

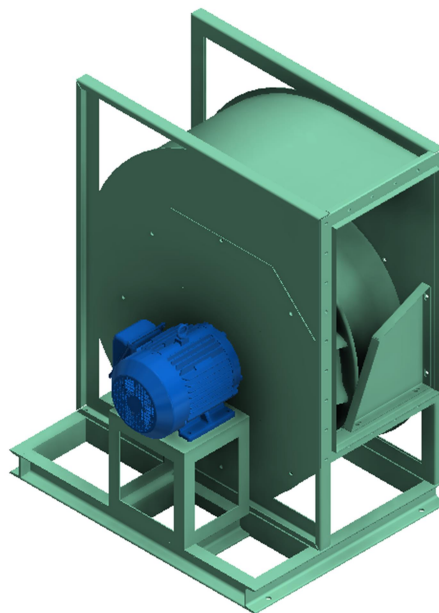
KAS

**SINGLE INLET CENTRIFUGAL FANS WITH AIRFOIL
BACKWARD CURVED BLADES**



K A S

SINGLE INLET CENTRIFUGAL FANS WITH AIRFOIL BACKWARD CURVED BLADES



송풍기 일반

■ 정의

기계적인 에너지를 기체나 유체에 주어서 압력과 속도 에너지로 변환시켜주는 기계장치를 송풍기라 한다.

■ 송풍기 일반사항

● 풍량(Air Volumn) : Q

송풍기의 풍량이란 송풍기가 단위시간당 흡입하는 공기의 양이다. 단. 압력비가 1.03 이하일 경우는 토출풍량을 흡입풍량으로 계산해도 무방하다. 흡입상태는 특별한 명기가 없을 경우 표준상태로 본다. 또한 기준상태(Normal condition)의 풍량(Q)을 표시할 때가 있다. 이때에는 표준상태로 환산후 적용한다. 온도 20℃, 절대압력 760mmHg, 습도 65%, 공기의 단위체적중량은 1.205kg/m³으로 본다.

구 분	온 도	대기압	습 도	단위체적중량	단 위
표준상태	20℃	760mmAq	65%	1.205 kg/m ³	m ³ /sec(CMS), m ³ /min(CMM), m ³ /h(CMH), ft ³ /sec(CFS), ft ³ /min(CFM), ft ³ /h(CFH)
기준상태	0℃	760mmAq	0%	1.293 kg/m ³	Nm ³ /sec, Nm ³ /min, Nm ³ /h

※ 1 m³/min = 35.317CFM

▷ 기준상태(QN)를 표준상태(Q)로 환산하는 식은 다음과 같다.

$$Q = QN \times \frac{273 + t^{\circ}\text{C}}{273} \times \frac{10,332}{10,332 \pm P_1}$$

Q: 표준상태의 흡입풍량(m³/min)

t: 사용상태의 흡입 Gas 온도(℃)

QN: 기준상태의 흡입풍량(Nm³/min)

P₁: 사용상태의 흡입풍압(mmAq)- 부압일 경우 (-)부호

● 송풍기의 압력

공기조화와 환기용으로 사용되는 송풍기의 발생압력은 수은주등으로는 거의 측정할 수 없을 정도의 저압력이므로 일반적으로 수주로 표시되어 있다. 이러한 액체의 높이로 압력을 표시하는 경우 액체의 종류가 변하면 비중량이 달라져서 단위에 액체의 종류를 표기 하여야 한다.

예) 1. 물(수)의 경우 100mm 수주 또는 100mmAq
(1mmAq = 1kg/m² = 0.0001kg/cm²)

2. 수은의 경우 760mm 수은주 또는 760mmHg

● 정압(Static Pressure) : P_s

송풍저항에 대항하는 압력이 정압이다.

정압은 기체의 흐름과 평행인 물체의 표면에 기체가 미치는 압력이며, 그 표면에 수직인 구멍을 통하여 측정한다.

단위로는 mmAq(Aqua), mAq, kg/m², kg/cm², mmWG(water gage), mmH₂O, Bar, pa 이 있고, 환산치는 다음과 같다.

$$\begin{aligned} 1\text{atm(표준대기압)} &= 760\text{mmHg(수은주 높이)} \\ &= 0.76 \times 13.595 \times 1000 \\ &= 10,332 \text{ kg/m}^2 = 1.0332 \text{ kg/cm}^2 \\ &= 10,332\text{mAq} = 10,332 \text{ mmAq} \\ &= 101,324 \text{ N/m}^2(\text{pa}) = 1.013\text{Bar} \\ &(\text{여기서, } 1\text{kg/cm}^2 = 10\text{mAq}, 1\text{mmAq} = 9.80665\text{pa}, 1\text{Bar} = 10^5\text{pa}) \end{aligned}$$

▷ 흡입기체의 온도가 표준이 아닐경우의 온도보정 환산방법은 다음과 같다.

$$P_2 = P_1 \times \frac{\gamma_1}{\gamma_2} \quad L_2 = L_1 \times \frac{\gamma_1}{\gamma_2}$$

P₁: 취급기체의 압력(mmAq)

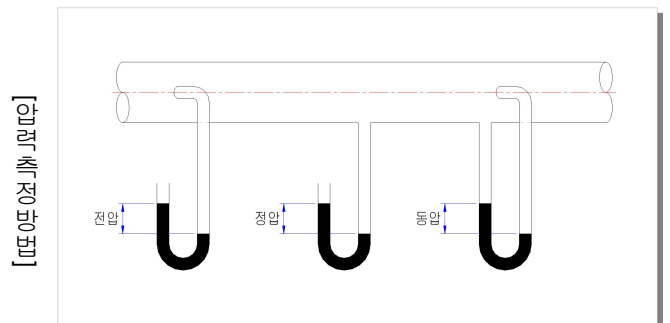
P₂: 상온공기의 압력(mmAq)

γ₁: 상온공기의 비중량(kg/m³)

γ₂: 취급기체의 사용온도 상태의 비중량(kg/m³)

L₁: 상온공기의 필요한 동력(Kw)

L₂: 취급기체의 사용온도 상태의 동력(Kw)



[그림 8]

● 동압(Dynamic Pressure = Velocity pressure) : P_d

동압은 속도에너지를 압력에너지로 환산한 값으로 속도압력이라고도 하며 유체의 속도에 의해 발생하며 다음의 식으로 표시된다.

$$P_d = \frac{V^2}{2g} \gamma (\text{mmAq}), \quad P_d = P_t - P_s$$

V : Velocity (m/s)

γ : Specific weight(kg/m³)

g : Acceleration of Gravity(m/s²)

P_t : Total Pressure(mmAq)

P_s : Static Pressure(mmAq)

● 전압(Total Pressure) : P_t

정압과 동압을 합한 것이 전압이고, 실제로 송풍을 가능케하기 위하여는 이 전압이 필요하다.

전압의 측정은 [그림 8]과 같이 한다.

단위는 mmAq, mmWG, mmH₂O, mAq, kg/m², kg/cm², PA, KPA(1PA = 0.102mmAq)이 있고 환산치는 다음과 같다.

$$1\text{kg/cm}^2 = 10,000(\text{mmAq, kg/m}^2, \text{mmH}_2\text{O})$$

● 수두 (Head) : H

송풍기의 흡입구와 배출구 사이의 압축과정에서 Impeller 에 의하여 단위 중량의 기체에 가하여지는 가역적 일당량 (kg.m/kg)을 말하며, 기체 기둥의 높이로 나타내고 이것을 수두(H)m 라고 부른다.

▷ 이론수두 $H(m) = \frac{P_t}{\gamma}$

▷ 단열수두 $H(m) = \frac{k}{k-1} \times \frac{P_i}{\gamma_1} \left\{ \left(\frac{P_o}{P_i} \right)^{(k-1)/k} - 1 \right\}$

▷ 압력비 $\frac{P_o}{P_i}$

압력비가 1.03 (310mmAq) 이하일 때는 이론수두식을, 그 이상일 때는 단열수두식을 적용한다.

P_t : 전압(mmAq)

γ : 가스 비중량(kg/m³)

γ_1 : 흡입구 비중량(kg/m³)

k : 비열비(CP/CV, 공기의 경우 0.24/0.172=1.4)

P_i : 흡입 절대압력(kg/m²)

P_o : 토출 절대압력(kg/m²)

● 비교 회전도 : N_s

송풍기의 기하학적으로 닮은 송풍기를 생각해서 풍량 1m³/min, 풍압을 Head 1m 생기게 한 경우의 가상 회전속도이고 송풍기의 크기에 관계없이 송풍기(Impeller)의 형식에 의해 변하는 값이다.

$$N_s = \frac{N \times Q^{1/2}}{H^{3/4}}$$

N_s : 송풍기 비교 회전도(R. P. M)

N : 송풍기 회전속도(R. P. M)

Q : 풍량(m³/min)

H : Head(m)

● 공기의 성질

흡입 상태의 공기의 비중량(γ_i)은 다음식으로 나타낸다.

$$\gamma_i(\text{kg/m}^3) = 1.2931 \frac{273}{273 + t^\circ\text{C}} \times \frac{(10332 + P) - 0.378 \times \varphi \times P_s}{10332}$$

φ : 상대습도(%)

t : 흡입온도(°C)

P_s : 포화 수증기 압력(mmAq)

P : 흡입 압력(mmAq)

▷ 증기표

t (°C)	증기압(Ps)		γs (kg/m³)	χs (kg/kg)	t (°C)	증기압(Ps)		γs (kg/m³)	χs (kg/kg)
	mmHg	kg/cm²				mmHg	kg/cm²		
0	4.58	0.0062	0.0047	0.0037	32	35.67	0.0485	0.0335	0.0306
4	6.09	0.0083	0.0064	0.0050	36	44.57	0.0606	0.0418	0.0387
8	8.04	0.0109	0.0083	0.0066	40	55.30	0.0752	0.0512	0.049
10	9.21	0.0125	0.0094	0.0076	50	92.50	0.1260	0.0832	0.0868
12	10.51	0.0143	0.0106	0.0087	60	149.50	0.2030	0.1302	0.153
16	13.61	0.0185	0.0135	0.0114	70	234	0.3180	0.1982	0.278
20	17.50	0.0238	0.0173	0.0147	80	355	0.4830	0.2936	0.552
24	22.38	0.0304	0.0216	0.0188	90	526	0.7150	0.4219	1.411
28	28.35	0.0385	0.0270	0.0241	100	760	1.0330	-	-
30	31.80	0.0433	0.0304	0.0272					

γs: 공기중 수증기량(kg/m³)

χs: 습공기중의 건조공기에 대한 수증기량(kg/kg)

● 효율(η)

송풍기의 효율은 전압효율, 정압효율로 구분하는데 특별한 규정이 없는 한 전압효율을 말한다.

