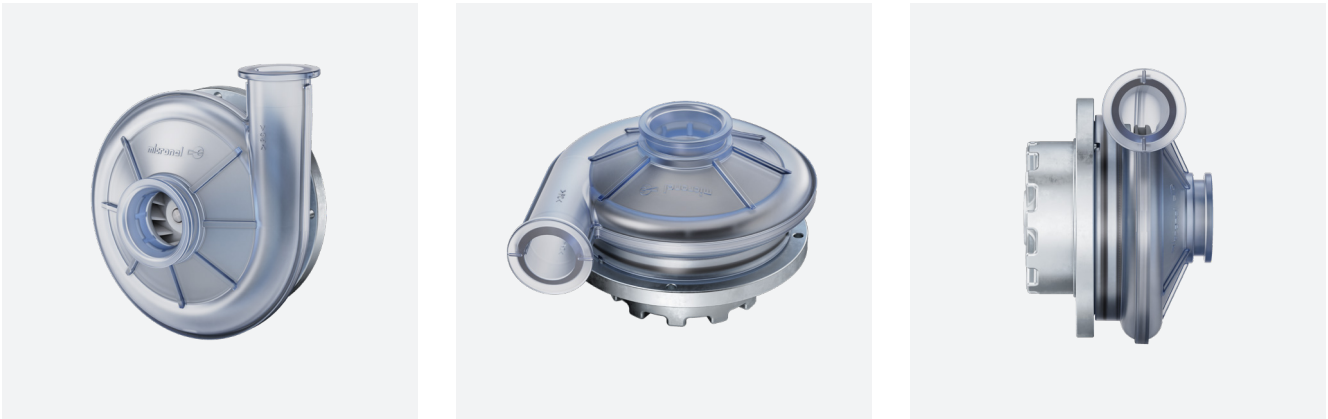


Specification

Radial Blower U85MX-024KE-5



General Information

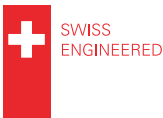
Item	
Product type	Radial blower
Part no.	U85MX-024KE-5
	U85MX-024KE-51 with inlet port (option)
	U85MX-024KE-52 with outlet port (option)
	U85MX-024KE-53 with inlet and outlet port (option)
Customer	N/A
Project no.	N/A
Modification	Standard product

Description

The versatile, high-power blower can be widely used for industrial or medical applications, where highest vacuum or pressure performance is needed, i.e. for cough therapy, dental suction, vacuum handling and many more.

Features

- Static pressure: 123 hPa, freeflow: 860 l/min
- 21 V_{DC} brushless motor with Hall sensors
- Highly efficient, quiet operation
- Mounting flange with threads
- Molex connector
- 40% oxygen resistant airway

