

Applied Systems  
Technical Data

# FWA-AF/AT



- > FWA01AF
- > FWA02AF
- > FWA03AF
- > FWA04AF
- > FWA05AF
- > FWA06AF

- > FWA07AF
- > FWA08AF
- > FWA10AF
- > FWA01AT
- > FWA02AT
- > FWA03AT

- > FWA04AT
- > FWA05AT
- > FWA06AT
- > FWA07AT
- > FWA08AT
- > FWA10AT



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# 1 Features

## 1 - 1 FWA-AF/AT

- Available static pressure up to 60Pa
- Centrifugal fans with forward-curved blades for low sound levels
- Compact design
- Easy installation and maintenance
- Nylon filter G2 class
- 4-speed fan motor

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## 2 Specifications

2-1 Technical Specifications				FWA01A5 FV1B	FWA02A5 FV1B	FWA03A5 FV1B	FWA04A5 FV1B	FWA05A5 FV1B	FWA06A5 FV1B	FWA07A5 FV1B	FWA08A5 FV1B	FWA10A5 FV1B	
Cooling capacity (standard conditions)	Latent capacity 4- pipe	High	kW	0.44	0.58	0.83	0.93	1.07	1.48	1.27	1.65	2.31	
		Super high	kW	0.46	0.59	0.84	0.96	1.07	1.52	1.31	1.67	2.34	
	Sensible capacity 4- pipe	Low	kW	1.01	1.15	1.33	2.00	2.63	3.36	4.13	4.52	6.01	
		Medium	kW	1.24	1.53	1.91	2.47	3.21	4.00	4.77	5.35	6.93	
		High	kW	1.49	2.03	2.54	3.17	3.96	4.88	5.72	6.64	8.50	
		Super high	kW	1.59	2.07	2.61	3.30	3.99	5.08	6.05	6.82	8.69	
	Total capacity 4- pipe	Low	kW	1.33	1.53	1.84	2.67	3.46	4.51	5.17	5.81	7.86	
		Medium	kW	1.63	2.01	2.59	3.25	4.15	5.30	5.91	6.79	8.96	
		High	kW	1.93	2.61	3.37	4.10	5.03	6.36	6.99	8.28	10.81	
		Super high	kW	2.06	2.66	3.46	4.26	5.07	6.60	7.36	8.49	11.03	
Heating capacity (standard conditions)	Capacity 4-pipe	Low	kW	1.57	1.77	2.05	3.07	3.83	4.83	6.11	6.65	8.58	
		Medium	kW	1.86	2.22	2.77	3.64	4.51	5.58	6.84	7.62	9.63	
		High	kW	2.15	2.75	3.49	4.46	5.35	6.56	7.93	9.08	11.39	
		Super high	kW	2.27	2.84	3.57	4.61	5.38	6.79	8.29	9.29	11.60	
Power input	Low		kW	0.04		0.05		0.07	0.12	0.17		0.22	
	Medium		kW	0.04	0.05	0.06		0.08	0.13	0.18	0.19	0.24	
	High		kW	0.042	0.058	0.073	0.076	0.105	0.149	0.206	0.215	0.273	
	Super high		kW	0.043	0.059	0.072	0.075	0.107	0.155	0.208	0.219	0.276	
Dimensions	Unit	Height	mm	253									
		Width	mm	590									
		Depth	mm	705	735	875	1,010		1,210	1,400	1,560	1,820	
	Packed unit	Height	mm	260									
		Width	mm	605									
		Depth	mm	720	750	890	1,020		1,220	1,415	1,570	1,830	
Weight	Unit		kg	18.0	19.0	22.0	26.0		31.0	42.0	43.0	50.0	
	Operation weight		kg	18	19	22	26		31	42	43	50	
	Packed unit		kg	20	21	24	28		34	45	47	54	
Casing	Colour			Metal									
	Material			Galvanised metal									
Heat exchanger	Type			Seamless copper tubing, mechanically bonded to rippled and louvred aluminum fins.									
	Height		mm	200									
	Length		mm	450	485	625	755		955	1,150	1,305	1,565	
	Rows	Quantity		4									
	Row step	Quantity		8									
	Fin	Type		Waffle louvred fin									
	Tube material			Seamless copper									
	Tube type			Plain									
	Tube thickness		mm	0.30									
	Water flow	Cooling	Low	l/h	229	263	315	458	592	773	886	995	1,347
Medium			l/h	278	345	443	557	711	909	1,013	1,164	1,535	
High			l/h	331	448	577	703	862	1,089	1,199	1,420	1,852	
Super high			l/h	352	456	592	729	868	1,131	1,262	1,455	1,890	
Heating		High	l/h	210	268	340	434	520	637	772	884	1,108	
		Low	l/h	154	172	199	298	372	469	594	647	833	
		Medium	l/h	181	216	269	353	438	541	666	742	936	
		Super high	l/h	221	276	348	448	524	659	808	904	1,128	
Water pressure drop		Cooling	Low	kPa	4	6	9	7	11	21	7	9	17
			Medium	kPa	6	9	17	10	16	28	9	12	22
			High	kPa	8	14	26	15	22	39	12	17	31
			Super high	kPa	9	15	28	17	23	41	13	18	32
		Heating	Low	kPa	3	4	6	15	23	41	13	17	30
			Medium	kPa	3	5	8	16	23	41	13	17	29
			High	kPa	3	4	5	7	8	10	12	13	17
			Super high	kPa	5	8	14	25	33	61	18	24	42

## 2 Specifications

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2-1 Technical Specifications				FWA01A5 FV1B	FWA02A5 FV1B	FWA03A5 FV1B	FWA04A5 FV1B	FWA05A5 FV1B	FWA06A5 FV1B	FWA07A5 FV1B	FWA08A5 FV1B	FWA10A5 FV1B
Fan	Type			Centrifugal (Blade: Forward - curve)								
	Quantity			1			2			3		4
	Air flow rate	Low	m <sup>3</sup> /h	204	230	251	405	563	697	940	990	1,309
		Medium	m <sup>3</sup> /h	258	322	385	520	723	870	1,123	1,223	1,569
		High	m <sup>3</sup> /h	321	447	548	712	954	1,126	1,425	1,623	2,063
Super high		m <sup>3</sup> /h	349	469	568	749	964	1,191	1,537	1,683	2,127	
Fan motor	Model			YF110-09-4D (1,0μF)	YF110-16-4D30 (1,0μF)	YF110-20-4D21 (1,2μF)	YF110-20-4S49 (2,0μF)	YF110-30-4S62 (3,0μF)	YF110-65-4S21 (2,5μF)	YF110-65-4S21 (2,5μF) YF110-20-4D21 (1,2μF)		YF110-65-4S21 (2,5μF) YF110-65-4S21 (2,5μF)
	Index of Protection			20								
	Insulation grade			B								
	Poles			4								
Air filter	Type			Aluminium Frame PP Filter Net G2 Class								
	Quantity			1			2			3		
Total sound power level	Low	dBA	38	37	38	40	45	48	50	48	53	
	Medium	dBA	40	42	45	46	50	52	54	53	56	
	High	dBA	44	51	54	52	58	61	62	61	64	
	Super high	dBA	46	52	56	53	59	63		62	65	
Sound pressure level	Low	dBA	27	26	27	29	34	37	39	37	42	
	Medium	dBA	29	31	34	35	39	41	43	42	45	
	High	dBA	33	40	43	41	47	50	51	50	53	
	Super high	dBA	35	41	45	42	48	52		51	54	
Piping connections	Water	Inlet	3/4"									
		Outlet	3/4"									
	Drain	OD	R 3/4"									
Insulation material				Physical PE								
Allowed water temperature	Cooling	Min.	°C	3								
		Max.	°C	90.0								
	Heating	Min.	°C	3.00								
		Max.	°C	90.000								

2-2 Technical Specifications				FWA01A5 TV1B	FWA02A5 TV1B	FWA03A5 TV1B	FWA04A5 TV1B	FWA05A5 TV1B	FWA06A5 TV1B	FWA07A5 TV1B	FWA08A5 TV1B	FWA10A5 TV1B
Power input	Low	kW	0.04		0.05		0.07	0.12	0.17			0.23
	Medium	kW	0.04	0.05	0.06		0.08	0.13	0.18	0.19	0.25	
	High	kW	0.042	0.059	0.072		0.105	0.159	0.209	0.219	0.286	
	Super high	kW	0.042	0.059	0.073	0.075	0.110	0.163	0.216	0.222	0.288	
Dimensions	Unit	Height	253									
		Width	590									
		Depth	705	735	875	1,010		1,210	1,400	1,560	1,820	
	Packed unit	Height	260									
		Width	605									
		Depth	720	750	890	1,020		1,220	1,415	1,570	1,830	
Weight	Unit	kg	17.0	18.0	21.0	24.0		30.0	40.0	41.0	47.0	
	Operation weight	kg	17	18	21	24		30	40	41	47	
	Packed unit	kg	19	20	23	27		33	43	45	51	
Casing	Colour	Metal										
	Material	Galvanised metal										
Heat exchanger	Type			Seamless copper tubing, mechanically bonded to rippled and louvred aluminum fins.								
	Height		mm	200								
	Length		mm	450	485	625	755		955	1,150	1,305	1,565
	Rows	Quantity		3								
	Row step	Quantity		8								
	Fin	Type		Waffle louvred fin								
	Tube material			Seamless copper								
	Tube type			Plain								
	Tube thickness		mm	0.30								

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## 2 Specifications

2-2 Technical Specifications				FWA01A5 TV1B	FWA02A5 TV1B	FWA03A5 TV1B	FWA04A5 TV1B	FWA05A5 TV1B	FWA06A5 TV1B	FWA07A5 TV1B	FWA08A5 TV1B	FWA10A5 TV1B	
Water flow	Cooling	Low	l/h	232	263	320	472	610	776	890	995	1,347	
		Medium	l/h	288	352	450	605	730	912	1,013	1,164	1,544	
		High	l/h	342	445	596	705	892	1,109	1,220	1,420	1,892	
		Super high	l/h	363	456	612	737	906	1,159	1,278	1,455	1,930	
	Heating	High	l/h	342	445	596	705	892	1,109	1,220	1,420	1,892	
		Low	l/h	232	263	320	472	610	776	890	995	1,347	
		Medium	l/h	288	352	450	605	730	912	1,013	1,164	1,544	
		Super high	l/h	363	456	612	737	906	1,159	1,278	1,455	1,930	
	Water pressure drop	Cooling	Low	kPa	4	6	9	8	12	21	7	9	17
			Medium	kPa	6	9	17	12	17	28	9	12	22
			High	kPa	8	14	28	16	24	40	12	17	32
			Super high	kPa	9	15	29	17	24	43	14	18	33
Heating		Low	kPa	3	4	6	6	10	15	5	6	12	
		Medium	kPa	5	8	13	10	15	22	7	9	16	
		High	kPa	8	13	24	14	24	34	11	14	25	
		Super high	kPa	9	14	26	16	25	37	12	15	26	
Fan	Type			Centrifugal (Blade: Forward - curve)									
	Quantity			1			2			3		4	
	Air flow rate	Low	m³/h	208	230	257	421	586	702	946	990	1,309	
		Medium	m³/h	269	331	393	580	750	873	1,123	1,223	1,581	
		High	m³/h	336	453	573	715	1,005	1,157	1,463	1,623	2,130	
Super high		m³/h	363	469	595	760	1,028	1,234	1,567	1,683	2,195		
Fan motor	Model			YF110-09-4D (1,0µF)	YF110-16-4D30 (1,0µF)	YF110-20-4D21 (1,2µF)	YF110-20-4S49 (2,0µF)	YF110-30-4S62 (3,0µF)	YF110-65-4S21 (2,5µF)	YF110-65-4S21 (2,5µF) YF110-20-4D21 (1,2µF)		YF110-65-4S21 (2,5µF)	
	Index of Protection			20									
	Insulation grade			B									
	Poles			4									
Air filter	Type			Aluminium Frame PP Filter Net G2 Class									
	Quantity			1			2			3			
Total sound power level	Low	dBA	37	36	38	40	45	46	50	47	52		
	Medium	dBA	40	42	45	46	50	51	53	52	56		
	High	dBA	44	51	54	52	58	61	62	60	64		
	Super high	dBA	46	52	56	53	59	63	62	65			
Sound pressure level	Low	dBA	26	25	27	29	34	35	39	36	41		
	Medium	dBA	29	31	34	35	39	40	42	41	45		
	High	dBA	33	40	43	41	47	50	51	49	53		
	Super high	dBA	35	41	45	42	48	52	51	54			
Piping connections	Water	Inlet	3/4"										
		Outlet	3/4"										
	Drain	OD	R 3/4"										
Insulation material			Physical PE										
Allowed water temperature	Cooling	Min.	°C	3									
		Max.	°C	90.0									
	Heating	Min.	°C	3.00									
		Max.	°C	90.000									

