

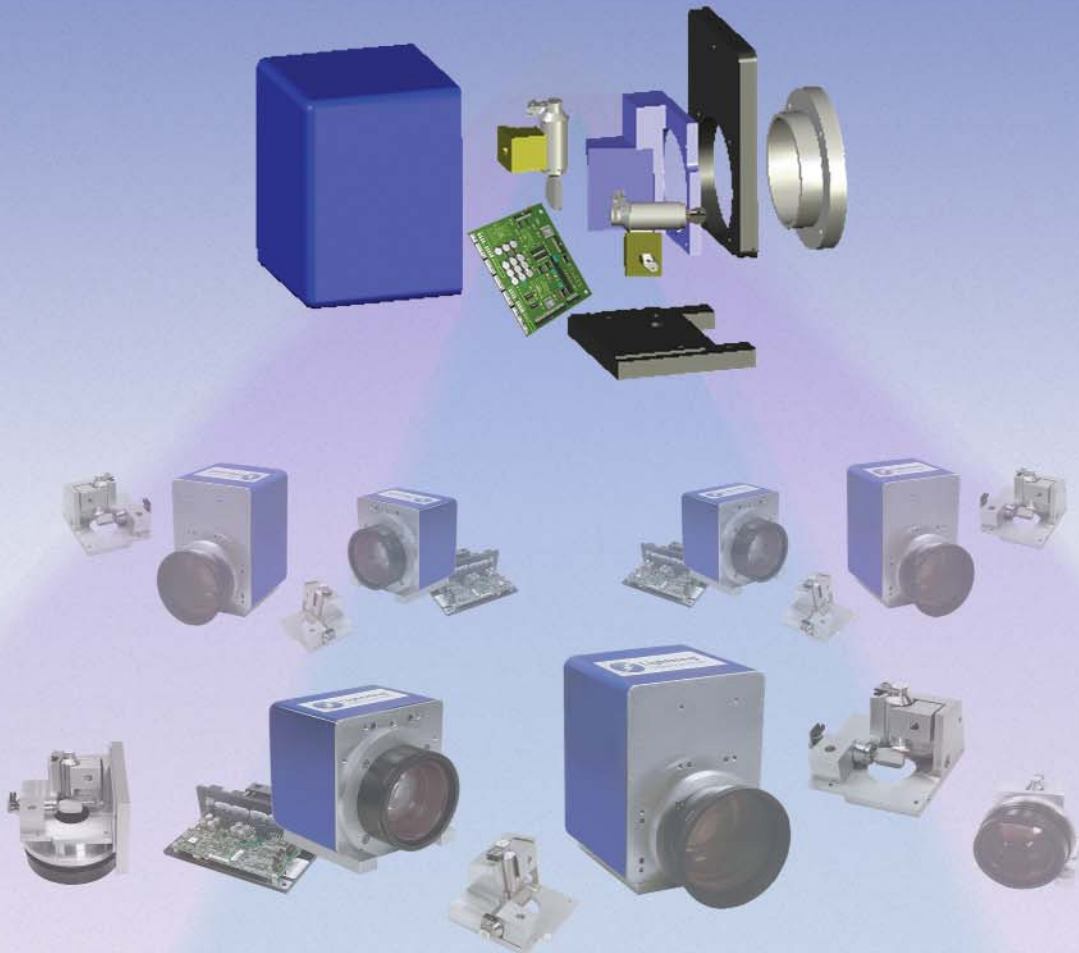


Lightning™
Digital Scan Heads

Preliminary

Make Your Laser Material Processing System Design a Reality

with the Modular Architecture of Our Plug and Play Digital Scan Head Family



Lightning Digital Scan Heads Offer Superior Performance and Unmatched Configuration Flexibility



Marking



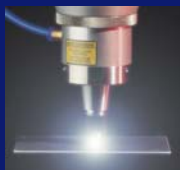
Welding



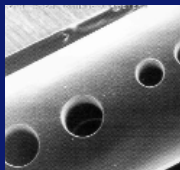
Cutting



Etching



Surface Treating

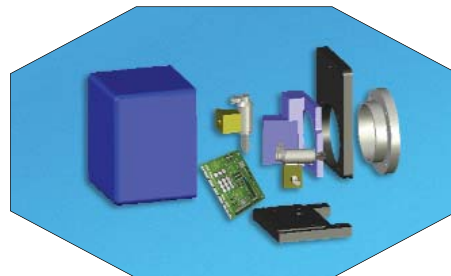


Drilling

General Scanning brings you features never before available in a scan head family. Named Lightning Digital Scan Heads, its performance was defined as "Best in Class" by our customers. It also offers you incredible design flexibility. Lightning Scan Head's modular architecture provides many configuration options for easy plug and play integration with your laser system design.

