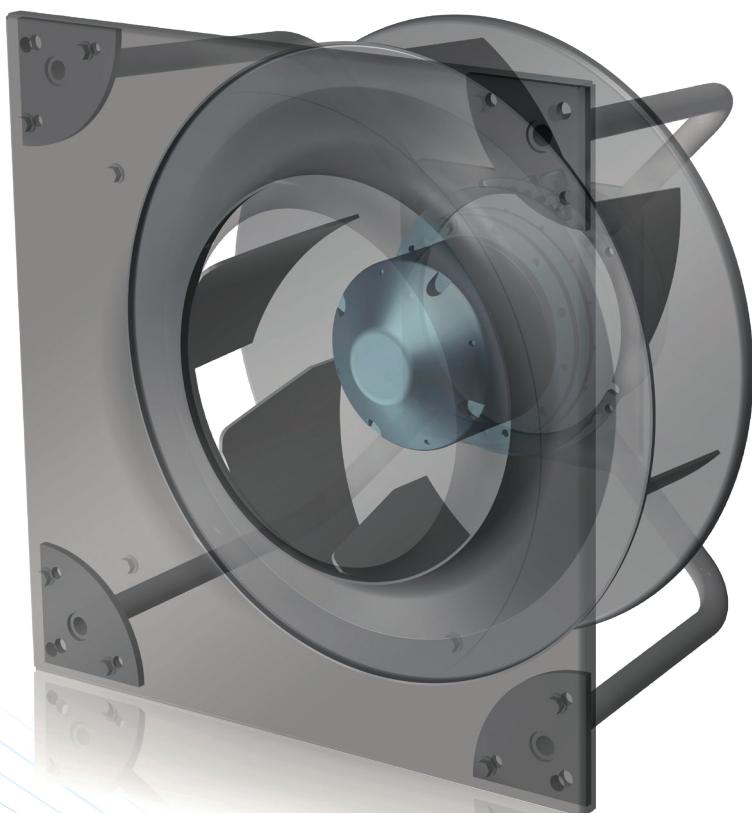


# PFP

The compact lightweight



Edition 2<sup>nd</sup>, 2018, Rev. 4.



**NICOTRA||Gebhardt**

# The compact lightweight

## Compact and Lightweight

The compact plug-fan, driven by a built-in external rotor motor, has taken a leading position in the market for fans intended for integration in air conditioning and ventilation equipment.

Nicotra Gebhardt has led this market with its high-end airfoil RLE plug fan, featuring the revolutionary EVO impeller in combination with external-rotor EC motors.

Now the new PFP range has been specifically developed to perform in typcall better compact installations of HVAC&R machinery, with a more competitive positioning on the market.

The PFP combines the advanced motor technology, already introduced in the drive system of the DDMP range, with a new mechanical arrangement and a new series of drivers, specifically developed for the plug-fan application.

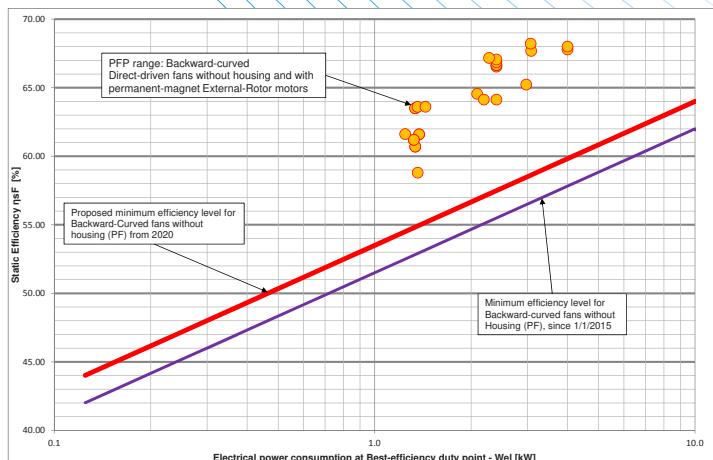
In combination with a new range of advanced impellers, the PFP drive system brings the efficiency of the new PFP to challenging levels, while, at the same time, considerably reducing the weight of the complete assembly.



## ErP Compliant, now and in the Future

Most other plug fan ranges, driven by external-rotor permanent-magnet motors are, comfortably compliant with the current minimum efficiency requirements, which are mandatory for products intended for installation and use within the EU.

The PFP range, combining advanced technology for both the impeller design and the complete high-efficiency drive system, comfortably exceeds even the proposals currently set forward for the next tier of the European legislation, expected for 2020 or afterwards.



## An Affordable Solution

Although incorporating advanced technical solutions, the PFP is conceived to provide, in a simple package, a competitive performance with an affordable cost for the customer.

### Purchase cost:

- the PFP fan is engineered for fast-rate and cost-effective series production.
- the PFP fan already incorporates the motor and an advanced driver: no need for additional and separate supplies.

### Installation cost:

- no manpower is needed to assemble fan, motor and driver.
- no need for complex inverter configurations: the one-piece functional unit does not need connection of different components or complex configuration to be operated, out-of-the-box, in its basic operation mode.
- the advanced operational modes can be configured on the same standard unit, with a simple computer program and a connection cable, providing design flexibility without having to keep in stock separate fans for each required operating mode.

### Maintenance cost:

- designed for long life and stable performance, the PFP direct-driven fan can be used to replace a number of traditional belt-driven fans, effectively removing the cost of periodical belt maintenance.
- the electronic control unit, which is the most critical component for the operating life of an EC fan, is not an integral part of the motor structure, instead it has been specifically designed as a replaceable component part.

This modular concept extends considerably the operational life of the fan without the need for extensive rework.

### Energy cost:

- the PFP significantly reduces power consumption, in comparison with solutions using older technology.

### Disposal cost:

- the PFP is manufactured using the maximum possible level of recyclable materials.

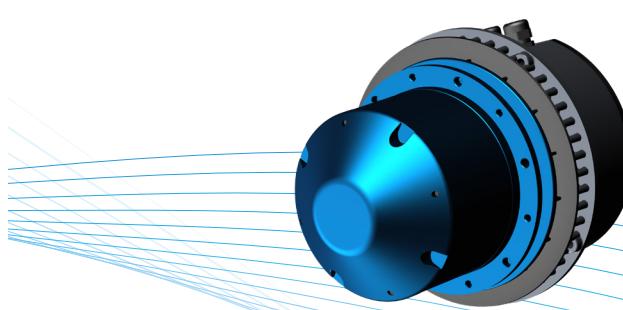
## Advanced Motor Technology

The PFP drive system draws its technology from the advanced system developed for the DDMP fans. The new series of high-efficiency, external-rotor, permanent-magnet motors, specifically designed for integration within double-inlet fans, has been significantly re-engineered, to perfectly fit the application in compact plug-fans.

The compact external-rotor motors use high-intensity neodymium magnets, reducing the size of the motors while, at the same time, improving the motor efficiency above that achieved by competing designs still using conventional ferrite magnets, and significantly above that of the AC motors of the past.

Thanks to this revolutionary choice, and to a careful design, the new Nicotra-Gebhardt Permanent Magnet<sup>®</sup> motors achieve IE5 efficiency levels.

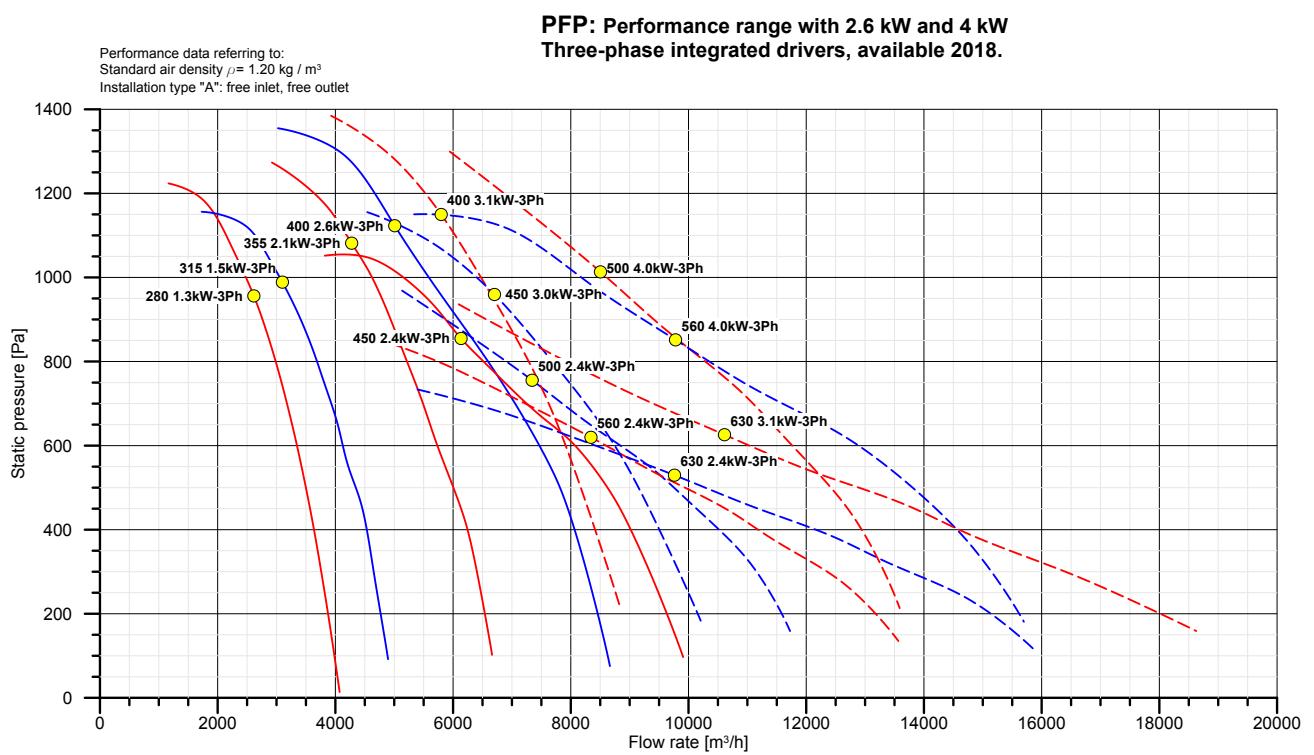
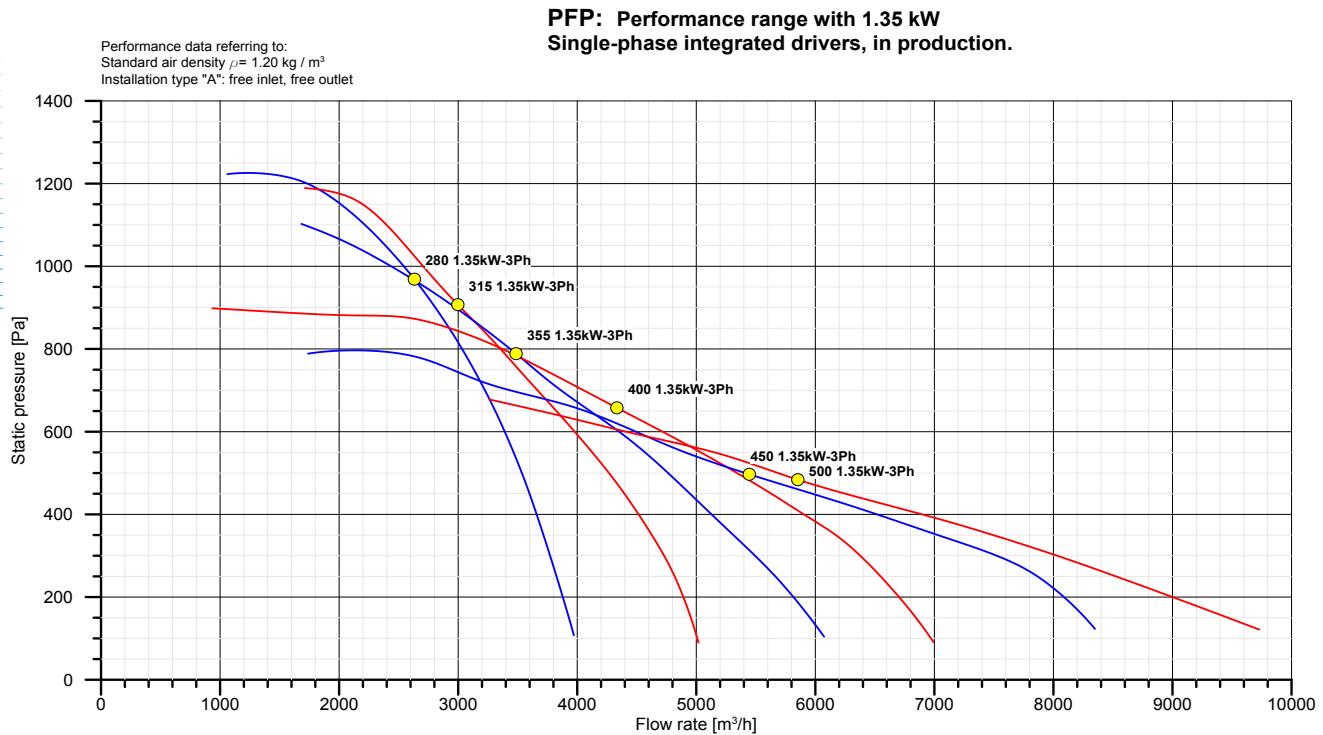
The smaller size and optimal shape of the Nicotra Gebhardt motors is important as this allows the installation of more powerful motors within the tight space provided by the plug-fans impellers, achieving relatively-high speeds and pressures, without compromising the aerodynamic efficiency, whenever the requirement for maximum compactness leads to the installation of the motor fully inside the impeller.



## A Steadily Increasing Range

The currently available PFP range covers fan sizes from 280 mm up to 500mm, with one size of on-board single-phase driver, having nominal input power of 1.35 kW.

The range is receiving a considerable extension in 2018, with the release of the first 3-Phase driver, a compact 2.4 kW unit, which will then be followed by a further step in power, to 4.0 kW, by the end of the year.



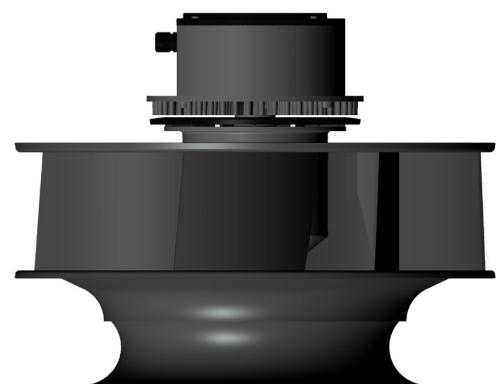
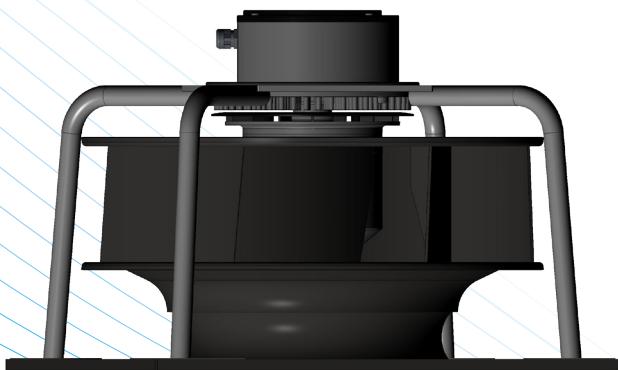
## Fan Models

The PFP fans, whichever size or motor variant, are available in two different mechanical arrangements, identified as follow :

- 1.** PFP (size)-A1 (identifiers for motor and options): Kit of motorized impeller and matching inlet nozzle, loose, for installation in the customer's supporting structure.
- 2.** PFP (size)-A3 (identifiers for motor and options): Fully-assembled unit with the motor and impeller sustained on a supporting bracket, which holds the impeller in place, facing a square front panel and inlet nozzle.

In both cases, the assembly of motor and impeller is dynamically balanced before shipment, and the inlet nozzle is fitted with a single pressure probe, to allow the measurement of the volume flow rate.

An additional -A6 model, specifically designed for installation on four anti-vibration mounts, with horizontal axis, is currently under development.



## Smart EC Motor Controllers

The motor controllers or “drivers”, fitted to the range of single-phase PFP models, have a maximum electrical input power of 1.35 kW and incorporate an advanced active input stage, providing power factor control (power factor is continuously adjusted to unity).

This design also provides harmonics filtering, to guarantee compliance with the EMC requirements applicable to domestic and equivalent environments (“first environment”), or with advanced requirements for harmonic distortion, like those which often apply to data centres.

The resulting drive systems comply with C1-class levels for power-drive systems, according to EN 61800-3, throughout the range of EMC requirements, and also with the more demanding immunity requirements for industrial environments, according to EN 61000-6-2. All these driver units have been designed with sensorless technology, to simplify their architecture and increase their operational reliability.

The PFP drivers are factory-configured to be ready for use in their simpler operation mode, i.e. with continuous speed control, having the fan speed proportional to an analogue input signal (0-10 Vdc or PWM).

