THEMBA LABS HVAC UPGRADE
CONTRACT: W1986
AHU SELECTION DATA SHEET

PROJECT ASSIGNMENTS
Process & Project Engineers

EQUIPMENT No.	AHU 01	
DESCRIPTION	Blue Zone AHU	
PROJECT TITLE	iThemba LABS HVAC Upgrade	**DATA SHEET No.: W1986-53001**

Shaded areas to be completed by Vendor

Equipment Details		
AHU Make		
AHU Model Number		
Supply Air Fan Make		
Supply Air Fan Model Number		
Serving		
1.Overall AHU		
Air Inlet Temperature (T1)	[°C]	Winter Design Condition: 5 min – Summer Design Conditions: 34db, 23wb
Air Outlet Temperature (T2)	[°C]	15
Outlet Humidity	%	<60
Air Flowrate	[m^3/h]	43250
AHU Casing MOC		Double skin panels with 0.5mm chromadek and 0.4mm stainless-steel internal lining.
AHU Instrumentation		Refer to P&ID W1986-45005-05
Lights		1 x 15W LED in each compartment
Drip Tray		Stainless Steel
Access Hatches		4 x with camlock handles and gaskets
Anti-Vibration Mountings		Neoprene Pads
2.Cooling Coil		
Cooling Medium		Chilled Water
Coil Inet Temperature (T1)	[°C]	8
Coil Outlet Temperature (T2)	[°C]	14
Cooling Capacity	[kW]	386.4
Cooling Medium Flowrate	[m^3/h]	43
Pipe Size(diameter)	[mm]	80
Line End Connections		Flanged SABS 1123 1000/3
Line Inlet Pressure	[kPa g]	
Line Outlet Pressure	[kPa g]	
Differential Pressure (P1-P2)	[kPa g]	
Cooling Coil MOC		Copper coil/Copper fin/Stainless steel casing
3.Heating Element		
Heating Capacity	[kW]	194
Off-coil Temperature	[°C]	15
Mains Supply	[V]	400V 3ph 50Hz
Heating Element MOC		Electrical Heating Coil
4.Filters		
Secondary Filters		1 x G4 as per EN779
Primary Filters		1 x F9 as per EN779
Primary Filter Size (actual size)	mm x mm	
Total Intake Area	m^2	
Actual Velocity	m/s	
Design Supply Air Flow	m^3/s	
5.Fans		
Fan / Blower Make and Model		
Fluid		Air
Density at Start-up Conditions	[kg/m^3]	1.293
Density at Operating Conditions	[kg/m^3]	1.293
5.1. Operating Conditions		
Closed or Open Loop System		Open Loop
Design Temperature	[°C]	50

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Normal Operating Temperature		[°C]	25
Inlet Capacity (at 0°C and 101.3kPa)		[m^3/h]	43250
Inlet Pressure (at operating temperature)		[kPa g]	
Discharge Capacity (at operating conditions)		[m^3/h]	43250
Discharge Pressure at 20°C		[kPa g]	
Discharge Pressure (at operating Temperature)		[Pa g]	1762
Efficiency		[%]	
Rotational speed of fan/blower at Duty Point			
Seal Type			
5.2. Physical Data			
Inlet Nozzle size and rating			
Outlet nozzle size and rating			
Mass			
Impeller Type			
Impeller Diameter		[mm]	
Max. Sound Pressure Level at 1m		[dBA]	
5.3. Construction			
Materials of Construction	Casing		Aluminium
	Shaft		Stainless Steel
	Impeller		Stainless Steel
	Baseplate		Mild Steel with Epoxy coating or Stainless Steel
5.4. Electric Drive Specification			
Motor Electrical Supply		[V/ph/Hz]	400V 3ph 50Hz
Fan Motor Rating		[kW]	32.9
Motor Enclosure Rating			
Rotational Speed		[rpm]	
Rated Power		[kW]	
Absorbed Power at Duty Point		[kW]	
Frequency Inverter on motor			
Coupling Type			
6. Dampers			
Type			2 x Positive Shut-off
Actuation			Pneumatic
Operation Mode			Open/Closed
Leakage Rating			

