

FA / FAB Series Wall Mounted Exhaust Fan with Gravity Damper

Technical Submittal & Specification Sheet — Compact Metal Axial Wall Ventilation (350 to 3,120 CFM)

Product Overview: The FA / FAB series wall mounted exhaust fan is a compact square metal axial ventilator designed for direct wall-opening installation. Equipped with integrated automatic gravity shutter louvers on the discharge face and a heavy-duty steel wire finger safety guard on the inlet, it extracts heat, humidity, stale air, and light fumes while reducing outdoor backdraft, dust, rain, and pest ingress when turned off.

Key Construction & Electrical Features:

- **Square Metal Housing:** Powder-coated pressed steel frame with pre-punched mounting holes.
 - **Rear Safety Guard:** Heavy-gauge steel wire grille protects against accidental contact with blades.
 - **100% Copper-Wound Motor:** Class B insulation with integrated thermal overload protection.
- **Gravity Shutter Louvers:** Formed aluminum louvers open under airflow; drop shut when fan stops.
 - **Low Energy Consumption:** Energy-efficient motor draws only 28W to 150W across the full range.
 - **Saudi 60 Hz Supply:** Configured for 220–240V 1-Phase 60Hz operation with 1650 RPM nominal speed.

FA Series Technical Specifications Table (220–240V 1-Phase 60Hz):

Model	Blade Dia.	Motor Power	Airflow (m³/h / CFM)	Noise Level	Wall Cutout (W×H)	Frame Depth	Weight
FA20-B	8" (200 mm)	28 W	600 m³/h (353 CFM)	50 dB(A)	250 × 250 mm	145 mm	2.8 kg
FA25-B	10" (250 mm)	36 W	900 m³/h (530 CFM)	51 dB(A)	300 × 300 mm	155 mm	3.4 kg
FA30-B	12" (300 mm)	60 W	1,300 m³/h (765 CFM)	51 dB(A)	350 × 350 mm	165 mm	4.2 kg
FA35-B	14" (350 mm)	75 W	1,800 m³/h (1,059 CFM)	53 dB(A)	400 × 400 mm	175 mm	5.1 kg
FA40-B	16" (400 mm)	83 W	3,500 m³/h (2,060 CFM)	54 dB(A)	450 × 450 mm	185 mm	6.3 kg
FA45-B	18" (450 mm)	104 W	4,500 m³/h (2,648 CFM)	56 dB(A)	500 × 500 mm	195 mm	7.6 kg
FA50-B	20" (500 mm)	150 W	5,300 m³/h (3,119 CFM)	60 dB(A)	550 × 550 mm	215 mm	9.2 kg

Engineering Note on Airflow & 60Hz Operation: Catalog airflow values reflect free-air wall discharge (0 Pa static pressure). Under Saudi 60Hz electrical supplies, 4-pole motors operate at nominal ~1650 RPM with approximately 10–15% higher airflow than 50Hz baseline ratings. Gravity louvers introduce approximately 10–15 Pa pressure resistance. Do not connect FA fans to long ductwork runs with high static pressure.

Room Ventilation Sizing & Air Change Rates (ACH)

Never size wall exhaust fans based on floor area alone. Calculate required ventilation capacity using Room Volume and Target Air Changes per Hour (ACH):

Ventilation Formula: Required Exhaust CFM = [Room Length (ft) × Width (ft) × Ceiling Height (ft) × Target ACH] ÷ 60

Room / Space Type	Target ACH	Ventilation Objective	Typical FA Selection
Storage & Stockrooms	6 – 10 ACH	Moisture, odor, and stagnant air removal.	FA20-B / FA25-B (350–530 CFM)
Maintenance Workshops	10 – 15 ACH	Non-hazardous fume and heat displacement.	FA30-B / FA35-B (765–1,059 CFM)
Electrical & Plant Rooms	12 – 20 ACH	Transformer and panel heat load evacuation.	FA40-B / FA45-B (2,060–2,648 CFM)
Light Kitchen / Dishwashing	15 – 25 ACH	Steam and background cooking odor (no grease hood).	FA45-B / FA50-B (2,648–3,119 CFM)

Gravity Damper Function & Application Boundaries:

- **Gravity Operation:** Louvers pivot open horizontally under exhaust air stream and drop closed by gravity when fan is turned off. Helps reduce backdraft and weather entry.
 - **Commercial Kitchen Boundary:** Suitable for dishwashing, prep areas, and background steam. **NOT** suitable for commercial grease exhaust hoods (use upblast roof fan).
- **Weather Protection:** On exterior walls exposed to direct desert wind and sandstorms, an external rain hood / weather louvre is recommended for added protection.
 - **Hazardous Area Restriction:** Standard FA motors are not explosion-proof (ATEX/IECEX). Do not install in flammable vapor or combustible paint spray booths.

Routine Maintenance & Inspection Guidelines:

Quarterly Inspection: Wipe accumulated dust, lint, and grease film from the gravity damper louvers and hinge pins to ensure free pivoting without sticking. Inspect rear finger guard and impeller for dust accumulation. Verify smooth motor rotation and tight mounting fasteners.