	Annexure - 1: <u>Datasheet of 10 HP VRF</u> (To be filled in by Bidder)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Type of VRF	VRF		
2	Make of VRF	Mitsubishi Heavy / Carrier / Toshiba / O General		
3	Model Name / Number of VRF			
4	Cooling Capacity TR @ 47°C ambient temerature as per deration chart	HP (attach VRF deration chart)		
5	Rated Power Input	Below 6.25 Kw		
6	EER	Above 15.2		
7	COP @ 100%	Above 4.45		
8	Power Supply	390-440V /3Ph/50 Hz		
9	Refrigerant	R-410a		
10	Factory Pre-Charge	Yes, Required		
11	Refrigerant Gas Pressure			
12	Noise Level at 1 Meter distance	Below 60 db		
13	External Wired Controller	VRF must be having provision of Common wired controller for 1 to 10 Nos. VRFs by looping in common communication cable		
14	Remote Operation	Remote Operation should be possible		
15	Diamensions in MM (LXWXH)			
16	Weight (Kg)			
Eva	porator			
1	Туре			
2	Material			
Con	denser			
1	Condenser Type / Tube Material	Inner Groove Type / Copper Tube		
2	Fins Material	Aluminum		
3	Number of Rows	Minimum 3		
4	FPI	Minimum 18		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder		
5	Fins Area				
6	Condenser Heat Exchange Area				
7	Noumber of Tubes				
Con	denser Fan	•			
1	Type / Drive	Propeller / Direct			
2	Quantity of Condenser fan				
3	Blade Material	SAN			
4	Motor Poles				
5	Air Volume	minimum 11000 m3/hr			
6	Fan Motor Wattage/Kw	KiloWatt			
7	Fan Speed High & Low (RPM)				
Con	pressor				
1	Type of Compressor	DC Inverter Scroll			
2	Quantity per VRF				
3	Each Compressor Capacity in TR	TR			
4	Compressor speed	Minimum & Maximum			
5	IP	IP55			
6	Insulation Grade	F			
7	Flow Control	EXV			
8	No of Refrigerant Circuits				
9		High Pressure Switch			
10		Low Pressure Switch			
11	In built Protection Devices	Thermal Proctector			
12		Overload Protector			
13		Phase Sequencer			
NOT	NOTE: 1) The bidder should fill-in all the data in above format only. If above required				

	of 14 HP VRF (To be fi	,
Description	Required - System Parameters	To be filled by the Bidder
Type of VRV/VRF	VRF	
Make of VRV/VRF	Mitsubishi Heavy / Carrier / Toshiba / O General	
Model Name / Number of VRV/VRF		
Cooling Capacity TR @ 47°C ambient temerature as per deration chart	HP (attach VRF deration chart)	
Rated Power Input	Below 9.6 Kw	
EER	Above 13.85	
COP @ 100%	Above 4	
Power Supply	390-440V /3Ph/50 Hz	
Refrigerant	R-410a	
Factory Pre-Charge	Yes, Required	
Refrigerant Gas Pressure		
Noise Level at 1 Meter distance	Below 60 db	
External Wired Controller	VRF must be having provision of Common wired controller for 1 to 10 Nos. VRFs by looping in common communication cable	
Remote Operation	Remote Operation should be possible	
Diamensions in MM (LXWXH)		
Weight (Kg)		
porator		
Туре		
Material		
denser		
Condenser Type / Tube Material	Inner Groove Type / Copper Tube	
Fins Material	Aluminum	
Number of Rows	Minimum 3	
	Type of VRV/VRF Make of VRV/VRF Model Name / Number of VRV/VRF Cooling Capacity TR @ 47°C ambient temerature as per deration chart Rated Power Input EER COP @ 100% Power Supply Refrigerant Factory Pre-Charge Refrigerant Gas Pressure Noise Level at 1 Meter distance External Wired Controller Remote Operation Diamensions in MM (LXWXH) Weight (Kg) porator Type Material denser Condenser Type / Tube Material	Type of VRV/VRF Make of VRV/VRF Make of VRV/VRF Model Name / Number of VRV/VRF Cooling Capacity TR @ 47°C ambient temerature as per deration chart Rated Power Input EER Above 13.85 COP @ 100% Above 4 Power Supply Refrigerant Factory Pre-Charge Refrigerant Gas Pressure Noise Level at 1 Meter distance External Wired Controller External Wired Controller Remote Operation Diamensions in MM (LXWXH) Weight (Kg) Porator Type Material denser Condenser Type / Tube Material Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Carrier / Toshiba / O General Mitsubishi Heavy / Caprier / Toshiba / O General Mitsubishi Heavy / Caprier / Toshiba / O General Mitsubish Heavy / Caprier / Toshiba / O General Mitsubishi Heavy / Caprier / Toshiba / O General Mitsubish Heavy / Caprier / Toshiba / O General Mitsubish Heavy / Caprier / Toshiba / O General Mitsubish Heavy / Caprier / Toshiba / O General Mitsubish (Apv. Caprier / Toshiba / O General MP (attach VRF deration chart) MP (attach V

