

Case Study: Sorgini Eye Institute

Innovative Ophthalmologist Takes DIY to New Extremes with Panasonic i-PRO Sensing Solutions' 4K Imaging

Combined High Performance and Cost-Efficiency Deliver Just What the Doctor Ordered

Laser-assisted in situ keratomileusis refractive eye surgery, otherwise known as LASIK surgery, was pioneered in the late 1980s and is now a commonly used procedure to correct farsighted or nearsighted vision deficiencies. The laser and optical systems first used for eye surgery have greatly evolved due to intelligent software, which has resulted in major advancements in laser and imaging technologies. With these capabilities, ophthalmologists are able to make precise corrections during ocular surgery to ensure the best possible outcome for their patients. The evolution of laser and imaging devices, and the techniques used to perform advanced eye surgeries, continue to evolve. At the forefront of this medical procedure is Canada's Sorgini Eye Institute.



A LASIK Pioneer in the Northern Country

Located in the city of Greater Sudbury, The Sorgini Eye Institute is the only permanent excimer laser clinic in Northern Ontario. It is privately owned by the residents of the region and is operated solely by the clinic's Medical Director, Dr. Curtis J. Sorgini. Dr. Sorgini not only follows all the latest advancements in laser and imaging technology, but he also takes a very hands-on approach in implementing any new techniques, equipment and procedures that offer even the smallest advantages to his patients. The clinic's LASIK equipment is internationally recognized and is constantly receiving hardware and software upgrades to keep it among the most advanced excimer laser treatment facilities in the world.



Today, The Sorgini Eye Institute's state-of-the-art equipment includes a Bausch & Lomb Teneo excimer laser system and Ziemer Z8 femtosecond laser. The excimer laser uses scanning technology for the treatment of myopia, astigmatism and hyperopia. It has an active eye tracker that monitors eye movements and adjusts the laser to compensate for movements significantly faster than the eye can move.

During surgery, Dr. Sorgini maintains control of the eye tracker and the laser, which allows him to reshape a patient's corneal tissue 1/4000th of a millimeter at a time while treating the largest possible corneal diameter and polishing its surface. To ensure optimal accuracy, the lasers are maintained on a regular basis by factory technicians and are calibrated before each patient by Dr. Sorgini.

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A History of Innovation Driven by Necessity

According to Dr. Sorgini, when he started performing laser eye surgery in 1995, there was no real equipment standard across the industry. The doctor wanted a way to keep his assistant visually aware of the status of the surgical procedure while he performed it. To accomplish this, Dr. Sorgini purchased a standard definition Panasonic camera and an adapter for the excimer laser. He then interfaced the two devices, which allowed the surgery to be visible on a monitor in the operating room.

“This visual imaging solution worked just fine, so we then started allowing a patient’s companion to sit in the operating room to provide support and watch the procedure,” said Dr. Sorgini.

A few years later, The Sorgini Eye Institute purchased a Leica microscope when the facility opened its own operating room. This microscope had a beam splitter that allowed Dr. Sorgini to mount a Panasonic camera directly on it, so he could use a monitor to assist during ocular procedures. It also allowed staff members and spectators to watch together in real time.

This further helped when the facility underwent its accreditation process. Required to watch an entire procedure as it takes place under the microscope, the licensing body could now view it on a monitor to ensure it meets government standards.

“Even though this was still just a standard definition camera, it turned out to be a huge thing,” said Dr. Sorgini. “We used this setup for a few years, and every time I would go to the American Academy meetings I would look at these new HD cameras and say, oh man these look great, but they cost 10 to 20 thousand bucks or more, and we can’t really afford that.”

“And then I came across the Panasonic i-PRO Sensing Solutions booth at the American Academy meeting. They were displaying a small two-piece HD camera with 4K resolution that looked great, at a price point that was far less than what I had been looking at from other manufacturers, so I bought one.”

4K Performance for Thousands Less

The Panasonic i-PRO 4K camera that Dr. Sorgini purchased was the GP-UH532 4K 3MOS Ultra HD Micro Camera with 1600TVL resolution. The two-piece camera system includes the GP-UH532HA camera head along with the CCU Unit GP-UH532CA. One of the smallest compact camera heads on the market, the GP-UH532HA features a 1/3-inch image sensor and employs a user interface designed for easy control of the system through an operation menu or a rotating knob. Six or more personal profiles can be stored on a USB memory, and these configurations can be switched to suit a variety of applications. The camera system features antibacterial coating and complies with IEC 60601-1 (basic safety and essential performance of medical

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electrical equipment) and IEC 60601-1-2 (electromagnetic compatibility requirements for medical devices) in the U.S. This camera also allows you to simultaneously display images on two monitors in the operating room, so all spectators have an unobstructed view of the procedure.

Plug-and-Play Integration

“Although the Panasonic i-PRO Sensing Solutions sales staff was always available and supportive, I didn’t really need their assistance installing the new 4K camera system. Once I found the converter, I just needed to physically mount the camera to the microscope, it was all pretty much plug-and-play as far I was concerned,” said Dr. Sorgini. “I know most doctors don’t like to do that kind of stuff, but it is something I’ve learned to pursue in the best interest of my patients.”

“When we first started with laser surgery, we kind of had to do everything ourselves. Everything was relatively new and being somewhat geographically isolated so far north in Ontario, we had little choice. This makes the reliability of this Panasonic i-PRO camera even more of an asset. But after all, it is a Panasonic i-PRO Sensing Solutions product, so I sort of expected it to live up to the company’s longstanding reputation,” concluded Dr. Sorgini. “I have a bunch of Panasonic products that are almost 20 years old, which I purchased even before my third child was born, and they’re still going strong.”

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About Panasonic i-PRO Sensing Solutions

Panasonic i-PRO Sensing Solutions Co., Ltd., is a global leader of advanced sensing technologies in the fields of Intelligent Surveillance, Public Safety and Industrial/Medical Imaging. Established in 2019, i-PRO was built on a legacy of over 60 years of innovation with Panasonic.

The company’s products, software and services extend human senses to capture moments of truth with innovations that inform and protect. In order to help create a safer world, Panasonic i-PRO Sensing Solutions Co., Ltd., supports the work of professionals who protect and save lives.

For more information visit [i-PRO.com](https://www.i-pro.com).


The Power of Truth