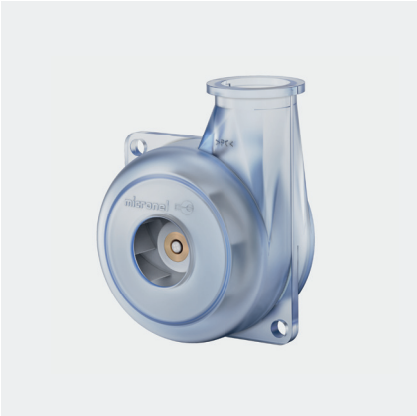
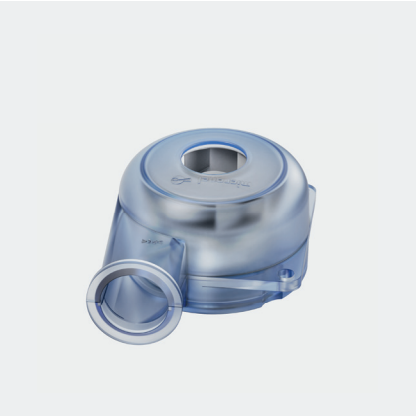
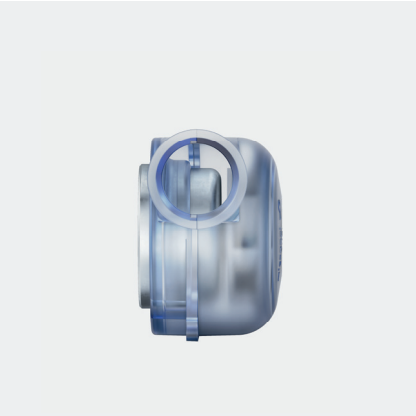
Specification

Radial Blower U51DL-024KK-5







General Information

Item	
Product type	Radial blower
Part no.	U51DL-024KK-5
Customer	N/A
Project no.	N/A
Modification	Standard product

Description

This versatile and compact 24 VDC blower is the ideal choice for mobile medical respiration devices. It is optionally availabe with a inlet nozzle.

SWISS ENGINEERED

CE

REACh Compliant

RoHS III Compliant

Features

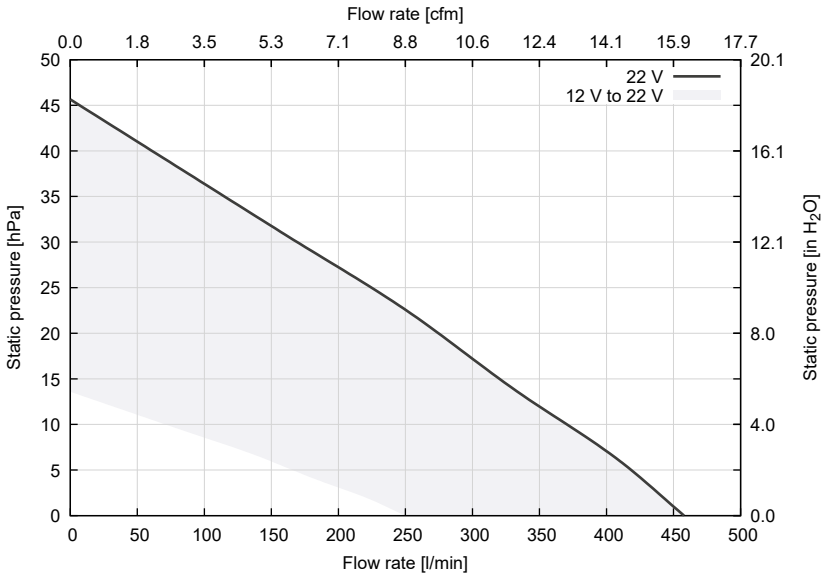
- Static pressure: 45 hPa, freeflow: 460 l/min
- 22 V_{DC} brushless DC-motor
- Small dimensions through slim design
- High power density

General Conditions

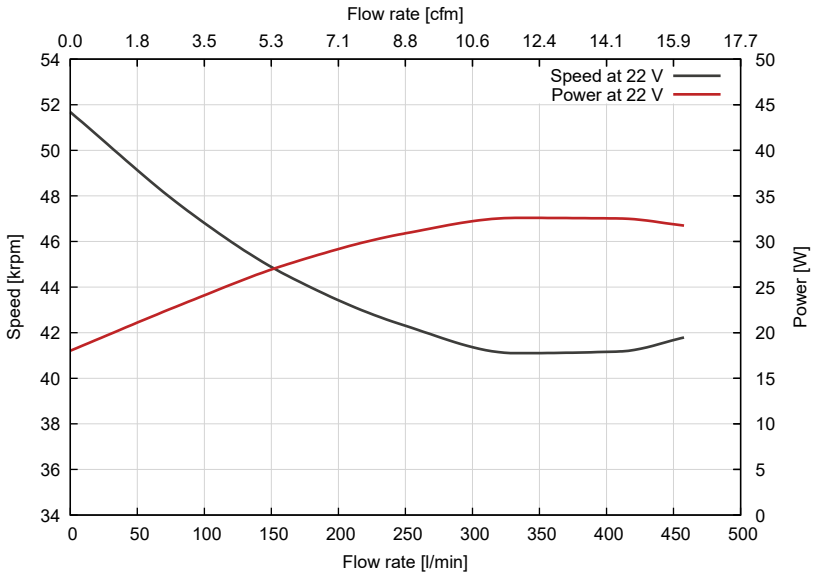
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m³ standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized 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]	45
Power consumption	[W]	18
Speed	[rpm]	51600

