EQUINIX

ARUP

Equipment Data Sheet
Fans
FR121-ARP-DC-XX-SP-M-HVAC-8005

Job Title: **Equinix FR12.1 Frankfurt**
Job Number: 285668-00 Purpose of Issue: D2
Made by: BP Checked by: DD
Date: 03 February 2023
Revision: P02

Legend
Unit Reference Phase 1
~~Unit Reference~~ Future Phases

General Data

Unit Reference	~~1EF_M2_5~~ 1EF_M1_13 ~~1EF_M2_6~~ 1EF_M1R1_2	1EF_M1_8 1EF_M1_7	Refer to drawings	Refer to drawings	Refer to drawings	Refer to drawings	Refer to drawings	Refer to drawings	Refer to drawings	1EF_M1_1	1EF_M1_2
Phase	Phase 1	Phase 1	Phase 1	Phase 1	Phase 1	-	Phase 1	Phase 1	Phase 1	Phase 1	Phase 1
Model Reference	AMD 710	B VDD - 630/4	AXN 12/56/500 M-D	HQW EC400	RR 125 C	AXT56	KRW 180/2/30/15	RR 100 C	SVV 80	RR 125 C	MV 125
Quantity	2/~~2~~	2	6/~~6~~	12/~~9~~	8/~~8~~	8/~~8~~	1	2/~~2~~	1/~~1~~	1	1
Location	Data Hall Gantry 1	Data Hall Gantry 1	Transformer Rooms Ground Floor, Level 1, Level 2	Transformer Rooms Gantry 1	Battery Rooms Ground Floor, Level 1, Level 2, Gantry level 1	UPS rooms	Heat Utilisation Room	VRF Room	PPR 01.10	Restrooms	Domestic Water and Fire Control Room
System	Make-up Air	Smoke Extract Air	Extract Air	Extract Air	Extract Air	Internal / mixing of air	Extract Air	Extract Air	Extract Air	Toilet Extract Air	Toilet Extract Air
Speed Control	Constant	Constant	Constant	Constant	Constant	Constant, equipped with inverter	Constant	2 speeds	Constant	Constant	Constant
Drive Type	-	-	-	-	-	2 impellers, operate continuosly	-	-	-	-	-

Performance Data

		Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered
Flow Rate	m³/h	20160		20160		6200		4288		400		14400		400		250 / 100		100		360		140	
Total Fan Pressure	Pa	-				-						-											
External Static Pressure	Pa	496		812		113		63		100		50		112		112/-		117		80		60	
Fan Velocity Pressure	Pa																						
Min. Total Efficiency	%					-		-		-		-		-		-		-		-		-	
Specific Fan Power	W/s/m³	706		939																			
Fan Speed	rpm	1440		1460		910		1700		2480		1440		2460		2890/1655		-		1655		1670	

Construction Data

Fan Scroll Material																							
Fan Scroll Finish																							
Fan Scroll Joint Construction																							
Air Leakage Class (DW 144)																							
Impeller Configuration		Axial		Axial		Axial		Axial		Centrifugal		Axial		Centrifugal		Centrifugal		Centrifugal		Radial		Radial	
Impeller Material																							
Impeller Finish																							
Impeller Construction						Blade pitch angle <33°						Blade angle =45°											
Blade Type																							
Shaft Material																							
Frame Material																							
Frame Finish																							
Inlet Connection Type		Flexible sleeves		-		Flexible sleeves		Circular duct		Circular duct		no duct		Circular duct		Circular duct		Circular duct		Circular duct		Circular duct	
Discharge Connection Type		Flexible sleeves		Flexible sleeves		Flexible sleeves				Circular duct		no duct		Circular duct		Circular duct		Circular duct		Circular duct		Circular duct	
Mounting Method		Duct Mounted Baseplate		Duct Mounted Baseplate		Suspended		Wall mounted		Duct Mounted - inline		Suspended		Duct Mounted - inline		Duct Mounted - inline		Duct Mounted - inline		Duct Mounted - inline		Duct Mounted - inline	
Balance Grade ISO 1940																							
Max Airstream Temp	°C	65		400		80		-		-		-		-		-		-		70		60	
Air Density	kg/m³	1.2		1.2		1.2		1.2		1.2		1.2		1.2		1.2		1.2		1.2		1.2	
Bearing Design Life	L10 Hrs																						
Fan Test Arrangement																							

