

Indian Institute of Technology, Kanpur  
Department of Aerospace Engineering

Inquiry no: AE/ACM/2016/WIND TUNNEL FAN&MOTOR

Date of Opening: **March 1, 2016**

Date of Closing: **March 14, 2016 \* Date extended:**

**Subject:**

Sealed quotations for the supply of “*Axial fan and A. C. motor*” for wind tunnel application are requested as per the following specifications.

**1. Desirable specifications for Axial fan:**

Application	Wind tunnel
Fan type	Vane axial
Static pressure loss	$\geq 850$ Pa
Volume flow rate	$\geq 15$ m <sup>3</sup> /s
Diameter of fan	930 $\pm$ 10 mm
Maximum rpm	$\geq 1450$
Motor drive type	Fan has to be directly mounted to the motor shaft
Number of blades	$\geq 12$
Blade pitch configuration	Adjustable pitch, i.e. the angle of attack of the blade can be changed based on the requirement.
Blade material	Aluminum alloy (A356 – T51 desirable)
Blade cross section	Airfoil shape
Sound Level	Under certified levels
Circular fan Housing/Casing	Mild steel made. Should have provisions for mounting the motor
Clearance between fan blade tip and housing inner wall	$\leq 2$ mm

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Operating conditions	Temperature : 3 to 50 degree C
Housing Mount	Housing should be fixed with provisions for mounting it over constructions to hold the housing.
Housing wall thickness	> 4mm
Housing length	> 950mm
Guide vanes	>= 9 nos. (inside the housing)
Hub	Single piece made of Aluminum alloy (A356 -T6 desirable)
Operating efficiency	>= 75%

**2. Desirable specifications for A. C. MOTOR:**

Make	Integrated Electric Company/Siemens/ABB/
Maximum power	~30 kW
Maximum stable rpm	1480
Minimum stable rpm	50
Voltage	415 ± 10%
Frequency	50 ± 5%
Type	3 phase A.C, Non FLP, eff2
Frame size	200 L
Insulation type	Class F
Operating temperature	50 degree C
Compatibility	Motor is expected to be compatible with a VFD along with a feedback mechanism either through a Tachometer or an Encoder

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**Important:**

*Both the fan and motor should be supplied with the necessary fittings/hardware items for completing the assembly of fan, motor and housing of the fan*

**Please note:**

1. Quotations must reach the address given below by **14 March 2016**
2. A copy of authorization letter is expected to be submitted from OEM.
3. Please provide propriety certificate if applicable.
4. Quotation must be valid for 60 days.
5. Desired warranty period: 2 years.
6. All the technical details should be attached along with the quotation.
7. Please include any other required accessories.
8. Include maximum educational/academic discounts, if any.
9. The quotation must include the freight charges till IIT Kanpur.
10. Please do not include excise duty if needed, as IIT Kanpur is fully exempted from excise duty. Moreover, custom duty is about 5-6% for IIT Kanpur, if applicable.

**Address for the quotation:**

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