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PROJECT ASSIGNMENTS
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EQUIPMENT No.	AHU 02	
DESCRIPTION	Cleanrooms 1, 2, 3 AHU	
PROJECT TITLE	iThemba LABS HVAC Upgrade	**DATA SHEET No.: W1986-53002**

Shaded areas to be completed by Vendor

Equipment Details		
AHU Make		
AHU Model Number		
Supply Air Fan Make		
Supply Air Fan Model Number		
Serving		
1.Overall AHU		
Air Inlet Temperature (T1)	[°C]	Winter Design Condition: 5 min – Summer Design Conditions: 34db, 23wb
Air Outlet Temperature (T2)	[°C]	15
Outlet Humidity	%	<60
Air Flowrate	[m^3/h]	27425
AHU Casing MOC		Double skin panels with 0.5mm chromadek and 0.4mm stainless-steel internal lining.
AHU Instrumentation		Refer to P&ID W1986-45005-05
Lights		1 x 15W LED in each compartment
Drip Tray		Stainless Steel
Access Hatches		4 x with camlock handles and gaskets
Anti-Vibration Mountings		Neoprene Pads
2.Cooling Coil		
Cooling Medium		Chilled Water
Coil Inet Temperature (T1)	[°C]	8
Coil Outlet Temperature (T2)	[°C]	14
Cooling Capacity	[kW]	250.0
Cooling Medium Flowrate	[m^3/h]	23
Pipe Size(diameter)	[mm]	65
Line End Connections		Flanged SABS 1123 1000/3
Line Inlet Pressure	[kPa g]	
Line Outlet Pressure	[kPa g]	
Differential Pressure (P1-P2)	[kPa g]	
Cooling Coil MOC		Copper coil/Copper fin/Stainless steel casing
3.Heating Element		
Heating Capacity	[kW]	123
Off-coil Temperature	[°C]	15
Mains Supply	[V]	400V 3ph 50Hz
Heating Element MOC		Electrical Heating Element
4.Filters		
Secondary Filters		G4 as per EN779
Primary Filters		F9 as per EN779
Primary Filter Size (actual size)	mm x mm	
Total Intake Area	m^2	
Actual Velocity	m/s	
Design Supply Air Flow	m^3/s	
5.Fans		
Fan / Blower Type Required		
Fan / Blower Make and Model		
Fluid		Air
Density at Start-up Conditions	[kg/m^3]	1.293
Density at Operating Conditions	[kg/m^3]	1.293
5.1. Operating Conditions		
Closed or Open Loop System		Open Loop

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Design Temperature		[°C]	50
Normal Operating Temperature		[°C]	25
Inlet Capacity (at 0°C and 101.3kPa)		[m^3/h]	27425
Inlet Pressure (at operating temperature)		[kPa g]	
Discharge Capacity (at operating conditions)		[m^3/h]	27425
Discharge Pressure at 20°C		[kPa g]	
Discharge Pressure (at operating Temperature)		[Pa g]	2438
Efficiency		[%]	
Rotational speed of fan/blower at Duty Point			
Seal Type			
5.2. Physical Data			
Inlet Nozzle size and rating			
Outlet nozzle size and rating			
Mass			
Impeller Type			
Impeller Diameter		[mm]	
Max. Sound Pressure Level at 1m		[dBA]	
5.3. Construction			
Materials of Construction	Casing		Aluminium
	Shaft		Stainless Steel
	Impeller		Stainless Steel
	Baseplate		Mild Steel with Epoxy coating or Stainless Steel
5.4. Electric Drive Specification			
Motor Electrical Supply		[V/ph/Hz]	400V 3ph 50Hz
Fan Motor Rating		[kW]	28.75
Motor Enclosure Rating			
Rotational Speed		[rpm]	
Rated Power		[kW]	
Absorbed Power at Duty Point		[kW]	
Frequency Inverter on motor			
Coupling Type			
6. Dampers			
Type			2 x Positive Shut-off
Actuation			Pneumatic
Operation Mode			Open/Closed
Leakage Rating			

