भारतीय उष्णदेशीय मौसम विज्ञान संस्थान
(पृथ्वी विज्ञान मंत्रालय, भारत सरकार का एक स्वायत्त संस्थान)
डॉ. होमी भाभा मार्ग, पाषाण, पुणे - 411 008

IITM

INDIAN INSTITUTE OF TROPICAL METEOROLOGY
(An Autonomous Institute of the Ministry of Earth Sciences, Govt. of India)
Dr. Homi Bhabha Road, Pashan, Pune - 411 008. India

सं. पीएस/125/32/2025 दिनांक – 13 मई 2026

सेवा में / To,

विषय- "विस्तारित क्षमताओं वाले एयरोसोल लिडार" की आपूर्ति, स्थापना और कमीशनिंग - (मात्रा - 2 सेट) के संदर्भ में।

Sub – Supply, Installation & Commissioning of Aerosol Lidar with Extended Capabilities Qty - 2 Sets.

Ref - This Institute's Tender enquiry of even number dated PS/125/32/2025

प्रिय महोदय/ Dear Sirs,

यह संस्थान उपरोक्त विषयानुसार सामग्री की खरिद करना चाहता है। इसलिए इच्छुक बोलीदाताओं से अनुरोध है कि अपनी तकनिकी तथा कीमत बोली निम्नलिखित निर्देशानुसार प्रस्तुत करें।

This Institute wishes to procure goods as per subject cited above. Therefore, interested bidders are requested to submit their Technical and Price bids as per the instructions given below;

बोली प्रस्तुत करने की अंतिम तिथि बोली प्रस्तुत करने की अंतिम तिथि दि. 19 मार्च 2026 से 28 मई 2026 तक 1500 बजे तक बढाई जाती है।

The last date of submission of bids is extended from 19th March 2026 to 28 May 2026 upto 1500 hrs.

For Updated Techical Technical Specification please refer pre-bid minutes. All other terms and conditions will remain unchanged.

तकनीकी विशिष्टताओं की अद्यतन जानकारी के लिए कृपया प्री-बिड मिनट्स देखें। अन्य सभी विनिमय एंव शर्ते अपरिवर्तित रहेंगी।

तकनिकी बोली उसी दिन 1530 बजे ऑनलाइन पद्धती व्दारा खोली जाएगी ।

Bids will be opened on the same day at 1530 hrs. through online mode only.

बोलीदाता जो उपर्युक्त निविदा में भाग लेना चाहते हैं, उन्हें वेब पोर्टल https://moes.euniwizarde.in पर उपलब्ध सूचना के अनुसार पंजीकृत करना होगा।

Bidders willing to participate for the above tender, has to get registered themselves on web portal https://moes.euniwizarde.in as per the instruction available at there.

धन्यवाद / Thanking you.

ygkad 13/5/2026

(श्रीमति योगिता कड / Smt. Yogita Kad)
प्रशासनिक अधिकारी (पीएसयू) / Administrative Officer (PSU)
कृते निदेशक / for Director

दूरभाष / Telephone: (020) 25904200 / 25865053 | फैक्स / Fax : (020) 25865142 | वेब / Web : www.tropmet.res.in

भारतीय उष्णदेशीय मौसम विज्ञान संस्थान, पुणे

INDIAN INSTITUTE OF TROPICAL METEOROLOGY, PUNE

Minutes of the Technical Evaluation Committee (TEC) meeting held on 24 March 2026

Response for prebid minutes for Aerosol lidar with extended Capabilities on 02 March 2026 Tender no. PS/125/32/2025 dt 19 Feb 2026.

The Director, IITM Pune, has constituted a technical evaluation committee (TEC) for processing proposals related to the "Aerosols, chemistry, Cloud Lightening & electricity" Instruments Vide No. Comm./2025/68 date 04 Aug 2025. The primary mandate of the committee was to finalize specifications for various instruments, to evaluate the technical bids received and provide the acceptance of the Instruments. Accordingly, TEC meeting was convened to finalize the IITM Response to the Prebid minutes for Aerosol lidar with extended Capabilities on 02 March 2026, at 16:00 IST in the Aryabhata Conference Hall, IITM Pune.

