

# Purchase Order

## TFS GURGAON AIRPORT SERVICES PRIVATE LIMITED

Order Number : TFS GURGAON/PO/24-25/000023

Supplier Detail	Shipped Location	Invoice Location
<b>PIONEER PROJECT SOLUTION</b> Supplier Code : RV242523827 [ V0000024 ]	<b>TFS GURGAON AIRPORT SERVICES PRIVATE LIMITED</b> TFS Delhi T1	<b>TFS GURGAON AIRPORT SERVICES PRIVATE LIMITED</b> TFS Delhi T1
(V0000024)	Delhi Terminal 1, Indira Gandhi International Airport, Domestic Departure SHA, Mehram Nagar, New Delhi, 110037	Delhi Terminal 1, Indira Gandhi International Airport, Domestic Departure Sha, Mehram Nagar, New Delhi, 110037  GSTIN No : 07AAKCT9336M1ZL
PAN No : <b>AHQPA6815Q</b> Supplier GST No : <b>07AHQPA6815Q2ZQ</b> Supplier Contact No : Contact Person Name : <b>MOHD ASHRAF</b> Supplier Email : <b>projectspioneer@gmail.com</b>	Cost Center Code : <b>91180053</b> Cost Center Name : <b>DEL T1 BIRYANI CONCEPT</b> Project ID : <b>0</b> PO Category : <b>Capex NSO</b>	Payment Term : <b>Payments Terms:</b> <b>HVAC- Hi Side  </b> <b>Advance 100% with GST within 7days of work order</b> <b>acknowledgement(by the</b> <b>vendor)</b> <b>HVAC- Low Side, FAS &amp; Fire  </b> <b>Advance - 40% within 7days of Work Order</b> <b>acknowledgement (by the vendor).</b> <b>RA Bill 1- Up to 70% upon 80% work completion &amp;</b> <b>submission on Tax Invoice.</b> <b>Final Bill- Up to 95% upon 100% work completion &amp;</b> <b>signed JMR.</b> PO Creation Date : <b>23/12/2024</b> PO Approval Date : <b>31/12/2024</b> PO Currency : <b>INR</b> Buyer Name : <b>Pushpak Mahesh Shewale</b>

Sr.No	Item Code	HSN\SAC Code	Item Name	Item Description	Pur. Grp.	Qty	UOM	Basic Rate	Dis%	Net Rate	Total Amount	IGST %	Gross Total Amount
1	High side hvac	995463	High side hvac	High side hvac	C01	1.00	NOS	593,500.00	0.00	593,500.00	593,500.00	18	700,330.00
2	Low side hvac	995463	Low side hvac		C01	1.00	NOS	356,600.00	0.00	356,600.00	356,600.00	18	420,788.00
3	Fire Sprinkler System	8424	Fire Sprinkler System	Fire Sprinkler System	C01	1.00	NOS	91,650.00	0.00	91,650.00	91,650.00	18	108,147.00
4	FAS	85311020	FAS	FAS	C01	1.00	NOS	142,086.00	0.00	142,086.00	142,086.00	18	167,661.48

**Total Qty : 4.00**

<b>Total Basic PO Amount</b>	<b>1,183,836.00</b>
<b>Total Other Charges</b>	
<b>IGST Amount</b>	<b>213,090</b>
<b>Grand Total PO Amount</b>	<b>1,396,926.48</b>

**Amount In Words :** Rupees Thirteen Lakh Ninty Six Thousand Nine Hundred Twenty Six And Fourty Eight Paise Only

**Remarks :** Liquidated Damages:

The CONTRACTOR shall pay liquidated damages as under, for any delay in the physical completion of the works

5% of the contract value for delay during Week 1

7.5% of the contract value for delay during Week 2

10% of the contract value per week for delay from Week 3 onwards.

**Standard Terms And Condition :**

**Completion / Delivery TimeLine :** 31/01/2025

**Mobilization Date :** 30/12/2024

**Defects Liability Period :** 31/12/2025

**Retention Percentage :** 5

Escalation Buyer Detail		
Name	Mobile No.	Email - ID
Pushpak Shewale	8268330691	
Stephen P.	8553338827	

**Disclaimer :**

Point 1 : Unless informed to us it is assumed that you are not registered as MSME with the respective government authority. If you have not yet provided the MSME details along with proof kindly provide the same at the earliest. Alternatively once you get registered then provide us relevant proof to update our records.

Point 2 : Supplier is requested to acknowledge or decline the order within 24 hours or else it would be considered as accepted.

