

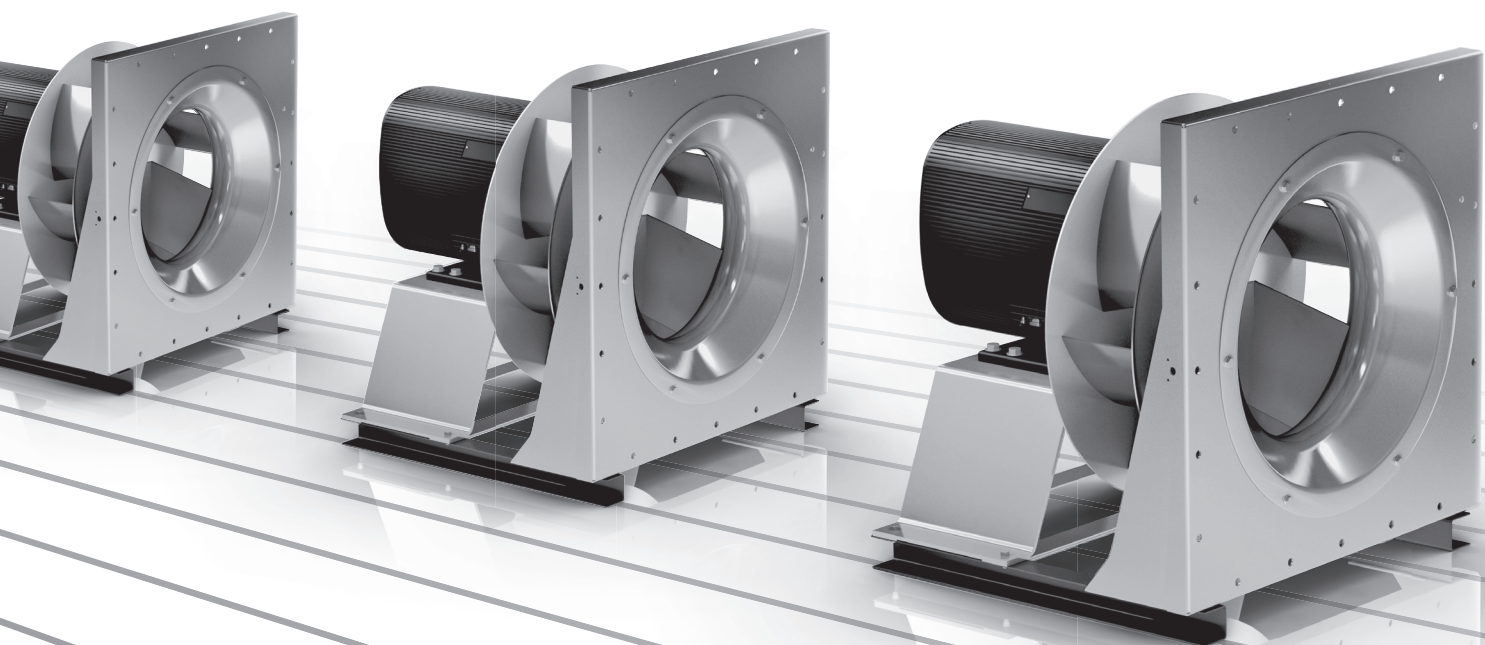
# High Performance Plug Fans

Impeller with true airfoil blades

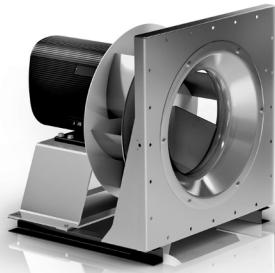
Issue 1.9 EN

# RLMEVO

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**NICOTRA** | **Gebhardt**  
fan|tastic solutions



## Ready for the next generation

We have accelerated impeller technology with the RLM Evo series, the new generation in our plug fan range. The result: More efficiency and reduced turbulent conditions. And that is highly effective as the Evo series ensures:

- ▶ lower energy consumption
- ▶ lower costs
- ▶ lower noise levels

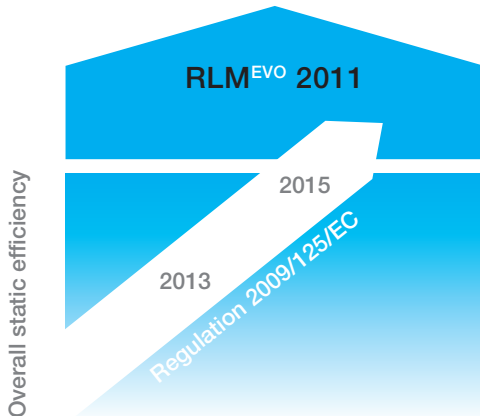
### Nicotra Gebhardt – the professionals in profiling

Nicotra Gebhardt is the first port of call for profiled impeller blades. We brought the first hollow section airfoil blades onto the market in 1975. Since then we have been achieving the absolutely best efficiencies in our fans in every application. Our engineers and technicians use the latest simulation programmes to develop and test new designs. You can rely on the knowledge and experience of specialists.

### Don't wait until 2015

Fans must reach ever higher system efficiencies. The EU's ErP directive will prescribe compulsory values in 2013 and will increase them again in 2015.

The new generation of plug fans by Nicotra Gebhardt, already achieved higher efficiency in 2011 than that required as from 2015.



## The plus factors of the new Generation

### ▶ Unparalleled system efficiency for plug fans

The Evo series sets a new standard in efficiency. No other plug fan reaches higher system efficiency.

### ▶ Innovative blade and impeller shaped for highest efficiencies

The entire shape of the impeller was optimised using a real turbulence profile for the blades. This ensures that the impeller reaches as yet unparalleled high efficiency and takes the top position in aerodynamics.

### ▶ Optimal pressure and turbulence conditions

The re-designed impeller shape makes optimal pressure and minimised turbulence conditions in the impeller possible. The inclined leading edge of the blade builds pressure more evenly minimising entry and exit losses.

### ▶ Low operating cost brushless DC motor

The brushless DC motor used by Nicotra Gebhardt is markedly more efficient than conventional drives: It reduces the energy consumption of the fan for partial loads by up to 50 %.

### ▶ Much quieter

Thanks to their new design the blades and the impeller run with less noise. The entire fan is thus much quieter.

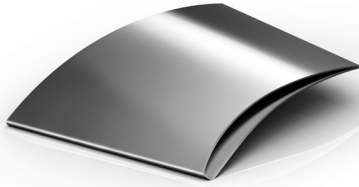
### ▶ Easy to integrate

Despite their improved performance figures, the Evo series have the same external dimensions and significant operational data as earlier generations of plug fans. They can therefore be easily and quickly exchanged in existing systems or integrated in available machine concepts.

### ▶ Easy maintenance

Thanks to the construction method and direct drive the Evo series is practically maintenance-free.

## The evolutionary elements



### ► The perfect profile

At the heart of the Evo series are the six blades with rounded inclined leading edges and re-designed hollow profile.

They ensure minimised turbulence conditions in the impeller thus enabling the extraordinary high efficiency of the fan.

Due to their special shape, the blades build up pressure evenly at all sections. The result: Air circulates around the blades better and the turbulence tends to dissipate. This increases not only efficiency but also causes significantly lower noise.



### ► The innovative high performance impeller

The re-designed high performance impeller makes the Evo series unbeatable in matters of efficiency. To ensure this we optimised the entire shape.

The special shape of the cover disc alone greatly improves turbulence. The width and diameter of the impeller are in an ideal ratio to each other.

The new hollow profile of the blades ensured that the weight of the impeller could be markedly reduced and that, at the same time, a high degree of stability could be reached. Pressure losses on entry were greatly decreased.

And at the exit, where losses had been sustained before, the new impeller shape ensures additional available static pressure.



### ► The tailored drive

The The new generation of our plug fans not only have a perfect impeller but also a precisely matched drive. For this reason, the Evo series, already an innovation in itself, is available with a cutting edge brushless DC motors. Together with such a drive, the Evo series delivers high performance with particularly low energy consumption. Whether during start-up or under base, partial or full load, the efficiency exceeds that of a conventional AC motor in every situation.

Our drives with brushless DCs reach efficiencies of efficiency class IE3 and higher.

## Type code

The type code of every fan is composed as follows. Example:

**RLM E6-3540-4W-17**

#### ■ Index for motor size

#### ■ Motor:

- W = Asynchronous motor (efficiency class IE2)
- D = Asynchronous motor
- BI = Brushless DC motor with integrated control unit (IE3 and higher)
- BE = Brushless DC motor with external control unit (IE3 and higher)

#### ■ N° of poles:

- 2 = 2-poles
- 4 = 4-poles
- 6 = 6-poles

#### ■ Impeller diameter (nominal 400 mm)

#### ■ Connecting diameter (nominal 355 mm)

#### ■ Specification

- 6 = Complete Plug Fan module (motor impeller unit, supporting plate with inlet cone and motor stand on baseframe)

#### ■ Impeller geometry (Series RLM Evo)

#### ■ Drive type

- M = Standard motor



# RLM E6-2528

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## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-2528-2W-16	3.00	400 Δ	50	2905	–	6.10	82	4780	100 L	2	33
RLM E6-2528-2W-14	2.20	230/400	50	2890	–	7.60/4.40	79	4590	90 L	2	29
RLM E6-2528-2W-13	1.50	230/400	50	2890	–	5.30/3.05	69	4040	90 S	2	25
RLM E6-2528-2W-11	1.10	230/400	50	2860	–	3.90/2.25	63	3640	80 M	2	22
RLM E6-2528-2W-10	0.75	230/400	50	2870	–	2.95/1.71	55	3180	80 M	2	20
RLM E6-2528-2D-08	0.55	230/400	50	2800	–	2.37/1.36	51	2880	71 M	2	17
RLM E6-2528-BI-BW-L	3.00	380...480	50/60	4500	6.4	6.4...5.1	–	4400	90	–	32
RLM E6-2528-BE-AY-L	1.50	*	*	4500	3.2	3.20	–	3910	71	–	22
RLM E6-2528-BI-IG-M	1.30	360...460	50/60	3100	4.0	2.60	–	3850	108/30	–	23
RLM E6-2528-BE-IG-M	1.30	*	*	3100	4.0	3.50	–	4000	108/30	–	18

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

### Fan type code

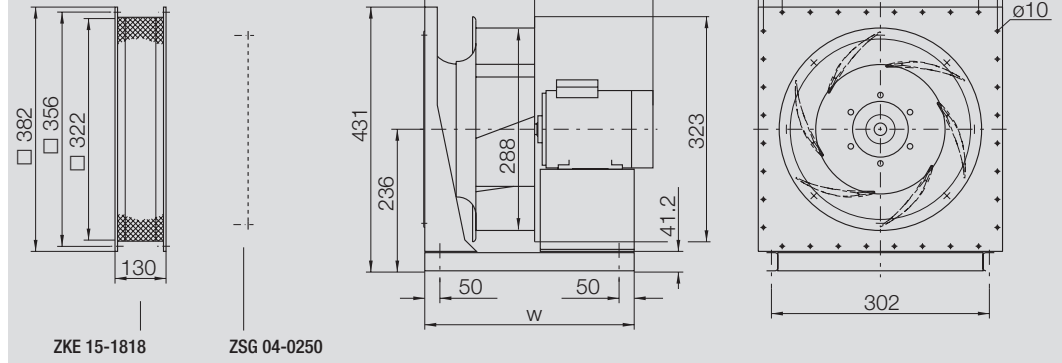
- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

### Dimensions in mm, subject to change.

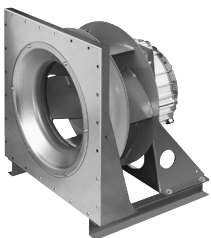


Motor **	k <sub>max</sub>	w
71	412	357
80	456	377
90	513	408
100	569	430

RLM E6-2528-2 -  
RLM E6-2528-BI-\_-L  
RLM E6-2528-BE-\_-L

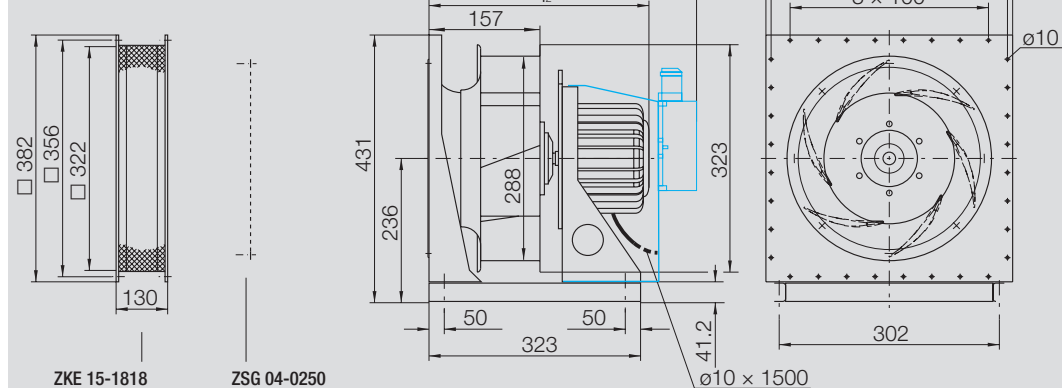


### Dimensions in mm, subject to change.



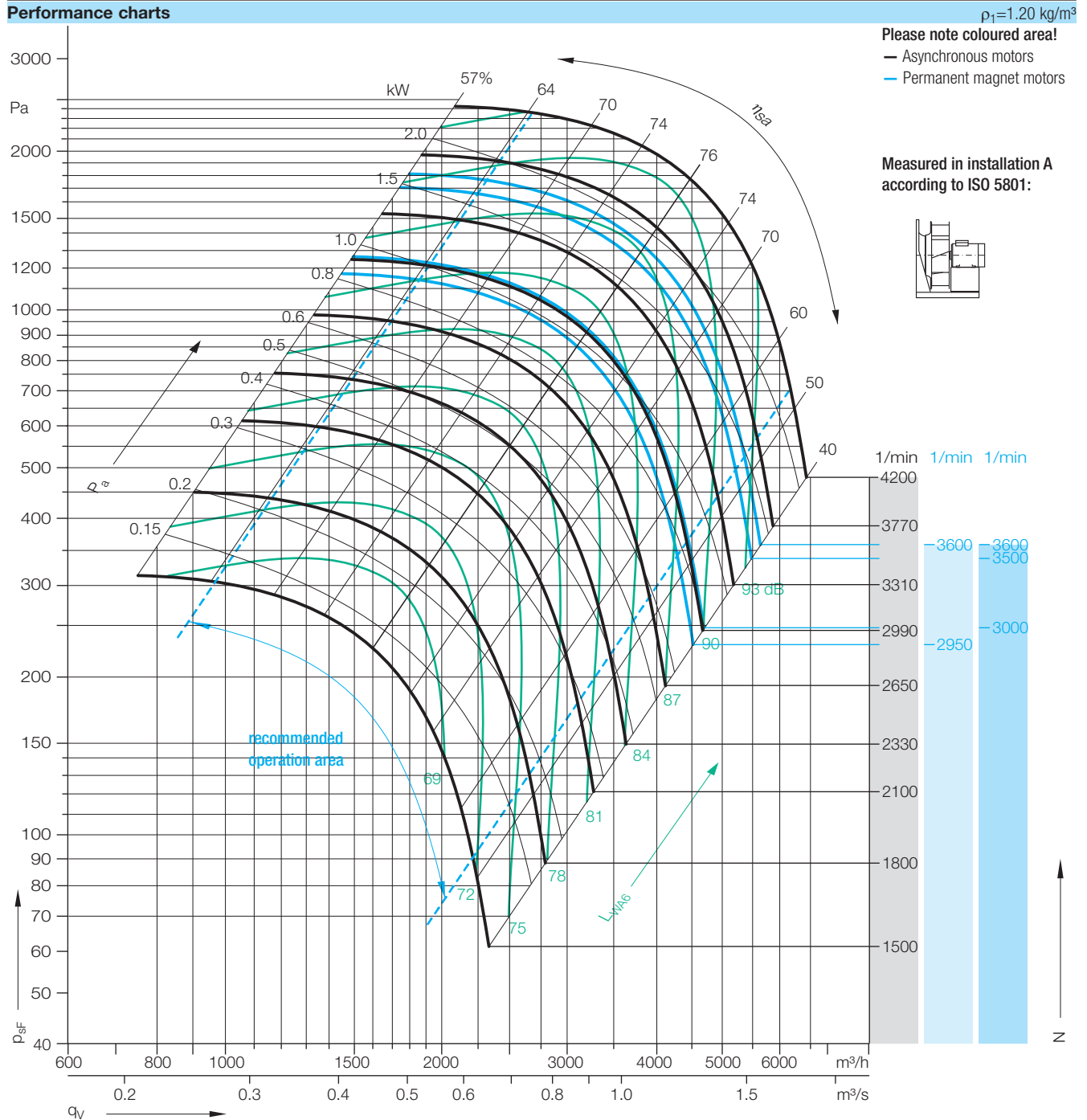
	l <sub>1</sub>	l <sub>2</sub>
BI	454	-
BE	-	334

RLM E6-2528-BI-IG-M  
RLM E6-2528-BE-IG-M

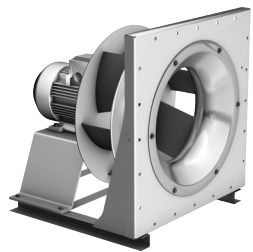


# RLM E6-2831

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

Model	Speed	$\eta_{se}$	64	70	74	76	74	70	60	%
<b>RLM E6-2831-</b>		$\eta_{sa}$	64	70	74	<b>76</b>	74	70	60	%
2W-14	3770 1/min	$\eta_{se}$	51	56	59	<b>60</b>	59	56	48	%
BI-HL	3600 1/min	$\eta_{se}$	55	61	64	<b>65</b>	63	60	52	%
BE-GR	3600 1/min	$\eta_{se}$	55	61	64	<b>65</b>	63	60	52	%
BI-IR	3500 1/min	$\eta_{se}$	55	61	64	<b>66</b>	64	61	52	%
BE-IR	3600 1/min	$\eta_{se}$	55	61	64	<b>66</b>	64	61	52	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power