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
5	Fins Area		
6	Condenser Heat Exchange Area		
7	Noumber of Tubes		
Con	denser Fan		
1	Type / Drive	Propeller / Direct	
2	Quantity of Condenser fan		
3	Blade Material	SAN	
4	Motor Poles		
5	Air Volume	minimum 11000 m3/hr	
6	Fan Motor Wattage/Kw	KiloWatt	
7	Fan Speed High & Low (RPM)		
Con	npressor		
1	Type of Compressor	DC Inverter Scroll	
2	Quantity per VRF		
3	Each Compressor Capacity in TR	TR	
4	Compressor speed	Minimum & Maximum	
5	IP	IP55	
6	Insulation Grade	F	
7	Flow Control	EXV	
8	No of Refrigerant Circuits		
9		High Pressure Switch	
10		Low Pressure Switch	
11	In built Protection Devices	Thermal Proctector	
12		Overload Protector	
13	†	Phase Sequencer	
NOT	E: 1) The bidder should fill-in all t	the data in above format only	. If above required

	Annexure - 3: <u>Datasheet of 16 HP VRF</u> (To be filled in by Bidder)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Type of VRV/VRF	VRF		
2	Make of VRV/VRF	Mitsubishi Heavy / Carrier / Toshiba / O General		
3	Model Name / Number of VRV/VRF			
4	Cooling Capacity TR @ 47°C ambient temerature as per deration chart	HP (attach VRF deration chart)		
5	Rated Power Input	Below 11 Kw		
6	EER	Above 13.8		
7	COP @ 100%	Above 4		
8	Power Supply	390-440V /3Ph/50 Hz		
9	Refrigerant	R-410a		
10	Factory Pre-Charge	Yes, Required		
11	Refrigerant Gas Pressure			
12	Noise Level at 1 Meter distance	Below 60 db		
13	External Wired Controller	VRF must be having provision of Common wired controller for 1 to 10 Nos. VRFs by looping in common communication cable		
14	Remote Operation	Remote Operation should be possible		
15	Diamensions in MM (LXWXH)			
16	Weight (Kg)			
Eva	porator	•		
1	Туре			
2	Material			
Con	denser			
1	Condenser Type / Tube Material	Inner Groove Type / Copper Tube		
2	Fins Material	Aluminum		
3	Number of Rows	Minimum 3		
4	FPI	Minimum 18		
5	Fins Area			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
6	Condenser Heat Exchange Area		
7	Noumber of Tubes		
Con	denser Fan	•	•
1	Type / Drive	Propeller / Direct	
2	Quantity of Condenser fan		
3	Blade Material	SAN	
4	Motor Poles		
5	Air Volume	minimum 13000 m3/hr	
6	Fan Motor Wattage/Kw	KiloWatt	
7	Fan Speed High & Low (RPM)		
Con	npressor		•
1	Type of Compressor	DC Inverter Scroll	
2	Quantity per VRF		
3	Each Compressor Capacity in TR	TR	
4	Compressor speed	Minimum & Maximum	
5	IP	IP55	
6	Insulation Grade	F	
7	Flow Control	EXV	
8	No of Refrigerant Circuits		
9		High Pressure Switch	
10		Low Pressure Switch	
11	In built Protection Devices	Thermal Proctector	
12		Overload Protector	
13		Phase Sequencer	
NOT	E: 1) The bidder should fill-in all the	data in above format only. If a	bove required

