

BOQ OF AIR CONDITIONING WORK FOR CIRCLE OFFICE, CANARA BANK, KOZHIKODE

Sl.No.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A	HIGH SIDE				
1	OUT DOOR UNIT				
	Supply of following capacity high efficiency VRF / VRV Air conditioning system with air cooled TOP discharge condenser units with anticorrosive blue / black coating fins, high efficiency DC motor, electronic expansion valve, control panel with all necessary protection functions, including single phase preventer, enclosed in powder coated GI sheet metal body. Minimum COP of the system shall be 3-4 under Cooling only conditions for 100% load and system suitable for R410A refrigerant, complete with all accessories including anti vibration isolators.				
	The compressor shall be of highly efficient hermetic scroll type and equipped with inverter control capable of changing the speed in accordance to the cooling load requirement.				
	The outdoor unit shall have the multi-step of capacity control to meet load fluctuation and indoor unit individual control.				
	Cooling only application				
1.1	36 HP	Nos	2.0		
1.2	30 HP	Nos	1.0		
2	CEILING SUSPENDED INDOOR UNITS				
	Supply of ceiling suspended type IDU, multi speed fan, multi row DX cooling coil, drain pan Filter, complete. Cost to include duties, Cess, transport, loading, unloading and storage at site. Complete				
2.1	13TR FCU / AHU units	Nos	3.0		
2.2	16TR FCU / AHU unit	Nos	1.0		
	Note: Tenderer can quote either for FCU or AHU as per manufacturer's recommendation. Strike out whatever is not applicable. Cost of AHU units intallation kit also to be included.				
3	CEILING MOUNTED INDOOR UNITS				
	Supply of 4 way supply Cassette unit with with multi speed fan, cooling coil, remote sensor, thermostat, washable filters, drain pump, auto swing in both directions, low noise fan, complete with refrigerant valve set, electronic expansion valve.units shall be suitable for single phase power supply, VRF technology, complete.				
3.1	1.3 TR	Nos	3.0		
3.2	1.6 TR	Nos	1.0		
3.3	2.0 TR	Nos	8.0		
3.4	3.2 TR	Nos	2.0		
3.5	Supply of Inverter hiwall split Indoor unit 1.0 TR, with remote, complete.	Nos	1.0		
4	DX - HI-WALL 1.00 TR SPLIT AC UNIT				
4.1	Supply of 1.0 TR INVERTER Model Cool type split AC unit with high wall mounted Single Split indoor unit and outdoor condensing unit Hermetically sealed compressor suitable for operation on 230V, 50Hz, 1Phase AC supply with cooling and condensing units with 3 mts of copper piping, insulation kit and 3 mts of 4 core copper flexible chord with cordless remote control etc., 1.0 TR, 5 Star capable of delivering 12000 BTU/hr and above with operating on refrigerant R-32/ R-410A.	Nos	2		
	(A) TOTAL FOR SUPPLY OF MACHINES				

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B	LOW SIDE				
5	Installation, testing and commissioning of VRV outdoor units as per specifications with necessary Refrigerant Gas and oil charge, including supplying and installing all necessary accessories as required to complete the installation. Cost to include demolition and repairing of the Civil structure to the original form.				
5.1	36 H.P.	Nos	2.0		
5.2	30 H.P.	Nos	1.0		
6	Installation, testing and commissioning of ceiling suspended type FCU / AHU units including supplying and installing all necessary accessories as required to complete the installation. Cost to include demolition and repairing of the Civil structure to the original form.				
6.1	13 Tr	Nos	3.0		
6.2	16 Tr	Nos	1.0		
7	Installation, testing and commissioning of Indoor 4wayCassette / Hiwall units including supplying and installing all necessary accessories as required to complete the installation. Cost to include communication cable between IDU and ODU. Cost to also include demolition and repairing of the Civil structure to the original form.				
7.1	1.3 TR	Nos	3.0		
7.2	1.6 TR	Nos	1.0		
7.2	2.0 TR	Nos	8.0		
7.4	3.2 TR	Nos	2.0		
7.5	Hiwall Split Unit of 1 TR	Nos	1.0		
8	Installation, testing and commissioning of 1 Tr. FCU Inverter type air cooled split Air-conditioning unit inclusive of refrigerant, copper piping, insulated PVC condensate drain piping, valves and insulation. Quoted prices should include cost of Gas, power wiring, control wiring & earthing complete to the satisfaction of the Engineer-in-charge.	Nos	2		
9	SITC of Microprocessor based On-OFF electronic Cyclic timer (LT) suitable for controlling Two Window / Wall mounted Air-conditioner with time setting range from 1min to 99 hrs, LED display, High / Low voltage protection, Power ON delay, complete with wiring, connections complete. Warranty of 1year.	No	1		
	Note : Fins and copper tubes of Air Cooled Condenser alongwith copper tubing / piping with all joints and U-Bends exposed to coastal areas corrosive atmosphere / aggressive ambient, shall be painted with special corrosion prevention coating either in factory or at site.				
11	Supply, Installation, testing and commissioning of condensate Drain pump with 4 litre capacity tank and capable of pumping water to a height of 10m with NR valve and switch wired to the FSU / AHU unit.	Nos	1		
12	Supply & Installation of refrigerant joints	nos	18.0		
13	Supply & Charging Of Refrigerant Gas	Kg	60.0		
14	Supply and Installation of 18G Copper Piping insulated with 19mm thick elastomeric nitrile rubber insulation for the Suction line and 13mm for the liquid line, between indoor & outdoor units as per specifications . All piping inside the room shall be properly supported with hanger and all external piping shall be with Poly shield coating . Cost to include all civil works including demolition and repairing of the Civil structure to the original form.				

