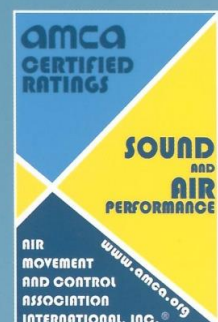




MIXED FLOW FANS

"TSMF" Series Rev. 02

'July 2019





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## INTRODUCTION & AMCA SEAL INFORMATION



주)티에스에어테크는 공조용 및 산업용송풍기(FAN, BLOWER), 공기조화기(AHU) 생산업체로서 1997년 설립 이래 송풍기 개발에 적극 참여하여 왔으며 그동안 축적해온 경험과 끊임없는 연구개발 및 기술혁신을 통해 고품질의 송풍기를 고객 여러분께 제작 공급하고자 혼신의 노력을 다하고 있습니다.

주)티에스에어테크는 꾸준한 제품개발과 철저한 고객서비스로 명실상부한 송풍기(FAN)전문 메이커로서 정상에 우뚝 서고자 심혈을 기울여 최선을 다 할 것이며 끊임없는 기술개발과 철저한 품질관리로 여러분의 성원에 보답하고자 항상 노력하는 회사가 되겠습니다.

감사합니다.

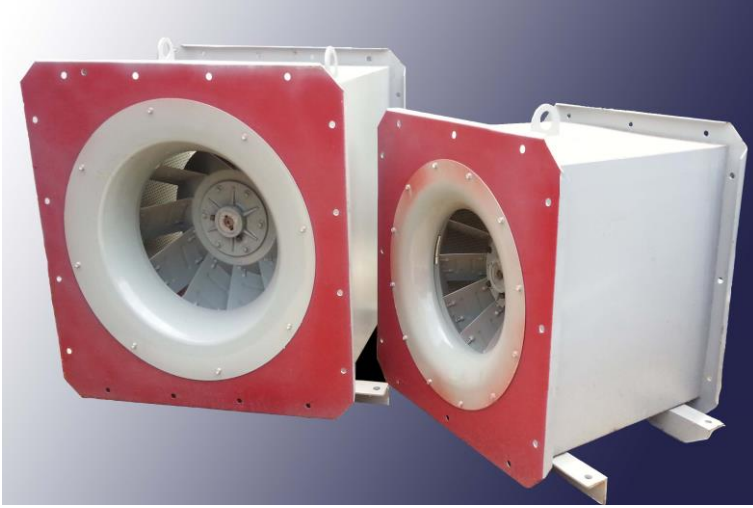


주)티에스에어테크가 획득한 TSMF SERIES Mixed flow FAN의 AMCA seal에 대한 내용입니다.

등급표시는 AMCA 211과 AMCA 311에 의거 테스트 및 절차에 따른 것이며, AMCA 보증프로그램의 요구사항과 일치합니다.

TS Airtech Co., Ltd certifies that the type "TSMF" Mixed flow Fans shown here in 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.

## ABOUT FANS



### ● 구조 및 형상

원심형과 축류형 흐름을 통합한 날개구조로 주판이 약 45도~55도의 경사면을 형성하고 있다.

### ● MODEL & TYPE

SIZE : 임펠러 깃 바깥지름 기준 (TSMF-500~900)

구동방식 : V-BELT 구동형(v-belt driven type)

직결식(direct driven type-with coupling)

재질 : STEEL, STS, SGCC

### ● MIXED FLOW FAN의 특징

#### 1) 공간절약 (Small space)

바닥설치형이 아닌 천정 Duct에 연결되므로 설치공간이 동일용량의 FAN중 가장 적다.

#### 2) 저소음 (Low level sound)

흡음재(Polyurethane 25t)를 사용하여 동일용량 중 가장 소음이 적다.

#### 3) 성능특성 (Special Performance)

풍량변화에 대한 정압 변화폭이 다소 적으며, 동력의 변화폭도 적습니다.

