Webel
opportunities infinITe

West Bengal Electronics Industry Development Corporation Limited

Registered Ofiice
Webel Bhavan, Block - EP & GP, Sector - V Bidhannagar, Salt Lake Kolkata 700091
Phone: 9133-2339-2228/226/327/316 'Fax: 9133-2357-1739/1708 email: contact@webel-india.com

NOTICE INVITING OPEN TENDER

Notice Inviting e-Tender No. WEBEL/EOT/COM/18-19/00093 Dated: 14-12-18

For: PROCUREMENT OF UPS SYSTEMS FOR WEBEL DQE ANIMATION ACADEMY.

The DY. G.M.(COMMERCIAL) on behalf of WEST BENGAL ELECTRONICS INDUSTRY DEVELOPMENT CORPORATION LIMITED invites Tender for the work detailed in table bellow:- (Submission of Bid Through Online Only)

Brief Description of Work	Tender Document Money (Rs) [Non refundable]	Earnest Money Deposit (EMD) (Rs) [Refundable]	Last Date and Time of Bid Submission (Online)	TECHNICAL BID Opening Date and Time (Online)
PROCUREMENT OF UPS SYSTEMS FOR WEBEL DQE ANIMATION ACADEMY.	Rs.500/-	Rs. 15,000/-	02 January 2019 12:00 PM	04 January 2019 3:00 PM
BID Opening Venue	**WEST BENGAL ELECTRONICS INDUSTRY DEVELOPMENT CORPORATION LIMITED Webel Bhavan, Block - EP & GP, Sector - V Bidhannagar, Salt Lake Kolkata 700091**			

For Commercial Queries, Contact: Mr. Pratul Show, DY. G.M.(COMMERCIAL) E-Mail: pratul.show@webel-india.com

For Technical Queries, Contact: Prodip Mukhopadhyay, CEO (WIL) E-Mail: prodip.mukhopadhyay@webel-india.com

DATE & TIME SCHEDULE

Activity / Event Description	Date	Time
Submission of Bid(s)	02 January 2019	12:00 PM
TECHNICAL BID Opening	04 January 2019	3:00 PM
PRICEBID Opening	07 January 2019	3:00 PM

NOTICE INVITING TENDER

1 . Technical Bid submission with digitally signed
The TECHNICAL BID is to be submitted duly digitally signed in the website https //wbtenders.gov.in

2 . Financial Bid submission with digitally signed
The FINANCIAL BID is to be submitted duly digitally signed in the website https //wbtenders.gov.in

3 . Schedule details
Submission of Technical Bid (if applicable) and Financial Bid will be done as per Time Schedule stated in this Tender Document.

4 . Price Bid/Financial Offer only if technical bid is qualified
The price bid / financial offer of the tenderer / bidder will be considered only if the technical bid of the tenderer is found qualified by the Tender Evaluation Committee (TEC) of WBEIDC. The decision of the TEC will be final and absolute in this respect.

5 . Display of Technically qualified bidders on the website.
The list of technically qualified bidders will be displayed on NITs website, https://wbtenders.gov.in.

SECTION A
ELIGIBILITY CRITERIA

1 . System Integrator
The Bidder/ASP/OEM should be a System Integrator.

Statutory

2 . Type of the Bidder
The bidder should be an ASP / OEM / System Integrator.

Statutory

3 . Experience on the related job area
The bidder should have executed 1 single order of similar nature of jobs, particularly in PROCUREMENT OF UPS SYSTEMS of Rs.1,000,000.00 each or more at any or The bidder should have executed 2 single order of similar nature of jobs, particularly in PROCUREMENT OF UPS SYSTEMS of Rs.500,000.00 each or more at any or The bidder should have executed 3 single order of similar nature of jobs, particularly in PROCUREMENT OF UPS SYSTEMS of Rs.300,000.00 each or more at any Govt. Department / Quasi Govt. Dept / PSU / Board / Council/ Large corporate or similar organization in last 3 financial years. Govt. Department / Quasi Govt. Dept / PSU / Board / Council or similar organization in last 3 financial years. Work Order copies along with job completion certificate from the customer duly self-attested are to be submitted.

Statutory

4 . Authorisation from OEMs
Bidders with tender specific authorization(s) from OEM(s), strictly in our format given in ANNEXURE-MAF in this tender document for all the items OEM(s) must accept their responsibility of supply, installation and comprehensive maintenance of services during warranty period as per ANNEXURE MAF.

Statutory

5 . Warranty of products
All products must be quoted with 3 YEARS ON-SITE COMPREHENSIVE manufacturer's warranty.

Statutory

6 . Unpriced Bill of Quantities
Un-priced B.O.Q is to be submitted in company letterhead mentioning the name, make and model no. of all the items.

Statutory

7 . Minimum Annual Turnover for the last financial year
Turnover of the last Financial Year (2017 - 2018) should be Rs.3,000,000.00 or above (Copy of audited Balance Sheet & P/L A/c duly certified by CA is required as proof).

Non-statutory

8 . Aggregate Annual Turnover
Aggregate of Turnover of last 3 Financial Years (01-04-15 - 31-03-18) should be Rs.10,000,000.00 or above (Copy of audited Balance Sheet & P/L A/c duly certified by CA is required as proof).

Non-statutory

9 . Company Profile & Article of Association
The Bidder must submit detail profile of the company and Articles of Association in the specified area of the job mentioned in this tender.

Non-statutory

10 . Incorporation certificate
The bidder should provide the certificate of incorporation under Comapny Act 1956.

Non-statutory

11 . No Consortium is allowed
The Bids shall be submitted by only the Bidder; no consortium is allowed in this Bid. Declaration in this regard needs to be submitted.

Non-statutory

12 . NO PART BID ALLOWED
Bidders have to quote all the items mentioned in tender document.No part bid will be accepted. Otherwise, the bid(s) will be treated as cancelled.

Non-statutory

13 . Statutory Documents-PAN & IT Returns
Copies of valid PAN along with I-T return documents, for Financial Year 2014 2015, 2015-2016, 2016-2017 are to be enclosed with the bid.

Non-statutory

14 . Trade License
Copy of valid Trade License is to be enclosed with the bid.

Non-statutory

15 . Locations of Service Centres
The bidder must have at least 1 registered service center for COMMUNICATION in KOLKATA Supporting documents for existence of Service Centre(s) has to be attached with the tender document.

Non-statutory

16 . Details of Office Locations
The Bidder must have office(s) in KOLKATA. (Copy of Trade License and contact details of the office(s), at the specified locations to be submitted along with the bid).

Non-statutory

17 . Banned by Govt. or like organizations
The bidder shall be required to give a declaration in their letter head that they have not been banned by any Government Agencies / Govt. Department / Quasi Govt. Dept / PSU / Board / Council or similar organization. If any Government Agencies / Govt. Department / Quasi Govt. Dept / PSU / Board Council or similar organization has banned the bidder and later on lifted the ban, the fact must be clearly stated.

Non-statutory

18 . Minimum number of years of existence
The bidding firm must be in existence for 3 years or more. (Documentary evidence has to be provided along with the bid)

Non-statutory

19 . Additional Eligibility Criteria
COPIES OF REGISTRATION CERTIFICATE FOR GST MUST BE ENCLOSED WITH THE BID. BIDDERS ARE ADVISED TO ENCLOS SYSTEM OF NOMENCLATURE (HSN) CODE & SERVICE ACCOUNTINGCODES (SAC) FOR ALL THE ITEMS.

Non-statutory

SECTION B
INSTRUCTIONS TO BIDDERS

General for e-Tender

1 . Registration of Bidder

Any Bidder willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement System, through logging on to https://etender.wb.nic.in . The Bidder is to click on the link for e-Tendering site as given on the web portal.

2 . Digital Signature Certificate (DSC)

Each Bidder is required to obtain a Class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders from the approved service provider of the National Informatics Centre (NIC) on payment of requisite amount. Details are available at the Web Site stated in Clause A.1. above. DSC is given as a USB e-Token.

