

Fresh air from

**ÖSTBERG**  
THE FAN COMPANY 

# RKBI

Insulated rectangular duct fan



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# QUALITY OF AIR IS QUALITY OF LIFE



## Fresh air from Östberg - The Fan Company

To live in a tight and well insulated house is good, if the ventilation is satisfactory. Fresh air is a prerequisite for our health and performance. Even a slight decrease in air quality can cause surprisingly many problems.

Allergies have become a gigantic public health problem. Pollen, dust, bacteria, gas from construction material, radon and mildew is present in much of the indoor air that people breath.

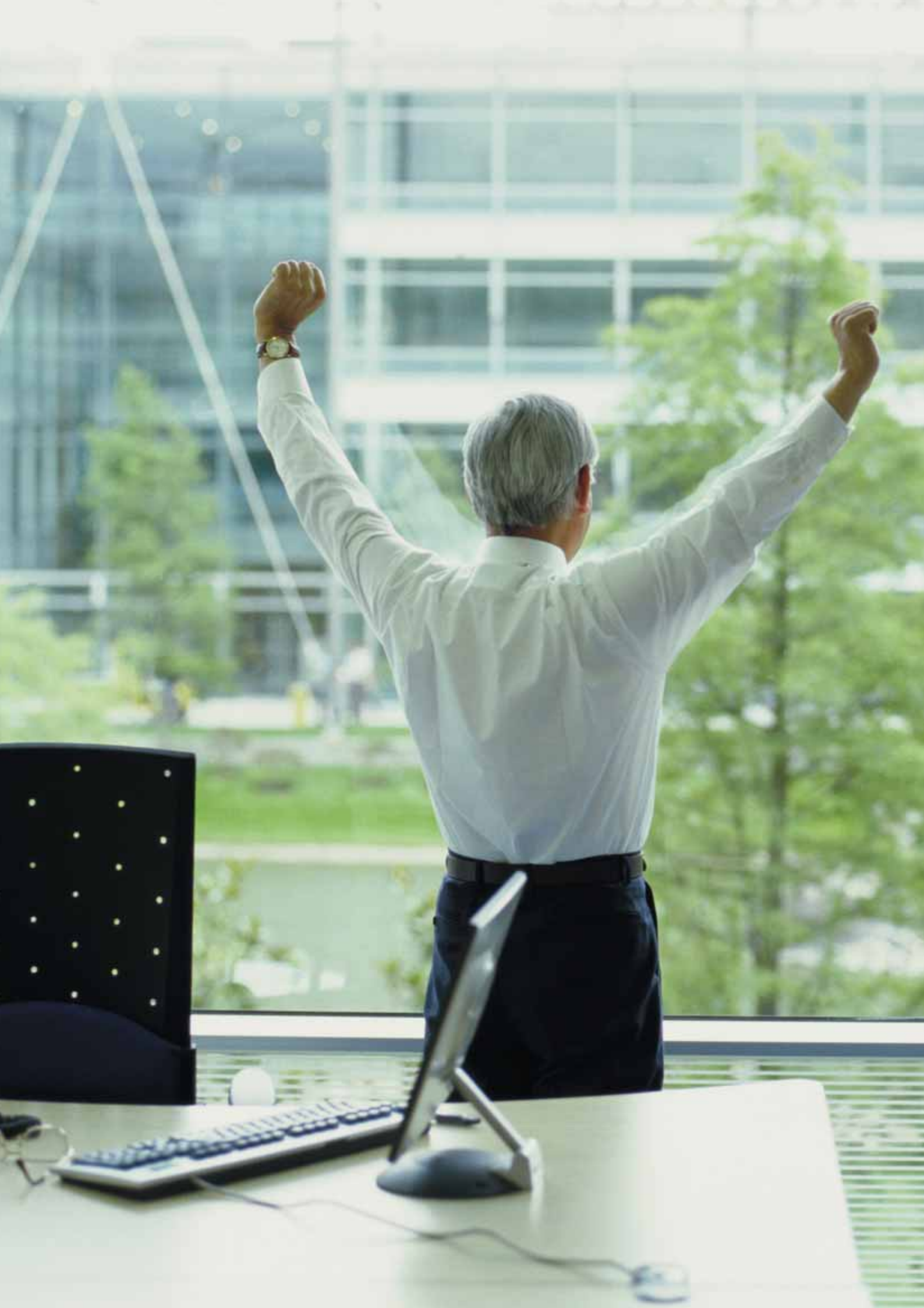
The combination of a bad indoor air and poor ventilation create conditions for poor health. The problems are not always obvious. Studies show a direct connection between the quality of air and our ability to concentrate and perform productively.

The quality of air directly affects the way we feel, not only physically but also spiritually. Therefore use Östberg quality products in order to achieve sufficient air-change together with a low sound level.



*Not only allergies. Studies show that there is a direct connection between our ability to concentrate and the quality of the air.*







*The RKBI on the left is available in the dimensions 600x350, 700x400 and 800x500. On the right the largest RKBI in the dimension 1000x500.*

## RKBI, insulated rectangular duct fan

RKBI is an insulated centrifugal duct fan with connections for rectangular ducts. The fan have a rigid housing of galvanised steel and are compact with high capacity. With the 50 mm high quality insulation it operates quiet and the surface of the insulation is easy to clean.

RKBI is available in 16 capacities. The backward curved impeller blades gives a better efficiency over a very big working area than the forward curved impeller blades.

The fan is designed to cope with high pressures i.e. long ducts with a minimum of noise. The motor is speed-controllable from 0-100% and maintenance-free, why the only service required is cleaning the impeller.

Motor with impeller can be swung out for inspection and cleaning (swing-out). The RKBI fan is supplied fully-wired and ready to fit in a sealed installation unit. It is moisture-proof and approved for use in warm or cold environments.

All fans are fitted with a built-in thermal protector.



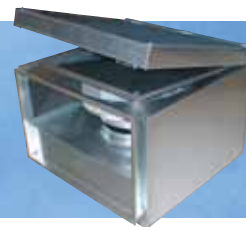
*The surface of the insulation is easy to clean and thanks to the swing-out design the large impeller-blades can be swung out for inspection and cleaning.*



# RKBI 600 x 350 A1

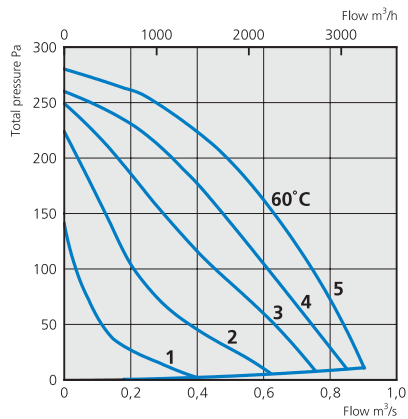
# RKBI 600 x 350 B1

With backward-curved impeller and swing-out design

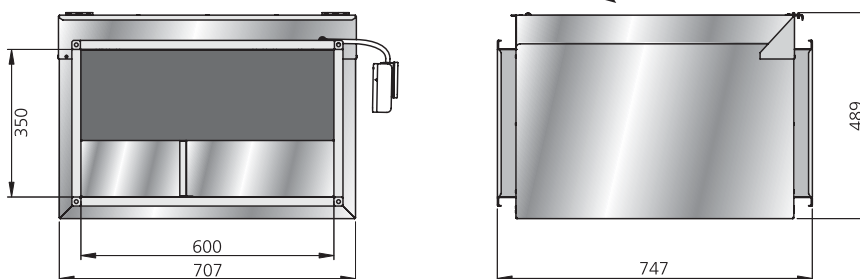


## RKBI 600 x 350 A1

### PRESSURE/FLOW



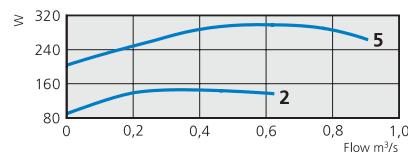
### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input W	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
230/50	1,34	298	920	52	4040001	8	F	IP 44