Dimensional Data

		Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered
Fan Diameter (Ø)	mm	-		-		500		400		243		560		-		243		-		-		-	
Overall Length	mm	555		1181		2100		213		188		880		375		188		244		188		258	
Overall Width	mm	800		1181		541		-		-		670		343		-		244		243		122	
Overall Height	mm	900		1050		712		-		-		650		193		-		98		243		211	
Inlet Connection Size (Ø)	mm	STA		STA		STA		400		125		-		150		99		78		124		122	
Discharge Connection Size	mm	STA		STA		STA		-		125		-		150		99		78		124		122	
Operating Weight	kg	161		231		-		11.3		2.9		110		5,5		2,9		2		2,9		1,7	

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Electrical Data

Electrical Supply	V/Ø/Hz	400/3/50		400/3/50		400/3/50		230/1/50		230/1/50		400/3/50		230/1/50		230/1/50		230/1/50		230/1/50		230/1/50	
Drive Efficiency	%	-		-		-		-		-		-		-		-		-		-		-	
Motor Efficiency Class	EFF	IE3		IE3		IE1		IE3		IE3				IE3		IE3		IE3		IE3		IE3	
Motor Efficiency	%	88.6		91				STA		STA		STA		STA		STA		STA		STA		STA	
Absorbed Power	kW	6.3		7.5		0,55		0.3		0.062		2 x 1.8		0,064		0,062		0,027		0,062		0,033	
Motor Rating	kW	-		-		-		-		-		-		-		-		-		-		-	
Motor Type		-		-		-		EC		EC		-		EC		EC		EC		-		-	
Motor Speed	rpm	1440		1460		910		1700		2480		1440		2890/-		2890/1655		-		1655		1670	
Starting Method		-		-		-		-		-		-		-		-		-		-		-	
Starting Current	A	12.3		117,8		-		1.4		0.27		23.4		0,35		0,81		0,1		0,8		0,4	
Full Load Running Current	A	12.3		14.2		1,67		1.4		0.27		4.5		0,35		0,81		0,1		0,3		0,2	
Power Source																							

Noise & Vibration Data

Induct Inlet		Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered	Required	Offered
	Total	105		STA		76		79		70		86		71		70		STA		70		64	
	125 Hz	85		STA		56		52		55		83		56		61		STA		55		33	
In Duct	250 Hz	95		STA		67		72		64		87		65		66		STA		64		51	
Sound Power Level @	500 Hz	100		STA		71		74		67		83		69		65		STA		67		55	
Lw dB(A)	1 kHz	101		STA		72		73		64		81		59		65		STA		64		58	
	2 kHz	98		STA		69		71		60		77		55		59		STA		60		61	
	4 kHz	90		STA		64		65		55		74		50		52		STA		55		48	
	8 kHz	79		STA		57		57		48		68		45		46		STA		48		40	
Induct Outlet																							
	Total	STA		STA		76		STA				86		72		49		STA		49		64	
	125 Hz	STA		STA		50		STA				83		55		23		STA		25		35	
In Duct	250 Hz	STA		STA		65		STA				87		65		40		STA		39		53	
Sound Power Level @	500 Hz	STA		STA		71		STA				83		68		40		STA		39		56	
Lw dB(A)	1 kHz	STA		STA		72		STA				81		66		44		STA		44		60	
	2 kHz	STA		STA		69		STA				77		61		42		STA		43		58	
	4 kHz	STA		STA		64		STA				74		56		44		STA		45		50	
	8 kHz	STA		STA		57		STA				68		47		38		STA		36		39	
Casing Radiated																							
	Total	STA		STA		60		STA		49		-		57				STA				50	
	125 Hz	STA		STA		51		STA		25		-		36				STA				30	
	250 Hz	STA		STA		58		STA		39		-		52				STA				36	
Sound Power Level @	500 Hz	STA		STA		53		STA		39		-		56				STA				42	
Lw dB(A)	1 kHz	STA		STA		47		STA		44		-		47				STA				48	
	2 kHz	STA		STA		39		STA		43		-		44				STA				41	
	4 kHz	STA		STA		30		STA		45		-		38				STA				34	
	8 kHz	STA		STA		19		STA		36		-		34				STA				27	
Anti Vibration Mount (AVM) Type		STA		STA		STA		STA		STA		STA		STA		STA		STA		STA		STA	
Min AVM Static Deflection	mm	STA		STA		STA		STA		STA		STA		STA		STA		STA		STA		STA	
Circular silencer w/o inner core (discharge)		-		-		✓		-		-		-		-		-		-		-		-	
Bellmouth inlet		STA		STA		✓		-		-		-		-		-		STA		-		-	
Flow redresser		STA		STA		✓		-		-		-		-		-		STA		-		-	
Comments												Mesh Inlet Guard and Confusor required												

