

## SPECIFICATION

# Micronel Radial Blower

## U71HL-024KM-4



### GENERAL INFORMATION

#### Item

Product type	Radial blower with integrated electronic motor driver
Article no.	U71HL-024KM-4 U71HL-024KM-41 with inlet port (option) U71HL-024KM-42 with outlet port (option) U71HL-024KM-43 with inlet and outlet port (option)
Manufacturer	Micronel AG
Customer	N/A
Project no.	P84332
Modification	Standard product

### APPLICATIONS

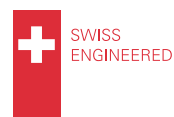
The versatile, high-power Micronel blower type U71HL-024KM-4 can be used for industrial applications, where highest vacuum or pressure performance is needed, i.e. for pick and place applications, particles and liquids suction and many more.

### FEATURES

- Pressure: 69 hPa, flow rate: 470 l/min
- 24 V<sub>DC</sub> brushless DC-motor
- Speed control and tacho frequency signal
- Aluminum heat sink
- Options for in- and outlet ports

### GENERAL CONDITIONS

Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m<sup>3</sup> 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.



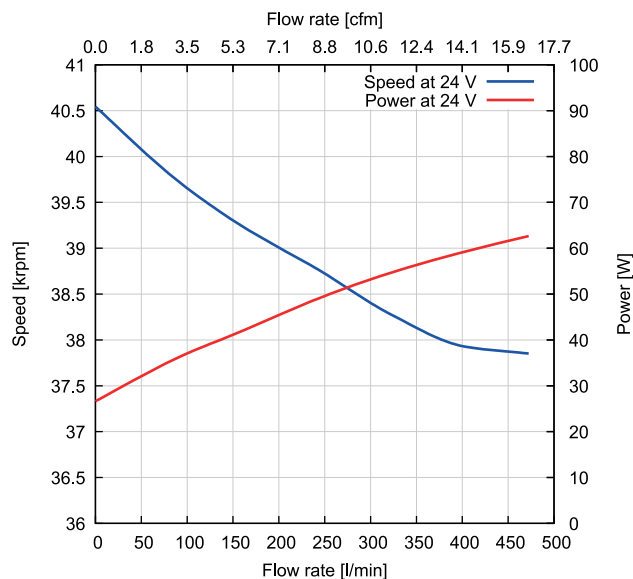
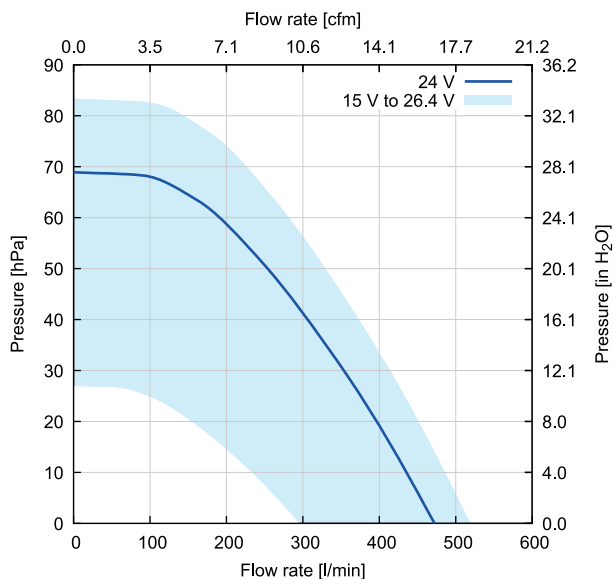
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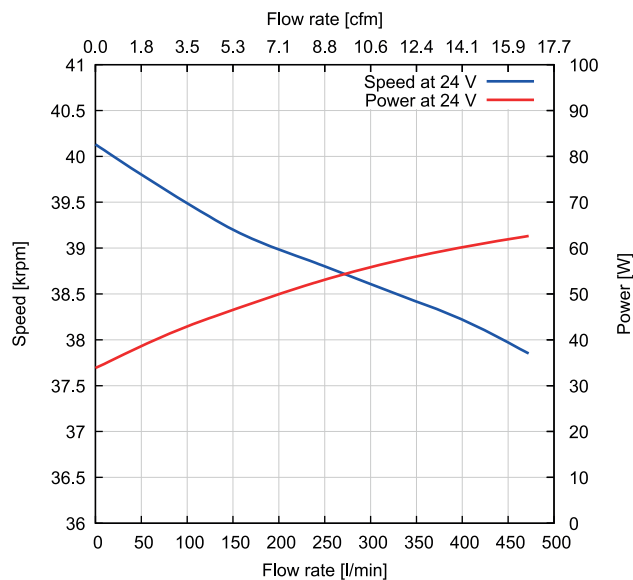
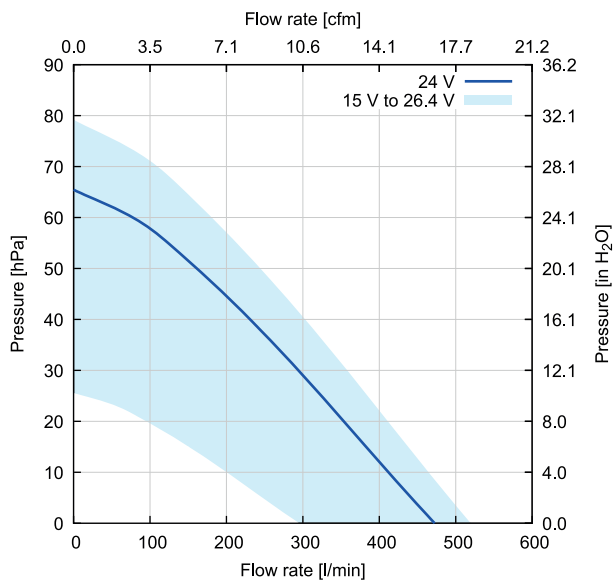
DECLARATION OF  
CONFORMITY  
NON-USE OF  
CONFLICT MINERALS