The drivers incorporate advanced protection features, preventing the user from exceeding the safety limits of the driver and the motor. If the combination of the air system configuration and the speed demand from the user bring the fan to exceed one or more of the limits, which are set for input power, motor torque, or operating temperature of the electronics, then the fan speed and power requirement is automatically restricted, to bring-back the fan within safe operating conditions.

The diagrams of the different PFP fan models in this catalogue, show the fan performance under standard laboratory conditions and already account for this automatic restriction of the fan performance, according to speed, power and torque limits.

If the software protection features should not be enough, a temperature-sensitive switch is fitted inside all motors, to stop the drive-system, preventing any permanent damage from overloading and overheating.

By design, these drive systems are insensitive to the frequency of the power supply, so all the PFP single-phase fans are suitable for operation with any power network at 50 or 60 Hz frequency, in the 220-240 V nominal voltage range.

## Advanced Operating Modes

The smart drivers can provide advanced functions, extending way beyond the simple speed control and safety monitoring.

Different, advanced operating modes can be activated with the use of a dedicated software for PC and an USB-RS485 interface cable: no need for any additional, plug-in hardware.

Most operating modes require an input value, e.g. a speed setting, which can normally be assigned in three different ways:

- A. can be set via the analogue input
- B. can be permanently stored in an Eprom register, via Modbus, or
- C. can be written in a volatile register, via Modbus again.

An Eprom register holds its value when the fan is powered-off and can be overwritten many times, but not an infinite number of times, so it should be used when the fan has to be configured for a given performance level, at the time of commissioning, and then left working without further adjustment. The Modbus link is then no longer needed for operation, but may still be useful, at a later stage, for fan troubleshooting or re-configuration.

A volatile register, in the micro-processor of the driver, can be written an infinite number of times, so this is the approach of choice when the target value has to be continuously adjusted via Modbus, but its value must be re-assigned whenever the fan is started again after having been powered-off.

## Alternative Speed-Control Modes

In the alternative speed control modes, the target speed value, instead of being a 0-10 Vdc or PWM signal, can be provided by Modbus, either on the appropriate permanent Eprom register, or in a corresponding volatile register, like in cases B and C listed above.

Including the analogue-input speed-control mode, which is set-up on all new fans as factory default, different speed control modes are available for all the three alternative input channels, A, B or C.

## PID Modes

Another group of selectable operating modes is providing PID control, using one of the analogue input channels for the measurement of a status variable with an external sensor, e.g. a value of pressure or temperature, or a concentration of CO<sub>2</sub> in the air, which can be kept to a desired value by adjustment of the fan speed and volume flow-rate.

The PFP drivers are provided with two separate analogue-input channels: the first can be used for the input voltage from an external transducer, and the second for an input from a potentiometer or from another external 0-10Vdc voltage source, providing the target value.

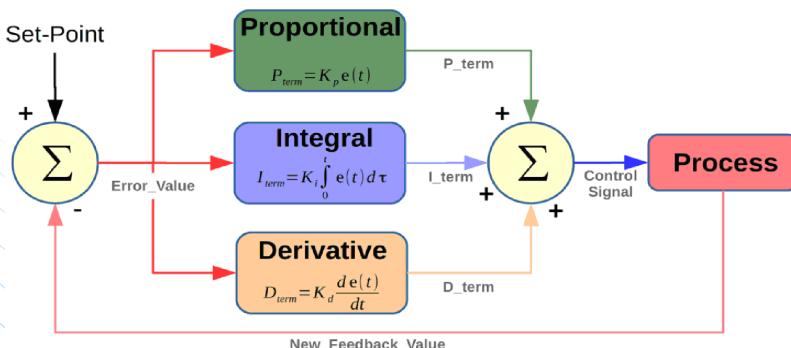
As an alternative, the target value for the PID may also be set via the Modbus interface, either permanently in an Eprom register, or in a volatile register.

## Constant-Volume Operation with Pressure Transducer

A note must be provided on constant-volume operation with backward-curved fans: because of their physical properties, these fans cannot be controlled, to a pre-set volume-flow rate, just by measuring their electrical consumption.

To compensate this, all the PFP fans are delivered with a single pressure tap on the inlet nozzle throat section. Constant-volume operation can be achieved by adding a pressure measurement-sensor (e.g. Nicotra-Gebhardt p/no. K43198), connected to the probe and to the signal input of the driver, properly set in PID mode.

With this arrangement, even on backward-curved fans like PFP it's possible to compensate a change of the pressure-loss in the air system (e.g. because it was not exactly known at the time of choosing a ventilation unit, or because some filter clogging occurs during the operation of the system) and keep the operating flow rate unmodified, within the pressure and power capability of the fan.



## PFP 1.35 kW 1-Phase Range

### Specifications

Direct-driven plug/plenum fan, with integrated drive system and high-efficiency backward-curved impeller without scroll. The drive system includes a high-efficiency external-rotor permanent-magnet motor and a smart electronic motor driver, providing speed-control and self-protection against overloading or overheating.

The external-rotor motor, using high-intensity rare-earth magnets for better efficiency and compactness, is directly integrated in the hub of the impeller and supported, behind the impeller, on the replaceable driver case, which acts as supporting flange.

The single-phase 1.35 kW driver, fitted into the fan supporting flange, provides advanced control functions as well as both analogue and digital external interfaces, and incorporates an active power factor control device, keeping the fan power factor constantly at optimum values, as well as restricting harmonic distortion on the supply network to minimal values.

The single-phase drive system complies with the requirements of the C1-class for EMC-compatibility levels, for power-drive systems, according to EN 61800-3, throughout the range of EMC requirements, and also with the more demanding immunity requirements for industrial environments, according to EN 61000-6-2.

The driver case of pressure-cast aluminium incorporates a patented forced-cooling system, protecting, from overheating, both the driver and the driver-side bearing.

The high-efficiency lightweight backward-inclined impellers, directly bolted onto the motor, are made of welded aluminium plate, to guarantee the stiffness and strength required for high-speed operation, without generating unmanageable vibrations.

## Slave Mode

A last advanced mode is the "Slave" mode, in which the PFP fan is set to closely follow the speed of another PFP fan, the "master fan", which is running in any one of the other operating modes, by conforming the speed of the slave fan to the tachometric output signal generated by the master.

This control arrangement is not required to operate a number of PFP fans in parallel, when more fans in parallel are operating in PID mode (including closed-loop and constant-volume operation with external airspeed or pressure transducers).

Running the PFP fans in parallel in a Master & Slave control arrangement, avoids the risk that each fan may independently start "hunting," in a frustrating endless search of a stable duty.

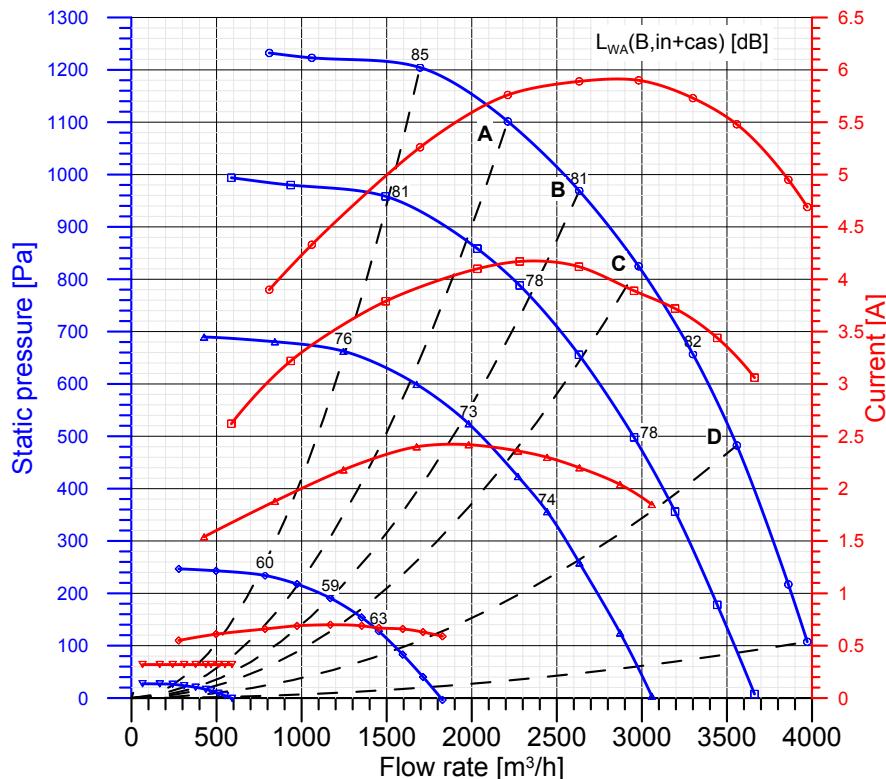
Code	Description	Size	Motor+Driver	Optimum energy efficiency point	
				Flow rate	Pressure
				[m³/h]	[Pa]
S80512	PFP A1-0280 M6F0	280	1416F0	2632	969
S80508	PFP A3-0280 M6F0	280	1416F0	2632	969
S80513	PFP A1-0315 M6F0	315	1416F0	2997	907
S80503	PFP A3-0315 M6F0	315	1416F0	2997	907
S80509	PFP A1-0355 M6F1	355	1416F1	3486	789
S80502	PFP A3-0355 M6F1	355	1416F1	3486	789
S80510	PFP A1-0400 M6F1	400	1416F1	4333	658
S80504	PFP A3-0400 M6F1	400	1416F1	4333	658
S80511	PFP A1-0450 M6F1	450	1416F1	5445	497
S80524BQE	PFP A3-0450 M6F1	450	1416F1	5445	497
S80514	PFP A1-0500 M6F2	500	1416F2	5231	544
S80525BQE	PFP A3-0500 M6F2	500	1416F2	5231	544

	Maximum values			IP fan grade	Tmin	Tmax	Page
Adsorbed power	Pressure (q=0)	Flow rate (P=0)					
[W]	[Pa]	[m³/h]		[°C]	[°C]		
1360	1232	3972	54	-20	+40	10	
1360	1232	3972	54	-20	+40	10	
1323	1188	5019	54	-20	+40	12	
1323	1188	5019	54	-20	+40	12	
1311	1119	6074	54	-20	+40	14	
1311	1119	6074	54	-20	+40	14	
1320	898	6993	54	-20	+40	16	
1320	898	6993	54	-20	+40	16	
1320	810	8877	54	-20	+40	18	
1320	810	8877	54	-20	+40	18	
1326	725	10188	54	-20	+40	20	
1326	725	10188	54	-20	+40	20	

Type: PFP A3-0280 1.35kW 1Ph  
Motor: 1416F0

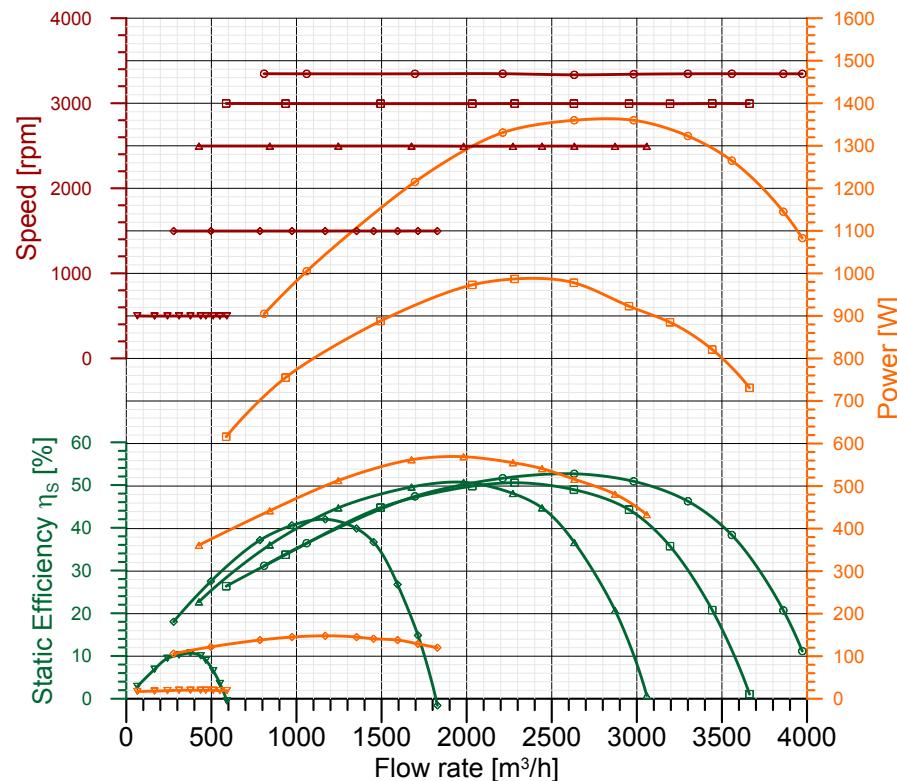
Power:	1360 W (input, max)	Protection Cl.:	IP 54
Poles:	8	Insulation Cl.:	F
Voltage:	220-240 V	Thermal prot.:	YES-Integral
Supply:	1~	Temp. Min:	-20 °C
Frequency:	50-60 Hz	Temp. Max:	+40 °C (+50°C)
Capacitor:	n.a.	Current Max:	5.9 A

Performance data referring to:  
Standard air density  $\rho = 1.20 \text{ kg} / \text{m}^3$   
Installation type "B": free inlet, ducted outlet  
Sound Power Levels shown are  
Inlet-side  $L_{WA}(B,\text{in+cas})$ , A-weighted, in dBA



### Integral speed-control by On-board Integral Driver

	qv m³/h	pfs Pa	Pe W	n rpm	I A	$\eta_s$ %
<b>○ Maximum performance curve (10 V)</b>						
A	2212	1101	1331	3347	5.76	51.6
B	2632	969	1360	3334	5.89	52.6
C	2981	825	1360	3341	5.90	50.9
D	3558	483	1265	3347	5.48	38.3
<b>□ Performance at 3000 rpm</b>						
A	2033	858	973	2995	4.10	49.7
B	2282	788	987	2996	4.17	50.5
C	2630	656	978	2996	4.12	48.9
D	3195	356	885	2994	3.72	35.7
<b>△ Performance at 2500 rpm</b>						
A	1676	599	562	2497	2.40	49.6
B	1982	524	569	2495	2.42	50.7
C	2272	423	555	2495	2.36	48.0
D	2633	258	516	2496	2.20	36.6
<b>◇ Performance at 1500 rpm</b>						
A	973	218	145	1497	0.69	40.6
B	1169	191	148	1497	0.70	42.0
C	1353	154	145	1498	0.69	39.8
D	1594	83	138	1497	0.66	26.7
<b>▽ Performance at 500 rpm</b>						
A	310	24	20	498	0.32	10.2
B	377	21	20	498	0.32	10.7
C	437	17	20	498	0.32	10.0
D	511	9	20	498	0.32	6.6



### ErP Data acc. to Reg. 327/11/CE

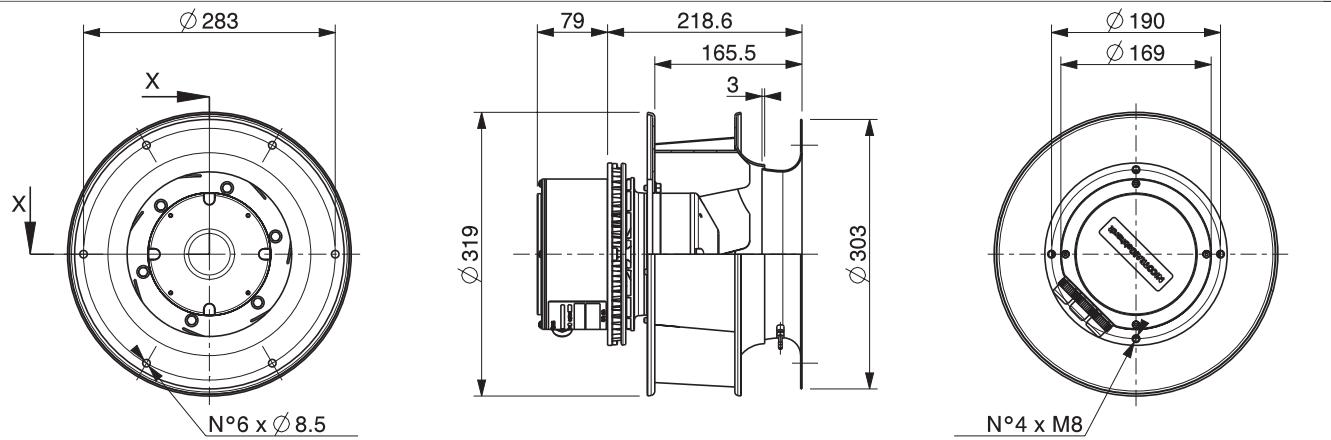
Performance referred to the best efficiency duty point

Compl. with Reg. 327/11/EC: Tier II (2015)
Overall Efficiency ( $\eta \times C_c$ ) [%]: 56.8
Measurement category: A
Efficiency category: Static
Efficiency grade N [%]: 65.9
A variable speed drive is integrated with this fan
Manufactured since: 2017
By:
Nicotra Gebhardt S.p.A. Via Modena 18 24040 Ciserano - Italy
Power input [kW]: 1.36
Volume flow rate qv [m³/s]: 0.731
Static Pressure [Pa]: 969
Speed [rpm]: 3334
Specific ratio: 1.01
Information on:
- Disassembly, recycling and disposal at end of life
- Optimal installation, use and maintenance of fans
are freely downloadable from
<a href="http://www.nicotra-gehardt.com">www.nicotra-gehardt.com</a>
Testing is carried out with the optional components of the test airway required, according to ISO 5801:2007, for the installation type detailed here on top.

