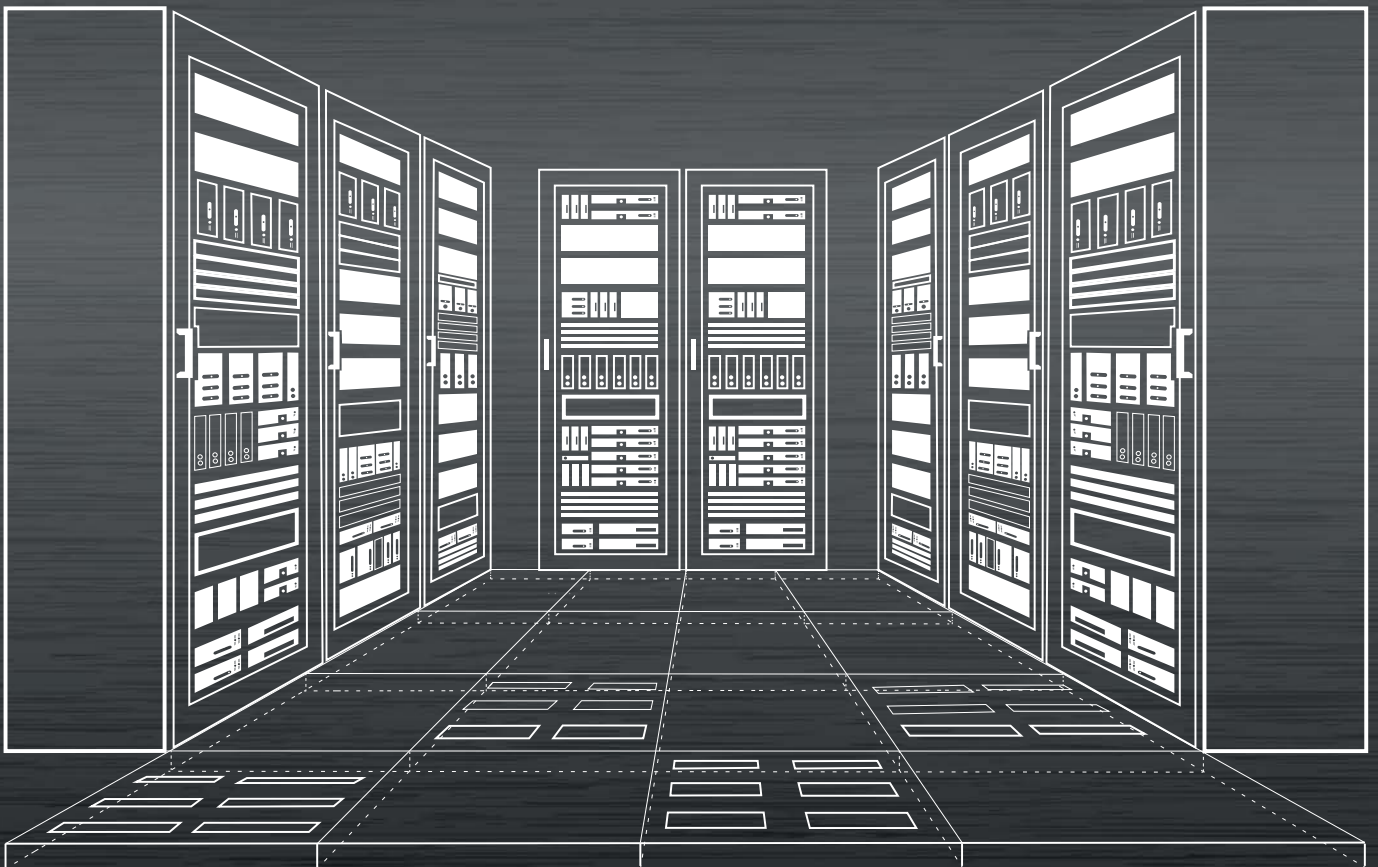


EC-FANS FOR DATA CENTERS



The Rosenberg Group

Air conditioning and ventilation technology
is our world



Air is our element – **moving it intelligently and efficiently** is our passion.

