

Product Data Sheet 8314 NHR

**ebmpapst**

The engineer's choice



8314 NHR

INDEX

<b>1</b>	<b>General</b> .....	<b>3</b>
<b>2</b>	<b>Mechanics</b> .....	<b>3</b>
2.1	General.....	3
2.2	Connections.....	3
<b>3</b>	<b>Operating Data</b> .....	<b>5</b>
3.1	Electrical Operating Data .....	5
3.2	Electrical Features .....	5
3.3	Aerodynamics.....	7
3.4	Sound Data.....	8
<b>4</b>	<b>Environment</b> .....	<b>8</b>
4.1	General.....	8
4.2	Climatic Requirements .....	8
<b>5</b>	<b>Safety</b> .....	<b>9</b>
5.1	Electrical Safety .....	9
5.2	Approval Tests .....	9
<b>6</b>	<b>Reliability</b> .....	<b>9</b>
6.1	General.....	9

**1 General**

Fan type	Fan	
Rotating direction looking at rotor	Counterclockwise	
Airflow direction	Air outlet over struts	
Bearing system	Ball bearing	
Mounting position - shaft	Any	

**2 Mechanics****2.1 General**

Width	80,0 mm	
Height	80,0 mm	
Depth	32 mm	
Mass	0,1 kg	
Housing material	Plastic	
Impeller material	Plastic	
Max. torque when mounted across both mounting flanges Screw size	Wire outlet corner: 100 Ncm Remaining corners: 100 Ncm ISO 4762 - M4 degreased, without an additional brace and without washer	

**2.2 Connections**

Electrical connection	Wires	
Lead wire length	L = 310 mm	
Tolerance	+ - 10,0 mm	



Wire	Color	Operation	Wire size	Insulation diameter
1	red	+ UB	AWG 26	1,35 mm
2	blue	- GND	AWG 26	1,35 mm

### 3 Operating Data

#### 3.1 Electrical Operating Data

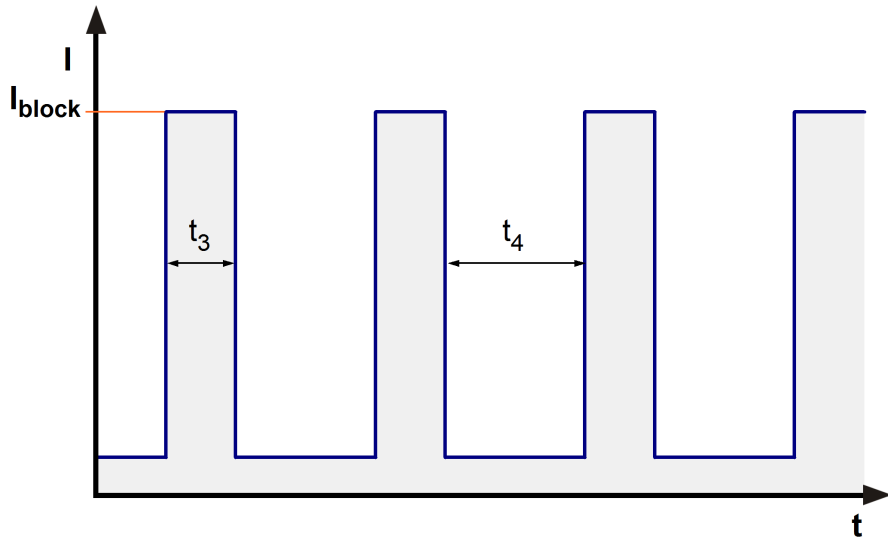
Measurement conditions: Normal air density = 1,2 kg/m<sup>3</sup>; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area should not be any solid obstruction within 0,5 m.