3 . Search and Download

The Bidder can search & download N.I.T. & Tender Document(s) electronically from computer once he logs on to the website mentioned in Clause A.1. using the Digital Signature Certificate. This is the only mode of collection of Tender Documents.

4 . Participation in more than one work

A prospective bidder shall be allowed to participate in the job either in the capacity of individual or as a partner of a firm. If found to have applied severally in a single job all his applications will be rejected for that job.

5 . Exemption under NSIC

Bidders who are registered with NSIC, UNDER SINGLE POINT REGISTRATION SCHEME for the TENDERED ITEMS are exempted payment of bid security and Tender Fees up to the amount equal to their monetary limit. A proof regarding current registration with NSIC for the TENDERED ITEMS will have to be attached and documented through e filling, otherwise the Bid will be treated as cancelled. In case of bidders having moneytary limit as "NO LIMIT", the exemption will be limited to Rs.50,00,000/- only as per existing policy of WBEIDC Ltd.

6 . Submission of Tenders

Tenders are to be submitted through online to the website stated in Clause A (i). in two folders at a time for each work, one in Technical Proposal & the other is Financial Proposal before the prescribed date & time using the Digital Signature Certificate (DSC) The documents are to be uploaded virus scanned copy duly Digitally Signed. The documents will get encrypted (transformed into non readable formats).

Additional Instructions

1 . Additional Instruction

COPIES OF REGISTRATION CERTIFICATE FOR GST MUST BE ENCLOSED WITH THE BID. BIDDERS ARE ADVISED TO EN SYSTEM OF NOMENCLATURE (HSN) CODE & SERVICE ACCOUNTINGCODES (SAC) FOR ALL THE ITEMS.

SECTION C

GENERAL TERMS & CONDITIONS

GENERAL TERMS AND CONDITIONS

1 . Disputes and Arbitrations

In case of any dispute or differences, breach and violation relating to the terms of this agreement, the said dispute or difference shall be referred to the sole arbitration of Managing Director, WBEIDC Ltd. or any other person appointed by him. The award of the arbitrator shall be final and binding on both the parties. In the event of such arbitrator to whom the matter is originally referred to vacates his office on resignation or otherwise or refuses to do works or neglecting his work or being unable to act as arbitrator for any reason whatsoever, the Managing Director shall appoint another person to act as arbitrator in the place of outgoing arbitrator and the person so appointed shall be entitled to proceed further with the reference from the stage at which it was left by the predecessor. The Contractor will have no objection in any such appointment that arbitrator so appointed is employee of WBEIDC Ltd. The adjudication of such arbitrator shall be governed by the provision of the Arbitration and Conciliation Act, 1996, or any statutory modification or re-enactment thereof or any rules made thereof. The arbitration shall be held in Kolkata only.

2 . Deadline for Submission of Proposals

Proposals will be received by WBEIDC at the specified address not later than 02 01-19 12:00 Hrs. WBEIDC may, at its discretion, extend this deadline. WBEIDC may also extend this deadline for any other administrative reason.

3 . GTC-EMD-ONLINE PAYMENT

//The bidder shall pay an EMD of Rs. 15,000 through Net banking or through RTGS NEFT through the https://wbtenders.gov.in //portal as per G.O 3975-F(Y) dated 28th July, 2016 issued by Finance department Govt. of West Bengal. //For detail payment procedure & guideline on the same bidders are advised to follow the same order. //You may find the GO by clicking the link https://bit.ly/2zZ4i6e

4 . Force Majeure Condition

If the execution of the contract/supply order is delayed beyond the period stipulated in the supply order as result of outbreak of hostilities, declaration of an embargo or blockade of road, fire, flood or any such act of nature, then WBEIDC LTD may allow such additional time by extending the project execution timeframe as considered to be justified by the circumstances of the case and its decision will be final. If additional time is granted by the WBEIDC LTD, the supply order shall be read and understood as if it had contained from its inception the execution date as extended.

5 . Inclusion of freight & insurance

Price quoted should be inclusive of freight & insurance upto the delivery locations.

6 . Formats and Signing of Proposals

The original proposal shall be neatly typed and shall be signed by an authorized signatory / signatories on behalf of the Bidder. The authorization shall be provided by written Power of Attorney accompanying the proposal. The person or persons signing the proposal shall initial all pages of the proposal, except for un-amended printed literature. The proposal shall contain no interlineations, erase or overwriting. In order to correct errors made by the Bidder, all corrections shall be done & initialed with date by the authorized signatory after striking out the original words / figures completely.

7 . Governing Laws

This Tender Document and the contract shall be governed by and interpreted in accordance with Laws in force in India. The courts at Kolkata shall have exclusive jurisdiction in all matters arising under the contract.

8 . Late Proposals

Any proposal received by WBEIDC after the deadline for submission of proposals, as referred above shall not be accepted.

9 . Language of Proposal & Correspondence

The proposal submitted by the Bidder should be in English language only. All the documents relating to the proposal

(including brochures) supplied by the firm should also be in English, and the correspondence between the Bidder & WBEIDC will be in English language only. A duly signed formal copy must subsequently confirm the correspondence by Fax / e-mail.

10 . Non escalation of Price
The price offers shall remain firm within the currency of contract and no escalation of price will be allowed.

11 . Non-eligibility of bid by Webel Group Company
No Webel group company allowed to bid in WBEIDC tenders, and bids will be summarily disqualified if received from any WEBEL group company.

12 . Availability of PAN
Any quotation submitted without PAN of the vendor will be summarily rejected.

13 . Proposal Currency
Prices shall be quoted in Indian Rupees, inclusive of all prevailing taxes, levies, duties, etc.

14 . Cancellation of PO
WBEIDC Ltd. reserves the right to cancel Purchase Order if the agreed delivery schedule is not adhered to by the supplier. Any loss arising out of such delay in the supply of the equipment / service, shall be on the supplier account.

15 . Period of Validity of Proposals
The price offers shall remain firm within the currency of contract and no escalation of price will be allowed. The quoted offer and / or rate must be valid for a minimum period of 180 Days from the date of opening of the tender. The tender inviting authority reserves the right for seeking extension of validity of offered rates from the successful bidder. Acceptance of such request during actual offer is however optional to the bidder. The price validity will remain unaltered irrespective of any reason including foreign exchange rate variation. Variation in statutory rate levied by Government will however be reflected for both reduction and escalation.

16 . Whom to report
Reporting: You have to report to MR. PRODIP MUKHOPADHYAY, GM-WLS. for ALL purposes.

17 . Schedule of the Tender
The tender document shall be submitted on or before 02-01-19 12:00 Hrs. to Mr. Pratul Show

18 . Opening of Tender
The tenders shall be opened at the time set forth in the document. Bidders or their authorized representatives are invited to be present and to put their signatures on the records of tender opening as each tender is opened

19 . Withdrawal from Tender
Any bidder may withdraw his tender by written request at any time prior to the scheduled closing time for receipt of tenders and not thereafter.

20 . Additional Terms & Conditions
AT THE TIME ACCEPTING LOI, VENDOR IS ADVISED TO CHECK THE GST PERCENTAGE MENTIONED IN THE LOI. IN CASE BIDDER MUST INFORM DGM (COMMERCIAL)
IN WRITING PRIOR TO ISSUE OF THE PURCHASE ORDER. ONCE PURCHASE ORDER ISSUED NO SUBSEQUENT REQUES PERCENTAGE WILL BE ENTERTAINED.

SECTION D

SPECIAL TERMS & CONDITIONS

SPECIAL TERMS AND CONDITIONS

1 . Consignee Details
Consignee Details: WEBEL DQE ANIMATION ACADEMY.

2 . Delivery time period
ALL ITEMS must be delivered and installed within 4 WEEKS from the date of issuance of LOI.

3 . Delivery Locations
Delivery/Installation location:
WEBEL BHAVAN, BLOCK-EP & GP, SECTOR-V, SALT LAKE, KOLKATA-700091.