▷ FAN TYPE 별 효율 - 일반적인 FAN의 선정에 적용

기종	효율	기종	효율	기종	효율
TURBO BLOWER	40 ~ 70%	ROOF VENTILATOR	40 ~ 50%	WALL VENTILATOR	30 ~ 50%
AIR-FOIL	70 ~ 85%	AXIAL	40 ~ 85%	PLATE	40 ~ 70%
SIROCCO	40 ~ 60%	TURBO FAN	60 ~ 80%	LIMIT LOAD	55 ~ 65%

● 동력계산

▷ 이론공기동력: La

$$La(kw) = \frac{Q \times P_t}{6120}$$

$$La(HP) = \frac{Q \times P_t}{4500}$$

▷ 축 동력(Shaft Horse Power) : Lb

$$Lb(kw) = \frac{Q \times P_t}{6120 \times \eta}$$

$$Lb(HP) = \frac{Q \times P_t}{4500 \times \eta}$$

▷ 실제 동력 : Lk

$$Lk = Lb \times \alpha$$

η: 송풍기 효율

α: Motor 안전율

● 송풍기 상사의 법칙

특정 송풍기에서 운전조건의 변화요인(RPM)에 대하여 일정한 법칙으로 상사하는 법칙을 말한다.

$$\frac{Q_2}{Q_1} = \frac{N_2}{N_1}$$

$$\frac{P_2}{P_1} = \left(\frac{N_2}{N_1}\right)^2$$

$$\frac{L_2}{L_1} = \left(\frac{N_2}{N_1}\right)^3$$

● 소음(Sound Level) : dB

송풍기 소음은 아래식에 의하여 이론적으로 추정할 수 있다.

$$dB = dBs + 10 \log_{10} \left(\frac{Q \times P_t^2}{60} \right)$$

dBs: 비소음의 평균 소음(dBs)

- Air-Foil Fan : 30 ~ 35dBs

- Turbo Fan : 35 ~ 40dBs

- Sirocco Fan : 40 ~ 45dBs

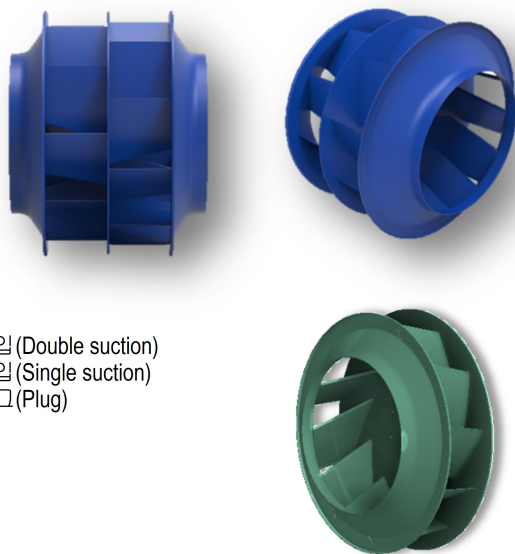
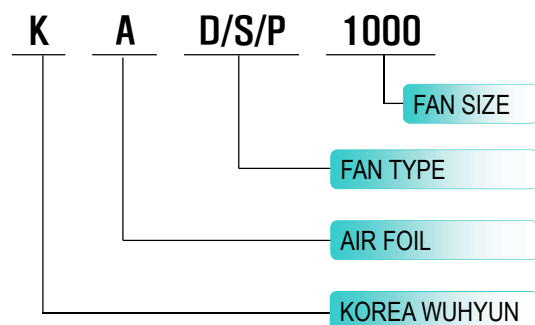
- Radial Fan : 45 ~ 50dBs

- Axial flow Fan : 50 ~ 55dBs

송풍기의 제원 및 제품목록표

■ 모델명 표기 방법

- Air-foil Fan



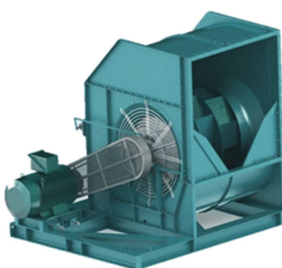
- D : 양흡입(Double suction)
- S : 편흡입(Single suction)
- P : 플러그(Plug)

■ 제품 목록표

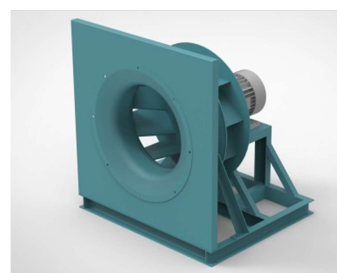
No Type		AIR FOIL FAN		
		양흡입	편흡입	플러그
1		KAD 315	KAS 315	KAP 315
2		KAD 355	KAS 355	KAP 355
3		KAD 400	KAS 400	KAP 400
4		KAD 450	KAS 450	KAP 450
5		KAD 560	KAS 560	KAP 560
6		KAD 630	KAS 630	KAP 630
7		KAD 710	KAS 710	KAP 710
8		KAD 800	KAS 800	KAP 800
9		KAD 900	KAS 900	KAP 900
10		KAD 1000	KAS 1000	KAP 1000
11		KAD 1120	KAS 1120	KAP 1120
12		KAD 1250	KAS 1250	KAP 1250
13		KAD 1400	KAS 1400	KAP 1400
14		KAD 1600	KAS 1600	KAS 1600



(DIRECT TYPE)



(BELT TYPE)



(PLUG TYPE)

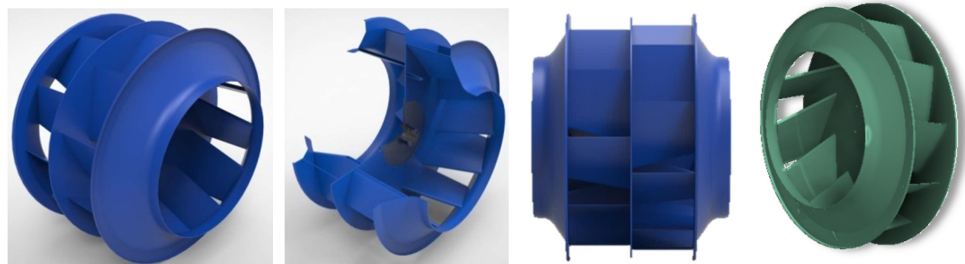
Air-Foil FAN 특징

■ 특징

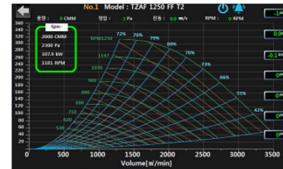
- Air-Foil Fan 은 Blade 의 형상에 항공기의 익형을 응용한 것으로서, 원심 송풍기중에서 가장 효율이 높고 소음이 낮으며 고속 회전이 가능하고 Impeller 의 직경도 작게할 수 있으므로 전체적으로 소형이 되는 장점이 있다.
- Impeller 는 11 개의 Blade 가 주판·측판에 용접 고정된 구조로 되어있고, Blade 의 폭은 비교적 넓게 철판을 굽혀서 익형으로 제작되며, 기류 안정화 가이드 깃을 적용하여 Impeller 끝단에서 발생하는 기류의 충동을 최소화하여 기류를 안정화시켜 효율을 극대화 하였다.



"WuHyun Technology certifies that the KAS Series shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program."



- 케이싱 구조는 보통 송풍기와 동일하며, KAD 1000 이상의 모델은 최대 12 분할의 볼트체결 구조로 견고성, 내구성을 강화하였으며, 특정 현장의 교체 및 반입,반출등 설치 용이성을 개선하였다.
- 모든 모델은 FCM (Fan Control Master) 보조 제어 장치를 설치하여 최적의 자동화 운전과 시스템 운전상태를 실시간 모니터링 및 제어 할 수 있다. 모니터링 시스템은 Micom controller 를 적용하였으며 Fan Performance Chart 를 제공하고 있다.
- 성능은 아래 그림(Selection Program)과 같이 동력곡선은 최고 효율점 부근에서 Limit load 특성이 있고, 압력곡선을 Turbo Fan 과 마찬가지로 안전성이 좋은 곡선을 이루고 있다.



■ 용도

- 건물 공조용 -AHU,OAC 등 공조장비, 반도체장비, 옥상배기용 등
- 보일러 압입·유입용, 지하철 유막 급배기용, Air Washer 용등
- 일반 산업용, 건조장치 및 원자력 발전소, 국소 환기용등

KAS MODEL 성능표

■ KAS 560

Wheel Diameter Ø574mm
Outlet Size / Area 0.27 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m³/min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m³/min]	[kW]	[%]	[%]	[dB(A)]
1	700	94	64	114.1	0.349	51.2	34.9	72	1	850	138	95	138.6	0.625	51.2	34.9	77
2		146	122	101.3	0.370	66.3	55.6	71	2		215	180	123.0	0.662	66.3	55.6	76
3		189	172	88.6	0.372	74.9	67.8	69	3		279	253	107.6	0.666	74.9	67.8	74
4		225	212	75.6	0.364	77.5	73.0	68	4		332	313	91.8	0.651	77.5	73.0	73
5		249	240	63.4	0.341	76.7	73.9	68	5		367	354	76.9	0.610	76.7	73.9	73
6		250	243	52.5	0.308	70.4	68.7	68	6		368	359	63.8	0.551	70.4	68.7	73
1	1000	192	131	163.0	1.017	51.2	34.9	81	1	1150	253	173	187.5	1.547	51.2	34.9	85
2		297	249	144.7	1.078	66.3	55.6	80	2		393	330	166.4	1.639	66.3	55.6	83
3		387	350	126.6	1.085	74.9	67.8	78	3		511	463	145.6	1.650	74.9	67.8	81
4		459	433	108.0	1.060	77.5	73.0	77	4		607	572	124.2	1.612	77.5	73.0	81
5		508	490	90.5	0.993	76.7	73.9	77	5		672	648	104.1	1.510	76.7	73.9	80
6		509	497	75.0	0.897	70.4	68.7	77	6		674	657	86.3	1.365	70.4	68.7	80
1	1300	324	221	211.9	2.235	51.2	34.9	88	1	1450	403	275	236.4	3.101	51.2	34.9	90
2		502	422	188.1	2.368	66.3	55.6	86	2		625	524	209.8	3.286	66.3	55.6	88
3		653	592	164.6	2.384	74.9	67.8	84	3		813	736	183.6	3.308	74.9	67.8	87
4		776	732	140.3	2.329	77.5	73.0	84	4		966	910	156.5	3.232	77.5	73.0	86
5		859	828	117.7	2.181	76.7	73.9	83	5		1069	1030	131.3	3.027	76.7	73.9	86
6		861	839	97.5	1.971	70.4	68.7	83	6		1071	1044	108.8	2.736	70.4	68.7	86
1	1600	491	335	260.8	4.167	51.2	34.9	93	1	1750	587	401	285.3	5.452	51.2	34.9	95
2		760	639	231.5	4.415	66.3	55.6	91	2		910	764	253.2	5.777	66.3	55.6	93
3		990	896	202.6	4.445	74.9	67.8	90	3		1184	1072	221.6	5.815	74.9	67.8	92
4		1176	1108	172.7	4.342	77.5	73.0	89	4		1407	1326	188.9	5.681	77.5	73.0	91
5		1302	1254	144.8	4.067	76.7	73.9	88	5		1557	1500	158.4	5.321	76.7	73.9	91
6		1304	1271	120.0	3.676	70.4	68.7	88	6		1560	1521	131.3	4.809	70.4	68.7	91
1	1900	692	473	309.7	6.978	51.2	34.9	97	1	2050	805	551	334.2	8.764	51.2	34.9	99
2		1072	900	274.9	7.393	66.3	55.6	95	2		1248	1048	296.6	9.286	66.3	55.6	97
3		1396	1264	240.6	7.443	74.9	67.8	94	3		1625	1472	259.6	9.348	74.9	67.8	96
4		1658	1563	205.1	7.271	77.5	73.0	93	4		1930	1819	221.3	9.133	77.5	73.0	95
5		1836	1769	172.0	6.810	76.7	73.9	93	5		2137	2059	185.6	8.553	76.7	73.9	95
6		1839	1793	142.5	6.155	70.4	68.7	93	6		2140	2087	153.8	7.731	70.4	68.7	95
1	2200	928	634	358.6	10.832	51.2	34.9	100	1	2350	1058	724	383.1	13.202	51.2	34.9	102
2		1438	1207	318.3	11.477	66.3	55.6	99	2		1641	1377	340.0	13.988	66.3	55.6	100
3		1871	1695	278.6	11.554	74.9	67.8	97	3		2135	1934	297.6	14.082	74.9	67.8	99
4		2223	2095	237.5	11.288	77.5	73.0	97	4		2536	2391	253.7	13.758	77.5	73.0	98
5		2461	2371	199.2	10.571	76.7	73.9	96	5		2808	2706	212.7	12.884	76.7	73.9	98
6		2465	2404	165.0	9.555	70.4	68.7	96	6		2813	2743	176.3	11.646	70.4	68.7	98
1	2500	1198	819	407.5	15.895	51.2	34.9	103	1	2650	1346	920	432.0	18.931	51.2	34.9	105
2		1857	1559	361.7	16.842	66.3	55.6	102	2		2086	1752	383.4	20.059	66.3	55.6	103
3		2416	2189	316.6	16.955	74.9	67.8	101	3		2715	2459	335.6	20.193	74.9	67.8	102
4		2871	2706	269.9	16.564	77.5	73.0	100	4		3225	3040	286.1	19.728	77.5	73.0	101
5		3178	3062	226.3	15.513	76.7	73.9	100	5		3571	3441	239.9	18.476	76.7	73.9	101
6		3183	3104	187.5	14.021	70.4	68.7	100	6		3577	3487	198.8	16.699	70.4	68.7	101
1	2800	1503	1027	456.4	22.331	51.2	34.9	106	1	2950	1668	1140	480.9	26.116	51.2	34.9	108
2		2329	1956	405.1	23.661	66.3	55.6	105	2		2585	2171	426.8	27.672	66.3	55.6	106
3		3031	2745	354.6	23.820	74.9	67.8	104	3		3364	3048	373.5	27.857	74.9	67.8	105
4		3601	3394	302.3	23.271	77.5	73.0	103	4		3997	3767	318.5	27.215	77.5	73.0	104
5		3986	3841	253.5	21.794	76.7	73.9	103	5		4425	4264	267.1	25.488	76.7	73.9	104
6		3993	3893	210.0	19.699	70.4	68.7	103	6		4432	4322	221.3	23.037	70.4	68.7	104
1	3100	1842	1259	505.3	30.306	51.2	34.9	109	1	3250	2024	1384	529.8	34.921	51.2	34.9	110
2		2855	2397	448.5	32.111	66.3	55.6	107	2		3138	2635	470.2	37.001	66.3	55.6	109
3		3715	3365	392.5	32.326	74.9	67.8	106	3		4083	3699	411.5	37.249	74.9	67.8	107
4		4414	4160	334.7	31.581	77.5	73.0	105	4		4851	4572	350.9	36.391	77.5	73.0	107
5		4886	4708	280.6	29.577	76.7	73.9	105	5		5371	5175	294.2	34.081	76.7	73.9	106
6		4895	4772	232.5	26.733	70.4	68.7	105	6		5380	5245	243.8	30.804	70.4	68.7	106