### INPUT/FLOW



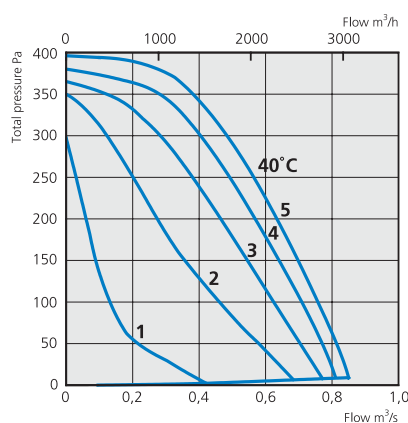
### SOUND DATA

450 l/s 208 Pa	$L_{pA}$	$L_{wA}$ tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 230 V	43	50	37	46	44	41	41	29	28	25
5. Inlet 230 V		62	55	59	50	48	40	43	39	32
4. Inlet 165 V		60	53	57	54	46	38	40	35	29
3. Inlet 135 V		59	53	55	52	44	36	37	33	27
2. Inlet 110 V		55	52	49	45	36	28	28	24	18
1. Inlet 80 V		49	41	47	42	26	15	16	15	15
Outlet 230 V		69	55	64	64	59	60	58	52	45

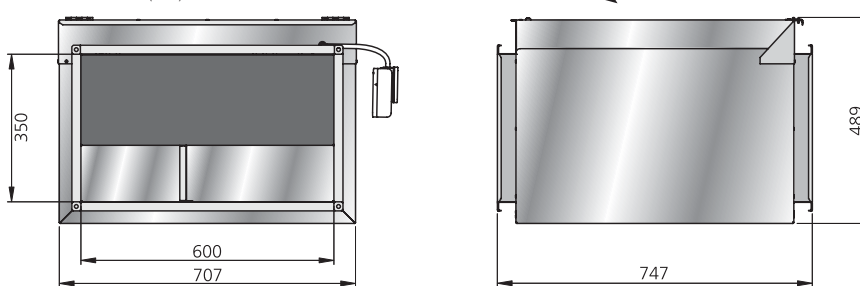
Sound data explanation, page 15.

## RKBI 600 x 350 B1

### PRESSURE/FLOW



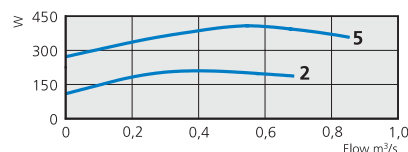
### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input W	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
230/50	2,11	412	1405	51	4040001	12	F	IP 44

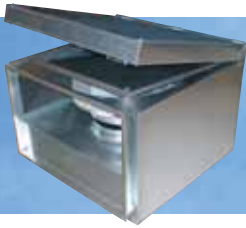
### INPUT/FLOW



### SOUND DATA

375 l/s 355 Pa	$L_{pA}$	$L_{wA}$ tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 230 V	54	58	40	61	53	43	44	38	35	34
5. Inlet 230 V		69	54	65	66	49	45	46	43	39
4. Inlet 165 V		69	55	61	67	51	45	45	41	39
3. Inlet 135 V		66	53	62	62	48	42	43	39	35
2. Inlet 110 V		59	52	57	51	40	39	40	37	29
1. Inlet 80 V		57	52	55	44	31	32	32	31	20
Outlet 230 V		75	56	68	73	60	63	61	56	52

Sound data explanation, page 15.

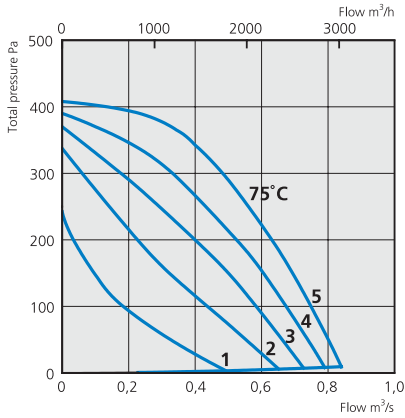


# RKBI 600 x 350 B3 RKBI 600 x 350 D1

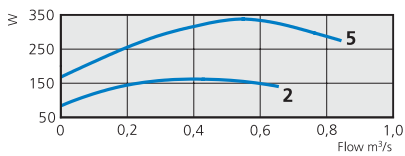
With backward-curved impeller and swing-out design

## RKBI 600 x 350 B3

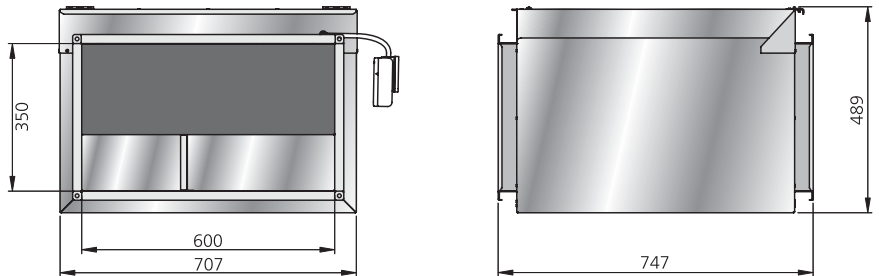
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input W	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
400/50	1,04	388	1415	52	4040004	-	F	IP 44

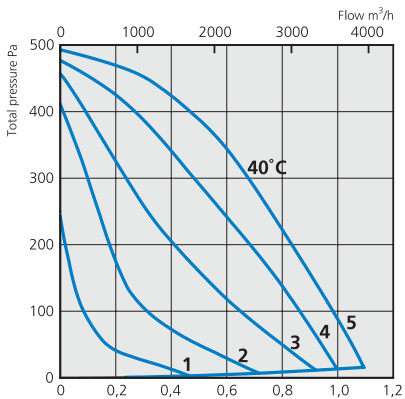
### SOUND DATA

375 l/s 350 Pa	$L_{pA}$	$L_{wA}$ tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 400 V	44	51	38	45	48	40	42	35	32	33
5. Inlet 400 V		67	55	59	66	49	45	46	43	38
4. Inlet 240 V		67	55	63	65	49	44	44	40	38
3. Inlet 185 V		65	53	62	60	47	41	42	39	34
2. Inlet 145 V		61	50	59	55	42	37	37	38	25
1. Inlet 95 V		51	44	49	41	30	27	26	23	17
Outlet 400 V		76	57	64	74	62	64	64	58	54

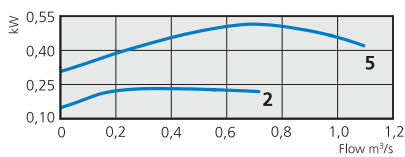
Sound data explanation, page 15.