Since 1981 we have been developing and producing adjustable external rotor motors, fans and air handling units.

Established

1981

Employees

350 in Germany
Approx. 1,400 worldwide

Production sites

Germany, Hungary, Czech Republic,
Italy, France, China, Slovakia

Development centres (certified laboratory)

Germany, France,
Hungary and China

Subsidiaries and Partners

ROX Klimatechnik GmbH,
ECOFIT, ETRI, Airtècnics



Air Conditioning of Data Centers

An essential part of the total energy consumption of data center can be attributed to cooling. Energy-efficient EC fans help to reduce the operating costs and are part of an economical and environmentally friendly cooling concept.

Our product range of EC fans is as versatile as the possible applications. Benefit from our many years of experience in air-conditioning technology and reduce your PUE value (Power Usage Effectiveness).



GKHM



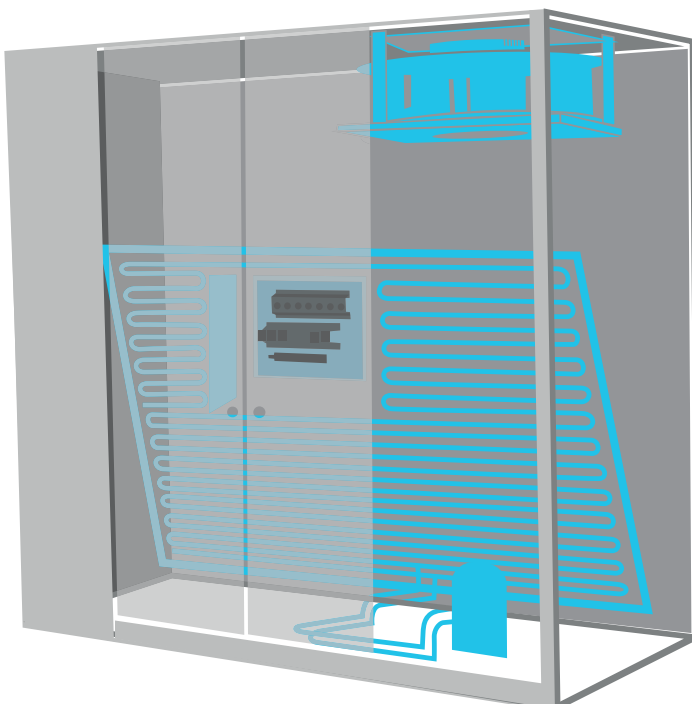
GKHR

Radial Fans Type: GKHM / GKHR

- Modbus compatible, electronically commutated motor (EC-motor)
- Built-in safety device
- Can be used independently of the mains frequency (50/60Hz)
- Efficient, low-noise, backward curved high-performance impeller
- UL listed
- Compact design - ideal for confined spaces
- Quick adjustment of cooling-unit-capacity through integrated control (0-10V)
- Up to 50% higher energy savings compared to AC fans

