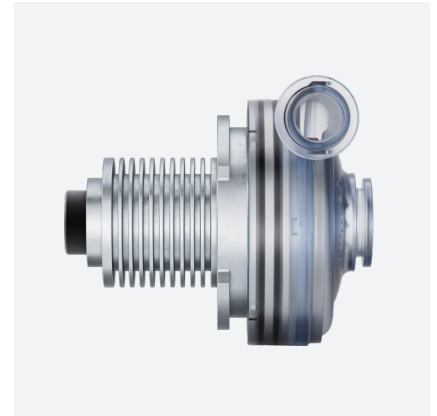


Specification

Radial Blower U65HN-024KS-6



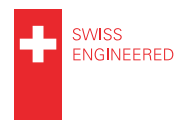
General Information

Item

Product type	Radial blower
Part no.	U65HN-024KS-6
Customer	N/A
Project no.	N/A
Modification	Standard product

Description

This efficient and super silent high performance blower has been specifically designed for demanding intensive care ventilation or neonatology, where maximum dynamics and 100% oxygen resistance are required. U65HN, as well as U65MN and U65ML is a member of the U65 FORM FIT LINE, which provides a uniform pressure and flow behaviour and mounting concept.



Features

- Static pressure: 95 hPa, freeflow: 435 l/min
- 24 V_{DC} brushless DC-motor
- Very quiet operation and highly efficient
- Low inertia rotor
- High frequency oscillatory ventilation at 10-12 Hz
- O₂ resistant

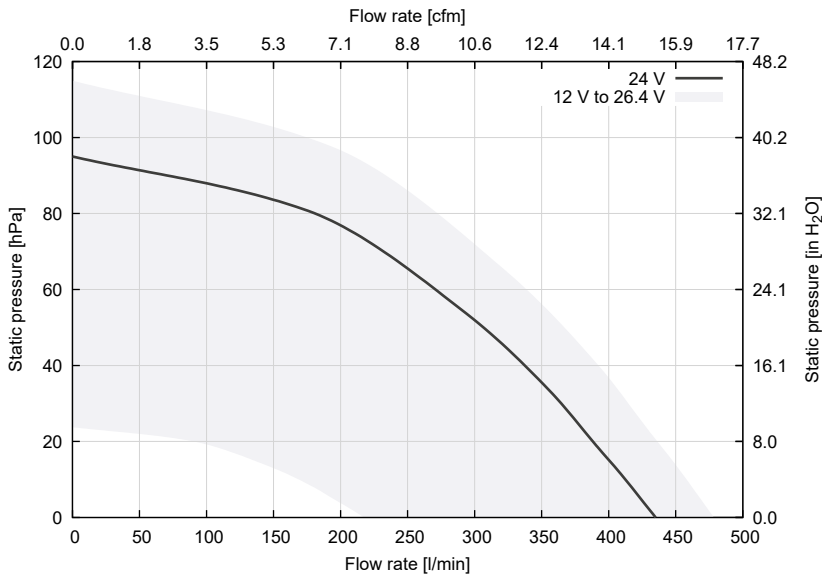


General Conditions

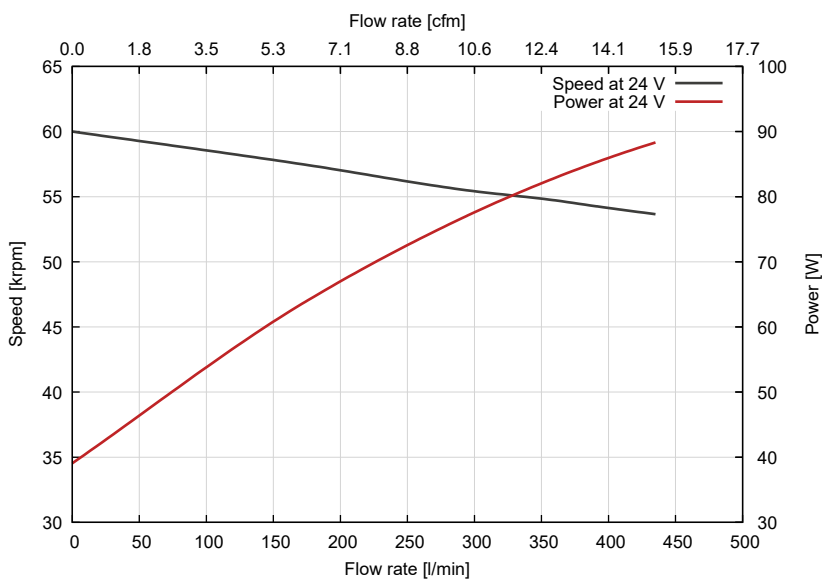
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m³ standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized inlet and outlet chambers. Tolerances based on specified speed data according to ISO 13348, grade 4: pressure +/-10 %, power +16 %. Tolerances based on constant voltage: speed +/-10 %, pressure +/-21 %, power +33 %. For continuous blower operation please refer to specified maximum ratings. Performance data outside normal operating range plotted for information only.