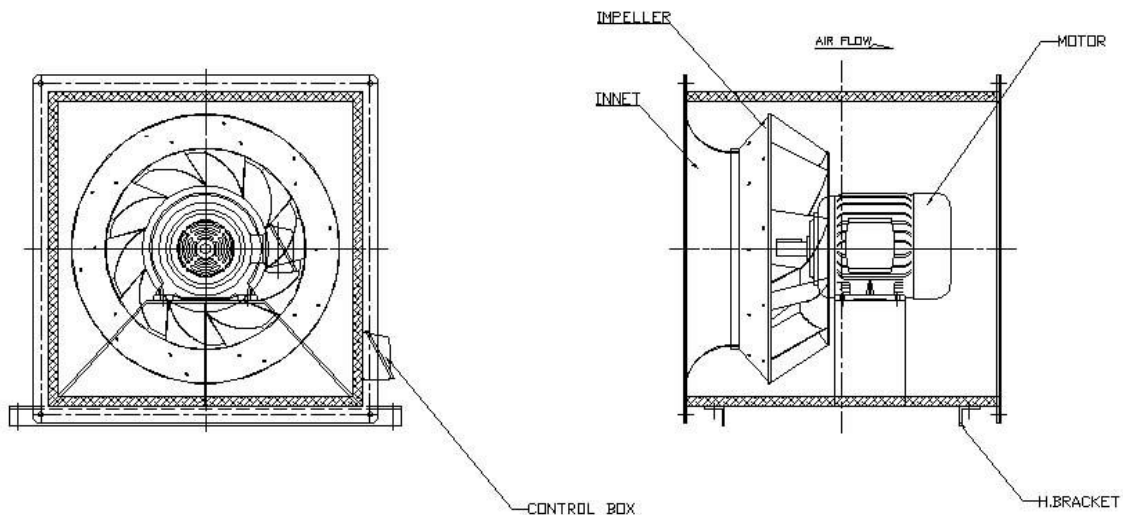
### ● 주요용도

- 기계실, 전기실, 발전기실 급,배기

- 소방 제연용 급기

- 일반 건축물 급,배기, 국소부위 급, 배기

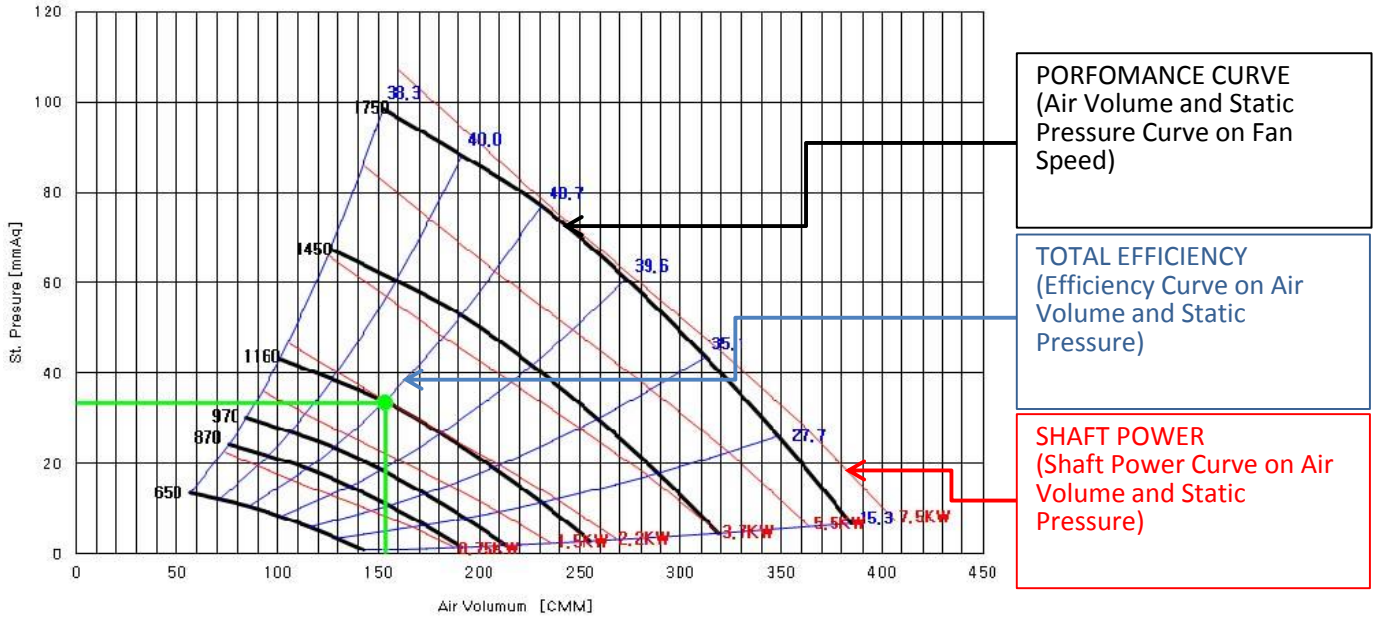
### ● MIXED FLOW FAN 구조



# FAN SELECT METHOD

## FAN 선정방법 예제 (Select Method Example)

AIR VOLUME	STATIC PRESSURE	FAN SPEED	TOTAL EFFICIENCY	SHAFT POWER	SOUND
153 CMM	33.9 mmAq	1160 RPM	40.65%	2.18 kW	89 dB(A)

