

EC Fan Selection Guide

Backward-curved centrifugal · direct drive · integrated speed control

JITAMITRA

Electro Engineering Private Limited
Exclusive India distributor — JUPI AirTech
EC backward-curved centrifugal fans

Jitamitra Electro Engineering is the exclusive authorised distributor in India for JUPI AirTech EC backward-curved centrifugal fans, under authorisation J26D061701IN dated 17 June 2026. This guide lists every variant we are authorised to supply — **28 across three lines** — with the manufacturer's published duty data, so you can shortlist before you enquire. We select, quote, supply, install, commission and service from our works at MIDC Ahilyanagar.

01 The three lines

High static pressure HSP · Ø310–560 · 10 variants Paint-booth air supply and recirculation, high-resistance AHUs, deep filter banks, long duct runs. Sheet-aluminium impeller, three-phase 380 V.	General air handling AHU · Ø250–630 · 5 variants The framed AHU workhorses, held as our reference set. Widest airflow range and the highest static pressure in the offering.	Cleanroom & low noise CR · Ø133–470 · 13 variants Filter and fan units for pharma, electronics and food. Single-phase 220 V, including two ultra-thin frames for shallow ceiling voids.
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02 How to read these charts

- **Airflow and static pressure are a pair.** A fan never delivers its maximum airflow and its maximum static pressure at the same time — those are the two ends of its curve. Your duty point sits between them.
- HSP airflow is the **free-air** (zero back-pressure) figure. Cleanroom airflow is the flow **at the stated static pressure**, which is a true duty point.
- Sound pressure is the catalogue maximum, not the level at your operating point. Expect lower in service, and ask us if a limit applies.
- Every fan is stepless 0–100%. Figures shown are at full speed; at part load, power falls with roughly the cube of speed.
- **Shortlist on the chart, then send us the duty.** These are the manufacturer's published points, not a selection. We re-select against your actual airflow and resistance before quoting.
- The reference code (e.g. HSP-450-3) is our ordering reference. Multiple variants per frame (e.g. -2 / -3) are different motor builds on the same impeller diameter.

03 Common to every fan in this guide

IMPELLER Backward-curved	DUTY TYPE S1 continuous	DYNAMIC BALANCE G4.0‡	CONTROL INPUT 0–10 V / PWM‡
BEARING LIFE L10 40,000 h min	CONTROLLER Integrated — no VFD	OPERATING TEMP. Per model — see chart	HUMIDITY 30–95 %RH n/c

L10 40,000 h is a minimum, quoted at rated voltage, full speed and 40 °C ambient. ‡Control input and balance grade are read from the framed datasheets we hold; the cleanroom catalogue publishes neither, so confirm both against the model being quoted. Operating temperature is stated per model and not across the range — two of the framed models stop at +40 °C. Motor materials are declared RoHS-compliant by the manufacturer. Protection and insulation class vary by line — see each chart.

Supply voltage — 415 V is within the rated window. The manufacturer's EC450 specification states an operating range of **380–480 VAC** for the three-phase range. India's nominal 415 V three-phase, even at +10% (456.5 V), sits inside it. Single-phase frames are rated 220 V against India's 240 V nominal. Three points we are still confirming in writing and will address on the offer: service life at 45–50 °C ambient (the 40,000 h figure is stated at 40 °C), the <1000 m altitude limit, and confirmation that the published P–Q data holds at 415/440 V. Raise your site conditions at enquiry stage and we will address them on the quotation.

