



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

Ref. PR No. 1000055490

Rfx. No. 6100002990

Item Description: **3DOF Gyroscope**

Sr. No	Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
1.	Dimensions – H × W × L	70 cm × 50 cm × 50 cm		
2.	Device mass	27.3 kg		
3.	Disc encoder resolution (in quadrature)	4096 count/rev		
4.	Gimbal/frame encoder resolution (in quadrature)	4000 count/rev		
5.	Disk motor power	44.5 W		
6.	Gimbals/frame motor power	266 W		
7.	Rotor mass	1.91 kg		
8.	Rotor diameter	0.152 m		
9.	Rotor thickness	0.0127 m		
10.	Analog I/O channels	8 channels		
11.	Encoder inputs channels	8 channels		
12.	Minimum Continuous Voltage Output	No load: ±21V, 2A load: ±20V		

Sr. No	Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
13.	Maximum Continuous Current Output	$\pm 4\text{ V}$		
14.	Amplifier Command Range	$\pm 10\text{ V}$		
15.	Amplifier Gain	1 or 3V/V (Gain Selectable)		
16.	Sensor processor board	Standalone device with ESP 32 Processor on board with 14+ sensors capable of data acquisition and end computing Should have ESP-WROOM-32 Processor, 4MB on board memory, Wi-Fi enable for IOT, Bluetooth for energy (BLE), 3.7V low power sensors, rechargeable LiPo 3.7V 500mAh. Should have different sensor like UV, Sound, Acceleration, CO2, Gyroscope, Air Pressure, External temperature probe, altitude, Magnetism, Humidity, ambient light, Color, Gesture & short- and long-range proximity sensors		
17	DOF	4 DOF sensed and 4 DOF actuated		
18	control design	Open architecture design, allowing users to design their own controller using MATLAB, Simulink		
19		• Flexible operation and control design from MATLAB® • 4 DOF sensed and 4 DOF actuated (over-actuated system) • Multi-colored axes for distinction (yaw in silver, roll in blue and pitch in red) • Fully documented system models and parameters provided for MATLAB®, Simulink® • Open architecture design, allowing users to design their own controller • Mechanically balanced through the entire workspace • High-resolution optical encoders for accurate measurement		

		• Precise, stiff and heavy-duty machined components • Slip rings provide infinite continuous motion in each DOF • Direct drive actuation to achieve negligible friction on all axes		
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Note- The warranty for equipment should be 12 months.