

**HLL LIFECARE LIMITED**  
**As Consultant to**  
**MINISTRY OF HEALTH & FAMILY WELFARE**  
**GOVERNMENT OF INDIA, NEW DELHI**  
**PRADHAN MANTRI SWASTHYA SURAKSHA YOJNA- Ph II**

**TENDER**  
**FOR**  
**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF MOT &**  
**UPS ROOM AT SUPER SPECIALITY HOSPITAL AT GOVT. RAJAJI**  
**MEDICAL COLLEGE, MADURAI UNDER PMSSY PH II**

**PART-III**  
**PRICE BID**

**Tender No. HLL/IDS/18/72 Dated: - 21.12.2018**



**HLL Lifecare Limited**  
(A Government of India Enterprise)

**एचएलएल लाइफ़केयर लिमिटेड**  
(भारत सरकार का उद्यम)

**GOLDEN JUBILEE BLOCK**  
**HLL BHAVAN, POOJAPPURA PO**  
**THIRUVANANTHAPURAM – 695012**  
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## **1 COMMERCIAL CONDITIONS**

1.0.1 The tendered rate shall inter alia be deemed to include for the provision of all materials, process, operation and special requirements detailed in the particular specification irrespective of whether these are mentioned in the description of equipment schedule and Bill of quantities or not. It is an express condition of the contract that the tendered rates for various items in the Bill of Quantities shall be deemed to include for the full, entire and final condition of the contractor respective items of the works in accordance with the provision of the contract.

1.0.2 The tendered rate shall include for all taxes, duties, etc. as applicable and shall be quoted on the works contract basis for **SITC of Air conditioning system for MOT & UPS room at Super Speciality hospital at Govt. Rajaji Medical College, Madurai under PMSSY Ph II.**

1.0.3 The tendered rate shall remain firm and free from variation due to rise in the cost of materials/ equipment, labour or any other reasons whatsoever during the contract period and valid extension on the case may be.

1.0.4 The quantum of excise duty included in the tendered price, the rate at which they were assumed etc. shall be indicated in the tender.

### **1.1 UNIT RATES**

1.11 Only approved work will be measured on completion and priced as per rates quoted against the respective items.

### **1.2 BRIEF DESCRIPTION OF PRICING**

1.2.1. Unforeseen difficulties for which provision has not been made in the tender will in no way relieve the successful tenderer from the full execution of the work.

1.2.2 The price quoted shall be the final amount for this finished work.

### **1.3 INCOME TAX**

Any payment to the contractor as per contract, will be made after deducting income tax as per the rules and regulations.

### **1.4 SALES TAX AND EXCISE DUTY**

The tenderer shall include all applicable taxes and duties in their quoted rates. The bid which mention that applicable taxes and duties extra shall be summarily rejected.

### **1.6. SUBMISSION OF BILL**

1.6.1. The contractor shall from time to time prepare and submit interim bills of the work executed and on completion of the contract, he shall prepare and submit the final bill. The measurements sheets in support of the interim and final bills shall be prepared by the contractor on the basis of measurements taken by him jointly with the project engineer and the said measurement sheets shall be submitted by him with the relevant bill.

### **1.7. EXTRA ITEMS**

The contractor is bound to carry out any items of work necessary for the completion of the job even though such items may not have been included in the schedule of probable quantities or rates, such items being necessary or essential for completing the job. Variation order in respect of such additional items and their quantities will be issued in writing by the employer.

1.7.1 All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of work and on completion including that of the sub-contractors and special tradesman and all materials condemned by the project engineer shall be cleared and removed from the site by the contractor without any extra charge.

1.7.2 All measuring steel taps, scaffolding, ladders instruments and tools that may be required for taking measurements shall be supplied by the contractor.

**1.8. OVER TIME WORK**

If the contractor is required to work night or on holidays in order to maintain the time schedule he shall take prior approval from the Engineer-in-charge. He should also provide and maintain at his own cost sufficient lights as may be necessary to enable the work to proceed satisfactorily during the night.

1.8.1. The contractor shall give full facilities to all other contractors working on site. He shall also arrange his programme of work so as not hinder the progress of other trades. The decision of the Engineer-in-charge on any point of dispute between the various parties shall be final and binding.

1.8.2. It is specifically pointed out that the contractor shall not be entitled to any compensation whatsoever on account of delay in procurement or supply of controlled materials and the rates quoted in the contract are fixed till the completion of the contract.

1.8.3. The contractor shall co-operate with other agencies appointed by the owners for the work to proceed smoothly with the least possible delay and to the satisfaction of the owners and the consultants.

1.8.4. The owners shall provide a source for power supply at one convenient point at site. The contractor shall at his own cost install a separate meter at the said source and lay additional cables from the said source also at his own cost. For the electricity consumed by the contractor he shall pay the owner the actual cost at the rate charged by the local authority for power for constructional purposes. The contractor shall also obtain the necessary permit for utilizing power for constructional purposes.