$\Delta p = 0$ : corresp. to free air flow (see chapter aerodynamics)  
I: corresp. to arithm. mean current value

Features	Condition	Symbol	Values		
Voltage range		U	12 V		28 V
Nominal voltage		$U_N$		24 V	
Power consumption	$\Delta p = 0$	P	1 W	3,6 W	5 W
Tolerance	0010		+/- 17,5 %	+/- 12,5 %	+/- 15 %
Current consumption	$\Delta p = 0$	I	75 mA	150 mA	180 mA
Tolerance	0010		+/- 17,5 %	+/- 12,5 %	+/- 15 %
Speed	$\Delta p = 0$	n	2.700 1/min	5.300 1/min	6.100 1/min
Tolerance	0010		+/- 12,5 %	+/- 7,5 %	+/- 10 %
Starting current consumption				1.100 mA	

#### 3.2 Electrical Features

Electronic function	None	
Reversed polarity protection	Rectifying diode	
Max. residual current at $U_N$	$I_F \leq 500 \mu A$	
Locked rotor protection	Auto restart	
Locked rotor current at $U_N$	$I_{block}$ approx. 1.100 mA	
Clock signal at locked rotor	$t_3 / t_4$ typical: 0,16 s / 11,8 s	



### 3.3 Aerodynamics

Measurement conditions:

Measured with a double chamber intake rig acc. to DIN EN ISO 5801.

Normal air density = 1,2 kg/m<sup>3</sup>; Temperature 23°C +/- 3°C;

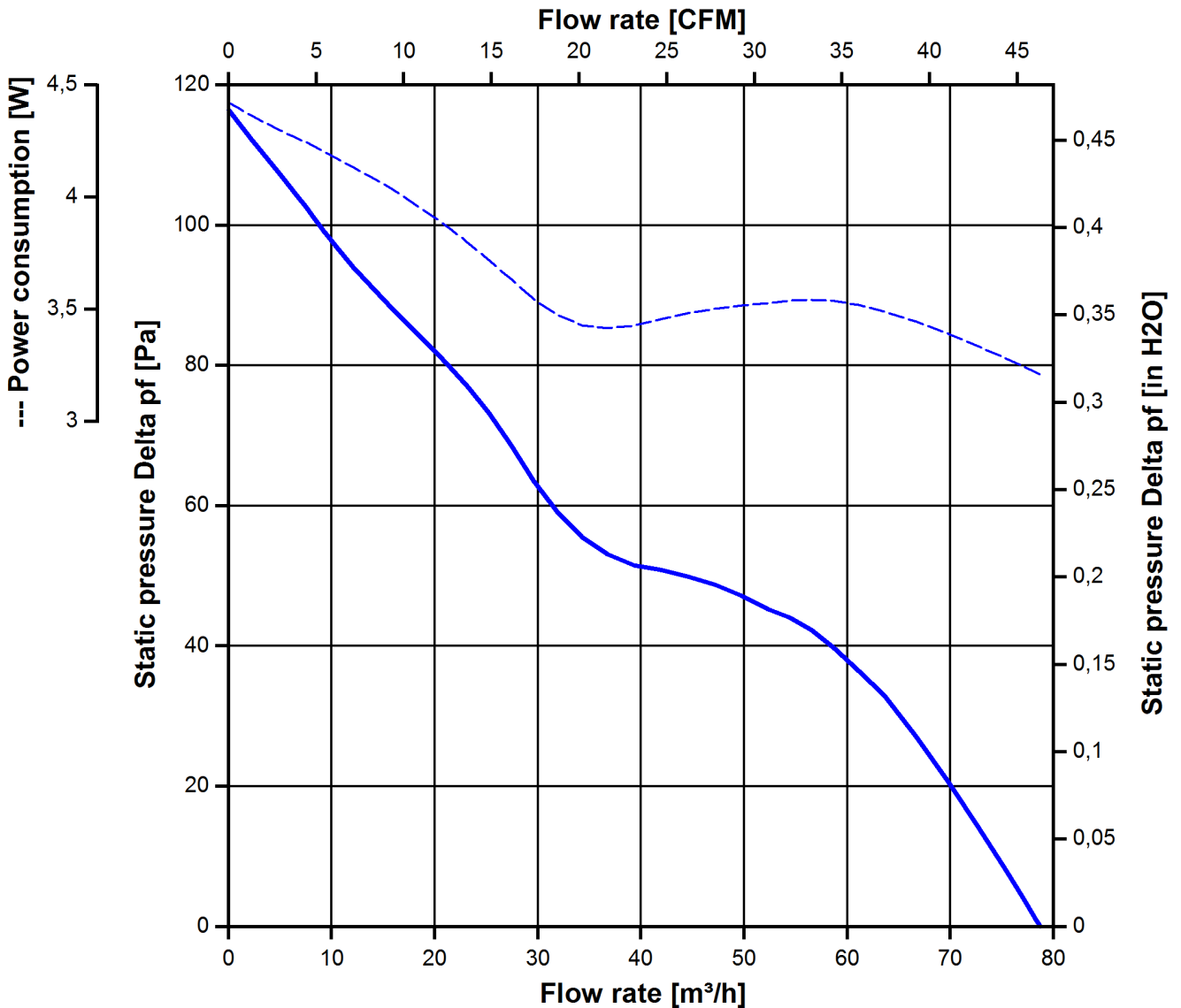
In the intake and outlet area should not be any solid obstruction within 0,5 m. Motor shaft horizontal.