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14.1	Φ41.3	Rmt	22		
14.2	Φ38.1	Rmt	3		
14.3	Φ34.9	Rmt	6		
14.4	Φ31.9	Rmt	2		
14.5	Φ28.6	Rmt	39		
14.6	Φ25.4	Rmt	20		
14.7	Φ22.2	Rmt	71		
14.8	Φ19.1	Rmt	61		
14.9	Φ15.9	Rmt	66		
14.1	Φ12.7	Rmt	61		
14.11	Φ9.52	Rmt	115		
14.12	Φ6.35	Rmt	20		
15	Supply, Fabrication, installation and testing of factory fabricated sheet metal ducts in accordance with the approved shop drawings and specifications.				
15.1	24 gauge galvanised sheet steel	Sqm	278.0		
15.2	22 gauge galvanised sheet steel	Sqm	142.0		
15.3	20 gauge galvanised sheet steel	Sqm	20.0		
16	Supply, installation, testing and balancing of powder coated Extruded Aluminium supply air grill with Collar dampers in accordance with the approved shop drawings and specifications. (Color - white. Submit Sample and get Confirmation from client before get ordered)	Sqm	9.0		
17	Supply, installation, testing and balancing of Extruded Aluminium Return Air Grills . (Color - white. Submit Sample and get Confirmation from client before get ordered)	Sqm	9.0		
18	Supply, installation balancing & testing of 18G GI volume control Dampers as per approved drawing and specifications.	Sqm	12.0		
19	Supply, installation balancing & testing of Non-Return Dampers as per approved drawing & specifications.	Sqm	6.0		
20	Supply And Installation Of Canvas Connection For AHU	Nos	4.0		
21	Supply & Installation of 15 mm thick Open cell Elastometric nitrile rubber Class '1' rating of 140-180 kg/m ³ density and with K value not exceeding 0.047 W/mK at an average of 20 deg C temperature. It should also meet UL 94test supplementary materials for air distribution system which should not absorbs less 0.2% water by volume (ASTM c 209), should not support microbial growth (ASTM 2180, G21, G22) and should not emit objectionable odors (ASTM C 665) and should have thermal conductivity of 0.04W/m K @ 20 degC as per DIN EN 12667. and water vapor permeance of 0.10. Adhesive shall be used additionally with VOC level not exceeding 50 grms / Litre.for duct insulation.	Sqm	100.0		

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22	Supply & Installation of 13 mm thick Elastometric nitrile rubber for rectangular duct insulation class " O " Closed cell nitrile rubber based elastomeric insulation with the density of 40 - 55 kg /m ³ r, thermal Conductivity shall not exceed 0.033 W/mK at 0 deg C mean temperature.. The insulation manufactured as per BS 476 Part 7 test & which should also meet UL94 supplementary materials for air distribution system which should not absorb less 0.2% water by volume (ASTM D 1056), should not support microbial growth (ASTM D2180, G21, G22) and should not emit objectionable odors (ASTM C 665) and water vapor permeance of 0.10.The quoted price inclusive of 50 mm wide 3 mm thick self adhesive tape. Adhesive shall be used additionally with VOC level not exceeding 50 grms / Litre.	Sqm	460.0		
23	Supply, installation, testing of GI fabricated Fresh Air Cowl with Louvers as per specifications and approved shop drawings.				
24	Supply and installation of PVC drain pipe insulated with 9mm nitrile rubber insulation				
24.1	Dia 32mm	Rmt	110.0		
24.2	Dia 40mm	Rmt	70.0		
24.3	Dia 50mm	Rmt	10.0		
25	POWER WIRING			-	-
25.1	Supply, installation, testing & laying of 1.1 KV grade XLPE insulated, 4C x 16sq.mm, Cu conductor armoured and PVC sheathed cables. supply will be made available AC Distribution board supplied by electrical contractor, AC Contractor to provide power / control supply to outdoor units, supports, cable trays etc.	Rmt	40.0		
25.2	Supply, installation, testing & laying of 1.1 KV grade XLPE insulated, 3C x 2.5 Sq.mm Cu conductor armoured and PVC sheathed cables.	Rmt	35.0		
25.3	Supply, installation, testing & laying of 1.1 KV grade XLPE insulated, 2C x 6 Sq.mm Cu conductor armoured and PVC sheathed Earthing Wire, along with the Power wiring	Rmt	40.0		
26	Supply, Installation & Commissioning of M.S. Catwalk of suitable size , accordingly to place Outdoor AC units, made out of M.S. sections like flats, hollow sections, L-Angles with necessary approved hardware and proper welding, finished with two coats of metal primer and paint, complete with scaffolding and carting away debris out of compound, cleaning the site etc. complete as per site requirements and instructions of the Architect.	Job	1.0		
	(B)TOTAL FOR LOW SIDE				
C	CAMC FOR ONE YEAR AFTER DEFECT LIABILITY PERIOD- FULL UNITS				
	All OD and ID UNITS including FSU / AHU units.				
1	CAMC FOR FIRST YEAR	SET			
2	CAMC FOR SECOND YEAR	SET			
3	CAMC FOR THIRD YEAR	SET			
	Note: CAMC Charges shall not be less than 6% of A+B. If quoted less than 6%, 6% of (A+B) will be considered for arriving at L1.				
A+B+C	(C)TOTAL FOR CAMC				
	GRAND TOTAL OF A+B+C				
Date					
Place					
					Signature of the Bidder with Stamp