**ItemCode** : High side hvac

**ItemName** : High side hvac

Sr No	Item Code	Item Name	UOM	Remarks	Quantity	Supplier Rate	Amount
1		Note Prices shall be based on supply, installation, testing commissioning (SITC) at site including all taxes, duties, transportation insurance etc.			0.00	0.00	0.00

2	1.1	<p><b>CEILING SUSPENDED AHU</b>  Supply and assembly of Ceiling Suspended Double skin cabinet type AHU Integrated (Air handling units) of following specifications  <b>Frame Structure</b> It shall consist of 48mm Extruded Aluminium with thermal break profile.</p> <p><b>Panel</b> 45mm + - 2mm thick double skin sandwich panels with rockwool insulation of density 64 kg m3 or PUF insulation of 48 kg m3 , The sheet thickness shall be minimum 0.6 mm for the outer skin precoated and 0.8 mm thickness for the inner skin of plain GI.</p> <p><b>Mixing Box</b> shall be provided wherever specified in the drawing.</p> <p><b>Filtration Section</b> It shall be provided with single stage washable type of prefilter MERV 8 first stage which shall be placed before coil section.</p> <p><b>Coil Section</b> Chilled water coil Multi row deep constructed with Aluminium fins of min 0.11mm thick 12 Fins per inch, and copper tubes of min 27 Guage thickness HYRDOPHYLLIC coated fins. Copper tube shall be min 12.5mm diameter. AHRI certified coil.The coil face area velocity shall not exceed 2.5m sec (500 fpm).  <b>Drain Pan</b> Condensate drain pan shall be fabricated from 18G SS 304 powder coated, insulated with 13 mm thick closed cell elastomeric(nitrile rubber) insulation.</p> <p><b>Fan Section</b> SISW DIDW Direct drive backward curved fan. The fan section shall be provided with limit switch for safety to shut off fan during Opening of access door. Fan outlet velocity not to exceed 1600 FPM. The sound level shall not be exceed more than 60dB @ 1m from the source. Vibration isolators, Door Limit switch, UV Lamp as per Technical Specifications, AHU Summary Sheet and drawings. Total static pressue has to calculated by Contractor as per the configuration.</p> <p><b>Other Details</b> AHU to house control box terminal box with Auto-Manual switch and incomer power terminal, with SPP, Over Undervoltage protection, shortcircuit protection and with no-nc contacts (potential free contact) to be provided for tripping on signal from Fire Dampers Fire Alarm Panel. Power cable from Terminal box to motor control cabling of required size upto the thermostat sensor etc. to be provided. Internal electrical and control wiring of AHU to be provided as factory fitted from AHU supplier. The cost shall include all necessary supports accessories required for installation.</p> <p>Contractor shall design the chilled water coil according to the following conditions  a. Coil air entering temperature - 75.4°F DB  b. Coil air leaving temperature - 54 deg. F DB 52.99 deg. F WB  c. Chilled water temperature entering - 7.0 deg. C 44.6 deg. F  d. Chilled water temperature leaving - 12 deg. C 53.6 deg. F</p> <table border="0"> <tr> <td>Make</td> <td>VTS</td> <td>Zeco</td> <td>Citizen</td> <td></td> <td></td> </tr> <tr> <td>Type</td> <td>Capacity</td> <td>Tonnage</td> <td>ESP</td> <td>No.</td> <td></td> </tr> <tr> <td>of</td> <td>(Cfm)</td> <td>TR</td> <td>(mm WG)</td> <td></td> <td></td> </tr> <tr> <td>Rows</td> <td>CS AHU</td> <td>2000</td> <td>3.09</td> <td>25</td> <td></td> </tr> <tr> <td></td> <td>4 6</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Make	VTS	Zeco	Citizen			Type	Capacity	Tonnage	ESP	No.		of	(Cfm)	TR	(mm WG)			Rows	CS AHU	2000	3.09	25			4 6					Nos		1.00	128,500.00	128,500.00
Make	VTS	Zeco	Citizen																																		
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3		<p>GENERAL NOTES</p> <p>a. LHS RHS VALVE station location to be confirmed.</p> <p>b. Fan outlet velocity - 1600 FPM</p> <p>c. Contractor shall submit static pressure calculation for all above units to Client Consultant.</p> <p>d. Any change in motor HP shall be made at no extra cost to client.</p> <p>f. Fan efficiency shall be minimum 75%</p> <p>g. The cost shall be included lifting shifting of each equipment material with all necessary arrangement. Also, it shall be included the cost of scaffolding required for Installation of such material equipment.</p>			0.00	0.00	0.00
4	1	<p>CHILLED WATER TYPE CEILING SUSPENDED AHU (AIR HANDLING UNIT)</p>			0.00	0.00	0.00
5	3	<p>VENTILATION SYSTEM KITCHEN EXHAUST FANSITC of KITCHEN EXHAUST FANS. Fan shall be circular mixed flow cabinet with belt driven centrifugal fan plug type fan. Fan and cabinet for Kitchen exhaust fans shall be suitable for smoke exhaust application and thermally rated for 250°C for 2 hours as per [BS EN 12101-3 2002] Class-B. Motor and belt drive shall be mounted outside, so that it is not exposed to smoke stream. Motors shall be suitable for 415±10% volts, 50 cycles, 3 phase AC supply, VFD drive compatible. Fan static pressure shall be as indicated. Fans shall be activated from fire signal from fire alarm system. Fan shall be with fire proof flexible connection at inlet and outlet. The minimum fan efficiency shall be 75%. The fan shall have low sound level exceeding not more than 65 DBA at 1.5 meter distance. The speed of the fans shall not exceed 1440 RPM for fans. Baseframe, canvass connections, ancillary structure required to suspended from slab beams, vibration isolators, vibration pads, connection flanges, inlet bell mouth inlet cone, outlet cone, back draft dampers, volume control and fire damper. (Vendor to crosscheck static pressure calculation) Make Greeheck, Nicotra, Waves, EdgeTech, Kruger, Wolter, Caryaire</p>			0.00	0.00	0.00