## RKBI 600 x 350 D1

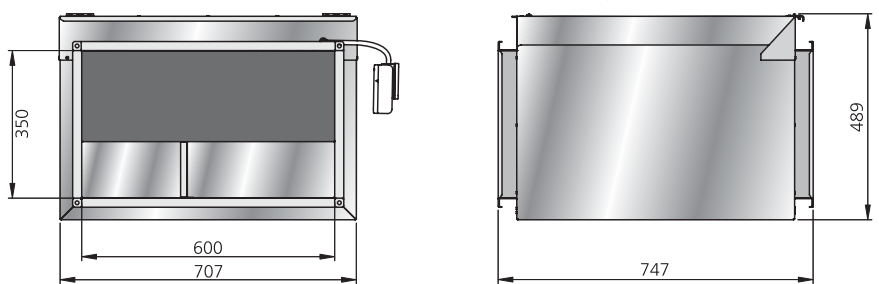
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
230/50	2,46	0,52	1370	56	4040001	12	F	IP 44

### SOUND DATA

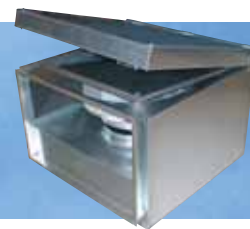
580 l/s 360 Pa	$L_{pA}$	$L_{wA}$ tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 230 V	49	56	41	53	53	46	44	39	36	36
5. Inlet 230 V		71	59	65	68	55	50	53	48	42
4. Inlet 165 V		67	57	63	63	52	46	49	43	39
3. Inlet 135 V		61	52	59	54	45	40	41	36	30
2. Inlet 110 V		56	49	54	47	37	32	31	28	20
1. Inlet 80 V		52	46	50	38	27	19	19	15	13
Outlet 230 V		80	62	69	78	66	68	67	62	56

Sound data explanation, page 15.

# RKBI 600 x 350 D3

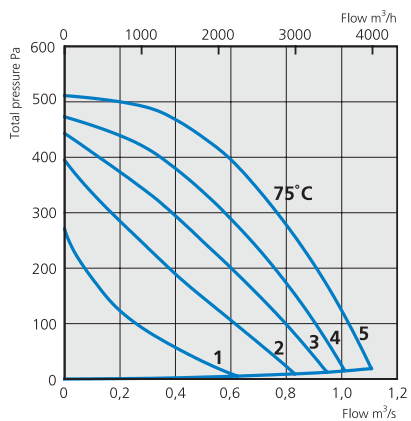
# RKBI 700 x 400 C1

With backward-curved impeller and swing-out design

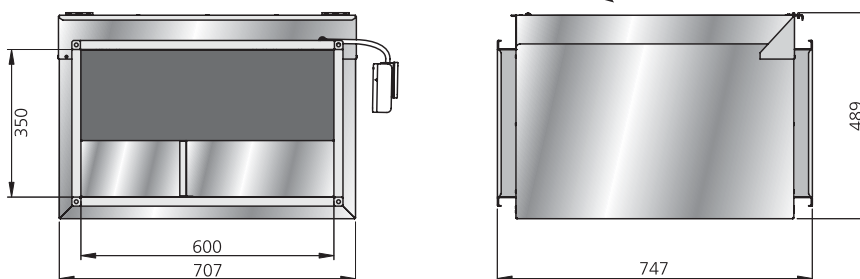


## RKBI 600 x 350 D3

### PRESSURE/FLOW



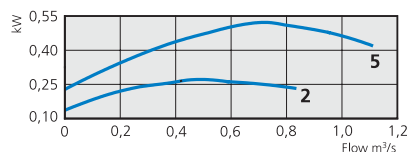
### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor µF	Insulation class	Motor protection
400/50	1,27	0,52	1415	50	4040030	-	F	IP 44

### INPUT/FLOW



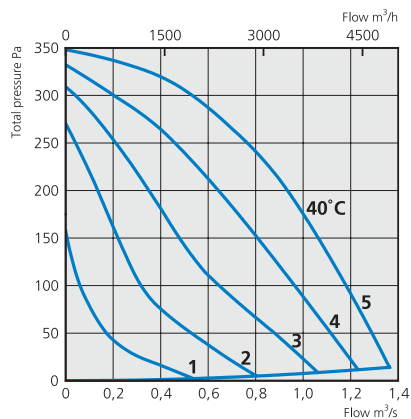
### SOUND DATA

535 l/s 425 Pa	LpA	LwA tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 400 V	49	56	41	49	54	45	44	41	39	38
5. Inlet 400 V		69	58	64	67	53	47	50	46	41
4. Inlet 240 V		67	56	63	64	51	46	48	43	39
3. Inlet 185 V		64	54	62	58	48	43	44	40	36
2. Inlet 145 V		61	52	59	52	44	39	40	36	31
1. Inlet 95 V		54	49	51	46	36	31	31	28	22
Outlet 400 V		78	60	67	77	64	66	65	59	54

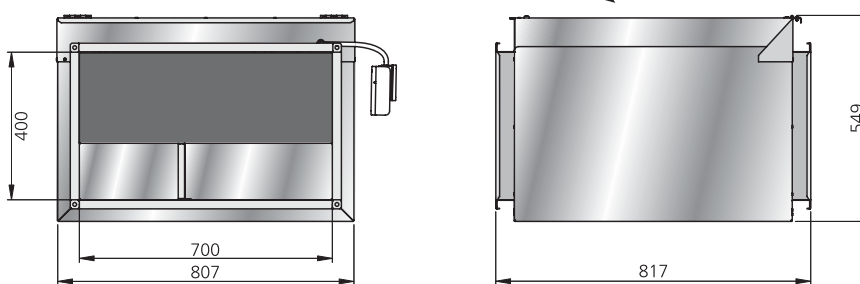
Sound data explanation, page 15.

## RKBI 700 x 400 C1

### PRESSURE/FLOW



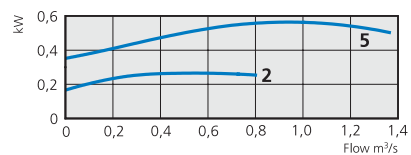
### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor µF	Insulation class	Motor protection
230/50	2,73	0,56	910	65	4040001	12	F	IP 44

### INPUT/FLOW

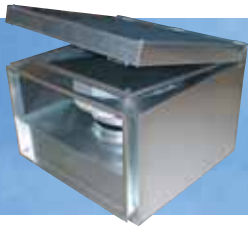


### SOUND DATA

560 l/s 280 Pa	LpA	LwA tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 230 V	51	58	46	56	50	45	42	35	32	31
5. Inlet 230 V		68	63	64	59	51	45	46	41	36
4. Inlet 165 V		65	62	61	56	48	42	43	37	34
3. Inlet 135 V		62	59	59	53	44	37	38	31	26
2. Inlet 110 V		57	56	49	45	37	30	30	22	19
1. Inlet 80 V		47	43	45	35	24	17	15	14	14
Outlet 230 V		74	62	70	68	63	66	61	55	49

Sound data explanation, page 15.