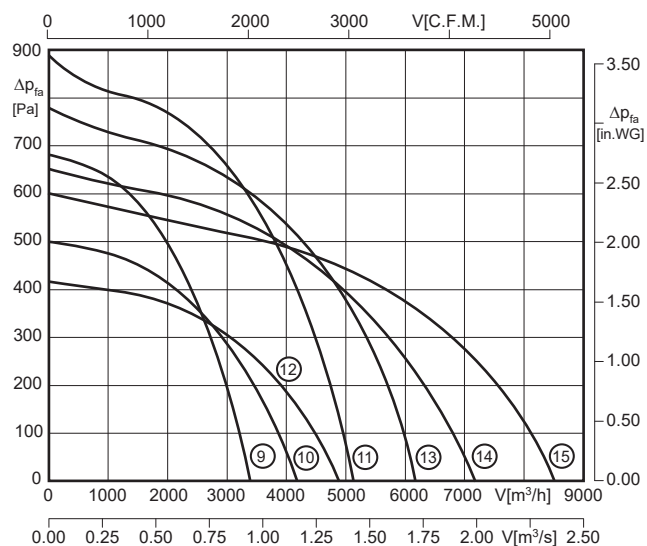
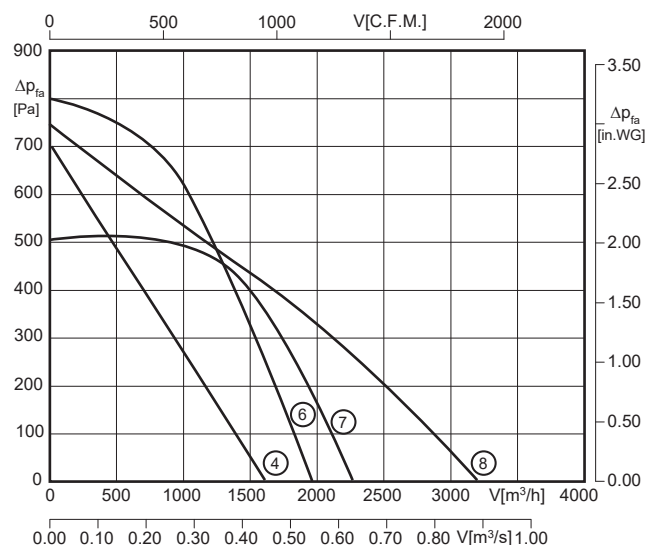
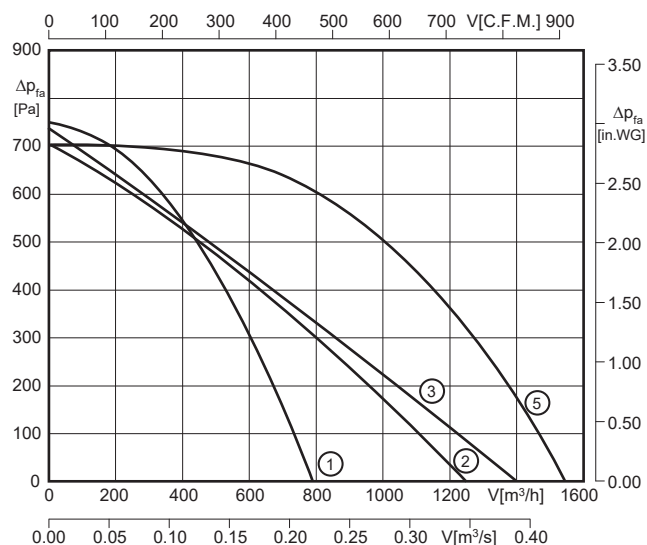
Application Field:

- Precision air conditioners
- Ventilation unit for direct and indirect (free) cooling
- Chillers
- Uninterruptible Power Supply (UPS)
- Air handling units
- Retrofit (refitting to EC fans) and many more...