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PROJECT ASSIGNMENTS
Process & Project Engineers

EQUIPMENT No.	AHU 03	
DESCRIPTION	Cleanrooms 4, 5 AHU	
PROJECT TITLE	iThemba LABS HVAC Upgrade	**DATA SHEET No.: W1986-53003**

Shaded areas to be completed by Vendor

Equipment Details		
AHU Make		
AHU Model Number		
Supply Air Fan Make		
Supply Air Fan Model Number		
Serving		
1.Overall AHU		
Air Inlet Temperature (T1)	[°C]	Winter Design Condition: 5 min – Summer Design Conditions: 34db, 23wb
Air Outlet Temperature (T2)	[°C]	15
Outlet Humidity	%	<60
Air Flowrate	[m^3/h]	8229
AHU Casing MOC		Double skin panels with 0.5mm chromadek and 0.4mm stainless-steel internal lining.
AHU Instrumentation		Refer to P&ID W1986-45005-05
Lights		1 x 15W LED in each compartment
Drip Tray		Stainless Steel
Access Hatches		4 x with camlock handles and gaskets
Anti-Vibration Mountings		Neoprene Pads
2.Cooling Coil		
Cooling Medium		Chilled Water
Coil Inet Temperature (T1)	[°C]	8
Coil Outlet Temperature (T2)	[°C]	14
Cooling Capacity	[kW]	73.3
Cooling Medium Flowrate	[m^3/h]	7
Pipe Size(diameter)	[mm]	40
Line End Connections		Flanged SABS 1123 1000/3
Line Inlet Pressure	[kPa g]	
Line Outlet Pressure	[kPa g]	
Differential Pressure (P1-P2)	[kPa g]	
Cooling Coil MOC		Copper coil/Copper fin/Stainless steel casing
3.Heating Element		
Heating Capacity	[kW]	37
Off-coil Temperature	[°C]	15
Mains Supply	[V]	400V 3ph 50Hz
Heating Element MOC		Electrical Heating Element
4.Filters		
Secondary Filters		G4 as per EN779
Primary Filters		F9 as per EN779
Primary Filter Size (actual size)	mm x mm	
Total Intake Area	m^2	
Actual Velocity	m/s	
Design Supply Air Flow	m^3/s	
5.Fans		
Fan / Blower Type Required		
Fan / Blower Make and Model		
Fluid		Air
Density at Start-up Conditions	[kg/m^3]	1.293
Density at Operating Conditions	[kg/m^3]	1.293
5.1. Operating Conditions		
Closed or Open Loop System		Open Loop

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Design Temperature		[°C]	50
Normal Operating Temperature		[°C]	25
Inlet Capacity (at 0°C and 101.3kPa)		[m^3/h]	8229
Inlet Pressure (at operating temperature)		[kPa g]	
Discharge Capacity (at operating conditions)		[m^3/h]	8229
Discharge Pressure at 20°C		[kPa g]	
Discharge Pressure (at operating Temperature)		[kPa g]	1775
Efficiency		[%]	
Rotational speed of fan/blower at Duty Point			
Seal Type			
5.2. Physical Data			
Inlet Nozzle size and rating			
Outlet nozzle size and rating			
Mass			
Impeller Type			
Impeller Diameter		[mm]	
Max. Sound Pressure Level at 1m		[dBA]	
5.3. Construction			
Materials of Construction	Casing		Aluminium
	Shaft		Stainless Steel
	Impeller		Stainless Steel
	Baseplate		Mild Steel with Epoxy coating or Stainless Steel
5.4. Electric Drive Specification			
Motor Electrical Supply		[V/ph/Hz]	400V 3ph 50Hz
Fan Motor Rating		[kW]	6.84
Motor Enclosure Rating			
Rotational Speed		[rpm]	
Rated Power		[kW]	
Absorbed Power at Duty Point		[kW]	
Frequency Inverter on motor			
Coupling Type			
6. Dampers			
Type			2 x Positive Shut-off
Actuation			Pneumatic
Operation Mode			Open/Closed
Leakage Rating			