6	3.2	<p><b>DRY SCRUBBER</b>  Supply, Installation, Testing and Commissioning of DRY SCRUBBER each comprising of extract air intake section, electrostatic precipitation technology, dry type air cleaner to remove oil, smoke and fumes from exhaust air, as per the specifications and as under CE Certified (Produce valid CE Certification)  Electrostatic Filter manufactured with 16G MS powder coated cabinet complete with washable type aluminium mesh filters, tungsten wire stainless steel spiked ionizers to create high voltage DC field, aluminium collector plates which should be alternatively charged positive and negative with large collecting area (Minimum filtration area of 2.00sqm per 1000 CMH) with minimum 13.5 deep cell, to work as magnet for charged smoke and oil particles.  Average efficiency of 90-95% in single pass as per ASHRAE test method (ASHRAE standard 52.2-2012 Produce valid test report)  Electrostatic precipitator should be able to charge particles from 0.01micron to 10micron through solid state power supply. Collector cell should be of permanent type and incorporate slide out facility for easy removal for cleaning. All the units shall be equipped with pulse width modulating (PWM) power circuit board. The system should be fitted with interlock switch for safety. The unit must have potential Free NO contact for monitoring thru BMS system and set of terminals for remote monitoring thru LED Indicators. The units should be supplied with Auto Wash and V shaped Adsorber Module as per specifications, if specifically asked for in BOQ. All the systems must be suitable for OUTDOOR Installation. Operating Voltage 220V, 50Hz Ionizing Voltage 12.5 to 13KVDC Collector Cell Voltage 6 to 6.5KVDC Power Consumption Not more than 50W per cell Dry scrubber shall be supplied with factory fitted UVO3 system, with ozone generating UVC lamps, interlocked with scrubber operation. The lamps must be fitted post the ESP on stand easily accessible from the scrubber door for maintenance replacement. The lamps must be supplied with Electronic Ballasts, mounted suitably within the scrubber control panel and completely interlocked. Lamp operation LED indicators must be available on the panel. Lamp life shall be minimum 13000hr. Make Rydair, Trion, Espair, Halton</p>			0.00	0.00	0.00
7	3.3	<p><b>KITCHEN FRESH AIR FANS</b> of KITCHEN FRESH FANS. Fan shall be circular mixed flow cabinet with belt driven centrifugal fan plug type fan. Fan and cabinet for Kitchen fresh air fans shall be suitable for smoke exhaust application and thermally rated for 250°C for 2 hours as per [BS EN 12101-3 2002] Class-B. Motor and belt drive shall be mounted outside, so that it is not exposed to smoke stream. Motors shall be suitable for 415±10% volts, 50 cycles, 3 phase AC supply, VFD drive compatible. Fan static pressure shall be as indicated. Fans shall be activated from fire signal from fire alarm system. Fan shall be with fire proof flexible connection at inlet and outlet. The minimum fan efficiency shall be 75%. The fan shall have low sound level exceeding not more than 65 DBA at 1.5 meter distance. The speed of the fans shall not exceed 1440 RPM for fans. Baseframe, canvass connections, ancillary structure required to suspended from slab beams, vibration isolators, vibration pads, connection flanges, inlet bell mouth inlet cone, outlet cone, back draft dampers, volume control and fire damper. In additional all fresh air fans shall be provided with prefilter (MERV 8) and fine filter (MERV 13).  Make Greeheck, Nicotra, Waves, EdgeTech, Kruger, Wolter, Caryaire</p>			0.00	0.00	0.00
8	a	4800 CFM, 60mm ESP (Class H)	Nos.		1.00	155,000.00	155,000.00

