Indian Institute of Technology KANPUR

KALYANPUR, KANPUR U.P

KANPUR -208016

Computer Centre

Tender No: CC/IITK/09/1035 Dated 6.11.2019

Bid Submission Last Date 27.11.2019 (4:00 PM)

TENDER DOCUMENT

FOR

Purchase of Modular UPS

Tender reference No. CC/IITK/09/1035

BID DOCUMENT

Online bids (Technical & Financial) from eligible bidders which are valid for a period of 120 days from the date of Technical Bid opening (i.e. 28.11.2019) are invited for and on behalf of the Assistant Registrar, IIT Kanpur for "**Modular UPS".**

Name of Work	**Online Fully Modular UPS 3 X200KVA hot swappable with 30 minute 12 V VRLA SMF battery backup**
Date of Publishing	**6.11.2019 (17:00 hrs)**
Clarification Start Date and Time	7.11.2019 (10:00 hrs)
Clarification End Date and Time	20.11.2019 (17:00 hrs)
Queries (if any)	No queries will be entertained after clarification end date and time
Bid Submission Start Date	**6.11.2019 (17:00Hrs)**
Last Date and time of uploading of Bids	27.11.2019 (16:00 hrs) 3 weeks from publication
EMD amount	Rs. 2,50,000/=
Last Date and time of submitting , EMD and other documents	27.11.2019 (17:00 hrs)
Date and time of opening of Technical Bids	28.11.2019 (16:00 hrs)
Date and time of opening of Financial Bids	Will be separately notified for Technically shortlisted/qualified bidders

Interested parties may view and download the tender document containing the detailed terms & conditions from the website http://eprocure.gov.in/eprocure/app

(The bids have to be submitted online in electronic form on www.eprocure.gov.in only. No physical bids will be accepted.)

INSTRUCTION FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the Central Public Procurement (CPP) Portal ie http://eprocure.gov.in/eprocure/app , using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

REGISTRATION

(i) Bidders are required to enrol on the e-Procurement module of the Central Public Procurement Portal (URL:https://eprocure.gov.in/eprocure/app)by clicking on the link "Online Bidder Enrolment" option available on the home page. **Enrolment on the CPP Portal is free of charge.**

(ii) During enrolment/ registration, the bidders should provide the correct/ true information including valid email-id & mobile no. All the correspondence shall be made directly with the contractors/ bidders through email-id provided.

(iii) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

(iv) For e-tendering possession of valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) is mandatory which can be obtained from SIFY /n-Code/e-Mudra or any Certifying Authority recognized by CCA India on e-Token/ Smart Card.

(v) Upon enrolment on CPP Portal for e-tendering, the bidders shall register their valid Digital Signature Certificate with their profile.

(vi) Only one valid DSC should be registered by a bidder. Bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse and should ensure safety of the same.

(vii) Bidders can than log into the site through the secured login by entering their user ID/ password and the password of the DSC/ e-Token.

SEARCHING FOR TENDER DOCUMENTS

1) There are various search options built in the CPP Portal to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords, etc., to search for a tender published on the CPP Portal.

2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS:

(i) For preparation of bid Bidders shall search the tender from published tender list available on site and download the complete tender document and should take into account corrigendum if any published before submitting their bids.

After selecting the tender document same shall be moved to the 'My favourite' folder of bidders account from where bidder can view all the details of the tender document.

(ii) Bidder shall go through the tender document carefully to understand the documents required to be submitted as part of the bid. Bidders shall note the number of covers in which the bid documents have to be submitted, the number of documents – including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

(iii) Any pre-bid clarifications if required, then same may be obtained online through the tender site, or through the contact details given in the tender document.

(iv) Bidders should get ready in advance the bid documents in the required format (PDF/xls/rar/dwf/jpg formats) to be submitted as indicated in the tender document/schedule. **Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.**

(v) Bidders can update well in advance, the documents such as experience certificates, annual report, PAN, EPF & other details etc., under "My Space/ Other Important Document" option, which can be submitted as per tender requirements. This will facilitate the bid submission process faster by reducing upload time of bids.

(vi) Any information/ material/ document supplied along with this tender or after placement order should not be disclosed or copied.

(vii) IITK may accept or reject any/ all tenders including the lowest tender without assigning any reasons whatsoever.

(viii) Clarification: For any clarification: Please contact DDIA, Computer Centre, IIT Kanpur (ddia@iitk.ac.in with cc to prajwalb@iitk.ac.in)

SUBMISSION OF BIDS:

(i) Interested authorized dealers/ distributors, who are willing to meet the stated requirement, are requested to kindly submit their competitive bids/ offers through e-procurement system of CPPP of GoI.

(ii) Bidder should log into the site well in advance for bid submission so that he/ she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay.

(iii) While submitting the bids online, the bidder shall read the terms & conditions (of CPP portal) and accepts the same in order to proceed further to submit their bid.

(iv) Bidders shall select the payment option as offline to pay the EMD and enter details of the DD/BC/BG/others.

(v) Bidder shall digitally sign and upload the required bid documents one by one as indicated in the tender document.

(vi) Bidders shall note that the very act of using DSC for downloading the tender document and uploading their offers is deemed to be a confirmation that they have read all sections and pages of the tender document without any exception and have understood the complete tender document and are clear about the requirements of the tender document.

(vii) Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document. For the file size of less than 1 MB, the transaction uploading time will be very fast.

(viii) **If price quotes are required in XLS format, utmost care shall be taken for uploading Schedule of quantities & Prices and any change/ modification of the price schedule shall render it unfit for bidding.**

Bidders shall download the Schedule of Quantities & Prices i.e. Schedule-A, in XLS format and save it without changing the name of the file. Bidder shall quote their rate in figures in the appropriate cells, thereafter save and upload the file in financial bid cover (Price bid) only.

The bidders are cautioned that uploading of financial bid elsewhere i.e. other than in cover 2 will result in rejection of the tender.

(ix) Bidders shall submit their bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). **The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour**.

(x) After the bid submission **(i.e. after Clicking "Freeze Bid Submission" i**n the portal), the bidders shall **take print out of system generated acknowledgement** number and keep it as a record of evidence for online submission of bid, which will also act as an entry pass to participate in the bid opening.

(xi) Bidders should follow the server time being displayed on bidder's dashboard at the top of the tender site, which shall be considered valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system.

(xii) All the documents being submitted by the bidders would be encrypted using PKI (Public Key Infrastructure) encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology.

(xiii) The successful bidder should submit Order Acceptance within 7 days from the date of order.

(xiv) If an Indian agent is involved, the following documents must be enclosed:

a. Foreign principal's proforma invoice indicating the Commission payable to the Indian

b. Agent and nature of after sales service to be rendered by the Indian Agent.

c. Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.

d. The enlistment of the Indian agent with Director General of Supplies & Disposals under the Compulsory Registration Scheme of Ministry of Finance.