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Line 1 — High static pressure | Line 2 — General air handling

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04 Line 1 · EC HSP high-static-pressure · Ø310–560

Ref.	Impeller Ø mm	Supply	Speed r/min	Input power W	Current A	Sound press. dB(A) max	Max airflow, free air m³/h
HSP-310	310	380 V 3-ph	2,710	1,510	2.7	77	5,940
HSP-355	355	380 V 3-ph	2,600	1,900	3.1	86	6,100
HSP-400-1	400	380 V 3-ph	2,705	2,655	5.4	81	7,483
HSP-400-2	400	380 V 3-ph	2,745	3,590	7.1	85	8,304
HSP-450-2	450	380 V 3-ph	2,250	3,977	6.1	92	13,860
HSP-450-3	450	380 V 3-ph	2,550	5,350	6.95	95	15,200
HSP-500-2	500	380 V 3-ph	1,750	3,300	4.95	90	13,400
HSP-500-3	500	380 V 3-ph	2,050	5,250	5.78	92	15,500
HSP-560-2	560	380 V 3-ph	1,620	3,660	5.1	91	13,860
HSP-560-3	560	380 V 3-ph	—†	5,570	7.3	95	15,200

Sheet-aluminium impeller · IP54 · insulation class F · 380 V 50 Hz three-phase. Source: manufacturer catalogue V2.0-26. Static pressure for these variants is read from the individual P–Q curve — ask us for the curve at your duty.

05 Line 2 · General air handling, framed · Ø250–630

Ref.	Impeller Ø mm	Supply	Speed r/min	Input power W	Current A	Sound press. dB(A) max	Max airflow m³/h	Max static Pa	Mass kg
AHU-250	250	220 V 1-ph	3,700	750	3.2	87	3,055	1,096	12
AHU-355	355	380 V 3-ph	2,950	2,300	3.5	91	7,440	1,488	24
AHU-450	450	380 V 3-ph	2,550	5,400	9.0	95	15,202	1,832	60
AHU-560	560	380 V 3-ph	—†	5,600	9.4	96	20,908	1,400	65
AHU-630	630	380 V 3-ph	1,830	6,900	10.5	87	23,515	1,504	70

Sheet-aluminium impeller · IP54 · insulation class F · with mounting frame. Max airflow is the free-air point and max static is a different point on the same curve — never simultaneous, and the highest static a model reaches occurs well below full flow. †Rotational speed for the Ø560 variants is confirmed on quotation — the manufacturer’s documents differ and we are not publishing a figure until they confirm it in writing. This set is specified to a premium paint-booth duty; we re-select for general applications.

AHU-630 carries the highest airflow in the offering at 23,515 m³/h, and AHU-450 the highest static pressure at 1,832 Pa (187 mmWC).
Above that pressure, or on hot, dusty or abrasive air, an EC fan is the wrong machine — we will quote a purpose-engineered Jitamitra centrifugal fan instead. See page 4.

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Line 3 — Cleanroom & low noise

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06 Line 3 • Purification / cleanroom FFU & EFU • Ø133–470

Ref.	Impeller Ø mm	Impeller material	Prot.	Ins. class	Speed r/min	Input power W	Airflow m³/h	At static Pa	Sound press. dB(A) max	Note
CR-133	133	Plastic	IP54	F	4,480	43	249	200	75	
CR-175	175	Plastic	IP54	F	4,070	78	519	200	77	
CR-190	190	Plastic	IP54	F	3,600	80	602	200	75	
CR-200U	200	Aluminium	IP20	B	3,600	285	678	200	71	Ultra-thin
CR-225	225	Plastic	IP54	F	2,800	145	893	200	75	
CR-250	250	Plastic	IP54	F	2,800	220	1,305	240	71	
CR-280	280	Plastic	IP54	F	1,960	195	1,714	140	69	
CR-310	310	Aluminium	IP54	F	1,860	160	1,885	100	65	
CR-315	315	Aluminium	IP44	B	1,500	200	1,720	100	54	Low noise
CR-355	355	Aluminium	IP54	F	2,000	570	3,308	200	75	
CR-400	400	Aluminium	IP44	B	1,400	310	2,877	157	51	Quietest
CR-470	470	Aluminium	IP44	B	1,200	310	3,092	100	57	
CR-470U	470	Aluminium	IP44	B	1,200	280	2,230	104	60	Ultra-thin

All 220 V 50 Hz single-phase. Airflow is quoted at the static pressure in the adjacent column — a real duty point, not a free-air figure. Source: manufacturer catalogue V1.0-26.

