

KRUGER

CFK Series Cabinet Fan

Inline Centrifugal Cabinet Fan



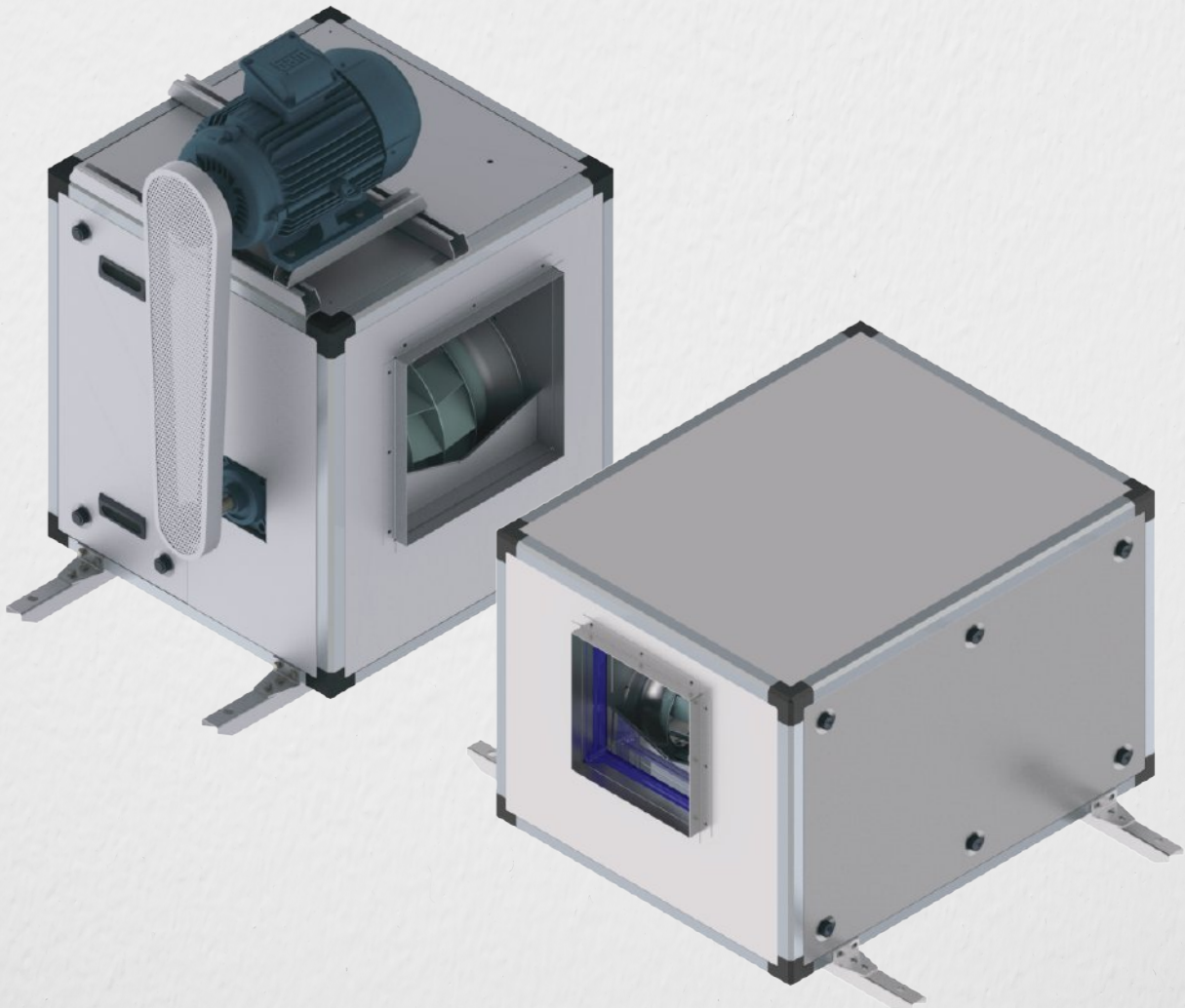
Compact



High Efficiency

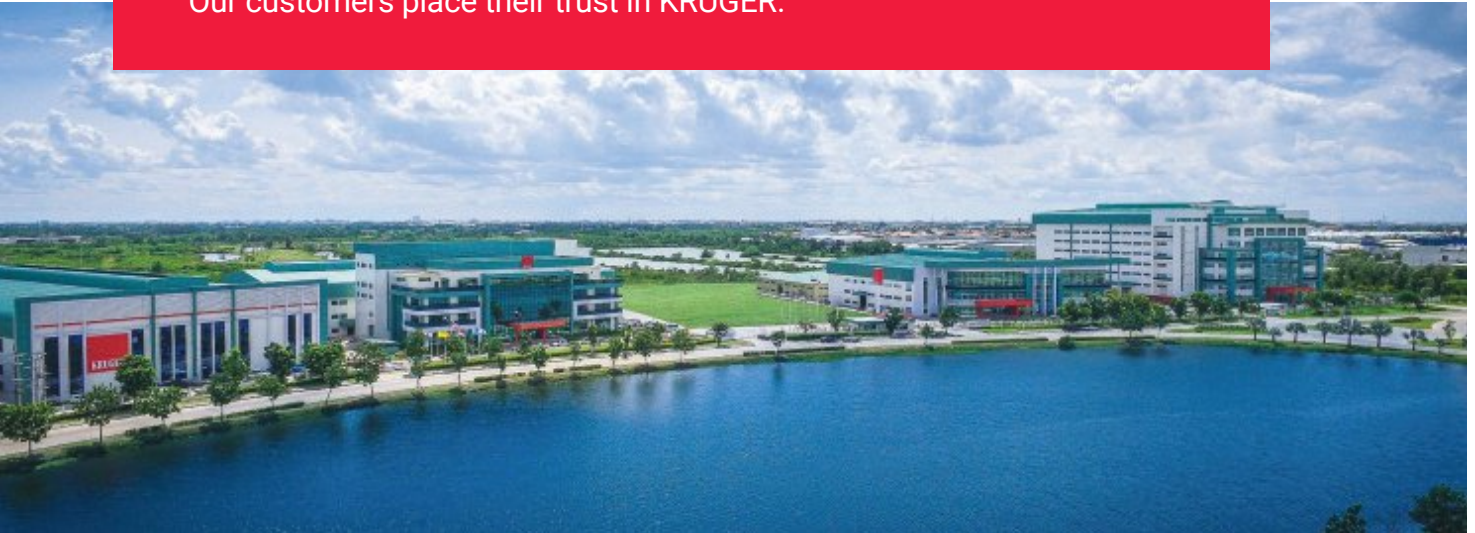


Low Noise



Why KRUGER?

KRUGER has been a leading innovator and manufacturer of residential, commercial and industrial fan application solutions across Asia since 1985. Today with a direct presence in over 18 regions throughout Asia; world class R&D and manufacturing facilities; KRUGER are able to offer their customers unparalleled service and support at a local level. Our customers place their trust in KRUGER.



What is KRUGER CFK Inline Centrifugal Cabinet Fan?

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The CFK series is a double inlet centrifugal inline fan designed for supply, exhaust and pressurization in general clean air, smokespill application with CL-F insulation motor. It is compact, generates high flow rate, high static pressure and low noise.

”



Compact



High Efficiency



Low Noise

Why use KRUGER CFK Inline Centrifugal Cabinet Fan?

Compact Size ►► **Smaller Footprint/Space** ►► **More Usable Area For Occupants**

CFK Series eliminates the need of fan room and CFK series compact size cabinet requires smaller footprint space for installation.

Low Noise ►► **Installation Near Occupant** ►► **Flexible Installation Location**

KRUGER CFK Series offers one of the lowest noise / CMH in the industry allows for very flexible installation location even above occupants.

High Efficiency ►► **Energy Saving** ►► **Lower Operating Cost**

Peak total operating efficiencies of +76% with AMCA FEI > 1.1

Certified For Smokespill Application With Class F Motor ►► **Lower Cost** ►► **Shorter Delivery**

Suitable for smokespill application high temperature (up to F400) airstream.

Summary of Key Standard CFK Series Specifications

A Fan size from 315 - 1000 mm.

B Airflow and static pressure performance range up to 100,000 CMH and 1500 Pa.

C Airstream operating temperatures

Clean air standard ventilation application -20°C to +55°C.
High temperature smokespill application (CFK(E)) up to 400°C/2Hrs.
Kitchen (grease laden air) application up to +80°C/176°F.

D Extended operating life

Deep groove ball bearing type with an adapter sleeve and free maintenance self-alignment by adapter sleeve. Sealed bearings suitable for L10>75,000 operating hours at maximum speed. Extended operating life construction of L10>200,000 operating hours available upon request. Vibration balanced to G2.5 in accordance with ISO14694/AMCA 204 standards.

E Certifications



Kruvent Industries (M) Sdn. Bhd. certifies that the CFK and CFK(E) Series shown herein is 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.

The AMCA certified ratings seal applies to air performance, sound, FEI, FEG for all models.

High temperature (up to 400°C/2Hrs) in accordance with EN12101-3 certification by TÜV SÜD a third-party globally renowned testing and certification organization.



Class	Temperature (°C)	Minimum Functioning Period (Minutes)
F _r 250	250	120
F 300	300	60
F _r 300	300	120
F 400	400	120

F Cabinet

With high gloss surface finished manufactured from ZERO spangle galvanized steel with aluminium column.

G Double Width Backward Curved Wheel

Wheel manufactured in steel, finished in zinc rich primer and polyester powder coating with salt spray rating up to 1000 hours (ASTM B117). All wheels are statically and dynamically balanced to G2.5 in accordance to ISO 21940.

H High Precision Shaft

Shaft manufacture from C45 steel with g6 tolerance (ISO286-2), to minimize eccentricity of shaft leading to lower vibration and longer bearing life.

I Safety Features

All belt-drive CFK models include a robust wire safety belt guard as standard. Optimal inlet and outlet safety guards are available on request.

J Built-in inlet and outlet flange for easy duct connection.

