Requirements / Specification Document

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

TITLE: 759 nm Butterfly-packaged Lasers and Laser Amplifiers ⓘ

Requesting Lab/Division/Group: Physical Measurements Lab/Time and Frequency Division/Neutral Atom Optical Clocks Group
NB688000-26-02448

General Statement of Need ⓘ

The Neutral Atom Optical Clocks Group at NIST requires a compact, single-mode, butterfly-packaged semiconductor lasers and laser amplifiers operating at 759 nm.

Items and/or Ancillary Services ⓘ

Item 1: Semiconductor Laser Amplifier and Evaluation Board Mount
Quantity: Two (2)
Specifications:
1.1 - Laser power amplifier at 759.35 nm.
1.2 - Polarization maintaining fiber-coupled input, APC connectorized.
1.3 - Free-space, collimated output.
1.4 - Output power of >=1.5 W for an input power of <= 10 mW.
1.5 - Packaged in standard 14-pin butterfly package.
1.6 - Integrated thermoelectric cooler and thermistor
1.7 - Evaluation board mount with thermal heat sink and electrical connections for Arroyo 6340 laser controller

Separately Priced Options and Services:
Item 2: Compact Semiconductor External Cavity Diode Laser
Quantity: Three (3)
Specifications:
1.1 - External Cavity diode laser at 759.35 nm.
1.2 - Total laser system must be packaged in standard 14 pin hermetically-sealed butterfly package.
1.3 - Polarization maintaining fiber-coupled output, APC connector.
1.4 - Mode-hop free tuning range >10 GHz.
1.5 - Coarse tuning range of 1 nm or more.
1.6 - Laser linewidth < 150 kHz.
1.7 - Output power 10 mW or more (fiber-coupled).
1.8 - Laser package includes integrated optical isolators with >50 dB isolation.
1.9 - Integrated thermoelectric cooler and thermistor

Item 3: Compact Single-Frequency Distributed Feedback Laser
Quantity: One (1)
Specifications:
1.1 Distributed feedback (DFB) laser at 759.35 nm.
1.2 Packaged in a standard 14 pin hermetically-sealed butterfly package.
1.3 Polarization maintaining fiber-coupled output, APC connector.
1.4 Output power >=12 mW
1.5 Laser linewidth <= 2 MHz
1.6 Includes integrated thermoelectric cooler and thermistor.

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: 16-18 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: 21 days
☐ 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.