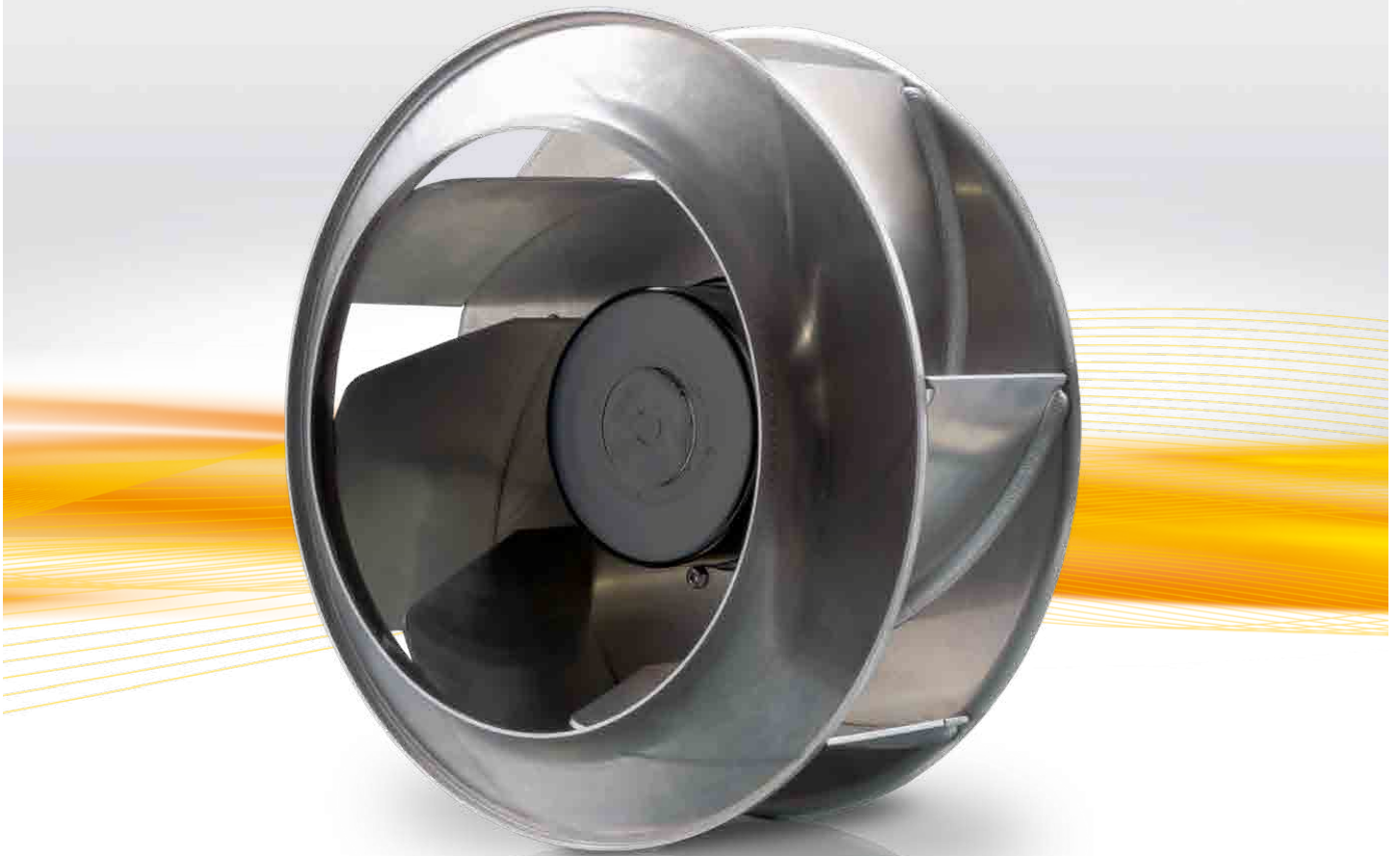


Revolution 360[®]

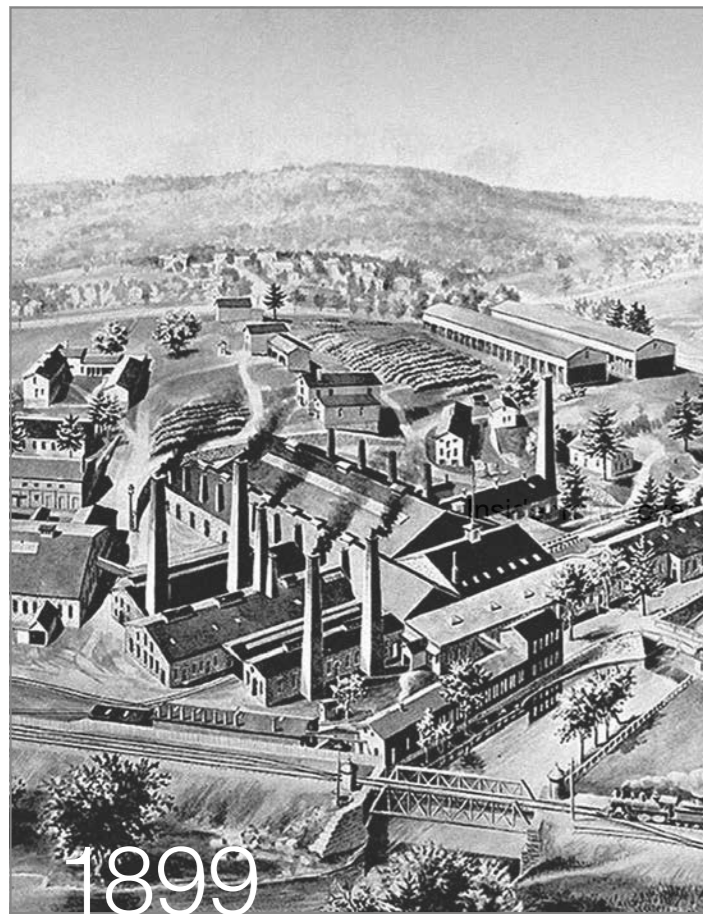


High Efficiency

Motorised Impellers and Plug Fans

torin-sifan

The Partner of Choice



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-Sifan has developed into an independent market leader in the supply of air-movement products, incorporating more than 50 years of continued UK innovation.