K High Efficiency Kruger Motor

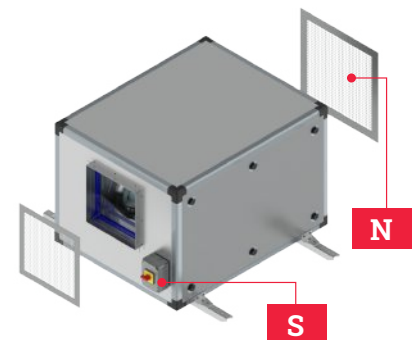
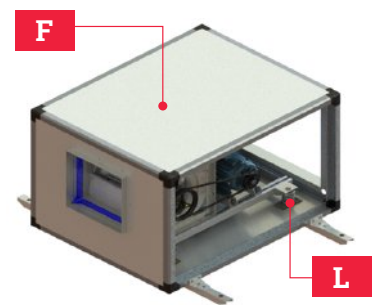
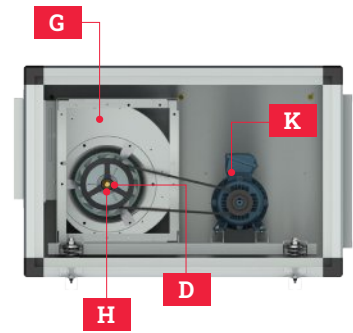
Available CL-F IE3 AC motor for HIGH Temperature Application, PM motor.

L Vibration Isolation

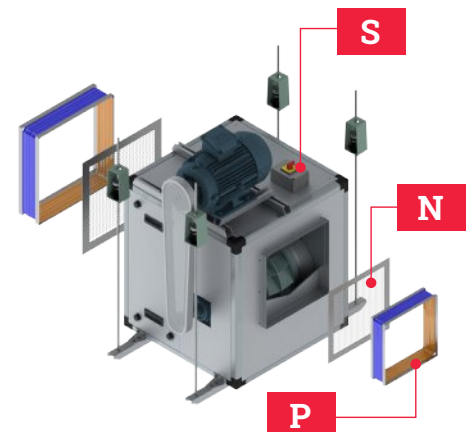
CFK cabinet internal motor installed with four mounted spring isolators inside cabinet as standard. Optimal ceiling hung or floor mounted spring isolator are available upon request for CFK (E) cabinet external motor.

Options and Accessories

- M** : "Double skin" cabinet with acoustic and thermal insulation.
- N** : Inlet and outlet safety guard.
- P** : Flexible Duct for motor outside cabinet design, both standard and high temperature variations up to 400°C.
- Q** : Belt cover isolates drive sets from airstream and protection from rotating pulleys and belts.
- R** : Filter options.
- S** : Safety electrical switch.



CFK Cabinet Internal Motor



CFK (E) Cabinet External Motor

Typical Ventilation Applications

OFFICE

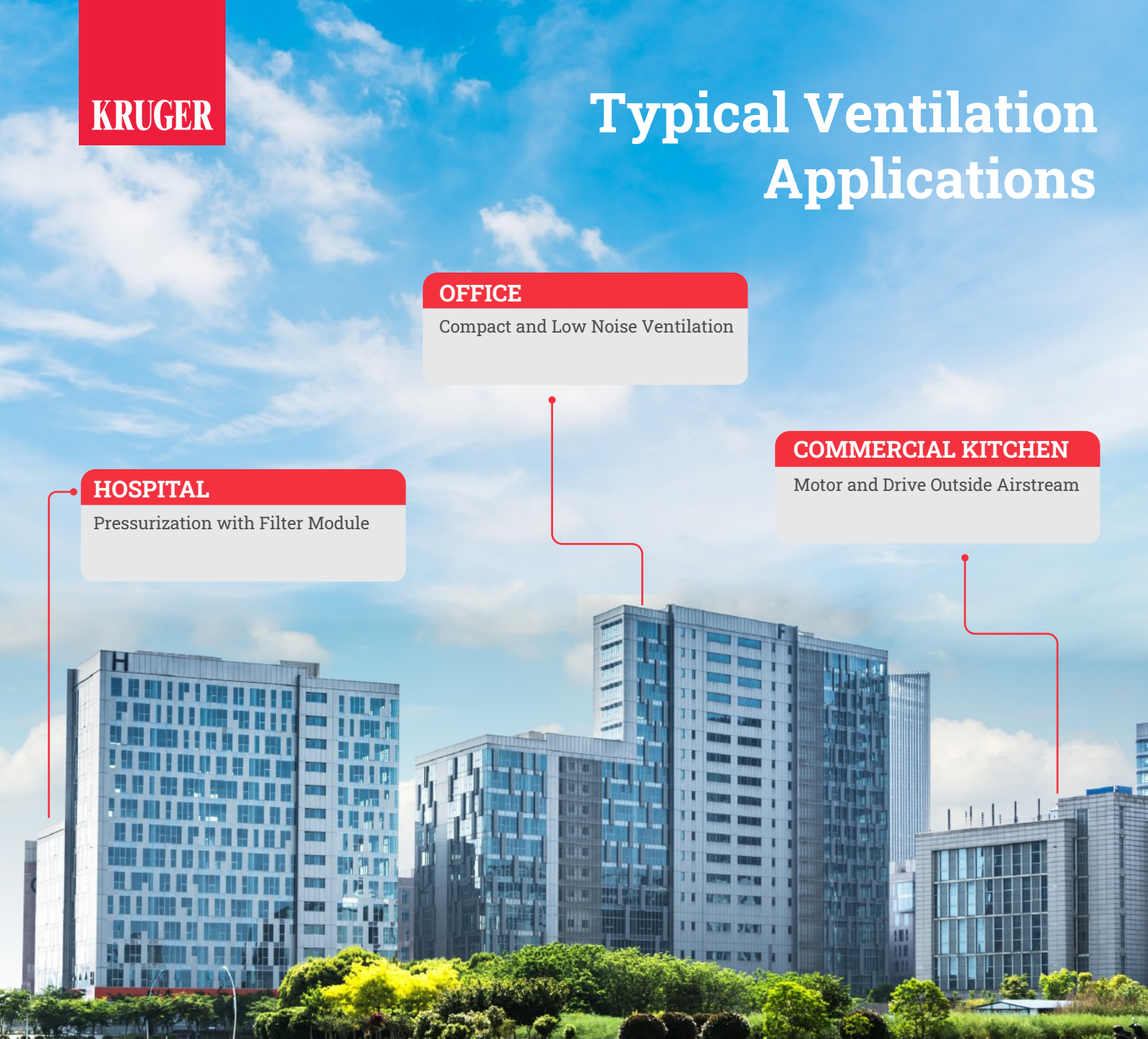
Compact and Low Noise Ventilation

COMMERCIAL KITCHEN

Motor and Drive Outside Airstream

HOSPITAL

Pressurization with Filter Module



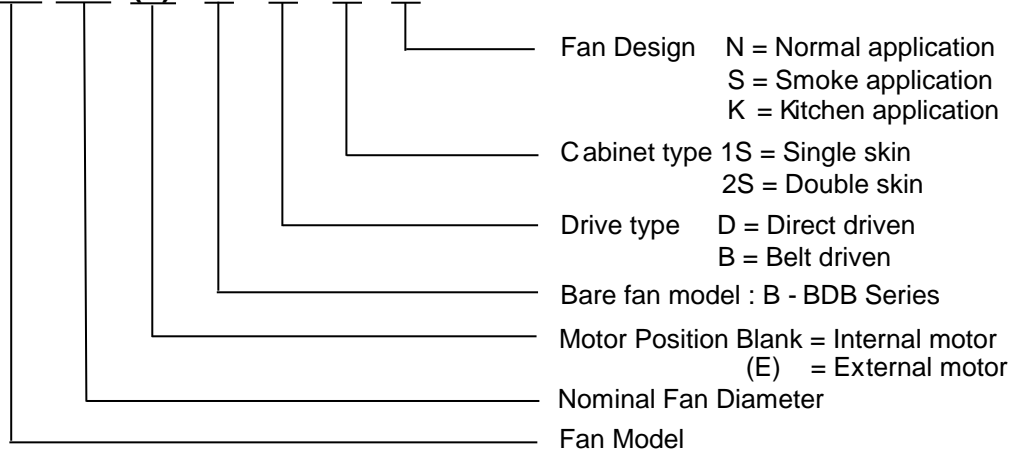
PARKING

Smokespill with Class F Motor



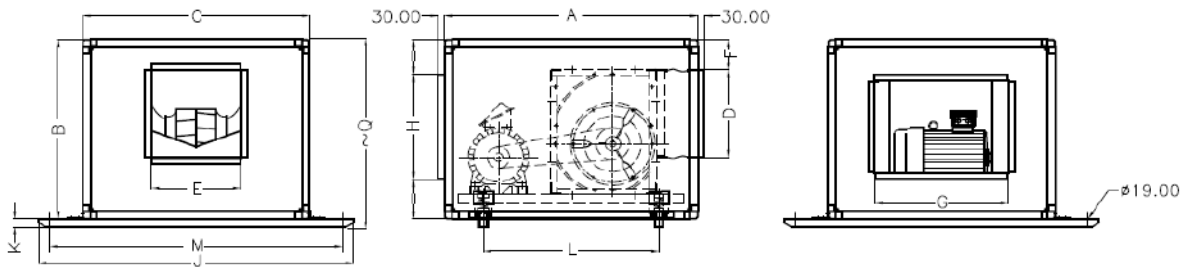
Nomenclature

CFK 450 (E) - B - D - 1S - N



Dimension

CFK cabinet internal motor



Model	A	B	C	D	E	F	G	H	J	K	L	M	Weight* (kg)	Max. Motor** Frame Size
315	1145	825	735	404	404	140	545	635	1135	40	795	1035	78	132
355	1276	926	826	452	452	160	635	735	1226	40	926	1126	93	132
400	1426	926	925	507	507	77	735	736	1325	40	1076	1225	105	160
450	1426	1026	1025	568	568	75	836	836	1425	40	1026	1325	159	160
500	1662	1176	1176	638	638	125	954	954	1576	50	1262	1476	169	160
560	1746	1306	1306	715	715	144	1084	1086	1706	50	1346	1606	196	160
630	1956	1456	1483	800	800	168	1269	1236	1883	50	1406	1783	227	180
710	2196	1656	1656	898	898	195	1436	1436	2156	100	1496	2056	287	180
800	2196	1860	1860	1006	1006	233	1642	1640	2360	100	1497	2260	335	200
900	2592	2060	2062	1130	1130	253	1841	1840	2562	125	1892	2462	422	225
1000	2912	2300	2296	1266	1266	332	2079	2080	2796	150	2112	2696	567	225