The following vendors are participated in the Prebid meeting on 02 March 2026, 15:00 IST:

SNO	Indian supplier / vendor for the representative of OEM	OEM for the Instrument
01	Pollution equipment & controls	Raymetrics
02	M & G Analyser Systems	CIMEL
03	SGS weather and environmental systems Pvt ltd	Purple pulse Lidar Systems

The Committee noted that, except for the laser energy specification, no other technical queries were of major concern. After thorough discussion, the Committee recommended that the laser energy requirement be specified as ≥190 mJ for flash lamp lasers and ≥100 mJ for DPSS lasers. Other minor comments were also reviewed and recommended, as detailed in Table 1 and Annexure 1.

Due to a technical issue with the microphone, Dr. Ernest Raj was unable to provide his inputs during the meeting. However, following a subsequent telephonic discussion, the following comments are provided: (i) The proposed IITM responses are agreed. (ii) Considering that a high-power laser system is proposed, system stability needs careful evaluation. In this context, as a similar lidar system is operational at NPL, Delhi, it is suggested that the IO visit the NPL lidar facility to better understand the overall laser system, energy, and its stability.

Table 1. List of the Queries raised and communicated to IITM for Tender no. PS/125/32/2025 dt 19 Feb 2026.

SNO	Bidder	Queries and clarification	IITM Response
01	Pollution equipment & control / Raymetrics	The following clauses may be inserted: However, in terms for Experience and Technical Capability under the Chapter 5 “Qualification Criteria.” •20+ years of continuous LiDAR manufacturing activity •Proven financial stability (include turnover range for the last 10 years) •In-house R&D (not university), engineering, manufacturing, QA, and integration •Documented international installations (list) •Long-term operational systems (>15 years in field of manufacturing-company registration certificates). •Must publish scientific paper on the actual working LiDAR not on prototype or university grade.	No change in the Qualification Criteria. Please refer to the relevant terms and conditions already specified in the tender document “Chapter 5: Experience and Technical Capacity”
02	SGS/Purple Pulsed lidar systems M& G / CIMEL	The requirement of laser pulse energy >190 mJ should be clearly specified for the laser type (flash lamp or DPSS), as it significantly affects cost and performance.	*Laser Energy ≥190mJ for Flash lamp /* *Laser Energy ≥100mJ for DPSS.* *The vendor should provide the Laser datasheet.*
03	Purple pulse lidar systems	Kindly clarify whether all three measurement components (1) Aerosol	Yes, all the three components and associated products are mandatory.

		Extinction, (2) Temperature, and (3) Water Vapour are mandatory deliverables under the system specification.	
04	SGS-Purple pulse lidar systems	Delivery period may extend to 12 months.	The delivery period cannot be extended. Please refer to the relevant terms and conditions specified in the tender document.

Annexure I

Table 1. Technical Specification for Aerosol Lidar with Extended Capabilities.
Tender no. PS/125/32/2025 dt 19 Feb 2026.

1.	**Aerosol Lidar with Extended Capabilities**	**Aerosol Lidar with Extended Capabilities**
2.	**Quantity**	02 Nos
3.	**Vertical(s) of mission Mausam to which the instrument belongs**	Urban and Weather_Mod
4.	**Purpose of the instrument**	The proposed instrument is a state-of-the-art, fully automated Aerosol Lidar System equipped with advanced capabilities to measure vertical profiles of aerosol backscatter, extinction, depolarization, atmospheric temperature, and water vapor.
5.	**Brief details about the Instrument**	The primary purpose of the instrument is to provide high-resolution, continuous vertical profiling of atmospheric aerosols, temperature, and water vapor to support advanced research and operational monitoring of air quality, weather, and climate. By capturing detailed information on aerosol properties and thermodynamic parameters in the lower and upper atmosphere, the system enables improved understanding of aerosol-cloud interactions, boundary layer dynamics, and radiative forcing. It plays a crucial role in enhancing fog and smog forecasting, studying urban heat stress, validating satellite and model data. Designed for continuous 24/7 operation under harsh outdoor conditions, with global standards.
7.	**Technical Specification of the Instrument**	

