

Specification of Thin Film Research Printer

A. Main Features :

1. Desktop inkjet printer to be used for research and development of inkjet processes and evaluation of inkjet materials for solar cells and other devices.
2. With graphical user interface.
3. Accurate printing platform with X & Y axis resolution $< 0.25 \mu\text{m}$,
4. Programmable Z – axis control.
5. Facility for print head rotation and substrate table rotation on Z – axis should be provided.
6. Travel speed of printing head = Variable upto 150 mm per second or higher
7. A4 size (210 mm X 300 mm) substrate carrier with vacuum clamping
8. Substrate heating facility from ambient up to 60°C should be provided.
9. Print head heating facility from ambient up to 80°C should be provided.
10. Camera system for fiducial substrate alignment and print view.
11. Industrial syringe ink system with high chemical resistance suitable for using various fluids such as oils, acids, organic solvents, bases etc..
12. Maintenance of print head : Manual purge and wipe.
13. Printing control with latest PC, LCD Monitor and suitable software. The software should operate under latest Windows XP environment.
14. Power input : $230 \pm 10\%$ V A.C. 50 ± 1 Hz, 1 – phase.

B. Test requirements :

1. The printer should be capable of printing on A4 size (210 mm X 300 mm) substrate using the software with standard **sample ink** which is to be provided by the supplier. The details of the ink such as a) Composition, b) Viscosity and addresses of the manufacturers should also be provided.

C. Software :

1. The software should be compatible with Microsoft Office products and it should operate under **Latest Windows XP Environment**.
2. **Latest PC along with LCD monitor (17")** to be provided with details. All catalogues related to Software / Hardware to be provided. It is preferable to supply PC available in India with software loaded and integrated with the system.

D. Power Input :

1. Should be designed for use with $230 \text{ V} \pm 10\%$ (1 phase) with a mains frequency of 50 ± 1 Hz.
2. **Suitable UPS (reputed make such as APC, SOCOMEC)** with backup power of up to 30 minutes to be quoted with details. Maintenance details and warranty aspects to be provided

E. Qualification Criteria & Other aspects:

1. The vendor **should have supplied minimum two such printers in India or elsewhere and details should be furnished.**
2. **Demonstration** of the printer, if feasible, should be arranged for its various features.
2. Should have agents in India to provide after sales service and maintenance.
3. The printer should be Guaranteed for a period of **2 years** from the date of commissioning. During warranty period, if there is any repair to be carried out at the suppliers works, transportation cost of equipment / component besides repair / replacement charges, if any, should be borne by the supplier.
4. **Catalogue related to each and every item should be enclosed.**
5. Installation & commissioning of the printer to be carried out by supplier at site at Corporate R&D, BHEL, Hyderabad, India.
6. Commissioning charges, if any, to be indicated.
7. **Training:** Training should be provided at BHEL, R&D, Hyderabad by Engineer from OEM.
8. Dimensions of equipment, weight and space requirements to be given
9. **Pre-installation requirements should be furnished.**
10. Compliance statement of specification to be submitted along with the offer. Without compliance statement, the offer is liable to be rejected. All tender Specifications to be compared with printer offered line by line and documentary evidence must be enclosed by the supplier along with quotation.
11. Two copies of operating manual to be provided.

For any Technical Clarification, please contact :

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