(xv) Conditional offers/ quotations shall not be accepted and are liable for rejection

(xvi) A scanned copy of the certificate on company letterhead, stating that the bidder hasn't been blacklisted by any institution/ organization/ society/ company of the Central / State Government ministry/ department, or its public sector organizations during the last three years, with company stamp and signed by authorized signatory should also be uploaded.

(xvii) The broad configuration / specification of the proposed purchase / work is given. Bidders are required to keep their proposal strictly as per the specification prescribed.

ASSISTANCE TO BIDDERS:

(i) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contract person indicated in the tender. The contact number for the helpdesk is 0512-259-7796 between 10:30 hrs to 17:00 hrs.

(ii) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24X7 CPP Portal Helpdesk. The 24 x 7 Help Desk Number 0120-4200462, 0120-4001002 and 0120-4001005. The helpdesk email id is **support-eproc@nic.in**

INSTRUCTION FOR e-PROCUREMENT

1. **PREPARATION AND SUBMISSION OF BIDS :**

   a. The detailed tender documents may be downloaded from http://eprocure.gov.in/eprocure/app till the last date of submission of tender. The Tender may be submitted online through CPP Portal http://eprocure.gov.in/eprocure/app

   b. The bidder should submit the bid online in two parts viz. Technical Bid and Financial Bid. Technical Bid should be upload online in cover 1and Financial Bid in ".Xls" should be upload online in cover-2

   SUBMISSION OF THE BID : All interested eligible bidders are requested to submit their bids online on CPP Portal: http://eprocure.gov.in/eprocure/app as per the criteria given in this document:

   a. Technical Bid should be upload online in cover-1.

   b. Financial Bid should be upload online in cover-2

   Both Technical and Financial Bid covers should be placed online on the CPP Portal (http://eprocure.gov.in/eprocure/app).

2. **TECHNICAL BID:** Signed and Scanned copies of the Technical bid documents as under must be submitted online on CPP Portal: http://eprocure.gov.in/eprocure/app .

   List of Documents to be scanned and uploaded (Under Cover-1) within the period of bid submission:-

   i. Scanned copy of Eligibility Criteria of OEM and Bidder as per Annexure-1

   ii. Scanned copy of Compliance sheet as per Annexure-2.

   iii. Scanned copy of Organization Declaration Sheet as per Annexure-3

   iv. Scanned copy of Technical supporting documents in support of all claims.

   v. Scanned copy of other document mentioned in tender document (if any).

   vi. Scanned copy of EMD.

   Please note that no indication of the rates/amounts be made in any of the documents submitted with the TC-BID.

3. **Financial Bid**

   a. The currency of all quoted rates shall be Indian Rupees. All payment shall be made in Indian Rupees.

   b. In preparing the financial bids, bidders are expected to take into account the requirements and conditions laid down in this Tender document. The financial bids should be uploaded online as per the specified **".Xls"** format i.e. Price Biin Excel sheet attached as **'.Xls'** with the tender and based on the scope of work, service conditions and other terms of the Tender document. It should include all costs associated with the Terms of Reference/Scope of Work of the assignment.

   c. The Financial Proposal should be inclusive of all applicable taxes, duties, fees, levies, and other charges imposed under the applicable laws. The rates quoted in the Tender are inclusive of all applicable taxes, duties etc. **except service tax.** The service tax component shall be re-immersible by the department after receipt of paid challans etc. if applicable.

4. **Last Date for Submission of Tender:**

   a. Online bids complete in all respects, must be submitted on or before the last date and time specified in the schedule of events.

   b. The IIT, Kanpur may, at its own discretion, alter/extend the last date for submission of tenders.

5. **Bid Validity**

   a. All the Bids must be valid for a period of 120 days from the last date of submission of the tender for execution of Contract. However, the quoted rates should be valid for the initial/ extended period of the Contract from the effective date of the Contract. No request will be considered for price revision during the original Contract period.

   b. A bid valid for a shorter period shall be declared as non-responsive.

   c. In exceptional circumstances, prior to expiry of the original time limit, the IIT may request the bidders to extend the period of validity for a specified additional period beyond the original validity of 120 days. The request and the bidders' responses shall be made in writing. The bidders, not agreeing for such extensions will be allowed to withdraw their bids without forfeiture of their Bid Security.

6. **Modification / Substitution/ Withdrawal of bids:**

   a. No Bid shall be modified, substituted or withdrawn by the Bidder after the Bid's due Date.

   b. Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid's due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.

7. **Rejection of the Bid**: The bid submitted shall become invalid and tender fee shall not be refunded if:-

   a. The bidder is found ineligible.
   b. The bidder does not upload all the documents as stipulated in the bid document.

Tender reference No. CC/IITK/09/1035

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

Tender Notice

E-tender /Online bids are invited for reputed firms from eligible bidders for the work of "**Purchase of Modular UPS**".

The scanned Demand draft for Rs. 2,50,000/- towards Bid Security/ EMD in favour of **Registrar IIT Kanpur** payable at Kanpur must reach **Department of Computer Centre, Indian Institute of Technology Kanpur, Kanpur (UP) 208016 India** latest by 05:00 PM Hrs **27.11.2019.**

Please note all bid related documents scanned copy is to be submitted on the online portal, only Demand draft has to physical reach the aforementioned address.

The tender document along with other details may be downloaded from the CPP Portal: http://eprocure.gov.in/eprocure/app

IIT, Kanpur reserves the right to accept or reject any or all the tenders without assigning any reasons thereof.

Note: No Exemption Allowed

Sd/
Assistant Registrar

Tender Document
Department of Computer Centre
Indian Institute of Technology Kanpur
Kanpur (UP) 208016 India

Enquiry Date: 6.11.2019
Enquiry No. CC/IITK/09/1035

A. Online quotations are invited for Supply, Installation and Testing of 3 x 200 kVA Modular UPS. The technical specification of the UPS is described below:

1. GENERAL REQUIREMENTS:

a. In these paragraphs, we summarily describe a three phase online UPS 600KVA uninterruptible power supply system with DSP technology, parallel redundancy, unity power factor, 3 phase + neutral in and 3-phase + neutral out, with a battery bank capable of providing up to 30 minutes of battery backup at a power rate of 600KVA.

b. The 600KVA UPS is divided into 3 racks (chassis), each serving 200 KVA in a parallel manner. Each 200 KVA unit is fully modular with hot swappable modules, wherein each module is of capacity 25-50 KVA.