The information is only valid under the specified test conditions and may be changed by the installation conditions. If there are deviations from the standard test conditions, the characteristic values must be checked under the installed conditions. Power consumption of the fan motor when operating at normal voltage is shown. Depending on the operating conditions of the application, the power input may be higher.

a.) Operation condition:

5.300 1/min at free air flow

Max. free-air flow ( $\Delta p = 0 / \dot{V} = \text{max.}$ )	78 m <sup>3</sup> /h	
Max. static pressure ( $\Delta p = \text{max.} / \dot{V} = 0$ )	116 Pa	



**3.4 Sound Data**

Measurement conditions: Sound pressure level: 1 meter distance between microphone and the air intake.  
 Sound power level: According to DIN 45635 Part 38 (ISO 10302)  
 Measured in a semianchoic chamber with a background noise level of  $L_p(A) < 5 \text{ dB(A)}$   
 For further measurement conditions see chapter aerodynamics.

a.) Operation condition:

5.300 1/min at free air flow		
Optimal operating point	65 m <sup>3</sup> /h @ 25 Pa	
Sound power level at the optimal operating point	5,3 bel(A)	
Sound pressure level at free air flow, measured in rubber bands	43 dB(A)	

**4 Environment**

**4.1 General**

Min. permitted ambient temperature TU min.	-20 °C	
Max. permitted ambient temperature TU max.	75 °C	
Min. permitted storage temperature TL min.	-40 °C	
Max. permitted storage temperature TL max.	80 °C	

**4.2 Climatic Requirements**

Humidity requirements	humid heat, cyclic; according to DIN EN 60068-2-30, 6 cycle	
Water exposure	None	
Dust requirements	Dust check; according to DIN EN 60068-2-68, 6g/m <sup>2</sup> d, 1 day	
Salt fog requirements	None	

Permitted application area:

The product is for the use in sheltered rooms with limited controlled temperature. Occasionally condensed water is allowed. Direct exposure to water must be avoided. Saline ambient conditions must be avoided.

Pollution degree 2 (according DIN EN 60664-1)

It occurs only non-conductive pollution. Occassionally, temporary conductivity caused by condensation occurs.

Please require severity levels and specification parameters from the responsible development departments.



**5 Safety**

**5.1 Electrical Safety**

Dielectric strength DIN EN 60950 (VDE 0805) and DIN EN 60335 (VDE 0700) A.) Type test Measuring conditions: After 48h of storage at 95% R.H. and 25°C. No arcing or breakdown is allowed! All connections together to ground.	500 VAC / 1 Min.	
B.) Routine test Measuring conditions: At indoor climate. No arcing or breakdown is allowed! All connections together to ground.	850 VDC / 1 Sec.	
Isolation resistance Measuring conditions: After 48h of storage at 95% R.H. and 25°C measured with U=500 VDC for 1 min.	RI > 10 MOhm	
Clearance / creepage distance	1,0 mm / 1,2 mm	
Protection class	III	

