Request for quote and specifications of UPS 400KVA

• The GEECI (Gallium Nitride Ecosystem Enabling Centre and Incubator) at SID-Indian Institute of Science is seeking bids from qualified industries for a UPS 400KVA.
• Companies need to submit two bids, a technical bid and a commercial bid, in two separate sealed envelopes. The bids should be submitted no later than 21 days from the date of posting of this tender, as listed on the website date/time stamp, and by 5 pm on the 21st day or next weekday in case the 21st day falls on a weekend or a national holiday.
• Both technical and commercial bids should be addressed to "The Chief Executive, Society for Innovation and Development, IISc, Bangalore 560012." GST# 29AAATS5333E1ZJ.
• The envelopes should be addressed to "Prof. Srinivasan Raghavan, CeNSE, IISc, Bangalore, 560012" and submitted to the office at CeNSE, IISc in Room No. GF 15 between 9 am and 5 pm.
• All questions regarding this tender should be addressed to Prof. Srinivasan Raghavan at the email address sraghavan@iisc.ac.in
• Post such submission all vendors should send an email to sraghavan@iisc.ac.in with the subject line: "GEECI_Bidder's name Tool Name" to intimate him of the submission within one day.
• Deviations from the technical specifications requested are allowed. Such deviations must be highlighted and justified. Their acceptance or rejection will be left to the discretion of the technical committee.
• The equipment sought will be placed at the Centre for Nano Science and Engineering (CeNSE), Indian Institute of Science (IISc). IISc is India's No. 1 institution on higher learning and the Center for Nano Science and Engineering is home to one of the best academic fabs in the world.
• The technical response, corresponding to the tool being offered, should be in the form of a compliance table with at least 5 columns. Serial number in column 1. Each of the numbered technical items below should be addressed in a separate row of the table in column 2. Compliance to this requirement, in Yes/No, deviation from it and justification should be provided in the neighboring columns 3-5. Post the opening of a hard copy of the technical bid the committee will request for a soft copy of the files for further processing. Companies should NOT mail soft copies of the files unless specifically requested for.
• Detailed technical specifications of the tool being offered should be included.
• Any additional capabilities or technical details, that you would like to bring to the attention of the purchase committee, can be listed at the end of the technical table.
• If multiple systems can fulfill the requirements, vendors can submit multiple bids.
• Vendors are encouraged to highlight the advantages of their tools over comparable tools from the competitors.
• The commercial bid should be broken up to the maximum extent possible into separate items with a cost against each to enable better comparison of price for various configurations across the bidders. As an option, please provide itemized cost for any suggested accessories/addons that may enhance the usability, capability, accuracy or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
The quotes should be split into a line item indicating the base price and then each optional item should be listed separately with its pricing.

1. The commercial bid must contain:
    a. Itemized cost of the system and *required* accessories, such as software, power supply, etc.

b. itemized cost, as an option, for any *suggested* accessories/add-ons that may enhance the usability, capability, accuracy or reliability of the tool. Vendors are encouraged to quote for as many add-ons as their tool portfolio permits.
c. The quotes should be CIF Bangalore, India. So please include cost of shipping to Bangalore. The quote does not need to account for Customs duties.
d. Please indicate the warranty provided with the tool. Warrant of 5 years of more is preferred.
e. Provide itemized cost for *required/expected* spares for 5 years of operation. This number will be used to estimate the life cycle cost of the tool.
f. The cost of annual maintenance contract (AMC). The details of AMC are given below. This number will be used to estimate the life cycle cost of the tool.
g. Length of time that the tools will be supported with service and spares from the date of installation. Our requirement is that the tools be supported for at least 5 years from the date of installation. To quote lowest price, vendors often quote for obsolete or soon-to-be obsolete equipment. This is **NOT** acceptable. For a user-facility like CeNSE, it is vital that the equipment be serviceable and supported for the foreseeable future. The length of guaranteed support will be used to estimate the life-cycles cost of the tool.

2. The AMC, valid for 3 years, must
   a. cover 4 scheduled preventive maintenance (including warranty period) and 2 emergency visit per year;
   b. The emergency visit should be supported with a 24-hour response window.
   c. In case the OEM is foreign, clarify if maintenance will be done by a trained local engineer (OEM representative within India) or a specialist from abroad.
   d. Include in the commercial offer, an itemized list of spares (e.g. maintenance kits) that are essential for scheduled visits.
3. The commercial bids will be evaluated based on life-cycle cost of the tool. This includes the cost of purchase, maintenance, spares, etc.
4. The RFQ must include references of 3 previous installations, preferably in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently.

Table 1: Technical Requirements

1.	Main application	a) To supply uninterrupted power to cleanroom tools. b) Real-estate is very limited. System must have a low footprint. c) System should need minimal maintenance or upkeep. Systems that need regular replacements or spares will not be considered. d) The system should conform to industrial safety standard,
2.	Facility type	a) The system must be compatible with utility or maintenance facilities. b) Vendor MUST show evidence of at least 10 prior installations at similar (or larger) scale facilities.
3.	Footprint & weight of cylinder storage and other equipment	a) Real estate is very expensive. Compact systems are preferred. Please specify the total foot print in cm x cm, volume, and weight.

