

TECHNICAL BID PROFORMA

Item Name: “Full body phantom / vitals simulator”

Bidder Eligibility Criteria:

I	Bidder Eligibility Criteria-I (Public Procurement – Preference to Make in India)	Class I / Class II	Local Content value	Reference, Page No.
I	Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16 th September 2020 and other subsequent orders issued therein.			
2.0	Bidder Eligibility Criteria-II	Compliance (Yes/No)	Reference Page No.	Remarks, If any
1	The bidder/OEM should have supplied at least 2 similar items to IITs, NITs, IISERs, CSIR Labs or other R&D organizations or institutions in India or abroad in the last 5 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.			

3.0 Technical Compliance:

Technical specifications required for one unit of Full body phantom / vitals simulator
Specifications: -

Sl.no	Technical Specification	Complied / Not Complied	Reference Page No.
1	Anatomically correct realistic skull phantom with skin-mimicking material surrounding it.		
2	Complex capillary-like blood vessels implemented in the forehead to circulate optically blood mimicking fluid along with external pumps to simulate pulsations.		
3	A network of variable temperature material around the face to mimic skin temperature changes in the facial area		
4	Anatomically correct adult torso with detachable head with spine and ribcage.		
5	Anatomically correct beating Heart with Aorta, Vena cava, 2 Atria, 2 Ventricles, 4 valves, Esophagus tube, Right and left Ventricles, right and left atrium.		
6	Mechanical pumping of heart to simulate adjustable heart rate, diastole and systole of the cardiac cycle, simulate the cyclic motion of the heart walls, mechanical pumping of blood mimicking fluid to create ballistic movement, control and change the pressure, complete system installed on a secure base		
7	Anatomically correct breathable Lungs with Trachea		

8	Realistic cyclic respiratory motion with adjustable breathing rate, inspiration and expiration through nose, temperature difference between inspired and expired air.														
9	Anatomically correct lower body with tissue/muscle mimicking material to transfer force due to the ballistic ejection of blood from the heart all the way to the feet.														
10	<p>Entire human body phantom must be functional while standing erect Detailed specifications:</p> <table border="1"> <tr> <td>Facial blood mimicking fluid sensitivity</td> <td>400 nm to 900 nm wavelengths</td> </tr> <tr> <td>Facial skin temperature range</td> <td>33 degrees to 40 degrees, in 0.5 deg steps</td> </tr> <tr> <td>Heart rate range</td> <td>40 bpm to 140 bpm in 1 bpm steps</td> </tr> <tr> <td>Blood pressure range</td> <td>80 mmHg to 140 mmHg in steps of 10 mmHg</td> </tr> <tr> <td>Breathing rate range</td> <td>10 to 20 breaths pm, in 1 breath pm steps</td> </tr> <tr> <td>Temperature differential between inspired and expired air</td> <td>0 to 2 degrees in 0.5 degree steps</td> </tr> </table>	Facial blood mimicking fluid sensitivity	400 nm to 900 nm wavelengths	Facial skin temperature range	33 degrees to 40 degrees, in 0.5 deg steps	Heart rate range	40 bpm to 140 bpm in 1 bpm steps	Blood pressure range	80 mmHg to 140 mmHg in steps of 10 mmHg	Breathing rate range	10 to 20 breaths pm, in 1 breath pm steps	Temperature differential between inspired and expired air	0 to 2 degrees in 0.5 degree steps		
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	Terms and Conditions:														
	The equipment must have one year warranty														

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the above points with document proof as required. Failing which bidders will be technically disqualified)

**SIGNATURE OF BIDDER ALONG WITH
SEAL OF THE COMPANY WITH DATE**