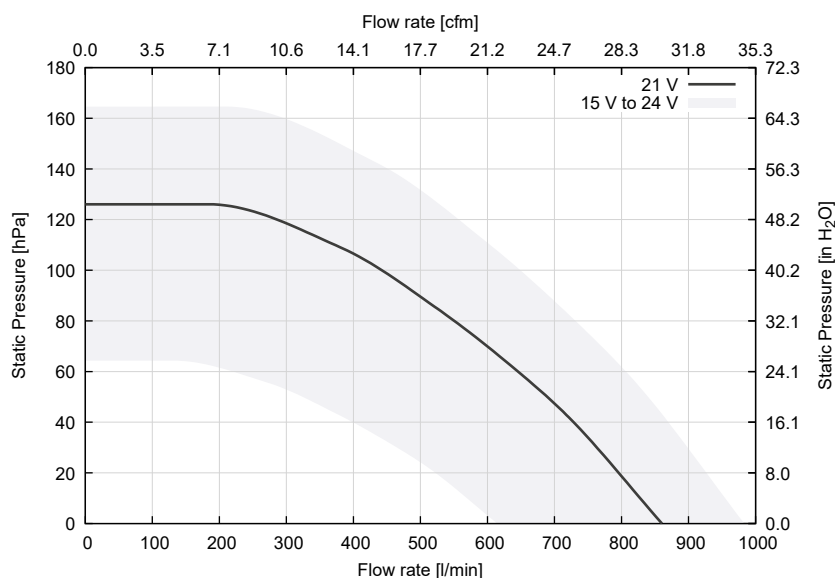


General Conditions

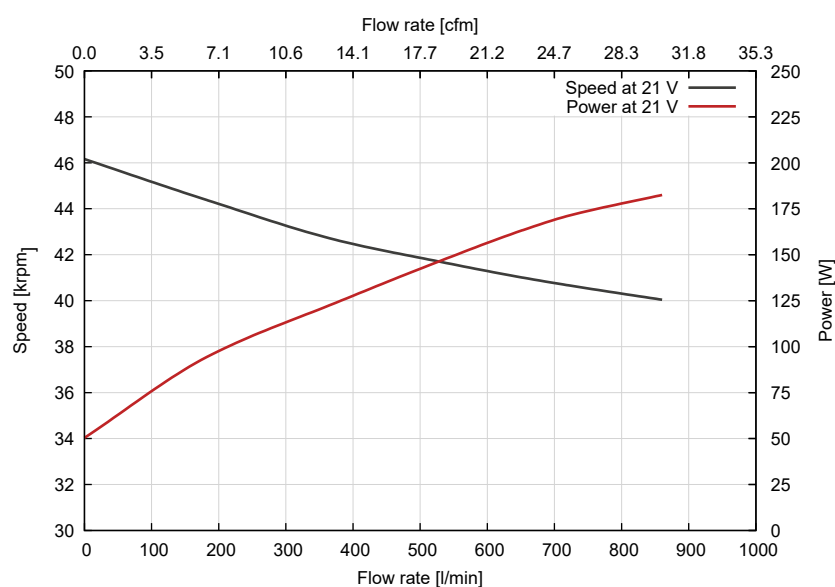
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m³ standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized 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]	123
Power consumption	[W]	51
Speed	[rpm]	46160

Shut-Off in Vacuum Operation (Zero Flow Rate)

Static pressure	[hPa]	114
Power consumption	[W]	48
Speed	[rpm]	45760

Free-Air (Zero Static Pressure)

Flow rate	[l/min]	860
Power consumption	[W]	183
Speed	[rpm]	40040

Technical Data

Electrical	Unit	Value
Nominal supply voltage	[V _{DC}]	21
Supply voltage range	[V _{DC}]	15 to 24
Maximum Ratings for Continuous Operation		
Minimum flow rate	[l/min]	80
Maximum speed	[rpm]	45 000
Maximum acceleration	[rpm/ms]	100
Maximum power consumption	[W]	160
Maximum housing surface temperature	[°C]	65
Maximum NTC temperature	[°C]	N/A
Environmental		
Ambient temperature (operating)	[°C]	-20 to 45
Ambient temperature (storage)	[°C]	-20 to 65
Relative humidity (non-condensing)	[%RH]	10 to 85
Ingress protection (EN60529)		IP40
Maximum oxygen concentration ⁽¹⁾	[%]	21
Motor		
Type		Brushless direct current motor with Hall sensors
Winding insulation class		F, 155 °C
Phase to phase resistance	[Ω]	0.14
Phase to phase inductance	[mH]	0.14
Speed constant	[rpm/V]	2222
Torque constant	[mNm/A]	4.30
Number of pole pairs		1
Hall sensor type		Melexis US3881 L UA 2.2 to 18 V _{DC}
NTC type		N/A
Lifetime		
L10 at 25 °C ambient temperature ⁽²⁾	[h]	20 000
Acoustics		
Sound pressure level ⁽³⁾	[dB(A)]	45
Leak Tightness		
Maximum leak flow rate	[l/min]	N/A
Mechanical		
Blower weight	[g]	295
Rotor weight	[g]	29.9
Rotor moment of inertia	[g · cm ²]	38.4

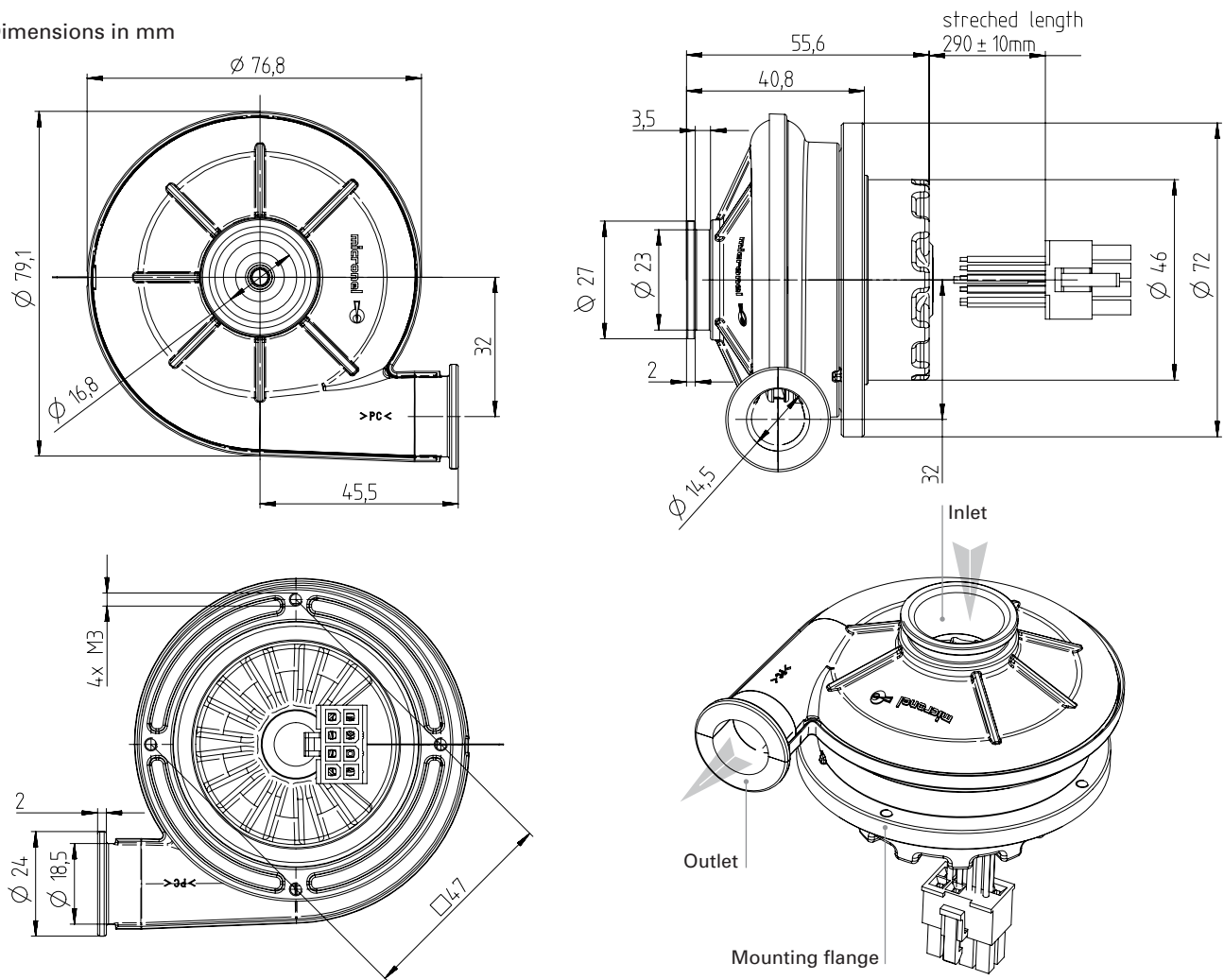
⁽¹⁾ Micronel blowers are designed for various levels of oxygen compatibility. Further information available on request.