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PROJECT ASSIGNMENTS
Process & Project Engineers

EQUIPMENT No.	AHU 04	
DESCRIPTION	Red Zone Ground AHU	
PROJECT TITLE	iThemba LABS HVAC Upgrade	**DATA SHEET No.: W1986-53004**

Shaded areas to be completed by Vendor

Equipment Details		
AHU Make		
AHU Model Number		
Supply Air Fan Make		
Supply Air Fan Model Number		
Serving		
1.Overall AHU		
Air Inlet Temperature (T1)	[°C]	Winter Design Condition: 5 min – Summer Design Conditions: 34db, 23wb
Air Outlet Temperature (T2)	[°C]	15
Outlet Humidity	%	< 60
Air Flowrate	[m^3/h]	11081
AHU Casing MOC		Double skin panels with 0.5mm chromadek and 0.4mm stainless-steel internal lining.
AHU Instrumentation		Refer to P&ID W1986-45007-05
Lights		1 x 15W LED in each compartment
Drip Tray		Stainless Steel
Access Hatches		4 x with camlock handles and gaskets
Anti-Vibration Mountings		Neoprene Pads
2.Cooling Coil		
Cooling Medium		Chilled Water
Coil Inet Temperature (T1)	[°C]	8
Coil Outlet Temperature (T2)	[°C]	14
Cooling Capacity	[kW]	103.1
Cooling Medium Flowrate	[m^3/h]	9
Pipe Size(diameter)	[mm]	
Line End Connections		Flanged SABS 1123 1000/3
Line Inlet Pressure	[kPa g]	
Line Outlet Pressure	[kPa g]	
Differential Pressure (P1-P2)	[kPa g]	
Cooling Coil MOC		Copper coil/Copper fin/Stainless steel casing
3.Heating Element		
Heating Capacity	[kW]	50
Off-coil Temperature	[°C]	15
Mains Supply	[V]	400V 3ph 50Hz
Heating Element MOC		Electrical Heating Element
4.Filters		
Secondary Filters		G4 as per EN779
Primary Filters		F9 as per EN779
Primary Filter Size (actual size)	mm x mm	
Total Intake Area	m^2	
Actual Velocity	m/s	
Design Supply Air Flow	m^3/s	
5.Fans		
Fan / Blower Type Required		
Fan / Blower Make and Model		
Fluid		Air
Density at Start-up Conditions	[kg/m^3]	1.293
Density at Operating Conditions	[kg/m^3]	1.293
5.1. Operating Conditions		
Closed or Open Loop System		Open Loop

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Design Temperature		[°C]	50
Normal Operating Temperature		[°C]	25
Inlet Capacity (at 0°C and 101.3kPa)		[m^3/h]	11081
Inlet Pressure (at operating temperature)		[kPa g]	
Discharge Capacity (at operating conditions)		[m^3/h]	11081
Discharge Pressure at 20°C		[kPa g]	
Discharge Pressure (at operating Temperature)		[kPa g]	799
Efficiency		[%]	
Rotational speed of fan/blower at Duty Point			
Seal Type			
5.2. Physical Data			
Inlet Nozzle size and rating			
Outlet nozzle size and rating			
Mass			
Impeller Type			
Impeller Diameter		[mm]	
Max. Sound Pressure Level at 1m		[dBA]	
5.3. Construction			
Materials of Construction	Casing		Aluminium
	Shaft		Stainless Steel
	Impeller		Stainless Steel
	Baseplate		Mild Steel with Epoxy coating or Stainless Steel
5.4. Electric Drive Specification			
Motor Electrical Supply		[V/ph/Hz]	400V 3ph 50Hz
Fan Motor Rating		[kW]	3.83
Motor Enclosure Rating			
Rotational Speed		[rpm]	
Rated Power		[kW]	
Absorbed Power at Duty Point		[kW]	
Frequency Inverter on motor			
Coupling Type			
6. Dampers			
Type			2 x Positive Shut-off
Actuation			Pneumatic
Operation Mode			Open/Closed
Leakage Rating			