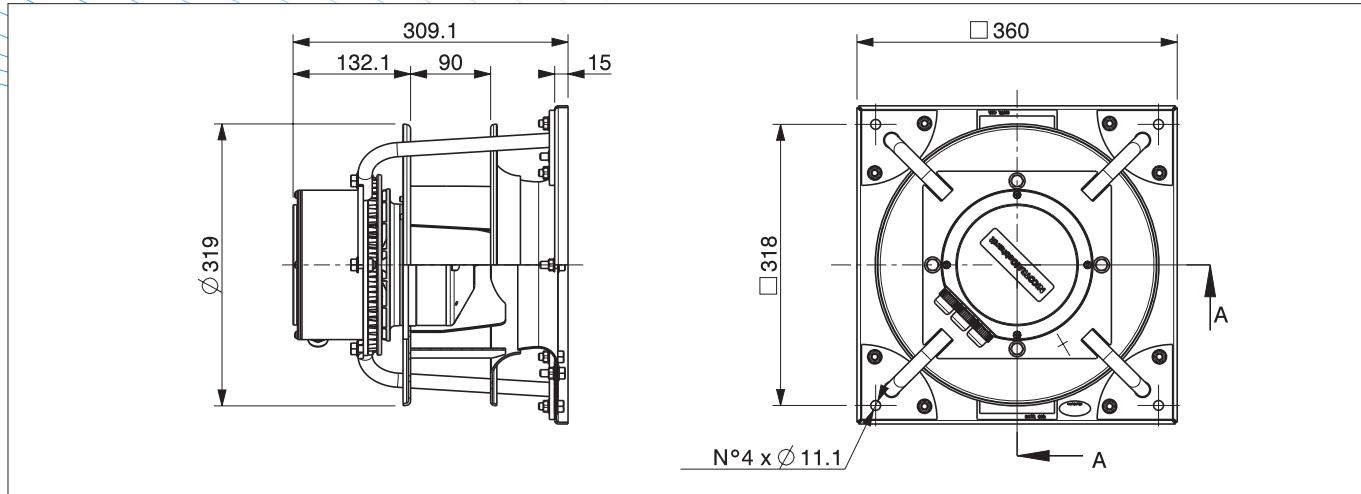
WIRING DIAGRAM		NOISE DATA										
		Working point										
		Sound power level for inlet side (Lw) in dB										
			m <sup>3</sup> /h	63	125	250	500	1k	2k	4k	8kHz	LwA
		230 V / 50 Hz	1696	89,7	89,9	90,4	81,3	74,7	73,0	69,2	63,2	85,1
		F.M.W.L.	2212	86,1	84,4	84,8	79,2	73,0	72,5	69,3	63,8	81,7
			2632	84,3	82,1	80,4	78,9	73,2	72,3	69,5	64,2	80,6
			3300	83,4	83,1	81,7	81,3	76,2	73,0	70,2	64,9	82,5
		230 V / 50 Hz	2033	69,2	68,4	72,9	73,0	69,7	68,6	65,5	63,8	75,8
		3000 rpm	2282	69,1	67,8	72,2	73,2	69,9	68,5	65,5	63,9	75,8
			2630	70,1	68,1	72,5	74,5	71,2	69,4	65,9	64,1	76,8
			3195	72,6	70,1	76,4	78,0	74,8	72,5	68,3	65,7	80,1
		230 V / 50 Hz	1676	64,4	64,2	67,2	69,1	65,7	64,2	60,4	58,5	71,4
		2500 rpm	1982	64,5	64,3	68,3	70,1	66,2	64,6	60,3	58,9	72,0
			2272	63,1	65,3	68,8	70,7	67,6	65,5	61,0	59,5	72,9
			2633	63,2	66,3	69,2	73,6	70,3	67,8	63,0	61,0	75,4
		230 V / 50 Hz	973	54,7	58,4	57,5	56,9	55,7	62,3	46,1	44,3	64,6
		1500 rpm	1169	57,3	58,8	58,2	56,9	55,7	62,3	46,4	44,5	64,7
			1353	51,0	56,4	58,8	58,1	57,3	62,5	47,7	45,9	65,2
			1594	65,9	59,3	58,9	60,9	59,5	62,5	50,1	47,9	66,1
		230 V / 50 Hz	310	N.A.								
		500 rpm	377	N.A.								
			437	N.A.								
			511	N.A.								

## DIMENSIONAL DRAWINGS

S80512 - PFP A1-0280 M6F0

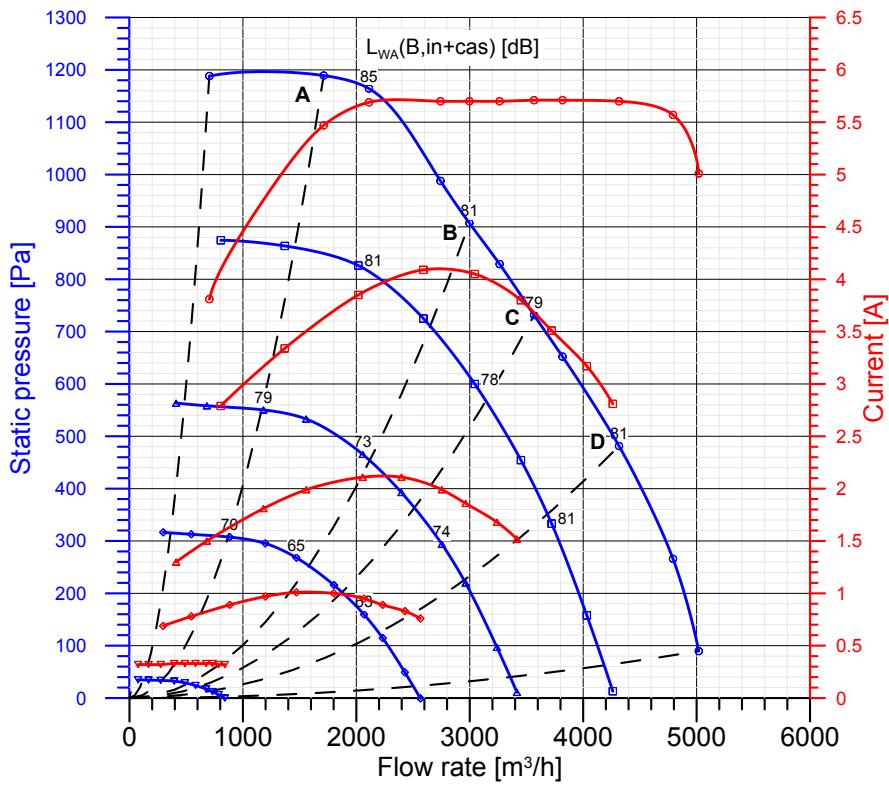


S80508 - PFP A3-0280 M6F0



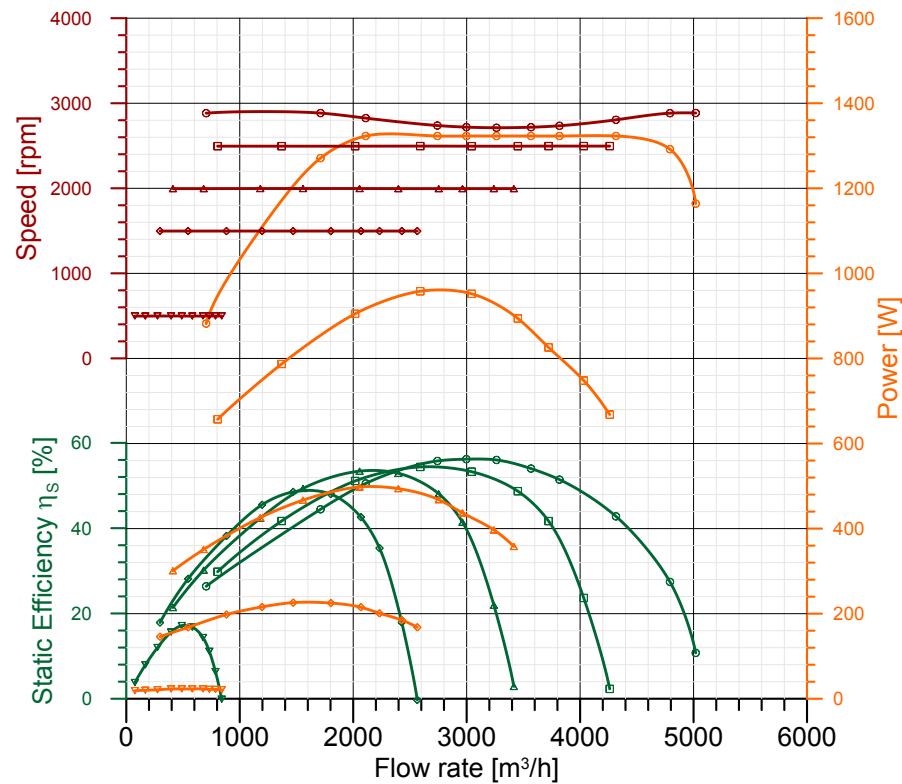
Type: PFP A3-0315 1.35kW 1Ph  
Motor: 1416F0

Power:	1323 W (input, max)	Protection Cl.:	IP 54
Poles:	8	Insulation Cl.:	F
Voltage:	220-240 V	Thermal prot.:	YES-Integral
Supply:	1~	Temp. Min:	-20 °C
Frequency:	50-60 Hz	Temp. Max:	+40 °C (50°C)
Capacitor:	n.a.	Current Max:	5.7 A



### Integral speed-control by On-board Integral Driver

qv m³/h	pfs Pa	Pe W	n rpm	I A	$\eta_s$ %
<b>Maximum performance curve (10 V)</b>					
A	1712	1189	1271	2884	5.47 44.4
B	2997	907	1323	2719	5.70 56.2
C	3567	731	1323	2718	5.71 54.0
D	4316	482	1323	2805	5.70 42.8
<b>Performance at 2500 rpm</b>					
A	805	874	657	2495	2.79 29.8
B	2591	725	958	2496	4.09 54.4
C	3451	454	894	2495	3.80 48.7
D	4032	158	748	2496	3.17 23.6
<b>Performance at 2000 rpm</b>					
A	682	558	351	1996	1.50 30.2
B	2056	466	498	1997	2.11 53.4
C	2754	294	468	1996	1.99 48.1
D	3240	97	397	1996	1.68 21.9
<b>Performance at 1500 rpm</b>					
A	545	313	168	1497	0.78 28.1
B	1471	268	226	1497	1.01 48.5
C	2068	160	215	1497	0.95 42.6
D	2428	49	185	1497	0.83 17.9
<b>Performance at 500 rpm</b>					
A	168	34	20	497	0.32 7.9
B	489	29	23	498	0.33 17.2
C	676	17	23	498	0.33 14.4
D	786	6	22	498	0.32 6.4



### ErP Data acc. to Reg. 327/11/CE

Performance referred to the best efficiency duty point

Compl. with Reg. 327/11/EC: Tier II (2015)  
Overall Efficiency ( $\eta \times C_c$ ) [%]: 60.7  
Measurement category: A

Efficiency category: Static  
Efficiency grade N [%]: 69.9

A variable speed drive is integrated with this fan  
Manufactured since: 2017

By:

Nicotra Gebhardt S.p.A.

Via Modena 18

24040 Ciserano - Italy

Power input [kW]: 1.323

Volume flow rate qv [m³/s]: 0.833

Static Pressure [Pa]: 907

Speed [rpm]: 2719

Specific ratio: 1.009

Information on:

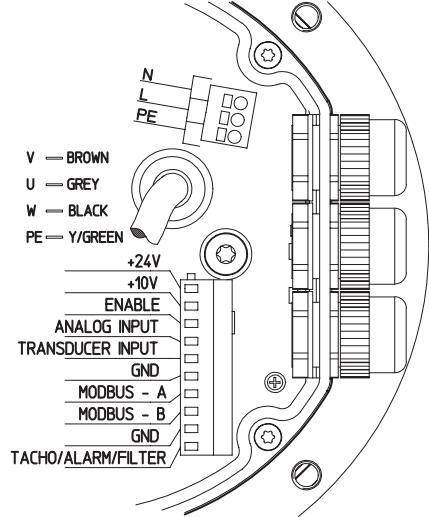
- Disassembly, recycling and disposal at end of life

- Optimal installation, use and maintenance of fans

are freely downloadable from

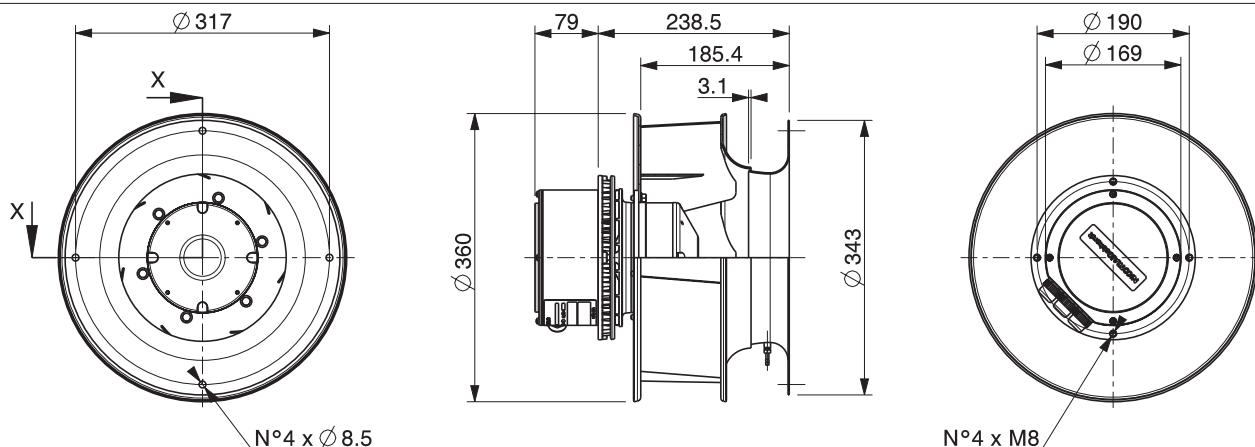
[www.nicotra-gehardt.com](http://www.nicotra-gehardt.com)

Testing is carried out with the optional components of the test airway required, according to ISO 5801:2007, for the installation type detailed here on top.

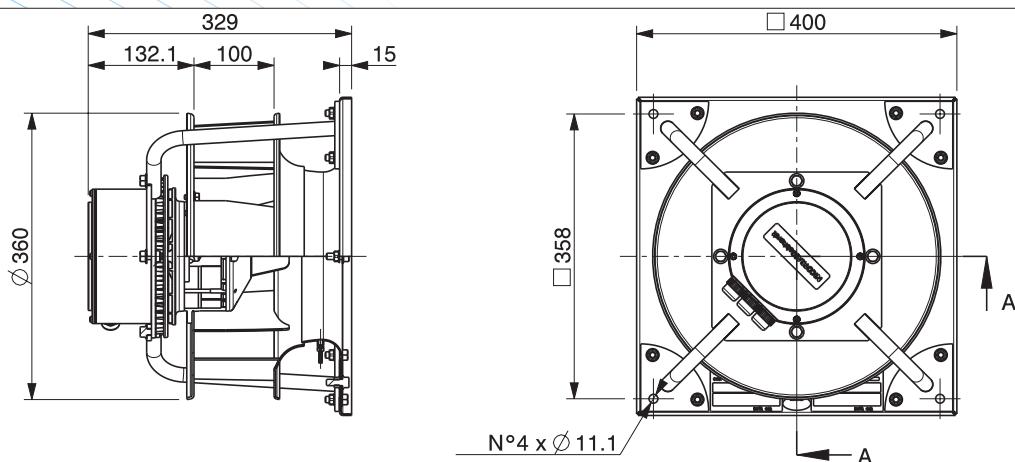
WIRING DIAGRAM		NOISE DATA										
		Working point										
		Sound power level for inlet side (Lw) in dB										
			m <sup>3</sup> /h	63	125	250	500	1k	2k	4k	8kHz	LwA
		230 V / 50 Hz	1696	89,7	89,9	90,4	81,3	74,7	73,0	69,2	63,2	85,1
		F.M.W.L.	2212	86,1	84,4	84,8	79,2	73,0	72,5	69,3	63,8	81,7
			2632	84,3	82,1	80,4	78,9	73,2	72,3	69,5	64,2	80,6
			3300	83,4	83,1	81,7	81,3	76,2	73,0	70,2	64,9	82,5
		230 V / 50 Hz	2033	69,2	68,4	72,9	73,0	69,7	68,6	65,5	63,8	75,8
		3000 rpm	2282	69,1	67,8	72,2	73,2	69,9	68,5	65,5	63,9	75,8
			2630	70,1	68,1	72,5	74,5	71,2	69,4	65,9	64,1	76,8
			3195	72,6	70,1	76,4	78,0	74,8	72,5	68,3	65,7	80,1
		230 V / 50 Hz	1676	64,4	64,2	67,2	69,1	65,7	64,2	60,4	58,5	71,4
		2500 rpm	1982	64,5	64,3	68,3	70,1	66,2	64,6	60,3	58,9	72,0
			2272	63,1	65,3	68,8	70,7	67,6	65,5	61,0	59,5	72,9
			2633	63,2	66,3	69,2	73,6	70,3	67,8	63,0	61,0	75,4
		230 V / 50 Hz	973	54,7	58,4	57,5	56,9	55,7	62,3	46,1	44,3	64,6
		1500 rpm	1169	57,3	58,8	58,2	56,9	55,7	62,3	46,4	44,5	64,7
			1353	51,0	56,4	58,8	58,1	57,3	62,5	47,7	45,9	65,2
			1594	65,9	59,3	58,9	60,9	59,5	62,5	50,1	47,9	66,1
		230 V / 50 Hz	310	N.A.								
		500 rpm	377	N.A.								
			437	N.A.								
			511	N.A.								