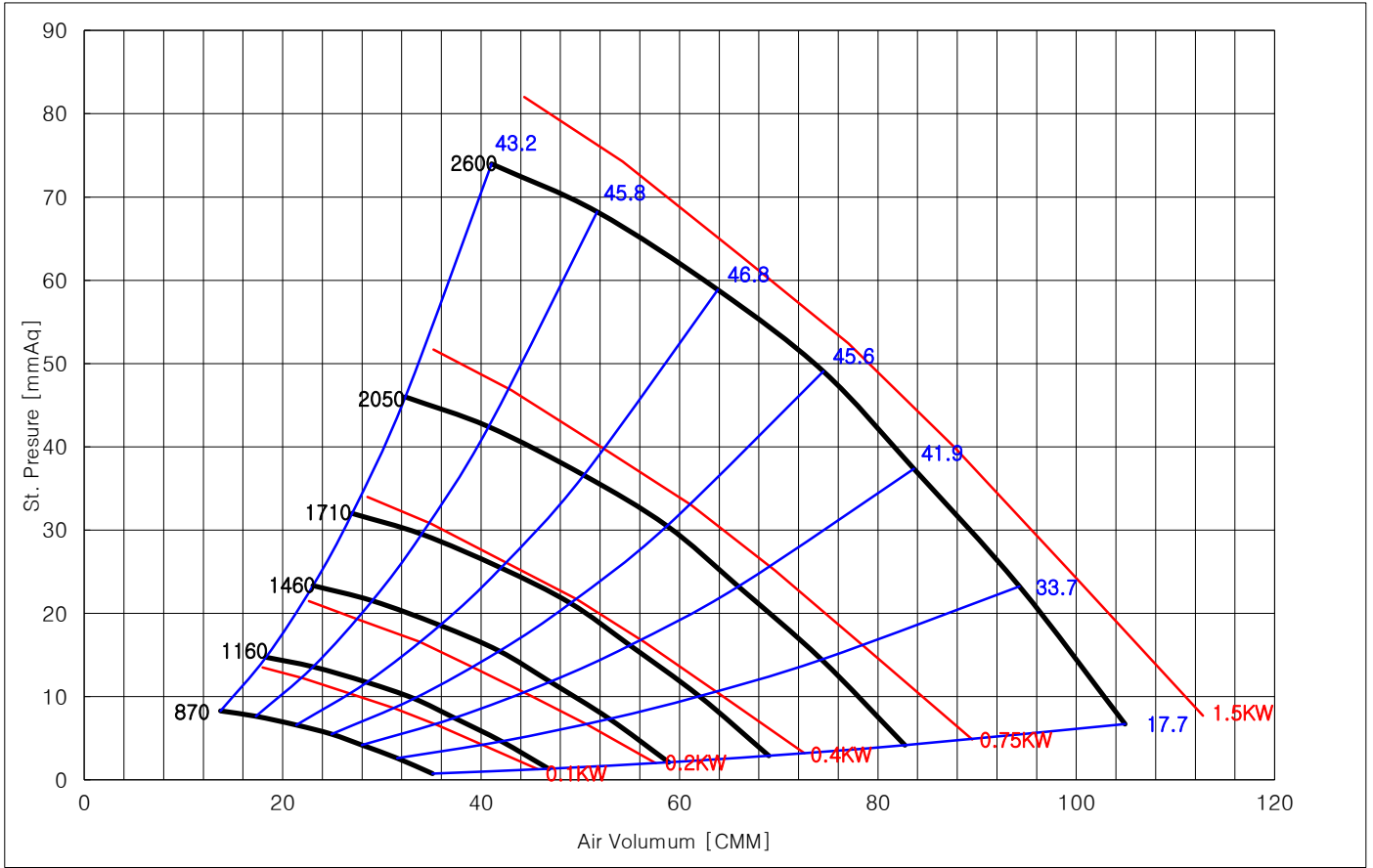


650	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	870	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	970	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))
1	143	0.9	0.32	15.29	74	1	191	1.7	0.78	15.29	82	1	213	2.1	1.08	15.29	85
2	129	3.6	0.35	27.72	74	2	173	6.5	0.84	27.72	81	2	193	8.0	1.16	27.72	84
3	116	6.0	0.37	35.13	73	3	155	10.8	0.89	35.13	81	3	173	13.4	1.23	35.13	84
4	101	8.4	0.38	39.58	72	4	136	15.1	0.91	39.58	80	4	151	18.7	1.26	39.58	83
5	86	10.6	0.38	40.65	74	5	115	19.1	0.92	40.65	81	5	128	23.7	1.28	40.65	84
6	71	12.2	0.36	40.01	75	6	95	21.8	0.87	40.01	83	6	106	27.1	1.21	40.01	86
7	57	13.6	0.34	38.27	75	7	76	24.4	0.81	38.27	83	7	84	30.3	1.12	38.27	85
1160	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	1450	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	1750	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))
1	255	3.0	1.85	15.29	90	1	319	4.7	3.60	15.29	95	1	385	6.8	6.33	15.29	100
2	231	11.5	1.99	27.72	89	2	289	18.0	3.89	27.72	95	2	348	26.2	6.83	27.72	100
3	207	19.2	2.10	35.13	89	3	259	30.0	4.10	35.13	94	3	312	43.7	7.21	35.13	100
4	181	26.8	2.15	39.58	88	4	226	41.9	4.21	39.58	94	4	273	61.0	7.39	39.58	99
5	153	33.9	2.18	40.65	89	5	191	53.0	4.26	40.65	95	5	231	77.2	7.49	40.65	100
6	127	38.8	2.07	40.01	90	6	159	60.6	4.03	40.01	96	6	192	88.3	7.09	40.01	101
7	101	43.3	1.91	38.27	90	7	126	67.7	3.73	38.27	96	7	152	98.5	6.56	38.27	101

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301  
 - Value shown are for inlet LwiA 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 apputenances(accessories), Power rating kW does not include transmission losses.



