



2025 MATE ROV Competition
UN Decade of the Ocean, MATE Year of the Great Lakes
Non-ROV Device Safety Inspection Sheet
EXPLORER/PIONEER/RANGER

Company Number:	Class: EX PN RN
Company Name:	Judge Name:

EXPLORER/PIONEER/RANGER CLASS Non-ROV Device Power Specifications and Independent Sensors SAFETY CHECK LIST. Companies must bring this check list with them to their safety inspection.

In 2025, only the vertical profiling float qualifies as a non-ROV device. In 2025, a pH sensor and/or a 360 photosphere camera qualifes as an independent sensor.

Non-ROV device		
	ELEC-NRD-001: Non-ROV devices cannot be powered from the surface. Power is limited to 12 VDC maximum and 5 amps maximum.	<ul style="list-style-type: none"> The enclosure housing must be designed so that it will open if the pressure inside the housing is greater than the outside pressure
	ELEC-NRD-002: The device may not utilize cameras. Thrusters are allowed only for a RANGER/PIONEER float.	<ul style="list-style-type: none"> Any pressure relief plug MUST be at least 2.5 cm in diameter.
	ELEC-NRD-003: Onboard power is allowed for non-ROV devices. If onboard batteries are being used, the following specifications must be met:	<ul style="list-style-type: none"> The enclosure housing must be designed so that it will release pressure if pressure inside the housing is greater than the outside pressure. Under no condition should the housing be built with fasteners to hold the device together if there is no pressure release valve.
	<ul style="list-style-type: none"> AAA, AA, C, D or 9V alkaline batteries are allowed. NiMH and AGM batteries are allowed. 	
	<ul style="list-style-type: none"> Batteries are mounted in a manner that they are not loose inside the container. 	
	<ul style="list-style-type: none"> A single fuse that will shut down all power sources if blown is included. 	
	<ul style="list-style-type: none"> A fuse (5 amps max) must be installed within 5 cm of the battery positive terminal. 	
	<ul style="list-style-type: none"> All fuses must be able to be visually inspected through a clear housing or upon opening the float. 	
	<ul style="list-style-type: none"> Alkaline batteries must use a cartridge fuse. NiMH and AGM batteries must use an ATO blade fuse. 	
	<ul style="list-style-type: none"> Battery Type Limitations <ul style="list-style-type: none"> AAA battery packs are limited to 500 mA AA battery packs are limited to 750 mA C battery packs are limited to 1A D battery packs are limited to 1.25A 9V battery packs are limited to 100mA NiMH/AGM batteries are limited to 5A 	
	<ul style="list-style-type: none"> Full load amp value was calculated and used to select the proper fuse size. 	
		Independent Sensors
		ELEC-IS-001: Independent sensors must be powered from the surface; no onboard batteries are allowed.
		ELEC-IS-002: Companies may use USB to connect their sensor to a computer. Companies may also use surface battery packs (limited to 12 volts maximum) or the MATE supply to provide power for their independent sensor.
		ELEC-IS-003: The independent sensor may only contain the intended sensor; thrusters, or other systems MAY NOT be attached. The 360 photosphere device MAY include a camera.
		ELEC-IS-004: Companies that use an independent sensor must provide a 3 amp (or less) fast blow fuse on the positive side of their connection.
		ELEC-IS-005: An SID must be submitted for an independent sensor that uses electrical power.