EC Fans with free running impeller

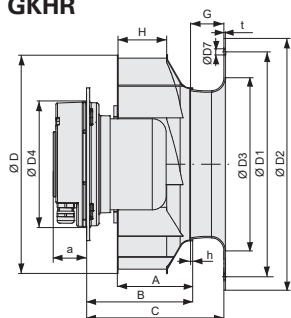
Type: RR_ EC / GKH_



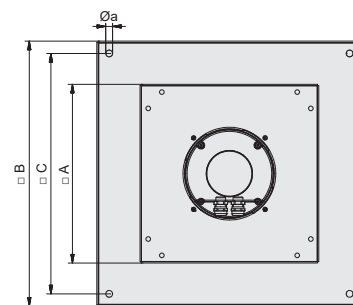
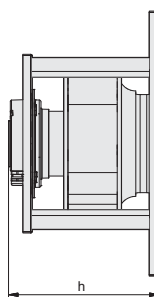
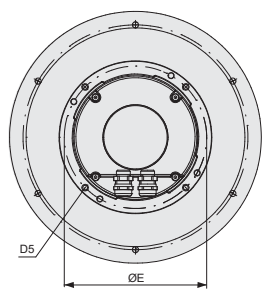
No.	Size	Fan Type	U [V]	f [Hz]	P [kW]	n [min ⁻¹]	I _N [A]	L _{wA} [dB(A)]	FMT [°C]
1	192	RR_G9 192 x 40R	1~230	50 / 60	0,14	3990	1,15	74	50
2	220	RR_G9 220 x 45R	1~230	50 / 60	0,145	3395	1,19	70,5	50
3	225	RR_G9 225 x 63R	1~230	50 / 60	0,15	2780	1,19	70,8	50
4	250	RR_G9 250 x 50R	1~230	50 / 60	0,15	2965	1,19	-	50
5	250	RR_V8 250 x 50R	1~200-277	50 / 60	0,187	3015	0,84*	-	60
6	250	RR_V8 250 x 50R	1~200-277	50 / 60	0,266	3390	1,19*	-	50
7	280	RR_V8 280 x 80R	1~200-277	50 / 60	0,17	2305	0,77*	-	60
8	337	RR_V8 337 x 88R	1~200-277	50 / 60	0,3	2200	1,35*	-	60
9	315	GKH_ 315.088.4EA	1~200-277	50 / 60	0,53	2265	2,35*	74	40
10	355	GKH_ 355.112.4EA	1~200-277	50 / 60	0,5	1715	2,2*	72	40
11	355	GKH_ 355.112.5FA	1~200-277	50 / 60	1,12	2250	5,0*	81	45
12	400	GKH_ 400.125.4FF	1~200-277	50 / 60	0,52	1400	2,3*	71	40
13	400	GKH_ 400.125.5FA	1~200-277	50 / 60	1,15	1875	5,1*	78	40
14	450	GKH_ 450.136.5FA	1~200-277	50 / 60	1,15	1550	5,1*	77	40
15	500	GKH_ 500.154.5HF	1~200-277	50 / 60	1,15	1300	5,1*	76	40

Notice: *230V/50Hz, Measurement according to ISO 13347-3. The free-outlet sound power level L_{wA|B} is depicted.

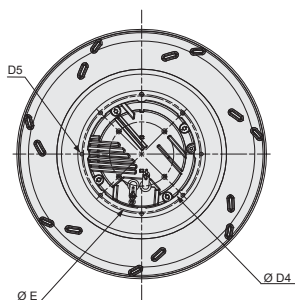
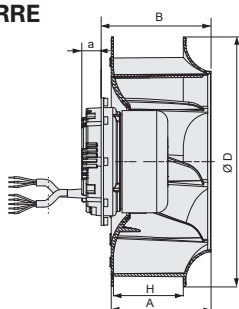
GKHR



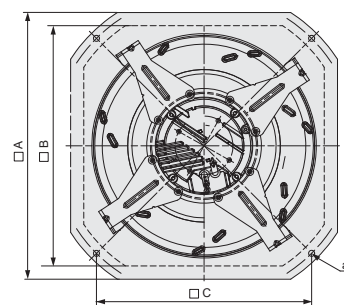
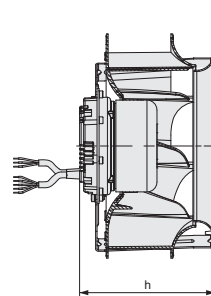
GKHM