c. **Currently, we have planned for populating 450 kVA - with each 200 kVA chassis populated with total of at least 150 kVA. Additional 150 kVA, can be populated in nearby future for which each vendor should provide module price (25-50 kW) separately, valid for 5 years from the date of purchase.**

d. **Chassis/Rack:** Each chassis contains three phase power modules, mains bypass static switch, protective switchgear and accessories. It should be possible to extend the existing capacity with additional chassis/rack for separate power input line. The 3 X200 KVA UPS racks have to be installed in the upper floor (1st floor) of the UPS installation centre adjacent to the main building of the Computer Centre of IIT Kanpur.

e. The UPS module should have a comprehensive warranty of five years.

f. **BATTERY:** The UPS batteries should be 12V, SMF VRLA batteries capable of providing 30 minutes of power at 600KVA output power rating. The battery voltage should be 380/480V DC configurable such that it should work even when 4-8 batteries fail. Batteries must be installed on suitable battery stand, with size designed as per the site condition and space, along with copper battery linking cable and DC cable between UPS to battery bank. Batteries have to be installed in the ground floor of the UPS installation centre of the Computer Center of IIT Kanpur.

g. **BATTERY Warranty and Standards:** Battery OEMs may be Exide/Amaron/Rocket/Southern make with battery manufacturer's standard warranty of 02 years. Bidder for UPS may provide the name/contact address/email of the OEM of the battery and should produce Quality Management System Certificate in accordance with standards ISO9001:2008 or equivalent, and battery performance certificate conforming to IEC-60896-2 and IEEE 1188 standards. The tender offer shall mention that the battery supply will be made in original un-tampered packing of the OEM battery manufacturer accompanied with proof of authenticity of the products from the OEM battery manufacturer (**signed back to back agreement**).

h. In view of the future change in technology to Lithium Ion batteries, the UPS should be capable of working with Lithium-Ion batteries when replaced after the battery warranty period or at a later period.

i. Earthing: Will be provided by the Institute. **Please mention the earth resistance value needed for the deployment**.

2. MODES OF OPERATION:

The UPS shall be designed to operate as an on-line, double conversion, solid state, reverse-transfer system in the following modes:

a. Normal: UPS inverters continuously power the critical AC load (computers and IT resources). The rectifier/charger derives power from the mains AC power supply source and converts this to DC power to supply the inverters, while also simultaneously float/boost charging the battery system. Power supplied by the UPS inverters is, to within specified tolerances, at rated voltage and frequency.

b. Battery: Upon failure of the mains AC power supply source, the critical AC load is powered by the inverter, which gets, without any interruption, power from the battery system. There shall be no interruption in power to the critical load upon failure or restoration of the mains AC power supply source. Upon restoration of the AC power supply source, power to the rectifier initially is restricted by a gradual power walk-in. Following the short power walk-in period, the rectifier powers the inverter and simultaneously recharges the battery through the battery charger. This shall be an automatic function and shall cause no interruption to the critical load.

c. Off-Battery: When the battery system is taken out of service for maintenance, it is disconnected from the battery converter and inverter by means of external breaker(s). The UPS shall continue to function and meet all of the specified steady-state performance criteria, except for the power outage backup capability.

d. Bypass: If the inverter fails, or its overload capacity is exceeded, or for some reasons, the inverter is manually turned off by user, and at this time the inverter is synchronous with the bypass, the static transfer switch shall perform a transfer of the load from the inverter to the bypass source with no interruption in power of the critical AC load. The static bypass shall be able to support continuously 110% of rated UPS capacity.

e. Maintenance: The UPS system should be equipped with an internal maintenance bypass. If the UPS needs to be maintained or repaired, after the inverter is turned off and the load is transferred to bypass, the internal/external maintenance bypass can be turned on and the UPS can be shut down and the battery can be disconnected for maintenance purposes.

3. SCALABILITY AND MODULARITY:

- Each UPS rack system/chassis shall consist of hot swappable power modules with each module rated for 25-50KW. Each rack/chassis should have a capacity of 200KVA. System should support hot swappable and should allow adding/removal of modules in working condition without disturbing connected load. Modularity design of the UPS system shall enable ease of service and upgradability and downgradability of the UPS rack system without interruption to the whole system.

- It is envisaged that in the future, it might be considered to add to the UPS capacity by connecting new modular system to a new input power line.

4. PERFORMANCE REQUIREMENTS:

- The UPS is VFI classified (according to IEC 62040-3) producing an output waveform that is independent of the input supply frequency and voltage.

5. UPS STANDARDS:

- The UPS and all associated equipment and components shall be manufactured in accordance with the following applicable standards:
  - **a.** Safety requirements: IEC 62040-1.
  - **b.** EMC IEC 62040-2 (A).
  - **c.** Performance IEC 62040-3 (VFI SS).
  - **d.** The quality system for the engineering and manufacturing facility should be certified to conform to quality system standard ISO 14001, The OEM should have Quality valid ISO 14001 for "Manufacture Research Development and Distribution of power quality, power distribution and powered electrical products".

    Necessary certification should be attached.

6. INPUT AND OUTPUT:

- Input and Output for UPS module is given in tabular fashion *in detailed technical specifications*.

7. EARTHING:

- The AC output neutral shall be electrically isolated from the UPS chassis. The UPS chassis shall have equipment earth terminals.
- **Please mention the earth resistance value needed for the deployment.**

8. WARRANTY:

a. The UPS manufacturer shall warrant the UPS system provided against any manufacturing, materials or workmanship faults for a minimum of 5 years from the date of successful completion of installation work.

b. Battery Warranty: The battery manufacturer's standard warranty of 2 years may be provided.

9. FABRICATION:

a. All materials in the UPS system shall be new and currently manufactured, high grade and should not have been in prior service (except for factory testing purposes). All active electronic devices shall be solid-state. Wiring practices, materials and coding shall be in accordance with the requirements of IEC. All electrical connections shall be torqued to the required value and marked with a visual indicator. Provision shall be

made in the cabinets to permit installation of input, output and external control cabling. Provision shall be made for bottom access, allowing for adequate cable bend radius for input and output connections.

b. Installation: The UPS shall be housed in the first floor of a designated building adjacent to the main Computer centre building with maximum supported density of 800 kg/sq. meter. UPS rack/chassis should be structurally adequate and have provisions for forklift handling. Maximum cabinet height shall be 2 meters.