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Equipment Data Sheet
Fans
FR121-ARP-DC-XX-SP-M-HVAC-8005

Job Title: **Equinix FR12.1 Frankfurt**
Job Number: 285668-00 Purpose of Issue: D2
Made by: BP Checked by: DD
Date: 03 February 2023
Revision: P02

Legend

Accessories	Required	Offered		Required	Offered
Special Finish			Mesh Inlet Guard		
Weatherproof Construction **(Note 10)**	✓		Mesh Discharge Guard	✓	
Casing Access Doors			Extended Bearing Lubricators		
Airtight Belt Guard			Non Return Damper	✓	
Shaft Seal			Flexible Connection **(Note 7)**	✓	
Additional Set of Belts & Pulleys			Motor Anti Condensation Heater		
Bellmouth Inlet			High Efficiency Motor	✓	
Inspection Switch **(Note 8)**	✓		Supporting frame		
Eletronic air flow switch	✓				
Eletronic speed controller **(Note 6)**	✓				

BMS Outputs	Required	Offered
Common Alarm - Volt Free Contact	✓	
Run Status - VFC	✓	

Testing	Required	Offered
Performance Type Tests	✓	
Works Performance Tests		
Site OEM Performance Tests		

Samples	Required	Offered
Type Samples		

Manufacturer

Manufacturer	Trox TLT	Helios	Systemair
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Additional Information

1 *This equipment data sheet **must** be read in conjunction with all other parts of the Specification, including: the Scheme report, the Scheme drawings.*

2 *Type test data shall be provided to demonstrate that the equipment performs to the required standards.*

3 *ISO 5801 Fan Test Arrangements*
Type A - Free Inlet & Free Outlet
Type B - Free Inlet & Ducted Outlet
Type C - Ducted Inlet & Free Outlet
Type D - Ducted Inlet & Ducted Outlet

4 *Submit fan curves to demonstrate performance at part load at Tender stage.*

5 *Bearing design life based on one start and stop per hour.*

6 *Fans are to have a VSD for the purpose of commission.*
Fans are to run at constant flow rate in operation.
Operate as duty standby, auto rotation and alarm raised by on-board controller to the mechanical control panel
surface mounting

Comments

7 *Fans are to have flexble connectors on the inlet sides.*

8 *Fans are to have a isolator switch*

9 *Integral non-return damper required on Fans*

10 *The fan units for smoke extract and make-up air are to be dilvered with weatherproof cases for external installation.*

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FR12.1 – Equinix
Data Centre Fans

Document Reference:	FR121-ARP-DC-XX-SP-M-HVAC-8005
Revision:	P02
Date:	2023-02-03
Purpose of Issue:	D2 – Tender Pack
Job number:	285668-00

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REV	DATE	Description	DWN / CHK / APP
P02	03.02.2023	Tender Pack	BP / DD / DW
P01	16.12.2022	RIBA 4 design	KW / DD / DW