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## **PHOTONICS**

EDITION









## ScannerMAX

### **Shaping the Future of Laser Technology**



cannerMAX, a dedicated division of Pangolin Laser Systems, is driving innovation in the field of lasers.

It is led by William R. Benner Jr., president and CTO, who shapes the company's strategic direction and oversees all operations. He leads hardware and software development and explores new product and industry directions. Benner holds 50+ U.S. and international patents and has received commendations from U.S. President Ronald Reagan and Florida Governor Bob Graham. With over 35 international awards for technical achievements, Benner's inventions are utilized by renowned companies like Walt Disney World, Universal Studios, Boeing, and more.

Before the inception of ScannerMAX, Benner served as a consultant for numerous major optical scanning manufacturers. His extensive experience in this field positions him as one of the few individuals globally with a profound understanding of technology. He brings significant value to ScannerMAX, bolstering its position in the optical scanning industry.

"Our brand stands out among approximately 10 global companies, manufacturing the most specialized laser scanners, placing it at the forefront of industry innovation," says Benner.

#### **Broad and Ever-Expanding Range of Solutions**

The lack of comprehensive information and accessibility in laser scanner technology poses a significant challenge, particularly for advanced applications such as medical imaging and autonomous vehicles. Acknowledging this, ScannerMAX is paving the way for cutting-edge laser technologies, focusing on optical coherence tomography (OCT), confocal microscopy, and LiDAR applications.

The company brings a broad and ever-expanding range of solutions to its clients. The products include single-axis galvos, X.Y. scanning systems, ARC, and resonant scanners. The enhanced optical scanning systems are available with stronger, cooler, and faster performance. They support various beam diameters (1mm to 30mm) and scan angles up to 40 degrees. Clients can choose from single or dual-axis configurations to suit their specific needs.

These solutions are set apart by Benner's contributions to increasing the mirror aperture sizes. ScannerMAX's systems have versatile optical coatings (U.V., 1064nm, 10.6um) catering to applications like LIDAR, laser marking, 3D printing, and more.

ScannerMAX's products address the shortcomings of conventional galvanometer scanners, which are commonly criticized for overheating and producing "squiggles" in laser projections. The patented "stronger, cooler, faster" design eliminates these issues by enabling high-speed scanning without compromising stability or causing overheating.

What sets it apart is not just the hardware; the DSP-based servo driver adds a layer of flexibility unmatched by competitors. It offers analog and digital command support, including XY2-100. This driver consumes less power, generates minimal heat, and ensures optimal performance in scanning applications. Additional protocols include digital serial for synchronized sampling and real-time position feedback.

#### **Illuminating Educational Pathways Toward Innovation**

Benner's expertise in laser scanners, a niche with limited educational resources, led him to publish 'Laser Scanners: Technologies and Applications.'



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This book describes a variety of laser and optical scanners and how they might be used to create great products. Benner illustrates some existing products that use optical scanners, discussing several types of optical scanners and how they can be configured for one-dimensional, two-dimensional, and even three-dimensional scanning. This book emphasizes galvanometer-based optical scanners (commonly called "Galvos") because of their versatility and high optical throughput. Other types of optical scanners are also described, including acousto-optic, electro-optic, polygonal, resonant, and MEMS scanners. Several chapters are devoted to the design features of these "stronger, cooler, faster" devices. Additional information covers signal connections and general tips for designing a new product.

This book is a valuable resource for individuals seeking to understand and incorporate lasers into their products or projects.

ScannerMAX strives to bridge the knowledge gap by creating educational resources, providing aspiring individuals with the necessary understanding to navigate the complexities of laser scanner technology, and fostering a more informed community.

#### Navigating Supply Chain Challenges Amidst a Pandemic

ScannerMAX's competitive pricing and robust supply chain

management proved pivotal during the COVID-induced supply chain crisis. Based in Sanford, Florida, it maintained uninterrupted operations throughout the COVID-19 pandemic, ensuring a robust supply chain due to strategic parts procurement a year in advance. While larger companies struggled to meet demand, ScannerMAX maintained steady production and successfully filled the market gap, providing essential scanners to customers and cementing their reputation as reliable suppliers.

The company's accessibility, facilitated by direct communication channels and a dedicated line for ScannerMAX, fosters personalized engagement. With a team of 50, ScannerMAX stands out for its ability to provide tailored solutions, both standard products and custom-made, meeting diverse customer needs.

Anecdotes highlight the company's customer-centric approach. For instance, a recent interaction involved a renowned microscope manufacturer who was dissatisfied with their current scanner. ScannerMAX's reliability, quick response, and proactive understanding of the application made it a preferred choice, showcasing its commitment to customer success.

#### **Empowering Solutions through Collaborative Engagement**

The most recent engagement was with a customer seeking a crucial 50-millimeter mirror. The scarcity of laser scanner component manufacturers posed a challenge for them. Previous disappointments with other suppliers heightened their concerns about reliability.

ScannerMAX emerged as a transformative partner, addressing immediate needs and delving into the intricacies of the customer's application. Beyond the initial request, ScannerMAX provided tailored solutions, earning the customer's trust.

Benner highlights ScannerMAX's valuable partnership with Edmunds, emphasizing accessibility for customers. Edmunds stands out as a reliable distributor, consistently maintaining a stock of its best-selling offerings. This strategic collaboration not only benefits ScannerMAX but also ensures convenience for customers. For universities and smaller customers seeking a straightforward ordering process, Edmunds serves as a reliable platform, always ensuring the availability of ScannerMAX products.

The ScannerMAX division, active since 2012, has been instrumental in the industry. The dedicated team, integral since inception, combines extensive knowledge with a commitment to more than just products.

It engages collaboratively, offering guidance rooted in experience, ensuring reliable deliveries, and empowering customers to optimize implementation through shared expertise. This approach transcends transactional norms, reflecting a commitment to elevating solutions through experience and collaboration.