2-3 Electrical Specifications				FWA01A5 FV1B	FWA02A5 FV1B	FWA03A5 FV1B	FWA04A5 FV1B	FWA05A5 FV1B	FWA06A5 FV1B	FWA07A5 FV1B	FWA08A5 FV1B	FWA10A5 FV1B
Power supply	Type			220-240 / 1 / 50								
	Phase			1~								
	Frequency		Hz	50								
	Voltage		V	220-240								

## 2 Specifications

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2-3 Electrical Specifications			FWA01A5 FV1B	FWA02A5 FV1B	FWA03A5 FV1B	FWA04A5 FV1B	FWA05A5 FV1B	FWA06A5 FV1B	FWA07A5 FV1B	FWA08A5 FV1B	FWA10A5 FV1B
Current input	Low	A	0.17	0.18	0.22		0.29	0.51	0.73		0.96
	Medium	A	0.17	0.22	0.27		0.34	0.56	0.81	0.82	1.05
	High	A	0.18	0.26	0.32	0.33	0.46	0.65	0.90	0.94	1.20
	Super high	A	0.19	0.26	0.32	0.33	0.47	0.68	0.91	0.96	1.21
Required wire section		mm <sup>2</sup>	1.0								
Required fuses		A	4								

2-4 Electrical Specifications			FWA01A5 TV1B	FWA02A5 TV1B	FWA03A5 TV1B	FWA04A5 TV1B	FWA05A5 TV1B	FWA06A5 TV1B	FWA07A5 TV1B	FWA08A5 TV1B	FWA10A5 TV1B
Fan motor			-								
Power supply	Type	220-240 / 1 / 50									
	Phase	1~									
	Frequency	Hz	50								
	Voltage	V	220-240								
Current input	Low	A	0.16	0.18	0.22	0.24	0.29	0.53	0.74	0.75	1.00
	Medium	A	0.18	0.22	0.26	0.28	0.34	0.58	0.81	0.83	1.11
	High	A	0.18	0.26	0.32		0.46	0.70	0.92	0.96	1.26
	Super high	A	0.18	0.26	0.32	0.33	0.48	0.72	0.95	0.97	1.26
Required wire section		mm <sup>2</sup>	1.0								
Required fuses		A	4								



### 3 Nomenclature

#### 3 - 1 Nomenclature

**FWA-AT/AF**  
**Nomenclature**

Product Code					
FWA	02	A5	F	V1B	R

**Options**

- Empty - Left Connection
- R - Right Connection
- T - 2 Pipe Model
- F - 4 Pipe Model
- Capacity information

**Main Parts**

# 4 Dimensional drawings

## 4 - 1 Dimensional Drawings

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FWA-AT/AF

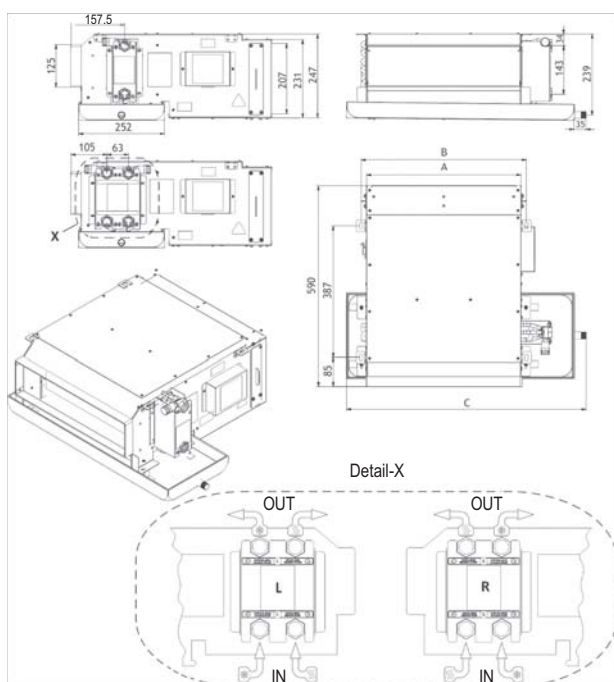
### DIMENSIONS OF UNITS

A

Model	Dimensions					
	A (mm)	B (mm)	C (mm)	Water Inlet	Water Outlet	Drain Pan Outlet
FWA01A5	454	486	705	G 3/4"	G 3/4"	R 3/4"
FWA02A5	489	521	735	G 3/4"	G 3/4"	R 3/4"
FWA03A5	629	661	875	G 3/4"	G 3/4"	R 3/4"
FWA04A5	759	791	1005	G 3/4"	G 3/4"	R 3/4"
FWA05A5	759	791	1005	G 3/4"	G 3/4"	R 3/4"
FWA06A5	959	991	1205	G 3/4"	G 3/4"	R 3/4"
FWA07A5	1154	1186	1400	G 3/4"	G 3/4"	R 3/4"
FWA08A5	1309	1341	1555	G 3/4"	G 3/4"	R 3/4"
FWA10A5	1569	1601	1815	G 3/4"	G 3/4"	R 3/4"

B

Model	Unit				Packed unit			
	Height (mm)	Width (mm)	Depth (mm)	Weight (Kg)	Height (mm)	Width (mm)	Depth (mm)	Weight (Kg)
FWA01A5TV1B(R)	253	590	705	17	260	605	720	19
FWA02A5TV1B(R)	253	590	735	18	260	605	750	20
FWA03A5TV1B(R)	253	590	875	21	260	605	890	23
FWA04A5TV1B(R)	253	590	1005	24	260	605	1020	27
FWA05A5TV1B(R)	253	590	1005	24	260	605	1020	27
FWA06A5TV1B(R)	253	590	1205	30	260	605	1220	33
FWA07A5TV1B(R)	253	590	1400	40	260	605	1415	43
FWA08A5TV1B(R)	253	590	1555	41	260	605	1570	45
FWA10A5TV1B(R)	253	590	1815	47	260	605	1830	51
FWA01A5FV1B(R)	253	590	705	18	260	605	720	20
FWA02A5FV1B(R)	253	590	735	19	260	605	750	21
FWA03A5FV1B(R)	253	590	875	22	260	605	890	24
FWA04A5FV1B(R)	253	590	1005	26	260	605	1020	28
FWA05A5FV1B(R)	253	590	1005	26	260	605	1020	28
FWA06A5FV1B(R)	253	590	1205	31	260	605	1220	34
FWA07A5FV1B(R)	253	590	1400	42	260	605	1415	45
FWA08A5FV1B(R)	253	590	1555	43	260	605	1570	47
FWA10A5FV1B(R)	253	590	1815	50	260	605	1830	54



Rev.00\_1

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# 5 Wiring diagrams

## 5 - 1 Wiring Diagrams - Single Phase

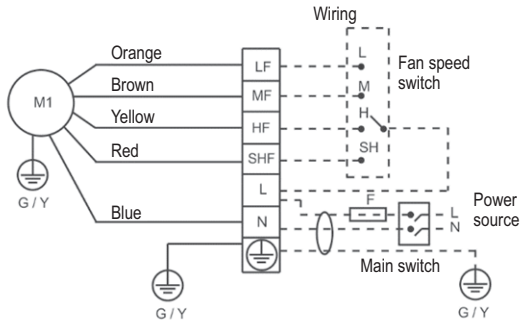
FWA-AT/AF

### WIRING DIAGRAMS OF UNIT

A \*Wiring diagram for FWA01, FWA02, FWA03, FWA04, FWA05, FWA06 models.

FWA (01 - 02 - 03 - 04 - 05 - 06) A5(AT/AF)-V1

Electrical circuit diagram



4PW90704-1

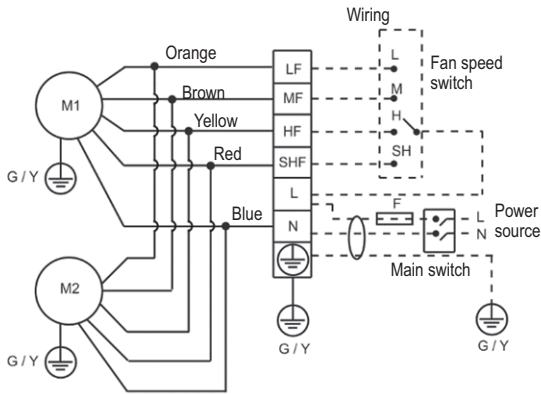
### NOTES

- = Field wiring
- M1,M2 = Fan motor
- G/Y = Green/Yellow
- F = Fuse
- LF = Low speed
- MF = Medium speed
- HF = High speed
- SHP = Super High speed

B \*Wiring diagram for FWA07, FWA08, FWA10 models.

FWA (07 - 08 - 10) A5(AT/AF)-V1

Electrical circuit diagram



4PW90705-1

### NOTES

- = Field wiring
- M1,M2 = Fan motor
- G/Y = Yellow
- F = Fuse
- LF = Low speed
- MF = Medium speed
- HF = High speed
- SHP = Super High speed

