Novanta PHOTONICS

ENGINEERED BY CAMBRIDGE TECHNOLOGY

LIGHTNING™ II 2-AXIS MODULAR SCAN HEAD

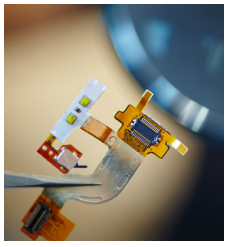
HIGH-PERFORMING DIGITAL SCAN HEAD FOR ADVANCED INDUSTRIAL APPLICATIONS

Novanta develops photonics solutions through our globally recognized brands— ARGES, Cambridge Technology, Laser Quantum and Synrad— specializing in cutting-edge components and sub-systems for laser-based diagnostic, analytical, micromachining and fine material processing applications. Powerful lasers, coupled with advanced beam steering and intelligent sub-systems incorporating software and controls, deliver extreme precision and performance, tailored to our customers' demanding applications.

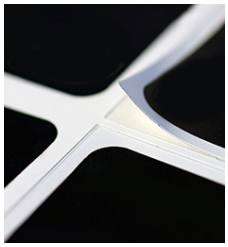
FAST & PRECISE SCANNING

Our LIGHTNING™ II digital scan head is the industry's most advanced scan head, enabling a broad range of advanced applications that require fast, precise laser beam scanning and continuous operation. High performance is achieved by integrating our optimized galvanometers, servos, mirrors, as well as software and controls into one scan head. THE LIGHTNING™ II model is ideal for advanced industrial and electronics applications such as via-hole drilling, laser additive manufacturing, converting, and micromachining.

Additive



Micromachining



Converting

Our scan heads may be configured with F-Theta lenses to support a variety of field sizes. A wide selection of mirror coatings is available to accommodate lasers ranging from UV to IR wavelengths. The modular interface enables compact system integration. Options of water-cooled or air-cooled galvanometer are available.

The 2-axis LIGHTNING™ II is ideal for advanced industrial and electronics applications.

DIGITAL PERFORMANCE

- Industry's most advanced scanning solution maximizes throughput and accuracy
- Uses 24-bit low drift encoder technology for ultra-high position accuracy and stability
- Includes Pulse-Width-Modulation drive for <90% servo power efficiency
- Beryllium mirrors are specially engineered to support high dynamic performance
- 24-bit command resolution using our ScanMaster Controller enables high precision
- A variety of tuning types available for specific applications

LIGHTNING™ II 2-AXIS MODULAR SCAN HEAD

Specifications	14 mm	20 mm	25 mm	30 mm
Mirror Aperture Size	14 mm	20 mm	25 mm	30 mm
Scan Angle	± 22°	± 20°	± 17°	± 20°
Step Response Time[1]	0.36 ms	0.37 ms	0.36 ms	0.55 ms
Typical Processing Speed	50 rad/s	50 rad/s	50 rad/s	50 rad/s
Wavelength Options	355 nm / 532 nm / 1030 nm - 1080 nm / 9.4 µm - 10.6 µm Broadband Coatings: 350 nm - 12 µm			
Repeatability[2]	<1 µrad			
Dither[2]	<1 µrad			
Long Term Drift[3]	10 µrad			
Temperature Drift	2 µrad/°C			
Linearity	99.9%			
Position Resolution	24-bit			
Digital Communication	GSBus or XY2-100			
Status Signals	Status Signals Position Acknowledge, System Ready			
Command Resolution	24-bit (GSB) or 16-bit (XY2-100)			
Cooling Water Temperature[4]	20.0°C ± 2.5°C			
Water Requirements[4]	Distilled water with corrosion inhibitor/algaecide such as Optishield® Plus or equivalent.			
Power Requirements	+15V to +48V DC, 3A RMS each, 6A peak			
Operating Temperature	15°C to 35°C			

Notes:
All angles are in optical degrees, unless otherwise noted. All specifications are subject to change without notice.
For product drawings, request CAD files from our representatives.

References:
1. X-axis, step size of 10 mrad-optical. 2. RMS, per axis. 3. During 8 hours of operation after 30 minutes of warm up, per axis. 4. For water-cooled galvonometer.

CONTACT US

Americas, Asia Pacific
Novanta Headquarters
Bedford, USA
P +1-781-266-5700

Photonics@Novanta.com

Europe, Middle East, Africa
Novanta Europe GmbH
Wackersdorf, Germany
P +49 9431 7984-0

Milan, Italy
P +39-039-793-710

Photonics@Novanta.com

China
Novanta Sales & Service Office
Shenzhen, China
P +86-755-8280-5395

Suzhou, China
P +86-512-6283-7080

Photonics.China@Novanta.com

Japan
Novanta Service & Sales Office
Tokyo, Japan
P +81-3-5753-2460

Photonics.Japan@Novanta.com

www.NovantaPhotonics.com