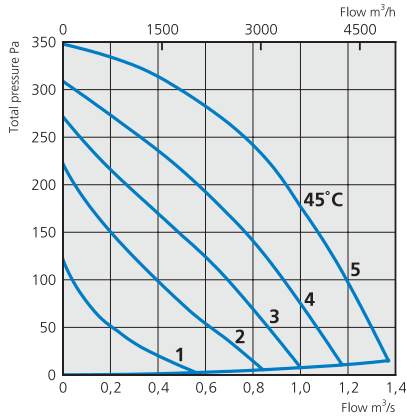


# RKBI 700 x 400 C3 RKBI 700 x 400 E1

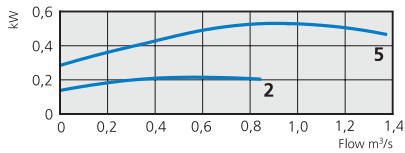
With backward-curved impeller and swing-out design

## RKBI 700 x 400 C3

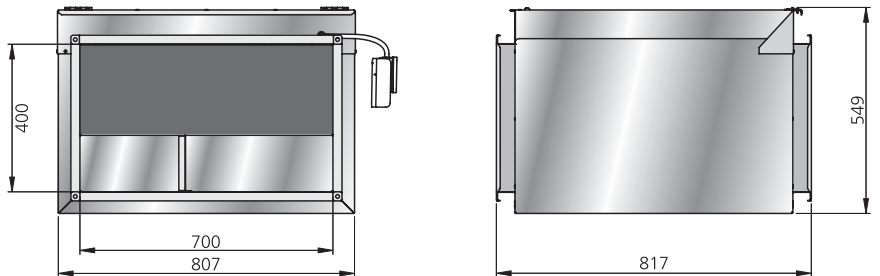
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor µF	Insulation class	Motor protection
400/50	1,20	0,53	920	66	4040030	-	F	IP 44

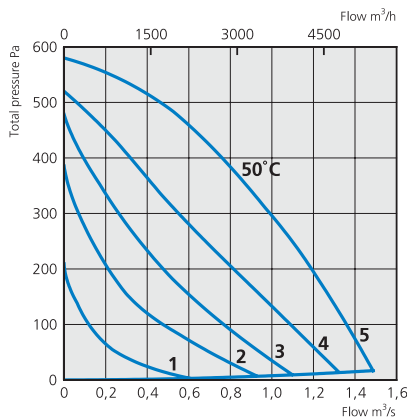
### SOUND DATA

490 l/s 303 Pa	$L_{pA}$	$L_{wA}$	tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 400 V	48	55	46	52	48	45	45	37	34	33	
5. Inlet 400 V		67	63	62	59	51	44	46	41	36	
4. Inlet 240 V		64	59	61	58	50	42	44	38	31	
3. Inlet 185 V		61	57	57	53	45	38	39	33	26	
2. Inlet 145 V		58	56	50	49	40	32	33	26	20	
1. Inlet 95 V		50	49	40	39	29	21	20	16	17	
Outlet 400 V		73	64	67	67	62	65	61	56	49	

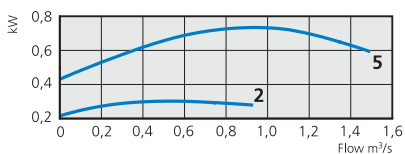
Sound data explanation, page 15.

## RKBI 700 x 400 E1

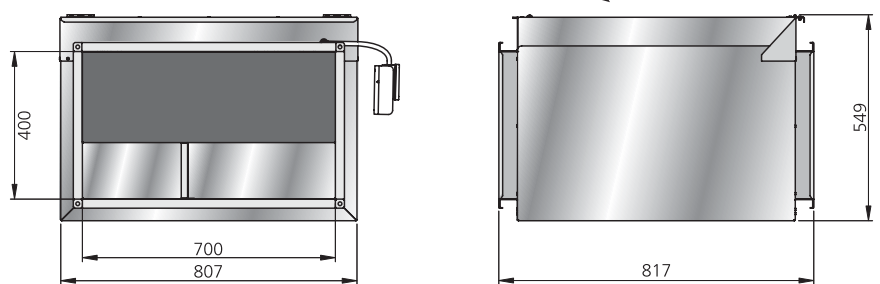
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor µF	Insulation class	Motor protection
230/50	3,30	0,73	1252	63	4040001	16	F	IP 44

### SOUND DATA

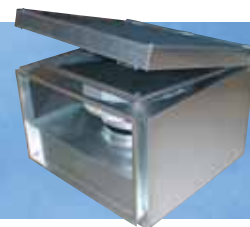
570 l/s 465 Pa	$L_{pA}$	$L_{wA}$	tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 230 V	49	56	45	54	51	45	43	40	37	39	
5. Inlet 230 V		68	60	65	63	53	50	50	45	41	
4. Inlet 165 V		65	56	63	58	49	47	47	41	37	
3. Inlet 135 V		61	54	59	53	45	42	42	35	30	
2. Inlet 110 V		57	51	54	48	38	35	34	27	21	
1. Inlet 80 V		51	48	46	38	29	26	23	17	14	
Outlet 230 V		76	61	71	71	64	69	64	59	54	

Sound data explanation, page 15.

# RKBI 700 x 400 E3

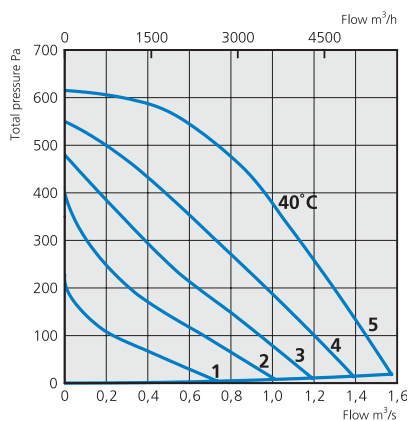
# RKBI 800 x 500 B1

With backward-curved impeller and swing-out design

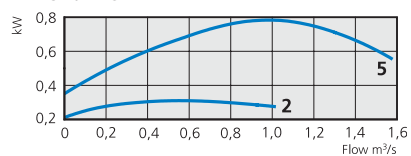


## RKBI 700 x 400 E3

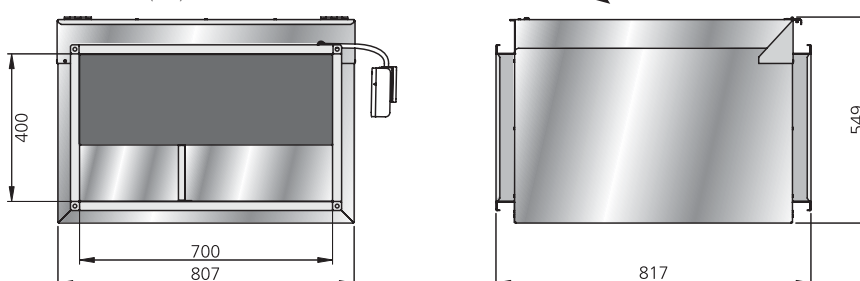
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
400/50	1,55	0,78	1358	63	4040030	-	F	IP 44

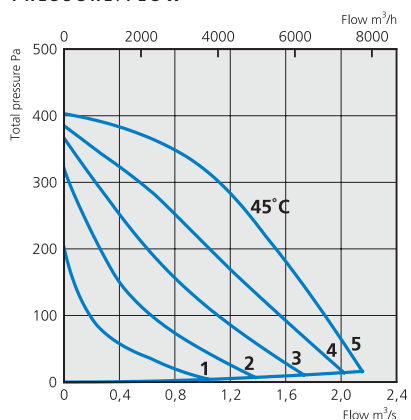
### SOUND DATA

630 l/s 515 Pa	$L_{pA}$	$L_{WA}$ tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 400 V	51	58	45	51	55	47	46	42	41	40
5. Inlet 400 V		70	60	64	68	56	52	52	47	43
4. Inlet 240 V		69	59	67	63	56	50	48	42	39
3. Inlet 185 V		64	55	61	57	49	44	43	37	32
2. Inlet 145 V		58	51	55	51	41	38	37	31	25
1. Inlet 95 V		49	48	42	40	30	27	24	18	15
Outlet 400 V		80	61	69	78	66	72	66	61	56

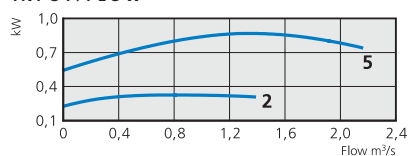
Sound data explanation, page 15.