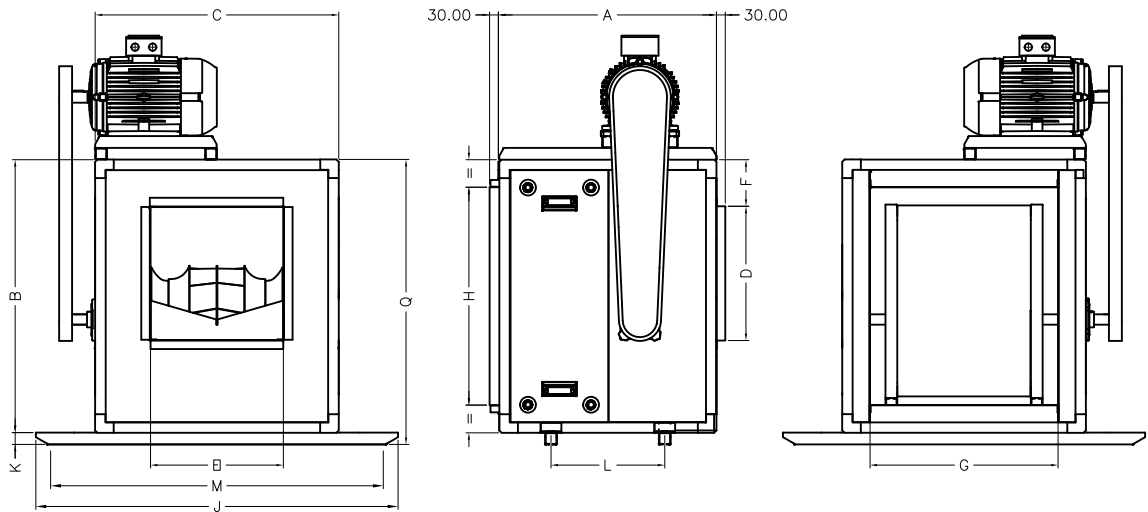
* Weight without motor and drive system.

** Please consult KRUGER for details when motor frame size is beyond this range.

All dimension in mm.

Dimension

CFK (E) cabinet external motor



Model	A	B	C	D	E	F	G	H	J	K	L	M	Q	Max. Motor** Frame Size
315	735	825	735	404	545	140	404	635	1335	40	385	1235	865	132
355	735	926	826	452	635	159	452	735	1426	40	385	1326	966	132
400	735	926	925	506	735	77	506	736	1525	40	385	1425	966	160
450	825	1026	1025	568	836	76	568	836	1625	40	425	1525	1066	160
500	925	1176	1176	638	956	125	638	956	1776	50	525	1676	1226	160
560	1025	1306	1306	715	1084	144	715	1086	1906	50	625	1806	1356	160
630	1175	1556	1482	800	1269	168	800	1236	2083	50	625	1983	1606	180
710	1305	1656	1656	898	1436	195	898	1436	2356	100	605	2256	1756	180
800	1455	1860	1860	1006	1642	233	1006	1640	2560	100	755	2460	1960	200
900	1655	2060	2062	1130	1841	253	1130	1840	2760	125	955	2660	2185	225
1000	1860	2350	2296	1266	2079	332	1266	2080	2996	150	1060	2896	2500	225

* Weight without motor and drive system.

** Please consult KRUGER for details when motor frame size is beyond this range.

All dimension in mm.

Example of Selection

Air Volume $Q = 10000 \text{ m}^3/\text{h}$

Outlet Velocity $V = 8.6 \text{ m/s}$

Dynamic Pressure $P_d = 44.0 \text{ Pa}$

Total Pressure $P_t = 780 \text{ Pa}$

Fan Speed $N = 1600 \text{ rpm}$

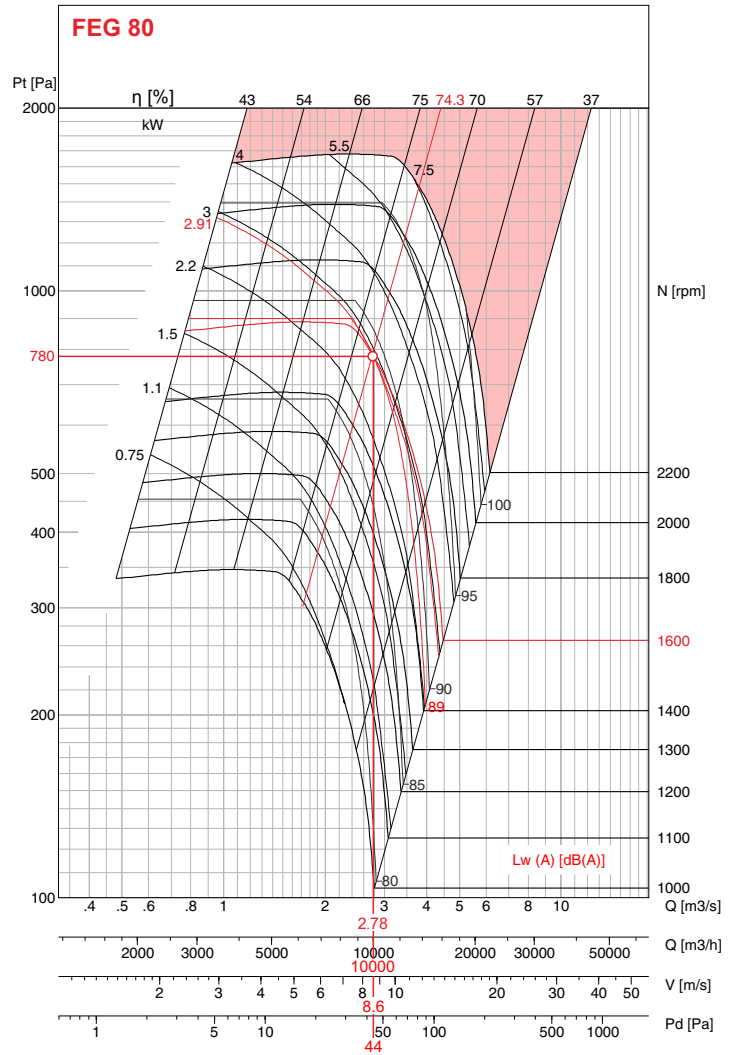
Absorbed Power $W = 2.91 \text{ kW}$

Total Efficiency $\eta = 74.3 \%$

Sound Power Level $L_w(A) = 89 \text{ dB(A)}$

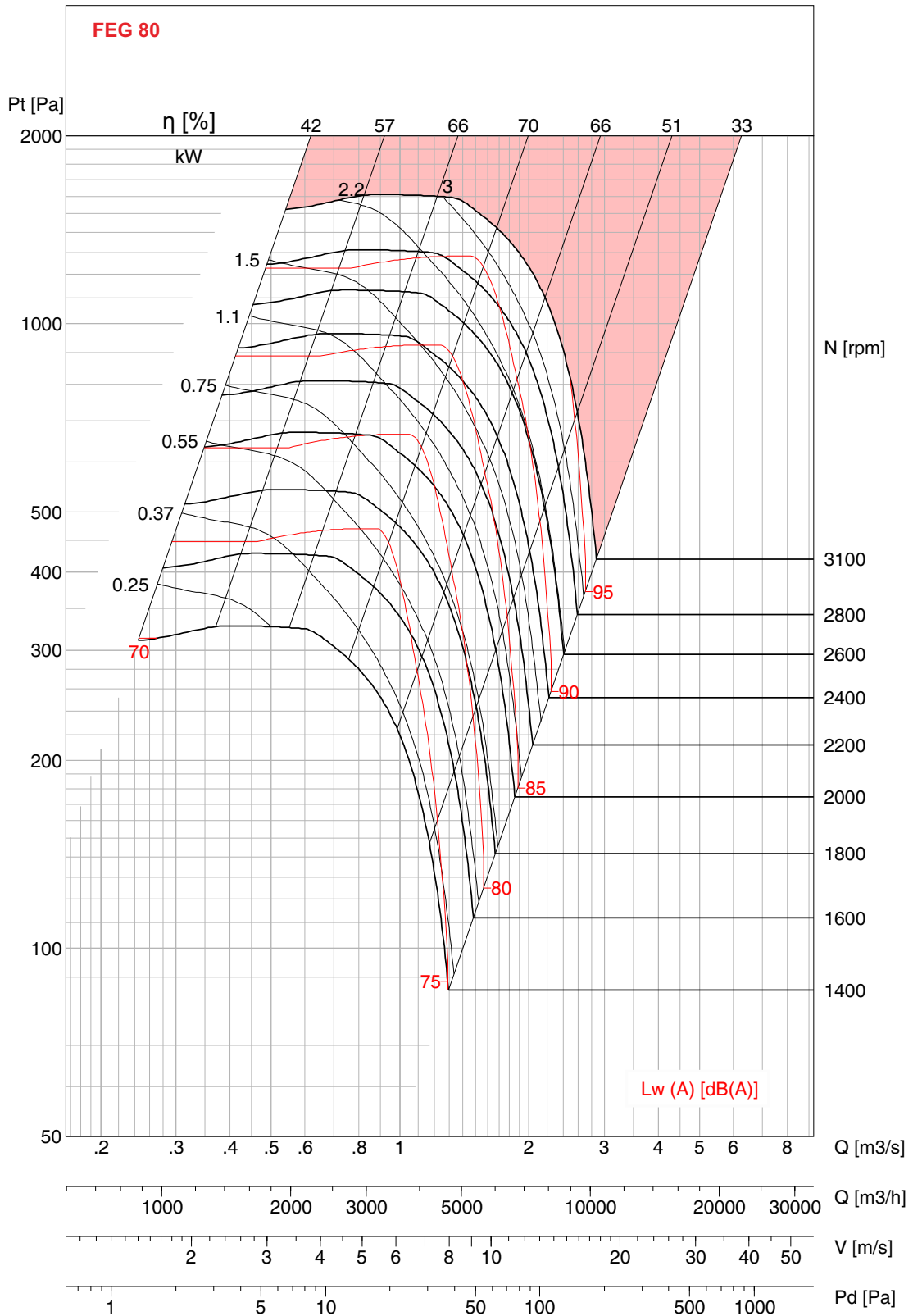


CFK 450/CFK 450(E)



