New: Hands-free infrared technology

By Designs for Vision Staff

Designs for Vision is introducing patented hands-free infrared technology with the WireLess™ IR, HDi™ and the Micro IR HDi headlights. These headlights feature HDi, high-definition imaging, Designs for Vision’s exclusive advanced photonic design that provides uniform light distribution with maximum intensity.

The patent-pending HDi technology optically focuses the light from the LED to provide 45 percent more light with uniform distribution.

The patented IR feature enables better infection control by letting you operate the headlight without touching the system. The IR headlights use a built-in infrared signal to enable you to turn the light on or off simply and safely. Onboard biometrics sense the position of the headlight to filter out unintended signals while working.

Designs for Vision has added the high-definition imaging to all of its headlights, including the LED Day-Lite® WireLess IR and the LED DayLite WireLess Mini, providing a lightweight cordless solution with light intensity comparable to many corded headlights. You can choose high-definition imaging with either a wired or wireless design to meet your preference, and any of the HDi headlights will illuminate the entire oral cavity.

Designs for Vision’s WireLess headlights free you from being tethered to a battery pack. The simple modular designs uncouple the headlights from a specific frame or single pair of loupes. Prior technology married a cordless light to one pair of loupes via a cumbersome integration of the batteries and electronics into the frame. The compact design of the LED DayLite WireLess headlights are independent of any frame/loupes.

The LED DayLite Micro HDi uses the new high definition imaging with a very lightweight headlight in combination with the Micro power pack. The Micro power pack is the lightest and smallest power pack. The complete unit includes two power packs, and each power pack can run up to 10 hours.

Designs for Vision is also featuring the REALITY 5-Star rated Micro 3.5EF Scopes and Micro 4.5EF Scopes utilizing a revolutionary optical design that reduces the size of the prismatic telescope by 50 percent and reduces the weight by 40 percent while providing an expanded field view of the oral cavity.

Designs for Vision is excited to announce that it recently expanded into a new 67,500 square foot location on Long Island at 4000 Veterans Memorial Highway, Bohemia, N.Y.
Align University Training Institute opens in Shanghai

By Align Technology Staff

Align Technology Inc. has opened the Align University Training Institute in Shanghai, China. This is Align's second training facility in China. The company opened its Chengdu training center in 2017.

This newest center represents the company's commitment to clinical education and support for dentists in China. It will be a major training facility that will enable Align to educate dentists and showcase the company's latest product and technology innovation in orthodontic treatment and digital dentistry.

“We see enormous potential in China, with a growing demand for Invisalign clear aligners,” said Julie Tay, Align Technology senior vice president and managing director, Asia Pacific. “As consumer demand grows, we want to ensure we provide our doctors with the latest innovation and training to deliver great outcomes for Invisalign patients — and ultimately more beautiful smiles. This is another important investment we are making in China to provide localized training and support to our doctors, as we continue to lead the industry in clear aligners and digital dentistry.”

According to the company, the Align University Shanghai Training Institute features state-of-the-art technology, including iTero intraoral scanners and dental simulation equipment. It holds three training rooms, including one multiple training room, a ClinCheck workshop room and a demonstration lab for iTero intraoral scanners and dental simulation equipment.

The institute will provide training, clinical education programs and demonstrations of the tools and processes used in a range of treatment options.

China is the second largest market for Align. The company opened its first office in Shanghai in 2011 and today has more than 1,200 employees in seven offices across China. To date, Align has trained more than 150,000 Invisalign practitioners worldwide.

Align Technology designs and manufactures the Invisalign® system — one of the most advanced clear-aligner systems in the world — and iTero® intraoral scanners and services. Align’s products help dental professionals to achieve the clinical results they expect and to deliver effective, cutting-edge dental options to their patients. You can visit www.aligntech.com for more information.

Here in Toronto

You can visit Align Technology in booth No. 204 to learn more about the Invisalign system and iTero digital scanning.
New scanner could move digital fence-sitters

By Dr. Hsuan Chen

The Primescan is the new intraoral scanner from Dentsply Sirona. For the dental professionals who are on the fence about joining digital dentistry, the Primescan presents an interesting choice. For the current CEREC users, on the other hand, social media might have just imploded with a collective, “It’s about time!”

But how much of it is hype, and how much is grounded in practical truth? Our very own Dr. Michael Tsao spent some time with this new machine and noted both its apparent strengths and weaknesses. In this article, I will attempt to distil our internal discussions and offer some insights and analysis on this fascinating device.

What is Primescan?
You can read all about its technical achievements and specifications at www.dentsplysirona.com/primescan.

In short, Primescan promises to be faster, easier to use and more accurate. At face value, these claims might not seem bold or even interesting, since every other major brand of intraoral scanners have said similar things about their scanners. This time, however, it seems like these promises are more than just marketing platitudes, as our analysis will show. But first, let’s talk about some physical comparisons between the Primescan and the Omnicam.

The interface
The Primescan kept the same cart design as the Omnicam, albeit with some distinct differences in how you control the user interface. The mouse cursor is now controlled with a touchpad, with two smaller regions underneath corresponding to the left and right mouse buttons. For CEREC users accustomed to the old scroll-wheel, it will take some getting used to.

Not only is the track ball gone, the keyboard is removed as well for a clean and minimalistic look. The battery is also apparently larger and actually able to support the use of Primescan without a power socket connection. The new touch screen is also 16:9 instead of 4:3, giving the user plenty more real estate to work with. Personally, I’ve had no complaints with the original design on the Omnicam, but keep in mind that the Omnicam will indeed get all the latest software updates, I feel that current users will be just as happy with the new Primescan. If you are planning a gradual conversion to the new digital workflow in restoratives, implantology or orthodontics, then the DI-focused Primescan is a great first step into the ecosystem.