At the core of this new line of scan heads is General Scanning's ground breaking Lightning Digital technology which includes: fourth-generation MPower galvo motors, a second-generation digital servo driver, and our revolutionary TuneMaster™ servo optimization software. When configured as a scan head, these core components give improved beam steering with greater efficiency, superior performance and increased throughput.

Lightning Digital Scan Heads for Every Application



Three basic scan head design configurations evolved from the original modular design.

Enclosed scan heads with internal electronics are available in clear aperture sizes ranging from 7mm to 70mm.



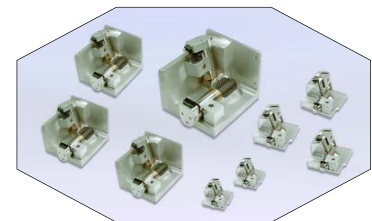
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2



Enclosed scan heads with remote electronics are available in clear aperture sizes range from 7mm to 70mm.

Open scan heads with remote electronics are available in clear aperture sizes range from 3mm to 70mm.



3

Key Specifications

- *Lightning Digital Technology*

- MPower Galvo Motors
- Lightning Digital Servo Driver
- TuneMaster Servo Optimization Software

- *Plug & Play*

- Analog or Digital XY2-100 Communication Protocol
- Standard Power and Communication Connectors
- Standard Mechanical Interface and Beam Path

- *Complete Family of Sizes*

- Clear Aperture Sizes of 3mm, 5mm, 7mm, 10mm, 14mm, 20mm, 25mm, 30mm, 50mm, 70mm

- *Modular Design Architecture*

- Open Scan Head with Remote Electronics
- Enclosed Scan Head with Remote Electronics
- Enclosed Scan Head with Internal Electronics

Next Generation Technology at the Core of Lightning Digital Scan Heads

TuneMaster Software

The TuneMaster toolset consists of three modules, each corresponding to a phase of the product life cycle: Development, Production and Support. By automating tune development in the "Application-Domain", tuning quality is optimized based on actual application results. In Production, this tune is automatically "personalized" for each specific scanner. And when support is necessary, systems are easily retuned to their original performance level after repair or maintenance. For details, visit: www.gs-scanners.com/opticalscanners/19-tunemaster.html.



Lightning Digital Servo Driver

General Scanning led the way with digital technology. Today, our second-generation digital servo design achieves even higher performance. Additionally, it provides dual-axis control in a form factor barely larger than many single axis boards. For details, visit: www.gs-scanners.com/opticalscanners/18-lightningdatasheets.html.

www.gs-scanners.com

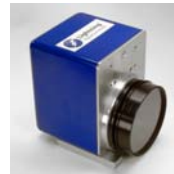
MPower Galvo Motors

General Scanning's family of 4th generation motors was designed with optimized coil winding and forming techniques to improve both motor efficiency (power transfer to the rotor) and heat transfer (coil-to-case conductivity). This optimization also provides the best balance of torque and response-time. For details, visit: www.gs-scanners.com/scannermotors/9-mpowerspecs.html.

Modular Packaging

Enclosed Scan Head with Internal Electronics

- Plug and Play
- Fully Packaged



Enclosed Scan Head with Remote Electronics

- Smallest Scan Head Size
- Reduced Heat in Scan Head
- Reduced Mass in Robotic Systems

Open Scan Head

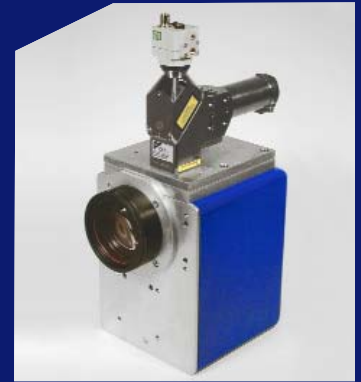
- Most Flexible



Customized to Your Application Requirements

New Lightning Digital Scan heads may be customized with our extensive selection of options. The list below outlines the major categories of available options:

- Lightweight Mirror Substrates
- Mirror Coatings
- Lens Selection
- Electrical Interface
- Mechanical Interface
- Laser Interface



Enclosed Scan Head with Electronics in Fiber Laser Application



Scan Head with Remote Electronics in Robotic Welding Application

To learn more about Lightning Digital Scan Heads, contact your local sales manager. Visit our website for the contact information: <http://www.gs-scanners.com/contact/30-sales.html>

To learn more about the Lightning Digital Scanner platform visit: www.gs-scanners.com for all the details.

To learn more about GSI Group, visit our corporate website: www.gsig.com

General Scanning is the world's leading optical scanner company with offices in major industrial centers around the globe. As one of fourteen product brands that comprise GSI Group, we deliver enabling technology that brings advanced applications to life in the medical, semiconductor, electronics and industrial markets.

GSI

A World of Enabling Technologies

Bringing Your Advanced Manufacturing Applications To Life

Enabling Technology

HEADQUARTERS

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