10. REDUNDANCY CONFIGURATION:

- The power modules shall operate simultaneously in a parallel configuration with the load shared equally between the interconnected and operational modules. The system can be in both redundant and non-redundant modes.

a. Redundant Parallel mode: The UPS with multiple racks (chassis) has in total, one or more than one module than is required to supply the full output load needed. The malfunction of one of the modules shall cause that module to be disconnected from the critical load and the remaining modules across multiple racks (chassis) shall continue to carry the load. Upon repair of the module, it shall be reconnected into the original rack and the critical load is served in parallel to resume redundant operation. Any module of some rack shall also be capable of being taken off the critical load manually for maintenance without disturbing the critical load. Module redundancy level shall be a pre-defined total number of modules across the racks that are required to supply the full rated load. When the number of connected modules in total across the racks equal to this values, a malfunction of another module shall cause the load to be transferred automatically and uninterrupted to the bypass line by the use of the static mains bypass switch.

b. Non-redundant mode: All the modules making up the UPS system shall supply the full rated load. If a module malfunctions, and that the remaining modules cannot support the load, the load has to be transferred, automatically and uninterrupted, to the bypass line by the use of the internal static mains bypass switch.

11. SYSTEM PROTECTION

- The UPS shall have built-in protection against surges, sags and over-current from the AC mains input source, over-voltage and voltage surges from output terminals of paralleled sources and load switching and circuit breaker operation in the distribution system.
- The UPS rack systems shall be protected against sudden changes in output load and short circuits at the output terminals.
- The UPS shall have built-in protection against damage to itself and connected load for all predictable types of malfunctions.
- Cascading failure of solid state devices may also be protected against. Internal UPS malfunctions shall cause the module to trip off-line with minimum damage to the module and provide maximum information to maintenance personnel regarding the reasons. The load shall be automatically transferred to the bypass line

uninterrupted should the connected critical load exceed the capacity of the available on-line modules. The various statuses of protective devices etc., shall be indicated on the graphic display on the front of the unit.

12. MACHINE INTERFACE

a. Each UPS module shall be equipped with display menu that automatically provides all information relating to the current status of the UPS and displays metered values. The LCD shall be able to store 500 and above historical event records that can be retrieved and referenced.

b. Metered Values: An MCU or DSP shall control the display functions of the monitoring system. All three phase parameters shall be displayed simultaneously. All voltage and current parameters shall be monitored using true RMS measurements. Detailed parameters for the following should be displayed--- Main input, Bypass, UPS output, Local Load, Battery, Parallel Load. Each UPS module shall be equipped with a mimic to indicate the power flow to the critical load along with an indication of the availability of basic components, namely, rectifier/charger, battery, automatic bypass, inverter and load. The mimic shall be displayed on LCD, including overload conditions. The power flow is also shown in the LCD menu.

c. Alarms and Status Information: Alarms and status conditions shall be reported at the paralleled module UPS. The display and control panel shall report the alarms and status information.

d. Software Compatibility: The UPS shall have software available for monitoring, control and event management through computer. It should provide a basic UPS operating system status and a centralized monitoring and event management of UPS, Environmental and Power Systems that can utilize an existing network infrastructure.

e. Load Bus Synchronizer: This shall keep the output of multiple independent parallel systems in synchronization even when the systems are operating on different modes (bypass/inverter) or on batteries.

13. COMMUNICATIONS:

a. **SNMP/HTTP Network Interface Card:** The UPS shall have internally fitted network interface card that will provide real-time status information over 10/100/1Gb base T Ethernet to and for users. The network interface card will support SNMP protocol. UPS information will also be available over the network via a web browser using an HTTP page. The card may support static IP and DHCP, and shall also be configurable via the network using the HTTP web page and telnet/ssh session. The card provides configuration and control security through a user name and password. The card's firmware can also be updated so that the card is enhanced by future releases.

b. **Other cards including RS 485/ RS 232 interface card and Dry contact card** with four channels of digital signal output to remote site (including 2 control channels) could be provided. The bidder may clearly specify the system functionality in this regard.

c. **Backnet Interface Card:** Should be able to integrate the UPS with a BMS (Make: Johnson Control BMS Software) so as to control the UPS through it.

14. TESTING OF UPS SYSTEM:

a. The supplier shall have facilities to carry out tests at factory. Standard on-site tests will have to be satisfactorily carried out in presence of IIT Kanpur Engineers and officials and certified for the UPS quoted in the tender, before acceptance of material. Non-compliance to tendered specifications during testing shall make the system liable for rejection. The following tests are to be conducted on the UPS system.

1) Standard Factory tests (reports to be included).

2) Full load input variation test.

3) THD (Voltage test performed at UPS output).

4) Overload test.

5) Simulated short circuit protection test.

6) UPS endurance test at 100% load for 8 hrs.

7) Overall efficiency at nominal voltage.

8) Inverter efficiency.

9) Backup test, UPS to be tested at full load on battery for 30 mins.

b. On-site test.

1) Voltage ripples at battery terminal.

2) Static bypass.

3) Backup test, UPS to be tested at actual available load on battery for 30 mins.

15. Maintenance:

a. There should be resident service engineer working for the contractor deployed at IIT Kanpur or in Kanpur. The service engineer deployed at IIT Kanpur or at Kanpur must be immediately available 24 X7 to respond to telephone/fax/email in the case of malfunction of the UPS. Further, in case of malfunction in the UPS or breakdown, the service engineer should attend the on-site complaint within one hour. Every effort must be made to source and replace the needed spares within a period of 48 hours from the time of intimation. All costs for this maintenance shall be covered under the **Comprehensive 5 year Warranty**.

b. The service engineer deployed at IIT Kanpur shall visit the UPS site on a regular bi-weekly basis (once in two weeks) for check-up of the above mentioned UPS system, inspection of the environs, inspection and maintenance of the DC backup services (battery banks), independent of malfunction/breakdown visits.

c. The service engineer may stock on site spare modules, fuses and other necessary components in quantities as needed to expedite maintenance required to alleviate disruption of services or for preventive maintenance.

d. The service engineer shall bring the necessary tools and instruments required for servicing the UPS, including as necessary for maintenance of the UPS/battery cubicles as appropriate.

e. The above maintenance clause is applicable even during the warranty period.