9	a	4800 CFM	Nos.		1.00	165,000.00	165,000.00
10	a	4100 CFM, 30mm ESP (Class F)	Nos.		1.00	145,000.00	145,000.00
<b>Total :</b>					<b>4.00</b>		<b>593,500.00</b>

**ItemCode** : Low side hvac

**ItemName** : Low side hvac

Sr No	Item Code	Item Name	UOM	Remarks	Quantity	Supplier Rate	Amount
1	a	F 25 mm	Rmt		20.00	325.00	6,500.00
2	2.3	BALL VALVE  SITC of following sizes of Ball Valve consist of Cap , Brass Body, Rated for 150 psi SWP, 600 psi WOG Pressure Two-piece construction; with brass body, regular port, B-16 chrome-plated ball and stem, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, vinyl covered steel handle, threaded or soldered ends and extended stem for insulated piping. Same valve shall be used as a Drain valve. Make Zoloto Audco Kitz			0.00	0.00	0.00
3	b	Thermometers of the mercury in glass stem type and copper separable well complete with guard etc., of industrial grade mounting on water lines. Length 9 12 inches, Thermometer, Range 0-50 deg C	Nos.		2.00	1,200.00	2,400.00
4	2.8	INSULATED CONDENSATE DRAIN PIPE SITC of UPVC pipes of following sizes for drain with necessary supports and fittings such as elbows, tees reducers etc. The insulation line to be insulated with nitrile rubber insulation of thickness 9mm and wrapped by weather proof protection tape. The Pipe wherever concealed should also have a parallel line as a standby arrangement in case of block of primary pipe . Make Supreme, Prince, Astral			0.00	0.00	0.00
5	4.5	EXTRUDED ALUMINIUM SQUARE AIR DIFFUSER  Supply, Installation, Testing and Balancing of Powder coated aluminium supply air square diffuser complete with removable inner core as per approved shop drawing and specifications. The diffuser shall also be provided with Black painted GI opposed blade damper (OBD) of required sizes. Each diffuser shall have double inlet rings to connect flexible ducts. The diffuser shall be suitable for gypsum grid ceiling. The Colour shall be decided and approved by client and architect.Make Cosmos Ruskin Titus Air Master			0.00	0.00	0.00
6	b	SQUARE DIFFUSER FOR GYPSUM CEILING			0.00	0.00	0.00
7		Return Air Diffuser without OBD	Nos.		2.00	1,200.00	2,400.00
8	4.6	CANVAS CONNECTION Supply fixing of flexible Canvas connections between mouth piece and initial piece of ducting. Flexible connections shall be fire resistant made of closely woven, double layer canvass neoprene coated fibre glass.			0.00	0.00	0.00
9	c	Cabinet Fresh Air Fan	No.		1.00	2,500.00	2,500.00
10	d	8 SWG GI Earthing	Rmt		10.00	110.00	1,100.00
11	6.2	CABLE TERMINATION			0.00	0.00	0.00
12	2	CHILLED WATER PIPING WITH INSULATION			0.00	0.00	0.00