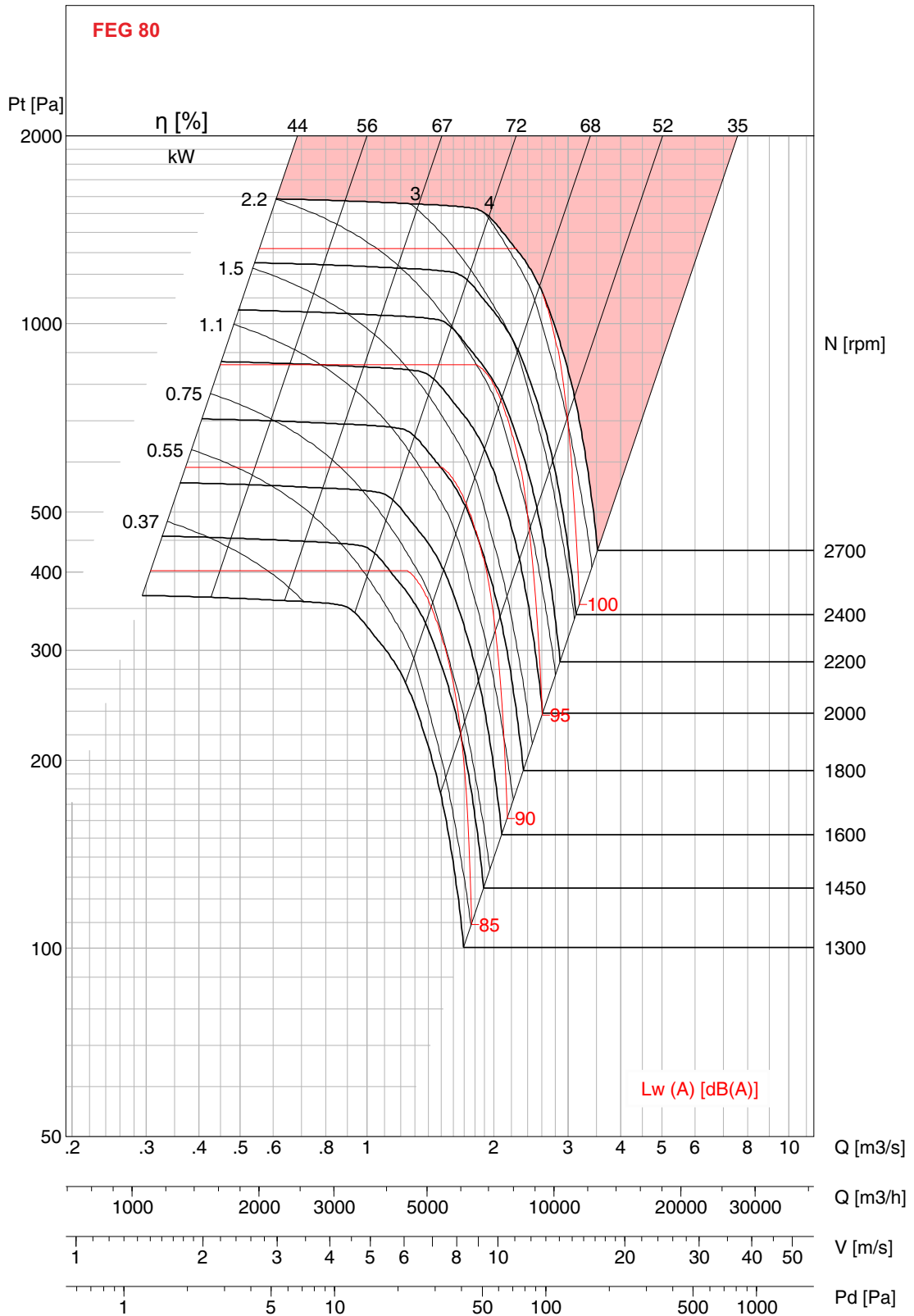
- Performance certified for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.
 - The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet Lw(A) sound power levels for installation type D - Ducted inlet, Ducted outlet. Ratings include the effects of duct end correction.

CFK 315/CFK 315(E)



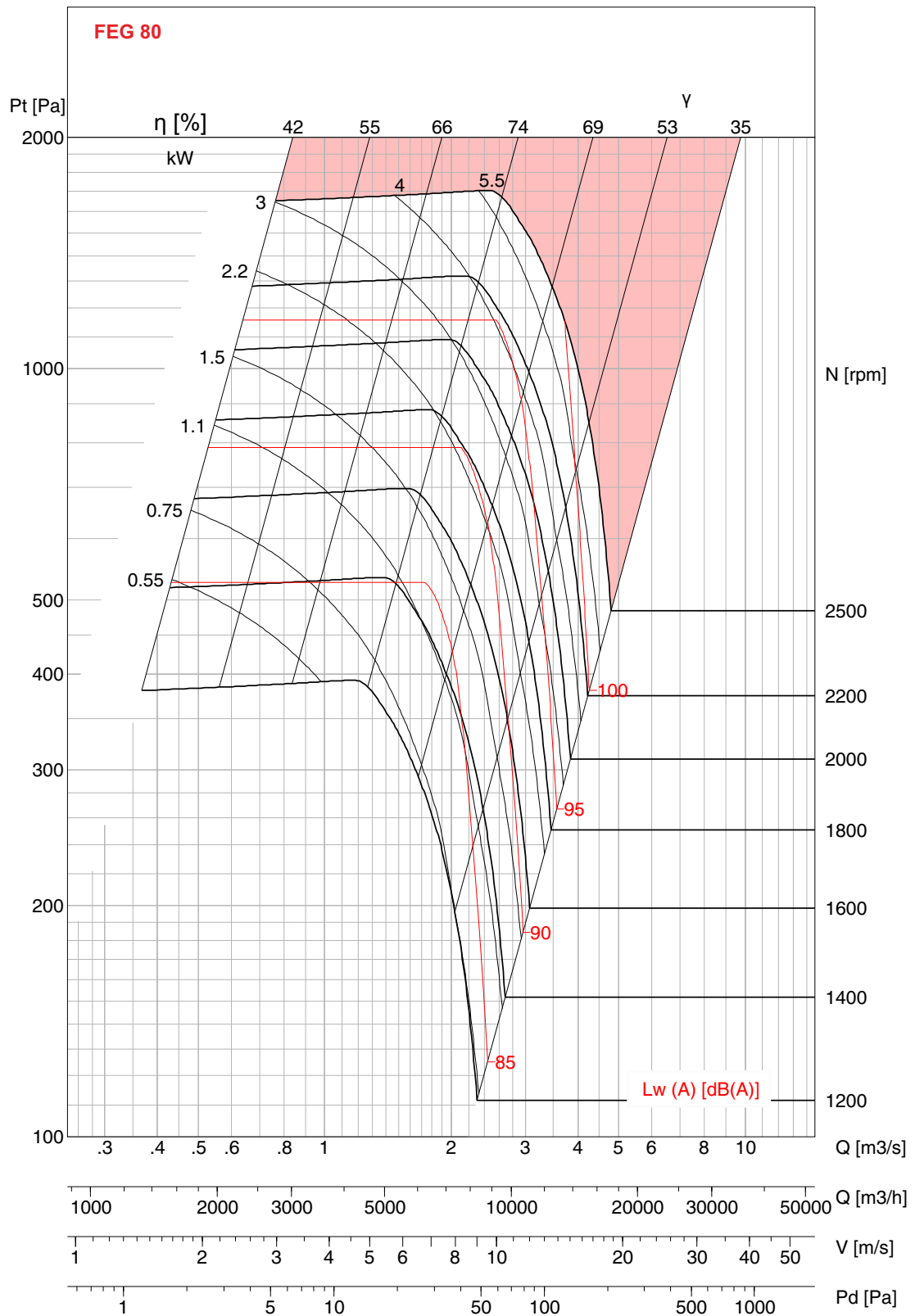
- Performance certified is for Installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.
 - The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet Lwi A sound power levels for installation type D - Ducted inlet, Ducted outlet. Ratings include the effects of duct end correction.

CFK 355/CFK 355(E)



- Performance certified is for Installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.
 - The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet Lw(A) sound power levels for installation type D - Ducted inlet, Ducted outlet. Ratings include the effects of duct end correction.

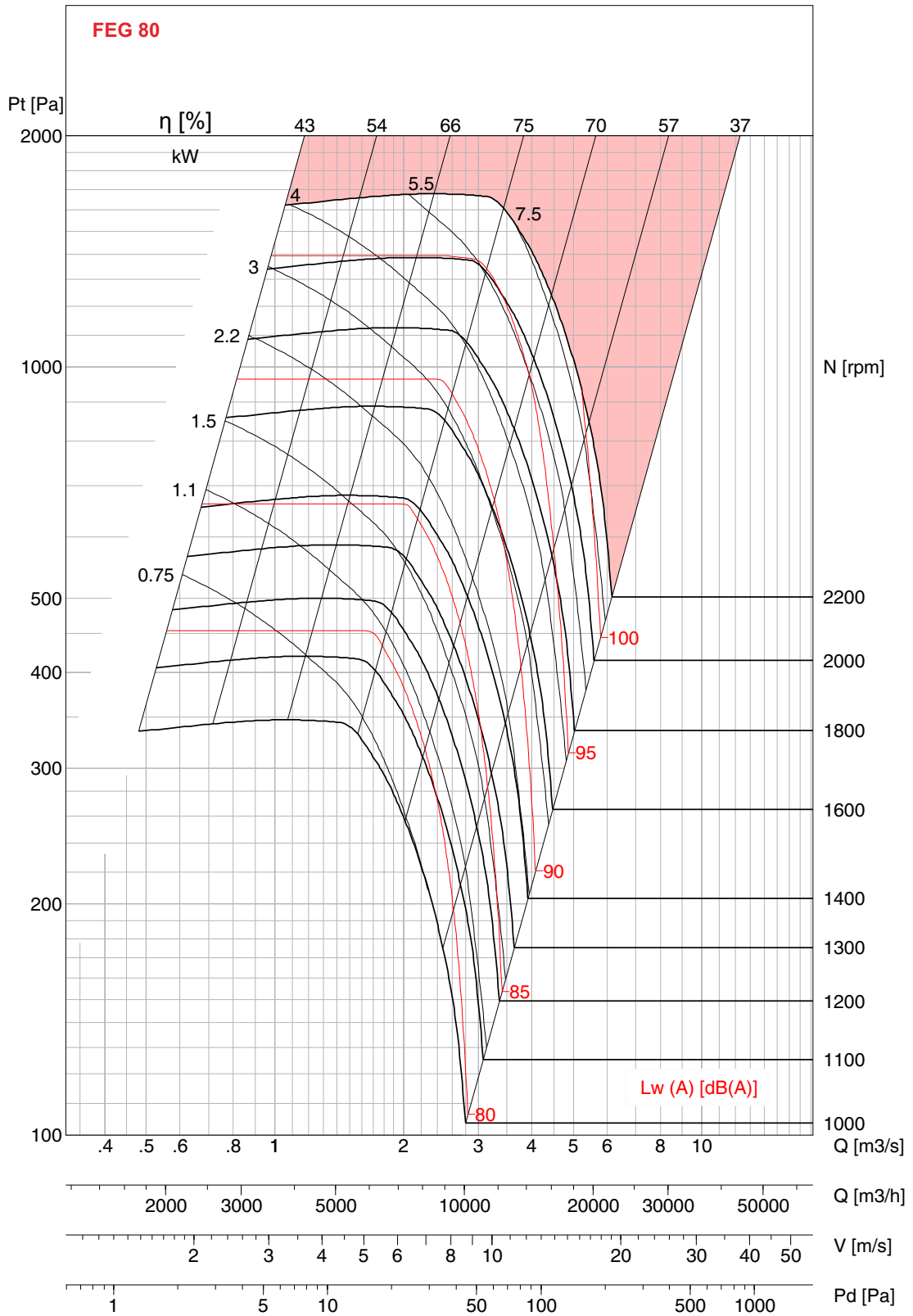
CFK 400/CFK 400(E)