# PERFORMANCE CURVES AND SOUND DATA - TSMF - 500

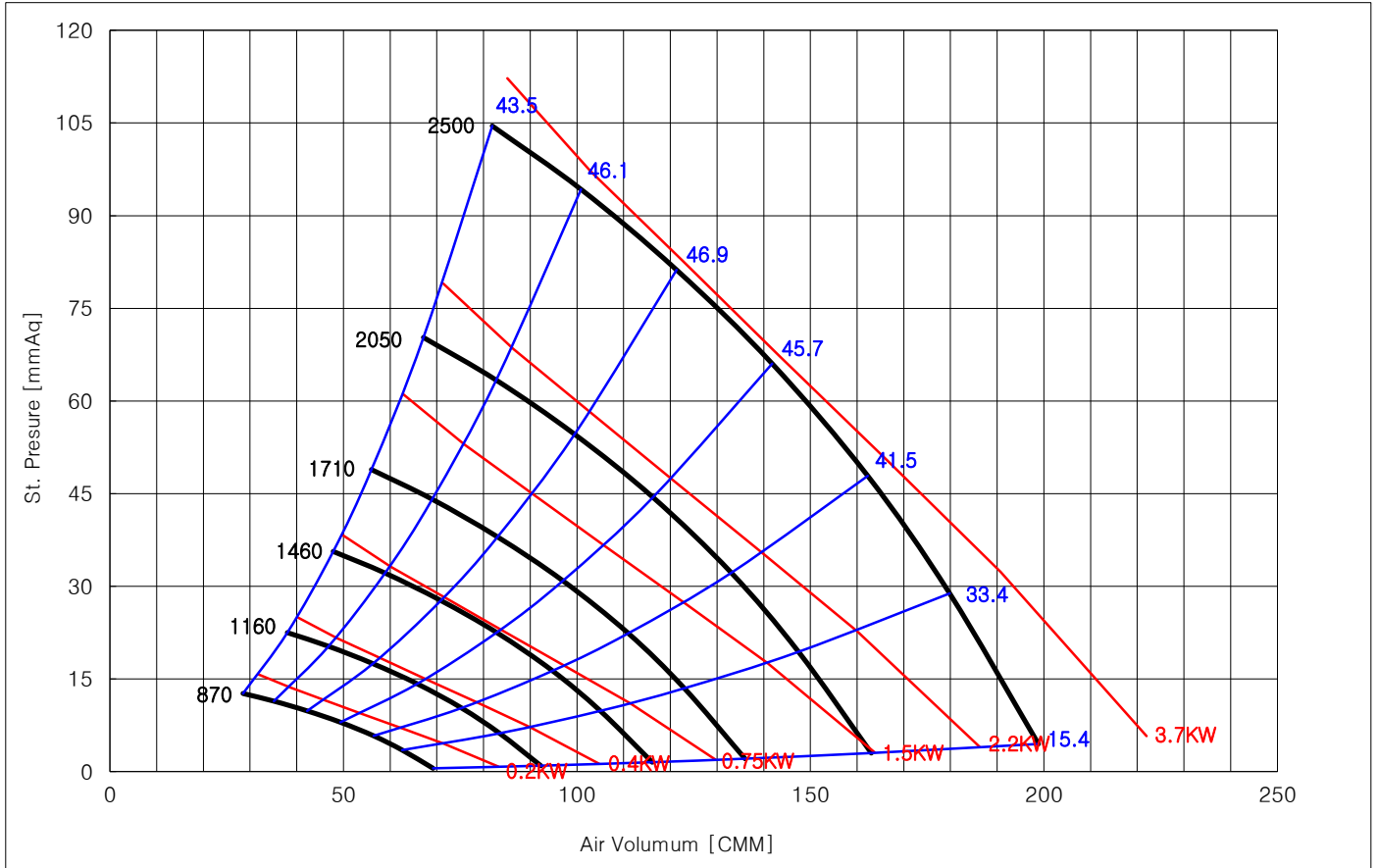


870	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))	1160	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))	1460	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))
1	35	0.8	0.043	17.67	67	1	47	1.3	0.10	17.67	73	1	59	2.1	0.20	17.67	78
2	32	2.6	0.047	33.74	65	2	42	4.6	0.11	33.74	72	2	53	7.3	0.22	33.74	77
3	28	4.2	0.050	41.91	64	3	37	7.4	0.12	41.91	71	3	47	11.8	0.24	41.91	76
4	25	5.5	0.052	45.63	63	4	33	9.8	0.12	45.63	70	4	42	15.5	0.24	45.63	75
5	21	6.6	0.051	46.77	62	5	28	11.7	0.12	46.77	69	5	36	18.6	0.24	46.77	75
6	17	7.6	0.048	45.82	62	6	23	13.6	0.11	45.82	69	6	29	21.5	0.23	45.82	74
7	14	8.3	0.045	43.15	61	7	18	14.7	0.11	43.15	68	7	23	23.3	0.21	43.15	74
1710	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))	2050	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))	2600	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))
1	69	2.9	0.33	17.67	82	1	83	4.2	0.56	17.67	86	1	105	6.7	1.14	17.67	92
2	62	10.1	0.36	33.74	81	2	74	14.4	0.62	33.74	85	2	94	23.2	1.26	33.74	91
3	55	16.2	0.38	41.91	80	3	66	23.2	0.66	41.91	84	3	84	37.4	1.34	41.91	90
4	49	21.2	0.39	45.63	79	4	59	30.5	0.68	45.63	84	4	75	49.1	1.38	45.63	89
5	42	25.5	0.39	46.77	79	5	50	36.6	0.67	46.77	83	5	64	58.9	1.36	46.77	89
6	34	29.5	0.37	45.82	78	6	41	42.4	0.63	45.82	83	6	52	68.2	1.29	45.82	88
7	27	32.0	0.34	43.15	78	7	32	46.0	0.58	43.15	82	7	41	74.0	1.19	43.15	88

- The A-Weighted sound rating shown have been calculated per AMCA Standard 301  
 - Value shown are for inlet Lwi 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 apputenances(accessories), Power rating kW does not include transmission losses.



# PERFORMANCE CURVES AND SOUND DATA - TSMF-600



870	Q(m <sup>3</sup> /min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	1160	Q(m <sup>3</sup> /min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	1460	Q(m <sup>3</sup> /min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))
1	69	0.5	0.11	15.37	72	1	92	1.0	0.27	15.37	79	1	116	1.5	0.54	15.37	84
2	63	3.5	0.13	33.44	71	2	83	6.2	0.31	33.44	78	2	105	9.8	0.62	33.44	83
3	56	5.8	0.14	41.52	70	3	75	10.3	0.34	41.52	77	3	95	16.3	0.68	41.52	83
4	49	8.0	0.15	45.67	70	4	66	14.2	0.36	45.67	77	4	83	22.5	0.71	45.67	82
5	42	9.8	0.15	46.89	69	5	56	17.5	0.36	46.89	76	5	71	27.7	0.71	46.89	82
6	35	11.4	0.15	46.10	68	6	47	20.3	0.35	46.10	75	6	59	32.1	0.69	46.10	81
7	28	12.7	0.14	43.54	68	7	38	22.5	0.33	43.54	75	7	48	35.6	0.65	43.54	81
1710	Q(m <sup>3</sup> /min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	2050	Q(m <sup>3</sup> /min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	2500	Q(m <sup>3</sup> /min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))
1	136	2.1	0.86	15.37	88	1	163	3.0	1.48	15.37	92	1	199	4.5	2.69	15.37	96
2	123	13.5	1.00	33.44	87	2	147	19.4	1.72	33.44	91	2	180	28.9	3.12	33.44	96
3	111	22.4	1.09	41.52	86	3	133	32.2	1.87	41.52	91	3	162	47.9	3.40	41.52	96
4	97	30.9	1.14	45.67	86	4	116	44.4	1.96	45.67	90	4	142	66.0	3.56	45.67	95
5	83	38.0	1.14	46.89	86	5	100	54.6	1.96	46.89	90	5	121	81.2	3.56	46.89	95
6	69	44.1	1.11	46.10	85	6	83	63.4	1.91	46.10	90	6	101	94.3	3.47	46.10	95
7	56	48.9	1.04	43.54	85	7	67	70.3	1.80	43.54	89	7	82	104.5	3.26	43.54	95