**PERFORMANCE**

**Pressure Operation at Outlet**



**Vacuum Operation at Inlet**



**Shut-Off in Pressure Operation (Zero Flow Rate)**

	Unit	Value
Static pressure	[hPa]	69
Power consumption	[W]	27
Speed	[rpm]	40 500

**Shut-Off in Vacuum Operation (Zero Flow Rate)**

Static pressure	[hPa]	64
Power consumption	[W]	34
Speed	[rpm]	40 100

**Free-Air (Zero Static Pressure)**

Flow rate	[l/min]	470
Power consumption	[W]	63
Speed	[rpm]	37 900

**TECHNICAL DATA**

<b>Electrical</b>	<b>Unit</b>	<b>Value</b>
Nominal voltage	[V <sub>DC</sub> ]	24
Voltage range	[V <sub>DC</sub> ]	15 to 26.4
Minimum power supply current <sup>(1)</sup>	[A]	N/A
Maximum start-up time	[s]	N/A
Maximum ripple voltage	[%]	5
<b>Maximum Ratings for Continuous Operation</b>		
Minimum flow rate	[l/min]	N/A
Maximum speed	[rpm]	40500
Maximum acceleration	[rpm/ms]	N/A
Maximum power consumption	[W]	63
Maximum housing surface temperature	[°C]	65
Maximum NTC temperature	[°C]	N/A
<b>Environmental</b>		
Ambient temperature (operating)	[°C]	-20 to 45
Ambient temperature (storage)	[°C]	-20 to 45
Relative humidity (noncondensing)	[%RH]	10 to 95
Ingress protection (EN60529)		IP40
Maximum oxygen concentration	[%]	N/A
<b>Motor</b>		
Type		Brushless direct current motor
Winding insulation class		H, 180 °C
NTC typ		N/A
<b>Lifetime</b>		
L10 at 25 °C ambient temperature <sup>(2)</sup>	[h]	20000
<b>Acoustics</b>		
Sound pressure level <sup>(3)</sup>	[dB(A)]	63
<b>Leak Tightness</b>		
Maximum leak flow rate	[l/min]	N/A
<b>Mechanical</b>		
Blower weight	[g]	358