13	2.2	CHILLED WATER PIPING INSULATION - INTERNAL USE  SITC of insulation for chilled water. piping. For internal pipe - Stick 25mm thick Nitrile rubber class O Closed cell nitrile rubber with anti-microbial coating on it. Insulation shall have Thermal conductivity of 0.033 W (m.K) and water vapor permeance of 0.10. Joints should be sealed with 50 mm wide 3 mm thick self adhesive tape and putting PVC bands at all supports. Make Armaflex K-flex			0.00	0.00	0.00
14	2.5	PIBCV VALVE SITC of Pressure Independent Balancing cum Control Valves (PIBCV) including integrated motorised control valve and balancing device for combined flow and water balancing requirement. Valve body to be rated for PN 16. The valve design flow rate should be factory calibrated with + - 5% flow accuracy. Valve shall have necessary measuring ports, drain port, flanges etc., Valve shall also provide temperature sensor with necessary cabling (min 2mtr length to be considered with each valve). The balancing to be done through microprocessor based hand held terminal POT and the same results shall be furnished in the water balancing report as part of commissioning report and handing over manual. Make Oventrop Siemens Danfoss			0.00	0.00	0.00
15	a	Water Pressure gauges 150mm dial complete with gauge valves, mounting, fittings and copper tubing extension wherever required. Pressure gauges Range 0-10 Kg CM2	Nos.		2.00	1,850.00	3,700.00
16	3.4	FRAMEWORK FOR FANS			0.00	0.00	0.00
17		Supply, Fabrication, Testing, and Commissioning of Factory Fabricated GI Sheet Metal 120GSM Rectangular boxed ducting, Plenums, Cows, Elbows with turning vanes, Splitters, Reducers, Flanges, Collars etc as per IS 655 and installation as per SMACNA standards, The complete ducting shall be provided with MS Supports, Rods, Angles, Flanges, Bracing, Rubber Gaskets, Wooden frames, Canvas Connections, etc. as per drawings and specifications. GI Sheet Makes Tata, Jindal, SAIL, Ispat Make Rola Star, Zeco Ductofab			0.00	0.00	0.00
18	b	24 Gauge GI Sheet Metal Duct (0-750mm)	Sq.mtr		75.00	1,200.00	90,000.00
19	a	SQUARE DIFFUSER FOR GRID CEILING			0.00	0.00	0.00
20	b	Cabinet Exhaust Fan	No.		1.00	2,500.00	2,500.00
21	5.2	ACOUSTIC INSULATION			0.00	0.00	0.00
22		Supply fixing acoustic insulation for ducting using Class 1 closed cell elastomeric insulation of 10mm thick Nitrile rubber insulation adhesive, longitudinal transverse joints sealed with adhesive in neat clean manner. Material shall be processed Nitrile Rubber foam with anti-microbial protection. Insulation shall have thermal conductivity of 0.047 W (m.K) and density of 140 - 180 kg m <sup>3</sup> . Make Armaflex K-flex	Sq.mtr		60.00	600.00	36,000.00
23		80 -mm Thick	Sq.mtr		25.00	1,000.00	25,000.00
24	b	CU XLPE Cable for 4800 CFM EX Fan, 3PH Fan with Industrial Top Plug	Nos.		2.00	450.00	900.00
25	6.3	CABLE TRAYS			0.00	0.00	0.00

26		Supplying Fixing of following sizes of GI cable tray duly painted perforated type of height 50mm along with necessary bends, reducers etc. anchored along the wall suspended from the ceiling with necessary MS supports.			0.00	0.00	0.00
27	2.1	CHW PIPE SITC of MS Heavy duty class C ERW Chilled Water pipe conforming to IS 1239 - 2004 primer painted including bends, tees, MS supports, PUFF saddles, anchor fasteners, steel angles and any other material required to complete the work. The piping flange connection bolts, washers and nuts should be hot dipped galvanised. Flourscent Plastic Sticker paint shall be applied to indicate Water flow directions. Only End flanges to be used for capping of pipes. Table E of BS code for flange thickness to be adhered. Make Jindal Hissar TATA			0.00	0.00	0.00
28	a	F 25 mm	Rmt		20.00	800.00	16,000.00
28	a	F 25 mm	No.		1.00	20,500.00	20,500.00
28	a	F 25 mm	Nos.		3.00	2,450.00	7,350.00
29	2.4	BALL VALVE WITH Y-STRAINER SITC of following sizes of Brass Ball Valve with Y-Strainer consist of Cap, Brass Body, Rated for 150 psi SWP, 600 psi WOG Pressure Two-piece construction; with brass body, regular port, B-16 chrome-plated ball and stem, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, vinyl covered steel handle, threaded or soldered ends and extended stem for insulated piping. Filter element shall be of non magnetic SS sheet with perforation. Make Zoloto Audco Kitz			0.00	0.00	0.00
30	a	F 25 mm	No.		1.00	2,450.00	2,450.00
31	2.6	Auto Air Vent Valves Make Anergy Flamco Providing and fitting Auto Vent Valves. Make Anergy Flamco Providing and fitting Auto Vent Valves.			0.00	0.00	0.00
32	2.7	SITC of Pressure gauges Thermometers Make H Guru Waree Necessary pressure gauges and thermometers 4 Dial type.			0.00	0.00	0.00
33		Supply, Fabrication and Installation of MS frame using channels angle iron sections as required for mounting of ventilation fans scrubber in areas shown in the layout. The frame work shall be applied with red oxide primer and thereafter, two coats of enamel paint of approved colour. The general arrangement drawing for frame work shall be got approved from the Mall team prior to commencement of fabrication.	Kg		200.00	225.00	45,000.00
34	4.1	GI SHEET METAL DUCTING			0.00	0.00	0.00
35	a	22 Gauge GI Sheet Metal Duct (751-1500mm)	Sq.mtr		10.00	1,350.00	13,500.00
36	4.2	EXTRUDED ALUMINIUM CEILING GRILLES Supply, Installation, Testing and Balancing of Powder coated aluminium grilles complete with removable inner core as per approved shop drawing and specifications. The area of grille can be of any geometrical shape (Square rectangular Linear). The grilles shall be with 15 30 45° deflections as per requirement. The Colour shall be decided and approved by client and architect. Make Cosmos, Air Master System Air			0.00	0.00	0.00
37		Supply Air Diffuser with OBD - Neck Size 225x225mm	Nos.		2.00	2,000.00	4,000.00
38	a	CHW AHU	No.		1.00	2,500.00	2,500.00

