

**PBM**

**SPECIFICATION FOR APPROVAL**

Customer:  
Model No: **PC50B12300A**  
Diameter of Impeller: **Ø50mm**



**PBM Motor and Fan (Suzhou) Co., Ltd**

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Customer Approved

PBM Checked By

Zepsi

**Model: PC50B12300A****Diameter of Imeller: Ø50mm****◆ 1.General Characters**

|      |                       |  |
|------|-----------------------|--|
| 1-1  | Rated Voltage         | 12 VDC   |
| 1-2  | Operating Voltage     | 9~15 VDC   |
| 1-3  | Rated Speed           | 2400 RPM   |
| 1-4  | Input Current         | 0.40 A   |
| 1-5  | Input Power           | 4.80 W   |
| 1-6  | Acoustical Noise      | 43 dB(A)   |
| 1-7  | Life Expectance       | 50,000Hours(L10)<br>At 40°C room, humidity 15%~65%RH.                          |
| 1-8  | Direction of Rotation | Clockwise<br>seen on motor   |
| 1-9  | Insulation Class      | Class B  |
| 1-10 | Insulation Resistance | 50 Mega Ohm minimum at 500VDC<br>Between frame and (+) terminal                |
| 1-11 | Motor Protection      | Locked rotor protection<br>Polarity protection<br>Automatic restart capability |
| 1-12 | Speed Control         | Control input 0~10VDC  |
| 1-13 | Dielectric Strength   | 5mA maximum at 500VAC 50Hz five second<br>Between frame and (+) terminal       |
| 1-14 | Air Flow              | 180 m <sup>3</sup> /H  |
| 1-15 | Static Pressure       | 42 Pa  |
| 1-16 | Protection Type       | IP44   |

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◆ **2. Mechanical Characters**

|     |                      |                                   |
|-----|----------------------|-----------------------------------|
| 2-1 | Dimension            | 65x67x340 (see dimension drawing) |
| 2-2 | Material of Impeller | Aluminum alloy                    |
| 2-3 | Number of Blades     | 22                                |
| 2-4 | Bearing System       | NMB ball bearing                  |
| 2-5 | Mounting Position    | Any                               |
| 2-6 | Lead Wire            | Red , Black, White AWG22#         |
| 2-7 | Package              | Standard                          |

◆ **3. Electrical Protection**

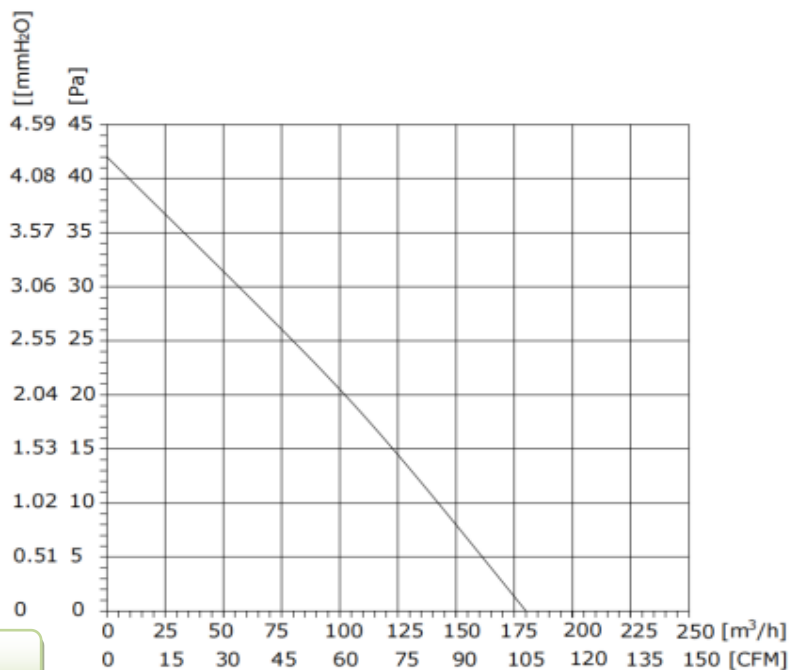
|     |                             |   |
|-----|-----------------------------|---|
| 3-1 | Locked-rotor Protection     | Over-current limiting circuit protects motor from damage at least for 72 hours of locked rotor condition at rated voltage.  |
| 3-2 | Reverse Polarity Protection | No damage if the positive and negative leads are reversed under maximum operation voltage conditions.                       |
| 3-3 | Over Voltage Protection     | The circuit will be shut down automatically when input voltage over 15VDC. And re-started when Voltage down to 15VDC below. |
| 3-4 | Soft Start                  | In 5 seconds after power on and speed control voltage gets to 1.5V.   |
| 3-5 | RoHS                        | All the material meets RoHS standard.   |