	Annexure - 4: <u>Datasheet of 18 HP VRF</u> (To be filled in by Bidder)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Type of VRV/VRF	VRF		
2	Make of VRV/VRF	Mitsubishi Heavy / Carrier / Toshiba / O General		
3	Model Name / Number of VRV/VRF			
4	Cooling Capacity TR @ 47°C ambient temerature as per deration chart	HP (attach VRF deration chart)		
5	Rated Power Input	Below 12.4 Kw		
6	EER	Above 13.8		
7	COP @ 100%	Above 4		
8	Power Supply	390-440V /3Ph/50 Hz		
9	Refrigerant	R-410a	_	
10	Factory Pre-Charge	Yes, Required		
11	Refrigerant Gas Pressure			
12	Noise Level at 1 Meter distance	Below 62 db		
13	External Wired Controller	VRF must be having provision of Common wired controller for 1 to 10 Nos. VRFs by looping in common communication cable		
14	Remote Operation	Remote Operation should be possible		
15	Diamensions in MM (LXWXH)			
16	Weight (Kg)			
Eva	porator			
1	Туре			
2	Material			
Con	denser			
1	Condenser Type / Tube Material	Inner Groove Type / Copper Tube		
2	Fins Material	Aluminum		
3	Number of Rows	Minimum 3		
4	FPI	Minimum 18		
5	Fins Area			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
6	Condenser Heat Exchange Area			
7	Noumber of Tubes			
Con	denser Fan			
1	Type / Drive	Propeller / Direct		
2	Quantity of Condenser fan			
3	Blade Material	SAN		
4	Motor Poles			
5	Air Volume	minimum 13000 m3/hr		
6	Fan Motor Wattage/Kw	KiloWatt		
7	Fan Speed High & Low (RPM)			
Con	npressor			
1	Type of Compressor	DC Inverter Scroll		
2	Quantity per VRF			
3	Each Compressor Capacity in TR	TR		
4	Compressor speed	Minimum & Maximum		
5	IP	IP55		
6	Insulation Grade	F		
7	Flow Control	EXV		
8	No of Refrigerant Circuits			
9		High Pressure Switch		
10		Low Pressure Switch		
11	In built Protection Devices	Thermal Proctector		
12		Overload Protector		
13		Phase Sequencer		
NOT	NOTE: 1) The bidder should fill-in all the data in above format only. If above required			

	Annexure - 5: <u>Datasheet of 20 HP VRF</u> (To be filled in by Bidder)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Type of VRV/VRF	VRF		
2	Make of VRV/VRF	Mitsubishi Heavy / Carrier / Toshiba / O General		
3	Model Name / Number of VRV/VRF			
4	Cooling Capacity TR @ 47°C ambient temerature as per deration chart	HP (attach VRF deration chart)		
5	Rated Power Input	Below 13.9 Kw		
6	EER	Above 13.60		
7	COP @ 100%	Above 4		
8	Power Supply	390-440V /3Ph/50 Hz		
9	Refrigerant	R-410a		
10	Factory Pre-Charge	Yes, Required		
11	Refrigerant Gas Pressure			
12	Noise Level at 1 Meter distance	Below 62 db		
13	External Wired Controller	VRF must be having provision of Common wired controller for 1 to 10 Nos. VRFs by looping in common communication cable		
14	Remote Operation	Remote Operation should be possible		
15	Diamensions in MM (LXWXH)			
16	Weight (Kg)			
Eva	porator			
1	Туре			
2	Material			
Con	denser			
1	Condenser Type / Tube Material	Inner Groove Type / Copper Tube		
2	Fins Material	Aluminum		
3	Number of Rows	Minimum 3		
4	FPI	Minimum 18		
5	Fins Area			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
6	Condenser Heat Exchange Area		
7	Noumber of Tubes		
Con	denser Fan		
1	Type / Drive	Propeller / Direct	
2	Quantity of Condenser fan		
3	Blade Material	SAN	
4	Motor Poles		
5	Air Volume	minimum 17000 m3/hr	
6	Fan Motor Wattage/Kw	KiloWatt	
7	Fan Speed High & Low (RPM)		
Con	npressor		
1	Type of Compressor	DC Inverter Scroll	
2	Quantity per VRF		
3	Each Compressor Capacity in TR	TR	
4	Compressor speed	Minimum & Maximum	
5	IP	IP55	
6	Insulation Grade	F	
7	Flow Control	EXV	
8	No of Refrigerant Circuits		
9		High Pressure Switch	
10		Low Pressure Switch	
11	In built Protection Devices	Thermal Proctector	
12		Overload Protector	
13		Phase Sequencer	
NOT	E: 1) The bidder should fill-in all the	e data in above format only. If	above required