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PROJECT ASSIGNMENTS
Process & Project Engineers

EQUIPMENT No.	AHU 05	
DESCRIPTION	Red Zone Basement AHU	
PROJECT TITLE	iThemba LABS HVAC Upgrade	**DATA SHEET No.: W1986-53005**

Shaded areas to be completed by Vendor

Equipment Details		
AHU Make		
AHU Model Number		
Supply Air Fan Make		
Supply Air Fan Model Number		
Serving		
1.Overall AHU		
Air Inlet Temperature (T1)	[°C]	Winter Design Condition: 5 min – Summer Design Conditions: 34db, 23wb
Air Outlet Temperature (T2)	[°C]	15
Outlet Humidity	%	< 60
Air Flowrate	[m^3/h]	22248
AHU Casing MOC		Double skin panels with 0.5mm chromadek and 0.4mm stainless-steel internal lining.
AHU Instrumentation		Refer to P&ID W1986-45007-05
Lights		1 x 15W LED in each compartment
Drip Tray		Stainless Steel
Access Hatches		4 x with camlock handles and gaskets
Anti-Vibration Mountings		Neoprene Pads
2.Cooling Coil		
Cooling Medium		Chilled Water
Coil Inet Temperature (T1)	[°C]	8
Coil Outlet Temperature (T2)	[°C]	14
Cooling Capacity	[kW]	201.0
Cooling Medium Flowrate	[m^3/h]	20
Pipe Size(diameter)	[mm]	65
Line End Connections		Flanged SABS 1123 1000/3
Line Inlet Pressure	[kPa g]	
Line Outlet Pressure	[kPa g]	
Differential Pressure (P1-P2)	[kPa g]	
Cooling Coil MOC		Copper coil/Copper fin/Stainless steel casing
3.Heating Element		
Heating Capacity	[kW]	100
Off-coil Temperature	[°C]	15
Mains Supply	[V]	400V 3ph 50Hz
Heating Element MOC		Electrical Heating Element
4.Filters		
Secondary Filters		G4 as per EN779
Primary Filters		F9 as per EN779
Primary Filter Size (actual size)	mm x mm	
Total Intake Area	m^2	
Actual Velocity	m/s	
Design Supply Air Flow	m^3/s	
5.Fans		
Fan / Blower Type Required		
Fan / Blower Make and Model		
Fluid		Air
Density at Start-up Conditions	[kg/m^3]	1.293
Density at Operating Conditions	[kg/m^3]	1.293
5.1. Operating Conditions		
Closed or Open Loop System		Open Loop