Core Focus

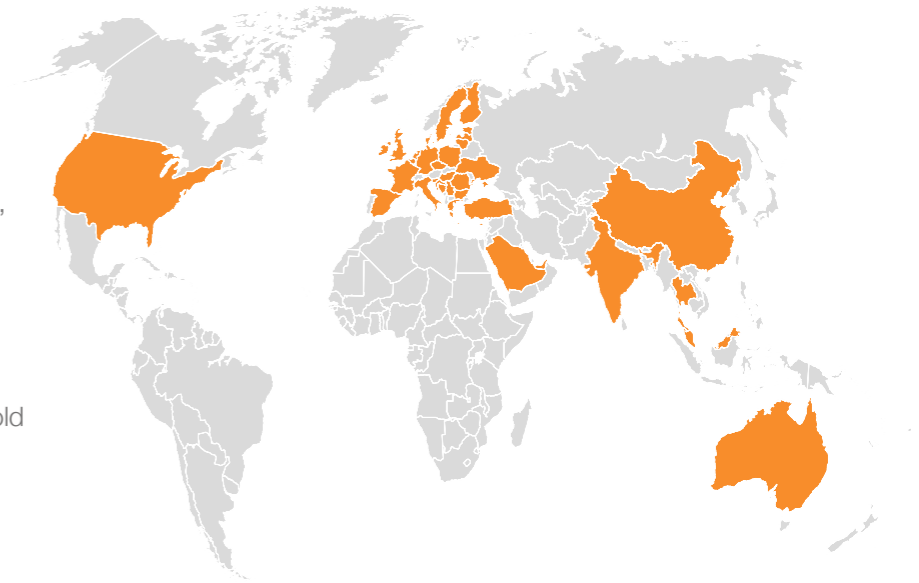
Torin-Sifan is a technology expert in the design, development and manufacture of centrifugal impellers, traditional AC motors and highly efficient Electronically Commutated (EC) motors.

Torin-Sifan products exceed the requirements of European energy saving legislation, and importantly this helps our customers to position themselves at the forefront of their markets.



International

Torin-Sifan sales are distributed evenly between the UK and various international markets across Europe, USA and the Asia Pacific region. Our product range has proven to be ideal for a diverse range of applications such as the heating, ventilation, air conditioning, household appliance and IT/telecom sectors, amongst others.



Investments

An investment of over £2m in 2014 saw Torin-Sifan opening its new EC Manufacturing & Technology Centre in the UK. This provides additional capacity to ensure best-in-class service levels for the ever increasing demand for high efficiency fans.

During 2016, we launched our latest generation EC motor platform, offering leading edge specification, various features and benefits, together with a design which takes into account manufacturing techniques, ensuring high levels of reliability and quality.

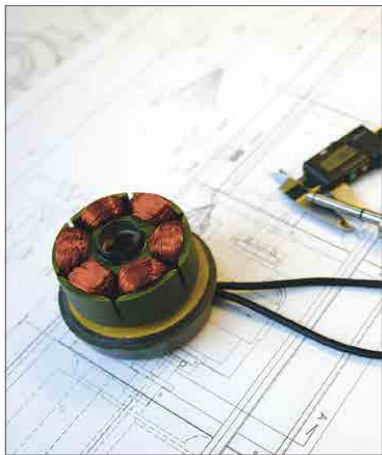


Quality and Legislation

Torin-Sifan is an ISO 9001 certified organisation. We recognise that the quality and reliability of our products, coupled with great service, form the most sought after set of purchasing criteria for our customers.

Torin-Sifan is also an active member of the UK Trade Association (FETA) and the European Ventilation Industry Association (EVIA).

This ensures that Torin-Sifan is at the forefront of European policy meaning regulatory challenges set by the EU are commercially and technically realistic for both our business and our customers.

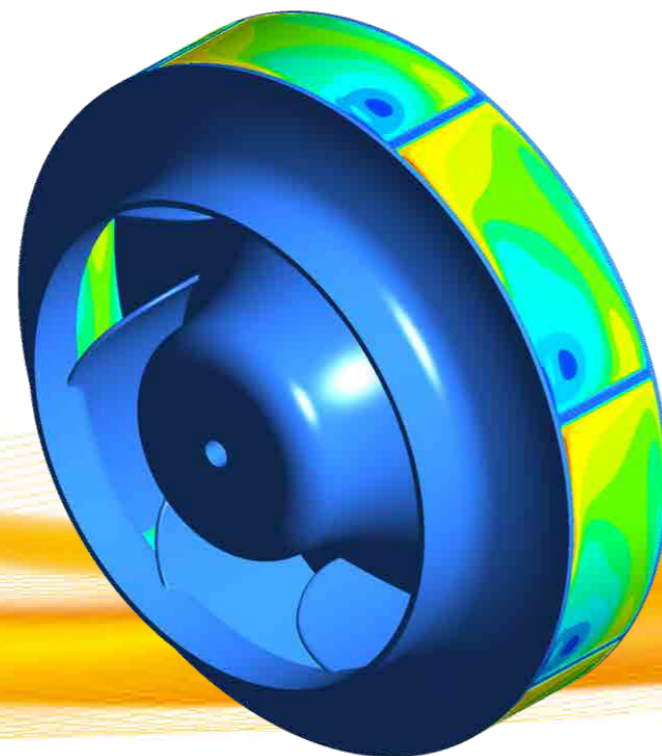


Technology Partners

Torin-Sifan is proud to partner with the customer base on custom designs, co-developments and technology licence agreements. Understanding the needs of customers, legislation that affects the various industries, whilst creating value and innovation is at the very heart of business for Torin-Sifan.

Expertise in aerodynamic design, EC motor technology, drive technology, efficiency and acoustics, plus our willingness to share this knowledge has positioned Torin-Sifan as the partner of choice for energy-efficient air movement solutions.

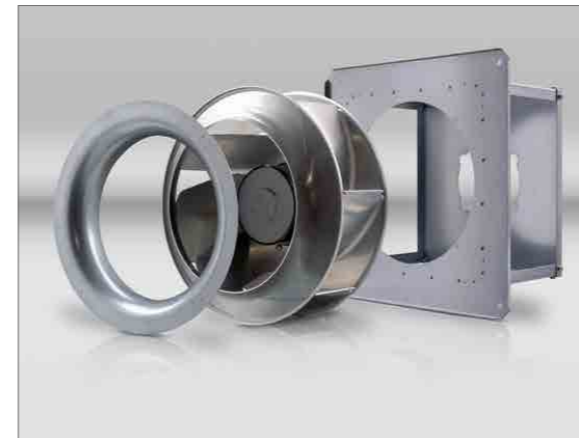
This is all underpinned by an extensive team of product development and applications engineers, combined with an exceptional research and development facility.