Detailed Technical Specifications	
Items	**Details**
General Specs	
UPS Topology	On line double conversion VFI
Architecture of UPS	Fully Modular, Scalable, Parallel redundant based on (25 – 50) KW Power Modules. [Note: Replacing or adding modules without stopping or shutdown power modules]
Total Installed Capacity of UPS	**3X200KW power modules chassis, fully modular** In case of any power module (25-50 KW) in any of the individual 200 KW chassis fails, then the rest of the power modules shall be in operation with all other modules of UPS in parallel; i.e. UPS should be de-rated only of the failed module capacity and not the entire chassis.
Operating Capacity Of UPS	150kVA per rack X 3 = 450kVA
Option for Future Extension via adding Modules	Up to 150 KVA
Warranty	5 years
In/Out phase Configuration	Three phase + Neutral
Output wave form on mains run	Sinusoidal
Output wave form on battery run	Sinusoidal
Bypass type	Static and electro mechanic
Transfer time(from grid to battery)	Instantly & Without any break
Battery Support	free maintenance VRLA Future Lithium-ion compatible **(For this at least 3 PO of Modular UPS with Lithium Ion battery is needed)**
Earthing	Mention Earth Resistance Value needed for the deployment
Other Conditions	1. Each Individual Power Module Rating should be 25 KW – 50 KW. 2. For the immediate deployment, each of the three UPS racks shall be populated with hot swappable modules of capacity 150KVA each. 3. Centralized Monitoring System for detailed Monitoring of Parameters in Power Rack. 4. 3-Level / 4-Level IGBT based Rectifier & IGBT based Inverter. 5. Input Power Factor=0.99 at 40°C continuous. 6. Full rated power output till 40°C ambient temperature. 7. The entire components of the system comprising of the UPS, Input cabinet, Output Cabinet, all cabling between Input cabinet to the UPS, UPS to Output cabinet (or a pre-wired system comprising of the same internally) cabling from UPS to Battery racks, Batteries, Battery racks and all other accessories shall be internally) cabling from UPS supplier. **IIT Kanpur will provide a single three-phase ¾-wire incoming supply and take out a single three-phase 4 wire**

	output from the UPS room.
Input	
Nominal Voltage	400/415/433 V three phase
Voltage range	+10% / -15% of selected nominal voltage
Frequency	48 Hz to 50Hz (autosensing)
Power Factor	≥ 0.99 from 25% to 100% of nominal load
Input current Distortion	<3% on full load (input $V_{THD} \leqq 5\%$)
Generator Compatibility	Should be compatible with Generator Make: Greaves Cotton (2 x 500KVA DG Set)
Bypass	Required
Max. output neutral potential difference relative to input neutral	Value to be provided by Vendor
Output	
Nominal voltage	380/400/415VAC (Configurable Option) three phase
Nominal power	3 x 200 kVA
Active power	3 x 200 kW
Voltage Regulation	± 1%
Voltage variation (static)	± 1% for balanced load, ± 2% for unbalanced load
Voltage variation (Load Transient 0-100%; 100-0%)	± 5% in 10 ms
Harmonic Distortion THDv on nominal power (linear load) THDv on nominal power (not linear load)	 ≦2% at 100 % linear load ≦ 5% at 100% nonlinear load
Frequency	50 Hz ± 5% (Synchronous to mains -> Grid Support Mode) 50 Hz ± 0.1Hz (free running -> Battery Support Mode) (autosensing or selectable)
Output Waveform	Pure Sine Wave
Current Crest Factor	3:1
Overload capability: 10 min 01 min	 ≦125% rated load ≦ 150% rated load
AC -AC Efficiency	> 96 % at (30% – 70%) load
Battery & Charge Controller	
Type	VRLA, SMF Battery
Design Life	≥ 2 years
Warranty	2 years
Nominal UPS Battery Voltage	12 Volt DC
Battery charger type	PWM high efficiency
Charging Cycle	Intelligent with boost charge and advanced management
Max Charging Current	Shall be as per the battery OEM

Battery Working Temperature	≥ 26°C
Battery Backup	30 minutes or more backup at full installed capacity (600 kW).
* Please provide number and AH capacity of batteries proposed.	
Environmental Specs	
Noise level @ 1m	< 65 dB
Working temperature range	from 0°C to +40°C continuous for kVA=KW
Stock temperature range	from -20°C to +50°C (excluded batteries)
Humidity range	10-90% at non-condensing
Protection degree	IP20 or better
Mechanical an Miscellaneous	
Technology rectifier/booster/inverter	IGBT
Communication Interface	SNMP, HTTP/HTTPS, Backnet, Other cards including RS 485/ RS 232
Installed Power Modules	25 kVA/KW – 50 kVA/KW
Emergency Power off	Required
Surge Power Ratings	As per IEC Standard
Standards	**Safety**: IEC 62040-1: Uninterruptible Power Systems (UPS) - Part 1: General and safety requirements for UPS **EMC/EMI/RFI**: IEC 62040-2: Uninterruptible Power Systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements **Performance**: IEC 62040-3: Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements **Environmental**: IEC 62040-4: Uninterruptible Power Systems (UPS) - Part 4: Environmental aspects – Requirements and reporting
OEM Certifications	
1. CE marking 2. The UPS manufacturer shall have valid ISO 9001 certification for quality management systems. 3. The battery manufacturer shall have valid ISO TS 16949 and ISO 14001 certifications for engineering/R&D, quality and functional safety. 4. The OEM should have Quality valid ISO 14001 for “Manufacture, Research Development and Distribution of power quality, power distribution and powered electrical products”. 5. Valid BS OHSAS 18001 - Occupational Health and Safety Assessment	
Building Management system Compatibility	
1. Should be able to integrate the UPS with a BMS (**Make:** Johnson Control BMS Software) so as to control the UPS through it. 2. The system should be fully compatible with standard BMS preferably using BACKNET card.	
Communication	
1. SNMP and HTTP/HTTPS based monitoring to be made available.	

Protection

1. Current limiting protection (Fuse less Electronic). Built in overload/ short circuit protection with circuits for current limit.
2. Soft start on inverter and charger arrangement.
3. Over voltage/ under voltage protection.
4. Short circuit/ overload protection.
5. Fan Failure Protection
6. All other protection systems required for safety of UPS system, such as over temperature protection, Low battery etc.
7. Remote monitoring of UPS system should be possible through status indicators elsewhere in the same facility through a device that replicates the indicators on mimic diagram on the UPS unit.

Emergency Trip

Provision to be made for an emergency trip button such that in case of emergency manual activation of this button will trip the input, battery and output breakers immediately.

Indications

1. Mains ON.
2. Inverter ON/ OFF/ FAULTY/ TRIP (Reason)
3. Charger ON/ FAULTY or TRIP (Reason)
4. Battery Low
5. Static by-pass ON
6. Over temperature

Alarm

1. Low battery alarm and mains failure / load on battery.
2. Over temperature alarm
3. Over Load & short circuit
4. DC Bus Over & Under Voltage
5. Alarms available at the UPS should also be available at around the distance of 40-50 meters.

Metering

Digital LCD duly calibrated to indicate the following

1. AC Voltage: Input and Output
2. AC Current : Input and Output
3. % Load / KVA/KW
4. Battery Voltage
5. Charging and Discharging Current
6. Frequency- Input/ Output
7. Active Power Module Bar
8. All interval voltage/current status/values

System Controller

The System controller must provide :

1. All system measurements on centralized control/monitoring module
2. Basic system configuration (SLD with variables status)
3. Alarm indications
4. Power Analysis (kW, kVA, V, I, p.f., THD)
5. Remote control monitoring at a distance of 40-50 meters from UPS location
6. Battery handling

Event logging at front panel
The display unit should allow the user to display a time and date stamped log.