The software
Admittedly, one of the changes that I am most excited about is the new design of CEREC 5.0 software. The blue background and button designs used in previous CEREC 4.x definitely looked dated (it was released in 2012, to be fair). Personally, I think they did a good job cleaning up the software interface.

During the event, Dentsply Sirona placed heavy emphasis on the new A.I. in the CEREC software. And that’s why it’s exciting to see the new CEREC 5.0 A.I., because it is capable of self-learning. The more time you work with it, the better its automatic margins and restoration designs will be. The even better news is that the learning processes are aggregated and centralized at a main server controlled by Dentsply Sirona, then distributed to all the end-users. This means that as a new Primescan or Omnicam owner, you can immediately take advantage of the most mature and smartest version of the software, trained by dentists all around the world.

Hands-on verdicts
Yes. Primescan does feel noticeably faster than the Omnicam, but keep in mind that the Omnicam is currently already one of the fastest scanners available. So how fast do you need, really?

Is Primescan easier to use?
As a veteran Omnicam user, Tsao had no trouble adjusting to the Primescan on the first try. The new scanner’s large imaging area and increased depth of field (up to 20 mm) seems to keep the image capture more continuous with out breaks. Note that the scanner is also bulkier and heavier, so if you’re not into heavy scanners this might be a small issue.

Is Primescan more accurate?
Accuracy can be divided into two components: trueness and precision. Trueness is how closely the data conform to reality (or the best approximation of reality), while precision is how closely the data conform to each other. These two concepts are mutually exclusive, and therefore can be tested separately.

According to tests completed at the University of Zurich, Primescan can achieve a local accuracy trueness of 14 µm and precision of 32 µm; and a global accuracy trueness of 32 µm and precision of 30 µm. (Results of other scanners can be found in the Journal of Applied Oral Science article “Local accuracy values for desktop and intraoral scanners,” Hei, 2016 at www.ncbi.nlm.nih.gov/pmc/articles/PMC4779014).
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New dental camera engages entire team

Revolutionizing clinical photography: Pre-programmed shooting modes enable dental camera users to navigate through tasks without extensive photographic skills or experience

By Shofu Dental Staff

Dentists who strive to increase the effectiveness of clear aligner therapies in their practice seek products that can engage their team members and improve the experience of a patient. Digital photography plays a key role in documenting treatments. With the right camera, team members can help increase the patient’s understanding of the clear aligner treatment for easy case acceptance. The EyeSpecial C-III camera from Shofu enables staff to take impressive images for case documentation, diagnosis, treatment planning, and patient communication and education. This digital dental camera has eight pre-programmed shooting modes so that clinicians and their team members can complete their photo series with ease and consistency. For every step of orthodontic photography, the EyeSpecial C-III will automatically set the appropriate f-stop, aperture and focal length to deliver consistent ideal photographs, leaving the camera’s operator to simply select a suitable mode. Incorporating intuitive functions tailored specifically for dentistry, the EyeSpecial C-III is designed to handle all clinical applications regardless of who is taking the photos. Combining the photos with a draw/edit function, which allows for making notes directly on images, is a unique attribute for effective treatment evaluation or a discussion about the progress or challenges associated with the modality. Engineered to provide functionality, the ultralight (weighing ca. 1lb) EyeSpecial C-III complies with infection control protocols. The camera’s body is water-, chemical- and scratch-resistant, and it can be swiftly disinfected with a sterilizing towelette.

Here in Toronto

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“...I was quite pleased to learn that in synchrony with its navigation capabilities, Navident simplifies the protocol and increases the accuracy of socket-shield technique!”

Dr. Jean-Francois Brochu, Prosthodontist, St-Hubert, Quebec

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Navident by Claronav
A revolutionary paradigm shift in dynamic surgical navigation

By George Mandelaris, DDS

A revolution in surgical guidance is afoot. A new dynamic navigation technology called “Trace and Place” (TaP for short), was developed by ClaroNav and will soon become available with its Navident system. I have had the opportunity to try the technology in a range of cases, and I am very impressed. Here’s a brief description of my experience.

Registration is accomplished using any recent CT scan of the jaw by selecting on-screen and then tracing three of the patient’s teeth or other structures (such as braces or abutments). The process is done in the chair, immediately before surgery. No stent or guide needs to be prepared, and the entire registration process is typically accomplished in about three minutes.

In the rare case something goes wrong during registration and an accuracy check fails to demonstrate the accuracy expected, the registration can be immediately repeated by tracing the same or other structures.

Once the jaw is registered with its CT scan, on-screen guidance of the drill position and orientation is provided. The jaw surface is fully exposed, just like with free-hand drilling.

Because the jaw often moves during the operation, the system continuously tracks the position of the jaw and adjusts the registration to keep the jaw and its on-screen image in accurate alignment. Tracking the upper jaw is accomplished using a special head-tracking frame, which is not affected by movements of the lower jaw or changes in facial expressions.

Tracking the lower jaw is accomplished by connecting a lightweight plastic “jaw tracker” part, marked with optical targets, to a single tooth using a light-cured composite. The motions of the drill are tracked using another plastic part marked with optical targets.

Streamlined and simplified

After only a short experience with Trace and Place technology in my practice, I have come to believe that it is a real tipping point for dynamic navigation guidance.

It has streamlined and simplified the workflow in both the diagnostic and surgical phases to allow state-of-the-art technology to be an everyday component of my surgical implant practice. I can’t imagine going back!