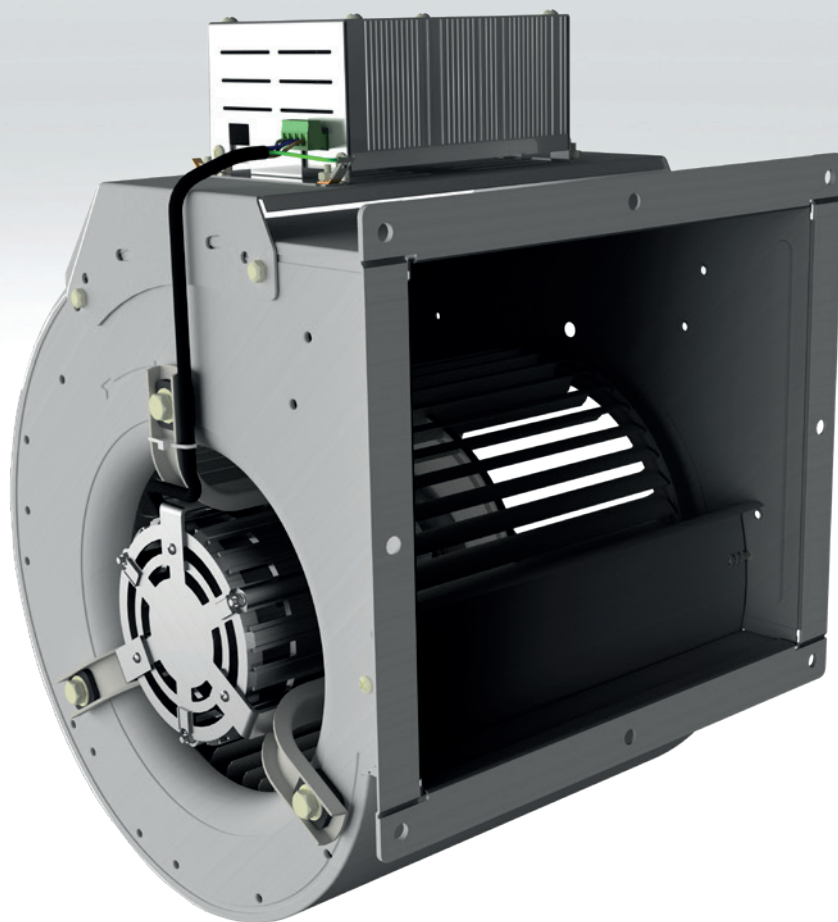
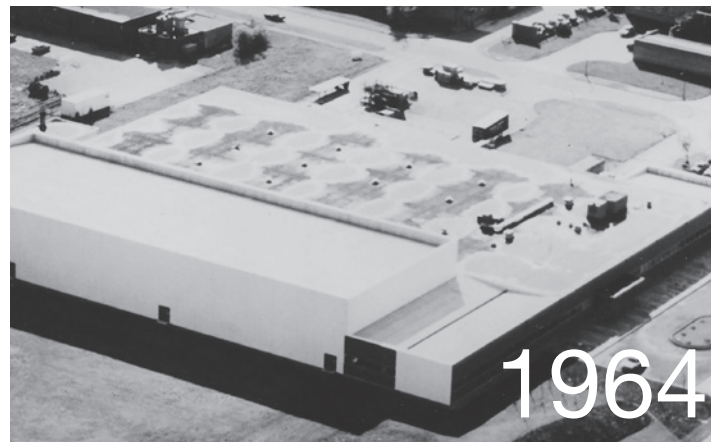
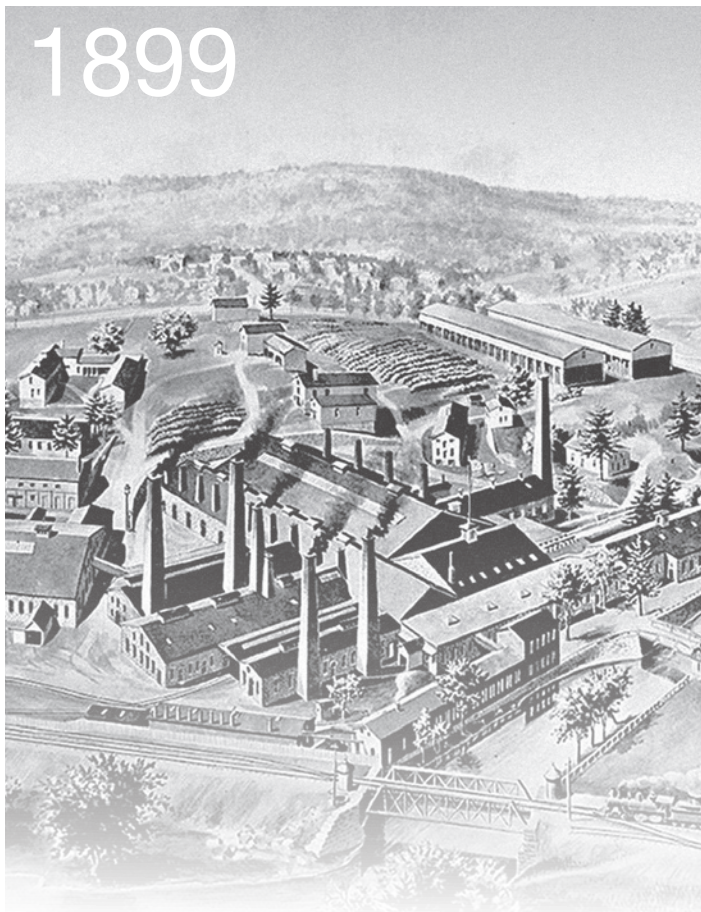




EC Direct Drive Fans

High Efficiency





For over a century...

History

Originally formed over 100 years ago as part of the USA based Torin Corporation, and then established as a UK subsidiary in 1964; Torin have developed into an independent market leader in the supply of air-movement products, incorporating over 60 years of UK innovation.

Core Focus



Torin is a technology expert in the design, development and manufacture of centrifugal impellers, traditional AC motors and highly efficient Electronically Commutated (EC) motors.

Torin products exceed the requirements of European energy saving legislation; helping our customers to position themselves at the forefront of their markets.



Efficiency with every rotation

About us

Torin design and manufacture highly efficient AC and EC motors, motorised impellers and fans for the residential and commercial HVAC manufacturing markets worldwide.

With over 60 years experience developing and manufacturing products, we sell over 1 million units per year and manufacture from two production sites in the UK.

More than 60 years of Innovation

Since our humble beginnings on the banks of the Naugatuck river in Connecticut USA, we have come a long way changing names, continents, owners and innovating the most efficient electric motor technology. We continue to invest in our local community, British engineering and raising the profile of Torin throughout the world.

International markets

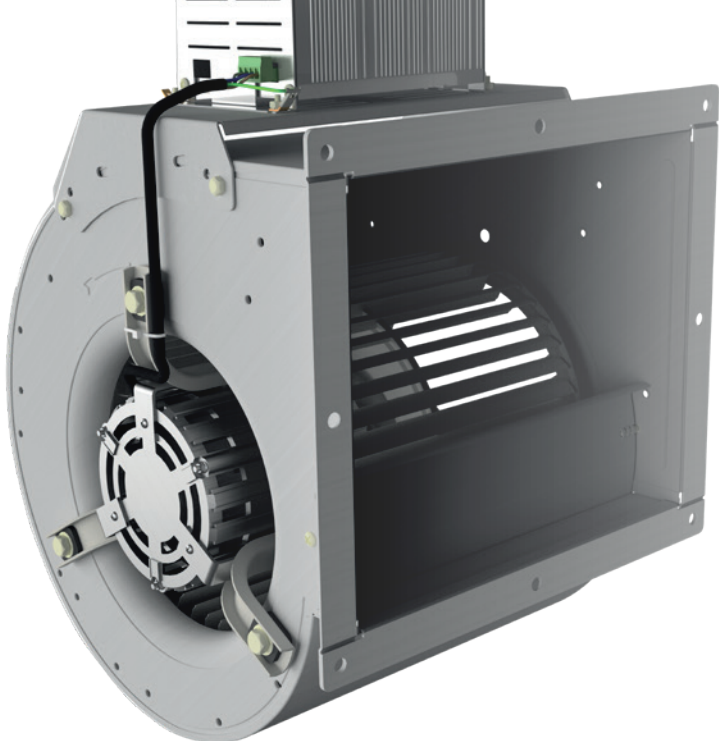
We are a truly international business with our sales evenly split between our home market in the UK and numerous export customers, all serviced by our technically competent international sales team. Support is provided by experienced product development and applications engineers backed up by an excellent research and development facility.

Customised Solutions

We understand the ever-changing market, therefore we offer customised product solutions to meet your exact needs. Whether you require a change to one of our standard products or by managing a truly joint development partnership to produce a product customised to meet your requirements.

Current examples include:

- Specific housing designs, including material thickness, mounting-hole locations and flange design.
- Lead lengths cut to size and your specified plug fitted.
- External or on-board electronics options
- Performance optimisation, including impeller and electronics design
- Licensing agreements for electronic circuitry
- Production and balancing of fans within your own product assemblies.



EC Direct Drive Fans

Torin started manufacturing direct drive fans in our UK factory in 1964. We have since established ourselves as the leading producer of direct drive fans in Europe. Literally millions of Torin direct drive fans have been produced and supplied to the air movement market over the years.

Torin offers a full range of direct drive fans utilising both traditional AC motor technology as well as three-phase AC motors with integrated inverters providing higher efficiencies and enhanced controllability.