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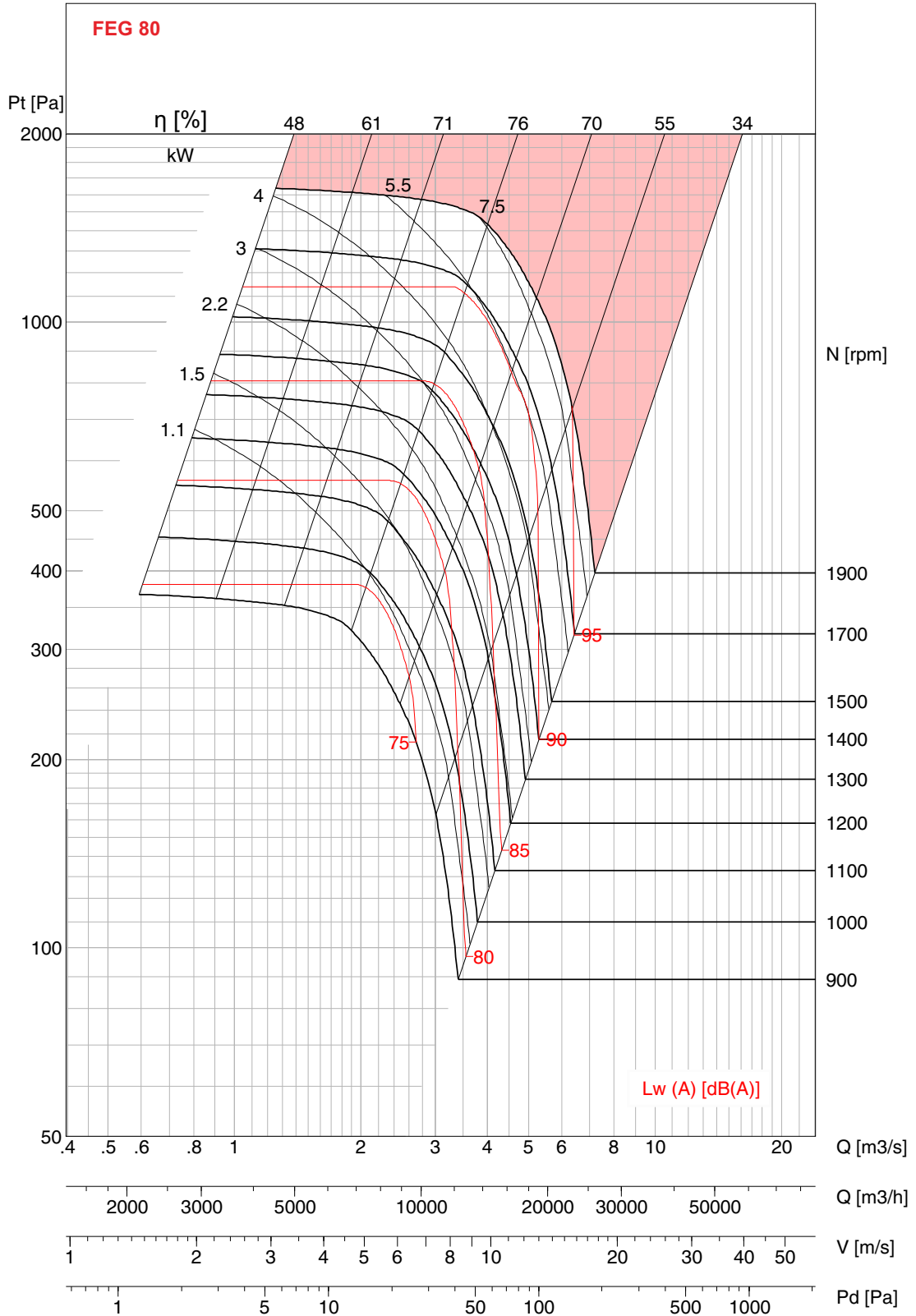


CFK 450/CFK 450(E)



- Performance certified for Installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.
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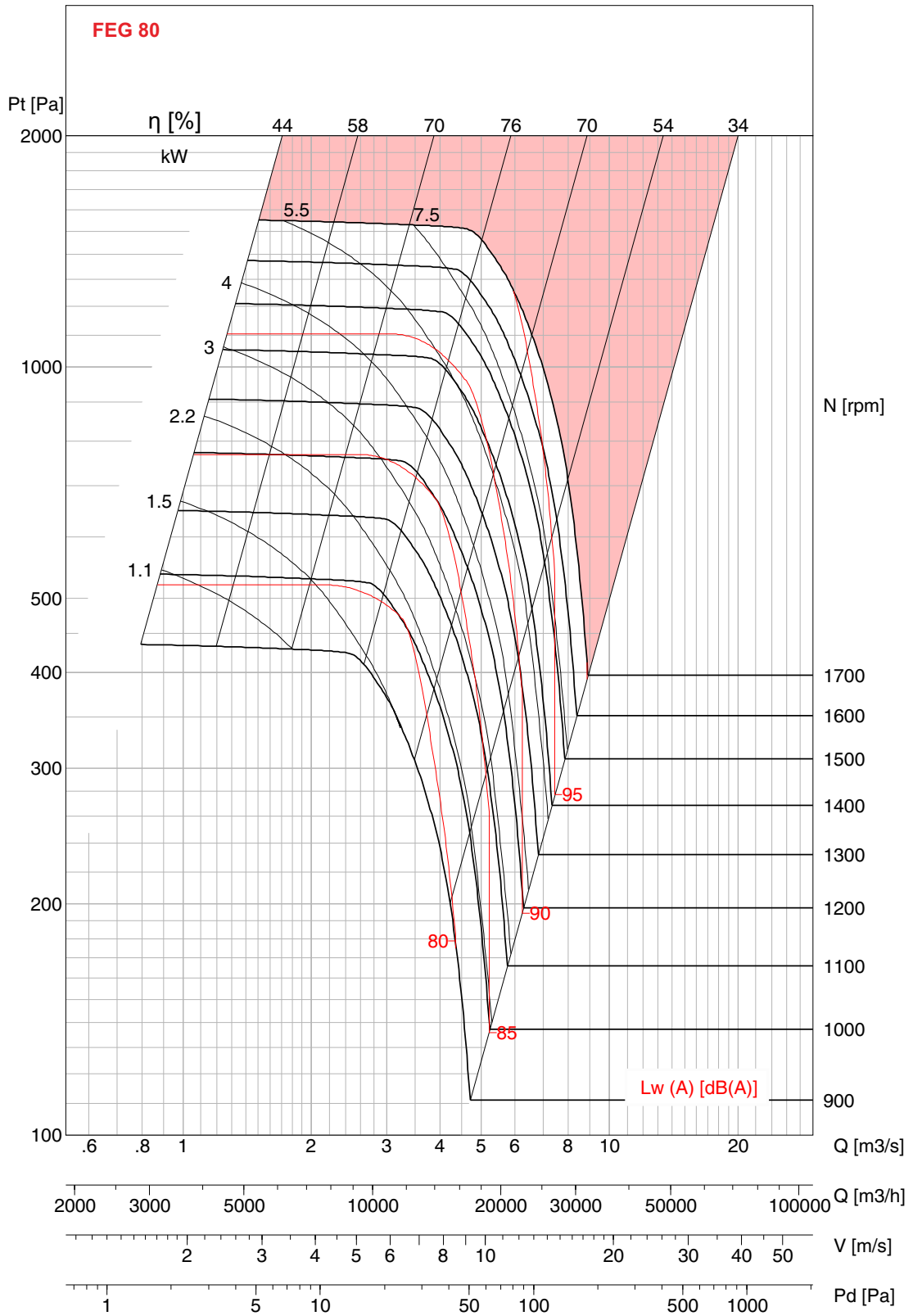
CFK 500/CFK 500(E)