## RKBI 800 x 500 B1

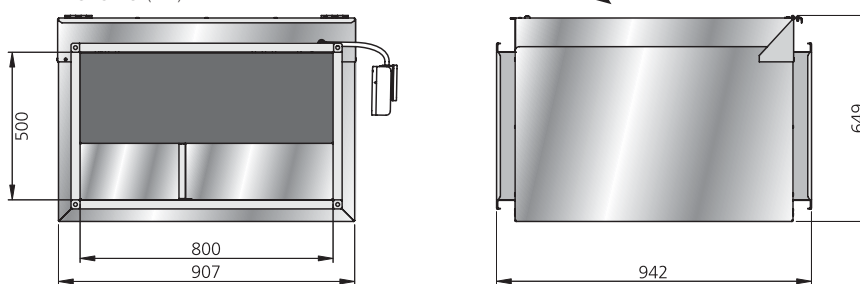
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



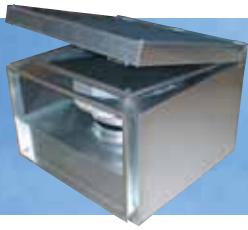
### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
230/50	4,44	0,87	871	87	4040001	25	F	IP 44

### SOUND DATA

705 l/s 355 Pa	$L_{pA}$	$L_{WA}$ tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 230 V	51	58	49	57	50	47	44	36	34	34
5. Inlet 230 V		70	58	69	54	49	51	49	44	39
4. Inlet 165 V		66	56	65	52	47	50	47	41	35
3. Inlet 135 V		63	58	61	51	45	47	44	38	32
2. Inlet 110 V		59	55	56	45	40	40	38	33	26
1. Inlet 80 V		55	45	54	33	28	28	24	19	18
Outlet 230 V		75	58	70	65	66	70	63	57	50

Sound data explanation, page 15.

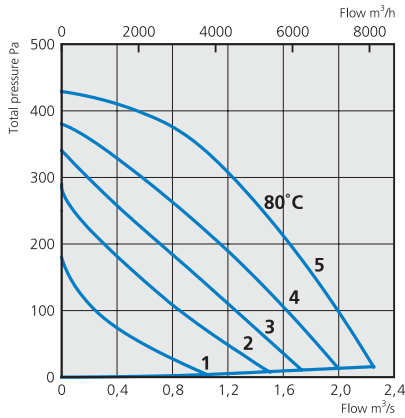


# RKBI 800 x 500 B3 RKBI 800 x 500 K1

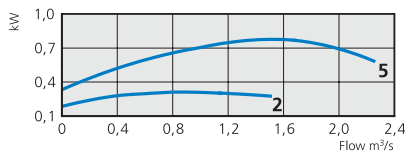
With backward-curved impeller and swing-out design

## RKBI 800 x 500 B3

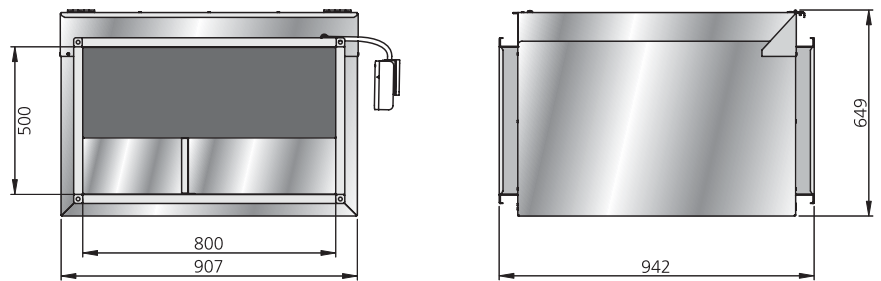
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
400/50	1,88	0,78	899	88	4040030	-	F	IP 44

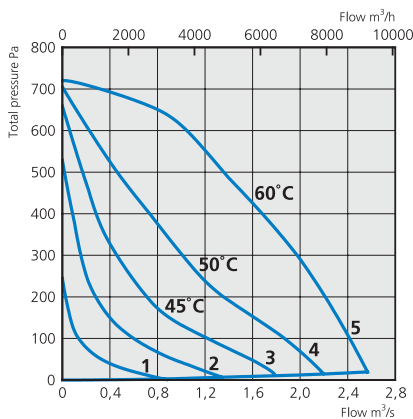
### SOUND DATA

715 l/s 375 Pa	$L_{pA}$	$L_{WA}$	tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 400 V	51	58	45	54	52	51	48	44	41	35	
5. Inlet 400 V	69	59	68	56	50	54	56	52	43		
4. Inlet 240 V	68	55	67	54	49	53	58	50	39		
3. Inlet 185 V	63	54	63	50	44	47	51	45	33		
2. Inlet 145 V	58	52	56	48	40	43	47	39	27		
1. Inlet 95 V	51	49	46	37	32	38	37	25	23		
Outlet 400 V	76	59	71	66	67	71	67	62	54		

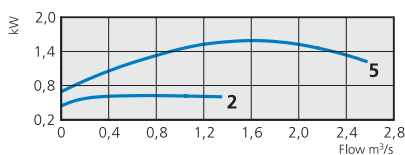
Sound data explanation, page 15.

## RKBI 800 x 500 K1

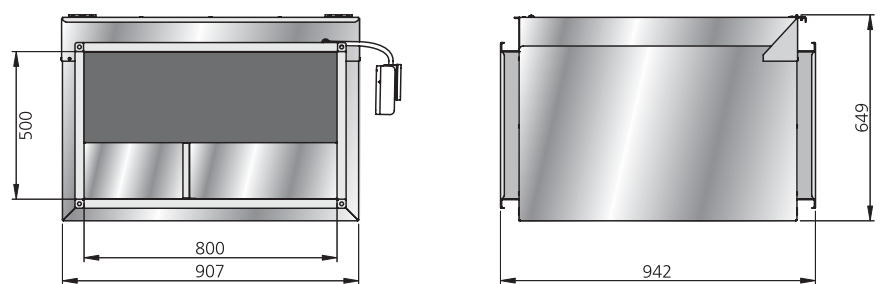
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
230/50	7,75	1,61	1285	87	4040001	25	F	IP 44

### SOUND DATA

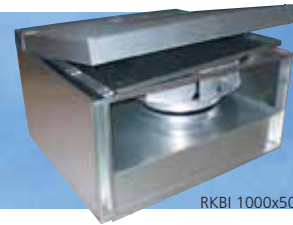
855 l/s 630Pa	$L_{pA}$	$L_{WA}$	tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 230 V	55	62	48	57	60	52	50	44	41	41	
5. Inlet 230 V	72	60	69	64	56	59	61	53	48		
4. Inlet 165 V	70	57	69	54	54	53	46	42			
3. Inlet 135 V	65	53	65	50	46	46	46	41	31		
2. Inlet 110 V	57	52	55	43	39	39	38	31	22		
1. Inlet 80 V	47	44	44	31	29	31	26	23	19		
Outlet 230 V	82	59	73	76	70	77	72	66	60		

Sound data explanation, page 15.