Annexure - 6: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 36)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	1850 CFM	
2	Fan Selection for Total Static Pressure	15 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CCD	
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan	
6	Filter	EU5	
7	Efficiency of Fan	%	
8	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
9	Fan Motor Efficiency	%	
10	Power Consumption	Watt / Kw	
11	Motor Make		
12	Motor Type		
13	Motor Ingress Protection	IP21	
14	Class of Insulation	F	
15	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
16	Starting Current	Amp.	
17	Full Load Current (Amps)	Amp.	
18	Starter With Fan Speed Control Regulator	Required	
19	Method of Starting	DOL / Star-delta /Soft Starter	
20	Starter Manufacturer / Make		
21	Starter Panel with BMS Compatibility	Required	
22	Material of Construction of Fan		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
23	Cabinet Material	Galvanised Sheet Steel	
24	Shaft Material		
25	Accessories included		
26	Overall Fan Efficiency	%	
27	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
28	Type of Bearing		
29	Noise Level at 3 Meter measured at free discharge	Below 55 dBA	
30	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
31	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 7: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 37)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	440 CFM	
2	Fan Selection for Total Static Pressure	15 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CCD	
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan	
6	Filter	EU5	
7	Efficiency of Fan	%	
8	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
9	Fan Motor Efficiency	%	
10	Power Consumption	Watt / Kw	
11	Motor Make		
12	Motor Type		
13	Motor Ingress Protection	IP20/21	
14	Class of Insulation	F	
15	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
16	Starting Current	Amp.	
17	Full Load Current (Amps)	Amp.	
18	Starter With Fan Speed Control Regulator	Required	
19	Method of Starting	DOL / Star-delta /Soft Starter	
20	Starter Manufacturer / Make		
21	Starter Panel with BMS Compatibility	Required	
22	Material of Construction of Fan		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
23	Cabinet Material	Galvanised Sheet Steel	
24	Shaft Material		
25	Accessories included		
26	Overall Fan Efficiency	%	
27	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
28	Type of Bearing		
29	Noise Level at 3 Meter measured at free discharge	Below 56 dBA	
30	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
31	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 8: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 38)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	3500 CFM	
2	Fan Selection for Total Static Pressure	25 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CCK	
5	Type of Fan	DIDW Forward Curved Belt Driven Fan	
6	Filter	EU5	
7	Efficiency of Fan	%	
8	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
9	Fan Motor Efficiency	%	
10	Power Consumption	Watt / Kw	
11	Motor Make		
12	Motor Type		
13	Motor Ingress Protection	IP55	
14	Class of Insulation	F	
15	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
16	Starting Current	Amp.	
17	Full Load Current (Amps)	Amp.	
18	Starter With Fan Speed Control Regulator	Required	
19	Method of Starting	DOL / Star-delta /Soft Starter	
20	Starter Manufacturer / Make		
21	Starter Panel with BMS Compatibility	Required	
22	Material of Construction of Fan		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
23	Cabinet Material	Galvanised Sheet Steel	
24	Shaft Material		
25	Accessories included		
26	Overall Fan Efficiency	%	
27	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
28	Type of Bearing		
29	Noise Level at 3 Meter measured at free discharge	Below 64 dBA	
30	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
31	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 9: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 39)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	900 CFM	
2	Fan Selection for Total Static Pressure	20 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CCD	
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan	
6	Filter	EU5	
7	Efficiency of Fan	%	
8	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
9	Fan Motor Efficiency	%	
10	Power Consumption	Watt / Kw	
11	Motor Make		
12	Motor Type		
13	Motor Ingress Protection	IP21	
14	Class of Insulation	F	
15	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
16	Starting Current	Amp.	
17	Full Load Current (Amps)	Amp.	
18	Starter With Fan Speed Control Regulator	Required	
19	Method of Starting	DOL / Star-delta /Soft Starter	
20	Starter Manufacturer / Make		
21	Starter Panel with BMS Compatibility	Required	
22	Material of Construction of Fan		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
23	Cabinet Material	Galvanised Sheet Steel		
24	Shaft Material			
25	Accessories included			
26	Overall Fan Efficiency	%		
27	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet		
28	Type of Bearing			
29	Noise Level at 3 Meter measured at free discharge	Below 59 dBA		
30	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)		
31	Total Weight	Kg		
NOT	NOTE: 1) The bidder should fill-in all the data in above format only. If above required			

