**48 V DC powered Ceiling Fan with feature for remote operation – Performance Table**

**(**This form, duly filled in with all particulars and accompanied by all test reports as Annexures shall be kept in a sealed cover, addressed to Center for Decentralised Power Systems (CDPS), Department of Electrical Engineering and delivered at CDPS at the time of submitting the samples for technical evaluation. Name of Contact Person: Dr M Kumaravel, Principal Scientist)

**Note:** Answering ‘Yes’, ‘No’ or ‘Same as IITM Specs’ under ‘ Vendor Specifications’ column shall be avoided and inappropriate answering under this column may result in tender disqualification**.**

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| --- | --- | --- | --- |
| **Parameter** |  **IITM Requirements** | **Vendor Specifications**  | **Test Report (given under Annexure)**  |
| Type of fan | External rotor  |  |  |
| Type of motor | PM BLDC |  |  |
| Fan size (Sweep) | 1200 ±5 mm |  |  |
| Nominal Operating Voltage | 48 V DC |  | Annexure No \_\_\_  |
| Operating Voltage Range | 45-52 V DC  |  |  Annexure No \_\_\_ |
| Power input | 30 W Max |  | Annexure No \_\_\_ |
| Max Speed |  300 – 320 RPM |  | Annexure No \_\_\_  |
| Air delivery at max speed |  200-210 m3/min |  | Annexure No \_\_\_  |
| Motor controller | Sensor less control strategy |  |  |
|  ON/OFF and speed control operation  | With built-in remote (IR) Sensor for external remote control. Sensor shall be located for signal sensing through the center of the fan motor bottom cover  |  |  |
| Multiple speed settings | From 170 RPM to max speed in near equal steps from remote  |  | Annexure No \_\_\_  |
| Starting | Fan shall start and run at 45 V to 52 V DC  |  |  |
| Start up at all speeds  | Smooth starting with a maximum of 180 degree (mechanical) reverse rotation, if any.  |  |  |
| Memorising last set speed | Fan controller shall be capable of running at the last set speed, at the time of Power ON  |  |  |
| Insulation resistance | 5 M Ohm @ 600 V DC |  | Annexure No \_\_\_ |
| Winding Temperature rise | 70 ◦ C |  | Annexure No \_\_\_ |
| Type of blades | Aluminium sheet |  |  |
| Protection features  |  Blocked Blade, Reverse polarity, Over voltage and Over Current |  |  |
| Operating noise at full speed | Less than 65 dBA |  | Annexure No \_\_\_ |
| Motor construction | Totally enclosed type |  |  |
| Corrosion resistance  | Motor body and blades shall be corrosion resistant |  |  |
| Ambient temperature | 50 ◦ C maximum |  |  |
| Max humidity | 90 % Rh |  |  |
| Other fan accessories | Standard down rod, canopy and shackle clip  |  |  |
| Safety features | Compliance to mechanical safety of fan suspension (clamp and down rod) |  |  |
| Design and Manufacturing  | India |  |  |
| **Remote Control Signals, Commands, Codes and Operation**  |
| Communication Protocol | NEC derived custom protocol |  |  |
| Fan operation commands and codes | Fan ON/OFF: 0x00FF42BBFan speed increase: 0x00FF52AAFan speed decrease:0x00FF7888  |  |  |
| Operating distance (line of sight)  | 3 m (with subtended angle of 45° between the axis of remote control and vertical axis)  |  | Annexure No \_\_\_  |
| Feedback signal to user | As Light signals to user for 1s whenever remote is operated |  |  |
|  Carrier frequency | 38 ± 1 kHz |  | Data sheet of IR Receiver shall be kept as Annexure. Annexure No \_\_ |

 Date Name and Signature of Authorised Signatory with company seal