90W – 170W EC Motorised Impellers



90W – 170W EC Motorised Fans



EC Centrifugal Fan Pedigree

Torin-Sifan started manufacturing EC centrifugal motorised impellers and fans in the late 1990's and we celebrated selling our one-millionth EC product to the European ventilation industry in 2013. We have since opened our EC Manufacturing & Technology Centre which acts as the centre of excellence for everything EC. This new state-of-the-art facility has benefitted from an investment exceeding £2m and houses the production of highly efficient EC motor, fan and blower products.

The Revolution 360 range utilises the latest three-phase technology, ensuring best-in-class efficiency levels as well as whisper quiet operation. These are fundamental considerations

when selecting your partner for air movement projects.

The newly expanded Revolution 360 range now caters for motor powers of up to 1 kW, impeller diameters of 400 mm and is also available in a plug fan mounting configuration.

The new additions to the range are suitable for heating, ventilation and cooling applications for use within commercial installations. This builds on the strong position Revolution 360 enjoys within the residential sector. The highly intelligent EC motor ensures that an optimal mix of air-performance, noise and efficiency is delivered.



The Revolution 360 range also exceeds the requirements of the eco-design regulations.

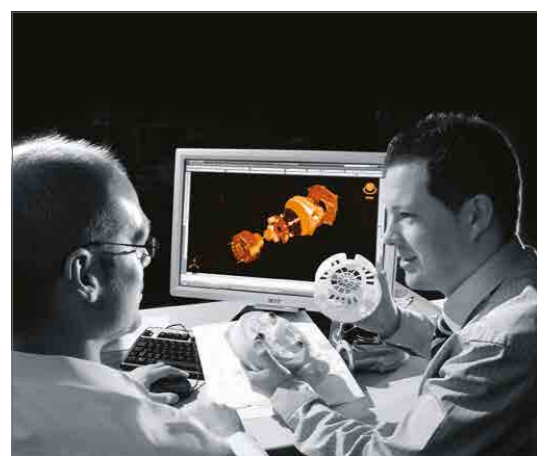
“Most importantly, our expertise is centred on understanding a fan’s specific performance in each application, however complex that application is.”

Why make Torin-Sifan your partner of choice?

We want our customers to always get the best from their products, so your requirements are paramount to us. You can benefit from a flexible & tailored set of services on offer.

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



Feel free to ask about our value-add-services if you don't see what you require.

Typical Specifications & Features

Technical Data	
Mode of Operation	Continuous
Supply Voltage (rms)	200 ~ 277 V ac
Supply Phase	1 ~
Supply Frequency Range	50/60 Hz
Control Input	0-10 V dc / PWM, RS485
Control Output	10 V dc max 10 mA, RS485
Dielectric Strength	1.5 kV dc / 2.2 kV ac
Leakage Current	≤3.5 mA
Protection	Locked rotor
Motor Protection	Over temperature protected
Motor Insulation Class	B
IP Rating	54
Operational Ambient Temperature Range	-25 °C to +60 °C
Material	
- Impeller	Aluminium
- Rotor Cup	SPCC
- Electronics Enclosure	Die-Cast Aluminium
- Inlet Ring	Galvanised Steel
Motor Mounting	Horizontal / Vertical
Bearings	Ball bearings
Balance Grade	G6.3
Approvals	CE
EMC	
- Immunity	EN61000-6-1
- Emissions	EN61000-6-3
- Harmonics	EN61000-3-2/3
LVD	
- Electrical Safety	EN60335-1, EN60335-2-80

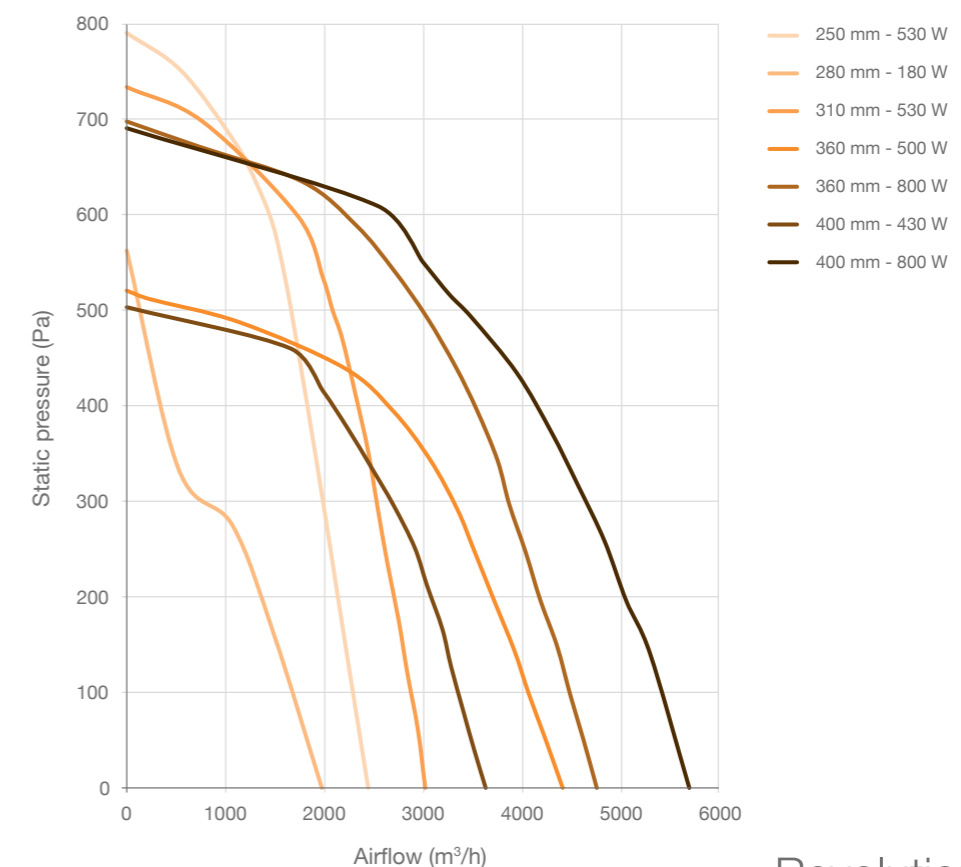
EC Motorised Impellers & Plug Fans range summary