## **2 SPECIAL CONDITIONS**

### **2.1 EXECUTION WORK**

2.1.1. The whole of the work as described in the contract (including bills of materials, specification and all drawings pertaining thereto) and as advised by the Engineer-in-charge from time is to be carried out and completed in all parts to the entire satisfaction of the Employer. Any minor details of construction which are obviously and fairly intended, or which may not have been definitely referred to in this contract, but which are usual construction practice and essential to the work, shall be included in this contact.

### **2.2. CERTIFICATE OF COMPLETION**

2.2.1 The contractor shall intimate to the Engineer-in-charge in writing as and when the works are completed and put into beneficial use in order to enable the consultants to check certify to the owners to take over the work.

2.2.2 The work shall not be considered as completed and put into beneficial use until the EIC have certified in writing that the same has been completed and put into beneficial use.

2.2.3 The defects liability period of one year shall commence from date of such completion or any specific date mentioned therein.

### **2.3 Payment terms**

- i. 70% after supply of materials at site in good working condition on pro-rata basis.
- ii. 20% after completion of installation in all respects.
- iii. Balance 10% will be paid after testing, commissioning & handing over to the client, including all required statutory approvals.

<b>Approved List of Makes - AV system</b>		
<b>S. No</b>	<b>DESCRIPTION</b>	<b>MAKES OF MATERIALS</b>
1	Air Handling Units	ETA, Edgetech, Zeco, Voltas, carrier
2	DX Type Condensing Unit:	Bluestar, ETA, Hitachi, LG, Daikin, Carrier
3	VFD (HVAC Drive Only)	Danfoss, Emerson, Siemens, ABB
4	Fans	Nikotra, Kruger, Systemair
5	Vibration Isolators/Flexible Connectors	Resistoflex, Dunlop, Cori
	<b>Ducting and Accessories</b>	
6	GI Sheets	TATA/SAIL/Jindal
7	Aluminum Grilles Diffusers/ Linear Grilles	Dynacraft, Air Master, Caryaire, Systemair, Air Master
8	Volume Control Damper	Dynacraft, Air Master, Caryaire, Systemair, Air Master
9	Fire Damper / Motorized	Dynacraft, Air Master, Caryaire, Systemair, Air Master
10	Damper Actuators	Belimo / Johnson Controls, Siemens
	<b>Insulation</b>	
11	Fiber glass	UP Twiga, Kimmco, Owens corning
12	Electrometric Nitrile Rubber - Class 'O' as per BS 476 Part 6 & 7	Armacell - Armaflex, Vidoflex, K-flex, ALP
13	Expanded Polystyrene Sections	Beardsell, Loyds, Shreevenus
14	PUF Panels	Venus, Beardshell
	<b>Electrical</b>	
15	CONTACTORS	L&T / ABB / SCHNEIDER / SIEMENS
16	DIGITAL METERS	AE / SCHNEIDER / L&T / ELMEASURE
17	SELECTOR SWITCH	SALZER/KAYCEE / L&T / Taishno
18	INDICATION LAMPS	SALZER/KAYCEE / L&T / Taishno
19	CURRENT TRANSFORMER	AE / KAPPA / Kalpa/Pragathi
20	RELAY	Schneider/L&T/Siemens/ABB
21	CAPACITOR	Universal/L&T/Siemens, Mehar
22	SINGLE PHASE PREVENTER	L&T / AREVA / ABB / SIEMENS
23	MCB / RCCB	L&T / SCHNEIDER / SIEMENS
24	STARTER	L&T / SIEMENS / ABB / Schneider
25	LT CABLES	Universal, Gloster, Torrent, rpg, Polycab
26	Cable gland & Lugs	Comet, Dowells, Multi-pressing, Hex, Jainson
27	PVC CONDUITS	Precision, Avon Plast, BEC, AKG
28	CABLE TRAY	Profab, Patny, Indiana, Elcon
29	PVC WIRES	FINOLEX CABLES/ RR KABLES / HAVELLS / Polycab
30	INDUSTRIAL MULTI CORE FLEXIBLE CABLE	FINOLEX CABLES/ RR KABLES / HAVELLS / Polycab
31	EARTHING	ASHLOK / VALUE ENGINEERING / WIRA / OBO BETTERMAN

