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Date: June 27, 2022

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**ADDENDUM 1**

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**RE: ADDENDUM TO TENDER NO: KNH/T/56/2022-2023- SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF MEDICAL EQUIPMENTS**

**TO ALL BIDDERS**

Pursuant to the Public Procurement and Asset Disposal Act section 75, its attendant Regulations 2020 and Clause 10 on Amendment of Tender Documents, the Hospital wishes to make the following amendments/clarifications;

**1. SCHEDULE OF REQUIREMENTS**

- i) On the price schedule for Medical Equipment item numbers 4 and 43: Interventional Radiology Suite and Tractor have been expunged.
- ii) On the price schedule the quantities for the following items have been amended as tabulated below;

NO	Item Description	QTY	UNIT PRICE	TOTAL COST	COUNTRY OF ORIGIN	REMARKS
6.(i)	Baby Electronic Scale	50				
6.(ii)	Portable weighing scale with height meter	50				
41.(i)	Surgeon Operating Stools without backrest	50				
41(ii)	Surgeon Operating Stools with backrest	50				
58.	IOPA AND OPG Machines	1				
59.	Commercial Printer for SN	1				

## **2. TECHNICAL SPECIFICATIONS**

The schedule for specification has been amended to include the following;

## **3. TECHNICAL SPECIFICATION OF THEATRE OPERATING STOOL WITH A BACKREST**

- i) The seat should have a sandal shape
- ii) Special surgical stool of high stainless steel quality suitable for operating room
- iii) High quality stainless steel quality safety base with 5 steering castors (abrasion resistant, non-discoloring, corrosion resistant synthetic double castors, load-dependent braked, antistatic)
- iv) Foot brake integrated in the transport frame
- v) height adjustment from 510-740 mm with installed gas pressure spring using foot operation with large, chromed safety foot bar
- vi) seat height: 510 – 740 mm
- vii) should have a black antistatic upholstery
- viii) Stand area –diameter 480mm
- ix) The seat diameter from 360-420mm, cushion strength 80-100mm)
- x) Brochure to be provided for evaluation
- xi) Manufacturer's Authorization

## **4. TECHNICAL SPECIFICATION OF THEATRE OPERATING STOOL WITHOUT A BACKREST**

- i) The seat should have a round shape
- ii) Special surgical stool of high quality stainless steel quality suitable for operating room
- iii) High quality Stainless steel quality safety base with 5 steering castors (abrasion resistant, non-discoloring, corrosion resistant synthetic double castors, load-dependent braked, antistatic)
- iv) Foot brake integrated in the transport frame
- v) height adjustment from 510-740 mm with installed gas pressure spring using foot operation with large, chromed safety foot bar
- vi) Seat height: 510 – 740 mm
- vii) should have a black antistatic upholstery
- viii) Stand area –diameter 480mm
- ix) Seat diameter from 360-420mm, cushion strength 80-100mm)
- x) Brochure to be provided for evaluation
- xi) Manufacturers Authorization

**5. KIDNEY TRANSPLANT RECIPIENT SET**

5	RAMPLEY SPONGE HOLDERS	1	ADSON DURA NEEDLE HOLDER
1	MAYO SCISSORS CURVED 6 1/2"	1	CASTROVIEJO NEEDLE HOLDER
1	CARLESS LIGATURE SCISSORS 6 1/2"	2	SIMS NEEDLE HOLDER
1	LOBECTOMY SCISSORS (METZABUM) 10 1/2"	1	NARROW JAW CARBIDE TIP NEEDLE HOLDER
1	METZABUM SCISSORS CURVED 7"	1	GOLD PLATED BULLDOG CLAMPS
1	METZABUM SCISSORS CURVED DELICATED 9"	2	FINE RIGHT ANGLED CLAMPS 4 1/2" (ELINGTANG)
1	POTTS SCISSORS STRAIGHT 6"	2	HARRINGTON RIGHT ANGLED CLAMP 14"
1	MAYO SCISSORS CURVED 10"	2	LANGENBERG RETRACTOR
8	CROSS ACTION TOWEL CLIPS	2	CANNYRALLIS RETRACTORS
1	BP HANDLE NO.4	2	MORRIS RETRACTOR
1	BP HANDLE NO.5	2	DEAVER RETRACTOR SMALL
1	COOLEY CLAMP FULLY CURVED	1	DEAVER RETRACTOR 2" WIDE
1	YANKER SUCKER TUBE	2	KELLY RETRACTOR SMALL
2	MULLER RIGHT ANGLED CLAMP 11"	1	COPPER RETRACTOR 2" WIDE
1	DEBARKEY ATRAUMA DISSECTING FORCEPS STRAIGHT 7"	1	COPPER RETRACTOR 1" WIDE
1	DEBARKEY ATRAUMA DISSECTING FORCEPS STRAIGHT 6"	1	FINNOCHETTO RETRACTOR SMALL
1	MCINDOES DISSECTING FORCEPS NON TOOTHED	1	FINNOCHETTO RETRACTOR LARGE
1	WAUGHS DISSECTING FORCEPS NON TOOTHED	1	MALLEABLE RETRACTOR 3/4"
1	FORCEPS NON TOOTHED	1	ANEURYSM NEEDLE
1	WAUGHS DISSECTING FORCEPS NON TOOTHED	1	SILVER PROBE
1	FORCEPS TOOTHED	1	SINUS FORCEPS
1	CANADIAN DISSECTING FORCEPS TOOTHED	1	STANLEY BOYD SCOOP DOUBLE
6	CHANCES ARTERY FORCEPS CURVED		
4	SPENCERWELL ARTERY FORCEPS STRAIGHT		
10	MOSQUITO ARTERY FORCEPS CURVED		
1	DUVAL TISSUE FORCEPS 6"		
3	DUVAL TISSUE FORCEPS 8"		
4	ALLIS TISSUE FORCEPS 6"		
4	ALLIS TISSUE FORCEPS 8"		
2	BABCORK TISSUE FORCEPS 8"		
1	FRENCH EYE NEEDLE HOLDER GOLD PLATED 10"		

## **6. SPECIFICATIONS AND ATTACHMENTS FOR DENTAL CHAIR/UNIT**

Over Head Continental delivery system consisting of:

1. 3 way syringe
2. 4 hole turbine Hoses with 3 handpieces;  
-High speed: super torque push button  
-Straight (motor & Handpiece)  
-contra angle (motor & Handpiece)
3. LED light cure unit
4. Overhead LED light
5. High volume saliva ejector/suction
6. Slow volume saliva suction
7. The synchronized movement between the seat and backrest.
8. Head rest with SEESA W movement suitable for Paediatric patients.
9. Auto return to zero position
10. Emergency stop control
11. X-ray viewer with light generated by LED
12. Multi functional foot control (base fixed or mobile
13. Operating voltage 220-240V, 50Hz volts
14. Piezoelectric Scaler
15. A spittoon
16. Tray holder
17. Amalgam separator
18. Intra oral camera
19. Compatible with dry central suction machine
20. Should be supplied with a height adjustable surgeons stool (two in number)

### **Terms & Conditions:-**

1. An undertaking to be provided by the principal/manufacturer of the system for availability of spares for ten years from the date of installation
2. Suppliers to produce CE/ISO/IEC certification/Declaration for each equipment.

### **Standards: safety.**

1. Should comply with CE standards
2. 2 year manufacturer's warranty
3. Five years comprehensive maintenance contract with spares
4. Supplier should have a service center in Kenya and should provide a manufacturers Authorization letter.
5. 2 weeks factory training for 2 biomedical technologists
6. On the ground training for User Dentists and Nurses.