07 Choosing within the cleanroom line

Noise is usually the deciding factor

A filter fan unit sits above people for the whole shift, so dB(A) is a specification, not a preference. **CR-400 at 51 dB(A)** and **CR-315 at 54 dB(A)** are the quietest frames in the offering. Direct drive means no belt dust — which in a room built to exclude particles matters as much as the noise.

Height, material and protection

CR-200U and **CR-470U** are ultra-thin frames for ceiling voids that will not accept a standard unit. Frames to Ø280 use a plastic impeller; Ø310 and above are aluminium. Protection is IP54 on most frames; the ultra-thin and some low-noise frames are IP20 / IP44 — check the chart against your installation.

Cleanroom classification, filter grade and room air-change rate are your design parameters, not ours. Tell us the airflow and resistance each unit must deliver and we will select the fan to it.

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Where EC belongs | What we need to quote

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08 Where an EC fan is right — and where it is the wrong machine

RIGHT MACHINE

- Paint-shop air supply and recirculation units — on the clean side of the filters
- AHU supply and return, new build or plug-fan retrofit
- Cleanroom filter and fan units — pharma, electronics, food
- The clean side of dust collectors and filtration plant
- Drying, ovens and general ventilation within the temperature rating
- OEM air-handling and cleanroom units built around an embedded fan
- Any duty that runs at part load for most of its life

WRONG MACHINE — ASK US FOR A JITAMITRA FAN INSTEAD

- Air above the selected model's operating-temperature rating — flue gas, kiln and furnace exhaust
- Abrasive or heavily dust-laden air — shot blast, foundry, cement, fly ash
- Corrosive atmospheres — the manufacturer warns specifically against H_2S , SO_2 and NO_2
- Classified or potentially explosive atmospheres
- The dirty side of any filter or collector
- Static pressure beyond what the charts cover at your airflow, or duties needing one large machine

For every duty in the right-hand column we build a purpose-engineered centrifugal fan in our own works — **up to 2,25,000 m³/h, 2,000 mmWC, 425 HP and 500 °C**. Ask, and we will tell you honestly which of the two your duty wants.

09 What we need in order to quote

- **Duty point** — airflow in CMH and static pressure in mmWC or Pa, at the fan
- **The fan today** — type, motor rating, belt or direct drive, VFD fitted or not
- **Running pattern** — hours/day, days/year, and how much of it at reduced flow
- **Electricity tariff** — ₹/kWh. Without it there is no payback, only a price
- **Clean side or dirty side** — filter type and pressure drop, clean and loaded
- **Air temperature** at the fan, and the plant-room ambient around it
- **Control requirement** — fixed, 0–10 V / PWM, or a BMS interface: tell us which BMS and we will confirm what the model supports
- **Space and access** — plenum dimensions, the door it must pass through, supply available

We do not publish a payback period, because one calculated on another plant's tariff tells you nothing about yours. Send the duty and the tariff and we will work it through with you on your own numbers. Quotations on our standard range normally within three working days.

10 About this document

All performance data in this guide is the manufacturer's published catalogue data for JUPI AirTech EC backward-curved centrifugal fans, and is reproduced by Jitamitra Electro Engineering as their authorised India distributor. It has not been independently verified by Jitamitra and is subject to the manufacturer's tolerances. Nothing in this document constitutes a warranty given on the manufacturer's behalf. Figures are for shortlisting; the binding specification is the one on our quotation for your duty. This guide covers the EC backward-curved centrifugal range only — the extent of our authorisation. Specifications may change without notice.

Send us a duty point. Airflow, static pressure, running hours and your tariff — and we will come back with a selection, a landed price and the payback worked on your own numbers.

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Meet us at the **CII Surface Coating Show 2026** — 19–21 November, Auto Cluster Exhibition Centre, Chinchwad, Pune — **Hall B, Stand C08**

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