**APPROVED MAKES - ELECTRICAL**

<b>S.No</b>	<b>DESCRIPTION</b>	<b>APPROVED MAKES</b>
2	CONTACTORS	L&T /ABB / SCHNEIDER / SIEMENS
3	DIGITAL METERS	AE / SCHNEIDER / L&T/ ELMEASURE
4	SELECTOR SWITCH	SALZER/KAYCEE / L&T / Taishno
5	INDICATION LAMPS	SALZER/KAYCEE / L&T / Taishno
6	CURRENT TRANSFORMER	AE / KAPPA /Kalpa/Pragathi
7	RELAY	Schneider/L&T/Siemens/ABB
8	CAPACITOR	Universal/L&T/Siemens,Mehar
9	SINGLE PHASE PREVENTER	L&T / AREVA / ABB / SIEMENS
10	MCB / RCCB	L&T/ SCHNEIDER / SIEMENS
11	SPD	OBO BETTERMAN / ABB / HAGER / LEGRAND
13	STARTER	L&T / SIEMENS /ABB / Schneider
14	LT CABLES	Universal, Gloster, Torrent, rpg, Polycab
15	Cable gland &Lugs	Comet, Dowells, Multi-pressing, Hex, Jainson
16	PVC CONDUITS	Precision, Avon Plast, BEC, AKG
17	CABLE TRAY	Profab, Patny, Indiana, Elcon
18	PVC WIRES	FINOLEX CABLES/ RR KABLES / HAVELLS / Polycab
25	INDUSTRIAL MULTI CORE FLEXIBLE CABLE	FINOLEX CABLES/ RR KABLES / HAVELLS / Polycab
26	EARTHING	ASHLOK / VALUE ENGINEERING / WIRA / OBO BETTERMAN

## **BILL OF QUANTITIES**

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
	<b>AIR HANDLING UNIT</b>				
A	Floor Mounted DX Outdoor unit with Air Handling Units				
1	Supply, Transport to site, Installation, Testing and Commissioning of Double Skin with Thermal Break Profile of 43+/-2 mm high pressure PUF injected with density of 40 kg/cu.m and aluminium corner profile Air handling Unit with necessary Protection, comprising of the following.				

	<p>Supply DIDW Fan not less than 70% efficiency along with EFF1 motor should be used. The fan and motor shall be completely isolated from the unit casing with antivibration isolaters along with drive package. <b>The blower fan motor will be direct driven.</b> Fan outlet should have fire retardant type flexible connection to prevent vibration transmission to the casing. Drive motor suitable for 400 +/- 15% V, 50 Hz, 3P, TEFC squirrel cage induction motor and suitable for VFD operation. Dx cooling coils shall be of 6 Row deep. Face Velocity across the coils should not exceed 420 FPM. Cooling coils shall be constructed from premium quality copper tubes and mechanically bonded to aluminium fins. The drain pan shall be 20-gauge stainless steel, sloped, and positioned under the dehumidifier coil. The drain pan shall be TIG welded and securely attached to the evaporator endplates to avoid shifting. The drain pan shall be fitted with a minimum 1" SS 304 grade drain connection. The unit will be with filter of 10 microns Prefilter before fan &amp; 5micron filter should be after the fan. The motor selected shall be energy efficient having efficiency EFF1 (Class I) at full load ranging between 82.5% to 92% in accordance with motor rating as per specification. The unit shall also be consists of anti vibration mounts, service doors / inspection windows, Double skin rexin flexible connection for fan outlet, Light and door limit switch, Mouth Damper and fire damper with spring return arrangement and Filters as specified Inside sheet of Ahu will be of Hygene coated Galvanized iron / Aluminum Sheets &amp; drain tray should be made out of stainless steel. Filter frame should be made out of Aluminium.both the fan should have aluminium volume control damper at the inlet of the fan. The following Items should be supplied along with the AHU. (Approved Make: Edgetech, Zeco, carrier,VTS - with AAF Make filters)</p>				
i	Mixing Box with Fresh air Inlet provision with damper				
ii	Filters, (10 micron)				
iii	Supply Fan				
iv	Cooling Coil				

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
v	Fine Filter (5Micron)				
vi	Heating Section with Heating Mesh (Heater)				
vii	Supply Plenum				
	The Supply Blower Total Static Pressure - 100 mm wc. Entering Air Temperature - DBT : Return air Temp (24 Deg C) + 20% Fresh air of Total air (40 DEG C) Leaving Air Temperature - DBT : 11°C				
1.1	17TR / 6000 CFM (BIGGER OT)	Nos	2		
2	Supply, Installation, testing and commisioning of Copper pipes with nitrile rubber tubluar insulation, for the below diameter. The copper pipe shall be 1mm thick in wall thickness.				
2.1	1 1/8" Dia	Rmt	30		
2.1	5/8" Dia	Rmt	30		
3	Contro cabling for AHU & Out door system:				