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301

- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.

- Performance certified is for installation type B - free inlet, ducted outlet.

- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

■ KAS 630

Wheel Diameter Ø645mm
 Outlet Size / Area 0.34 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]
1	600	87	60	138.8	0.394	51.2	34.9	72	1	725	127	87	167.7	0.695	51.2	34.9	77
2		135	113	123.2	0.417	66.3	55.6	70	2		197	166	148.8	0.736	66.3	55.6	75
3		176	159	107.8	0.420	74.9	67.8	69	3		257	232	130.3	0.741	74.9	67.8	74
4		209	197	91.9	0.410	77.5	73.0	68	4		305	287	111.1	0.724	77.5	73.0	73
5		231	223	77.1	0.384	76.7	73.9	68	5		337	325	93.1	0.678	76.7	73.9	72
6		232	226	63.8	0.347	70.4	68.7	68	6		338	330	77.2	0.613	70.4	68.7	72
1	850	175	120	196.6	1.119	51.2	34.9	81	1	975	230	157	225.5	1.689	51.2	34.9	84
2		271	228	174.5	1.186	66.3	55.6	79	2		357	299	200.1	1.790	66.3	55.6	82
3		353	319	152.7	1.194	74.9	67.8	78	3		464	420	175.2	1.802	74.9	67.8	81
4		419	395	130.2	1.166	77.5	73.0	77	4		551	520	149.4	1.760	77.5	73.0	80
5		464	447	109.2	1.092	76.7	73.9	76	5		610	588	125.2	1.649	76.7	73.9	80
6		465	453	90.5	0.987	70.4	68.7	76	6		611	596	103.8	1.490	70.4	68.7	80
1	1100	293	200	254.4	2.426	51.2	34.9	87	1	1225	363	248	283.3	3.350	51.2	34.9	90
2		454	381	225.8	2.570	66.3	55.6	85	2		563	473	251.5	3.550	66.3	55.6	88
3		591	535	197.6	2.588	74.9	67.8	84	3		732	664	220.1	3.574	74.9	67.8	87
4		702	661	168.5	2.528	77.5	73.0	83	4		870	820	187.6	3.491	77.5	73.0	86
5		777	749	141.3	2.367	76.7	73.9	83	5		963	928	157.3	3.270	76.7	73.9	85
6		778	759	117.1	2.140	70.4	68.7	83	6		965	941	130.4	2.955	70.4	68.7	85
1	1350	441	302	312.2	4.484	51.2	34.9	92	1	1475	527	360	341.1	5.849	51.2	34.9	94
2		684	574	277.1	4.751	66.3	55.6	90	2		816	685	302.8	6.197	66.3	55.6	92
3		890	806	242.5	4.783	74.9	67.8	89	3		1062	962	265.0	6.239	74.9	67.8	91
4		1057	996	206.8	4.673	77.5	73.0	88	4		1262	1189	225.9	6.095	77.5	73.0	90
5		1170	1128	173.4	4.376	76.7	73.9	88	5		1397	1346	189.5	5.708	76.7	73.9	90
6		1172	1143	143.7	3.955	70.4	68.7	88	6		1399	1364	157.0	5.159	70.4	68.7	90
1	1600	620	424	370.1	7.465	51.2	34.9	96	1	1725	720	492	399.0	9.355	51.2	34.9	98
2		960	806	328.4	7.910	66.3	55.6	94	2		1116	937	354.1	9.912	66.3	55.6	96
3		1250	1132	287.5	7.963	74.9	67.8	93	3		1452	1316	309.9	9.979	74.9	67.8	95
4		1485	1399	245.1	7.779	77.5	73.0	92	4		1726	1626	264.2	9.749	77.5	73.0	94
5		1644	1584	205.5	7.286	76.7	73.9	92	5		1910	1841	221.6	9.130	76.7	73.9	94
6		1646	1605	170.3	6.585	70.4	68.7	92	6		1914	1866	183.6	8.252	70.4	68.7	94
1	1850	828	566	427.9	11.540	51.2	34.9	100	1	1975	944	645	456.8	14.041	51.2	34.9	101
2		1284	1078	379.8	12.227	66.3	55.6	98	2		1463	1229	405.4	14.877	66.3	55.6	100
3		1671	1513	332.4	12.309	74.9	67.8	97	3		1904	1725	354.8	14.976	74.9	67.8	98
4		1985	1871	283.4	12.025	77.5	73.0	96	4		2262	2132	302.5	14.631	77.5	73.0	97
5		2197	2117	237.6	11.262	76.7	73.9	96	5		2504	2413	253.7	13.703	76.7	73.9	97
6		2201	2146	196.9	10.179	70.4	68.7	96	6		2509	2446	210.2	12.385	70.4	68.7	97
1	2100	1067	730	485.7	16.879	51.2	34.9	103	1	2225	1198	819	514.6	20.076	51.2	34.9	104
2		1654	1389	431.1	17.884	66.3	55.6	101	2		1857	1559	456.7	21.271	66.3	55.6	103
3		2153	1950	377.3	18.004	74.9	67.8	100	3		2417	2189	399.8	21.414	74.9	67.8	101
4		2558	2411	321.7	17.589	77.5	73.0	99	4		2871	2706	340.8	20.920	77.5	73.0	100
5		2831	2728	269.7	16.473	76.7	73.9	99	5		3179	3063	285.8	19.593	76.7	73.9	100
6		2836	2765	223.5	14.889	70.4	68.7	99	6		3184	3104	236.8	17.709	70.4	68.7	100
1	2350	1336	914	543.5	23.653	51.2	34.9	105	1	2475	1482	1013	572.4	27.632	51.2	34.9	107
2		2071	1739	482.4	25.062	66.3	55.6	104	2		2298	1929	508.1	29.277	66.3	55.6	105
3		2696	2442	422.2	25.230	74.9	67.8	103	3		2990	2709	444.7	29.473	74.9	67.8	104
4		3203	3019	360.0	24.648	77.5	73.0	102	4		3553	3348	379.1	28.794	77.5	73.0	103
5		3546	3417	301.8	23.084	76.7	73.9	102	5		3933	3790	317.9	26.967	76.7	73.9	103
6		3552	3463	250.1	20.864	70.4	68.7	102	6		3940	3841	263.4	24.374	70.4	68.7	103
1	2600	1636	1118	601.3	32.033	51.2	34.9	108	1	2725	1797	1228	630.2	36.879	51.2	34.9	109
2		2536	2129	533.7	33.941	66.3	55.6	106	2		2785	2339	559.4	39.076	66.3	55.6	108
3		3300	2989	467.1	34.168	74.9	67.8	105	3		3625	3283	489.6	39.337	74.9	67.8	106
4		3920	3695	398.3	33.381	77.5	73.0	104	4		4306	4059	417.4	38.431	77.5	73.0	106
5		4340	4182	334.0	31.262	76.7	73.9	104	5		4768	4594	350.0	35.992	76.7	73.9	105
6		4348	4239	276.7	28.257	70.4	68.7	104	6		4776	4656	290.0	32.531	70.4	68.7	105

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301
- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.
- Performance certified is for installation type B - free inlet, ducted outlet.
- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