39		NOTES The ducting support should be as per tender specification and additional supports are to be provided by Contractor as decided by Consultant. Muslin cloth cover for all air outlets during construction. Pressure testing of complete duct work as per DW SMACNA standard. Silicon sealant for longitudinal transverse joints as per specification. Diffusers grilles shall be powder coated as per color approved by Architect.			0.00	0.00	0.00
40	5	THERMAL INSULATION			0.00	0.00	0.00
41		Supply fixing of Thermal insulation for supply air duct using 19mm thick class O Closed cell nitrile rubber with anti-microbial coating on it. Insulation shall have Thermal conductivity of 0.033 W (m.K) and water vapor permeance of 0.10. Joints should be sealed with 50 mm wide 3 mm thick self adhesive tape. The duct shall be stick with recommended adhesive. Make Armaflex K-flex	Sq.mtr		10.00	700.00	7,000.00
42	5.3	THERMAL INSULATION FOR KITCHEN DUCTS  SITC of Glass Fibre Blanket Insulation material bonded with Thrmosetting Resin, with factory applied laminated aluminium foil of 22 micrns with fibre glass backing. Further, wire mesh along with 7 mil cloth shall be applied on above the insulation with proper adhesive. Nominal density 48 Kg CuM. Thermal conductivity, < 0.033 W m.K at 24 degC. All Insuation material and adhesives shall be as per Class I for surface spread and in accordance with BS 476, Class O for non-combustible grade. Makes UP Twiga, Owens Corning, Supreme			0.00	0.00	0.00
43	6	ELECTRICAL WORKS			0.00	0.00	0.00
44	6.1	Power Cable			0.00	0.00	0.00
45		Supply, handling, laying effecting proper connections testing and commissioning of following sizes of 1.1 KV grade XLPE insulated FRLS Aluminium Copper conductor cables laid over MS supports cable racks or fixing on walls including clamping the cable to supports in an approved manner as required complete with Copper earthing as specified for continuous earthing along with cable. All complete as required and as per final instruction as given by Owners Consultants and as per Technical specifications. Earthing shall be measured separately and shall be connected in two runs. Power to ELCB to be provided near each ODU by electrical contractor.			0.00	0.00	0.00
46	a	CU Armoured Cable for Suitable 2000 CFM AHU Fan, 3PH Fan	Rmt		5.00	325.00	1,625.00
47	b	CU XLPE Cable for 4800 CFM EX Fan, 3PH Fan with Industrial Top Plug	Rmt		5.00	425.00	2,125.00
48		Supply Making of Cable termination of armoured unarmoured cables 1.1 KV grade including installation of cable glands, cable lugs (Aluminium for A2XFY copper for 2XFY YY Double compression type), heat shrinkable sleeves on long ends, crimping paste etc. The work includes testing commissioning of cables, meggering values submitting reports of tests. (One set includes termination of all cores of one end only). All crimping tools dies shall be arranged by contractor.			0.00	0.00	0.00
49	c	CU XLPE Cable for 4100 CFM FA Fan, 3PH Fan with Industrial Top Plug	Nos.		2.00	450.00	900.00
50	a	SITC of Auto air vent in each risers common headers AHU. 3 4 auto vent valves at each coil riser header.	Nos.		2.00	850.00	1,700.00