- Performance certified is for Installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.
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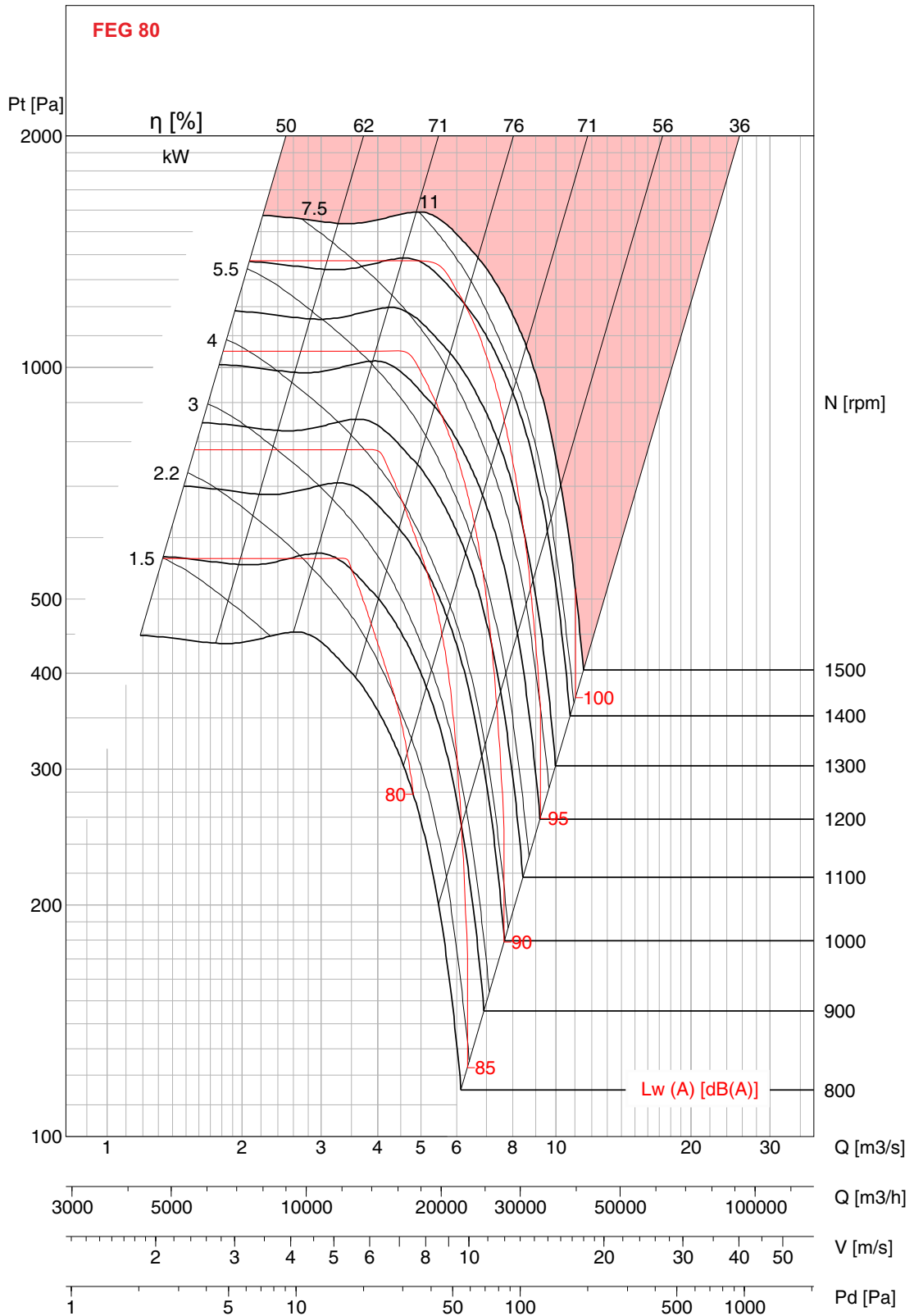


CFK 560/CFK 560(E)



- Performance certified is for Installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.
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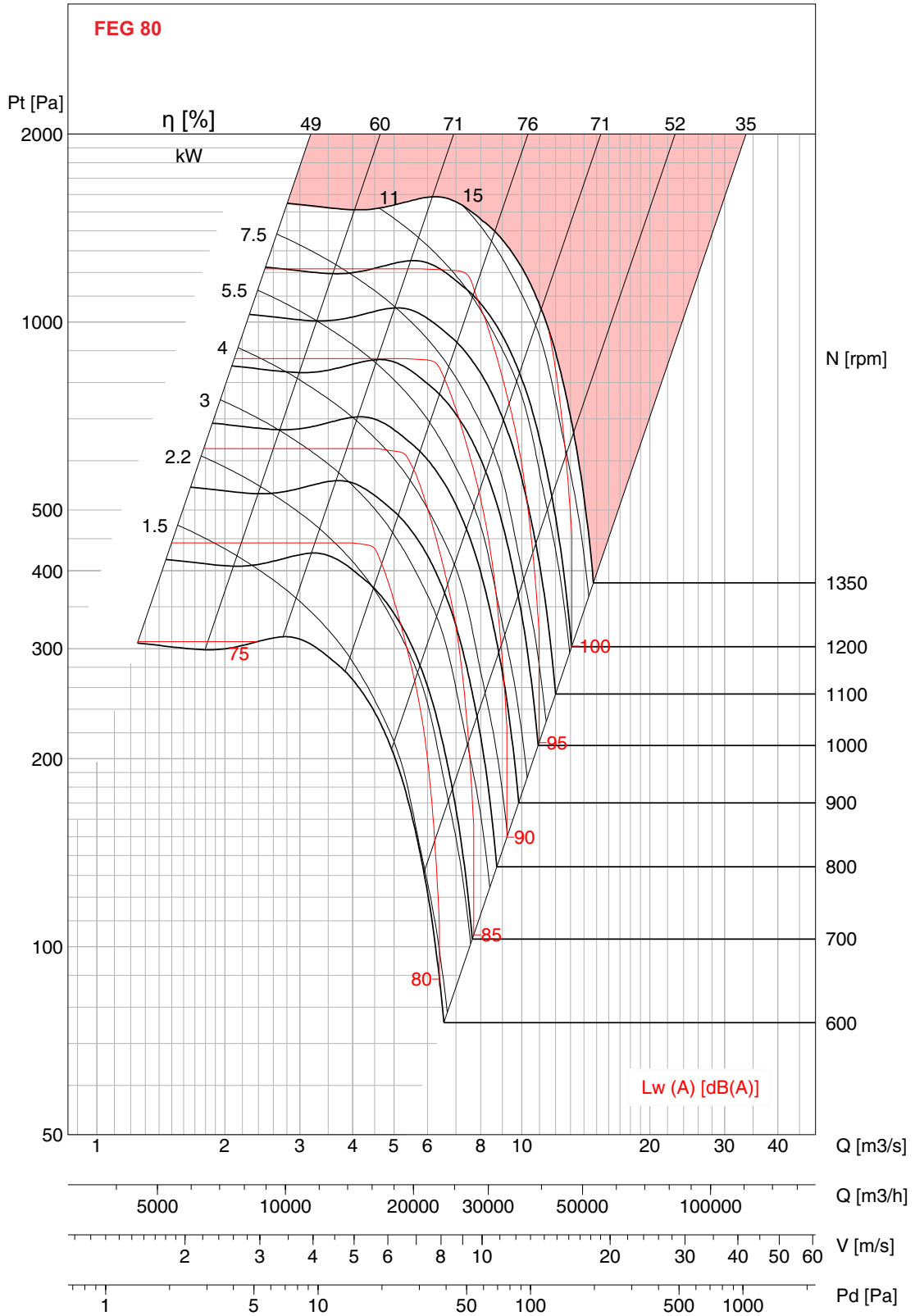
CFK 630/CFK 630(E)



- Performance certified is for Installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.
 - The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet L_{wi} A sound power levels for installation type D - Ducted inlet, Ducted outlet. Ratings include the effects of duct end correction.



CFK 710/CFK 710(E)

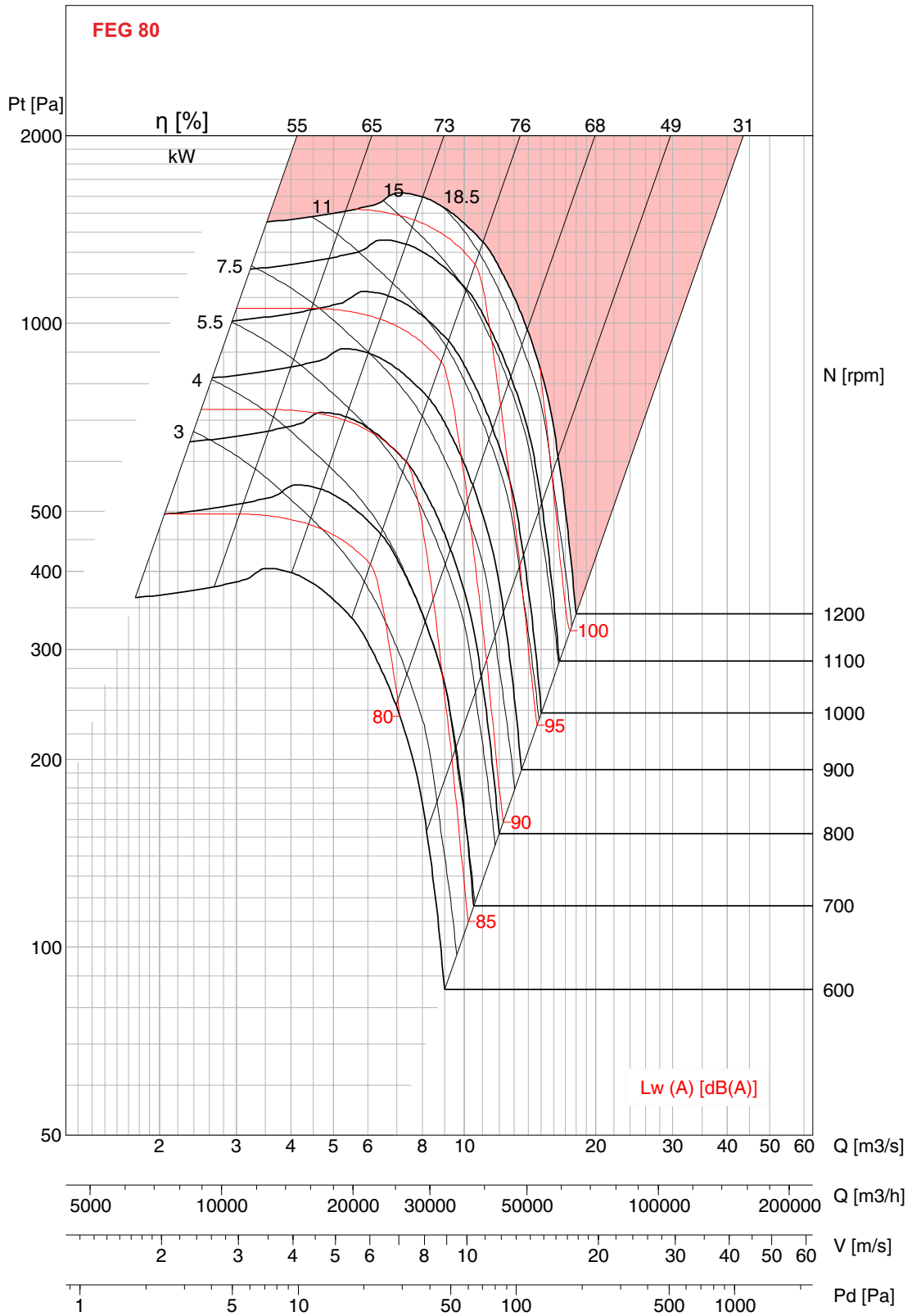


- Performance certified is for Installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.