# RKBI 800 x 500 K3

# RKBI 1000 x 500 J1

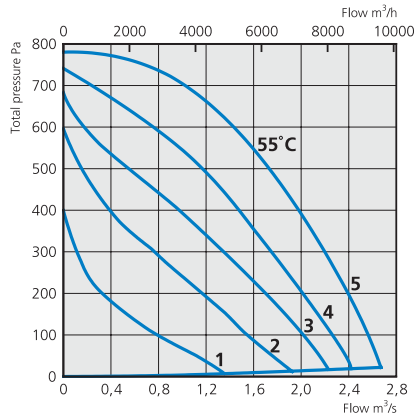
With backward-curved impeller and swing-out design



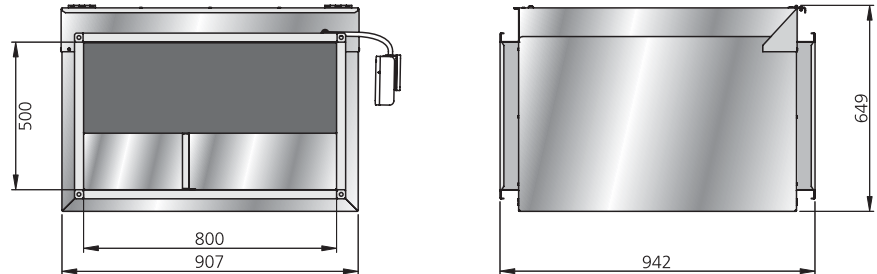
RKBI 1000x500

## RKBI 800 x 500 K3

### PRESSURE/FLOW



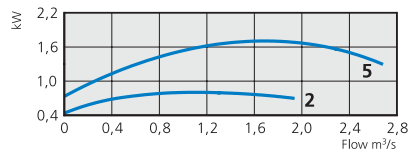
### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
400/50	3,69	1,72	1395	87	4040030	-	F	IP 44

### INPUT/FLOW



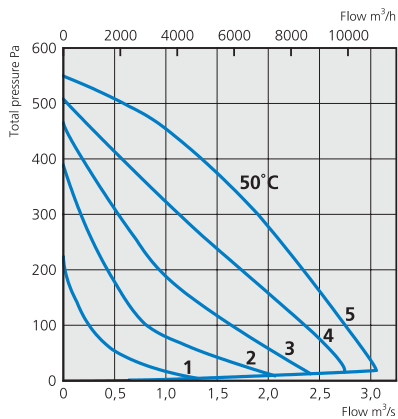
### SOUND DATA

1180 l/s 665 Pa	$L_{pA}$	$L_{WA}$	tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 400 V	57	64	49	58	62	54	52	45	41	40	
5. Inlet 400 V		73	61	69	69	59	62	63	56	51	
4. Inlet 240 V		72	60	69	64	58	62	59	52	48	
3. Inlet 185 V		69	56	68	57	54	57	56	49	43	
2. Inlet 145 V		65	55	64	52	49	51	51	45	38	
1. Inlet 95 V		58	53	55	44	40	41	40	33	26	
Outlet 400 V		86	62	74	82	74	81	76	70	63	

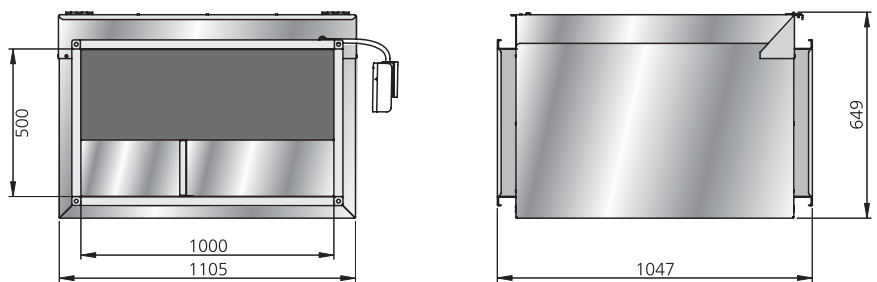
Sound data explanation, page 15.

## RKB1 1000 x 500 J1

### PRESSURE/FLOW



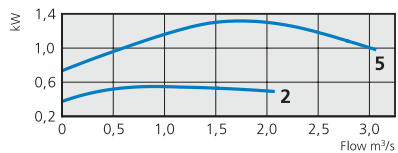
### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
230/50	6,43	1,32	875	132	4040001	30	F	IP 44

### INPUT/FLOW



### SOUND DATA

810 l/s 470 Pa	$L_{pA}$	$L_{WA}$	tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 230 V	53	60	52	56	53	55	49	41	38	37	
5. Inlet 230 V		71	61	69	57	52	52	51	47	41	
4. Inlet 165 V		69	58	68	55	50	50	50	44	38	
3. Inlet 135 V		64	56	62	50	45	45	44	38	32	
2. Inlet 110 V		59	53	57	43	38	37	37	30	24	
1. Inlet 80 V		52	41	52	40	28	26	26	19	17	
Outlet 230 V		76	61	71	66	68	72	65	59	53	

Sound data explanation, page 15.



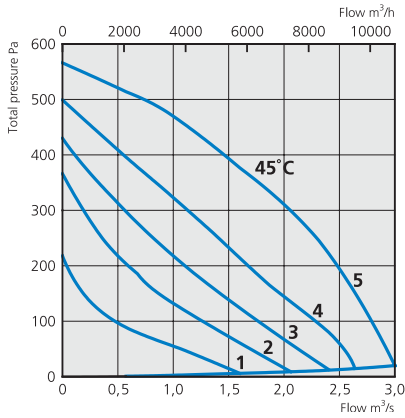
RKBI 1000x500

# RKBI 1000 x 500 J3 RKBI 1000 x 500 L3

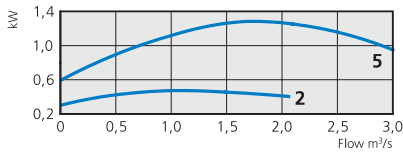
With backward-curved impeller and swing-out design

## RKBI 1000 x 500 J3

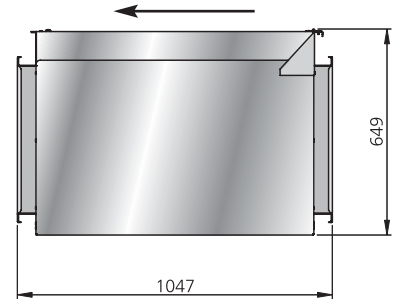
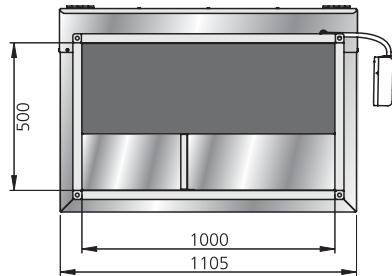
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
400/50	3,44	1,28	890	132	4040030	-	F	IP 44