250 mm 530 W	280 mm 180 W	310 mm 530 W	360 mm 500 W	360 mm 800 W	400 mm 430 W	400 mm 800 W
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Technical Data							
Supply Voltage (rms)	200 ~ 277	200 ~ 277	200 ~ 277	200 ~ 277	200 ~ 277	200 ~ 277	200 ~ 277
Max. Airflow	2440 m³/h	1972 m³/h	3016 m³/h	4408 m³/h	4755 m³/h	3635 m³/h	5693 m³/h
Max. Current	3.5 A	1.0 A	3.5 A	3.6 A	4.0 A	3.1 A	4.0 A
Max. Input Power	530 W	180 W	530 W	500 W	800 W	430 W	800 W
Inrush Current (t=25 °C)							
Cold Start	24.0 A	15.4 A	24.0 A	24.0 A	24.8 A	24.0 A	24.8 A
Hot Start	43.4 A	35.1 A	43.4 A	43.4 A	39.7 A	43.4 A	39.7 A
Max. Speed	3050 rpm	1850 rpm	2500 rpm	1730 rpm	2030 rpm	1500 rpm	1760 rpm
Erp Efficiency Rating (FMEG)	67	70	76	73	71	76	76
IP Rating	54	54	54	54	54	54	54
Motor Insulation Class	B	B	B	B	B	B	B
Operational Ambient Temperature Range	-25 °C to +60 °C	-25 °C to +60 °C	-25 °C to +60 °C	-25 °C to +60 °C	-25 °C to +60 °C	-25 °C to +60 °C	-25 °C to +60 °C
Weight	5.3 kg	3.2 kg	6.3 kg	7.1 kg	10.5 kg	7.2 kg	11.3 kg
Standard Direction of Rotation	Clockwise	Clockwise	Clockwise	Clockwise	Clockwise	Clockwise	Clockwise
Number of Blades	7	9	7	7	7	7	7

Motorised Impellers & Plug Fans Consolidated Graph - Test Power Supply: 230 V 50 Hz



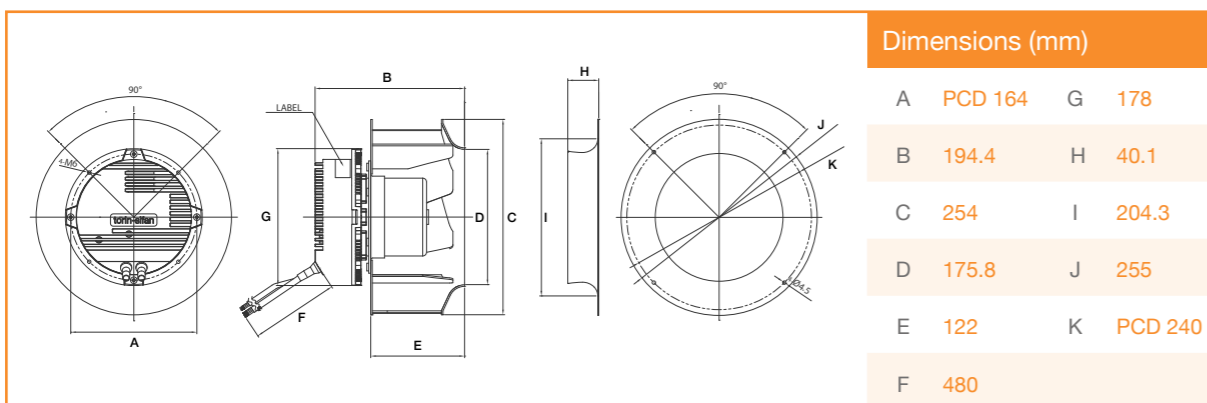
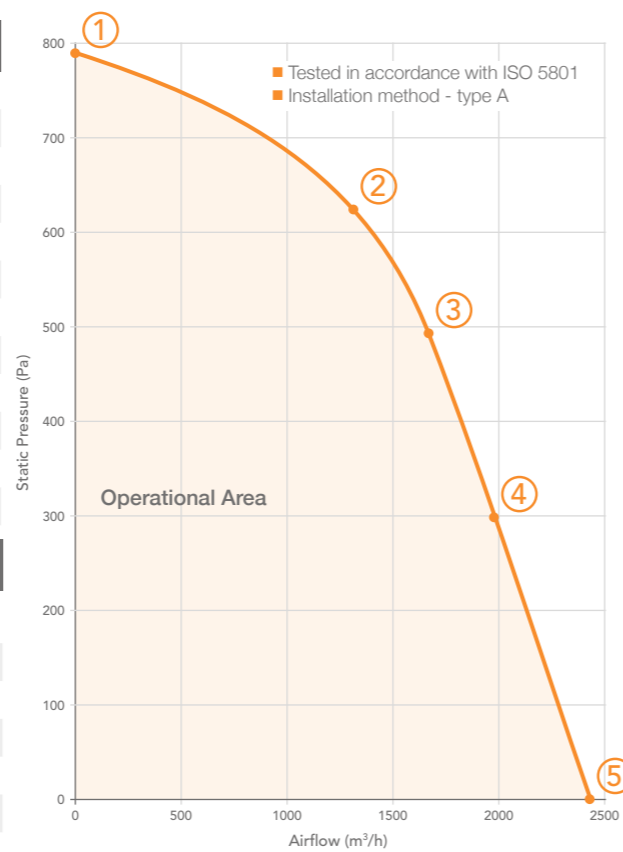


EC High Efficiency motorised impellers & plug fans

250 mm - 530 W

Technical Data	
Supply Voltage (rms)	200 ~ 277
Max Airflow	2440 m ³ /h
Max Current	3.5 A
Max Input Power	530 W
Max Speed	3050 rpm
ErP Efficiency Rating (FMEG)	67
IP Rating	54
Motor Insulation Class	B
Temperature Range	-25 °C to +60 °C
Weight	5.3 kg
Direction of Rotation	Clockwise
Number of Blades	7

Performance Data						
Data point	Static Pressure (Pa)	Airflow (m ³ /h)	Current (A)	Speed (rpm)	Power (W)	Noise (Lp - dBA)
1	796	0	2.24	3046	290	-
2	639	1303	3.03	3045	488	74.5
3	493	1678	3.11	3046	500	73.5
4	295	1993	2.79	3049	449	75.0
5	0	2440	2.33	3044	375	79.0