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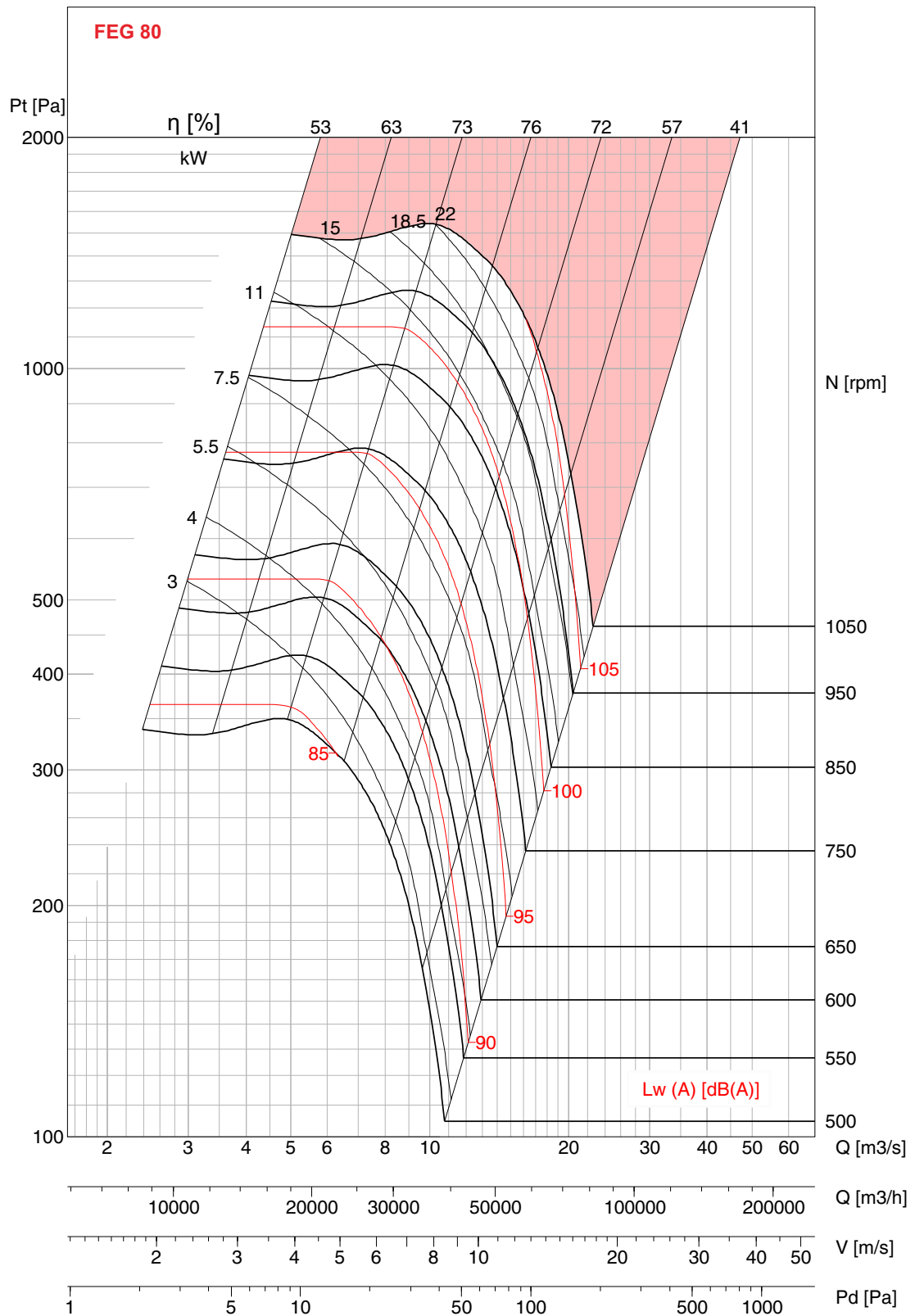
CFK 800/CFK 800(E)



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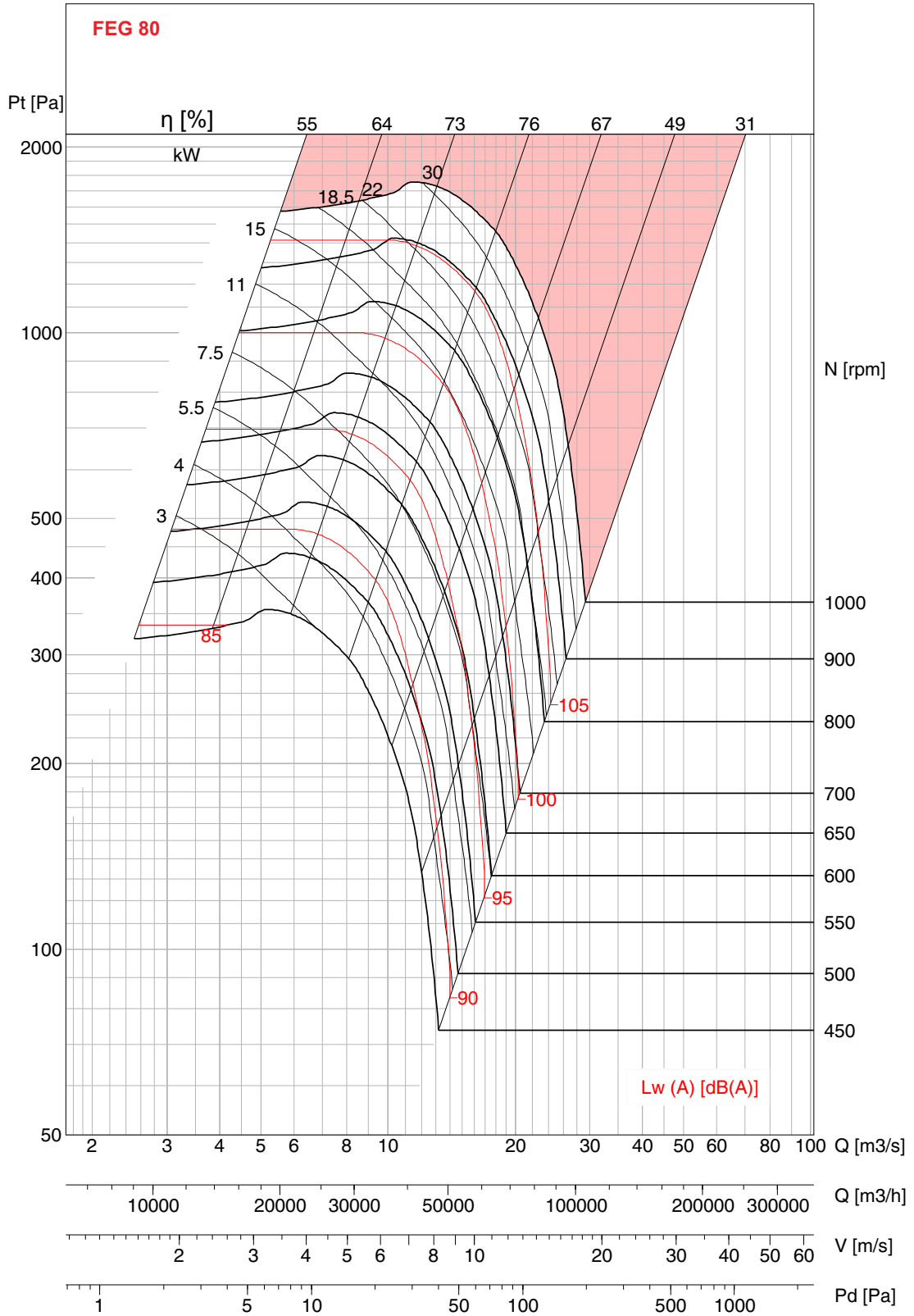
CFK 900/CFK 900(E)



- Performance certified is for Installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (Belt Cover). Power rating kW does not include transmission losses.
- The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet Lwi A sound power levels for installation type D - Ducted inlet, Ducted outlet. Ratings include the effects of duct end correction.



CFK 1000/CFK 1000(E)