B. Clarification:

For any clarification: Please contact DDIA, Computer Centre, IIT Kanpur (ddia@iitk.ac.in with cc to prajwalb@iitk.ac.in)

C. Final Decision Making Authority:

The decision of the Director, IIT Kanpur will be binding on all bidders.

D. Disclaimer:

1. Information disclosed under and in accordance with the tender document will not constitute as an offer, also the acceptance of responses to this tender cannot be considered as a binding contract.
2. Applicants are solely responsible for all expenses associated with responding to this tender.
3. IITK reserves the right to annul the tender process at any time, without thereby incurring any liability to the affected bidders or specifying the grounds for the action.

E. Legal

1. If any dispute, difference, question of disagreement or matter, whatsoever, before or after completion or abandonment of work, hereafter arises between the parties, as to the meaning, operation or effect of the contract or out of or relating to the contract or breach thereof, the same shall be referred to a Sole Arbitrator to be appointed by the Director of the Institute at the time of dispute.
   a. The venue of the arbitration shall be at Kanpur.
   b. Subject to as aforesaid, the provisions of the Arbitration and Conciliation Act. 1996 and any statutory modifications or re-enactment thereof and rules made there-under and for the time being in force, shall apply to the arbitration proceedings under this clause.

2. The contract shall be governed by and construed according to the laws in force in India. The Parties shall hereby submit to the jurisdiction of the courts situated at Kanpur.

Terms and Conditions Governing the Contract

1. The rates are to be quoted by the bidders in Indian Rupees only and payment shall be made to successful bidders in Indian Rupees only. Any statutory applicable taxes such as applicable Tax, etc. should be mentioned separately in the Financial Bid. However, quote should be inclusive of all other levies, statutory taxes and charges such as Octroi, Packaging & Forwarding charges etc. and should be delivered at the premises. All prices shall be fixed and shall not be subject to escalation of any description. The rates must be quoted strictly as per the 'Financial Bid Format' provided.

2. The time of delivery including testing and handing over in satisfactory condition is the essence of the contract and the shipment should be effected as per the schedule. In the event of part supply, IITK shall withhold the entire payment until the whole of the supply as per the order is delivered. In case the delivery schedule is not stipulated as essential criteria, Contractor may indicate the period of delivery required for them.

3. If the completion of systems/ components is delayed for reasons of force majeure such as acts of God, Acts of Public enemy, acts of Government, fires, floods, epidemics, quarantine restrictions, illegal strikes and freight embargoes, the Contractor shall within 3 days from the date of such occurrence, give notice to IITK in writing of his claim for extension of delivery period. IITK on receipt of such notice may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the contract. Unless the extended delivery period is agreed by IITK in writing, contractor cannot claim the extension of delivery time as a matter of right. IITK shall have the right to either cancel/ extend the order validity/ levy LD as appropriate.

4. If the Contractor shall fail to deliver the systems/ components within the time specified in the Contract, IITK shall recover from the Contractor as liquidated damages a sum of 0.5% of the contract price of the undelivered systems /components for each week of delay (or) part thereof. The total liquidated damages shall not exceed 5% of the contract price of the unit or units so delayed. Systems/ components will be deemed to have been delivered only when all essential components parts are also delivered. If any essential components are not delivered in time, the entire system / components will be considered as delayed until such time the missing parts are delivered.

5. In general, all supplies are to be delivered as per the schedule of the contract only. In exceptional circumstances, part supply of the items may be accepted upon the recommendation of end-user. However, payment will be effected as stipulated in order/ contract.

6. The Goods supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery.

7. If the contractor fails to deliver the stores or any instalment thereof within the period fixed for such delivery or at any time repudiates the contract before expiry of such period, IITK is entitled to cancel the contract and source purchases from third parties the stores not delivered at the risk and cost of the defaulting contractor.

8. The Contractor warrants that the Goods supplied under this Contract are new, unused, of the most recent or current models and those they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Contractor further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/ or material is required by IITK's Specifications) or from any act or omission of the Contractor, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.

9. **Bidders shall select the payment option as offline to pay the EMD and enter details of the DD/BC/BG/others.**

10. **Deadline for delivery and installation is 60 days from the issue of P.O.**. *IITK does not make ANY ADVANCE PAYMENT*. As per standard terms, 70% payment will be made against Delivery goods from the date receipt of bill and 30% after successful installation, testing and acceptance.

11. **Qualified Bidder has to give a Bank Guarantee of 5% of the total deployment cost after PO generation within 2 days. Final payment shall be made against the Performance Security submitted through a Bank Guarantee in Indian Rupees for the entire warranty period of the UPS plus sixty days at 5% of the full amount quoted.**

12. The price shall include but not limited to:

   a. Costs of goods / services covered in this contract.
   b. Taxes and duties
   c. Transportation and packing cost

d. Cost of Installation, testing, commissioning and handing over of goods

The Bidder shall indicate on the appropriate price schedule form, the unit prices and total bid prices of the goods he proposes to supply under the contract strictly as per price bid format of tender.

13. **Total duration for delivery and installation is 60 days from the issue of P.O. The supplier is also required to do the installation and demonstration of the equipment within this time; otherwise the penalty clause will be the 0.5% of the total PO value, on weekly basis.**

    In case of any damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. IIT Kanpur will not be liable to any type of losses in any form.

14. **Downtime:** During the warranty period, not more than 1% downtime will be permissible. For every day exceeding permissible downtime, penalty of 1/365 of the 1% FOB value will be imposed. Downtime will be counted from the date and time of the filing of complaint with in the business hours.

15. The Bidder shall have to submit a copy of GST Registration certificate along with quotation (if applicable) for claiming the above.

16. In respect of GST as per notification No.45/2017 central tax (Rate) dated 14.11.2017 and Notification No. 47/2017-Integrated Tax (Rate) dated 14.11.2017 and G.O.(MS) No.161 CT&RD dated 14.11.2017. The GST is payable by IITK at 5% only against the tariff rate. Necessary exemption certificate will be issued by IITK for claiming the benefit of exemption. In respect of Import, the custom duty at concessional rate of 5.15% is only payable by IITK under notification no.51/96 customs dated 23.07.1996 and 43/2017 customs dated 30.06.2017 and High sea Sale also acceptable by the IIT Kanpur. No other tax is payable.