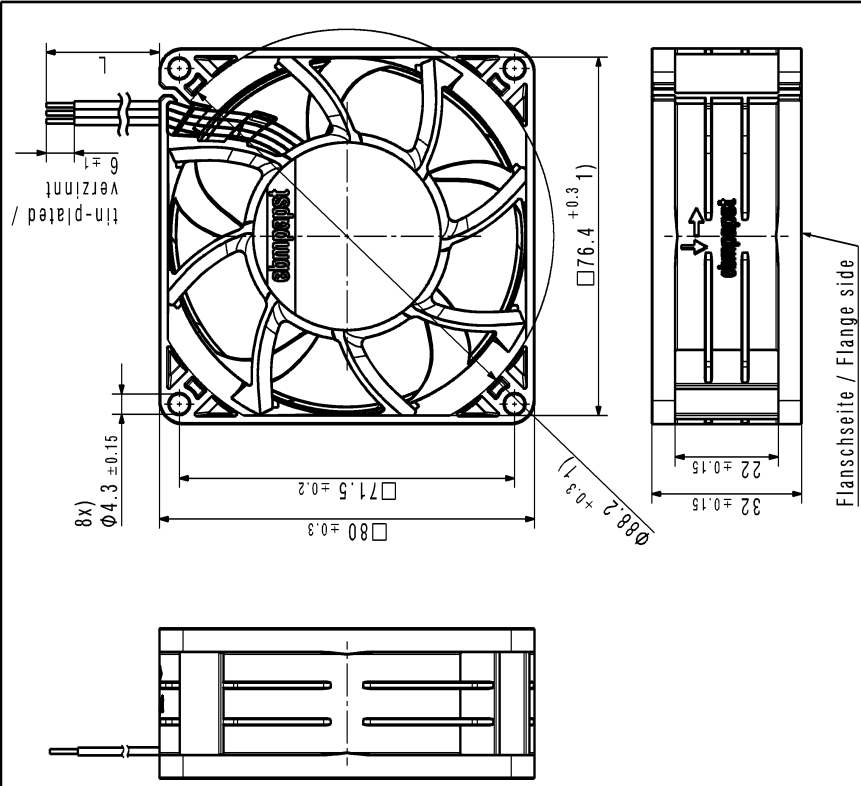
**5.2 Approval Tests**

CE	EC Declaration of Conformity	Yes
EAC	Eurasian Conformity	Yes
UL	Underwriters Laboratories	Yes / UL507, Electric Fans
VDE	Association for Electrical, Electronic and Information Technologies	Yes / Approval acc. to EN 60950 (VDE 0805) - Information technology equipment
CSA	Canadian Standards Association	Yes / C22.2 No. 113 Fans and Ventilators
CCC	China Compulsory Certification	Not applicable

**6 Reliability**

**6.1 General**

Life expectancy L10 at TU = 40 °C	82.500 h	
Life expectancy L10 at TU max.	32.500 h	
Life expectancy L10 acc. to IPC 9591 at TU = 40 °C	140.000 h	



- 1) Maße für Montagewand / Dimensions for assembly wall
- Kein Axialspiel der Kugellager durch Federausgleich / no axial clearance of ball bearings due to a pre-load spring
  - Anzahl und Länge der Litzen siehe Produktspezifikation Blatt 1
- Number and length of the wires see design specification sheet 1

	Datum / State / Document-Date DATE / Version / CAD-Environment 5229101 / CP800A	CAD-Modell / CAD-Environment 5229101 / CP800A	Name / Name Dia LUM	Volumen / Volume (cm <sup>3</sup> ): Gewicht / Mass (g):
	Zeichnung / Drawing Gepr. / Checked Zeichnung / Drawing	3D-Referenzmodell / 3D-Referenzmodell Name	Artikel / Title: Zöhp.-Nr. / Drawing No.:	Ers.-Zöhp. / Replaces: Ersatzteil / Replacement Part:
Toleranzangabe / Tolerance: Ø	Allgemeinanzug / gen. Tolerances: Toleranzangabe / Tolerance: Ø	Zeichnung / Drawing Gepr. / Checked Zeichnung / Drawing	Zeichnung / Drawing Gepr. / Checked Zeichnung / Drawing	Form / Size: Maßstab / Scale <b>A</b>
			ebmpapst ebm-papst St. Georgen GmbH & Co KG	

Copyright of this document, and giving it others and the use or communication of the contents thereof, are forbidden without express authority. Orders are liable to the payment of damages. All rights are reserved in the event of the grant of a patent or the registration of a utility model or design.

Schutzvermerk nach DIN ISO 15018:1978 beachten!  
 Refer to protection notice DIN ISO 15018:1978!