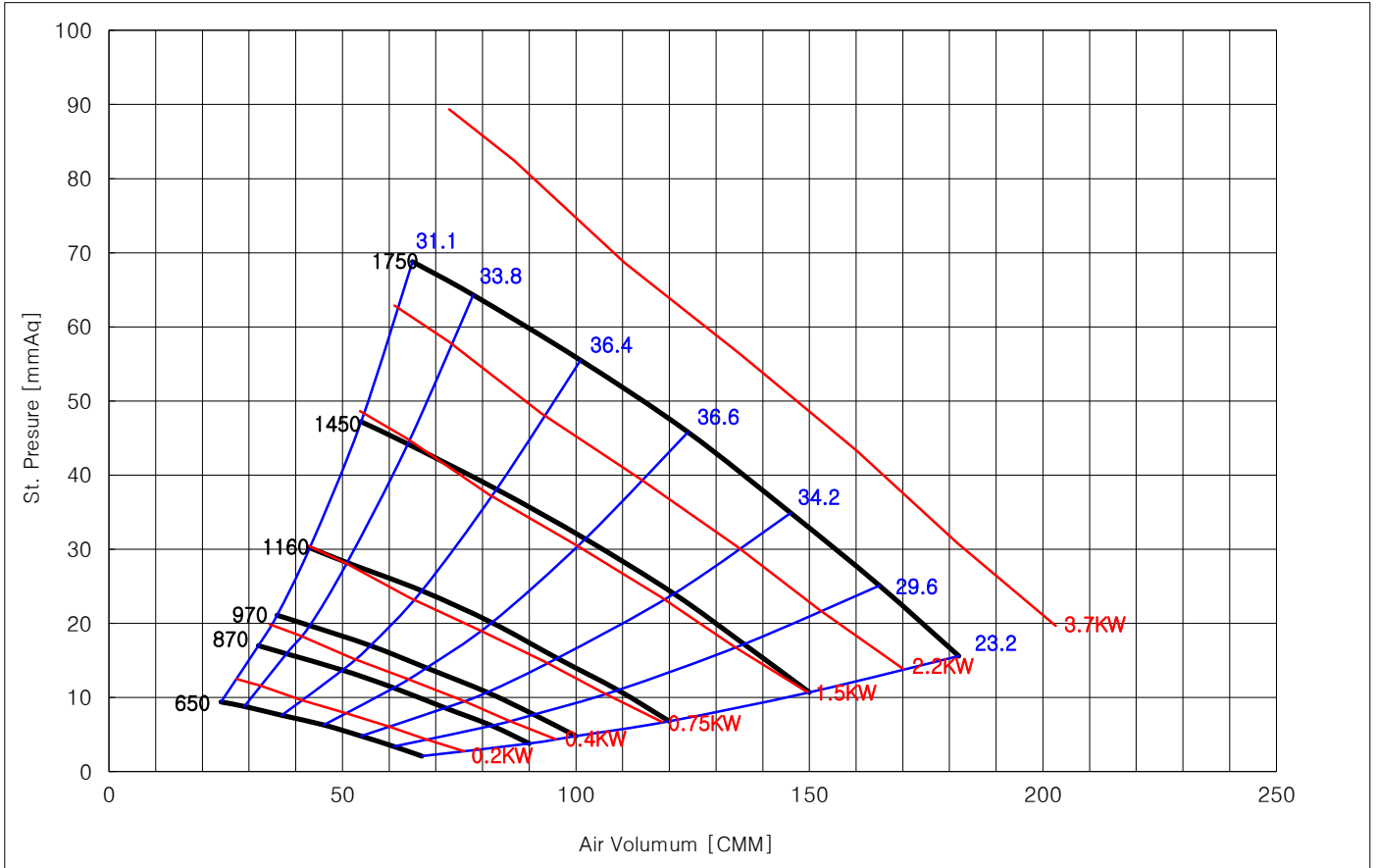
- The A-Weighted sound rating shown have been calculated per AMCA Standard 301

- Value shown are for inlet LwiA 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 apputenances(accessories). Power rating kW does not include transmission losses.

# PERFORMANCE CURVES AND SOUND DATA - TSMF-700



650	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))	870	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))	970	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))
1	67	2.1	0.13	23.19	70	1	90	3.8	0.31	23.19	77	1	100	4.8	0.40	23.19	80
2	61	3.4	0.14	29.64	70	2	82	6.2	0.32	29.64	77	2	91	7.7	0.42	29.64	80
3	54	4.8	0.14	34.15	69	3	72	8.6	0.32	34.15	77	3	81	10.7	0.44	34.15	79
4	46	6.3	0.14	36.60	69	4	61	11.3	0.33	36.60	77	4	68	14.0	0.45	36.60	80
5	37	7.6	0.14	36.38	69	5	50	13.7	0.32	36.38	77	5	56	17.0	0.45	36.38	80
6	29	8.8	0.13	33.84	69	6	38	15.9	0.31	33.84	77	6	43	19.7	0.44	33.84	80
7	24	9.4	0.13	31.13	69	7	32	17.0	0.30	31.13	77	7	36	21.1	0.42	31.13	80
1160	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))	1450	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))	1750	Q(m³/min)	Ps(mmAq)	H(kW)	η <sub>r</sub> (%)	Lwi(dB(A))
1	120	6.8	0.72	23.19	85	1	150	10.7	1.40	23.19	90	1	182	15.6	2.45	23.19	95
2	109	11.0	0.75	29.64	84	2	136	17.2	1.45	29.64	90	2	165	25.1	2.55	29.64	95
3	96	15.3	0.76	34.15	84	3	121	24.0	1.48	34.15	90	3	146	34.9	2.60	34.15	95
4	82	20.1	0.77	36.60	84	4	102	31.4	1.50	36.60	90	4	124	45.8	2.63	36.60	95
5	67	24.4	0.75	36.38	84	5	83	38.1	1.47	36.38	90	5	101	55.5	2.58	36.38	95
6	51	28.2	0.72	33.84	84	6	64	44.2	1.40	33.84	90	6	78	64.3	2.46	33.84	95
7	43	30.2	0.70	31.13	84	7	54	47.2	1.35	31.13	90	7	65	68.8	2.38	31.13	95

