



**Brief Introduction :**

1. This ECM (Electronically Commutated Motor) is a high efficiency programmable brushless DC motor utilizing a **permanent magnet rotor** and an **external inverter**.
2. DC motor is significantly more energy efficient than AC motor and much easier to control. The energy saving is upto 65% in average compared to shaded pole motor, or 35% compared to PSC motor.
3. The motor is of long lifetime, wide range of applications and speed regulations.
4. It's generally available for products of low speed (generally less than 6000RPM).
5. It's with large rotation inertia, simple structure & not accurate starting position.
6. The standard shaft diameter (d) is  $\phi 15\text{mm}$ . **It's hollow**, can be other diameters, with D-cuts, threads, etc., and the length (L) can be any as needed.

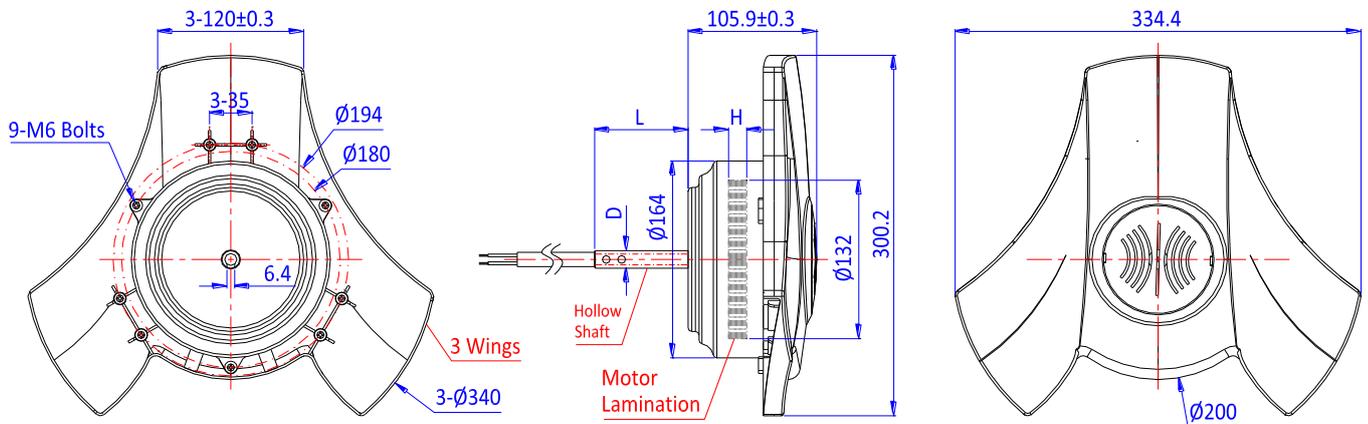
**Main Characteristics :**

- Motor Type: **3 Phase internal rotor** brushless motor;
- Control Driver Circuit: **External circuit**, sine wave drive (with lower noise and vibration, but the motor efficiency is also lower);
- Hall Sensor: No;
- Motor Rotation: Can be either in CW or CCW direction as needed;
- Fixing of the Fan Blade: By the 9-M6 bolts in the front of the motor (see from the below drawing).

**Typical Applications :**

This motor is mostly used for **ceiling fan, industrial fan, etc.** It can also be used for other applications that need low speeds and low power.

**Outline Dimensions (All dimensions in millimeter) :**



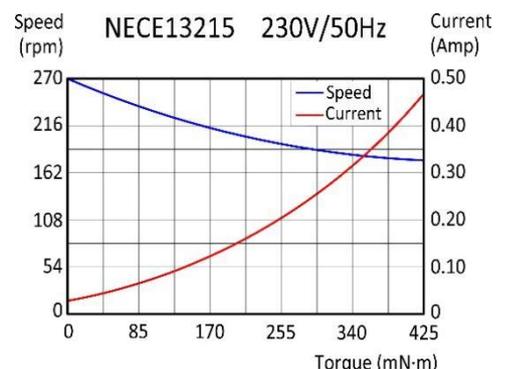
A: Shaft Total Length    D: Shaft Diameter    H: Lamination Height    L: Shaft Extended Length    A: Motor Total Height

- Remarks:** 1) Only the dimensions marked in letters are changeable as needed. Other dimensions are fixed.  
2) The height and the shape of the above motor body are not changeable unless we open new moulds.

**Technical Performances (tested under room temperature) :**

Specs	Height of Stator Lamination (mm)	Rated Voltage (VAC)	Rated Freq'y (Hz)	Speed Levels /	On Load ( $\pm 10\%$ )		
					Input Current (Amp)	Output Speed ( $\pm 5\text{RPM}$ )	Input Power (Watts)
NECE13215	15	230	50	F1	0.11	130	11
				F2	0.15	165	16
				F3	0.20	200	24
				F4	0.30	235	37
				F5	0.41	270	56

**Performance Curve :**



**Remarks:** This catalog listed just some typical models. The performances as above are just for reference only. We can adjust our motor specifications according to what the customer needs. OEM & ODM are both welcome.