### DIMENSIONAL DRAWINGS

S80513 - PFP A1-0315 M6F0

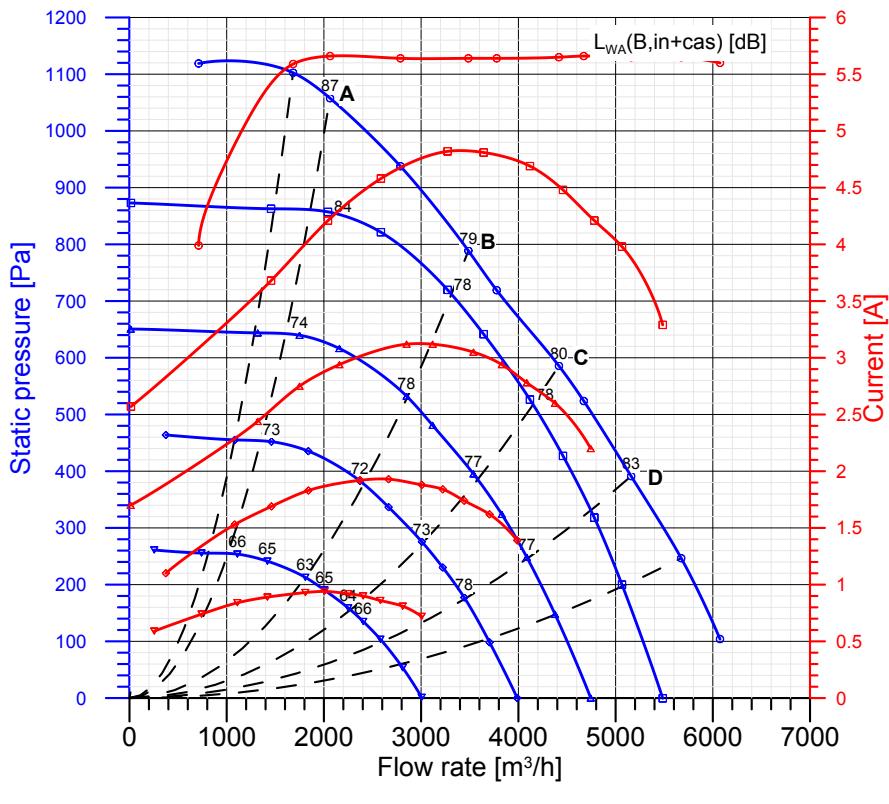


S80503 - PFP A3-0315 M6F0



Type: PFP A3-0355 1.35kW 1Ph  
Motor: 1416F1

Power:	1311 W (input, max)	Protection Cl.:	IP 54
Poles:	8	Insulation Cl.:	F
Voltage:	220-240 V	Thermal prot.:	YES-Integral
Supply:	1~	Temp. Min:	-20 °C
Frequency:	50-60 Hz	Temp. Max:	+40 °C (50°C)
Capacitor:	n.a.	Current Max:	5.7 A



### Integral speed-control by On-board Integral Driver

qv	pfs	Pe	n	I	$\eta_s$
m³/h	Pa	W	rpm	A	%
<b>○ Maximum performance curve (10 V)</b>					
A	2063	1058	1311	2419	5.66 45.2
B	3486	789	1311	2268	5.64 57.1
C	4417	586	1311	2278	5.65 53.7
D	5160	391	1311	2350	5.65 42.0

### Performance at 2200 rpm

A	2042	857	1003	2193	4.21	48.4
B	3272	720	1148	2194	4.82	56.9
C	4119	526	1121	2194	4.69	53.6
D	4781	318	1010	2194	4.21	41.8

### Performance at 1900 rpm

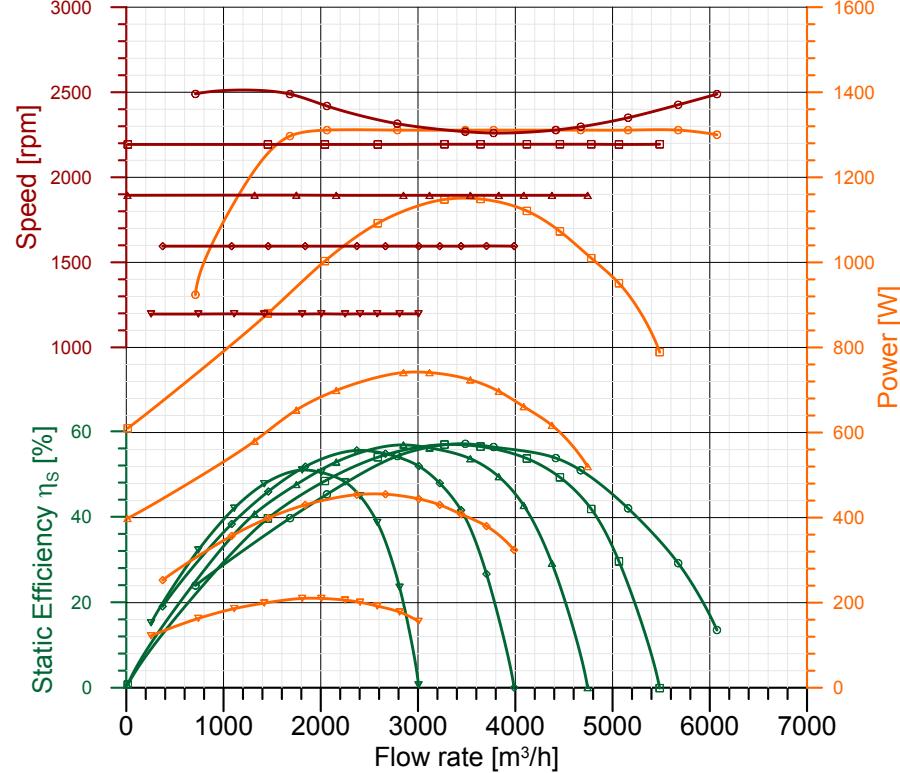
A	1749	640	653	1895	2.75	47.6
B	2850	532	741	1894	3.12	56.8
C	3538	395	724	1894	3.05	53.6
D	4087	248	661	1894	2.78	42.7

### Performance at 1600 rpm

A	1460	452	399	1595	1.69	45.9
B	2371	383	454	1595	1.92	55.5
C	3007	276	444	1595	1.88	51.9
D	3443	177	408	1595	1.74	41.5

### Performance at 1200 rpm

A	1110	254	186	1197	0.84	42.0
B	1809	213	210	1196	0.93	50.9
C	2250	159	206	1196	0.92	48.1
D	2581	104	192	1197	0.86	38.7



### ErP Data acc. to Reg. 327/11/CE

Performance referred to the best efficiency duty point

Compl. with Reg. 327/11/EC: Tier II (2015)  
Overall Efficiency ( $\eta \times C_c$ ) [%]: 61.6  
Measurement category: A  
Efficiency category: Static  
Efficiency grade N [%]: 70.9

A variable speed drive is integrated with this fan  
Manufactured since: 2017

By:

Nicotra Gebhardt S.p.A.  
Via Modena 18  
24040 Ciserano - Italy

Power input [kW]: 1.311

Volume flow rate qv [m³/s]: 0.968

Static Pressure [Pa]: 789

Speed [rpm]: 2268

Specific ratio: 1.008

Information on:

- Disassembly, recycling and disposal at end of life

- Optimal installation, use and maintenance of fans

are freely downloadable from

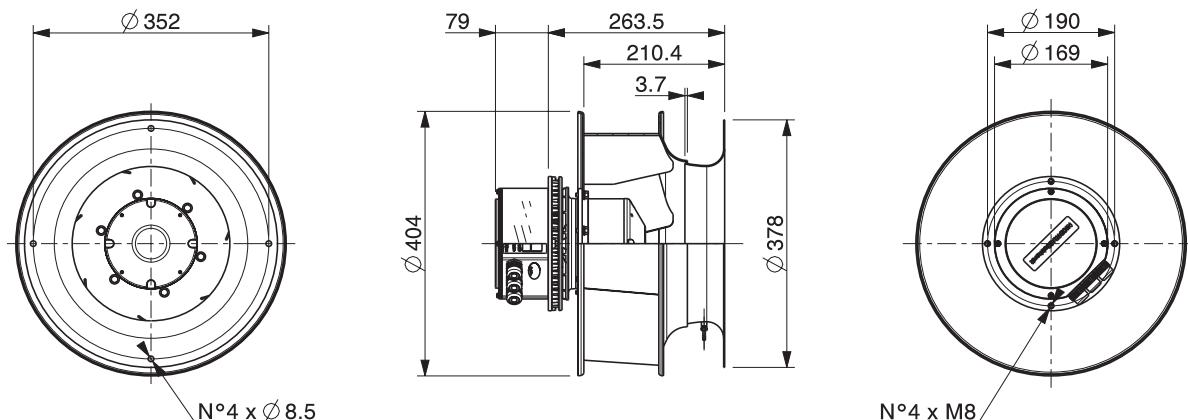
[www.nicotra-gehardt.com](http://www.nicotra-gehardt.com)

Testing is carried out with the optional components of the test airway required, according to ISO 5801:2007, for the installation type detailed here on top.

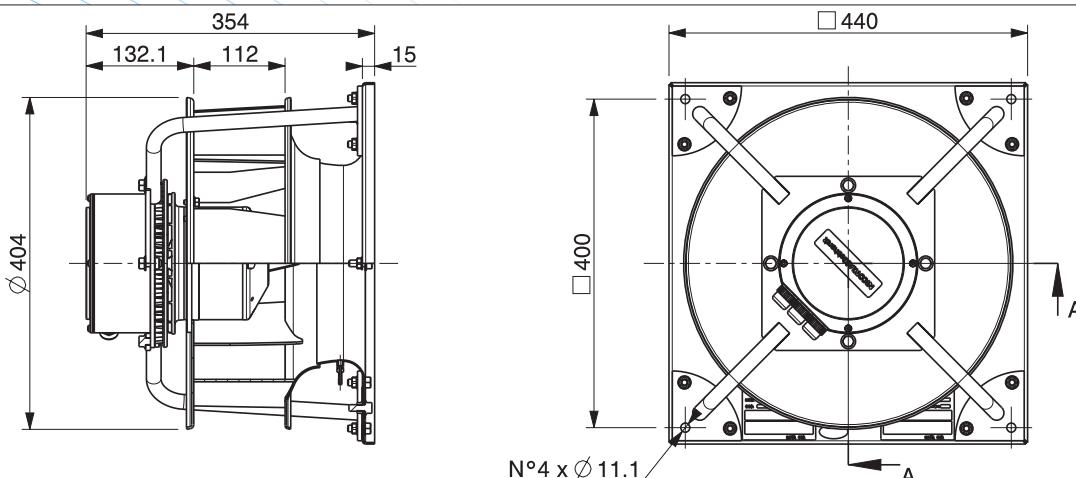
WIRING DIAGRAM		NOISE DATA																																																																																																																																																																																																																																																																								
<p>V — BROWN U — GREY W — BLACK PE — Y/GREEN</p>		<table border="1"> <thead> <tr> <th>Working point</th><th colspan="9">Sound power level for inlet side (Lw) in dB</th><th>LwA</th></tr> <tr> <th></th><th>m³/h</th><th>63</th><th>125</th><th>250</th><th>500</th><th>1k</th><th>2k</th><th>4k</th><th>8kHz</th><th></th><th></th></tr> </thead> <tbody> <tr><td>230 V / 50 Hz</td><td>2063</td><td>97,7</td><td>94,9</td><td>93,1</td><td>82,1</td><td>74,9</td><td>69,7</td><td>65,1</td><td>58,2</td><td></td><td>87,2</td></tr> <tr><td>F.M.W.L.</td><td>3486</td><td>84,6</td><td>81,3</td><td>83,8</td><td>75,0</td><td>70,1</td><td>67,8</td><td>63,8</td><td>57,6</td><td></td><td>78,8</td></tr> <tr><td></td><td>4417</td><td>84,5</td><td>82,1</td><td>83,7</td><td>76,8</td><td>72,0</td><td>68,7</td><td>65,1</td><td>58,6</td><td></td><td>79,7</td></tr> <tr><td></td><td>5160</td><td>85,1</td><td>84,3</td><td>86,5</td><td>80,4</td><td>75,7</td><td>70,9</td><td>67,5</td><td>60,6</td><td></td><td>82,7</td></tr> <tr><td>230 V / 50 Hz</td><td>2042</td><td>74,8</td><td>74,4</td><td>81,0</td><td>72,7</td><td>68,8</td><td>66,2</td><td>62,5</td><td>59,5</td><td></td><td>76,4</td></tr> <tr><td>2200 rpm</td><td>3272</td><td>66,6</td><td>68,8</td><td>74,8</td><td>71,4</td><td>67,4</td><td>65,1</td><td>62,2</td><td>59,8</td><td></td><td>73,8</td></tr> <tr><td></td><td>4119</td><td>68,3</td><td>69,9</td><td>81,9</td><td>73,2</td><td>68,5</td><td>65,8</td><td>62,7</td><td>60,2</td><td></td><td>76,8</td></tr> <tr><td></td><td>4781</td><td>71,2</td><td>70,6</td><td>83,5</td><td>77,0</td><td>71,4</td><td>68,1</td><td>65,4</td><td>61,2</td><td></td><td>79,3</td></tr> <tr><td>230 V / 50 Hz</td><td>1749</td><td>72,0</td><td>77,4</td><td>75,7</td><td>67,9</td><td>66,1</td><td>62,4</td><td>58,7</td><td>55,3</td><td></td><td>72,4</td></tr> <tr><td>1900 rpm</td><td>2850</td><td>64,6</td><td>65,9</td><td>66,3</td><td>66,0</td><td>63,7</td><td>61,7</td><td>58,6</td><td>55,7</td><td></td><td>69,1</td></tr> <tr><td></td><td>3538</td><td>64,7</td><td>67,7</td><td>68,1</td><td>67,6</td><td>64,6</td><td>62,3</td><td>58,8</td><td>55,9</td><td></td><td>70,1</td></tr> <tr><td></td><td>4087</td><td>68,2</td><td>70,2</td><td>71,0</td><td>72,9</td><td>67,0</td><td>64,2</td><td>60,2</td><td>57,3</td><td></td><td>73,4</td></tr> <tr><td>230 V / 50 Hz</td><td>1460</td><td>66,8</td><td>82,9</td><td>68,0</td><td>63,9</td><td>62,9</td><td>58,5</td><td>54,0</td><td>50,6</td><td></td><td>70,4</td></tr> <tr><td>1600 rpm</td><td>2371</td><td>61,3</td><td>64,4</td><td>66,8</td><td>63,3</td><td>61,2</td><td>57,9</td><td>54,2</td><td>50,7</td><td></td><td>66,4</td></tr> <tr><td></td><td>3007</td><td>61,3</td><td>64,8</td><td>66,4</td><td>64,5</td><td>61,1</td><td>58,4</td><td>54,2</td><td>50,9</td><td></td><td>66,7</td></tr> <tr><td></td><td>3443</td><td>68,4</td><td>67,2</td><td>68,8</td><td>68,1</td><td>62,4</td><td>59,9</td><td>55,2</td><td>52,3</td><td></td><td>69,0</td></tr> <tr><td>230 V / 50 Hz</td><td>1110</td><td>62,5</td><td>71,5</td><td>57,7</td><td>60,1</td><td>57,8</td><td>51,7</td><td>46</td><td>41,49</td><td></td><td>62,7</td></tr> <tr><td>1200 rpm</td><td>1809</td><td>57,9</td><td>60,8</td><td>58,1</td><td>58,4</td><td>56,9</td><td>51,5</td><td>46,3</td><td>42,08</td><td></td><td>60,8</td></tr> <tr><td></td><td>2250</td><td>61,2</td><td>61,3</td><td>58,1</td><td>59,1</td><td>57,2</td><td>52,5</td><td>47</td><td>42,51</td><td></td><td>61,4</td></tr> <tr><td></td><td>2581</td><td>68,5</td><td>63,2</td><td>60,6</td><td>60,3</td><td>57,6</td><td>55</td><td>48</td><td>43,49</td><td></td><td>62,7</td></tr> </tbody> </table>		Working point	Sound power level for inlet side (Lw) in dB									LwA		m³/h	63	125	250	500	1k	2k	4k	8kHz			230 V / 50 Hz	2063	97,7	94,9	93,1	82,1	74,9	69,7	65,1	58,2		87,2	F.M.W.L.	3486	84,6	81,3	83,8	75,0	70,1	67,8	63,8	57,6		78,8		4417	84,5	82,1	83,7	76,8	72,0	68,7	65,1	58,6		79,7		5160	85,1	84,3	86,5	80,4	75,7	70,9	67,5	60,6		82,7	230 V / 50 Hz	2042	74,8	74,4	81,0	72,7	68,8	66,2	62,5	59,5		76,4	2200 rpm	3272	66,6	68,8	74,8	71,4	67,4	65,1	62,2	59,8		73,8		4119	68,3	69,9	81,9	73,2	68,5	65,8	62,7	60,2		76,8		4781	71,2	70,6	83,5	77,0	71,4	68,1	65,4	61,2		79,3	230 V / 50 Hz	1749	72,0	77,4	75,7	67,9	66,1	62,4	58,7	55,3		72,4	1900 rpm	2850	64,6	65,9	66,3	66,0	63,7	61,7	58,6	55,7		69,1		3538	64,7	67,7	68,1	67,6	64,6	62,3	58,8	55,9		70,1		4087	68,2	70,2	71,0	72,9	67,0	64,2	60,2	57,3		73,4	230 V / 50 Hz	1460	66,8	82,9	68,0	63,9	62,9	58,5	54,0	50,6		70,4	1600 rpm	2371	61,3	64,4	66,8	63,3	61,2	57,9	54,2	50,7		66,4		3007	61,3	64,8	66,4	64,5	61,1	58,4	54,2	50,9		66,7		3443	68,4	67,2	68,8	68,1	62,4	59,9	55,2	52,3		69,0	230 V / 50 Hz	1110	62,5	71,5	57,7	60,1	57,8	51,7	46	41,49		62,7	1200 rpm	1809	57,9	60,8	58,1	58,4	56,9	51,5	46,3	42,08		60,8		2250	61,2	61,3	58,1	59,1	57,2	52,5	47	42,51		61,4		2581	68,5	63,2	60,6	60,3	57,6	55	48	43,49		62,7
Working point	Sound power level for inlet side (Lw) in dB									LwA																																																																																																																																																																																																																																																																
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230 V / 50 Hz	2063	97,7	94,9	93,1	82,1	74,9	69,7	65,1	58,2		87,2																																																																																																																																																																																																																																																															
F.M.W.L.	3486	84,6	81,3	83,8	75,0	70,1	67,8	63,8	57,6		78,8																																																																																																																																																																																																																																																															
	4417	84,5	82,1	83,7	76,8	72,0	68,7	65,1	58,6		79,7																																																																																																																																																																																																																																																															
	5160	85,1	84,3	86,5	80,4	75,7	70,9	67,5	60,6		82,7																																																																																																																																																																																																																																																															
230 V / 50 Hz	2042	74,8	74,4	81,0	72,7	68,8	66,2	62,5	59,5		76,4																																																																																																																																																																																																																																																															
2200 rpm	3272	66,6	68,8	74,8	71,4	67,4	65,1	62,2	59,8		73,8																																																																																																																																																																																																																																																															
	4119	68,3	69,9	81,9	73,2	68,5	65,8	62,7	60,2		76,8																																																																																																																																																																																																																																																															
	4781	71,2	70,6	83,5	77,0	71,4	68,1	65,4	61,2		79,3																																																																																																																																																																																																																																																															
230 V / 50 Hz	1749	72,0	77,4	75,7	67,9	66,1	62,4	58,7	55,3		72,4																																																																																																																																																																																																																																																															
1900 rpm	2850	64,6	65,9	66,3	66,0	63,7	61,7	58,6	55,7		69,1																																																																																																																																																																																																																																																															
	3538	64,7	67,7	68,1	67,6	64,6	62,3	58,8	55,9		70,1																																																																																																																																																																																																																																																															
	4087	68,2	70,2	71,0	72,9	67,0	64,2	60,2	57,3		73,4																																																																																																																																																																																																																																																															
230 V / 50 Hz	1460	66,8	82,9	68,0	63,9	62,9	58,5	54,0	50,6		70,4																																																																																																																																																																																																																																																															
1600 rpm	2371	61,3	64,4	66,8	63,3	61,2	57,9	54,2	50,7		66,4																																																																																																																																																																																																																																																															
	3007	61,3	64,8	66,4	64,5	61,1	58,4	54,2	50,9		66,7																																																																																																																																																																																																																																																															
	3443	68,4	67,2	68,8	68,1	62,4	59,9	55,2	52,3		69,0																																																																																																																																																																																																																																																															
230 V / 50 Hz	1110	62,5	71,5	57,7	60,1	57,8	51,7	46	41,49		62,7																																																																																																																																																																																																																																																															
1200 rpm	1809	57,9	60,8	58,1	58,4	56,9	51,5	46,3	42,08		60,8																																																																																																																																																																																																																																																															
	2250	61,2	61,3	58,1	59,1	57,2	52,5	47	42,51		61,4																																																																																																																																																																																																																																																															
	2581	68,5	63,2	60,6	60,3	57,6	55	48	43,49		62,7																																																																																																																																																																																																																																																															