Torin EC direct drive fans are a range of forward curved fans powered by intelligent, controllable and highly efficient EC motors with on-board drive electronics. Each model is also optionally available as a high-pressure version (ECDDC-HP).

This entire range provides the ultimate in efficiency and controllability, far exceeding the efficiency requirements of the Energy Related Products Directive (ErP), January 2015.

In addition, all of our direct drive products benefit from a range of accessories which can be factory fitted including outlet flanges, mounting feet, cubic frames and painted finishes

Typical Specifications & Features

Technical	Data
Mode of Operation	Continuous
Control Input	0-10 V dc
Control Output	10 C dv, max. load 15 mA
Dielectric Strength	On basic insulation 1500 V dc (Live to earth) On reinforced insulation 3750 V (Live to signal)
Leakage Current	2-3 mA
Protection	Overload, temperature, current
Inrush Current at Power On	65 A max. ~1 ms @ 230 V @ T= 25°C, OFF for >1min
Motor Protection	IP20
Motor Insulation Class	F
Operational Temperature	-20°C to +40°C
Material (Motor/Inverter)	Cast/extruded aluminium
Mounting	Motor - in airstream Inverter - in airstream
Bearings	Sealed for life ball
Balance Grade	G6.3 or better
EMC	
Interference Emission	EN61000-6-2
Interference Immunity	EN61000-6-3
Current Harmonics	EN61000-3-2
Voltage Fluctuations and Flicker	EN61000-3-3

What is a Direct Drive Fan?

In a direct drive fan the impeller is directly connected to the motor shaft. The blades of the fan will rotate at the same speed as the motor.

Our EC direct drive fans are powered by intelligent, controllable and highly efficient EC motors with on-board drive electronics. Fan cases and impellers are manufactured from corrosion resistant galvanised steel.

What applications can Direct Drive Fans be used for?

This type of high-flow centrifugal fan is typically used in ventilation, heating, AHUs, air curtains and heat recovery applications which can add further to the overall cost.



What is ErP?

ErP stands for 'Energy Related Products'. The ErP Directive 2009/125/EC is focussed on reducing energy consumption of fans. Regulation 327/2011 applies to fans with input powers of between 125W and 500kW. ISO 12759 has been established to allow fan producers to measure the efficiency of fans in a consistent manner and determine compliance to the directive.

The efficiency of the fan is expressed as a Fan Motor Efficiency Grade (FMEG). The Torin ECDDC range uses high efficiency EC motors that offer 30% energy savings when compared to a traditional AC motor. Torin ECDDC fans far exceed the requirements of the ErP Directive from January 2015

Customised solutions

We understand not every product offers the most optimal solution for your application. We can work together to provide a customised solution for you.



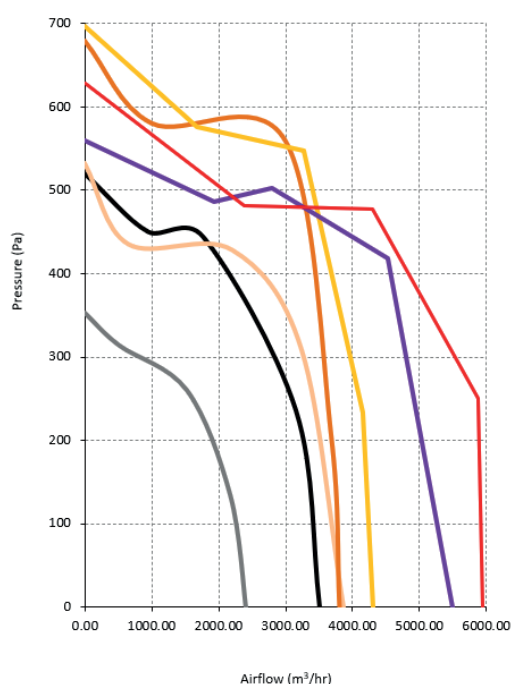
Direct Drive Fans range summary



ECDDC 201-178	ECDDC 241-181	ECDDC 241-241	ECDDC 270-203	ECDDC 270-270	ECDDC 321-241	ECDDC 321-321
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Technical Data

Supply Voltage (V/Ph/Hz)	230 /1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Max Airflow	2414	3504	3871	3861	4309	5506	5965
Max Current	2.44	4.78	4.79	4.87	4.84	7.14	7.15
Max Input Power	542	1094	1089	1092	1087	1587	1580
Max Speed	1559	1548	1547	1549	1546	1159	1160
ErP Efficiency Rating (FMEG)	49	58	56	59	59	63	62
Ip Rating	20	20	20	20	20	20	20
Motor Insultation Class	F	F	F	F	F	F	F
Temperature Range °C	-20 to +40	-20 to +40	-20 to +40	-20 to +40	-20 to +40	-20 to +40	-20 to +40
Weight (kg)	10.5	14.5	16	16	18	24	25.5



Consolidated Graph - Direct Drive Fans range

- ECDDC 201-178
- ECDDC 241-181
- ECDDC 241-241
- ECDDC 270-203
- ECDDC 270-270
- ECDDC 321-241
- ECDDC 321-321



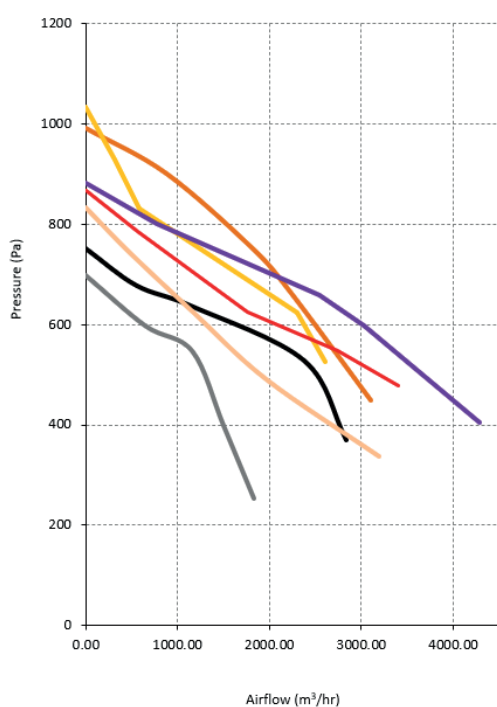
Direct Drive Fans - High Pressure



ECDDC - HP 201-178	ECDDC - HP 241-181	ECDDC - HP 241-241	ECDDC - HP 270-203	ECDDC - HP 270-270	ECDDC - HP 321-241	ECDDC - HP 321-321
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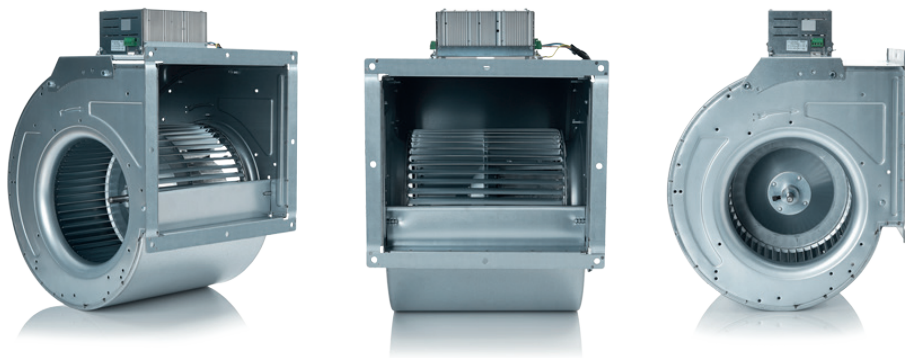
Technical Data

Supply Voltage (V/ Ph/Hz)	230 /1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Max Airflow	1921	2914	3228	2700	2695	4125	3996
Max Current	2.5	4.7	4.66	4.7	4.4	5.72	5.03
Max Input Power	560	1046	1040	1062	1002	1305	1157
Max Speed	2227	1995	1975	1948	1922	1438	1362
ErP Efficiency Rating (FMEG)	44	51	50	53	51	60	56
Ip Rating	20	20	20	20	20	20	20
Motor Insulation Class	F	F	F	F	F	F	F
Temperature Range °C	-20 to +40	-20 to +40	-20 to +40	-20 to +40	-20 to +40	-20 to +40	-20 to +40
Weight (kg)	10.5	14.5	16	16	18	24	25.5



Consolidated Graph - Direct Drive Fans HP range

- ECDDC (HP) 201-178
- ECDDC (HP) 241-181
- ECDDC (HP) 241-241
- ECDDC (HP) 270-203
- ECDDC (HP) 270-270
- ECDDC (HP) 321-241
- ECDDC (HP) 321-321