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

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

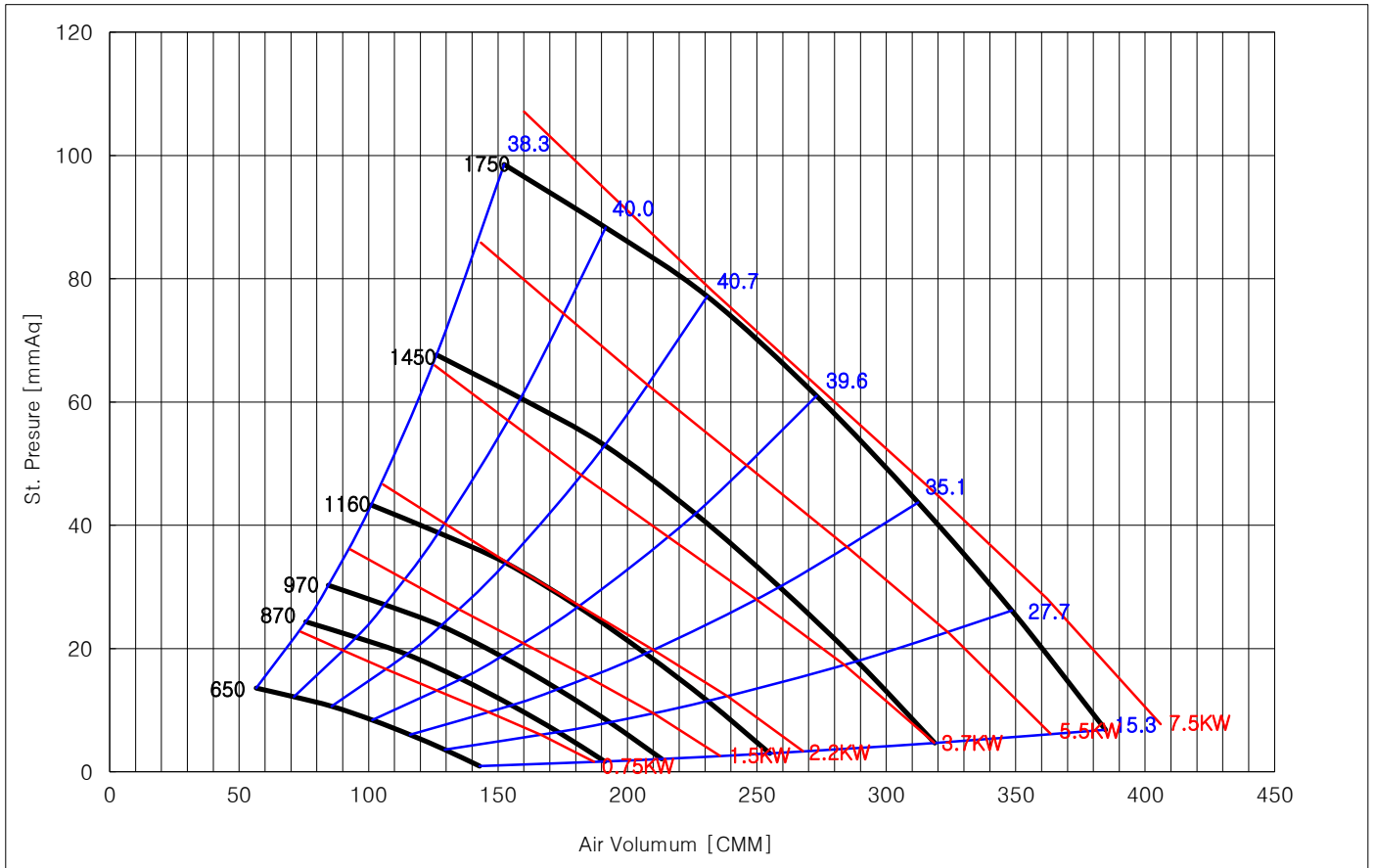
- Performance certified is for installation type B - free inlet, ducted outlet.

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





# PERFORMANCE CURVES AND SOUND DATA - TSMF-800



650	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	870	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	970	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))
1	143	0.9	0.32	15.29	74	1	191	1.7	0.78	15.29	82	1	213	2.1	1.08	15.29	85
2	129	3.6	0.35	27.72	74	2	173	6.5	0.84	27.72	81	2	193	8.0	1.16	27.72	84
3	116	6.0	0.37	35.13	73	3	155	10.8	0.89	35.13	81	3	173	13.4	1.23	35.13	84
4	101	8.4	0.38	39.58	72	4	136	15.1	0.91	39.58	80	4	151	18.7	1.26	39.58	83
5	86	10.6	0.38	40.65	74	5	115	19.1	0.92	40.65	81	5	128	23.7	1.28	40.65	84
6	71	12.2	0.36	40.01	75	6	95	21.8	0.87	40.01	83	6	106	27.1	1.21	40.01	86
7	57	13.6	0.34	38.27	75	7	76	24.4	0.81	38.27	83	7	84	30.3	1.12	38.27	85
1160	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	1450	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	1750	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))
1	255	3.0	1.85	15.29	90	1	319	4.7	3.60	15.29	95	1	385	6.8	6.33	15.29	100
2	231	11.5	1.99	27.72	89	2	289	18.0	3.89	27.72	95	2	348	26.2	6.83	27.72	100
3	207	19.2	2.10	35.13	89	3	259	30.0	4.10	35.13	94	3	312	43.7	7.21	35.13	100
4	181	26.8	2.15	39.58	88	4	226	41.9	4.21	39.58	94	4	273	61.0	7.39	39.58	99
5	153	33.9	2.18	40.65	89	5	191	53.0	4.26	40.65	95	5	231	77.2	7.49	40.65	100
6	127	38.8	2.07	40.01	90	6	159	60.6	4.03	40.01	96	6	192	88.3	7.09	40.01	101
7	101	43.3	1.91	38.27	90	7	126	67.7	3.73	38.27	96	7	152	98.5	6.56	38.27	101