**7. TECHNICAL SPECIFICATIONS FOR IOPA AND OPG MACHINES**

S/NO	ITEM DESCRIPTION	TECHNICAL SPECIFICATIONS
1	Orthopantomagram Panoramic Dental X-ray Unit(OPG) + Computer Monitors + Smart Printer	<p>Description Pax-1 2D SC Digital Panoramic X-ray Unit with Ceph</p> <p>Function Pano + Scanning Ceph</p> <p>Detector Pano:CMOS</p> <p>Ceph:CMOS</p> <p>Gray Scale 14 bits</p> <p>Scan Time Pano:HD 13.5 Sec</p> <p>Normal 10.1 Sec</p> <p>Ceph:12.9 Sec</p> <p>Patient Position Standing Wheel Chair Accessible</p> <p>Focal Spot 0.5 x 0.5 mm</p> <p>Generator Voltage 50-90 kVp</p> <p>Generator Current 4-10mA</p> <p>Image Magnification Pano:1.3 Constant</p> <p>Ceph:1.14</p> <p>Dimension 1920mm x 1200mm x 2300mm</p> <p>Weight 120kg</p> <p>Base 50kg</p> <p>Smart Printer 2 Tray CR 200V:E</p> <p>Computer Monitors</p>
2	Wall Mounted Intraoral Periapical X-ray Unit(IOPA).	<p>Power Voltage: AC220 ± 10%</p> <p>Frequency: 50/60Hz</p> <p>Electric plug: Three-core (International / European standard)</p> <p>Ultimate Capacity: 900VA</p> <p>Electric Current: 4A</p>

		<p>Fuse: 6.3A</p> <p>Focus: 0.8mm</p> <p>Rated High Voltage: 70KV ± 10%</p> <p>Tube-Head Current: 7mA ± 15%</p> <p>Anode Angle: 19°</p> <p>Load Cycle: 1/60</p> <p>Half Value Layer: 1.6mmAL under 70KV</p> <p>Inherent Filtration: ≥2.1mm AL</p> <p>Radiation Leakage: &lt; 0.07mGy/h</p> <p>Exposure Time: 0.06-2.00s</p> <p>Fashion Design</p> <p>Finger control</p> <p>Free movement</p> <p>Precise positioning</p> <p>Multi-function timer</p> <p>Easy-operational handle</p>
3	<p><b>EZ-Sensor Classic</b> <b>Size 1.5</b></p>	<p>Detector CMOS</p> <p>Pixel Size 29.6 μm</p> <p>Theoretical Resolution 17 lp/mm</p> <p>Dynamic Range 12 bit</p> <p>Active Area (WxL) Size 1.0 _ 20 x 30mm</p> <p><b>Size 1.5 _ 24 x 33mm</b></p> <p>Size 2.0 _ 26 x 36mm</p> <p>Dimensions (WxLxT) Size 1.0 _ 25.4 x 36.8mm (1.00 x 1.45 inch)</p> <p><b>Size 1.5 _ 29.2 x 39.5mm (1.14 x 1.55 inch)</b></p> <p>Size 2.0 _ 31.3 x 42.9mm (1.23 x 1.69 inch)</p> <p>Thickness 4.8 mm (0.19 inch)</p> <p>Cable Length 2.7 m</p>

<b>3</b>	<b>UPS</b>	2000VA +240voltage
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**8. SPECIFICATIONS FOR MULTIFUNCTIONAL PRINTER FOR CERTIFICATES**

<b>PRODUCT SPECIFICATION</b>		
<b>Technology:</b>	Electro photography	
<b>Print Resolution:</b>	2400 x 2400 dpi	
<b>Print Speed</b>		
<b>8.5" x 11":</b>	Up to 70 ipm	
<b>11" x 17":</b>	Up to 35 ipm	
<b>12" x 18":</b>	Up to 35 ipm	
<b>13" x 19":</b>	Up to 33 ipm	
<b>13" x 30":</b>	Up to 19 ipm	
<b>Paper Size</b>		
<b>Standard:</b>	3.94" x 5.83" to 13" x 19.2"	
<b>Optional:</b>	5.5" x 5.83" to 13" x 51.2"	
<b>Paper Capacity<sup>1</sup></b>		
<b>Standard:</b>	Up to 1,650 Sheets	
<b>Maximum:</b>	Up to 10,400 Sheets	
<b>Paper Weight</b>		
<b>Standard:</b>	14 lb. Bond to 110 lb. Cover (52 gsm to 300 gsm)	
<b>Optional:</b>	14 lb. Bond to 130 lb. Cover (52 gsm to 350 gsm)	
<b>Envelopes:<sup>2</sup></b>	No 10 (COM10), ISO-C5, DL, Monarch, 6" x 9", 9" x 12", 10" x 13	
<b>Long Sheets<sup>3</sup></b>		
<b>Duplex:</b>	Up to 13" x 30"	

Simplex:	Up to 13" x 51.2"
<b>Automatic Duplexing<sup>3</sup></b>	
Paper Size:	Up to 13" x 30"
Paper Weight:	Up to 130 lb. Cover (350 gsm) <sup>4</sup>
Power Source:	Single-Phase 208 V, 50/60 Hz, 20 A
Weight:	697 lb.
Dimensions (W x D x H):	60.2" x 38.7" x 67.4"
<b>INPUT ACCESSORIES</b>	
Multi-Drawer Paper Deck-D1	
Paper Capacity: <sup>1</sup>	Up to 5,000 Sheets
Paper Size:	5.5" x 7.2" to 13" x 19.2"
Paper Weight:	14 lb. Bond to 130 lb. Cover (52 gsm to 350 gsm)
Power Source:	110-127V, 60 Hz, 6.4 A
Weight:	388 lb.
Dimensions (W x D x H):	37.9" x 31.5" x 42.5"
POD Deck Lite-	
Paper Capacity: <sup>1</sup>	Up to 3,500 Sheets
Paper Size:	5.5" x 5.83" to 13" x 19.2"
Paper Weight:	14 lb. Bond to 130 lb. Cover (52 gsm to 350 gsm)
Envelopes: <sup>2</sup>	5.5" x 5.83" to 13" x 19.2"
Power Source:	120-127 V, 60 Hz, 2.2 A
Weight:	168 lb.
Dimensions (W x D x H):	28.3" x 27.0" x 22.6"
POD Deck Lite XL-A1	
Paper Capacity: <sup>1</sup>	Up to 3,500 Sheets (Up to 13" x 19.2")
	Up to 1,000 Sheets (Up to 13" x 30")
Paper Size:	5.5" x 5.83" to 13" x 30"



Paper Weight:	14 lb. Bond to 130 lb. Cover (52 gsm to 350 gsm) <b>5</b>
Envelopes: <b>2</b>	5.5" x 5.83" to 13" x 30"
Power Source:	Single-Phase 208V AC, 60 Hz, 20A
Weight:	250 lb.
Dimensions (W x D x H):	43.5" x 27" x 22.6"
Stack Bypass-	
Paper Capacity: <b>1</b>	Up to 250 Sheets
Paper Size:	4" x 5.83" to 13" x 19.2"
Paper Weight:	14 lb. Bond to 130 lb. Cover (52 gsm to 350 gsm)
Envelopes: <b>2</b>	4" x 5.83" to 13" x 19.2"
Weight:	3 lb.
Dimensions (W x D x H):	19.3" x 15.1" x 2.9"

**Long Sheet Feeding and Catch Tray-**

Paper Capacity:	Up to 1 Sheet
Paper Size:	4" x 5.83" to 13" x 51.2"
Paper Weight:	17 lb. Bond to 130 lb. Cover (64 gsm to 350 gsm) <b>5</b>
Envelopes:	4" x 5.83" to 13" x 19.2"
Weight:	2 lb.
Dimensions (W x D x H):	85.6" x 56.1" x 56.1"
Duplex Color Image Reader-M2	
Image Sensor:	CCD
Scan Speed (Letter, 300 dpi)	
BW (duplex):	Up to 230 opm
Color (duplex):	Up to 150 opm
Document Size:	Statement to 11" x 17"
Resolution:	Up to 600 x 600 dpi, 256 Gradations

Tray Capacity:1	Up 300 Sheets
Weight:	84 lb.
Dimensions (W x D x H):	25" x 23.8" x 10"