KAS 710

Wheel Diameter Ø720mm
Outlet Size / Area 0.43 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]
1	109	74	193.0	0.682	51.2	34.9	75	1	159	108	233.2	1.204	51.2	34.9	80		
2	168	141	171.3	0.723	66.3	55.6	74	2	246	206	207.0	1.276	66.3	55.6	78		
3	219	198	149.9	0.728	74.9	67.8	72	3	320	290	181.2	1.284	74.9	67.8	77		
4	260	245	127.8	0.711	77.5	73.0	71	4	380	358	154.5	1.254	77.5	73.0	76		
5	288	278	107.2	0.666	76.7	73.9	71	5	421	405	129.5	1.175	76.7	73.9	76		
6	289	281	88.8	0.602	70.4	68.7	71	6	421	411	107.3	1.062	70.4	68.7	76		
1	218	149	273.5	1.940	51.2	34.9	84	1	287	196	313.7	2.928	51.2	34.9	88		
2	338	284	242.7	2.056	66.3	55.6	83	2	444	373	278.4	3.102	66.3	55.6	86		
3	439	398	212.4	2.069	74.9	67.8	81	3	578	524	243.7	3.123	74.9	67.8	84		
4	522	492	181.1	2.022	77.5	73.0	80	4	687	647	207.7	3.051	77.5	73.0	83		
5	578	557	151.9	1.893	76.7	73.9	80	5	761	733	174.2	2.857	76.7	73.9	83		
6	579	565	125.8	1.711	70.4	68.7	80	6	762	743	144.3	2.583	70.4	68.7	83		
1	365	249	353.9	4.205	51.2	34.9	90	1	453	309	394.1	5.807	51.2	34.9	93		
2	566	475	314.1	4.455	66.3	55.6	89	2	701	589	349.8	6.153	66.3	55.6	91		
3	736	667	274.9	4.485	74.9	67.8	87	3	913	827	306.1	6.194	74.9	67.8	90		
4	874	824	234.4	4.381	77.5	73.0	86	4	1084	1022	261.0	6.051	77.5	73.0	89		
5	968	933	196.5	4.103	76.7	73.9	86	5	1201	1157	218.9	5.667	76.7	73.9	89		
6	970	945	162.8	3.709	70.4	68.7	86	6	1203	1173	181.3	5.122	70.4	68.7	89		
1	550	376	434.3	7.772	51.2	34.9	95	1	656	448	474.5	10.137	51.2	34.9	97		
2	852	715	385.5	8.235	66.3	55.6	94	2	1017	854	421.2	10.741	66.3	55.6	96		
3	1109	1004	337.4	8.290	74.9	67.8	92	3	1323	1199	368.6	10.813	74.9	67.8	94		
4	1317	1241	287.6	8.099	77.5	73.0	91	4	1572	1482	314.3	10.564	77.5	73.0	94		
5	1458	1405	241.2	7.585	76.7	73.9	91	5	1741	1677	263.5	9.893	76.7	73.9	93		
6	1461	1424	199.8	6.856	70.4	68.7	91	6	1744	1700	218.3	8.942	70.4	68.7	93		
1	772	528	514.7	12.939	51.2	34.9	99	1	897	613	554.9	16.215	51.2	34.9	101		
2	1197	1005	456.9	13.710	66.3	55.6	98	2	1391	1168	492.5	17.181	66.3	55.6	100		
3	1557	1411	399.9	13.802	74.9	67.8	96	3	1810	1640	431.1	17.296	74.9	67.8	98		
4	1850	1744	340.9	13.484	77.5	73.0	96	4	2150	2027	367.5	16.897	77.5	73.0	97		
5	2048	1973	285.9	12.628	76.7	73.9	95	5	2381	2294	308.2	15.825	76.7	73.9	97		
6	2052	2000	236.8	11.414	70.4	68.7	95	6	2385	2325	255.3	14.303	70.4	68.7	97		
1	1032	706	595.2	20.001	51.2	34.9	103	1	1176	804	635.4	24.336	51.2	34.9	105		
2	1600	1343	528.2	21.193	66.3	55.6	101	2	1823	1531	563.9	25.785	66.3	55.6	103		
3	2082	1886	462.3	21.335	74.9	67.8	100	3	2373	2149	493.6	25.958	74.9	67.8	102		
4	2473	2331	394.2	20.843	77.5	73.0	99	4	2819	2657	420.8	25.360	77.5	73.0	101		
5	2738	2638	330.5	19.520	76.7	73.9	99	5	3121	3007	352.9	23.750	76.7	73.9	101		
6	2743	2674	273.8	17.643	70.4	68.7	99	6	3126	3048	292.3	21.467	70.4	68.7	101		
1	1330	909	675.6	29.255	51.2	34.9	106	1	1493	1021	715.8	34.797	51.2	34.9	107		
2	2061	1731	599.6	30.998	66.3	55.6	104	2	2314	1943	635.3	36.869	66.3	55.6	106		
3	2682	2430	524.8	31.205	74.9	67.8	103	3	3011	2728	556.0	37.116	74.9	67.8	105		
4	3187	3004	447.4	30.486	77.5	73.0	102	4	3578	3372	474.1	36.260	77.5	73.0	104		
5	3528	3400	375.2	28.551	76.7	73.9	102	5	3961	3816	397.5	33.959	76.7	73.9	104		
6	3534	3446	310.8	25.806	70.4	68.7	102	6	3967	3868	329.3	30.694	70.4	68.7	104		
1	1665	1138	756.0	40.997	51.2	34.9	109	1	1847	1263	796.2	47.893	51.2	34.9	110		
2	2581	2167	671.0	43.438	66.3	55.6	107	2	2863	2404	706.7	50.745	66.3	55.6	109		
3	3359	3043	587.3	43.729	74.9	67.8	106	3	3726	3375	618.5	51.085	74.9	67.8	107		
4	3991	3761	500.7	42.721	77.5	73.0	105	4	4427	4172	527.3	49.908	77.5	73.0	106		
5	4418	4257	419.9	40.010	76.7	73.9	105	5	4901	4722	442.2	46.740	76.7	73.9	106		
6	4426	4315	347.8	36.163	70.4	68.7	105	6	4909	4786	366.4	42.246	70.4	68.7	106		
1	2038	1394	836.4	55.522	51.2	34.9	111	1	2239	1531	876.7	63.921	51.2	34.9	112		
2	3160	2653	742.4	58.829	66.3	55.6	110	2	3471	2914	778.1	67.728	66.3	55.6	111		
3	4112	3725	649.8	59.223	74.9	67.8	109	3	4517	4091	681.0	68.182	74.9	67.8	110		
4	4885	4604	554.0	57.858	77.5	73.0	108	4	5366	5058	580.6	66.610	77.5	73.0	109		
5	5408	5211	464.5	54.186	76.7	73.9	108	5	5941	5724	486.9	62.383	76.7	73.9	109		
6	5417	5282	384.9	48.976	70.4	68.7	107	6	5951	5802	403.4	56.385	70.4	68.7	109		

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301

- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.

- Performance certified is for installation type B - free inlet, ducted outlet.

- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

KAS 800

Wheel Diameter Ø810mm
 Outlet Size / Area 0.54 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]
1	500	104	72	233.5	0.752	53.7	37.2	78	1	600	150	104	280.2	1.299	53.7	37.2	82
2		154	128	210.0	0.786	68.4	57.0	76	2		222	185	252.0	1.358	68.4	57.0	81
3		198	179	182.7	0.791	75.9	68.5	75	3		286	257	219.2	1.367	75.9	68.5	79
4		236	222	156.5	0.773	79.2	74.4	73	4		340	319	187.8	1.335	79.2	74.4	78
5		253	243	130.6	0.722	75.8	68.0	73	5		364	350	156.7	1.247	75.8	68.0	77
6		259	253	104.2	0.641	69.7	62.2	73	6		373	364	125.0	1.108	69.7	62.2	77
1	700	204	141	326.9	2.062	53.7	37.2	86	1	800	267	184	373.6	3.078	53.7	37.2	89
2		303	252	294.0	2.156	68.4	57.0	84	2		395	329	336.0	3.218	68.4	57.0	87
3		389	350	255.8	2.171	75.9	68.5	83	3		508	458	292.3	3.240	75.9	68.5	86
4		463	435	219.1	2.120	79.2	74.4	81	4		604	568	250.4	3.165	79.2	74.4	85
5		496	476	182.8	1.980	75.8	68.0	81	5		647	622	208.9	2.956	75.8	68.0	84
6		508	495	145.8	1.760	69.7	62.2	81	6		663	647	166.7	2.627	69.7	62.2	84
1	900	338	233	420.3	4.383	53.7	37.2	92	1	1000	417	288	467.0	6.012	53.7	37.2	94
2		500	416	378.0	4.582	68.4	57.0	90	2		618	513	420.0	6.286	68.4	57.0	93
3		643	579	328.9	4.614	75.9	68.5	89	3		794	715	365.4	6.329	75.9	68.5	91
4		765	718	281.7	4.507	79.2	74.4	87	4		944	887	313.0	6.182	79.2	74.4	90
5		819	787	235.1	4.208	75.8	68.0	87	5		1011	971	261.2	5.773	75.8	68.0	89
6		840	819	187.5	3.741	69.7	62.2	87	6		1037	1011	208.3	5.132	69.7	62.2	89
1	1100	505	348	513.7	8.003	53.7	37.2	96	1	1200	601	415	560.4	10.389	53.7	37.2	99
2		747	621	462.0	8.366	68.4	57.0	95	2		889	739	504.0	10.862	68.4	57.0	97
3		960	865	401.9	8.423	75.9	68.5	93	3		1143	1030	438.5	10.936	75.9	68.5	96
4		1143	1073	344.4	8.228	79.2	74.4	92	4		1360	1277	375.7	10.682	79.2	74.4	94
5		1224	1175	287.3	7.683	75.8	68.0	92	5		1456	1398	313.4	9.975	75.8	68.0	94
6		1254	1223	229.2	6.830	69.7	62.2	91	6		1493	1456	250.0	8.867	69.7	62.2	94
1	1300	705	487	607.1	13.209	53.7	37.2	100	1	1400	818	564	653.8	16.498	53.7	37.2	102
2		1044	868	546.0	13.810	68.4	57.0	99	2		1211	1006	588.0	17.248	68.4	57.0	101
3		1341	1208	475.0	13.904	75.9	68.5	98	3		1556	1402	511.5	17.366	75.9	68.5	99
4		1596	1499	407.0	13.582	79.2	74.4	96	4		1851	1738	438.3	16.963	79.2	74.4	98
5		1709	1641	339.5	12.682	75.8	68.0	96	5		1982	1903	365.6	15.840	75.8	68.0	98
6		1752	1709	270.8	11.274	69.7	62.2	96	6		2032	1982	291.7	14.081	69.7	62.2	97
1	1500	939	648	700.5	20.292	53.7	37.2	104	1	1600	1068	737	747.2	24.627	53.7	37.2	106
2		1390	1155	630.1	21.214	68.4	57.0	103	2		1581	1314	672.1	25.746	68.4	57.0	104
3		1786	1609	548.1	21.359	75.9	68.5	101	3		2032	1831	584.6	25.922	75.9	68.5	103
4		2125	1995	469.6	20.864	79.2	74.4	100	4		2418	2270	500.9	25.321	79.2	74.4	102
5		2275	2185	391.8	19.483	75.8	68.0	99	5		2589	2486	417.9	23.645	75.8	68.0	101
6		2332	2275	312.5	17.319	69.7	62.2	99	6		2654	2588	333.3	21.019	69.7	62.2	101
1	1700	1206	832	794.0	29.539	53.7	37.2	107	1	1800	1352	933	840.7	35.064	53.7	37.2	109
2		1785	1484	714.1	30.882	68.4	57.0	106	2		2001	1664	756.1	36.658	68.4	57.0	107
3		2294	2067	621.2	31.092	75.9	68.5	104	3		2572	2317	657.7	36.908	75.9	68.5	106
4		2730	2563	532.2	30.372	79.2	74.4	103	4		3060	2873	563.5	36.053	79.2	74.4	105
5		2922	2807	444.0	28.361	75.8	68.0	103	5		3276	3146	470.1	33.666	75.8	68.0	104
6		2996	2922	354.2	25.211	69.7	62.2	102	6		3359	3276	375.0	29.927	69.7	62.2	104
1	1900	1506	1039	887.4	41.239	53.7	37.2	110	1	2000	1669	1152	934.1	48.099	53.7	37.2	111
2		2230	1854	798.1	43.114	68.4	57.0	109	2		2471	2054	840.1	50.286	68.4	57.0	110
3		2865	2581	694.2	43.408	75.9	68.5	107	3		3175	2860	730.8	50.629	75.9	68.5	109
4		3410	3202	594.8	42.402	79.2	74.4	106	4		3778	3547	626.1	49.456	79.2	74.4	108
5		3651	3506	496.2	39.594	75.8	68.0	106	5		4045	3884	522.4	46.181	75.8	68.0	107
6		3742	3650	395.8	35.197	69.7	62.2	105	6		4146	4044	416.7	41.053	69.7	62.2	107
1	2100	1840	1270	980.8	55.681	53.7	37.2	113	1	2200	2019	1394	1027.5	64.020	53.7	37.2	114
2		2724	2264	882.1	58.212	68.4	57.0	112	2		2990	2485	924.1	66.930	68.4	57.0	113
3		3501	3154	767.3	58.609	75.9	68.5	110	3		3842	3461	803.9	67.387	75.9	68.5	111
4		4165	3911	657.4	57.251	79.2	74.4	109	4		4571	4292	688.7	65.826	79.2	74.4	110
5		4460	4283	548.5	53.460	75.8	68.0	108	5		4894	4700	574.6	61.467	75.8	68.0	110
6		4571	4459	437.5	47.523	69.7	62.2	108	6		5017	4894	458.3	54.641	69.7	62.2	109

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301
- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.
- Performance certified is for installation type B - free inlet, ducted outlet.
- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