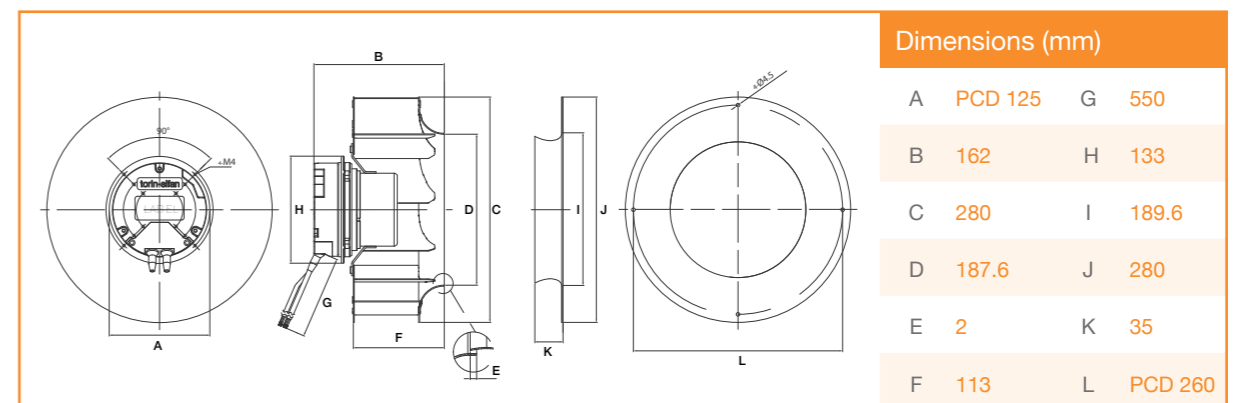
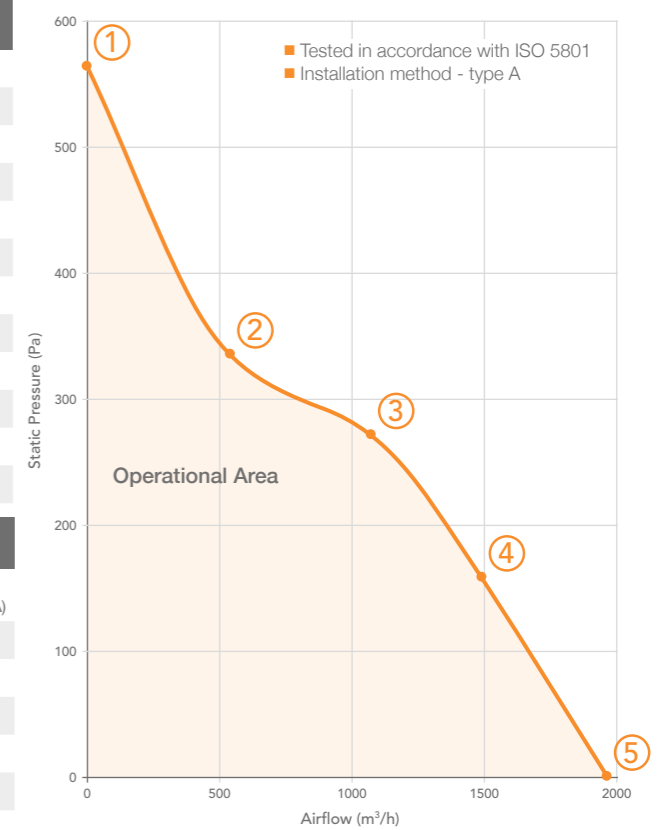


EC High Efficiency motorised impellers & plug fans

280 mm - 180 W

Technical Data	
Supply Voltage (rms)	200 ~ 277
Max Airflow	1972 m ³ /h
Max Current	1.0 A
Max Input Power	180 W
Max Speed	1850 rpm
ErP Efficiency Rating (FMEG)	70
IP Rating	54
Motor Insulation Class	B
Temperature Range	-25 °C to +60 °C
Weight	3.2 kg
Direction of Rotation	Clockwise
Number of Blades	9

Performance Data						
Data point	Static Pressure (Pa)	Airflow (m ³ /h)	Current (A)	Speed (rpm)	Power (W)	Noise (Lp - dBA)
1	565	0	0.52	1838	95	-
2	336	521	0.70	1847	139	67.5
3	276	1069	0.92	1838	178	64.5
4	159	1495	0.84	1843	170	69.0
5	0	1972	0.60	1850	141	72.0





EC High Efficiency motorised impellers & plug fans

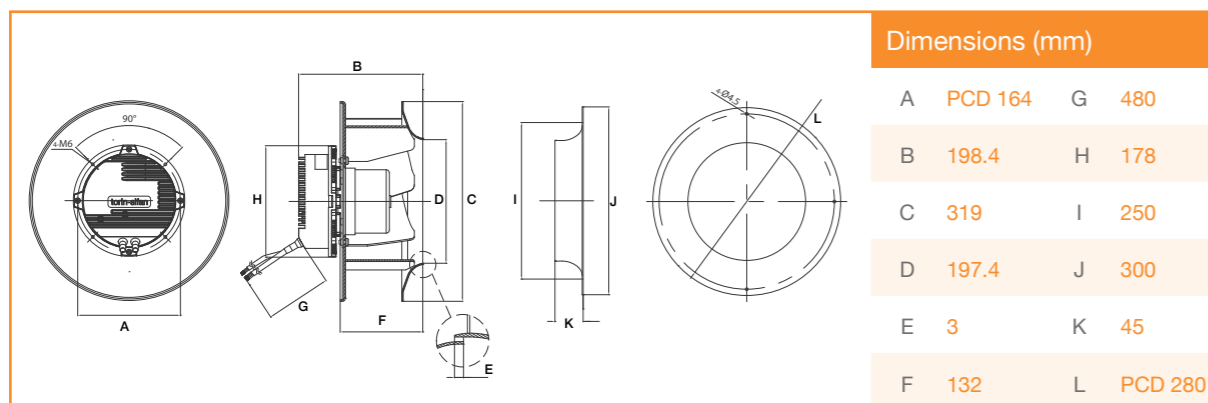
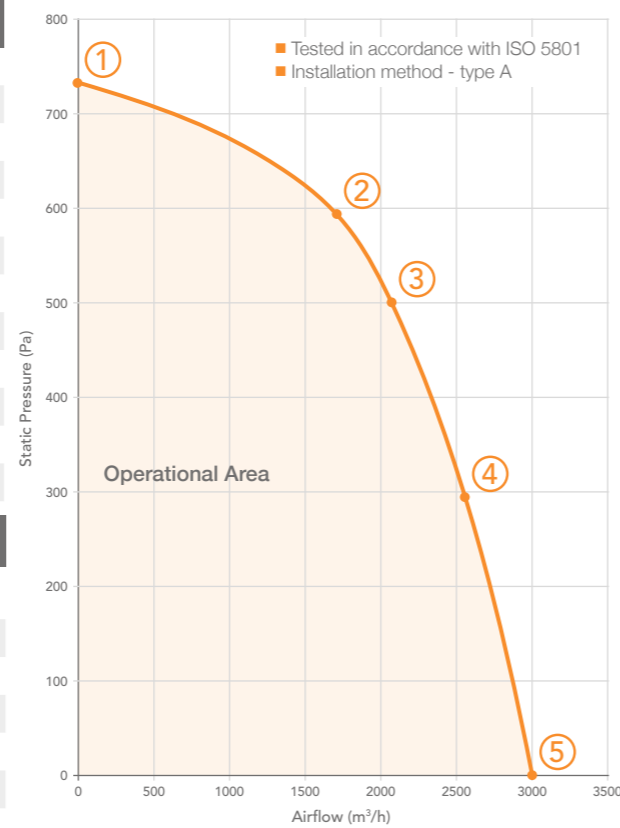
310 mm - 530 W