# 6 Sound data

## 6 - 1 Sound Level Data

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### FWA-AT/AF

#### 2 Pipe Models Sound Levels

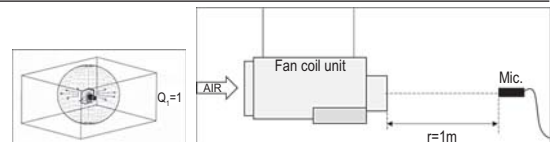
Model	Freq [Hz]	[dB] (1/1 octave)									NR	NC	Lp dB(A)	Lw dB(A)
		31.5	63	125	250	500	1000	2000	4000	8000				
FWA01AT	High (4)	49.88	42.85	34.69	33.94	32.50	30.06	27.45	21.78	19.84	30	28	35.0	46.0
	Med (3)	49.29	43.94	33.53	32.61	30.26	27.85	24.90	20.00	19.13	28	26	33.0	44.0
	Low (2)	49.59	42.92	31.02	29.03	26.08	22.85	19.65	17.69	18.44	26	22	29.0	40.0
	SLOW (1)	47.68	40.21	28.36	25.57	21.88	18.95	16.90	15.95	18.27	26	22	26.0	37.0
FWA02AT	High (4)	52.36	46.64	38.06	40.63	37.07	35.85	34.30	28.99	20.61	37	35	40.9	51.9
	Med (3)	52.07	45.74	37.24	39.69	36.35	35.11	33.28	27.69	20.16	36	34	40.0	50.9
	Low (2)	49.20	40.98	31.55	31.03	28.75	26.73	22.26	17.77	18.33	27	24	31.3	42.3
	SLOW (1)	49.76	42.15	28.16	23.79	20.09	17.78	15.39	15.07	17.69	25	21	25.0	36.0
FWA03AT	High (4)	53.07	44.10	41.09	44.78	40.29	38.91	37.99	34.31	26.29	41	38	44.6	55.5
	Med (3)	52.19	44.07	40.42	43.31	39.18	37.72	36.36	32.36	24.12	39	37	43.1	54.1
	Low (2)	53.37	44.73	34.45	35.17	31.61	29.12	25.82	20.11	18.90	29	27	34.4	45.3
	SLOW (1)	48.26	44.99	29.50	27.57	23.15	19.81	16.93	15.98	18.41	26	22	27.1	38.0
FWA04AT	High (4)	51.18	44.12	38.94	40.13	38.68	37.08	35.77	29.70	20.05	39	36	42.0	53.0
	Med (3)	51.97	45.73	37.73	38.99	37.78	36.30	34.60	28.20	18.87	38	35	41.0	52.0
	Low (2)	53.48	42.82	33.35	33.45	32.56	30.97	28.93	19.96	16.32	31	29	35.0	46.0
	SLOW (1)	52.40	44.19	30.49	28.68	26.65	23.15	19.45	16.80	15.81	23	21	29.0	40.0
FWA05AT	High (4)	53.19	44.41	44.34	45.36	43.51	42.93	42.59	38.40	28.54	45	43	48.2	59.2
	Med (3)	53.84	46.77	43.68	44.69	42.74	41.97	41.34	37.00	26.95	44	42	47.2	58.2
	Low (2)	52.24	45.45	36.60	37.32	35.97	34.55	32.18	25.13	18.81	35	33	39.0	50.0
	SLOW (1)	51.71	44.56	33.60	32.52	31.86	29.38	25.10	19.28	18.58	29	27	33.9	44.9
FWA06AT	High (4)	53.63	47.25	47.58	49.90	46.16	45.16	45.66	43.17	34.75	48	46	51.5	62.5
	Med (3)	53.38	47.12	45.59	48.30	44.64	43.78	44.32	41.25	32.76	47	45	50.0	61.0
	Low (2)	53.11	46.18	38.07	39.77	36.79	35.07	33.72	27.34	20.28	37	34	40.1	51.1
	SLOW (1)	50.83	41.73	37.05	35.38	32.73	30.57	27.78	21.22	18.70	31	29	35.5	46.5
FWA07AT	High (4)	53.56	47.55	47.97	48.57	46.27	46.21	46.34	43.73	35.13	49	47	52.0	63.0
	Med (3)	50.52	46.03	46.60	47.57	45.74	45.28	45.43	42.23	33.16	48	46	51.0	62.0
	Low (2)	48.16	40.85	39.54	40.76	37.98	37.10	35.94	30.17	21.07	39	36	42.0	53.0
	SLOW (1)	47.65	42.50	36.98	38.79	35.53	34.06	31.31	23.92	18.76	34	33	38.5	49.5
FWA08AT	High (4)	53.24	45.88	48.17	48.38	45.60	44.47	45.53	42.89	33.75	48	46	51.0	62.0
	Med (3)	53.28	50.07	45.60	47.02	43.61	42.57	43.58	40.33	30.77	46	44	49.0	60.0
	Low (2)	55.93	54.26	42.75	40.13	37.27	35.41	34.86	28.73	19.58	38	35	41.0	52.0
	SLOW (1)	52.52	45.76	42.05	34.95	33.44	31.03	28.39	20.83	16.29	31	30	36.0	47.0
FWA09AT	High (4)	53.23	49.25	49.93	51.16	48.61	47.74	48.05	46.36	37.30	51	49	54.0	65.0
	Med (3)	51.78	46.37	48.49	50.22	47.82	46.68	47.16	45.15	35.78	50	48	53.0	64.0
	Low (2)	52.88	45.36	43.78	43.53	41.19	39.19	38.60	33.49	24.09	41	39	44.7	55.7
	SLOW (1)	52.20	43.38	42.03	40.15	38.32	35.71	34.27	28.10	20.67	37	35	41.0	52.0

#### 4 Pipe Models Sound Levels

Model	Freq [Hz]	[dB] (1/1 octave)									NR	NC	Lp dB(A)	Lw dB(A)
		31.5	63	125	250	500	1000	2000	4000	8000				
FWA01AF	High (4)	53.49	44.89	33.19	34.56	32.73	29.85	27.21	21.03	16.82	30	28	35.0	46.0
	Med (3)	53.67	46.62	32.34	32.97	30.61	27.88	24.64	18.64	16.17	28	25	33.0	44.0
	Low (2)	53.18	44.55	29.53	29.46	26.57	22.81	19.41	15.91	15.20	23	20	29.0	40.0
	SLOW (1)	53.94	47.08	30.00	26.14	22.29	19.25	16.77	15.26	15.37	23	19	27.0	38.0
FWA02AF	High (4)	52.36	46.64	38.06	40.63	37.07	35.85	34.30	28.99	20.61	37	35	40.9	51.9
	Med (3)	52.07	45.74	37.24	39.69	36.35	35.11	33.28	27.69	20.16	36	34	40.0	50.9
	Low (2)	49.20	40.98	31.55	31.03	28.75	26.73	22.26	17.77	18.33	27	24	31.3	42.3
	SLOW (1)	54.27	44.74	27.67	25.16	21.82	20.16	15.63	14.04	14.15	22	18	26.0	37.0
FWA03AF	High (4)	57.41	44.49	42.83	44.50	41.20	38.17	37.74	34.74	26.23	41	38	44.6	55.5
	Med (3)	51.68	43.15	41.14	43.48	39.89	36.75	36.37	32.84	23.78	39	37	43.1	54.1
	Low (2)	50.72	42.39	35.09	35.46	32.01	28.62	26.42	20.15	15.80	29	27	34.4	45.3
	SLOW (1)	51.48	43.54	30.35	27.38	23.97	20.65	17.13	14.67	15.00	22	18	27.1	38.0
FWA04AF	High (4)	54.73	46.25	39.05	39.95	39.16	37.11	35.42	29.46	19.65	38	36	42.0	53.0
	Med (3)	54.01	46.57	38.30	39.32	38.08	36.48	34.07	27.81	18.54	37	35	41.0	52.0
	Low (2)	52.45	45.78	33.55	34.38	33.30	30.42	26.30	19.33	16.36	30	29	35.0	46.0
	SLOW (1)	52.88	46.42	29.58	28.62	26.78	23.05	18.67	15.94	16.11	23	21	29.0	40.0
FWA05AF	High (4)	51.16	43.93	45.09	45.78	44.01	42.89	42.20	38.50	27.74	45	43	48.2	59.2
	Med (3)	51.47	42.66	43.11	45.05	42.89	41.83	41.15	37.34	26.60	44	42	47.2	58.2
	Low (2)	50.04	43.43	37.38	37.65	36.06	34.35	32.08	25.98	17.02	35	33	39.0	50.0
	SLOW (1)	53.83	44.10	32.85	32.64	31.70	29.72	25.25	18.75	15.49	30	28	33.9	44.9
FWA06AF	High (4)	54.47	47.60	47.21	50.55	48.92	45.28	45.27	43.34	35.76	48	46	52.0	63.0
	Med (3)	55.46	47.07	45.43	50.44	45.39	42.80	43.62	41.35	32.65	46	44	50.0	61.0
	Low (2)	54.84	46.13	38.50	42.62	37.50	34.93	34.33	29.39	19.54	37	35	41.0	52.0
	SLOW (1)	50.21	43.11	35.44	40.48	34.08	30.96	29.03	23.02	15.79	32	30	37.0	48.0
FWA07AF	High (4)	53.10	45.34	49.11	48.84	46.86	46.08	46.18	43.57	34.59	49	47	52.0	63.0
	Med (3)	52.48	44.17	48.08	48.08	45.89	45.26	45.19	42.23	33.20	48	46	51.0	62.0
	Low (2)	51.91	43.65	41.33	42.01	39.12	37.70	36.86	31.18	21.01	40	37	43.0	54.0
	SLOW (1)	50.29	43.66	40.27	38.87	35.36	33.67	31.55	24.52	16.33	35	32	38.5	49.5
FWA08AF	High (4)	56.17	42.71	47.91	48.87	45.61	44.47	45.49	42.57	32.84	48	46	51.0	62.0
	Med (3)	48.05	42.46	45.97	47.60	44.86	43.78	44.35	41.45	31.71	47	45	50.0	61.0
	Low (2)	45.94	41.33	40.97	41.28	38.68	36.48	35.77	30.11	20.73	39	36	42.0	53.0
	SLOW (1)	52.43	43.32	39.06	36.51	34.51	31.73	29.98	22.64	16.42	33	30	37.0	48.0
FWA09AF	High (4)	53.15	47.03	50.39	51.51	49.41	47.73	47.86	46.07	36.60	51	48	54.0	65.0
	Med (3)	53.66	47.54	49.83	50.45	48.83	46.79	46.78	44.78	35.07	50	47	53.0	64.0
	Low (2)	51.88	45.46	45.37	43.72	41.80	39.38	38.50	33.89	24.55	41	39	45.0	56.0
	SLOW (1)	52.85	47.06	43.98	42.48	39.57	36.62	34.67	28.72	20.84	38	35	42.0	53.0

### NOTES

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



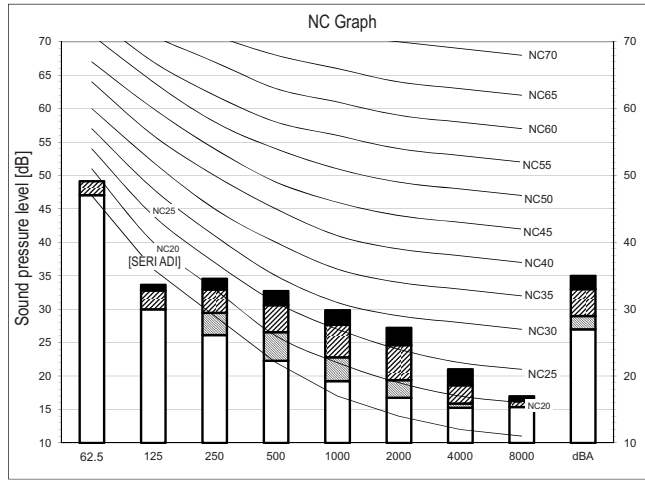
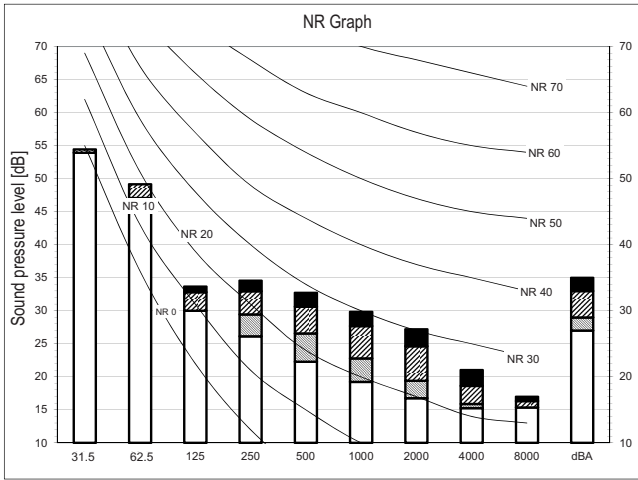
Rev.00\_1

# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

FWA01AF

FWA01AF Sound Curves



FWA01AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	53.49	53.67	53.18	53.94
63	44.89	46.62	44.55	47.08
125	33.19	32.34	29.53	30.00
250	34.56	32.97	29.46	26.14
500	32.73	30.61	26.57	22.29
1000	29.85	27.68	22.81	19.25
2000	27.21	24.64	19.41	16.77
4000	21.03	18.64	15.91	15.26
8000	16.82	16.17	15.20	15.37
NR	30	28	23	23
NC	28	25	20	19
Lp dB(A)	35.00	33.00	29.00	27.00
Lw dB(A)	45.99	43.99	39.99	37.99

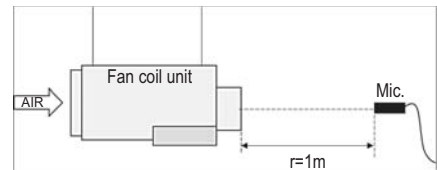
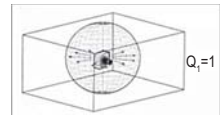
- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