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◆ **4. Environmental Characters**

|     |                       |                                       |
|-----|-----------------------|---------------------------------------|
| 4-1 | Operating Temperature | -25°C to 60°C                         |
| 4-2 | Storage Temperature   | -40°C to 75°C                         |
| 4-3 | Operating Humidity    | 5% to 90% RH                          |
| 4-4 | Storage Humidity      | 5% to 95% RH                          |
| 4-5 | RoHS                  | All the material meets RoHS standard. |

◆ **5. Airflow Curve**

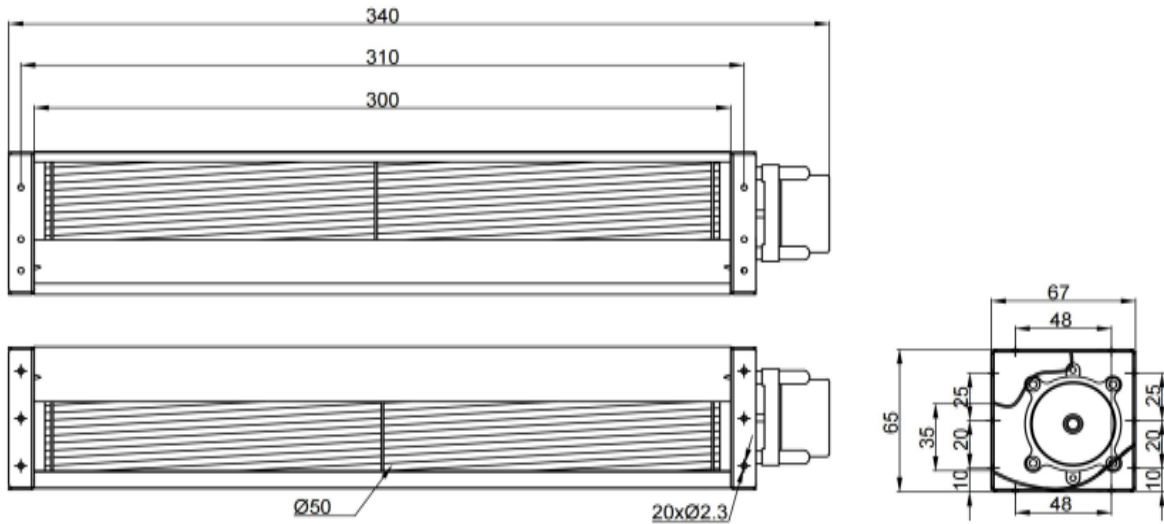


**Testing Condition**

Input Voltage----Operating voltage (12VDC)  
 Temperature-----Room temperature  
 Humidity-----65%RH  
 Test distance-----1m

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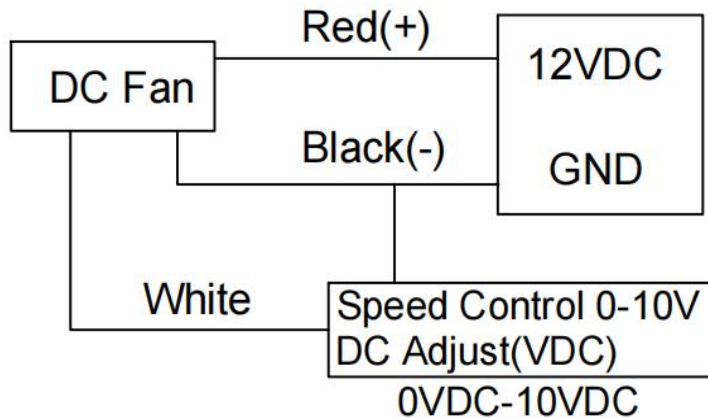
◆ **6. Outline Drawing**



**Note**

- 1. Connection line 3X (Red, Black, White AWG22#);  
 Red=+12VDC, White=0-10VDC, Black=GND.

◆ **7. Connection Diagram**



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◆ **8.Safety Requirements**

1. Make sure that the metal casing of the stator connected to the ground before being powered on.
2. If the fan doesn't work after been powered on, please check the speed control input voltage, it may not be well connected. To prevent the suddenly start of the fan to hurt hands or other personal injury; do not touch the impellers or rotor when the power is on.
3. Fan needs a few seconds to start after being powered on. To prevent personal injury, do not touch the impellers or rotor when the power is on or in a low speed.
4. Unless they are instructed by the person(s) responsible for their safety, those who are lack of physical, mental or sensory capacities and proper practical experience or expertise cannot use this appliance. Please do not let the children play with this product.
5. If the power cord be damaged, the power cord must be replaced by the manufacturer in order to avoid accident of the proxy service personnel or the equivalent qualification maintenance personnel.
6. As an integral part of the fan, this DC motor cannot be used alone without impeller or load.
7. Please carefully read this technical specification before using the product.