51	c	Thermowells	Nos.		4.00	500.00	2,000.00
52	a	F 25 mm	Rmt		10.00	120.00	1,200.00
53		NOTES FOR PIPING Cover all open pipe ends with muslin cloth during construction Pipe cleaning chemical treatment as per specs shall be included in the piping cost. Unit rates for all indicated sizes of pipes valves shall be furnished. Cleaning Painting of pipe before insulation shall be included in piping cost. The piping support should be as per tender specification and additional supports are to be provided Contractor as decided by Consultant. All the valves shall be insulated with the same material as that of Chilled water pipng and cost of insulation for valves shall be considered.			0.00	0.00	0.00
54		Note Fan outlet velocity - 1600 FPM All cabinet fans should have plenum section. Fresh air fan should to have 6mm thick synthetic media washable filter with framework. Contractor shall submit static pressure calculation for all above units to Client Consultant for their approval. Also, the total static drops across the systems shall cover the overall length from suction discharge to grille (inside the outlet). Any change in motor HP or coil selection shall be made at no extra cost to client. Fan efficiency shall be minimum 75% The cost shall be included lifting shifting of each equipment material with all necessary arrangement. Also, it shall be included the cost of scaffolding required for Installation of such material equipment.			0.00	0.00	0.00
55	4	SHEET METAL WORKS			0.00	0.00	0.00
56	b	Square Rectangular Linear	Sq.mtr		3.00	6,000.00	18,000.00
57	4.3	OPPOSED BLADE DAMPER SITC of Aluminium Opposed blade dampers black powder coated vertical blades type for supply air collar. The damper should be gear operated type. Make Cosmos, Air Master System Air	Sq.mtr		1.00	4,000.00	4,000.00
58	4.4	MULTI LEAF VOLUME CONTROL DAMPERSITC of multiblade box type galvanised steel sheet volume control dampers for ducts to be provided with suitable links, levers and quadrants for manual control of volume of air flow and for proper balancing of the air distribution system as per the approved shop drawings and specifications. Make Carryaire System Air Dynacraft Air Master	Sq.mtr		1.50	8,000.00	12,000.00
59		Return Air Diffuser without OBD	Nos.		3.00	1,200.00	3,600.00
60		Supply Air Diffuser with OBD - Neck Size 225x225mm	Nos.		2.00	2,000.00	4,000.00
61	c	CU XLPE Cable for 4100 CFM FA Fan, 3PH Fan with Industrial Top Plug	Rmt		5.00	425.00	2,125.00
62	c	CU XLPE Cable for dry Scrubber, 1PH with Industrial Top Plug	Rmt		5.00	225.00	1,125.00
63	a	CU Armoured Cable for Suitable 2000 CFM AHU Fan, 3PH Fan	Nos.		2.00	450.00	900.00
64	a	50mm x 50mm x 1.6mm Thick	Rmt		20.00	500.00	10,000.00
<b>Total :</b>					<b>518.50</b>		<b>356,600.00</b>

ItemCode : Fire Sprinkler System

ItemName : Fire Sprinkler System

Sr No	Item Code	Item Name	UOM	Remarks	Quantity	Supplier Rate	Amount
1	a	1000 MM Long	No.		7.00	2,000.00	14,000.00