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

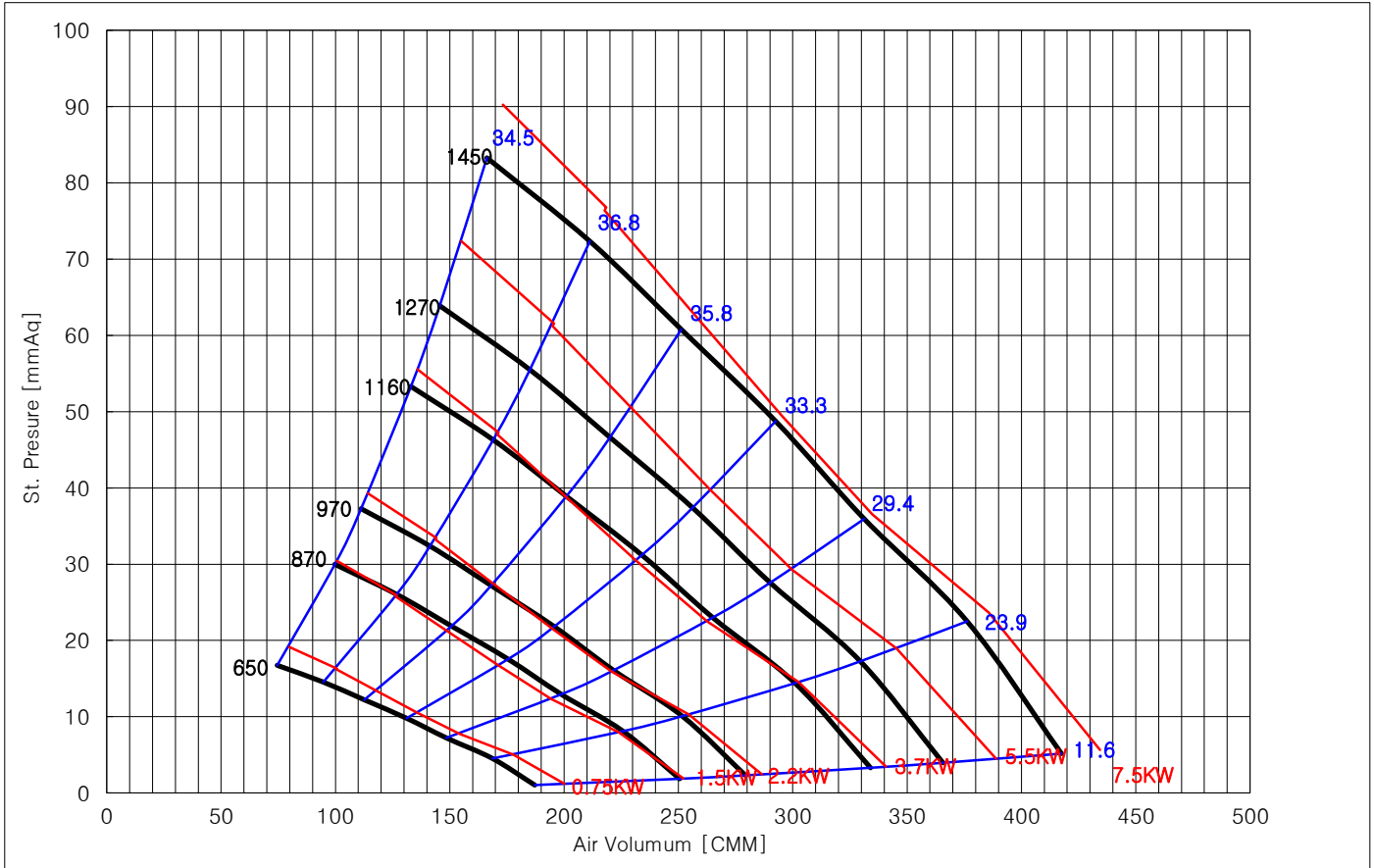
- Value shown are for inlet LwiA sound power levels for installation type B - free inlet, ducted outlet.

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

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



# PERFORMANCE CURVES AND SOUND DATA - TSMF-900



650	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	870	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	970	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))
1	187	1.0	0.59	11.58	79	1	251	1.9	1.42	11.58	86	1	279	2.3	1.97	11.58	89
2	169	4.5	0.64	23.89	78	2	226	8.1	1.53	23.89	86	2	252	10.1	2.13	23.89	89
3	148	7.2	0.66	29.36	78	3	199	12.9	1.59	29.36	86	3	222	16.1	2.20	29.36	89
4	131	9.8	0.67	33.25	78	4	176	17.6	1.61	33.25	86	4	196	21.8	2.23	33.25	88
5	113	12.2	0.65	35.84	78	5	151	21.9	1.57	35.84	85	5	168	27.2	2.17	35.84	88
6	95	14.5	0.63	36.79	78	6	127	26.0	1.51	36.79	85	6	141	32.4	2.09	36.79	88
7	75	16.7	0.60	34.45	79	7	100	30.0	1.44	34.45	86	7	111	37.3	1.99	34.45	89
1160	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	1270	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))	1450	Q(m³/min)	Ps(mmAq)	H(kW)	$\eta_r$ (%)	Lwi(dB(A))
1	334	3.3	3.37	11.58	94	1	366	4.0	4.43	11.58	96	1	418	5.2	6.59	11.58	100
2	301	14.4	3.64	23.89	94	2	330	17.3	4.77	23.89	96	2	376	22.5	7.10	23.89	99
3	265	23.0	3.77	29.36	93	3	290	27.6	4.94	29.36	96	3	331	35.9	7.36	29.36	99
4	234	31.2	3.81	33.25	93	4	256	37.4	5.01	33.25	96	4	293	48.8	7.45	33.25	99
5	201	38.9	3.71	35.84	93	5	220	46.6	4.87	35.84	95	5	251	60.8	7.25	35.84	99
6	169	46.3	3.57	36.79	93	6	185	55.5	4.68	36.79	95	6	211	72.3	6.97	36.79	99
7	133	53.3	3.41	34.45	94	7	146	63.9	4.47	34.45	96	7	166	83.3	6.66	34.45	100

