

Lincoln hyperSCAN Series Polygonal Scan Heads

Product Highlights

Lincoln hyperSCAN Series polygonal scan heads provide the ultimate performance in high-accuracy ultra-high-speed scanning applications. Designed for two dimensional fixed-field scanning, the hyperSCAN incorporates a multi-facet polygonal mirror DC brushless motor assembly (MPA), a "Start Of Scan" laser synchronization sub-system, and an f-theta lens to provide scanning speeds up to 200 meters/second. The scan head's integrated dual axes galvanometers enable Y-axis indexing, Y-axis cross-scan error correction, and f-theta lens barrel distortion compensation to deliver exceptional pixel placement repeatability.

The hyperSCAN is ideal for integration with ultra-short-pulse (USP) lasers in a variety of applications such as high-fill high-resolution marking and printing, precision micromachining, and more.

KEY BENEFITS

Polygonal Scan Head for High-Accuracy Ultra-High Speed Scanning

- Scan speeds of 70 - 200 m/s enables high productivity and throughput
- Optical error correction and lens distortion compensation for the most demanding applications
- Advanced system controller supports real-time control of scan head, lasers, and stages
- Available for 355 nm, 515 nm, 532 nm, 1030 nm, 1064 nm wavelengths

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Polygonal Scan Heads

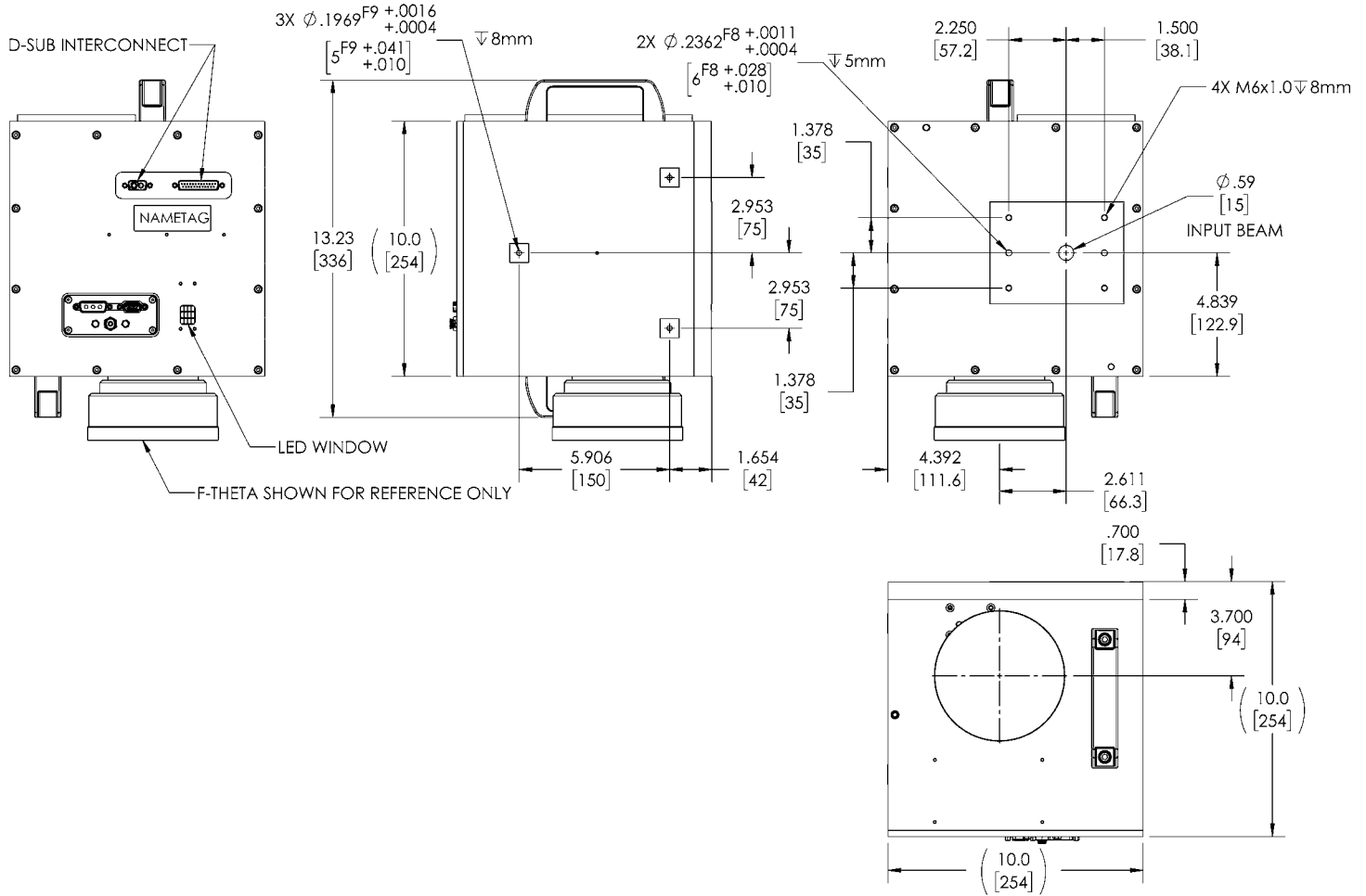
Product Specifications

Wavelength Options	355 nm, 515 nm, 532 nm, 1030 nm, 1064 nm
Scan Rate	217 - 616 lines/s
Scan Speed (on target) ¹	70 - 200 m/s
Output Scan Angle ²	±16° (Typical)
Input Clear Aperture	15 mm
f-theta Optics Focal Length	255 mm
Spot Size (M ² =1.0) at 532nm ³	25 µm
Field Size	160 mm X 160 mm
Resolution, X Axis	<3 µm
Resolution, Y Axis	<3 µm
Repeatability, X Axis ⁴	± 15 µm
Repeatability, Y Axis ⁴	± 15 µm
X-Y Axes Galvanometers	Yes
Start of Scan Sensor	Yes
CDA Purge Port	Yes
Control Card	Included, with software interface
Input Power	24VDC 3A, 48VDC 6A (scan head); 12VDC 2A (controller)
Data Cable Length	5m (16.4 ft) max.
Laser Requirements	Pulse on Demand (POD), Synchronization, Seed Frequency ≥ 50MHz
Operating Environment	25 °C ±10 °C ≤ 80% RH, non-condensing
Dimensions (excluding handles and scan lens)	10 in x 10.25 in x 10 in (254 mm x 260 mm x 254 mm)
Weight	approx. 22 kg.

References:

1. Calculated based on the scan rate and the use of an f-theta lens of 255 mm EFL
2. Larger scan angles available with reduced input beam size
3. Collimated input beam
4. Laser dependent

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Notes:
All dimensions are in inches, unless otherwise noted. All specifications are subject to change without notice.

About Cambridge Technology

With close to 50 years of expertise, Cambridge Technology designs, develops, and manufactures innovative beam steering solutions including polygon- and galvanometer-based optical scanning components, 2-axis and 3-axis scan heads, scanning subsystems, high power scanning heads, and controlling hardware and software. We excel in collaborating with our key OEM partners to engineer products that meet their needs from the largest engineering solution to the smallest component. Key market applications include advanced industrial processes like additive manufacturing, laser converting, laser marking, and via-hole drilling, and medical applications such as laser treatment and optical coherence tomography. Cambridge Technology is a Novanta company.

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