High Efficiency Direct Drive Fans

201mm - 178mm

Technical Data

Supply Voltage (V/Ph/Hz) 230 /1/50

Max Airflow (m³/h) 2414

Max Current (A) 2.44

Max Input Power (W) 542

Max Speed (rpm) 1559

ErP Efficiency Rating (FMEG) 49

IP Rating 20

Motor Insulation Class F

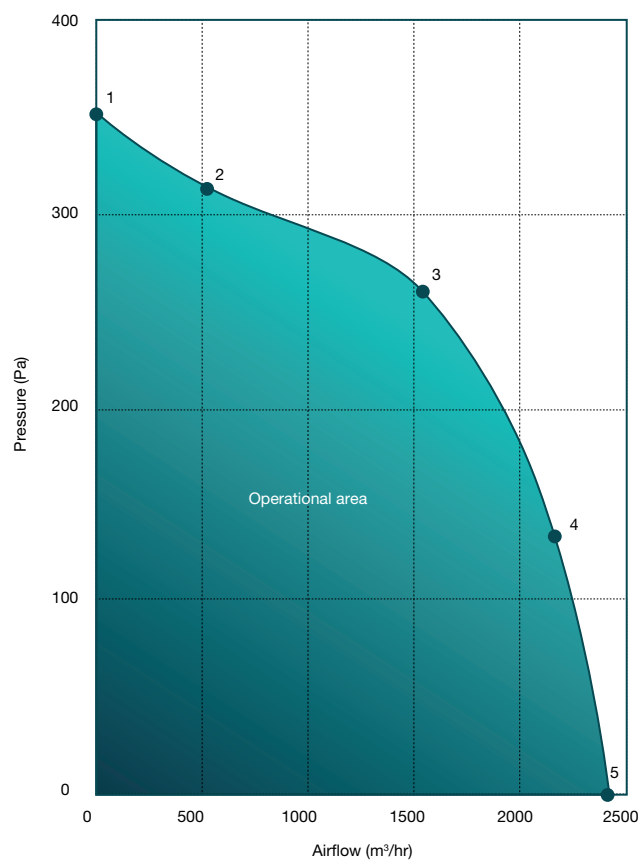
Temperature Range (°C) -20 to +40

Weight (kg) 10.5

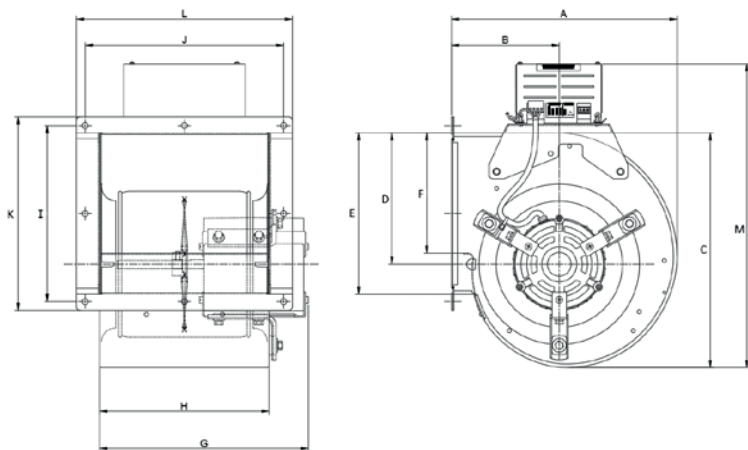
Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	353	0	0.64	1556	121
2	314	516	0.79	1556	159
3	260	1533	1.64	1558	360
4	134	2182	2.42	1559	540
5	0	2414	2.44	1432	540

ECDDC 201-178



Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	309.1	H	232
B	147.6	I	241
C	321.7	J	272
D	180.2	K	265
E	221.4	L	296
F	165	M	416.1
G	286		



Efficiency with every rotation



High Efficiency Direct Drive Fans

241mm - 181mm

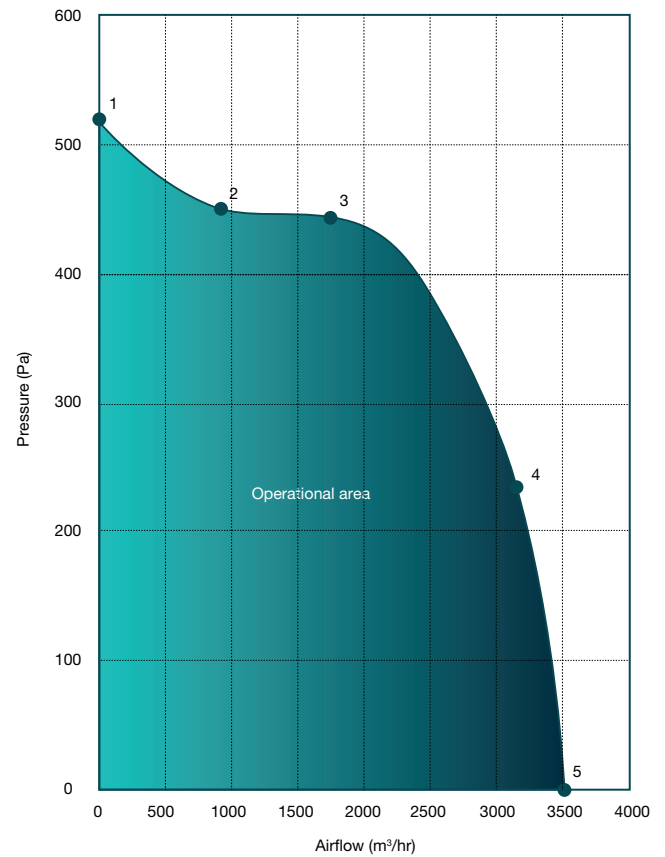
Technical Data

Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	3504
Max Current (A)	4.78
Max Input Power (W)	1094
Max Speed (rpm)	1548
ErP Efficiency Rating (FMEG)	58
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	14.5

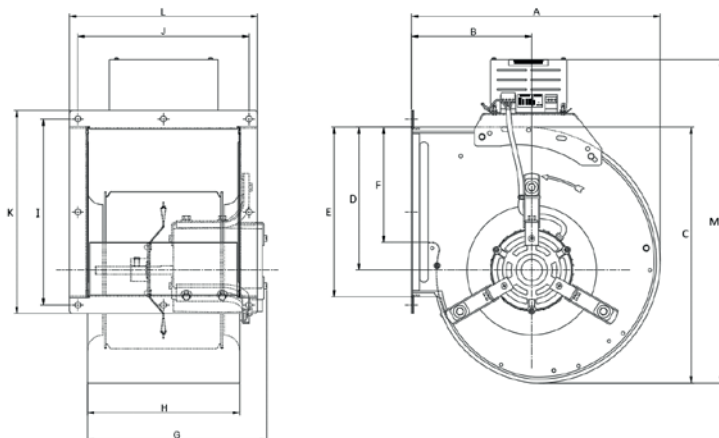
Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	520	0	0.88	1547	184
2	450	947	1.31	1547	289
3	444	1767	2.24	1546	507
4	236	3150	4.8	1527	1090
5	0	3504	4.78	1332	1087

ECDDC 241-181

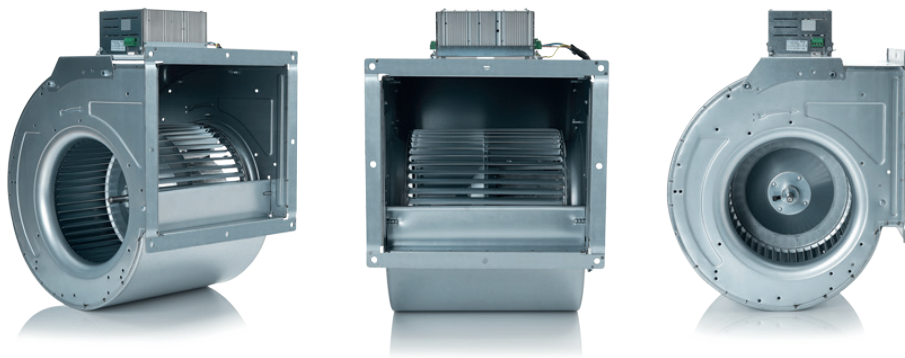


Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	380.9	H	233
B	184.1	I	285
C	392	J	262
D	218.9	K	311
E	260	L	288
F	176.5	M	495.7
G	274.4		



High Efficiency Direct Drive Fans

241mm - 241mm

Technical Data

Supply Voltage (V/Ph/Hz) 230 /1/50

Max Airflow (m³/h) 3871

Max Current (A) 4.79

Max Input Power (W) 1089

Max Speed (rpm) 1547

ErP Efficiency Rating (FMEG) 56

IP Rating 20

Motor Insulation Class F

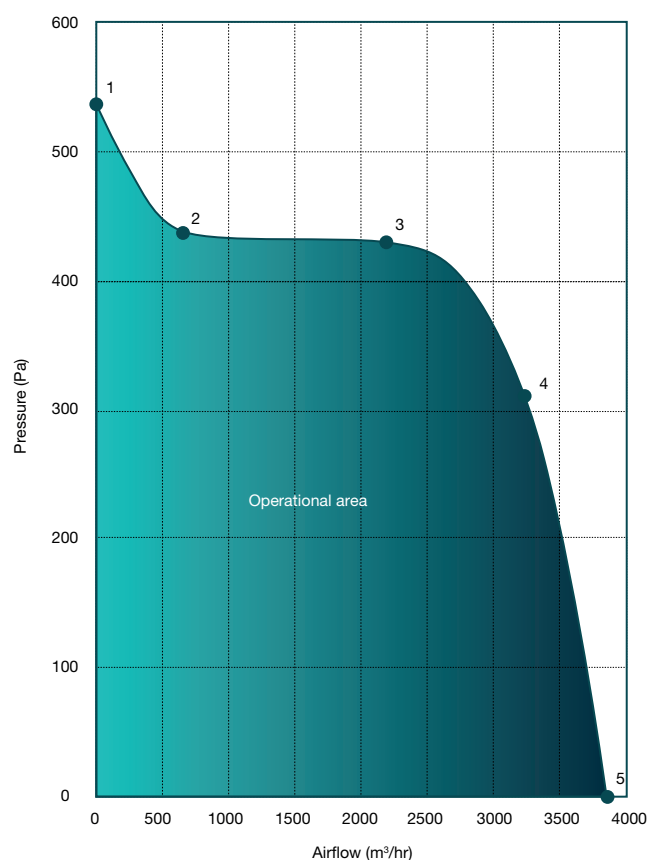
Temperature Range (°C) -20 to +40

Weight (kg) 16

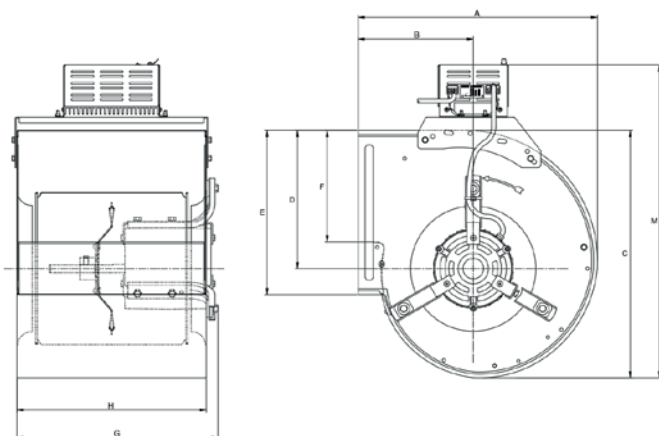
Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	532	0	0.97	1547	204
2	435	652	1.14	1545	245
3	428	2203	2.6	1544	655
4	308	3240	4.45	1544	1089
5	0	3864	4.75	1270	1085

