



BHARAT HEAVY ELECTRICALS LIMITED

Spec No: 60587 (Rev-01)

Enquiry No.:
Due Date:
Supplier Qtn. No.:
Date:

SPECIFICATION CUM COMPLIANCE CERTIFICATION FOR
Audio System at Cultural hall (1Set)

NOTE:-

1. Vendor(OEM) must submit complete information against all clauses. The offer meeting this clause would only be processed.
2. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor
3. The offer and all documents enclosed with offer should be in English language only.

ADDRESS OF THE SUPPLIER :	ADDRESS OF THE INDIAN AGENTS :
TELEPHONE NOS.:	TELEPHONE NOS.:
FAX NOS.:	FAX NOS.:
E-MAIL ADDRESS :	E-MAIL ADDRESS :

SL NO	SPECIFICATION	MAKE/MODEL TO BE CONFIRMED BY VENDOR	OFFERED	DEVIATIONS	REMARKS
1	Vocal microphone : 4 Nos.				
1.1	Transducer Type: Dynamic				
1.2	Frequency Response: 30Hz-17kHz				
1.3	Polar Pattern: Cardioid				
1.4	Sensitivity (at 1kHz): -49dB ±3dB				
1.5	Nominal Impedance: 300-400 Ω				
1.6	Connector: 3-pin XLR male				
1.7	On/Off Switch				
1.8	Accessories Included: 6.5M XLR-F to XLR-M Mic Cable, Leatherette Pouch, Mic Holder, Plastic Case.				
2	Podium microphone: 2 Nos.				
2.1	Capsule Type: Electret condenser				
2.2	Frequency Response: 30Hz-18KHz				
2.3	Polar Pattern: Cardioid				
2.4	Sensitivity: -36dB ±3dB				
2.5	Impedance: 50-100 Ω				
2.6	Connector: XLR				
2.7	Power Requirement: 2 AAA / AA Batteries / +48V Phantom Power (optional)				
2.8	High quality 20-22" gooseneck microphone with Base				
2.9	On/Off Switch & LED				
2.10	Balanced XLR Connector				
2.11	High gain before feedback				

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3	Audio Compressor: 1 No.				
3.1	Input Impedance: Balanced: 20 k Ω , Unbalanced: 10 k Ω				
3.2	Output Impedance: Balanced: 150 k Ω , Unbalanced: 300 k Ω				
3.3	Frequency Response: 20 Hz - 20 K Hz, +- 3dB				
3.4	S/N ratio: 95dB or better				
3.5	Threshold: Variable (-40 to +22 dBu)				
3.6	Ratio: Variable (1:1 to infinity:1)				
3.7	Attack time: Variable (0.1 ms to 100 ms)				
3.8	Release time: Variable (0.05 sec to 2.5 sec)				
3.9	Output: Variable (-18 to +18 dB)				
4	Crossover: 1 No.				
4.1	Input Section:				
4.1.1	Input Level control with clip Led's				
4.1.2	3 Band equalizer for all input and output				
4.2	Output Section				
4.2.1	1 X SUB out - male XLR , servo balanced or equivalent with individual level/gain control.				
4.2.2	Left/SUM & Right Low out - male XLR, servo balanced or equivalent with individual level/gain control.				
4.2.3	Left & Right HI out - male XLR , servo balanced or equivalent with individual level/gain control.				
4.3	Crossover Section				
4.3.1	Crossover filter with roll-off characteristics 24 dB/octave or better.				
4.3.2	Dedicated SUB out with frequency selection with 24dB/oct (or better) filter and level control.				
4.4	Delay Section				
4.4.1	Self illuminated Delay on/off switch.				
4.5	Other Features				
4.5.1	Assignable bargraph to input, Sub out, Low & High Out levels.				
4.5.2	Internal switch-mode power supply for maximum voltage variation				
5	Power sequencer: 1 No.				
5.1	Output Current: 6 x 6A AC and 2 x 25 A AC or more				
5.2	Input AC Mains: 240V AC @ 50Hz				
5.3	Weight: Less than 10 KG				
5.4	Size: 1 to 2U				
5.5	Surge and Spike Protection				
6	Amplifier(2000 Watt RMS): 2 Nos.				