# RLM E6-2831

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## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-2831-2W-16	3.00	400 Δ	50	2905	–	6.10	72	4200	100 L	2	34
RLM E6-2831-2W-14	2.20	230/400	50	2890	–	7.60/4.40	65	3770	90 L	2	31
RLM E6-2831-2W-13	1.50	230/400	50	2890	–	5.30/3.05	57	3310	90 S	2	27
RLM E6-2831-2W-11	1.10	230/400	50	2860	–	3.90/2.25	52	2990	80 M	2	24
RLM E6-2831-4W-11	0.75	230/400	50	1400	–	3.15/1.81	94	2650	80 M	4	23
RLM E6-2831-4D-10	0.55	230/400	50	1395	–	2.54/1.46	83	2330	80 M	4	22
RLM E6-2831-BI-HL-L	2.20	380...480	50/60	3600	5.8	4.8...3.8	–	3600	90	–	34
RLM E6-2831-BE-GR-L	2.20	*	*	3600	5.8	4.60	–	3600	71	–	24
RLM E6-2831-BE-AY-L	1.50	*	*	4500	3.2	3.20	–	2950	71	–	23
RLM E6-2831-BI-IR-M	1.95	360...460	50/60	3100	6.0	3.40	–	3500	108/55	–	27
RLM E6-2831-BE-IR-M	1.95	*	*	3100	6.0	4.50	–	3600	108/55	–	22
RLM E6-2831-BI-IG-M	1.30	360...460	50/60	3100	4.0	2.20	–	3000	108/30	–	25
RLM E6-2831-BE-IG-M	1.30	*	*	3100	4.0	3.50	–	3000	108/30	–	20

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

### Fan type code

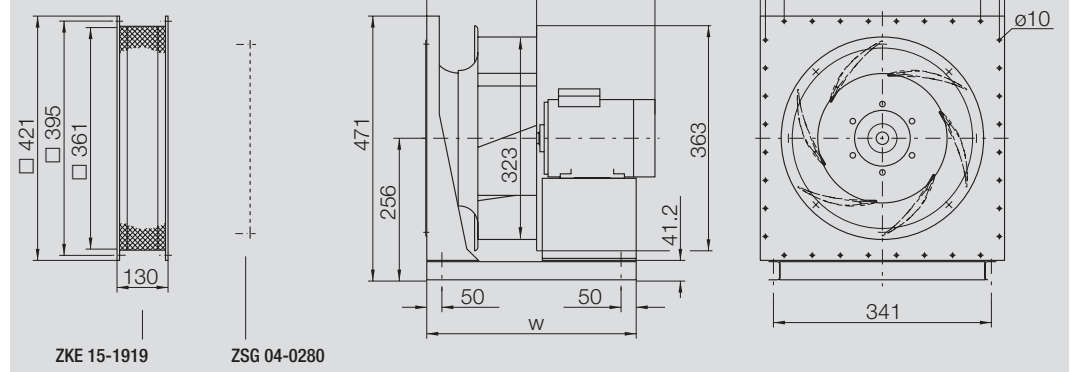
- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

### Dimensions in mm, subject to change.

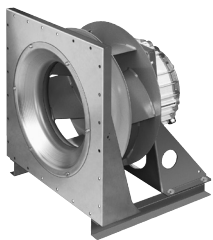


Motor **	k <sub>max</sub>	w
71	422	397
80	476	397
90	533	428
100	589	450

RLM E6-2831-2 -  
RLM E6-2831-4 -  
RLM E6-2831-BI-\_\_-L  
RLM E6-2831-BE-\_\_-L

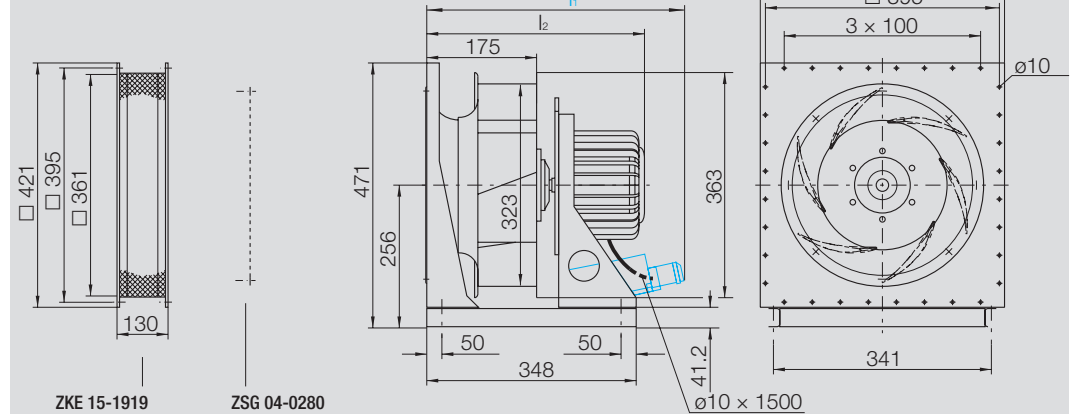


### Dimensions in mm, subject to change.



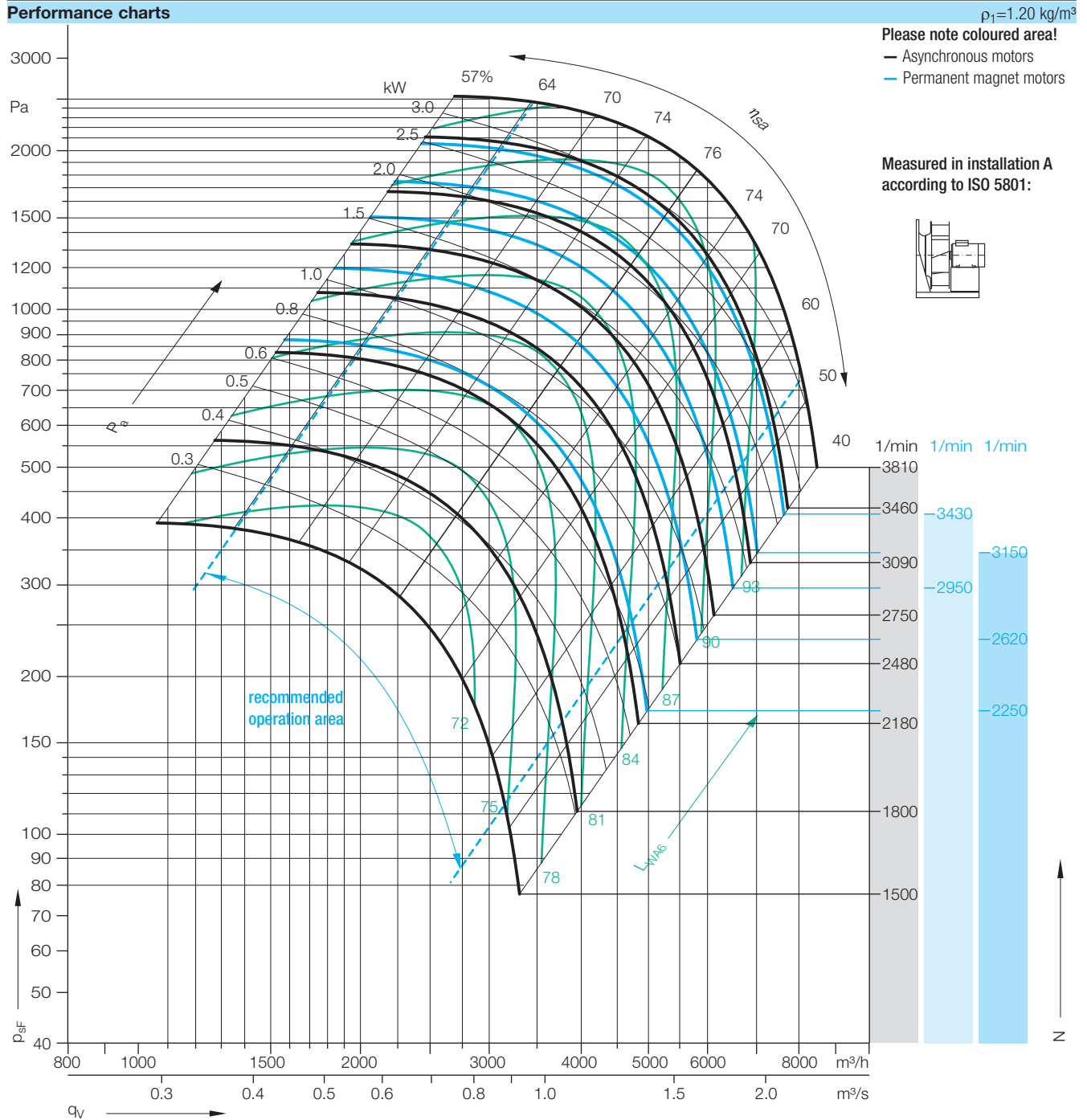
	l <sub>1</sub>	l <sub>2</sub>
BI-IR	477	-
BE-IR	-	380
BI-IG	477	-
BE-IG	-	355

RLM E6-2831-BI-IR-M  
RLM E6-2831-BE-IR-M

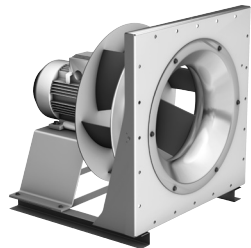


# RLM E6-3135

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

RLM E6-3135-	$\eta_{sa}$	64	70	74	76	74	70	60	%
2W-16 3440 1/min	$\eta_{se}$	53	57	61	62	61	57	49	%
BI-HN 3430 1/min	$\eta_{se}$	57	63	66	67	66	62	53	%
BE-HN 3430 1/min	$\eta_{se}$	57	63	66	67	66	62	53	%
BI-QG 2620 1/min	$\eta_{se}$	56	61	65	66	65	61	52	%
BE-QG 3150 1/min	$\eta_{se}$	57	62	65	67	66	62	53	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power



# RLM E6-3135

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## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-3135-2W-19	4.00	400 Δ	50	2950	–	7.80	64	3810	112 M	2	42
RLM E6-3135-2W-16	3.00	400 Δ	50	2905	–	6.10	59	3460	100 L	2	36
RLM E6-3135-2W-14	2.20	230/400	50	2890	–	7.60/4.40	53	3090	90 L	2	33
RLM E6-3135-4W-14	1.50	230/400	50	1440	–	5.90/3.40	95	2750	90 L	4	31
RLM E6-3135-4W-13	1.10	230/400	50	1440	–	4.40/2.55	86	2480	90 S	4	30
RLM E6-3135-4W-11	0.75	230/400	50	1400	–	3.15/1.81	77	2180	80 M	4	27
RLM E6-3135-BI-HN-L	3.00	380...480	50/60	3600	8.0	6.4...5.1	–	3430	90	–	39
RLM E6-3135-BE-HN-L	3.00	*	*	3600	8.0	6.30	–	3430	90	–	32
RLM E6-3135-BE-GR-L	2.20	*	*	3600	5.8	4.60	–	2950	71	–	27
RLM E6-3135-BI-QG-M	2.10	360...460	50/60	2250	9.0	2.60	–	2620	150/45	–	36
RLM E6-3135-BE-QG-M	2.10	*	*	2250	9.0	5.00	–	3150	150/45	–	31
RLM E6-3135-BI-IG-M	1.30	360...460	50/60	3100	4.0	1.70	–	2250	108/30	–	31
RLM E6-3135-BE-IG-M	1.30	*	*	3100	4.0	3.50	–	2250	108/30	–	26

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

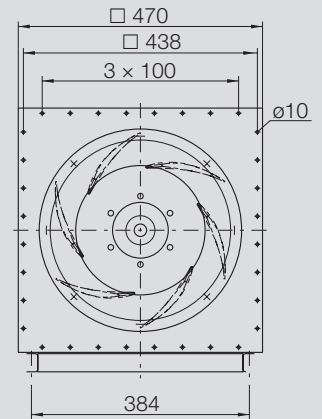
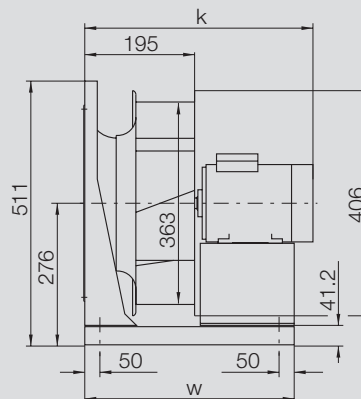
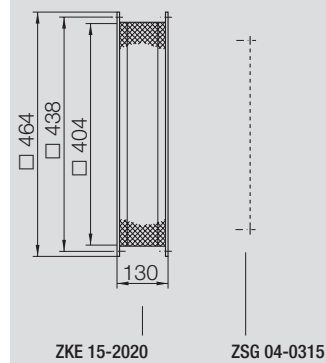
### Fan type code

- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

### Dimensions in mm, subject to change.

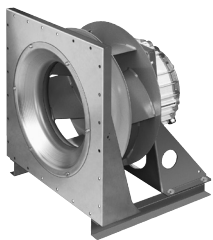


RLM E6-3135-2W-  
RLM E6-3135-4W-  
RLM E6-3135-BI-\_\_-L  
RLM E6-3135-BE-\_\_-L

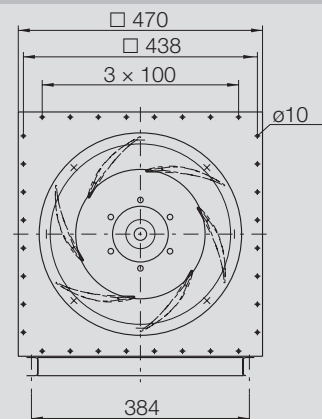
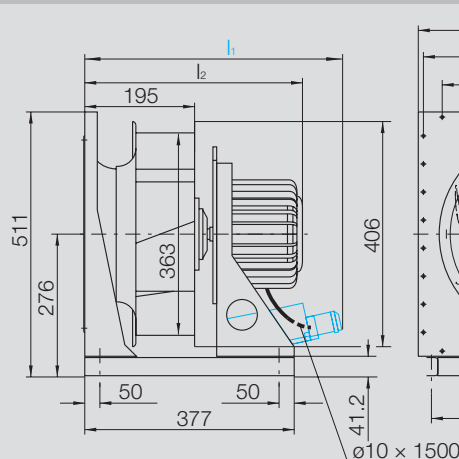
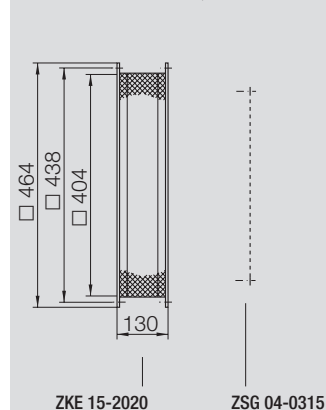


Motor **	k <sub>max</sub>	w
71	442	417
80	526	447
90	553	448
100	609	470
112	628	477

### Dimensions in mm, subject to change.



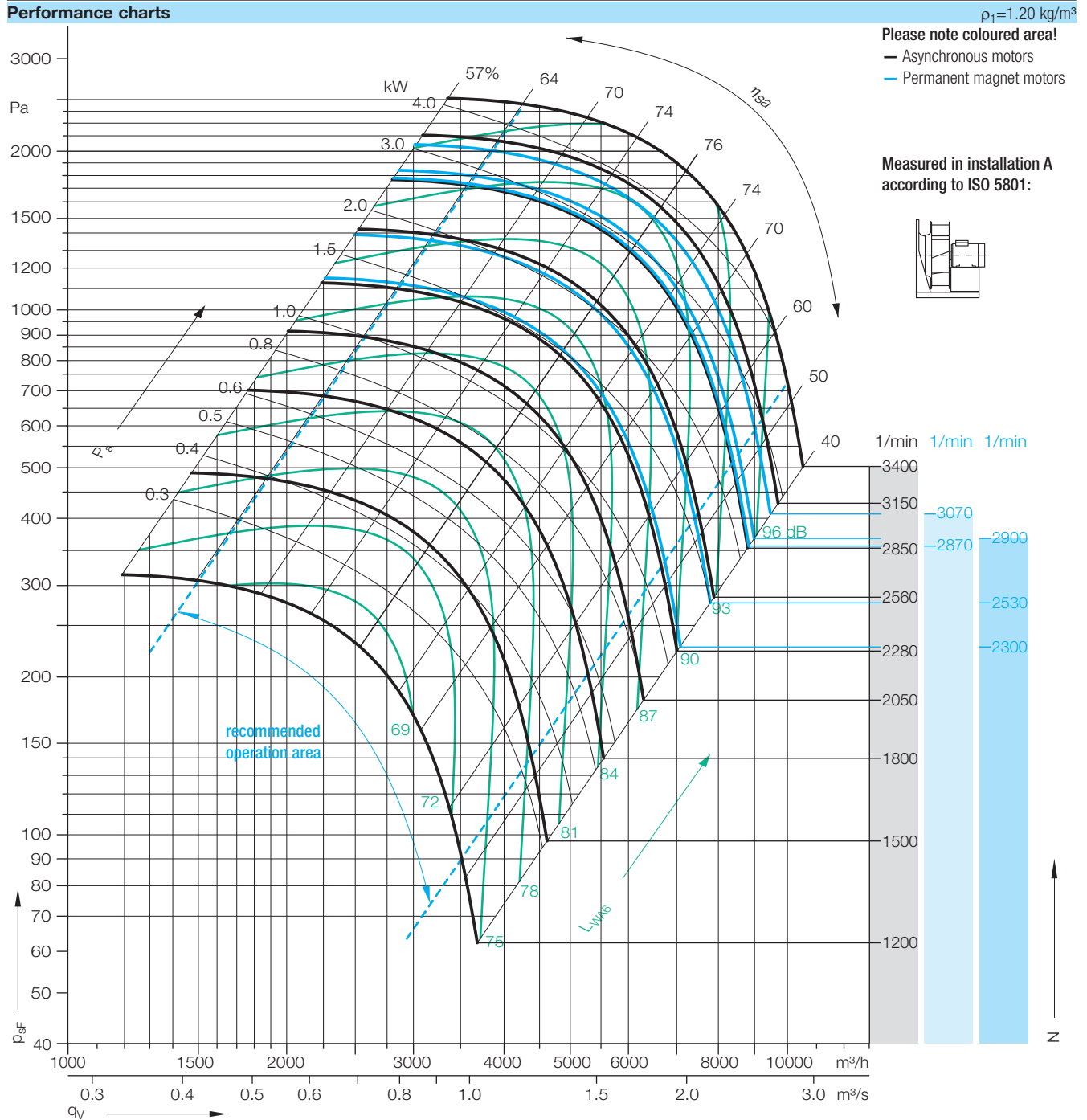
RLM E6-3135-BI-QG-M  
RLM E6-3135-BE-QG-M



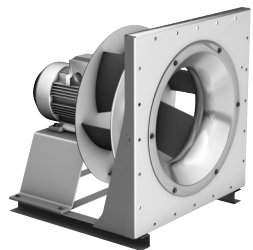
	l <sub>1</sub>	l <sub>2</sub>
BI-QG	495	-
BE-QG	-	383
BI-IG	495	-
BE-IG	-	372