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 10: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 40)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	600 CFM	
2	Fan Selection for Total Static Pressure	25 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CCD	
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan	
6	Filter	EU5	
7	Efficiency of Fan	%	
8	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
9	Fan Motor Efficiency	%	
10	Power Consumption	Watt / Kw	
11	Motor Make		
12	Motor Type		
13	Motor Ingress Protection	IP21	
14	Class of Insulation	F	
15	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
16	Starting Current	Amp.	
17	Full Load Current (Amps)	Amp.	
18	Starter With Fan Speed Control Regulator	Required	
19	Method of Starting	DOL / Star-delta /Soft Starter	
20	Starter Manufacturer / Make		
21	Starter Panel with BMS Compatibility	Required	
22	Material of Construction of Fan		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
23	Cabinet Material	Galvanised Sheet Steel	
24	Shaft Material		
25	Accessories included		
26	Overall Fan Efficiency	%	
27	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
28	Type of Bearing		
29	Noise Level at 3 Meter measured at free discharge	Below 57 dBA	
30	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
31	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 11 : <u>Datasheet of Inline Fan (BOQ Item Sr. No. 41)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	200 CFM	
2	Fan Selection for Total Static Pressure	25 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CCD	
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan	
6	Filter	EU5	
7	Efficiency of Fan	%	
8	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
9	Fan Motor Efficiency	%	
10	Power Consumption	Watt / Kw	
11	Motor Make		
12	Motor Type		
13	Motor Ingress Protection	IP20/21	
14	Class of Insulation	F	
15	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
16	Starting Current	Amp.	
17	Full Load Current (Amps)	Amp.	
18	Starter With Fan Speed Control Regulator	Required	
19	Method of Starting	DOL / Star-delta /Soft Starter	
20	Starter Manufacturer / Make		
21	Starter Panel with BMS Compatibility	Required	
22	Material of Construction of Fan		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
23	Cabinet Material	Galvanised Sheet Steel	
24	Shaft Material		
25	Accessories included		
26	Overall Fan Efficiency	%	
27	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
28	Type of Bearing		
29	Noise Level at 3 Meter measured at free discharge	Below 57 dBA	
30	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
31	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 12: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 42)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	2540 CFM	
2	Fan Selection for Total Static Pressure	25 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CSD/CSK	
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan	
6	Filter	EU5	
7	Efficiency of Fan	%	
8	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
9	Fan Motor Efficiency	%	
10	Power Consumption	Watt / Kw	
11	Motor Make		
12	Motor Type		
13	Motor Ingress Protection	IP20/21	
14	Class of Insulation	F	
15	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
16	Starting Current	Amp.	
17	Full Load Current (Amps)	Amp.	
18	Starter With Fan Speed Control Regulator	Required	
19	Method of Starting	DOL / Star-delta /Soft Starter	
20	Starter Manufacturer / Make		
21	Starter Panel with BMS Compatibility	Required	
22	Material of Construction of Fan		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
23	Cabinet Material	Galvanised Sheet Steel	
24	Shaft Material		
25	Accessories included		
26	Overall Fan Efficiency	%	
27	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
28	Type of Bearing		
29	Noise Level at 3 Meter measured at free discharge	Below 54 dBA	
30	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
31	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 13: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 43)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	1220 CFM	
2	Fan Selection for Total Static Pressure	25 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CCD	
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan	
6	Filter	EU5	
7	Efficiency of Fan	%	
8	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
9	Fan Motor Efficiency	%	
10	Power Consumption	Watt / Kw	
11	Motor Make		
12	Motor Type		
13	Motor Ingress Protection	IP21	
14	Class of Insulation	F	
15	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
16	Starting Current	Amp.	
17	Full Load Current (Amps)	Amp.	
18	Starter With Fan Speed Control Regulator	Required	
19	Method of Starting	DOL / Star-delta /Soft Starter	
20	Starter Manufacturer / Make		
21	Starter Panel with BMS Compatibility	Required	
22	Material of Construction of Fan		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder		
23	Cabinet Material	Galvanised Sheet Steel			
24	Shaft Material				
25	Accessories included				
26	Overall Fan Efficiency	%			
27	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet			
28	Type of Bearing				
29	Noise Level at 3 Meter measured at free discharge	Below 57 dBA			
30	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)			
31	Total Weight	Kg			
NO	NOTE: 1) The bidder should fill-in all the data in above format only. If above required				

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 14: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 44)</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	Fan CFM	1850 CFM	
2	Fan Selection for Total Static Pressure	25 MM W.G.	
3	Make of Fan	Kruger	
4	Model Number of Fan	CCD	
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan	
6	Efficiency of Fan	%	
7	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase	
8	Fan Motor Efficiency	%	
9	Power Consumption	Watt / Kw	
10	Motor Make		
11	Motor Type		
12	Motor Ingress Protection	IP21	
13	Class of Insulation	F	
14	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart	
15	Starting Current	Amp.	
16	Full Load Current (Amps)	Amp.	
17	Starter With Fan Speed Control Regulator	Required	
18	Method of Starting	DOL / Star-delta /Soft Starter	
19	Starter Manufacturer / Make		
20	Starter Panel with BMS Compatibility	Required	
21	Material of Construction of Fan		
22	Cabinet Material	Galvanised Sheet Steel	
23	Shaft Material		

