



## CSIR - NATIONAL PHYSICAL LABORATORY

(Council of Scientific & Industrial Research)

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### **Subject: Invitation of Expression of Interest for the Procurement of “Fiber Bragg Grating Force”**

CSIR-National Physical Laboratory, New Delhi is one of the earliest national laboratories set up under the Council of Scientific & Industrial Research. CSIR-NPL is the custodian of National Standards and maintains the Indian Standard Time (IST). It is mandated to be India’s National Measurement Institute (NMI) by an act of Parliament. CSIR-NPL disseminates precision measurements that are needed for the growth of Indian science and industry as well as for the legal metrology needs of the nation. Over the years the laboratory has developed expertise in the subject enabling it to shift its basis for measurement standard from ‘artifact’ to quantum standards. The laboratory provides apex level calibration services in the country; offering National Accreditation Board for Testing and Calibration Laboratories (NABL), the national accreditation body in the country.

EOI are hereby invited through Central Public Procurement (CPP) Portal <https://epublishing.gov.in/eprocure> through **OFFLINE HARD COPY** of offers from manufacturers, their authorized distributors and Indian Agent of Foreign principals, if any, under the provision of various policy initiatives and notifications issued by various Ministries / Departments of the Govt. of India for purchase of items listed below:

**Ref no. 14-VIII/SKG(33-GTE)2024PB/T-39**

### **Procurement of “Fiber Bragg Grating Force”**

Last date of submission: 22<sup>nd</sup> July, 2025 upto 03:00 PM

Date of opening : 23<sup>rd</sup> July, 2025 at 03:00 PM

Interested bidders may download the details form our website: [www.nplindia.org](http://www.nplindia.org) or on (CPP) Portal (<https://epublishing.gov.in/eprocure> under tender ID **2025 CSIR 804354 1** and if you need any query may contact on e-mail [surya.kumar.gautam@nplindia.org](mailto:surya.kumar.gautam@nplindia.org).

**Sr. Controller of Stores and Purchase**

**Subject : Invitation for Expression of Interest (EOI) for the procurement of “Fiber Bragg Grating Force”**

CSIR-National Physical Laboratory, New Delhi has the responsibility of realizing the units of physical measurements based on the International System (SI units) under the subordinate legislations of weights & Measures Act 1956 (reissued in 1988 under the 1976 Act). NPL also has the statutory obligation to realize, establish, maintain, reproduce and update the national standards of measurement & calibration facilities for different parameters. CSIR-NPL is the custodian of National Standards and maintains the Indian Standard Time (IST). It is mandated to be India's National Measurement Institute (NMI) by an act of Parliament. CSIR-NPL disseminates precision measurements that are needed for the growth of Indian science and industry as well as for the legal metrology needs of the nation. Over the years the laboratory has developed expertise in the subject enabling it to shift its basis for measurement standard from 'artifact' to quantum standards. The laboratory provides apex level calibration services in the country; offering National Accreditation Board for Testing and Calibration Laboratories (NABL), the national accreditation body in the country.

**Broad Objectives:-**

EOI are hereby invited from reputed engineering/fabricating companies/firms for putting up “Fiber Bragg Grating Force”. Firms can apply with technical datasheet and/or scheme, along with the documentary evidence for work of similar nature done in the past, if any. The firms should also meet the other parameters as given below and are required to submit following information along with their applications.

- 1.) Name of the firm with their constitution/proprietorship/partnership details etc., with the date of establishment/registration.
- 2.) List of similar orders successfully completed in the last three years as above with testimonials from department concerned and the details of contact persons, if any
- 3.) The firm should not have incurred any loss in more than two years during the last five years ending 31<sup>st</sup> March 2025.
- 4.) List of works in hand giving nature of work, department, cost, date of start and completion with present progress and the contact details of clients.
- 5.) Balance sheet of the firm for previous two years (2023-2024 and 2024-2025) must be enclosed with the offer certified by chartered accountant evidencing turnover.
- 6.) The article of association in order to know the standing of the firm.

Un-priced Offers against this EOI should be submitted to “The Director, CSIR-NPL, Dr. K.S. Krishnan Marg, New Delhi-110012, Main building, Room No. 160, Purchase Branch as per the requirement. Last date of submission of EOI is 22<sup>nd</sup> July 2025 upto 03:00 PM. Shortlisted firms shall be called for making a presentation at a later date.

If any information furnished by the applicant is found incorrect at a later stage, it shall be liable to be debarred from tendering/taking up of work in CSIR. CSIR-NPL reserves the right to verify the particulars furnished by the applicant; independently. CSIR-NPL reserves the right to reject any prospective application without assigning any reason.

## **Brief description of Expression of interest for the procurement of “Fiber Bragg Grating Force”**

### **Specifications:**

#### **Proposed Technical Specification of “FIBER BRAGG GRATING FORCE”**

##### **FBG Sensor Specification**

<b>Parameter</b>	<b>Range</b>
Sensitivity per FBG	1.1 pm/N
Calibration factor	435 N/nm
Resolution	<1 N
Measurement range	0-500N
Limit load	1000N
Breaking Load	1250N
Temperature effect on zero signal	0.1 % of Cn/10°C
Linearity deviation	1% of Cn
Operation temperature range	-20 ... 75C
Bragg wavelengths	1580 and 1590 nm
FWHM, reflectivity and side lobe suppression	≤ 0.3 nm, 21 ± 4 %, > 10db
Connector	Huber+Suhner Q-ODC-2

##### **Interrogator Specification**

<b>Parameter</b>	<b>Range</b>
Measurement range	100 [1500 ... 1600] nm
Resolution/Repeatability	<1pm
Stability/Reproducibility	5pm
Optical connectors	FC/APC
Sample rate	1S/s
Optical detection method	Logarithmic
Dynamic range	➤ 50 db
Consumption	24 W
Operation Temperature	0 TO 50 °C
Mechanical tests Sinusoidal vibration (EN60068-2-6) Acceleration	2.5g0-pk
Degree of protection (EN60529; IEC529)	IP40
EMC requirements	Per EN 61326

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