Technical Data

Supply Voltage (rms)	200 ~ 277
Max Airflow	3016 m ³ /h
Max Current	3.5 A
Max Input Power	530 W
Max Speed	2500 rpm
ErP Efficiency Rating (FMEG)	76
IP Rating	54
Motor Insulation Class	B
Temperature Range	-25 °C to +60 °C
Weight	6.3 kg
Direction of Rotation	Clockwise
Number of Blades	7

Performance Data

Data point	Static Pressure (Pa)	Airflow (m ³ /h)	Current (A)	Speed (rpm)	Power (W)	Noise (Lp - dBA)
1	734	0	2.29	2496	275	-
2	598	1731	3.12	2500	512	74.0
3	500	2079	3.11	2496	510	73.0
4	294	2533	2.81	2503	461	73.0
5	0	3016	2.31	2500	373	74.5



EC High Efficiency motorised impellers & plug fans

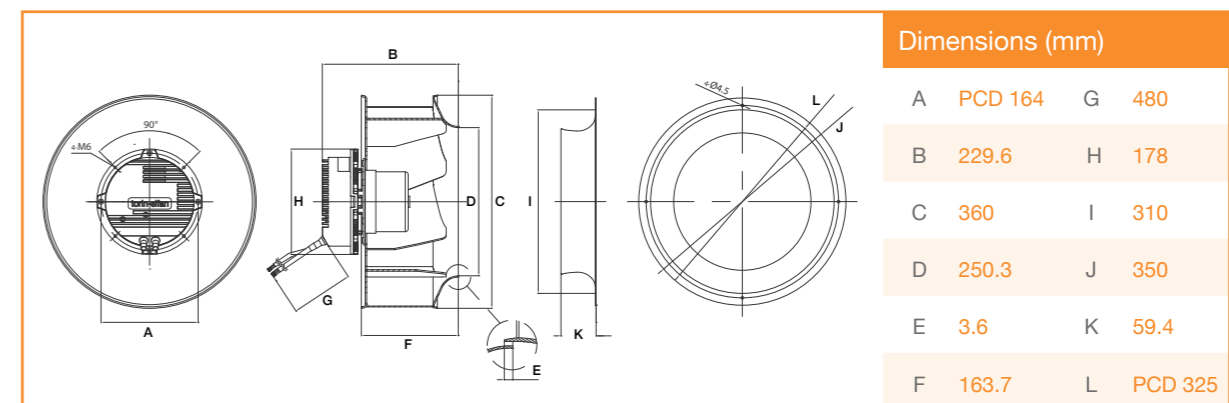
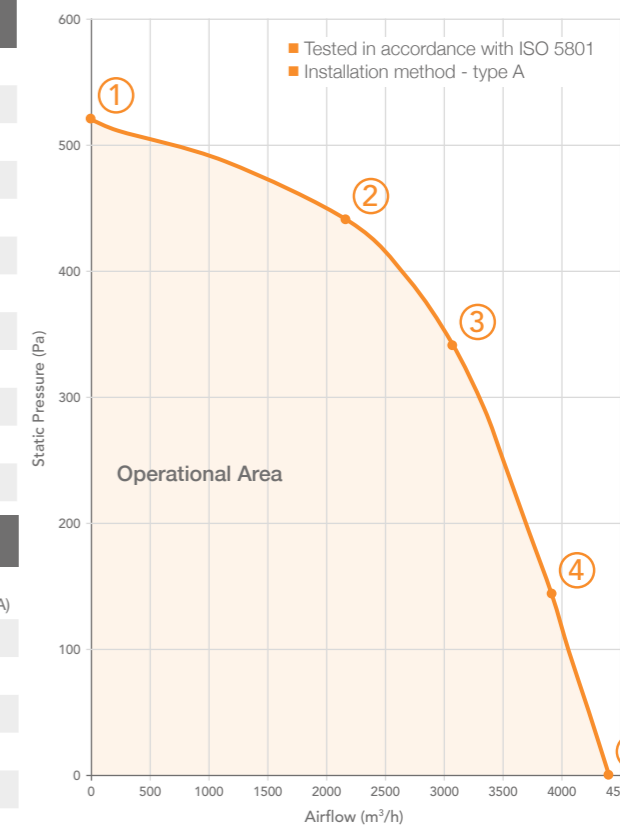
360 mm - 500 W

Technical Data

Supply Voltage (rms)	200 ~ 277
Max Airflow	4408 m ³ /h
Max Current	3.6 A
Max Input Power	500 W
Max Speed	1730 rpm
ErP Efficiency Rating (FMEG)	73
IP Rating	54
Motor Insulation Class	B
Temperature Range	-25 °C to +60 °C
Weight	7.1 kg
Direction of Rotation	Clockwise
Number of Blades	7

