

Plug Fans RLE-EC

Issue 2.2 EN
October 2013



NICOTRA | **Gebhardt**
fan|tastic solutions

Top quality featuring high performance and long lasting operation!



Nicotra Gebhardt has extended, diversified and improved the range of RLE "plug fans".

The impellers are available with different geometries and widths and they are driven by brushless DC motors.

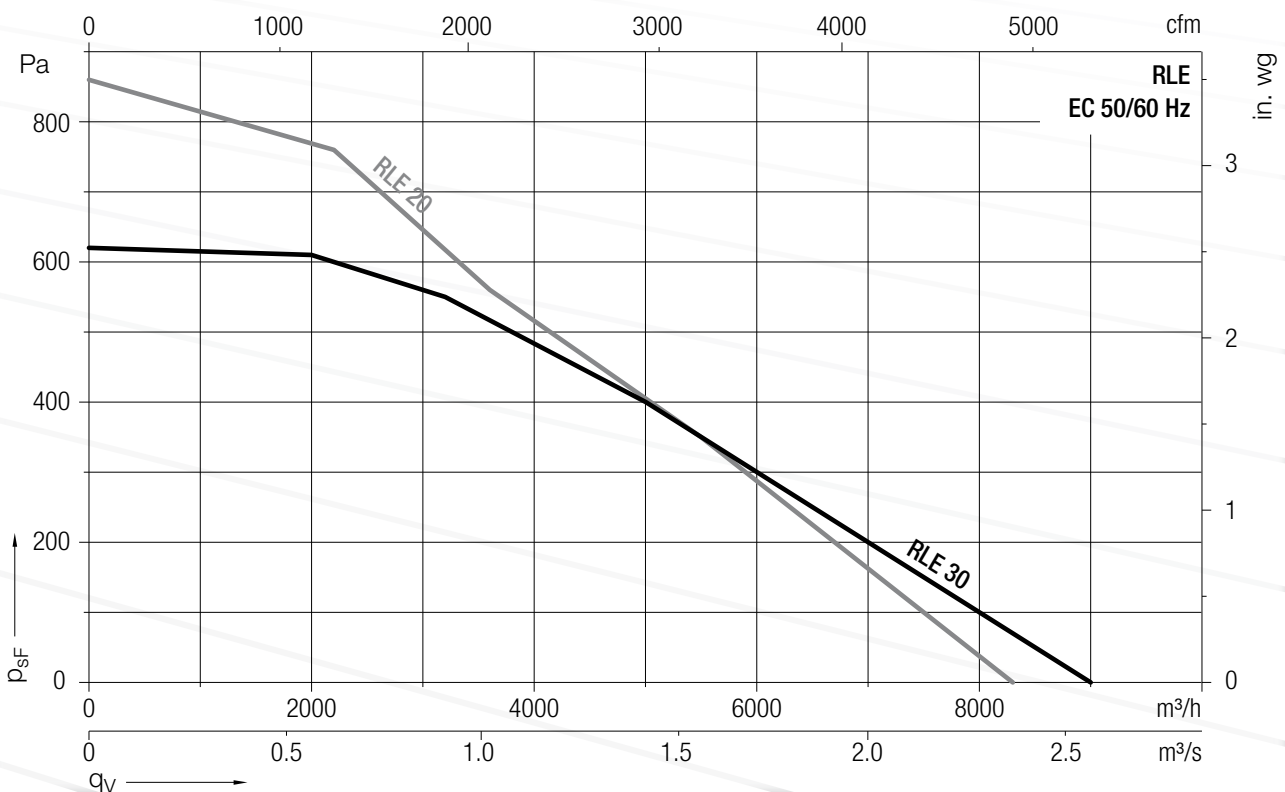
The presentation of the performance data has not been changing but it continues showing the static pressure which corresponds to the best practice for applications with this type of fans.

The easiest way of selecting a plug fan type may be by using the fan selection programme proSELECTA II. As a result of using this way of selection a full specification with all technical data, dimensions, and fan curves will be available automatically.

The benefits

- ▶ Aerodynamical and acoustical optimised fan design
- ▶ Optimised utilisation of the motor rating by introducing of an exactly matching impeller material resistance
- ▶ Reduced installation length supplying a compact unit
- ▶ available with brushless DC motors
- ▶ stepless variable fan speed

Performance area



Simple and reliable fan selection

proSELECTA II is a technical selection program that allows you to configure your own individually designed fan. It provides you with the opportunity to choose from the entire range of fan types and their associated options.



Simple and reliable selection

The result from proSELECTA II is the provision of all the technical data for your fan, including sound level data, dimension specifications and accessories. Apart from that, as a registered user, your purchase prices are provided. Additionally fully dimensioned drawings in dxf format are available, which can be downloaded and transferred straight into your CAD system.

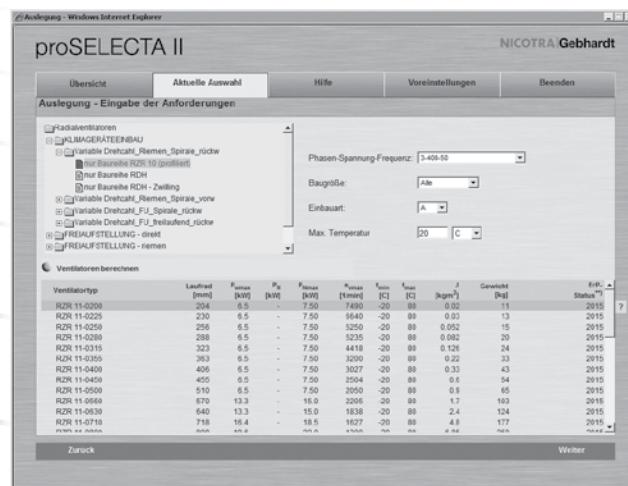
So that you can be sure. Models and options that are technically not permissible, are automatically excluded in proSELECTA II. So there is no chance that you will configure a "wrong" device option.

During the fan selection process, you can choose any of the standardised ATEX options.

Free registration and many advantages

You can register as a proSELECTA II user with us, which enables us to offer you faster order processing. What this means for you is:

- ▶ The complete configuration of your fan with its associated system accessories and belt drive layout.
- ▶ The possibility to produce fans that operate via a frequency inverter.
- ▶ The option of saving your own fan configuration on our server.
- ▶ The opportunity to modify your saved configuration, even over the phone to your Nicotra Gebhardt representative.



RLE 20-0299-EC

Technical Data in Class 2 according to DIN 24166

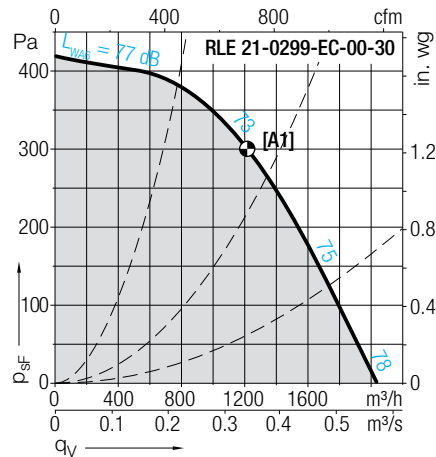
RLE 20-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protec- tion class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0299-EC-00-30	230	1~	50/60	1850	0,23	1,05	73	IP44	B	40	8,3

Stepless speed controllable via electrical Commutation Unit.
The fans must be used with the Electrical Commutation Unit EKE 05.

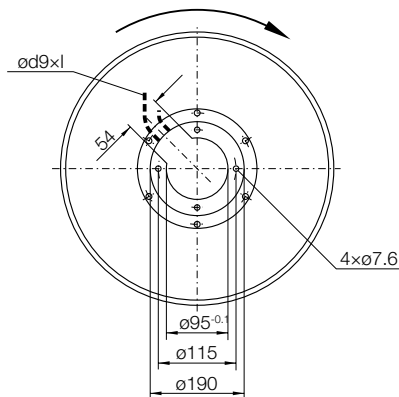
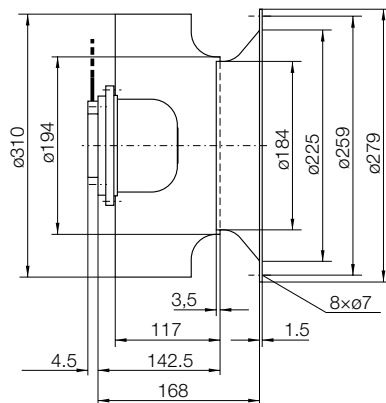
Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} -1$ dB.

Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$



Dimensions in mm, Subject to change.



Connection cable:	
RLE 20-	$\text{ø}9 \times 1$
0299-EC-00-30	$\text{ø}7.2 \times 800$

Clockwise rotation RD	
Reverb sensor cable:	
RLE 20-	$\text{ø}9 \times 1$
0299-EC-00-30	$\text{ø}6.8 \times 800$

Duty Point

N [1/min]	q_v
450...900	0.3 q_{Vmax}
450...900	0.6 q_{Vmax}
450...900	1.0 q_{Vmax}
901...1800	0.3 q_{Vmax}
901...1800	0.6 q_{Vmax}
901...1800	1.0 q_{Vmax}
1801...1850	0.3 q_{Vmax}
1801...1850	0.6 q_{Vmax}
1801...1850	1.0 q_{Vmax}

Relative sound power level for discharge side L_{Wrel6}									
63	125	250	500	1000	2000	4000	8000	Hz	
+4	-3	-4	-6	-4	-6	-14	-21		dB
-1	-5	-4	-6	-6	-5	-12	-20		dB
-2	-3	-2	-6	-5	-6	-12	-22		dB
-1	-2	-3	-7	-5	-5	-12	-19		dB
-5	-4	-4	-7	-6	-5	-10	-18		dB
-9	-3	-3	-6	-5	-6	-12	-19		dB
+1	-3	-1	-4	-6	-7	-10	-16		dB
-7	-7	-2	-5	-5	-6	-10	-16		dB
-15	-13	-3	-5	-5	-6	-10	-18		dB

Relative sound power level for inlet side L_{Wrel5}									
63	125	250	500	1000	2000	4000	8000	Hz	
+9	+3	+1	-1	-7	-11	-17	-23		dB
+3	+2	+1	-1	-7	-10	-14	-27		dB
0	+1	+1	-1	-6	-12	-19	-28		dB
+7	+3	+1	-2	-6	-9	-14	-22		dB
0	+1	+1	-1	-7	-10	-14	-23		dB
-3	+2	+1	-1	-6	-12	-16	-23		dB
+2	+3	+2	-2	-6	-11	-15	-20		dB
-3	-2	+2	-2	-5	-12	-16	-22		dB
-8	-5	+1	-1	-6	-12	-15	-20		dB