# RLM E6-3540

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

RLM E6-3540-	$\eta_{sa}$	64	70	74	76	74	70	60	%
2W-19 3070 1/min	$\eta_{se}$	53	58	62	63	62	58	50	%
BI-H3 2870 1/min	$\eta_{se}$	57	63	66	67	66	63	54	%
BE-H5 3070 1/min	$\eta_{se}$	57	63	66	67	66	63	54	%
BI-WT 2530 1/min	$\eta_{se}$	57	63	66	68	66	63	54	%
BE-WT 2900 1/min	$\eta_{se}$	57	63	66	68	66	63	54	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power

# RLM E6-3540

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## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-3540-2W-21	5.50	400 Δ	50	2950	–	10.50	57	3400	132 S	2	58
RLM E6-3540-2W-19	4.00	400 Δ	50	2950	–	7.80	53	3150	112 M	2	54
RLM E6-3540-4W-17	3.00	400 Δ	50	1455	–	6.20	97	2850	100 L	4	43
RLM E6-3540-4W-16	2.20	400 Δ	50	1455	–	4.65	87	2560	100 L	4	39
RLM E6-3540-4W-14	1.50	230/400	50	1440	–	5.90/3.40	79	2280	90 L	4	36
RLM E6-3540-4W-13	1.10	230/400	50	1440	–	4.40/2.55	71	2050	90 S	4	33
RLM E6-3540-4W-11	0.75	230/400	50	1400	–	3.15/1.81	64	1800	80 M	4	30
RLM E6-3540-BI-H3-L	3.00	380...480	50/60	3000	9.6	6.4...5.1	–	2870	90	–	46
RLM E6-3540-BE-H5-L	4.00	*	*	3000	12.7	8.50	–	3070	90	–	41
RLM E6-3540-BE-H3-L	3.00	*	*	3000	9.6	6.40	–	2870	90	–	39
RLM E6-3540-BI-WT-M	2.80	360...460	50/60	1900	14.0	4.00	–	2530	150/70	–	44
RLM E6-3540-BE-WT-M	2.80	*	*	1900	14.0	7.00	–	2900	150/70	–	39
RLM E6-3540-BI-QG-M	2.10	360...460	50/60	2250	9.0	3.00	–	2300	150/45	–	41
RLM E6-3540-BE-QG-M	2.10	*	*	2250	9.0	5.00	–	2300	150/45	–	36

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

### Fan type code

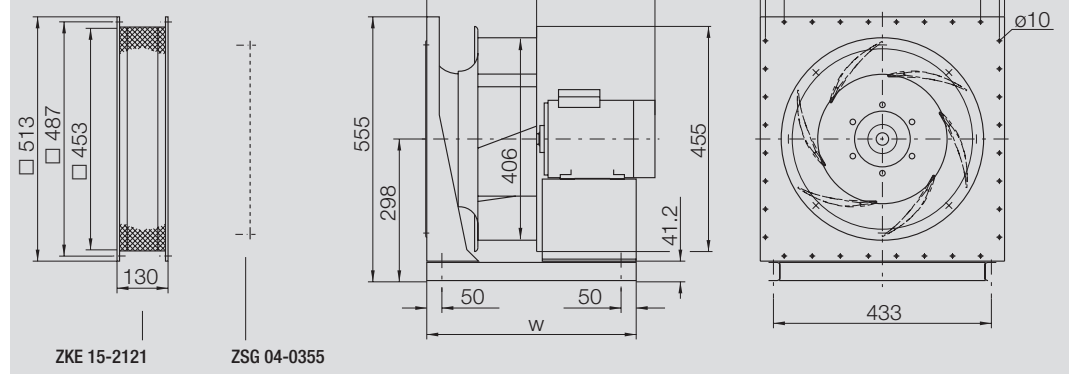
- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

### Dimensions in mm, subject to change.

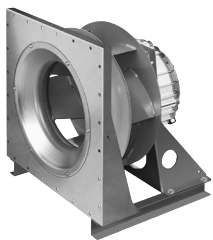


Motor **	k <sub>max</sub>	w
80	526	447
90	583	478
100	639	500
112	658	507
132	706	536

RLM E6-3540-2W-  
RLM E6-3540-4W-  
RLM E6-3540-BI-\_-L  
RLM E6-3540-BE-\_-L

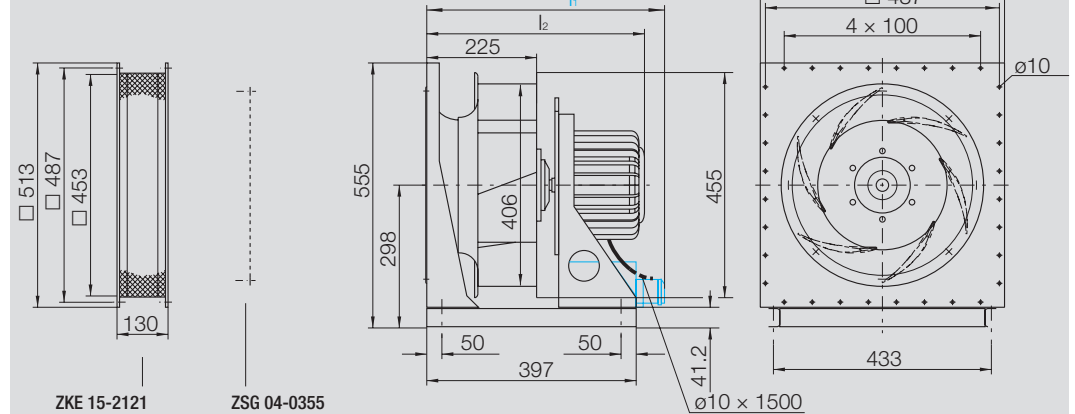


### Dimensions in mm, subject to change.



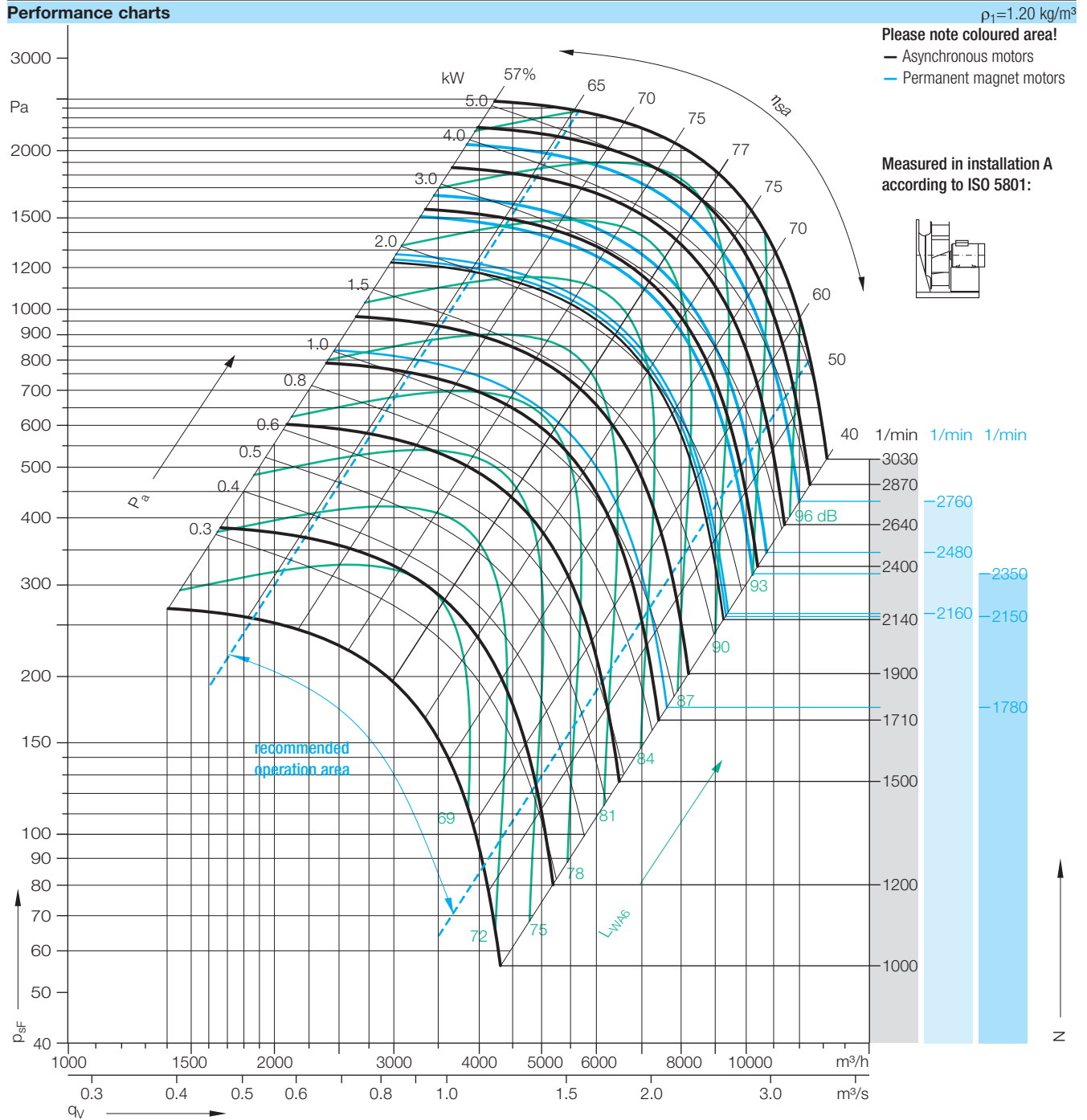
	l <sub>1</sub>	l <sub>2</sub>
BI-WT	511	-
BE-WT	-	438
BI-QG	511	-
BE-QG	-	413

RLM E6-3540-BI-WT-M  
RLM E6-3540-BE-WT-M

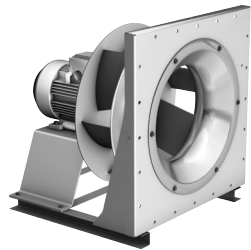


# RLM E6-4045

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

RLM E6-4045-	$\eta_{sa}$	65	70	75	77	75	70	60	%
4W-21 2760 1/min	$\eta_{se}$	55	60	64	65	64	60	51	%
BI-H5 2480 1/min	$\eta_{se}$	58	63	67	68	67	63	54	%
BE-H7 2760 1/min	$\eta_{se}$	58	63	67	68	67	63	54	%
BI-WT 2150 1/min	$\eta_{se}$	58	63	67	69	67	63	54	%
BE-WT 2350 1/min	$\eta_{se}$	58	63	68	69	68	63	54	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power

# RLM E6-4045

EVOLUTION  
IS IN THE AIR  
RLM<sup>EVO</sup>

## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-4045-2W-22	7.50	400 Δ	50	2950	–	14.10	51	3030	132 S	2	70
RLM E6-4045-4W-21	5.50	400 Δ	50	1465	–	11.40	98	2870	132 S	4	66
RLM E6-4045-4W-19	4.00	400 Δ	50	1460	–	8.20	90	2640	112 M	4	55
RLM E6-4045-4W-17	3.00	400 Δ	50	1455	–	6.20	82	2400	100 L	4	52
RLM E6-4045-4W-16	2.20	400 Δ	50	1455	–	4.65	73	2140	100 L	4	48
RLM E6-4045-4W-14	1.50	230/400	50	1440	–	5.90/3.40	65	1900	90 L	4	44
RLM E6-4045-4W-13	1.10	230/400	50	1440	–	4.40/2.55	59	1710	90 S	4	41
RLM E6-4045-BI-H5-L	4.00	380...480	50/60	3000	12.7	8.5...6.8	–	2480	90	–	53
RLM E6-4045-BE-H7-L	5.50	*	*	3000	17.5	11.70	–	2760	90	–	48
RLM E6-4045-BE-H5-L	4.00	*	*	3000	12.7	8.50	–	2480	90	–	46
RLM E6-4045-BE-H3-L	3.00	*	*	3000	9.6	6.40	–	2160	90	–	44
RLM E6-4045-BI-WT-M	2.80	360...460	50/60	1900	14.0	4.00	–	2150	150/70	–	49
RLM E6-4045-BE-WT-M	2.80	*	*	1900	14.0	7.00	–	2350	150/70	–	44
RLM E6-4045-BI-QG-M	2.10	360...460	50/60	2250	9.00	2.40	–	1780	150/45	–	46
RLM E6-4045-BE-QG-M	2.10	*	*	2250	9.00	5.00	–	1780	150/45	–	41

\* Motor for operation with inverter only (No mains operation).

We recommend: Danfoss VLT HVAC Drive FC-100.

### Fan type code

W = Asynchronous motor according to efficiency class IE2 (High Efficiency)

BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)

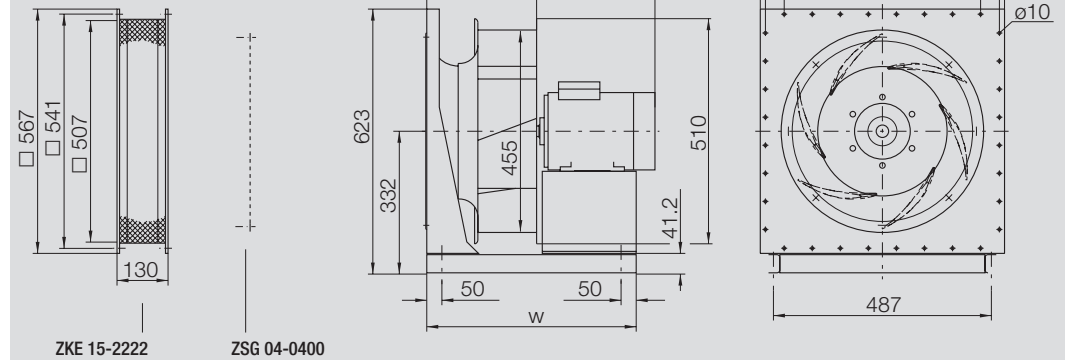
BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

## Dimensions

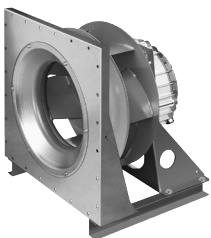


Motor **	k <sub>max</sub>	w
90	608	503
100	691	552
112	710	559
132	731	561

RLM E6-4045-4W-  
RLM E6-4045-BI-\_-L  
RLM E6-4045-BE-\_-L

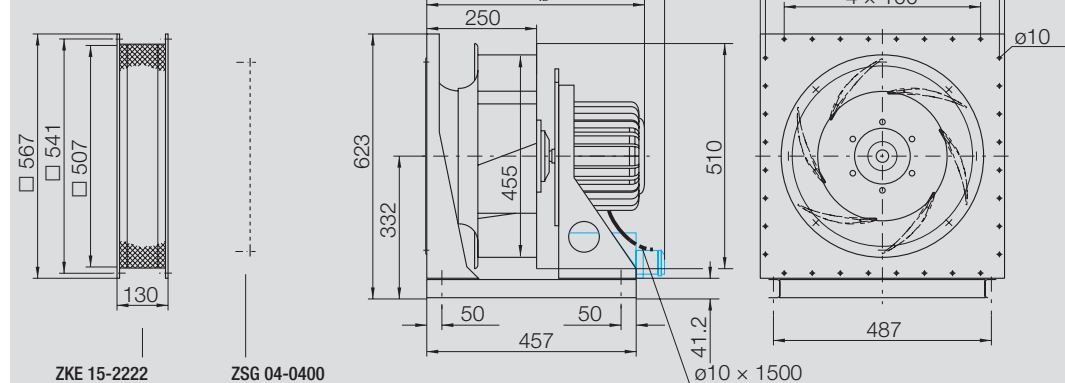


## Dimensions in mm, subject to change.



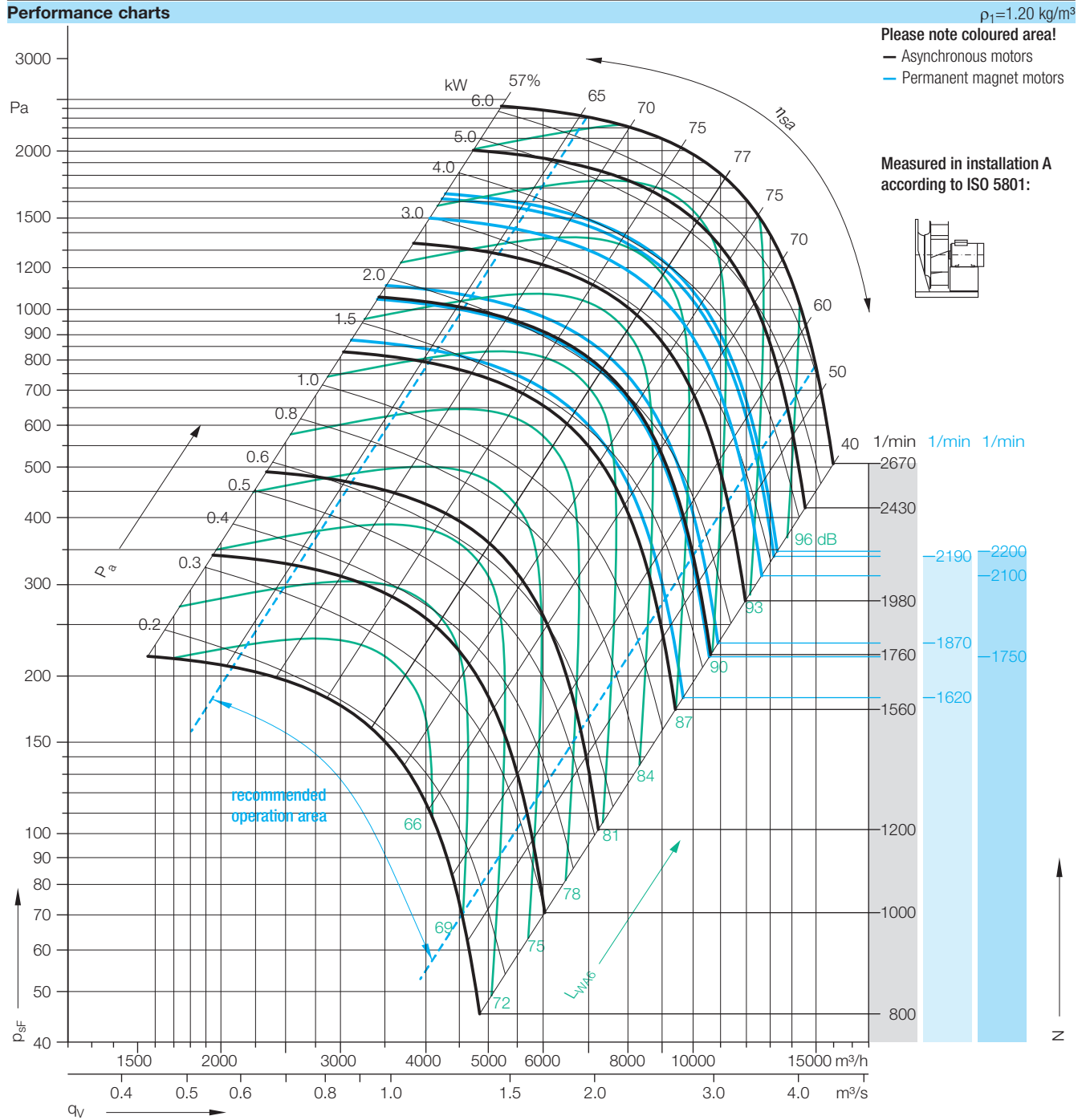
	l <sub>1</sub>	l <sub>2</sub>
BI-WT	542	-
BE-WT	-	462
BI-QG	542	-
BE-QG	-	437