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Design Temperature		[°C]	50
Normal Operating Temperature		[°C]	25
Inlet Capacity (at 0°C and 101.3kPa)		[m^3/h]	22248
Inlet Pressure (at operating temperature)		[kPa g]	
Discharge Capacity (at operating conditions)		[m^3/h]	22248
Discharge Pressure at 20°C		[kPa g]	
Discharge Pressure (at operating Temperature)		[kPa g]	3054
Efficiency		[%]	
Rotational speed of fan/blower at Duty Point			
Seal Type			
5.2. Physical Data			
Inlet Nozzle size and rating			
Outlet nozzle size and rating			
Mass			
Impeller Type			
Impeller Diameter		[mm]	
Max. Sound Pressure Level at 1m		[dBA]	
5.3. Construction			
Materials of Construction	Casing		Aluminium
	Shaft		Stainless Steel
	Impeller		Aluminium
	Baseplate		Galvanized Steel
5.4. Electric Drive Specification			
Motor Electrical Supply		[V/ph/Hz]	400V 3ph 50Hz
Fan Motor Rating		[kW]	31.23
Motor Enclosure Rating			
Rotational Speed		[rpm]	
Rated Power		[kW]	
Absorbed Power at Duty Point		[kW]	
Frequency Inverter on motor			
Coupling Type			
6. Dampers			
Type			2 x Positive Shut-off
Actuation			Pneumatic
Operation Mode			Open/Closed
Leakage Rating			

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PROJECT ASSIGNMENTS
Process & Project Engineers

EQUIPMENT No.	AHU 06	
DESCRIPTION	Cyclotron AHU	
PROJECT TITLE	iThemba LABS HVAC Upgrade	**DATA SHEET No.: W1986-53006**

Shaded areas to be completed by Vendor

Equipment Details		
AHU Make		
AHU Model Number		
Supply Air Fan Make		
Supply Air Fan Model Number		
Serving		
1.Overall AHU		
Air Inlet Temperature (T1)	[°C]	Winter Design Condition: 5 min – Summer Design Conditions: 34db, 23wb
Air Outlet Temperature (T2)	[°C]	15
Outlet Humidity	%	< 60
Air Flowrate	[m^3/h]	1696
AHU Casing MOC		Double skin panels with 0.5mm chromadek and 0.4mm stainless-steel internal lining.
AHU Instrumentation		Refer to P&ID W1986-45006-05
Lights		1 x 15W LED in each compartment
Drip Tray		Stainless Steel
Access Hatches		4 x with camlock handles and gaskets
Anti-Vibration Mountings		Neoprene Pads
2.Cooling Coil		
Cooling Medium		Chilled Water
Coil Inet Temperature (T1)	[°C]	8
Coil Outlet Temperature (T2)	[°C]	14
Cooling Capacity	[kW]	20.2
Cooling Medium Flowrate	[m^3/h]	4
Pipe Size(diameter)	[mm]	32
Line End Connections		Flanged SABS 1123 1000/3
Line Inlet Pressure	[kPa g]	
Line Outlet Pressure	[kPa g]	
Differential Pressure (P1-P2)	[kPa g]	
Cooling Coil MOC		Copper coil/Copper fin/Stainless steel casing
3.Heating Element		
Heating Capacity	[kW]	8
Off-coil Temperature	[°C]	15
Mains Supply	[V]	400V 3ph 50Hz
Heating Element MOC		Electrical Heating Element
4.Filters		
Secondary Filters		G4 as per EN779
Primary Filters		F9 as per EN779
Primary Filter Size (actual size)	mm x mm	
Total Intake Area	m^2	
Actual Velocity	m/s	
Design Supply Air Flow	m^3/s	
5.Fans		
Fan / Blower Type Required		
Fan / Blower Make and Model		
Fluid		Air
Density at Start-up Conditions	[kg/m^3]	1.293
Density at Operating Conditions	[kg/m^3]	1.293
5.1. Operating Conditions		
Closed or Open Loop System		Open Loop