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
3.1	4C x 6 Sq.mm Copper flexable power cable with PVC pipe for indoor units	Rmt	30		
3.2	Supply, laying & Termination of flexible Copper Control cabling with PVC pipe between indoor to Outdoor unit.( Copper flexible cable - 3 x 1.5 sqmm )	Rmt	35		
3.3	Supply, laying & Termination of 4C x 10 sq.mm Copper flexible power cable with PVC conduit between isolator to outdoor unit.	Rmt	25		
4	AHU Starter Panel:				
	The Starter panel should be supplied along with AHU and it should complete with DOL Starter,VFD, relays, protections, On/Off indication and other auxiliary components, as necessary. BMS Connectivity provisions with are - ON/OFF command, ON/OFF/TRIP status, Auto/Manual status should be included. All AHUs should have fire trip facility. Control panels shall contain factory mounted and wired fan motor starters and auxiliary controls, starter panel should have controller or thermostat to set the desire set point and should have sensor to sense the return air temp and with humidistat. The <b>AHU control panel will be have VFD</b> to can control the direct driven fan motor.				

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
	7.5 KW	Nos	2		
5	DX Type Condensing Unit:				
	Supply, Installation, Testing & Commissioning of DX outdoor unit . Outdoor unit shall be factory assembled weather proof casing constructed from heavy gauge mild steel panels. The unit shall be completely factory wired and tested with necessary controls. The compressor shall be highly efficient scroll type with R-22 / R-407/R410 and aluminium fins shall be covered with anti-corrosion resin. Unit shall be equipped with oil recovery system to ensure stable operation with long refrigerant piping. The unit shall be compatible for BMS operation (optional).				
5.1	8.5TR	Nos	4		
6	GI Ducting WITH 19 mm thick onside aluminium foiled XLPE external thermal insulation - Connection work between AHU supply mouth and OT Ducting inlet:				

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
	Sheet Metal Work with TDS Flanges for all sizes of the duct. Fabrication as per IS Standards. Galvanizing shall be Class VII – light coating of zinc, nominal 120 gm / sqm surface area and Lock Forming Quality prime material alongwith mill test certificates. All duct construction and installation shall be in accordance with IS standards. In addition ducts shall be factory fabricated utilizing the following machines to provide the requisite quality of ducts. All ducts shall be fabricated and installed in workmanlike manner, conforming to relevant IS codes. The Duct shall be included with Guide vanes, Adjustable splitter dampers, fastners, threaded rods, nut, Fire retardant Gasket and washers as per specs and ducts supported with Hi-tech Supports at regular intervals and with external thermal insulation as specified above:				
	20G up to 1501 to 2250mm	sq.m	110		
7	Drain Piping: Supply, Installation of 25mm Dia PVC Drain Pipe for AHU Drain with 9mm thick Nirile Rubber insulation	RMT	30		
8	Testing and commissioning including refrigerant charging	Lot	1		

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
9	Supply & laying of the following size 1.1kV grade XLPE insulated PVC sheathed, armoured Aluminium conductor power cable confirming to IS 7098 (part 1) amended upto date.				
	4 x 16 sqmm	RMT	300		
	3.5 C x 25 sq.mm	RMT	90		
10	Supplying and making end termination with brass compression gland and aluminium lugs including gland earthing for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
	4 x 16 sqmm	Nos	8		
	3.5 C x 25 sq.mm	Nos	4		

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
11	Supply and installation of the following TPN MCB with suitable MS box made of 14SWG CRCA sheet powder coated for housing MCB, complete with all required accessories as required.				
	63 A	Nos	6		
12	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, required supports (M.S as per the site condition). including bolts & nuts, horizontal & vertical bends, reducers, tees, cross members, painting suspenders & all other accessories as required.				
	150mm width x 50 mm depth x 1.6mm thickness	RMT	70		
13	Providing and fixing 25 mm x 5 mm GI strip on surface or in recess for earth connections etc. as required.	RMT	95		

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
14	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	RMT	550		
B	SPLIT AC				
15	Supply, Installation, testing, commissioning of Air Cooled High Wall mounted Split Air Conditioner of following capacity consisting of high wall mounted type room unit (fan coil) with cordless remote control and one number outdoor condensing unit comprising of energy efficient suitable rotary compressor for operation on single phase, 230 V, 50Hz supply, fixing the outdoor unit on a wall surface with suitable stand as per manufacturers recommendation and fixing of room (fan coil) unit on wall, standard 3 m distance refrigerant copper piping with 13mm nitrile rubber insulation, providing and making interconnection between room & condenser as per site conditions, comprising of , canvas connections, full electrical cabling from power plug near indoor unit and to outdoor unit, ODU MS stand, first charge refrigerant gas (R-410), suitable stabilizer etc complete as required.(Samsung)				
	2 TR 3 star Inverter as per BEE	Nos	3		

Sl. No.	Description	Unit	Qty	RATE (Rs. in words & in figures)	Amount (Rs.)
	V Guard 5 KVA stabilizer	Nos	3		
	Extra Coper pipe with insulation	Mtrs	10		
	ODU MS stand	Nos	3		
	<b>Total</b>				