4 . Liquidated Damage
As per the job mentioned in the tender document; In the event of failure to meet the job completion in stipulated date/time liquidated damage may be imposed on the Vendor(s) for sum equivalent to 1.00% of the contract value for each week or part thereof, subject to a ceiling of 5.00% of the contract value (including all taxes & duties and other charges). In the event of LD exceeds 5.00% of the order value, WBEIDC reserves the right to terminate the contract and WBEIDC will get the job completedby any other competent party. The difference of cost incurred by WBEIDC will be recovered from the earnest money deposited / PBG / Invoice submitted by the vendor (as applicable).

5 . Payment Authority
Payment sanctioning authority: SRI PRODIP MUKHOPADHYAY, GM-WLS.

6 . Payment Terms
Payment will be made on submission of bills along with the receipted Challan & successful installation certificate from the END CUSTOMER. Payment will be released within 30 days after receiving payment from the end customer.

7 . Security Deposit
Successful bidder will have to submit a performance bank guarantee within 14 DAYS of issuance of LOI, amounting 5% total ordered value in the format given in the tender document for a validity period of 60 DAYS more than the warranty period (3 YEAR from the date of final acceptance of the end customer) of the quoted items.

8 . Additional Terms & Conditions
THE DETAILS SPECIFICATION IS ATTACHED IN THIS TENDER DOCUMENT.

BOQ, TECHNICAL SPECIFICATIONS & DELIVERY LOCATIONS

SL. No.	Description / Specification	Qty	UOM	Delivery Location
1	UPS 30 kVA True Online Double Conversion IGBT based UPS system with advanced DSP technologies and having minimum power factor of 0.9 with 3-Phase input and 3-Phase Output Rack mountable UPS is preferred Preferred Make: APC/Vertiv/Numeric/Hitachi/Delta	1	Nos.	HO (KOL)
2	BATTERY For 15 min. backup 42Ah batteries	40	Nos.	HO (KOL)
3	BATTERY RACK	1	Nos.	HO (KOL)
4	BATTERY INTERLINK CABLE (NYVIN CABLE)	1	Nos.	HO (KOL)
5	UPS 10 kVA True Online Double Conversion IGBT based UPS system with advanced DSP technologies and having minimum power factor of 0.9 with 3-Phase input and 1-Phase Output Rack mountable UPS is preferred Preferred Make: APC/Vertiv/Numeric/Hitachi/Delta	1	Nos.	HO (KOL)
6	BATTERY For 15 min. backup 26Ah batteries	20	Nos.	HO (KOL)
7	BATTERY RACK	1	Nos.	HO (KOL)
8	BATTERY INTERLINK CABLE (NYVIN CABLE)	1	Nos.	HO (KOL)

Delivery / Service Location Details

Location Code	Location Address
HO (KOL)	Webel Bhavan, Block - EP & GP, Sector - VBidhannagar, Salt LakeKolkata700091

Payment Terms Details

Payment Terms Code	Description
30D DELV	Within 30 days after delivery.

COMPLIANCE SHEET

SL. No.	Description / Specification	Qty	UOM	Offered Specification	Compliant (Yes/No)	Deviation Details (if any)
1	UPS 30 kVA True Online Double Conversion IGBT based UPS system with advanced DSP technologies and having minimum power factor of 0.9 with 3-Phase input and 3-Phase Output Rack mountable UPS is preferred Preferred Make: APC/Vertiv/Numeric/Hitachi/Delta	1	Nos.			
2	BATTERY For 15 min. backup 42Ah batteries	40	Nos.			
3	BATTERY RACK	1	Nos.			
4	BATTERY INTERLINK CABLE (NYVIN CABLE)	1	Nos.			
5	UPS 10 kVA True Online Double Conversion IGBT based UPS system with advanced DSP technologies and having minimum power factor of 0.9 with 3-Phase input and 1-Phase Output Rack mountable UPS is preferred Preferred Make: APC/Vertiv/Numeric/Hitachi/Delta	1	Nos.			
6	BATTERY For 15 min. backup 26Ah batteries	20	Nos.			
7	BATTERY RACK	1	Nos.			
8	BATTERY INTERLINK CABLE (NYVIN CABLE)	1	Nos.			

ANNEX - BID FORM

(Bidders are requested to furnish the Bid Form in the Format given in this section, filling the entire Blank and to be submitted on Letter Head)

Ref No : (Mandatory) Date : (Mandatory)

To,
Dy. General Manager (Commercial)
WBEIDC Ltd
Webel Bhavan
Block EP & GP, Sector-V
Salt Lake Electronics Complex
Kolkata-700091

Dear Sir,

Having examined the Bid documents we, the undersigned, offer to undertake the job of "<*Tender Title*>" as per the Tender No. _____dated_____.

We agree to abide by this bid for the period of 6 (six) months from the date for fixed for price bid opening and it shall remain binding upon us for acceptance at any time before the expiry of the period.

This bid, together with your written acceptance thereof and your order / notification of award, shall constitute a binding contract between us.

We understand that WBEIDC reserves the right to accept in full / part or reject any or all the bids received or split order within successful bidding without any explanation to bidders and its decision on the subject will be final and binding on Bidder. We also understand that WBEIDC is not bound to accept the L-1 bid for placement of order.

We had given an EMD/BG of Rs. _____ (DD/BG No_____ dated _____ on _____) along with the technical document.

We also abide to go through bank Guarantee of 5% of the job value as Performance Bank Guarantee.

Dated, this _____day of _____, 20__

Signature

.....
(In capacity of)
Duly authorized to sign bid for and on behalf of
(Name and Address of the Bidder)

(Affix Official Seal)

ANNEX - BOM & TECHNICAL SPECIFICATIONS

ALL TECHNICAL PARAMETERS OF ITEMS ARE MANDATORY. NO DOWNWARD DEVIATION IS ALLOWED. IN CASE OF ANY DEVIATIONS IN SPECIFICATIONS OF THESE ITEMS, THE BID WILL BE SUMMERILY REJECTED.

The bidder has to attach a technical compliance sheet in the following format:

Sl. No.	Description of Items	Make & Model No.	Qty	Unit	Offered Specification	Remarks
1						

ANNEX – MAF
(MANUFACTURER'S AUTHORISATION FORM)

(TO BE SUBMITTED ON OEM LETTERHEAD, SIGNED BY A PERSON COMPETENT AND HAVING THE POWER OF ATTORNEY [Notarized copy to be attached] TO BIND THE PRODUCER) Without this MAF, the bid is liable to be rejected.

Tender No. ---------- **Date:----------**

Dy. General Manager (Commercial)
WBEIDC LTD ,
Block-EP&GP, Webel Bhawan,
Sector-V ,Salt Lake , Kolkata-700 091.

WHEREAS _____ who are official producers of _____ and having production facilities at _____ do hereby authorize _____ located at _____ (hereinafter, the "Bidder") to submit a bid of the following Products produced by us, for the Supply Requirements associated with the above Invitation for Bids.

[Note : Please Specify the Product Name & Model No here.]

When resold by _____ these products are subject to applicable warranty terms of this NIT.

We assure you that in the event of _____ not being able to fulfill its obligation as our Sales & Service Provider in respect of this NIT, we would continue to meet our the terms stated in the abovementioned NIT through alternate arrangements.

We also confirm that _____ is our authorized service provider / system integrator and can hence provide maintenance and upgrade support for our products.

We also undertake to supply the materials in the event of the non-supply of the materials by_____ as per the NIT and assure you the availability of spares for the products for the next two years after the expiry of three years comprehensive on-site warranty.