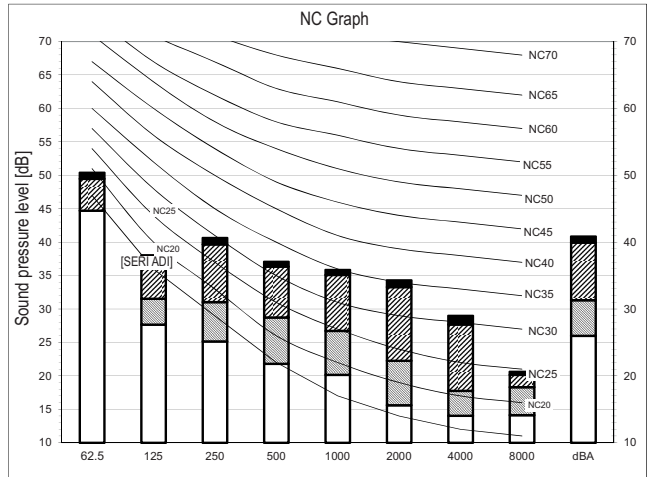
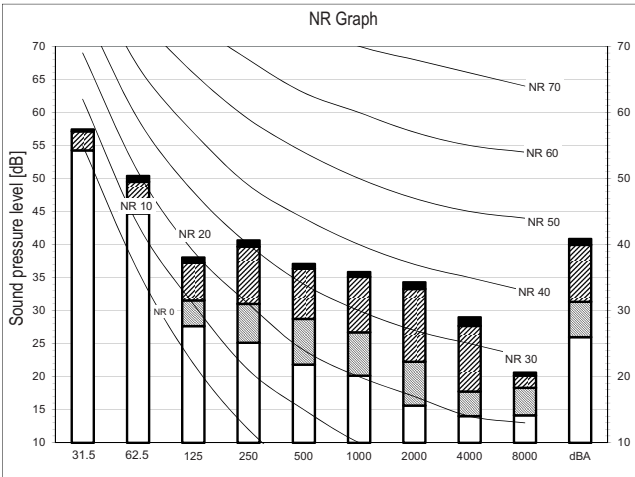
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA02AF

FWA02AF Sound Curves

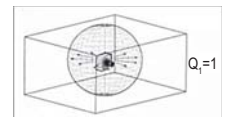


FWA02AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	52.36	52.07	49.20	54.27
63	46.64	45.74	40.98	44.74
125	38.06	37.24	31.55	27.67
250	40.63	39.69	31.03	25.16
500	37.07	36.35	28.75	21.82
1000	35.85	35.11	26.73	20.16
2000	34.30	33.28	22.26	15.63
4000	28.99	27.69	17.77	14.04
8000	20.61	20.16	18.33	14.15
NR	37	36	27	22
NC	35	34	24	18
Lp dB(A)	40.86	39.95	31.33	26.00
Lw dB(A)	51.85	50.94	42.33	36.99

- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLOW-tap

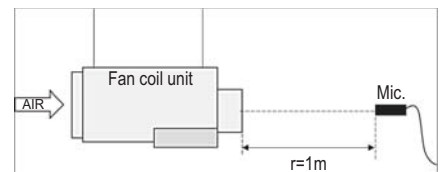
**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)

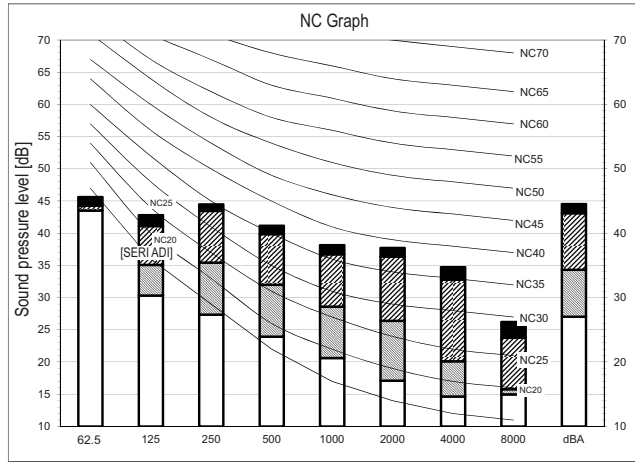
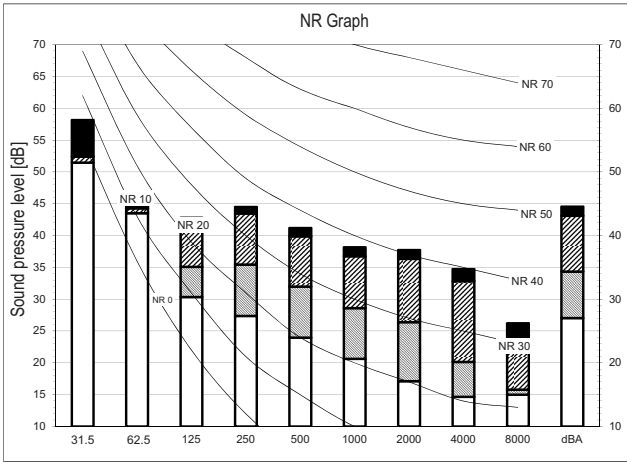


# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

FWA03AF

FWA03AF Sound Curves



FWA03AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	57.41	51.68	50.72	51.48
63	44.49	43.15	42.39	43.54
125	42.83	41.14	35.09	30.35
250	44.50	43.48	35.46	27.38
500	41.20	39.89	32.01	23.97
1000	38.17	36.75	28.62	20.65
2000	37.74	36.37	26.42	17.13
4000	34.74	32.84	20.15	14.67
8000	26.23	23.78	15.80	15.00
NR	41	39	29	22
NC	38	37	27	18
Lp dB(A)	44.56	43.12	34.35	27.05
Lw dB(A)	55.55	54.11	45.35	38.04

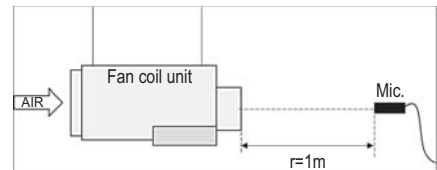
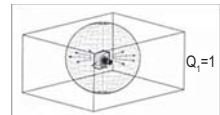
High-tap  
 Med-tap  
 Low-tap  
 SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



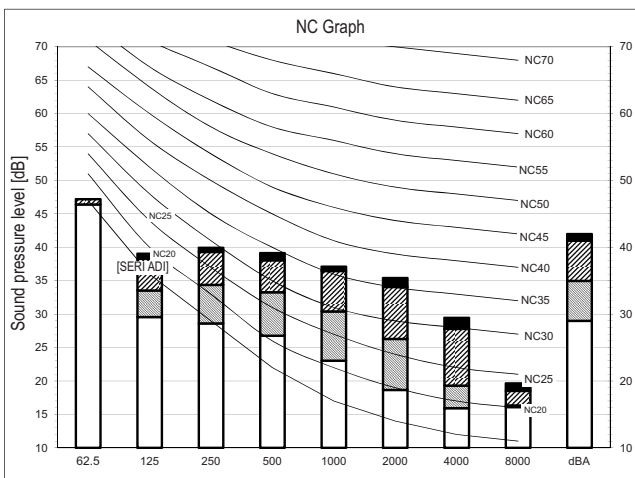
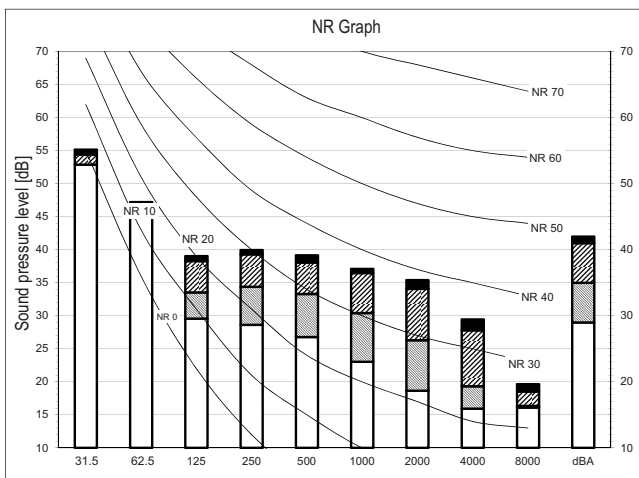
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA04AF

FWA04AF Sound Curves



FWA04AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	54.73	54.01	52.45	52.88
63	46.25	46.57	45.78	46.42
125	39.05	38.30	33.55	29.58
250	39.95	39.32	34.38	28.62
500	39.16	38.08	33.30	26.78
1000	37.11	36.48	30.42	23.05
2000	35.42	34.07	26.30	18.67
4000	29.46	27.81	19.33	15.94
8000	19.65	18.54	16.36	16.11
NR	38	37	30	23
NC	36	35	29	21
Lp dB(A)	42.00	41.00	35.00	29.00
Lw dB(A)	52.99	51.99	45.99	39.99

High-tap  
 Med-tap  
 Low-tap  
 SLOW-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)

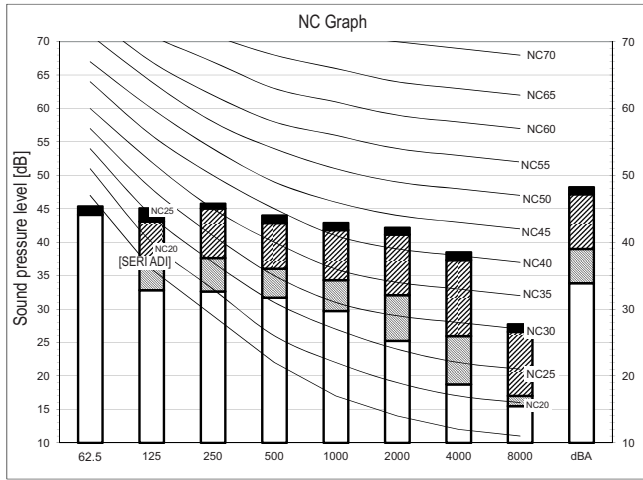
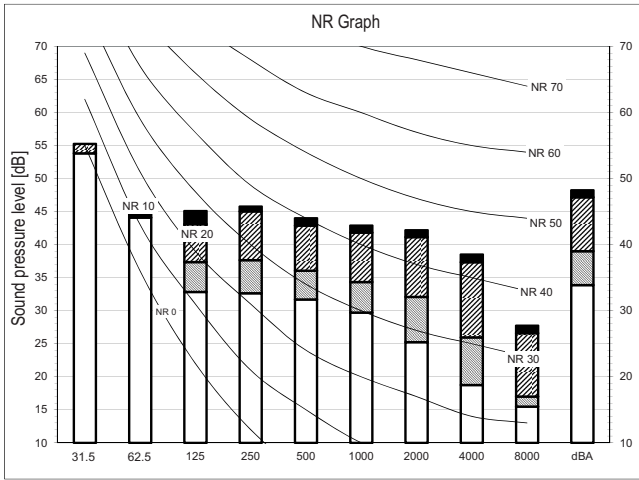


# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

FWA05AF

FWA05AF Sound Curves



FWA05AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	51.16	51.47	50.04	53.83
63	43.93	42.66	43.43	44.10
125	45.09	43.11	37.38	32.85
250	45.78	45.05	37.65	32.64
500	44.01	42.89	36.06	31.70
1000	42.89	41.83	34.35	29.72
2000	42.20	41.15	32.08	25.25
4000	38.50	37.34	25.98	18.75
8000	27.74	26.60	17.02	15.49
NR	45	44	35	30
NC	43	42	33	28
Lp dB(A)	48.24	47.18	39.01	33.88
Lw dB(A)	59.23	58.17	50.00	44.87

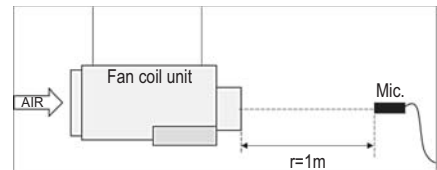
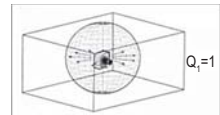
- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



