



सत्यमेव जयते

Government of India
Department of Science & Technology
Ministry of Science & Technology



Prayas Centre Name TECHNOLOGY BUSINESS INCUBATOR- NATIONAL INSTITUTE OF TECHNOLOGY CALICUT

City KOZHIKODE (CALICUT)

State KERALA

Equipment available at TBI FABLAB facility

Section		Electronic/Prototyping Facility
Sr. No.	Equipment Name	Equipment detail
1	Rapid Prototyping Equipment (3D Printer)	<p>Brand - Delta WASP Model - WASP 2040 Industrial X Specification - Build volume: \varnothing 200 x h 400 mm Heated active chamber: heated up to 70°C Minimum layer height: 50 micron Print speed max(*): 300 mm/s Travel speed max(*): 500 mm/s Acceleration(*): 10.000 mm/s² Bed temperature max: 120 C° Extruder / Nozzle diameter standard: WASP ZEN X Extruder with MT cartridge, nozzle 0,4 mm Operational area – Product development, Manufacturing, prototype designing Link of the user manual -</p>
2	PCB Milling/ Prototyping Machine	<p>Brand : MITS Eleven Labs Model: LAB20552 Working Area: 229x320x10 mm Specification: Spindle Speed 5000-41000rpm Control motor : stepper motor Power consumption 150 Machine dimension : 435x575x430 Weight : 2.8kg Material support: ABS or acrylonitrile butadiene styrene, is a terpolymer, meaning a combination of three polymers, Acrylic, Brass, Delrin, FR-1 Circuit Board (PCB) Blanks. Operational Area: Electronic circuit/ Product development, Manufacturing, prototype designing Link of the user manual -</p>

3	Electronic Circuit Design Software- OrCad	<p>Brand: Cadence Model: Design Software OrCAD Specification: OrCAD PCB 10 user license with compatible Workstation</p> <ul style="list-style-type: none"> • OrCAD Capture • OrCAD CIS Option • OrCAD PSpiceA/D • OrCAD PSpice Advanced Analysis • OrCAD SLPS Option • OrCAD PCB Designer Professional • OrCAD PCB SigXplorer <p>Operational Area: Collaborative and intuitive PCB Design Software</p>
4	Pick & Place Machine	<p>Brand: Zoid Labs Model : Placer Boat, SMD Pick & Place Specification : Size: 530 mm X 520 mm x 400 mm PCB Size : 200 x 180 mm Feeder type : Up to 14 Feeders and IC Tray. Feeder types available are Automatic, Tray, Manual GUI: Next-Gen with Component Management Features, Component Identification by QR Code, WYSISWG error-free part orientation, Upgradable software Package: From 0201 (0.6 x 0.3mm) to fine pitch (0.5mm) ICs, SOT variants, QFN,DFN,CSP,SON etc Inputs : Gerber, Centroid/KiCad/Eagle/Altium P&P formats, Fully Automatic , Semi-Automatic, Automatic Tool Change</p> <p>Operational Area: Collaborative and intuitive PCB Design</p>
5	Soldering & DE soldering Station	<p>Brand : Weller Model: WR 2002 SMD Specification:</p> <ul style="list-style-type: none"> Dimensions L x W x H (mm) 273 x 235 x 102 Weight (approx.) in kg 6, 7 Voltage 230 V Power 250 W (300 W) Channels 2 Temperature range (depends on tool) °C 50 - 550 Temperature range (depends on tool) °F 150 - 950 Temperature accuracy °C ±9 Temperature accuracy °F ±17 Temperature stability °C ±2 Temperature stability °F ±4 Equipotential bonding socket Via a 3.5 mm jack bush (initial state-hard-grounded) Display LCD

Section		Metalworking Facility
Sr. No.	Equipment Name	Equipment detail
6	CNC Router/Milling	<p>Brand - Suraj by Sahil Alloys, Punjab Model – CRM series 1325 Specification - Working area 1300 x 2500 x 200 mm Table size 1440 x 3040 mm Resolution 0.001 mm Repeatability ± 0.15 mm/300mm Structure type Steel Structure Max. power consumption 3.0 kW Max. rapid speed 0 - 8000 mm / min Max. working Speed 0 - 6000 mm / min Max. Spindle Motor Power 1.5 kW Spindle Speed 0 - 24000 rpm (Variable speed)</p> <p>Standard tools and accessories : Collet set (2-10mm) with adapter, table clamps, table vise (4 inch), Standard Engraving tool kit</p> <p>Operational area – Soft wood, multiword, plywood, gypsum board, acrylic</p>
7	Laser Cutter/ Engraving Machine	<p>Brand: Suraj by Sahil Alloys Model: Suraj LC Specification:</p> <p>Maximum Work Area: 1300x900mm Laser Power : Laser power : 30-150W Cutting Speed: 10000 mm/min Precision: <0.01 mm Dimension: 2080x1300x1300mm Accessories : Chiller Unit CW5200, 1HP Blower, Air Compressor, Linear Guides Hiwin, Knife Table, Heavy Duty Stepper Motor, AR Coated Lens (USA), Metallic Mirrors. Support files : Parasolid, PLT, CDR, AI, DWG, DXF, DST, BMP, JPEG, TIFF, GIF, PCX, etc. Applicable Material : Non-Metal Such as: Acrylic, Soft Wood, Paper, Cardboard, Cloth, Leather, Plastic, Rubber, Ceramic, MDF, Plywood, Foam, Thermocol, Veneer, ABS Sheets etc.</p> <p>Operational Area: Soft wood, multiword, plywood, gypsum board, acrylic</p>
8	Sand Blasting Machine	<p>Brand : Sandstorm by Sandstorm Equipment Bangalore Model : SEC SB-9090 Specification :</p> <p>Dimension : 900mm X 900mm X 900mm Nozzle : 8 mm Nozzle made up of tungsten Carbide Compressor : Compressor with 30CFN out put at 80psim V Belt, consists of air compressor, V-belt, belt guard, drive pulley, non-return valve, safety valve and starter. Accessories: Blast Nozzle of 8mm 2 no.s Blast Gun 1 No., View Glass 5 Nos. Hand Gloves 5 Pair (10 No.s), Light Fixtures 2 No.s 1.5 Hp Motor starter with push button 1 set</p> <p>Operational Area : Industrial Application, metal surface finishing paint/rest removing</p>