⁽²⁾ Accelerated aging test at 45 °C ambient temperature, continuous operation, flow control with 4.5 mm diameter orifice plate at outlet, normal cleanliness according to ISO 281. Temperature dependency of lifetime according to IPC-9591: factor 1.5 per 10 °C.

⁽³⁾ 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
Fan housing	Polycarbonate (PC) Flammability: Glow wire flammability index 850 °C / 1 mm (IEC 60695-2-12) Biocompatibility: USP Class VI / ISO 10993
Impeller	Polyamide (PA6)
Hub	Stainless steel
Motor housing	Zinc die cast Aluminum, anodized, natural color
Label	Plastic
Connector	Molex Mini-Fit 39-01-2080 Flammability: UL 94V-2
Crimp terminal	Molex Mini-Fit 39-00-0038
Lead wire	Silicone insulated cable UL 758 Style 3132

Identification

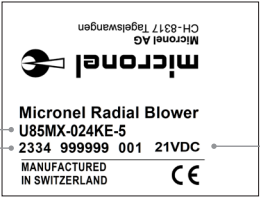
Label

Design

Part number

Identification number:

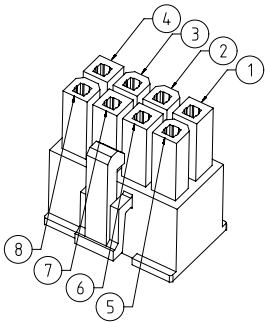
- Year, calendar week (YYWW)
- Fabrication number (6 digits)
- Serial number (3 digits)



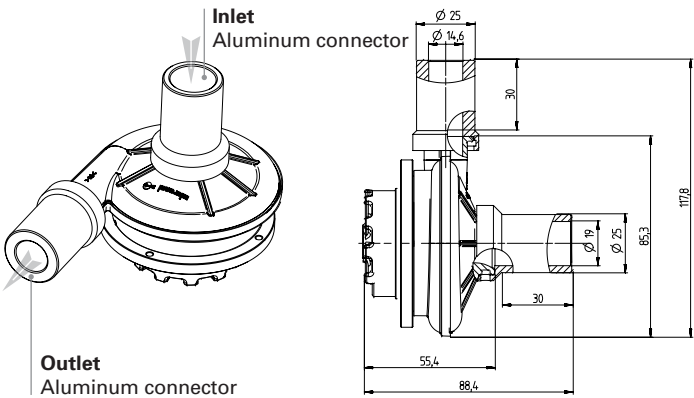
Nominal voltage

Blower Pinout

Pin	Color	Description	AWG
1	Blue	Hall sensor 1	24
2	Black	Hall sensor 2	24
3	Yellow	V _{Hall}	24
4	Orange	Motor winding W	18
5	Grey	Hall sensor 3	24
6	Green	GND	24
7	Brown	Motor winding U	18
8	Red	Motor winding V	18



Options for Inlet and Outlet Connections*



Part no. with options	Inlet	Outlet
U85MX-024KE-5		
U85MX-024KE-51	●	
U85MX-024KE-52		●
U85MX-024KE-53	●	●

* The drawings show inlet and outlet connectors. Both options are independent of each other.

No application of forces on connectors allowed!

Notice



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.

All data are subject to change without advanced notice.
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