Shut-Off in Vacuum Operation (Zero Flow Rate)		
Static pressure	[hPa]	37
Power consumption	[W]	23
Speed	[rpm]	48000

Free-Air (Zero Static Pressure)		
Flow rate	[l/min]	460
Power consumption	[W]	32
Speed	[rpm]	41800

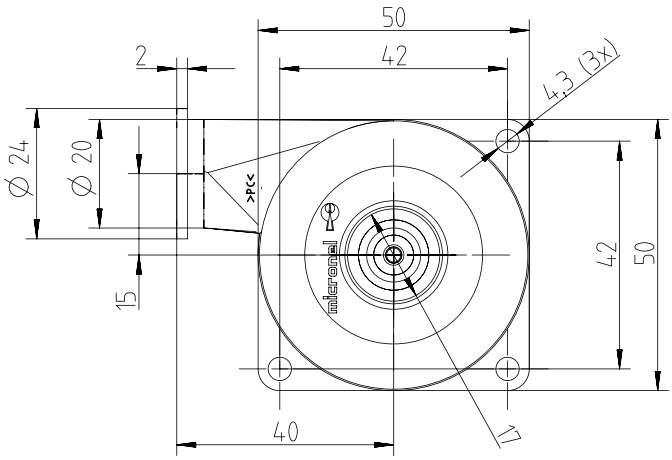
Technical Data

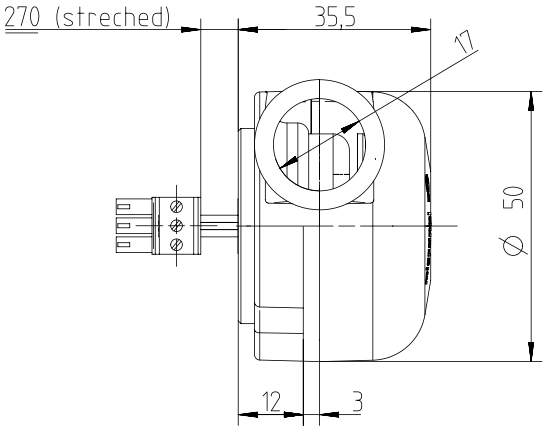
Electrical	Unit	Value
Nominal supply voltage	[V_{DC}]	22
Supply voltage range	[V_{DC}]	12 to 22
Maximum Ratings for Continuous Operation		
Minimum flow rate	[l/min]	N/A
Maximum speed	[rpm]	45 000
Maximum acceleration	[rpm/ms]	N/A
Maximum power consumption	[W]	32
Maximum housing surface temperature	[°C]	65
Maximum NTC temperature	[°C]	N/A
Environmental		
Ambient temperature (operating)	[°C]	-20 to 40
Ambient temperature (storage)	[°C]	-20 to 40
Relative humidity (non-condensing)	[%RH]	10 to 85
Ingress protection (EN60529)		IP40
Maximum oxygen concentration	[%]	21
Motor		
Type		Brushless direct current motor
Winding insulation class		F, 155 °C
Phase to phase resistance	[Ω]	1.65
Phase to phase inductance	[mH]	0.83
Speed constant	[rpm/V]	1205
Torque constant	[mNm/A]	3.63
Number of pole pairs		1
Hall sensor type		N/A
NTC type		N/A
Lifetime		
L10 at 25 °C ambient temperature[1]	[h]	10 000
Acoustics		
Sound pressure level	[dB(A)]	58
Leak Tightness		
Maximum leak flow rate	[l/min]	N/A
Mechanical		
Blower weight	[g]	90
Rotor weight	[g]	19.5
Rotor moment of inertia	[g · cm²]	9.3

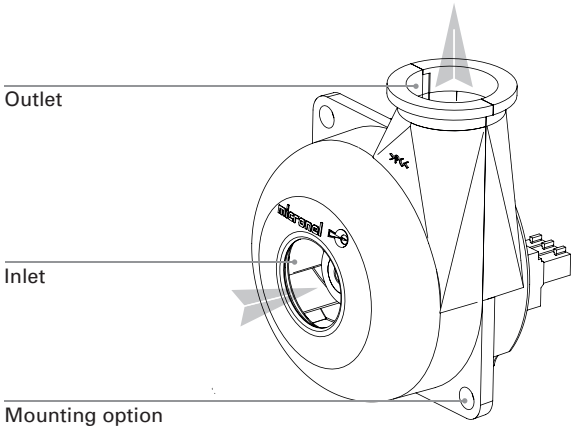
[1] Accelerated aging test at 45 °C ambient temperature, continuous operation, normal cleanliness according to ISO 281. Temperature dependency of lifetime according to IPC-9591: factor 1.5 per 10 °C.

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 / 1 mm (IEC 60695-2-12) Biocompatibility: USP Class VI / ISO 10993
Impeller	Polyamide (PA 6), white
Hub	Brass
Motor housing	Aluminum anodised, natural colour
Label	PET
Connector	Phoenix MC 1.5-3, PA, UL94 V0
Crimp terminal	N/A
Lead wire	PVC Flammability: UL 1007

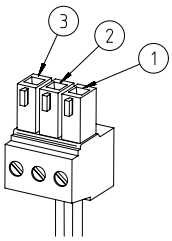
Identification

Label

Design

Blower Pinout

Pin	Color	Description	AWG
1	Brown	Motorwinding U	24
2	Red	Motorwinding V	24
3	Orange	Motorwinding W	24



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.

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