RRE



RRM



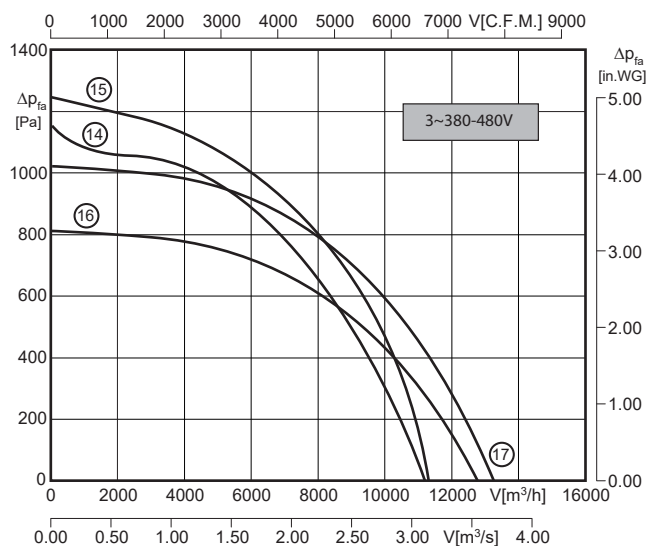
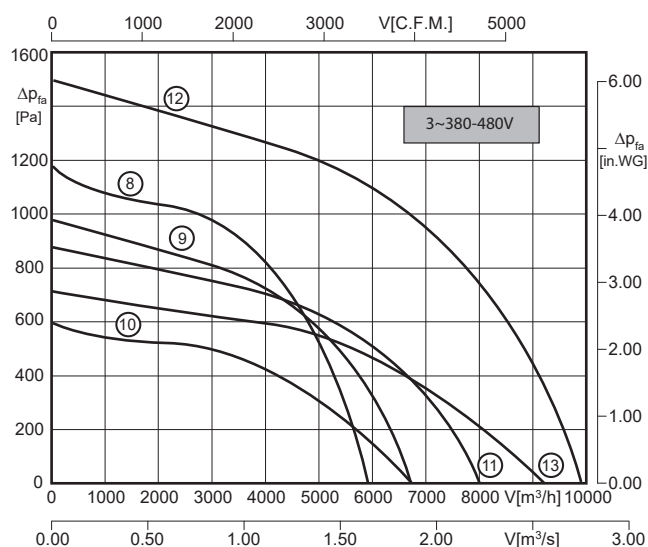
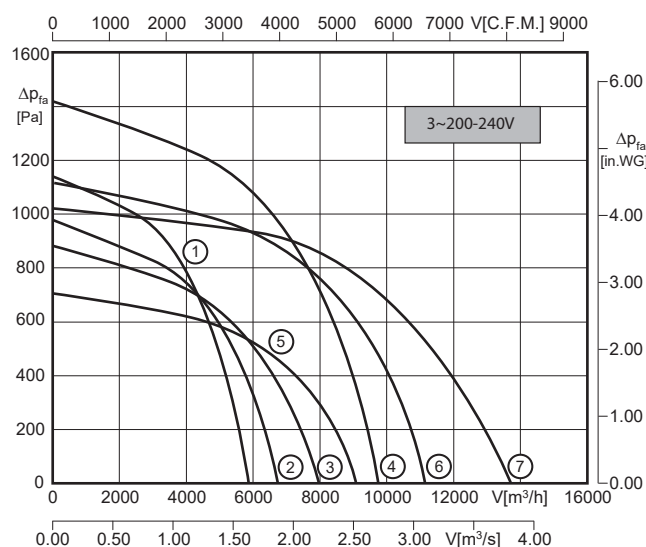
No.	Fan Type	A	B	C	H	D	a	D4	D5	E	h	D3	D2	D1	D7	G	t
1	RREG9 192 x 40R	60	70	-	40	192	17,5	97,7	M4 x 6***	107,5	-	-	-	-	-	-	-
1	RRMG9 192 x 40R	267,5	202				6				112,5						
2	RREG9 220 x 45R	63	71	-	45	220	17,5	97,7	M4 x 6***	107,5	-	-	-	-	-	-	-
2	RRMG9 220 x 45R	267,5	241				6				122						
3	RREG9 225 x 63R	90	99	-	63	225	17,5	97,7	M4 x 6***	107,5	-	-	-	-	-	-	-
3	RRMG9 225 x 63R	267,5	241				6				135,5						
4	RREG9 250 x 50R	81,7	99	-	50,7	252	17,5	97,7	M4 x 6***	107,5	-	-	-	-	-	-	-
4	RRMG9 250 x 50R	296	265				6				156						
5	RREV8 250 x 50R	80,8	99	-	50	252	41	110,1	M5 x 10***	125	-	-	-	-	-	-	-
6	RREV8 250 x 50R	81,7	99	-	50,7	252	41	110,1	M5 x 10***	125	-	-	-	-	-	-	-
7	RREV8 280 x 80R	114,8	128		80	281	41	110,1	M5 x 10***	125	-	-	-	-	-	-	-
8	RREV8 337 x 88R	142,5	152,5		88	337	41	110,1	M5 x 10***	125	-	-	-	-	-	-	-
9	GKHR 315.088.4EA	142,5	167	207	88	337	38	150	M6 x 10***	164	3,1	265	307	286	7*	43	1,5
9	GKHM 315.088.4EA	500	360	450			11				222						23,5
10	GKHR 355.112.4EA	173	200,5	245	112	377	38	150	M6 x 10***	164	3,5	296	348	320	10*	48	1,5
10	GKHM 355.112.4EA	500	395	450			11				260						23,5
11	GKHR 355.112.5FA	173	207	251	112	377	58	180	M6 x 13***	202	3,5	296	348	320	10*	48	1,5
11	GKHM 355.112.5FA	500	395	450			11				267						43
12	GKHR 400.125.4FF	194	219,5	269	125	424	38	150	M6 x 10***	164	4	326	382	356	9**	53	1,5
12	GKHM 400.125.4FF	500	420	450			11				283						23
13	GKHR 400.125.5FA	194	226	275	125	424	58	180	M6 x 13***	202	4	326	382	356	9**	53	1,5
13	GKHM 400.125.5FA	500	420	450			11				290						43
14	GKHR 450.136.5FA	213	241	294	136	477	58	180	M6 x 13***	202	4,5	372	422	395	9**	57,5	1,5
14	GKHM 450.136.5FA	630	470	580			14				309						43
15	GKHR 500.154.5HF	240	264	323	154	534	58	180	M6 x 13***	202	5	411	464	440	10,5**	64	1,5
15	GKHM 500.154.5HF	630	535	580			14				338						43