Components

RLE 20-	Electronic ZKD	Commutation Unit EKE
0299-EC-00-30		05-0018-5E-IA

RLE 20-0407-EC

Technical Data in Class 2 according to DIN 24166

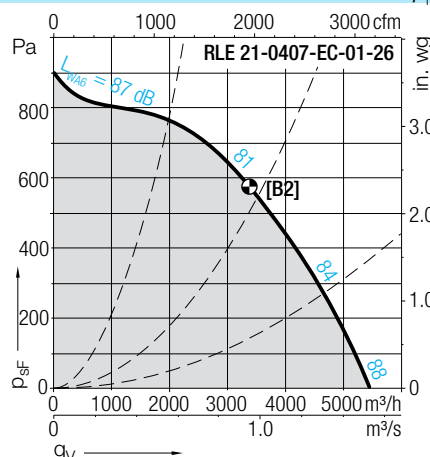
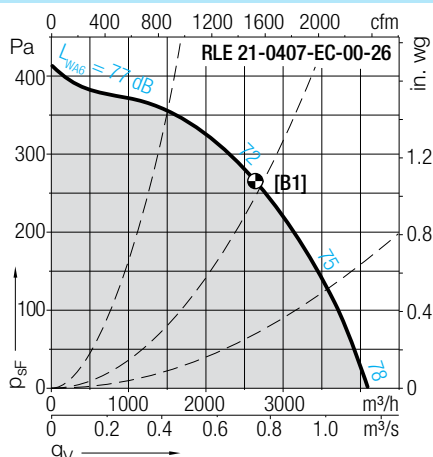
RLE 20-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protection class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0407-EC-00-26	230	1~	50	1350	0,36	1,6	72	IP44	B	40	10,7
0407-EC-01-26	230	1~	50/60	1970	1,02	4,5	81	IP44	F	40	12

Stepless speed controllable via electronic Commutation Unit.
The fans must be used with the Electronic Commutation Unit EKE 05.

Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 2$ dB.

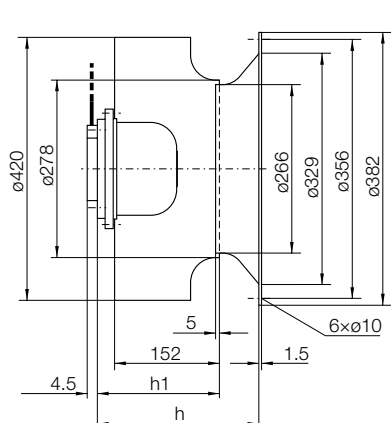
Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$

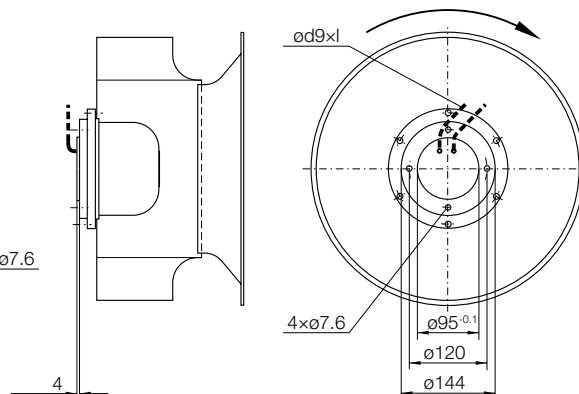


Dimensions in mm, Subject to change.

RLE 20-0407-EC-00-26



RLE 20-0407-EC-01-26



Dimensions depending on motorsize:

RLE 20-	ød8	h	h1
0407-EC-00-26	115	208.5	177.5
0407-EC-01-26	120	210.5	179.5

Clockwise rotation RD

Connection cable:

RLE 20-	ød9x1
0407-EC-00-26	ø7.2x800
0407-EC-01-26	ø7.2x800

Reverb sensor cable:

RLE 20-	ød9x1
0407-EC-00-26	ø6.8x800
0407-EC-01-26	ø6.8x800

Duty Point

N [1/min]	q_v
450...900	0.3 q_{vmax}
450...900	0.6 q_{vmax}
450...900	1.0 q_{vmax}
901...1970	0.3 q_{vmax}
901...1970	0.6 q_{vmax}
901...1970	1.0 q_{vmax}

Relative sound power level for discharge side L_{Wrel6}

63	125	250	500	1000	2000	4000	8000	Hz
+9	+2	-3	-4	-5	-7	-14	-21	dB
+2	-2	-2	-4	-4	-8	-16	-22	dB
-1	-3	-3	-4	-5	-7	-10	-24	dB
+3	+4	+1	-4	-6	-8	-11	-19	dB
-5	-4	-4	-4	-5	-7	-12	-18	dB
-10	-3	-4	-4	-5	-7	-11	-18	dB

Relative sound power level for inlet side L_{Wrel5}

63	125	250	500	1000	2000	4000	8000	Hz
+9	+4	0	-2	-6	-11	-17	-23	dB
+4	+2	+1	-1	-6	-11	-18	-24	dB
+2	+1	+1	-1	-6	-12	-17	-28	dB
+2	+5	+1	-2	-6	-11	-16	-22	dB
-2	+1	0	-1	-6	-10	-15	-23	dB
-6	0	0	-1	-6	-11	-15	-21	dB

Components

RLE 20-	Inlet Cone ZKD	Electronic Commutation Unit EKE
0407-EC-00-26		05-0018-5E-IA
0407-EC-01-26		05-0040-5E-IA

RLE 20-0477-EC

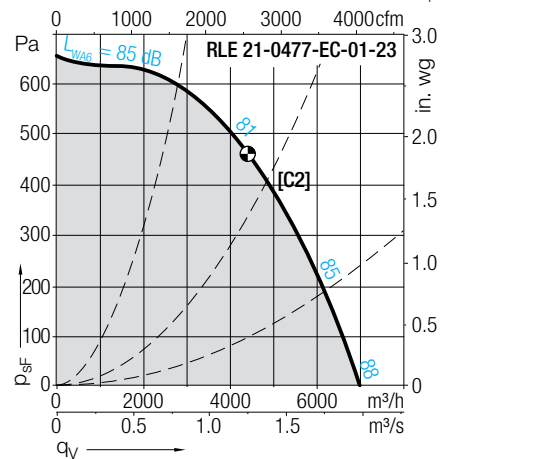
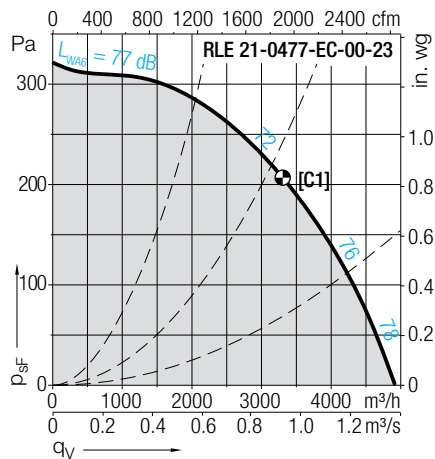
Technical Data in Class 2 according to DIN 24166

RLE 20-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protec- tion class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0477-EC-00-23	230	1~	50/60	1070	0,37	1,62	72	IP44	B	40	15,8
0477-EC-01-23	230	1~	50/60	1530	0,98	4,3	81	IP44	F	40	18,2

Stepless speed controllable via electrical Commutation Unit.
The fans must be used with the Electrical Commutation Unit EKE 05.

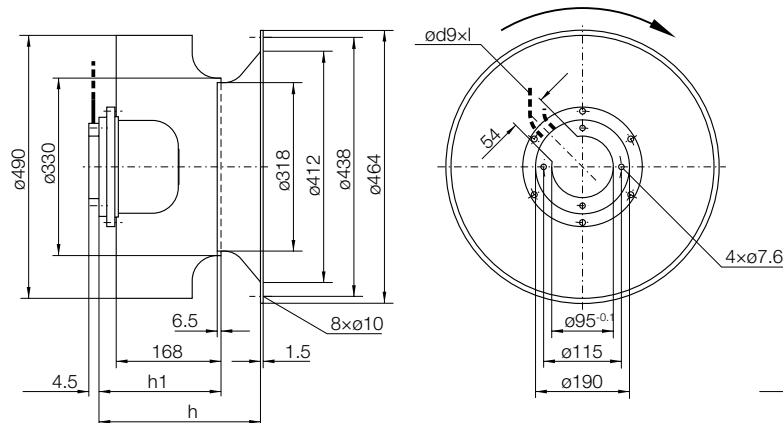
Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 2$ dB.

Curves in Class 2 according to DIN 24166

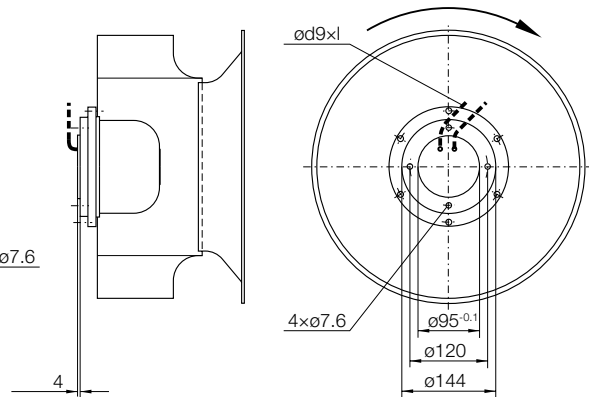


Dimensions in mm, Subject to change.

