

**STATE BANK OF INDIA -BOQ /PRICE BID FOR VRF BASED HVAC SYSTEMS FOR JHALLAHALLI -WEST**

Sl.No	Description	Unit	Qty	Rate		Amount	
				Supply	Installation	Supply	Installation
1.0	VRF INSTALLATION –OUTDOOR UNIT						
	Supply, Installation, testing and commissioning of VRF Outdoor units consists of 100 % based scroll / rotary compressor and 100% Inverter type ODU with fully variable speed compressor with copper condensor only, DC fan motor with aero-spiral fan blade, e-pass heat exchanger, safety valves, solenoid valves, receiver, Sub Cool system, check valve, electronic expansion valve, high pressure switch, low pressure sensor, pressure regulating valve refrigerant filter, stop valve, accumulator and outdoor branch kits. Rate inclusive of R410A refrigerant for entire circuits & oil pre charging, vibration isolators, supports and accessories etc.						
1.1	<b>50.60 kW Colling capacity ( 18.0 HP )</b>	Nos	1				
1.2	Lifting Shifting of ODU's at Terrace with Cranes, placing at MS Frames	Nos	1				
1.3	Scaffolding charges out side for Copper pipings and associated works till Piping , Testing works etc are over avg - 1 month	lot	1				
2.0	Supply and installation of MS Frame for VRF outdoor units and civil works for foundation /pedestal works,etc at Terrace	Nos	1				
3.0	Supply, installation, testing and commissioning of 4-way VCC-Variable Compact Cassette units upto 1.0 Tr onwards.The sizes of cassette units would be approx 208x570x570 or 258x840x840 and the units should be complete with inbuilt drain pump, controls, microprocessor control panel, wiring, Electronic Expansion Contorler etc.The unit shall be charged with R410 A refrigerant.The noise level shall not be more than 55 dB(A)at normal operation measured horizontally 1m away and 1.5m above ground. The capacities of each machine and quantities are as indicated below.						
3.1	<b>9.0 kW Cooling capacity ( 2.8 TR) / 636 CFM,(ONLY VLC)</b>	Nos	2				
4.0	Installation, testing and commissioning of shifted VRF Ductable air conditioning units and R410 gas with direct driven fan, high efficient filter, inbuilt microprocessor thermostat, electronic expansion valve, provision of fresh air duct connection, wired PID remote controller with necessary cable, inbuilt high head drain pump, necessary ceiling supports & vibration isolators, refrigerant charging, oil charging, control wiring and drain connection, etc. The capacities and cfm are as mentioned below.						
4.1	<b>38.7 kW Cooling capacity ( 11 TR) / 4400 CFM</b>	Nos	1	-			
5.0	Supply & installtion of Corded Remote controllers shall be sleek & self diagnosti	Nos	1				
6.0	Supply & installtion of hand held Cordless Remote controllers	Nos	2				
7.0	Supply, Installation, Testing & Commissioning of Refnet Joints, T joints of Suitable Size for the above system.						
7.1	Y joints / Refnet Joints	Nos	2				
8.0	<b>Nitrogen Pressure testing &amp; Additional gas charging for the entire length of copper tube - Refrigerant R410A / Environmental friendly refrigerant</b>						
8.1	50.60 kW Colling capacity ( 18.0 HP )	Nos	1				
9.0	Supply, Installation, Testing and Commissioning of the refrigerant copper piping with 13mm/19mm nitrile rubber insulation with UV white tape in sleeve form. The Ref. Piping shall be pressure tested at 1.5 times the working pressure. The Piping shall be properly supported with bracket and supporting rods etc.,						
9.1	28.6 mm O.D. (13mm thick insulation)	Rmt	30				
9.2	22.2mm O.D. (13mm thick insulation)	Rmt	10				
9.3	19.1mm O.D. (13mm thick insulation)	Rmt	20				
9.4	15.9 mm O.D. (10mm thick insulation)	Rmt	26				
9.5	12.7mm O.D. (10mm thick insulation)	Rmt	8				
9.6	9.5 mm O.D. (8mm thick insulation)	Rmt	28				
10.0	Supply & installtioan of CPVC pipe of with 6mm thick nitrile rbber insulation and necessary supports and fixing accessories etc.						
10.1	25mm NB	Rmt	20				
10.2	32mm NB	Rmt	30				
11.0	Control Wiring: Control cabling from Indoor to outdoor unit for all the units with the necessary fittings. The cabling shall be FRLS weather proof type as most of the cabling will have open exposure to atmosphere. The cabling shall be bundled properly and shall be neatly aligned with the Refrigerant piping. The cabling shall be well supported at specific intervals and & similar to refrigerant piping.						
11.1	3C X 1.0 Sqmm cable	Rmt	100				
11.2	3 C X 1.5 Sqmm cable	Rmt	10				
12.0	Supply installation and testing and balance of GI Ducts for Supply air complete factory fabricated using CNC plasma cutting machine, as required by the specifications. The duct should be supported by threaded rods.						
12.1	24 Gauge	Sqm	60				
13.0	Supply, Installation, testing & Balancing of Al. Powder coated Diffusers /Continuous grills for supply & return of the following sizes with all the necessary flanges,etc.						