RLM E6-4045-BI-WT-M  
RLM E6-4045-BE-WT-M

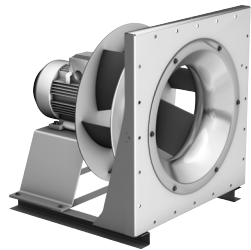


# RLM E6-4550

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

RLM E6-4550-	$\eta_{sa}$	65	70	75	77	75	70	60	%
4W-21 2430 1/min	$\eta_{se}$	55	60	64	65	64	60	51	%
BI-H7 2190 1/min	$\eta_{se}$	58	63	67	68	67	63	54	%
BE-H7 2190 1/min	$\eta_{se}$	58	63	67	68	67	63	54	%
BI-YG 2100 1/min	$\eta_{se}$	58	63	67	69	67	63	54	%
BE-YG 2200 1/min	$\eta_{se}$	58	63	68	69	68	63	65	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power

# RLM E6-4550

EVOLUTION  
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RLM<sup>EVO</sup>

## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-4550-4W-23	7.50	400 Δ	50	1465		14.70	91	2670	132 M	4	86
RLM E6-4550-4W-21	5.50	400 Δ	50	1465	-	11.40	82	2430	132 S	4	79
RLM E6-4550-4W-19	4.00	400 Δ	50	1460	-	8.20	74	2180	112 M	4	65
RLM E6-4550-4W-17	3.00	400 Δ	50	1455	-	6.20	68	1980	100 L	4	61
RLM E6-4550-4W-16	2.20	400 Δ	50	1455	-	4.65	60	1760	100 L	4	57
RLM E6-4550-4W-14	1.50	230/400	50	1440	-	5.90/3.40	54	1560	90 L	4	54
RLM E6-4550-BI-H7-L	5.50	380...480	50/60	3000	17.5	11.7...9.3	-	2190	90	-	63
RLM E6-4550-BE-H7-L	5.50	*	*	3000	17.5	11.70	-	2190	90	-	56
RLM E6-4550-BE-H5-L	4.00	*	*	3000	12.7	8.50	-	1870	90	-	54
RLM E6-4550-BE-H3-L	3.00	*	*	3000	9.6	6.40	-	1620	90	-	52
RLM E6-4550-BI-YG-M	4.30	360...460	50/60	1700	24.0	6.40	-	2100	220/55	-	74
RLM E6-4550-BE-YG-M	4.30	*	*	1700	24.0	10.00	-	2200	220/55	-	67
RLM E6-4550-BI-WT-M	2.80	360...460	50/60	1900	14.0	3.70	-	1750	150/70	-	60
RLM E6-4550-BE-WT-M	2.80	*	*	1900	14.0	7.00	-	1750	150/70	-	55

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

### Fan type code

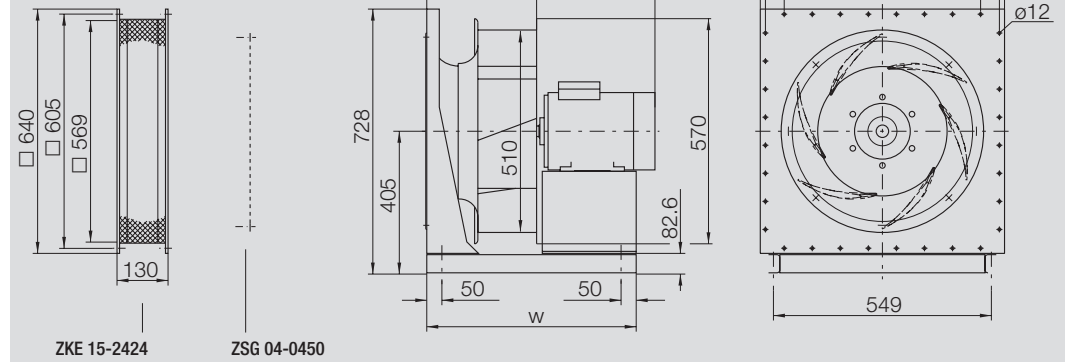
- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

### Dimensions in mm, subject to change.

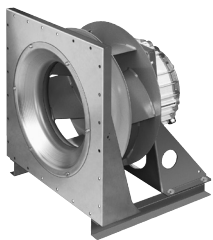


Motor **	k <sub>max</sub>	w
90	635	530
100	691	552
112	710	559
132	758	598

RLM E6-4550-4W-  
RLM E6-4550-BI-\_-L  
RLM E6-4550-BE-\_-L

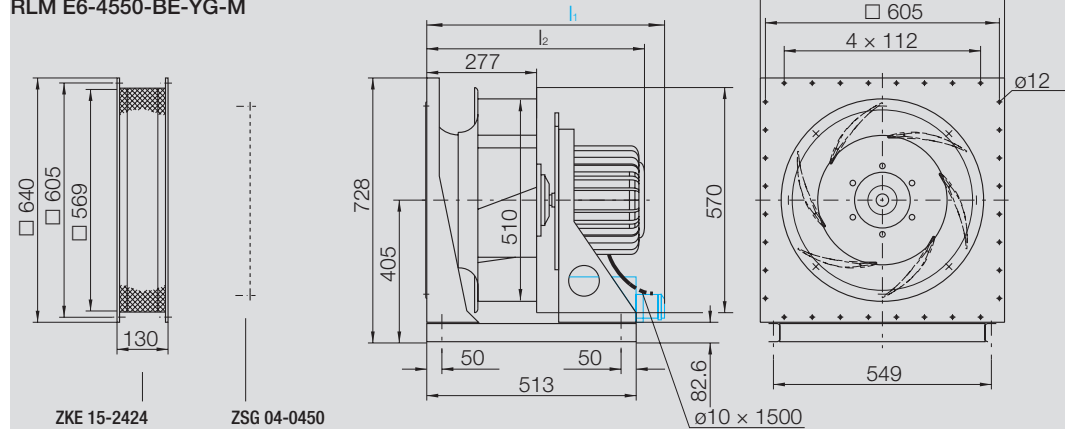


### Dimensions in mm, subject to change.



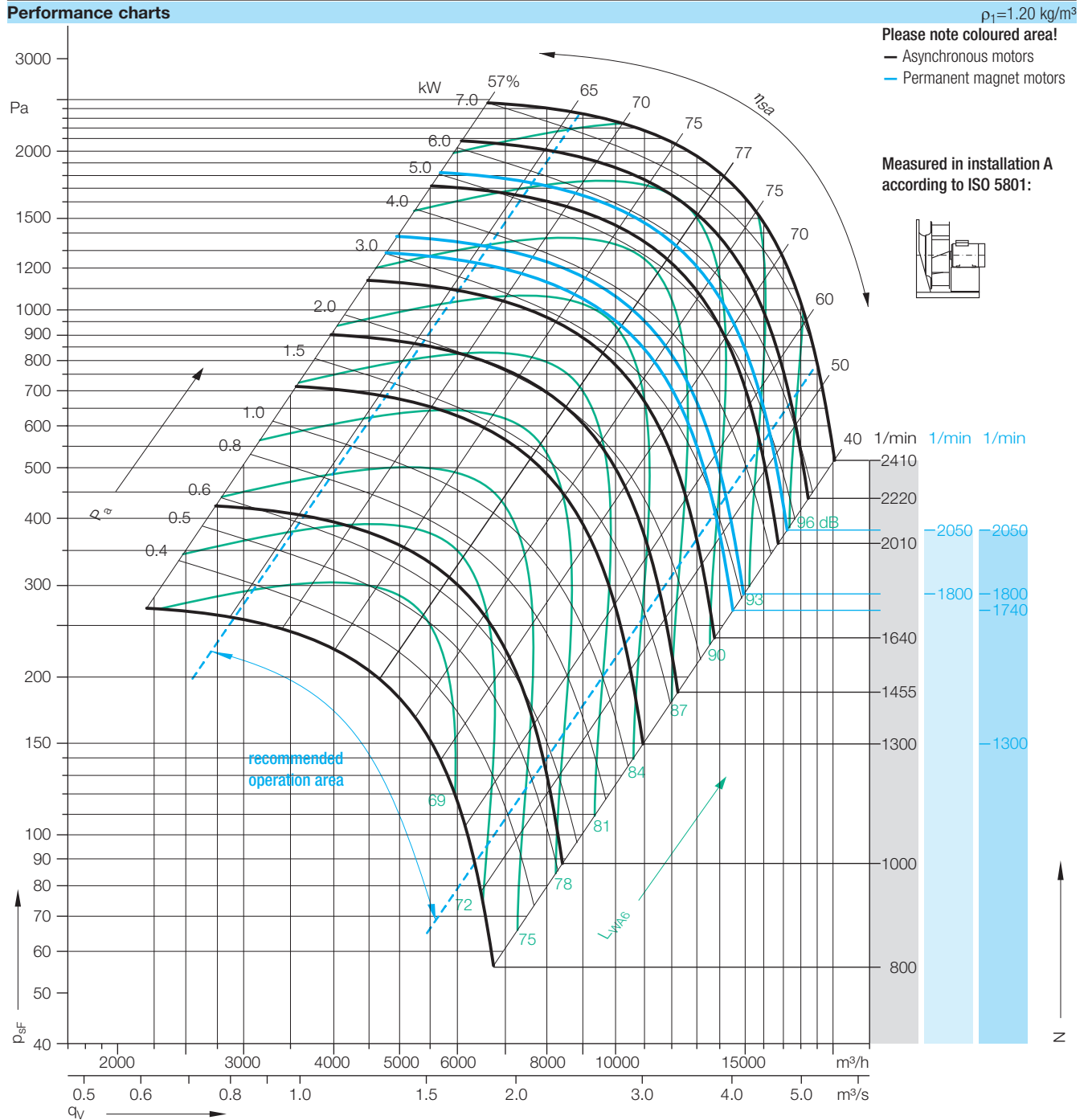
	l <sub>1</sub>	l <sub>2</sub>
BI-YG	582	-
BE-YG	-	495
BI-WT	575	-
BE-WT	-	495

RLM E6-4550-BI-YG-M  
RLM E6-4550-BE-YG-M

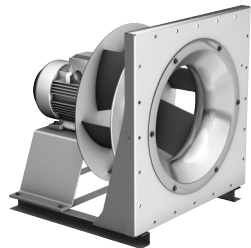


# RLM E6-5056

EVOLUTION  
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RLM<sup>EVO</sup>



**System efficiencies**



Comparison system efficiencies  $\eta_{se}$  (impeller, motor, inverter)

RLM E6-5056-	$\eta_{sa}$	65	70	75	77	75	70	60	%
4W-23 2200 1/min	$\eta_{se}$	56	61	65	66	65	61	52	%
BI-UR 1800 1/min	$\eta_{se}$	57	62	66	67	66	62	53	%
BE-VN 2050 1/min	$\eta_{se}$	58	63	67	68	67	63	54	%
BI-YG 1740 1/min	$\eta_{se}$	58	63	67	69	67	63	54	%
BE-YN 2050 1/min	$\eta_{se}$	58	63	68	69	68	63	54	%

**Formula symbols**

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power



# RLM E6-5056

EVOLUTION  
IS IN THE AIR  
RLM<sup>EVO</sup>

## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-5056-4W-26	11.00	400 Δ	50	1470	–	21.00	82	2410	160 M	4	126
RLM E6-5056-4W-23	7.50	400 Δ	50	1465	–	14.80	75	2220	132 M	4	99
RLM E6-5056-4W-21	5.50	400 Δ	50	1465	–	11.40	68	2010	132 S	4	92
RLM E6-5056-4W-19	4.00	400 Δ	50	1460	–	8.20	61	1800	112 M	4	77
RLM E6-5056-4W-17	3.00	400 Δ	50	1455	–	6.20	56	1640	100 L	4	73
RLM E6-5056-4W-16	2.20	400 Δ	50	1455	–	4.65	50	1455	100 L	4	69
RLM E6-5056-6W-16	1.50	230/400	50	935	–	6.40/3.70	69	1300	100 L	6	73
RLM E6-5056-BI-UR-L	4.00	380...480	50/60	1800	21.2	8.8...7.0	–	1800	90	–	82
RLM E6-5056-BE-VN-L	5.50	*	*	1800	29.2	11.60	–	2050	112	–	84
RLM E6-5056-BI-YG-M	4.30	360...460	50/60	1700	24.0	6.40	–	1740	220/100	–	85
RLM E6-5056-BE-YN-M	6.50	*	*	1400	44.0	16.00	–	2050	220/100	–	90
RLM E6-5056-BE-YG-M	4.30	*	*	1700	24.0	10.00	–	1800	220/55	–	77
RLM E6-5056-BI-WT-M	2.80	360...460	50/60	1900	14.0	3.10	–	1300	150/70	–	70
RLM E6-5056-BE-WT-M	2.80	*	*	1900	14.0	7.00	–	1300	150/70	–	65

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

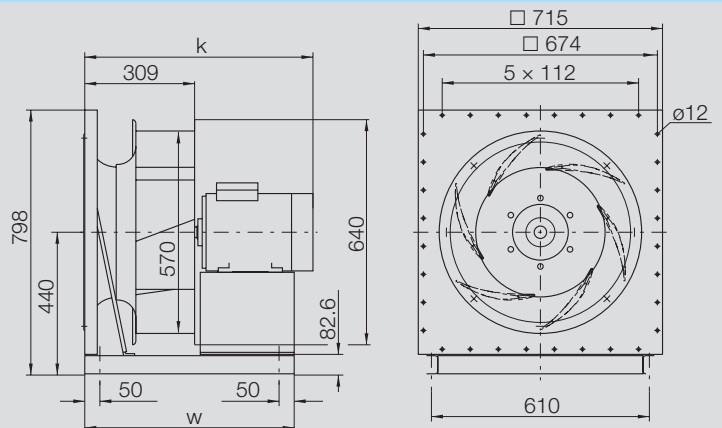
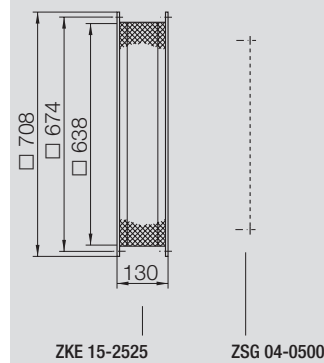
### Fan type code

- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

### Dimensions in mm, subject to change.

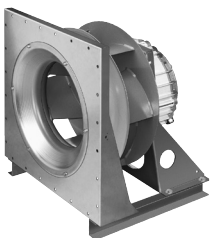


RLM E6-5056-4W-  
RLM E6-5056-6W-  
RLM E6-5056-BI-\_-L  
RLM E6-5056-BE-\_-L

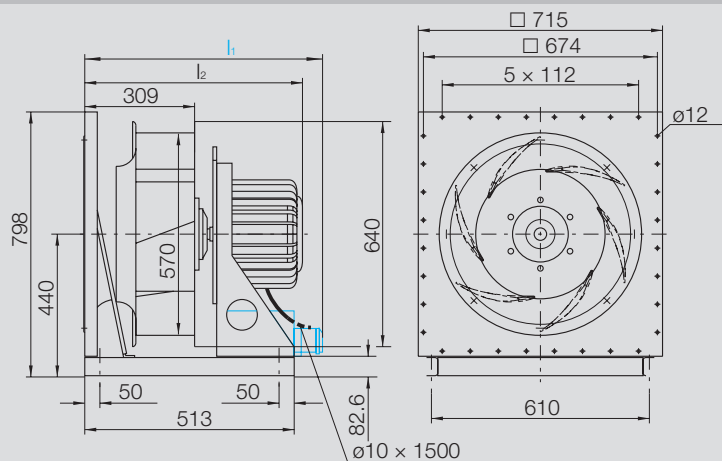
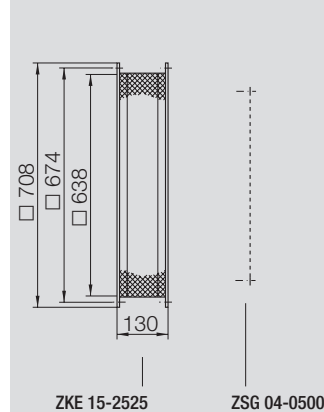


Motor **	k <sub>max</sub>	w
90	638	540
100	701	562
112	720	569
132	768	608
160	879	707