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Design Temperature		[°C]	50
Normal Operating Temperature		[°C]	25
Inlet Capacity (at 0°C and 101.3kPa)		[m^3/h]	1696
Inlet Pressure (at operating temperature)		[kPa g]	
Discharge Capacity (at operating conditions)		[m^3/h]	1696
Discharge Pressure at 20°C		[kPa g]	
Discharge Pressure (at operating Temperature)		[kPa g]	382
Efficiency		[%]	
Rotational speed of fan/blower at Duty Point			
Seal Type			
5.2. Physical Data			
Inlet Nozzle size and rating			
Outlet nozzle size and rating			
Mass			
Impeller Type			
Impeller Diameter		[mm]	
Max. Sound Pressure Level at 1m		[dBA]	
5.3. Construction			
Materials of Construction	Casing		Aluminium
	Shaft		Stainless Steel
	Impeller		Stainless Steel
	Baseplate		Mild Steel with Epoxy coating or Stainless Steel
5.4. Electric Drive Specification			
Motor Electrical Supply		[V/ph/Hz]	400V 3ph 50Hz
Fan Motor Rating		[kW]	0.27
Motor Enclosure Rating			
Rotational Speed		[rpm]	
Rated Power		[kW]	
Absorbed Power at Duty Point		[kW]	
Frequency Inverter on motor			
Coupling Type			
6. Dampers			
Type			2 x Positive Shut-off
Actuation			Pneumatic
Operation Mode			Open/Closed
Leakage Rating			

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PROJECT ASSIGNMENTS
Process & Project Engineers

EQUIPMENT No.	AHU 07	
DESCRIPTION	Elephant & VBS Vaults AHU	
PROJECT TITLE	iThemba LABS HVAC Upgrade	**DATA SHEET No.: W1986-53007**

Shaded areas to be completed by Vendor

Equipment Details		
AHU Make		
AHU Model Number		
Supply Air Fan Make		
Supply Air Fan Model Number		
Serving		
1.Overall AHU		
Air Inlet Temperature (T1)	[°C]	Winter Design Condition: 5 min – Summer Design Conditions: 34db, 23wb
Air Outlet Temperature (T2)	[°C]	15
Outlet Humidity	%	< 60
Air Flowrate	[m^3/h]	2331
AHU Casing MOC		Double skin panels with 0.5mm chromadek and 0.4mm stainless-steel internal lining.
AHU Instrumentation		Refer to P&ID W1986-45006-05
Lights		1 x 15W LED in each compartment
Drip Tray		Stainless Steel
Access Hatches		4 x with camlock handles and gaskets
Anti-Vibration Mountings		Neoprene Pads
2.Cooling Coil		
Cooling Medium		Chilled Water
Coil Inet Temperature (T1)	[°C]	8
Coil Outlet Temperature (T2)	[°C]	14
Cooling Capacity	[kW]	21.0
Cooling Medium Flowrate	[m^3/h]	2
Pipe Size(diameter)	[mm]	20
Line End Connections		Flanged SABS 1123 1000/3
Line Inlet Pressure	[kPa g]	
Line Outlet Pressure	[kPa g]	
Differential Pressure (P1-P2)	[kPa g]	
Cooling Coil MOC		Copper coil/Copper fin/Stainless steel casing
3.Heating Element		
Heating Capacity	[kW]	10
Off-coil Temperature	[°C]	15
Mains Supply	[V]	400V 3ph 50Hz
Heating Element MOC		Electrical Heating Element
4.Filters		
Secondary Filters		G4 as per EN779
Primary Filters		F9 as per EN779
Primary Filter Size (actual size)	mm x mm	
Total Intake Area	m^2	
Actual Velocity	m/s	
Design Supply Air Flow	m^3/s	
5.Fans		
Fan / Blower Type Required		
Fan / Blower Make and Model		
Fluid		Air
Density at Start-up Conditions	[kg/m^3]	1.293
Density at Operating Conditions	[kg/m^3]	1.293
5.1. Operating Conditions		
Closed or Open Loop System		Open Loop