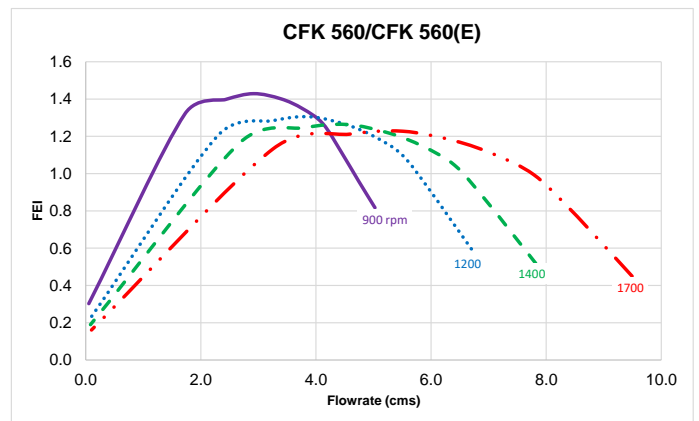
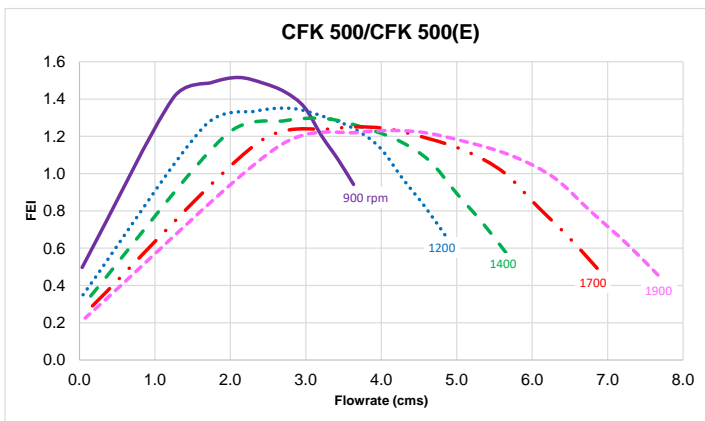
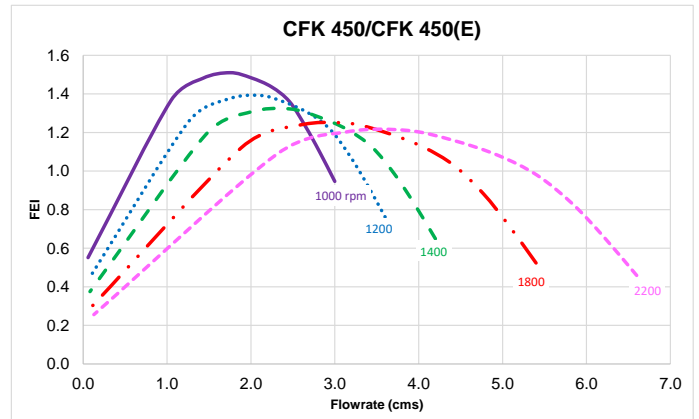
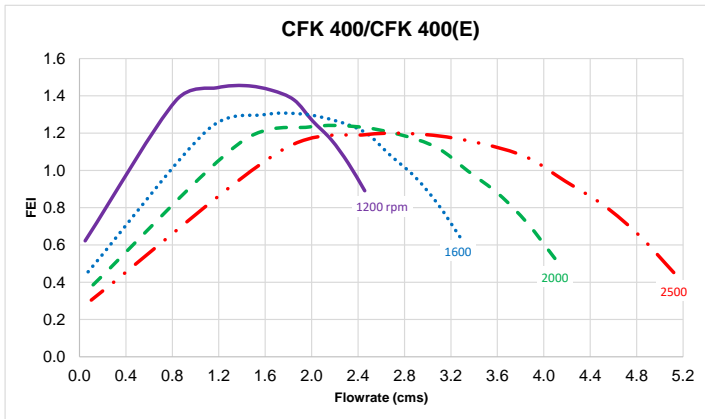
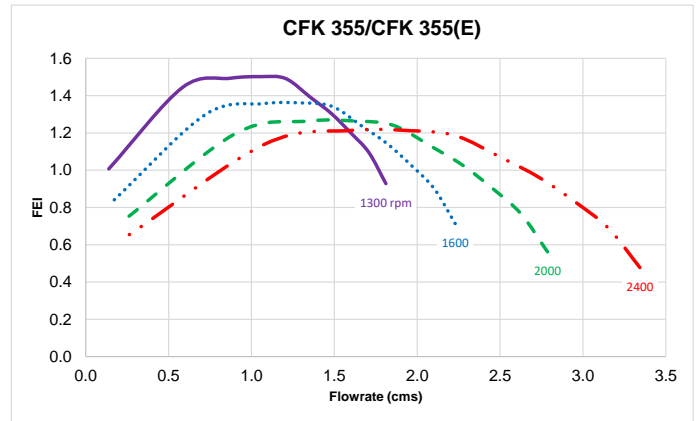
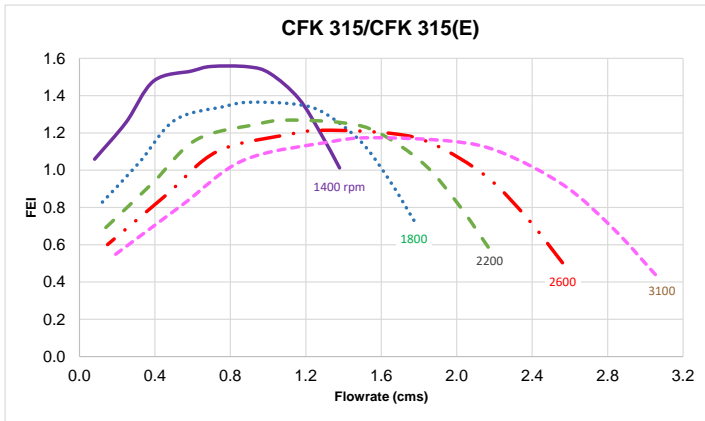
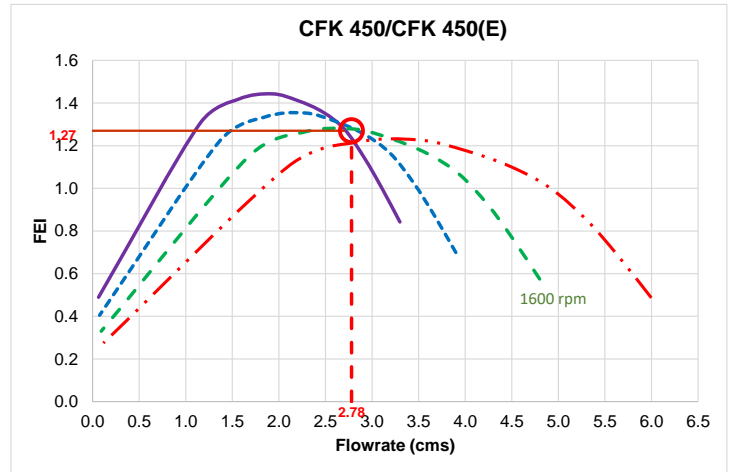


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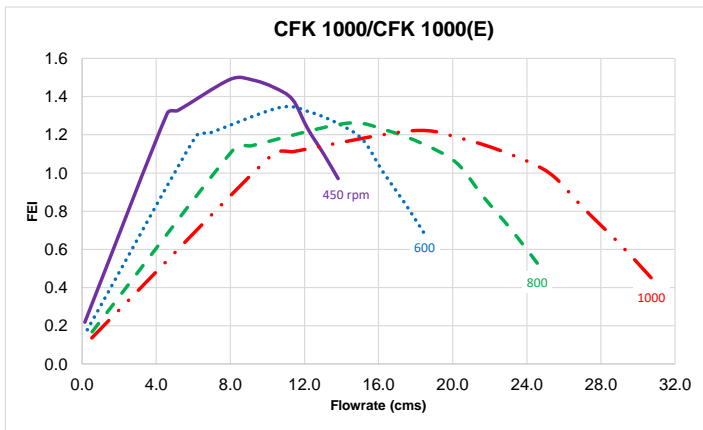
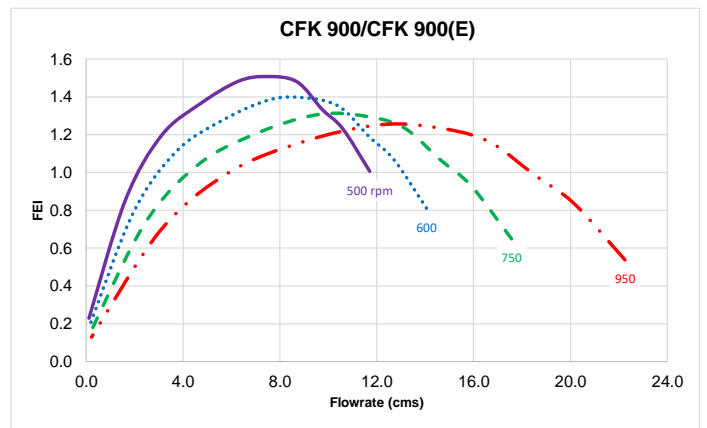
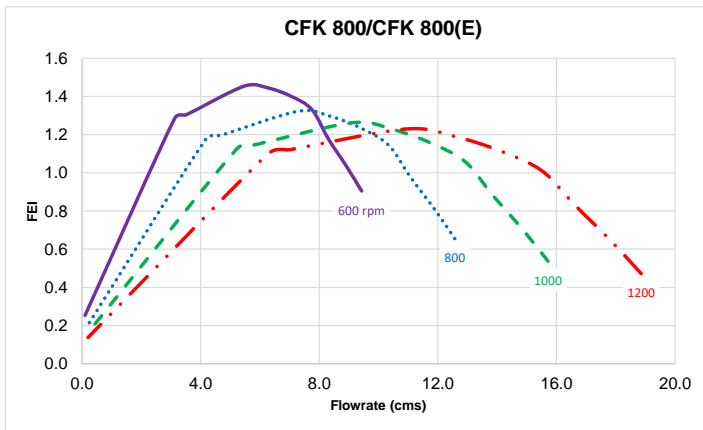
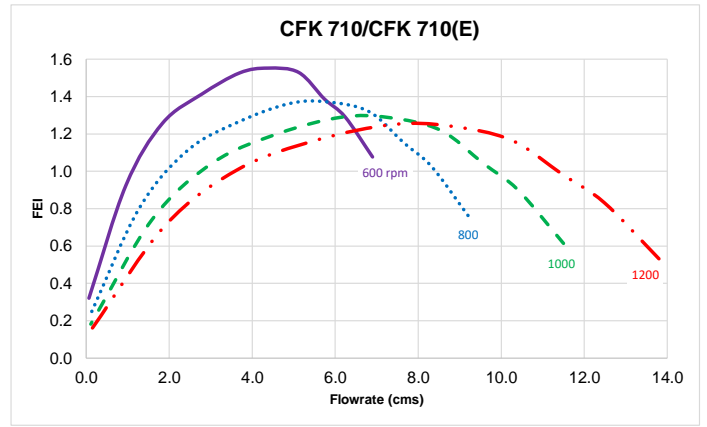
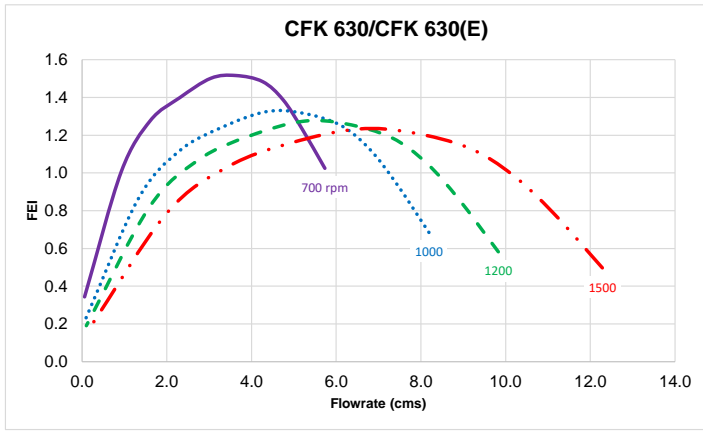
Fan Energy Index

Example of FEI Selection

Air Volume Q = 2.78 m³/s
 Fan Speed N = 1600 rpm
 FEI = 1.27



Performance certified is for installation type D - Ducted inlet, Ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (Belt Cover). FEI_T values are calculated in accordance with ANSI/AMCA Standard 208 and are based on default motor efficiencies (Belt Driven type). FEI_T values for fans with specific motors will vary slightly from those shown. Fan speed shown in RPM.



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KRUGER Ventilation Group

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