RLE 20-0477-EC-00-26



RLE 20-0477-EC-01-26



Dimensions depending on motorsize:

RLE 20-	h	h1
0477-EC-00-23	237	193.5
0477-EC-01-23	239	195.5

Clockwise rotation RD

Connection cable:	RLE 20-	Ød9x1
0477-EC-00-23	Ø7.2x800	
0477-EC-01-23	Ø7.2x800	

Reverb sensor cable:

RLE 20-	Ød9x1
0477-EC-00-23	Ø6.8x800
0477-EC-01-23	Ø6.8x800

Duty Point

1/min	q_{Vmax}
450...900	0.3 q_{Vmax}
450...900	0.6 q_{Vmax}
450...900	1.0 q_{Vmax}
901...1530	0.3 q_{Vmax}
901...1530	0.6 q_{Vmax}
901...1530	1.0 q_{Vmax}

Relative sound power level for discharge side L_{Wrel6}

63	125	250	500	1000	2000	4000	8000	Hz
+9	+2	-3	-4	-5	-7	-14	-21	dB
+2	-2	-2	-4	-4	-8	-16	-22	dB
-1	-3	-3	-4	-5	-7	-10	-24	dB
+3	+4	+1	-4	-6	-8	-11	-19	dB
-5	-4	-4	-4	-5	-7	-12	-18	dB
-10	-3	-4	-4	-5	-7	-11	-18	dB

Relative sound power level for inlet side L_{Wrel5}

63	125	250	500	1000	2000	4000	8000	Hz
+9	+4	0	-2	-6	-11	-17	-23	dB
+4	+2	+1	-1	-6	-11	-18	-24	dB
+2	+1	+1	-1	-6	-12	-17	-28	dB
+2	+5	+1	-2	-6	-11	-16	-22	dB
-2	+1	0	-1	-6	-10	-15	-23	dB
-6	0	0	-1	-6	-11	-15	-21	dB

Components

RLE 20-	Inlet Cone	Electronic Commutation Unit
	ZKD	EKE
0477-EC-00-23		05-0018-5E-IA
0477-EC-01-23		05-0040-5E-IA

RLE 20-0538-EC

Technical Data in Class 2 according to DIN 24166

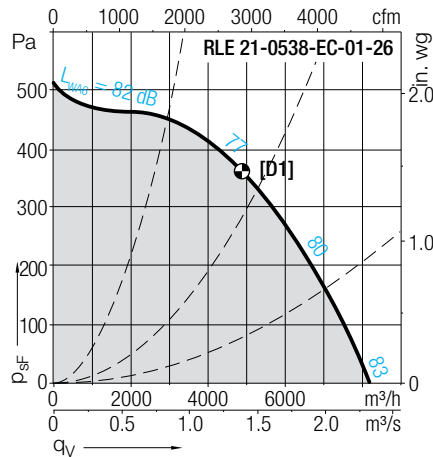
RLE 20-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protection class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0538-EC-01-26	230	1~	50/60	1140	0,9	4	77	IP44	F	40	32

Stepless speed controllable via electronic Commutation Unit.
The fans must be used with the Electronic Commutation Unit EKE 05.

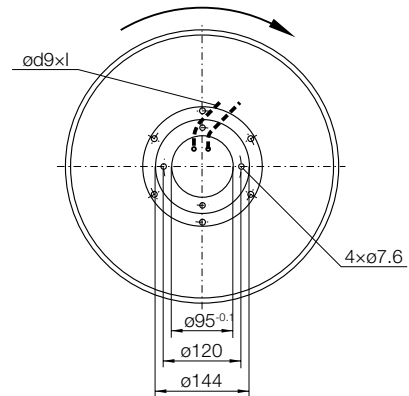
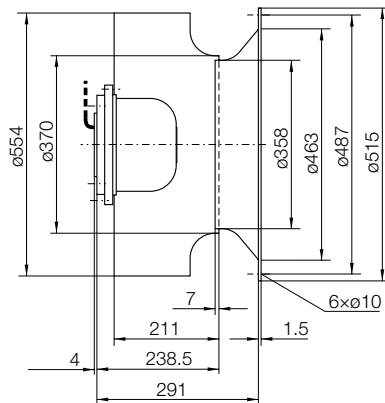
Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 3$ dB.

Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$



Dimensions in mm, Subject to change.



Connection cable:	
RLE 20-	ød9x1
0538-EC-01-26	ø7.2x800

Clockwise rotation RD	
Reverb sensor cable:	
RLE 20-	ød9x1
0538-EC-01-26	ø6.8x800

Duty Point	1/min	q_{Vmax}
450...900	0.3 q_{Vmax}	
450...900	0.6 q_{Vmax}	
450...900	1.0 q_{Vmax}	
901...1140	0.3 q_{Vmax}	
901...1140	0.6 q_{Vmax}	
901...1140	1.0 q_{Vmax}	

Relative sound power level for discharge side L_{Wrel6}									
63	125	250	500	1000	2000	4000	8000	Hz	
+7	+2	-3	-4	-5	-7	-12	-19		dB
+1	-3	-3	-4	-5	-7	-13	-19		dB
-1	-3	-4	-4	-5	-7	-12	-20		dB
+6	+2	-1	-5	-6	-7	-11	-17		dB
-2	-3	-4	-4	-5	-7	-11	-16		dB
-6	-4	-4	-4	-5	-7	-11	-17		dB

Relative sound power level for inlet side L_{Wrel5}									
63	125	250	500	1000	2000	4000	8000	Hz	
+10	+5	0	-2	-6	-10	-13	-21		dB
+6	+2	0	-2	-6	-10	-13	-22		dB
+3	+2	0	-1	-6	-11	-14	-22		dB
+8	+6	+1	-2	-7	-11	-13	-18		dB
+3	+3	+1	-2	-7	-10	-12	-17		dB
-4	+1	+1	-2	-7	-9	-12	-17		dB

Components

RLE 20-	Inlet Cone ZKD	Electronic Commutation Unit EKE
0538-EC-01-26		05-0040-5E-IA

RLE 30-0288-EC

Technical Data in Class 2 according to DIN 24166

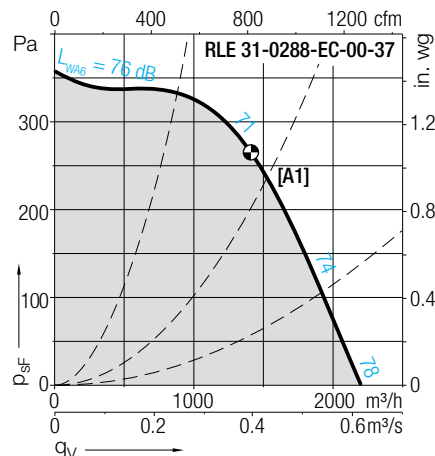
RLE 30-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protec- tion class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0288-EC-00-37	230	1~	50/60	1850	0,22	0,96	71	IP44	B	40	7,7

Stepless speed controllable via electrical Commutation Unit.
The fans must be used with the Electronic Commutation Unit EKE 05.

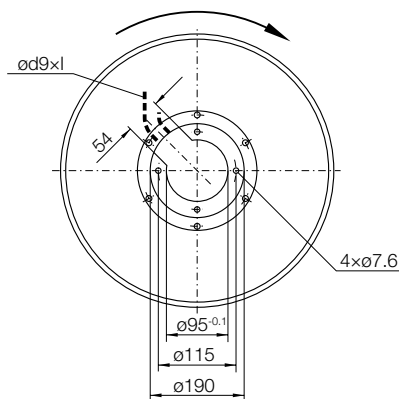
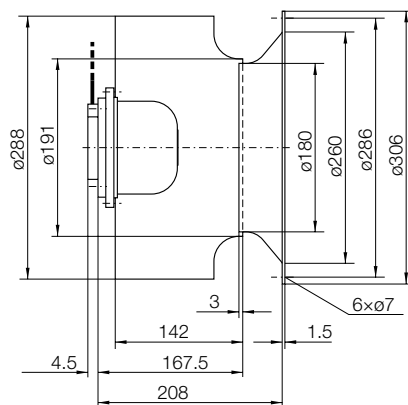
Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 1$ dB.

Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$



Dimensions in mm, Subject to change.



Connection cable:	
RLE 30-	ød9x1
0288-EC-00-37	ø7.2x800

Clockwise rotation RD	
Reverb sensor cable:	
RLE 30-	ød9x1
0288-EC-00-37	ø6.8x800

Duty Point	
N [1/min]	q_V
450...900	0.3 q_{Vmax}
450...900	0.6 q_{Vmax}
450...900	1.0 q_{Vmax}
901...1800	0.3 q_{Vmax}
901...1800	0.6 q_{Vmax}
901...1800	1.0 q_{Vmax}
1801...1850	0.3 q_{Vmax}
1801...1850	0.6 q_{Vmax}
1801...1850	1.0 q_{Vmax}

Relative sound power level for discharge side L_{Wrel6}									
63	125	250	500	1000	2000	4000	8000	Hz	
+9	-1	-2	-5	-4	-8	-15	-22		dB
+6	-1	-3	-5	-5	-6	-15	-20		dB
-2	-5	-4	-6	-4	-6	-13	-22		dB
+6	0	-2	-6	-4	-7	-12	-20		dB
-1	0	-2	-6	-5	-7	-10	-18		dB
-8	-4	-5	-6	-5	-7	-9	-17		dB
0	-3	-1	-5	-5	-6	-11	-18		dB
-7	-5	0	-5	-6	-7	-10	-14		dB
-13	-12	-5	-7	-5	-6	-10	-11		dB

Relative sound power level for inlet side L_{Wrel5}									
63	125	250	500	1000	2000	4000	8000	Hz	
+7	+2	0	-1	-6	-11	-16	-19		dB
+6	+2	0	-1	-6	-10	-16	-22		dB
+2	+1	0	-1	-6	-10	-17	-26		dB
+9	+3	0	-2	-6	-10	-13	-17		dB
+3	+2	+1	-1	-7	-10	-14	-22		dB
-3	+1	0	-1	-7	-10	-13	-22		dB
+7	+4	+1	-2	-6	-11	-15	-20		dB
-4	0	+3	-2	-7	-12	-15	-18		dB
-10	-5	+1	-2	-5	-11	-13	-16		dB

Components

RLE 30-	Inlet Cone	Electronic Commutation Unit
0288-EC-00-37	ZKD	EKE
		05-0018-5E-IA

RLE 30-0323-EC

Technical Data in Class 2 according to DIN 24166

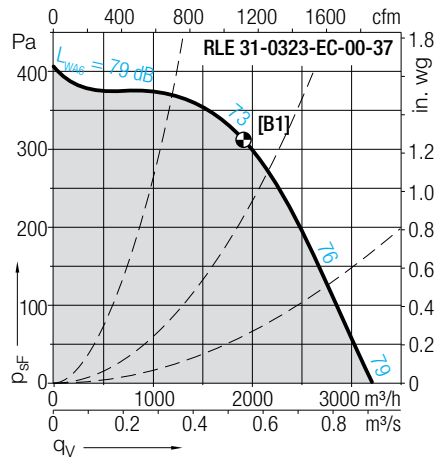
RLE 30-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protection class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0323-EC-00-37	230	1~	50/60	1750	0,33	1,45	73	IP44	B	40	8,1

Stepless speed controllable via electronic Commutation Unit.
The fans must be used with the Electronic Commutation Unit EKE 05.