## FINISHING ACCESSORIES

### Copy Tray

Paper Capacity:1	Up to 250 Sheets
Paper Weight:	14 lb. Bond to 130 lb. Cover (52 gsm to 350 gsm)
Paper Size:	4" x 5.83" to 13" x 19.2"
Weight:	2.6 lb.
Dimensions (W x D x H):	16.6" x 15" x 6.8"

### Sensing Unit

Tasks:	Front to Back Alignment, Color Accuracy Check, Cross Shade Adjustment, Secondary Transfer Adjustment
DFE:	PRISMAsync Print Server V8.2 or later; imagePRESS Server H350/G250 V2.0 or later
Paper Weight:	14 lb. Bond to 130 lb. Cover (52 gsm to 350 gsm)
Paper Size:	5.5" x 5.83" to 13" x 30"
Dimensions (W x D x H):	20.2" x 29.5" x 48.3"
Power Supply:	100-240 V, 50-60 Hz, 2.5 A

### Document Insertion Unit

Tray Capacity1	
Upper Tray:	Up to 200 Sheets
Lower Tray:	Up to 200 Sheets
Paper Weight:	14 lb. Bond to 130 lb. Cover (52 gsm to 300 gsm)
Paper Size:	7.2" x 7.2" to 13" x 19.2"
Power Supply:	100-240 V, 50/60 Hz, 1.0 A
Weight:	135 lb.

Dimensions (W x D x H):	29.4" x 31.3" x 55.4"
<b>Multi Function Professional Puncher</b>	
Paper Weight	
Punching:	20 lb. Bond to 110 lb. Cover (75 gsm to 300 gsm)
Creasing:	110 lb. Text to 110 lb. Cover (162 gsm to 300 gsm)
Paper Size:	12" x 18", 11" x 17", LTR, LGL, LTR-R, STMT
Punching:	Letter-R, Letter, Legal, 11" x 17", 12" x 18"
Creasing:	Letter-R, 11" x 17, 12" x 18", 13" x 19"
Die Set Patterns:	Loose Leaf 3-Hole/5-Hole, Velo Bind 11-Hole, Plastic Comb 19-Hole, Twin Loop 21-Hole/32-Hole, Color Coil 44-Hole, Crease
Power Supply:	100-127 V, 60 Hz, 15 A
Weight:	225 lb.
Dimensions (W x D x H):	17.5" x 31.3" x 41"
<b>GBC eWire Pro6</b>	
Bound Book Size:1	15 to 100 Sheets
Paper Size:	Letter, 5.5" x 8.5", Tab Stock
Paper Weight:	20 lb. Bond to 110 lb. Cover (75 gsm to 300 gsm)
Wire Choices:	1/4", 5/16", 3/8", 7/16", 1/2", 9/16"
Stack Capacity:	Up to 35 Books
Infeed:	Multi Function Professional Puncher-B1
Power Supply:	115 V, 60 Hz, 2.8A
Weight:	500 lb.
Dimensions (W x D x H):	35.8" x 31.3" x 42.6"
<b>Perfect Binder</b>	
Finished Book Size:	5.4" x 7.99" to 8.5" x 11.69"
Book Thickness:1	10 to 200 Sheets (Up to 0.98")
Body Paper Weight:	14 lb. Bond to 43 lb. Bond (52 gsm to 163 gsm)

Cover Paper Weight:	24 lb. Bond to 110 lb. Cover (90 gsm to 300 gsm)
Trimming Method:	3-Side Cut/1-Side Cut/No Cut
<b>Trim Range</b>	
Top/Bottom:	0.26" to 1.56"
Side:	0.26" to 1.95"
Power Source:	208 V, 60 Hz, 2.6 A
Weight:	679 lb.
Dimensions (W x D x H):	36.3" x 31.1" x 51.3"
High Capacity Stacker-H16	
Stack Capacity: 1	Up to 6,000 Sheets
Top Tray Capacity: 1	Up to 200 Sheets
Paper Size:	7.2" x 7.2" to 13" x 19.2"
Paper Weight:	14 lb. Bond to 130 lb. Cover (52 gsm to 350 gsm)
Power Source:	120 V, 60 Hz, 10 A
Weight:	265 lb.
Dimensions (W x D x H):	35.4" x 29.3" x 44.9"
Plockmatic Multi Purpose Stacker	
Stack Height:	Sheets < 25.6": Up to 11.8"
Sheets > 25.6": Up to 5.3"	
Paper Size:	8.3" x 11" to 13" x 30"
Paper Weight:	100 lb. Test to 130 lb. Cover (148 gsm to 350 gsm)
Power Source:	100-240 V, 50-60 Hz, 2 A
Weight:	168 lb.
Dimensions (W x D x H):	41.8" x 35.4" x 26.8"
<b>MAX Ring Binder MB</b>	
Binding Capacity: 1	2 to 100 Sheets
Sheet Size:	Letter, Letter Tab

Paper Weight:	17 lb. Bond to 80 lb. Cover (64 to 216 gsm)
Stacking Capacity:	Up to 25 Books
Ring Elements:	Small (Up to 50 Sheets), Large (Up to 100 Sheets)
Power Source:	120-127 V, 60 Hz, 2.8 A
Weight:	331 lb.
Dimensions (W x D x H):	55.5" x 26.8" x 41.8"
<b>Paper Folding Unit</b>	
Double Parallel Fold:	Legal, Letter-R
C/Accordion Fold:	Letter-R
Z-Fold:	Letter-R, 11" x 17"
Paper Weights:	14 lb. Bond to 28 lb. Bond (50 gsm to 105 gsm)
Power Source:	From Finisher
Weight:	157 lb. (71 kg)
Dimensions (W x D x H):	13.3" x 31.3" x 46.9"
<b>Staple Finisher-AC1/Booklet Finisher</b>	
Tray Capacity1	
Top Tray:	Up to 250 Sheets
Middle Tray:	Up to 250 Sheets
Lower Tray:	Up to 3,000 Sheets
Saddle-Stitch Tray:	Up to 30 Booklets
<b>Paper Weight</b>	
Stacking:	14 lb. Bond to 130 lb. Cover (52 to 350 gsm)
Corner Stapling:	14 lb. Bond to 140 lb. Index (52 to 256 gsm)
Booklet Making:	14 lb. Bond to 140 lb. Index (52 to 256 gsm)
Staple Positions:	Corner, Double Side, Eco
<b>Paper Size</b>	
Stapling:	Executive, Letter-R, Letter, Legal, 11" x 17"

Saddle Finisher:	5.5" x 7.2" to 11.8" x 17"
<b>Stapling Capacity<sup>1</sup></b>	
Corner/Double Side:	Up to 65 Sheets
Eco Stitch:	Up to 5 Sheets
Saddle Stitch:	Up to 20 Sheets
V-Folding:	Up to 3 Sheets without Stitch
Power Source:	From the Main Unit
<b>Weight</b>	
Staple Finisher:	80 lb.
Booklet Finisher:	131 lb.
Dimensions (W x D x H):	25.5" x 25.9" x 44.1"
<b>2/3 Hole Puncher Unit-A110</b>	
Paper Weight:	14 lb. Bond to 110 lb. Cover (52 gsm to 300 gsm)
<b>Paper Sizes</b>	
2-Hole:	Legal, Letter-R, Custom Size (7.2" x 7.2" to 11.8" x 17")
3-Hole:	11" x 17", Letter, Executive-R, Custom Size (9.5" x 7.2" to 11.8" x 17")
Paper Weight:	14 lb. Bond to 110 lb. Cover (52 gsm to 300 gsm)
Power Supply:	From the Finisher
<b>Staple Finisher-W1/Booklet Finisher-W1</b>	
<b>Tray Capacity<sup>1</sup></b>	
Top Tray:	Up to 1,000 Sheets
Lower Tray:	Up to 4,000 Sheets
Saddle-Stitch Tray:	Up to 30 Booklets or Limitless
<b>Paper Weight</b>	
Stacking:	14 lb. Bond to 130 lb. Cover (52 to 350 gsm)
Corner Stapling:	14 lb. Bond to 110 lb. Cover (52 to 300 gsm)
Booklet Making:	14 lb. Bond to 110 lb. Cover (52 to 300 gsm)
Staple Positions:	Corner, Double Side