KAS 900

Wheel Diameter Ø910mm
Outlet Size / Area 0.67 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m³/min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m³/min]	[kW]	[%]	[%]	[dB(A)]
1	500	132	91	331.1	1.345	53.7	37.2	81	1	575	174	120	380.8	2.046	53.7	37.2	85
2		195	162	297.8	1.406	68.4	57.0	80	2		258	214	342.5	2.139	68.4	57.0	83
3		250	226	259.1	1.416	75.9	68.5	78	3		331	298	297.9	2.153	75.9	68.5	82
4		298	280	221.9	1.383	79.2	74.4	77	4		394	370	255.2	2.103	79.2	74.4	80
5		319	306	185.2	1.291	75.8	68.0	76	5		422	405	212.9	1.964	75.8	68.0	80
6		327	319	147.7	1.148	69.7	62.2	76	6		433	422	169.9	1.746	69.7	62.2	80
1	650	222	154	430.5	2.955	53.7	37.2	88	1	725	277	191	480.1	4.101	53.7	37.2	90
2		329	274	387.1	3.089	68.4	57.0	86	2		410	341	431.8	4.287	68.4	57.0	89
3		423	381	336.8	3.110	75.9	68.5	85	3		527	474	375.6	4.316	75.9	68.5	87
4		504	473	288.5	3.038	79.2	74.4	83	4		627	588	321.8	4.216	79.2	74.4	86
5		539	518	240.7	2.837	75.8	68.0	83	5		671	644	268.5	3.937	75.8	68.0	85
6		553	539	192.0	2.522	69.7	62.2	82	6		688	671	214.2	3.500	69.7	62.2	85
1	800	337	233	529.8	5.509	53.7	37.2	92	1	875	403	278	579.5	7.209	53.7	37.2	94
2		499	415	476.5	5.760	68.4	57.0	91	2		597	496	521.1	7.536	68.4	57.0	93
3		641	578	414.5	5.799	75.9	68.5	89	3		767	691	453.4	7.588	75.9	68.5	91
4		763	716	355.1	5.665	79.2	74.4	88	4		913	857	388.4	7.412	79.2	74.4	90
5		817	784	296.3	5.290	75.8	68.0	88	5		977	938	324.1	6.921	75.8	68.0	90
6		837	817	236.3	4.702	69.7	62.2	87	6		1002	977	258.5	6.153	69.7	62.2	89
1	950	475	328	629.1	9.226	53.7	37.2	96	1	1025	553	382	678.8	11.588	53.7	37.2	98
2		704	585	565.8	9.645	68.4	57.0	95	2		819	681	610.5	12.115	68.4	57.0	97
3		904	815	492.2	9.711	75.9	68.5	93	3		1053	948	531.1	12.197	75.9	68.5	95
4		1076	1010	421.7	9.486	79.2	74.4	92	4		1252	1176	455.0	11.915	79.2	74.4	94
5		1152	1106	351.8	8.858	75.8	68.0	92	5		1341	1288	379.6	11.126	75.8	68.0	94
6		1181	1152	280.6	7.874	69.7	62.2	91	6		1375	1341	302.8	9.890	69.7	62.2	93
1	1100	637	440	728.5	14.322	53.7	37.2	100	1	1175	727	502	778.1	17.456	53.7	37.2	102
2		943	784	655.2	14.973	68.4	57.0	98	2		1076	895	699.8	18.249	68.4	57.0	100
3		1212	1092	569.9	15.075	75.9	68.5	97	3		1383	1246	608.8	18.374	75.9	68.5	99
4		1442	1354	488.3	14.726	79.2	74.4	96	4		1646	1545	521.6	17.948	79.2	74.4	97
5		1544	1483	407.4	13.751	75.8	68.0	95	5		1762	1692	435.2	16.760	75.8	68.0	97
6		1583	1544	324.9	12.224	69.7	62.2	95	6		1806	1762	347.1	14.899	69.7	62.2	97
1	1250	823	568	827.8	21.016	53.7	37.2	103	1	1325	924	638	877.5	25.031	53.7	37.2	104
2		1218	1013	744.5	21.972	68.4	57.0	102	2		1369	1138	789.2	26.169	68.4	57.0	103
3		1565	1410	647.6	22.122	75.9	68.5	100	3		1759	1585	686.5	26.347	75.9	68.5	102
4		1863	1749	554.9	21.609	79.2	74.4	99	4		2093	1965	588.2	25.737	79.2	74.4	100
5		1994	1915	462.9	20.178	75.8	68.0	98	5		2241	2152	490.7	24.033	75.8	68.0	100
6		2044	1994	369.3	17.937	69.7	62.2	98	6		2297	2240	391.4	21.364	69.7	62.2	100
1	1400	1032	712	927.1	29.527	53.7	37.2	106	1	1475	1146	791	976.8	34.531	53.7	37.2	107
2		1528	1270	833.8	30.869	68.4	57.0	104	2		1696	1410	878.5	36.100	68.4	57.0	106
3		1964	1769	725.4	31.079	75.9	68.5	103	3		2180	1964	764.2	36.347	75.9	68.5	104
4		2336	2194	621.4	30.359	79.2	74.4	102	4		2594	2435	654.7	35.505	79.2	74.4	103
5		2502	2402	518.5	28.349	75.8	68.0	101	5		2777	2667	546.3	33.154	75.8	68.0	103
6		2564	2501	413.6	25.201	69.7	62.2	101	6		2846	2776	435.7	29.472	69.7	62.2	102
1	1550	1265	873	1026.5	40.070	53.7	37.2	108	1	1625	1390	960	1076.1	46.173	53.7	37.2	110
2		1873	1557	923.2	41.892	68.4	57.0	107	2		2059	1711	967.8	48.272	68.4	57.0	108
3		2407	2168	803.1	42.178	75.9	68.5	106	3		2646	2383	841.9	48.601	75.9	68.5	107
4		2864	2689	688.0	41.201	79.2	74.4	104	4		3148	2956	721.3	47.475	79.2	74.4	106
5		3066	2945	574.0	38.472	75.8	68.0	104	5		3370	3237	601.8	44.332	75.8	68.0	105
6		3143	3066	457.9	34.200	69.7	62.2	104	6		3455	3370	480.0	39.409	69.7	62.2	105
1	1700	1522	1050	1125.8	52.866	53.7	37.2	111	1	1775	1659	1145	1175.5	60.176	53.7	37.2	112
2		2253	1873	1012.5	55.269	68.4	57.0	109	2		2456	2042	1057.2	62.912	68.4	57.0	111
3		2895	2608	880.8	55.646	75.9	68.5	108	3		3156	2844	919.7	63.341	75.9	68.5	109
4		3445	3235	754.6	54.357	79.2	74.4	107	4		3756	3527	787.9	61.873	79.2	74.4	108
5		3689	3542	629.6	50.758	75.8	68.0	106	5		4021	3862	657.4	57.776	75.8	68.0	107
6		3781	3688	502.2	45.121	69.7	62.2	106	6		4122	4021	524.3	51.360	69.7	62.2	107

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301

- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.

- Performance certified is for installation type B - free inlet, ducted outlet.

- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

■ KAS 1000

Wheel Diameter Ø1000mm
Outlet Size / Area 0.82 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]
1	400	102	70	351.5	1.104	53.7	37.2	79	1	475	143	99	417.5	1.848	53.7	37.2	83
2		151	125	316.2	1.154	68.4	57.0	77	2		212	177	375.4	1.932	68.4	57.0	81
3		194	174	275.0	1.162	75.9	68.5	76	3		273	246	326.6	1.945	75.9	68.5	80
4		230	216	235.6	1.135	79.2	74.4	74	4		325	305	279.8	1.900	79.2	74.4	79
5		247	237	196.6	1.060	75.8	68.0	74	5		348	334	233.4	1.774	75.8	68.0	78
6		253	247	156.8	0.942	69.7	62.2	73	6		356	348	186.2	1.577	69.7	62.2	78
1	550	192	133	483.4	2.869	53.7	37.2	86	1	625	248	171	549.3	4.210	53.7	37.2	90
2		285	237	434.7	2.999	68.4	57.0	85	2		368	306	494.0	4.401	68.4	57.0	88
3		366	330	378.1	3.020	75.9	68.5	83	3		473	426	429.7	4.431	75.9	68.5	87
4		435	409	324.0	2.950	79.2	74.4	82	4		562	528	368.2	4.329	79.2	74.4	85
5		466	448	270.3	2.754	75.8	68.0	82	5		602	578	307.2	4.042	75.8	68.0	85
6		478	466	215.6	2.449	69.7	62.2	81	6		617	602	245.0	3.593	69.7	62.2	84
1	700	312	215	615.2	5.914	53.7	37.2	92	1	775	382	264	681.1	8.027	53.7	37.2	94
2		461	383	553.3	6.183	68.4	57.0	91	2		565	470	612.6	8.391	68.4	57.0	93
3		593	534	481.2	6.226	75.9	68.5	89	3		727	655	532.8	8.449	75.9	68.5	91
4		705	662	412.3	6.081	79.2	74.4	88	4		865	812	456.5	8.253	79.2	74.4	90
5		755	725	344.0	5.679	75.8	68.0	87	5		926	889	380.9	7.706	75.8	68.0	90
6		774	755	274.4	5.048	69.7	62.2	87	6		949	926	303.9	6.851	69.7	62.2	89
1	850	459	317	747.0	10.590	53.7	37.2	97	1	925	544	375	813.0	13.647	53.7	37.2	99
2		680	565	671.8	11.071	68.4	57.0	95	2		806	670	731.1	14.268	68.4	57.0	97
3		874	787	584.4	11.146	75.9	68.5	94	3		1035	933	635.9	14.365	75.9	68.5	96
4		1040	977	500.7	10.888	79.2	74.4	92	4		1232	1157	544.9	14.032	79.2	74.4	94
5		1114	1069	417.7	10.167	75.8	68.0	92	5		1319	1266	454.6	13.103	75.8	68.0	94
6		1141	1113	333.3	9.038	69.7	62.2	92	6		1352	1319	362.7	11.648	69.7	62.2	94
1	1000	636	439	878.9	17.243	53.7	37.2	100	1	1075	735	507	944.8	21.421	53.7	37.2	102
2		941	783	790.4	18.027	68.4	57.0	99	2		1088	904	849.7	22.395	68.4	57.0	101
3		1210	1090	687.5	18.150	75.9	68.5	97	3		1398	1260	739.0	22.548	75.9	68.5	99
4		1440	1352	589.1	17.730	79.2	74.4	96	4		1664	1562	633.2	22.026	79.2	74.4	98
5		1541	1480	491.5	16.556	75.8	68.0	96	5		1781	1710	528.3	20.567	75.8	68.0	98
6		1580	1541	392.1	14.717	69.7	62.2	95	6		1826	1781	421.5	18.283	69.7	62.2	97
1	1150	841	580	1010.7	26.225	53.7	37.2	104	1	1225	954	659	1076.6	31.698	53.7	37.2	105
2		1245	1035	909.0	27.417	68.4	57.0	102	2		1413	1174	968.2	33.139	68.4	57.0	104
3		1600	1441	790.6	27.604	75.9	68.5	101	3		1815	1636	842.2	33.365	75.9	68.5	103
4		1904	1788	677.4	26.965	79.2	74.4	100	4		2160	2028	721.6	32.592	79.2	74.4	101
5		2038	1957	565.2	25.179	75.8	68.0	99	5		2313	2221	602.0	30.434	75.8	68.0	101
6		2089	2038	450.9	22.383	69.7	62.2	99	6		2371	2313	480.3	27.054	69.7	62.2	101
1	1300	1075	742	1142.5	37.884	53.7	37.2	107	1	1375	1202	830	1208.4	44.826	53.7	37.2	108
2		1591	1323	1027.5	39.606	68.4	57.0	106	2		1780	1480	1086.8	46.864	68.4	57.0	107
3		2045	1842	893.7	39.876	75.9	68.5	104	3		2287	2061	945.3	47.183	75.9	68.5	105
4		2433	2284	765.8	38.952	79.2	74.4	103	4		2722	2556	810.0	46.090	79.2	74.4	104
5		2605	2501	638.9	36.373	75.8	68.0	102	5		2914	2798	675.7	43.038	75.8	68.0	104
6		2670	2604	509.7	32.334	69.7	62.2	102	6		2987	2914	539.1	38.259	69.7	62.2	103
1	1450	1337	923	1274.4	52.569	53.7	37.2	110	1	1525	1479	1021	1340.3	61.155	53.7	37.2	111
2		1979	1645	1146.1	54.958	68.4	57.0	108	2		2190	1820	1205.4	63.935	68.4	57.0	110
3		2544	2292	996.9	55.333	75.9	68.5	107	3		2814	2535	1048.4	64.371	75.9	68.5	108
4		3027	2842	854.1	54.051	79.2	74.4	106	4		3348	3144	898.3	62.880	79.2	74.4	107
5		3241	3112	712.6	50.472	75.8	68.0	105	5		3584	3442	749.5	58.716	75.8	68.0	106
6		3322	3240	568.5	44.867	69.7	62.2	105	6		3674	3584	597.9	52.196	69.7	62.2	106
1	1600	1628	1123	1406.2	70.629	53.7	37.2	112	1	1675	1784	1231	1472.1	81.034	53.7	37.2	113
2		2410	2003	1264.6	73.840	68.4	57.0	111	2		2641	2196	1323.9	84.718	68.4	57.0	112
3		3097	2790	1100.0	74.343	75.9	68.5	109	3		3394	3058	1151.5	85.295	75.9	68.5	110
4		3685	3460	942.5	72.621	79.2	74.4	108	4		4039	3792	986.7	83.320	79.2	74.4	109
5		3946	3789	786.3	67.812	75.8	68.0	108	5		4324	4153	823.2	77.802	75.8	68.0	109
6		4045	3945	627.3	60.282	69.7	62.2	107	6		4433	4324	656.7	69.162	69.7	62.2	109