ECDDC 241-241



Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	379.3	H	300
B	182.5	I	na
C	392	J	na
D	218.9	K	na
E	260	L	na
F	176.5	M	496.1
G	218.4		



High Efficiency Direct Drive Fans

270mm - 203mm

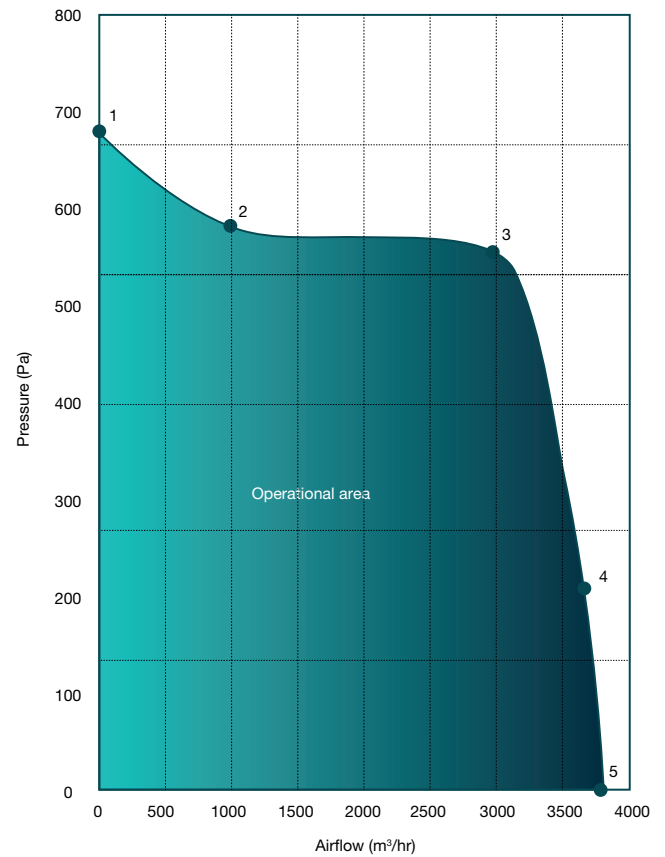
Technical Data

Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	3861
Max Current (A)	4.87
Max Input Power (W)	1092
Max Speed (rpm)	1549
ErP Efficiency Rating (FMEG)	59
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	16

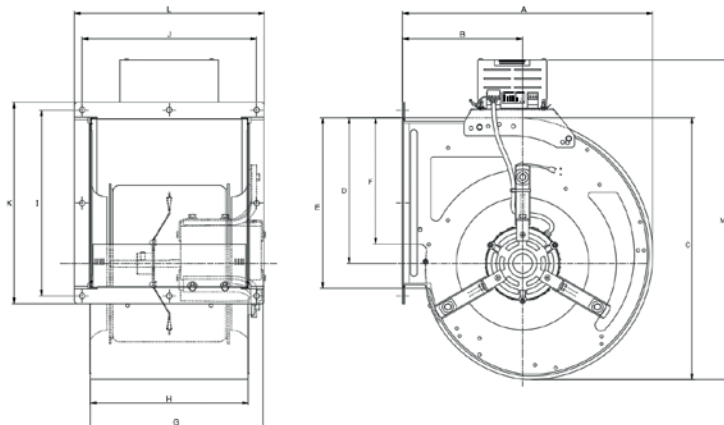
Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	680	0	1.41	1547	306
2	581	1000	1.85	1546	408
3	560	2997	4.82	1530	1092
4	207	3680	4.74	1198	805
5	0	3806	3.51	922	805

ECDDC 270-203

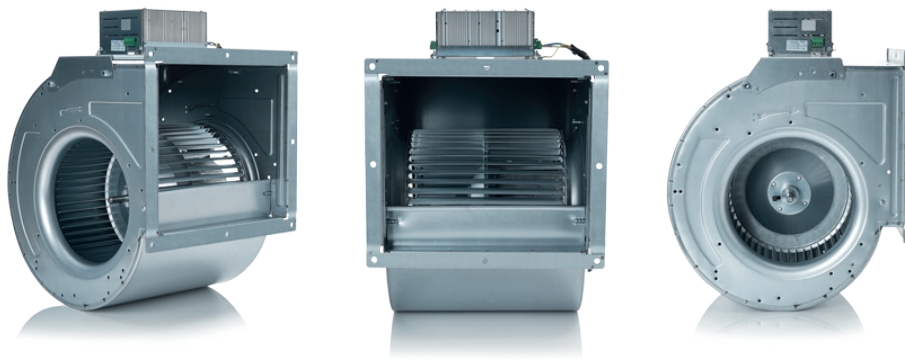


Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	423	H	267
B	203.2	I	314
C	443	J	295
D	246.4	K	340
E	288.3	L	321.2
F	213.4	M	539.6
G	291.6		



High Efficiency Direct Drive Fans

270mm - 270mm

Technical Data

Supply Voltage (V/Ph/Hz) 230 /1/50

Max Airflow (m³/h) 4309

Max Current (A) 4.84

Max Input Power (W) 1087

Max Speed (rpm) 1546

ErP Efficiency Rating (FMEG) 59

IP Rating 20

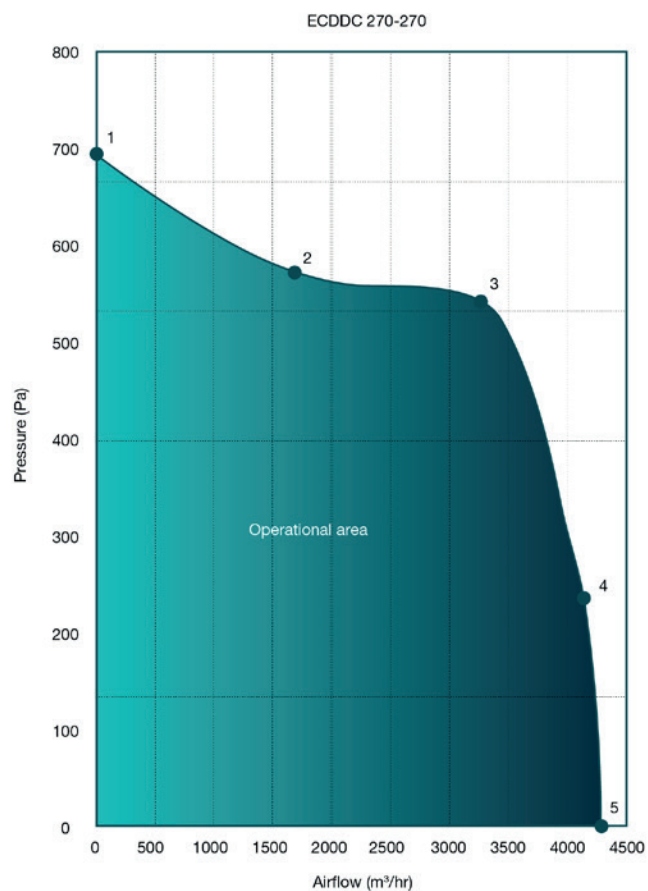
Motor Insulation Class F

Temperature Range (°C) -20 to +40

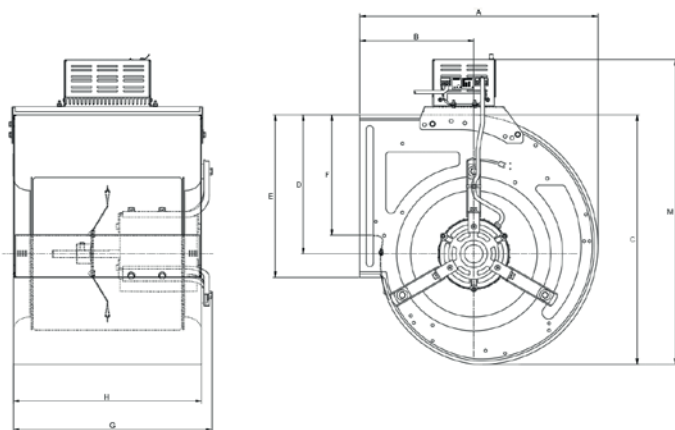
Weight (kg) 18

Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	697	0	1.63	1546	366
2	576	1679	2.6	1544	585
3	548	3265	4.81	1516	1087
4	233	4153	4.66	1182	1040
5	0	4309	3.38	871	750



Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	421.1	H	333
B	201.6	I	na
C	441.8	J	na
D	246	K	na
E	287.7	L	na
F	213.1	M	539.7
G	351.5		