	Section	Parameter	Specification Requirement
	General	Lidar Type	Turnkey, outdoor, automated LIDAR operations.
		Measurement capabilities	Vertical profiling of aerosol backscatter, extinction, depolarization, temperature, & water vapor. The system should comply with any global measurement design guidelines. For example, ACTRIS (Aerosol, Clouds and Trace gases Research Infrastructure) design guidelines or equivalent.
		Operation	24/7 unattended operation, remote-controllable
		Design	Compact, Modular and upgradeable
	Transmitter (Laser)	Laser Type	Flashlamp-pumped or Diode Pumped Solid State DPSS (preferred).
		Wavelength	355 nm; Optional to add a 532 nm channel post-installation. The system should have the capability of multi-wavelength upgrade. Multi-wavelength support (e.g., optionally 355, 532, and 1064 nm) should be modular and upgradable post-installation.
		Laser Energy	*Laser Energy ≥ 190mJ for Flash lamp /* *Laser Energy ≥ 100mJ for DPSS.* *The vendor should provide the Laser datasheet.*
		Repetition Rate	≥ 10 Hz. The vendor should provide laser datasheet

		Pulse Duration	≤ 10 ns. The vendor should provide laser datasheet
	Detection Channels (Wavelength Options)	Detection channels should be filtered using high-quality narrowband interference filters and/or polychromators.	
		Elastic Backscatter	355 nm
		Depolarization	355 nm with polarization separation. Laser polarization ratio must be >70% for accurate depolarization measurements.
		Temperature detection channels	353 & 357 nm (preferred) or suitable alternatives.
		Water Vapor detection channels	387 & 408 nm (preferred) or suitable alternatives
		Detector	PMT (Photomultiplier Tubes) or APDs (avalanche photodiodes). The detector choice should be exhibiting low dark current, low thermal noise, high gain stability, and good linearity across the dynamic range with respect to wavelength.
	Receiver Optics	Telescope Type	The system shall be equipped with a Newtonian/Cassegrain or reflector telescope with an aperture of at least 300 mm, preferably 400 mm, optimized for efficient light collection and ruggedized for outdoor operation. A built-in alignment check, or calibration tool, should be included. The mirror should be protected with a dielectric or enhanced aluminum coating for high reflectivity.
		Telescope Diameter	≥ 300 mm

		Overlap Function	Full overlap distance ≤ 500 m
		Alignment	Built-in alignment check/test functionality
	Performance	Temporal Resolution	≤ 10 minutes; The system must allow user-configurable temporal/spatial averaging to balance range and resolution.
		Range (spatial) resolution	Range (spatial) resolution must be ≤ 100 m (adjustable, minimum resolution ≤ 30 m preferred).
		Altitude of measurement range	≥ 15 km (night), ≥ 4 km (day) or higher
		Temperature Accuracy	≤ ±2 K
		Humidity or water vapor Accuracy	≤ ±5% or 0.1 g / kg
		SNR	SNR > 5 should be at 10 km for the 10-minute average for backscatter profiles on a clear sky day.
	System, Software & Data	Control Software	Fully automated control with manual override Software Updates: Ability to push updates and configuration changes remotely Operable over standard Ethernet (static IP or DHCP configuration) The vendor must provide guidelines for secure remote access (password protection, optional VPN) The GUI software should include scan setup, maintenance, calibration, online test plots, raw data display, storage/playback enable/disable option, product generation, selection of base products and derived products for storage and display, Image saving, FTP of selected data and products, any