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6.1	Power output: (all wattage ratings in True RMS)		
6.1.1	2 Ohm, 20 Hz- 20 KHz, 1% THD : 2 x 1000 Watt		
6.1.2	2 Ohm (EIA), 1KHz, 1% THD : 2 x 2250 Watt		
6.1.3	4 Ohm, 20 Hz- 20 KHz, 1% THD : 2 x 800 Watt		
6.1.4	4 Ohm (EIA), 1KHz, 1% THD : 2 x 1380 Watt		
6.1.5	8 Ohm, 20 Hz- 20 KHz, 1% THD : 2 x 500 Watt		
6.1.6	8 Ohm (EIA), 1KHz, 1% THD : 2 x 755 Watt		
6.2	Bridged Mode		
6.2.1	4 Ohm, 20 Hz- 20 KHz, 1% THD : 2000 Watt		
6.2.2	4 Ohm (EIA), 1KHz, 1% THD : 4500 Watt		
6.2.3	8 Ohm, 20 Hz- 20 KHz, 1% THD : 1600 Watt		
6.2.4	8 Ohm (EIA), 1KHz, 1% THD : 2760 Watt		
6.3	Damping Factor: > 200:1 (or better)		
6.4	Frequency Response: 20 Hz - 20 kHz		
6.5	Protection Devices: Overload Protection, Temperature, DC, RFI Short Circuit, Short Start		
6.6	Input Connector (per Ch): XLR, 1/4" TRS jack		
6.7	Output Connector (per Ch): Speakon Connector		
6.8	3 Switchable operation modes: Stereo, Mono, Bridge		
6.9	BIS registration of product		
7	Amplifier(3000 Watt RMS): 1 No		
7.1	Power output (all wattage ratings in True RMS)		
7.1.1	2 Ohm, 20 Hz- 20 KHz, 1% THD : 2 x 1500 Watt		
7.1.2	2 Ohm (EIA), 1KHz, 1% THD : 2 x 2750 Watt		
7.1.3	4 Ohm, 20 Hz- 20 KHz, 1% THD : 2 x 1100 Watt		
7.1.4	4 Ohm (EIA), 1KHz, 1% THD : 2 x 1580 Watt		
7.1.5	8 Ohm, 20 Hz- 20 KHz, 1% THD : 2 x 700 Watt		
7.1.6	8 Ohm (EIA), 1KHz, 1% THD : 2 x 830 Watt		
7.2	Bridged Mode		
7.2.1	4 Ohm, 20 Hz- 20 KHz, 1% THD : 3000 Watt		
7.2.2	4 Ohm (EIA), 1KHz, 1% THD : 5500 Watt		
7.2.3	8 Ohm, 20 Hz- 20 KHz, 1% THD : 2200 Watt		
7.2.4	8 Ohm (EIA), 1KHz, 1% THD : 3160 Watt		
7.3	Damping Factor: > 400:1 (or better)		
7.4	Frequency Response: 20 Hz - 20 kHz		
7.5	Protection Devices: Overload Protection, Temperature, DC, RFI Short Circuit, Short Start		
7.6	Input Connector (per Ch): XLR, 1/4" TRS jack		
7.7	Output Connector (per Ch): Speakon Connector		
7.8	3 Switchable operation modes: Stereo, Mono, Bridge		
7.9	BIS registration of product		
8	LINE ARRAY SPEAKER (PASSIVE): 8 Nos.		
8.1	Frequency range: 85 - 19kHz		

