

This 120 Gigapixel Photo is the Largest of New York City Ever Taken

By [Jaron Schneider](#) April 27, 2021



[EarthCam](#) recently unveiled the [GigapixelCam X80](#), which is a robotic camera that can produce more than 80,000-megapixel panoramas. To prove it, the company used the X80 to make [the highest resolution photo of New York ever captured](#): 120,000-megapixels.

EarthCam's devices can be mounted pretty much anywhere and are typically used by construction companies to document long-term builds or used as live-streaming cameras in a host of global locations.

“*EarthCam.com, the global network of owned and operated live streaming webcams, was built as a way to transport people to interesting and unique locations around the world that may be difficult or impossible to experience in person. Providing a virtual window to the world, viewers can freely explore the globe from unparalleled vantage points, such as the torch balcony of the Statue of Liberty, which has been closed to the public since 1916. EarthCam.com derives revenue from advertising and licensing of its proprietary webcam content.*”

“This is our ninth year of creating gigapixel tech,” EarthCam's Founder and CEO Brian Cury tells PetaPixel. “Our robotic use of it goes back years earlier. We've been on a mission to make the best outdoor webcams for clients and it is what has got us nine of the top 10 stadiums in the last few years.”

The kind of client that would demand the products that EarthCam produces is, as expected, unique.

“There is a narrow group of amazing clients who wants the best, the highest quality they can be,” Cury continues. Because of the challenging environments that EarthCam clients demand, having a fully robotic solution on a solidly-mounted housing is the only way to successfully operate a camera over time.

The X80 is the company's latest product that combines its specialized housing and computing with a [Sony a7R IV](#) and, in the case of the New York gigapixel image, the [70-300mm f/4.5-5.6 G](#) E-mount lens. While the well-known Sony camera lives in the housing and is the core of the imaging capabilities, Cury was adamant that making the device was more than just throwing a camera in a weather-proof housing, but the culmination of a decade of experience in both hardware and software for this extremely specialized purpose.

While the X80 was originally built to capture 80 gigapixel photos, EarthCam stretched the device to the limits of its capabilities in this particular image, which Cury says is actually 120 gigapixels.

"If you printed this photo out, it would be the length of 272 New York hot dogs end to end," Cury says, laughing. In a more "boring" measurement, he says it comes out to 136 feet wide at 300 DPI.

The GigapixelCam X80 is \$24,995 as fitted, but if a client does not need a robotic version, those are less expensive. EarthCam's line starts at \$1,900 for a time-lapse camera with solar power and goes up from there.

The photo was taken from a mounting position on the Empire State Building, and the Sony a7R IV inside is able to be controlled thanks to Sony's software development kit (SDK).

"We put together the X80 using the a7R IV (before we used Nikon cameras)," Cury says. "We loved this camera, and Sony who has traditionally not been very fluid with APIs and code has released a lot of public code and more data beyond that lately."

Creating images like this is the premier capability of the camera, but it's also meant to be able to make them in any environment, repeatedly.

"We connect the camera to a computer and an industrial power supply so this thing can work long term, and we put a heater and a fan in there that can actively heat and cool the camera so you can put it anywhere from Saudi Arabia to Alaska," Cury explains. The company also has a solar option that would allow the X80 to be self-sufficient for extreme lengths of time, provided it can get enough sun.

"It's a robust system, with a super high-end filtration system on it as well. And we have controls inside to operate a wiper and a washer system so we can keep it clean."

When it comes to making a photo of this magnitude, Cury says that everything has to be ultra-precise. The video below shows the insane detail that the company was able to produce by combining its technologies with the Sony a7R IV:

"The whole system is automated. The camera is taking 61-megapixel images and the server is organizing them. It takes thousands of photos and stitches them together server-side," Cury explains.

Normally, attempting to load a photo of this magnitude would crash your browser, but because of how EarthCam's server is set up, it instead loads tiles as the viewer interacts with the image so that it can quickly load the resolution only where it is needed.

EarthCam provided a few zooms into key areas of the full gigapixel image to give an idea of how much sheer resolution the camera is capable of creating.

During the capture process, Cury says that even though it is automated and precise, it's not perfect.

"There are usually about 10% that are out of focus, but in this case, it was under 5% retakes that we had to do," Cury says, touting the capabilities of EarthCam's latest X80. "That's where the beauty of this camera comes in. If you're a photographer and you rented this spot to take this photo and you spent your day trying to make this, if you get anything out of focus it's a killer. It's very disappointing. With this camera, you just get on it the next day and you just get the photo you need, or you wait for the right day to do it again. You don't have to worry about missing anything. You can get that beauty shot whenever you want it."

Cury explains that a photo the size of this New York Gigapixel isn't made necessarily in a single day, though it certainly could be.

"This photo was probably created over several weeks, but that being said we could run a simple version where it runs 77 photos at 70mm to create a 2.6 gigapixel photo and that takes 15 minutes," Cury explains.

There are certain times and days that are picked out to assure that key areas of an image look their best.

"We played a lot with lighting. We went and got shots that were maybe better lit," he says. For example, both the Statue of Liberty and the World Trade Center were captured at different times to assure the best lighting on each.

While EarthCam's advanced technology does a lot of the heavy lifting, the finished gigapixel image of New York was not just all done by the robot, as the final photo still needs an artist's touch to be truly finished.

"The system will create it for you robotically, but you need an artist to really touch it up and make it look how it does," he explains. "The camera is the paintbrush, you need it and it's important. But it's not easy getting a camera on top of the Empire State Building. A lot of times we don't brag about the camera because it can be a bit of a distraction. But in this case, we are because it's a great camera and it's not easy to do this stuff."

To see more of EarthCam's projects, the company has a [YouTube channel](#) full of locations around the world that are captured through its robotic cameras [here](#).