*6 x 60° / **8 x 45° / ***4 x 90°

All dimensions in mm / individual adjustment possible / RR_V8 only as Motor-Impeller-Unit available

EC Fans with free running impeller

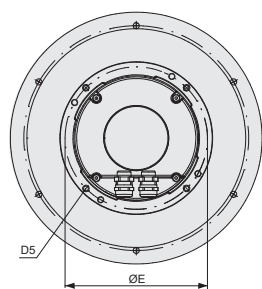
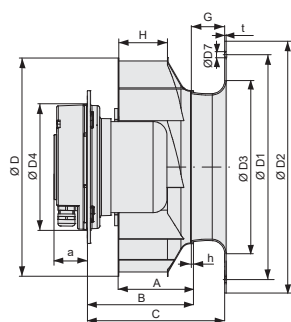
Type: GKHR / GKHM



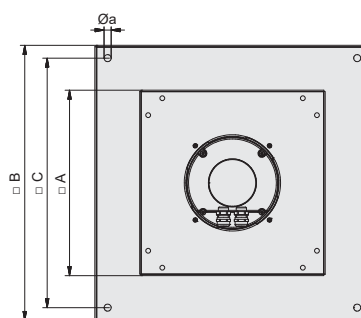
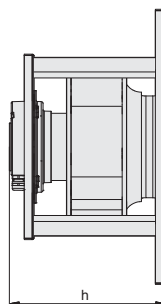
No.	Size	Fan Type	U [V]	f [Hz]	P [kW]	n [min ⁻¹]	I _N [A]	L _{wA} [dB(A)]	FMT [°C]
1	355	GKH_355.112.5FA	3~200-240	50 / 60	1,7	2600	4,6*	84	40
2	400	GKH_400.125.5HF	3~200-240	50 / 60	1,6	2100	4,2*	83	40
3	450	GKH_450.136.5HF	3~200-240	50 / 60	1,7	1775	4,6*	81	40
4	450	GKH_450.136.6FF	3~200-240	50 / 60	3,5	2250	9,0*	88	40
5	500	GKH_500.154.5HF	3~200-240	50 / 60	1,5	1425	4,0*	77	40
6	500	GKH_500.154.6FF	3~200-240	50 / 60	3,0	1800	7,7*	86	55
7	560	GKH_560.175.6IF	3~200-240	50 / 60	3,35	1550	8,5*	86	40
8	355	GKH_355.112.5FA	3~380-480	50 / 60	1,7	2600	2,8**	84	40
9	400	GKH_400.125.5HF	3~380-480	50 / 60	1,6	2100	2,5**	83	40
10	450	GKH_450.136.5FA	3~380-480	50 / 60	0,95	1450	1,5**	76	50
11	450	GKH_450.136.5HF	3~380-480	50 / 60	1,65	1775	2,7**	81	40
12	450	GKH_450.136.6FF	3~380-480	50 / 60	3,5	2300	5,1**	89	40
13	500	GKH_500.154.5HF	3~380-480	50 / 60	1,5	1425	2,4**	77	45
14	500	GKH_500.154.6FF	3~380-480	50 / 60	2,9	1800	4,4**	86	60
15	500	GKH_500.154.6IF	3~380-480	50 / 60	3,45	1900	5,1**	87	40
16	560	GKH_560.175.6FF	3~380-480	50 / 60	2,5	1400	3,8**	85	40
17	560	GKH_560.175.6IF	3~380-480	50 / 60	3,26	1550	5,0**	86	50