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
24	Accessories included		
25	Overall Fan Efficiency	%	
26	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
27	Type of Bearing		
28	Noise Level at 3 Meter measured at free discharge	Below 57 dBA	
29	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
30	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 15: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 45)</u> (To be filled in by Bidder)

	in by bluder)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Fan CFM	1750 CFM		
2	Fan Selection for Total Static Pressure	25 MM W.G.		
3	Make of Fan	Kruger		
4	Model Number of Fan	CCD		
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan		
6	Efficiency of Fan	%		
7	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase		
8	Fan Motor Efficiency	%		
9	Power Consumption	Watt / Kw		
10	Motor Make			
11	Motor Type			
12	Motor Ingress Protection	IP21		
13	Class of Insulation	F		
14	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart		
15	Starting Current	Amp.		
16	Full Load Current (Amps)	Amp.		
17	Starter With Fan Speed Control Regulator	Required		
18	Method of Starting	DOL / Star-delta /Soft Starter		
19	Starter Manufacturer / Make			
20	Starter Panel with BMS Compatibility	Required		
21	Material of Construction of Fan			
22	Cabinet Material	Galvanised Sheet Steel		
23	Shaft Material			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
24	Accessories included		
25	Overall Fan Efficiency	%	
26	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
27	Type of Bearing		
28	Noise Level at 3 Meter measured at free discharge	Below 57 dBA	
29	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
30	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 16: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 46)</u> (To be filled in by Bidder)

	iii by blader)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Fan CFM	3030 CFM		
2	Fan Selection for Total Static Pressure	25 MM W.G.		
3	Make of Fan	Kruger		
4	Model Number of Fan	CSD		
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan		
6	Efficiency of Fan	%		
7	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase		
8	Fan Motor Efficiency	%		
9	Power Consumption	Watt / Kw		
10	Motor Make			
11	Motor Type			
12	Motor Ingress Protection	IP54		
13	Class of Insulation	F		
14	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart		
15	Starting Current	Amp.		
16	Full Load Current (Amps)	Amp.		
17	Starter With Fan Speed Control Regulator	Required		
18	Method of Starting	DOL / Star-delta /Soft Starter		
19	Starter Manufacturer / Make			
20	Starter Panel with BMS Compatibility	Required		
21	Material of Construction of Fan			
22	Cabinet Material	Galvanised Sheet Steel		
23	Shaft Material			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
24	Accessories included		
25	Overall Fan Efficiency	%	
26	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
27	Type of Bearing		
28	Noise Level at 3 Meter measured at free discharge	Below 60 dBA	
29	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
30	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 17: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 47)</u> (To be filled in by Bidder)

	in by bluder)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Fan CFM	150 CFM		
2	Fan Selection for Total Static Pressure	25 MM W.G.		
3	Make of Fan	Kruger		
4	Model Number of Fan	CCD		
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan		
6	Efficiency of Fan	%		
7	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase		
8	Fan Motor Efficiency	%		
9	Power Consumption	Watt / Kw		
10	Motor Make			
11	Motor Type			
12	Motor Ingress Protection	IP21		
13	Class of Insulation	F		
14	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart		
15	Starting Current	Amp.		
16	Full Load Current (Amps)	Amp.		
17	Starter With Fan Speed Control Regulator	Required		
18	Method of Starting	DOL / Star-delta /Soft Starter		
19	Starter Manufacturer / Make			
20	Starter Panel with BMS Compatibility	Required		
21	Material of Construction of Fan			
22	Cabinet Material	Galvanised Sheet Steel		
23	Shaft Material			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
24	Accessories included		
25	Overall Fan Efficiency	%	
26	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
27	Type of Bearing		
28	Noise Level at 3 Meter measured at free discharge	Below 57 dBA	
29	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
30	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 18: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 48)</u> (To be filled in by Bidder)

	in by blader)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Fan CFM	3240 CFM		
2	Fan Selection for Total Static Pressure	25 MM W.G.		
3	Make of Fan	Kruger		
4	Model Number of Fan	CSD/CSK		
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan		
6	Efficiency of Fan	%		
7	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase		
8	Fan Motor Efficiency	%		
9	Power Consumption	Watt / Kw		
10	Motor Make			
11	Motor Type			
12	Motor Ingress Protection	IP54/55		
13	Class of Insulation	F		
14	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart		
15	Starting Current	Amp.		
16	Full Load Current (Amps)	Amp.		
17	Starter With Fan Speed Control Regulator	Required		
18	Method of Starting	DOL / Star-delta /Soft Starter		
19	Starter Manufacturer / Make			
20	Starter Panel with BMS Compatibility	Required		
21	Material of Construction of Fan			
22	Cabinet Material	Galvanised Sheet Steel		
23	Shaft Material			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
24	Accessories included		
25	Overall Fan Efficiency	%	
26	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
27	Type of Bearing		
28	Noise Level at 3 Meter measured at free discharge	Below 59 dBA	
29	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
30	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 19: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 49)</u> (To be filled in by Bidder)

