

Detailed Specifications of Global Tender Notice No: 01/2017

S. NO.	TENDER NO.	BRIEF DETAILS OF ITEM(S)	PAGE NOS.
1.	14-VII/AK(2578)17-PB/T-01	Doppler Sodar	2-4
2.	14-VI/D(838)16-PB/ T-02	Spectroradiometer System for measurement of radiometric, photometric & calorimetric parameters of light sources	5

Technical specifications for procurement of Doppler Sonic Detection and ranging (SODAR) Instrument for continuous monitoring of relative intensity of temperature eddies, horizontal and vertical wind speed and direction in the lower atmosphere.

This Instrument (SODAR) will be installed at G.B. Pant Institute, Almora (Uttanchal)

S.No.	Item	Specifications	
1.	Name of Instrument	SODAR for continuous monitoring of relative intensity of temperature eddies in the lower atmosphere as a function of height and time, horizontal and vertical wind speed and direction. The system should provide information of the mixing height, inversion height and stability condition. The SODAR should have phased array antenna system.	
2.	Transmitter Characteristics	Operating range	From 20 meter to 1000 meter from ground in fair weather condition and average range should not be less than 700 meters.
		Transmit Frequency	Between 1 to 7 kHz (user selectable)
		Pulse length	Between 10 millisecond to 900 milliseconds. (user selectable)
		Pulse repetition frequency	Selective as per the range
		Sampling height Increment	User selectable
		Minimum Sampling height	20 meters
		Averaging and Reporting Interval	User selectable

3.	Deliverables	Back scattered vertical echo profile and 3D wind speed profile	
4.	Receiver Characteristics	➤ Gain (max) : 100±20 dB	
5.	Range & Accuracy	Vertical speed range	Greater than or equal to ± 10 m/sec
		Vertical speed accuracy	± 0.5 m/sec or better.
		Horizontal wind speed range	0 to 30 m/sec or better.
		Horizontal speed accuracy	Less than or equal to ± 0.5 m/sec or better.
		Horizontal direction accuracy:	Less than or equal to three degrees.
6.	Ambient Operating conditions	Temperature	-10°C to 60° C
		Relative Humidity	10 -100%
7.	Power requirement	230±10 % VAC/50±5 Hz	
8.	Additional accessories.	GPS for positioning, Pressure, temperature and humidity sensors. GPRS modem for remote control and data transfer	
9.	Warranty	Two year's on-site warranty after installation and commissioning.	

10.	Installation and training	Onsite demonstration and training for three persons for time period as required. Operating manuals should also be provided.
11.	Software/hardware support (optional)	Automatic estimation of mixing height, inversion height, stability classification and lapse rate. Provision for Solar panel based power supply to the instrument. Price should be quoted for each item individually.
12.	AMC(optional)	AMC should be quoted for One year after warranty period.

"Integrating sphere based Spectroradiometer system for measurement of radiometric, photometric (especially luminous flux) and colorimetric parameters of light sources"

Consisting of:

One unit

1. Integrating sphere (rust free) for 2pi and 4pi measurements:

- a) Sphere diameter: 2.00 meter
- b) Coating material: PTFE / BaSO₄
- c) Average diffuse reflectance ~ 95% or better in visible range
- d) Lamp Socket assemblies
- e) No. of ports & locations: 3 ports at standard locations for pendant lamp, fiber probe and Auxiliary lamps arrangement

One unit

2. Spectroradiometer:

- a) Spectral range: 360 – 780nm, or more
- b) Photometric range for luminous sources: 20 – 50000 lm or more
- c) Wavelength accuracy: $\leq \pm 0.5\text{nm}$ or better
- d) Optical input: SMA port connected multimode low loss optical fiber cable of standard length (2 meter or longer)

One unit

3. Color Printer and PC loaded with Light measuring software powered with an online UPS (2kVA):

- a) Measurements with the system should be operable and controlled with light measurement-analyzing software(s) with appropriate data recording for further study.
- b) The light measurement software should be able to measure:
 - (i) Total luminous flux (lumens)
 - (ii) Radiant flux (Watt)
 - (iii) Total spectral flux (Watt/nm)
 - (iv) Peak wavelength
 - (v) Luminous efficacy (lm/W)
 - (vii) Correlated color temperature (CCT)
 - (viii) Chromaticity co-ordinates
 - (ix) Color rendering index (CRI)

Two units

4. Standard lamp (Illuminant A) for System calibration:

- a) Traceable to any of NMI along with their original calibration certificates
- b) Luminous flux $\geq 500\text{ lm}$
- c) Rated life (calibrated) : $\geq 50\text{ hours}$

One unit

5. Appropriate DC Electrical supply for Standard lamps

- a) input AC power requirement: 220-240V, 50 Hz
- b) Current stability: at least 0.1%

One unit

6. Auxiliary lamp arrangement

7. Installation: Installation of the system should be done by supplier/manufacturer at CSIR-NPL campus.

8. Warranty: At least one year from the date of installation / commencement of the system.

9. Optional (Prices should be quoted separately in the price bid):

Illuminance meter with display range 0.0001 lx (last digit) to 500000 lx, 4-digit display, power supply for 230 V, 50Hz, photometer head with very fine ($f \leq 1.5\%$) $V(\lambda)$ approximation, and cosine correction (with test report)