### Dimensions in mm, subject to change.



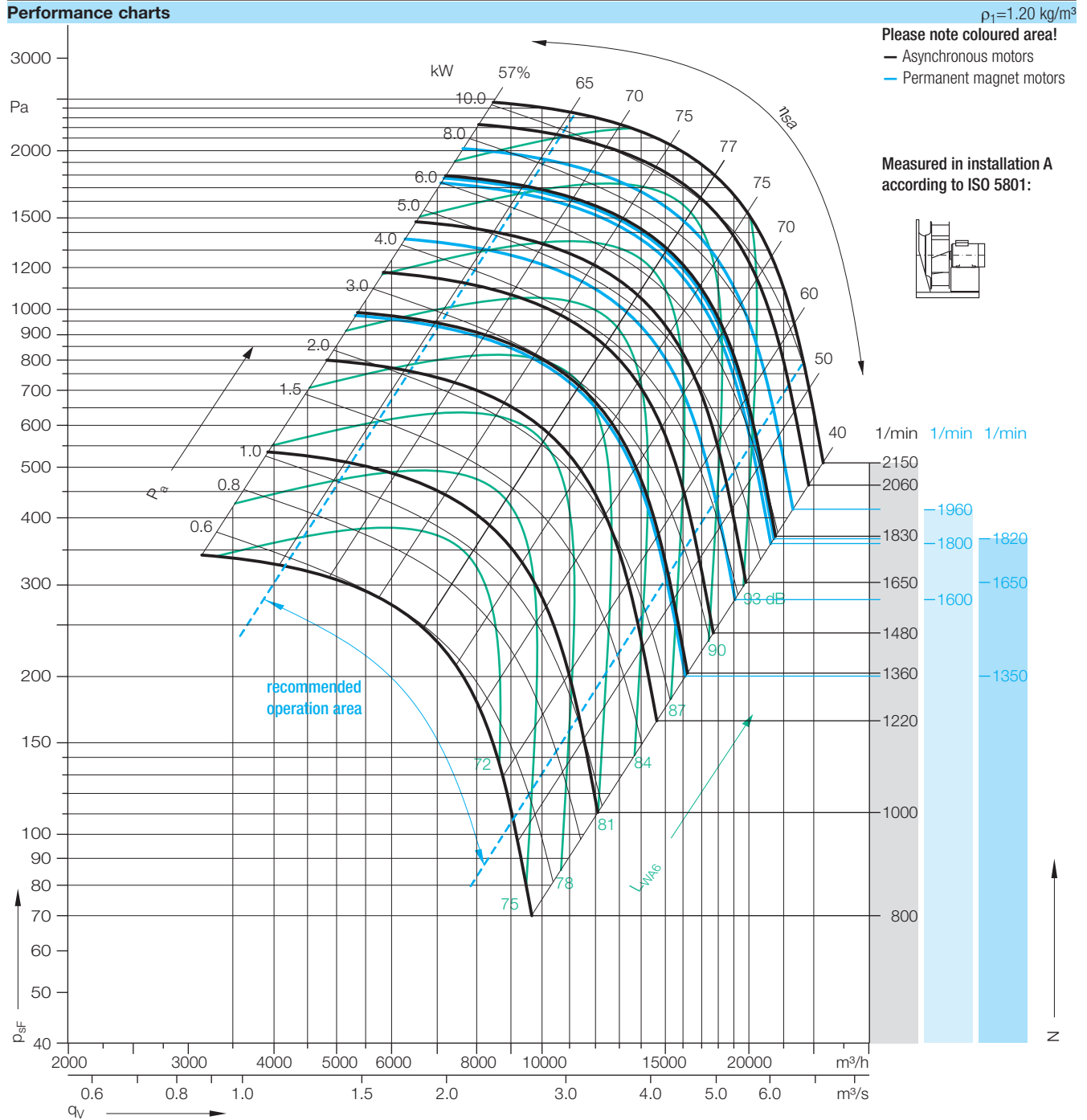
RLM E6-5056-BI-YG-M  
RLM E6-5056-BE-YN-M



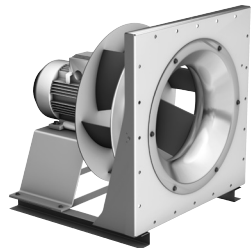
	l <sub>1</sub>	l <sub>2</sub>
BI-YG	587	-
BE-YN	-	545
BE-YG	-	500
BI-WT	580	-
BE-WT	-	500

# RLM E6-5663

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

RLM E6-5663-	$\eta_{sa}$	65	70	75	77	75	70	60	%
4W-26 1960 1/min	$\eta_{se}$	57	61	66	67	66	61	53	%
BI-VP 1800 1/min	$\eta_{se}$	58	63	67	68	67	63	54	%
BE-VR 1960 1/min	$\eta_{se}$	58	63	67	68	67	63	54	%
BI-YN 1650 1/min	$\eta_{se}$	58	63	68	69	68	63	54	%
BE-YN 1820 1/min	$\eta_{se}$	58	63	68	69	68	63	54	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power

# RLM E6-5663

EVOLUTION  
IS IN THE AIR  
RLM<sup>EVO</sup>

## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-5663-4W-28	15.00	400 Δ	50	1475	–	28.00	72	2150	160 L	4	154
RLM E6-5663-4W-26	11.00	400 Δ	50	1470	–	21.00	70	2060	160 M	4	142
RLM E6-5663-4W-23	7.50	400 Δ	50	1465	–	14.80	62	1830	132 M	4	109
RLM E6-5663-4W-21	5.50	400 Δ	50	1465	–	11.40	56	1650	132 S	4	102
RLM E6-5663-4W-19	4.00	400 Δ	50	1460	–	8.20	50	1480	112 M	4	88
RLM E6-5663-6W-21	3.00	400 Δ	50	970	–	7.00	70	1360	132 S	6	98
RLM E6-5663-6W-19	2.20	400 Δ	50	955	–	5.60	63	1220	112 M	6	88
RLM E6-5663-BI-VP-L	7.50	380...480	50/60	1800	39.8	16.2...12.8	–	1800	112	–	107
RLM E6-5663-BE-VR-L	11.00	*	*	1800	58.4	23.20	–	1960	112	–	103
RLM E6-5663-BE-VP-L	7.50	*	*	1800	39.8	15.80	–	1800	112	–	100
RLM E6-5663-BE-VN-L	5.50	*	*	1800	29.2	11.60	–	1600	112	–	96
RLM E6-5663-BI-YN-M	6.50	360...460	50/60	1400	44.0	10.10	–	1650	220/100	–	106
RLM E6-5663-BE-YN-M	6.50	*	*	1400	44.0	16.00	–	1820	220/100	–	99
RLM E6-5663-BI-YG-M	4.30	360...460	50/60	1700	24.0	6.00	–	1350	220/55	–	93
RLM E6-5663-BE-YG-M	4.30	*	*	1700	24.0	10.00	–	1350	220/55	–	86

\* Motor for operation with inverter only (No mains operation).

We recommend: Danfoss VLT HVAC Drive FC-100.

### Fan type code

W = Asynchronous motor according to efficiency class IE2 (High Efficiency)

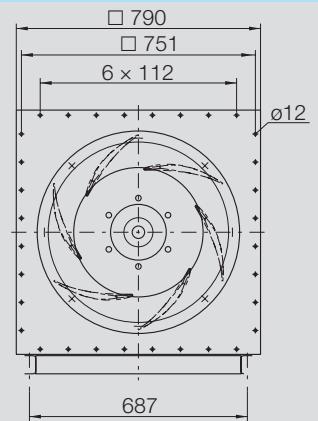
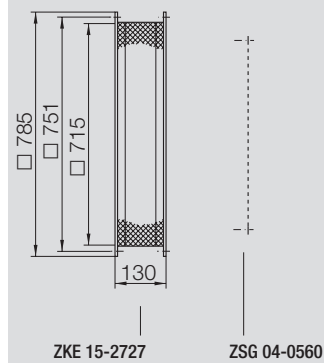
BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)

BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

### Dimensions in mm, subject to change.

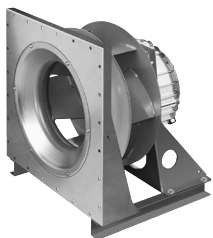


RLM E6-5663-4W-  
RLM E6-5663-6W-  
RLM E6-5663-BI-\_\_-L  
RLM E6-5663-BE-\_\_-L

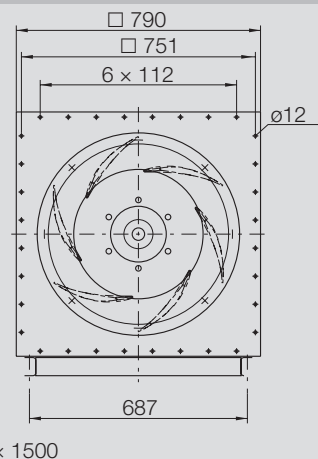
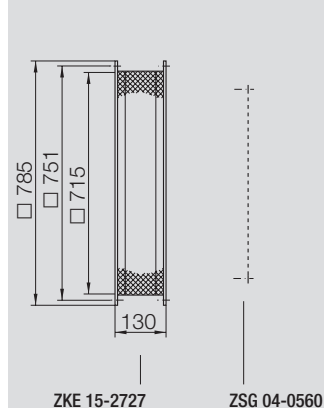


Motor **	k <sub>max</sub>	w
112	755	615
132	809	649
160	920	748

### Dimensions in mm, subject to change.



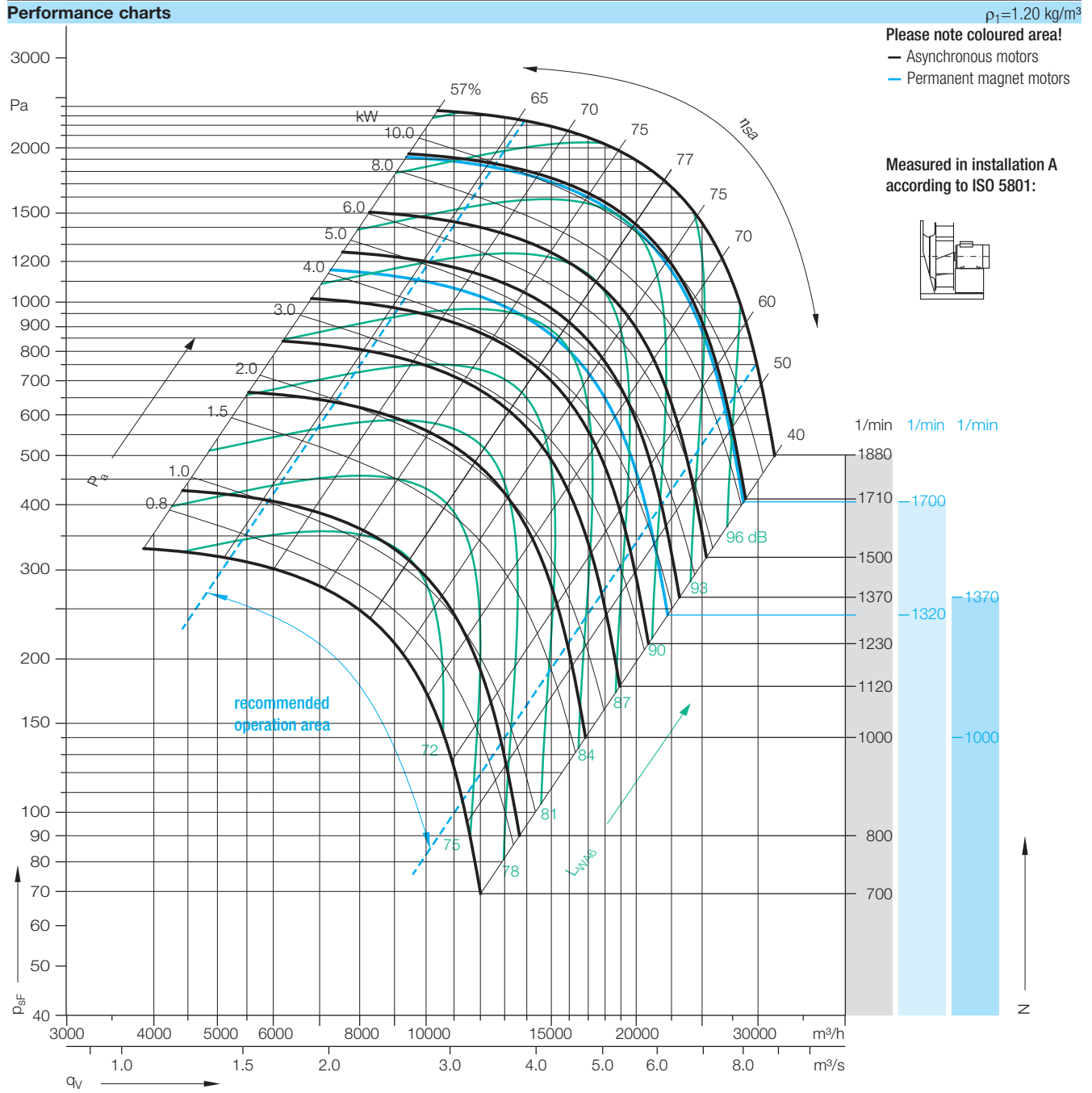
RLM E6-5663-BI-YN-M  
RLM E6-5663-BE-YN-M



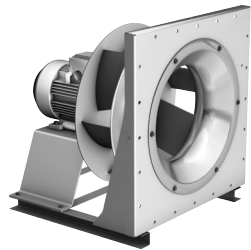
	l <sub>1</sub>	l <sub>2</sub>
BI-YN	617	-
BE-YN	-	582
BI-YG	617	-
BE-YG	-	537

# RLM E6-6371

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

Model	Speed	Motor Type	65	70	75	77	75	70	60	%
<b>RLM E6-6371-</b>		$\eta_{sa}$	65	70	75	<b>77</b>	75	70	60	%
4W-26	1710 1/min	$\eta_{se}$	57	61	66	<b>67</b>	66	61	53	%
BI-VR	1700 1/min	$\eta_{se}$	58	63	67	<b>68</b>	67	63	54	%
BE-VR	1700 1/min	$\eta_{se}$	58	63	67	<b>68</b>	67	63	54	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power

# RLM E6-6371

EVOLUTION  
IS IN THE AIR  
RLM<sup>EVO</sup>

## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-6371-4W-28	15.00	400 Δ	50	1475	–	28.00	63	1880	160 L	4	182
RLM E6-6371-4W-26	11.00	400 Δ	50	1470	–	21.00	58	1710	160 M	4	170
RLM E6-6371-4W-23	7.50	400 Δ	50	1465	–	14.80	51	1500	132 M	4	146
RLM E6-6371-6W-24	5.50	400 Δ	50	970	–	12.00	70	1370	132 M	6	149
RLM E6-6371-6W-23	4.00	400 Δ	50	970	–	8.70	63	1230	132 M	6	140
RLM E6-6371-6W-21	3.00	400 Δ	50	970	–	7.00	57	1120	132 S	6	135
RLM E6-6371-BI-VR-L	11.00	380...480	50/60	1800	58.4	23.6...18.7	–	1700	112	–	135
RLM E6-6371-BE-VR-L	11.00	*	*	1800	58.4	23.20	–	1700	112	–	128
RLM E6-6371-BE-VP-L	7.50	*	*	1800	39.8	15.80	–	1320	112	–	125
RLM E6-6371-BI-YN-M	6.50	360...460	50/60	1400	44.0	10.10	–	1370	220/100	–	130
RLM E6-6371-BE-YN-M	6.50	*	*	1400	44.0	16.00	–	1370	220/100	–	123
RLM E6-6371-BI-YG-M	4.30	360...460	50/60	1700	24.0	4.50	–	1000	220/55	–	117
RLM E6-6371-BE-YG-M	4.30	*	*	1700	24.0	10.00	–	1000	220/55	–	110

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

### Fan type code

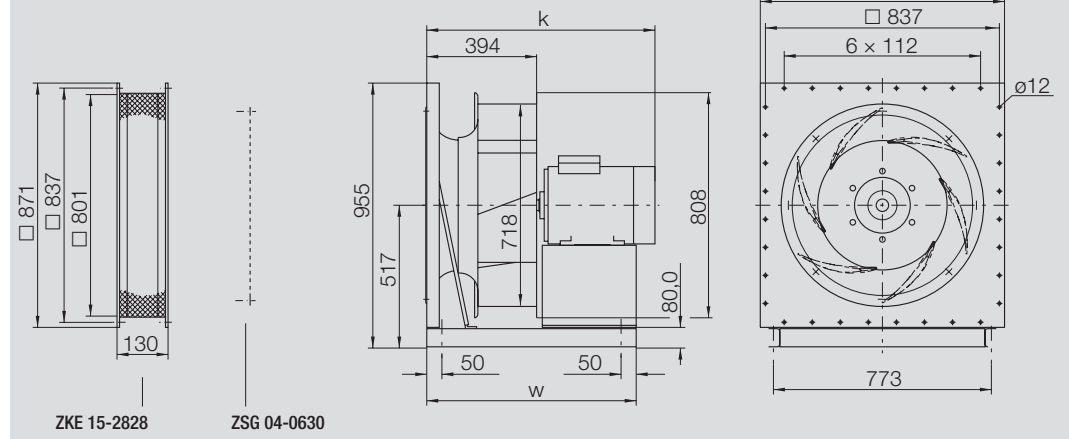
- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BI = Brushless DC motor with integrated control unit (efficiency class IE3 and higher)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

Dimensions in mm, subject to change.

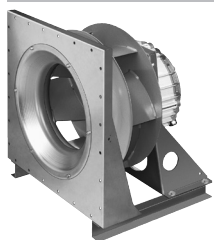


Motor **	k <sub>max</sub>	w
112	753	692
132	854	692
160	965	791

### RLM E6-6371



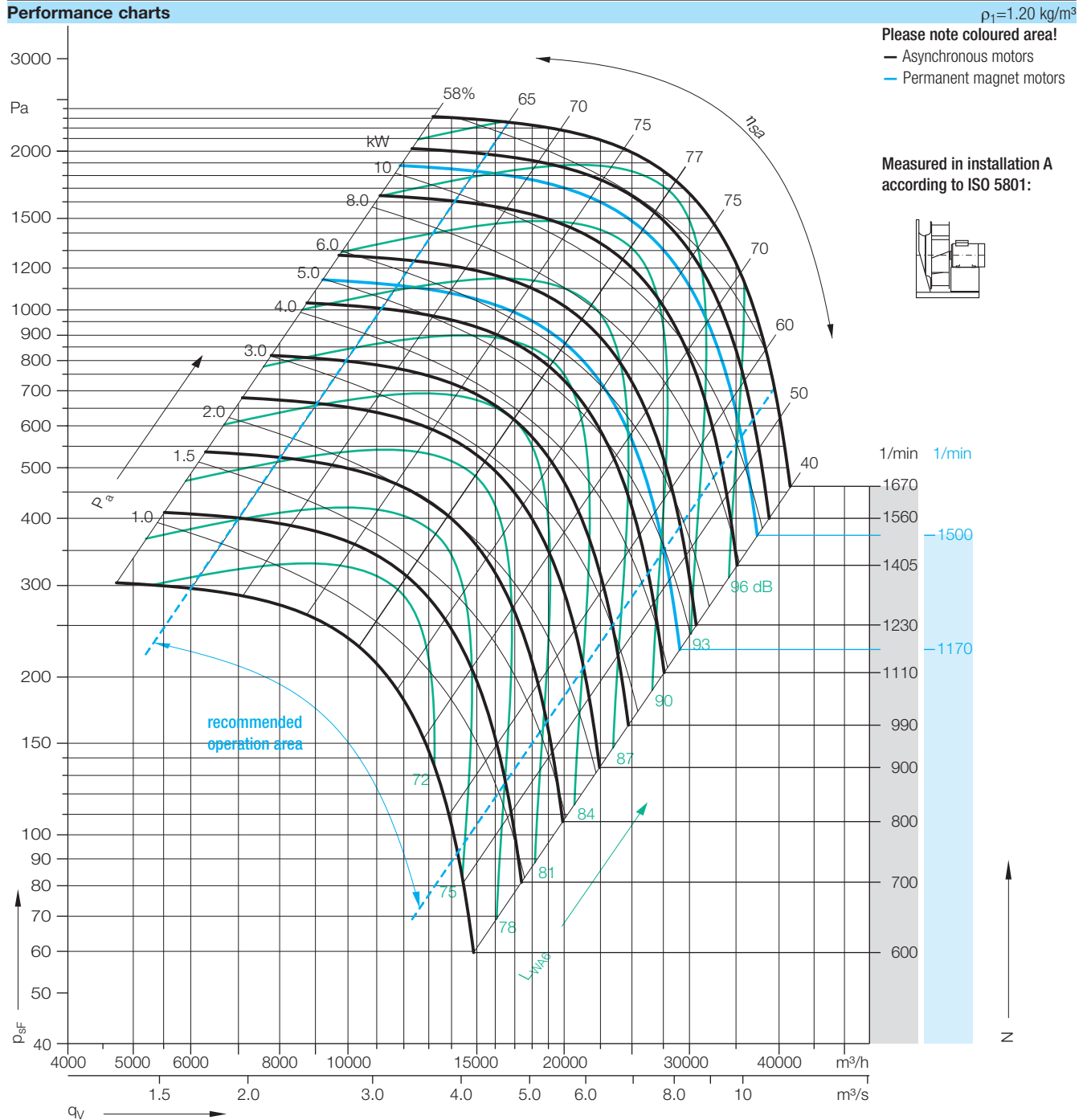
Dimensions in mm, subject to change.