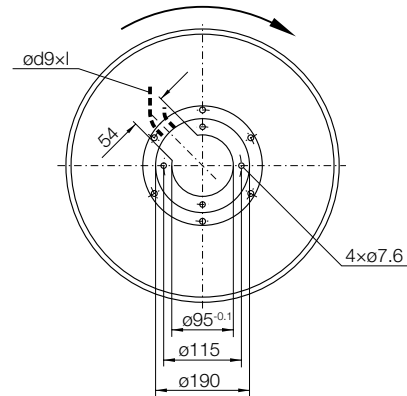
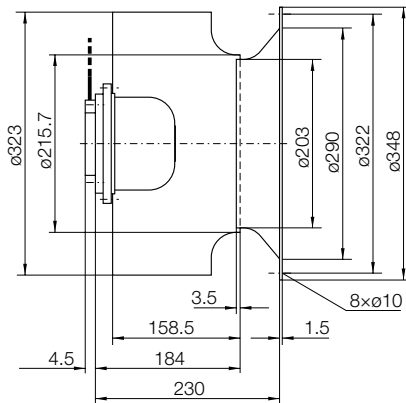
Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 1$ dB.

Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$



Dimensions in mm, Subject to change.



Connection cable:	
RLE 30-	ød9x1
0323-EC-00-37	ø7.2x800

Clockwise rotation RD Reverb sensor cable:	
RLE 30-	ød9x1
0323-EC-00-37	ø6.8x800

Duty Point	
N [1/min]	q_v
450...900	0.3 $q_{v \max}$
450...900	0.6 $q_{v \max}$
450...900	1.0 $q_{v \max}$
901...1750	0.3 $q_{v \max}$
901...1750	0.6 $q_{v \max}$
901...1750	1.0 $q_{v \max}$

Relative sound power level for discharge side L_{Wrel6}									
63	125	250	500	1000	2000	4000	8000	Hz	
+9	-1	-2	-5	-4	-8	-15	-22		dB
+6	-1	-3	-5	-5	-6	-15	-20		dB
-2	-5	-4	-6	-4	-6	-13	-22		dB
+6	0	-2	-6	-4	-7	-12	-20		dB
-1	0	-2	-6	-5	-7	-10	-18		dB
-8	-4	-5	-6	-5	-7	-9	-17		dB

Relative sound power level for inlet side L_{Wrel5}									
63	125	250	500	1000	2000	4000	8000	Hz	
+7	+2	0	-1	-6	-11	-16	-19		dB
+6	+2	0	-1	-6	-10	-16	-22		dB
+2	+1	0	-1	-6	-10	-17	-26		dB
+9	+3	0	-2	-6	-10	-13	-17		dB
+3	+2	+1	-1	-7	-10	-14	-22		dB
-3	+1	0	-1	-7	-10	-13	-22		dB

Components

RLE 30-	Inlet Cone ZKD	Electronic Commutation Unit EKE
0323-EC-00-37		05-0018-5E-IA

RLE 30-0363-EC

Technical Data in Class 2 according to DIN 24166

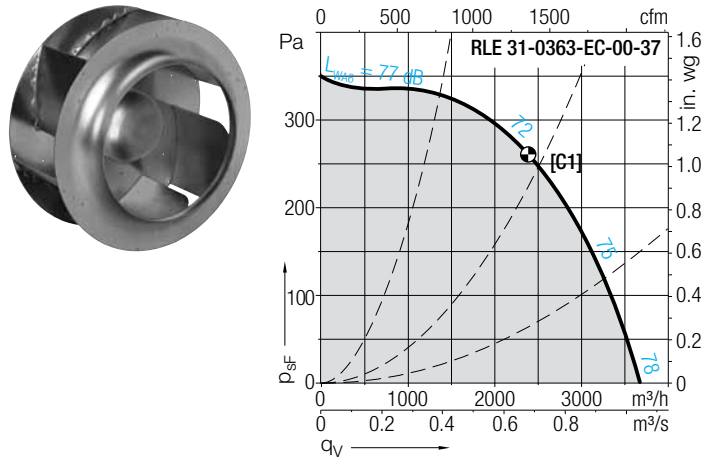
RLE 30-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protection class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0363-EC-00-37	230	1~	50/60	1460	0,34	1,5	72	IP44	B	40	8,4

Stepless speed controllable via electrical Commutation Unit.
The fans must be used with the Electrical Commutation Unit EKE 05.

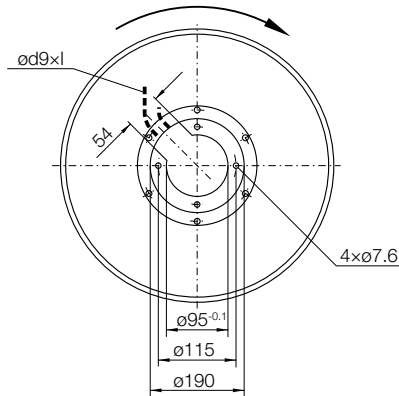
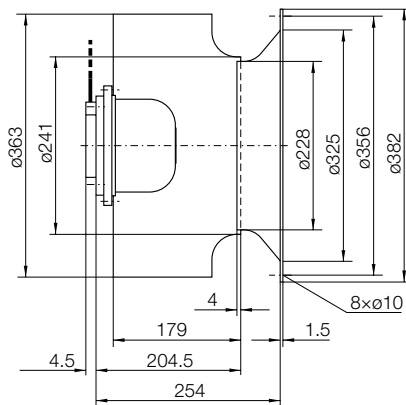
Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 2$ dB.

Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$



Dimensions in mm, Subject to change.



Connection cable:	
RLE 30-	$\phi 9 \times 1$
0363-EC-00-37	$\phi 7.2 \times 800$

Clockwise rotation RD	
Reverb sensor cable:	
RLE 30-	$\phi 9 \times 1$
0363-EC-00-37	$\phi 6.8 \times 800$

Duty Point	
N [1/min]	q_v
450...900	0.3 q_{Vmax}
450...900	0.6 q_{Vmax}
450...900	1.0 q_{Vmax}
901...1460	0.3 q_{Vmax}
901...1460	0.6 q_{Vmax}
901...1460	1.0 q_{Vmax}

Relative sound power level for discharge side L_{Wrel6}									
63	125	250	500	1000	2000	4000	8000	Hz	
+9	-1	-2	-5	-4	-8	-15	-22	dB	
+6	-1	-3	-5	-5	-6	-15	-20	dB	
-2	-5	-4	-6	-4	-6	-13	-22	dB	
+6	0	-2	-6	-4	-7	-12	-20	dB	
-1	0	-2	-6	-5	-7	-10	-18	dB	
-8	-4	-5	-6	-5	-7	-9	-17	dB	

Relative sound power level for inlet side L_{Wrel5}									
63	125	250	500	1000	2000	4000	8000	Hz	
+7	+2	0	-1	-6	-11	-16	-19	dB	
+6	+2	0	-1	-6	-10	-16	-22	dB	
+2	+1	0	-1	-6	-10	-17	-26	dB	
+9	+3	0	-2	-6	-10	-13	-17	dB	
+3	+2	+1	-1	-7	-10	-14	-22	dB	
-3	+1	0	-1	-7	-10	-13	-22	dB	

Components

	Inlet Cone	Electronic Commutation Unit
RLE 30-	ZKD	EKE
0363-EC-00-37		05-0018-5E-IA

RLE 30-0406-EC

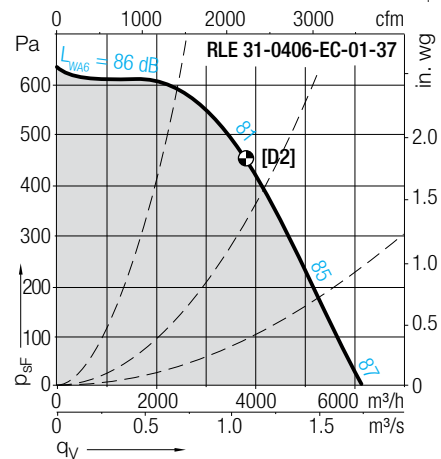
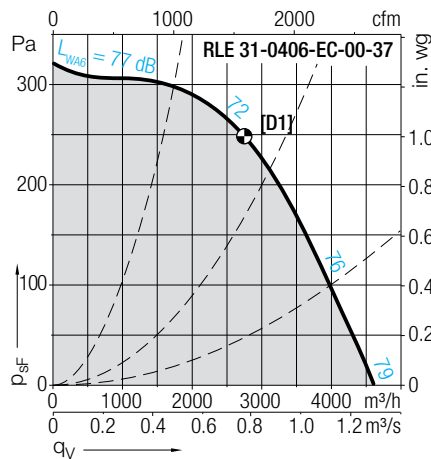
Technical Data in Class 2 according to DIN 24166

RLE 30-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protection class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0406-EC-00-37	230	1~	50/60	1260	0,38	1,67	72	IP44	B	40	9,5
0406-EC-01-37	230	1~	50/60	1760	1	4,4	81	IP44	F	40	9,5

Stepless speed controllable via electronic Commutation Unit.
The fans must be used with the Electronic Commutation Unit EKE 05.

Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 2$ dB.