Performance Data

Data point	Static Pressure (Pa)	Airflow (m ³ /h)	Current (A)	Speed (rpm)	Power (W)	Noise (Lp - dBA)
1	522	0	1.91	1721	273	-
2	441	2200	2.97	1721	500	68.0
3	345	3065	3.09	1721	500	67.5
4	144	3920	2.55	1725	430	69.5
5	0	4408	2.03	1722	340	71.5





EC High Efficiency motorised impellers & plug fans

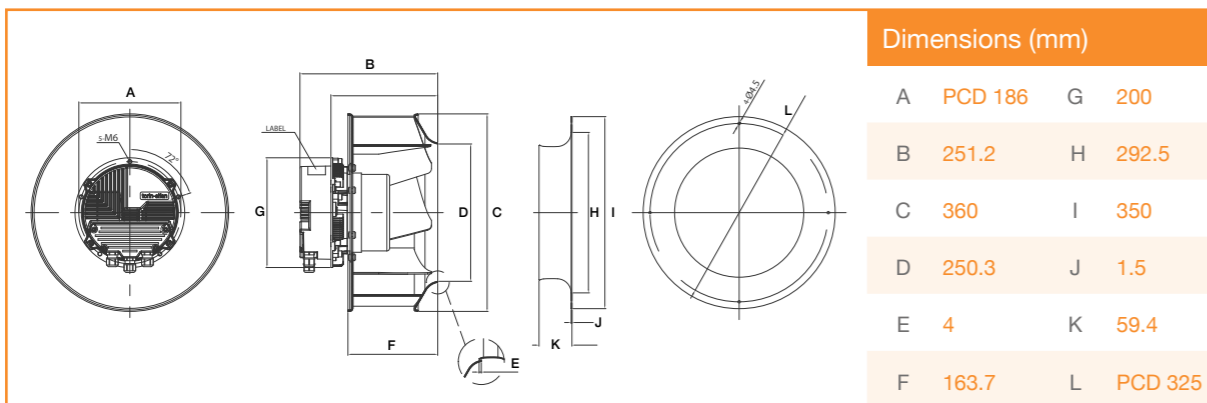
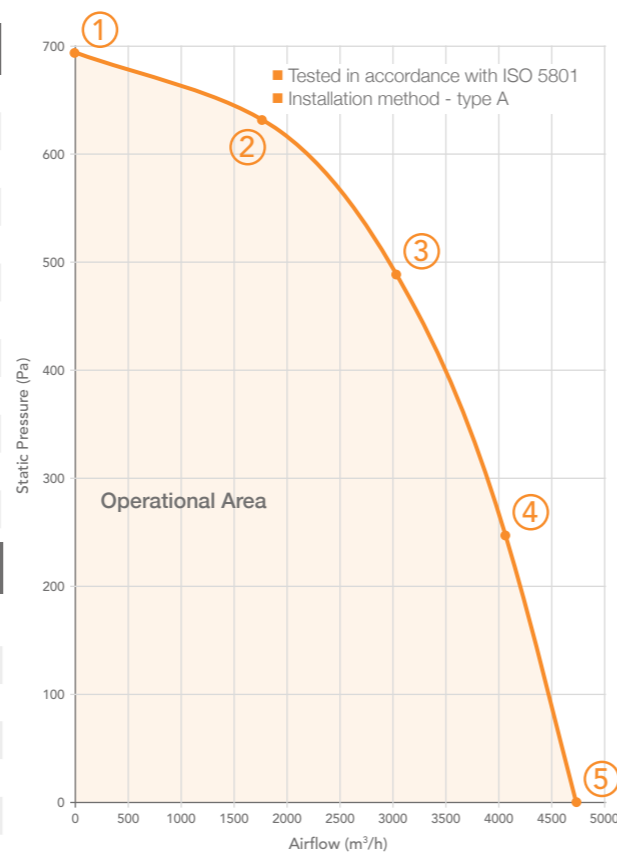
360 mm - 800 W

Technical Data

Supply Voltage (rms)	200 ~ 277
Max Airflow	4755 m ³ /h
Max Current	4.0 A
Max Input Power	800 W
Max Speed	2030 rpm
ErP Efficiency Rating (FMEG)	71
IP Rating	54
Motor Insulation Class	B
Temperature Range	-25 °C to +60 °C
Weight	10.5 kg
Direction of Rotation	Clockwise
Number of Blades	7

Performance Data

Data point	Static Pressure (Pa)	Airflow (m ³ /h)	Current (A)	Speed (rpm)	Power (W)	Noise (Lp - dBA)
1	697	0	2.29	2029	415	-
2	634	1774	2.99	2032	681	72.0
3	492	3034	3.32	2019	755	70.5
4	246	4035	3.00	2024	683	71.0
5	0	4755	2.36	2027	532	78.5