<b>Paper Size</b>	
Stapling:	8.3" x 11" to 11.7" x 17"
Saddle Finisher:	8.3" x 11" to 13" x 19.2"
<b>Stapling Capacity<sup>1</sup></b>	
Corner/Double Side:	Up to 100 Sheets
Saddle Stitch:	Up to 25 Sheets
V-Folding:	Up to 5 Sheets without stitch
Power Source:	120-240 V, 60 Hz, 8 A
<b>Weight</b>	
Staple Finisher:	287 lb.
Booklet Finisher:	397 lb.
Dimensions (W x D x H):	31.5" x 31.3" x 48.8"
<b>Long Sheet Catch Tray-C111</b>	
Stack Capacity: <sup>1</sup>	100 sheets
Paper Size:	4" x 5.83" to 13" x 30"
<b>Long Sheet Catch Tray XL-A112</b>	
Stack Capacity: <sup>1</sup>	Up to 30" (300 sheets)
	Up to 51.2" (10 sheets)
Paper Size:	4" x 5.83" to 13" x 51.2"
<b>Puncher Unit</b>	
Paper Weight:	Same as Main Engine
<b>Paper Sizes</b>	
2-Hole:	Legal, Letter-R, Custom Size (7.2" x 7.2" to 11.8" x 17")
3-Hole:	11" x 17", Letter, Executive-R, Custom Size (9.5" x 7.2" to 11.8" x 17")
Paper Weight:	14 lb. Bond to 110 lb. Cover (52 gsm to 300 gsm)
Punch Waste Capacity:	Up to 6,000 Sheets
Power Supply:	From the Finisher
<b>DFD Adapter and Finisher Bridge-A16,12</b>	

Paper Weight:	14 lb. Bond to 110 lb. Cover (52 gsm to 300 gsm)
Supported Finishing:	SDD BLM300C Professional Booklet Maker Plockmatic BLM50/35 Professional Booklet Maker, MAX Ring Binder MB-1000C
Requirements:	Staple/Booklet Finisher-W1
Weight:	66 lb.
Dimensions (W x D x H):	23.5" x 29.3" x 5.9"
<b>Booklet Trimmer</b>	
Margin Trimming:	Front-edge Trim
Trim Amount:	0.08" to 1.1"
Paper Weight:	14 lb. Bond to 110 lb. Cover (52 gsm to 300 gsm)
Power Supply:	From the Finisher
Weight:	392 lb.
Dimensions (W x D x H):	82.5" x 30.8" x 41"
<b>Two-Knife Booklet Trimmer</b>	
Margin Trimming:	Top and Bottom
Trim Amount:	0.08" to 0.59"
Paper Weight:	14 lb. Bond to 110 lb. Cover (52 gsm to 300 gsm)
Power Supply:	120 V/15 A
Weight:	320 lb.
Dimensions (W x D x H):	21.1" x 30.4" x 41"
<b>Square Fold Booklet Maker</b>	
Booklet Capacity1:	Up to 25 Sheets
Booklet Input Size:	4.71" x 8.27" to 9.6" x 12.6"
Booklet Output Size:	4.71" x 7.87" to 9.6" x 12.6"
Paper Weight:	16 lb. Bond to 110 lb. Cover
Trim Amount:	0.08" to 1.38"



Power Supply:	120 V, 60 Hz, 15 A
Weight:	154 lb.
Dimensions (W x D x H):	44.9" x 23.6" x 44.9"
<b>Square Fold Booklet Maker with Two Knife</b>	
Booklet Capacity <sup>1</sup> :	Up to 25 Sheets
Booklet Input Size:	4.88" x 5.51" to 9.6" x 12.6"
Booklet Output Size:	4.88" x 5.51" to 9.6" x 12.6"
Paper Weight:	16 lb. Bond to 110 lb. Cover
Trim Amount:	0.08" to 1.38"
Power Supply:	120 V, 60 Hz, 15 A
Weight:	573 lb.
Dimensions (W x D x H):	62.7" x 27.6" x 51.2"
<b>Professional Booklet Maker</b>	
Booklet Size <sup>1</sup> :	Up to 30 Sheets
Paper Size:	5.5" x 9.9" to 12.6" x 18.5"
Paper Weight	
Body:	16 lb. Bond to 64 lb. Cover (60 to 240 gsm)
Cover:	20 lb. Bond to 110 lb. Cover (80 to 300 gsm)
Trim Amount <sup>1</sup>	
Face:	0.08" to 0.63"
Top/Bottom:	0.08" to 1.38"
Paper Rotating:	16 8" x 8" to 9.1" x 12.6"
Weight:	1,477 lb.
Dimensions (W x D x H):	143.6" x 27.5" x 45.3"
Plockmatic BLM50/35 Professional Booklet	
Booklet Size <sup>1</sup> :	Up to 50 Sheets

Paper Size:	8.1" x 10.8" to 12.6" x 18"
Paper Weight	
Uncoated:	16 lb. Bond to 110 lb. Cover (60 to 300 gsm)
Coated:	28 lb. Bond to 110 lb. Cover (105 to 300 gsm)
Trim Amount <b>15</b>	
Face:	0.04" to 1"
Top/Bottom:	0.196" to 1.18"
Paper Rotating:	8.1" x 10.9" to 9.1" x 12.7"
<b>6</b>	
Weight:	1,235.7 lb.
Dimensions (W x D x H):	131.1" x 33.8" x 42.5"
<b>PRINT SERVERS</b>	
imagePRESS Printer Kit-F1	
PDL:	PS, PCL, UFR
Memory:	3.5 GB
Hard Drive:	1.5 TB
PRISMAsync Print Server <b>7</b>	
System Software:	
	Version 7
CPU:	Intel Core i7 4770S @ 3.1 GHz
Memory:	16 GB
Hard Drive:	1.5 TB
OS:	Windows 10
Standard:	Scheduler, DocBox, G7 Calibration, Page Programmer, Remote Manager, PRISMAlytics Dashboard, Automated Workflows, Multiple Queues, Remote Control
Optional:	E-Shredding

<b>PRISMAsync Print Server LP17</b>	
System Software:	Version 7
CPU:	Intel Core i7 4770S @ 3.1 GHz
Memory:	16 GB
Hard Drive:	1.5 TB
OS:	Windows 10
Standard:	Multiple Queues, Scheduler, Remote Manager, Color Presets, Pixel Precise Preview, Spot Color Editing, Calibration, Realistic Preview, Digital Moire
Optional:	Advanced Color Management, Power Up Package,

### 9. SPECIFICATIONS FOR FAREWELL HOME COLD ROOMS

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
<b>SUPPLY, DELIVER, INSTALL, TEST AND COMMISSION AS PER PECIFICATIONS</b>					
<b>A</b>	<b>GENERAL WING COLD ROOMS</b>				
	Supply., deliver and install test and commission the following equipment as described				
1	<u>Cooling coil unit</u> Cooling coil unit of cooling load capacity of not less than 4KW ,complete with cooling coil, defrost heater, expansion valve, air circulating fans, guards, drip tray, drainage pipe work supports etc. for use with R404A, R134A – Refrigerant - suitable to BITZER V cold room . The unit to be as Frigaborn MUC 520 rein with power supply 4.0KW 240V 50HZ-. Ducted Type cooling	No	16		

	unit. ( Allow for ducting works connections) or equal and approved				
2	<p><b>Condensing Unit</b></p> <p>Condensing unit with condensing load of not less than 4KW and complete with fan ,compressor-hermetically sealed type with internal thermal overload protection , liquid receiver, dual pressure control switch , solenoid valve, sight glass, filter drier using R404A refrigerant, anti vibration mountings, etc (the unit to be as condensing unit for BITZER V cold room ) with power supply 4KW ,415V,50HZ ,and compressor to be as MANEUROPE HARMETIC TYPE MTZ50HK4BVE OR equivalent approved</p>	NO	16		
3	<p><b>DUCTING WORKS :</b></p> <p>Carry out ducting works using galvanized mild steel sheet 1.00mm thick C/W bends, hangers, transportation pieces supportters, connectors to enclose the cooling coil (evaporator unit) in the duct. Separate the cooling coil units, each cooling coil unit to serve one cold room with six compartment doors independently. (Allow for suitable mounting support for the above cooling coil unit inside the duct with provision for inspection door).</p> <p>Total ducting area of about 300m<sup>2</sup>, linear length of about 160 m.</p> <p>-Supply and return ducts to be installed and connected to each cooling coil unit.</p>	ITEM	16		