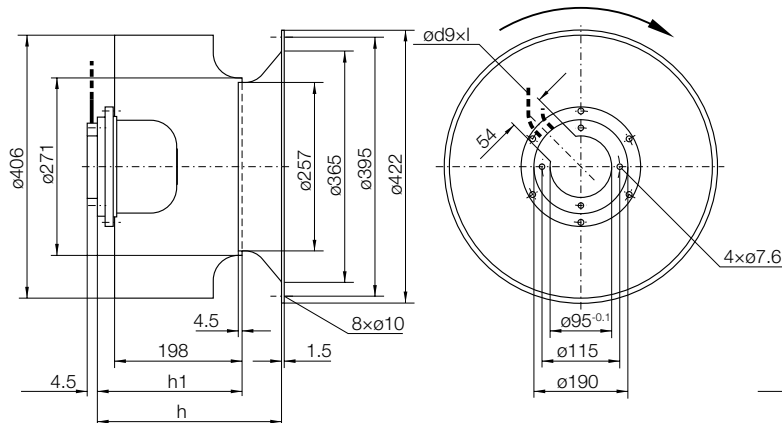
Curves in Class 2 according to DIN 24166



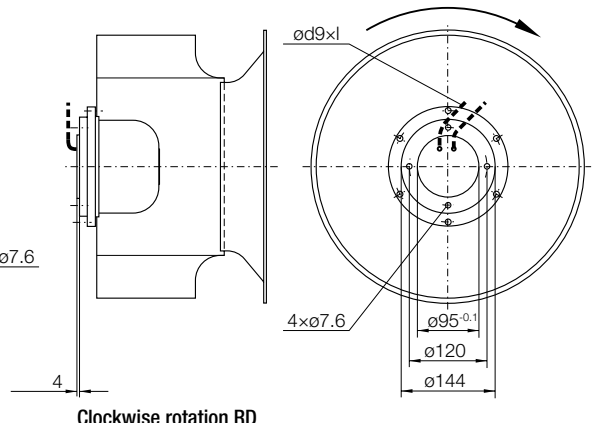
$\rho_1 = 1.15 \text{ kg/m}^3$

Dimensions in mm, Subject to change.

RLE 30-0406-EC-00-37



RLE 30-0406-EC-01-37



Dimensions depending on motorsize:

RLE 30-	h	h1
0406-EC-00-37	268.5	223.5
0406-EC-01-37	270.5	225.5

Clockwise rotation RD

Connection cable:

RLE 30-	Ø9x1
0406-EC-00-37	Ø7.2x800
0406-EC-01-37	Ø7.2x800

Reverb sensor cable:

RLE 30-	Ø9x1
0406-EC-00-37	Ø6.8x800
0406-EC-01-37	Ø6.8x800

Duty Point

N [1/min]	q_v
450...900	0.3 q_{vmax}
450...900	0.6 q_{vmax}
450...900	1.0 q_{vmax}
901...1760	0.3 q_{vmax}
901...1760	0.6 q_{vmax}
901...1760	1.0 q_{vmax}

Relative sound power level for discharge side L_{Wrel6}

	63	125	250	500	1000	2000	4000	8000	Hz
450...900	+8	0	-2	-5	-4	-7	-14	-22	dB
450...900	+7	+1	-2	-5	-4	-7	-13	-21	dB
450...900	+2	-2	-3	-5	-5	-6	-12	-23	dB
901...1760	+5	+1	-1	-5	-4	-7	-12	-19	dB
901...1760	-1	+2	-1	-5	-5	-7	-11	-17	dB
901...1760	-4	-1	-4	-5	-5	-7	-11	-15	dB

Relative sound power level for inlet side L_{Wrel5}

	63	125	250	500	1000	2000	4000	8000	Hz
450...900	+9	+2	0	-1	-7	-11	-15	-19	dB
450...900	+7	+2	+1	-1	-7	-11	-16	-23	dB
450...900	+3	+2	+1	-1	-7	-10	-15	-25	dB
901...1760	+7	+3	0	-1	-7	-11	-14	-20	dB
901...1760	+2	+3	+1	-1	-7	-11	-14	-20	dB
901...1760	-4	+1	0	-1	-7	-10	-13	-16	dB

Components

RLE 30-	Inlet Cone ZKD	Electronic Commutation Unit EKE
0406-EC-00-37		05-0018-5E-IA
0406-EC-01-37		05-0040-5E-IA

RLE 30-0455-EC

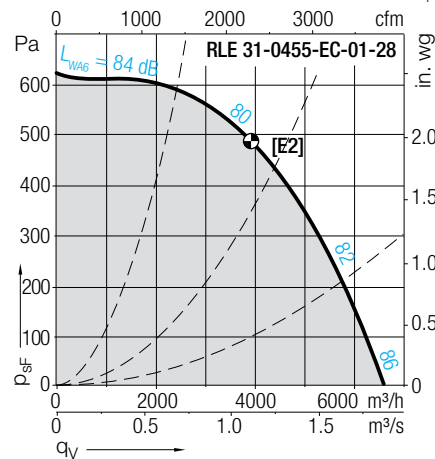
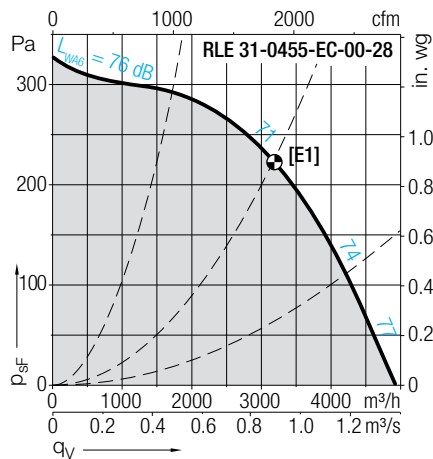
Technical Data in Class 2 according to DIN 24166

RLE 30-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protection class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0455-EC-00-28	230	1~	50/60	1120	0,38	1,67	71	IP44	B	40	14,1
0455-EC-01-28	230	1~	50/60	1580	1	4,4	80	IP44	F	40	15,6

Stepless speed controllable via electrical Commutation Unit.
The fans must be used with the Electrical Commutation Unit EKE 05.

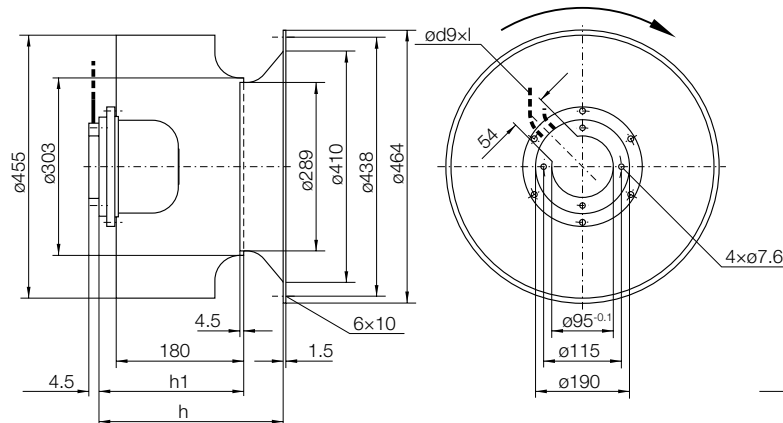
Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 2$ dB.

Curves in Class 2 according to DIN 24166

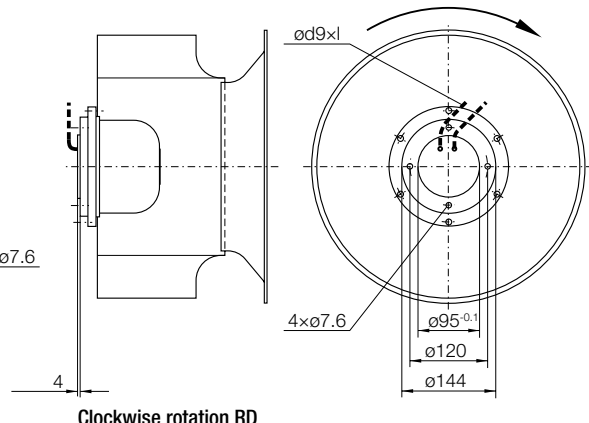


Dimensions in mm, Subject to change.

RLE 30-0455-EC-00-28



RLE 30-0455-EC-01-28



Dimensions depending on motorsize:

RLE 30-	h	h1
0455-EC-00-28	275	205.5
0455-EC-01-28	277	207.5

Clockwise rotation RD

Connection cable:	RLE 30-	ød9x1
0455-EC-00-28	ø7.2x800	
0455-EC-01-28	ø7.2x800	

Reverb sensor cable:

RLE 30-	ød9x1
0455-EC-00-28	ø6.8x800
0455-EC-01-28	ø6.8x800

Duty Point

N [1/min]	q_v
450...900	0.3 q_{Vmax}
450...900	0.6 q_{Vmax}
450...900	1.0 q_{Vmax}
901...1580	0.3 q_{Vmax}
901...1580	0.6 q_{Vmax}
901...1580	1.0 q_{Vmax}

Relative sound power level for discharge side L_{Wrel6}

	63	125	250	500	1000	2000	4000	8000	Hz
450...900 0.3 q_{Vmax}	+8	+2	-3	-5	-4	-8	-14	-22	dB
450...900 0.6 q_{Vmax}	+4	-2	-2	-5	-4	-7	-14	-23	dB
450...900 1.0 q_{Vmax}	+1	-2	-3	-5	-4	-7	-12	-23	dB
901...1580 0.3 q_{Vmax}	+3	+1	0	-5	-4	-8	-12	-19	dB
901...1580 0.6 q_{Vmax}	-5	-1	-2	-5	-4	-8	-11	-17	dB
901...1580 1.0 q_{Vmax}	-10	-1	-4	-5	-4	-8	-10	-17	dB

Relative sound power level for inlet side L_{Wrel5}

	63	125	250	500	1000	2000	4000	8000	Hz
450...900 0.3 q_{Vmax}	+8	+4	0	-1	-6	-11	-19	-24	dB
450...900 0.6 q_{Vmax}	+5	+3	+2	-1	-8	-11	-18	-24	dB
450...900 1.0 q_{Vmax}	+3	+2	+1	0	-7	-11	-16	-28	dB
901...1580 0.3 q_{Vmax}	+5	+4	+2	-1	-8	-12	-16	-22	dB
901...1580 0.6 q_{Vmax}	-3	+3	+2	0	-8	-12	-16	-24	dB
901...1580 1.0 q_{Vmax}	-7	+3	0	-1	-6	-11	-14	-20	dB

Components

RLE 30-	Inlet Cone	Electronic Commutation Unit
0455-EC-00-28	ZKD	EKE
0455-EC-01-28		05-0018-5E-IA
		05-0040-5E-IA

RLE 30-0455-EC

Technical Data in Class 2 according to DIN 24166

RLE 30-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protection class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0455-EC-01-37	230	1~	50/60	1470	1,05	4,6	79	IP44	F	40	12

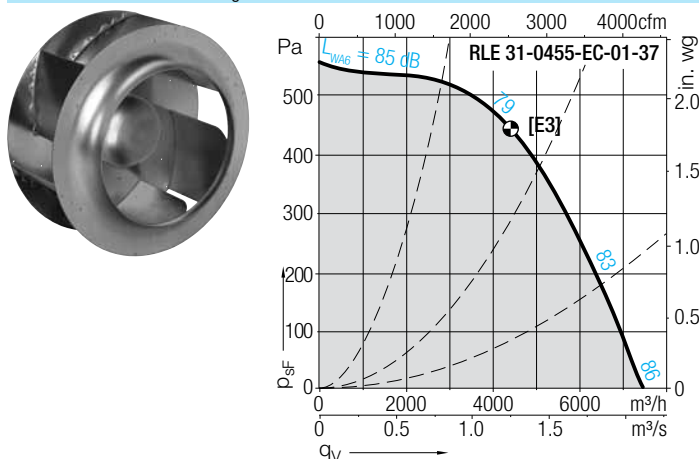
Stepless speed controllable via electronic Commutation Unit.
The fans must be used with the Electronic Commutation Unit EKE 05.

Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!

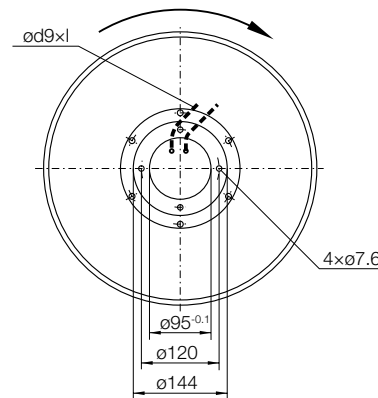
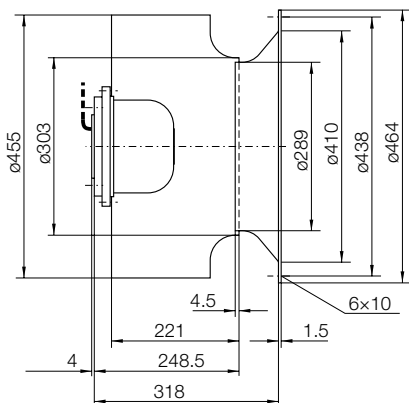
Sound level for inlet side $L_{WA5} = L_{WA6} - 2$ dB.

Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$



Dimensions in mm, Subject to change.



Connection cable:	
RLE 30-	$\phi d9 \times 1$
0455-EC-01-37	$\phi 7.2 \times 800$

Clockwise rotation RD	
Reverb sensor cable:	
RLE 30-	$\phi d9 \times 1$
0455-EC-01-37	$\phi 6.8 \times 800$

Duty Point	
N [1/min]	q_v
450...900	0.3 $q_{v \max}$
450...900	0.6 $q_{v \max}$
450...900	1.0 $q_{v \max}$
901...1470	0.3 $q_{v \max}$
901...1470	0.6 $q_{v \max}$
901...1470	1.0 $q_{v \max}$

Relative sound power level for discharge side L_{Wrel6}									
63	125	250	500	1000	2000	4000	8000	Hz	
+8	0	-2	-5	-4	-7	-14	-22		dB
+7	+1	-2	-5	-4	-7	-13	-21		dB
+2	-2	-3	-5	-5	-6	-12	-23		dB
+5	+1	-1	-5	-4	-7	-12	-19		dB
-1	+2	-1	-5	-5	-7	-11	-17		dB
-4	-1	-4	-5	-5	-7	-11	-15		dB

Relative sound power level for inlet side L_{Wrel5}									
63	125	250	500	1000	2000	4000	8000	Hz	
+9	+2	0	-1	-7	-11	-15	-19		dB
+7	+2	+1	-1	-7	-11	-16	-23		dB
+3	+2	+1	-1	-7	-10	-15	-25		dB
+7	+3	0	-1	-7	-11	-14	-20		dB
+2	+3	+1	-1	-7	-11	-14	-20		dB
-4	+1	0	-1	-7	-10	-13	-16		dB

Components

RLE 30-	Inlet Cone	Electronic Commutation Unit
0455-EC-01-37	ZKD	EKE
		05-0040-5E-IA

RLE 30-0510-EC

Technical Data in Class 2 according to DIN 24166

RLE 30-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protec- tion class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0510-EC-01-37	230	1~	50/60	1180	1,02	4,5	77	IP44	F	40	16,4

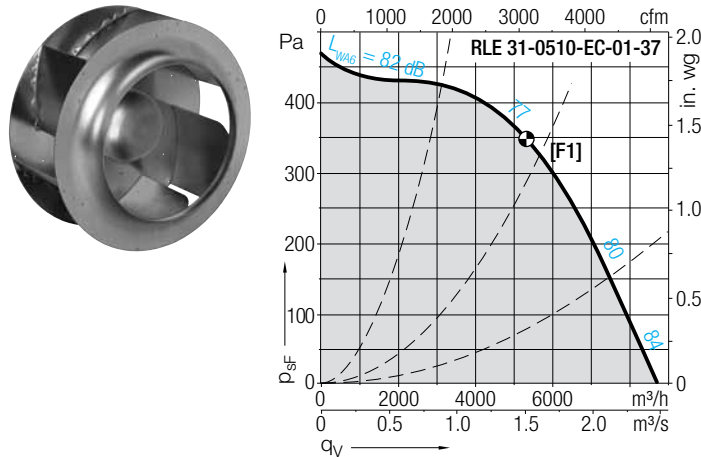
Stepless speed controllable via electrical Commutation Unit.
The fans must be used with the Electrical Commutation Unit EKE 05.

Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!

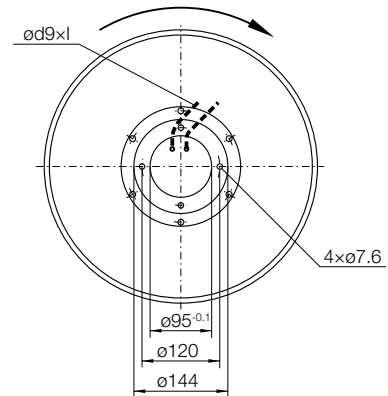
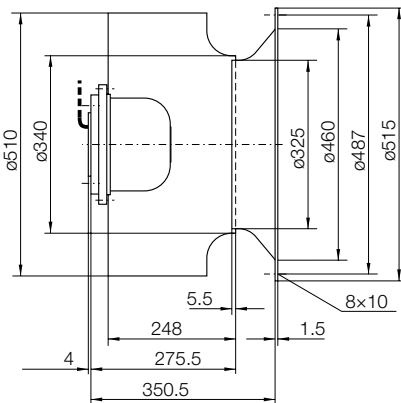
Sound level for inlet side $L_{WA5} = L_{WA6} - 3$ dB.

Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$



Dimensions in mm, Subject to change.



Connection cable:	
RLE 30-	ød9x1
0510-EC-01-37	ø7.2x800

Clockwise rotation RD	
Reverb sensor cable:	
RLE 30-	ød9x1
0510-EC-01-37	ø6.8x800

Duty Point	
N [1/min]	q_v
450...900	0.3 q_{Vmax}
450...900	0.6 q_{Vmax}
450...900	1.0 q_{Vmax}
901...1180	0.3 q_{Vmax}
901...1180	0.6 q_{Vmax}
901...1180	1.0 q_{Vmax}

Relative sound power level for discharge side L_{Wrel6}									
	63	125	250	500	1000	2000	4000	8000	Hz
0.3 q_{Vmax}	+8	0	-2	-5	-4	-7	-14	-22	dB
0.6 q_{Vmax}	+7	+1	-2	-5	-4	-7	-13	-21	dB
1.0 q_{Vmax}	+2	-2	-3	-5	-5	-6	-12	-23	dB
0.3 q_{Vmax}	+5	+1	-1	-5	-4	-7	-12	-19	dB
0.6 q_{Vmax}	-1	+2	-1	-5	-5	-7	-11	-17	dB
1.0 q_{Vmax}	-4	-1	-4	-5	-5	-7	-11	-15	dB

Relative sound power level for inlet side L_{Wrel5}									
	63	125	250	500	1000	2000	4000	8000	Hz
0.3 q_{Vmax}	+9	+2	0	-1	-7	-11	-15	-19	dB
0.6 q_{Vmax}	+7	+2	+1	-1	-7	-11	-16	-23	dB
1.0 q_{Vmax}	+3	+2	+1	-1	-7	-10	-15	-25	dB
0.3 q_{Vmax}	+7	+3	0	-1	-7	-11	-14	-20	dB
0.6 q_{Vmax}	+2	+3	+1	-1	-7	-11	-14	-20	dB
1.0 q_{Vmax}	-4	+1	0	-1	-7	-10	-13	-16	dB

Components

	Inlet Cone	Electronic Commutation Unit
RLE 30-	ZKD	EKE
0510-EC-01-37		05-0040-5E-IA

RLE 30-0570-EC

Technical Data in Class 2 according to DIN 24166

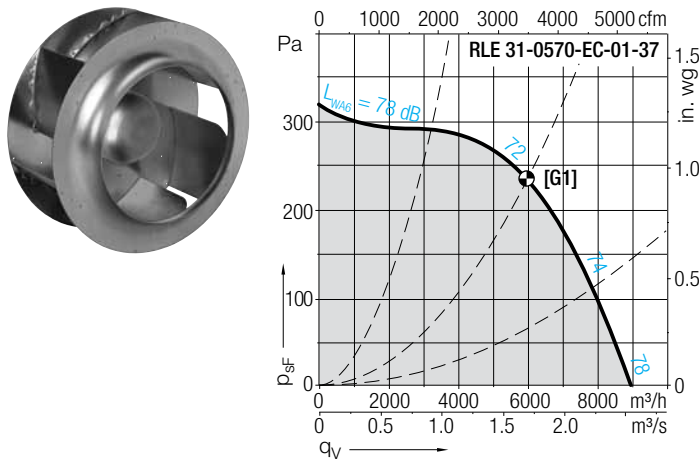
RLE 30-	Voltage V	Phases	Frequency Hz	Speed 1/min	Max. power consumption kW	Nominal current A	L_{WA6} at q_{Vopt} dB	Motor protection class	Motor thermal class	Media Temperature max. °C	Impeller weight kg
0570-EC-00-37	230	1~	50/60	880	0,8	3,5	72	IP44	F	40	24,6

Stepless speed controllable via electronic Commutation Unit.
The fans must be used with the Electronic Commutation Unit EKE 05.