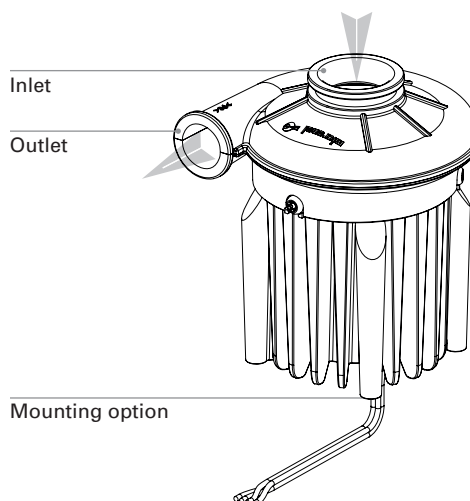
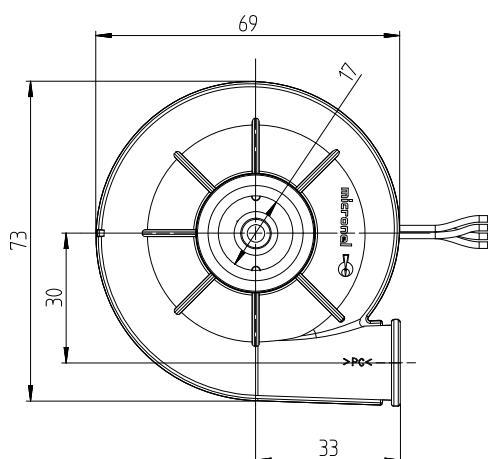
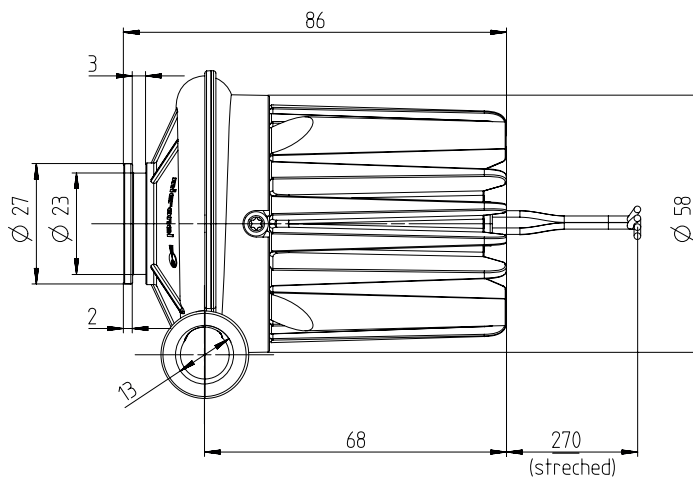
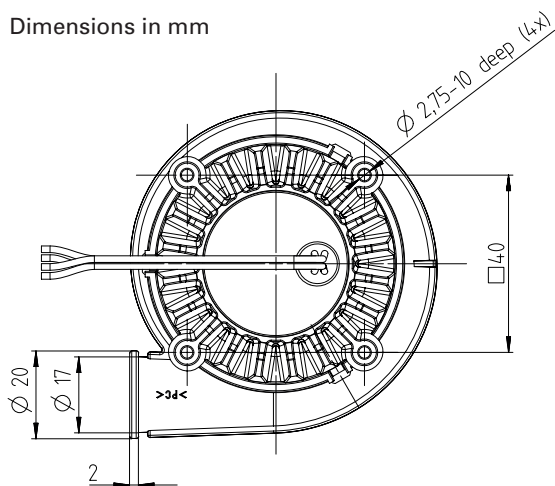
<sup>(1)</sup> Recommended minimum continuous power supply current for proper start-up behavior at nominal voltage. This is an Indicative value. Power supply dimensioning, wiring, safety, setup and validation is the customer's responsibility.