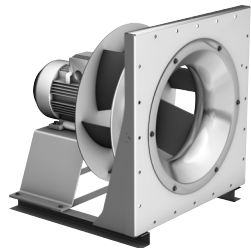
	l <sub>1</sub>	l <sub>2</sub>
BI-YN	666	-
BE-YN	-	632
BI-YG	666	-
BE-YG	-	587

# RLM E6-7180

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

Model	Speed	Efficiency	65	70	75	77	75	70	60	Unit
<b>RLM E6-7180-</b>		$\eta_{sa}$								%
4W-28	1535 1/min	$\eta_{se}$	58	62	66	<b>68</b>	66	62	53	%
BE-WU	1500 1/min	$\eta_{se}$	59	63	67	<b>69</b>	67	63	54	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power

# RLM E6-7180

EVOLUTION  
IS IN THE AIR  
RLM<sup>EVO</sup>

## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-7180-4W-30	18.50	400 Δ	50	1465	–	35.00	57	1670	180 M	4	280
RLM E6-7180-4W-28	15.00	400 Δ	50	1475	–	28.00	52	1560	160 L	4	202
RLM E6-7180-6W-28	11.00	400 Δ	50	975	–	22.50	72	1405	160 L	6	212
RLM E6-7180-6W-26	7.50	400 Δ	50	975	–	16.10	63	1230	160 M	6	196
RLM E6-7180-6W-24	5.50	400 Δ	50	970	–	12.00	57	1110	132 M	6	169
RLM E6-7180-6W-23	4.00	400 Δ	50	970	–	8.70	51	990	132 M	6	160
RLM E6-7180-BE-WU-L	15.00	*	*	1500	95.5	31.80	–	1500	132 XXL	–	185
RLM E6-7180-BE-VR-L	11.00	*	*	1800	58.4	23.20	–	1170	112	–	160

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

### Fan type code

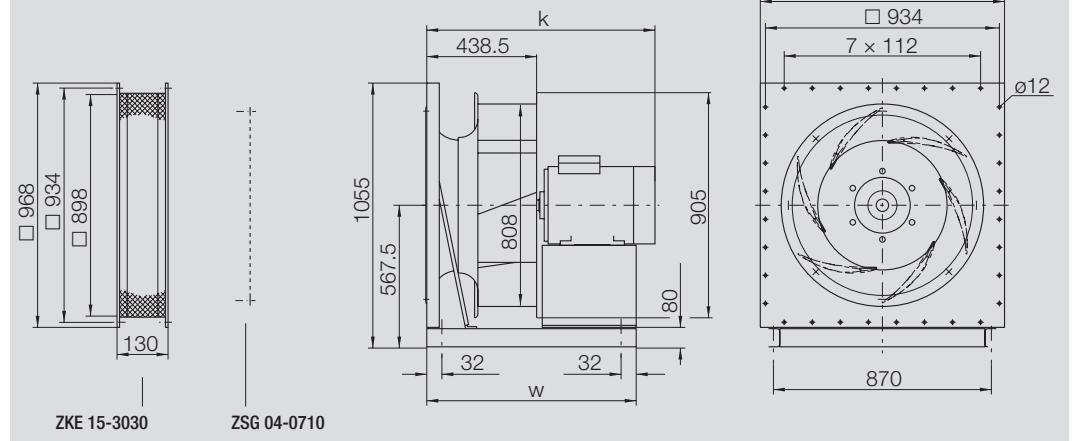
- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

## Dimensions in mm, subject to change.



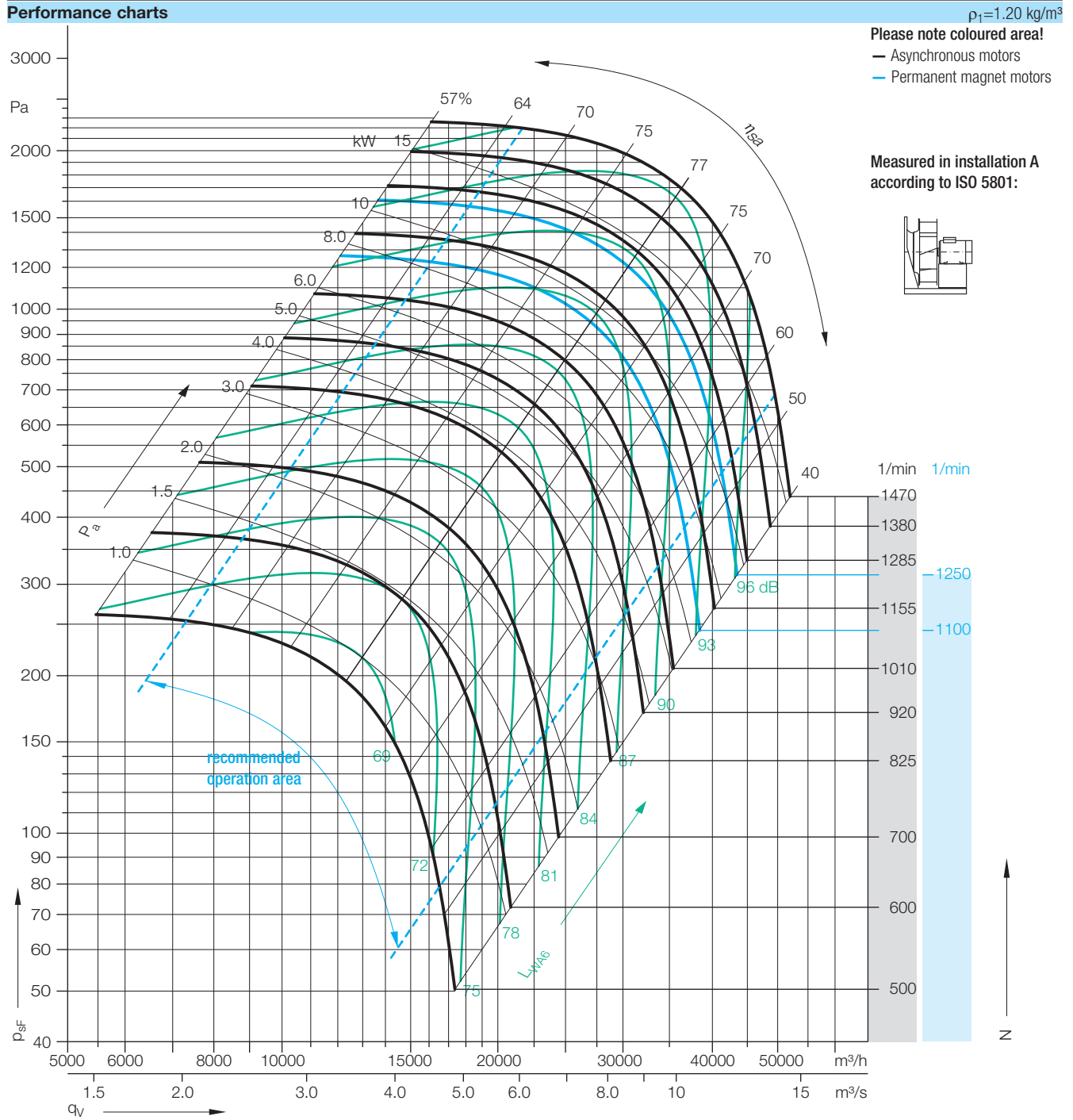
Motor **	k <sub>max</sub>	w
112	800	739
132 M	900	752
132 XXL	926	752
160	1011	836
180	1080	890

### RLM E6-7180

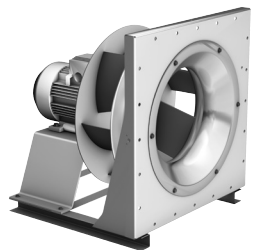


# RLM E6-8090

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

Model	Speed	Motor Type	Efficiency 1	Efficiency 2	Efficiency 3	Efficiency 4	Efficiency 5	Efficiency 6	Efficiency 7
<b>RLM E6-8090-</b>		$\eta_{sa}$	64	70	75	<b>77</b>	75	70	60
<b>6W-33</b>	1380 1/min	$\eta_{se}$	57	62	66	<b>68</b>	66	62	53
<b>BE-WW</b>	1250 1/min	$\eta_{se}$	57	62	67	<b>69</b>	67	62	53

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power



# RLM E6-8090

EVOLUTION  
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RLM<sup>EVO</sup>

## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-8090-4W-31	22.00	400 Δ	50	1465	–	41.50	50	1470	180 L	4	325
RLM E6-8090-6W-33	18.50	400 Δ	50	978	–	36.50	70	1380	200 L	6	356
RLM E6-8090-6W-31	15.00	400 Δ	50	975	–	30.00	65	1285	180 L	6	310
RLM E6-8090-6W-28	11.00	400 Δ	50	975	–	22.50	59	1155	160 L	6	247
RLM E6-8090-6W-26	7.50	400 Δ	50	975	–	16.10	51	1010	160 M	6	230
RLM E6-8090-8W-27	5.50	400 Δ	50	730	–	13.30	63	920	160 M	8	236
RLM E6-8090-8W-26	4.00	400 Δ	50	730	–	9.70	56	825	160 M	8	223
RLM E6-8090-BE-WW-L	18.50	*	*	1500	105	39.30	–	1250	132 XXL	–	220
RLM E6-8090-BE-WU-L	15.00	*	*	1500	95.50	31.80	–	1100	132	–	213

\* Motor for operation with inverter only (No mains operation).  
We recommend: Danfoss VLT HVAC Drive FC-100.

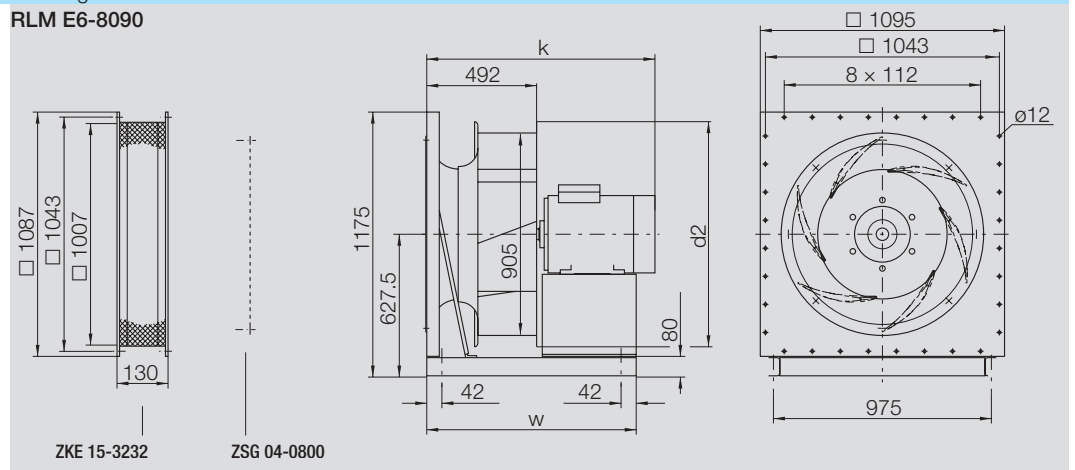
**Fan type code**

- W = Asynchronous motor according to efficiency class IE2 (High Efficiency)
- BE = Brushless DC motor with external control unit (efficiency class IE3 and higher)

**Dimensions** in mm, subject to change.

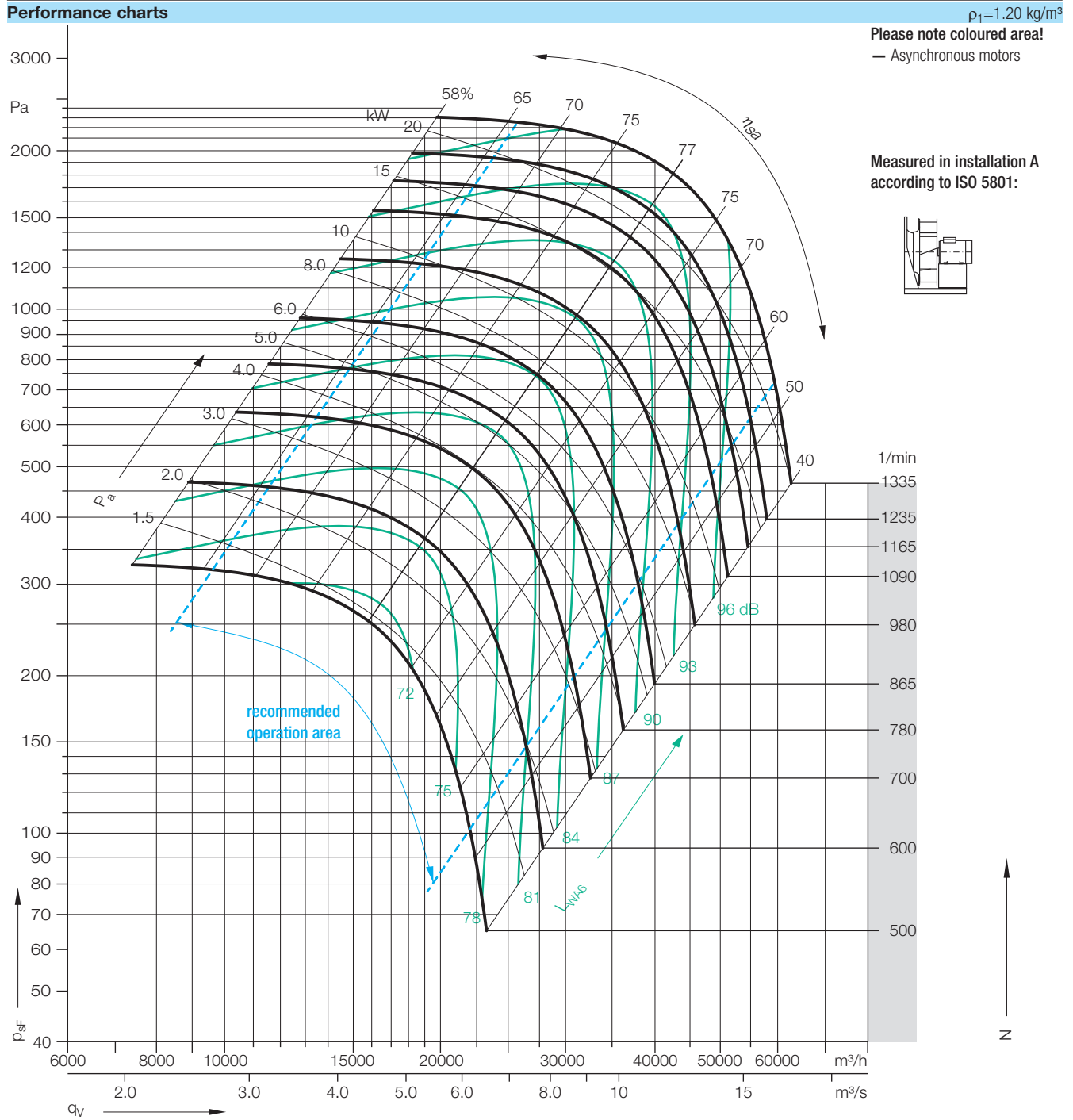


Motor **	k <sub>max</sub>	w
132	980	806
160	1065	890
180	1135	944
200	1232	1013

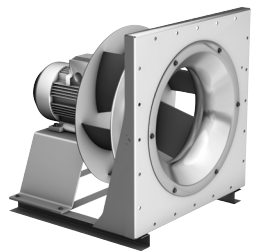


# RLM E6-9010

## Performance charts



## System efficiencies



### Comparison system efficiencies $\eta_{se}$ (impeller, motor, inverter)

RLM E6-9010-	$\eta_{sa}$	65	70	75	77	75	70	60	%
6W-34 1235 1/min	$\eta_{se}$	58	62	66	68	66	62	53	%

### Formula symbols

- $\eta_{se}$  = overall static efficiency (impeller, motor, inverter)
- $\eta_{sa}$  = fan shaft static efficiency
- $L_{WA6}$  = A-weighted sound power level at discharge
- $P_a$  = fan shaft power

# RLM E6-9010

EVOLUTION  
IS IN THE AIR  
RLM<sup>EVO</sup>

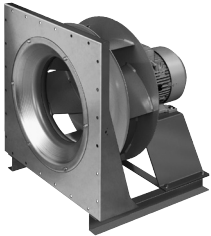
## Technical Data

Fan type RLM Evo	Motor power kW (max.)	Mains voltage V	Mains frequency Hz	Nominal speed 1/min	Nominal moment Nm	Nominal current A	max. operating frequency Hz	max. speed 1/min	Motor size **	Poles	approx. weight ~kg
RLM E6-9010-6W-37	30.00	400 Δ	50	980	–	57.00	68	1335	225 M	6	491
RLM E6-9010-6W-34	22.00	400 Δ	50	978	–	42.50	63	1235	200 L	6	426
RLM E6-9010-6W-33	18.50	400 Δ	50	978	–	36.00	59	1165	200 L	6	406
RLM E6-9010-6W-31	15.00	400 Δ	50	975	–	31.00	55	1090	180 L	6	360
RLM E6-9010-6W-28	11.00	400 Δ	50	975	–	22.50	50	980	160 L	6	297
RLM E6-9010-8W-28	7.50	400 Δ	50	730	–	17.30	59	865	160 L	8	298
RLM E6-9010-8W-27	5.50	400 Δ	50	730	–	13.30	53	780	160 M	8	286