Performance

Pressure vs. Flow Characteristics



Speed and Power vs. Flow Characteristics



Shut-Off in Pressure Operation (Zero Flow Rate)

	Unit	Value
Static pressure	[hPa]	95
Power consumption	[W]	40
Speed	[rpm]	60 000

Shut-Off in Vacuum Operation (Zero Flow Rate)

Static pressure	[hPa]	89
Power consumption	[W]	40
Speed	[rpm]	60 000

Free-Air (Zero Static Pressure)

Flow rate	[l/min]	435
Power consumption	[W]	90
Speed	[rpm]	54 000

Technical Data

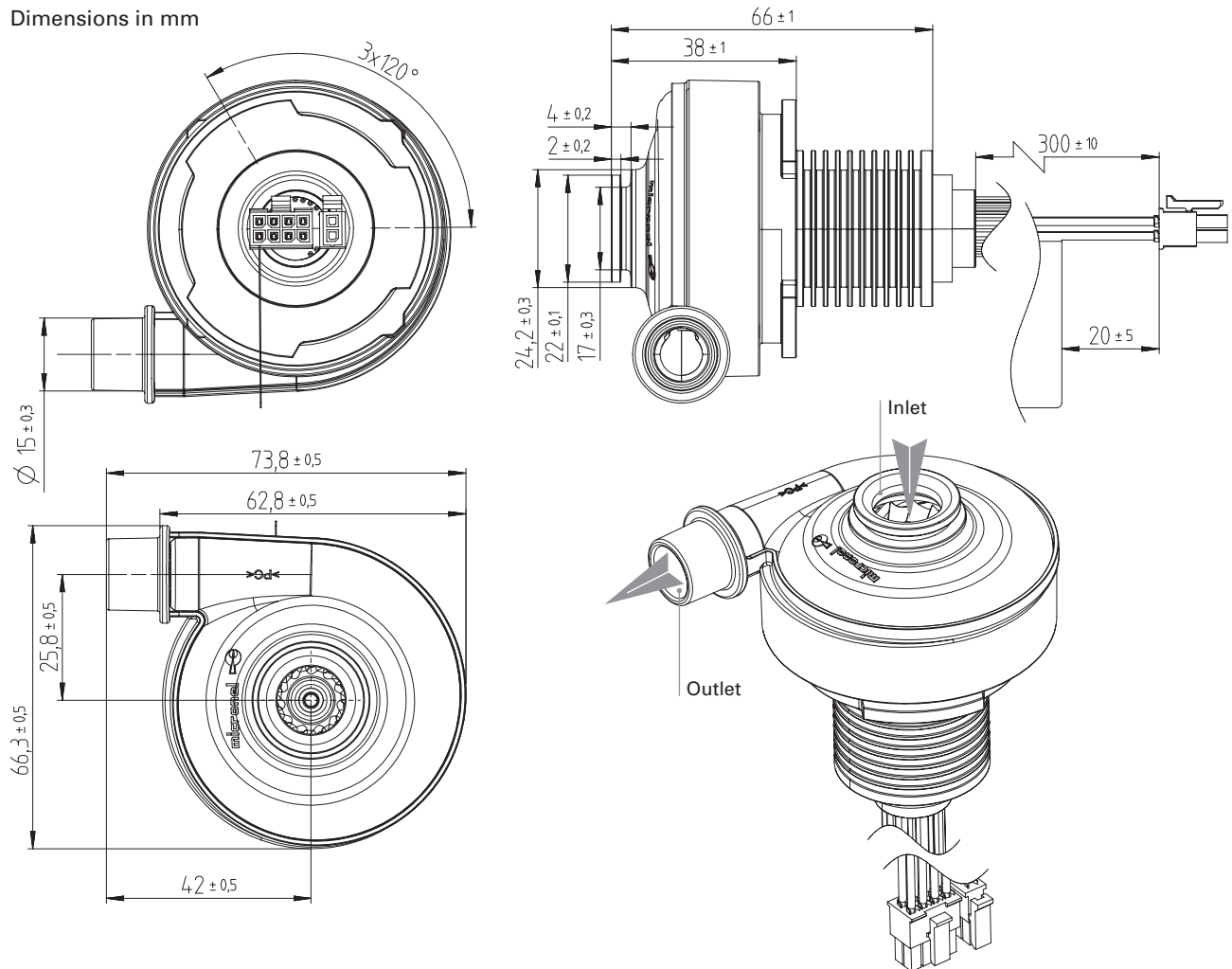
Electrical	Unit	Value
Nominal supply voltage	[V _{DC}]	24
Supply voltage range	[V _{DC}]	12 to 26.4
Maximum Ratings for Continuous Operation		
Minimum flow rate	[l/min]	10
Maximum speed	[rpm]	60 000
Maximum acceleration	[rpm/ms]	400
Maximum power consumption	[W]	90
Maximum housing surface temperature	[°C]	70
Maximum NTC temperature	[°C]	N/A
Environmental		
Ambient temperature (operating)	[°C]	-20 to 50
Ambient temperature (storage)	[°C]	-20 to 70
Relative humidity (non-condensing)	[%RH]	10 to 95 (non condensing)
Ingress protection (EN60529)		IP10
Maximum oxygen concentration	[%]	100
Motor		
Type		Brushless direct current motor with Hall sensors
Winding insulation class		F, 155 °C
Phase to phase resistance	[Ω]	0.238
Phase to phase inductance	[mH]	0.0202
Speed constant	[rpm/V]	2550
Torque constant	[mNm/A]	3.74
Number of pole pairs		1
Hall sensor type		Allegro A 1220
NTC type		R ₂₅ = 10 kΩ +/- 1 % B _{25/85} = 3490 K -40 °C to 125 °C
Lifetime		
L10 at 25 °C ambient temperature ⁽¹⁾	[h]	> 60 000
Acoustics		
Sound pressure level ⁽²⁾	[dB(A)]	47
Leak Tightness		
Maximum leak flow rate	[l/min]	N/A
Mechanical		
Blower weight	[g]	240
Rotor weight	[g]	19
Rotor moment of inertia	[g · cm ²]	6.12