(b)	Supply and install back-up evaporator fan motor- 90w-150W 240V/415V C/W with blades 350mm size.  The fan shall be housed in a rectangular frame work made of stainless steel, and be sliding in rails inside the duct for ease of servicing. (To serve as a booster fan to the cooling coil unit.)	NO	16		
(c)	<b><u>Cooling coil unit and fan support</u></b>  Allow for suitable duct mounting supports for the above cooling coil units and fans	item			
4	<b>Refrigerant Circuit Fittings</b>				
(a)	Thermostatic expansion valve (TEV) to match the evaporator and condensing unit load <b>(R404a/R410a) as Danfos Model OR Equivalent approved</b>	NO	16		
(b)	Filter drier to mach to refrigerant capacity <b>(R404a/R410a) As Danfoss Model OR Equivalent Approved</b>	NO	16		
(c)	Liquid refrigerant line site glass-as danfoss or equal and approved	NO	16		
(d)	Dual pressure control switch - <b>(R404a/R410a) as Danfoss Model OR Equivalent Approved, Low side -0 – 100 psi, High side 100-400psi</b>	Pair	16		
5	Room thermostat -5 <sup>0</sup> to 10 <sup>0</sup> range as Danfoss model <b>OR Equivalent Approved.</b>	NO	16		
6	Electronic digital temperature thermometer( gauge)	NO	16		
7	Solenoid valve complete with coil- to match liquid line size as Danfoss	NO	16		

8	<b>Refrigeration Pipe Work</b>					
(a)	12mm diameter high quality copper Refrigeration pipe work including pipe work fittings, isolation valves holder bats, tray etc	LM	200			
(b)	15mm diameter high quality copper Refrigeration pipe work including pipe work fittings, isolation valves holder bats, tray etc	LM	200			
	<b>Refrigeration Pipe Work insulation</b>	LM	200			
	<b>25mm Amarflex insulation for suction refrigeration pipe</b>					
9	<b><u>DUCTING WORKS</u></b> <b><u>INSULATION</u></b> Carry out insulation of the supply and return ducts  Using styraple insulation 50mm thick and clad with alluminium leaving service inspection points to the evaporator and fans. Insulation of about 300m <sup>2</sup> ( surface area )	ITEM	ITEM			
10	<b>CONTROL PANEL-FOR COLD ROOMS</b>					
(a)	Supply and install control panel complete with the following :  -Defrost timer switches - Phase failure relays Electrical relay with fuse box. -Compressor starter with overload protection 32Amps. -Heater contactors - Evaporator fan starter with overload protection.	NO	4			

	<p>-Local isolator &amp; appropriate MCBs</p> <p><u>-Pilot lamps should include fan trip -red,</u></p> <p>Compressor run green, fan run green, heater on- yellow.</p> <p>-Each pilot lamp should be labeled</p> <p>-Under voltage/over voltage protection,</p> <p>-All interconnecting pipe work</p> <p>( N/B-EACH CONTROL PANNEL TO SERVE TWO MACHINES)</p>				
(b)	<p>Modernize the existing control panel by replacing its controls – mcbs, mcbs, contactors ,overloads, temperature control thermostats, motor starters and current overload relays ,phase failure relays, with overload and under voltage protection, timer switch for defrost control ,push buttons for start and stop and audible alarm system( n/b- each control panel to serve two machines)-</p> <p>then hand over the removed parts to HE.</p>	ITEM	4		
11	<b>ELECTRICAL WORKS</b>				
	<p>Electrical works include local wiring between the machinery, service isolator , control panel and cooling units</p>	ITEM			
12 (A)	<p>Carefully remove all the old wooden cold room doors and hand over to DR/HE</p>	ITEM			
(B)	<p>Supply and replace the wooden bottom frame work of the cold rooms measuring approximately</p>	ITEM			

	1500mmx 50mmx25mm of similar existing hard wood.				
13	<p>Supply, deliver and install compartment doors (three No. to replace each wooden door) .The compartment doors shall be constructed from stainless steel (304) sheet of about 1.5mm and to be size of about 750mmx600mm properly welded to avoid pockets . The same shall be jacketed with stainless steel (both sides) with insulation of polyurethane material.</p> <p>It shall be hinged (2 hinges) on a stainless steel frame which covers the entire length and width of existing door. Each door shall have side lock handle .The doors to have mirror finish on both sides. They shall be completed with double sealing gasket all round.</p>	No	96		
14-a	<p><b>Line remaining face of the cold room with the same stain less steel sheets such that all all wood work and masonry works are covered with stainless steel sheet. The surface area to be covered is approx 60M<sup>2</sup></b></p>	ITEM			
-b	<p><b>Line remaining inner surface of all cold rooms with the same stain less steel sheets such that all masonry works are covered with stainless steel sheet. The surface area to be covered is approx 400M<sup>2</sup></b></p>	ITEM			
15	<b>COLD ROOM RACKS</b>				
a	<p><b>Polish all old trays /racks and make good where necessary. Replace all roller bearings as necessary</b></p>	ITEM			



b	<p>Allow for Supply. delivery and installation of new <b>COLD ROOM RACKS as per existing made of stainless steel as per existing .</b></p>	ITEM			
16	<p>Supply and install air <b>supply fan</b> duty as woods type 35JM, 1440RPM, 240V 0.5M<sup>3</sup>/S 50HZ, ) or Equal and Approved (against 250 p.a.). The fan shall be complete With its suitable vibration isolator mountings, <b>its blades, housing, and all electrical controls (phase failure relay, contactor, and switch.</b></p>	No	2		
17	<p><b>Supply and install extract fans as woods type 40JM,1420 rpm,415v, at 200pa 1.5M<sup>3</sup>/S 50HZ,(axial flow type). The fan to be complete with its blades, housing, and all electrical controls (phase failure relay, contactor, switch.</b></p>	No	2		
18	<p><b><u>Silencers</u></b> Supply and install Silencer for axial fan systems, constructed from cold formed pre –galvanized steel sheet and absorbent material of acoustic grade resin bonded mineral fibre with erosion resistant facing and moisture resistant lining. Fitted to achieve 15dB noise reduction. Silencer as “WOODS” model HM10 “C”-type, diameter 400mm, or equal and approved</p>	No	4		
19--a	<p>Carry out ducting works (in ventilating the plant room)-using galvanized mild steel sheet 1.00mm thick C/W bends, hangers, transportation pieces supporters, connectors to supply fresh air in the plant room at a lower level , and extract the hot air &amp; gases at a</p>	ITEM			

	higher level					
(b)	(i) Install goose neck roof cowl with insect lourver size  400 x 400mm to the supply duct.					
(c)	1. Install goose neck roof cowl with insect lourver size  250 x 300mm to the extract duct.					
(d)	<b>Carry out supply and installation of air flow dampers , made of galvanized mild steel sheet 1.00mm thick in to the respective supply and extract air ducts to enable controlled air flow into the rooms</b>				ITEM	
(e)	Supply and install air diffusers in the respective rooms. With adjustable air louvers -Sizes...(i) 400x300mm				ITEM	
20	Carry out testing of the systems and then commission				ITEM	
21	Allow for working drawings as installed				ITEM	
22	<b>(vi)contingency allowed and to be expended with the authority of the hospital; engineer</b>				SUM	
	N.B. Bidders must visit the site before quoting. Site Visit Certificate will be issued					

### Conditions

- Bidders must visit site and confirm pertinent issues that will guide them on installation.
- Successful bidder must **Quote For** installation material and works.
- Bidders must fill in the site visit form.
- Bidder must engage the services of qualified engineers /technicians registered by **ERC** and **NCA-5** & above for mechanical works in refrigeration and air conditioning for proper installation and commissioning of the cold rooms (attach their certificates).
- Bidders must provide catalogue with detailed information of their products for evaluation.
- Bidders must show proof of having carried out similar works.
- Bidders must show prove of technical capability and financial current audited Accounts.
- Successful bidder must provide operational, service manual and part list.
- Successful bidder must provide in house training for both the operators and technical staff.
- Successful bidder must provide a 1 year warranty of their product.
- Equipment to be ISO 9001 /CE certified.