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301
- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.
- Performance certified is for installation type B - free inlet, ducted outlet.
- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

KAS 1120

Wheel Diameter Ø1120mm
Outlet Size / Area 1.04 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]
1	300	76	51	399.5	0.876	57.0	38.7	72	1	375	118	80	499.4	1.710	57.0	38.7	77
2		112	93	354.6	0.914	71.9	59.6	70	2		175	146	443.3	1.785	71.9	59.6	75
3		144	129	312.6	0.927	80.0	71.8	68	3		225	202	390.7	1.810	80.0	71.8	74
4		171	160	267.3	0.895	83.8	78.5	67	4		267	250	334.2	1.749	83.8	78.5	72
5		186	178	222.5	0.822	82.4	79.1	67	5		290	279	278.1	1.606	82.4	79.1	78
6		187	182	185.6	0.741	76.8	74.7	67	6		292	284	232.1	1.447	76.8	74.7	78
7		186	182	155.4	0.665	71.1	69.7	67	7		290	284	194.3	1.300	71.1	69.7	78
1	450	170	115	599.3	2.956	57.0	38.7	82	1	525	232	157	699.2	4.694	57.0	38.7	85
2		253	210	531.9	3.084	71.9	59.6	80	2		344	285	620.6	4.898	71.9	59.6	83
3		324	291	468.9	3.128	80.0	71.8	78	3		442	396	547.0	4.968	80.0	71.8	82
4		384	360	401.0	3.022	83.8	78.5	77	4		523	490	467.9	4.799	83.8	78.5	81
5		418	401	333.7	2.775	82.4	79.1	77	5		569	546	389.3	4.407	82.4	79.1	81
6		420	409	278.5	2.500	76.8	74.7	77	6		572	556	324.9	3.970	76.8	74.7	81
7		418	409	233.2	2.246	71.1	69.7	77	7		568	557	272.0	3.566	71.1	69.7	81
1	600	302	205	799.0	7.006	57.0	38.7	89	1	675	383	259	898.9	9.975	57.0	38.7	91
2		449	373	709.3	7.311	71.9	59.6	87	2		568	472	797.9	10.409	71.9	59.6	90
3		577	518	625.2	7.416	80.0	71.8	85	3		730	655	703.3	10.559	80.0	71.8	88
4		683	640	534.7	7.163	83.8	78.5	84	4		865	810	601.5	10.199	83.8	78.5	87
5		743	713	444.9	6.579	82.4	79.1	84	5		940	902	500.5	9.367	82.4	79.1	87
6		747	726	371.3	5.926	76.8	74.7	84	6		946	919	417.7	8.438	76.8	74.7	87
7		742	728	310.9	5.323	71.1	69.7	84	7		939	921	349.7	7.579	71.1	69.7	87
1	750	473	320	998.8	13.684	57.0	38.7	94	1	825	572	387	1098.7	18.213	57.0	38.7	96
2		702	582	886.6	14.279	71.9	59.6	92	2		849	705	975.2	19.005	71.9	59.6	95
3		901	809	781.5	14.484	80.0	71.8	91	3		1090	978	859.6	19.278	80.0	71.8	93
4		1068	1000	668.4	13.990	83.8	78.5	90	4		1292	1210	735.2	18.621	83.8	78.5	92
5		1161	1114	556.2	12.849	82.4	79.1	89	5		1404	1348	611.8	17.102	82.4	79.1	92
6		1167	1135	464.1	11.575	76.8	74.7	89	6		1413	1373	510.5	15.406	76.8	74.7	92
7		1160	1137	388.6	10.396	71.1	69.7	89	7		1403	1376	427.4	13.838	71.1	69.7	92
1	900	680	461	1198.6	23.645	57.0	38.7	98	1	975	799	541	1298.4	30.063	57.0	38.7	100
2		1010	838	1063.9	24.674	71.9	59.6	97	2		1186	984	1152.6	31.371	71.9	59.6	99
3		1298	1164	937.8	25.028	80.0	71.8	96	3		1523	1367	1015.9	31.821	80.0	71.8	98
4		1537	1440	802.0	24.175	83.8	78.5	94	4		1804	1690	868.9	30.736	83.8	78.5	97
5		1671	1604	667.4	22.204	82.4	79.1	94	5		1962	1883	723.0	28.230	82.4	79.1	96
6		1681	1634	556.9	20.001	76.8	74.7	94	6		1973	1918	603.3	25.430	76.8	74.7	96
7		1670	1637	466.3	17.965	71.1	69.7	94	7		1960	1922	505.2	22.841	71.1	69.7	96
1	1050	926	628	1398.3	37.548	57.0	38.7	102	1	1125	1063	720	1498.2	46.183	57.0	38.7	104
2		1375	1141	1241.2	39.182	71.9	59.6	101	2		1579	1310	1329.9	48.192	71.9	59.6	103
3		1766	1585	1094.1	39.743	80.0	71.8	100	3		2027	1819	1172.2	48.883	80.0	71.8	102
4		2093	1961	935.7	38.389	83.8	78.5	98	4		2402	2251	1002.5	47.216	83.8	78.5	100
5		2275	2184	778.6	35.259	82.4	79.1	98	5		2612	2507	834.2	43.367	82.4	79.1	100
6		2288	2225	649.8	31.761	76.8	74.7	98	6		2627	2554	696.2	39.065	76.8	74.7	100
7		2273	2229	544.0	28.528	71.1	69.7	98	7		2610	2559	582.9	35.088	71.1	69.7	100
1	1200	1210	820	1598.1	56.048	57.0	38.7	105	1	1275	1366	925	1698.0	67.228	57.0	38.7	107
2		1796	1491	1418.5	58.487	71.9	59.6	104	2		2028	1683	1507.2	70.153	71.9	59.6	106
3		2307	2070	1250.3	59.325	80.0	71.8	103	3		2604	2337	1328.5	71.159	80.0	71.8	105
4		2733	2561	1069.4	57.303	83.8	78.5	102	4		3085	2891	1136.2	68.733	83.8	78.5	103
5		2971	2852	889.9	52.631	82.4	79.1	101	5		3354	3220	945.5	63.129	82.4	79.1	103
6		2989	2906	742.6	47.410	76.8	74.7	101	6		3374	3280	789.0	56.867	76.8	74.7	103
7		2969	2911	621.7	42.583	71.1	69.7	101	7		3352	3286	660.6	51.077	71.1	69.7	103
1	1350	1531	1037	1797.8	79.803	57.0	38.7	108	1	1425	1706	1156	1897.7	93.857	57.0	38.7	110
2		2274	1887	1595.8	83.276	71.9	59.6	107	2		2533	2102	1684.5	97.940	71.9	59.6	108
3		2919	2620	1406.6	84.469	80.0	71.8	106	3		3253	2919	1484.8	99.344	80.0	71.8	108
4		3459	3241	1203.1	81.590	83.8	78.5	105	4		3854	3611	1269.9	95.958	83.8	78.5	106
5		3761	3610	1001.1	74.937	82.4	79.1	104	5		4190	4022	1056.7	88.134	82.4	79.1	106
6		3783	3677	835.4	67.504	76.8	74.7	104	6		4215	4097	881.8	79.391	76.8	74.7	106
7		3758	3684	699.5	60.631	71.1	69.7	104	7		4187	4105	738.3	71.309	71.1	69.7	106
1	1500	1890	1281	1997.6	109.470	57.0	38.7	111	1	1575	2084	1412	2097.5	126.725	57.0	38.7	112
2		2807	2329	1773.2	114.233	71.9	59.6	110	2		3095	2568	1861.8	132.239	71.9	59.6	111
3		3604	3234	1562.9	115.870	80.0	71.8	109	3		3974	3566	1641.1	134.134	80.0	71.8	110
4		4271	4001	1336.7	111.920	83.8	78.5	108	4		4708	4411	1403.6	129.562	83.8	78.5	109
5		4643	4456	1112.3	102.795	82.4	79.1	107	5		5119	4913	1167.9	118.998	82.4	79.1	108
6		4670	4540	928.2	92.598	76.8	74.7	107	6		5148	5005	974.6	107.193	76.8	74.7	108
7		4639	4549	777.2	83.171	71.1	69.7	107	7		5115	5015	816.0	96.281	71.1	69.7	108

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301
- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.
- Performance certified is for installation type B - free inlet, ducted outlet.
- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