Section	Power Tool
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Sr. No.	Equipment Name	Equipment detail
9	Scroll Saw	Brand – Jai 661010 by Bright way Model – 24” Scroll/JIG Saw with 1Hp Motor Specification: Working Area: Minimum 24 Inch or More Rotor/Motor: 1 HP Single Phase Motor with DOL Starter Cutting Blade : Thermo Steel Blade- Material Support – Metal Sheet, PVC Sheet, Plywood, Acrylic Board, Gypsum Board etc.
Section Supply & measuring equipment		
Sr. No.	Equipment Name	Equipment detail
10	Electronic Work Bench – 3 Nos.	Brand – Shyam Electronics by ARS Technologies Kanpur Model - STS EB-02 Specification - Dimension: 1000(H) x 2000(L) x 1000 (W) mm Type: Modular Construction: 3,2,1.6 mm CRCA with Powered coated with ESD conductive bench Top. Working Voltage: 200-240V AC, 50Hzs. Dual power Supply Multi meter Oscilloscope Function Generator RJ 45 connector with, PC monitor Arm, and CPU Stand ; AC power supply for the PC. Operational Area: Electronic/ Electric Product design development and testing
11	Vinyl Plotter	Brand : SAGA Model : Stepper Vinyl Plotter Saga 1350 (4 Feet) Specification : Dimension: Media Width: 1320mm Cutting Width 1300mm Force 600g Cutting Speed : 50mm/Sec Working Temp : 20-28 oC Humidity : 40% - 68% Floor Size: 3 Feet x 5 Feet x 5 Feet Supporting Software : Corel, Flexi sign, DRAGON CUT Working Power : AC 220 V, 80 Watts in Single Phase, Operational Area: Vinyl Cutting, Sticker Cutting

Section		Hand tools	
Sr. No.	Equipment Name	Sr. No.	Equipment Name
12	Cord Less Drill Driver	23	Electronic Components staking shelf-2
13	Mitre Saw	24	Screw Driver Set (80+ Drivers)
14	Smart Drill Kit	25	160mm Soft Grip Filing Set
15	Bench Grinder	26	4-Piece Plier Set
16	Cordless Impact Drill	27	Stainless Steel Tweezers
17	Bench Pillar Drill	28	Sensors (All the 6 type) with minimum 10 units
18	Professional Angle Grinder for Metal	29	Communication modules (Xbee) – 2No.
19	Spanner Set & Hammer Set	30	Bluetooth, WiFi, RF – 5 No. each

20	Allen Key Set – 2 set	31	Resistors, capacitors, Transistors, Diodes, Fuses & Holders
21	NUT & Bolts – 2 set	32	ICs- ADC DAC, Op-amp, timer IC
22	Cutting plier – 2 set	33	Connectivity Cables-
Section	Measuring Instruments		
Sr. No.	Equipment Name		
34	PH Tester		
35	Digital Multi meter		
36	SSU hydro meter (Range 00 to 100)		
37	Digital Vernier Calipers		
38	Multimeter Screw Gauge –Digital		
39	Digital Storage Oscilloscope		
40	Portable Digital Multi Angle Back light Gloss Meter		
41	Dual Power Supply (0-30V) 2A with Safety Features – 3no.		
42	(0-30V) 5A Power Supply unit – 2 No.		
43	PCB Inspection Microscope Mono Zoom Head 8” LCD 5MP		
Equipment available under TBI			
Sr. No.	Equipment Name	Equipment detail	
1.	Chemical Vapour Deposition Apparatus	<u>NanTec</u>	
2.	Laminar Air Flow	<u>Lablin Instrument: HLF-4</u>	
3.	Analytical Balance	<u>IG-220AS Igene Labserve (P) Ltd</u>	
4.	Auto Clave (Vertical)	<u>54 Liter, Rotek</u>	
5.	Refrigerated Centrifuge	<u>Remi- CPR 24 Plus</u>	
6.	HOT AIR OVEN	<u>Labline 2500 MHOS 05</u>	