

TECHNICAL SPECIFICATIONS AND OTHER ALLIED REQUIREMENTS

PUR/392/ADA/AP/E/2020-21

SI	Item/Specification	Qty
1	SUPPLY, INSTALLATION AND TRAINING OF DESKTOP 3D PRINTER (DETAILS ARE AS PER BELOW ANNEXURE-I)	01 No.

1. INSTALLATION, COMMISSIONING AND TRAINING

- 1.1. Vendor should complete delivery, Installation and training within 60 days from the date of Purchase Order. The Installation should be carried out only by expert engineers of supplier/Manufacturer. During the course of Installation, necessary training on operation and maintenance of the goods shall be imparted to relevant Scientist/Engineers/Technicians.

2. WARRANTY

- 2.1. Minimum 1 year Comprehensive on-site warranty on the complete printer from the date of installation. Unlimited online support during warranty period.

3. Manufacturer Authorisation Certificate

- 3.1 Vendor (Non-OEM bidder) should provide Manufacturer Authorisation Certificate from OEM's.

Annexure-I

Specifications for Desktop 3D Printer

1. End use

CMERI Durgapur intends to procure a **3D FUSION DEPOSITION MODELLING (FDM)/FUSED FILAMENT FABRICATION (FFF) PRINTER** (Brand New and non-refurbished) which shall fulfil requirements/specifications mentioned in this document.

This 3D printer is required for the development of thermoplastic parts used as the integral part in the development of functional prototypes with enough strength. The machine should have the capability to print not just the prototypes but special and strong materials for form, fitment and function testing, producing accurate tools, fixtures and functional parts.

Sl. No.	Description			Remarks/ Compliance
2.	3D Printer Specifications			
2.1	Printing Technology	Fusion deposition modelling (FDM)/ Fused filament fabrication (FFF)		
2.2	Build Envelope	X	200 mm or higher	(rectangular or circular configuration)
		Y		
		Z	400 mm or higher	
2.3	Material	Printer should be capable of printing most engineering Thermoplastic materials, at least up to fusion temperature 300°C, including the following: <ul style="list-style-type: none"> • ASA • ABS • HIGH-IMPACT PS • PETG • POLYCARBONATE • PVA • PLA • PA • PA Carbon • TPU • TPE • POLYPROPYLENE 		
2.4	Extruder	<ul style="list-style-type: none"> • Dual extruder for multi-material/ multicolor prints. • Modular to support single and dual extruders including extruder to print flexible/rubber-like materials. 		
2.5	Extruder Switching	There should be manual/automatic mechanism for extruder switching.		
2.6	Filament diameter	1.75 mm (1.75 or 2.85 mm for flexible/rubber-like materials)		
2.7	Minimum layer resolution	50 µm or better		
2.8	Extrusion Temperature	300°C or more		

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2.9	Build platform	Heated aluminum platform with preheat temperature control up to at least 110°C.	
2.10	Extruder Head Positional accuracy	20 µm or better	
2.11	Chamber	Chamber should be closed with thermal and acoustic insulation, and should have air recirculation system and heat control up to at least 70 °C.	
2.12	End filament sensor	Machine should have end filament sensor to indicate the filament completion.	
2.13	Resurrection System in case of power outage	Printer should have inbuilt feature that enables to resume the print from the same position after power is restored.	
2.14	Data Import Formats	STL, OBJ	
2.15	Supported OS	Compatible with Windows, Linux & MacOS clients	
2.16	Communication Port Interface	USB 2.0, Wi Fi or LAN	
2.17	Display	TFT display with touch interface	
2.18	Active controlling the printing thermal conditions	Printer should have heated print chamber and active cooling on the mechanics.	
2.19	Print Speed (max)	100 mm/s or higher	
2.20	Travel speed (max)	150 mm/s or higher	
2.21	Power supply	220 V 50 Hz	
2.22	Other features	<ul style="list-style-type: none"> • Automatic system to avoid the collision of the extruder on the plate. • Gcode error checking system. • Auto check system: automatic error recognition routine • Mesh auto calibration: mesh plate calibration • Machine connected to the network for monitoring and control. • Live view Camera on-board for monitoring. • Continuous Print: when the used extruder runs out of filament, the print should continue with the other extruder. 	
3.	Software	Pre-processing software: A pre-processing standalone software with a perpetual license must be quoted with fully automatic support generation capability, software should be capable of modifying the infill, density, pattern, angles and number of support interface layers.	

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4.	Material	Two spools each of the following supported materials should be supplied with the machine: ABS, PVA, PLA (Total quantity: 6 Spools)	
5.	Requisite Accessories	All the essential accessories required for smooth running of the printer should be supplied with the machine.	
6.	Safety Features	Printer should meet International Safety standards e.g. CE/EC or other certification.	
7.	Installation and commissioning		
7.1	Vendor should specify overall dimensions of the printer offered and show schematically how much area is required to install the printer in all three dimensions with the essential accessories, if any.		
7.2	Vendor has to carry out installation and commissioning of the machine at CSIR-CMERI.		
8.	Warranty	Minimum 1-year comprehensive onsite warranty on the complete printer from the date of installation. Unlimited online support during warranty period.	
9.	Training	Minimum 3-day onsite training must be provided after installation of the printer at CSIR-CMERI Durgapur.	
10.	Bidder should provide details against each of the requirements of the compliance statement sent along with this tender document. Silence on any point shall be treated as non-compliance. Simple compliance without details of the offered item shall also be treated as non-compliance. Product specification sheet should also be submitted with the bid. Vendor shall also provide the material technical data sheet of the supported materials with the machine.		
11.	The bid should clearly indicate the make and model details of the quoted machine. Non-OEM bidders should furnish the OEM's authorization certificate in the prescribed format.		
12.	Bidder should have supplied same or similar make machines to the govt. institutions in India. Supporting PO copies should be submitted along with the bid.		

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