

**SAM ANNOUNCEMENT: SPECIAL NOTICE**

**CLASSIFICATION CODE:** 6640 – Laboratory Equipment and Supplies

**SUBJECT:** NOTICE OF INTENT TO SOLE SOURCE: Raith America Inc – Two identical 100 keV E-Beam Lithography systems

**SOLICITATION NUMBER:** NB680000-23-00605

**RESPONSE DATE:** March 8, 2023 @ 05:00 PM EST

**DESCRIPTION:**

The United States Department of Commerce (DOC), National Institute of Standards and Technology (NIST), Acquisition Management Division (AMD) intends to negotiate, on a sole source basis, with Raith America Inc, 1377 Motor Parkway, Suite 100, Islandia, NY 11749 for the purchase of the following systems to be utilized by NIST's Physical Measurements Laboratory (PML). The statutory authority for this acquisition is 4 FAR 6.302-1 Only One Responsible Source and No other Supplies or Services will satisfy agency requirement

NIST's CNST NanoFab seeks to acquire two identical high-resolution 100 keV electron beam lithography systems for installation into a class 100 multi-user CNST NanoFab cleanroom facility. The two new instruments shall replace the existing, end-of-life electron beam lithography tools, a technology that was introduced in 2004. The clean room facility is located at the NIST Gaithersburg, MD site and is used as a shared resource that is accessible to researchers from industry, academia, NIST, and other government agencies. The added capability will allow us to reproducibly define nanoscale features on a variety of substrate surfaces including: 5-inch and 6-inch (6025 plates) photomasks; substrate sizes ranging from small 2 mm square pieces up to semi-spec semiconductor silicon substrates with diameters up to 200 mm; and non-standard substrate sizes with irregular topographic landscapes and thicknesses exceeding 10 mm, such as optical lenses and thick patterned substrates. The two identical high-resolution 100 keV electron beam lithography systems allow for repeatable lithographic processing of semiconductor substrates, thereby ensuring product performance, quality, and reliability. This capability will be available in the CNST NanoFab as a resource accessible to NIST and external researchers.

NIST intends to purchase the following:

2 QTY, Raith America Inc EBPG5200 PLUS Electron Beam Lithography (EBL) Systems with the following performance characteristics:

Based on the Government's market research, only Raith America, Inc. can provide a commercially available product that meets the following combined minimum specifications:

- Operating at an accelerating voltage of 100 keV
- Allows for operation at a beam energy of 50 keV
- Integrated stainless steel 10 substrate holder load lock system that accommodates a variety of photomask and substrate sizes, within a vacuum environment.
- Resolution and overlay accuracy of 1mm
- Field size greater than or equal to 1mm x 1mm
- Variable address pixel grid with a variable field size down to the 1mm field size.

- Allows users access to the pattern generator to access a library of existing integrated vectorized shapes and to create new vectorized shapes
- A Z stage that allows for stage motion in the Z-direction of greater than or equal to 10mm

Raith America, Inc. is the sole manufacturer and distributor of the commercial equipment that meets the required combined minimum specifications.

The North American Industry Classification System (NAICS) code for this acquisition is 333242 – Semiconductor Machinery Manufacturing, with a small business size standard of 1,500 employees.

A determination by the Government not to compete the proposed acquisition based upon responses to this notice is solely within the discretion of the Government. Information received will be considered solely for the purpose of determining whether to conduct a competitive procurement.

No solicitation package will be issued. This notice of intent is not a request for quotations; however, all responsible sources interested may identify their interest and capability to respond to this requirement. Interested parties that believe they can satisfy the requirements listed above must identify their capability in writing before the response date of this notice. **Only responses received by 05:00 p.m. Eastern Standard Time on March 8, 2023 will be considered by the government.** Responses shall be submitted via email to forest.crumpler@nist.gov.

**Contracting Office Address:**

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Bldg. 301, Mail Stop 1640  
Gaithersburg, Maryland 20899-0001