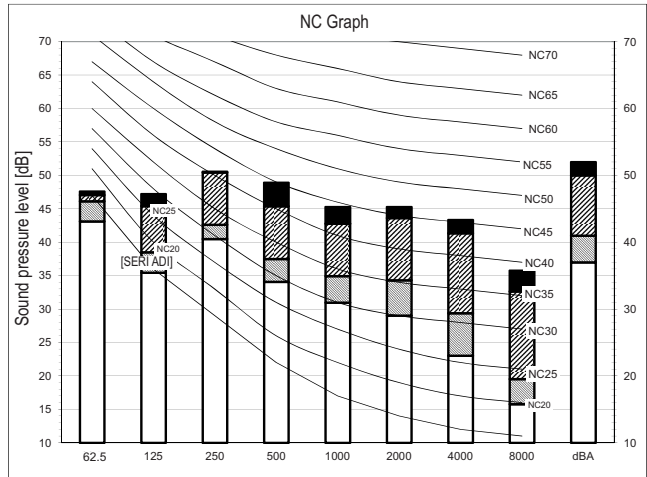
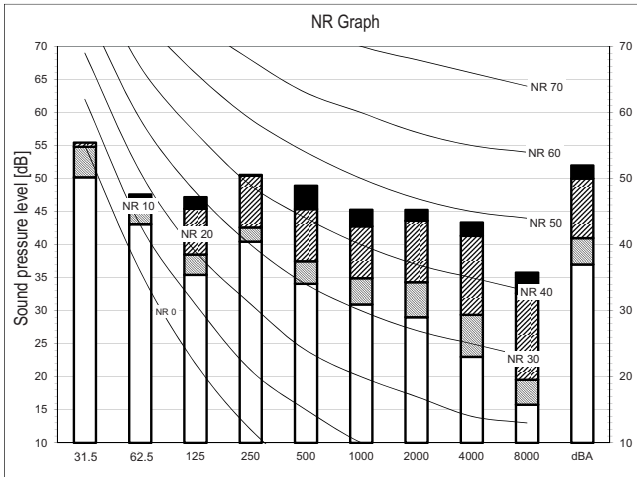
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA06AF

FWA06AF Sound Curves



FWA06AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	54.47	55.46	54.84	50.21
63	47.60	47.07	46.13	43.11
125	47.21	45.43	38.50	35.44
250	50.55	50.44	42.62	40.48
500	48.92	45.39	37.50	34.08
1000	45.28	42.80	34.93	30.96
2000	45.27	43.62	34.33	29.03
4000	43.34	41.35	29.39	23.02
8000	35.76	32.65	19.54	15.79
NR	48	46	37	32
NC	46	44	35	30
Lp dB(A)	52.00	50.00	41.00	37.00
Lw dB(A)	62.99	60.99	51.99	47.99

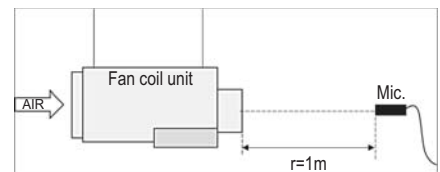
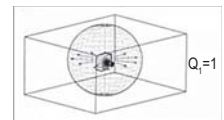
High-tap  
 Med-tap  
 Low-tap  
 SLOW-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)

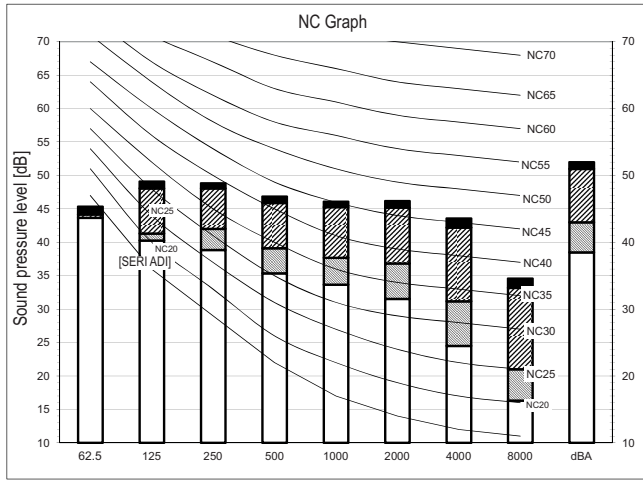
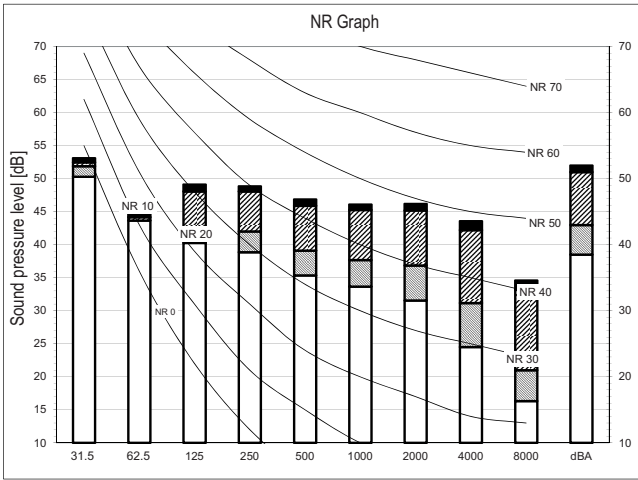


# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

FWA07AF

FWA07AF Sound Curves



FWA07AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	53.10	52.48	51.91	50.29
63	45.34	44.17	43.65	43.66
125	49.11	48.08	41.33	40.27
250	48.84	48.08	42.01	38.87
500	46.86	45.89	39.12	35.36
1000	46.08	45.26	37.70	33.67
2000	46.18	45.19	36.86	31.55
4000	43.57	42.23	31.18	24.52
8000	34.59	33.20	21.01	16.33
NR	49	48	40	35
NC	47	46	37	32
Lp dB(A)	52.00	51.00	43.00	38.51
Lw dB(A)	62.99	61.99	53.99	49.50

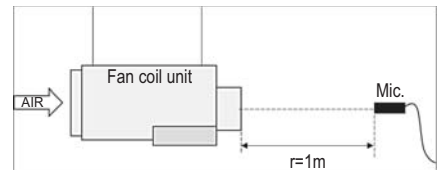
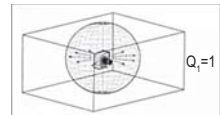
- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



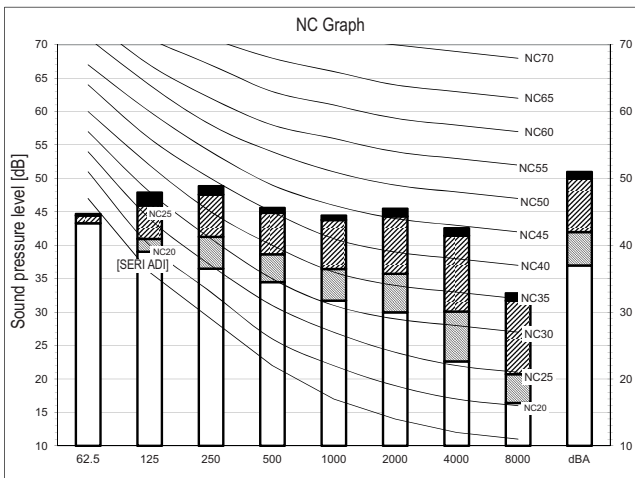
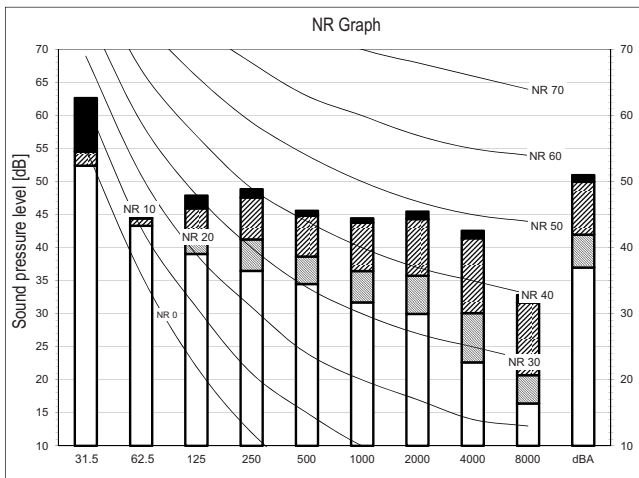
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA08AF

FWA08AF Sound Curves

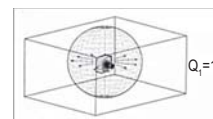


FWA08AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	56.17	48.05	45.94	52.43
63	42.71	42.46	41.33	43.32
125	47.91	45.97	40.97	39.06
250	48.87	47.60	41.28	36.51
500	45.61	44.86	38.68	34.51
1000	44.47	43.78	36.48	31.73
2000	45.49	44.35	35.77	29.98
4000	42.57	41.45	30.11	22.64
8000	32.84	31.71	20.73	16.42
NR	48	47	39	33
NC	46	45	36	30
Lp dB(A)	51.00	50.00	42.00	37.00
Lw dB(A)	61.99	60.99	52.99	47.99

High-tap  
 Med-tap  
 Low-tap  
 SLow-tap

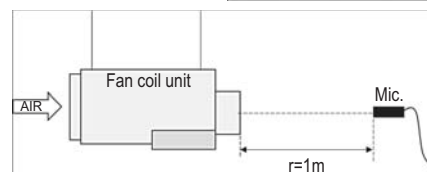
**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)

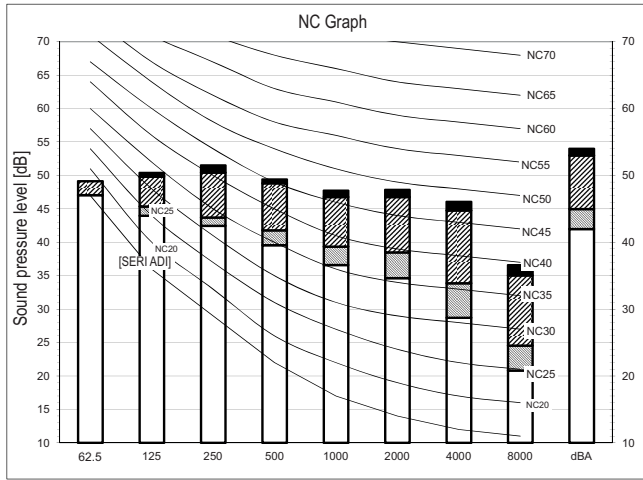
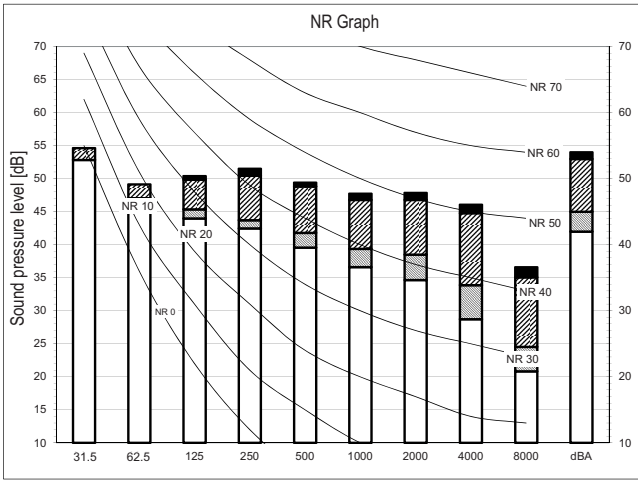


# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

### FWA10AF

FWA10AF Sound Curves



FWA10AF				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	53.15	53.66	51.88	52.85
63	47.03	47.54	45.46	47.06
125	50.39	49.83	45.37	43.98
250	51.51	50.45	43.72	42.48
500	49.41	48.83	41.80	39.57
1000	47.73	46.79	39.38	36.62
2000	47.86	46.78	38.50	34.67
4000	46.07	44.78	33.89	28.72
8000	36.60	35.07	24.55	20.84
NR	51	50	41	38
NC	48	47	39	35
Lp dB(A)	54.00	53.00	45.00	42.00
Lw dB(A)	64.99	63.99	55.99	52.99

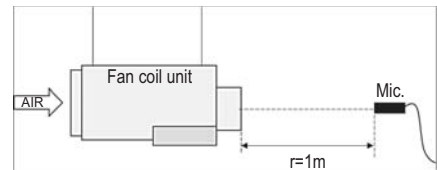
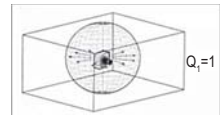
- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