Name _____ In the capacity of

ANNEX – PBG

PERFORMANCE SECURITY GUARANTEE BOND

1. In consideration of the MD , WBEIDC (hereinafter called 'WBEIDC') having agreed to exempt _____ (hereinafter called 'the said contractor(s)') from the demand under the terms and conditions of an agreement/Advance Purchase Order No _____ dated _____ made between _____ and _____ for the supply of _____ (hereinafter called "the said agreement "), of security deposit for the due fulfillment by the said contractor (s) of the terms and conditions contained in the said Agreement, on production of the bank guarantee for _____we, (name of the bank) _____ (hereinafter refer to as "the bank") at the request of _____ (contractor(s)) do hereby undertake to pay to the WBEIDC an amount not exceeding _____ against any loss or damage caused to or suffered or would be caused to or suffered by WBEIDC by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

2. We (name of the bank) _____ do hereby undertake to pay the amounts due and payable under this guarantee without any demure, merely on a demand from the WBEIDC by reason of breach by the said contractor(s)' of any of the terms or conditions contained in the said Agreement or by reason of the contractors(s)' failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee where the decision of WBEIDC in these counts shall be final and binding on the bank. However, our liability under this guarantee shall be restricted to an amount not exceeding _____.

3. We undertake to pay to the WBEIDC any money so demanded notwithstanding any dispute or disputes raised by the contractor(s)/supplier(s) in any suit or proceeding pending before any court or tribunal relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the contractor(s)/supplier(s) shall have no claim against us for making such payment.

4. We(name of the bank)_____ further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the WBEIDC under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till _____(office/Department) WBEIDC certifies that the terms and conditions of the said Agreement have been fully or properly carried out by the said contractor(s) and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the expiry of TWO/TWO AND HALF/THREE YEARS (as specified in the tender no.....) from the date hereof, we shall be discharged from all liabilities under this guarantee thereafter.

5. We (name of the bank)_____ further agree with the WBEIDC that the WBEIDC shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the WBEIDC against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of the WBEIDC or any indulgence by the WBEIDC

7. We (name of the bank) _____ lastly undertake not to revoke this guarantee during its currency except with the previous consent of the WBEIDC in writing.

Dated the _____ day of _____, 20_____

for _____
(Indicate the name of bank)

ANNEX - UFA

UNDERTAKING FOR AUTHENTICITY FOR ---------- (items name)

(TO BE SUBMITTED ON LETTERHEAD BY THE SUCCESSFULL BIDDER)

Sub: - < Tender Title >

Ref: - 1. Your Purchase Order No. _____ dated _____

2. Our Invoice No. / Quotation No. _____ dated _____

With reference to the Servers etc. being supplied / quoted to you vide our Invoice No. / Quotation No. / Order No. cited above, we hereby undertake that all the components / parts / assembly / software used in the Servers under the above like Hard disk, Monitors, Memory etc. shall be original new components / parts / assembly / software only, from respective OEMs of the products and that no refurbished / duplicate / second hand components / parts / assembly / software are being used or shall be used.

We also undertake that in respect of licensed operating system if asked for by you in the purchase order, the same shall be supplied along with the authorized license certificate (e.g. Product keys on certification of Authenticity in case of Microsoft Windows Operating System) and also that it shall be sourced from the authorize source (e.g. Authorized Microsoft Channel in case of Microsoft Operating System).

Should you require, we hereby undertake to produce the certificate from our OEM supplier in support of above undertaking at the time of delivery / installation. It will be our responsibility to produce such letters from our OEM supplier's at the time of delivery.

In case of default and our inability to comply with the above at the time of delivery or during installation, for the IT hardware / software already billed, we agree to take back the desktops without demur, if already supplied and return the money if any paid to us by you in this regard.

We (system OEM name) also take full responsibility of full parts & service SLA as per the content even if there is no defect by our authorized service center / Reseller / SI etc.

Authorized Signatory with seal

Name : _____

Designation : _____

Place : _____

Date : _____

PRICE BID

The price has to be submitted online only.

ANNEX – EXP PROF
EXPERIENCE PROFILE

Name of the Firm: .....

.....

List of projects completed that are similar in nature to the works executed during the last 3 (three) years, as stated above.

Sl. No.	Customer's Name	PO No. and Date	Value in Rs.	Date of Successful Completion of the job	Completion Certificate Date issued by Customer

Note:

i. Certificate from the Customers to be attached

ii. Non-disclosure of any information in the Schedule will result in disqualification of the firm

Signature of applicant including title
and capacity in which application is made.

ANNEX - SAO
STRUCTURE AND ORGANISATION

1) Name of Applicant 2) Office Address	: :	
Telephone No.	:	
Fax No.	:	
3) Name and Address of Bankers	:	
4) Attach an organization chart showing the structure of the company with names of Key personnel and technical staff with Bio-data.	:	

Note: Application covers Proprietary Firm, Partnership, Limited Company or Corporation.

Signature of applicant including title
and capacity in which application is made.

TECHNICAL SPECIFICATIONS FOR 10 KVA UPS SYSTEM

Sl	Parameter	Required Specification	Offered Specification
1	Manufacturers Credentials	Manufacturer must be ISO 9001:2008 certified. Please enclose Certificate	
		Manufacturer must be ISO 14001 certified. Please enclose certificate	
		Bidder if not the manufacturer, must provide **Manufacturer's Tender Specific Authorization** that the bidder is authorized sales & service provider.	
2	UPS Ratings	10 KVA / 10KW	
3	UPS Type	True Online Double conversation with **integrated Smart sleep technologies** along with DSP Based UPS system with IGBT based rectifier and Inverter.	
4	Mandatory System Features	UPS efficiency Online mode efficiency up to 95.8% Eco mode efficiency up to 99%	
5	Input Parameters	It Should be possible to configure the UPS system for single Phase (220/230/240VAC) / Three Phase (380/400/415VAC) and Single Phase Output.((220/230/240VAC)	
		Permissible Input voltage range : 176V AC - 288V AC	
		Input frequency Range : 40Hz-70Hz	
		Nominal Frequency: 50Hz/60Hz	
		Input power factor : >0.99 p.f	
6	Intermediate Dc Circuit Parameters	Nominal DC bus voltage: 140VDC – 240VDC	
		Types of batteries supported : SMF	
		Battery Charging max : 8A	
7	Output Parameters	Output power rating at 1.0 pf: 10 KVA / 10 KW	
		Output power factor : Unity	
		Output voltage precision : +/-3%	
		Output voltage distortion for <2% for 100% Linear Load < 5% for 100% Non Linear Load	
		Power Rating at Unity pf : 10 KVA	
		Output Crest factor capacity : 3:1	
		Overload Capacity : at 25°C Upto 105%~ 125% for 5 mins, Upto 125%~ 150% for 1 mins Over 150% for 200ms	
8	Batteries	SMF Battery: 20 Blocks of 12V for each set	
		Battery VAH should not less than 6000VAH for total 15mins backup .	
9	Special Feature (Mandatory)	Operating Temperature : 0-50°C without de-rating UPS output capacity.	
10	Output Outlet	UPS output socket / Outlet should be programmable with cascade protection .	
11	Display	Gravity Sense LCD display.	

12	Safety	General & Safety Requirement: IEC/EN 62040-1 EMC : IEC/EN 62040-2.	
13	Ethernet Port	Built in with the UPS system to support monitoring.	
14	Protection Parameter	Dust Proof, Moisture Proof , High Temperature Proof,	
15	Certification	RoHS, SEISMIC Certified.	

Please enclose a printed brochure of the UPS system along with the offer in case there is a mismatch between quoted specifications and the Brochure Specifications then the tender may be rejected

Single-Module Uninterruptible Power System
30kVA
Technical Data Sheet

1.0 GENERAL

1.1 SUMMARY

These specifications describe requirements for an Uninterruptible Power System (UPS) optimized for maximum efficiency. The UPS shall automatically maintain AC power to the critical load within specified tolerances and without interruption during failure or deterioration of the normal power source.

The manufacturer shall design and furnish all materials and equipment to be fully compatible with electrical, environmental and space conditions at the site. The UPS shall include all equipment to properly interface the AC power source to the intended load and shall be designed for unattended operation.