Efficiency with every rotation



High Efficiency Direct Drive Fans

321mm - 241mm

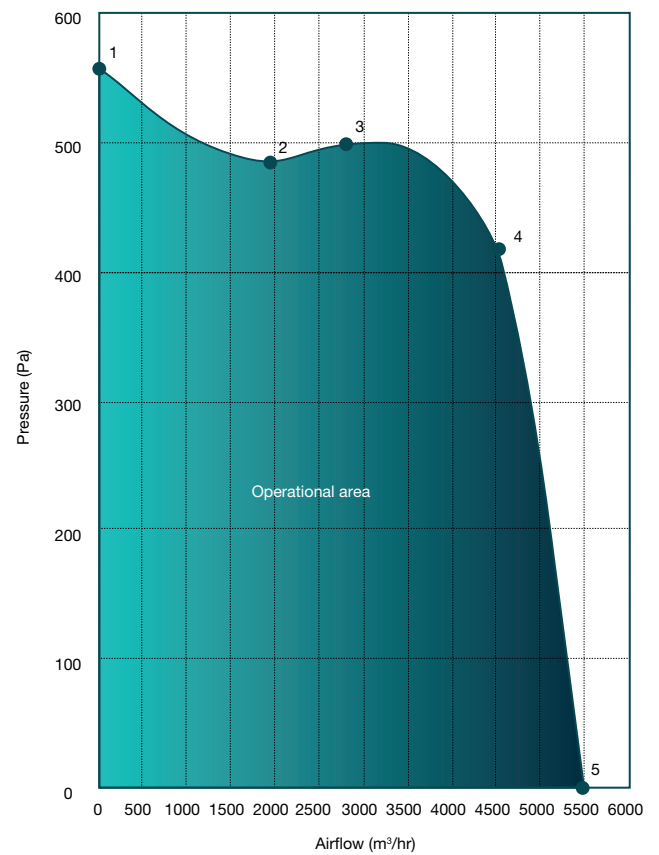
Technical Data

Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	5506
Max Current (A)	7.14
Max Input Power (W)	1587
Max Speed (rpm)	1159
ErP Efficiency Rating (FMEG)	63
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	24

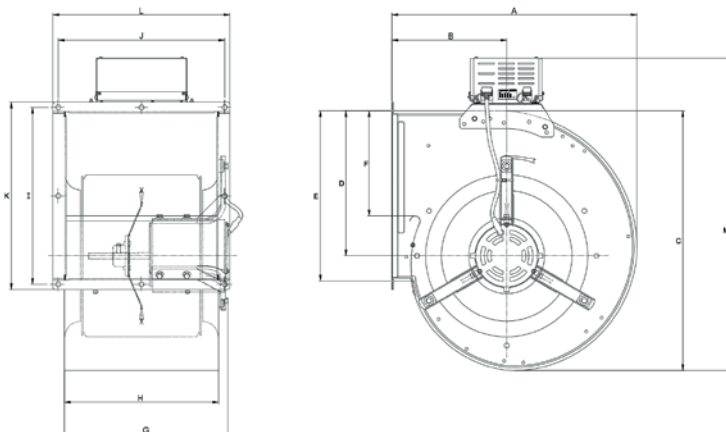
Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	560	0	1.39	1157	293
2	486	1929	2.37	1158	760
3	502	2795	3.43	1158	760
4	418	4526	6.28	1054	1408
5	0	5490	5.5	832	1235

ECDDC 321-241

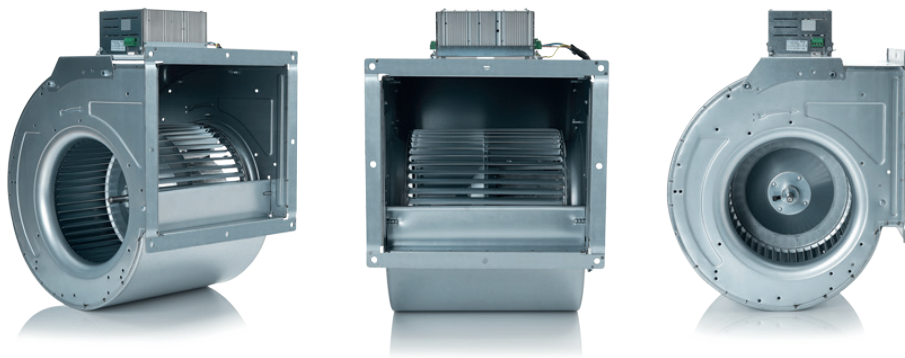


Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	494.5	H	311
B	231.6	I	357
C	524	J	336
D	292.5	K	378
E	343	L	356.8
F	211.9	M	630.8
G	329.5		



High Efficiency Direct Drive Fans

321mm - 321mm

Technical Data

Supply Voltage (V/Ph/Hz) 230 /1/50

Max Airflow (m³/h) 5965

Max Current (A) 7.15

Max Input Power (W) 1580

Max Speed (rpm) 1160

ErP Efficiency Rating (FMEG) 62

IP Rating 20

Motor Insulation Class F

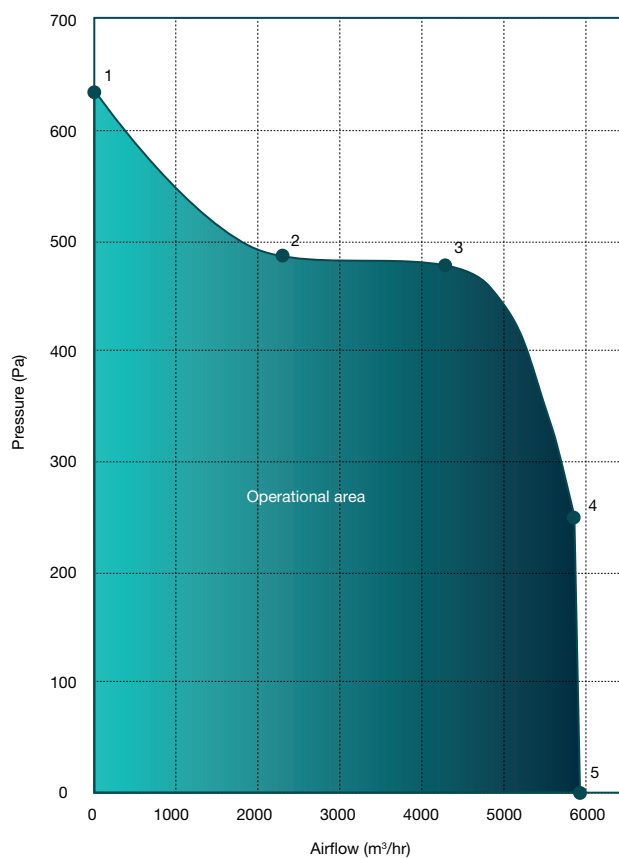
Temperature Range (°C) -20 to +40

Weight (kg) 25.5

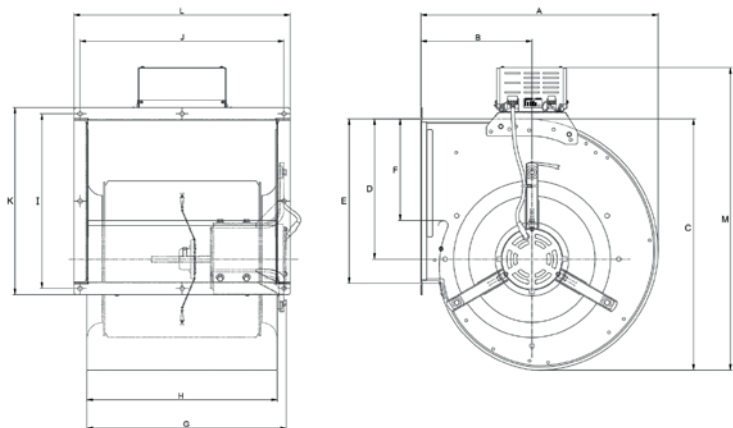
Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	629	0	1.66	1159	362
2	482	2381	2.85	1157	646
3	478	4301	5.32	1156	1200
4	250	5879	6.93	1017	1575
5	0	5944	4.43	713	1013

ECDDC 321-321

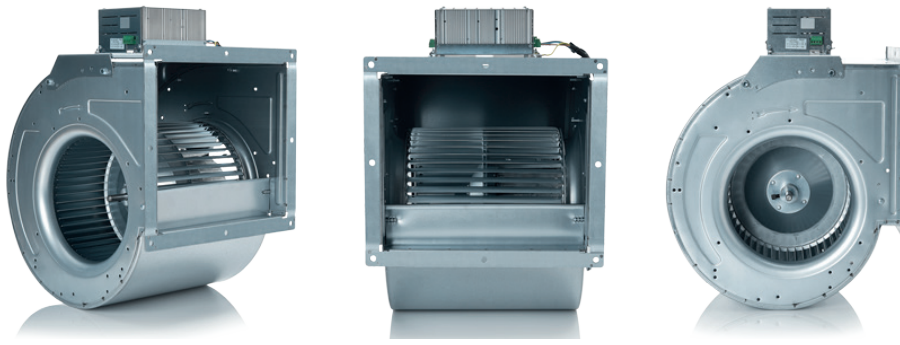


Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	494.5	H	397
B	231.6	I	364
C	524	J	425
D	292.5	K	390
E	343	L	451
F	211.9	M	630.6
G	415.5		



