



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY  
MATERIALS MANAGEMENT DIVISION  
Powai, Mumbai - 400076

**Technical Specifications of Screen Printer**  
**RFx No. 6100001105 (Reference No. 1000024089)**

**Specifications:**

Fully automated Screen Printer with camera based optical alignment to be used for Perovskite Solar Cells.

**Specifications:**

1. Frame size: maximum ~50 cm X ~50 cm
2. Print Speed: variable between 1-7 cm per sec
3. Maximum Printable Area: 40 cm X 40 cm or better
4. Maximum Print Stroke: 450 mm
5. Print Gap: variable between 0 - ~20 mm in 0.1 mm steps
6. Squeegee Pressure: variable between 0 - 15 kg with manual dial control in ~ 0.1kg
7. Maximum Board size: ~ 50 cm x ~ 45 cm
  
8. Machine Accuracy:  $\pm 25 \mu\text{m}$
9. Machine Repeatability:  $\pm 10 \mu\text{m}$  @
  
10. Feed Direction: Left-to-right or right-to-left, fully automated
  
11. Warranty period of the supplied products shall be 1 years from the date of final acceptance of goods.
  
12. The system should demonstrate to deposit mesoporous TiO<sub>2</sub>, ZrO<sub>2</sub> and porous carbon layer for perovskite solar cell application. A recipe for deposition of the above material should be provided alongside the necessary screens and pastes (100 gm. each).
  
13. For all pneumatic operations, the system should come with its own noise-free stand-alone compressor. For control the system should come with a stand-alone computer alongside, for the offline print design and data analysis a separate laptop computer should be provided. Needed power requirements should be compatible for Indian standard, 220V AC.