Notice: *230V/50Hz, **400V/50Hz, Measurement according to ISO 13347-3. The free-outlet sound power level L_{wA|B} is depicted.

GKHR



GKHM



No.	Fan Type	A	B	C	H	D	a	D4	D5	E	h	D3	D2	D1	D7	G	t
1	GKHR 355.112.5FA	173	207	251	112	377	63	180	M6 x 22***	202	3,5	297	348	320	10*	48	1,5
1	GKHM 355.112.5FA	500	395	450			11				266,5						48
2	GKHR 400.125.5HF	194	226	275	125	424	63	180	M6 x 22***	202	4	325,5	382	356	9**	53	1,5
2	GKHM 400.125.5HF	500	500	420	450		11				289,7						48
3	GKHR 450.136.5HF	213	241	294	136	477	63	180	M6 x 22***	202	4,5	372	422	395	9**	57,5	1,5
3	GKHM 450.136.5HF	630	470	580			14				309						48
4	GKHR 450.136.6FF	213	255	308	136	477	70	235	M10 x 28**	252	4,5	372	422	395	9**	57,5	1,5
4	GKHM 450.136.6FF	630	535	580			14				323						55
5	GKHR 500.154.5HF	240	264	323	154	534	63	180	M6 x 22***	202	5	411	464	440	10,5**	64	1,5
5	GKHM 500.154.5HF	630	535	580			14				337,7						48
6	GKHR 500.154.6FF	240	278	337	154	534	70	235	M10 x 28**	252	5	411	464	440	10,5**	64	1,5
6	GKHM 500.154.6FF	630	535	580			14				352						55
7	GKHR 560.175.6IF	270	311	375	175	594	70	235	M10 x 28**	252	5,6	458	519	490	9**	70	1,5
7	GKHM 560.175.6IF	800	585	750			14				391						55
8	GKHR 355.112.5FA	173	207	251	112	377	63	180	M6 x 22***	202	3,5	297	348	320	10*	48	1,5
8	GKHM 355.112.5FA	500	395	450			11				266,5						48
9	GKHR 400.125.5HF	194	226	275	125	424	63	180	M6 x 22***	202	4	325,5	382	356	9**	53	1,5
9	GKHM 400.125.5HF	500	420	450			11				289,7						48
10	GKHR 450.136.5FA	213	241	294	136	477	63	180	M6 x 22***	202	4,5	372	422	395	9**	57,5	1,5
10	GKHM 450.136.5FA	630	470	580			14				309						43
11	GKHR 450.136.5HF	213	241	294	136	477	63	180	M6 x 22***	202	4,5	372	422	395	9**	57,5	1,5
11	GKHM 450.136.5HF	630	470	580			14				309						48
12	GKHR 450.136.6FF	213	255	308	136	477	70	235	M10 x 28**	252	4,5	372	422	395	9**	57,5	1,5
12	GKHM 450.136.6FF	630	535	580			14				323						55
13	GKHR 500.154.5HF	240	264	323	154	534	63	180	M6 x 22***	202	5	411	464	440	10,5**	64	1,5
13	GKHM 500.154.5HF	630	535	580			14				337,7						48
14	GKHR 500.154.6FF	240	278	337	154	534	70	235	M10 x 28**	252	5	411	464	440	10,5**	64	1,5
14	GKHM 500.154.6FF	630	535	580			14				352						55
15	GKHR 500.154.6IF	240	278	337	154	534	70	235	M10 x 28**	252	5	410	464	440	10,5**	64	1,5
15	GKHM 500.154.6IF	630	535	580			14				352						55
16	GKHR 560.175.6FF	270	311	375	175	594	70	235	M10 x 28**	252	5,6	458	519	490	9**	70	1,5
16	GKHM 560.175.6FF	800	585	750							391						55
17	GKHR 560.175.6IF	270	311	375	175	594	70	235	M10 x 28**	252	5,6	458	519	490	9**	70	1,5
17	GKHM 560.175.6IF	800	585	750			14				391						55