## DIMENSIONAL DRAWINGS

S80509 - PFP A1-0355 M6F0

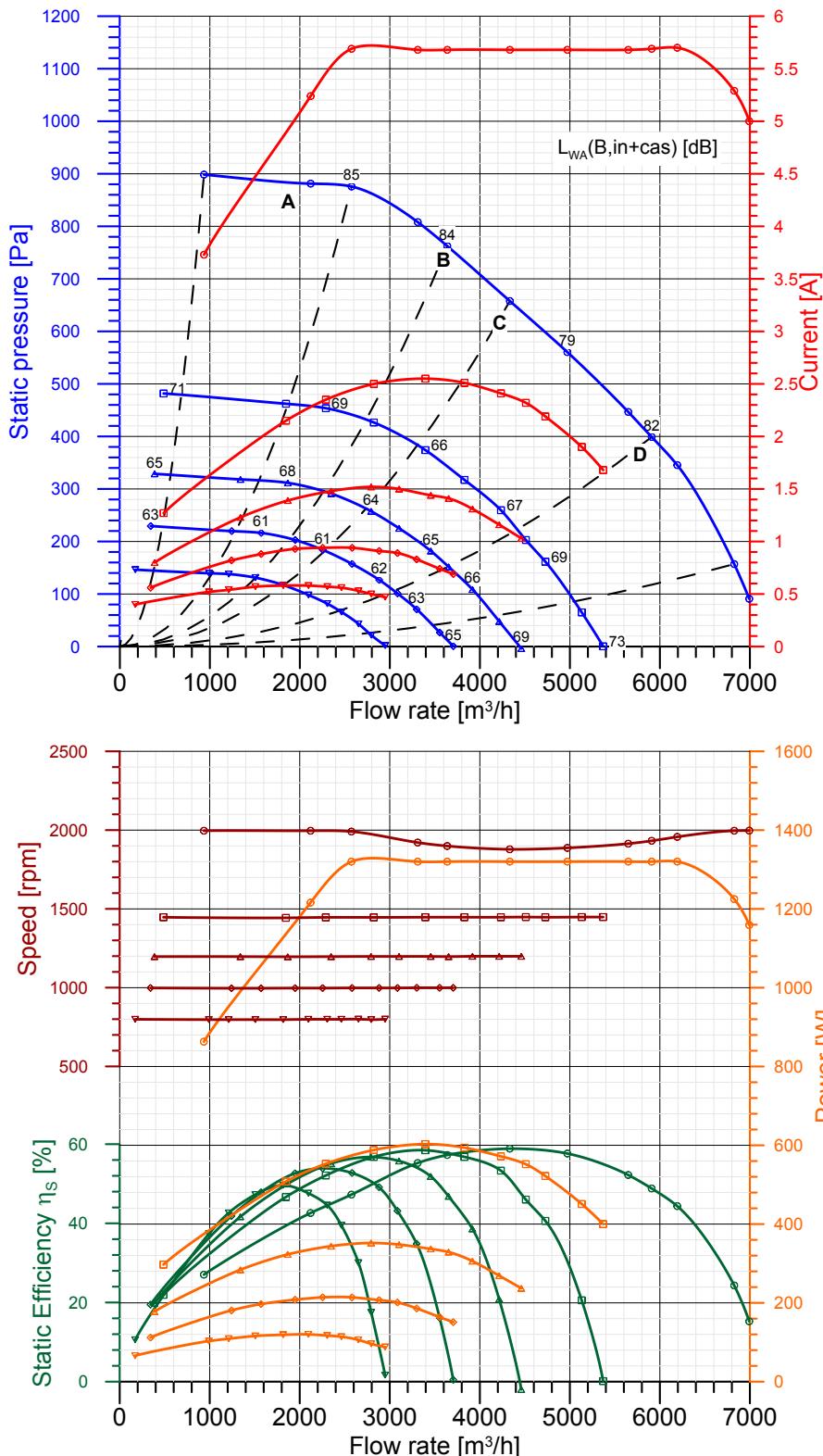


S80502 - PFP A3-0355 M6F1



Type: PFP A3-0400 1.35kW 1Ph  
Motor: 1416F1

Power:	1320 W (input, max)	Protection Cl.:	IP 54
Poles:	8	Insulation Cl.:	F
Voltage:	220-240 V	Thermal prot.:	YES-Integral
Supply:	1~	Temp. Min:	-20 °C
Frequency:	50-60 Hz	Temp. Max:	+40 °C (+50°C)
Capacitor:	n.a.	Current Max:	5.7 A



Performance data referring to:  
Standard air density  $\rho = 1.20 \text{ kg} / \text{m}^3$   
Installation type "B": free inlet, ducted outlet  
Sound Power Levels shown are  
Inlet-side  $L_{WA}(B,\text{in+cas})$ , A-weighted, in dBA

### Integral speed-control by On-board Integral Driver

qv	pfs	Pe	n	I	η <sub>s</sub>
m³/h	Pa	W	rpm	A	%
<b>○ Maximum performance curve (10 V)</b>					
A	2574	876	1320	1991	5.69 47.3
B	3638	762	1320	1899	5.68 57.3
C	4333	658	1320	1878	5.68 58.9
D	5909	399	1320	1932	5.69 48.8
<b>□ Performance at 1450 rpm</b>					
A	2289	454	553	1446	2.35 52.1
B	3395	374	603	1447	2.55 58.5
C	3829	317	594	1447	2.51 56.8
D	4728	161	522	1447	2.19 40.6
<b>△ Performance at 1200 rpm</b>					
A	1866	312	323	1196	1.39 50.0
B	2792	258	352	1198	1.52 56.8
C	3103	225	348	1198	1.50 55.8
D	3918	109	306	1199	1.31 38.6
<b>◇ Performance at 1000 rpm</b>					
A	1570	216	197	996	0.88 47.8
B	2254	184	214	997	0.94 53.9
C	2580	157	214	998	0.94 52.7
D	3299	71	186	999	0.83 34.8
<b>▽ Performance at 800 rpm</b>					
A	1211	138	109	797	0.54 42.6
B	1816	117	119	797	0.58 49.6
C	2096	98	120	799	0.58 47.6
D	2652	43	106	800	0.53 30.1

### ErP Data acc. to Reg. 327/11/CE

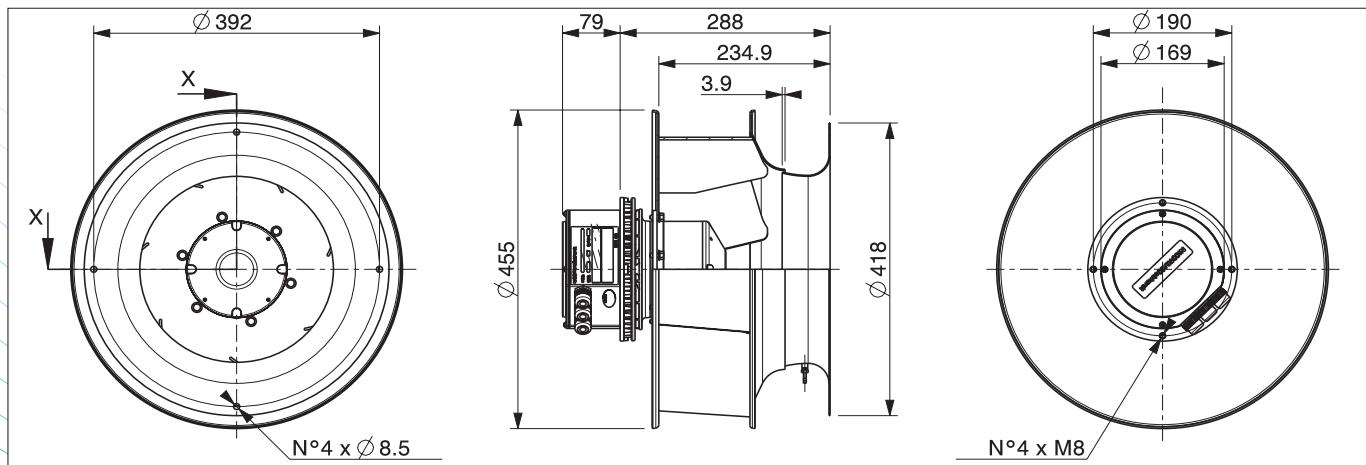
Performance referred to the best efficiency duty point

Compl. with Reg. 327/11/EC:	Tier II (2015)
Overall Efficiency ( $\eta \times C_c$ ) [%]:	63.5
Measurement category:	A
Efficiency category:	Static
Efficiency grade N [%]:	72.7
A variable speed drive is integrated with this fan	
Manufactured since:	2017
By:	Nicotra Gebhardt S.p.A. Via Modena 18 24040 Ciserano - Italy
Power input [kW]:	1.32
Volume flow rate qv [m³/s]:	1.204
Static Pressure [Pa]:	658
Speed [rpm]:	1878
Specific ratio:	1.006
Information on:	
- Disassembly, recycling and disposal at end of life	
- Optimal installation, use and maintenance of fans	
are freely downloadable from	
<a href="http://www.nicotra-gehardt.com">www.nicotra-gehardt.com</a>	
Testing is carried out with the optional components of the test airway required,	
according to ISO 5801:2007, for the installation type detailed here on top.	

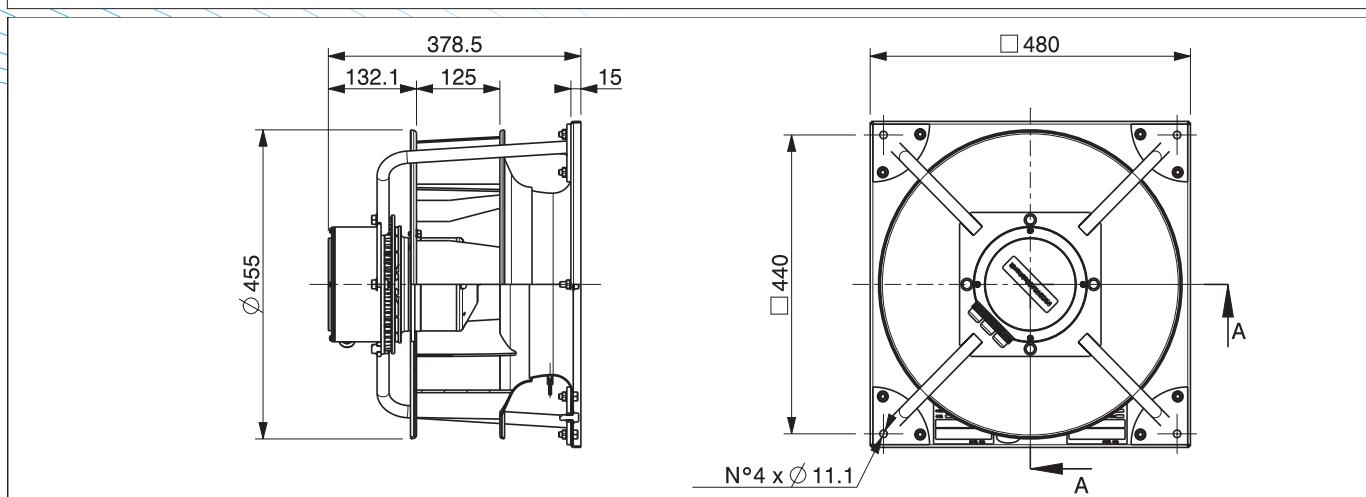
WIRING DIAGRAM		NOISE DATA										
		Working point   Sound power level for inlet side (Lw) in dB										
	m³/h	63	125	250	500	1k	2k	4k	8kHz			LwA
230 V / 50 Hz	2574	95,5	93,8	91,1	79,3	72,0	67,6	63,0	56,8			85,2
F.M.W.L.	3638	82,9	81,9	91,7	74,2	69,1	66,5	61,5	56,5			83,9
	4333	83,2	80,4	83,4	74,5	69,1	66,9	61,8	56,5			78,2
	5909	85,8	84,7	87,4	78,6	72,6	69,4	64,2	58,8			82,0
230 V / 50 Hz	2289	69,5	79,8	66,4	64,2	62,7	58,1	52,9	49,9			68,8
1450 rpm	3395	66,3	64,7	65,9	62,9	61,5	57,5	53,1	50,7			66,1
	3829	65,0	65,4	66,6	63,9	61,0	57,6	53,4	51,4			66,4
	4728	69,9	71,3	69,2	67,8	62,6	61,3	55,3	52,9			69,4
230 V / 50 Hz	1866	64,1	81,6	60,8	62,6	58,6	53,2	48,0	45,2			68,0
1200 rpm	2792	53,8	64,4	58,2	64,5	57,2	53,0	48,1	46,1			63,9
	3103	60,3	64,1	58,8	64,6	57,0	53,2	48,4	46,1			64,0
	3918	66,5	68,5	63,3	66,3	58,2	56,5	50,6	47,4			66,1
230 V / 50 Hz	1570	59,3	68,1	53,3	59,9	57,6	48,3	42,9	41,0			61,4
1000 rpm	2254	57,5	67,0	57,3	59,5	57,5	48,5	43,6	44,5			61,3
	2580	63,8	63,9	55,8	60,1	57,2	48,9	44,0	44,8			61,2
	3299	69,9	69,0	58,3	61,2	57,1	51,9	46,8	44,5			62,6
230 V / 50 Hz	1211	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.			N.A.
800 rpm	1816	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.			N.A.
	2096	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.			N.A.
	2652	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.			N.A.