### Fan type code

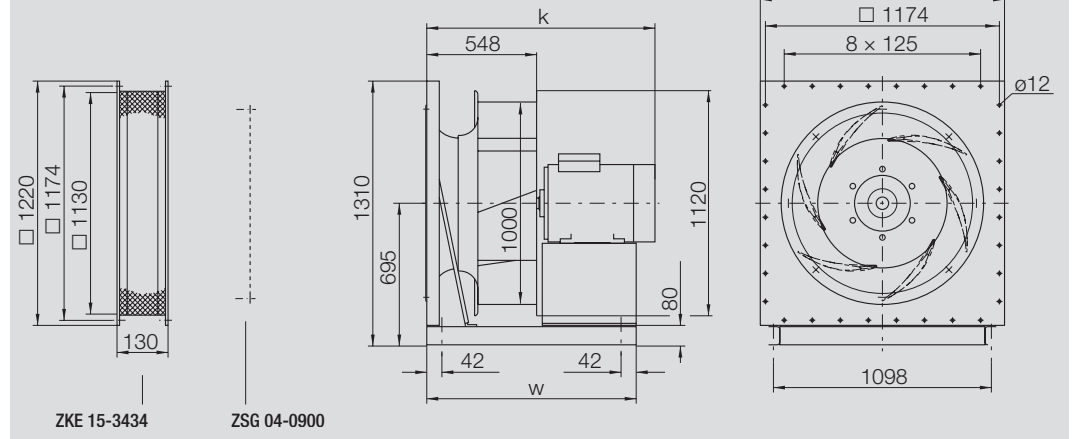
W = Asynchronous motor according to efficiency class IE2 (High Efficiency)

### Dimensions in mm, subject to change.



Motor **	k <sub>max</sub>	w
160	1120	952
180	1190	990
200	1287	1028
225	1319	1050

### RLM E6-9010



# RLMEVO

Technical Data according to ErP-REGULATION 327/2011/EU

01	02	03	04	05	06	07	08	09a-09c, 10, 11					12	13	14
								At optimum energy efficiency							
								Motor input power	Flow rate	Pressure	Speed	Specific ratio			
$\eta_{se}$ %	-	-	N	VSD	-	-	RLM	$P_{e,ont}$ kW	$Q_{v,ont}$ m³/h	$P_{sF,ont}$ Pa	$N_{ont}$ 1/min	$P_2/P_1$	-	-	-
55.8	A	static	67.8				E6-2528-2D-08	0.75	2180	665	2880	1.007	Information on recycling and disposal is provided in the operating instruction.	Information on installation, operation and maintenance is provided in the operating instructions.	The measurements do not use components which are not part of the fan.
60.8	A	static	71.8	has to installed	Das Herstellungsjahr des Ventilators ist auf dem jeweiligen Typschild des Produktes aufgeführt.	Nicotra Gebhardt GmbH, Gebhardtstraße 19-25, 74638 Waldenburg, HRB 727753	E6-2528-2W-10	0.93	2407	810	3180	1.008			
61.7	A	static	70.9				E6-2528-2W-11	1.35	2755	1062	3640	1.011			
62.8	A	static	70.7				E6-2528-2W-13	1.81	3057	1308	4040	1.013			
64.0	A	static	70.9				E6-2528-2W-14	2.28	3330	1552	4400	1.016			
61.5	A	static	70.8				E6-2831-2W-11	1.33	3192	901	2990	1.009			
63.0	A	static	71.1				E6-2831-2W-13	1.77	3534	1104	3310	1.011			
63.5	A	static	69.8				E6-2831-2W-14	2.55	4025	1433	3770	1.014			
63.7	A	static	70.0				E6-3135-2W-14	2.52	4683	1216	3090	1.012			
65.1	A	static	70.1				E6-3135-2W-16	3.41	5213	1507	3440	1.015			
65.8	A	static	69.8				E6-3540-2W-19	4.19	6509	1501	3070	1.015			
51.7	A	static	63.7				E6-2831-4D-10	0.75	2488	547	2330	1.005			
62.5	A	static	73.5				E6-2831-4W-11	0.93	2829	708	2650	1.007			
62.3	A	static	73.4				E6-3135-4W-11	0.92	3304	605	2180	1.006			
63.4	A	static	72.7				E6-3135-4W-13	1.33	3758	783	2480	1.008			
64.1	A	static	72.1				E6-3135-4W-14	1.78	4167	963	2750	1.010			
62.7	A	static	73.9				E6-3540-4W-11	0.91	3816	516	1800	1.005			
63.1	A	static	72.5				E6-3540-4W-13	1.31	4346	669	2050	1.007			
64.3	A	static	72.3				E6-3540-4W-14	1.78	4834	828	2280	1.008			
64.6	A	static	71.1				E6-3540-4W-16	2.47	5428	1044	2560	1.010			
65.8	A	static	70.8				E6-3540-4W-17	3.36	6043	1294	2850	1.013			
64.2	A	static	73.6				E6-4045-4W-13	1.30	5103	575	1710	1.006			
65.3	A	static	73.7				E6-4045-4W-14	1.76	5670	710	1900	1.007			
65.6	A	static	72.0				E6-4045-4W-16	2.47	6386	900	2140	1.009			
66.8	A	static	71.8				E6-4045-4W-17	3.43	7162	1132	2400	1.011			
67.3	A	static	71.0				E6-4045-4W-19	4.51	7878	1370	2640	1.014			
68.0	A	static	71.1				E6-4045-4W-21	5.09	8237	1498	2760	1.015			
65.5	A	static	73.6				E6-4550-4W-14	1.72	6556	601	1560	1.006			
65.9	A	static	72.4				E6-4550-4W-16	2.43	7397	765	1760	1.008			
66.8	A	static	71.8				E6-4550-4W-17	3.41	8321	968	1980	1.010			
67.4	A	static	71.1				E6-4550-4W-19	4.49	9162	1174	2180	1.012			
67.4	A	static	69.7				E6-4550-4W-21	6.14	10212	1458	2430	1.015			
65.7	A	static	72.3				E6-5056-4W-16	2.39	8537	653	1455	1.007			
67.2	A	static	72.2				E6-5056-4W-17	3.38	9622	830	1640	1.008			
67.5	A	static	71.3				E6-5056-4W-19	4.41	10561	1000	1800	1.010			
67.6	A	static	69.9				E6-5056-4W-21	6.06	11793	1246	2010	1.012			
68.9	A	static	70.1				E6-5056-4W-23	7.86	12908	1493	2200	1.015			
67.4	A	static	71.2				E6-5663-4W-19	4.37	12292	852	1480	1.009			
67.6	A	static	70.0				E6-5663-4W-21	5.98	13703	1059	1650	1.011			
68.8	A	static	69.8				E6-5663-4W-23	8.07	15198	1303	1830	1.013			
70.3	A	static	70.4				E6-5663-4W-26	9.80	16278	1494	1960	1.015			
68.8	A	static	70.0				E6-6371-4W-23	7.90	17590	1101	1500	1.011			
69.7	A	static	69.6				E6-6371-4W-26	11.56	20053	1431	1710	1.014			
62.8	A	static	70.7				E6-5056-6W-16	1.80	7627	521	1300	1.005			
63.4	A	static	69.6				E6-5663-6W-19	2.59	10132	579	1220	1.006			
65.1	A	static	69.9				E6-5663-6W-21	3.53	11295	719	1360	1.007			
64.9	A	static	69.8				E6-6371-6W-21	3.50	13134	614	1120	1.006			
65.6	A	static	69.2				E6-6371-6W-23	4.57	14424	741	1230	1.007			
66.2	A	static	68.4				E6-6371-6W-24	6.21	16066	919	1370	1.009			
68.0	A	static	69.0				E6-8090-6W-26	8.10	24826	791	1010	1.008			
69.0	A	static	68.9				E6-8090-6W-28	11.91	28390	1035	1155	1.010			
70.0	A	static	69.5				E6-8090-6W-31	16.21	31586	1281	1285	1.013			
70.3	A	static	69.6				E6-8090-6W-33	19.93	33921	1477	1380	1.015			
68.9	A	static	68.7				E6-9010-6W-28	12.20	31338	966	980	1.010			
70.0	A	static	69.5				E6-9010-6W-31	16.50	34855	1195	1090	1.012			
70.7	A	static	70.0				E6-9010-6W-33	20.00	37254	1365	1165	1.014			
70.9	A	static	70.0				E6-9010-6W-34	23.80	39492	1534	1235	1.015			
67.4	A	static	71.1				E6-8090-8W-26	4.47	20279	528	825	1.005			
67.2	A	static	69.4				E6-8090-8W-27	6.16	22614	656	920	1.007			
67.1	A	static	69.2				E6-9010-8W-27	6.32	24942	612	780	1.006			
67.7	A	static	68.5				E6-9010-8W-28	8.54	27661	753	865	1.008			

Technical Data according to ErP-REGULATION 327/2011/EU

01	02	03	04	05	06	07	08	09a	09b	09c	10	11	12	13	14	
																Overall efficiency
$\eta_{se}$	-	-	N	VSD	-	-	RLM	$P_{e,opt}$	$Q_{v,opt}$	$P_{st,opt}$	$N_{opt}$	$p_2/p_1$	-	-	-	
%	-	-	-	-	-	-	-	kW	m <sup>3</sup> /h	Pa	1/min	-	-	-	-	
65.3	A	Static	73.5	has to installed	-	-	RLM	1.65	2745	1414	5000	1.014	-	-	-	
68.0	A	Static	76.7					G6-2225-BE-AY-L	1.48	2959	1225	3910				1.012
66.9	A	Static	76.8					E6-2831-BE-AY-L	1.15	3149	877	2950				1.009
69.4	A	Static	76.7					E6-2831-BE-GR-L	2.01	3843	1306	3600				1.013
70.2	A	Static	77.6					E6-3135-BE-GR-L	1.96	4470	1108	2950				1.011
70.7	A	Static	76.1					E6-3135-BE-HN-L	3.06	5198	1498	3430				1.015
70.7	A	Static	76.0					E6-3540-BE-H3-L	3.14	6085	1312	2870				1.013
70.3	A	Static	74.6					E6-3540-BE-H5-L	3.86	6509	1501	3070				1.015
72.3	A	Static	79.1					E6-4045-BE-H3-L	2.27	6446	917	2160				1.009
71.7	A	Static	76.5					E6-4045-BE-H5-L	3.47	7401	1209	2480				1.012
71.3	A	Static	74.6					E6-4045-BE-H7-L	4.81	8237	1498	2760				1.015
71.7	A	Static	79.7					E6-4550-BE-H3-L	1.71	6808	648	1620				1.006
71.7	A	Static	77.8					E6-4550-BE-H5-L	2.63	7859	864	1870				1.009
71.2	A	Static	75.1					E6-4550-BE-H7-L	4.26	9204	1185	2190				1.012
71.3	A	Static	73.5					E6-5056-BE-VN-L	6.08	12028	1297	2050				1.013
71.3	A	Static	74.3					E6-5663-BE-VN-L	5.16	13288	996	1600				1.010
72.1	A	Static	73.5					E6-5663-BE-VP-L	7.26	14949	1260	1800				1.013
72.7	A	Static	73.0					E6-5663-BE-VR-L	9.29	16278	1494	1960				1.015
70.1	A	Static	73.1					E6-6371-BE-VP-L	5.23	15479	853	1320				1.009
72.7	A	Static	72.7					E6-6371-BE-VR-L	10.78	19935	1415	1700				1.014
71.1	A	Static	72.9					E6-7180-BE-VR-L	6.80	20010	870	1170				1.009
73.6	A	Static	73.3					E6-7180-BE-WU-L	13.83	25654	1429	1500				1.014
72.3	A	Static	72.4					E6-8090-BE-WU-L	9.75	27038	938	1100				1.009
73.1	A	Static	72.8					E6-8090-BE-WV-L	14.15	30725	1212	1250				1.012
66.0	A	Static	73.0					E6-2528-BI-BW-L	2.17	3330	1552	4400				1.016
69.4	A	Static	76.7					E6-2831-BI-HL-L	2.01	3843	1306	3600				1.013
70.7	A	Static	76.1					E6-3135-BI-HN-L	3.06	5198	1498	3430				1.015
70.7	A	Static	76.0					E6-3540-BI-H3-L	3.14	6085	1312	2870				1.013
71.7	A	Static	76.5					E6-4045-BI-H5-L	3.47	7401	1209	2480				1.012
71.2	A	Static	75.1					E6-4550-BI-H7-L	4.26	9204	1185	2190				1.012
70.9	A	Static	74.9					E6-5056-BI-UR-L	4.14	10561	1000	1800				1.010
72.1	A	Static	73.5					E6-5663-BI-VP-L	7.26	14949	1260	1800				1.013
72.7	A	Static	72.7					E6-6371-BI-VR-L	10.78	19935	1415	1700				1.014
66.6	A	Static	75.0					G6-2225-BE-IG-M	1.62	2745	1414	5000				1.014
70.6	A	Static	79.1					E6-2528-BE-IG-M	1.53	3027	1282	4000				1.013
69.8	A	Static	79.7					E6-2831-BE-IG-M	1.16	3203	907	3000				1.009
70.1	A	Static	77.5					E6-2831-BE-IR-M	1.99	3843	1306	3600				1.013
70.0	A	Static	81.1					E6-3135-BE-IG-M	0.87	3410	645	2250				1.006
71.1	A	Static	77.7					E6-3135-BE-QG-M	2.36	4773	1263	3150				1.013
71.5	A	Static	79.9					E6-3540-BE-QG-M	1.60	4877	843	2300				1.008
71.0	A	Static	76.1					E6-3540-BE-WT-M	3.22	6149	1340	2900				1.013
72.4	A	Static	81.8					E6-4045-BE-QG-M	1.27	5312	623	1780				1.006
72.9	A	Static	78.5					E6-4045-BE-WT-M	2.90	7013	1086	2350				1.011
71.4	A	Static	78.4					E6-4550-BE-WT-M	2.16	7355	756	1750				1.008
72.0	A	Static	75.9					E6-4550-BE-YG-M	4.27	9246	1195	2200				1.012
71.0	A	Static	79.4	E6-5056-BE-WT-M	1.56	7627	521	1300	1.005							
70.9	A	Static	74.9	E6-5056-BE-YG-M	4.14	10561	1000	1800	1.010							
72.0	A	Static	74.3	E6-5056-BE-YN-M	6.02	12028	1297	2050	1.013							
70.6	A	Static	75.9	E6-5663-BE-YG-M	3.13	11212	709	1350	1.007							
72.1	A	Static	73.381	E6-5663-BE-YN-M	7.51	15115	1288	1820	1.013							
70.1	A	Static	76.8	E6-6371-BE-YG-M	2.28	11727	490	1000	1.005							
71.1	A	Static	73.6	E6-6371-BE-YN-M	5.77	16066	919	1370	1.009							
69.4	A	Static	78.5	E6-2528-BI-IG-M	1.38	2914	1188	3850	1.012							
69.3	A	Static	79.1	E6-2831-BI-IG-M	1.17	3203	907	3000	1.009							
70.2	A	Static	78.0	E6-2831-BI-IR-M	1.83	3737	1235	3500	1.012							
70.8	A	Static	82.0	E6-3135-BI-IG-M	0.86	3410	645	2250	1.006							
71.1	A	Static	80.2	E6-3135-BI-QG-M	1.36	3970	874	2620	1.009							
71.5	A	Static	79.9	E6-3540-BI-QG-M	1.60	4877	843	2300	1.008							
72.1	A	Static	79.2	E6-3540-BI-WT-M	2.11	5364	1020	2530	1.010							
73.5	A	Static	82.9	E6-4045-BI-QG-M	1.25	5312	623	1780	1.006							
73.2	A	Static	80.1	E6-4045-BI-WT-M	2.21	6416	909	2150	1.009							
71.7	A	Static	78.7	E6-4550-BI-WT-M	2.15	7355	756	1750	1.008							
72.3	A	Static	76.8	E6-4550-BI-YG-M	3.69	8825	1089	2100	1.011							
71.4	A	Static	79.9	E6-5056-BI-WT-M	1.55	7627	521	1300	1.005							
71.9	A	Static	76.4	E6-5056-BI-YG-M	3.69	10209	934	1740	1.009							
70.8	A	Static	76.2	E6-5663-BI-YG-M	3.12	11212	709	1350	1.007							
71.8	A	Static	74.4	E6-5663-BI-YN-M	5.62	13703	1059	1650	1.011							
70.5	A	Static	77.3	E6-6371-BI-YG-M	2.26	11727	490	1000	1.005							
70.6	A	Static	73.1	E6-6371-BI-YN-M	5.81	16066	919	1370	1.009							

Das Herstellungsjahr des Ventilators ist auf dem jeweiligen Typschild des Produktes aufgeführt.

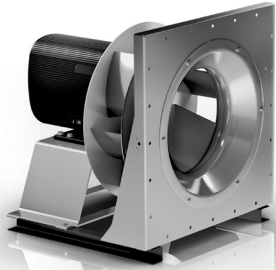
Nicotra Gebhardt GmbH, Gebhardtstraße 19-25, 74638 Waldenburg, HRB 727753

Information on recycling and disposal is provided in the operating instruction.

Information on installation, operation and maintenance is provided in the operating instructions.

The measurements do not use components which are not part of the fan.

## Specification

EVOLUTION  
IS IN THE AIR  
RLM<sup>EVO</sup>**Plug fan with direct drive RLM Evo**

Complete assembly module with highest system efficiency, specifically developed and optimized for use without a spiral casing and designed for use with a horizontal axis. Newly developed high performance impeller with optimized shape and highest efficiency, comprising six backward curved hollow section true aerofoil blades with real turbulence profile and rounded, inclined blade leading edges, from impeller shroud to backplate, for optimal impact over the entire width of the blade. Co-rotating radial diffuser with optimized exit curving on the cover disc to enhance efficiency.

Impeller made of high tensile sheet steel in an automated manufacturing process, robotic welding, degreased, iron phosphated and coated with a high quality epoxy-polyester mixed powder, fastened with a clamping bush to the shaft of the motor, balanced statically and dynamically according to ISO 1940, specification G2.5, based on the maximum speed from size 4550.

System inlet cone made of galvanized sheet steel for optimal inflow to the impeller, equipped with flow measuring device IMV as a standard feature.

Attached internal rotor motor (mounting arrangement type IM B3) with efficient asynchronous technology (IE2) with 3 PTCs suitable for operation on the frequency inverter **or** with highly efficient permanent magnet technology (IE3 and higher) – optimally coordinated with the high performance impeller.

Equipped on inlet side with connection possibility for quadratic supports.

Complete module optimally adjusted, built to a common base frame prepared for vibration decoupling.

Impeller-Performance data to tolerance class 1 according to DIN 24166.

