

<b>Department</b>	CEM-ICOPEP
<b>Location:</b>	SERDAL-ICOPEP Room 13 and 14
<b>Nature of Work:</b>	Re-Estimated Cost of One (1) Inverter Split Type Air Conditioning Unit with Supply/Delivery, labor and Materials Including Installation
<b>Description</b>	Replacement of Defective A/C unit to Inverter type

Qty.	Unit	SPECIFICATION	Estimated Unit Cost	Estimated Total Cost
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**I. AIRCON EQUIPMENT**

1	Set	Brand new 3.0 TR FULL DC Inverter type Ceiling Cassette Split type Air-Conditioning Unit with Rated Cooling Capacity 12,500 - 38,400 KJ/hr, Power Input 685 - 3,550 Watts, 10.8 - 18.2 EER, Power Supply 230 Volts, 1 Phase 60 Hz., Current 16 Amps, Refrigerant (R410A) Wireless Remote Control.		
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**II. COST OF LABOR AND MATERIALS FOR INSTALLATION OF ONE (1) A/C UNIT**

SCOPE OF WORK TO BE DONE				
		A) Provision. Finished Concrete pad Foundation with Steel Frame as per Drawing		
		B) Layout and Installation of Fabricated Angle Bar 3/16" x 1 1/2" Thickness, Pre-painted Primer Epoxy (gray) for FCU and ACCU		
		C) Chipping and Plastering		
		D) Mounting and Installation of Air Conditioning units FCU and ACCU with Rubber Pad Support		
		E) Layout and Installation of Drainage Pipeline using PVC 3/4" Diameter (Eslon Blue) with Rubber Hose Insulation		
		F) Layout and Installation of Electrical PVC (Neltex) Including Power and Transmission Wirings from FCU to ACCU using 3.5mm <sup>2</sup> Including Grounding Line.		
		G) Layout and Termination of Electrical Wiring 5.5mm <sup>2</sup> with PVC (Neltex) from ACCU to 40 amp. Circuit Breaker NEMA 3r Enclosure (2 meters from ACCU)		
		H) Layout and Installation of Hard Drawn Copper Pipe 5/8" O.D. And 3/8" O.D. Type -L with Rubber Insulation 3/4" thickness from FCU to ACCU including Vinyl tape Insulation		
		I) Leak Testing and Correction, System Flushing and Vacuuming		
		J) Provision/Metal Cladding of Refrigerant pipe sets, from ACCU to FCU, using Galvanize Iron Guage 0.5mm, as per drawing 1"x3"x4" Bending sizes Pre-painted (same as Wall Painted)		
		K) Refrigerant Charging and Start Up with Commissioning		
		L) Attach Certificate of Warranty		

**BREAKDOWN OF LABOR AND MATERIALS FOR THE INSTALLATION OF ONE (1) UNIT 3.0 TR  
INVERTER CEILING CASSETTE SPLIT TYPE AIRCONDITIONING UNIT**

**A. COPPER PIPE AND FITTING WITH INSULATIONS**

30	Ft.	Copper Pipe 3/8" O.D. Type - L Hard Drawn
30	Ft.	Copper Pipe 3/8" O.D. Type - L Hard Drawn
6	Pcs.	Copper Elbow 3/8" I.D. x 90° Long Radius
6	Pcs.	Copper Elbow 3/8" I.D. x 90° Long Radius
5	Pcs.	Flat Silver Rod 18"
5	Length	Elastomeric Rubber Insulation 3/8" I.D. x 3/4" THK x 6'
5	Length	Elastomeric Rubber Insulation 3/8" I.D. x 3/4" THK x 6'
3	Rolls	Polyethelene Vinyl Tape Insulation 4" x 50 meters
3	Length	Elastomeric Rubber Insullation 7/8" I.D. x 1/2" thk x 6' (for drain line)

**B. ELECTRICAL WORK FOR ACCU TO FCU, CONTROL WIRINGS, CONDENSATE DRAIN**

1	Set	Circuit Breaker 40 Amps. 2 pole, Bolt on Type, NEMA 3R Enclosure
45	Mtrs.	THHN Stranded Wire #3.5 mm <sup>2</sup>
6	Mtrs.	THHN Stranded Wire #5.5 mm <sup>2</sup>
2	Length	PVC Pipe 1/2" dia X 10' (Neltex)
4	Pcs.	PVC Long Elbow 1/2" x 90° (Neltex)
10	Mtrs.	Electrical Flexible Hose 1/2" dia. (orange)
2	Pcs.	PVC Adapter 1/2" with RSC Locknut (Neltex)
3	Length	PVC Pipe 3/4" dia X 10' (Eslon Blue)
6	Pcs.	PVC Short Elbow 3/4" dia x 90° (Eslon Blue)

**C. STEEL FRAME AND METAL CLADDING SUPPORT FOR ACCU TO FCU**

2	Length	Angle Bar 3/16" x 1 1/2" x 20' Feet
1	Klg.	Welding Rod
4	Pcs.	Bolt & Nut with Flat/lock Washer 5/16" x 2" long
8	Pcs.	Threaded Female Expansion Shield 1/2" I.D x 2" Long Galvanized (DYNA Bolt)
4	Length	Full Threaded Rod 1/2" x 1 mtr. With nut/Flat Washer
1	Sheet	G.I Plain Sheet 4' x 8' guage 0.5mm (for Cladding Materials)
50	Pcs.	Plastic Tox with Metal Screw (6mm)

**D. REFRIGERANT SYSTEM FLUSHING, LEAK TESTING, VACUUMING, CHARGING**

4	Klgs.	Refrigerant R410A
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**E. OTHERS CONTINGENCY TO COMPLETE THE INSTALLATION**

1	Lot	Mapp Gas, Welding, Brazing, Cutting, Painting, Bending and Consumable Materials, Etc.
1	Lot	Gravel, Sand, Cement, Corrogated Bar 9.52mm, Water, Etc. (for Concrete Foundation)