KAS 1250

Wheel Diameter Ø1250mm
Outlet Size / Area 1.31 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]
1	300	94	64	555.4	1.517	57.0	38.7	75	1	375	147	100	694.3	2.962	57.0	38.7	81
2		140	116	493.0	1.582	71.9	59.6	73	2		219	181	616.3	3.091	71.9	59.6	78
3		180	161	434.6	1.605	80.0	71.8	72	3		281	252	543.2	3.135	80.0	71.8	77
4		213	199	371.7	1.550	83.8	78.5	70	4		332	311	464.6	3.028	83.8	78.5	76
5		231	222	309.3	1.424	82.4	79.1	70	5		361	347	386.6	2.781	82.4	79.1	76
6		233	226	258.1	1.283	76.8	74.7	70	6		364	353	322.6	2.505	76.8	74.7	76
7		231	227	216.1	1.152	71.1	69.7	70	7		361	354	270.1	2.250	71.1	69.7	76
1	450	212	144	833.1	5.118	57.0	38.7	85	1	525	288	195	972.0	8.128	57.0	38.7	89
2		315	261	739.5	5.341	71.9	59.6	83	2		428	355	862.8	8.481	71.9	59.6	87
3		404	363	651.8	5.417	80.0	71.8	81	3		550	494	760.5	8.603	80.0	71.8	85
4		479	449	557.5	5.233	83.8	78.5	80	4		652	611	650.4	8.309	83.8	78.5	84
5		520	500	463.9	4.806	82.4	79.1	80	5		708	680	541.2	7.632	82.4	79.1	84
6		524	509	387.1	4.329	76.8	74.7	80	6		713	693	451.6	6.875	76.8	74.7	84
7		520	510	324.1	3.889	71.1	69.7	80	7		708	694	378.1	6.175	71.1	69.7	84
1	600	377	255	1110.8	12.132	57.0	38.7	92	1	675	477	323	1249.7	17.274	57.0	38.7	95
2		559	464	986.0	12.660	71.9	59.6	90	2		708	587	1109.3	18.026	71.9	59.6	93
3		718	645	869.1	12.841	80.0	71.8	89	3		909	816	977.7	18.284	80.0	71.8	92
4		851	797	743.3	12.404	83.8	78.5	88	4		1077	1009	836.2	17.661	83.8	78.5	90
5		925	888	618.5	11.392	82.4	79.1	87	5		1171	1124	695.9	16.221	82.4	79.1	90
6		931	905	516.2	10.262	76.8	74.7	87	6		1178	1145	580.7	14.612	76.8	74.7	90
7		925	907	432.2	9.217	71.1	69.7	87	7		1170	1147	486.2	13.124	71.1	69.7	90
1	750	589	399	1388.5	23.695	57.0	38.7	97	1	825	712	483	1527.4	31.539	57.0	38.7	99
2		874	725	1232.5	24.726	71.9	59.6	96	2		1058	878	1355.8	32.911	71.9	59.6	98
3		1122	1007	1086.4	25.081	80.0	71.8	94	3		1358	1219	1195.0	33.383	80.0	71.8	97
4		1330	1246	929.2	24.226	83.8	78.5	93	4		1609	1508	1022.1	32.245	83.8	78.5	96
5		1446	1388	773.2	22.251	82.4	79.1	93	5		1749	1679	850.5	29.616	82.4	79.1	95
6		1454	1414	645.2	20.043	76.8	74.7	93	6		1760	1711	709.7	26.678	76.8	74.7	95
7		1445	1416	540.2	18.003	71.1	69.7	93	7		1748	1714	594.2	23.962	71.1	69.7	95
1	900	848	574	1666.2	40.946	57.0	38.7	102	1	975	995	674	1805.1	52.059	57.0	38.7	104
2		1259	1044	1479.0	42.727	71.9	59.6	100	2		1477	1226	1602.3	54.324	71.9	59.6	102
3		1616	1450	1303.7	43.340	80.0	71.8	99	3		1897	1702	1412.3	55.102	80.0	71.8	101
4		1915	1794	1115.0	41.862	83.8	78.5	98	4		2247	2106	1207.9	53.224	83.8	78.5	100
5		2082	1998	927.8	38.449	82.4	79.1	97	5		2443	2345	1005.1	48.885	82.4	79.1	99
6		2094	2036	774.2	34.635	76.8	74.7	97	6		2458	2389	838.8	44.035	76.8	74.7	99
7		2080	2040	648.3	31.109	71.1	69.7	97	7		2442	2394	702.3	39.552	71.1	69.7	99
1	1050	1154	782	1943.9	65.020	57.0	38.7	105	1	1125	1324	897	2082.8	79.972	57.0	38.7	107
2		1713	1422	1725.5	67.849	71.9	59.6	104	2		1967	1632	1848.8	83.452	71.9	59.6	106
3		2200	1974	1520.9	68.822	80.0	71.8	103	3		2525	2266	1629.6	84.648	80.0	71.8	105
4		2607	2442	1300.8	66.476	83.8	78.5	102	4		2992	2803	1393.7	81.762	83.8	78.5	104
5		2834	2720	1082.4	61.056	82.4	79.1	101	5		3253	3122	1159.8	75.096	82.4	79.1	103
6		2850	2771	903.3	54.999	76.8	74.7	101	6		3272	3181	967.8	67.646	76.8	74.7	103
7		2832	2776	756.3	49.400	71.1	69.7	101	7		3251	3187	810.3	60.760	71.1	69.7	103
1	1200	1507	1021	2221.6	97.056	57.0	38.7	109	1	1275	1701	1153	2360.5	116.415	57.0	38.7	110
2		2238	1857	1972.0	101.279	71.9	59.6	107	2		2526	2096	2095.3	121.481	71.9	59.6	109
3		2873	2579	1738.2	102.731	80.0	71.8	107	3		3244	2911	1846.9	123.222	80.0	71.8	108
4		3404	3190	1486.7	99.229	83.8	78.5	105	4		3843	3601	1579.6	119.022	83.8	78.5	107
5		3701	3553	1237.1	91.138	82.4	79.1	105	5		4178	4011	1314.4	109.317	82.4	79.1	106
6		3723	3619	1032.3	82.098	76.8	74.7	105	6		4203	4086	1096.8	98.473	76.8	74.7	106
7		3699	3626	864.3	73.740	71.1	69.7	105	7		4175	4093	918.4	88.448	71.1	69.7	106
1	1350	1907	1292	2499.3	138.192	57.0	38.7	112	1	1425	2125	1440	2638.2	162.527	57.0	38.7	113
2		2832	2350	2218.5	144.204	71.9	59.6	110	2		3155	2618	2341.8	169.598	71.9	59.6	112
3		3636	3263	1955.5	146.271	80.0	71.8	110	3		4052	3636	2064.1	172.029	80.0	71.8	111
4		4309	4037	1672.5	141.285	83.8	78.5	108	4		4801	4498	1765.4	166.165	83.8	78.5	110
5		4684	4496	1391.7	129.765	82.4	79.1	108	5		5219	5010	1469.0	152.617	82.4	79.1	109
6		4712	4581	1161.4	116.893	76.8	74.7	108	6		5250	5104	1225.9	137.477	76.8	74.7	109
7		4681	4589	972.4	104.992	71.1	69.7	108	7		5216	5113	1026.4	123.481	71.1	69.7	109
1	1500	2355	1595	2777.1	189.563	57.0	38.7	114	1	1575	2596	1759	2915.9	219.443	57.0	38.7	115
2		3496	2901	2465.0	197.811	71.9	59.6	113	2		3855	3199	2588.3	228.991	71.9	59.6	114
3		4489	4029	2172.8	200.646	80.0	71.8	112	3		4950	4442	2281.4	232.273	80.0	71.8	114
4		5319	4984	1858.3	193.807	83.8	78.5	111	4		5865	5495	1951.2	224.356	83.8	78.5	112
5		5783	5551	1546.3	178.005	82.4	79.1	110	5		6376	6120	1623.7	206.063	82.4	79.1	112
6		5817	5655	1290.4	160.347	76.8	74.7	110	6		6413	6235	1354.9	185.621	76.8	74.7	112
7		5779	5666	1080.4	144.023	71.1	69.7	110	7		6371	6246	1134.4	166.724	71.1	69.7	112

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301
- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.
- Performance certified is for installation type B - free inlet, ducted outlet.
- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

KAS 1400

Wheel Diameter Ø1400mm
Outlet Size / Area 1.64 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m ³ /min]	[kW]	[%]	[%]	[dB(A)]
1	200	53	36	520.2	0.792	57.0	38.7	69	1	275	99	67	715.3	2.059	57.0	38.7	77
2		78	65	461.8	0.826	71.9	59.6	67	2		147	122	634.9	2.148	71.9	59.6	74
3		100	90	407.0	0.838	80.0	71.8	65	3		189	170	559.6	2.179	80.0	71.8	73
4		119	111	348.1	0.810	83.8	78.5	64	4		224	210	478.6	2.105	83.8	78.5	72
5		129	124	289.7	0.744	82.4	79.1	64	5		244	234	398.3	1.933	82.4	79.1	71
6		130	126	241.7	0.670	76.8	74.7	64	6		245	238	332.4	1.741	76.8	74.7	71
7		129	126	202.4	0.602	71.1	69.7	64	7		244	239	278.3	1.564	71.1	69.7	71
1	350	161	109	910.4	4.244	57.0	38.7	82	1	425	237	161	1105.4	7.599	57.0	38.7	87
2		239	198	808.1	4.429	71.9	59.6	80	2		352	292	981.2	7.929	71.9	59.6	85
3		307	275	712.3	4.492	80.0	71.8	79	3		452	406	864.9	8.043	80.0	71.8	83
4		363	340	609.2	4.339	83.8	78.5	77	4		536	502	739.7	7.769	83.8	78.5	82
5		395	379	506.9	3.985	82.4	79.1	77	5		582	559	615.5	7.135	82.4	79.1	82
6		397	386	423.0	3.590	76.8	74.7	77	6		586	569	513.7	6.428	76.8	74.7	82
7		395	387	354.2	3.224	71.1	69.7	77	7		582	571	430.1	5.773	71.1	69.7	82
1	500	328	222	1300.5	12.373	57.0	38.7	91	1	575	434	294	1495.6	18.818	57.0	38.7	94
2		487	404	1154.4	12.912	71.9	59.6	89	2		644	535	1327.6	19.637	71.9	59.6	92
3		626	562	1017.5	13.097	80.0	71.8	88	3		828	743	1170.2	19.918	80.0	71.8	91
4		741	695	870.3	12.650	83.8	78.5	86	4		981	919	1000.8	19.239	83.8	78.5	90
5		806	774	724.2	11.619	82.4	79.1	86	5		1066	1023	832.8	17.671	82.4	79.1	90
6		811	788	604.3	10.466	76.8	74.7	86	6		1072	1042	695.0	15.918	76.8	74.7	90
7		805	790	506.0	9.401	71.1	69.7	86	7		1065	1044	581.9	14.297	71.1	69.7	90
1	650	555	376	1690.7	27.184	57.0	38.7	97	1	725	690	468	1885.8	37.721	57.0	38.7	100
2		824	683	1500.7	28.367	71.9	59.6	95	2		1025	850	1673.9	39.362	71.9	59.6	98
3		1057	949	1322.8	28.773	80.0	71.8	94	3		1316	1181	1475.4	39.927	80.0	71.8	97
4		1253	1174	1131.3	27.792	83.8	78.5	93	4		1559	1460	1261.9	38.566	83.8	78.5	96
5		1362	1308	941.4	25.526	82.4	79.1	93	5		1695	1627	1050.0	35.421	82.4	79.1	95
6		1370	1332	785.6	22.994	76.8	74.7	93	6		1705	1657	876.2	31.907	76.8	74.7	95
7		1361	1335	657.8	20.653	71.1	69.7	93	7		1693	1660	733.7	28.659	71.1	69.7	95
1	800	840	569	2080.8	50.680	57.0	38.7	102	1	875	1005	681	2275.9	66.312	57.0	38.7	104
2		1248	1035	1847.0	52.886	71.9	59.6	101	2		1492	1238	2020.2	69.198	71.9	59.6	103
3		1602	1438	1628.1	53.644	80.0	71.8	99	3		1916	1720	1780.7	70.189	80.0	71.8	102
4		1898	1778	1392.4	51.815	83.8	78.5	98	4		2271	2127	1523.0	67.797	83.8	78.5	100
5		2063	1981	1158.7	47.590	82.4	79.1	98	5		2469	2369	1267.3	62.269	82.4	79.1	100
6		2075	2018	966.9	42.869	76.8	74.7	98	6		2483	2414	1057.5	56.092	76.8	74.7	100
7		2062	2022	809.6	38.505	71.1	69.7	98	7		2467	2418	885.5	50.381	71.1	69.7	100
1	950	1185	803	2471.0	84.867	57.0	38.7	106	1	1025	1379	934	2666.1	106.596	57.0	38.7	108
2		1759	1460	2193.4	88.560	71.9	59.6	105	2		2048	1699	2366.5	111.234	71.9	59.6	107
3		2259	2027	1933.3	89.829	80.0	71.8	104	3		2630	2360	2085.9	112.829	80.0	71.8	106
4		2677	2508	1653.5	86.767	83.8	78.5	103	4		3116	2919	1784.0	108.983	83.8	78.5	105
5		2910	2793	1375.9	79.693	82.4	79.1	102	5		3387	3251	1484.5	100.097	82.4	79.1	104
6		2927	2845	1148.2	71.787	76.8	74.7	102	6		3407	3312	1238.8	90.167	76.8	74.7	104
7		2908	2851	961.3	64.479	71.1	69.7	102	7		3385	3319	1037.2	80.988	71.1	69.7	104
1	1100	1588	1076	2861.1	131.749	57.0	38.7	110	1	1175	1812	1228	3056.2	160.577	57.0	38.7	112
2		2359	1957	2539.7	137.482	71.9	59.6	109	2		2691	2233	2712.8	167.564	71.9	59.6	110
3		3029	2718	2238.6	139.452	80.0	71.8	108	3		3456	3101	2391.2	169.966	80.0	71.8	110
4		3588	3362	1914.6	134.699	83.8	78.5	106	4		4094	3836	2045.1	164.172	83.8	78.5	108
5		3901	3745	1593.2	123.716	82.4	79.1	106	5		4451	4273	1701.8	150.786	82.4	79.1	108
6		3924	3815	1329.5	111.443	76.8	74.7	106	6		4477	4353	1420.1	135.828	76.8	74.7	108
7		3898	3822	1113.1	100.098	71.1	69.7	106	7		4448	4361	1189.0	122.000	71.1	69.7	108
1	1250	2051	1390	3251.3	193.330	57.0	38.7	113	1	1325	2305	1562	3446.4	230.260	57.0	38.7	114
2		3046	2527	2886.0	201.742	71.9	59.6	112	2		3422	2840	3059.2	240.278	71.9	59.6	113
3		3911	3510	2543.8	204.634	80.0	71.8	111	3		4394	3943	2696.5	243.722	80.0	71.8	113
4		4634	4341	2175.7	197.659	83.8	78.5	110	4		5207	4878	2306.2	235.415	83.8	78.5	111
5		5038	4836	1810.4	181.542	82.4	79.1	109	5		5660	5433	1919.0	216.220	82.4	79.1	111
6		5067	4926	1510.8	163.533	76.8	74.7	109	6		5693	5535	1601.4	194.771	76.8	74.7	111
7		5034	4935	1264.9	146.885	71.1	69.7	109	7		5656	5545	1340.8	174.942	71.1	69.7	111
1	1400	2573	1743	3641.5	271.615	57.0	38.7	116	1	1475	2856	1935	3836.5	317.648	57.0	38.7	117
2		3821	3170	3232.3	283.433	71.9	59.6	115	2		4241	3519	3405.5	331.469	71.9	59.6	116
3		4906	4403	2849.1	287.496	80.0	71.8	114	3		5445	4887	3001.7	336.220	80.0	71.8	115
4		5813	5446	2436.8	277.696	83.8	78.5	113	4		6452	6045	2567.3	324.759	83.8	78.5	114
5		6319	6066	2027.7	255.054	82.4	79.1	112	5		7015	6733	2136.3	298.280	82.4	79.1	113
6		6356	6180	1692.1	229.753	76.8	74.7	112	6		7055	6859	1782.7	268.691	76.8	74.7	113
7		6315	6191	1416.7	206.363	71.1	69.7	112	7		7010	6872	1492.6	241.336	71.1	69.7	113