⁽¹⁾ Calculated value. Accelerated aging test ongoing at 45 °C ambient temperature, continuous operation 40000 rpm @ 45 hPa / 45 l/min and normal cleanliness according to ISO 281. Temperature dependency of lifetime according to IPC-9591: factor 1.5 per 10 °C.

⁽²⁾ Measured at distance of 1 meter from inlet, with open inlet, outlet connected to breathing tube and 4 mm orifice in sound cancellation box at 1 kPa.

Drawings

Dimensions in mm



Orientations

Direction of rotation	↻ Counter-clockwise (view on inlet)
Mounting position	Any direction

Materials

Components	Material
Blower housing	Polycarbonate (PC) Flammability: Glow wire flammability index 850 °C / 1 mm (IEC 60695-2-12) Biocompatibility: USP Class VI / ISO 10993-5
Impeller	PEEK glass fibre reinforced Flammability: Glow wire flammability index 960 °C / 2 mm (IEC 60695-2-12) Biocompatibility: ISO 10993-5
Hub	Brass
Motor housing	Aluminum
Label	Plastic
Connector	Molex 43025-0800/43025-0200
Crimp terminal	Pin 1, 2, 3, 5, 6, 9, 10 Molex 43030-0005 Pin 4, 7, 8 Molex 43030-0002
Lead wire	PVC insulated AWG 22/26 Flammability: UL 1007/1569

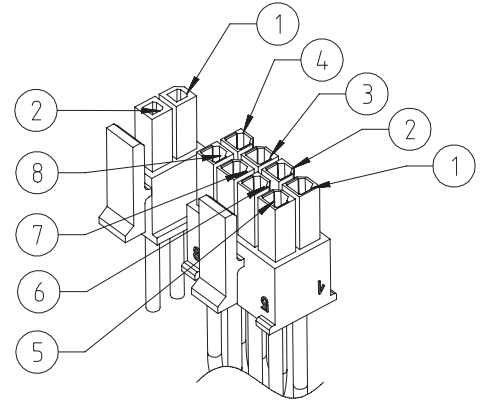
Identification

Label

Design	Part number		Nominal voltage
	Identification number: • Year, calendar week (YYWW) • Fabrication number (6 digits) • Serial number (3 digits)		

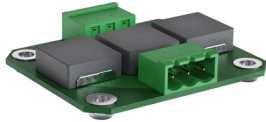
Blower Pinout

Pin	Color	Descripti1	AWG
1	Yellow	Hall sensor 1	26
2	Brown	Hall sensor 2	26
3	Orange	V_{Hall} 4.5 to 24 V_{DC}	26
4	White	Motor winding 3	22
5	Grey	Hall sensor 3	26
6	Blue	GND	26
7	Red	Motor winding 1	22
8	Black	Motor winding 2	22
1	Purple	NTC	26
2	Purple	NTC	26



Accessories

Not included!



Micronel Choke Module MCM-33/10 S0500-00001

In order to run a low inductance motor with Micronel Driver Electronics (MDB-48/10, MDM-48/10, MSDM-24/10) it is advisory to use the Choke Module to reduce ripple currents. The module comes with mating connectors.

Properties

- 3 coils with 33 μH inductance for each phase, Currents: 10.7 A_{RMS} / 15 A_{Sat}
- Reduction of ripple currents
- Raises system efficiency
- Reduces unwanted power dissipation and heat generation in the internals of the motor
- Improves EMC
- Extends lifetime of the fan
- Two Amphenol Anytek 20020110-H031A01LF PCBA terminal blocks
- Two Amphenol Anytek 20020006-H031B01LF mating connectors included

Parameters

Size	60 x 50 x 13 mm	
Recommended for the blowers	Micronel Radial Blower	U65HN-024KS-6, U71HN-024KX-6



Handle in power-off conditions only!
Read operating manual!



Please see separate accessories list or contact Micronel Sales for a full list of options and accessories.