1.2 STANDARDS

The UPS and all associated equipment and components shall be manufactured in accordance with the following applicable standards:

- Safety Requirements: IEC 62040-1-1, EN 50091-1-1
- EMC: IEC 62040-2 (Class C3), EN 50091-2 (Class C3)
- Performance: IEC 62040-3 (VFI SS 111), EN50091-3

The above mentioned product standards incorporate relevant compliance clauses with generic IEC and EN standards for safety (60950), electromagnetic emission and immunity (61000 series) and construction (60146 series and 60529).

For more details, see below:

- IEC 61000-3-4
- IEC 61000-4-2, 4, 5, 6, 8, 11
- EN60950
- EN60529
- IEC 60146-1-1

The UPS is CE marked in accordance with EEC directives 73/23 “low voltage” and 89/336 “electromagnetic compatibility”.
The Quality System for the engineering and manufacturing facility certificated to conform to Quality System Standard ISO 9001 for the design and manufacture of power protection systems for computers and other sensitive electronics.

1.3 SYSTEM DESCRIPTION

1.3.1 Design Requirements

The UPS shall be rated to provide a minimum of **27 kW** on the output.

The UPS shall be able to supply all required power to full rated output kVA loads with power factor from 0.5 lagging to 0.9 leading.

Load voltage and bypass line voltage shall be 400VAC, three-phase, four-wire plus ground. Input voltage shall be 400VAC, three-phase, four-wire plus ground. The AC input source and bypass input source shall each be a solidly grounded wye service.

The battery shall support the UPS at the rated **24 kW** load for at least **15minutes** at 25℃ at startup.

The UPS shall have an active power factor-corrected IGBT converter/rectifier, capable of maintaining input power factor and input current total harmonic distortion (THDi) within specifications without an additional input filter.

The UPS shall be of transformer-free design, requiring no internal transformer in the main power path for the basic operation of the module.

1.3.2 Modes of Operation

The UPS shall operate as an on-line reverse transfer system in the following modes:

A. **Normal**: The critical AC load shall be continuously powered by the UPS inverter. The rectifier/charger shall derive power from the utility AC source and supply DC power to the DC-DC converter, which in turn shall supply the inverter while simultaneously float charging the battery.

B. **ECO Mode**: The critical AC load shall be continuously powered by the bypass with the inverter available to power the load if the bypass source voltage or frequency exceeds adjustable parameters of power quality.

C. **Battery**:Upon failure of utility AC power, the critical load shall be powered by the inverter, which, without any switching, shall obtain its power from the battery plant via the DC-DC converter. There shall be no interruption in power to the critical load upon failure or restoration of the utility AC source.

D. **Recharge**: Upon restoration of the utility AC source, the rectifier shall supply power to the output inverter and to the DC-DC converter, which shall simultaneously recharge the batteries. This shall be an automatic function and shall cause no interruption to the critical load.

E. **Bypass**: If the UPS must be taken out of service, the static transfer switch shall transfer the load to the bypass source. The transfer process shall cause no interruption in power to the critical load. An optional external wrap-around maintenance bypass shall be used to ensure full isolation of the unit for the service of internal components while providing safety from arc flash.

F. **Off-Battery**: If the battery only is taken out of service, it shall be disconnected from the DC-DC converter by means of an external disconnect circuit breaker. The UPS shall continue to function and meet all of the specified steady-state performance criteria, except for the power outage backup time capability. If multiple battery strings are used, each string shall be capable of being electrically isolated for safety during maintenance.

1.3.3 Performance Requirements

The solid-state power components, magnetic, electronic devices and over current protection devices shall operate within the manufacturer's recommended temperature when the UPS is operating at 100% critical load and maintain battery charging under either of the following conditions:

- Any altitude within the specified operating range ≤1000m elevation.
- Any ambient temperature within the specified operating range of 0°C to 40°C

1.3.4 Input

A. Voltage: Input/output voltage specifications of the UPS shall be

- Rectifier AC Input: 380/400/415V, three-phase, four-wire-plus-ground
- Bypass AC Input: 380/400/415V, three-phase, four-wire-plus-ground
- AC Output: 380/400/415V, three-phase, four-wire-plus-ground

B. Voltage Range: 305 - 477V at full at full load

C. Frequency Range: 40 - 70Hz

D. Maximum Inrush Current: UPS inrush current not to exceed 1.5 times rated input current

E. Power Factor: Minimum 0.99 at full load with nominal input voltage

F. Current Distortion: Less than 4% THD at full load input current in double-conversion mode

1.3.5 AC Output

A. Load Rating: 100% of load rating for any load from 0.5 lagging to 0.9

B. Voltage Regulation:

- ±1% RMS average for a balanced, three-phase load
- ±2% for 100% unbalanced load for line-to-line imbalances

C. VoltageAdjustmentRange: ±5% for line drop compensation adjustable by factory service personnel

D. Frequency Regulation:

- Synchronized to bypass: ±2.0Hz default setting, (adjustable by factory service personnel)

E. System Efficiency: defined as output kW/input kW at rated lagging load power factor; and not less than the values listed below

95% at 60-100% Load,

>94.3% at 50% Load,

>93%at 25% load.

F. Phase Imbalance:

- Balanced loads 120° ±1°
- 100% unbalanced loads 120° ±2°

G. Voltage Transients (average of all three phases):

- **0-100% or 100-0%**
  Response Meets IEC 62040-3: 2010 Figure 2 Curve 1, Class 1
  Meets ITIC and CBEMA Curve Requirements
- **10-100% or 100-10%**
  Transient Voltage Deviation, RMS 5%

H. Overload at Full Output Voltage with ±1% voltage regulation:

- 105% - 125% of full load for 5 minutes
- 125% - 150% of full load for 60 seconds
- >150% of full load for a minimum of 200 milliseconds

1.3.6 Grounding

The UPS chassis shall have an equipment ground terminal.

1.4 ENVIRONMENTAL CONDITIONS

The UPS shall be able to withstand the following environmental conditions without damage or degradation of operating characteristics:

A. Operating Ambient Temperature

- UPS: 0°C to 40°C
- Battery: 25°C ± 3°C

B. Storage/Transport Ambient Temperature

- Storage and transportation: -40°C ~ +70°C

C. Relative Humidity

- 0 to 95%, non-condensing

D. Altitude

- ≤ 1000m; derate power by 1% for every 100m above 1000m

E. Audible Noise Level

- 58 dBA measured 1m from the surface of the unit

1.4.1 UPS Delivery Submittals

Submittals upon UPS delivery shall include:

- A complete set of submittal drawings.
- Two (2) sets of instruction manuals. Manuals shall include a functional description of the equipment, safety precautions, instructions, step-by-step operating procedures and routine maintenance guidelines, including illustrations.

1.5 WARRANTY

1.5.1 UPS Warranty

The UPS manufacturer shall warrant the unit against defects in workmanship and materials for 36 months after initial startup or 37 months after the shipping date, whichever comes first.

1.5.2 Warranty – End User

Warranties associated with items not manufactured by the UPS supplier but included as part of the system shall be passed through to the end user.

1.6 QUALITY ASSURANCE

1.6.1 Manufacturer's Qualifications

A minimum of 20 years' experience in the design, manufacture and testing of solid-state UPS systems shall be required.

The quality system for the engineering and manufacturing facility shall be certified to conform to Quality System Standard ISO 9001& ISO 140001 for the design and manufacture of power protection systems for computers and other sensitive electronics

1.6.2 Factory Testing

Before shipment, the manufacturer shall fully and completely test the UPS unit to ensure compliance with the specification.

The UPS unit shall be tested at the system-specified capacity. Testing shall be done using load banks at part-load and the full kW rating of the unit.

Operational discharge and recharge tests to ensure guaranteed rated performance.

System operations such as startup, shutdown and transfers shall be demonstrated.

A certified copy of the test results shall be available for each system as indicated on the order.

