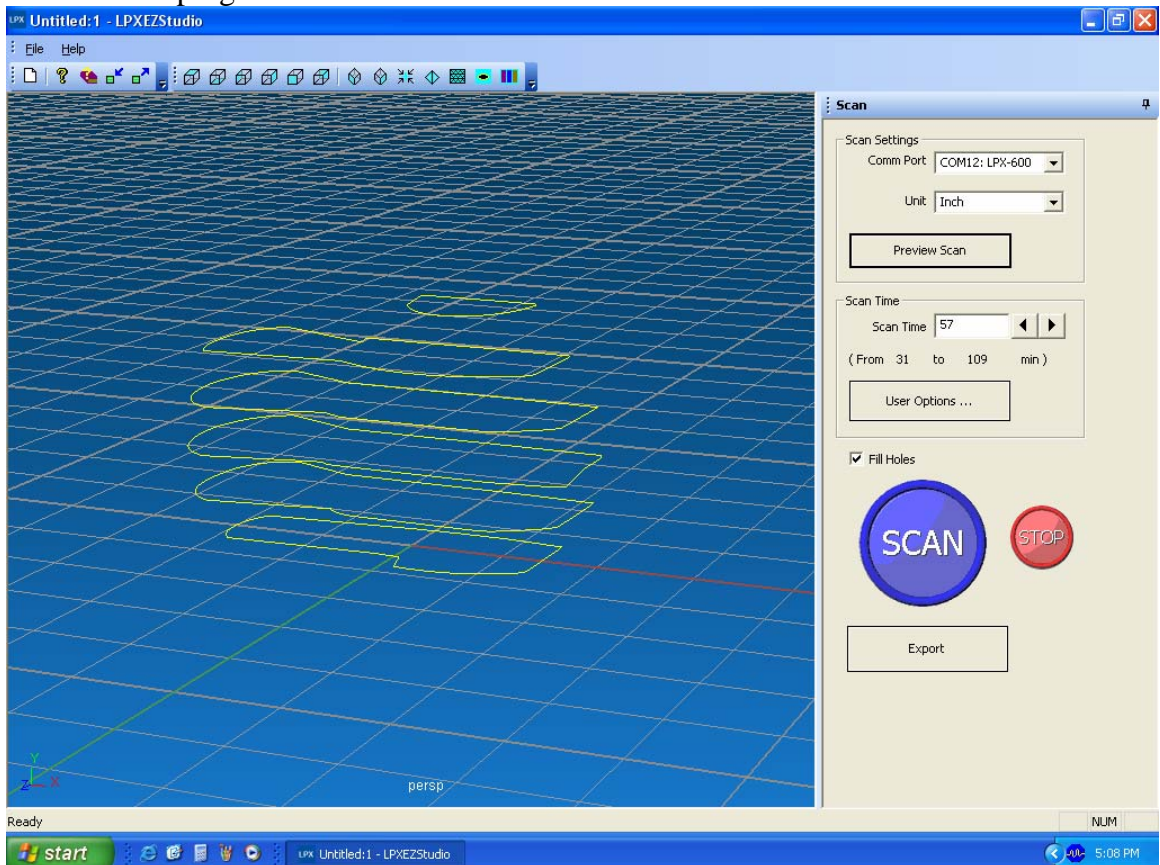
With its USB connection and one-button operation, the LPX-600 is ready to use within minutes after opening the box. Once up and running, the 3D scanner uses a solid state laser that requires no maintenance or consumables. Its metal enclosure uses filtered windows for optimum safety.

The workflow below illustrates the camera being reverse engineering in three steps:

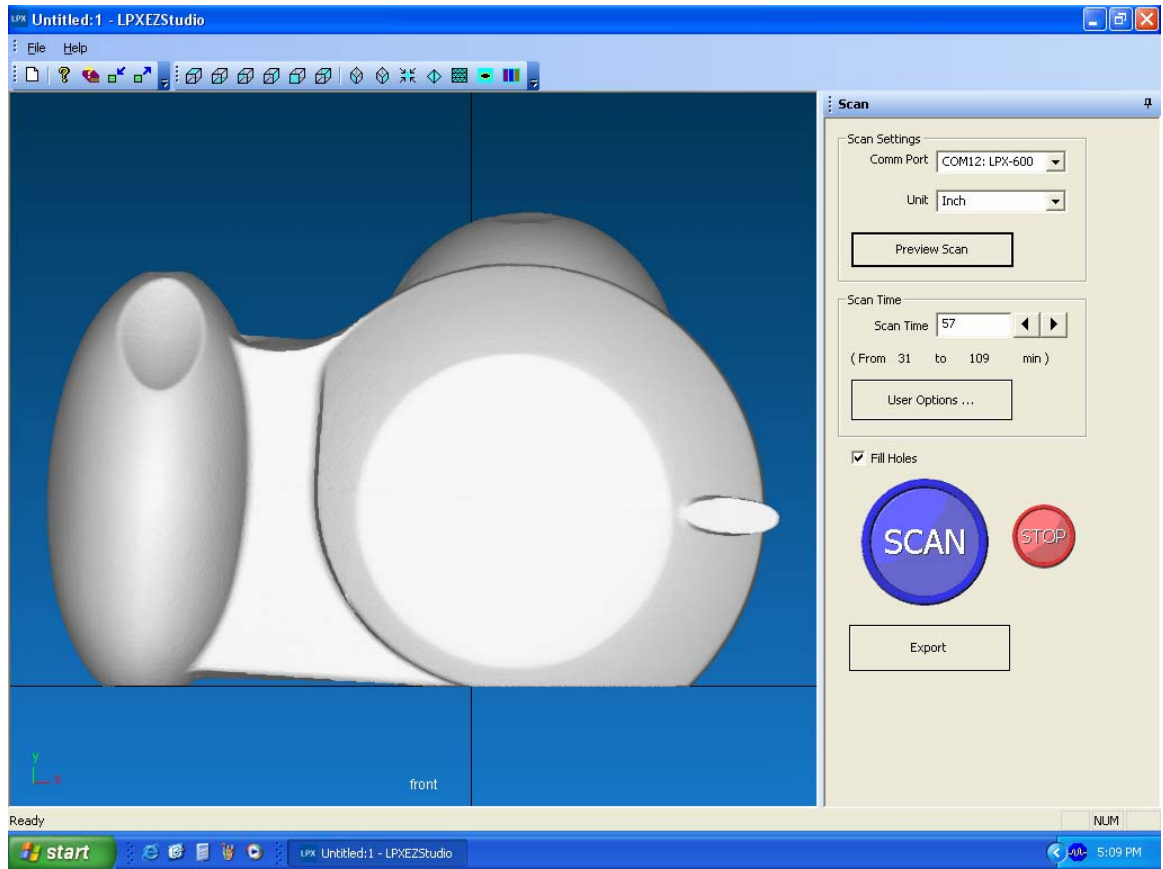
1. Place the camera inside the LPX-600 and turn it on.



2. Launch the LPX EZ Studio reverse engineering software and push the preview button in the program.



3. Press the scan button on the LPX-600.



That's it! Minutes later, the LPX-600 finishes the scan and LPX EZ Studio software automatically cleans up the digitized camera, leaving a perfect CAD model with a watertight surface.