### 10. NUTRITIONAL ASSESSMENT TOOLS: WEIGHING SCALES

NO	LOCATION	EQUIPMENT/ PLANT	SPECIFICATIONS	PURPOSE/ FUNCTION
1.	ALL CLINICAL AREAS (WARDS/CLINICS)	Portable weighing scale with height meter	Stand on weighing scale with large circular scale or with dual reading die cast beam; complete with mechanical height rod. The height rod should measure between 76 cm to 200 cm. Should have a BMI display; platform cover that is easy to clean; tough white coated finish; platform size 270 mm x 370 mm; Capacity upto 160 kg to 225 kg; to measure to the nearest 0.1kg to 0.5 kg.	Nutritional assessment

2.	PEDIATRIC WARDS; CLINICS; NBU; MCHC	Baby Electronic Scale	Baby weighing scale with high sides to ensure baby safety, with easy to clean tray. Capacity up to at least 15kg to 20 kg. Graduation between 5g to 10 g.	Nutritional assessment
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### 11. TECHNICAL SPECIFICATIONS FOR BLOOD PRESSURE MACHINE(PAEDS)

Unit must have:

- 1) A range of 0 – 300mmHg
- 2) Large easy to read dial
- 3) Latex bulb and chrome-plated air release valve
- 4) At least 3m spiral BP Hose
- 5) 2 sets of pediatric cuffs
- 6) Adjustable (swivel) wall mounting bracket

**12. RENOVATION AND INSTALATION WORKS AT MAIN THEATRE  
MECHANICAL VENTILATIN AND AIR CONDITIONING SYSTEMS**

NO.	ITEM DESCRIPTION	REPAIR REQUIRMENTS	UNIT OF ISSUE	QTY	UNIT PRICE RATE	TOTAL
1	INSTALLATION OF PACKAGE CHILLER  -OLD THEATERS AND NEW THEATRES	<b>SUPPLY ,DELIVER,INSTALL,TEST AND COMMISSION CENTRAL AIR CONDITIONING SYSTEM AS PER SPECIFICATIONS</b>  (i) Supply and install central air conditioning system  - complete with humidifiers and dehumidifiers ,  Cooling Capacity of 30KW, refrigerant, R-410 A , C/C2 5.7 KG .BP-  LP 20 Bar HP -31 Bar A Max-14.3, - KW Max -6.2, , 415V.  Control 24/50/1, 100VA 415V .TYPE 355041-TRANE  BVBA/FRANCE <b>OR</b> equal to <b>TRANE MODEL TTA 100B, 102,000 BTU/HOUR (30KW) cooling capacity and complete with</b>  -it's indoor /out door units and fans. The system  Should be complete with a properly sized sound silencer.	NO	4		
2		Allow construction of a 6 "concrete platform for the A/C in the plant room	ITEM			

3	DUCTING WORKS	<p><b>(ii)</b> Carry out ducting works using galvanized mild steel sheet 1.00mm thick , complete with bends ,hangers, transportation pieces, supportters ,and connect the air conditioning system to inlet supply point of the existing mechanical ventilation system ( ducting of about (60 M<sup>2</sup> ). Per each system</p> <p>Install pre- filters and absolute HEPA- filters 99% Efficiency to A/C and direct Air- conditioned air to the respective theatres using the existing duct system.</p> <p><b>N.B. Each Air Conditioner to serve two theatres, corridors and offices as per the existing systems</b></p>	ITEM		
4	AIR DUMPERS	<p><b>(iii)</b>Carry out supply and installation of air flow dampers , made of galvanized mild steel sheet 1.00mm thick in to the respective air ducts to enable controlled air flow into the rooms</p>	ITEM		
5	INSULATION WORKS	<p><b>(iv)</b> Carry out insulation works of all the naked ducts, at pre- filtration and Air handling Fan, using styraple insulation 50mm thick. And paint with bitumen or equivalent approved insulation -leaving service inspection point to pre filters.</p>	ITEM		
6	CONTROL PANEL	<p><b>(v)</b> SUPPLY AND INSTALL CONTROL PANEL C/W WITH MCBS, MCCBS ,contactors ,overloads, temperature control</p>	no	4	

		thermostats, motor starters and current overload relays ,phase failure relays, with overload and under voltage protection, timer switch for defrost control ,push buttons for start and stop and audible alarm system.			
7	AIR HANDLING SYSTEMS (PRE-FILTERS)  <u>THEATRES</u>	<u>PRE-FILTERS:</u> Supply and install ;washable and re-usable pre- filters in metal panel of minimum 600x600x100mm thick and capable of 0.1 m <sup>3</sup> /sec. of air with pressure drop of 32Pa and efficiency of 85% ASHRAE as “ FRANCE AIR FR SPG 85” or equal and approved.	No	44	
8	DUCTING SYSTEMS	Recondition the ducting systems-interior surfaces by cleaning , painting, and removing any obstructions to air flow in the ducts and install appropriate air flow dampers as may be necessary	ITEM		
9	SUPPLY FANS -AC1 ,AC2	(a) Supply and install air supply driving fan motors (DUTY & STAND BY) complete with CENTRIFUGAL FAN, AS TRANE MODEL -(EQUAL TO EXISTING) ,5.5KW.1400RPM.10.5AMP. C/W CENTRIFUGAL FAN , Then reconnect using ducting to the existing ducting system .Fan to be capable to deliver 2.4 m <sup>3</sup> /sec. air flow rate against a pressure drop of 1000 Pa complete with dampers .	SET	6	

	<b>SUPPLY FANS -AC3</b>	(b) Supply and install air supply driving fan motors (DUTY & STAND BY MOTORS) complete with CENTRIFUGAL FAN, AS TRANE MODEL -(EQUAL TO EXISTING) ,4KW.1400RPM 8.6AMP.,Then reconnect using ducting to the existing ducting system .Fan to be capable to deliver 2.0 m <sup>3</sup> /sec. air flow rate against a pressure drop of 525 Pa complete with dampers.	No	4		
	<b>AC1,AC2 &amp; AC3 FAN- SILENCERS</b>	(c) <b>SILENCERS</b> Supply and install Silencer for supply fan systems, constructed from cold formed pre –galvanized steel sheet and absorbent material of acoustic grade resin bonded mineral fibre with erosion resistant facing and moisture resistant lining. Fitted to achieve 15dB noise reduction. Silencer as “WOODS” model HM10 “C” - type, diameter 400mm, or equal and approved.	No	4		
10	<b>ABSOLUTE- FILTERS</b>	-Supply and install absolute HEPA- filters 99% Efficiency size -610mm x 610mm x290mm , -0.05 micron Filter Media  -Absolute air filter in metal panels with a capacity of 0.5 m <sup>3</sup> /sec against 275 Pa pressure drop with a very high efficiency of 99% NaCl.	No	48		