2.0 PRODUCT

2.1 FABRICATION

2.1.1 Materials

All materials of the UPS shall be new, of current manufacture, high grade and shall not have been in prior service except as required during factory testing. All active electronic devices shall be solid-state. All power semiconductors shall be sealed. Control logic and fuses shall be physically isolated from power train components to ensure operator safety and protection from heat.

2.1.2 UPS Internal Wiring

Wiring practices, materials and coding shall be in accordance with the requirements of the National Electrical Code and applicable local codes and standards. All bolted connections of busbars, lugs and cables shall be in accordance with requirements of the National Electric Code and other applicable standards. All electrical power connections shall be torqued to the required value and marked with a visual indicator.

2.1.3 Field Wiring

All field wiring power connections shall be to tin-plated copper busbars for connection integrity. Busbars shall have adequate space to allow two-hole, long-barrel, compression type lugs forming a permanent connection between field wiring and field-installed lugs.

Provisions shall be made in the cabinets to permit installation of input, output and external control cabling using raceway or conduit. Provision shall be made for top and bottom access to input, output, bypass and DC connections. In conformance with the NEC, connection cabinets shall provide for adequate wire bend radius.

2.1.4 Construction and Mounting

The UPS shall be housed in an IP20 enclosure, designed for floor and rack mounting. The UPS shall be structurally adequate and have provisions for forklift handling. Maximum cabinet height shall be0.45 meters for all UPS range.

2.1.5 Cooling

Adequate ventilation shall be provided to ensure that all components are operated well within temperature ratings.

Temperature sensors shall be provided to monitor the UPS's internal temperature. Upon detection of temperatures in excess of the manufacturer's recommendations, the sensors shall cause audible alarms to be sounded and visual alarms to be displayed on the UPS control panel.

2.2 EQUIPMENT

2.2.1 UPS System

The UPS system shall consist of an IGBT power factor-corrected rectifier, DC-DC converter and three-phase, transformer-free inverter, bypass static transfer switch, bypass synchronizing circuitry, protective devices and accessories as specified. The specified system shall also include a battery disconnect breaker and battery system.

2.2.2 Surge Protection

The UPS shall have input 50kA UL Certified external surge suppressor (TVSS) with response time of < 0.5 nano seconds to protect against surges, sags and over current from the AC source.

2.2.3 Output Protection

The UPS shall be protected against sudden changes in output load and short circuits at the output terminals. The UPS shall have built-in protection against permanent damage to itself and the connected load for all predictable types of malfunctions. Fast-acting, current-limiting devices shall be used to protect against cascading failure of solid-state devices. 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 reason for tripping off-line.

The load shall be automatically transferred to the bypass line uninterrupted for an internal UPS malfunction. The status of protective devices shall be indicated on a graphic display screen on the front of the unit.

2.3 COMPONENTS

2.3.1 Rectifier

The term rectifier shall denote the solid-state equipment and controls necessary to convert alternating current to regulated direct current to supply the inverter and charge the battery. The DC output of the rectifier shall meet the input requirements of the inverter without the battery being connected.

A. Input Current Harmonic Distortion

The rectifier shall actively control and reduce input current distortion over the full operating range of the UPS without the need for an additional passive input filter. Input current THD shall be less than 4% at rated load and nominal voltage in double-conversion mode.

B. Dynamic Current Input Limit Reduction

The rectifier, in conjunction with the other UPS controls and circuitry, shall adjust the current demanded for battery charging as a function of UPS wattage load and input voltage level.

2.3.2 DC-DC Converter

The term DC-DC converter shall denote the equipment and controls to regulate the output of the rectifier to the levels appropriate for charging the battery and to boost the battery voltage to the level required to operate the inverter. The DC-DC converter shall be solid-state, capable of providing rated output power and, for increased performance, shall be a pulse width-modulated design and shall utilize insulated gate bipolar transistors (IGBTs). The DC-DC converter shall control charging of the battery. The AC ripple voltage of the charger DC shall not exceed 1% RMS of the float voltage.

A. Battery Recharge

In addition to supplying power for the load, the rectifier/charger shall be capable of supplying a minimum of 5% of the module full load power rating for recharging the battery. The battery recharge rate capability shall be sufficient to replace 95% of the battery discharge power within ten (10) times the discharge time while running at 95% of full load at nominal voltage, provided that the battery can accept recharge at that rate. After the battery is recharged, the rectifier/charger shall maintain the battery at full charge until the next emergency operation.

B. Battery Equalize Charge

A manually initiated equalize charge feature shall be provided to apply an equalize voltage to the battery. The duration of equalize charge time shall be adjustable from 8 to 30 hours. A method shall be available to deactivate this feature for valve regulated battery systems.

C. Stop Battery Charging Function

Battery charging may be stopped by a shunt trip of the battery cabinet breaker when over temperature is sensed in the battery cabinet.

D. Over voltage Protection

There shall be DC over voltage protection so that if the DC voltage rises to the pre-set limit, the UPS shall shut down automatically and initiate an uninterrupted load transfer to bypass or shall disconnect the battery via the DC breaker(s) in the battery string.

E. Temperature-Compensated Charging

The UPS shall adjust the battery charging voltage based on the battery temperature reported from external battery temperature sensors. When multiple sensors are used, the voltage shall be based on the average temperature measured. Excessive difference in the temperature measurements shall be reported and the charging voltage adjusted to protect the batteries from excessive current.

F. Battery Load Testing

The UPS shall be capable of performing battery load testing under operator supervision. To accomplish this, the rectifier shall reduce charging voltage to force the batteries to carry the load for a short time. If the curve of battery voltage drop indicates diminished battery capacity, the UPS shall display an alarm message. If the voltage drop indicates battery failure, the UPS shall terminate the test immediately and annunciate the appropriate alarms.

2.3.3 Inverter

The term inverter shall denote the equipment and controls to convert direct current from the rectifier or battery via the DC-DC converter to precise alternating current to power the load. The inverter shall be solid-state, capable of providing rated output power and, for increased performance, the inverter shall be a pulse-width-modulated design and shall utilize insulated gate bipolar transistors (IGBTs). To further enhance reliable performance and efficiency, the inverter shall not require an inverter output series static switch/isolator for the purposes of overload or fault isolation or transfers to bypass.

A. Overload Capability

The inverter shall be able to sustain an overload across its output terminals while supplying full rated voltage ofup to 150% for 60 seconds. The inverter shall be capable of at least 200% current for short-circuit conditions including phase-to-phase, phase-to-ground and three-phase faults. After the fault is removed, the UPS shall return to normal operation without damage. If the short circuit is sustained, the load shall be transferred to the bypass source and the inverter shall disconnect automatically from the critical load bus.

B. Output Frequency

The inverter shall track the bypass continuously, providing the bypass source maintains a frequency of 50Hz ±1% (0.5 Hz).

C. Phase-to-Phase Balance

The inverter shall provide a phase-to-phase voltage displacement of no worse than ±2% with a 100% unbalanced load.

D. Inverter Fault Sensing and Isolation

The UPS shall be provided with a means to detect a malfunctioning inverter and isolate it from the critical load bus to prevent disturbance of the critical load voltage beyond the specified limits.

E. Battery Protection

The inverter shall be provided with monitoring and control circuits to protect the battery system from damage due to excessive discharge. Inverter shutdown shall be initiated when the battery voltage has reached the end of discharge voltage. The battery end-of-discharge voltage shall be calculated and automatically adjusted for partial load conditions to allow extended operation without damaging the battery. Automatic shutdown based on discharge time shall not be acceptable.

2.3.4 Inverter Bypass Operation

When maintenance is required or when the inverter cannot maintain voltage to the load due to sustained overload or malfunction, a bypass circuit shall be provided to isolate the inverter output from the load and provide a path for power directly from an alternate AC (bypass) source. The UPS control system shall constantly monitor the availability of the inverter bypass circuit to perform a transfer. The inverter bypass circuit shall consist of a continuous duty bypass static switch and an over current protection device to isolate the static bypass switch from the bypass utility source. The bypass static switch shall denote the solid-state device incorporating SCRs (silicon controlled rectifiers) that can automatically and instantaneously connect the alternate AC source to the load.