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8.2	Horizontal Coverage Angle: 100 Degree or More			
8.3	Verticle Coverage Angle: 10 Degree or Less			
8.4	Crossover Frequency: 1600 - 1800 Hz			
8.5	Power rating: Continuous, program, Peak: 400W, 800W, 1600W			
8.6	SPL: 132 dB or more			
8.7	System Sensitivity (1w @1m)dB:100 or better			
8.8	LF driver: 2 x 8"			
8.9	HF Driver: 2 x 1"			
8.10	Nominal Impedence: 8 Ohm			
8.11	Input Connectors: 2 x Speakon			
8.12	Net Weight: 25 kg or Less			
8.13	Accessories (Standard): Rigging and Flying Kit consisting Flybars/ Array Frame & quick release Pins			
9	STAGE MONITORS: 4 Nos.			
9.1	Type: 2-Way Active Speaker			
9.2	Power Output (RMS / Peak) Watts: 275/ 550			
9.3	Frequency Response (Hz): 60-18000			
9.4	Sensitivity (1w @1m) dB: 96-100			
9.5	SPL (dB): 125 (or more)			
9.6	LF Driver Size: 12" Woofer, 2" Voice coil			
9.7	HF Driver Size: 1" Exit, 1.35" Voice Coil			
9.8	Input Connector: XLR / Jack combo			
9.9	Net Weight (Kgs.): 20 Kg Or less			
10	ACCESSORIES			
10.1	Microphone Connector Boxes for Stage (4 x FXLR panel type): 4 Nos			
10.2	Monitor Speaker Connector Boxes for Stage (2 x MXLR panel type): 2 Nos			
10.3	Equipment Rack 24U: 1 Nos			
10.4	Speaker cable 48/0.2mm (meters) : 250			
10.5	2-core ABC 19/0.122mm shielded microphone cable (meters) : 200			
10.6	Multipair(8 pair) Cable SR for Stage Box (meters): 100			
10.7	Line Array assembly kit including fly-bar and locking pins: 2 Set			
10.8	Suitable ChainPulley arrangements (1 TON CAPACITY WITH 20 MTRS. LIFT AS PER IS: 3832-2005, HEAVY DUTY CHAIN PULLEY WITH LOAD CHAIN AS PER IS: 6216 ALLOY STEEL GR. 80, HAND CHAIN AS PER IS 2429 GR. 30 AND HOOKS AS PER IS: 15560-2005 ALONG WITH LOAD TEST CERTIFICATE FROM ANY GOVT. APPROVED TEST HOUSE.): 2 Set			

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	Set of cables and patch cords: Wall Mount XLR- 24Nos, XLR- 36No, Jack- 15 No, Speakon-20Nos, Mic Cable 100-40- 300Feet, Mic cable 4 core- 200 Feet			
10.9	Servo Stabilizer 8 kVA : 1 No.			
10.10	HDMI Splitter 1 HDMI Input - 4 HDMI output : 1 No			
10.11	HDMI cable 10 meter,15 Meter and 20 Meter : 1 each			
10.12	Headphone for Mixer: 2 Nos			
11	Installation, Testing & Commissioning in vendor's scope			
11.1	Drawing and laying of speaker and microphone cables			
11.2	Installation charges for equipment and accessories			
	Equalization of sound system for increasing acoustic gain before onset of feedback and enhancing naturalness of reinforced sound			
11.3				
11.4	Measurement of Speech Transmission Index			
	Measurement of Sound Pressure levels by pink noise excitation of sound system			
11.5				
12	GENERAL TERMS AND CONDITIONS DETAILS TO BE INCLUDED IN THE OFFER			
12.1	Technical literature catalogue of the equipment.			
12.2	List of customers alongwith customers full address date of supply to whom identical system have been supplied			
12.3	Detailed AMC proposal for period of two years to be quoted alongwith the offer beyond warranty period			
13	INSPECTION AND TESTING (QAP)			
13.1	Live operational inspection at BHEL works for continuous 5 hrs operation and checking for quality of all types of usage alongwith all accessories.			
13.2	Inspection and testing of the equipment, if required, shall be carried out by BHEL , before despatch			
14	MISCELLANEOUS			
14.1	4 Copies each of test & guarantee certificates, descriptive leaflets operation & service manuals, etc., should be provided alongwith the equipment / supply.			
14.2	The complete system shall be guaranteed for minimum period of 36 months from the date of commissioning at site.			
14.3	Service support should be provided to BHEL on emergency basis on the same day, minor repairs to be completed within 2 to 3 days			

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14.4	Valid Authorization certificate issued by Manufacturer or Authorized Distributor in India to be submitted along with offer				
14.5	O & M training should be provided free of cost to BHEL Staff.				

PQC REQUIREMENT

1	Experience and past performance on similar contracts for last two Years (within last two years from the cut-off date): Vendor to submit Proof of copy of Purchase Order & performance proof for Audio System (Line array Speaker (250 Watt or more), Amplifiers (500Watt or more), Mic etc) to be submitted either against his own name or against the name of OEM, if authorised by OEM; only. Cut-off date for Experience shall be 31st August 2019.				
2	Capabilities : In case of Non- OEM vendor, valid Authorization Certificate Issued by Manufacturer or Authorized Distributor to be Submitted along with Offer.				
3	Financial Standing : Bidder must submit Latest ITCC and audited Balance sheet along with Profit & Loss account for the last three years ending 31st March 2019 .				
	Note 1: Financial Standing Requirements will not be applicable for MSME vendors. However Experience and past performance on similar contracts for last two Years and capabilities will be applicable for both MSME and Non- MSME vendor.				

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