

Nova Ray[®] ROV Applications

The Nova Ray family of Remotely Operated Vehicles (ROVs) redefine the classes of ROV use and application. Traditional classes create limitations that Nova Ray, with its far superior performance and configuration flexibility break apart. Whether it is observation, inspection, hazardous, or even security missions, the Nova Ray performs these in ways that allow for far more sensor stability, extreme maneuverability, with more varied “Swiss Army Knife” flexibility than any other ROV / UUV on the market.

- **Oil & Gas Pipeline Inspection With Higher ROI:** The Nova Ray can perform up to 10x more linear miles/kms of pipeline inspection per day than other ROVs. It does this by being able to be towed under complete control at higher speed, precisely positioned over the pipeline, plus can instantly switch to free flying mode to do more close-in inspection without the tow vessel stopping or turning around.
- **Infrastructure Inspection Anywhere There In Water:** The Nova Ray’s maneuverability & power makes it ideal for marine and inland underwater inspections. From dams to bridges to ports & marinas, anywhere that there is water and the space to perform, the Nova Ray excels, even in high currents. It can free fly to view any structure at depth, and with the right sensor/camera configuration test for corrosion and materials integrity.
- **Rapid Higher Speed Sea Floor & Channel Mapping:** Because the Nova Ray can be “control towed” at high speed with perfect stability, it provides the best platform for sea floor, and river or lake bed mapping using sonar, LIDAR, photogrammetry, or other sensors alone or in combination. The Nova Ray can allow for more frequent channel updates, especially following storms, using smaller vessels or boats with greater accuracy and higher resolution data.
- **Chain Of Custody Legal Data Acquisition:** Many applications require compliant data / file logging with precise metadata records for legal purposes. The Nova Ray’s data collection provides for automated “chain of custody” record stamping & logging to meet the needs for regulatory data gathering and archiving. Raw “unprocessed data” is retained automatically, allowing Nova Ray images and sensor data to be used as legal records.

NOVA RAY



- **Marine Research & Zero-Impact Underwater Survey:** Marine research brings extreme challenges to any ROV. The Nova Ray’s sensor flexibility, extreme maneuverability & power, makes it ideal for any fisheries surveys to close up coral reef examination, while allowing for tight positioning without harm to fragile ecosystems. The Nova Ray can be towed or free-flown with precise control to avoid collisions while collecting the broadest range of sensor data.
- **Bottom Profiling And Anchor Damage Surveys:** Measuring bottom profiles or anchor damage requires precision controlled altitude and “rock solid” stability for the highest resolution data, while demanding the largest area coverage per hour for best ROI. The Nova Ray can be control-towed at the highest speeds while delivering the best quality data, adapted with precision laser or ultrasonic altitude control auto-pilot for rapid surveys and inspections.
- **Marine & Underwater Salvage Location & Support:** From locating 100 year old locomotives at 350ft depth in mountain lakes to salvaging shipwrecks, the Nova Ray’s unique sensor configurations, controlled-tow & free flight maneuvering means it can do large surveys or instantly switch to close quarter inspection without having to stop the tow vessel. Sensor packages allow for materials detection, or even LIDAR & photogrammetry 3D model building.
- **Waterway Emergency Response & Recovery Operations:** The Nova Ray can be deployed rapidly from ship or shore by hand (305 model). It fits in an emergency response vehicle or small fast deployment vessel. It is perfectly suited to first response by Coast Guard, Marine Patrol, Harbor Fire, and other first responders from stand-off positions to monitor sub-surface situations, or locate casualties or assets. It can also perform rescue missions on demand.

Call us for a live demo of the Nova Ray at Tampa Florida:

+1 833 NovaRay / 833-668-2729

Learn More At:

www.NovaRayROV.com

Nova Ray® ROV Applications

- **Port / Waterways Security Surveillance Monitoring:** In today's world it is critical to know about what vessels are entering ports, canals, and waterways. Nova Ray's unique abilities allow for vessel wake inspection for chemical, biological and radiological threats. The Nova Ray can operate with total stability immediately below the surface within a 60° arc from the tow vessel. It can also use hydrophones or other sensors for sub-surface surveillance as well.
- **Any Size Vessel Inspection In Port Or At Sea:** Things happen to vessels and the ability to inspect for hull damage or condition immediately can be a significant benefit to ship owners. Additionally the Nova Ray are perfectly suited for in-water hull inspections in any conditions regardless of currents, means you can inspect at the dock or open ocean. From insurance inspection, hull condition & corrosion testing, or even inspection at sea without stopping the vessel.
- **Military Deployment & Special Operator Uses:** The extreme maneuverability and capability to operate in numerous current profiles allows the Nova Ray to perform multiple surveillance and security missions at sea, in rivers or lakes, while still being a hand-deployable device (305 model) if needed. It is perfect for rapid use in numerous situations from drug interdiction (underwater inspection) to terrorism at sea from any size vessel for rapid response.
- **Precision Ecological Regulatory Compliance Monitoring:** The Nova Ray can easily move through constricted spaces, from coral reefs to mangroves allowing for remote data gathering in areas difficult for vessels or divers. Its thrusters and hydrodynamic control surfaces allow for operating in surf or tidal surges, permitting surveys in the most difficult currents and conditions. It can also take chemical pollutant measurements at pipe outflows, in canals, rivers & lakes.
- **Storm Surge & Floods Disaster Recovery:** In the aftermath of natural disasters, inspection of flooded areas can be extremely challenging with obstacles and hazards everywhere. The Nova Ray can be rapidly deployed from any vehicle, including helicopters, to assess infrastructure, perform search & rescue, trace toxic leaks, view dam or levee breaks, in almost any current conditions without needing to risk divers, or wait for safer conditions.
- **Inspections Or Surveys That Have High Risk To The ROV:** The Nova Ray is designed to recover from in-use risks. It is highly modular and allows for low-cost repairs even at sea. Propeller or other hazard damage can be repaired easily without the total loss of the device. Most repairs can be done at sea with only an hour or two of downtime, without risking the investment in vessel and crew, with the right maintenance package for spares on-hand.
- **Interventions & Performing Mechanical Tasks:** The Nova Ray can be equipped with a mechanical actuator arm to perform mission needed tasks that include object recovery, sample taking, and more. Options include attaching to metal surfaces for stability while performing work. The Nova Ray's unique design and stability in the water allow for the broadest range of missions. Call us today to explore the ways we can configure a Nova Ray for your needs.

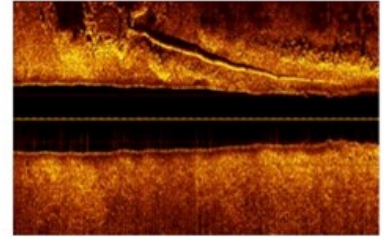
Katrina Pipeline inspections

Testimonial

We used the Nova Ray ROV to inspect oil and natural gas offshore pipelines for post Katrina surveying and inspection in the Gulf coast region. The ability to tow the Nova Ray was a crucial factor in our decision to purchase, because this equipment gave us much more versatility. The ability to change from a traditional observation class ROV for sub sea tie in and valve inspections, to a towable, side scan sonar equipped ROV for long distance pipeline inspections allowed us to efficiently accomplish both tasks.

On recent contract work we used the ROV on and off for 50 days. It was used for visual confirmation and as a back up side scan sonar. Because our vehicle was equipped with the side scan sonar, it was used repeatedly as a back up when the ship's side scan sonar was down. This alone kept us working and not losing valuable sea time. I believe that had we not had this piece of equipment on board, we would not have finished our contracts in the same time frame.

Ed Watkins of W & W Engineering
Tampa, Florida



Side Scan image of Sub sea tie-in



Call us for a live demo of the Nova Ray at Tampa Florida:

+1 833 NovaRay / 833-668-2729

Learn More At:

www.NovaRayROV.com

Nova Ray® ROV Applications

Primary Nova Ray ROV Applications Include:

- Risk Reduction Inspection
- Marine Research
- Infrastructure Maintenance
- Cable & Pipeline Inspection
- Bottom Anchor Damage Review & Analysis
- Waterway Emergency Response & Recovery Operations
- Port / Marina Security
- Vessel Inspection at Port or at Sea
- Property Recovery
- First Responder Use
- Military & Special Operator Uses

Environment Suitability:

- Still Water
- Lakes, Rivers, Streams
- Shore & Estuaries
- Near Shore
- Off Shore / Open Ocean
- Deep Ocean – to 4,000 Meters
- Flooded Underground / Caves
- Waterlines / Tunnels / Sewers



Additional Nova Ray Applications:

- Risk Mitigation
- Aquaculture Off-Shore
- Biological Monitoring & Management
- Broadcast 4K HD Video
- Submarine Cable Inspection
- Diver Support
- Educational / Academic / Research
- Environmental Protection & Monitoring
- Fisheries Monitoring & Management
- Deep Water Benthic Surveying
- Geo-Hazard & Seabed Features
- Infrastructure (Dams, Bridges, Ports)
- Law Enforcement (Scene Inspection)
- Homeland Security Chemical Biological Nuclear Detection
- Hydroelectric Inspection
- Offshore / Ocean Floor
- Oil & Gas Pipeline
- Military (Observation / Intelligence / Weaponization)
- Nuclear Monitoring
- Port Security
- Vessel Inspection & Surveillance
- Salvage & Recovery – Maritime & Inland Waters
- Science & Research (Oceanography, Archaeology, Geology)
- Search & Rescue (Rapid Location, Recovery, Rescue)
- Tourism / Fishing Applications
- Water Management (Oceans, Fresh Water)
- Future Applications



The Extreme ROV From Coral Partners

Call us for a live demo of the Nova Ray at Tampa Florida:

+1 833 NovaRay / 833-668-2729

Learn More At:

www.NovaRayROV.com