High Efficiency Direct Drive Fans - High Pressure

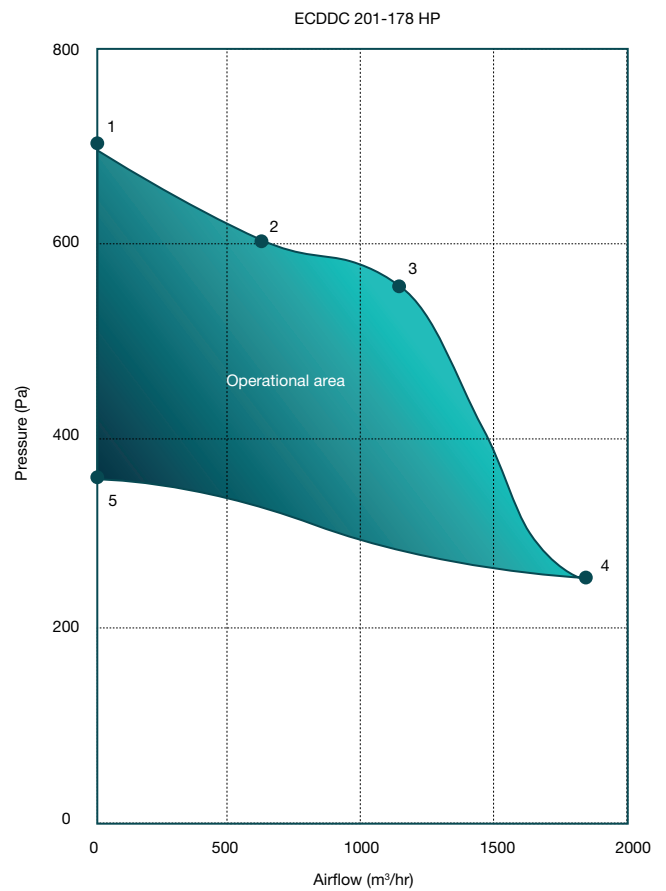
201mm - 178mm

Technical Data

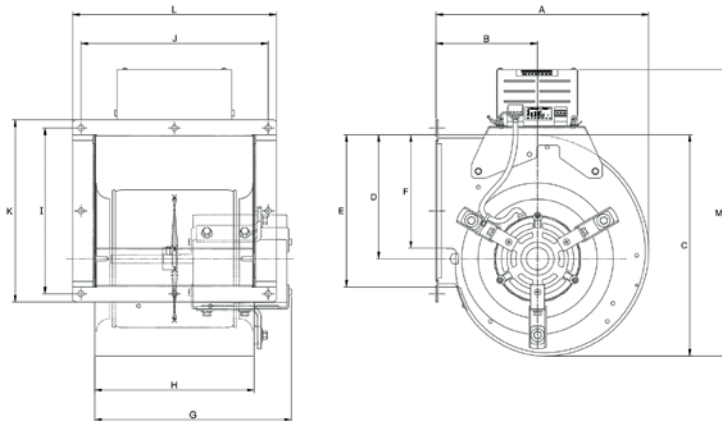
Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	1921
Max Current (A)	2.5
Max Input Power (W)	560
Max Speed (rpm)	2227
ErP Efficiency Rating (FMEG)	44
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	10.5

Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	699	0	1.35	2227	295
2	598	649	1.82	2189	413
3	547	1160	2.47	2129	553
4	399	1497	2.47	1929	560
5	254	1825	2.48	1725	560



Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	309.1	H	232
B	147.6	I	241
C	321.7	J	272
D	180.2	K	265
E	221.4	L	296
F	165	M	416.1
G	286		



High Efficiency Direct Drive Fans - High Pressure

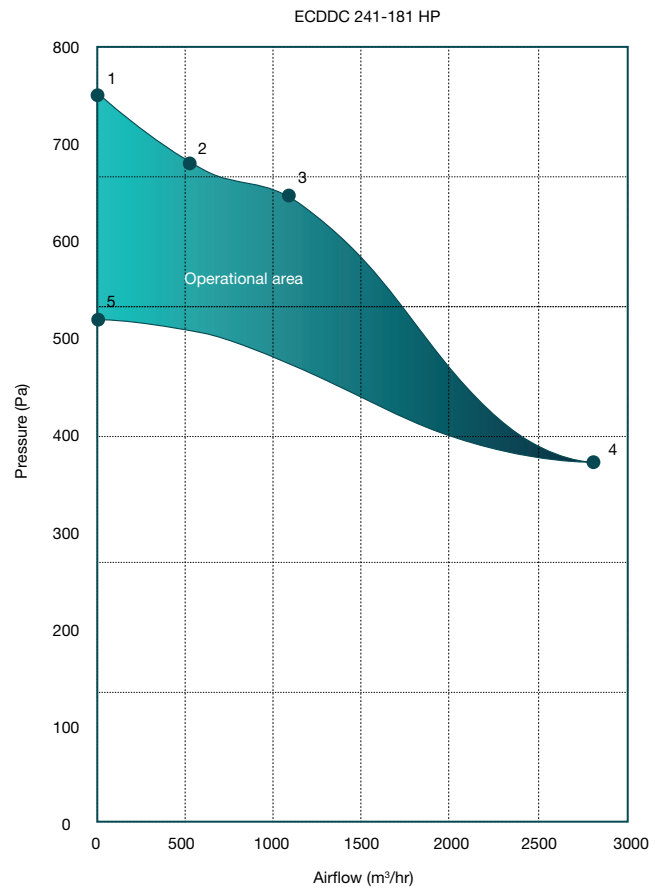
241mm - 181mm

Technical Data

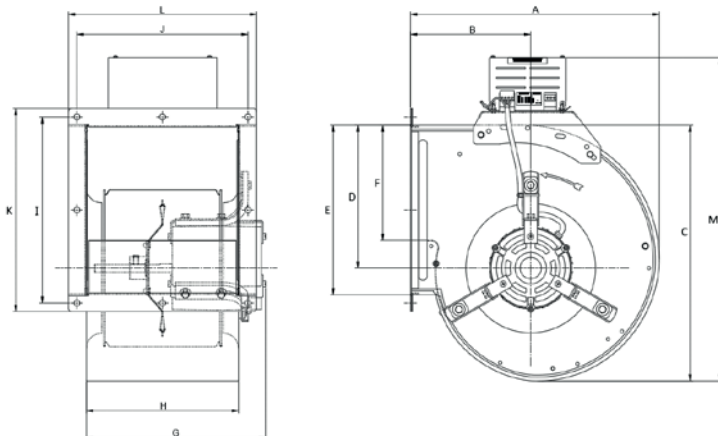
Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	2914
Max Current (A)	4.7
Max Input Power (W)	1046
Max Speed (rpm)	1995
ErP Efficiency Rating (FMEG)	51
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	14.5

Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	753	0	1.43	1970	326
2	679	552	1.76	1967	395
3	637	1162	2.53	1944	369
4	529	2374	3.96	1792	901
5	371	2830	4.39	1667	1000

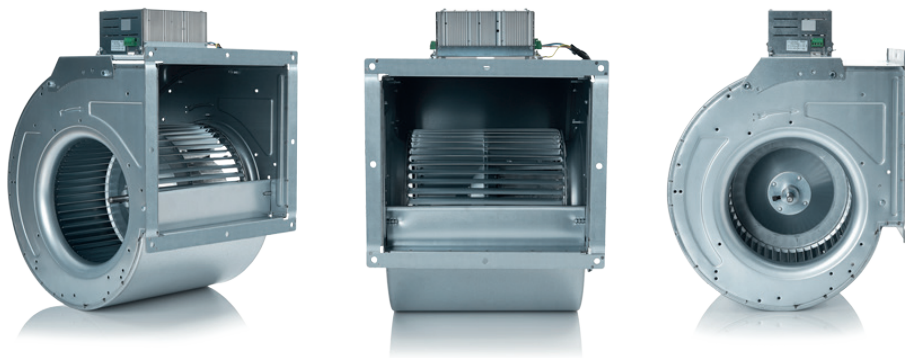


Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	380.9	H	233
B	184.1	I	285
C	392	J	262
D	218.9	K	311
E	260	L	288
F	176.5	M	495.7
G	274.4		



High Efficiency Direct Drive Fans - High Pressure

241mm - 241mm

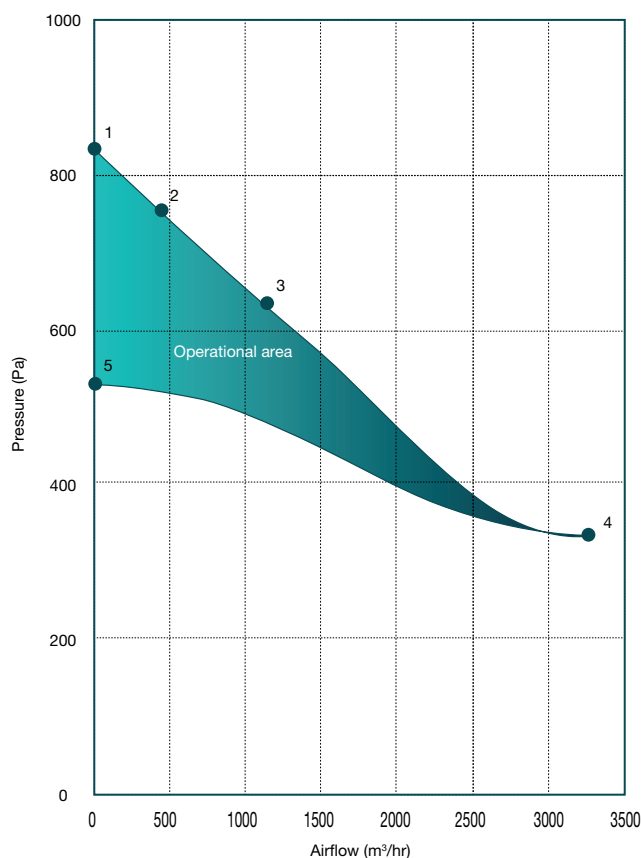
Technical Data

Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	3228
Max Current (A)	4.66
Max Input Power (W)	1040
Max Speed (rpm)	1975
ErP Efficiency Rating (FMEG)	50
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	16

