



Single Source Justification (Simplified Acquisition)

Section A: General Contract Information

Is this a Bridge Action as defined in the [AF Bridge Action Reduction Plan](#)?

☐ Yes

☒ No

Contracting Activity: 10 CONS/PKB

Project/Program Name: Falcon ODIN

Purchase Request / Local ID Number: F4BWB03025A001

Estimated Contract Cost (including Options):



Section B: Description of the Supplies/Services Required

Rotation stages will be used in a space experiment called Falcon ODIN. The rotation stages will provide the capability to point two mirrors in directions commanded from the ground. A quantity of 8 rotation stages is needed to perform the functions necessary on the space station. Additional specifications include:

- Operational temperature of at least -10C to 30C
- Vacuum rated to at least 10^{-6} torr
- Rotate at least 2 degrees per second
- Move in two axis in the field of regard
- Have at least +/- 7 degrees of angle range (for mirror mount types)
- No built-in controller (need to operate it from our own microcontroller)
- Built-in encoder for closed-loop operation
- Hold at least 2kg load (for rotation stages)
- Lightweight (if possible)
- Each stage no larger than 2"x2"x1"
- Each stage no more than 1 amp current draw

1EA Microcontroller

Section C: Justification for Soliciting from a Single Source or Brand Name

The Micronix Rotation Stage is currently designed to work with existing instruments. A different rotation stage will significantly impact both the overall schedule and delivery date of our project. The rotation stages are needed to be delivered as soon as they are manufactured. In order to maintain the delivery of the payload, the rotation stages need to be available for use as early as possible. This lab builds both an engineering model as well as a flight model, the flight model must be available for delivery no later than December of 2023, but in order to meet that goal, the engineering model must be built no later than March of 2023. The rotation stages are critical to this build, and need to be delivered in as short a window as possible. The stages must be manufactured to survive extreme temperatures found in space, while being compatible with the commands we send them, no other rotation stages have been identified in the market research that can survive at -10 degrees C, as required by NASA.

Section D: Efforts to Obtain Competition

Market Research conducted with ThorLabs, MKS (Newport), Newmark Systems, PI-USA and Micronix show that only Micronix can produce the rotation stage meeting the extreme temperatures and manufactured for delivery within a reasonable date. Micronix who was the only vendor identified who was able to modify their product and meet the delivery by date. All the other vendors were not able to meet all of the requirements.

Section E: Steps to Preclude Future Single Source or Brand Name Awards

The use of different rotation stages may require a full redesign, additional reconfigurations and testing procedures will enable



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competition in the future.

Section F: Contracting Officer's Determination

I have determined, in accordance with [FAR 13.106-1\(b\)\(1\)](#), that the circumstances of this contract action deem only a single source is reasonably available.

Date	Typed Name and Rank/Grade of Contracting Officer	Signature of Contracting Officer
24-Feb-2023	Kristin A. Heikkila/NH-03	HEIKKILA.KRISTIN.A.115422 9961 <small>Digitally signed by HEIKKILA.KRISTIN.A.1154229961 Date: 2023.02.24 13:55:45 -07'00'</small>