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Design Temperature		[°C]	50
Normal Operating Temperature		[°C]	25
Inlet Capacity (at 0°C and 101.3kPa)		[m^3/h]	2331
Inlet Pressure (at operating temperature)		[kPa g]	
Discharge Capacity (at operating conditions)		[m^3/h]	2331
Discharge Pressure at 20°C		[kPa g]	
Discharge Pressure (at operating Temperature)		[kPa g]	944
Efficiency		[%]	
Rotational speed of fan/blower at Duty Point			
Seal Type			
5.2. Physical Data			
Inlet Nozzle size and rating			
Outlet nozzle size and rating			
Mass			
Impeller Type			
Impeller Diameter		[mm]	
Max. Sound Pressure Level at 1m		[dBA]	
5.3. Construction			
Materials of Construction	Casing		Aluminium
	Shaft		Stainless Steel
	Impeller		Stainless Steel
	Baseplate		Mild Steel with Epoxy coating or Stainless Steel
5.4. Electric Drive Specification			
Motor Electrical Supply		[V/ph/Hz]	400V 3ph 50Hz
Fan Motor Rating		[kW]	1.01
Motor Enclosure Rating			
Rotational Speed		[rpm]	
Rated Power		[kW]	
Absorbed Power at Duty Point		[kW]	
Frequency Inverter on motor			
Coupling Type			
6. Dampers			
Type			2 x Positive Shut-off
Actuation			Pneumatic
Operation Mode			Open/Closed
Leakage Rating			

REV.	DATE	DESCRIPTION	BY	CHK.	APPR.	APPR.	APPR.
1	17 Jan. 25	Addendum 2	BM				
0	27 Nov. 24	Issue for Tender	BM				
REVISIONS			**APPROVAL**			**CLIENT APPROVALS**	

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PROJECT ASSIGNMENTS
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EQUIPMENT No.	AHU 08	
DESCRIPTION	Hot Cells AHU	
PROJECT TITLE	iThemba LABS HVAC Upgrade	**DATA SHEET No.: W1986-53008**

Shaded areas to be completed by Vendor

Equipment Details		
AHU Make		
AHU Model Number		
Supply Air Fan Make		
Supply Air Fan Model Number		
Serving		
1.Overall AHU		
Air Inlet Temperature (T1)	[°C]	Winter Design Condition: 5 min – Summer Design Conditions: 34db, 23wb
Air Outlet Temperature (T2)	[°C]	15
Outlet Humidity	%	< 60
Air Flowrate	[m^3/h]	1200
AHU Casing MOC		Double skin panels with 0.5mm chromadek and 0.4mm stainless-steel internal lining.
AHU Instrumentation		Refer to P&ID W1986-45008-05
Lights		1 x 15W LED in each compartment
Drip Tray		Stainless Steel
Access Hatches		4 x with camlock handles and gaskets
Anti-Vibration Mountings		Neoprene Pads
2.Cooling Coil		
Cooling Medium		Chilled Water
Coil Inet Temperature (T1)	[°C]	8
Coil Outlet Temperature (T2)	[°C]	14
Cooling Capacity	[kW]	10.6
Cooling Medium Flowrate	[m^3/h]	1
Pipe Size(diameter)	[mm]	15
Line End Connections		Flanged SABS 1123 1000/3
Line Inlet Pressure	[kPa g]	
Line Outlet Pressure	[kPa g]	
Differential Pressure (P1-P2)	[kPa g]	
Cooling Coil MOC		Electrical Heating Element
3.Heating Element		
Heating Capacity	[kW]	5
Off-coil Temperature	[°C]	15
Mains Supply	[V]	400V 3ph 50Hz
Heating Element MOC		Copper coil/Copper fin/Stainless steel casing
4.Filters		
Secondary Filters		G4 as per EN779
Primary Filters		F9 as per EN779
Primary Filter Size (actual size)	mm x mm	
Total Intake Area	m^2	
Actual Velocity	m/s	
Design Supply Air Flow	m^3/s	
5. Dampers		
Type		2 x Positive Shut-off
Actuation		Pneumatic
Operation Mode		Open/Closed
Leakage Rating		

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PROJECT ASSIGNMENTS
Process & Project Engineers

0	27 Nov. 24	Issue for Tender	BM				
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REVISIONS			**APPROVAL**			**CLIENT APPROVALS**	