



Republic of the Philippines

SURIGAO DEL NORTE STATE UNIVERSITY

"For Nation's Greater Heights"



OFFICE OF THE BIDS & AWARDS COMMITTEE

SUPPLEMENTAL/BID BULLETIN NO. 1

Reference No.: PB# 23-03-0006

Title: ***SUPPLY AND DELIVERY OF HVAC 3 IN 1 "REFRIGERATION, FREEZER AND AIRCON TRAINER"***

Subject: Additional Specification

<i>AUTOMATION AND ELECTRICAL MACHINE</i>	
<i>DESCRIPTION</i>	<i>SPECIFICATION</i>
TOWER LIGHT	Base type 3 Tri-color Tower light, 3 RED, GREEN, YELLOW IP Rating IP67, Lighting Color RED, Current 1 A, Materials 3 RED, Number of Layer 3.
PLUG	Heavy Duty Rubber Plug 15amp., 250VAC
LIQUID TIGHT HOSE	½ NPT, PVC Coated Flexible Conduit.
LIQUID TIGHT HOSE FITTINGS	½ NPT, Liquidtight Connector Metal Conduit.
THERMOCOUPLE	Max Temperature Sensed – 180 up to 1370°C, Material Chromel, Alumel.
TEMPERATURE CONTROLLER	Power Supply: 100-240VAC.50/60HZ Display: 2lines, 4 digit Celsius temperature.
PRESSURE TRANSDUCER	25Bars Capacity Analog Output 24VDC
DIGITAL PRESSURE SENSOR METER	Power Supply: 90-265V AC Power Consumption: <3W Accuracy: 0.3%F.S±2dgt Input: 4-20mA, 0-10V, 0-75mV
PANEL GAUGE	Voltmeter 0-300VAC Range Ammeter 0-20Amp AC Range Direct Type Frequency Meter 220VAC 45-65Hz.
POWER SUPPLY	220VAC Power Input, 24VDC 6 Ampere, Output Voltage Adj. Range:± 10%
ROYAL CORD	3Cores #12 Size: 3.5mm²x2C, 60° 300V Jacketed Outdoor Power Cable, 600V, 1roll.

Wireless Controller Module	Operating Current: Standby current (all relays closed) 15MA, 1 relay open 41MA, 2 relays open 69MA
Fault Finding Experiments	Fault-finding for electronic/electrical equipment is a skill that is neither an art nor a science, but an engineering discipline in its own right.
Pressure Control Transducer	Piezo-resistive thick film ceramic sensor, Output 4-20 mA
Android App Wireless Control	Android device screens in real-time and remote access/control Android devices running Android 8 or later as well as other Android-based phones and tablets
CONDENSER	2Hp Capacity Finned Type, External rotor fan 220VAC, Heat exchanger.
EVAPORATOR	Cooling Ventilation, Copper Piping Installation, Built-in Fan
SUNCTION	Control Floodback, Oil Dillution and Slugging, R404a Freon Compatible.
REFRIGERANT RECEIVER	450PSI working Pressure, Vertical Mount, R404a Freon Compatible.
OIL SEPARATOR	For Refrigerant used for return back oil.
FILTER DRIER	Flare Type, Protect from Moisture, Acids, Solid Contaminants.
DIFFERENTIAL PRESSURE SWITCH	Low 0.2 – 7.5 Bar, Differential 0.7-4Bar, High 8 – 32 bar, Differential -4Bar.
LOW PRESSURE GAUGE	Low Side Gauge w/ oil R404a, Back Mounted, Range -30 to 150 Psi
HIGH PRESSURE GAUGE	High Side Gauge w/ oil R404a, Back Mounted, Connection Type Flare ¼, Range -30 to 550Psi.
SOLENOID VALVE	220VAC Coil Input Voltage.
MANUAL VALVE	Diaphragm Hand Valve.
EXPANSION VALVE	-40/+10°C/ -40/+50°C
SIGHT GLASS	Joining Sight Glass, Connection Type Flare.
FITTINGS AND TUBINGS	
LEARNING TABLE and OPERATION MANUAL	Experiment Manual
RECOVERY MACHINE	
DESCRIPTION	
Refrigerant recovery unit with oil separator is used for Recovery of refrigerant HFC and HCFC.	
Refrigerants Category 4:	R-404A
Refrigerants Category 5:	R-402A, R-404A, R-407A, R-410A, R-507
Power supply:	230/60 V/Hz

Power:	3/4 KM
Motor Speed:	1450 rpm
Maximum current draw:	4 A
Compressor:	Oil-less, air-cooled, piston style
Automatic safety shut-off:	38,5/3850 bar/kPa (558 psi)
Recover rate: Category III- Vapor/Liquid/Push/pull:	0,20/1,60/4,60 kg/min
Recover rate: Category IV- Vapor/Liquid/Push/pull	0,25/1,80/5,60 kg/min
Recover rate: Category V- Vapor/Liquid/Push/pull:	0,25/2,20/6,30 kg/min
Operating temperature:	0 ÷ 40 °C
Dimensions:	450 x 250 x 355 mm
Weight:	14.2kg

For your guidance and information.



MR. JONAS ROBERT L. MIRANDA
BAC Chairperson

Received by the Bidder: _____

Date: _____