A. Static Bypass Switch Rating

The static bypass switch shall be rated for continuous duty operation at full rated load for highest reliability without the use of mechanical devices as used with a momentary rated device.

B. Manual Load Transfers

A manual load transfer between the inverter output and the alternate AC source shall be initiated from the control panel. Manually initiated transfers shall be make-before-break, utilizing the inverter and the bypass static switch.

C. Automatic Load Transfers

An automatic load transfer between the inverter output and the alternate AC source shall be initiated if an overload condition is sustained for a period in excess of the inverter output capability or due to a malfunction that would affect the output voltage. Transfers caused by overloads shall initiate an automatic retransfer of the load to the inverter only after the load has returned to a level within the rating of the inverter source and the alarm has been acknowledged.

D. Momentary Overloads

In the event of a load current inrush or branch load circuit fault in excess of the inverter rating, the bypass static switch shall connect the alternate AC source to the load for at least 200 milliseconds, allowing >

400% of the normal rated output current to flow. Output voltage shall be sustained to the extent the alternate AC source capacity permits. If the overload condition is removed before the end of the 200-millisecond period, the bypass static switch shall turn off and the load shall remain on inverter power. If the overload remains, then a transfer to the alternate AC source is to be completed.

E. Back-Feed Protection

As required by IEC/EN 62040-1, the static transfer switch shall not back-feed UPS power to the bypass distribution system while the UPS is operating on battery during a bypass power outage. The purpose of this requirement is to prevent the risk of electrical shock on the distribution system when the normal source of power is disconnected or has failed. If a shorted SCR is detected, the static transfer switch shall be isolated by an internal automatic circuit breaker and an alarm message shall be annunciated at the UPS control panel. The load shall remain on conditioned and protected power after detection of a shorted SCR and isolation of the bypass static switch.

F. Active ECO-Mode

When selected, this mode of operation shall transfer the load to the bypass source and maintain it there as long as the bypass source frequency, slew rate and voltage are within the adjusted operating parameters. While in this mode, the inverter shall remain operating to demonstrate the ability to instantaneously assume the load without interrupting the output voltage. Should the bypass source go outside the adjusted limits, the bypass static switch shall turn off, isolating the load from the bypass while the inverter assumes the full critical load. The load shall be transferred from the bypass source to the inverter while maintaining the output voltage within the ITIC and CBEMA curves.

2.3.5 Display and Controls

A. UPS Control Panel

Each UPS module shall be equipped with a dot graphic LCD display. This shall automatically provide all information relating to the current status of the UPS as well as being capable of displaying metered values. The display shall be menu-driven, permitting the user to easily navigate through operator screens.

B. Logic

UPS system logic and control programming shall reside in a microprocessor-based control system with nonvolatile flash memory. Rectifier, inverter and system control logic shall utilize high-speed digital signal processors (DSPs). CAN bus shall be used to communicate between the logic and the User Interface as well as the options. Switches, contacts and relays shall be used only to signal the logic system as to the status of mechanical devices or to signal user control inputs. Customer external signals shall be isolated from the UPS logic by relays or optical isolation.

C. Metered Values

A microprocessor shall control the display and memory functions of the monitoring system. All three phases of three-phase parameters shall be displayed simultaneously. All voltage and current parameters shall be monitored using true RMS measurements for accuracy to ±3% of voltage, ±5% AC current. The following parameters shall be displayed:

- Input voltage, line-to-line
- Input current per phase
- Input frequency
- Input Power factor
- Battery voltage
- Battery charging/discharging current
- Output voltage, line-to-line
- Output frequency
- Bypass input voltage, line-to-line
- Bypass input frequency
- Load current
- Load real power (kW), total and percentage
- Load apparent power (kVA), total and percentage
- Load percentage of capacity
- Battery temperature, each battery string
- Battery state of charge
- Real time efficiency curve

D. HMI Control Buttons

Buttons shall be provided to start and stop the inverter. A pop-up message requesting confirmation shall be displayed whenever a command is initiated that would change the status of the UPS.

Other buttons shall be provided to reset faults and silence the alarm buzzer.

E. Event Log

This menu item shall display the list of events that have occurred recently while the UPS was in operation. The Event Log shall store up to 2000 events, with the oldest events being overwritten first if the log's capacity is reached.

F. Battery Status Indicator

A battery status indicator shall display DC alarm conditions, temperature, battery state of charge, the present battery voltage, total discharge time, status of last battery test and battery time remaining during discharge.

The UPS shall provide the operator with controls to perform the following functions:

- Configure and manage manual battery test.
- Modify test duration and minimum voltage
- Start battery test
- Monitor test status and progression
- Stop battery test
- Battery test status

G. Alarms

The following alarm messages shall be displayed:

- Mains Voltage Abnormal
- Mains Under voltage
- Mains Freq. Abnormal
- Charger Fault
- Battery Reversed
- No Battery
- Parallel Comm. Fail
- Bypass Unable To Track
- Bypass Abnormal
- Inverter Asynchronous
- Fan Fault
- Control Power Fail
- Unit Over Load
- System Over Load
- Bypass Phase Reversed
- Transfer Time-Out
- Load Sharing Fault
- Bypass Over Current.

H. Controls

System-level control functions shall be:

- Start Inverter (and transfer to inverter)
- Stop Inverter (after transferring to bypass)
- Startup Screen
- Battery Test Set point Adjustment
- Configure Manual Battery Test
- Initiate Manual Battery Test
- System Settings (Time, Date, Language, LCD Brightness, Password, Audio Level)
- Alarm Silence Command
- Fault Reset Command
- ECO mode

I. Manual Procedures

- Load Transfers: HMI buttons (START INVERTER, STOP INVERTER) shall provide the means for the user to transfer the load to bypass and back on UPS.

2.3.6 Self-Diagnostics

- Event Log File - The control system shall maintain a log of the event conditions that have occurred during system operation. Each log shall contain the event name, event time/date stamp and a set/clear indicator.

2.3.7 Remote Monitoring and Integration Capabilities

A. **Communication Cards**:The UPS can be equipped with up to three optional communication card(s) including:

- Integrated Liebert SIC card providing Web-based UPS monitoring and management capabilities

B. **Output Alarm Contacts**: Dry contact outputs shall be provided for Summary Alarm, Bypass Active, Low Battery and AC Input Failure.

C. **Customer Input Contacts**: The UPS shall have four discrete input contacts available for the input and display of customer-provided alarm points or to initiate a pre-assigned UPS operation. Each input can be signaled by an isolated, external, normally open contact.

When an assembly is selected as a pre-assigned UPS operation, the following actions shall be initiated:

- Transfer to Bypass—Manual command to transfer from inverter operation to static bypass operation.
- Fast Power Off—Emergency Module Off (EPO) commands to stop UPS operation.
- Acknowledge Fault—Acknowledge a UPS alarm condition and present faults will be reset.
- Bypass/Inverter Off—Emergency Power Off (EPO) commands to stop UPS operation.
- External Maintenance Bypass Breaker (MBB) status (open or closed)

2.3.8 Battery Disconnect Breaker

The battery cabinet shall have a properly rated circuit breaker to isolate it from the Liebert ITA UPS. This breaker shall be in a separate enclosure or in a matching battery cabinet. When this breaker is open, there shall be no battery voltage in the UPS enclosure. The UPS shall be automatically disconnected from the battery by a shunt trip of the battery cabinet breaker when signaled by other control functions.

2.3.9 Battery Plant

The battery plant shall comply with the specifications of:

- Matching Battery Power Pack, or
- Valve-Regulated, Sealed Cell Battery System on Rack.