## DIMENSIONAL DRAWINGS

S80510 - PFP A1-0400 M6F1



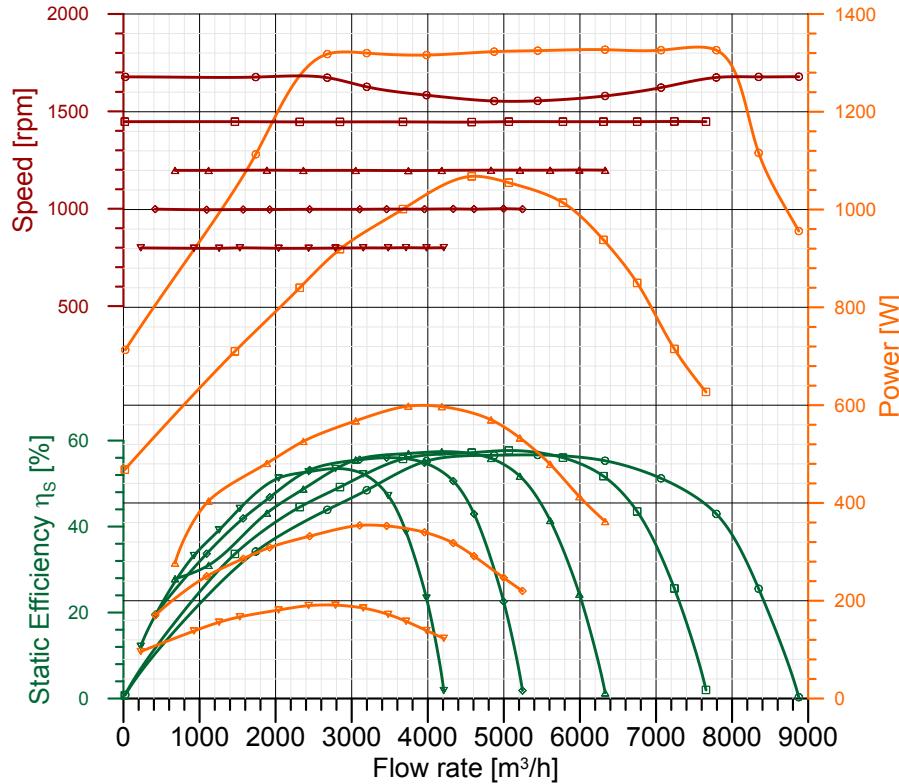
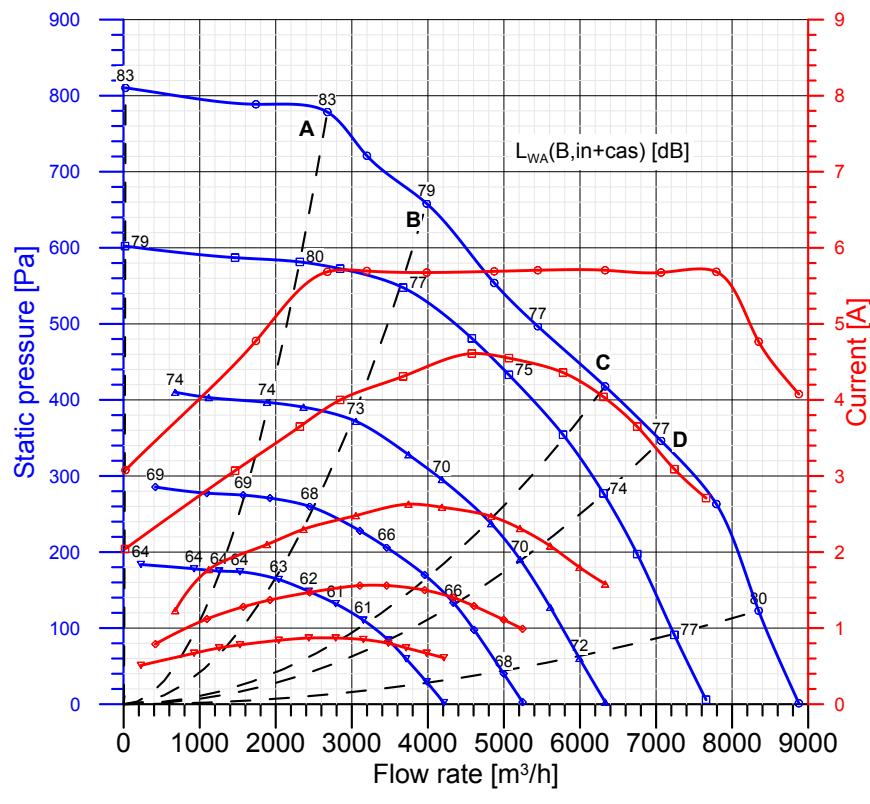
S80504 - PFP A3-0400 M6F1



Type: PFP A3-0450 1.35kW 1Ph  
Motor: 1416F1

Power:	1320 W (input, max)	Protection Cl.:	IP 54
Poles:	8	Insulation Cl.:	F
Voltage:	220-240 V	Thermal prot.:	YES-Integral
Supply:	1~	Temp. Min:	-20 °C
Frequency:	50-60 Hz	Temp. Max:	+40 °C (+50°C)
Capacitor:	n.a.	Current Max:	5.7 A

Performance data referring to:  
Standard air density  $\rho = 1.20 \text{ kg} / \text{m}^3$   
Installation type "B": free inlet, ducted outlet  
Sound Power Levels shown are  
Inlet-side  $L_{WA}(B,\text{in+cas})$ , A-weighted, in dBA



### Integral speed-control by On-board Integral Driver

qv m³/h	pfs Pa	Pe W	n rpm	I A	$\eta_s$ %
<b>Maximum performance curve (10 V)</b>					
A	2679	779	1318	1673	5.69 43.9
B	3984	658	1316	1583	5.68 55.2
C	6330	418	1327	1579	5.71 55.3
D	7066	346	1326	1622	5.68 51.2
<b>Performance at 1450 rpm</b>					
A	2317	581	840	1446	3.65 44.5
B	3674	548	1001	1446	4.31 55.7
C	5777	354	1014	1447	4.36 56.0
D	6309	277	938	1447	4.04 51.7
<b>Performance at 1200 rpm</b>					
A	1885	397	481	1198	2.10 43.1
B	3053	372	568	1197	2.48 55.5
C	4832	237	570	1198	2.47 55.9
D	5211	190	533	1198	2.31 51.7
<b>Performance at 1000 rpm</b>					
A	1573	275	286	996	1.28 41.9
B	2447	260	332	997	1.47 53.2
C	3957	170	340	998	1.50 54.8
D	4336	133	318	999	1.40 50.6
<b>Performance at 800 rpm</b>					
A	1257	175	156	797	0.74 39.2
B	2039	164	181	797	0.84 51.3
C	3152	110	185	799	0.85 52.3
D	3480	84	172	799	0.80 47.2

### ErP Data acc. to Reg. 327/11/CE

Performance referred to the best efficiency duty point

Compl. with Reg. 327/11/EC: Tier II (2015)  
Overall Efficiency ( $\eta \times C_c$ ) [%]: 61.2  
Measurement category: A  
Efficiency category: Static  
Efficiency grade N [%]: 70.4

A variable speed drive is integrated with this fan  
Manufactured since: 2017

By:  
Nicotra Gebhardt S.p.A.  
Via Modena 18  
24040 Ciserano - Italy

Power input [kW]: 1.325  
Volume flow rate qv [m³/s]: 1.513  
Static Pressure [Pa]: 497  
Speed [rpm]: 1554  
Specific ratio: 1.005  
Information on:

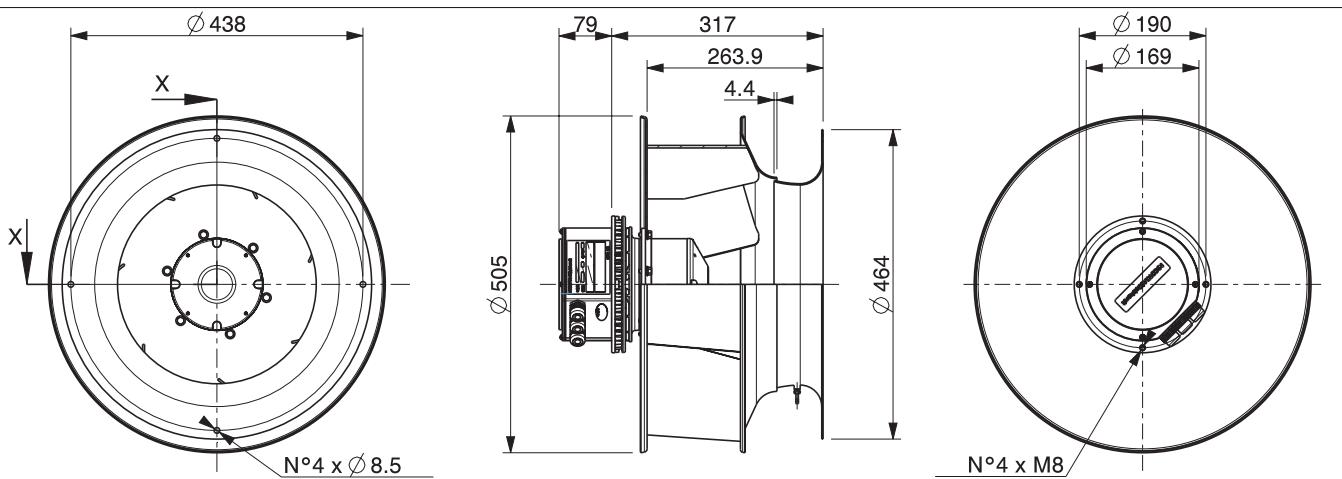
- Disassembly, recycling and disposal at end of life
- Optimal installation, use and maintenance of fans are freely downloadable from [www.nicotra-gehardt.com](http://www.nicotra-gehardt.com)

Testing is carried out with the optional components of the test airway required, according to ISO 5801:2007, for the installation type detailed here on top.