EC High Efficiency motorised impellers & plug fans

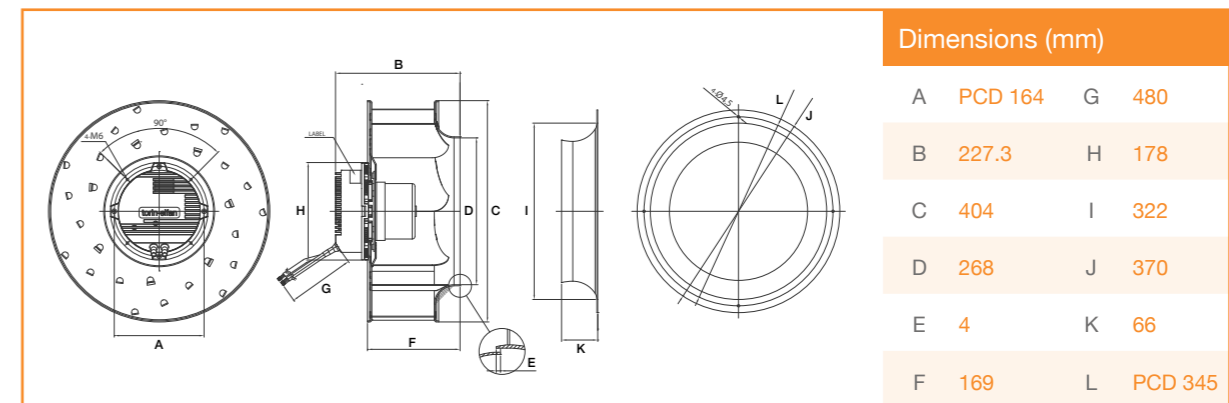
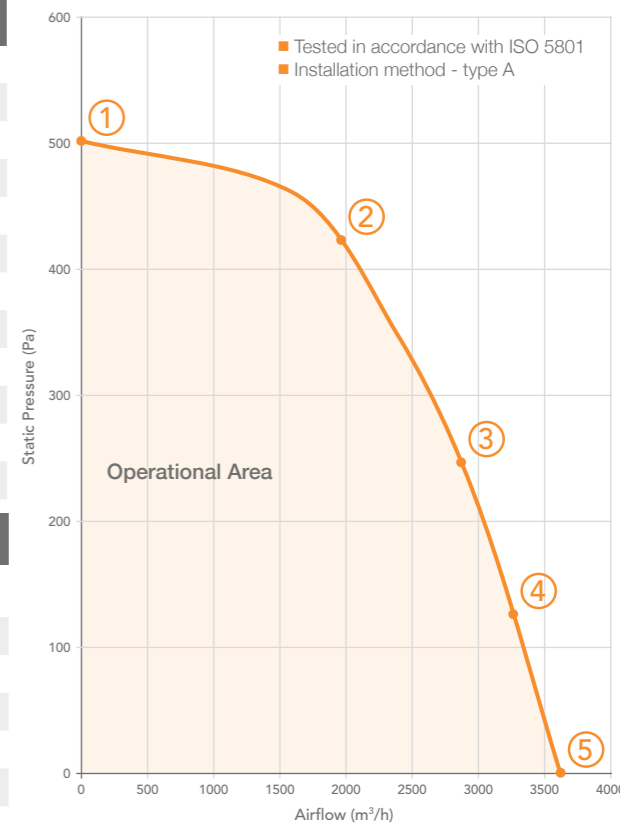
400 mm - 430 W

Technical Data

Supply Voltage (rms)	200 ~ 277
Max Airflow	3635 m ³ /h
Max Current	3.1 A
Max Input Power	430 W
Max Speed	1500 rpm
ErP Efficiency Rating (FMEG)	76
IP Rating	54
Motor Insulation Class	B
Temperature Range	-25 °C to +60 °C
Weight	7.2 kg
Direction of Rotation	Clockwise
Number of Blades	7

Performance Data

Data point	Static Pressure (Pa)	Airflow (m ³ /h)	Current (A)	Speed (rpm)	Power (W)	Noise (Lp - dBA)
1	504	0	1.34	1502	217	-
2	417	1984	2.51	1482	424	70.0
3	252	2916	2.43	1502	412	71.0
4	128	3284	1.94	1499	328	72.0
5	0	3635	1.47	1499	248	76.0





EC High Efficiency motorised impellers & plug fans

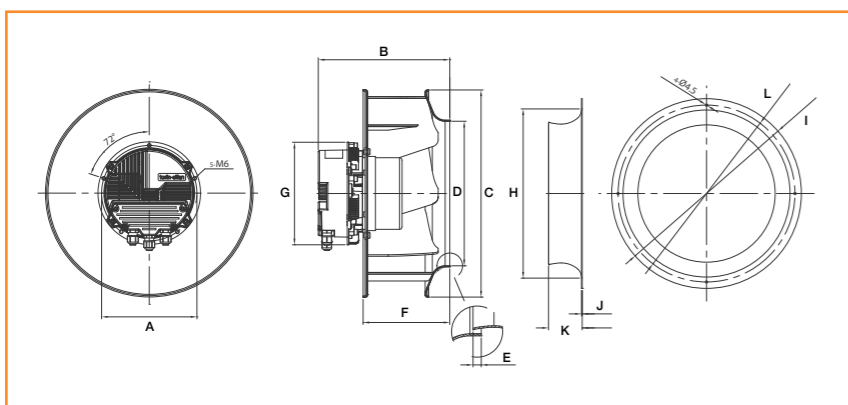
400 mm - 800 W

Technical Data

Supply Voltage (rms)	200 ~ 277
Max Airflow	5693 m ³ /h
Max Current	4.0 A
Max Input Power	800 W
Max Speed	1760 rpm
ErP Efficiency Rating (FMEG)	76
IP Rating	54
Motor Insulation Class	B
Temperature Range	-25 °C to +60 °C
Weight	11.3 kg
Direction of Rotation	Clockwise
Number of Blades	7

Performance Data

Data point	Static Pressure (Pa)	Airflow (m ³ /h)	Current (A)	Speed (rpm)	Power (W)	Noise (Lp - dBA)
1	690	0	2.27	1751	472	-
2	608	2543	3.37	1760	767	72.0
3	491	3493	3.51	1744	800	71.0
4	316	4569	3.40	1750	775	71.0
5	0	5693	2.34	1750	530	77.5



Dimensions (mm)

A	PCD 186	G	200
B	256.6	H	330
C	404	I	370
D	282	J	1.5
E	4	K	65.7
F	169.1	L	PCD 345

Motorised Impellers & Plug Fans mounting enclosures

Production Pedigree

Torin-Sifan also manufactures the full range of optional plug fan mounting enclosures.

Housing a number of high-speed and conventional power presses, ranging up to 150 tonne capacity, coupled with CNC punching machines, the

Torin-Sifan press and welding shops are well equipped to provide the ancillary equipment, supporting standard products.

All of the SPCC, galvanised sheet-steel metal components that make up the plug fan mounting enclosures are

produced in-house, prior to being engineered together, allowing us to complete the assembly to the exacting quality standards that our customers have come to expect.

250 mm - 530 W enclosure

A	400
B	286
C	286
D	400
E	236
F	8
G	191

280 mm - 180 W enclosure

A	400
B	294
C	294
D	400
E	199
F	8
G	185

310 mm - 530 W enclosure

Dimensions (mm)	
A	400
B	309
C	309
D	400
E	245
F	8
G	199

360 mm - 500 W enclosure

Dimensions (mm)	
A	500
B	354
C	354
D	500
E	293
F	12
G	248

360 mm - 800 W enclosure

Dimensions (mm)	
A	430
B	354
C	354
D	430
E	314
F	12
G	260

400 mm - 430 W enclosure

Dimensions (mm)	
A	500
B	399
C	399
D	500
E	297
F	12
G	252

400 mm - 800 W enclosure

Dimensions (mm)	
A	500
B	399
C	399
D	500
E	326
F	12
G	272



torin-sifan

The Partner of Choice

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