A. Valve-Regulated, Sealed Cell Battery System on Rack

The battery shall be a lead-acid, sealed maintenance free type with a one-year full warranty

Ratings

Backup time: 10-15 minutes
Load kW: 24kW
VAH: 20000
Battery design block should be 30/32/34/38/40

Electrolyte Immobilization

The battery shall utilize absorbent glass mat (AGM) technology to immobilize electrolyte.

Alloys

Grids shall be manufactured of lead-calcium alloys to assure long life and consistently low gassing rate over the entire service life; all internal wetted parts shall be of similar non-antimonial alloy to preclude interfacial corrosion at the bonded area.

Plates

Both positive and negative plates shall be of the flat pasted plate design to ensure highly reliable electrical performance throughout the life of the battery.

Terminals

All batteries shall include copper inserted terminal posts allowing connector torque of 11Nm for M6, 13Nm for M8 and copper-to-copper interface with the intercell connector (except for flashing). Terminal posts shall be of sufficient strength to support normal inter-tier or inter-step cabling without additional bracing.

Container

The cell container and cover shall be of a flame-retardant material with an oxygen index of at least 28. The cell cover shall include a low-pressure release vent. All cells larger than .25 kW/cell (15 minute rate to 1.67 volts per cell) shall include an integral flash arrestor.

Intercell Connections

For each bolted connection, tin-plated copper connectors and corrosion-resistant bolts shall be provided; interconnecting hardware shall be sized so as to permit discharge at the maximum published rate while allowing no more than 30 mV of voltage drop between adjacent units at the one-minute rate to 1.75 volts per cell (VPC). Along with the necessary hardware, the supplier shall furnish terminal connection coating compound if required by the battery manufacturer.

Manufacturing Controls

Each cell shall be clearly identified as to cell type, voltage and capacity as well as manufacturing control group for future quality assurance traceability. All cells in the battery shall be tested to verify 100% system capacity. The equipment shall be designed and manufactured under a quality assurance program that is controlled and documented by written policies, procedures or instructions and that shall be carried out throughout the performance of the work. The quality control assurance program and testing shall conform to the applicable standards/ISO 9001 and JIS standard.

2.3.10 Optional Accessories and Features

A. Load Bus Sync

The Load Bus Sync (LBS) shall enable two independent single-module UPS units to stay in sync when operating on battery or unsynchronized input sources. The LBS shall determine the master and slave relationship between UPS units. The LBS shall be installed within each single-module UPS.

B. Communication Card

A communication card shall provide Web-based UPS monitoring and management capabilities and one or two of the following remote monitoring protocols: SNMP (v1, v2, v3), Modbus for remote monitoring.

C. Relay Contact Card

A relay contact card shall provide output dry contact signals communicating the following UPS states: Summary Alarm, Bypass Active (On Bypass), Low Battery, AC Input Failure (UPS Fault) and On UPS.

D. Liebert SiteScan® Communication Card

The Liebert SiteScan communication card shall provide a connection to a Liebert SiteLink-E™, allowing Liebert SiteScan Web to monitor and control the UPS.

3.0 EXECUTION

3.1 FIELD QUALITY CONTROL

The following inspections and test procedures shall be performed by factory-trained field service personnel during the UPS startup.

A. Visual Inspection

- Inspect equipment for signs of damage.
- Verify installation per drawings supplied with installation manuals or submittal package.
- Inspect cabinets for foreign objects.
- Verify that neutral and ground conductors are properly sized and configured per IES Standard requirements as noted in manufacturer drawings supplied with installation manuals or submittal package.
- Inspect each battery jar for proper polarity.
- Verify that all printed circuit boards are configured properly.

B. Mechanical Inspection

- Check all control wiring connections for tightness.
- Check all power wiring connections for tightness.
- Check all terminal screws, nuts and/or spade lugs for tightness.

C. Electrical Inspection

- Check all fuses for continuity.
- Confirm input and bypass voltage and phase rotation are correct.
- Verify control transformer connections are correct for voltages being used.
- Ensure connection and voltage of the battery string(s).

3.2 UNIT STARTUP

1. Energize control power.
2. Verify DC float and equalize voltage levels.
3. Verify DC voltage clamp and overvoltage shutdown levels.
4. Verify battery discharge, low battery warning and low battery shutdown levels.
5. Verify fuse monitor alarms and system shutdown.
6. Verify inverter voltages and regulation circuits.
7. Verify inverter/bypass sync circuits and set overlap time.
8. Perform manual transfers and returns.
9. Simulate utility outage at no load.
10. Verify proper recharge.

3.3 MANUFACTURER'S FIELD SERVICE

A. Service Personnel

The UPS manufacturer shall directly employ a nationwide service organization, consisting of factory-trained field service personnel dedicated to the startup and maintenance of UPS and power equipment.

The manufacturer shall provide a national dispatch center to coordinate field service personnel schedules. One toll-free number shall reach a qualified support person 24 hours a day, 7 days a week and 365 days a year. If emergency service is required, on-site response time shall be 4 hours or less within 150 miles.

Two local customer engineers shall be assigned to the site with a regional office as a backup. Escalation procedures shall be in place to notify Power Technical Support if a site is not functioning within 24 hours.

B. Replacement Parts Stocking

Parts shall be available through an extensive network to ensure round-the-clock parts availability throughout the country.

Spare parts shall be stocked by local field service personnel with backup available from national parts centers and the manufacturing location. A Customer Support Parts Coordinator shall be on call 24 hours a day, 7 days a week, 365 days a year for immediate parts availability.

C. Maintenance Contracts

A complete offering of preventive and full-service maintenance contracts for both the UPS system and battery system shall be available.

UNINTERRUPTIBLE POWER SYSTEM TECHNICAL DATA:

Parameters	Specification data	Suppliers Data
Input Characteristics		
Nominal Voltage	380/400/415, 3-phase 4-wire (+PE) TN/TT power distribution system	
Tolerance on voltage	305V - 477V at full load	
Nominal frequency(60Hz selectable)	50Hz	
Tolerance on frequency	40-70 Hz	
Input Power factor @nominal voltage	0.99 at 100% load	
	>0.98 at 50% load	
Total harmonic distortion (THDi) @ full load	<4%	
Walk in/soft start(sec)	5s to reach full rated current (selectable 10s through 25s in 5-second intervals)	
INVERTER OUTPUT CHARACTERISTICS		
Nominal voltage (380/415 selectable)	400V Three Phase +N	
Nominal frequency(60Hz selectable)	50Hz	
Nominal Power @ 40 Deg C (kVA)	30/40	
Output Voltage Stability in steady state condition	+/-1%	
Stability in dynamic conditions for 100% load step variations	+/-5%	
Load crest factor without derating	3:1	
Output voltage distortion with 100% linear load	<2%	
Output voltage distortion with 100% non-linear load as specified by IEC/EN 62040-3	<5%	
Output frequency stability in synchronization with mains (± 0.5 to +/-3 hz)	+/-2Hz	
Output frequency stability with internal clock	± 0.05%	
Frequency slew rate (Hz/s)	Adjustable from 0.1 to 0.6	
Permitted overload:		
. For 5 Minutes	125%	
. For 60 seconds	150%	
Characteristics of electronic static changeover switch		
Nominal voltage (380/415 selectable)	400V	
Tolerance on voltage	+15%,-20%	
Nominal frequency (60 Hz selectable)	50Hz	
Tolerance on frequency (±0.5, ±1, ±2, ±3)	±2	

Permitted overload:		
. For 5 Minutes	125%	
. For 60 seconds	150%	
. For 200 milli seconds	>400%	
UPS characteristics		
Maximum UPS cabinet dimensions W X H X D in mm	176 X 484.6 X 800	
UPS mounting	Flexible to mount it in the rack or on the floor	
Noise level measured @ 1 meter and @ 100% load according to ISO 3746	Max 58dB	
Performance in double conversion mode	95% @ 60-100%load	
	>94.3% @ 50% load	
	93% @ 25% load	
Performance in Eco Mode (at 100% Load)	98.5%	
Degree of protection	IP 20	
Color of cubicles	Black ZP7021	