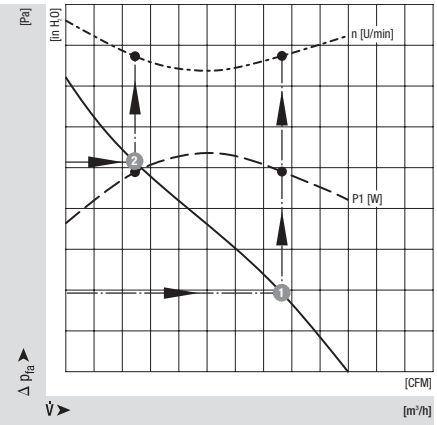
AC centrifugal blowers and fans forward curved

Technical information

With forward curved centrifugal fans, maximum power consumption is reached at free air. Rising back pressure results in declining power consumption. Positioned at the centre of the air stream, the integrated external-rotor motor is excellently cooled. All motors have a special torque vs. speed characteristic which allows for speed control. Some centrifugal fans depend in their use on a minimal and specified back pressure.



Air performance characteristics for forward curved centrifugal fans

Scroll housing

Versions:

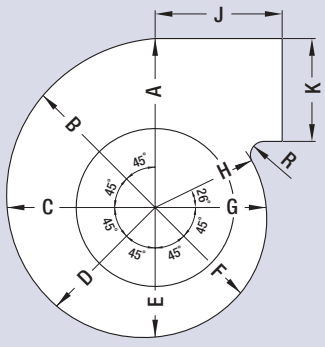
a) in aluminium die-cast alloy, with the two housing parts screwed together
b) in galvanised sheet steel, with case and side-parts joined by slots and tabs
c) in heat-resistant plastic
d) case in galvanised sheet steel, side parts in heat-resistant plastic

Forward curved centrifugal fans require scrolls as guides. These scrolls guide the air stream from impeller to pressure stud.
The dimensions of the centrifugal blowers can be taken from the respective pages.

Centrifugal fans supplied without scroll

For the integration of the scroll into the unit or for customized solutions, the scroll dimensions as listed below apply. Changing the scroll dimensions results in changes of the air performance characteristic as well as in the parameters as specified.
The inlet nozzles required are listed in the accessories.

Size	A	B	C	D	E	F	G	H	J	K	R
076/085	60	57,0	55,0	53,0	52	51,0	48,0	47,0	60	42	6
097	75	71,5	68,0	65,5	62	58,5	57,5	56,5	75	48	5
108	93	83,0	77,0	73,0	68	67,0	64,0	60,0	79	50	12
120	91	91,0	89,0	85,0	79	73,0	69,0	67,0	82	50	6
133	91	88,0	81,5	79,0	77	76,5	73,5	73,0	87	71	4
140/146/160	137	128,5	120,0	113,0	105	98,0	90,0	87,0	103	92	11
180	156	146,0	137,0	128,0	119	111,0	104,0	102,0	120	110	8
200	217	197,0	179,0	163,0	149	137,0	127,0	118,0	136	146	13



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Impellers
Forward curved impellers are press-fitted onto the rotor of the external-rotor motor.
This unit is dynamically balanced in two planes according to DIN ISO 1940.

Centrifugal fans, single inlet
The external-rotor motor (standard version) integrated in the impeller is mounted onto the side wall of the scroll housing.

Centrifugal fans, dual inlet
a) Via a bracket, the integrated external-rotor motor (standard version) is mounted on one side of the scroll housing.
b) As of size 133, an external-rotor motor with standing shaft (EW) can be used. In this version, the motor is anti-vibration mounted on both sides of the scroll housing via brackets. These fans have extremely low structural vibration rates.

Direction of rotation
Centrifugal fans with single inlet clockwise rotation as seen from suction side.
Centrifugal fans with dual inlet anti-clockwise rotation as seen from inlet opposite the cable exit.
Any exceptions to this are indicated on the relevant pages.

Type of protection
IP44 when being installed. Any evaluation has to be carried out in the customer's final application. Any exceptions to this are indicated on the relevant pages.

Bearings
Maintenance-free ball bearings
(any exceptions to this are indicated on the relevant pages)

Approvals
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Cable exit
Variable cable exits either lateral or front side for centrifugal fans, single inlet.
For centrifugal blowers, single inlet, please consult relevant drawings.

Air performance characteristic
All air performance characteristics are based on measurements using the scroll housings shown on the respective pages.

Insulation class
"B" (types in insulation class "F" are marked)

Electrical data
Electrical data are determined at highest load, i.e. at free air flow.
Should free air flow be impossible for some blowers or fans, the values are determined in the minimal operating point.

AC centrifugal blowers and fans

single inlet, Ø 108 / 120

- **Material:** scroll housing made of die-cast aluminium, impeller made of galvanised sheet steel

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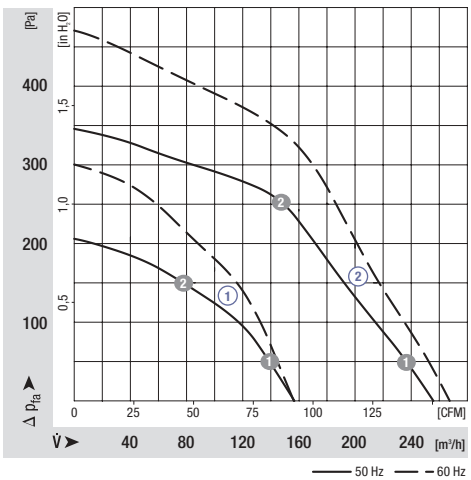
Nominal data		Characteristic	Voltage	Frequency	Air flow	Speed/rpm	Power input	Current draw	Capacitor	Noise level	Min. back pressure	Perm. amb. temp.	Mass
Type	**Motor**		**VAC**	**Hz**	**m³/h**	**min⁻¹**	**W**	**A**	**µF/VDB**	**dB(A)**	**Pa**	**°C**	**kg**
G2E 108-AA01 -01[1]	M2E 042-CA	①	230	50	155	1650	41	0,19	1,5/400	54	0	55	1,3
R2E 108-AA01 -05[1]			230	60	155	1650	44	0,20	1,5/400	54	0	55	0,6
G2E 120-AR77 -01	M2E 068-BF	②	230	50	255	2350	80	0,35	2,0/450	61	0	55	1,8
R2E 120-AR77 -05			230	60	265	2450	100	0,44	2,0/450	62	0	60	1,2

subject to alterations

[1] FPU (P2) capacitor in keeping with IEC 252

		n [min⁻¹]	P_1 [W]
①	1	1920	39
①	2	2350	36
②	1	2460	77
②	2	2665	69

Characteristics



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Dimensions

Type	B	D	G	H	I	J	K	L	M	N	O	a	b	c	d	e	f	g	h	i	k	l
G2E 108-AA01 -01 **R2E 108-AA01 -05**	97	66	8	87	82	300	159	79	168	71	118	108	52	53	57	20	84	59	17	47	32	300
G2E 120-AR77 -01 **R2E 120-AR77 -05**	100	68	7	100	98	450	178	82	184	86	132	120	62	83	63	15	96	92	27	58	55	450