		<b>As "FRANCE AIR FR EFI 12GP" or equal and approved</b>			
11	<b>FANS- EXTRACT</b>	<p><b>(a)</b> SUPPLY AND INSTALL AIR EXTRACT FANS – CENTRIFUGAL TYPE/or AXIAL flow type--1.5KW 1400RPM,240V/415V . <b>(DUTY &amp; STAND BY)</b> Extract fan capable of 0.6 M<sup>3</sup>/sec against a pressure drop of 475 Pa complete with dampers</p> <p><b>(b)</b> SUPPLY AND INSTALL AIR SUPPLY FANS – CENTRIFUGAL TYPE/or AXIAL flow type--1.5KW 1400RPM,240V/415V <b>(DUTY &amp; STAND BY)</b>. Fan capable of 0.6 M<sup>3</sup>/sec flow rate against a pressure drop of 475 Pa complete with dampers</p>	NO		
12	<b>DAMPERS</b>	<p><b>Balancing air flow – Dampers</b></p> <p>(i)Supply and install - control air flow dampers to the appropriate size of the duct, with a galvanized steel frame 80mm deep and blades of 50mm pitch , complete with operating gear wheels and servomotor As FRANCE AIR and Servomotor type LM 230 or equal and approved- .( all to the whole installation -</p>	item		

		supply lines & extract lines).					
13	AIR SUPPLY DIFFUSER	Air Supply Diffusers 1-Way laminar flow high wall diffusers of size 350x350mm, set to discharge 0.1m <sup>3</sup> /sec of air at a velocity of 2.0m/sec.	ITEM				
14	EXTRACT AIR GRILLS	Extract air grills all to be complete with balancing dampers 2- Way extract air grill of size 300x300mm, each capable of extracting 0.06m <sup>3</sup> /sec. As “Kool air return grilles” or equal and approved.	ITEM				
15	SUPPLY & EXTRACT FAN-SILENCERS	<u>Silencers</u> Supply and install Silencer for axial fan systems, constructed from cold formed pre – galvanized steel sheet and absorbent material of acoustic grade resin bonded mineral fibre with erosion resistant facing and moisture resistant lining. Fitted to achieve 15dB noise reduction. Silencer as “WOODS” model HM10 “C”- type, diameter 400mm, or equal and approved.	No	9			
16		<u>ELECTRICAL WORKS</u> Carry out all electrical installation works from the air conditioning units, fans and to the control panel all to working condition.	ITEM				

17	FAN CONTROL PANNEL	<p><b>Control panel--</b> Supply and install a <b>splash proof fan control panel</b> complete with operational switches, indicator lights.</p> <p>It shall incorporate an isolator, contactors, three phase AVS relays, surge protection unit and over heat safety controls, fuses and pilot lamps to enable operating conditions to be checked.</p> <p>The panel shall be cut of mild steel and anodized after manufacture. It shall include volt free contacts for on-off and audible signal connection to a central indicator panel. (For each system – to every theatre.)</p>	ITEM			
18		<p>Allow for as installed drawings to Engineers approval which shall be 2no.set of copies in CD and hard copies.</p>	item			
19		<p><b><u>Builders works</u></b> Allow for a prime sum of Ksh.300, 000 for all building works associated with installation of air ventilating systems, such as double sealing glass windows and cutting openings on walls.</p>				Ksh.300,000
20		<p>Contingency allowed and to be expended with the authority of the hospital; engineer</p>				700,000
21		<p>Test and commission the whole installation in good working condition.</p>				

		<b>Total Brought Forward...</b>	
		pg....1	-
		“ ....2	-
		“ ....3	-
		“ ..4	-
		“ .. 5	-
		<b>Grand Total</b>	=

**TECHNICAL SCHEDULE ITEMS TO BE SUPPLIED**

General notes to the tenderer

- 1.1 The tenderer shall submit technical schedule for all materials and equipment upon which he has based his tender sum
- 1.2 The tenderer must also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings described in the technical schedules. Manufactures literatures shall be accepted. Failure to comply with this may have his tender disqualified.
- 1.3 Completion of the technical schedule shall not relieve the contractor from complying with the requirement of the specifications except as may be approved by the Engineer.

**TECHNICAL SCHEDULE**

The tenderer shall **submit technical schedules** for all material and equipment upon which he has based his tender

The tenderer must also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings as described in the technical schedules.

Completion of the technical schedule shall not relieve the contractor from complying with the requirement of the specifications except as may be approved by the Engineer

**Technical Schedule**

Item No.	Description	Manufacture	Country Of Origin	Particulars – Catalogue No
1	<p><b>CENTRALAIR CONDITIONING SYSTEM</b> Cooling</p> <p>Capacity of 30KW, refrigerant, R-410 A, C/C2 5.7 KG .BP- LP 20 Bar HP -31 Bar A Max- 14.3, - KW Max -6.2.,415V Control 24/50/1, 100VA 415V.</p>			
2	<p><b>Air supply driving fan motors:</b> (DUTY &amp; STAND BY) complete with iscentrifugal fan, as TRANE MODEL -(EQUAL TO EXISTING) ,4KW.1400RPM 8.6AMP,415V.C/W centrifugal fan</p>			
3	<p><b>Air Extract Fans –Centrifugal Type/Or Axial flow type--1.5KW 1400RPM, 240V/415V. (DUTY &amp; STAND BY) Extract fan capable of 0.6 M<sup>3</sup>/sec against a pressure drop of 475 Pa complete with dampers</b></p>			
4	<p><b>Silencer for axial fan systems,</b> constructed from cold formed pre – galvanized steel sheet and absorbent material of acoustic grade resin bonded mineral fiber with erosion resistant facing and moisture resistant lining. Fitted to achieve 15dB noise reduction. Silencer as “WOODS” model HM10 “C”-type, diameter 400mm, or equal and approved</p>			
5	<p><b>Washable and re-usable pre-filters-</b> in metal panel of minimum 600x600x100mm thick and capable of 0.1 m<sup>3</sup>/sec. of air with pressure drop of 32Pa and efficiency of 85% ASHRAE</p>			

6	<p>as "FRANCE AIR FR SPG 85"</p> <p><b>ABSOLUTE-HEPA AIR FILTERS</b> size -610mm x 610mm x290mm , <b>-0.05 micron Filter Media-</b></p> <p>absolute air filter in metal panels with a capacity of 0.5 m<sup>3</sup>/sec against 275 pa pressure drop with a very high efficiency of 99% nacl. as "france air fr efi 12gp" or equal and approved</p>			
7	<p><b>AIR FLOW DAMPERS...</b></p>			
8	<p><b>AIR SUPPLY DIFFUSERS</b></p> <p>1-Way laminar flow high wall diffusers of size 350x350mm, set to discharge 0.1m<sup>3</sup>/sec of air at a velocity of 2.0m/sec...</p>			
9	<p><b>FAN CONTROL PANNEL-</b> Splash proof fan control panel complete with operational switches, indicator lights, MCBS, MCCBS ,contactors ,overloads, temperature control thermostats, motor starters and current overload relays ,phase failure relays.</p>			

**SCHEDULE OF MAJOR ITEMS OF THE CONTRACTORS EQUIPMENT PROPOSED FOR CARRYING OUT THE WORKS**

ITEM OF EQUIPMENT	DESCRIPTION ,MAKE AND AGE (YEARS)	CONDITION ( NEW, GOOD POOR) AND NUMBER AVAILABLE	OWNED ,LEASED ( FROM WHOM), OR TO BE PURCHASED ( FROM WHOM )

**SCHEDULE OF ON GOING PROJECTS**

Details of ongoing or Committed Projects, Including Expected Completion Dates:

PROJECT NAME	NAME OF CLIENT	CONTRACT SUM	% COMPLETE	COMPLETION DATE

**N.B.**

**Conditions**

- Bidders must visit site and confirm pertinent issues that will guide them on installation. Fill in site visit form
- Bidder must **Quote For** installation material and works.
- Bidders must be licensed mechanical engineering firms specializing in ventilation and air conditioning.
- Bidder must engage the services of qualified engineers /technicians registered with appropriate Regulatory bodies, with NCA-5& above for mechanical works in refrigeration and air conditioning- for proper installation and commissioning of the air conditioner (attach their certificates).
- Bidders must provide catalogue with detailed information of their products for evaluation.
- Bidders must show proof of having carried out similar works.