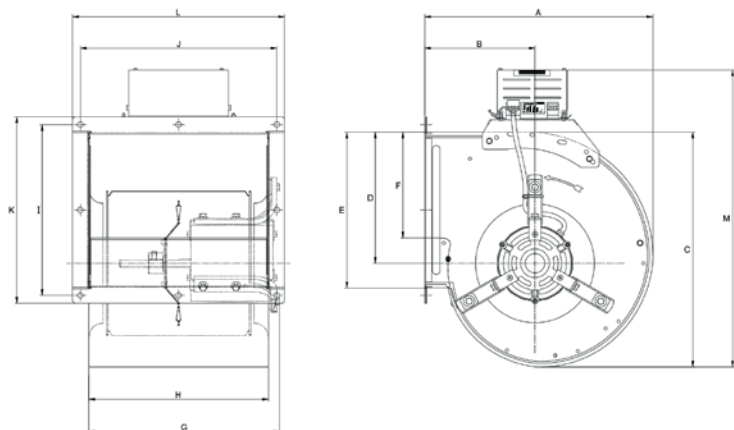
Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	834	0	1.9	1960	421
2	741	497	2.0	1972	448
3	625	1171	2.73	1930	613
4	490	1972	3.0	1737	680
5	337	3193	4.42	1606	995

ECDDC 241-241 HP

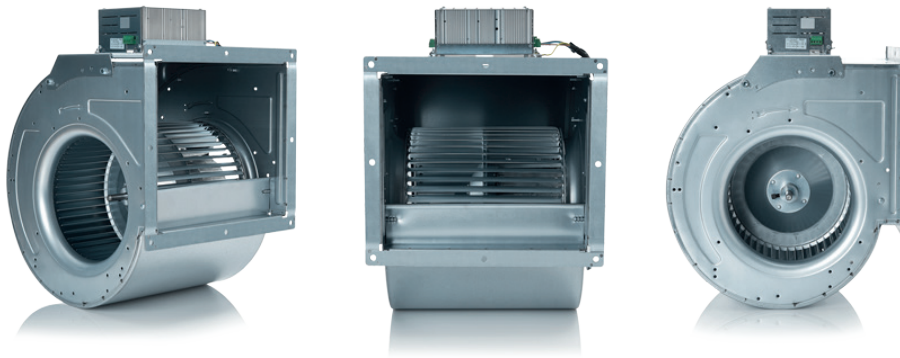


Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	380.9	H	300
B	184.1	I	285
C	392	J	328
D	218.9	K	311
E	260	L	354
F	176.5	M	495.7
G	318.4		



High Efficiency Direct Drive Fans - High Pressure

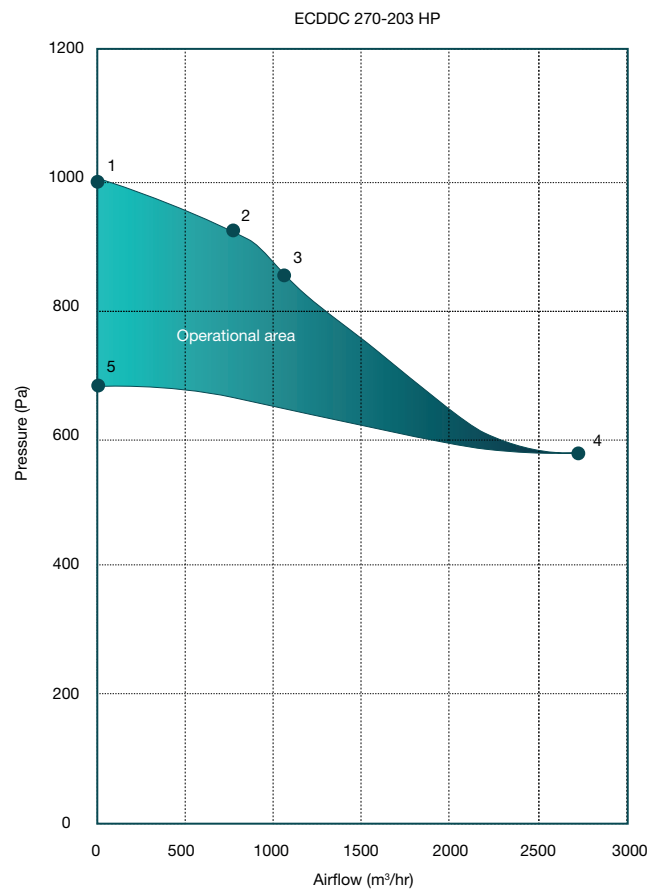
270mm - 203mm

Technical Data

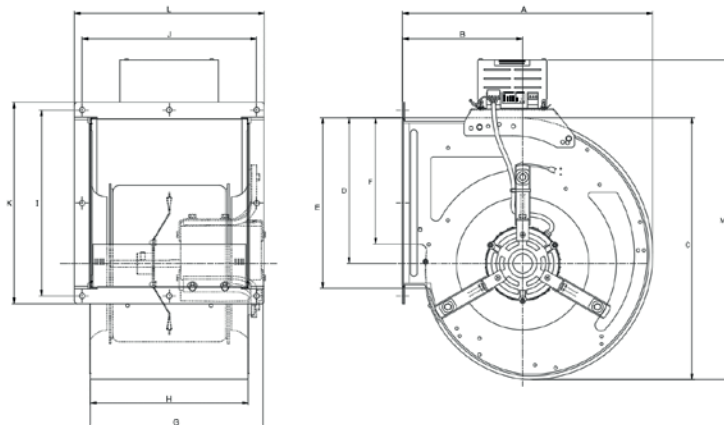
Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	2700
Max Current (A)	4.7
Max Input Power (W)	1062
Max Speed (rpm)	1948
ErP Efficiency Rating (FMEG)	53
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	16

Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	993	0	2.42	1942	540
2	902	879	2.58	1930	583
3	754	1805	3.96	1772	903
4	666	2222	4.16	1735	954
5	449	3099	4.8	1508	1100

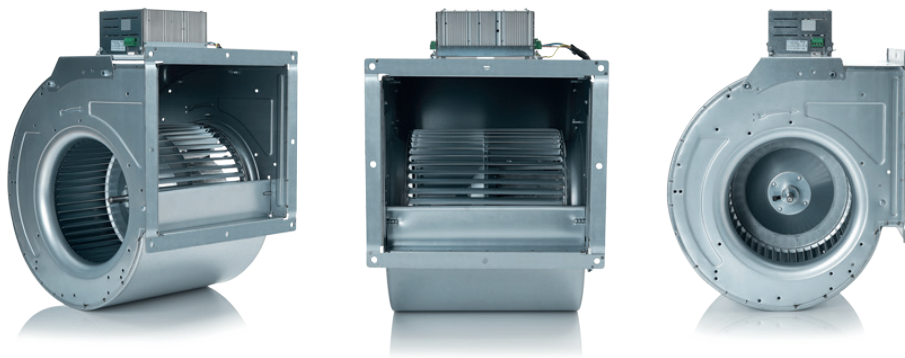


Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	423	H	267
B	203.2	I	314
C	443	J	295
D	246.4	K	340
E	288.3	L	321.2
F	213.4	M	539.6
G	291.6		



High Efficiency Direct Drive Fans - High Pressure

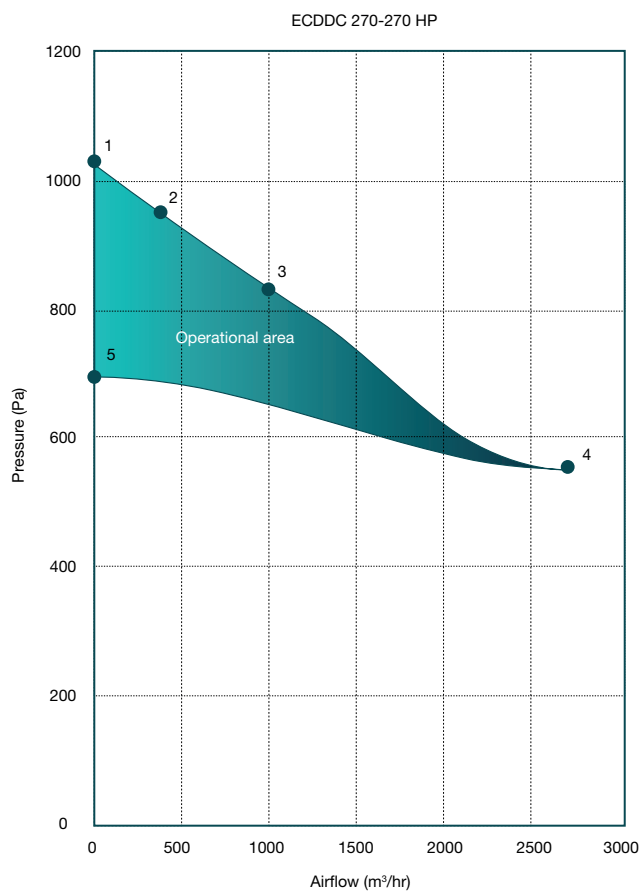
270mm - 270mm

Technical Data

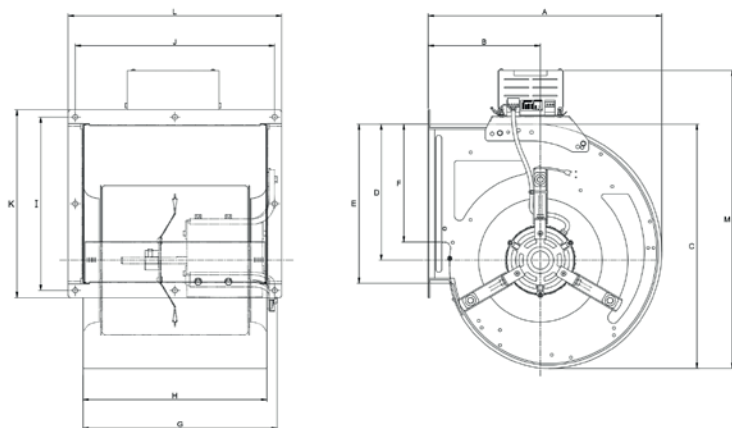
Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	2695
Max Current (A)	4.4
Max Input Power (W)	1002
Max Speed (rpm)	1922
ErP Efficiency Rating (FMEG)	51
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	18

Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	1033	0	2.83	1922	641
2	930	317	2.97	1910	660
3	831	580	3.33	1888	751
4	623	2294	4.32	1701	993
5	526	2609	4.09	1571	924



Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	423	H	333
B	203.2	I	314
C	442.3	J	361
D	246.4	K	340
E	288.2	L	387
F	213.4	M	539.6
G	351.5		



High Efficiency Direct Drive Fans - High Pressure

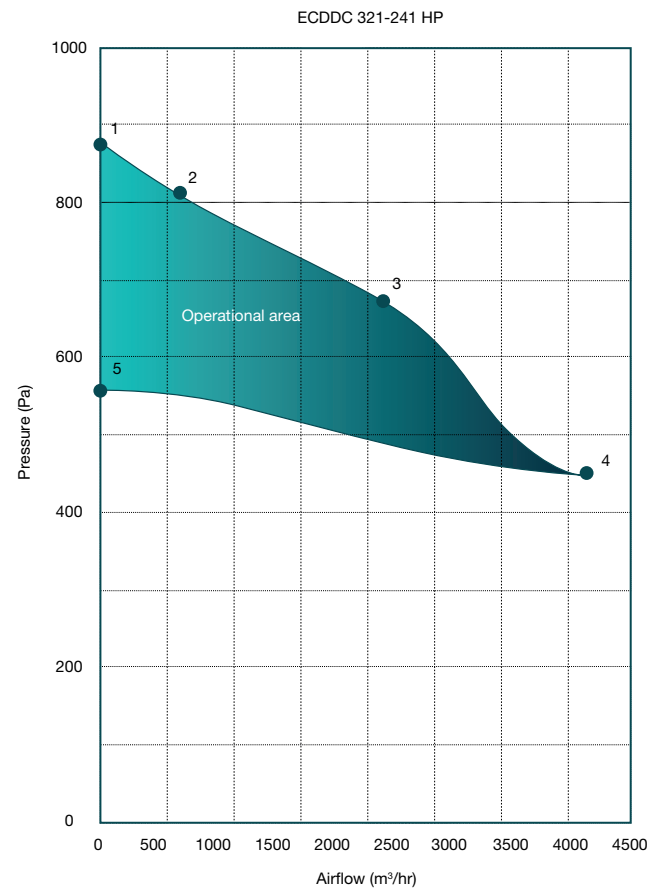
321mm - 241mm

Technical Data

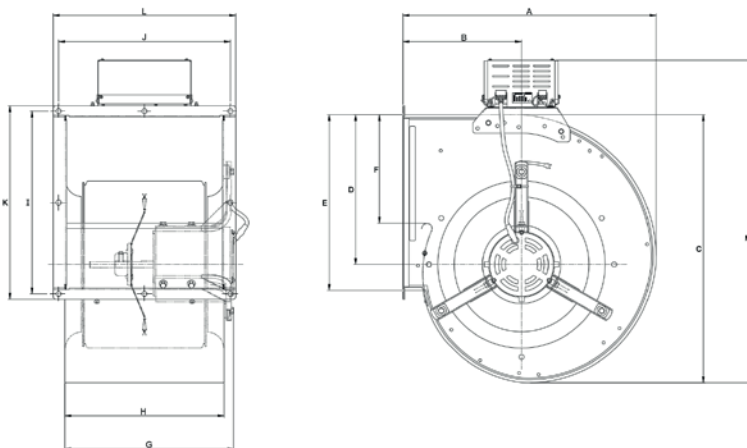
Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	4125
Max Current (A)	5.72
Max Input Power (W)	1305
Max Speed (rpm)	1438
ErP Efficiency Rating (FMEG)	60
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	24

Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	882	0	2.2	1438	506
2	802	779	2.43	1433	555
3	660	2540	4.15	1346	994
4	598	3020	4.47	1292	1023
5	405	4290	5.84	1167	1340

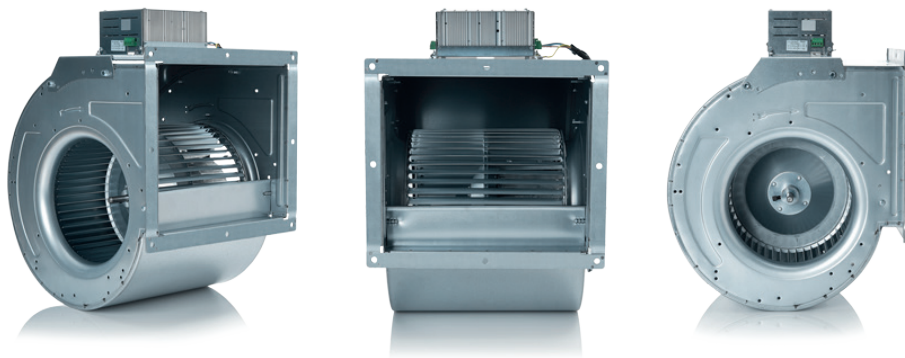


Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	494.5	H	311
B	231.6	I	357
C	524	J	336
D	292.5	K	378
E	343	L	356.8
F	211.9	M	630.6
G	329.5		



High Efficiency Direct Drive Fans - High Pressure

321mm - 321mm

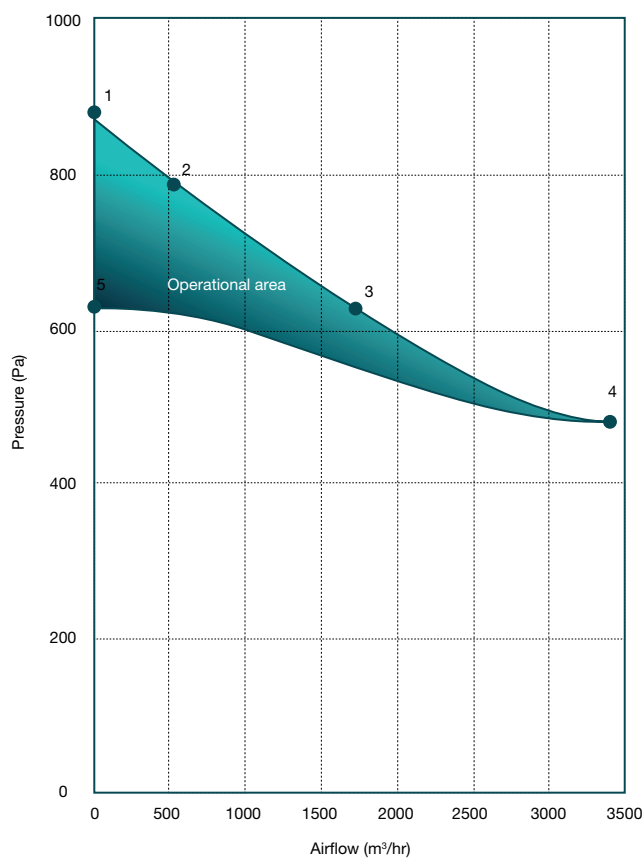
Technical Data

Supply Voltage (V/Ph/Hz)	230 /1/50
Max Airflow (m³/h)	3996
Max Current (A)	5.03
Max Input Power (W)	1157
Max Speed (rpm)	1362
ErP Efficiency Rating (FMEG)	56
IP Rating	20
Motor Insulation Class	F
Temperature Range (°C)	-20 to +40
Weight (kg)	25.5

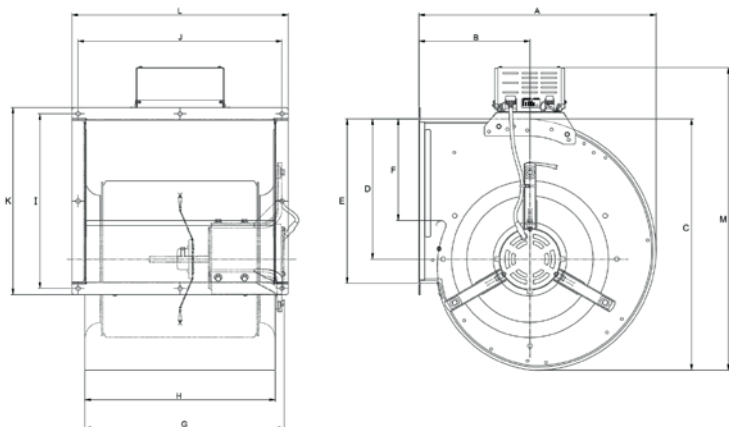
Performance Data

Data Point	Static Pressure (Pa)	Airflow (m³/h)	Current (A)	Speed (rpm)	Power (W)
1	868	0	2.4	1355	547
2	787	559	2.41	1354	553
3	625	1756	3.38	1317	731
4	548	2733	4.02	1242	911
5	479	3401	4.46	1193	1008

ECDDC 321-321 HP



Tested in accordance with ISO 5801. Installation method - type A.



Dimensions (mm)

A	494.5	H	397
B	231.6	I	364
C	524	J	425
D	292.5	K	390
E	343	L	451
F	211.9	M	633.1
G	415.5		



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