4.	System software	a) Front panel displaying equipment and process status along with appropriate software to be supplied. b) System must interface with the building management software. c) Complete logs of all the process and system parameters to be available and stored for future trouble shooting d) Please specify the date the system was launched and the time the software will be supported. This is long-time investment. The system MUST have lifetime support.
5.	Periodic Maintenance	a) The system should require minimal maintenance. Mention the recommended preventive maintenance schedule for the system. Provide details of what constitutes preventive maintenance. b) Can the preventive maintenance be done by a trained on-site engineer (CeNSE employee) or requires a specialist from the OEM? c) Please note, that system should be supported by a trained local representative with a 24-hour window of response.
6.	Installation and Training	a) Installation and training at customer site, by the experts from OEM should be part of the package. b) During the installation all the specifications of the processes should be verified for acceptance by the customer.
7.	Safety	a) Mention any special safety requirement of the system b) The system must come with a complement of interlocks to prevent common user errors. c) Flashing lights with the hooter during emergencies
8.	Recommendation	a) The system must submit references from at least 3 previous installations at similar or larger cleanrooms. b) The names and contact addresses of the referees must be submitted with the proposal, so the purchase committee can contact them independently.
9.	Acceptance tests	a) As per industry standards

Table 2: Technical Specifications

S.NO	DESCRIPTION	SPECIFICATION
1	**CAPACITY**	400 KVA/400 KW With Galvanic Isolation Transformer at Input
2	**INPUT**	
	Rectifier	IGBT - based PFC
	Input Voltage Range (Ph-Ph)	400 V AC, -20/+15%
	Input Frequency Range	50 / 60 Hz ± 10 %
	Input Current Harmonics (THDi)	<3% at 100% load
		<3% at 75% load
		<5% at 50% load
	Input Power Factor	> 0.99
	Input Phase sequence auto correction	Available
	Rectifier sequential start-up (hold-off-) (sec)	Settable from 1 to 300 Seconds
	Rectifier soft-start (Power walk-in) (sec)	Settable from 5 to 30 Seconds
3	**BATTERIES**	
	Temperature Compensated Battery Charging	Required
	Battery Backup	20-30 Min backup @ full load (400 KW) considered. Calculation shall be as per IEEE 485 Standard
	Battery Ah and quantity.	Vendors may provide quantity and capacity of batteries based on the DC voltage of the UPS and according to battery wattage Chart provided by the manufacturer and consider design margin of 10% and aging factor 25%, Pf 1
	Battery Make	AGM VRLA, Make Panasonic/Quanta/Exide Confirming to JISC :8702 (Pt, I,II,III)
	Battery minimum VAH	446400 VAH
	DC Ripple	<1%
	Common Battery Bank option	Available
4	**OUTPUT**	
	Inverter technology	3-Level IGBT (High Frequency PWM)
	Nominal Output Voltage (selectable) (Vac)	380-400-415
	Output Voltage Stability:	
	- Static (Balanced Load) (%)	± 1 %

	- Static (Unbalanced Load) (%)	± 2 %
	- Dynamic (Step Load 20%÷ 100% ÷20%) (%)	± 5 %
	- Output Volt. Recovery Time(after step load) (ms)	< 20 ms
	Output Frequency (selectable) (Hz)	50 / 60
	Output Frequency Stability	
	- Free Running Quartz Oscillator (Hz)	± 0.001 Hz
	- Inverter Sync. with Mains (Hz)	± 2 %
	- Slew rate (Hz/s)	<1
	Output Power Factor of UPS	Unity
	Over load capacity	125% for 5 minutes; 150% for 30 Seconds; >150% for 100 ms
	Output Harmonic Distortion (%) - Linear Load - Non-Linear Load	< 1 % < 5 %
	Crest Factor	3:1
	Output Waveform	Sine wave
5	**Bypass**	
	Inbuilt Automatic/Static Bypass	Available as standard
	Maintenance/Manual Bypass facility	Available as standard
6	**Overall Efficiency(AC-AC)**	
	at 50% load	>94%
	at 75% load	>95%
	at 100% load	>95%
7	**Parallel Configuration**	Upto 6 (Power parallel)
8	**Display Front Panel**	Touch -Screen
9	**Measurements**	
	Input:	
		Voltage (Vac), per phase
		Current (Aac), per phase
		Frequency (Hz)
		Power (kVA)
	Output:	
		Voltage (Vac), per phase
		Current (Aac), per phase
		Frequency (Hz)
		Power (kW), per phase
		Load (%), per phase
	BYPASS:	
		Voltage (Vac), per phase

		Frequency (Hz)
	Battery:	
		Voltage (Vdc), Current (Adc)
		Rated Capacity (Ah)
		Residual Autonomy (minute, %)
10	**Audible Alarm for Following Conditions**	
		Mains Fault
		Battery Discharge
		Bypass fault
		Over temperature
		Overload
		Fault on UPS
11	**Communication interface /Network interface**	
	Required as Standard	Relay contact board,RS232, Mod-Bus RS485, SNMP-Ethernet For Remote Monitoring
	Sensor Manager	• Sensor Manger/ Inbuilt (Smoking, Anti Fire System , Temperature/Humidity) • All Data / Logs Shall be read from the sensors and to be stored in an internal Device and should be downloadable file.
	Remote Alarm Panel	Required
12	**Environmental**	
	UPS Ambient Temperature	0 - 40 Deg C
	UPS Storage Temperature	-10 to 70 Deg C
	Relative Humidity (non condensing)	<95%
	Audible Noise level	<65 dBA at full load from 1 meter distance
	Ventilation	Forced
	Protection	IP-20
13	Reference Standards	
	Electromagnetic Compatibility	IEC / EN 62040-2 (CE Marking)
	Safety	IEC / EN 62040-1
	Test and performance	IEC / EN 62040-3
	Certification	PEP (LEED certification) for Claim of Green Building Benefits
	Type Test Certificate/Report	To be Submitted
14	Dimensions (mm) (W x D x H)	To be Specified
	Weight	To be Specified
	Color	To be Specified

	Input/output terminals	Cables input from top/bottom
	UPS Manufacturer's own Service center	Should be available locally

Thanking you,