- Bidders must show prove of technical capability and financial current audited Accounts.
- Successful bidder must provide operational, service manual and part list
- Successful bidder must provide in house training for both the operators and technical staff
- Successful bidder must provide a 1 year warranty of their product.
- Equipment to be ISO 9001 /CE certified.

**13. PROPOSED AIR CONDITIONING AND MECHANICAL VENTILATION SYSTEM AT CSSD-TSSU AREA**

<b>PROPOSED AIR CONDITIONING AND MECHANICAL VENTILATION SYSTEM AT CSSD-TSSU AREA</b>					
<b>NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>RATE</b>	<b>AMOUNT</b>
	<b>SPECIFICATIONS AND BID OF QUANTITIES</b>	<b>T</b>	<b></b>	<b>E</b>	<b>NT</b>
	<b>SUPPLY ,DELIVER,INSTALL,TEST AND COMMISSION CENTRAL AIR CONDITIONING SYSTEM AS PER SPECIFICATIONS</b>				<b>KSHS.</b>
<b>A</b>	<p>(1) Supply and install A CLASS ENERGY EFFICIENCY AIR COOLED LIQUID CHILLER AND HEAT PUMP WITH AXIAL FANS, ROTARY / SCROLL TYPE COMPRESSOR, PLATE EXCHANGER AND PUMP KIT- <b>AS CLINT MODELL CHA/ML/ST 91*151 – COMPACT LINE</b> series, cooling capacity range 40-47.8 KW , 415v, 139-179 amps .max- refrigerant, R-407C, central air conditioning system—(EUROVENT CERTIFIED PERFORMANCE)</p> <p><b>OR Equivalent approved.</b></p> <p><b>FEATURES: -</b></p> <p>1) .Structure with supporting frame ,in peraluman ,galvanized sheet .</p> <p>2) Scroll compressor with oil sight glass, internal overheat</p>				
					SET

		2	
protection and crankcase heater.			
3) Axial fan type with low ventilation and special wing profile, directly coupled to external rotor motors.			
4) Condenser with copper tubes and aluminum finned coil .			
5) Evaporator AISI 316 Stainless steel blaze welded plates type, completed with water differential pressure switch and antifreeze heater.			
6) R407C refrigerant.			
7) Electrical panel includes : main switch with door lock device ,fuses ,compressor contact and pump remote control switch.			
8) Electronic proportional device to decrease the sound level, with a continuous regulation of fan speed. This device also allows the cooling functioning of the unit by external temperature till $-20^{\circ}\text{c}$ .			
9) Water circuit includes :variable speed circulating pump, safety valve , gauge and expansion vessel.			
10) Microprocessor control and regulation system with AQUALOGIK technology.			
<b>ACCESSORIES</b>			
(a) FACTORY FITTED ACCESSORIES			
EH- Supplementary electrical heater			
KC- GAS burner integration kit			
TX- Coil with pre-coated fins			
(b) LOOSE ACCESSORIES			
HW –Storage tank for domestic hot water . production			
CR-Remote control panel			
IS - Modbus RTU protocol ,RS485			
serial . , interface			
RP - Coil protection metallic guard			
AG- Rubber shock absorbers			
(II)			

	The unit shall have a Ductable fan coil unit with 3-speed or EC Inverter radial fans-47.8 KW in capacity As CLINT MODEL UTW 63 + 544 (EUROVENT CERTIFIED PERFORMANCE)--- <b>OR Equivalent approved.</b>			
(B)	<b>AIR SUPPLY FAN AND BOOSTER FAN</b> Supply and install air Supply fan and booster fan as woods type 40JM, 2800RPM, 415V ,0.8M <sup>3</sup> /S 50HZ, ) or Equal and approved (against 100 p.a.). The fan shall be complete with its suitable vibration isolator mountings.	NO	4	
(C)	<b>AIR EXTRACT FANS</b> Supply and install air Extract fan as woods-axial flow type 45JM, 2800RPM, 415V 0.8M <sup>3</sup> /S 50HZ, ) or Equal and approved (against 100 p.a.). The fan shall be complete with its suitable vibration isolator mountings.	NO	4	
(D)	<b>CYLINDRICAL SOUND ATTENUATOR SILENCER</b> Supply and install cylindrical sound attenuator silencer, to above fans. Capable to reduce noise level from 12-15 DBA. Type C-355mm OR Equal and approved.	No	4	
(E)	<b>DUCTING WORKS:</b> Carry out ducting works using galvanized mild steel sheet 1.00mm thick C/W bends, hangers, transformation pieces supporters, flexible connectors total ducting linear length of about 450m or total ducting area of 400m <sup>2</sup> , to the air conditioning system and mechanical ventilation systems. Connect the Air Conditioner-to serve clean area store, working area and offices. Supply of fresh air and extraction along the corridors and other stores.	Item	Item	
(F)	(i) Install goose neck roof cowl with insect louver size 400 x 400mm to the supply duct. 2. Install goose neck roof cowl with insect louver size 350 x 350mm to the extract duct.	No	8	
(G)	<b>INSULATION</b> Carry out insulation of the supply ducts using styraple insulation 50mm thick and paint with Bitumen or equivalent approved insulation, and clad with aluminium sheet metal where exposed to atmosphere as necessary all as per linear length of the ducting.	Item	Item	
(H)	<b>AIR FLOW DAMPERS</b> Carry out supply and installation of air flow dampers, made of galvanized mild steel sheet 1.00mm thick in to the		20	

	respective supply and extract air ducts to enable controlled air flow into the rooms	NO		
(I)	<p><b>AIR DIFFUSERS:</b> Supply and install air diffusers in the respective rooms. With adjustable air louvers Sizes..(i) 400x300mm Sizes..(ii)350x300mm</p>	No	36	
(J)	<p><b>SUPPLY AND INSTALL A SPLASH PROOF CONTROL PANEL</b> complete with operational switches, MCBs, MCCBS ,contactors ,overloads, temperature control thermostats, motor starters and current overload relays ,phase failure relays, with overload and under voltage protection, three phase <b>AVS</b>relays <b>surge protection unit</b>, timer switch for defrost control ,push buttons for start and stop and audible alarm system.  The panel shall be cut of mild steel and anodized after manufacture. It shall include volt free contacts for on-off and audible signal connection to a central indicator panel.</p>	Item	Item	
(K)	<p>Supply and install absolute hepa filter of 99.9% efficiency together with a washable aluminium prefilter. All complete with panel and insert louver to the inlet duct. Install Air flow control manometers across the filters , that has to be with indicator lights. Red/green at control (when defective Red light and normal - green light)- in line with air conditioner and supply fan systems.(The air flow manometers across the absolute filter shall have digital alarm system when dew for service)</p>	Item	Item	
(L)	<p>Supply and install remote digital temperature room control thermostats, in the respective air conditioned rooms.Then carry out electrical wiring installation to the whole system .</p>	No	4	
(M)	<p>Carry out supply and installation of rubber door gaskets at positive pressure clean area doors to separate the pressures from the negative pressure zone</p>	Item	Item	
(N)	<p>Supply and install room differential manometers across all doors between the clean positive pressure zone and</p>	Item	Item	

	negative pressure zone				
(O)	Carry out wiring from the main distributor board, install an appropriate isolator switch with correct rated MCB, charge the system with refrigerant, set to work, test and commission the whole installation to the satisfaction of the Hospital Engineer				
(P)	Carry out testing of the systems and then commission	Item	Item		
(Q)	Allow for working drawings as installed				
(R)	(vi)contingency allowed and to be expended with the authority of the hospital; engineer	Item	Item		
	N.B. Bidders must visit the site before quoting.	sum			
	Site Visit Certificate will be issued.				
	<b>Total Carried to Collection Page</b>				

Site visit will be held on 29<sup>th</sup> June, 2022 starting at 10:30 East African Time as per the requirements set out in the technical specifications.

Please note that the Tender Closing and Opening date remains as earlier communicated (7<sup>th</sup> July, 2022) at 10:00am EAT.

  
**ABDALLAH OFULIA**  
**FOR: CHIEF EXECUTIVE OFFICER**