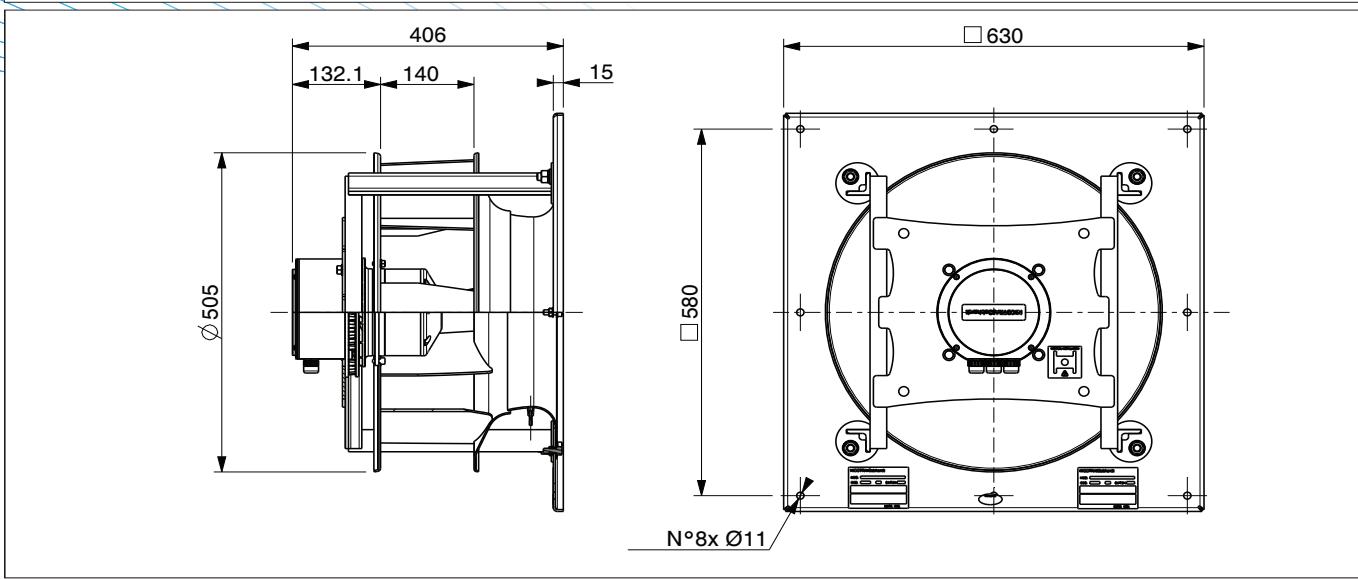
WIRING DIAGRAM		NOISE DATA																																																																																																																																																																																																																																																																							
		<b>Working point</b> <table border="1"> <thead> <tr> <th></th><th>m³/h</th><th>63</th><th>125</th><th>250</th><th>500</th><th>1k</th><th>2k</th><th>4k</th><th>8kHz</th><th></th><th>LwA</th></tr> </thead> <tbody> <tr> <td>230 V / 50 Hz</td><td>3294</td><td>82,2</td><td>89,7</td><td>79,4</td><td>76,4</td><td>79,1</td><td>74,8</td><td>66,9</td><td>59,9</td><td></td><td>82,7</td></tr> <tr> <td>F.M.W.L.</td><td>4878</td><td>68,4</td><td>83,3</td><td>71,8</td><td>71,8</td><td>76,6</td><td>72,5</td><td>64,5</td><td>58,3</td><td></td><td>79,4</td></tr> <tr> <td></td><td>6293</td><td>76,9</td><td>71,2</td><td>73,2</td><td>72,3</td><td>72,6</td><td>69,4</td><td>62,4</td><td>57,4</td><td></td><td>76,4</td></tr> <tr> <td></td><td>6954</td><td>81,3</td><td>77,6</td><td>75,3</td><td>75,8</td><td>72,3</td><td>71,6</td><td>65,1</td><td>60,5</td><td></td><td>78,2</td></tr> <tr> <td>230 V / 50 Hz</td><td>2317</td><td>78,7</td><td>87,9</td><td>74,6</td><td>72,9</td><td>76,0</td><td>71,2</td><td>62,6</td><td>55,7</td><td></td><td>79,6</td></tr> <tr> <td>1450 rpm</td><td>3674</td><td>65,7</td><td>74,6</td><td>69,4</td><td>69,2</td><td>74,8</td><td>70,5</td><td>61,8</td><td>55,9</td><td></td><td>77,2</td></tr> <tr> <td></td><td>5777</td><td>70,2</td><td>70,6</td><td>70,5</td><td>69,0</td><td>70,1</td><td>67,8</td><td>60,0</td><td>54,6</td><td></td><td>74,0</td></tr> <tr> <td></td><td>6752</td><td>84,4</td><td>75,6</td><td>73,6</td><td>71,0</td><td>68,4</td><td>68,5</td><td>60,2</td><td>55,8</td><td></td><td>74,6</td></tr> <tr> <td>230 V / 50 Hz</td><td>1885</td><td>72,5</td><td>81,8</td><td>69,4</td><td>68,0</td><td>70,7</td><td>66,4</td><td>57,1</td><td>50,1</td><td></td><td>74,3</td></tr> <tr> <td>1200 rpm</td><td>3053</td><td>62,6</td><td>75,8</td><td>64,8</td><td>65,6</td><td>69,9</td><td>65,7</td><td>56,3</td><td>50,2</td><td></td><td>72,6</td></tr> <tr> <td></td><td>4832</td><td>74,8</td><td>72,2</td><td>64,3</td><td>64,4</td><td>65,5</td><td>64,3</td><td>54,9</td><td>49,2</td><td></td><td>69,9</td></tr> <tr> <td></td><td>5609</td><td>77,9</td><td>72,8</td><td>67,8</td><td>66,4</td><td>63,8</td><td>62,8</td><td>55,1</td><td>50,2</td><td></td><td>69,6</td></tr> <tr> <td>230 V / 50 Hz</td><td>1573</td><td>71,8</td><td>73,6</td><td>64,5</td><td>64,0</td><td>66,1</td><td>61,5</td><td>51,9</td><td>44,5</td><td></td><td>69,3</td></tr> <tr> <td>1000 rpm</td><td>2447</td><td>60,4</td><td>70,4</td><td>60,7</td><td>61,7</td><td>65,4</td><td>60,7</td><td>51,3</td><td>44,4</td><td></td><td>68,0</td></tr> <tr> <td></td><td>3957</td><td>65,4</td><td>68,8</td><td>60,7</td><td>60,5</td><td>61,7</td><td>57,8</td><td>49,0</td><td>43,0</td><td></td><td>65,2</td></tr> <tr> <td></td><td>4609</td><td>75,0</td><td>69,6</td><td>63,7</td><td>62,0</td><td>60,0</td><td>59,8</td><td>49,7</td><td>44,2</td><td></td><td>65,8</td></tr> <tr> <td>230 V / 50 Hz</td><td>1257</td><td>70,1</td><td>64,0</td><td>58,9</td><td>58,2</td><td>62,1</td><td>55,1</td><td>45,5</td><td>36,9</td><td></td><td>64,2</td></tr> <tr> <td>800 rpm</td><td>2039</td><td>52,3</td><td>56,8</td><td>55,6</td><td>56,3</td><td>61,6</td><td>54,6</td><td>44,9</td><td>36,8</td><td></td><td>63,3</td></tr> <tr> <td></td><td>3152</td><td>67,1</td><td>57,3</td><td>57,9</td><td>54,6</td><td>58,3</td><td>52,3</td><td>42,3</td><td>36,5</td><td></td><td>60,7</td></tr> <tr> <td></td><td>3714</td><td>69,9</td><td>63,5</td><td>58,7</td><td>55,7</td><td>57,5</td><td>52,1</td><td>42,5</td><td>37,1</td><td></td><td>60,7</td></tr> </tbody> </table>													m³/h	63	125	250	500	1k	2k	4k	8kHz		LwA	230 V / 50 Hz	3294	82,2	89,7	79,4	76,4	79,1	74,8	66,9	59,9		82,7	F.M.W.L.	4878	68,4	83,3	71,8	71,8	76,6	72,5	64,5	58,3		79,4		6293	76,9	71,2	73,2	72,3	72,6	69,4	62,4	57,4		76,4		6954	81,3	77,6	75,3	75,8	72,3	71,6	65,1	60,5		78,2	230 V / 50 Hz	2317	78,7	87,9	74,6	72,9	76,0	71,2	62,6	55,7		79,6	1450 rpm	3674	65,7	74,6	69,4	69,2	74,8	70,5	61,8	55,9		77,2		5777	70,2	70,6	70,5	69,0	70,1	67,8	60,0	54,6		74,0		6752	84,4	75,6	73,6	71,0	68,4	68,5	60,2	55,8		74,6	230 V / 50 Hz	1885	72,5	81,8	69,4	68,0	70,7	66,4	57,1	50,1		74,3	1200 rpm	3053	62,6	75,8	64,8	65,6	69,9	65,7	56,3	50,2		72,6		4832	74,8	72,2	64,3	64,4	65,5	64,3	54,9	49,2		69,9		5609	77,9	72,8	67,8	66,4	63,8	62,8	55,1	50,2		69,6	230 V / 50 Hz	1573	71,8	73,6	64,5	64,0	66,1	61,5	51,9	44,5		69,3	1000 rpm	2447	60,4	70,4	60,7	61,7	65,4	60,7	51,3	44,4		68,0		3957	65,4	68,8	60,7	60,5	61,7	57,8	49,0	43,0		65,2		4609	75,0	69,6	63,7	62,0	60,0	59,8	49,7	44,2		65,8	230 V / 50 Hz	1257	70,1	64,0	58,9	58,2	62,1	55,1	45,5	36,9		64,2	800 rpm	2039	52,3	56,8	55,6	56,3	61,6	54,6	44,9	36,8		63,3		3152	67,1	57,3	57,9	54,6	58,3	52,3	42,3	36,5		60,7		3714	69,9	63,5	58,7	55,7	57,5	52,1	42,5	37,1		60,7
	m³/h	63	125	250	500	1k	2k	4k	8kHz		LwA																																																																																																																																																																																																																																																														
230 V / 50 Hz	3294	82,2	89,7	79,4	76,4	79,1	74,8	66,9	59,9		82,7																																																																																																																																																																																																																																																														
F.M.W.L.	4878	68,4	83,3	71,8	71,8	76,6	72,5	64,5	58,3		79,4																																																																																																																																																																																																																																																														
	6293	76,9	71,2	73,2	72,3	72,6	69,4	62,4	57,4		76,4																																																																																																																																																																																																																																																														
	6954	81,3	77,6	75,3	75,8	72,3	71,6	65,1	60,5		78,2																																																																																																																																																																																																																																																														
230 V / 50 Hz	2317	78,7	87,9	74,6	72,9	76,0	71,2	62,6	55,7		79,6																																																																																																																																																																																																																																																														
1450 rpm	3674	65,7	74,6	69,4	69,2	74,8	70,5	61,8	55,9		77,2																																																																																																																																																																																																																																																														
	5777	70,2	70,6	70,5	69,0	70,1	67,8	60,0	54,6		74,0																																																																																																																																																																																																																																																														
	6752	84,4	75,6	73,6	71,0	68,4	68,5	60,2	55,8		74,6																																																																																																																																																																																																																																																														
230 V / 50 Hz	1885	72,5	81,8	69,4	68,0	70,7	66,4	57,1	50,1		74,3																																																																																																																																																																																																																																																														
1200 rpm	3053	62,6	75,8	64,8	65,6	69,9	65,7	56,3	50,2		72,6																																																																																																																																																																																																																																																														
	4832	74,8	72,2	64,3	64,4	65,5	64,3	54,9	49,2		69,9																																																																																																																																																																																																																																																														
	5609	77,9	72,8	67,8	66,4	63,8	62,8	55,1	50,2		69,6																																																																																																																																																																																																																																																														
230 V / 50 Hz	1573	71,8	73,6	64,5	64,0	66,1	61,5	51,9	44,5		69,3																																																																																																																																																																																																																																																														
1000 rpm	2447	60,4	70,4	60,7	61,7	65,4	60,7	51,3	44,4		68,0																																																																																																																																																																																																																																																														
	3957	65,4	68,8	60,7	60,5	61,7	57,8	49,0	43,0		65,2																																																																																																																																																																																																																																																														
	4609	75,0	69,6	63,7	62,0	60,0	59,8	49,7	44,2		65,8																																																																																																																																																																																																																																																														
230 V / 50 Hz	1257	70,1	64,0	58,9	58,2	62,1	55,1	45,5	36,9		64,2																																																																																																																																																																																																																																																														
800 rpm	2039	52,3	56,8	55,6	56,3	61,6	54,6	44,9	36,8		63,3																																																																																																																																																																																																																																																														
	3152	67,1	57,3	57,9	54,6	58,3	52,3	42,3	36,5		60,7																																																																																																																																																																																																																																																														
	3714	69,9	63,5	58,7	55,7	57,5	52,1	42,5	37,1		60,7																																																																																																																																																																																																																																																														

### DIMENSIONAL DRAWINGS

S80511- PFP A1-0450 M6F1



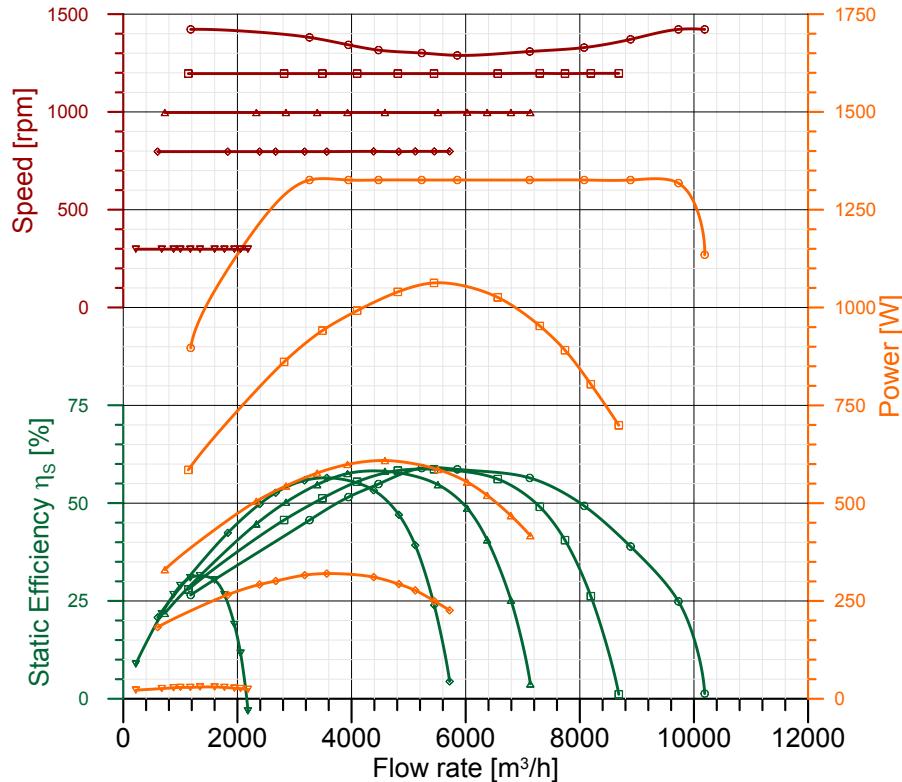
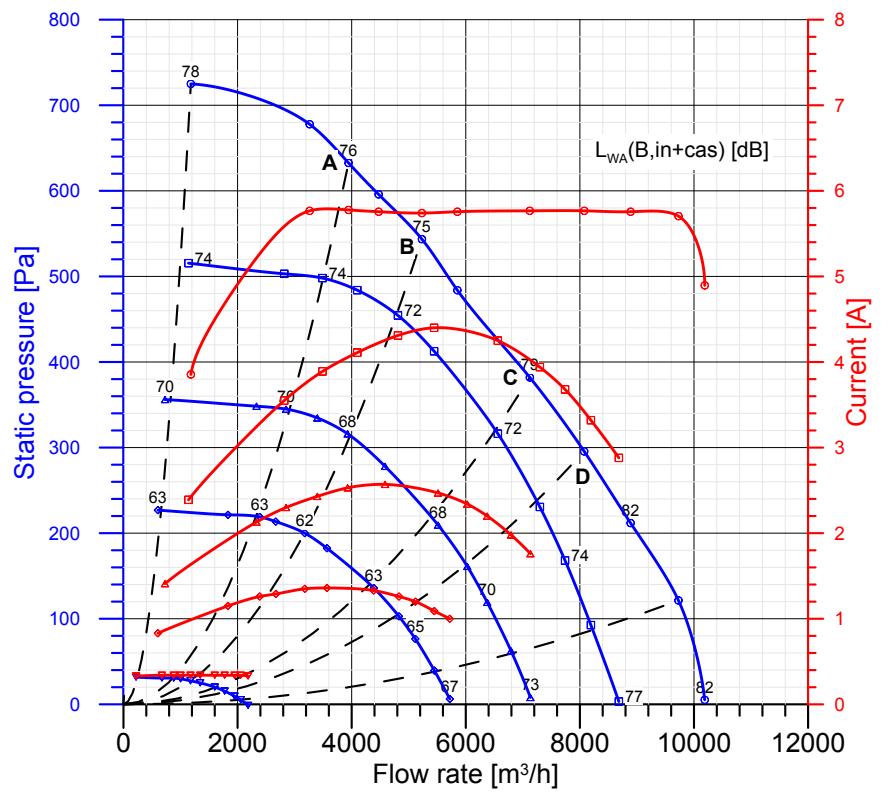
S80524BQE - PFP A3-0450 1F M6F1 BQE F M6F1 BQE



Type: PFP A3-0500 1.35kW 1Ph  
Motor: 1416F2

Power:	1326 W (input, max)	Protection Cl.:	IP 54
Poles:	8	Insulation Cl.:	F
Voltage:	220-240 V	Thermal prot.:	YES-Integral
Supply:	1~	Temp. Min:	-20 °C
Frequency:	50-60 Hz	Temp. Max:	+40 °C (+50°C)
Capacitor:	n.a.	Current Max:	5.78 A

Performance data referring to:  
Standard air density  $\rho = 1.20 \text{ kg} / \text{m}^3$   
Installation type "B": free inlet, ducted outlet  
Sound Power Levels shown are  
Inlet-side  $L_{WA}(B,\text{in+cas})$ , A-weighted, in dBA



### Integral speed-control by On-board Integral Driver

	qv m³/h	pfs Pa	Pe W	n rpm	I A	$\eta_s$ %
<b>Maximum performance curve (10 V)</b>						
A	3945	633	1326	1343	5.78	51.5
B	5231	544	1326	1301	5.74	58.9
C	7122	382	1326	1309	5.77	56.4
D	8076	296	1326	1329	5.77	49.3
<b>Performance at 1200 rpm</b>						
A	3488	498	941	1196	3.89	51.2
B	4811	454	1040	1196	4.31	58.3
C	6562	316	1026	1196	4.25	56.1
D	7299	231	953	1197	3.94	49.1
<b>Performance at 1000 rpm</b>						
A	2850	345	544	997	2.30	50.2
B	3929	316	599	997	2.53	57.6
C	5514	210	586	997	2.47	54.7
D	6026	161	554	998	2.34	48.7
<b>Performance at 800 rpm</b>						
A	2389	219	292	797	1.26	49.8
B	3178	200	316	797	1.35	55.8
C	4387	136	311	798	1.33	53.3
D	4829	103	293	797	1.26	47.0
<b>Performance at 300 rpm</b>						
A	881	31	28	298	0.34	26.6
B	1175	27	29	298	0.34	30.9
C	1600	20	30	298	0.34	30.3
D	1773	15	29	298	0.34	26.6

### ErP Data acc. to Reg. 327/11/CE

Performance referred to the best efficiency duty point

Compl. with Reg. 327/11/EC: Tier II (2015)  
Overall Efficiency ( $\eta \times Cc$ ) [%]: 63.6  
Measurement category: A  
Efficiency category: Static  
Efficiency grade N [%]: 72.8

A variable speed drive is integrated with this fan  
Manufactured since: 2017

By:  
Nicotra Gebhardt S.p.A.  
Via Modena 18  
24040 Ciserano - Italy

Power input [kW]: 1.326  
Volume flow rate qv [m³/s]: 1.453  
Static Pressure [Pa]: 544  
Speed [rpm]: 1301  
Specific ratio: 1.005

Information on:  

- Disassembly, recycling and disposal at end of life
- Optimal installation, use and maintenance of fans

 are freely downloadable from

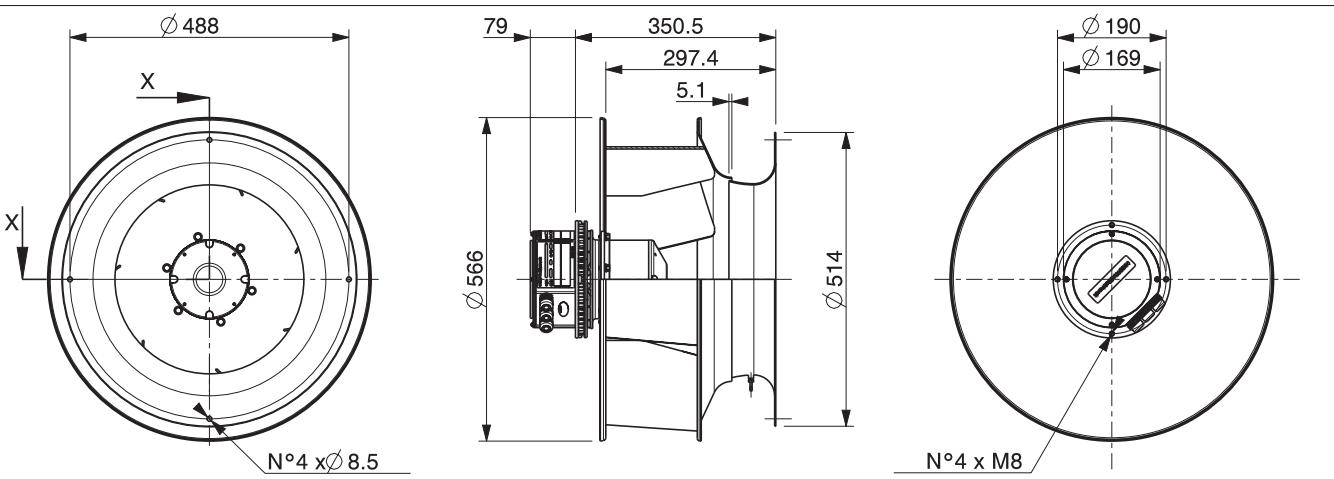
[www.nicotra-gebhardt.com](http://www.nicotra-gebhardt.com)

Testing is carried out with the optional components of the test airway required, according to ISO 5801:2007, for the installation type detailed here on top.

