



Company Spec Sheet

Company Specs:

Company name: Mosasaurus
School name: Macau Pui Ching Middle School
Home state: Macau SAR, China
Distance traveled: around 12,026 km
Returning Team: participated in the MATE competition twice

ROV Specs:

ROV name: Manta Ray
Total Cost: USD\$ 2,383.5
Dimension: H: 354cm * W: 401cm * L: 406cm
Weight: 10.8kg
Total student-hours to design and build: 310 Hours



Fig.1 Group Photo
Front Row: Quennie Sio, Yanki Chan, Hayden Ho, Rianna Lei, Leon Lei
Second Row: Bosco Tam, Helios Chow, Kenny Hong, Ryan Leong, Patrick Lu



Fig.2 Manta Ray ROV

Team Specs:

Grade	Member Name	Role	Status
8	Hayden Ho	CEO, Robotic Arm Engineer	Returning
8	Kenny Hong	CFO, Control Box Engineer	Returning
12	Bosco Tam	Mechanical Engineer	Returning
11	Leon Lei	Software Engineer	Returning
8	Yanki Chan	Mechanical Engineer	Returning
8	Ryan Leong	Control Engineer	Returning
8	Helios Chow	Project, File Manager	Returning
8	Quennie Sio	Structure Engineer	Returning
8	Patrick Lu	Programming Engineer	New
8	Rianna Kio	Programming Engineer	New
/	Marco Lou	Mentor	/
/	Thomas Lao	Mentor	/

Safety Features:

- Anderson Connector: The 12V DC MATE power supply connects to the main power cable via the Anderson power pole connector, about 11 cm from the main connection point.
- Propellers: Thrusters secured with 3D printed shrouds that meet IP-20 standards.
- Sharp or Dangerous Components: Manta Ray's edges have been filleted and chamfered to remove sharp edges.

Special Features:

- Custom-designed 3D printed tools like "Water sample collection device" and "anode hook" for specialised tasks
- Custom-built buoyancy engine controlled by an ESP32 microcontroller
- 6 thrusters arranged in a vectored configuration
- Software architecture uses QGroundControl and Python-based automation for data collection, positioning, and mission logic.