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301
- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.
- Performance certified is for installation type B - free inlet, ducted outlet.
- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.

■ KAS 1600

Wheel Diameter Ø1600mm
 Outlet Size / Area 2.14 m²

Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi	Det.	N	Pt	Ps	Q	H	EtaT	EtaS	Lwi
	[r/min]	[Pa]	[Pa]	[m3/min]	[kW]	[%]	[%]	[dB(A)]		[r/min]	[Pa]	[Pa]	[m3/min]	[kW]	[%]	[%]	[dB(A)]
1	100	17	12	388.3	0.193	57.0	38.7	57	1	175	53	36	680	1.034	57.0	38.7	70
2		25	21	344.6	0.201	71.9	59.6	54	2		78	65	603	1.079	71.9	59.6	68
3		33	29	303.8	0.204	80.0	71.8	53	3		100	90	532	1.095	80.0	71.8	66
4		39	36	259.8	0.197	83.8	78.5	51	4		119	111	455	1.057	83.8	78.5	65
5		42	40	216.2	0.181	82.4	79.1	51	5		129	124	378	0.971	82.4	79.1	65
6		42	41	180.4	0.163	76.8	74.7	51	6		130	126	316	0.875	76.8	74.7	65
7		42	41	151.1	0.147	71.1	69.7	51	7		129	126	264	0.786	71.1	69.7	65
1	250	107	73	970.6	3.015	57.0	38.7	79	1	325	181	123	1262	6.625	57.0	38.7	85
2		159	132	861.6	3.147	71.9	59.6	76	2		269	223	1120	6.913	71.9	59.6	82
3		204	183	759.4	3.192	80.0	71.8	75	3		345	310	987	7.012	80.0	71.8	81
4		242	227	649.5	3.083	83.8	78.5	73	4		409	383	844	6.773	83.8	78.5	80
5		263	253	540.5	2.832	82.4	79.1	73	5		445	427	703	6.221	82.4	79.1	80
6		265	257	451.0	2.551	76.8	74.7	73	6		447	435	586	5.604	76.8	74.7	80
7		263	258	377.6	2.291	71.1	69.7	73	7		444	436	491	5.033	71.1	69.7	80
1	400	274	186	1553.0	12.351	57.0	38.7	90	1	475	387	262	1844	20.683	57.0	38.7	94
2		407	338	1378.5	12.889	71.9	59.6	87	2		574	477	1637	21.583	71.9	59.6	92
3		523	469	1215.1	13.073	80.0	71.8	86	3		738	662	1443	21.892	80.0	71.8	90
4		620	581	1039.2	12.628	83.8	78.5	85	4		874	819	1234	21.146	83.8	78.5	89
5		674	647	864.8	11.598	82.4	79.1	85	5		950	912	1027	19.422	82.4	79.1	89
6		678	659	721.6	10.448	76.8	74.7	85	6		956	929	857	17.495	76.8	74.7	89
7		673	660	604.2	9.384	71.1	69.7	85	7		949	931	718	15.714	71.1	69.7	89
1	550	519	351	2135.4	32.108	57.0	38.7	97	1	625	670	454	2427	47.116	57.0	38.7	100
2		770	639	1895.5	33.505	71.9	59.6	95	2		995	825	2154	49.166	71.9	59.6	99
3		989	887	1670.8	33.986	80.0	71.8	94	3		1277	1146	1899	49.871	80.0	71.8	97
4		1172	1098	1429.0	32.827	83.8	78.5	93	4		1513	1418	1624	48.171	83.8	78.5	96
5		1274	1223	1189.1	30.151	82.4	79.1	93	5		1645	1579	1351	44.243	82.4	79.1	96
6		1281	1246	992.3	27.160	76.8	74.7	93	6		1655	1609	1128	39.854	76.8	74.7	96
7		1273	1248	830.8	24.395	71.1	69.7	93	7		1644	1612	944	35.797	71.1	69.7	96
1	700	840	569	2717.8	66.195	57.0	38.7	103	1	775	1030	698	3009	89.833	57.0	38.7	105
2		1248	1035	2412.5	69.075	71.9	59.6	101	2		1529	1269	2671	93.741	71.9	59.6	104
3		1602	1438	2126.4	70.065	80.0	71.8	100	3		1964	1762	2354	95.085	80.0	71.8	103
4		1898	1778	1818.7	67.677	83.8	78.5	99	4		2327	2180	2014	91.844	83.8	78.5	101
5		2063	1981	1513.4	62.159	82.4	79.1	99	5		2529	2428	1676	84.355	82.4	79.1	101
6		2075	2018	1262.9	55.993	76.8	74.7	99	6		2544	2473	1398	75.987	76.8	74.7	101
7		2062	2022	1057.4	50.292	71.1	69.7	99	7		2528	2478	1171	68.251	71.1	69.7	101
1	850	1239	839	3300.2	118.519	57.0	38.7	108	1	925	1467	994	3591	152.741	57.0	38.7	110
2		1839	1526	2929.4	123.675	71.9	59.6	106	2		2178	1808	3188	159.387	71.9	59.6	108
3		2362	2120	2582.1	125.448	80.0	71.8	105	3		2797	2510	2810	161.671	80.0	71.8	107
4		2799	2622	2208.4	121.172	83.8	78.5	104	4		3314	3105	2403	156.160	83.8	78.5	106
5		3043	2920	1837.6	111.292	82.4	79.1	103	5		3603	3459	2000	143.428	82.4	79.1	106
6		3060	2975	1533.5	100.252	76.8	74.7	103	6		3624	3523	1669	129.200	76.8	74.7	105
7		3040	2981	1284.0	90.046	71.1	69.7	103	7		3601	3530	1397	116.046	71.1	69.7	105
1	1000	1715	1162	3882.6	192.988	57.0	38.7	112	1	1075	1981	1343	4174	239.748	57.0	38.7	113
2		2546	2113	3446.4	201.385	71.9	59.6	110	2		2942	2441	3705	250.180	71.9	59.6	112
3		3269	2934	3037.8	204.271	80.0	71.8	109	3		3778	3390	3266	253.765	80.0	71.8	111
4		3874	3629	2598.1	197.308	83.8	78.5	108	4		4476	4194	2793	245.115	83.8	78.5	110
5		4211	4042	2161.9	181.221	82.4	79.1	108	5		4867	4671	2324	225.130	82.4	79.1	109
6		4236	4118	1804.1	163.244	76.8	74.7	107	6		4895	4759	1939	202.797	76.8	74.7	109
7		4208	4126	1510.5	146.624	71.1	69.7	107	7		4863	4768	1624	182.151	71.1	69.7	109
1	1150	2267	1536	4465.0	293.510	57.0	38.7	115	1	1225	2573	1743	4756	354.763	57.0	38.7	117
2		3367	2794	3963.3	306.281	71.9	59.6	114	2		3821	3170	4222	370.199	71.9	59.6	116
3		4323	3880	3493.4	310.671	80.0	71.8	113	3		4906	4403	3721	375.505	80.0	71.8	115
4		5123	4799	2987.8	300.081	83.8	78.5	112	4		5813	5446	3183	362.705	83.8	78.5	113
5		5569	5346	2486.2	275.614	82.4	79.1	111	5		6319	6066	2648	333.131	82.4	79.1	113
6		5602	5446	2074.7	248.273	76.8	74.7	111	6		6356	6180	2210	300.085	76.8	74.7	113
7		5565	5456	1737.1	222.998	71.1	69.7	111	7		6315	6191	1850	269.535	71.1	69.7	113
1	1300	2898	1963	5047.4	423.994	57.0	38.7	118	1	1375	3242	2196	5339	501.693	57.0	38.7	119
2		4303	3570	4480.3	442.442	71.9	59.6	117	2		4813	3994	4739	523.522	71.9	59.6	118
3		5525	4958	3949.1	448.784	80.0	71.8	116	3		6181	5547	4177	531.025	80.0	71.8	118
4		6546	6133	3377.6	433.486	83.8	78.5	115	4		7323	6861	3572	512.924	83.8	78.5	116
5		7117	6831	2810.5	398.141	82.4	79.1	114	5		7962	7642	2973	471.103	82.4	79.1	116
6		7158	6959	2345.3	358.646	76.8	74.7	114	6		8008	7786	2481	424.370	76.8	74.7	116
7		7112	6972	1963.7	322.134	71.1	69.7	114	7		7956	7800	2077	381.166	71.1	69.7	116

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301
- Value shown are for inlet Lwi A sound power levels for installation type B - free inlet, ducted outlet.
- Performance certified is for installation type B - free inlet, ducted outlet.
- Performance ratings do not include the effects of appurtenances(accessories), Power rating kW does not include transmission losses.