*6 x 60° / **8 x 45° / ***4 x 90°

All dimensions in mm / individual adjustment possible.

Railway Technology

Rosenberg is one of the world's in railway technology. Rosenberg OEM Products are not only installed to air-condition driver's cabins and passenger compartments but also to cool switchboards, drive inverters and many other components.



Renewable Energies

Modified Rosenberg OEM Products offer an optimal solution for a great number of applications in wind power plants. Our Products ensure the steady cooling for generators, switchboards, transformers, converters and many other components.



Transformer Cooling

Efficient cooling plays an important role in the lifetime and constantly high operation safety of transformers. Customized fans assume this task for many years and are characterized by reliability and high quality.





Compressor Cooling

Knowledge and experience - Rosenberg has been active in the compressor cooling sector for many years. Due to the close cooperation with well-known manufacturers, numerous fans have already been adapted to the needs of the industry.



Marine

Cruise Ships have a wide range of ventilation needs. Rosenberg OEM Products offer solutions for exhaust ventilation of elevators, restrooms, laundries or battery compartments as well as solutions for the use in HVAC applications dedicated to yachts and cruise ships cabins.



Packaging Industry

In highly complex packaging processes, it is essential to prevent a failure of the entire system. Therefore Rosenberg OEM products are used for cooling to ensure a trouble-free operation of various machines in industrial packaging processes.

Since its foundation in 1981 by Karl Rosenberg the Rosenberg Ventilatoren GmbH has emerged through its development and production of adjustable external rotor motors, fans, air handling units and control technology as an important center for Europe for the ventilation and air conditioning industry in Europe.

Customer-oriented and high-quality production is our top priority. The continuous information flow and a good cooperation between customers and our employees is very important to us to ensure quality and product innovation. Modern perfor-

mance testing, computer-controlled production machines and self-directed work groups are also included as well as the integration of measures for higher quality and environment protection.

At the headquarters in Künzelsau, Rosenberg employ 240 members of staff, with over 1.400 employees worldwide. Further Rosenberg production plants are located in Glaubitz (Germany), Waldmünchen (Germany), Hungary, Czech Republic, Italy, France, Slovakia, Turkey, Mexico and in China.



You can find more information on:
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Künzelsau-Gaisbach

ECFanGrid

EC fans operating in parallel enable a simple plug and play solution for almost any ventilation requirement



The Rosenberg ECFanGrid Retrofit Kit is a complete system for retrofitting belt-driven or directly driven fans in existing plants. You benefit from all the advantages of an ECFanGrid. The kit is adaptable to your housing dimensions and contains all parts for the conversion: fans, switch cabinet, sheet metal parts and screws.



Advantages of an ECFanGrid

- High volume flows
- Redundancy (failsafe)
- Highly efficient EC-Technology
- Compact, flexible design and weight reduction
- Predestined for retrofitting in existing plants
- Simple setup of volume flow and pressure regulation
- Reduced low frequency noises
- Simple cleaning, maintenance and uncomplicated replacement



www.ECFanGrid.de

For more information please call 07940/142-0 or by
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