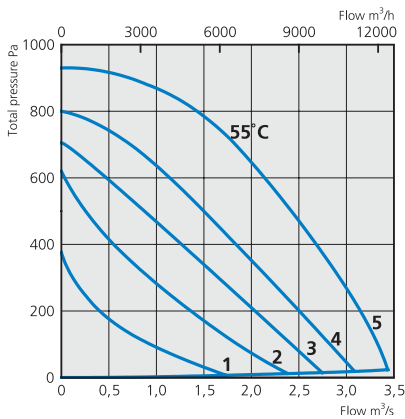
### SOUND DATA

720 l/s 490 Pa	$L_{pA}$	$L_{WA}$ tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 400 V	53	60	53	57	53	52	48	42	39	37
5. Inlet 400 V		71	63	70	58	54	53	53	47	43
4. Inlet 240 V		67	56	66	54	49	50	50	43	38
3. Inlet 185 V		63	55	61	50	46	45	45	39	33
2. Inlet 145 V		57	52	55	46	42	41	40	34	28
1. Inlet 95 V		50	45	47	38	33	31	29	23	19
Outlet 400 V		78	63	73	67	69	73	66	60	55

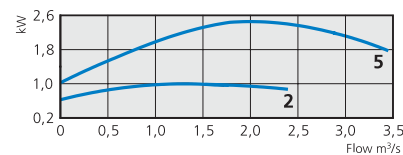
Sound data explanation, page 15.

## RKBI 1000 x 500 L3

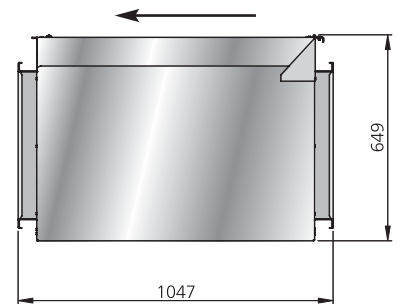
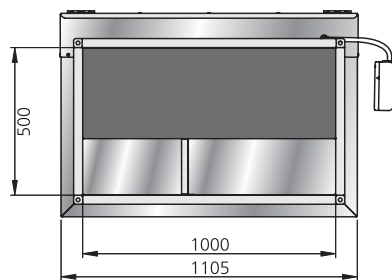
### PRESSURE/FLOW



### INPUT/FLOW



### DIMENSIONS (mm)



### TECHNICAL DATA

Voltage V/Hz	Current A	Input kW	Speed rpm	Weight kg	Wiring diagram	Capacitor $\mu$ F	Insulation class	Motor protection
400/50	4,90	2,46	1348	124	4040030	-	F	IP 44

### SOUND DATA

1110 l/s 840Pa	$L_{pA}$	$L_{WA}$ tot dB (A)	63	125	250	500	1K	2K	4K	8K
To environment 400 V	58	65	55	62	60	55	54	49	47	44
5. Inlet 400 V		75	63	73	67	59	60	61	55	51
4. Inlet 240 V		73	59	71	64	57	61	61	54	50
3. Inlet 185 V		70	56	69	58	53	53	55	51	44
2. Inlet 145 V		66	53	65	52	48	48	51	48	38
1. Inlet 95 V		56	49	53	43	38	39	44	34	23
Outlet 400 V		85	64	76	78	75	81	76	73	70

Sound data explanation, page 15.

# GENERAL FAN FACTS

## Directions for use

### DESCRIPTION

- The fan is used for transportation of “clean” air, meaning not intended for fire-dangerous substances, explosives, grinding dust, soot, etc.
- The fan is equipped with an asynchronous external rotor induction motor with maintenance-free sealed ball-bearings.
- To achieve maximum life length for installations in damp or cold environments, the fan should be operating continuously.
- The fan can be installed outside or in damp environments. Make sure that the fan-house is equipped with drainage.
- All fans are as standard, single phase 230V, 50 Hz or 3-phase 230V/400V, 50 Hz.
- The fan can be installed in any position.

### INSTALLATION

- The fan must be installed according to the air direction label on the fan.
- The fan must be connected to duct or equipped with a safety grill.
- The fan should be installed in a safe way and make sure that no foreign objects are left behind.
- The fan should be installed in a way that makes service and maintenance easy. OBS! Consider the weight and size of the fan.
- The fan should be installed in a way that vibrations can be transfused to duct or building. To provide this use for example a flange.
- To regulate the speed a transformer, a speed controller or a frequency converter can be connected.
- A wiring diagram is applied on the inside of the junction box or separate enclosed.
- The fan are installed and connected electrically in the right way grounded and with motor protection.

ally in the right way grounded and with motor protection.

- The motor protection must always be used, see wiring diagram.
- Electrical installations must be made by an authorised electrician.
- Electrical installations must be connected to a locally situated tension free switcher or by a lockable head switcher.

### OPERATION

Before starting, make sure that:

- the current does not exceed more than +5 % of what is stated on the label.
- the connecting voltage is in between +6% to -10% of the rated voltage.
- no noise appears when starting the fan.
- the rotation direction at 3-phase motors are according to the label.

### HOW TO HANDLE

- The fan must be transported in its packing until installation. This prevents transport damages, scratches and the fan from getting dirty.
- Attention, look out for sharp edges and corners.

### MAINTENANCE

- Before service, maintenance or repair begins, the fan must be tension free and the impeller must have stopped.
- Consider the weight of the fan when removing or opening larger fans to avoid jamming and contusions.
- The fan must be cleaned when needed, at least once per year to maintain the capacity and to avoid unbalance which may cause unnecessary damages on the bearings.

- The fan bearings are maintenance-free and should be renewed only when necessary.
- When cleaning the fan, high-pressure cleaning or strong dissolvent must **not** be used.
- Cleaning should be done without dislodging or damaging the impeller.
- Make sure that there is no noise from the fan.

### FAULT DETECTION

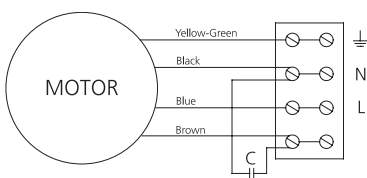
1. Make sure that there is tension to the fan.
2. Cut the tension and verify that the impeller is not blocked.
3. Check the thermo-contact/motor protector. If it is disconnected the cause of overheating must be taken care of, not to be repeated. To restore the manual thermo-protector the tension will be cut for a couple of minutes. Larger motors than 1,6 A may have manual resetting on the motor. If it has automatic thermo-protector the resetting will be done automatically when the motor is cold.
4. Make sure that the capacitor is connected, (single phase only) according to the wiring diagram.
5. If the fan still does not work, the first thing to do is to change the capacitor.
6. If nothing of this works, contact your fan supplier.
7. If the fan is returned to the supplier, it must be cleaned, the motor cable undamaged and a detailed nonconformity report enclosed.

### WARRANTY

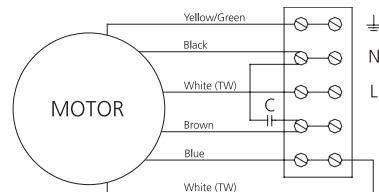
The warranty is only valid under condition that the fan is used according to this “Directions for use”.