			other task related to setup/operation/maintenance/calibration/ data storage).
		Data, monitoring and processing.	The system software should have a Real-time data streaming, health monitoring, Visualization, storage support Real-time and post-processing. Software license must be perpetual and include at least 07 years of update support.
		Data products	Aerosol extinction, back scatter and depolarization coefficient profiles. Temperature, water vapor mixing ratio profiles. Raw and processed data output in NetCDF preferred; CSV or HDF5 optional.
		Interfaces	Ethernet (mandatory), USB
		System and Storage	Integrated or external PC / workstation with suitable operating system. Windows licensed OS is preferred, Processor: Intel Core i7 or higher (multi-core preferred) Ram: Minimum 16 GB (at least 64 GB expandable) Interfaces: Minimum of USB 2.0/3.0 ports, Ethernet port and any other ports to monitor, Realtime streaming of the Lidar data. Storage: with a minimum of 1 TB storage SSD or HDD. Display: Compatible with full data visualization and system GUI, minimum of 14". Factor: Industrial rack-mountable chassis (optional if system includes embedded computer).

			The internet connectivity will be provided by IITM. The necessary networking hardware/ switches/ router/ firewall etc should be provided by the bidder. All the software/hardware installation and configuration should be done by the bidder. All the systems should be capable of operating remotely and unmanned using secured networks protocols.
		Remote Access	The system should have the capabilities for Remote Access through Remote Desktop Connection or equivalent. Optional: Any licensed Remote access software is preferred. Remote access must allow complete diagnostics, restart, data download, and log review capabilities.
	Enclosure & Power	Enclosure Protection	Outdoor rated, thermal enclosure with climate control. Temperature (22 degC) and relative humidity (below 50%) should be maintained inside the enclosure. The system should have a provision for lightning arrests for outdoor installations. The system should have protection from direct exposure to weather / severe weather conditions, like heavy rain, gusting and wind load in outdoor operations.
		Dimensions & Weight	Compact design (optional: Automated hatch on roof for window protection with auto rain triggering).
		Power Supply	230 VAC, 50 Hz

		Environmental Tolerance	Operating Temp: 0–55°C; RH: 10–90%
		Online UPS	To run the whole facility, lidar system and accessories for least 10 minutes along with voltage stabilization with a power-factor 0.99.
		System safety	The system shall be equipped with an external camera to monitor the safe operation of the hatch and the status of the external telescope window. The system should equipped a suitable CCTV IP-based camera system to record/monitor, cabin room activities and terrace activities (at least 2 cameras and an NVR at each site with 30days storage) with software to monitor remotely.
		Spare Parts and essential tools for operation and maintenance	A detailed annexure with a list of recommended consumables, spares and operational tool kit should be submitted with the technical bid.
		Remote Support	The escalation matrix of Phone/email/remote login support during warranty need to be given in the technical bid.
	Documentation & Delivery	Delivery Time	Within 10 months of Purchase Order.
		Documentation	Vendor should provide the detail manuals (in English) for the hardware & software. The manual should also contain the detail algorithm to extract the atmospheric parameters from the raw data along with calibration certificates. Vendor should perform a factory acceptance test (FAT) prior to shipping. The report must be shared. *The list of SAT components to test and verify the system functionality should be submitted along with the technical document.*
8.	Proprietary nature	Not of a proprietary nature.	

	(PAC from OEM and internal PAC from Indenting officer will be required, if proprietary item)	
9	Installation, Testing of equipment and calibration, details of training, etc.	A minimum of 3-5 days of training to cover the system operation, critical hardware maintenance/replacement, retrieval algorithm, software, and calibration. A detailed annexure of the day- wise training plan should be submitted along with the technical bid.
10	Warranty	02 Years
11	Post warranty Services, Extended warranty, Annual Maintenance Contract (AMC), Comprehensive Annual Maintenance Contract (CAMC), Operations Maintenance Contract (OMC) etc.	03 Years of CAMC
12	Specific Requirement if any	