### NOTES

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

### References for NR and NC values.

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



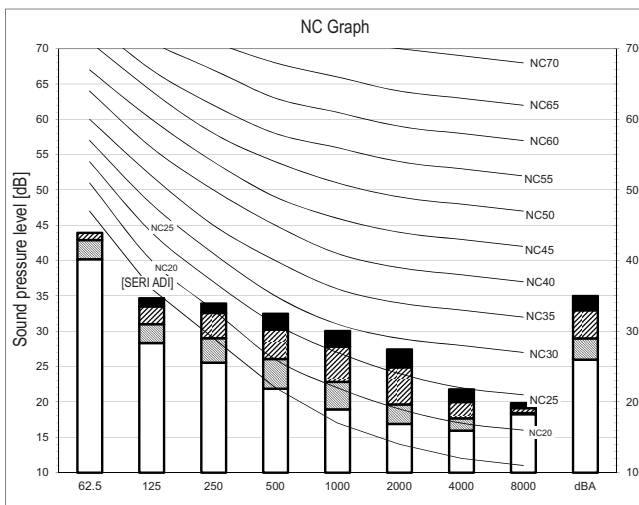
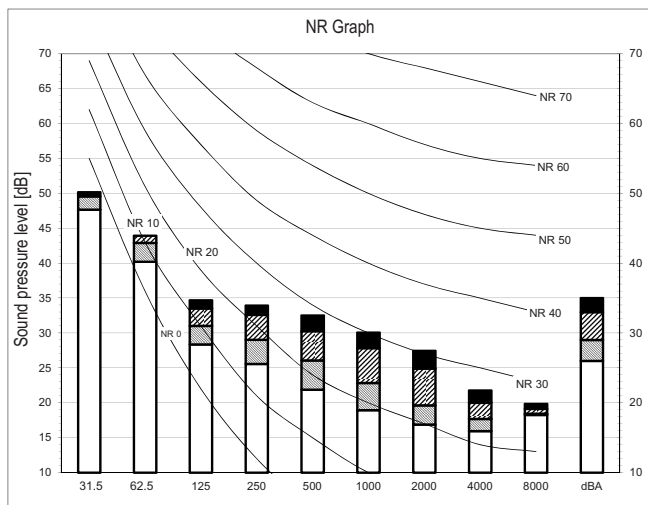
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA01AT

FWA01AT Sound Curves

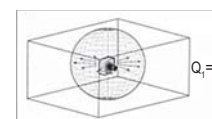


FWA01AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	49.88	49.29	49.59	47.68
63	42.85	43.94	42.92	40.21
125	34.69	33.53	31.02	28.36
250	33.94	32.61	29.03	25.57
500	32.50	30.26	26.08	21.88
1000	30.06	27.85	22.85	18.95
2000	27.45	24.90	19.65	16.90
4000	21.78	20.00	17.69	15.95
8000	19.84	19.13	18.44	18.27
NR	30	28	26	26
NC	28	26	22	22
Lp dB(A)	35.00	33.00	29.00	26.00
Lw dB(A)	45.99	43.99	39.99	36.99

- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

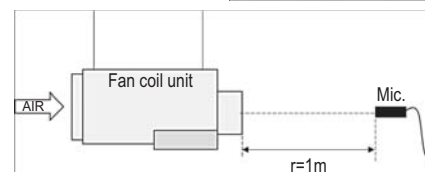
**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)

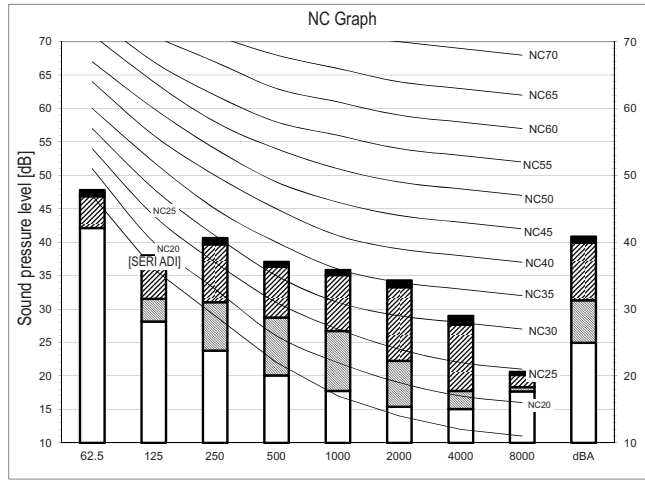
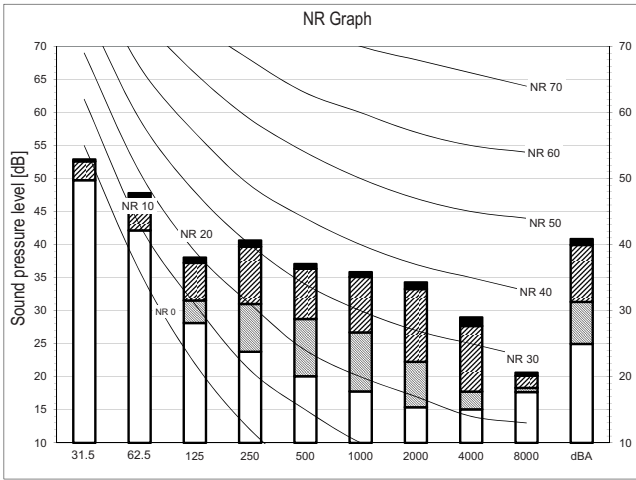


# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

FWA02AT

FWA02AT Sound Curves



FWA02AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	52.36	52.07	49.20	49.76
63	46.64	45.74	40.98	42.15
125	38.06	37.24	31.55	28.16
250	40.63	39.69	31.03	23.79
500	37.07	36.35	28.75	20.09
1000	35.85	35.11	26.73	17.78
2000	34.30	33.28	22.26	15.39
4000	28.99	27.69	17.77	15.07
8000	20.61	20.16	18.33	17.69
NR	37	36	27	25
NC	35	34	24	21
Lp dB(A)	40.86	39.95	31.33	24.98
Lw dB(A)	51.85	50.94	42.33	35.97

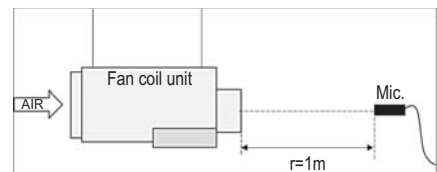
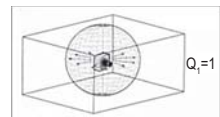
High-tap  
 Med-tap  
 Low-tap  
 SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



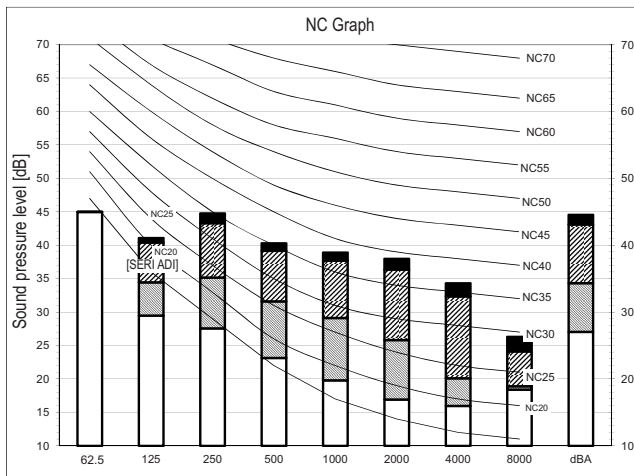
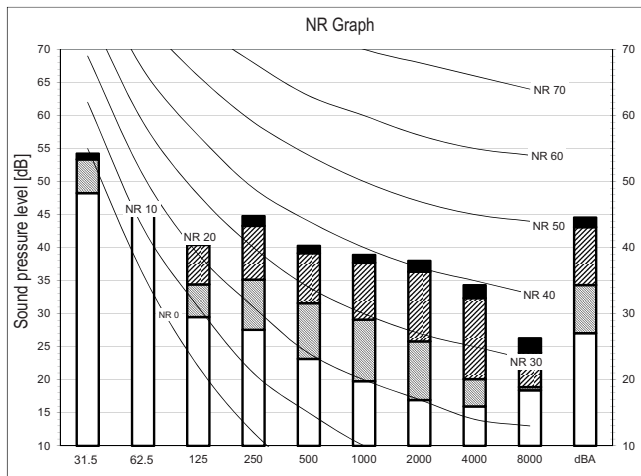
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA03AT

FWA03AT Sound Curves

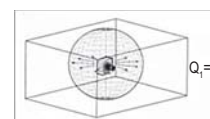


FWA03AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	53.07	52.19	53.37	48.26
63	44.10	44.07	44.73	44.99
125	41.09	40.42	34.45	29.50
250	44.78	43.31	35.17	27.57
500	40.29	39.18	31.61	23.15
1000	38.91	37.72	29.12	19.81
2000	37.99	36.36	25.82	16.93
4000	34.31	32.36	20.11	15.98
8000	26.29	24.12	18.90	18.41
NR	41	39	29	26
NC	38	37	27	22
Lp dB(A)	44.56	43.12	34.35	27.05
Lw dB(A)	55.55	54.11	45.35	38.04

- High-tap
- ▨ Med-tap
- ▒ Low-tap
- SLOW-tap

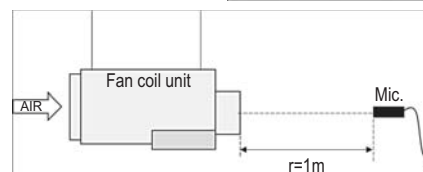
**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



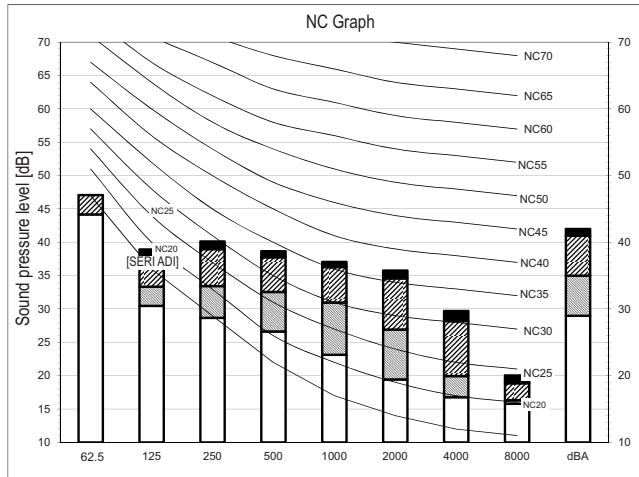
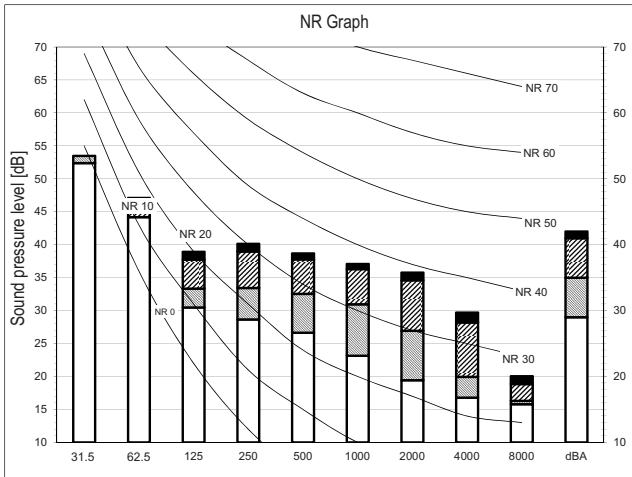


# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

FWA04AT

FWA04AT Sound Curves



FWA04AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	51.18	51.97	53.48	52.40
63	44.12	45.73	42.82	44.19
125	38.94	37.73	33.35	30.49
250	40.13	38.99	33.45	28.68
500	38.68	37.78	32.56	26.65
1000	37.08	36.30	30.97	23.15
2000	35.77	34.60	26.93	19.45
4000	29.70	28.20	19.96	16.80
8000	20.05	18.87	16.32	15.81
NR	39	38	31	23
NC	36	35	29	21
Lp dB(A)	42.00	41.00	35.00	29.00
Lw dB(A)	52.99	51.99	45.99	39.99

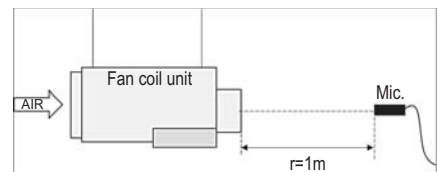
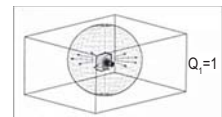
- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