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

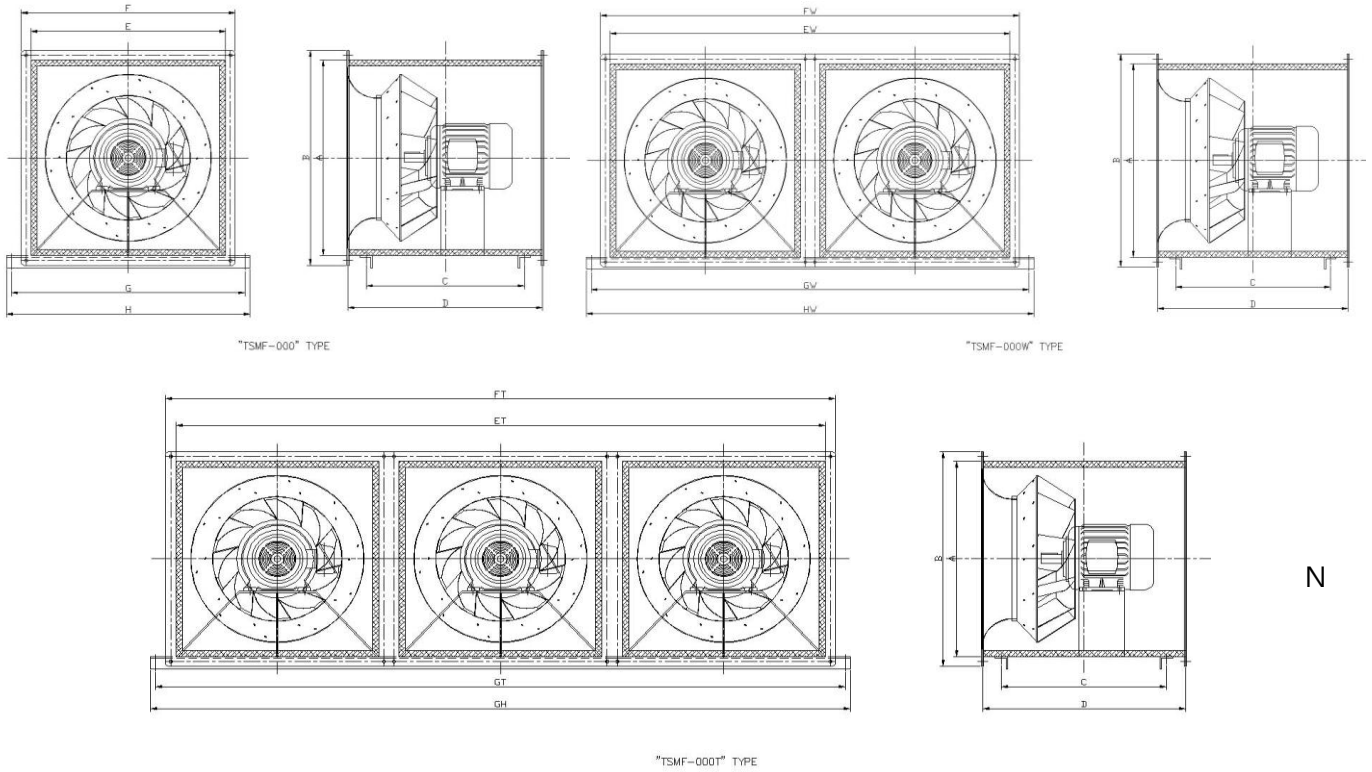
- Value shown are for inlet LwiA sound power levels for installation type B - free inlet, ducted outlet.

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

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



# OVERALL DIMENSION



FAN MODEL		TSMF-500	TSMF-600	TSMF-700	TSMF-800	TSMF-900	REMARK
Inlet	A	500	600	700	800	900	
	B	580	680	780	880	980	
Outlet	E	500	600	700	800	900	
	F	580	680	780	880	980	
Side length	C	350	450	550	650	750	
	D	500	600	700	800	900	
Hanger Hole	G	660	760	860	960	1060	
Fan Base	H	700	800	900	1000	1100	

FAN MODEL		TSMF-500W	TSMF-600W	TSMF-700W	TSMF-800W	TSMF-900W	REMARK
Inlet	A	500	600	700	800	900	
	B	580	680	780	880	980	
Outlet	EW	1080	1280	1480	1680	1880	
	FW	1160	1360	1560	1760	1960	
Side length	C	350	450	550	650	750	
	D	500	600	700	800	900	
Hanger Hole	GW	1240	1440	1640	1840	2040	
Fan Base	HW	1280	1480	1680	1880	2080	

FAN MODEL		TSMF-500T	TSMF-600T	TSMF-700T	TSMF-800T	TSMF-900T	REMARK
Inlet	A	500	600	700	800	900	
	B	580	680	780	880	980	
Outlet	ET	1660	1960	2260	2560	2860	
	FT	1740	2040	2340	2640	2940	
Side length	C	350	450	550	650	750	
	D	500	600	700	800	900	
Hanger Hole	GT	1820	2120	2420	2720	3020	
Fan Base	HT	1860	2160	2460	2760	3060	