<sup>(2)</sup> Accelerated aging test at 45 °C ambient temperature, operation cycle 11.5 h ON, 0.5 h OFF, normal cleanliness according to ISO 281. Temperature dependency of lifetime according to IPC-9591: factor 1.5 per 10 °C.

<sup>(3)</sup> Measured at distance of 1 meter from inlet, with open inlet and outlet, working point 1000 Pa.

**DRAWINGS**

Dimensions in mm



**Orientations**

Direction of rotation

↻ Counter-clockwise (view on inlet)

Mounting position

Any direction

**MATERIALS**

**Components**

**Material**

Blower housing

Polycarbonate (PC), transparent  
Flammability: 850 °C

Impeller

Polyamide (PA 6), white

Hub

Stainless steel

Motor housing

Aluminum

Label

Plastics

Connector

N/A

Crimp terminal

N/A

Lead wire

High flex silicon  
Flammability: UL 3239

**IDENTIFICATION**

**Label**

Design

Article number

Nominal voltage



Identification number:

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

**BLOWER PINOUT**

Pin	Color	Description	AWG
1	Red	V <sub>CC</sub>	24
2	Black	GND	24
3	Yellow	Tachometer output	24
4	Green	Set speed input	24

**ELECTRONIC FUNCTIONS**

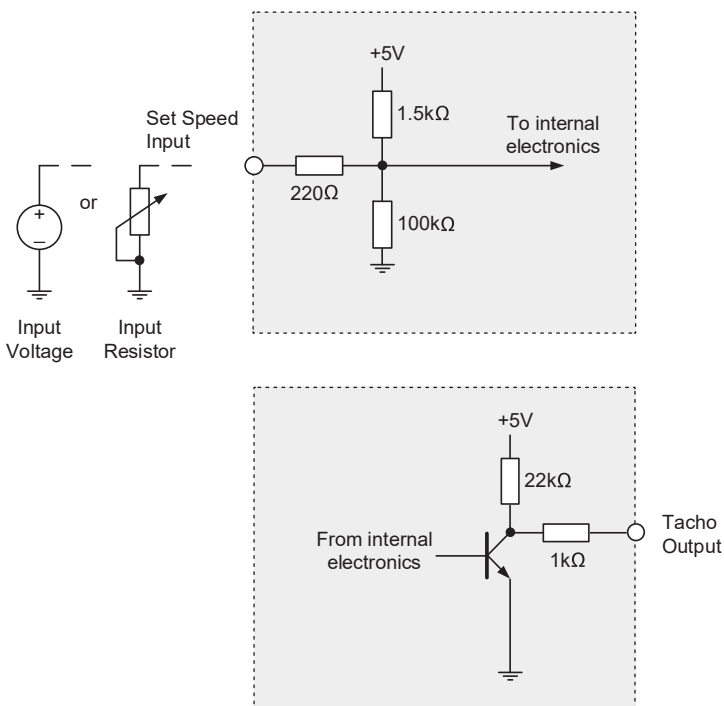
**Integrated Electronic Motor Driver**

Type

Slotted brushless direct current motor driver

Features

- Integrated speed control (voltage / resistor)
- Tachometer frequency signal
- Locked rotor protection
- Over voltage protection
- Polarity protection



**Speed Control Input**

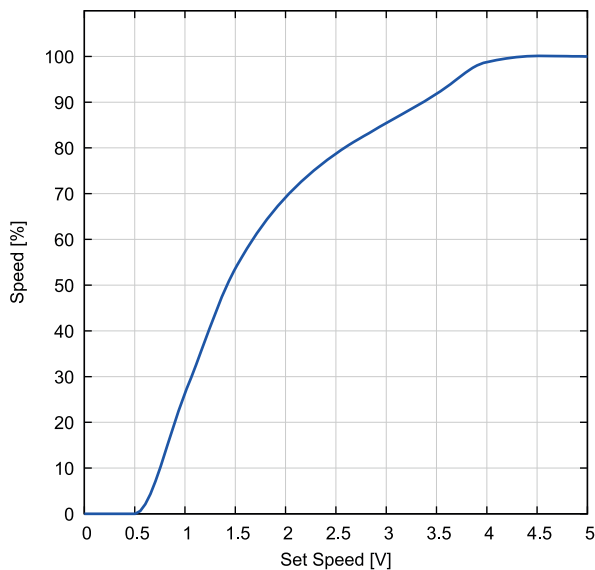
The blower speed can be controlled either by input voltage or input resistor value. See „Set Speed Input“ tables for further details.