2	d	Providing fixing testing and commissioning of UL FM approved Rated crome finished rosset cap TYCO VIKING MAKE	No.		10.00	225.00	2,250.00
3	iv)	50 mm dia.	RMT		10.00	1,250.00	12,500.00
4	2	Providing , fixing testing and commissioning of pendant type sprinkler heads 79 deg. Temp	No.		3.00	1,450.00	4,350.00
5	6	Providing fixing testing and commissioning of UL Rated SS Flexible pipe ( Assumed required at site)			0.00	0.00	0.00
6	7	Providing, laying, jointing, testing and commissioning of G.I. pipes and fittings (IS 1239 (Part-I)-Class C and IS 1239 Part-II heavy respectively), All pipes as per ASTM A-105 3000 LBS (up to 50mm dia) and ASTM A 234 WPB or B above 50mm dia including cutting,threading welding etc providing all malleable galvanized iron fittings viz. Flanges, bends, tees, elbows,reducers, unions, supporting with G. I. clamps, hangers, M.S. brackets etc. including cutting holes and chases in brick or RCC wall slabs and making good the same to the Approval of Architect consultant ,complete including painting with one coat of primer and two or more coats of synthetic enamel paint of approved make and shade. (Pipe connection shall be thredded up to 50mm dia and above 50mm dia shall be through welding)			0.00	0.00	0.00
7	8	Wheel operated Butterfly Valves (PN 16) with inbuilt supervisory switch (UL listed and FM approved) with CI Body, Black Nitrile Body Liner and Nylon Coated SG Iron Disc with material and labour including hydraulic testing etc. complete as per drawing, specification to the level of satisfaction of Site- Incharge.			0.00	0.00	0.00
8	ii)	32 mm dia.	RMT		5.00	950.00	4,750.00
9	lii)	40 mm dia.	RMT		2.00	1,050.00	2,100.00
10	il)	50 mm dia.	No.		1.00	16,500.00	16,500.00
11	1	Providing , fixing testing and commissioning of pendant type sprinkler heads 68 deg. Temp	No.		7.00	2,050.00	14,350.00
12	c	1600 MM Long	No.		3.00	2,450.00	7,350.00
13	l)	25 mm dia.	RMT		18.00	750.00	13,500.00
<b>Total :</b>					<b>66.00</b>		<b>91,650.00</b>

ItemCode : FAS

ItemName : FAS

Sr No	Item Code	Item Name	UOM	Remarks	Quantity	Supplier Rate	Amount
1	13.3.3	Supply,Installation,Testing Commissioning of Horn Strobe rated at 82 dBA @ 3m for Audible annunciation and 75cd flashing at 1 Hz for visual indication with Control modules and necessary accessories including back box.	Nos		2.00	4,600.00	9,200.00
2	13.3.7	Supply,Installation,Testing Commissioning of Analogue Addressable Flash scan Type Heat Detector having Rotary , decimal addressing system with standard base, built in isolation function and junction box. The detector shall be capable to address in the range of 1-159. The detector shall be with Visible bi-color LEDs for 360 deg viewing and shall blink green every time the detector is addressed, and illuminate steady red on alarm. (Make-Edward-EST-SIGA-HFS)	Nos		1.00	4,700.00	4,700.00
3	13.5	SITC of 2Cx1.5sq.mm multistranded FRLS Cu. Armoured for RED Colour, Mylan Shielded Screened cable For SLC.	Mtrs		40.00	150.00	6,000.00

4	13.3.1	Supply,Installation,Testing Commissioning of Analogue Addressable Monitor module having Rotary, decimal addressing system for monitoring the field devices shall be capable of providing DPDTcontact rated at 24V DC, 2A.	Nos		2.00	4,800.00	9,600.00
5		(For all AHU s, Fans Access Control)			0.00	0.00	0.00
6	13.3.9	Supply,Installation,Testing Commissioning of Addressable Break Glass Manual Call Point having Rotary, decimal addressing system and having an integrally mounted addressable module that monitors and reports contact status.	Nos		2.00	4,800.00	9,600.00
7	13.3	Detectors and Devices			0.00	0.00	0.00
8	13.4	SITC of Fault Isolator.	Nos		1.00	4,800.00	4,800.00
9	13.1.1	Fire alarm Addressable control panel (1 Loop)			0.00	0.00	0.00
10	13.2	Active Repeater Panel with 8.5 Touch Screen TFT display with TCP IP Eable Repeater Panel shall monitor and control (Scroll, Acknowledge, Reset Mute) all the events of the FACP to which it is connected and it shall have Port Vectoring Event Filtering capability of showing only ALARMS, TROUBLES or SUPERVISORY or customized combinations of user selected events.	Nos		1.00	80,000.00	80,000.00
11	13.3.2	Supply,Installation,Testing Commissioning of Analogue Addressable Relay module having Rotary, decimal addressing system for AHU tripping and shall be capable of providing DPDTcontact rated at 24v DC, 2A.	Nos		1.00	4,800.00	4,800.00
12	13.3.6	Supply,Installation,Testing Commissioning of Analogue Addressable Flash scan Type Photoelectric Multi Sensor detectors having Rotary, decimal addressing system with standard base, built in isolation function and junction box. The detector shall be capable to address in the range of 1-159. The detector shall be with Visible bi-color LEDs for 360 deg viewing and shall blink green every time the detector is addressed, and illuminate steady red on alarm. (Make- Edward-SIGA PHD)	Nos		3.00	4,462.00	13,386.00
<b>Total :</b>					<b>53.00</b>		<b>142,086.00</b>