**Variants** (at choice)

- ▶ with standard internal rotor motor with asynchronous technology (IE2)
- ▶ with internal rotor motor with permanent magnet technology (IE3 and higher)
  - with integrated control unit (series: BI)
  - with external control unit (series: BE)

## Fan Data

Fan type	RLM E6-	
Volume flow	$Q_V$	m <sup>3</sup> /h
Fan static pressure	$p_{sF}$	Pa
Air density at inlet	$\rho_1$	kg/m <sup>3</sup>
Media temperature	t	°C
Fan power	$P_a$	kW
Efficiency	$\eta_{sa}$	Hz
speed	N	1/min
Max. fan speed	$N_{max}$	1/min
Frequency	f	Hz
Max. operating frequency	$f_{max}$	Hz
Sound power level (A weighted)	$L_{WA}$	dB
Weight	m	kg

## Fittings / Accessories

- ▶ Mating flange
- ▶ Inlet connection (flexible)
- ▶ Protection guard for inlet
- ▶ Anti vibration mounts (spring diffusors)
- ▶ Inverter for AC motors (Unit with Filter and Control Panel)
- ▶ Inverter for brushless DC motors (Unit with Filter, Line Choke and Control Panel)
- ▶ Line choke
- ▶ Universal control device
- ▶ Differential pressure sensor

## Description

$$\eta_{se} = \eta_F \cdot \eta_M \cdot \eta_{sa}$$

$$P_e = \frac{q_v \cdot p_{sF}}{\eta_{se}}$$

The system efficiency is the product of the efficiencies of the frequency inverter, motor and impeller.  
The electric power of the fan taken from the mains can be determined with the system efficiency.

## Performance data



The performance curves of the fans are determined at the plenum test rig according to ISO 5801, measured in installation „A“.

The curves show a free discharge pressure rise  $p_{sF}$  as a function of the volume flow rate  $q_v$  in double logarithmic grid distribution. The resistant curves appear as straight lines.

The fan curves are related to a reference density of  $\rho_1 = 1.2 \text{ kg/m}^3$  at the fan intake. The pressure and impeller power are directly proportional to the density  $\rho_1$ .

The efficiencies  $\eta_{sa}$  given in the performance curves are only valid for the impeller.

The performance data of the RLM centrifugal fans are classified in precision class 1 according to DIN 24166 "Fans, technical delivery conditions".

## Sounds

$$L_{WA5} = L_{WA6} - \Delta L_{WA}$$

$q_{Vopt}$	$\leq 0.85$	$> 0.85$
$\Delta L_{WA}$	4 dB	5 dB

Sound measurement and analysis are carried out in accordance with DIN 45635-38 "Sound measurement at machines; fans".

In the performance maps the A sound power level  $L_{WA6}$  is stated as emission parameter for the discharge side.

The value for the inlet side  $L_{WA5}$  can be calculated with the stated formula.

## Inlet side

$$L_{Wfc5} = L_{WA5} + L_{Wrel5}$$

Relative sound power level for inlet side  $L_{Wrel5}$  at octave centre frequencies  $f_c$ .

RLM E6-	Duty Point	63	125	250	500	1000	2000	4000	8000 Hz
2528/-2831	0.50...0.85 $q_{Vopt}$	-11	-10	+2	-3	-6	-11	-12	-21 dB
	>0.85...1.30 $q_{Vopt}$	-10	-10	-1	-4	-5	-9	-9	-15 dB
	>1.30 $q_{Vopt}$	-9	-13	-1	-5	-7	-10	-6	-11 dB
3135/-3540	0.50...0.85 $q_{Vopt}$	-11	-10	+4	-2	-9	-10	-13	-20 dB
	>0.85...1.30 $q_{Vopt}$	-8	-9	+2	-2	-8	-10	-11	-18 dB
	>1.30 $q_{Vopt}$	-10	-11	+1	-3	-8	-10	-8	-14 dB
4045/-4550	0.50...0.85 $q_{Vopt}$	-7	+4	0	-3	-8	-8	-9	-16 dB
	>0.85...1.30 $q_{Vopt}$	-8	-2	0	-6	-8	-7	-8	-13 dB
	>1.30 $q_{Vopt}$	-11	-5	-4	-8	-9	-6	-7	-10 dB
5056/-6371	0.50...0.85 $q_{Vopt}$	-4	+6	+1	-3	-6	-9	-11	-17 dB
	>0.85...1.30 $q_{Vopt}$	-4	+2	-1	-4	-6	-8	-10	-13 dB
	>1.30 $q_{Vopt}$	-6	+2	-2	-6	-9	-7	-8	-9 dB

## Discharge

$$L_{Wfc6} = L_{WA6} + L_{Wrel6}$$

Relative sound power level for discharge side  $L_{Wrel6}$  at octave centre frequencies  $f_c$ .

RLM E6-	Duty Point	63	125	250	500	1000	2000	4000	8000 Hz
2528/-2831	0.50...0.85 $q_{Vopt}$	-7	-10	-2	-6	-5	-6	-10	-18 dB
	>0.85...1.30 $q_{Vopt}$	-7	-10	-6	-10	-6	-6	-7	-14 dB
	>1.30 $q_{Vopt}$	-10	-12	-7	-11	-8	-7	-5	-12 dB
3135/-3540	0.50...0.85 $q_{Vopt}$	-4	-9	+2	-7	-6	-8	-10	-18 dB
	>0.85...1.30 $q_{Vopt}$	-5	-8	-3	-8	-5	-8	-7	-14 dB
	>1.30 $q_{Vopt}$	-8	-12	-4	-9	-7	-8	-5	-12 dB
4045/-4550	0.50...0.85 $q_{Vopt}$	-10	-3	-5	-8	-5	-5	-10	-18 dB
	>0.85...1.30 $q_{Vopt}$	-13	-8	-8	-10	-7	-5	-8	-15 dB
	>1.30 $q_{Vopt}$	-15	-12	-11	-12	-10	-4	-6	-13 dB
5056/-6371	0.50...0.85 $q_{Vopt}$	-5	+4	-2	-5	-5	-7	-12	-17 dB
	>0.85...1.30 $q_{Vopt}$	-6	-1	-5	-5	-5	-8	-10	-13 dB
	>1.30 $q_{Vopt}$	-10	-3	-7	-7	-8	-6	-6	-11 dB

# RLM<sup>EVO</sup>

## Anti Vibration Mounts

AV mounts are designed to prevent noise and vibrations being transmitted through the base of the fan.

AV mounts should be mounted beneath the fan base frame so the weight and spring deflections are evenly distributed. They should not be mounted symmetrically because a counter force is induced into the system by the pressure created by the working fan.

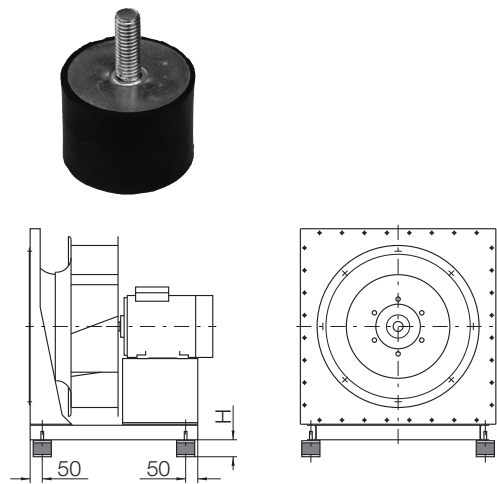
It is difficult for the manufacturer to establish the position of the AV mounts to suit all types of application.

Vibration and noise insulation can also be improved by ensuring that the fan is connected to its external environment by a flexible coupling.

Available AV mounts for different fans, see proSELECTA II.

The AVM-mounts are supplied with the suitable mounting material for the base frame.

## Rubber Buffers



**Rubber buffers** for noise insulation only.

Quantity „z“ Rubber Buffers ZBD. Inlet-side ① / Motor-Side ②.

RLM Evo	H max. [mm]	z × ZBD ①	z × ZBD ②
RLM E6-2528	30	2 × *	2 × *
RLM E6-2831	30	2 × *	2 × *
RLM E6-3135	30	2 × *	2 × *
RLM E6-3540	30	2 × *	2 × *
RLM E6-4045	30	2 × *	2 × *
RLM E6-4550	30	2 × *	2 × *
RLM E6-5056	30	2 × *	2 × *
RLM E6-5663	30	2 × *	2 × *
RLM E6-6371	50	2 × *	2 × *
RLM E6-8090	50	2 × *	2 × *

\* Assignment on request.



## Anti Vibration Mounts

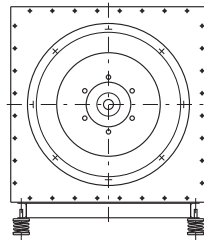
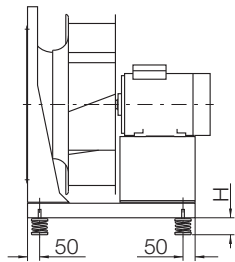
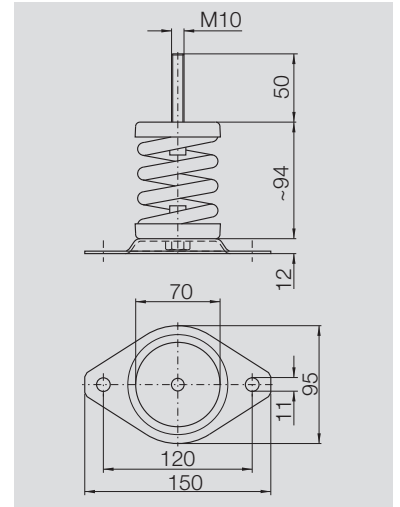
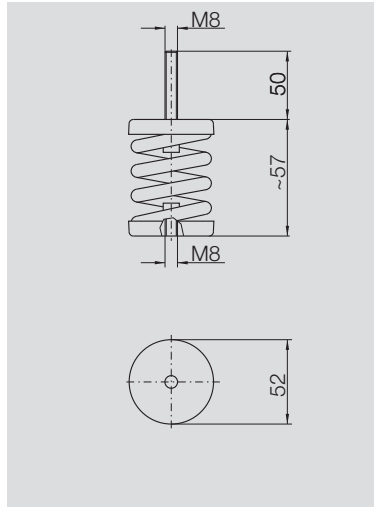


ZBD SP-770



ZBD SP-750

**Spring diffusers** with noise insulation layer and height adjustment, for both vibration and noise insulation.



Quantity „z“ anti-vibration-mounts ZBD. Inlet-side ① / Motor-Side ②.

RLM Evo	H max. [mm]	z × ZBD ①	z × ZBD ②
RLM E6-2528- _W/_D	~57	2 × SP-770*	2 × SP-770*
RLM E6-2831- _W/_D	~57	2 × SP-770*	2 × SP-770*
RLM E6-3135- _W	~57	2 × SP-770*	2 × SP-770*
RLM E6-3540- _W	~57	2 × SP-770*	2 × SP-770*
RLM E6-4045- _W	~106	2 × SP-750*	2 × SP-750*
RLM E6-4550- _W	~106	2 × SP-750*	2 × SP-750*
RLM E6-5056- _W	~106	2 × SP-750*	2 × SP-750*
RLM E6-5663- _W	~106	2 × SP-750*	2 × SP-750*
RLM E6-6371- _W	~106	2 × SP-750*	2 × SP-750*
RLM E6-8090- _W	~106	2 × SP-750*	2 × SP-750*

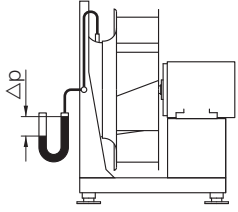
RLM Evo	H max. [mm]	z × ZBD ①	z × ZBD ②
RLM E6-2528-BI/BE-L	~57	2 × SP-770*	2 × SP-770*
RLM E6-2831-BI/BE-L	~57	2 × SP-770*	2 × SP-770*
RLM E6-3135-BI/BE-L	~57	2 × SP-770*	2 × SP-770*
RLM E6-3540-BI/BE-L	~57	2 × SP-770*	2 × SP-770*
RLM E6-4045-BI/BE-L	~106	2 × SP-750*	2 × SP-750*
RLM E6-4550-BI/BE-L	~106	2 × SP-750*	2 × SP-750*
RLM E6-5056-BI/BE-L	~106	2 × SP-750*	2 × SP-750*
RLM E6-5663-BI/BE-L	~106	2 × SP-750*	2 × SP-750*
RLM E6-6371-BI/BE-L	~106	2 × SP-750*	2 × SP-750*

RLM Evo	H max. [mm]	z × ZBD ①	z × ZBD ②
RLM E6-2528-BI/BE-M	~57	2 × SP-770*	2 × SP-770*
RLM E6-2831-BI/BE-M	~57	2 × SP-770*	2 × SP-770*
RLM E6-3135-BI/BE-M	~57	2 × SP-770*	2 × SP-770*
RLM E6-3540-BI/BE-M	~57	2 × SP-770*	2 × SP-770*
RLM E6-4045-BI/BE-M	~57	2 × SP-770*	2 × SP-770*
RLM E6-4550-BI/BE-M	~57	2 × SP-770*	2 × SP-770*
RLM E6-5056-BI/BE-M	~57	2 × SP-770*	2 × SP-770*
RLM E6-5663-BI/BE-M	~57	2 × SP-770*	2 × SP-770*

\* Assignment on request.

# RLMEVO

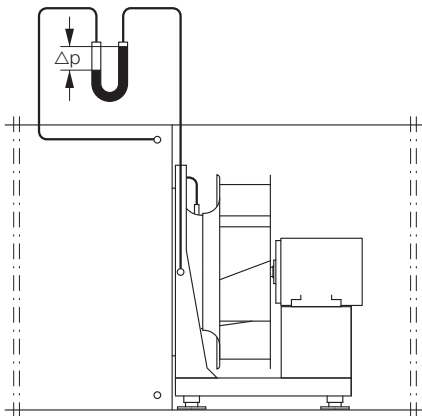
## Volumeter



$$q_V = K \times \sqrt{\frac{2}{\rho} \times \Delta p_{Dü}}$$



pressure tapplings in inlet cones



The fans are equipped with a flow measuring device as standard. With the flow measuring device it is possible to measure/monitor the flow easily after the fan is installed.

For pressure measurement A pressure tapping at a predetermined position on the inlet cone is provided whereby the decrease in pressure created by the cone can be measured. The decrease in pressure measured can be inserted in the following formula.

- ▶  $q_V$  Volume flow  $m^3/h$
- ▶ K calibration factor  $m^2s/h$
- ▶  $\rho$  density of media  $kg/m^3$
- ▶  $\Delta p_{Dü}$  pressure difference at cone Pa

The K factor is determined by comparative measurement on a standard test ring.

When fans are built in a plenum, it is required to measure the differential pressure between the static pressure in the plenum on the suction side and the pressure at the inlet cone.

To ensure that the static pressure to be measured at the inlet nozzle is not distorted by dynamic velocities, it is recommended to attach a ring of points on the wall as shown in the following diagram.

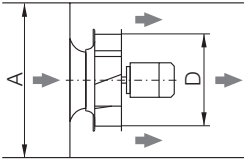
If the differential pressure is conducted via a pressure sensor, the signal can also be used for controlling.

Detailed description, measurement and connection diagram available on request.

### Calibration factors

RLM	K [m <sup>2</sup> s/h]	RLM	K [m <sup>2</sup> s/h]
RLM E6-2528	79	RLM E6-5056	242
RLM E6-2831	94	RLM E6-5663	310
RLM E6-3135	106	RLM E6-6371	385
RLM E6-3540	128	RLM E6-7180	490
RLM E6-4045	155	RLM E6-8090	628
RLM E6-4550	190	RLM E6-9010	794

## Correction of design for installation in an enclosure



Installing the fan in a casing may result in a reduced flow rate and pressure increase relative to the information in the performance map which is determined freely discharging in accordance with the prescribed standards.

The pressure loss can be calculated as a function of the size of the casing with the loss coefficient  $\zeta$  for the installed casing from the following diagram. The values in the diagram apply when the box sections are quadratic and the impeller is laid out symmetrically (inflow and outflow according to the diagram).

If casings with rectangular sections are used the following approximate values can be used for box size A:

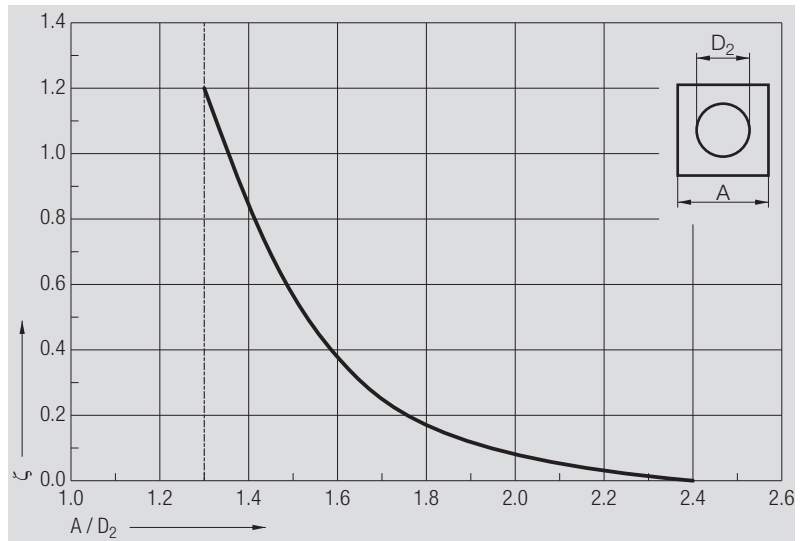
- $\zeta$  Loss coefficient for casing installation
- A Inside casing width or length
- $D_2$  Throat plate diameter

► Max. side length  $B_{max}$  / min. side length  $B_{min} \leq 1.3$ :

$$A = \sqrt{B_{max} \cdot B_{min}}$$

► Max. side length  $B_{max}$  / min. side length  $B_{min} > 1.3$ :

$$A = 1.14 \cdot B_{min}$$



If the impeller is laid out asymmetrically, the loss coefficients are up to 20 % higher. A minimum distance of the impeller to the surrounding wall of  $0.15 \cdot D_2$  must be observed.

- $p_V$  Pressure loss in Pa
- $\zeta$  Loss coefficient for casing installation
- $\rho$  Reference density of conveyed air (usually: 1.2 kg/m<sup>3</sup>)
- $q_V$  Flow rate in m<sup>3</sup>/h
- $D_2$  Throat plate diameter in mm

The pressure loss is calculated with the loss coefficient determined in accordance with the following formula:

$$p_V = 100200 \cdot \zeta \cdot \rho \frac{q_V^2}{D_2^4}$$

The throat plate diameters for the calculation can be taken from the respective dimension diagram of the fan. The pressure loss is added to the desired pressure increase in the operating point and the fan is selected with the corrected value.