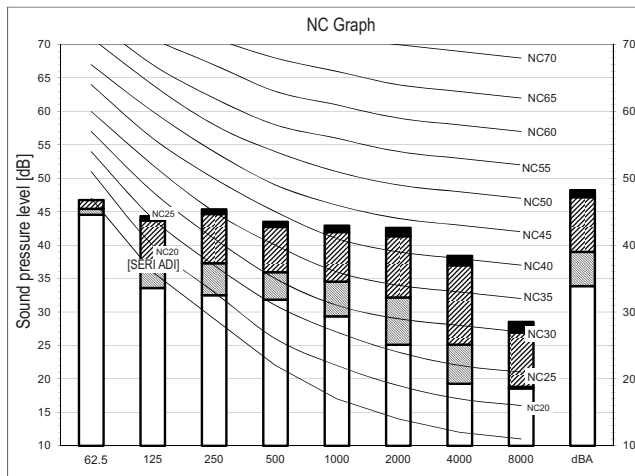
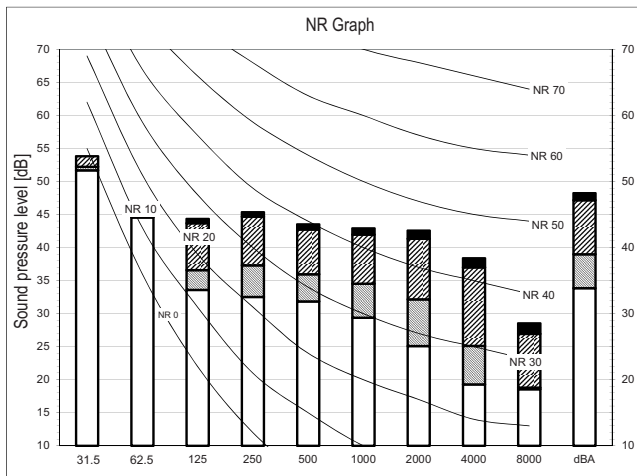
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA05AT

FWA05AT Sound Curves

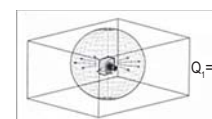


FWA05AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	53.19	53.84	52.24	51.71
63	44.41	46.77	45.45	44.56
125	44.34	43.68	36.60	33.60
250	45.36	44.69	37.32	32.52
500	43.51	42.74	35.97	31.86
1000	42.93	41.97	34.55	29.38
2000	42.59	41.34	32.18	25.10
4000	38.40	37.00	25.13	19.28
8000	28.54	26.95	18.81	18.58
NR	45	44	35	29
NC	43	42	33	27
Lp dB(A)	48.24	47.18	39.01	33.88
Lw dB(A)	59.23	58.17	50.00	44.87

- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

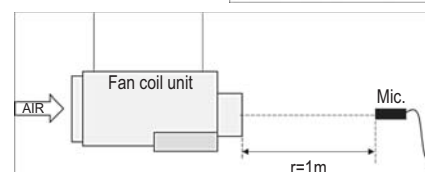
**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)

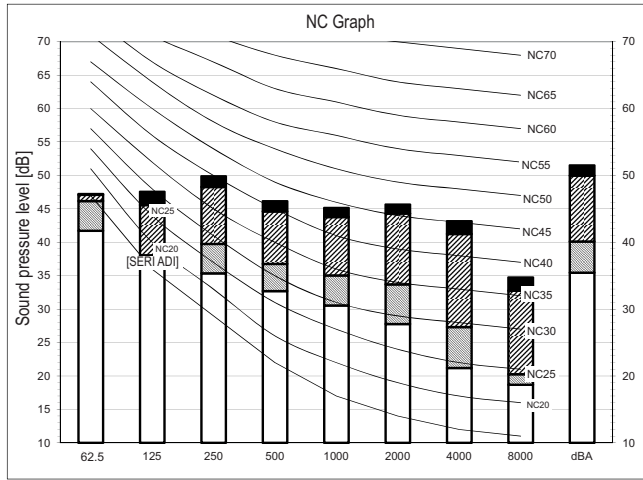
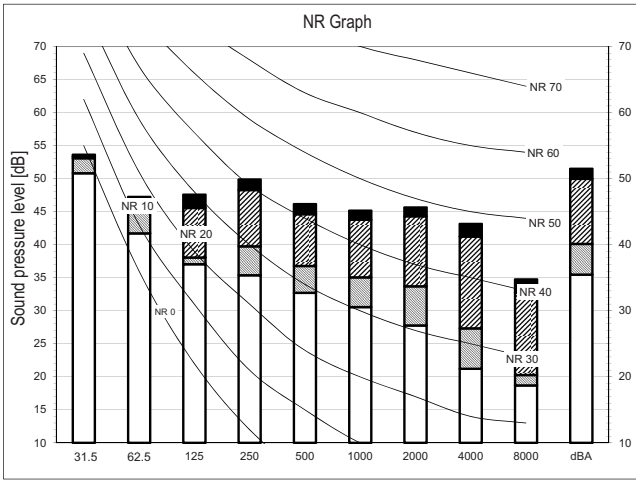


# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

FWA06AT

FWA06AT Sound Curves



FWA06AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	53.63	53.38	53.11	50.83
63	47.25	47.12	46.18	41.73
125	47.58	45.59	38.07	37.05
250	49.90	48.30	39.77	35.38
500	46.16	44.64	36.79	32.73
1000	45.16	43.78	35.07	30.57
2000	45.66	44.32	33.72	27.78
4000	43.17	41.25	27.34	21.22
8000	34.75	32.76	20.28	18.70
NR	48	47	37	31
NC	46	45	34	29
Lp dB(A)	51.51	49.98	40.14	35.48
Lw dB(A)	62.50	60.98	51.13	46.47

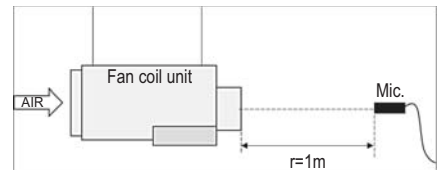
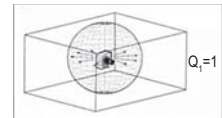
- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



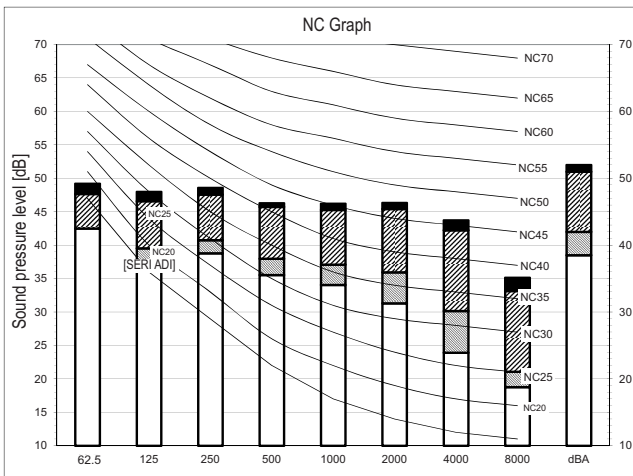
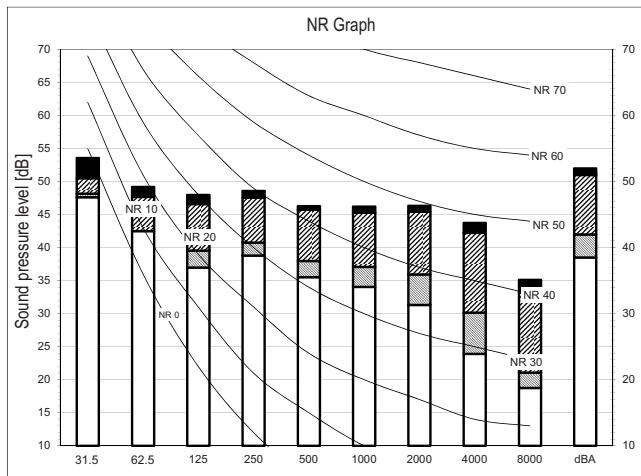
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA07AT

FWA07AT Sound Curves

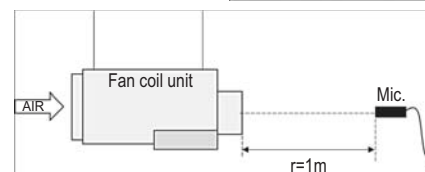
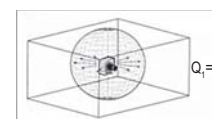


FWA07AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	53.56	50.52	48.16	47.65
63	47.55	46.03	40.85	42.50
125	47.97	46.60	39.54	36.98
250	48.57	47.57	40.76	38.79
500	46.27	45.74	37.98	35.53
1000	46.21	45.28	37.10	34.06
2000	46.34	45.43	35.94	31.31
4000	43.73	42.23	30.17	23.92
8000	35.13	33.16	21.07	18.76
NR	49	48	39	34
NC	47	46	36	33
Lp dB(A)	52.00	51.00	42.00	38.51
Lw dB(A)	62.99	61.99	52.99	49.50

High-tap  
 Med-tap  
 Low-tap  
 SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



**References for NR and NC values.**

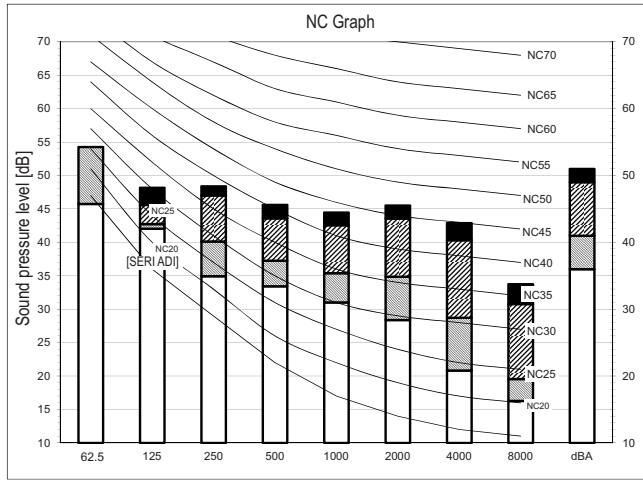
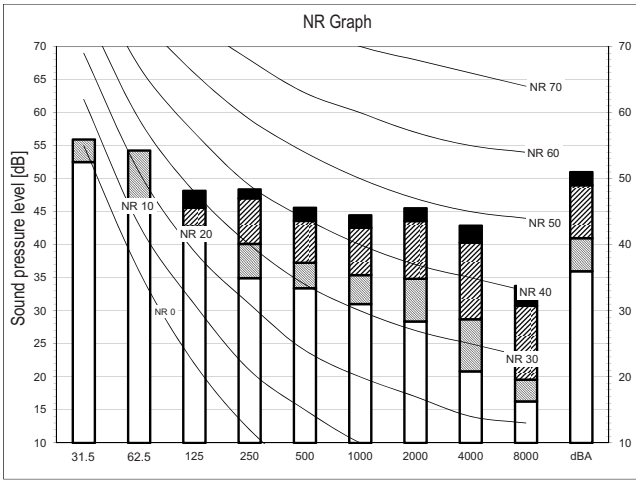
[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)

# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

FWA08AT

FWA08AT Sound Curves



FWA08AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLow (1)
31.5	53.24	53.28	55.93	52.52
63	45.88	50.07	54.26	45.76
125	48.17	45.60	42.75	42.05
250	48.38	47.02	40.13	34.95
500	45.60	43.61	37.27	33.44
1000	44.47	42.57	35.41	31.03
2000	45.53	43.58	34.86	28.39
4000	42.89	40.33	28.73	20.83
8000	33.75	30.77	19.58	16.29
NR	48	46	38	31
NC	46	44	35	30
Lp dB(A)	51.00	49.00	41.00	36.00
Lw dB(A)	61.99	59.99	51.99	46.99

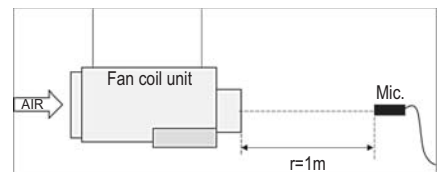
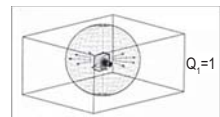
- High-tap
- ▨ Med-tap
- ▩ Low-tap
- SLow-tap