17. In the event of any dispute, difference, interpretation or application relating to this agreement arises, the same shall be settled amicably by the parties. In case the dispute or differences could not be settled amicably, the same shall be referred for adjudication through Arbitration by an Arbitrator to be appointed by the Director, IITK. The Arbitration shall be concluded in accordance with the provisions of Arbitration & Conciliation Act, 1996 or any statutory modifications or re-enactment thereof and the rules made their under and for the time being in force shall apply to the arbitration proceedings. Venue of such arbitration shall be at Lucknow. The language of arbitration proceedings shall be English. The Arbitrator shall make a reasoned award (the “award”), which shall be final and binding on the parties. The cost of the arbitration shall be shared equally by the parties to the contract. However, expenses incurred by each party in connection with the preparation, presentation etc., shall be borne by each party.

18. The bidder shall furnish, as a part of his bid, documents establishing the bidder’s eligibility to bid and his qualification to perform the contract if his bid is accepted. The bidder must possess PAN No. and any other registration to claim the statutory levies.

19. The bidder is qualified only when he is the original manufacturer or established dealer with original manufacturer’s authorization letter to quote, sell and service the products offered as per the prescribed format in our web site along with agency agreement.

20. In a tender, either the Indian agent on behalf of the Principal / OEM or Principal / OEM itself can bid but both cannot bid simultaneously for the same item / product in the same tender. If an agent submits bid on behalf of Principal / OEM, the same agent shall not submit a bid on behalf of another Principal / OEM

in the same item / product. In case a bidder not doing business within India, he shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India equipped and able to carry out the supply, maintenance, repair obligations etc. during the warranty and post warranty period or ensure a mechanism at place for carrying out the supply, maintenance, repair obligations etc. during the warranty and post warranty period. OEM also shall provide agency agreement and indicate agency commission payable to make remitting in INR.

Tender reference No. CC/IITK/09/1035

Annexure -1

Eligibility Criteria of OEM and Bidder:

S. No.	Description	Complied (Y/N)	Remarks
1.	The OEM of the equipment's quoted for should have a minimum of **five or more spare depots in Northern region closest to IIT Kanpur** to support failure of equipment's and better resolution (above 200 kVA).		
2.	The OEM should support next business day delivery against defective spares in major locations in India. OEM should have 24x7x365 support for India with a direct TAC support in the country.		
3.	OEM should be ranked in any renowned ranking agency like Frost and Sullivan or equivalent. **Documentary proof should be attached.**		
4.	The OEM turnover (most recent) for only 3 Phase UPS sales in India (Rs. > 150 Crs). **Documentary proof should be attached.**		
5.	The OEM should be ISO 9001certified and should have registered office in India from last 15 years.		
6.	Profitability of OEM should be increasing in last 5 years at the average rate of 2% per year. **Documentary proof Bank Certificate attached in this regard should be submitted.**		
7.	Telephone/e-mail/Fax help desk must be provided that immediately responds to issues raised by IIT Kanpur concerning the UPS, especially malfunction, breakdown etc.		
8.	Resident Engineer should be deployed in IIT Kanpur/ or should be able to report within 1 hour in case of any issue raised.		
9.	In case of major failure, the total turnaround time should not be more than 48 hrs.		
10.	The bidder must be a reputed manufacturer (OEM) or his authorized System Integrator of the type of products offered. In case of System Integrator, a Letter of Authorization from OEM, specific to the tender should be enclosed. **Signed Back to Back agreement is needed.** **The bids received without Letter of Authorization from OEM are liable to be rejected.**		
11.	The bidder should have at experience in the field Supply of UPS in IIT's/ Central University, Central Government & PSU's **Documentary proof Purchase Orders copy attached in this regard should be submitted.**		
12.	For after sales services the agency shall be available at all times and communication by Tele/E-Mail/Fax to agency shall be acknowledged immediately on the same day.		
13.	The Bidder shall provide the Registration number GST/Sales Tax/ Service Tax /PAN /TIN - Registration number.		
14.	Bidder should have minimum 5 years presence in India. **(Attach Company Registration Certificate)**		
15.	Bidder should have minimum 1.5 Cr. net worth in last financial year 2018- 19 **(Attach CA certificate)**.		

16.	Bidder should have Solvency Certificate of Rs. 1 Cr. **(Attach Bank Certificate)**		
17.	Bidder should have minimum Rs.5 Cr. Turnover for last 3 Consecutive years 2016-17, 2017-18, 2018-19. **(Attach CA certificate and Balance sheet & P&L Account).**		

(Signature of the Tenderer)
Name:
Seal of the Company

Annexure – 2

Compliance Sheet:

Items	Details	Complied (Y/N)	Relevant Details (Mandatory)
General Specs			
UPS Topology	On line double conversion VFI		
Architecture of UPS	Fully Modular, Scalable, Parallel redundant based on (25 – 50) KW Power Modules. [Note: Replacing or adding modules without stopping or shutdown power modules]		
Total Installed Capacity of UPS	**3X200KW power modules chassis, fully modular** In case of any power module (25-50 KW) in any of the individual 200 KW chassis fails, then the rest of the power modules shall be in operation with all other modules of UPS in parallel; i.e. UPS should be de-rated only of the failed module capacity and not the entire chassis.		
Operating Capacity Of UPS	150kVA per rack X 3 = 450kVA		
Option for Future Extension via adding Modules	Up to 150 KVA		
Module Size	(25 – 50) KW		
Warranty	5 years		
In/Out phase Configuration	Three phase + Neutral		
Output wave form on mains run	Sinusoidal		
Output wave form on battery run	Sinusoidal		
Bypass type	Static and electro mechanic		
Transfer time(from grid to battery)	Instantly & Without any break		
Battery Support	free maintenance VRLA Future Lithium-ion compatible		
	For this atleast 3 PO of Modular UPS with Lithium Ion battery is needed		
Earthing	Mention Earth Resistance Value needed for the deployment		
Other Conditions	1. Each Individual Power Module Rating should be 25 KW – 50 KW.		
	2. For immediate deployment, each of the three UPS racks shall be populated with hot swappable modules of capacity 150KVA each.		
	3. Centralized Monitoring System for detailed Monitoring of		