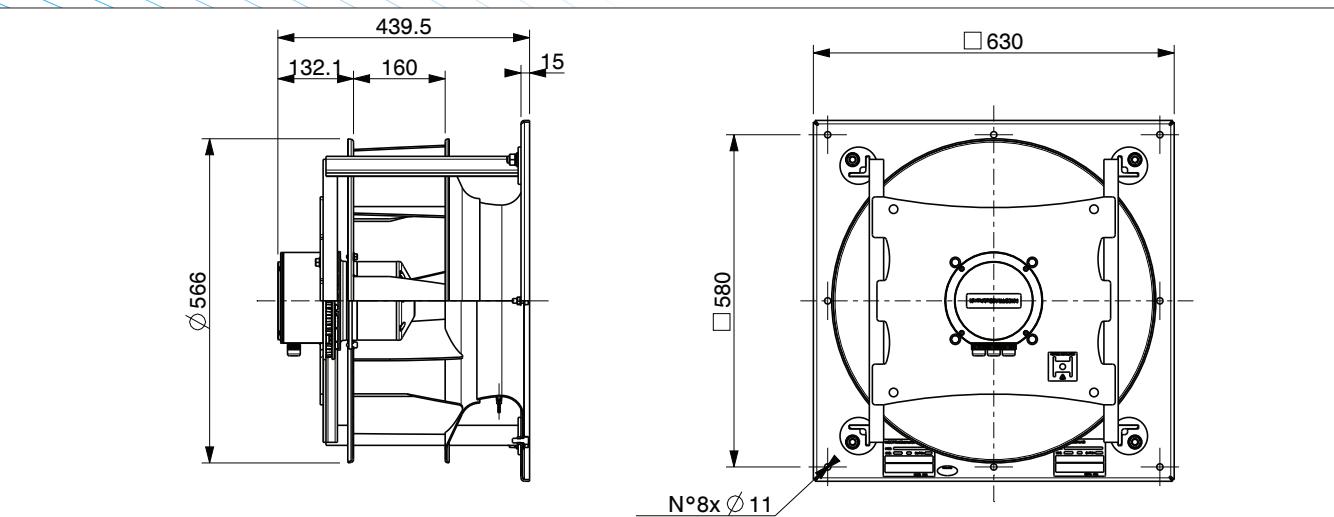
WIRING DIAGRAM		NOISE DATA																																																																																																																																																																																																																																								
<p>V — BROWN U — GREY W — BLACK PE — Y/GREEN</p>		<table border="1"> <thead> <tr> <th>Working point</th> <th>m³/h</th> <th>63</th> <th>125</th> <th>250</th> <th>500</th> <th>1k</th> <th>2k</th> <th>4k</th> <th>8kHz</th> <th>LwA</th> </tr> </thead> <tbody> <tr><td>230 V / 50 Hz</td><td>3945</td><td>70,9</td><td>79,8</td><td>76,4</td><td>73,3</td><td>69,4</td><td>65,7</td><td>62,7</td><td>56,0</td><td>75,5</td></tr> <tr><td>F.M.W.L.</td><td>5231</td><td>67,2</td><td>79,6</td><td>74,4</td><td>71,0</td><td>70,5</td><td>65,8</td><td>59,8</td><td>56,7</td><td>74,8</td></tr> <tr><td></td><td>7122</td><td>63,5</td><td>79,2</td><td>83,2</td><td>78,1</td><td>70,4</td><td>67,1</td><td>59,2</td><td>56,5</td><td>79,2</td></tr> <tr><td></td><td>8076</td><td>65,5</td><td>78,6</td><td>82,4</td><td>85,7</td><td>70,5</td><td>69,9</td><td>60,2</td><td>57,9</td><td>83,8</td></tr> <tr><td>230 V / 50 Hz</td><td>3488</td><td>70,8</td><td>83,5</td><td>76,5</td><td>69,3</td><td>66,1</td><td>63,0</td><td>61,6</td><td>52,9</td><td>74,1</td></tr> <tr><td>1200 rpm</td><td>4811</td><td>63,0</td><td>75,8</td><td>75,6</td><td>66,9</td><td>65,4</td><td>63,3</td><td>57,1</td><td>53,6</td><td>71,9</td></tr> <tr><td></td><td>6562</td><td>64,1</td><td>72,6</td><td>73,5</td><td>67,0</td><td>66,1</td><td>64,6</td><td>56,5</td><td>53,6</td><td>71,6</td></tr> <tr><td></td><td>7299</td><td>64,2</td><td>75,6</td><td>73,5</td><td>68,7</td><td>66,6</td><td>66,5</td><td>57,0</td><td>54,3</td><td>72,8</td></tr> <tr><td>230 V / 50 Hz</td><td>2850</td><td>69,2</td><td>79,0</td><td>71,1</td><td>67,1</td><td>63,1</td><td>60,2</td><td>54,4</td><td>47,3</td><td>70,2</td></tr> <tr><td>1000 rpm</td><td>3929</td><td>61,7</td><td>73,5</td><td>70,3</td><td>64,9</td><td>61,9</td><td>59,3</td><td>51,2</td><td>49,0</td><td>68,2</td></tr> <tr><td></td><td>5514</td><td>63,3</td><td>68,0</td><td>69,0</td><td>64,8</td><td>63,3</td><td>59,8</td><td>51,3</td><td>48,1</td><td>68,1</td></tr> <tr><td></td><td>6026</td><td>67,1</td><td>67,7</td><td>71,0</td><td>65,8</td><td>63,8</td><td>60,5</td><td>51,6</td><td>48,7</td><td>69,0</td></tr> <tr><td>230 V / 50 Hz</td><td>2389</td><td>73,0</td><td>62,3</td><td>63,0</td><td>59,8</td><td>55,8</td><td>56,3</td><td>46,7</td><td>39,7</td><td>62,7</td></tr> <tr><td>800 rpm</td><td>3178</td><td>61,4</td><td>58,8</td><td>63,4</td><td>58,8</td><td>56,3</td><td>54,2</td><td>48,6</td><td>40,9</td><td>62,0</td></tr> <tr><td></td><td>4387</td><td>62,3</td><td>59,8</td><td>66,2</td><td>57,7</td><td>58,1</td><td>54,2</td><td>46,3</td><td>40,6</td><td>63,0</td></tr> <tr><td></td><td>4829</td><td>65,5</td><td>63,0</td><td>67,8</td><td>59,9</td><td>59,7</td><td>55,7</td><td>46,1</td><td>41,9</td><td>64,6</td></tr> <tr><td>230 V / 50 Hz</td><td>881</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td></tr> <tr><td>300 rpm</td><td>1175</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td></tr> <tr><td></td><td>1600</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td></tr> <tr><td></td><td>1773</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td><td>N.A.</td></tr> </tbody> </table>		Working point	m³/h	63	125	250	500	1k	2k	4k	8kHz	LwA	230 V / 50 Hz	3945	70,9	79,8	76,4	73,3	69,4	65,7	62,7	56,0	75,5	F.M.W.L.	5231	67,2	79,6	74,4	71,0	70,5	65,8	59,8	56,7	74,8		7122	63,5	79,2	83,2	78,1	70,4	67,1	59,2	56,5	79,2		8076	65,5	78,6	82,4	85,7	70,5	69,9	60,2	57,9	83,8	230 V / 50 Hz	3488	70,8	83,5	76,5	69,3	66,1	63,0	61,6	52,9	74,1	1200 rpm	4811	63,0	75,8	75,6	66,9	65,4	63,3	57,1	53,6	71,9		6562	64,1	72,6	73,5	67,0	66,1	64,6	56,5	53,6	71,6		7299	64,2	75,6	73,5	68,7	66,6	66,5	57,0	54,3	72,8	230 V / 50 Hz	2850	69,2	79,0	71,1	67,1	63,1	60,2	54,4	47,3	70,2	1000 rpm	3929	61,7	73,5	70,3	64,9	61,9	59,3	51,2	49,0	68,2		5514	63,3	68,0	69,0	64,8	63,3	59,8	51,3	48,1	68,1		6026	67,1	67,7	71,0	65,8	63,8	60,5	51,6	48,7	69,0	230 V / 50 Hz	2389	73,0	62,3	63,0	59,8	55,8	56,3	46,7	39,7	62,7	800 rpm	3178	61,4	58,8	63,4	58,8	56,3	54,2	48,6	40,9	62,0		4387	62,3	59,8	66,2	57,7	58,1	54,2	46,3	40,6	63,0		4829	65,5	63,0	67,8	59,9	59,7	55,7	46,1	41,9	64,6	230 V / 50 Hz	881	N.A.	300 rpm	1175	N.A.		1600	N.A.		1773	N.A.																																
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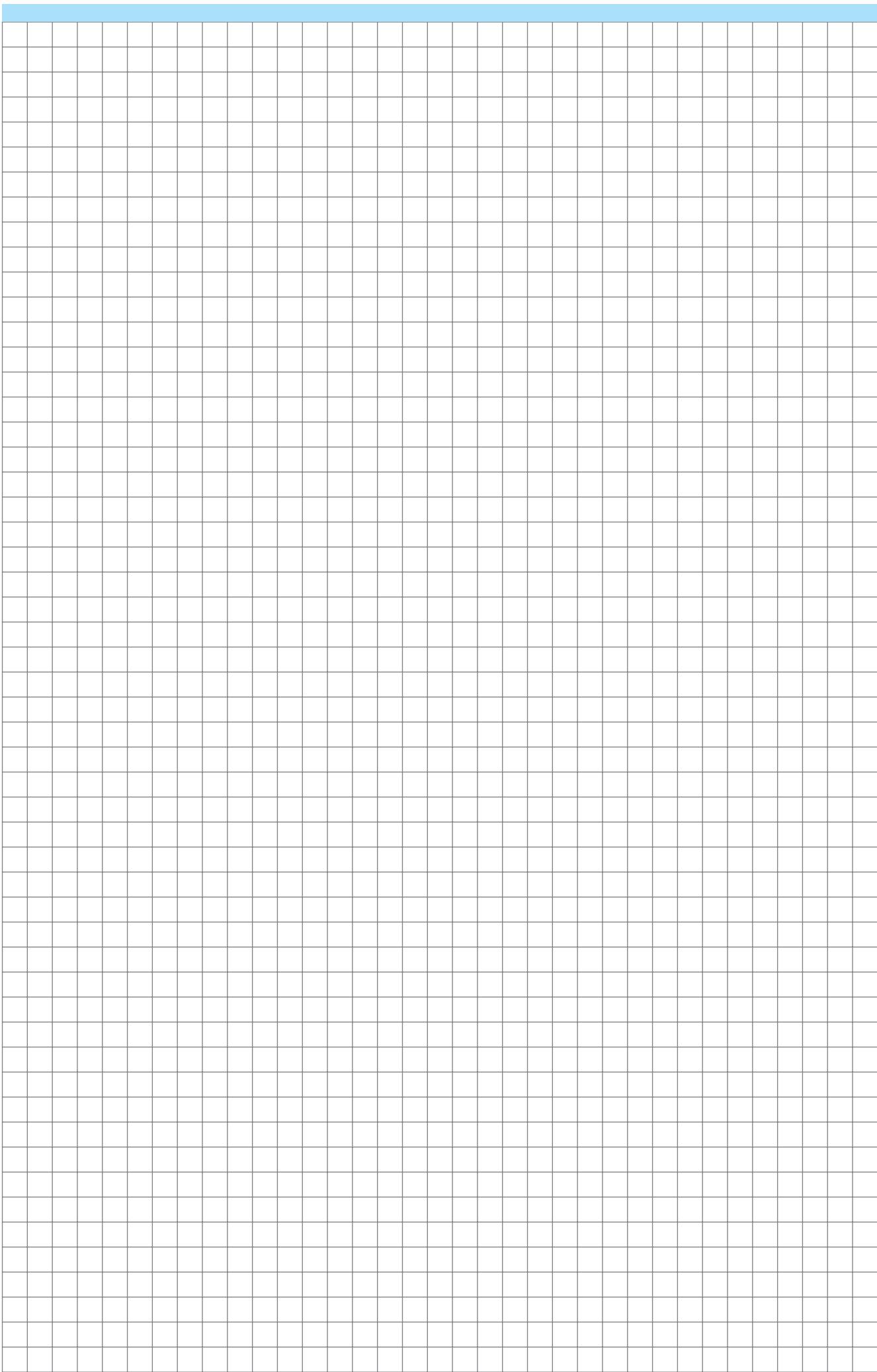
### DIMENSIONAL DRAWINGS

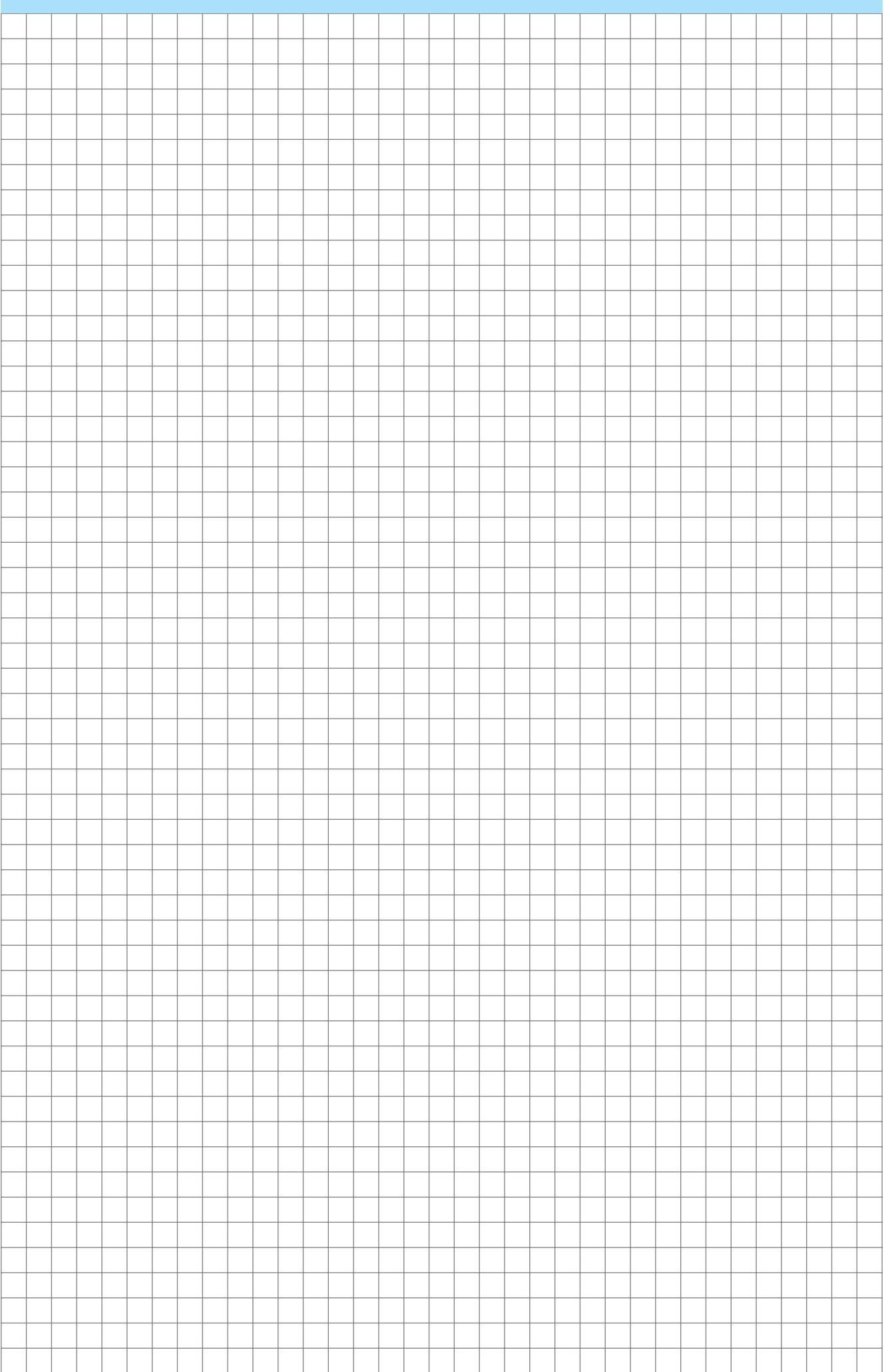
S80514- PFP A1-0500 M6F2



S80525BQE – PFP A3-0500 1F M6F2 BQE







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