## Wiring diagrams

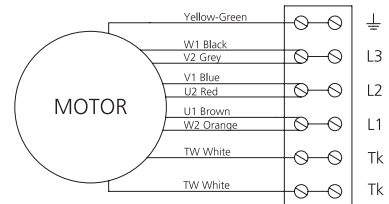
**4040001**  
Single phase



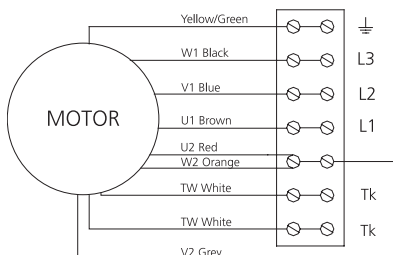
**4040005** Single phase  
external thermo-contact leads, TW



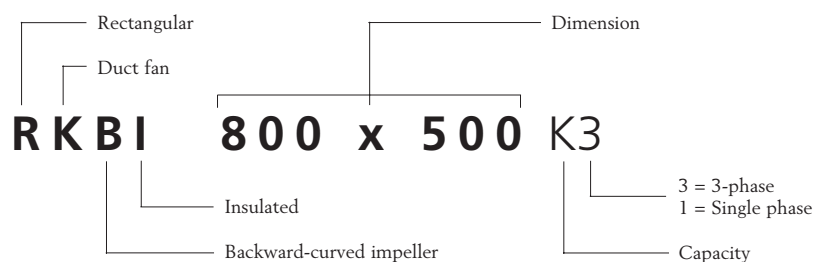
**4040030** 3-phase Y 400 V  
external thermo-contact leads, TW



**4040004** 3-phase Y 400 V  
external thermo-contact leads, TW



## Key to model types



# GENERAL FAN FACTS

## Pressure/flow-curves explanation

**FIG. 1:**

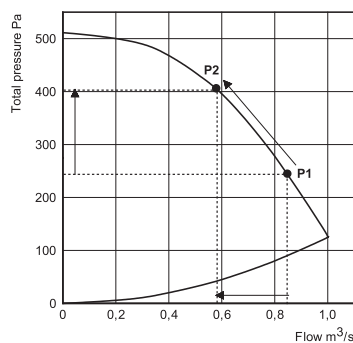
The fan curve describes the capacity of the fan, i.e. the fan's flow at different pressures at a certain input voltage.

The fan diagram has the pressure in Pascal, Pa, on the vertical axis and the flow in cubic meters per second, m<sup>3</sup>/s, on the horizontal axis.

The point on the fan curve showing the current pressure and flow is called the fan's working point. In our example it is marked with P.

If the pressure increases in the ducts, the working point moves along the fan curve and hence a lower flow is obtained. In the example the working point would move from P1 to P2.

**FIG. 1:**



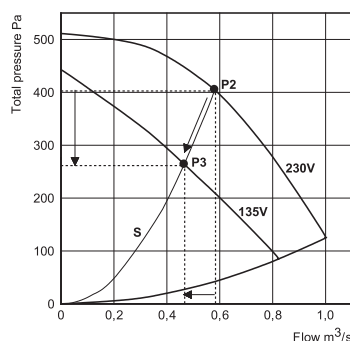
**FIG. 2:**

The system line describes the total behaviour of a ventilation system (ducts, silencers and valves etc.).

Along this system line, S, the working point is moved from P2 to P3 as the rotational speed is changed.

Discrete voltage steps with eg. a transformer produces different fan curves, transformer curves, indicated in the example.

**FIG. 2:**



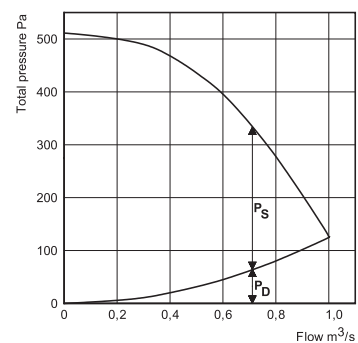
**FIG. 3:**

Our fan curves presents the total pressure in Pascal. Total pressure = Static + Dynamic pressure.

The static pressure is the fan's pressure compared to the atmospheric pressure. It is this pressure that shall overcome the pressure losses of the ventilation system.

The dynamic pressure is a calculated pressure that arises at the outlet of the fan, and is mostly due to air velocity. The dynamic pressure thus describes how the fan is working. The dynamic pressure starts at origo, that increases with increased flow. A high dynamic pressure can with wrong duct dimensions produce a high pressure loss. If the pressure loss in the system is known, a fan whose difference between the total and the dynamic pressure corresponds to the pressure loss in the system must be found.

**FIG. 3:**



## Sound data explanation

### SOUND DATA IN THIS BROCHURE ARE BASED ON FOLLOWING DEFINITIONS:

The points for which the sound data are presented are along the system line defined by the pressure and flow stated in the sound data table for each fan. There are three types of sound in these table; inlet- and outlet sound are measured in duct, while the surrounding sound is measured outside the fan and duct system. For all these types of sound, the sound power levels are presented in octave bands. For the surrounding sound, also the sound pressure level has been calculated.

### THE SOUND POWER LEVEL

The sound power level, Lw(A) is used to calculate the sound from the whole ventilation system. This system can be a composition of grills, dampers and diffusers for example.

The sound power level is a measured value according to standards, and it does not tell how the sound appears as the sound power is independent of the characteristics of the placement of the fan. In order to resemble the human ear, the A-filter is used indicated with Lw(A) measured in dB(A).

### THE SOUND PRESSURE LEVEL

The sound pressure level, Lp or Lp(A), tell how the human ear registers the sound. It is dependent on the sound power level, distance from the source, restrictions of the propagation and the acoustic characteristics of the room.

The sound pressure level is presented for a room with an equivalent absorption area of 20 m<sup>2</sup> at a distance of 3 m, where the sound is emitted in a semi spherical propagation.

The sound pressure level can be calculated as:

$$L_p = L_w + 10 \log(Q/4\pi r^2 + 4/A)$$

where A is the room's equivalent absorption area and Q is the propagation type:

- Q=1 is spherical propagation
- Q=2 is semi spherical propagation
- Q=4 is quarter spherical propagation.

Thus, for the above specified properties of the placement of the fan, the difference between sound pressure and sound power is:

$$L_p - L_w = 10 \log(2/4\pi 3^2 + 4/20) \approx -7 \text{ dB}$$

which is the difference that can be seen in the tables of sound data for each fan. For the free field case, i.e. from a roof fan, the sound pressure level is calculated as:

$$L_p = L_w + 10 \log(2/4\pi r^2)$$

## Temperature of transported air

In pressure/flow diagrams or in the table of technical data there are facts about highest temperature of transported air.

All motors have insulation class F which means that the thermal contact disconnect the power when the winding temperature is maxi-

mum 155°C. At this winding temperature the life of the ball bearings is not optimum. This is why the ambient temperature is shown at a lower winding temperature so the life of ball bearings become optimum.

Observe that all 3-phase motors needs an external thermal contact relay connected to the outdrawn thermal contact wires. This is really important at speed control



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We have continued to develop new products and today we offer a wide product range of centrifugal in-line duct fans.

Our goal has always been to offer quality products at competitive prices.

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**THE FAN COMPANY** 

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