	in by bluder)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Fan CFM	200 CFM		
2	Fan Selection for Total Static Pressure	15 MM W.G.		
3	Make of Fan	Kruger		
4	Model Number of Fan	CCD		
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan		
6	Efficiency of Fan	%		
7	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase		
8	Fan Motor Efficiency	%		
9	Power Consumption	Watt / Kw		
10	Motor Make			
11	Motor Type			
12	Motor Ingress Protection	IP21		
13	Class of Insulation	F		
14	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart		
15	Starting Current	Amp.		
16	Full Load Current (Amps)	Amp.		
17	Starter With Fan Speed Control Regulator	Required		
18	Method of Starting	DOL / Star-delta /Soft Starter		
19	Starter Manufacturer / Make			
20	Starter Panel with BMS Compatibility	Required		
21	Material of Construction of Fan			
22	Cabinet Material	Galvanised Sheet Steel		
23	Shaft Material			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
24	Accessories included		
25	Overall Fan Efficiency	%	
26	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
27	Type of Bearing		
28	Noise Level at 3 Meter measured at free discharge	Below 57 dBA	
29	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
30	Total Weight	Kg	
NOTE: 1) The bidder should fill-in all the data in above format only. If above required			

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 20: <u>Datasheet of Inline Fan (BOQ Item Sr. No. 50)</u> (To be filled in by Bidder)

	in by blader)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder	
1	Fan CFM	300 CFM		
2	Fan Selection for Total Static Pressure	15 MM W.G.		
3	Make of Fan	Kruger		
4	Model Number of Fan	CCD		
5	Type of Fan	Direct Driven, DIDW Forward Curved Centrifugal Fan		
6	Efficiency of Fan	%		
7	Power Supply Required - AC, 50 Hz	Single Phase / Three Phase		
8	Fan Motor Efficiency	%		
9	Power Consumption	Watt / Kw		
10	Motor Make			
11	Motor Type			
12	Motor Ingress Protection	IP21		
13	Class of Insulation	F		
14	Electrical Characteristics of Fan Motor	Attach Electrical Characteristics Chart		
15	Starting Current	Amp.		
16	Full Load Current (Amps)	Amp.		
17	Starter With Fan Speed Control Regulator	Required		
18	Method of Starting	DOL / Star-delta /Soft Starter		
19	Starter Manufacturer / Make			
20	Starter Panel with BMS Compatibility	Required		
21	Material of Construction of Fan			
22	Cabinet Material	Galvanised Sheet Steel		
23	Shaft Material			

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
24	Accessories included		
25	Overall Fan Efficiency	%	
26	Fan Performance Data - Static Pressure Vs Flow Rate	Attach Performace Datasheet	
27	Type of Bearing		
28	Noise Level at 3 Meter measured at free discharge	Below 57 dBA	
29	Overall Size (including base frame) L x D x H	mm x mm x mm (Attach GA Drawing)	
30	Total Weight	Kg	

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 21: <u>Datasheet of EU Filter</u> (To be filled in by Bidder)

Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	EU5 Filter Make	Camfil-Farr/Aspen/AAF/Dyna Filters	
2	Filter Class according to EN779 - 2012 / ASHRAE	EU5/ MERV 10	
3	Filter Class according to ISO 16890	ISO Coarse 90%	
4	Filters Type, Face Areas	Sq. Feet	
5	Filter Efficiency down to 10 microns	> 98%	
6	Filter Efficiency down to 5 microns	90 - 99 %	
7	Filter Efficiency down to 3 microns	70 - 90 %	
8	Filter Efficiency down to 1 microns	30 - 50 %	
9	Filter Efficiency down to 0.5 microns	15 - 30 %	
10	Filter Efficiency down to 0.3 microns	5 - 15 %	
11	Filter Efficiency down to 0.1 microns	0 - 10 %	
12	Filter Material	Synthetic Fiber	
13	Frame Material	Anodized Aluminum	
14	100% Water Washable.	Required	

NOTE: 1) The bidder should fill-in all the data in above format only. If above required data is not filled properly or partially filled tender shall be liable to rejection.