	Parameters in Power Rack.		
	4. 3-Level / 4-Level IGBT based Rectifier & IGBT based Inverter.		
	5. Input Power Factor=0.99 at 40°C continuous.		
	6. Full rated power output till 40°C ambient temperature.		
	7. The entire components of the system comprising of the UPS, Input cabinet, Output Cabinet, all cabling between Input cabinet to the UPS, UPS to Output cabinet (or a pre-wired system comprising of the same internally) cabling from UPS to Battery racks, Batteries, Battery racks and all other accessories shall be internally) cabling from UPS supplier. **IIT Kanpur will provide a single three-phase ¾-wire incoming supply and take out a single three-phase 4 wire output from the UPS room.**		
Input			
Nominal Voltage	400/415/433 V three phase		
Voltage range	+10% / -15% of selected nominal voltage		
Frequency	48 Hz to 50 Hz (autosensing)		
Power Factor	≥ 0.99 from 25% to 100% of nominal load		
Input current Distortion	<3% on full load (input $V_{THD} \leqq 5\%$)		
Generator Compatibility	Should be compatible with Generator Make: Greaves Cotton (2 x 500KVA DG Set)		
Bypass	Required		
Max. output neutral potential difference relative to input neutral	Value to be provided by Vendor		
Output			
Nominal voltage	380/400/415VAC (Configurable Option) three phase		
Nominal power	3 x 200 kVA		
Active power	3 x 200 kW		

Voltage Regulation	± 1%		
Voltage variation (static)	± 1% for balanced load,		
	± 2% for unbalanced load		
Voltage variation (Load Transient 0-100%; 100-0%)	± 5% in 10 ms		
Harmonic Distortion THDv on nominal power (linear load) THDv on nominal power (not linear load)	≦2% at 100 % linear load		
	≦ 5% at 100% nonlinear load		
Frequency	50 Hz ± 5% (Synchronous to mains -> Grid Support Mode)		
	50 Hz ± 0.1Hz (free running -> Battery Support Mode) (autosensing or selectable)		
Output Waveform	Pure Sine Wave		
Current Crest Factor	3:1		
Overload capability: 10 min	≦125% rated load		
01 min	≦ 150% rated load		
AC -AC Efficiency	> 96 % at (30% – 70%) load		
Battery & Charge Controller			
Type	VRLA, SMF Battery		
Design Life	≥ 2 years		
Warranty	2 years		
Nominal UPS Battery Voltage	12 Volt DC		
Battery charger type	PWM high efficiency		
Charging Cycle	Intelligent with boost charge and advanced management		
Max Charging Current	Shall be as per the battery OEM		
Battery Working Temperature	≥ 26°C		
Battery Backup	30 minutes or more backup at full installed capacity (600 kW).		
* Please provide number and AH capacity of batteries proposed.			
Environmental Specs			
Noise level @ 1m	< 65 dB		
Working temperature range	from 0°C to +40°C continuous for kVA=KW		
Stock temperature range	from -20°C to +50°C (excluded batteries)		
Humidity range	10-90% at non-condensing		
Protection degree	IP20 or better		
Mechanical an Miscellaneous			
Technology rectifier/booster/inverter	IGBT		

Communication Interface	SNMP, HTTP/HTTPS, Backnet, Other cards including RS 485/ RS 232		
Installed Power Modules	25 kVA/KW – 50 kVA/KW		
Emergency Power off	Required		
Surge Power Ratings	As per IEC Standard		
Standards	**Safety**: IEC 62040-1: Uninterruptible Power Systems (UPS) - Part 1: General and safety requirements for UPS		
	EMC/EMI/RFI: IEC 62040-2: Uninterruptible Power Systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements		
	Performance: IEC 62040-3: Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements		
	Environmental: IEC 62040-4: Uninterruptible Power Systems (UPS) - Part 4: Environmental aspects – Requirements and reporting		
OEM Certifications			
1. CE marking			
2. The UPS manufacturer shall have valid ISO 9001 certification for quality management systems.			
3. The battery manufacturer shall have valid ISO TS 16949 and ISO 14001 certifications for engineering/R&D, quality and functional safety.			
4. The OEM should have Quality valid ISO 14001 for "Manufacture, Research Development and Distribution of power quality, power distribution and powered electrical products".			
5. Valid BS OHSAS 18001 - Occupational Health and Safety Assessment			
Building Management system Compatibility			
1. Should be able to integrate the UPS with a BMS (**Make:** Johnson Control BMS Software) so as to control the UPS through it.			
2. The system should be fully compatible with standard BMS preferably using BACKNET card.			
Communication			
1. SNMP and HTTP/HTTPS based monitoring to be made available.			
Protection			
1. Current limiting protection (Fuse less Electronic). Built in overload/ short circuit protection with circuits for current limit.			
2. Soft start on inverter and charger arrangement.			

3. Over voltage/ under voltage protection.		
4. Short circuit/ overload protection.		
5. Fan Failure Protection		
6. All other protection systems required for safety of UPS system, such as over temperature protection, Low battery etc.		
7. Remote monitoring of UPS system should be possible through status indicators elsewhere in the same facility through a device that replicates the indicators on mimic diagram on the UPS unit.		
Emergency Trip		
Provision to be made for an emergency trip button such that in case of emergency manual activation of this button will trip the input, battery and output breakers immediately.		
Indications		
1. Mains ON.		
2. Inverter ON/ OFF/ FAULTY/ TRIP (Reason)		
3. Charger ON/ FAULTY or TRIP (Reason)		
4. Battery Low		
5. Static by-pass ON		
6. Over temperature		
Alarm		
1. Low battery alarm and mains failure / load on battery.		
2. Over temperature alarm		
3. Over Load & short circuit		
4. DC Bus Over & Under Voltage		
5. Alarms available at the UPS should also be available at around the distance of 40-50 meters.		
Metering		
Digital LCD duly calibrated to indicate the following 1. AC Voltage: Input and Output		
2. AC Current : Input and Output		
3. % Load / KVA/KW		
4. Battery Voltage		
5. Charging and Discharging Current		
6. Frequency- Input/ Output		
7. Active Power Module Bar		
8. All interval voltage/current status/values		
System Controller		
The System controller must provide : 1. All system measurements on centralized control/monitoring module		
2. Basic system configuration (SLD with variables status)		
3. Alarm indications		
4. Power Analysis (kW, kVA, V, I, p.f., THD)		

5. Remote control monitoring at a distance of 40-50 meters from UPS location		
6. Battery handling		
Event logging at front panel		
The display unit should allow the user to display a time and date stamped log.		

Annexure – 3

Organization Letter Head
DECLARATION SHEET

We, _____ hereby certify that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the warranty.

The prices quoted in the financial bids are subsidized due to academic discount given to IIT Kanpur.

We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years.

NAME & ADDRESS OF the authorized Dealers/ distributors	
1 Phone	
2 Fax	
3 E-mail	
4 Contact Person Name	
5 Mobile Number	

Signature of Tenderer
Name:

Seal of the Company

Appendix

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date:

To,
_____
_____
_____
_____
_____

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender / Work: -
_____
_____
_____

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:
_____
_____

as per your advertisement, given in the above mentioned website(s).

2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .,), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organisation too have also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. I / We do hereby declare that our Firm has not been blacklisted/ debarred/ terminated/ banned by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organisation shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,
(Signature of the Bidder, with Official Seal)