**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745

**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)



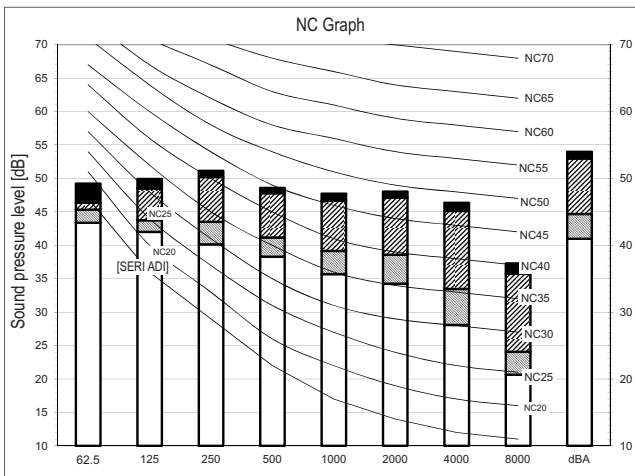
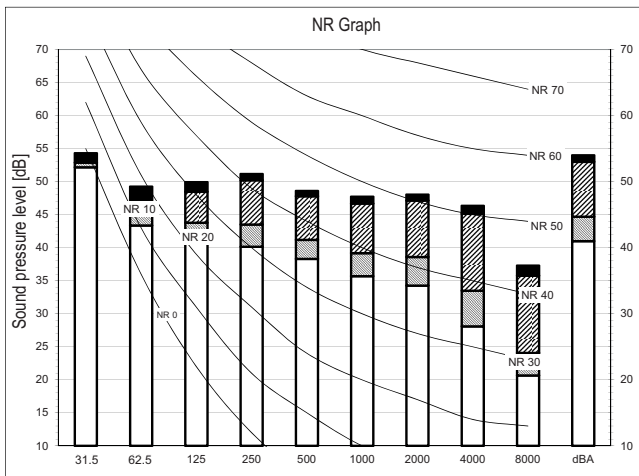
# 6 Sound data

## 6 - 2 Sound Pressure Spectrum

6

FWA10AT

FWA10AT Sound Curves



FWA10AT				
Freq [Hz]	[dB] (1/1 octave)			
	High (4)	Med (3)	Low (2)	SLOW (1)
31.5	53.23	51.78	52.88	52.20
63	49.25	46.37	45.36	43.38
125	49.93	48.49	43.78	42.03
250	51.16	50.22	43.53	40.15
500	48.61	47.82	41.19	38.32
1000	47.74	46.68	39.19	35.71
2000	48.05	47.16	38.60	34.27
4000	46.36	45.15	33.49	28.10
8000	37.30	35.78	24.09	20.67
NR	51	50	41	37
NC	49	48	39	35
Lp dB(A)	54.00	53.00	44.71	41.00
Lw dB(A)	64.99	63.99	55.70	51.99

High-tap  
 Med-tap  
 Low-tap  
 SLOW-tap

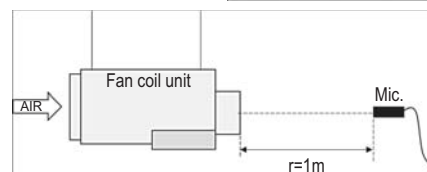
**NOTES**

1. Data is valid at free field condition
2. Data is valid at nominal operation condition
3. dBA = A-weighted sound pressure level. (A-scale according to IEC 651 table IV)
4. Dry heat exchanger
5. 1 Meter distance from air outlet
6. Comply with ISO 3745



**References for NR and NC values.**

[http://www.engineeringtoolbox.com/nc-noise-criterion-d\\_725.html](http://www.engineeringtoolbox.com/nc-noise-criterion-d_725.html)  
[http://www.engineeringtoolbox.com/nr-noise-rating-d\\_60.html](http://www.engineeringtoolbox.com/nr-noise-rating-d_60.html) (NR Value)

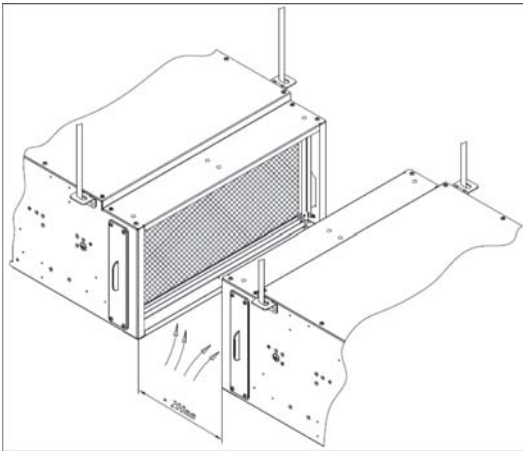


# 7 Installation

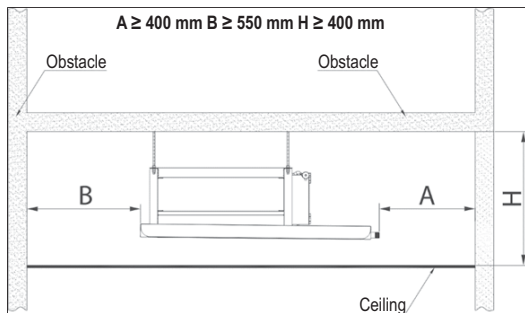
## 7 - 1 Installation Method

FWA-AT/AF

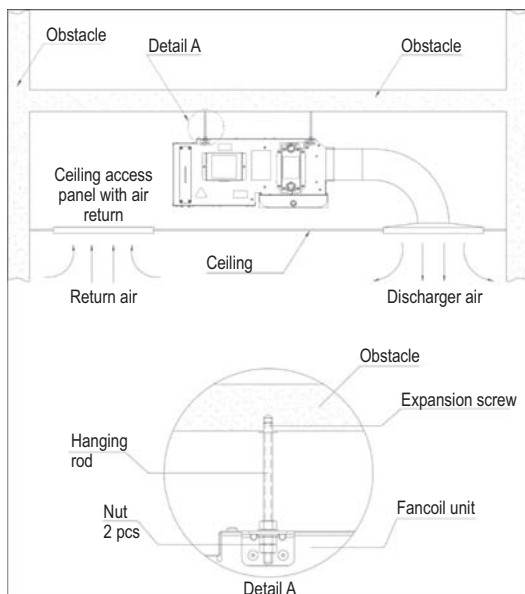
A \*In necessary case of below mounting in field, please consider the minimum distance between units is 200mm (20cm).



B \*In necessary case of below mounting in field, please consider the below dimensions.



C \*Mounting of hanging rod to unit, please use 2 nuts for fixing unit.



# 8 Operation range

## 8 - 1 Operation Range

8

### FWA-AT/AF

#### Operation limits

##### Water Side

Max. Water Pressure		MPa	1.6
Min. Entering Water Temperature	Cooling	°C	3
Max. Entering Water Temperature	Heating		90

##### Room Side

Max. Temperature	Cooling	°C	36
	Heating		30
Min. Temperature	Cooling	°C	16
	Heating		10

##### Power Supply

Voltage		V	220 - 240 (±10%)
Frequency		Hz	50 - 60 (±2)
Required Fuse		A	4

MAXIMUM ALLOWED ESP VALUES FOR MODELS	High Speed (Pa)	Med Speed (Pa)	Low Speed (Pa)
FWA01	60	60	48
FWA02	60	60	60
FWA03	60	60	55
FWA04	60	60	60
FWA05	60	60	60
FWA06	60	60	60
FWA07	60	60	60
FWA08	60	60	60
FWA10	60	60	60



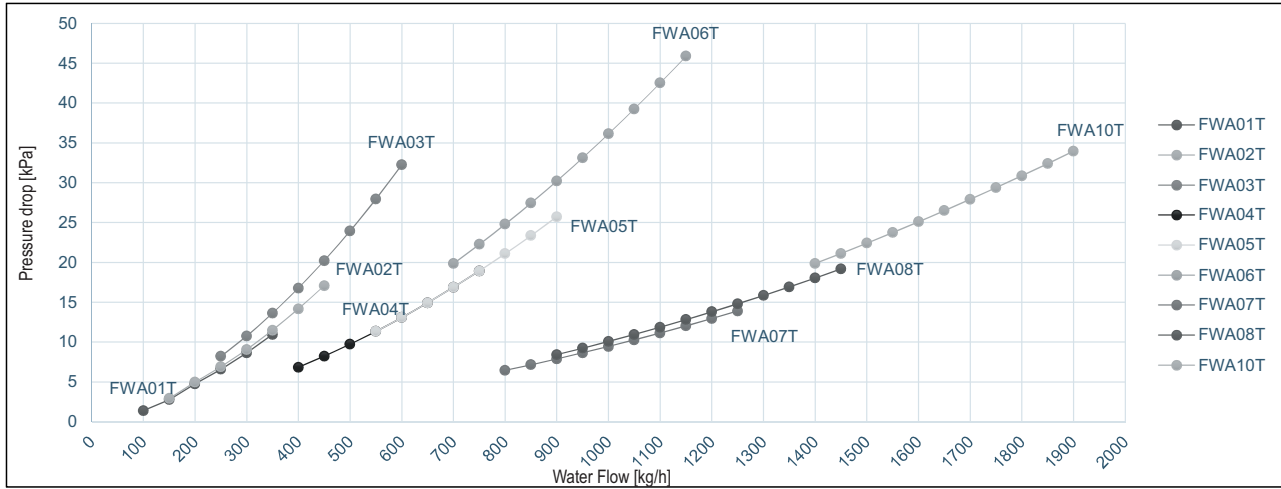
# 9 Hydraulic performance

## 9 - 1 Water Pressure Drop Curve Evaporator

### FWA-AT/AF

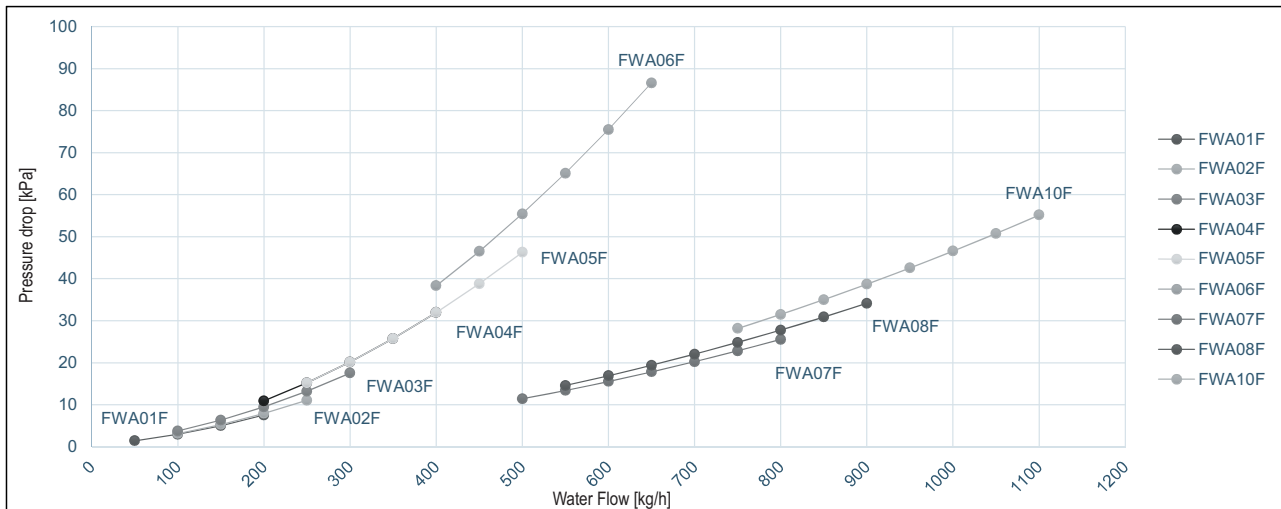
#### A Water Pressure Drop Graphics

2 and 4 Pipe Models



#### B Water Pressure Drop Graphics

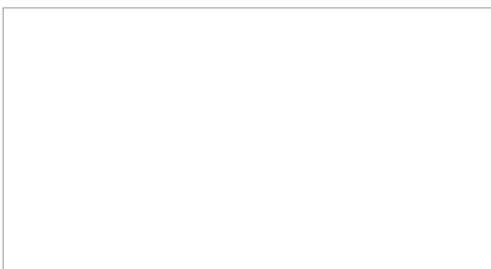
4 Pipe Additional Heat Exchanger







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EEEN18 03/18



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