**Tachometer Output**

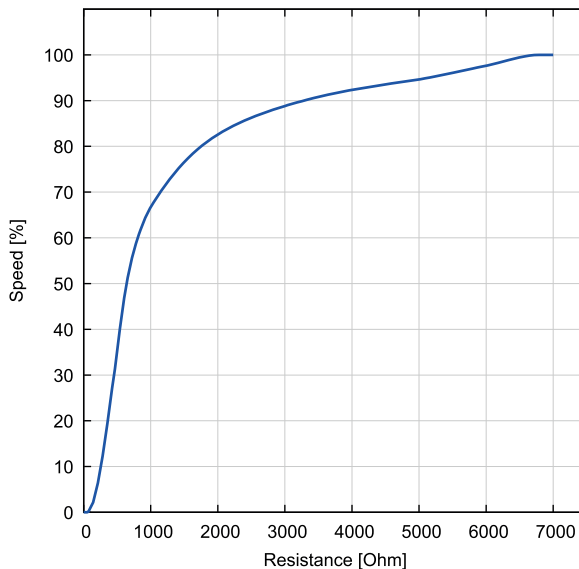
Tachometer frequency:  
3 pulses per revolution  
**n = 20 · f**  
**n** Rotation speed [rpm]  
**f** Tacho frequency [Hz]

**ELECTRONIC FUNCTIONS**

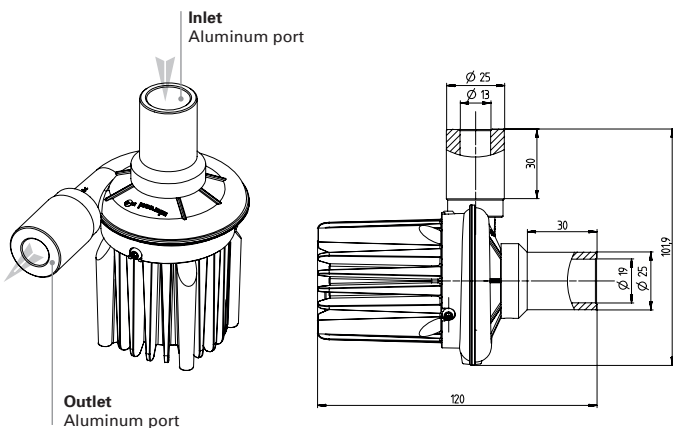
Set Speed Input Voltage [V <sub>DC</sub> ]	Operation Mode
Set speed not connected	Blower speed at 100 %
Set speed to ground	Stop
0.0	Stop
0.1 to 1.5	Not defined, blower might run or stop
2.0	Minimum start-up voltage
1.5 to 4.0 (after start-up)	Blower speed depends on input voltage
4.0 to 5.0	Blower speed at 100 %



Set Speed Input Resistor [kΩ]	Operation Mode
Set speed not connected	Blower speed at 100 %
Set speed to ground	Stop
0.0 to 0.06	Stop
0.06 to 0.75	Not defined, blower might run or stop
0.75	Minimum start-up resistance
0.75 to 6.8 (after start-up)	Blower speed depends on resistor value
> 6.8 or open input	Blower speed at 100 %



**OPTIONS FOR INLET AND OUTLET PORTS\***



Article with options	Inlet port	Outlet port
Radial Blower U71HL-024KM-4		
Radial Blower U71HL-024KM-41	●	
Radial Blower U71HL-024KM-42		●
Radial Blower U71HL-024KM-43	●	●

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

**No application of forces on ports allowed!**

**NOTE**



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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