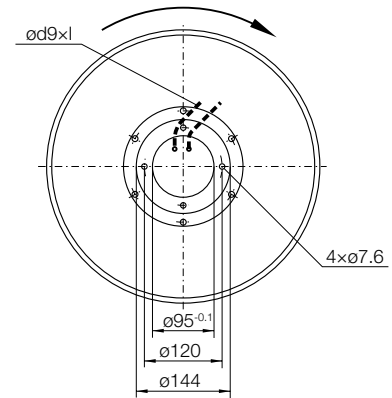
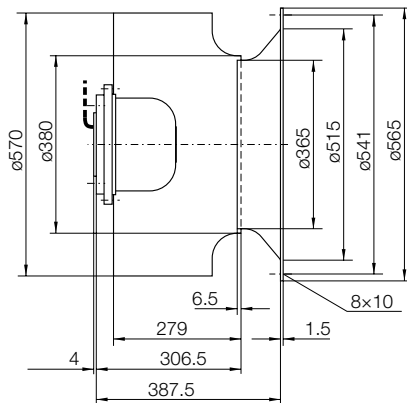
Performance curves and sound data are valid only for the motor impeller in connection with our inlet cone!
Sound level for inlet side $L_{WA5} = L_{WA6} - 4$ dB.

Curves in Class 2 according to DIN 24166

$\rho_1 = 1.15 \text{ kg/m}^3$



Dimensions in mm, Subject to change.



Connection cable:	
RLE 30-	ød9x1
0570-EC-00-37	ø7.2x800

Clockwise rotation RD	
Reverb sensor cable:	
RLE 30-	ød9x1
0570-EC-00-37	ø6.8x800

Duty Point	
N [1/min]	q_v
450...880	0.3 q_{Vmax}
450...880	0.6 q_{Vmax}
450...880	1.0 q_{Vmax}

Relative sound power level for discharge side L_{Wrel6}									
63	125	250	500	1000	2000	4000	8000	Hz	
+7	+1	-2	-3	-4	-9	-14	-22		dB
+7	+2	-2	-4	-4	-8	-13	-19		dB
+4	0	-2	-3	-4	-8	-13	-19		dB

Relative sound power level for inlet side L_{Wrel5}									
63	125	250	500	1000	2000	4000	8000	Hz	
+9	+2	+1	-2	-6	-11	-14	-19		dB
+7	+2	+1	-2	-6	-10	-13	-19		dB
+4	+1	0	-2	-6	-9	-13	-18		dB

Components

RLE 30-	Inlet Cone ZKD	Electronic Commutation Unit EKE
0570-EC-01-37		05-0040-5E-IA

Technical Data

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

RLE 20-	Overall efficiency η_e [%]	Measure- ment category	Efficiency category	achieved	required		Speed control (VSD)	Rated motor po- wer at optimum energy efficiency	Flow rate at optimum energy efficiency	Pressure at optimum energy efficiency	Speed at optimum energy efficiency	"specific ratio"
				efficiency grade at optimum energy efficiency	efficiency grade acc. to ErP since	2013						
				"N"				P_e [kW]	q_v [m ³ /h]	p_F [Pa]	N [1/min]	
0299-EC-00-30	52.9	A	STATIC	71.0	58	62	integrated	0.190	1200	301	1850	1.003
0407-EC-00-26	61.5	A	STATIC	77.2	58	62	integrated	0.317	2650	265	1350	1.003
0407-EC-01-26	57.6	A	STATIC	68.4	58	62	integrated	0.938	3330	584	1970	1.006
0477-EC-00-23	60.8	A	STATIC	76.6	58	62	integrated	0.313	3290	208	1070	1.002
0477-EC-01-23	62.7	A	STATIC	73.7	58	62	integrated	0.900	4400	462	1530	1.005
0538-EC-01-26	59.7	A	STATIC	71.1	58	62	integrated	0.825	4900	362	1140	1.004
RLE 30-	η_e [%]			"N"	2013	2015		P_e [kW]	q_v [m ³ /h]	p_F [Pa]	N [1/min]	
0288-EC-00-37	56.7	A	STATIC	74.9	58	62	integrated	0.185	1400	270	1850	1.003
0323-EC-00-37	57.1	A	STATIC	73.3	58	62	integrated	0.290	1916	311	1750	1.003
0363-EC-00-37	60.6	A	STATIC	76.8	58	62	integrated	0.284	2384	260	1460	1.003
0406-EC-00-37	58.4	A	STATIC	74.1	58	62	integrated	0.325	2753	248	1260	1.002
0406-EC-01-37	52.2	A	STATIC	63.1	58	62	integrated	0.910	3800	450	1760	1.005
0455-EC-00-28	57.8	A	STATIC	73.2	58	62	integrated	0.339	3195	221	1120	1.002
0455-EC-01-28	57.9	A	STATIC	68.8	58	62	integrated	0.910	3908	485	1580	1.005
0455-EC-01-37	55.9	A	STATIC	66.6	58	62	integrated	0.957	4400	438	1470	1.004
0510-EC-01-37	55.1	A	STATIC	65.9	58	62	integrated	0.929	5336	345	1180	1.003
0570-EC-01-37	54.4	A	STATIC	66.5	58	62	integrated	0.714	5980	234	880	1.002

RLE 20-/30-EC

Specification



High performance centrifugal fan RLE-EC

optimised, for using without volute casing. With brushless DC external rotor motor and commutation unit, for installation horizontally or vertically.

High performance centrifugal impeller with backward curved blades fitted to the rotor of an integrated motor. Protection IP44, statically and dynamically balanced in accordance with DIN ISO 1940.

Stepless speed controlled through brushless DC motor with commutation unit.

Impeller out of galvanized steel sheet with Alu-blades riveted - Range RLE20/RLE30.

Inlet cone can be delivered as an accessory.

Fan Data

Fan type	RLE		
Volume flow	q_v		m ³ /h
Fan static pressure	p_{sF}		Pa
Air density at inlet	ρ_1		kg/m ³
Media temperature	t		°C
Fan power	P_a		kW
Efficiency	η_{se}		Hz
speed	N		1/min
Frequency	f		Hz
Sound power level (A weighted)	L_{WA}		dB
Weight	m		kg

Fittings / Accessories

► Inlet cone (lose)

EKE 05

Elektronical Commutation Unit

for Nicotra Gebhardt EC-motors



Execution

Elektronical commuter unit with single phase input and variable output voltage and frequency, specially designed for matching to the operation of roof fans with brushless DC motors. By using most modern power semi conductors a high efficiency at any speed is guaranteed. The output voltage is generated at high pulse frequencies (15kHz).

Specification

- ▶ suitable for operating Nicotra Gebhardt brushless DC motors exclusively
- ▶ for single phase feed line 208V-277V/47Hz-63 Hz - max. motor rating of 380W (950W)
- ▶ internal power limitation - max. ambient temperature at operation -10°C up to +40°C
- ▶ setting of max. and min. rpm possible (possibility of setting reduced speed at night)
- ▶ analogue interface 0...5V/0...10V - Monitoring of operation (potential-free error reading)
- ▶ no error contact closed
- ▶ error (e.g. no current) contact closed
- ▶ Reset and programming button
- ▶ easy and simple maximum speed programming

Standards and guide lines

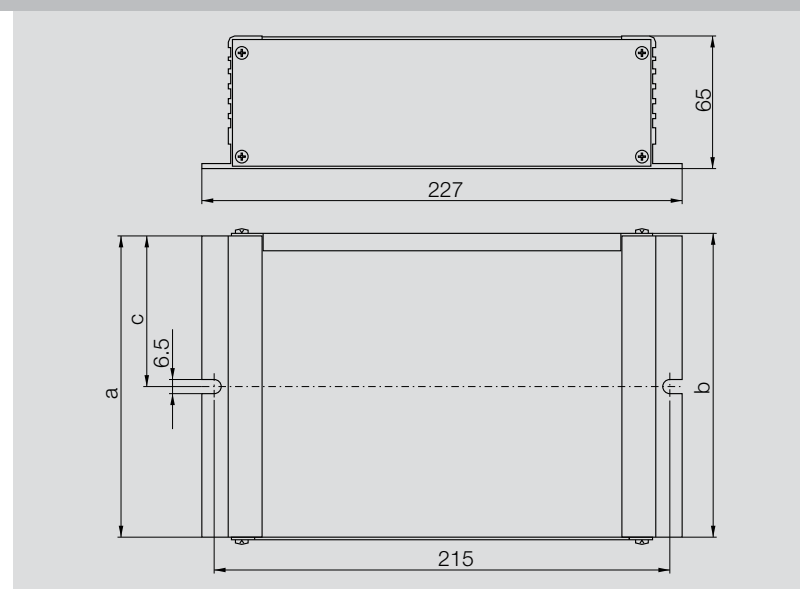
Radio frequency suppression to EMV basic standard EN 50081-1 (residential and business areas) and EN 61000-3-2 is met by using integrated filters and power factor controller (PFC).

Technical Data

EKE 05-	Operating voltage V (1~)	Input frequency Hz	Nominal input power W	Input current (cos phi = 0.97) at 208V / 230V / 277V A	Power limitation (DC connection)	Efficiency %	Fuse	Operating temperatur °C	Motor protection class	a mm	b mm	c mm
0018-5E-IA	208...277	47/63	400	1,98 / 1,79 / 1,49	480	> 93	4	-10 ... +40	IP20	142	144	71
0040-5E-IA	230	50/60	1000	4,48	**	> 93	10	-10 ... +40	IP20	187	189	93,5

For nominal input power EKE 05-0018-5E-IA see diagram 1 / ** see diagram 2

Dimensions in mm, subject to change.