NOTE: 2) OFFERS with "INCOMPLETE INFORMATION" ARE LIABLE TO BE REJECTED, which may be noted.

Annexure - 22: <u>Datasheet of Electrical Work</u> (To be filled in by			
Bidder)			
Sr. No.	Description	Required - System Parameters	To be filled by the Bidder
1	MCB DB Make	Wipro/North West/Siemens/ABB/L&T	
2	MCB & RCBO Make	Wipro/North West/Siemens/ABB/L&T	
3	Name of Electrical Contractor		
4	Electrical Contractor's Licence Number and Validity Period/Date (Attach Copy)	Attach Licence Copy	
	TE: 1) The bidder should fill-in all tais not filled properly or partially		•
	TE: 2) OFFERS with "INCOMPLE ECTED, which may be noted.	ETE INFORMATION" ARE	E LIABLE TO BE

<u>Annexure – 23 : LIST OF APPROVED MAKES</u>

Sr. No.	Name of Item	Approved Makes
1	MCB Distribution Boards	Wipro/ North West/Siemens / ABB
2	Air Circuit Breaker (ACB)	Siemens-3WL /Legrand- DMX3/ L& T-Omega
3	MCCB/MCB	Siemens /ABB/ L& T/ North West
4	Switch Fuse Units	Siemens /ABB/ L& T/ North West
5	Contactors and Starters	L&T / Siemens / ABB
6	Refrigerant Pipes	Mandev / Nippon / Totaline
7	VRV/VRF Units (Indoor & Outdoor)	Mitsubishi Heavy/Carrier/Toshiba/ O General
8	Fresh / Exhaust Air Centrifugal Fans	Kruger
9	Y or T- Joints/ Refnet	Mitsubishi Heavy/Carrier/Toshiba/ O General
10	UPVC Pipes & Fittings	Astral/Finolex/Ashirwad
11	GSS sheets/ Steel Angles/Channels	Jindal/ SAIL-Bhilai/ TATA
12	Prefabricated GS Ducts	SA Spiro/ ASAWA/ Rolastar/ Ductofab
13	Duct Silencers	Cosmos/ Ruskin/ George-Rao/ Dynacraft
14	Insulated flexible ducts	Twiga/ ATCO/ K-flex
15	Glass wool (Fibre Glass)	Twiga/ Kimmco/ Owens-Corning
16	Nitrile Rubber	Analco/ Aeroflex/ K-Flex
17	Cold Compound / CPRX Compound	Shalimar/ Shalicoat / Pidilite
18	Vibration Isolators/Cushy Foot Mounts	Dunlop/ Resistoflex/ Kanwal
19	Exhaust Disc Valves and Door Transfer Grill	Cosmos//Ruskin/ George-Rao/ Dynacraft
20	Air Filters, Micro Filters	Camfil-Farr/ Aspen/ AAF/ Dyna Filters
21	Balancing Valves	Advance/ Danfoss/ Belimo/ Audco
22	Duct Thermal Insulation	Thermobreak/ K-Flex/ Trocellen
23	Dampers, Louvers, Motorised Dampers	Cosmos/ Ruskin/ George-Rao/ Dynacraft
24	Grills, Diffusers, Al. Box Type Dampers	Cosmos/ Ruskin/ George-Rao/ Dynacraft
25	CAV Boxes	Systemair/Carrier/Belimo/Halton
26	Hardware	Sundaram/ GKW/ Fit tight
27	Anchor Fasteners	Hilti / Shakti
28	Paints	Nerolac, Asian, Berger
29	Welding Rods	ESAB/ Advani-Orlecon
30	PVC Pipes & Accessories	Finolex/Astral/Ashirwad/Supreme
31	ELCB/RCCB/RCBO	Siemens /ABB/ L& T/ North West

Sr. No.	Name of Item	Approved Makes
32	Push Buttons	L&T / Technic
33	Indicating Lamps	L&T / Technic
34	Fuses & Fuse bases	L&T / Siemens /ABB
35	Indicating / Measuring Instruments	Conzerv/ HPL/ Secure/ L&T
36	Terminals	Elmex / Connectwell
37	LT Cables/Wires	Finolex / RR Kables /Gloster
38	Timer	L&T/ABB/Minilec
39	Cable Glands Single/Double Compression	Braco / Dowells / Commet
40	PVC rigid conduits & Accessories	Precision/ Astral
41	Bi-metalic Crimping Type Lugs	Dowells
42	Cable Trays / Wireways	Cablofil / Profab / Shruti

 $\underline{\text{Note}}$: Bidder must highlight make of goods/items offered as per approved make list.

SEAL & SIGNATURE OF BIDDER