Requirements / Specification Document

Use this document to detail specifications/requirements for an item and/or ancillary services. ⓘ

TITLE: **Compact 1156 nm Fiber Lasers for Portable Clocks** ⓘ

Requesting Lab/Division/Group: Physical Measurements Lab/Time and Frequency Division/Neutral Atom Optical Clocks Group

General Statement of Need ⓘ

NIST is assembling a portable optical clock to advance time-keeping technology. A compact, narrow-linewidth laser is required to lock to the optical cavity, and this must be done with minimal additional pieces to ensure portability of the clock system. This purchase concerns purchase of such a clock laser.

Items and/or Ancillary Services ⓘ

Item 1: Compact 1156 nm fiber lasers for portable clocks
Quantity: Two (2)
Specifications:
1.1: Fiber laser with >10 mW optical power output from a PM fiber with APC connector polarization extinction ratio better than 20 dB.
1.2: Operation at 1156.839 nm with tuning range >.35 nm.
1.3: Combined laser and controller fit within 250 mm x 125 mm x 40 mm.
1.4: Linewidth below 5 kHz at 100 us integration time.
1.5: Warranty > 22 months
1.6: Slow feedback option utilizing PZT based tuning with bandwidth >5 kHz.

Separately Priced Options and Services:
Item 2: Acoustic-Optical Modulator for feedback
Quantity: Two (2)
Specifications:
1.1 feedback bandwidth >450 kHz,
1.2 feedback range:>±5MHz
1.3 power loss from input less than 3.5 dB

[List any other item(s) or service requirements here using the same format above.]

Service Requirements / Item Specifications

Section ⓘ	Requirements/Specifications ⓘ
Planning Considerations ☒ N/A	☐ List any visits required to allow potential vendors to see site specific constraints. [Explain requirement here] ☐ US citizen required on-site (foreign nationals require preregistration 30 days prior) ☐ Vendor rep on-site more than three days ☐ Other considerations: [List other considerations to ensure an accurate quote]

Shipping & Delivery ☐ N/A	[Enter shipping and delivery information by item here.] **Shipping criteria:** ☒ Partial delivery acceptable ☐ Direct delivery to building required [Explain need for requirement here] Building has: ☐ Loading dock ☐ Containerization preference: [Choose container] Other requirements: [List any other requirements here] **Delivery date criteria:** ☒ Delivery of goods, installation, and training shall be completed no later than: 12 weeks ARO ☐ Deliver no earlier than: [Insert date here] ☐ Other: [List other shipping, delivery, or specil requirements]
Electronic Media ☒ N/A	[Enter electronic media requirements by item here.] ☐ Software ☐ Electronic manuals ☐ License Key ☐ Other: [List any other Electronic Media requirements here] [Enter email address for software delivery here]
Installation ☒ N/A	[Enter installation requirements by item here.] ☐ Vendor technician on site ☐ Rigging ☐ Uncrating / Unpackaging ☐ Removal of packaging material ☐ Equipment set up ☐ Start-up services ☐ Turn key installation ☐ Other [Enter details here.] Note: When installation is required, TPOC or COR shall be the coordination point.
Facility / Utility Considerations ☒ N/A	[List site specific utility considerations by item here.] ☐ OFPM Work Order Number(s) [List any Work Order Number(s) here] ☐ Power available Voltage: [Enter voltage here] (V) Max Current: [Enter max current draw here] (A) Phase: [Choose phase] Frequency: [Typically 60Hz] (Hz) NEMA Plug Type: [Enter plug type here] (i.e.: NEMA L5-20P) Environment: [Choose environment] Other power consideration: [List any other power considerations here] ☐ Utility connections: [List relevant available utilities, pressure(s), and flowrate(s)] ☐ Other considerations: [List other considerations to ensure an accurate quote]

Warranty ⓘ ☐ N/A	Base Manufacturer Warranty is acceptable [If you require an Extended Manufacturer Warranty, describe the warranty requirements per item here.] What is included? ☐ Labor ☐ Parts ☐ Travel ☐ Cost and liability for returns ☐ Other: [Enter other requirements here] ☐ Warranty length: [Enter warranty length here] Period Length:[Ex. month, 6 month, year etc.]
Training ☒ N/A	[Training requirements (who, when, what, where) here. If on-site, is travel necessary?] ☐ On-site ☐ Off-site location: [Enter location(s) here] ☐ Number of trainees: [Enter number of trainees here] Scope of training: ☐ Operations ☐ Maintenance ☐ Troubleshooting ☐ Safety ☐ Other: [Enter other scope requirements here] ☐ Training materials to be provided: [Describe requirement here] ☐ Other: [Enter other training requirements here] Note: When training is required, TPOC or COR shall be the coordination point.
Inspection and Acceptance ☐ N/A	[Enter inspection requirements per item here] ☒ Planned government acceptance testing (7 business days) ☐ Gov't acceptance expected to take longer than 7 business days: [Duration] ☐ Inspection and acceptance plan: [Explain here] ☐ Other: [Enter other requirements here]
Maintenance ⓘ ☒ N/A	[Describe your maintenance requirements per item here] Period Length: [Ex. month, 6 month, year etc.] What is included? ☐ Labor ☐ Spare parts ☐ Consumables ☐ Travel ☐ Cost and liability for returns ☐ Software updates ☐ Manuals ☐ Service plan length: [Enter service plan length here] ☐ Other: [Enter other requirements here] ☐ Requirements: [Enter requirements here] (i.e.: onsite within 72 hours, etc.) ☐ Option Period 1 ☐ Option Period 2 ☐ Option Period 3 ☐ Option Period 4
Government Furnished Material / Equipment ☒ N/A	[List any government furnished material/equipment per item here] ☐ Samples for testing ☐ Government equipment which will leave gov't site (TPOC must coordinate with division property custodian) Serial Number: [Enter Serial Number here] Description: [Enter description here]

	NIST property number: [Enter NIST property number here] ☐ Other: [Enter other details here]
Travel ☒ N/A	[Describe any travel requirements per item here] ☐ Explain: [Explain here] ☐ Other: [Enter other requirements here] *Vendor: To the maximum extent possible, include as part of appropriate sections above (maintenance, repair, etc.). Otherwise, it will be a separate line item, reimbursable per the Federal Travel Regulation.*

Provide suggestions to improve this form by clicking here.