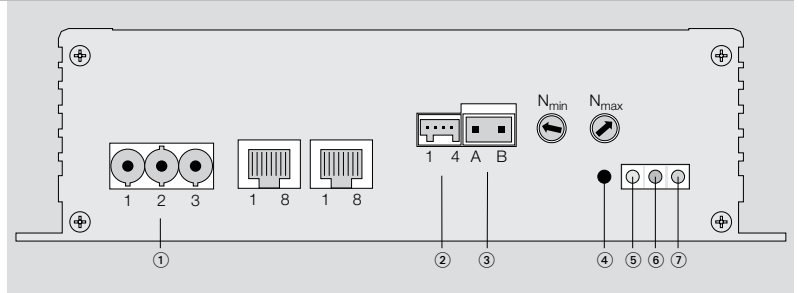


EKE 05

Elektronical Commutation Unit for Nicotra Gebhardt EC-motors

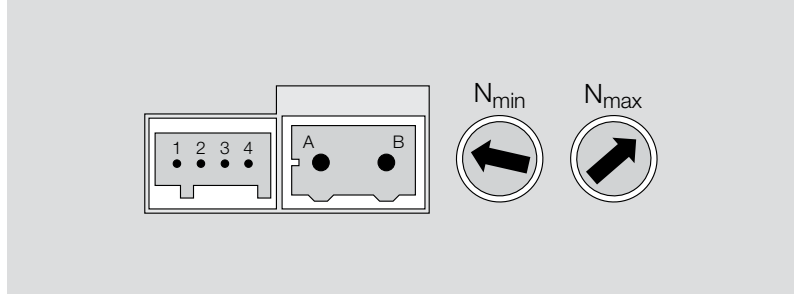
Connection diagram

- ① mains
- ② analog input
- ③ error contact opener
- ④ reset / programming
- ⑤ programming LED
- ⑥ error LED
- ⑦ operating LED



Links

- 1 = +5 V
- 2 = 0...10 V
- 3 = 0... 5 V
- 4 = ground
- A = error contact
- B = error contact
- N_{min} = minimal speed setting
- N_{max} = maximal speed setting



Power derating vs. supply voltage (EKE 05-0018-5E only)

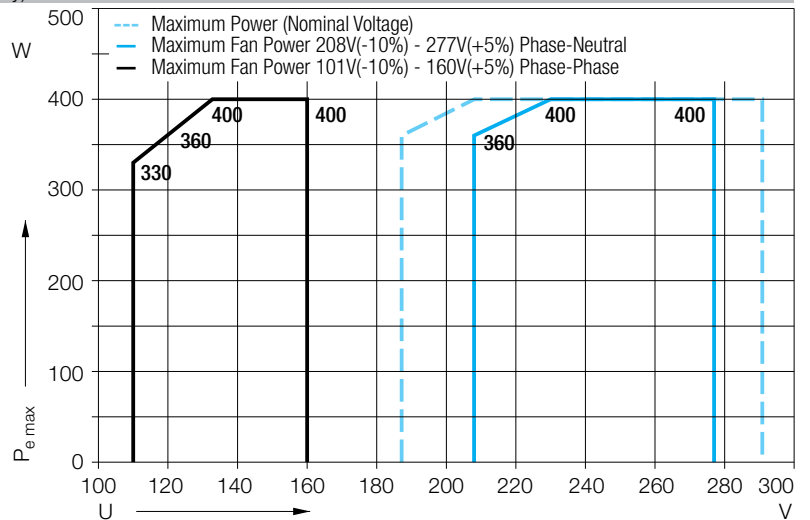


Diagram 1

Power limitation vs. motor speed

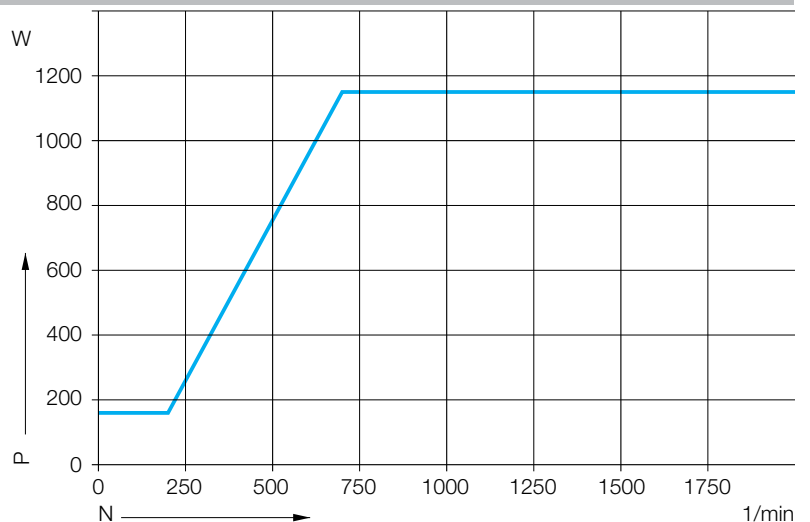


Diagram 2

EGH 01-0001-EC

Speed regulator module



for EKE 05-0018-5E-IA

Design

Impact-resistant plastic casing (cream-coloured) in protection class IP44 with rotary knob on front.

Clearly visible and identifiable terminal strip for connections.

When used as integrated model in a normal switching box the control module with front plate is simply removed from the lower part of the casing.

Function

The module has a rotary knob for the infinitely variable switchover of the rotation speed on the RLE-EC respectively.

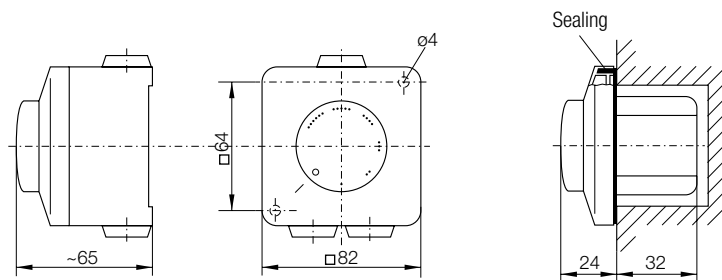
Technical Data

	resistor	protection class	weight
EGH 01-	kΩ	IP	kg
0001-EC	10	44	0.145

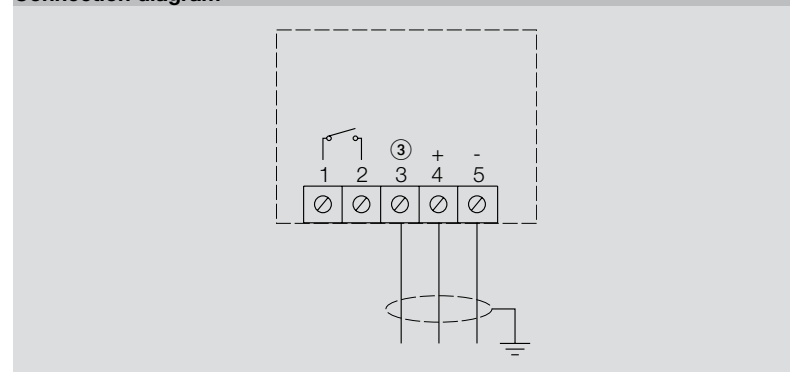
Dimensions in mm, Subject to change

Surface mounting version

flush mounting version



Connection diagram



③ U-supply

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 .

The fan curves are related to a reference density of $\rho_1 = 1,15\text{kg/m}^3$ at the fan intake.

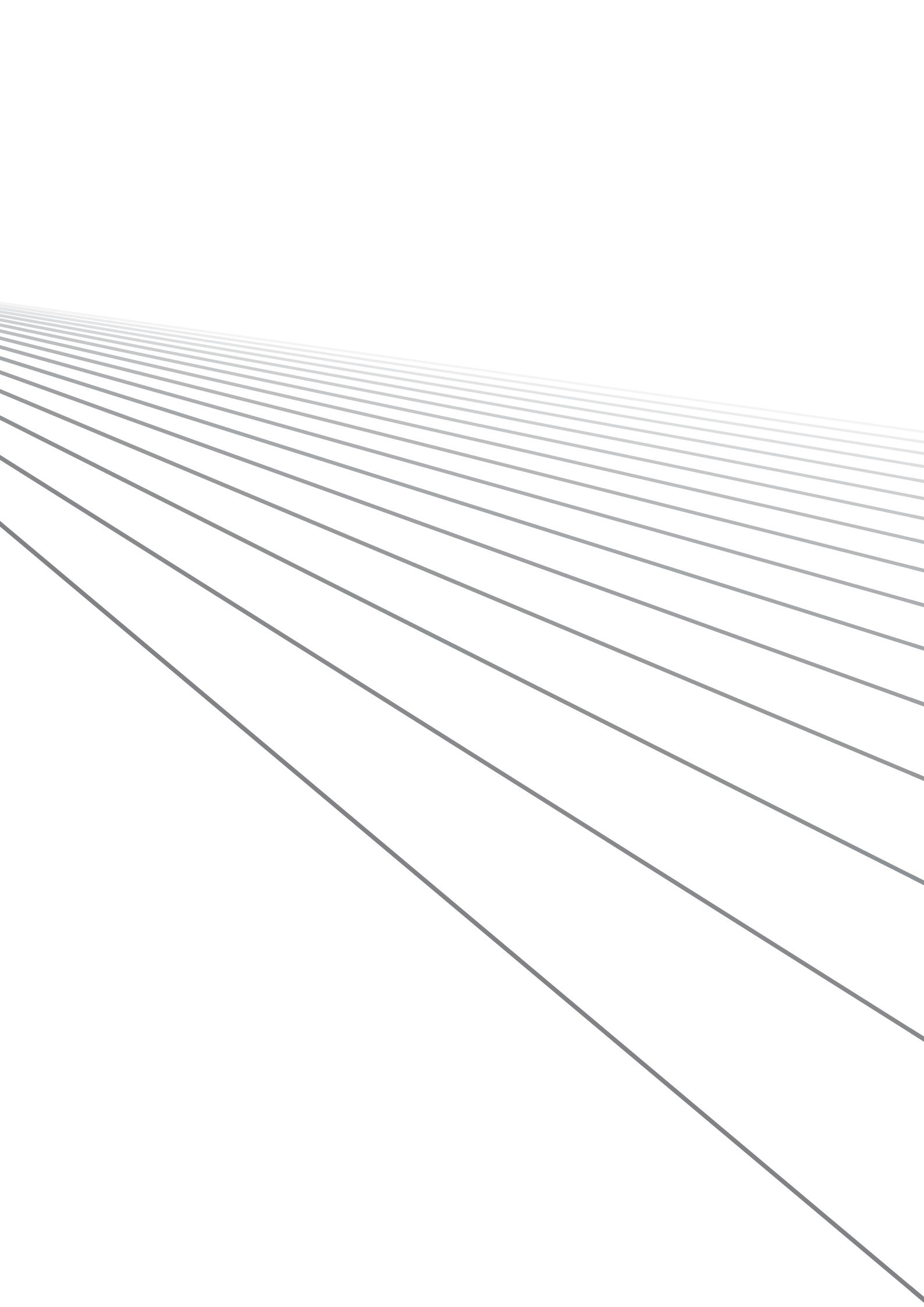
The pressure and impeller power are directly proportional to the density ρ_1 .

Sounds

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

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.



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